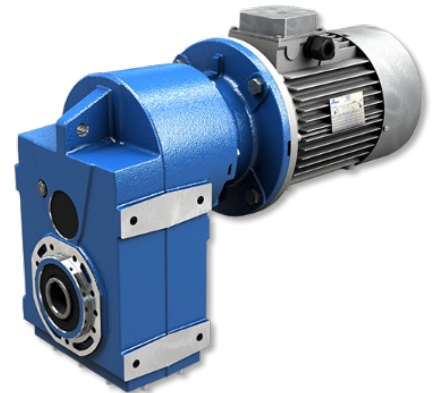


# TECHNICAL CATALOGUE



## SHAFTMOUNTED GEARED MOTORS



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Motovario® corporate philosophy aims to promote the company's brand and products at an international level with determination and transparency, while constantly striving to offer innovative solutions for satisfying and anticipating the demand of the market. Motovario® provides technologically advanced solutions in the transmission components field for industrial and civil applications worldwide.

### The company

At Formigine, the heart of Modena's industrial district, Motovario® boasts a production plant spanning 50,000 m<sup>2</sup> that employs 500 people.

1965 Foundation of Motovario

1998 Acquisition of Spaggiari Trasmissioni an important brand in the mechanical technology sector.

2006 Motovario acquisition by a private investment fund managed by Synergo SGR, in order to guarantee its development and support its expansion throughout the world.

2014 Acquisition of Pujol.

2015 Acquisition by TECO.

At the core of Motovario® lies an evolved production process based on technological solutions that convert power into movement. Motovario® is at the heart of the production processes that drive industries worldwide. Quality and reliability are the company's fundamental assets. Motovario® is present throughout the world with branches in France, Spain, Germany, England, China, the United States and India. The sales network and customer service guarantee immediate and high-quality support to all customers. In addition, the company boasts a worldwide network of MAC

(Motovario Assembly Centre). Qualified assembly centres are present, in Italy, Australia, Benelux, Bulgaria, China, Finland, France, India, Ireland, Israel, Malaysia, Poland, Portugal, South Korea, Spain, Sweden, Turkey, United Kingdom, Ukraine and USA. The company is able to offer a wide range of products: speed variators, right-angle, helical-bevel, shaft-mounted, worm gear reducers and gearmotors, electric motors, inverter and inverter drives. Maximum quality and precision are ensured by the cutting-edge technologies implemented in the production process. 170 numerical control machines, served by LGV lines for storage in automatic warehouses, ensure a high standard of efficiency for the Motovario® production department.

The highly automated assembly lines are supported by a specific computerised system. The process statistical control system manages the production process to avoid rejects, by enabling the operator to monitor all the processing phases. The annealing, tempering, hardening and carburizing treatments are carried out inside the plant. The plant operates on a 24-hour basis, including holidays. Reliability, resilience and versatility are the distinctive features of Motovario® products, the most qualified solution to any power transmission requirement.

### Main fields OF APPLICATIONS

- Mechanical-electromechanical industry (car washing, pumps, barriers & automatic doors, circuit breakers)
- Ceramic industry (ovens, press feeding systems)
- Food, farming, oenology industry
- Wood, marble, glass industry
- Packaging & bottling industry
- Textile, shoes, leather industry
- Transport, logistic industry
- Construction industry
- Milling, animal husbandry, flower industry
- Machine tools & steel industry
- Mining, quarry, cement industry
- Energy industry (solar, nuclear, biomass, wind)
- Amusement industry (theatres, leisure parks, kiddy rides)
- Chemical & pharmaceuticals industry
- Paper & printing industry
- Plastic & rubber industry
- Telecommunications industry (satellite orientation systems, military radar)
- Engineering and consultant companies

### Certifications

Our products can be manufactured to conform with the ATEX Directive 2014/34/UE. In addition, the safety and quality of our motors, geared motors and motovariators is guaranteed by the EAC (EurAsian Conformity) certification, an essential requirement for products exported to the Russian Federation. Our motors are UL certified, which guarantees their safety and quality requirements for the North American market.

### Quality CONCEPT

Motovario® has obtained the quality certification renewal of its production system in conformity to the UNI EN ISO 9001:2008 standard. This internationally recognised certification acknowledges the company's commitment and drive geared towards constantly improving products, projects and services offered. Moreover, the company has obtained the OHSAS 18001:1999 (Occupational Health and Safety Assessment Series) certification, which defines the requirements of the workplace safety and health management system.

### Research & DEVELOPMENT

Technological innovation: a crucial factor for competing in the market. In the company's 50-year history, research and change have been the pivotal factors in guaranteeing competitiveness at a global level, thanks to increasingly advanced products in terms of performance and reliability. Each year the company invests an increasing amount of its turnover in research and development, geared towards promoting the constant study and analysis of products, control processes and performance certification. In order to ensure that customers receive products that comply with the requested performance levels, the company carries out simulations on all new products, including NVH (Noise, Vibration, Harshness) tests effected in the advanced semi-anechoic chamber.

### Customer CARE

Innovative instruments and software applications supporting the technical and logistic requirements of our partners worldwide guarantee a timely and customised service. The experience acquired by Motovario® has led to the creation of the new online portal MyMotovario 4.0, which allows for selecting products and exporting their 3D file. As a result, designers and engineering departments can download the three-dimensional model of the requested product and implement it directly in their own layout. In order to maximise customer service and quality, Motovario® offers all its customers the following online services: Order Tracking, which allows for monitoring the progress of an order in real time, and the Stock Availability service, through which users may check the availability (stock) of our products, both in the Italian plant and in the various branches.

### Motovario chooses technological evolution.

Motovario® has chosen technological evolution and actively collaborates with the Faculty of Engineering of the University of Modena and Reggio Emilia and of the University of Bologna.

**Reliability, sturdiness, versatility**

These are the distinctive traits of Motovario products. A broad range of transmission products that provide a competent, innovative solution to each and every power application need. Cutting-edge tools, unrelenting research efforts and ongoing commitment to upgrading manufacturing equipment to the latest state-of-the-art enable us to offer high quality and performance standards to cater to industry requirements and the broadest variety of applications. Motovario ranks among the leading, well-reputed companies in Italy engaged in the design, manufacture and sales of transmission products for industrial and civil applications. The entire manufacturing process takes place in Formigine and Ubersetto plants, in Modena area, with an overall surface area of over 50.000 sq m. and a workforce of about 500 people. 170 numerically controlled machines and cutting-edge handling, storage and assembly automated systems ensure that all products meet high quality standards. The network includes more than 40 Motovario-certified assembly centres, with the capability to supply products in a broad range of versions, including customised versions, high service capacity and fast response. As a result, our product offering can cater to the needs of all plant engineering sectors, in all industries and for different applications, and includes: speed variators, helical, bevel-helical, parallel helical, worm gear reducers and gearmotors, electric motors and motor-inverters. All of the products we manufacture share such common features as reliability, sturdiness and versatility, topped with a high innovation content. At the heart of a company's technological innovation is the ability to develop integrated tools for computer-aided calculation simulation and management of different processes as part of product development. When simulating operating, setup and process conditions, it is also necessary to analyse and optimize the overall functional design of a product using a synergistic approach. This is achieved by implementing an exhaustive experimental plan, without using interpolation or approximation, as they frequently allow criticalities or any oversizing which is not conducive to maximising quality/cost ratio to go unnoticed.

**High-efficiency method for calculation according to standards**

A set of specific functions have been developed to this end. A few significant examples include functions to:

- Optimise individual reduction ratios and the combinations of the different reduction stages based on parametrisable target normal series;
- Calculate torque values and maximum permissible external forces for gear reducer units, using iterative numeric algorithms to confirm target life/safety values of components;
- Create databases for loading a FEM structural analysis model by automatically writing all reaction components of bearings under all load conditions to a specific file, with automatic selection of critical cases that need to be verified.

Another goal of the method is to create synergy between calculation according to standards and FEM structural calculation and the implementation of FEM model loading procedures, so as to simplify input data, meshing and constraint criteria

**Competitiveness and operational benefits of the new method**

This method offers many practical advantages over traditional calculation procedures within the company, namely:

- Iterative optimisation of project since setup stage;
- Accurate assessment of the various service factors and reliability levels for the entire gear reducer unit and for all operating conditions as per catalogue rating or customer specific requirements;
- Faster support to customers in analysing tailored product configurations;
- Integrated corporate databases that can be updated in real-time.

**Range extension and ongoing evolution**

The steady, significant growth of Motovario Group is achieved thanks to an ongoing search for new calculation and design tools, as well as to customer service. The new tools identified have led to innovation, improved product reliability as well as positive developments in market management. The following software products are used for design, calculation and management:

- Solidworks;
- Kisoft;
- Kissys;
- Ansys;
- FEM modelling analysis software;
- Circuit design and simulation software;
- Specific spreadsheets;
- SAP.

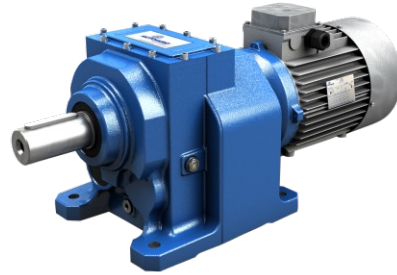
In MyMotovario 4.0 portal, PRODUCT SELECTION includes a section named APPLICATIONS where customers can enter application data and find out which gear reducer suits them best in a matter of minutes.



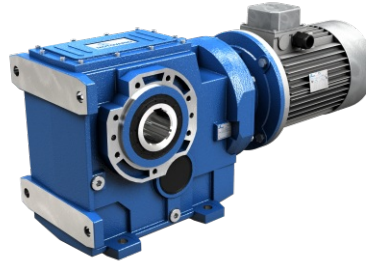
## MOTOVARIO Products

**HELICAL GEAR REDUCERS**

Cast iron or aluminum casing  
 Output shaft up to 90 mm  
 Mn<sub>2</sub> up to 70806 in-lb  
 Reduction stages 1, 2, 3  
 Ratios up to 282  
 Atex units

**HELICAL BEVEL GEAR REDUCERS**

Cast iron or aluminum casing  
 Output shaft up to 110 mm  
 Mn<sub>2</sub> up to 115059 in-lb  
 Reduction stages 2, 3  
 Ratios up to 443  
 Atex units

**SHAFT MOUNTED GEAR REDUCERS**

Cast iron  
 Output shaft up to 90 mm  
 Mn<sub>2</sub> up to 84402 in-lb  
 Reduction stages 2, 3  
 Ratios up to 395  
 Atex units

**WORM GEAR REDUCERS**

Cast iron or aluminum casing  
 Output shaft up to 50 mm  
 Mn<sub>2</sub> up to 23631 in-lb  
 Ratios up to 1083  
 Atex units

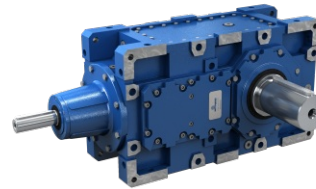
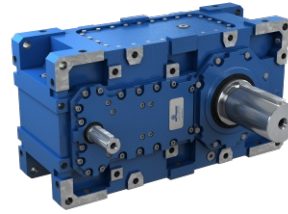


**PLANETARY GEARED UNITS**

Cast iron  
 Output shaft up to 80 mm  
 Mn<sub>2</sub> up to 88507 in-lb  
 Reduction stages 1, 2, 3, 4  
 Ratios up to 2700

**PARALLEL HELICAL AND BEVEL HELICAL GEAR REDUCERS FOR MIDDLE HEAVY INDUSTRY**

Cast iron casing  
 Output shaft up to 180 mm  
 Mn<sub>2</sub> up to 973582 in-lb  
 Reduction stages 2, 3, 4  
 Ratios up to 431  
 Atex units

**MOTOVARIATORS AND MOTOVARIATOR-GEAR REDUCERS**

Cast iron or aluminum casing  
 Mn<sub>2</sub> up to 44254 in-lb  
 Atex units

**ELECTRIC MOTORS**

Power ratings up to 121 HP  
 Poles 2, 4, 6  
 Three-phase and single-phase, built-in  
 brake, dual polarity  
 Protection class up to IP66



**DRIVES**

**DRIVON - motoinverter**

Three phase and single phase power supply  
High dynamics sensorless vectorial control  
Power ratings up to 7,5 HP  
Standard integrated STO  
Integrated field bus  
Optional field bus



## 1.3.1 Symbols

| Physical dimension  | Symbol           | Symbol units of measure | Input           | Output          |
|---------------------|------------------|-------------------------|-----------------|-----------------|
| Power               | P                | [HP]                    | P <sub>1</sub>  | P <sub>2</sub>  |
| Requested power     | Pr               | [HP]                    | Pr <sub>1</sub> | Pr <sub>2</sub> |
| Nominal power       | Pn               | [HP]                    | Pn <sub>1</sub> | Pn <sub>2</sub> |
| Torque              | M                | [in-lb]                 | M <sub>1</sub>  | M <sub>2</sub>  |
| Nominal torque      | Mn               | [in-lb]                 | /               | Mn <sub>2</sub> |
| Requested torque    | Mr               | [in-lb]                 | Mr <sub>1</sub> | Mr <sub>2</sub> |
| Speed               | n                | [rpm]                   | n <sub>1</sub>  | n <sub>2</sub>  |
| Load                | F                | [lb]                    | /               | /               |
| Radial load         | Fr               | [lb]                    | Fr <sub>1</sub> | Fr <sub>2</sub> |
| Radial axial        | Fa               | [lb]                    | Fa <sub>1</sub> | Fa <sub>2</sub> |
| Reduction ratio     | i                | [ ]                     | /               | /               |
| Dynamic efficiency  | η <sub>d</sub>   | [ ]                     | /               | /               |
| Speed               | ips              | [inch/second]           | /               | /               |
| Service factor      | f.s.             | [ ]                     | /               | /               |
| Life factor         | Fh               | [ ]                     | Fh <sub>1</sub> | Fh <sub>2</sub> |
| Corrective factor   | fh               | [ ]                     | fh <sub>1</sub> | fh <sub>2</sub> |
| Static              | s                | [ ]                     | /               | /               |
| Dynamic             | d                | [ ]                     | /               | /               |
| Calculated          | c                | [ ]                     | /               | /               |
| Maximum             | max              | [ ]                     | /               | /               |
| Minimum             | min              | [ ]                     | /               | /               |
| Moment of inertia   | J                | [lb*in <sup>2</sup> ]   | J <sub>1</sub>  | J <sub>2</sub>  |
| Ambient temperature | T <sub>amb</sub> | [°F]                    | /               | /               |
| Dimensions          |                  | [inch]                  | /               | /               |
| Angular backlash    | y                | [arcmin]                | y <sub>1</sub>  | y <sub>2</sub>  |

## 1.3.2 Formulas

| REDUCER   |  |                       |
|---|--|-----------------------|
| Starting or stopping time   | $t = v / a$  | [s]                   |
| Velocity in rotary motion   | $v = \pi * d * n / 60$<br>$v = \omega * r$         | [ft/s]                |
| Speed velocity<br>Angular velocity  | $n = 60 * v / (\pi * d)$<br>$\omega = v / r$       | [rpm]<br>[rad/s]      |
| Acceleration or deceleration according to a starting / stopping time  | $a = v / t$  | [ft/s <sup>2</sup> ]  |
| Angular acceleration  | $\alpha = n / (9,55 * t)$<br>$\alpha = \omega / t$ | [rad/s <sup>2</sup> ] |
| Starting or stopping distance (according to acceleration / deceleration or angular velocity)                            | $s = a * t^2 / 2$<br>$s = v * t / 2$               | [ft]                  |
| Horizontal translation force  | $F = \mu * m * g$                                  | [lbf]                 |
| Vertical translation force (lifting)  | $F = m * g$  |                       |
| Inclined plane translation force  | $F = m * g (\mu * \cos\beta + \sin\beta)$          |                       |
| m= mass [kg]; g= gravity acceleration [m/s <sup>2</sup> ]; $\mu$ = friction coefficient; $\beta$ = angle of inclination |  |                       |
| Moment of inertia   | $J = m * v^2 / \omega^2$                           | [lb ft <sup>2</sup> ] |
| Torque  | $M = F * d / 2$<br>$M = J * \omega / t$            | [in-lb]               |

| MOTOR and GEARMOTOR                                |   |       |
|--|---|-------|
| Starting time                                      | $t_a = (J_{ext} + J_m) * n_n / 9,55 + (M_{peak} - M_r)$ | [s]   |
| Braking time                                       | $t_s = (J_{ext} + J_m) * n_n / 9,55 + (M_{peak} + M_r)$ | [s]   |
| Motor rotation angle during starting               | $\varphi = n_n * t_a / 19,1$                            | [rad] |
| Motor rotation angle during braking                | $\varphi = n_n * t_s / 19,1$                            | [rad] |
| Power available at the shaft of single phase motor | $P = V * I * \eta * \cos\omega$                         | [W]   |
| Power available at the shaft of three phase motor  | $P = 1,73 * V * I * \eta * \cos\omega$                  | [W]   |

| RUNNING at 60Hz  |   |         |
|--|---|---------|
| Speed velocity at 60Hz   | $n_{60Hz} = 1,2 * n_{50Hz}$                                   | [rpm]   |
| Power at 60Hz  | $P_{1\ 60Hz} = P_{1\ 50Hz} * \sqrt{V_{60Hz} / V_{50Hz}}$      | [kW]    |
| If input voltage at 60 Hz ( $V_{60Hz}$ ) corresponds to winding voltage at 50 Hz ( $V_{50Hz}$ ), power doesn't change<br>$P_{1\ 60Hz} = P_{1\ 50Hz}$           |   |         |
| If input voltage at 60 Hz ( $V_{60Hz}$ ) is 20% higher than winding voltage at 50 Hz ( $V_{50Hz}$ ), power increases by 20%<br>$P_{1\ 60Hz} = 1,2 P_{1\ 50Hz}$ |   |         |
| Torque at 60Hz   | $M_{60Hz} = M_{50Hz} * P_{1\ 60Hz} / (1,2 * P_{1\ 50Hz})$     | [in-lb] |
| Service factor at 60Hz   | $f.s_{60Hz} = f.s_{50Hz} * 1,175 * P_{1\ 50Hz} / P_{1\ 60Hz}$ | -       |

| UNIT CONVERSION TABLE |                                     |   |   |                                     |
|-----------------------|-------------------------------------|---|---|-------------------------------------|
| Description           | Imperial units                      | International System of Units (SI)  | Technical System (metric)                   |                                     |
| Lenght, Distance      | 1 inch<br>1 foot                    | [in] = 0.0254<br>[ft] = 0.3048  | meter                                       | [m]                                 |
| Mass                  | 1 pound<br>1 ounce                  | [lb] = 0.4536<br>[oz] = 0.0283  | kilogram                                    | [kg]                                |
| Volume                | US liquid gallon                    | [gal] = 3.7854  | liter                                       | [l]                                 |
| Temperature           | Fahrenheit degree                   | [°F] = 1.8 * °C + 32  | Celsius degree                              | [°C]                                |
| Force                 | 1 pound-force                       | [lb <sub>(f)</sub> ] = 4.4482   | newton                                      | [N]                                 |
|                       |                                     | [lb <sub>(f)</sub> ] = 0.4536   | kilogram force                              | [kg <sub>(f)</sub> ]                |
| Power                 | 1 horse power                       | [hp] = 0.7457   | kilowatt                                    | [kW]                                |
| Torque, Work          | 1 pound-force inch                  | [lb <sub>(f)</sub> in] = 0.1130   | newton meter, joule<br>kilogram-force meter | [N m], [J]<br>[kg <sub>(f)</sub> m] |
|                       | 1 pound-force foot                  | [lb <sub>(f)</sub> in] = 0.0115<br>[lb <sub>(f)</sub> ft] = 1.3560<br>[lb <sub>(f)</sub> ft] = 0.1383 |   |                                     |
| Pressure              | 1 pound-force per square inch (psi) | [lb <sub>(f)</sub> /in <sup>2</sup> ] = 0.0689  | bar   | [bar]                               |
| Moment of inertia     | 1 WK <sup>2</sup>                   | [lb <sub>(f)</sub> ft <sup>2</sup> ] = 0.0421   | kilogram square-meter                       | [kg m <sup>2</sup> ]                |

For correctly selecting a gear reducer or geared motor, several essential pieces of data are required:

1. The rotational input speed to the gear reducer ( $n_1$ ) and the rotational output speed ( $n_2$ ). Through these two values it is possible to calculate the reduction ratio ( $i$ ) of the gear reducer using the following formula:  $i = n_1/n_2$
2. The torque required by the application ( $M_{r2}$ ).

The geared motor or gear reducer can be selected once this data is known.

This guide helps you to select the right product in just a few steps:

#### Geared motor selection

1. Determine the application's actual service factor (**s.f.**). This parameter depends on the type of load of the powered machine, the number of starts per hour and the hours of operation (refer to the "Service factor" paragraph).
2. Calculate the input power  $P_{r1}$  using the required torque value  $M_{r2}$ , the speed  $n_2$  and dynamic efficiency value.  $P_{r1} = (M_{r2} * n_2) / (\mu_d * 63.025)$ . The dynamic efficiency value depends on the type of gear reducer and on the number of gear reduction stages. (To calculate the efficiency value see its page).
3. Consult the geared motor performance tables and identify a nominal power value  $P_{n1}$  exceeding the required power  $P_{r1}$ , such that:  $P_{n1} \geq P_{r1}$
4. Once the suitable nominal power has been identified, select the geared motor capable of generating the rotational speed closest to the desired  $n_2$  value and with service factor s.f. greater or equal to that required by the application.

In the geared motor selection tables the combinations include 2-pole, 4-pole and 6-pole motors powered at 50Hz.

#### Gear reducer selection

1. Determine the application's service factor (**s.f.**) (consult to the "Service factor" paragraph on its page).
2. Calculate the reduction ratio  $i$  from the requested output speed  $n_2$  and from the input speed  $n_1$ .  $i = n_1/n_2$
3. Calculate the torque  $M_{c2}$  for selecting the gear reducer through the torque required by the application  $M_{r2}$  and the service factor s.f.:  $M_{c2} = M_{r2} * (f.s.)$
4. Consult the Gear Reducer Performance tables looking for the reducer that, with the reduction ratio closer to the calculated one, has a nominal torque  $M_{n2}$  so that:  $M_{n2} \geq M_{c2}$

#### Checks

Once the gear reducer or geared motor has been selected, the following checks should be performed:

##### 1. Thermal power

The gear reducer's thermal power must be equal to or greater than the installed mechanical power, or the power required by the application according to the indications contained in the section (refer to the "Thermal power" paragraph).

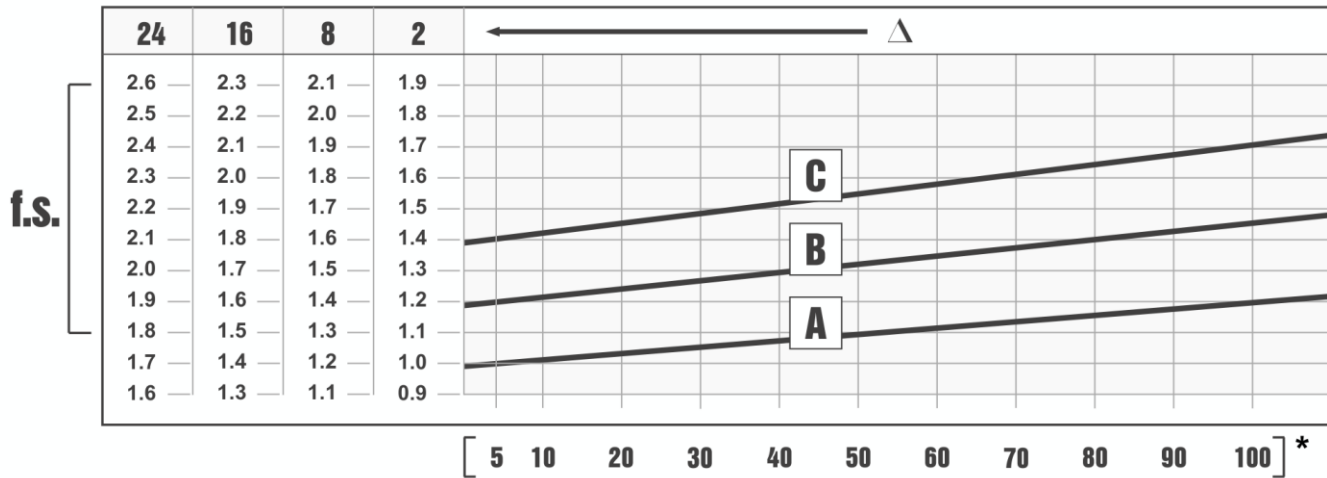
##### 2. Maximum torque

Generally, the maximum torque (peak instantaneous load) that can be applied to the gear reducer must not exceed 200% of the nominal torque  $M_{n2}$  (ATEX -  $M_{2max}$ ).

#### C. Radial loads

1. Verify that the radial loads acting on the input and/or output shafts are within with the values indicated in the catalogue. If they exceed these values, increase the size of the gear reducer or modify the external load capacity. During the checking phase, it is important to remember that the values indicated in the catalogue refer to loads acting on the mid-point of the shaft protrusion, therefore, if the load is applied to a different position, appropriate formulas must be used to calculate the admissible load in the desired position (refer to the "Radial loads" paragraph).
2. If accessory output shafts are present, make sure that the applied load is compatible with shaft size. If help is needed: contact MOTOVARIO TECHNICAL SERVICE.

D. If an electric motor is going to be fitted to the selected gear reducer, check for its applicability by referring to the configuration table (see paragraph "Motor flange availability"). From IEC 180 motors, verify if necessary to support the motor with feet. In case of need please contact MOTOVARIO TECHNICAL SERVICE.



The service factor (f.s.) depends on the operating conditions the gear reducer is subjected to. The parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:

- type of load of the operated machine : A - B - C
- length of daily operating time: hours/day ( $\Delta$ )
- start-up frequency: starts/hour (\*)

#### LOAD:

- **A** - uniform =  $f_a \leq 0,3$
- **B** - moderate shocks =  $f_a \leq 3$
- **C** - heavy shocks =  $f_a \leq 10$

#### $f_a = J_e/J_m$

- $J_e$  [lb-in<sup>2</sup>] moment of reduced external inertia at the drive-shaft
- $J_m$  [lb-in<sup>2</sup>] moment of inertia of motor

If  $f_a > 10$  call MOTOVARIO TECHNICAL SERVICE.

In the case of a variable speed reducer, once determined the service factor of the application it is necessary to compare this value with the safety factor of the S reducer reported in the selection tables, verifying  $S \geq f.s.$  condition. The maximum number of admissible starts depends on the type of application. Approximately, the figure must not exceed 5-10 for minute. Contact MOTOVARIO TECHNICAL SERVICE if you have any special requirements.

- Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.
- Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.
- Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.



### 1.6.1 Installation

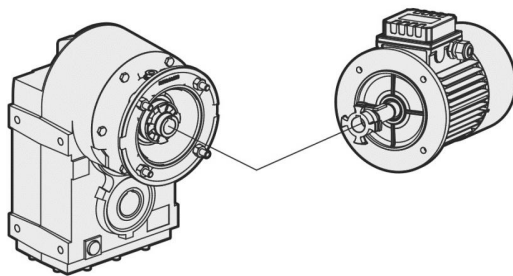
To install the gear reducer it is necessary to note the following recommendations:

- Check the correct direction of rotation of the gear reducer output shaft before fitting the unit to the machine.
- In the case of particularly lengthy periods of storage (4/6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
- Whenever possible, protect the gear reducer against solar radiation and bad weather.
- Ensure the motor cools correctly by ensuring good passage of air from the fan side.
- In the case of ambient temperatures < 23°F or > 104°F MOTOVARIO TECHNICAL SERVICE.
- The various parts (pulleys, gear wheels, couplings, shafts, etc.) must be mounted on the solid or hollow shafts using special threaded holes or other systems that anyhow ensure correct operation without risking damage to the bearings or external parts of the units. Lubricate the surfaces in contact to avoid seizure or oxidation.
- Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
- For units equipped with oil plugs, replace the closed plug used for shipping with the special breather plug.
- Check the correct level of the lubricant through the indicator, if there is one.
- Starting must take place gradually, without immediately applying the maximum load.
- When there are parts, objects or materials under the motor drive that can be damaged by even limited spillage of oil, special protection should be fitted.

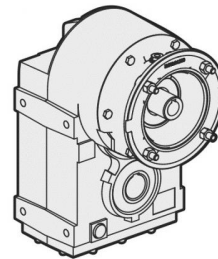
#### Assembling motor on pam flange

When the unit is supplied without motor, it is necessary to follow these recommendation to ensure the correct assembly of the electric motor. Check that the tolerances for the motor shaft and flange correspond to the “standard”. Carefully clean the shaft, spigot and surfaces of the flange removing traces of paint and dirt, and confirm the key is fitted correctly. Fit the half coupling/sleeve to the motor shaft (see picture) taking care to ensure the motor shaft and bearings are not damaged by avoiding excessive force and where necessary using assembly equipment. Place the couplings elastic element onto the motor half coupling and position the motor up to the gear unit ensuring the coupling element is aligned with the driven half coupling. Complete the assembly using the fixing bolts. Key-ways with tightened tolerances.

Flexible joint



PAM Sleeve



Motovario products are supplied with the following surface treatment features:

#### Grey-coloured cast-iron cases for gears

- Die-cast materials are always painted.

**Grey-coloured cast-iron inspection cover:** The gear reducer S... series with 2, 3 stages size 125, 140, 150 are supplied with grey-coloured cast-iron closing cover and a metal nameplate printed.



#### Painting specifications:

- Orange-peel blue epoxy-polyester RAL 5010. Polyester resin based heat-hardening powders, altered with epoxy resins.
- Mechanical properties:** Tests carried out onto degreased Unichim white lattens film thickness: 2.5 mils comply with the following specifications: adherence (ISO2409).
- Heat resistance:** 24 HOURS AT 302°F.
- Corrosion strength:** ASTM B 117/97 salt fog from 100 to 500 hours depending on the support's preliminary treatment.

#### Performance:

- Loading capacity in accordance with DIN 3990, ISO 6336, AGMA 2101, ISO 10300, DIN 3991, ISO 281, DIN 743.

#### Efficiency $\eta$ :

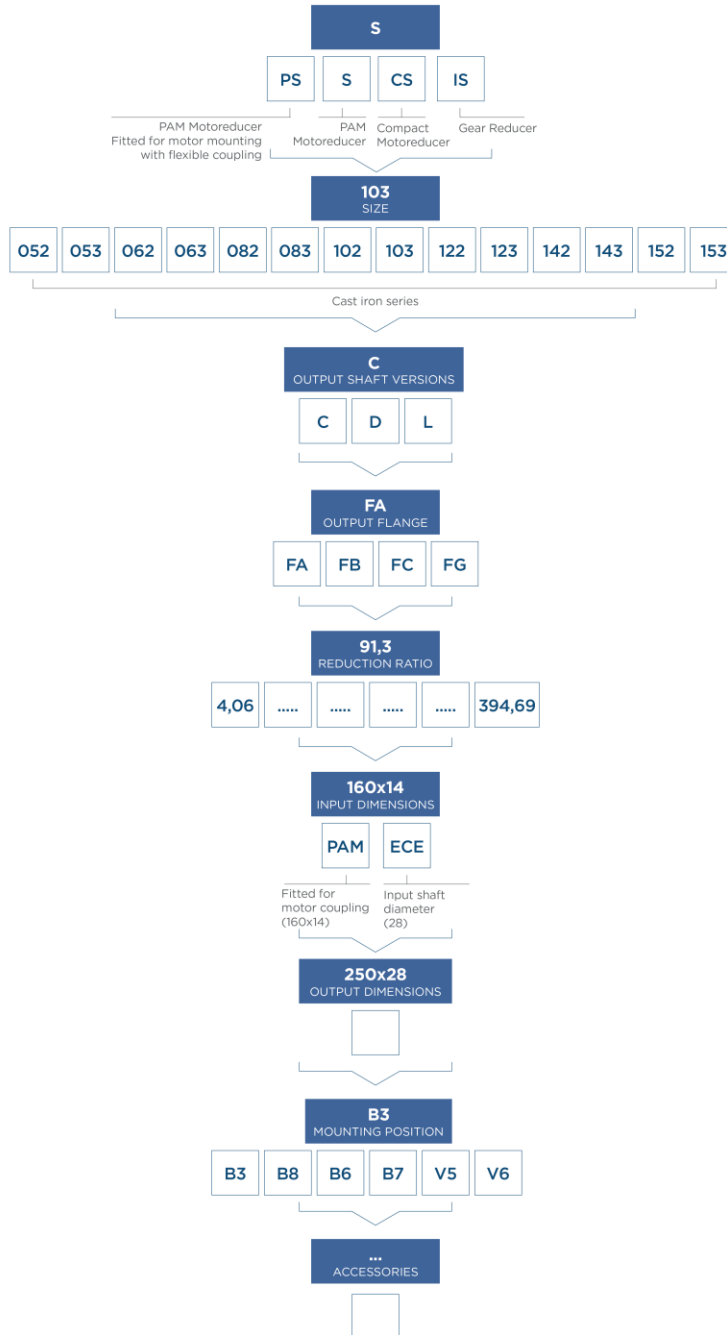
- The efficiency is the ratio between the output power  $P_2$  and the power absorbed by the gear reducer  $P_1$ :  $\eta = P_2 / P_1$ .

S-range shaft-mounted reducers have an average value equal to:

S..2 stages = 0,96

S..3 stages = 0,94

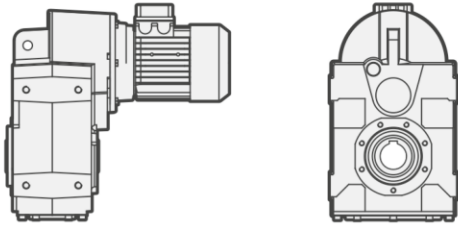
## 2.2.1 Designation



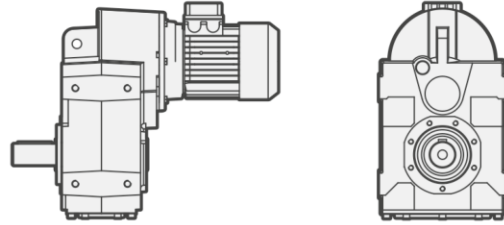
## 2.2.2 Versions

S... C - S... D - S... L

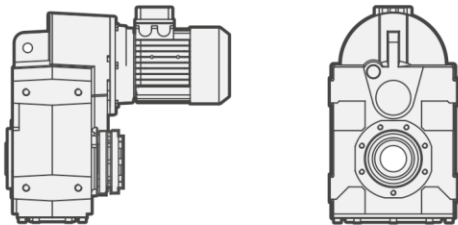
**S.. C** FOOT-FLANGE MOUNTING / HOLLOW SHAFT



**S.. D** FOOT-FLANGE MOUNTING / D SOLID SHAFT

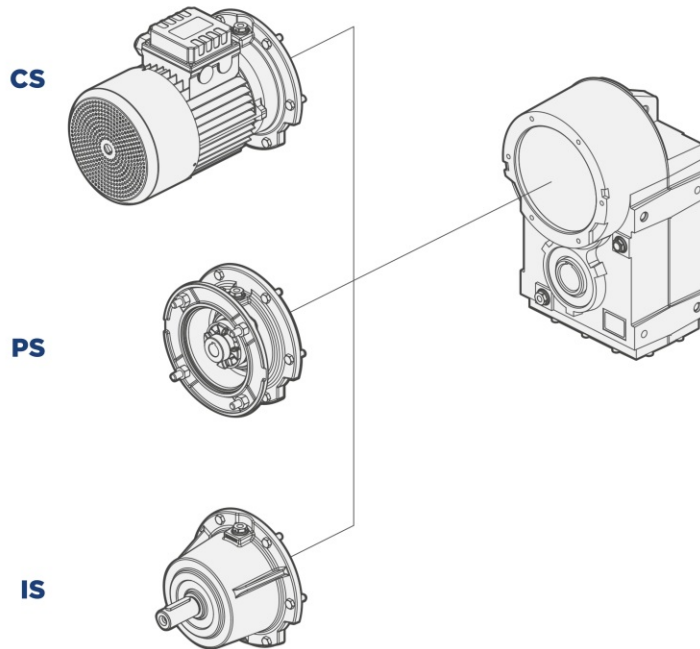


**S.. L** FOOT-FLANGE MOUNTING / SHRINK DISC SHAFT



### 2.2.3 Modularity

#### S GREY CAST IRON SERIES



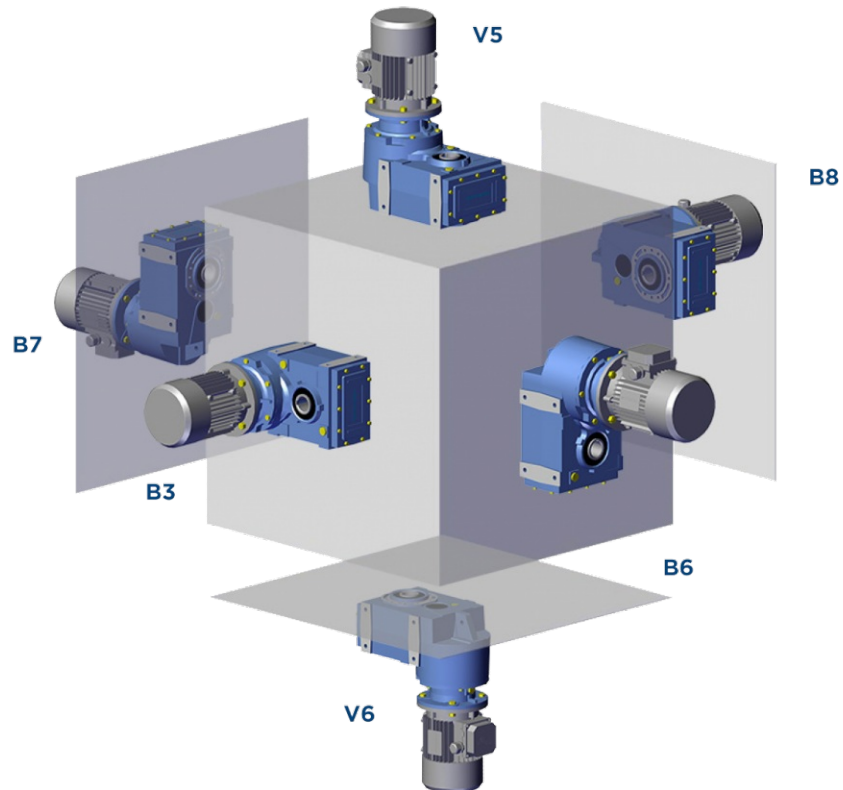
**CS**  
Compact electric motor versions

**IS**  
Input shaft versions

**PS**  
Fitted for motor mounting  
with flexible coupling

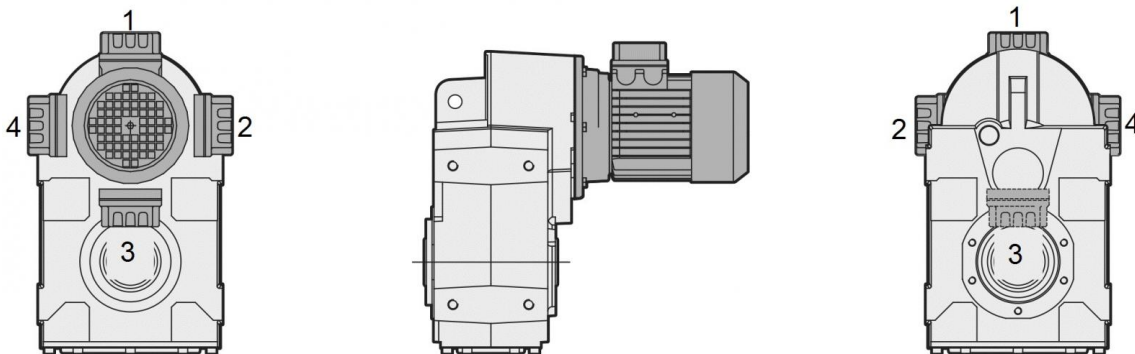
### 2.3.1 Mounting positions

The mounting position of the gear unit identifies its space orientation. B3 mounting position, as from a technical point of view, ensures lower oil splash, better lubrication and less heating.



### 2.3.2 Position of terminal box

Unless otherwise specified when ordering, the gear reducer is supplied with terminal box in position 1.



### 2.4.1 Information

The scheme below indicates the nominal thermal power Pth capacity [HP] according to the following conditions:

- mounting position B3
- continuous operation at input speed  $\leq 1800$  rpm
- environment temperature 77°F
- sea level altitude
- air speed around the gear reducer  $\geq 38$  ips
- absence of external radial and/or axial loads

| n <sub>1</sub> =1,750rpm |          |
|--------------------------|----------|
|                          | Pth [HP] |
| S052                     | 7.5      |
| S062                     | 11       |
| S082                     | 20       |
| S102                     | 26       |
| S122                     | 40       |
| S142                     | 60       |
| S152                     | 70       |

**A correct lubrication and a proper running condition of the gearbox are guaranteed only applying an input power not exceeding Pth (at the above reference conditions) (T oil max=203°F).**

NOTE: Normally, three stages gearboxes do not require thermal power verification because the thermal rating usually exceed the mechanical one.

### 2.4.2 Verification

#### Application check

Except for continuous operating times below two hours and successive pauses capable of bringing the gear reducer back to ambient temperature, for each application it is peremptory to verify the gear reducer's thermal limit according to the following formula:  $P_1 < P_{th} * F_c * F_v * F_a$ , where:

- P<sub>1</sub> = input power to the gear reducer
- P<sub>th</sub> = thermal power at the reference conditions (see above table)
- F<sub>c</sub> = ambient and operating temperature correction factor
- F<sub>v</sub> = ventilation correction factor
- F<sub>a</sub> = altitude correction factor

The correction factors refer to different operating conditions compared to the reference conditions, and are provided by the following ISO14179 tables:

| Ambient temperature °F | F <sub>c</sub> | Duty per hour of operation % |      |      |      |    |
|------------------------|----------------|------------------------------|------|------|------|----|
|                        |                | 100                          | 80   | 70   | 40   | 20 |
| 13.4                   | 1.15           | 1.21                         | 1.32 | 1.55 | 2.07 |    |
| 24.1                   | 1.07           | 1.12                         | 1.23 | 1.44 | 1.93 |    |
| 33.5                   | 1.00           | 1.05                         | 1.15 | 1.35 | 1.80 |    |
| 40.2                   | 0.93           | 0.98                         | 1.07 | 1.26 | 1.67 |    |
| 53.6                   | 0.83           | 0.87                         | 0.95 | 1.12 | 1.49 |    |
| 57.7                   | 0.75           | 0.79                         | 0.86 | 1.01 | 1.35 |    |
| 67.1                   | 0.67           | 0.70                         | 0.77 | 0.90 | 1.21 |    |

| Altitude [ft] | F <sub>a</sub> |
|---------------|----------------|
| 0*            | 1              |
| 2460          | 0.95           |
| 4921          | 0.9            |
| 7382          | 0.85           |
| 9843          | 0.81           |

| Ventilation correction factor                         | F <sub>v</sub> |
|---|----------------|
| Stagnant air (<1.12 mph)                              | 0.75           |
| Indoor installation with slight ventilation           | 1              |
| Indoor installation with good ventilation (>3.13 mph) | 1.4            |
| Outdoor installation (>8.3 mph)                       | 1.9            |

\*Sea level

In case of operation at input speeds exceeding 2000 rpm, or ambient temperatures greater than 104°F, it is advisable to contact our technical department.

## 2.5.1 Critical applications

| S                | 050 | 060 | 080 | 100 | 125 | 140 | 150 |
|------------------|-----|-----|-----|-----|-----|-----|-----|
| 2000 < n1 < 3000 | ✓   | ✓   | ✓   | ✓   | ✓   | B   | B   |
| V6               | B   | B   | B   | B   | B   | B   | B   |
| n1 > 3000        | B   | B   | B   | B   | B   | A   | A   |
| ...L : V5 - V6   | B   | B   | B   | B   | B   | B   | B   |
| (*) ...L         | B   | B   | B   | B   | B   | B   | B   |

✓ Verified application

A Application not recommended

B Check the application and/or call MOTOVARIO TECHNICAL SERVICE.

(\*) The shrink disc is designed only to transmit the output torque.

In case of mounting position with radial and/or axial loads, please contact MOTOVARIO TECHNICAL SERVICE.

## 2.5.2 Information

The performance given in the catalogue correspond to mounting position B3 or similar, when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the tables that highlight different critical situations for each size of gear reducer. It is also necessary to take due consideration of and carefully assess the following applications by calling MOTOVARIO TECHNICAL SERVICE:

- To avoid the use as multiplier.
- Use in services that could be hazardous for people if the gear reducer fails.
- Applications with especially high inertia.
- Use as a lifting winch.
- Applications with high dynamic strain on the case of the gear reducer.
- In places with  $T_{amb}$  under 23°F °C or over 104°F.
- Use in chemically aggressive environments.
- Use in a salty environment.
- Mounting positions not envisaged in the catalogue.
- Use in radioactive environments.
- Use in environments pressures other than atmospheric pressure.

Avoid applications where even partial immersion of the reducer is required.

In the presence of overloading due to full load, braking, shocks or other static and dynamic causes, please verify that the peak torque is less than  $2 \cdot Mn_2$ .



## 2.6 MOTOR FLANGE AVAILABILITY

These tables report all possible dimensions. Please verify service factor.  
#Ratio not existent for version IS.

| PS 052 |     |       |       |
|--------|-----|-------|-------|
| i      | 56C | 140TC | 180TC |
| 8.63   | •   | •     | •     |
| 11.14  | •   | •     | •     |
| 12.00  | •   | •     | •     |
| 13.66  | •   | •     | •     |
| 15.27  | •   | •     | •     |
| 16.29  | •   | •     | •     |
| 18.63  | •   | •     | •     |
| 19.73  | •   | •     | •     |
| 21.04  | •   | •     | •     |
| 21.53  | •   | •     | •     |
| 24.07  | •   | •     | •     |
| 25.20  | •   | •     | •     |
| 25.79  | •   | •     | •     |
| 27.81  | •   | •     | •     |
| 30.00  | •   | •     | •     |
| 32.55  | •   | •     | •     |
| 33.00  | •   | •     | •     |
| 34.09  | •   | •     | •     |
| 36.55  | •   | •     | •     |
| 38.75  | •   | •     | •     |
| 39.90  | •   | •     | •     |
| 42.63  | •   | •     | •     |
| 46.00  | •   | •     | •     |
| 47.20  | •   | •     | •     |
| 52.25  | •   | •     | •     |
| 57.86  | •   | •     | •     |
| 59.42  | •   | •     | •     |
| 72.83  | •   | •     | •     |

| PS 053 |     |       |
|--------|-----|-------|
| i      | 56C | 140TC |
| 36.50  | •   | •     |
| 47.14  | •   | •     |
| 57.79  | •   | •     |
| 63.74  | •   | •     |
| 78.14  | •   | •     |
| 74.20  | •   | •     |
| 95.84  | •   | •     |
| 117.48 | •   | •     |
| 137.45 | •   | •     |
| 177.55 | •   | •     |
| 198.45 | •   | •     |
| 217.64 | •   | •     |
| 256.33 | •   | •     |
| 314.21 | •   | •     |

| PS 062 |     |       |       |
|--------|-----|-------|-------|
| i      | 56C | 140TC | 180TC |
| 8.00   | •   | •     | •     |
| 8.92   | •   | •     | •     |
| 9.55   | •   | •     | •     |
| 10.65  | •   | •     | •     |
| 11.71  | •   | •     | •     |
| 13.06  | •   | •     | •     |
| 13.36  | •   | •     | •     |
| 15.94  | •   | •     | •     |
| 16.16  | •   | •     | •     |
| 19.29  | •   | •     | •     |
| 19.55  | •   | •     | •     |
| 23.18  | •   | •     | •     |
| 23.75  | •   | •     | •     |
| 25.14  | •   | •     | •     |
| 27.66  | •   | •     | •     |
| 30.00  | •   | •     | •     |
| 33.93  | •   | •     | •     |
| 36.57  | •   | •     | •     |
| 39.38  | •   | •     | •     |
| 43.64  | •   | •     | •     |
| 46.10  | •   | •     | •     |
| 48.30  | •   | •     | •     |
| 53.53  | •   | •     | •     |
| 55.00  | •   | •     | •     |
| 67.47  | •   | •     | •     |

| PS 063 |     |       |
|--------|-----|-------|
| i      | 56C | 140TC |
| 33.57  | •   | •     |
| 37.77  | •   | •     |
| 40.05  | •   | •     |
| 49.13  | •   | •     |
| 55.29  | •   | •     |
| 58.72  | •   | •     |
| 65.85  | •   | •     |
| 68.25  | •   | •     |
| 73.63  | •   | •     |
| 81.43  | •   | •     |
| 99.89  | •   | •     |
| 126.43 | •   | •     |
| 150.85 | •   | •     |
| 182.53 | •   | •     |
| 185.05 | •   | •     |
| 217.79 | •   | •     |
| 267.16 | •   | •     |

| PS 082 |     |       |       |       |
|--------|-----|-------|-------|-------|
| i      | 56C | 140TC | 180TC | 210TC |
| 7.34   | •   | •     | •     | •     |
| 8.06   | •   | •     | •     | •     |
| 9.94   | •   | •     | •     | •     |
| 11.61  | •   | •     | •     | •     |
| 12.75  | •   | •     | •     | •     |
| 14.04  | •   | •     | •     | •     |
| 15.43  | •   | •     | •     | •     |
| 15.73  | •   | •     | •     | •     |
| 17.29  | •   | •     | •     | •     |
| 19.03  | •   | •     | •     | •     |
| 20.14  | •   | •     | •     | •     |
| 22.13  | •   | •     | •     | •     |
| 24.00  | •   | •     | •     | •     |
| 26.05  | •   | •     | •     | •     |
| 27.29  | •   | •     | •     | •     |
| 28.67  | •   | •     | •     | •     |
| 29.60  | •   | •     | •     | •     |
| 31.78  | •   | •     | •     | •     |
| 34.91  | •   | •     | •     | •     |
| 35.50  | •   | •     | •     | •     |
| 40.05  | •   | •     | •     | •     |
| 43.05  | •   | •     | •     | •     |
| 50.25  | •   | •     | •     | •     |
| 54.27  | •   | •     | •     | •     |
| 61.98  | •   | •     | •     | •     |

| PS 083 |     |       |       |
|--------|-----|-------|-------|
| i      | 56C | 140TC | 180TC |
| 67.52  | •   | •     | •     |
| 74.18  | •   | •     | •     |
| 81.71  | •   | •     | •     |
| 91.49  | •   | •     | •     |
| 100.62 | •   | •     | •     |
| 117.17 | •   | •     | •     |
| 128.73 | •   | •     | •     |
| 136.34 | •   | •     | •     |
| 158.76 | •   | •     | •     |
| 184.88 | •   | •     | •     |
| 203.11 | •   | •     | •     |
| 205.34 | •   | •     | •     |
| 226.04 | •   | •     | •     |
| 250.50 | •   | •     | •     |
| 266.13 | •   | •     | •     |
| 292.36 | •   | •     | •     |
| 315.73 | •   | •     | •     |
| 360.58 | •   | •     | •     |

# 2.6 MOTOR FLANGE AVAILABILITY

| PS 102 |     |       |       |       |       |
|--------|-----|-------|-------|-------|-------|
| i      | 56C | 140TC | 180TC | 210TC | 250TC |
| 8.06   |     |       |       | •     | •     |
| 8.85   |     |       |       | •     | •     |
| 10.88  |     |       |       | •     | •     |
| 12.75  |     |       |       | •     | •     |
| 13.99  |     |       |       | •     | •     |
| 15.43  |     |       |       | •     | •     |
| 17.21  |     |       |       | •     | •     |
| 19.00  | •   | •     | •     | •     | •     |
| 20.83  | •   | •     | •     | •     | •     |
| 22.13  | •   | •     | •     | •     | •     |
| 24.28  | •   | •     | •     | •     | •     |
| 26.33  | •   | •     | •     | •     | •     |
| 29.87  | •   | •     | •     | •     | •     |
| 32.40  | •   | •     | •     | •     | •     |
| 34.91  | •   | •     | •     | •     | •     |
| 38.30  | •   | •     | •     | •     | •     |
| 42.53  | •   | •     | •     | •     | •     |
| 44.00  | •   | •     | •     | •     | •     |
| 47.13  | •   | •     | •     | •     | •     |
| 50.25  | •   | •     | •     | •     | •     |
| 55.14  | •   | •     | •     | •     | •     |
| 59.40  | •   | •     | •     | •     | •     |
| 67.84  | •   | •     | •     | •     | •     |

| PS 103 |     |       |       |
|--------|-----|-------|-------|
| i      | 56C | 140TC | 180TC |
| 74.18  | •   | •     | •     |
| 81.39  | •   | •     | •     |
| 89.77  | •   | •     | •     |
| 100.15 | •   | •     | •     |
| 110.55 | •   | •     | •     |
| 121.29 | •   | •     | •     |
| 128.73 | •   | •     | •     |
| 141.24 | •   | •     | •     |
| 173.78 | •   | •     | •     |
| 188.51 | •   | •     | •     |
| 203.11 | •   | •     | •     |
| 222.85 | •   | •     | •     |
| 224.76 | •   | •     | •     |
| 274.20 | •   | •     | •     |
| 280.89 | •   | •     | •     |
| 292.36 | •   | •     | •     |
| 320.79 | •   | •     | •     |
| 345.60 | •   | •     | •     |
| 394.69 | •   | •     | •     |

| PS 122 |       |       |       |       |       |       |
|--------|-------|-------|-------|-------|-------|-------|
| i      | 140TC | 180TC | 210TC | 250TC | 280TC | 320TC |
| 8.48   |       |       | •     | •     | •     | •     |
| 9.30   |       |       | •     | •     | •     | •     |
| 10.24  |       |       | •     | •     | •     | •     |
| 11.42  |       |       | •     | •     | •     | •     |
| 12.63  |       |       | •     | •     | •     | •     |
| 13.84  |       |       | •     | •     | •     | •     |
| 16.99  |       |       | •     | •     | •     | •     |
| 21.25  |       | •     | •     | •     | •     | •     |
| 22.37  |       | •     | •     | •     | •     | •     |
| 23.29  |       | •     | •     | •     | •     | •     |
| 26.15  |       | •     | •     | •     | •     | •     |
| 28.60  |       | •     | •     | •     | •     | •     |
| 30.51  |       | •     | •     | •     | •     | •     |
| 32.76  |       | •     | •     | •     | •     | •     |
| 33.44  |       | •     | •     | •     | •     | •     |
| 35.20  |       | •     | •     | •     | •     | •     |
| 41.07  |       | •     | •     | •     | •     | •     |
| 43.60  | •     | •     | •     | •     | •     | •     |
| 44.63  | •     | •     | •     | •     | •     | •     |
| 49.04  | •     | •     | •     | •     | •     | •     |
| 53.75  | •     | •     | •     | •     | •     | •     |
| 66.00  | •     | •     | •     | •     | •     | •     |

| PS 123   |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|
| i        | 140TC | 180TC | 210TC | 250TC | 280TC |
| 64.84    |       | •     | •     | •     | •     |
| 71.07    |       | •     | •     | •     | •     |
| 78.46    |       | •     | •     | •     | •     |
| 87.27    |       | •     | •     | •     | •     |
| 105.91   | •     | •     | •     | •     | •     |
| 112.52   | •     | •     | •     | •     | •     |
| 123.33   | •     | •     | •     | •     | •     |
| 130.04   | •     | •     | •     | •     | •     |
| 133.78   | •     | •     | •     | •     | •     |
| 151.43   | •     | •     | •     | •     | •     |
| 177.53   | •     | •     | •     | •     | •     |
| 194.59   | •     | •     | •     | •     | •     |
| 215.60   | •     | •     | •     | •     | •     |
| 238.93   | •     | •     | •     | •     | •     |
| # 255.54 | •     | •     | •     | •     | •     |
| # 280.10 | •     | •     | •     | •     | •     |
| # 301.16 | •     | •     | •     | •     | •     |
| # 343.93 | •     | •     | •     | •     | •     |

## 2.6 MOTOR FLANGE AVAILABILITY

| S142  |       |       |       |       |
|-------|-------|-------|-------|-------|
| i     | 210TC | 250TC | 280TC | 320TC |
| 4.11  | •     | •     | •     | •     |
| 4.58  | •     | •     | •     | •     |
| 5.14  | •     | •     | •     | •     |
| 5.81  | •     | •     | •     | •     |
| 6.21  | •     | •     | •     | •     |
| 7.31  | •     | •     | •     | •     |
| 8.20  | •     | •     | •     | •     |
| 9.28  | •     | •     | •     | •     |
| 9.91  | •     | •     | •     | •     |
| 11.40 | •     | •     | •     | •     |
| 12.81 | •     | •     | •     | •     |
| 14.27 | •     | •     | •     | •     |
| 16.00 | •     | •     | •     | •     |
| 18.10 | •     | •     | •     | •     |
| 19.33 | •     | •     | •     | •     |
| 22.24 | •     | •     | •     | •     |
| 25.26 | •     | •     | •     | •     |
| 28.33 | •     | •     | •     | •     |
| 32.05 | •     | •     | •     | •     |
| 34.22 | •     | •     | •     | •     |
| 39.37 | •     | •     | •     | •     |

| S143   |       |       |       |
|--------|-------|-------|-------|
| i      | 180TC | 210TC | 250TC |
| 45.76  | •     | •     | •     |
| 50.97  | •     | •     | •     |
| 57.17  | •     | •     | •     |
| 64.67  | •     | •     | •     |
| 69.05  | •     | •     | •     |
| 79.45  | •     | •     | •     |
| 98.80  | •     | •     | •     |
| 110.05 | •     | •     | •     |
| 123.43 | •     | •     | •     |
| 139.64 | •     | •     | •     |
| 149.09 | •     | •     | •     |
| 157.48 | •     | •     | •     |
| 171.54 | •     | •     | •     |
| 175.40 | •     | •     | •     |
| 196.73 | •     | •     | •     |
| 222.56 | •     | •     | •     |
| 237.62 | •     | •     | •     |
| 273.41 | •     | •     | •     |

| S152  |       |       |       |       |
|-------|-------|-------|-------|-------|
| i     | 250TC | 280TC | 320TC | 360TC |
| 4.06  | •     | •     | •     | •     |
| 4.53  | •     | •     | •     | •     |
| 5.20  | •     | •     | •     | •     |
| 5.71  | •     | •     | •     | •     |
| 6.52  | •     | •     | •     | •     |
| 7.28  | •     | •     | •     | •     |
| 8.35  | •     | •     | •     | •     |
| 9.17  | •     | •     | •     | •     |
| 10.41 | •     | •     | •     | •     |
| 12.46 | •     | •     | •     | •     |
| 13.90 | •     | •     | •     | •     |
| 15.96 | •     | •     | •     | •     |
| 17.52 | •     | •     | •     | •     |
| 19.90 | •     | •     | •     | •     |
| 22.88 | •     | •     | •     | •     |
| 27.10 | •     | •     | •     | •     |
| 29.75 | •     | •     | •     | •     |
| 33.79 | •     | •     | •     | •     |
| 38.84 | •     | •     | •     | •     |

| PS 153 |       |       |       |
|--------|-------|-------|-------|
| i      | 210TC | 250TC | 280TC |
| 40.10  | •     | •     | •     |
| 44.75  | •     | •     | •     |
| 51.37  | •     | •     | •     |
| 56.39  | •     | •     | •     |
| 64.05  | •     | •     | •     |
| 73.62  | •     | •     | •     |
| 87.16  | •     | •     | •     |
| 97.27  | •     | •     | •     |
| 111.66 | •     | •     | •     |
| 122.56 | •     | •     | •     |
| 139.20 | •     | •     | •     |
| 154.01 | •     | •     | •     |
| 160.01 | •     | •     | •     |
| 176.81 | •     | •     | •     |
| 194.05 | •     | •     | •     |
| 220.41 | •     | •     | •     |
| 253.35 | •     | •     | •     |

| S        | S050     |            | S060     |            | S080     |            | S100     |            |
|----------|----------|------------|----------|------------|----------|------------|----------|------------|
| Versions | Standard | On request | Standard | On request | Standard | On request | Standard | On request |
| C        | 1        | /          | 1        | 2          | 1 (Ø40)  | 2 (Ø40)    | 1        | 2          |
| D        | 1        | /          | 1        | /          | /        | 1 (Ø45)    | 2        | /          |
| L        | 1        | /          | 1        | /          | 2        | /          | 1        | /          |

| S        | S125     |            | S140     |            | S150     |            |
|----------|----------|------------|----------|------------|----------|------------|
| Versions | Standard | On request | Standard | On request | Standard | On request |
| C        | 1        | 2          | 1        | 2          | 1        | 2          |
| D        | 2        | /          | 2        | /          | 2        | /          |
| L        | 1        | /          | 1        | /          | 1        | /          |

1 - Ball Bearing

2 - Roller bearings

/ - Not available

### 2.8.1 Information

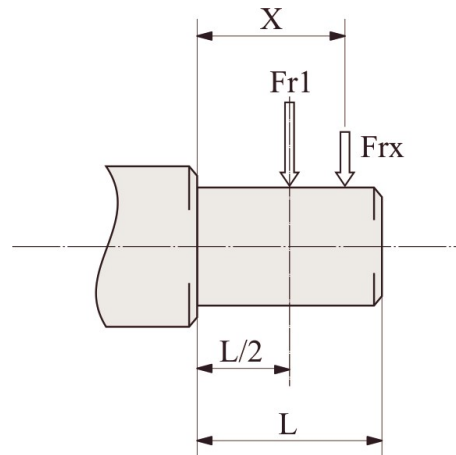
The value of the admissible radial load [lb] is given in the tables relating to the performance of the gear reducer at issue. It is related to the load applied on the centre line of the shaft and in the most unfavourable conditions of angle of application and direction of rotation. The maximum admissible axial loads are 1/5 of the value of the given radial load when they are applied in combination with the radial load. The tables relating to the output shafts give the maximum admissible value. This value must never be exceeded since it relates to the strength of the case. Particular conditions of radial load higher than the limits of the catalogue may occur. In this case, call our Technical Service and provide details on the application: direction of the load, direction of rotation of the shaft, type of service. In case of double extension shafts with radial load applied on both ends, the max. admissible radial loads must be defined according to the specific running conditions, in this case call our Technical Service. The radial load on the shaft is calculated with the following formula:  $Fr_e = (2 \cdot M \cdot fz) / D \leq Fr1$  or  $Fr2$

- **Fre** [lb] Resulting radial load
- **M** [lb-in] Torque on the shaft
- **D** [in] Diameter of the transmission member mounted on the shaft
- **Fr1-Fr2** [lb] Value of the maximum admitted radial load (see relative tables)
- **fz** = 1.1 gear pinion - 1.4 chain wheel - 1.7 v-pulley - 2.5 flat pulley

### 2.8.2 Input

When the radial load is not on the centre line of the shaft, it is necessary to adjust the admissible radial load Fr1 with the following formula:  $Fr_x = (Fr1 \cdot a) / (b + x)$

- **a**, **b** = values given in the tables
- **x** = distance from the point of application of the load to the shaft shoulder



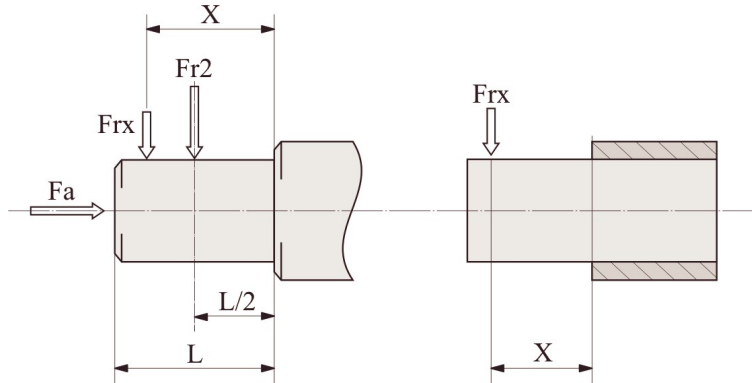
| IS                 | 052/053 | 062/063 | 082/083 | 102/103 | 122/123 | 142/143 | 152/153 |
|--------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>a</b>           | 4.13    | 4.13    | 5.39    | 5.39    | 6.89    | 6       | 7       |
| <b>b</b>           | 3.15    | 3.15    | 4.25    | 4.25    | 5.31    | 4       | 5       |
| <b>Fr1 max(**)</b> | 337     | 562     | 809     | 809     | 1619    | 944     | 1169    |

(\*\*Fr1 max) Max admissible value of the reducer in static conditions and/or for limited operations. For continuous overhung loads please check the values on the performances tables calculated according to the casing, the shaft and bearings.

## 2.8.3 Output

When the radial load is not on the centre line of the shaft, it is necessary to adjust the admissible radial load  $Fr_2$  with the following formula:  $Fr_x = (Fr_2 \cdot a) / (b + x)$

- $a$ ,  $b$  = values given in the tables
- $x$  = distance from the point of application of the load to the shaft shoulder



| S                          | 052/053 | 062/063 | 082/083 | 102/103 | 122/123 | 142/143 | 152/153 |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|
| a                          | 4.92    | 5.71    | 7.48    | 8.86    | 10.43   | 14.19   | 16.12   |
| b                          | 3.78    | 4.57    | 5.91    | 6.89    | 7.95    | 10.28   | 11.77   |
| D (Fr2 max <sup>**</sup> ) | 1349    | 2248    | 4047    | 4946    | 6744    | 7868    | 8992    |
| C (Fr2 max <sup>**</sup> ) | 1349    | 899     | 1619    | 2023    | 2518    | 4159    | 4361    |

(\*\*Fr2 max) Max admissible value of the reducer in static conditions and/or for limited operations. For continuous overhung loads please check the values on the performances tables calculated according to the casing, the shaft and bearings.

### 2.9.1 Information

In cases of ambient temperatures not envisaged in the table, call our Technical Service. In the case of temperatures under -22°F or over 140°F it is necessary to use oil seals with special properties. For operating ranges with temperatures under 32°F it is necessary to consider the following:

1. The motors need to be suitable for operation at the envisaged ambient temperature.
2. The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
3. In case of cast-iron gear reducers, pay attention to impact loads since cast iron may have problems of fragility at temperatures under 5°F.
4. During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

Oil must be changed after approx. 10000 hours/2 years of operation; this time varies based on the type of service and on the environment inside which the gear reducer is installed. Units not featuring any oil plug are life-lubricated, and therefore maintenance-free.

### 2.9.2 Lubricants

Specifications of lubricants recommended by Motovario.

The units **S052/3 ÷ 102/3** are supplied with LAND OIL GEAR POWER 220 oil, unless otherwise specified by the client.

The units **S122/3 ÷ 152/3** are supplied without lubricant.

|                                | S052/3 ÷ 152/3              |                           |
|--------------------------------|-----------------------------|---------------------------|
|                                | Mineral oil                 |                           |
| T <sub>amb</sub> °F<br>ISO/SAE | (+23) - (+104)<br>ISO VG220 | (+5) - (+77)<br>ISO VG150 |
| LAND OIL                       | GEAR POWER 220              | -                         |
| ENI                            | BLASIA 220                  | BLASIA 150                |
| SHELL                          | OMALA S2 G 220              | OMALA S2 G 150            |
| KLUBER                         | Kluberoil GEM 1-220N        | Kluberoil GEM 1-150N      |
| MOBIL                          | MOBILGEAR 600 XP220         | MOBILGEAR 600 XP150       |
| CASTROL                        | ALPHA SP 220                | ALPHA SP 150              |
| BP                             | ENERGOL GR-XP220            | ENERGOL GR-XP150          |
| PETRONAS                       | GEAR MEP 220                | GEAR MEP 150              |



## 2.9.3 Special lubricants

|        | $T_{amb}^{\circ F}$ | Polyglycol synthetic oil                |
|--------|---------------------|---|
| ENI    | (-22) - (+86)       | Blasia S 150 (ISO VG150)                |
|        | (-4) - (+104)       | Blasia S 220 (ISO VG220)                |
| MOBIL  | (-49) - (+32)       | SHC 624 (ISO VG32)                      |
|        | (-40) - (+41)       | SHC 626 (ISO VG68)                      |
| KLUBER | (-40) - (+41)       | Klubersynth GH 6-32 (ISO VG32)          |
|        | (-31) - 50)         | Klubersynth GH 6-80 (ISO VG80)          |
|        | (-22) - (+104)      | Klubersynth GH 6-150 (ISO VG150)        |
|        | (-13) - (+104)      | Klubersynth GH 6-220 (ISO VG220)        |
|        | (+5) - (+122)       | Klubersynth GH 6-460 (ISO VG460)        |
|        | (+14) - (+158)      | Klubersynth GH 6-680 (ISO VG680)        |
|        | $T_{amb}^{\circ F}$ | Polyglycol synthetic oil for food grade |
| KLUBER | (-22) - (+59)       | Klubersynth UHI-6 100 (ISO VG100)       |
|        | (-13) - (+104)      | Klubersynth UHI-6 220 (ISO VG220)       |
|        | (+5) - (+104)       | Klubersynth UHI-6 320 (ISO VG320)       |
|        | (+5) - (+122)       | Klubersynth UHI-6 460 (ISO VG460)       |
|        | (+14) - (+122)      | Klubersynth UHI-6 680 (ISO VG680)       |

If 'special' lubricant is required please contact for Technical Assistance.

### 2.9.4 Quantity

- For the gear reducers S ... series with 2, 3 stages it is always necessary to specify the envisaged position.
- The gear S... series with 2, 3 stages sizes 050, 060 gear reducers are supplied complete with lubricant, have no oil plugs and need no maintenance.
- The gear S... series with 2, 3 stages sizes 080, 100 gear reducers are supplied complete with lubricant and are fitted with oil plugs to suit any mounting position included in the catalogue
- The gear S... series with 2, 3 stages sizes 125, 140, 150 have no lubricant and are fitted with oil plugs to suit any mounting position included in the catalogue. The oil filling can be done on request, in this case it is recommended, after installation, to replace the closed plug used for transportation with the supplied breather plug. When the reduction unit is supplied without lubricant, it is provided with a label to be filled.

Oil quantity in the table (litres ~) are indicative; for a proper use you will have to refer to the level plug or the dipstick. Any level difference could depend on construction tolerances, but also by the placement of the unit or by the mounting surface at the customer's premises. It is appropriate to check and, if necessary, restores the level when the units are installed.

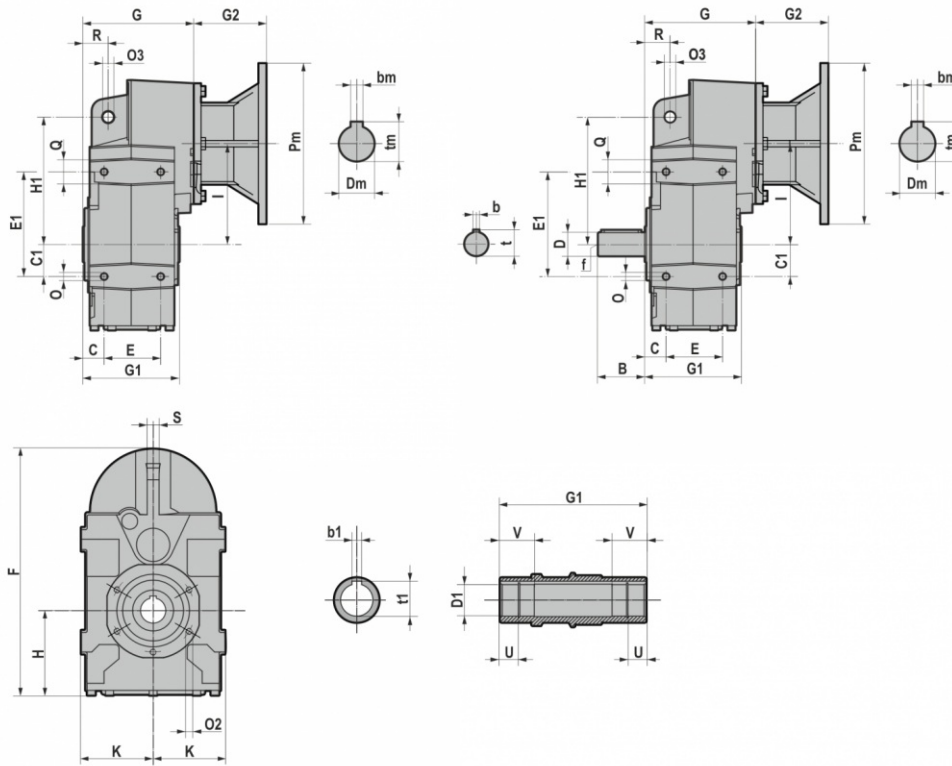
| S - CS    | 052/053 | 062/063 | 082/083 | 102/103 | 122/123 | 142        | 143          | 152          | 153        |
|-----------|---------|---------|---------|---------|---------|------------|--------------|--------------|------------|
| <b>B3</b> | 2,05    | 2,4     | 6       | 9       | 14,7    | 22         | 20           | 29,7         | 27         |
| <b>B8</b> | 1,8     | 2,3     | 4       | 6       | 11,8    | 20         | 20           | 31           | 31         |
| <b>B6</b> | 2,4     | 2,9     | 5,7     | 8       | 16      | 22<br>(25) | 18<br>(24,5) | 29,3<br>(42) | 24<br>(40) |
| <b>B7</b> | 2,1     | 2,6     | 4,5     | 6,8     | 11,3    | 17,5       | 14           | 22,5         | 18         |
| <b>V5</b> | 2,8     | 3,5     | 6,8     | 10,3    | 19      | 24,5       | 23,5         | 34,4         | 33         |
| <b>V6</b> | 2,4     | 2,9     | 6,4     | 9,9     | 18      | 20,8       | 20           | 33,3         | 32         |

(...) 142-143-152-153 quantity of oil [l] for gearbox with backstop device

The following values of J1 moment of inertia are only estimated, referred to the maximum calculated, and to the gearbox input side.

| S-2/3   | J <sub>1</sub> [Kg*m <sup>2</sup> ] | J <sub>1</sub> [lb*in <sup>2</sup> ] |
|---------|-------------------------------------|--------------------------------------|
| 052/053 | 0.0004                              | 1.3669                               |
| 062/063 | 0.0006                              | 2.0503                               |
| 082/083 | 0.0015                              | 5.1258                               |
| 102/103 | 0.0034                              | 11.6184                              |
| 122/123 | 0.0085                              | 29.0460                              |
| 142/143 | 0.0384                              | 131.2194                             |
| 152/153 | 0.0830                              | 283.6253                             |

## 3.1.1 S 052...123



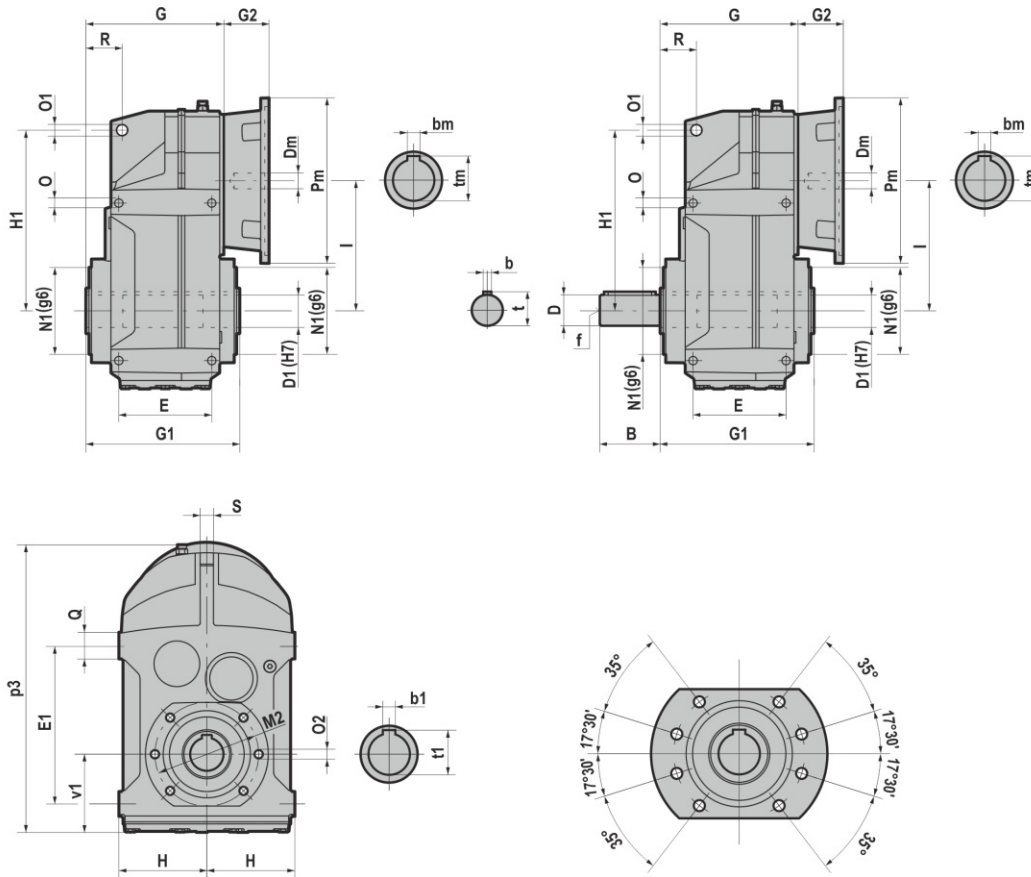
|           | D1 +0.001/0 | b1   | t1   | U    | V    | B    | D               | b    | t    | f      | C    | C1   | E    | E1    |
|-----------|-------------|------|------|------|------|------|-----------------|------|------|--------|------|------|------|-------|
| S052/S053 | 1.25        | 0.25 | 1.37 | /    | 1.18 | 2.36 | 1.25 0/-0.0005  | 0.25 | 1.36 | 1/2-13 | 1.04 | 1.57 | 2.76 | 5.12  |
| S062/S063 | 1.38        | 0.31 | 1.52 | 0.47 | 1.38 | 2.76 | 1.375 0/-0.0005 | 0.31 | 1.51 | 1/2-13 | 1.18 | 1.77 | 3.15 | 5.79  |
| S082/S083 | 1.50        | 0.38 | 1.67 | /    | 1.65 | 3.15 | 1.625 0/-0.001  | 0.38 | 1.80 | 5/8-11 | 1.46 | 2.36 | 4.17 | 7.48  |
| S102/S103 | 2.00        | 0.50 | 2.22 | /    | 1.97 | 3.94 | 2 0/-0.001      | 0.50 | 2.22 | 3/4-10 | 1.44 | 2.76 | 5.39 | 10.83 |
| S122/S123 | 2.38        | 0.63 | 2.65 | /    | 2.76 | 4.72 | 2.375 0/-0.001  | 0.63 | 2.65 | 3/4-10 | 1.69 | 3.94 | 6.50 | 12.20 |

|           | F     | G     | G1   | H    | H1    | I    | K    | O      | O3   | O2           | Q    | R    | S    |
|-----------|-------|-------|------|------|-------|------|------|--------|------|--------------|------|------|------|
| S052/S053 | 12.24 | 5.41  | 4.72 | 4.21 | 6.22  | 4.92 | 3.56 | M10x18 | 0.55 | M8x16 (n.5)  | 1.18 | 1.24 | 0.59 |
| S062/S063 | 12.6  | 6.24  | 5.51 | 3.82 | 6.69  | 5.63 | 3.80 | M12x20 | 0.55 | M8x16 (n.5)  | 1.57 | 1.26 | 0.59 |
| S082/S083 | 15.08 | 8.15  | 7.09 | 4.21 | 8.58  | 6.69 | 4.43 | M12x20 | 0.55 | M10x20 (n.7) | 1.73 | 1.61 | 0.79 |
| S102/S103 | 16.81 | 8.56  | 8.27 | 4.69 | 10.94 | 7.09 | 5.12 | M16x26 | 0.87 | M12x22 (n.7) | 1.97 | 1.97 | 0.79 |
| S122/S123 | 21.97 | 10.12 | 9.45 | 6.54 | 13.62 | 9.25 | 6.50 | M16x30 | 0.87 | M14x28 (n.7) | 1.97 | 2.44 | 1.02 |

| NEMA  | Pm x Dm        | G2                     |           |           |           |
|-------|----------------|------------------------|-----------|-----------|-----------|
|       |                | S052/S053<br>S062/S063 | S082/S083 | S102/S103 | S122/S123 |
| 56C   | 6.5"x0.625"    | 3.74                   | 2.95      | 2.95      | /         |
| 140TC | 6.5"x0.875"    | 3.74                   | 2.95      | 2.95      | 2.58      |
| 180TC | 9"x1.125"      | 4.33                   | 3.54      | 3.54      | 3.17      |
| 210TC | 9"x1.375"      | /                      | 6.02      | 6.02      | 5.65      |
| 250TC | 9"x1.625"      | /                      | /         | 6.02      | 5.65      |
| 320TC | 11"x1.875"     | /                      | /         | /         | 6.89      |
| 360TC | 13.375"x2.125" | /                      | /         | /         | 7.03      |

| NEMA  | Pm    | Dm    | tm   | bm     |
|-------|-------|-------|------|--------|
| 56C   | 6.69  | 0.625 | 0.71 | 0.1875 |
| 140TC | 6.69  | 0.875 | 0.97 | 0.1875 |
| 180TC | 9.06  | 1.125 | 1.24 | 0.2500 |
| 210TC | 9.06  | 1.375 | 1.52 | 0.3125 |
| 250TC | 9.06  | 1.625 | 1.80 | 0.3750 |
| 280TC | 11.02 | 1.875 | 2.10 | 0.5000 |
| 320TC | 13.39 | 2.125 | 2.35 | 0.5000 |
| 360TC | 13.39 | 2.375 | 2.65 | 0.6250 |

## 3.1.2 S 142...153



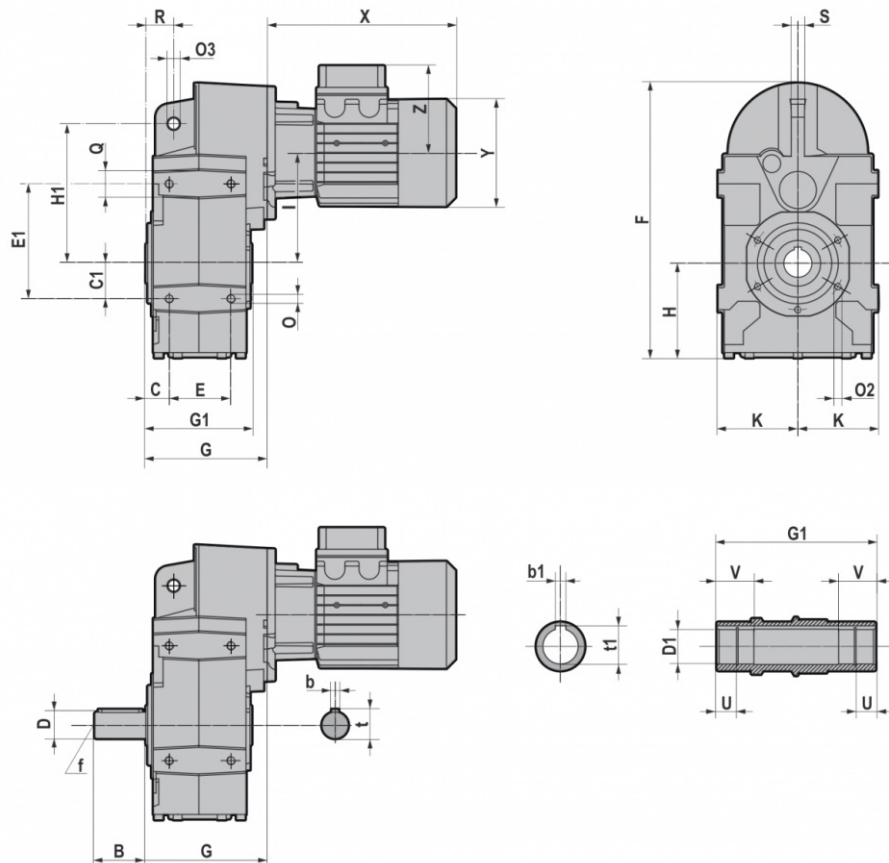
|           | D1   | b1   | t1   | B    | D     | b     | t    | f         | E    | E1    | G     | G1    |
|-----------|------|------|------|------|-------|-------|------|-----------|------|-------|-------|-------|
| S142/S143 | 2.76 | 0.79 | 2.95 | 5.51 | 2.875 | 0.75  | 3.2  | 3/4-10UNC | 8.07 | 13.78 | 11.1  | 11.81 |
|           | 2.56 | 0.71 | 2.73 |      |       |       |      |           |      |       |       |       |
| S152/S153 | 3.15 | 0.87 | 3.36 | 6.69 | 3.625 | 0.875 | 4.01 | 1-8UNC    | 8.66 | 15.75 | 12.66 | 13.78 |
|           | 3.54 | 0.98 | 3.76 |      |       |       |      |           |      |       |       |       |

|           | H    | HI    | I     | NI   | M2    | O      | O1   | O2     | p3    | Q    | R    | S    | v1   |
|-----------|------|-------|-------|------|-------|--------|------|--------|-------|------|------|------|------|
| S142/S143 | 7.87 | 15.55 | 10.59 | 7.09 | 8.66  | M20x28 | 1.02 | M16x26 | 24.21 | 1.97 | 2.76 | 1.18 | 6.97 |
| S152/S153 | 8.86 | 19.09 | 12.80 | 8.27 | 10.24 | M24x36 | 1.02 | M20x30 | 28.74 | 2.36 | 3.46 | 1.42 | 8.39 |

| NEMA  | Pm x Dm        | G2        |           |
|-------|----------------|-----------|-----------|
|       |                | S142/S143 | S152/S153 |
| 180TC | 9"x1.125"      | 3.50      | /         |
| 210TC | 9"x1.375"      | 3.50      | 4.57      |
| 250TC | 9"x1.625"      | 4.86      | 4.57      |
| 280TC | 11"x1.875"     | 4.86      | 4.57      |
| 320TC | 13.375"x2.125" | 5.53      | 5.89      |
| 360TC | 13.375"x2.375" | /         | 5.89      |

| NEMA  | Pm    | Dm    | tm   | bm     |
|-------|-------|-------|------|--------|
| 180TC | 9.06  | 1.125 | 1.24 | 0.2500 |
| 210TC | 9.06  | 1.375 | 1.52 | 0.3125 |
| 250TC | 9.06  | 1.625 | 1.80 | 0.3750 |
| 280TC | 11.02 | 1.875 | 2.10 | 0.5000 |
| 320TC | 13.39 | 2.125 | 2.35 | 0.5000 |
| 360TC | 13.39 | 2.375 | 2.65 | 0.6250 |

## 3.1.3 CS 052...123



|             | D1 +0.001/0 | b1   | t1   | U    | V    | B    | D               | b    | t    | f      | C    | C1   | E    | E1    |
|-------------|-------------|------|------|------|------|------|-----------------|------|------|--------|------|------|------|-------|
| CS052/CS053 | 1.25        | 0.25 | 1.37 | /    | 1.18 | 2.36 | 1.25 0/-0.0005  | 0.25 | 1.36 | 1/2-13 | 1.04 | 1.57 | 2.76 | 5.12  |
| CS062/CS063 | 1.38        | 0.31 | 1.52 | 0.47 | 1.38 | 2.76 | 1.375 0/-0.0005 | 0.31 | 1.51 | 1/2-13 | 1.18 | 1.77 | 3.15 | 5.79  |
| CS082/CS083 | 1.50        | 0.38 | 1.67 | /    | 1.65 | 3.15 | 1.625 0/-0.001  | 0.38 | 1.80 | 5/8-11 | 1.46 | 2.36 | 4.17 | 7.48  |
| CS102/CS103 | 2.00        | 0.50 | 2.22 | /    | 1.97 | 3.94 | 2 0/-0.001      | 0.50 | 2.22 | 3/4-10 | 1.44 | 2.76 | 5.39 | 10.83 |
| CS122/CS123 | 2.38        | 0.63 | 2.65 | /    | 2.76 | 4.72 | 2.375 0/-0.001  | 0.63 | 2.65 | 3/4-10 | 1.69 | 3.94 | 6.50 | 12.20 |

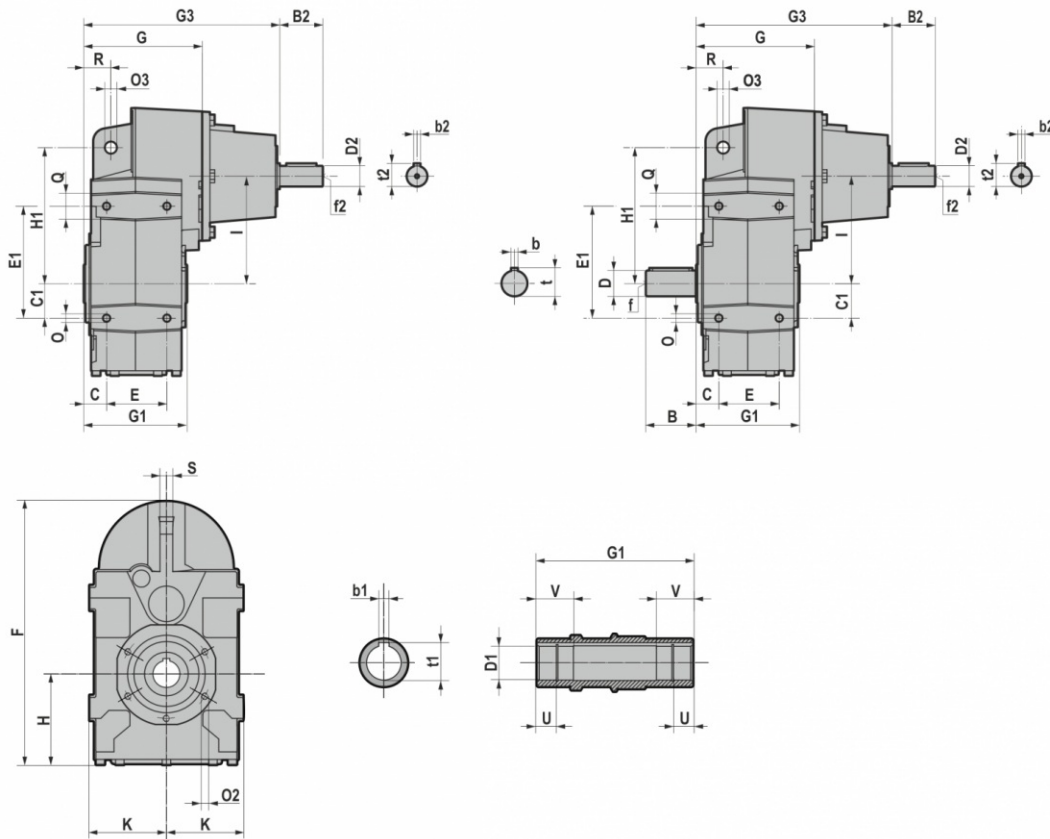
|             | F     | G     | G1   | H    | H1    | I    | K    | O      | O3   | O2           | Q    | R    | S    |
|-------------|-------|-------|------|------|-------|------|------|--------|------|--------------|------|------|------|
| CS052/CS053 | 12.24 | 5.41  | 4.72 | 4.21 | 6.22  | 4.92 | 3.56 | M10x18 | 0.55 | M8x16 (n.5)  | 1.18 | 1.24 | 0.59 |
| CS062/CS063 | 12.6  | 6.24  | 5.51 | 3.82 | 6.69  | 5.63 | 3.80 | M12x20 | 0.55 | M8x16 (n.5)  | 1.57 | 1.26 | 0.59 |
| CS082/S083  | 15.08 | 8.15  | 7.09 | 4.21 | 8.58  | 6.69 | 4.43 | M12x20 | 0.55 | M10x20 (n.7) | 1.73 | 1.61 | 0.79 |
| CS102/CS103 | 16.81 | 8.56  | 8.27 | 4.69 | 10.94 | 7.09 | 5.12 | M16x26 | 0.87 | M12x22 (n.7) | 1.97 | 1.97 | 0.79 |
| CS122/CS123 | 21.97 | 10.12 | 9.45 | 6.54 | 13.62 | 9.25 | 6.50 | M16x30 | 0.87 | M14x28 (n.7) | 1.97 | 2.44 | 1.02 |

| T (IE1 - IE2 - IE3)        |   |      |      |                 |                 |                 |       |                 |       |        |
|----------------------------|---|------|------|-----------------|-----------------|-----------------|-------|-----------------|-------|--------|
|                            |   | 063  | 071  | 080             | 090S            | 090L            | 100   | 112             | 132S  | 132M/L |
| CS052/CS053<br>CS062/CS063 | X | 8.46 | 9.49 | 10.55<br>*11.46 | 11.65<br>*12.95 | 12.64<br>*13.94 | 13.11 | 13.82<br>*14.76 | /     | /      |
|                            | Y | 4.76 | 5.47 | 6.22            | 6.81            | 6.81            | 7.52  | 8.31            | /     | /      |
|                            | Z | 4.09 | 4.41 | 4.8             | 5.12            | 5.12            | 5.47  | 6.06            | /     | /      |
| CS082/CS083<br>CS102/CS103 | X | /    | 8.7  | 9.76<br>*10.67  | 10.87<br>*12.17 | 11.85<br>*13.15 | 13.19 | 14.02<br>*14.96 | 15.94 | 17.44  |
|                            | Y | /    | 5.47 | 6.22            | 6.81            | 6.81            | 7.52  | 8.31            | 9.8   | 9.8    |
|                            | Z | /    | 4.41 | 4.8             | 5.12            | 5.12            | 5.47  | 6.06            | 7.64  | 7.64   |
| CS122/CS123                | X | /    | /    | /               | 10.51<br>*11.81 | 11.5<br>*12.8   | 12.83 | 13.66<br>*14.61 | 15.59 | 17.09  |
|                            | Y | /    | /    | /               | 6.81            | 6.81            | 7.52  | 8.31            | 9.8   | 9.8    |
|                            | Z | /    | /    | /               | 5.12            | 5.12            | 5.47  | 6.06            | 7.64  | 7.64   |

| TB (IE1 - IE2 - IE3)       |   |       |       |                 |                 |                 |       |                 |       |        |
|----------------------------|---|-------|-------|-----------------|-----------------|-----------------|-------|-----------------|-------|--------|
|                            |   | 063   | 071   | 080             | 090S            | 090L            | 100   | 112             | 132S  | 132M/L |
| CS052/CS053<br>CS062/CS063 | X | 10.75 | 12.07 | 13.43<br>*14.33 | 14.69<br>*15.98 | 15.67<br>*16.97 | 16.34 | 17.64<br>*18.58 | /     | /      |
|                            | Y | 4.76  | 5.47  | 6.22            | 6.81            | 6.81            | 7.52  | 8.31            | /     | /      |
|                            | Z | 4.69  | 5.08  | 5.39            | 6.18            | 6.18            | 6.61  | 7.2             | /     | /      |
| CS082/CS083<br>CS102/CS103 | X | /     | 11.28 | 12.64<br>*13.54 | 13.9<br>*15.2   | 14.88<br>*16.18 | 16.42 | 17.83<br>*18.78 | 19.88 | 21.54  |
|                            | Y | /     | 5.47  | 6.22            | 6.81            | 6.81            | 7.52  | 8.31            | 9.8   | 9.8    |
|                            | Z | /     | 5.08  | 5.39            | 6.18            | 6.18            | 6.61  | 7.2             | 9.06  | 9.06   |
| CS122/CS123                | X | /     | /     | /               | 13.5<br>*14.8   | 14.49<br>*15.79 | 16.02 | 17.44<br>*18.39 | 19.49 | 21.14  |
|                            | Y | /     | /     | /               | 6.81            | 6.81            | 7.52  | 8.31            | 9.8   | 9.8    |
|                            | Z | /     | /     | /               | 6.18            | 6.18            | 6.61  | 7.2             | 9.06  | 9.06   |

\*TP80B4, SH80B4, HSH80B4, TP90S4, SH90S4, HSH90S4, TP90L4, SH90L4, HSH90L4, TP90S6, TP112M4, TP112M6

## 3.1.4 IS 052...123



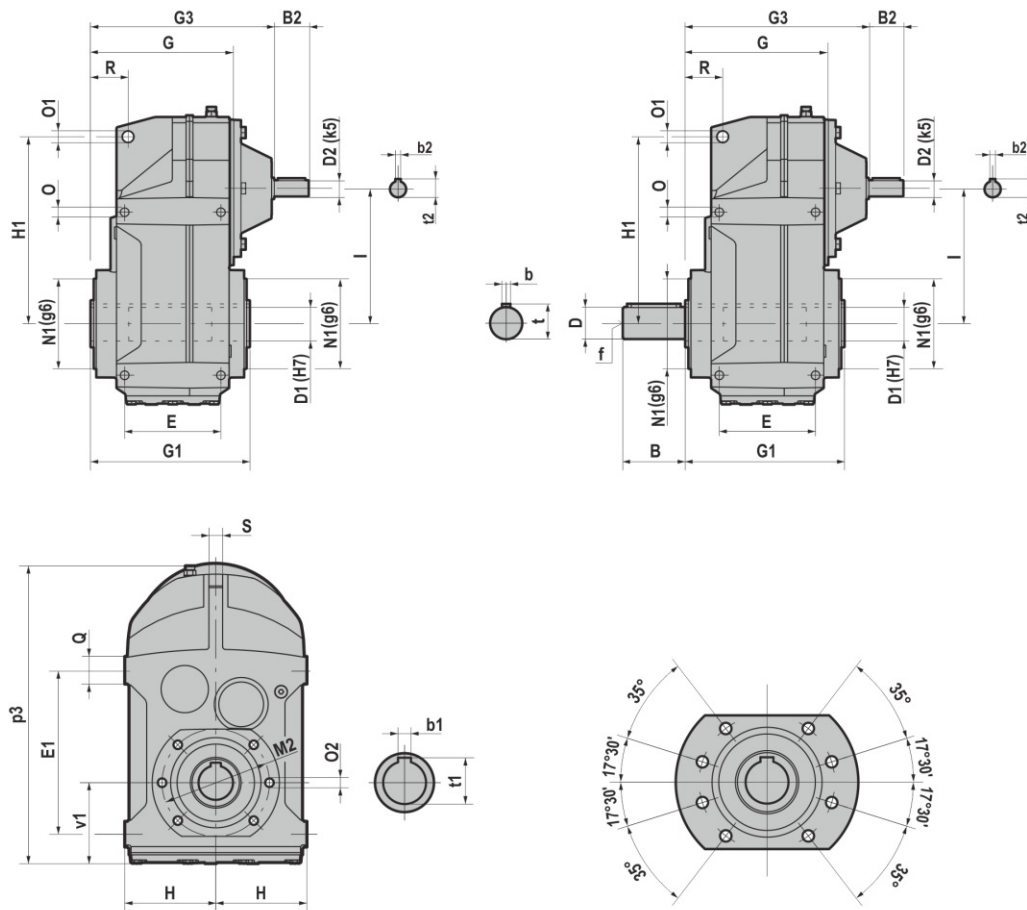
|             | D1 +0.001/0 | b1   | t1   | U    | V    | B    | D               | b    | t    | f      | C    | C1   | E    | E1    |
|-------------|-------------|------|------|------|------|------|-----------------|------|------|--------|------|------|------|-------|
| IS052/IS053 | 1.25        | 0.25 | 1.37 | /    | 1.18 | 2.36 | 1.25 0/-0.0005  | 0.25 | 1.36 | 1/2-13 | 1.04 | 1.57 | 2.76 | 5.12  |
| IS062/IS063 | 1.38        | 0.31 | 1.52 | 0.47 | 1.38 | 2.76 | 1.375 0/-0.0005 | 0.31 | 1.51 | 1/2-13 | 1.18 | 1.77 | 3.15 | 5.79  |
| IS082/IS083 | 1.50        | 0.38 | 1.67 | /    | 1.65 | 3.15 | 1.625 0/-0.001  | 0.38 | 1.80 | 5/8-11 | 1.46 | 2.36 | 4.17 | 7.48  |
| IS102/IS103 | 2.00        | 0.50 | 2.22 | /    | 1.97 | 3.94 | 2 0/-0.001      | 0.50 | 2.22 | 3/4-10 | 1.44 | 2.76 | 5.39 | 10.83 |
| IS122/IS123 | 2.38        | 0.63 | 2.65 | /    | 2.76 | 4.72 | 2.375 0/-0.001  | 0.63 | 2.65 | 3/4-10 | 1.69 | 3.94 | 6.50 | 12.20 |

|             | F     | G     | G1   | H    | H1    | I    | K    | O      | O3   | O2           | Q    | R    | S    |
|-------------|-------|-------|------|------|-------|------|------|--------|------|--------------|------|------|------|
| IS052/IS053 | 12.24 | 5.41  | 4.72 | 4.21 | 6.22  | 4.92 | 3.56 | M10x18 | 0.55 | M8x16 (n.5)  | 1.18 | 1.24 | 0.59 |
| IS062/IS063 | 12.6  | 6.24  | 5.51 | 3.82 | 6.69  | 5.63 | 3.80 | M12x20 | 0.55 | M8x16 (n.5)  | 1.57 | 1.26 | 0.59 |
| IS082/IS083 | 15.08 | 8.15  | 7.09 | 4.21 | 8.58  | 6.69 | 4.43 | M12x20 | 0.55 | M10x20 (n.7) | 1.73 | 1.61 | 0.79 |
| IS102/IS103 | 16.81 | 8.56  | 8.27 | 4.69 | 10.94 | 7.09 | 5.12 | M16x26 | 0.87 | M12x22 (n.7) | 1.97 | 1.97 | 0.79 |
| IS122/IS123 | 21.97 | 10.12 | 9.45 | 6.54 | 13.62 | 9.25 | 6.50 | M16x30 | 0.87 | M14x28 (n.7) | 1.97 | 2.44 | 1.02 |

|             | G3    | B2   | D2              | b2   | t2   | f2     |
|-------------|-------|------|-----------------|------|------|--------|
| IS052/IS053 | 8.96  | 1.97 | 0.875 0/-0.0005 | 0.19 | 0.96 | 1/4-20 |
| IS062/IS063 | 9.78  | 1.97 | 0.875 0/-0.0005 | 0.19 | 0.96 | 1/4-20 |
| IS082/IS083 | 12.60 | 2.76 | 1.375 0/-0.0005 | 0.31 | 1.51 | 1/2-13 |
| IS102/IS103 | 13.01 | 2.76 | 1.375 0/-0.0005 | 0.31 | 1.51 | 1/2-13 |
| IS122/IS123 | 15.10 | 3.15 | 1.625 0/-0.001  | 0.38 | 1.79 | 5/8-11 |



## 3.1.5 IS 142...153



|             | D1   | b1   | t1   | B    | D     | b     | t    | f         | E    | E1    | G     | G1    |
|-------------|------|------|------|------|-------|-------|------|-----------|------|-------|-------|-------|
| IS142/IS143 | 2.76 | 0.79 | 2.95 | 5.51 | 2.875 | 0.75  | 3.2  | 3/4-10UNC | 8.07 | 13.78 | 11.1  | 11.81 |
|             | 2.56 | 0.71 | 2.73 |      |       |       |      |           |      |       |       |       |
| IS152/IS153 | 3.15 | 0.87 | 3.36 | 6.69 | 3.625 | 0.875 | 4.01 | 1-8UNC    | 8.66 | 15.75 | 12.66 | 13.78 |
|             | 3.54 | 0.98 | 3.76 |      |       |       |      |           |      |       |       |       |

|             | H    | H1    | I     | N1   | M2    | O      | O1   | O2     | p3    | Q    | R    | S    | v1   |
|-------------|------|-------|-------|------|-------|--------|------|--------|-------|------|------|------|------|
| IS142/IS143 | 7.87 | 15.55 | 10.59 | 7.09 | 8.66  | M20x28 | 1.02 | M16x26 | 24.21 | 1.97 | 2.76 | 1.18 | 6.97 |
| IS152/IS153 | 8.86 | 19.09 | 12.80 | 8.27 | 10.24 | M24x36 | 1.02 | M20x30 | 28.74 | 2.36 | 3.46 | 1.42 | 8.39 |

|             | G3    | D2    | B2   | b2   | t2   |
|-------------|-------|-------|------|------|------|
| IS142/IS143 | 14.25 | 1.375 | 2.76 | 0.31 | 1.51 |
| IS152/IS153 | 16.61 | 1.625 | 3.15 | 0.38 | 1.79 |

The values reported in the tables are referred to the weight of the gearbox with lubricant (S140/S150 supplied without lubricant) included.

\*Weight without motor.

| * PS    | 56C  | 140TC | 180TC | 210TC | 250TC | 280TC | 320TC | 360TC |      |
|---------|------|-------|-------|-------|-------|-------|-------|-------|------|
| 052-053 | 44.5 | 44.4  | 47.6  | /     | /     | /     | /     | /     | ~ lb |
| 062-063 | 52.4 | 52.3  | 55.6  | /     | /     | /     | /     | /     |      |
| 082-083 | 76.8 | 76.6  | 81.8  | 96.7  | 96.4  | /     | /     | /     |      |
| 102-103 | 101  | 100.8 | 106   | 121   | 120.7 | /     | /     | /     |      |
| 122-123 | /    | 181.6 | 186.7 | 202.8 | 202.7 | 227.9 | 234.1 | /     |      |
| 142     | /    | /     | /     | 381.4 | 400   | 400   | 405.6 | /     |      |
| 143     | /    | /     | 405.6 | 405.6 | 421.1 | /     | /     | /     |      |
| 152     | /    | /     | /     | 564.4 | 564.4 | 564.4 | 584.2 | 584.2 |      |
| 153     | /    | /     | /     | 597.4 | 597.4 | 597.4 | /     | /     |      |

| IS      | - lb |
|---------|------|
| 052-053 | 42.2 |
| 062-063 | 49.9 |
| 082-083 | 85.8 |
| 102-103 | 110  |
| 122-123 | 202  |
| 142     | 341  |
| 143     | 363  |
| 152     | 484  |
| 153     | 528  |

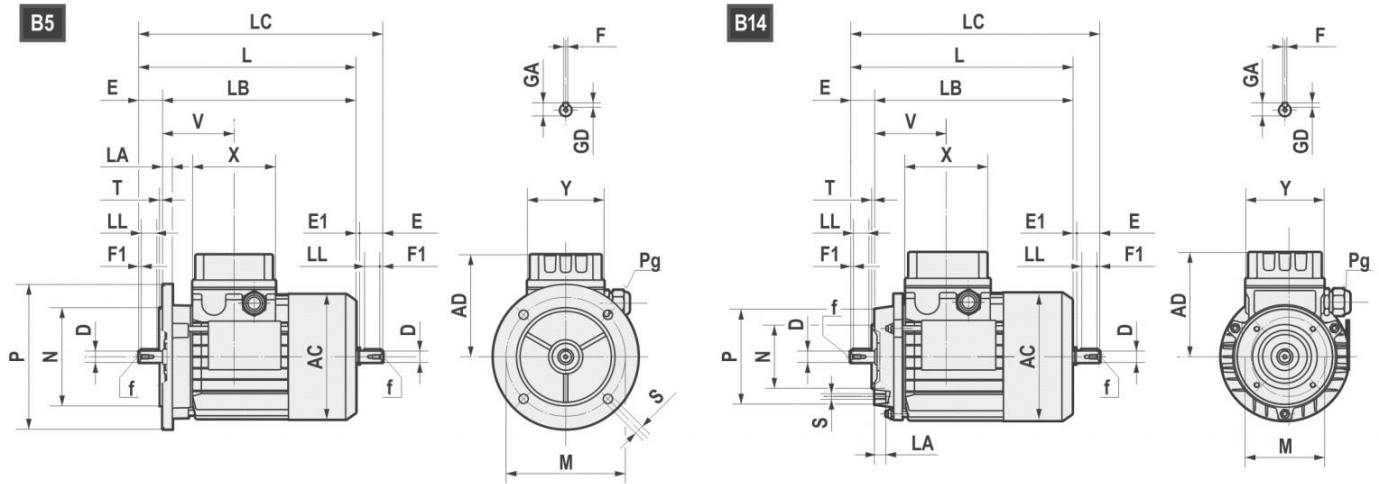
|         | TH   |       |       |      |
|---------|------|-------|-------|------|
| CS      | 63   | 71    | 80    |      |
| 052-053 | 9.15 | 9.74  | 12.16 | ~ lb |
| 062-063 | /    | 11.33 | 13.79 |      |
| 082-083 | /    | 17.04 | 19.64 |      |
| 102-103 | /    | 22.03 | 24.63 |      |

|         | TBH  |       |       |      |
|---------|------|-------|-------|------|
| CS      | 63   | 71    | 80    |      |
| 052-053 | 21.7 | 10.75 | 13.74 | ~ lb |
| 062-063 | /    | 12.38 | 15.38 |      |
| 082-083 | /    | 18.05 | 21.18 |      |
| 102-103 | /    | 23.04 | 26.17 |      |

|         | TP    |       |       |       |       |       |       |      |
|---------|-------|-------|-------|-------|-------|-------|-------|------|
| CS      | 80    | 090S  | 090L  | 100   | 112   | 132S  | 132M  |      |
| 052-053 | 12.88 | 15.79 | 16.51 | 18.96 | 28.21 | /     | /     | ~ lb |
| 062-063 | 14.51 | 17.42 | 18.14 | 20.59 | 29.85 | /     | /     |      |
| 082-083 | 20.37 | 22.59 | 23.09 | 25.36 | 34.56 | 43.23 | 45.18 |      |
| 102-103 | 25.36 | 27.58 | 28.08 | 30.35 | 39.55 | 48.22 | 50.17 |      |
| 122-123 | /     | 43.91 | 44.18 | 46.86 | 55.43 | 64.55 | 65.32 |      |

|         | TBP   |       |       |       |       |       |       |      |
|---------|-------|-------|-------|-------|-------|-------|-------|------|
| CS      | 80    | 090S  | 090L  | 100   | 112   | 132S  | 132M  |      |
| 052-053 | 14.47 | 18.28 | 19.01 | 22.09 | 33.84 | /     | /     | ~ lb |
| 062-063 | 16.1  | 19.91 | 20.64 | 23.72 | 35.47 | /     | /     |      |
| 082-083 | 21.91 | 25.08 | 25.58 | 28.44 | 40.19 | 49.58 | 51.53 |      |
| 102-103 | 26.9  | 30.07 | 30.57 | 33.43 | 45.18 | 54.57 | 56.52 |      |
| 122-123 | /     | 46.4  | 46.67 | 48.53 | 61.05 | 70.9  | 71.67 |      |

## 3.3.1 Electric motors



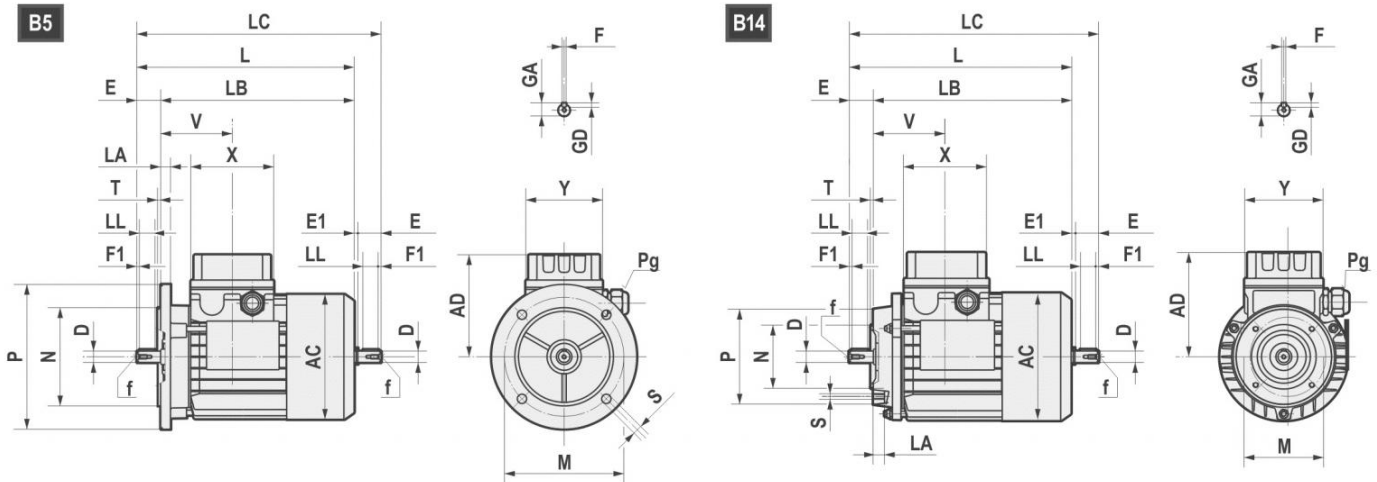
|             | AC  | AD  | L             | LB            | LC            | X   | Y   | V     | D     | E   | E1  | f       | F1  | GA   | F  | GD |
|-------------|-----|-----|---------------|---------------|---------------|-----|-----|-------|-------|-----|-----|---------|-----|------|----|----|
| <b>63</b>   | 121 | 104 | 211           | 188           | 235.5         | 80  | 74  | 69    | 11 j6 | 23  | 1.5 | M4x10   | 2.5 | 12.5 | 4  | 4  |
| <b>71</b>   | 139 | 112 | 238.5         | 208.5         | 271           | 80  | 74  | 74.5  | 14 j6 | 30  | 2.5 | M5x12.5 | 3   | 16   | 5  | 5  |
| <b>80</b>   | 158 | 122 | 272.5<br>*296 | 232.5<br>*256 | 314<br>*337   | 80  | 74  | 78    | 19 j6 | 40  | 1.5 | M6x16   | 5   | 21.5 | 6  | 6  |
| <b>90S</b>  | 173 | 148 | 298<br>*331   | 248<br>*281   | 349.5<br>*381 | 98  | 98  | 89.5  | 24 j6 | 50  | 1.5 | M8x19   | 5   | 27   | 8  | 7  |
| <b>90L</b>  | 173 | 148 | 323<br>*356   | 273<br>*306   | 374.5<br>*408 | 98  | 98  | 89.5  | 24 j6 | 50  | 1.5 | M8x19   | 5   | 27   | 8  | 7  |
| <b>100</b>  | 191 | 156 | 368           | 308           | 431.5         | 98  | 98  | 97.5  | 28 j6 | 60  | 3.5 | M10x22  | 7.5 | 31   | 8  | 7  |
| <b>112</b>  | 211 | 171 | 382.5<br>*408 | 322.5<br>*348 | 447<br>*472   | 98  | 98  | 100   | 28 j6 | 60  | 3.5 | M10x22  | 7.5 | 31   | 8  | 7  |
| <b>132S</b> | 249 | 195 | 452           | 372           | 536.5         | 118 | 118 | 115.5 | 38 k6 | 80  | 4   | M12x28  | 10  | 41   | 10 | 8  |
| <b>132L</b> | 249 | 195 | 490           | 410           | 574.5         | 118 | 118 | 115.5 | 38 k6 | 80  | 4   | M12x28  | 10  | 41   | 10 | 8  |
| <b>160S</b> | 249 | 195 | 520           | 410           | /             | 118 | 118 | 115.5 | 42k6  | 100 | /   | M16x36  | 10  | 45   | 12 | 8  |

\*TP80B4, SH80B4, HSH80B4, TP90S4, SH90S4, HSH90S4, TP90L4, SH90L4, HSH90L4, TP90S6, TP112M4, TP112M6

| B5         | M   | N   | P   | LA   | S    | T   |
|------------|-----|-----|-----|------|------|-----|
| <b>63</b>  | 115 | 95  | 140 | 10   | 9    | 3   |
| <b>71</b>  | 130 | 110 | 160 | 10   | 9.5  | 3.5 |
| <b>80</b>  | 165 | 130 | 200 | 12   | 11   | 3.5 |
| <b>90</b>  | 165 | 130 | 200 | 12   | 11   | 3.5 |
| <b>100</b> | 215 | 180 | 250 | 15   | 14   | 4   |
| <b>112</b> | 215 | 180 | 250 | 14.5 | 14   | 4   |
| <b>132</b> | 265 | 230 | 300 | 20   | 14   | 3.5 |
| <b>160</b> | 300 | 250 | 350 | 13   | 18.5 | 3.5 |

| B14        | M   | N   | P   | LA   | S   | T   |
|------------|-----|-----|-----|------|-----|-----|
| <b>63</b>  | 75  | 60  | 90  | 10   | M5  | 2.5 |
| <b>71</b>  | 85  | 70  | 105 | 10.5 | M6  | 2.5 |
| <b>80</b>  | 100 | 80  | 120 | 10.5 | M6  | 3   |
| <b>90</b>  | 115 | 95  | 140 | 11.5 | M8  | 3   |
| <b>100</b> | 130 | 110 | 160 | 15   | M8  | 3.5 |
| <b>112</b> | 130 | 110 | 160 | 11.5 | M8  | 3.5 |
| <b>132</b> | 165 | 130 | 200 | 20.5 | M10 | 3.5 |
| <b>160</b> | 215 | 180 | 250 | -    | M12 | 4   |

All dimensions are in mm



|             |       | AC  | AD  | L    | LB  | X   | D  | E   | f   | GA   | F  | GD | LL  | Pg        |           |
|-------------|-------|-----|-----|------|-----|-----|----|-----|-----|------|----|----|-----|-----------|-----------|
| <b>160M</b> | 2-4-6 | 314 | 251 | 600  | 490 | 158 | 42 | 110 | M16 | 45   | 12 | 8  | 90  | 2-M40x1.5 | 1-M16x1.5 |
| <b>160L</b> | 2-4-6 | 314 | 251 | 645  | 535 | 158 | 42 | 110 | M16 | 45   | 12 | 8  | 90  | 2-M40x1.5 | 1-M16x1.5 |
| <b>180M</b> | 2-4   | 355 | 267 | 680  | 570 | 158 | 48 | 110 | M16 | 51.5 | 14 | 9  | 100 | 2-M40x1.5 | 1-M16x1.5 |
| <b>180L</b> | 4-6   | 355 | 267 | 720  | 610 | 158 | 48 | 110 | M16 | 51.5 | 14 | 9  | 100 | 2-M40x1.5 | 1-M16x1.5 |
| <b>200L</b> | 2-4-6 | 397 | 300 | 785  | 675 | 187 | 55 | 110 | M20 | 59   | 16 | 10 | 100 | 2-M50x1.5 | 1-M16x1.5 |
| <b>225S</b> | 4     | 446 | 325 | 820  | 680 | 187 | 60 | 140 | M20 | 64   | 18 | 11 | 125 | 2-M50x1.5 | 1-M16x1.5 |
| <b>225M</b> | 2     | 446 | 325 | 815  | 705 | 187 | 55 | 110 | M20 | 59   | 16 | 10 | 100 | 2-M50x1.5 | 1-M16x1.5 |
| <b>225M</b> | 4-6   | 446 | 325 | 845  | 705 | 187 | 60 | 140 | M20 | 64   | 18 | 11 | 125 | 2-M50x1.5 | 1-M16x1.5 |
| <b>250M</b> | 2-4-6 | 485 | 360 | 910  | 770 | 238 | 60 | 140 | M20 | 64   | 18 | 11 | 125 | 2-M63x1.5 | 1-M16x1.5 |
| <b>250M</b> | 2-4-6 | 485 | 360 | 910  | 770 | 238 | 65 | 140 | M20 | 69   | 18 | 11 | 125 | 2-M63x1.5 | 1-M16x1.5 |
| <b>280S</b> | 2-4-6 | 547 | 390 | 970  | 830 | 238 | 65 | 140 | M20 | 69   | 18 | 11 | 125 | 2-M63x1.5 | 1-M16x1.5 |
| <b>280S</b> | 2-4-6 | 547 | 390 | 970  | 830 | 238 | 75 | 140 | M20 | 79.5 | 20 | 12 | 125 | 2-M63x1.5 | 1-M16x1.5 |
| <b>280M</b> | 2-4-6 | 547 | 390 | 1025 | 885 | 238 | 65 | 140 | M20 | 69   | 18 | 11 | 125 | 2-M63x1.5 | 1-M16x1.5 |
| <b>280M</b> | 2-4-6 | 547 | 390 | 1025 | 885 | 238 | 75 | 140 | M20 | 79.5 | 20 | 12 | 125 | 2-M63x1.5 | 1-M16x1.5 |

| B5         | M   | N   | P   | LA | S  | T |
|------------|-----|-----|-----|----|----|---|
| <b>160</b> | 300 | 250 | 350 | 13 | 19 | 5 |
| <b>180</b> | 300 | 250 | 350 | 15 | 19 | 5 |
| <b>200</b> | 350 | 300 | 400 | 17 | 19 | 5 |
| <b>225</b> | 400 | 350 | 450 | 20 | 19 | 5 |
| <b>250</b> | 500 | 450 | 550 | 22 | 19 | 5 |
| <b>280</b> | 500 | 450 | 550 | 22 | 19 | 5 |

All dimensions are in mm

## 3.3.2 Nominal power - [HP]

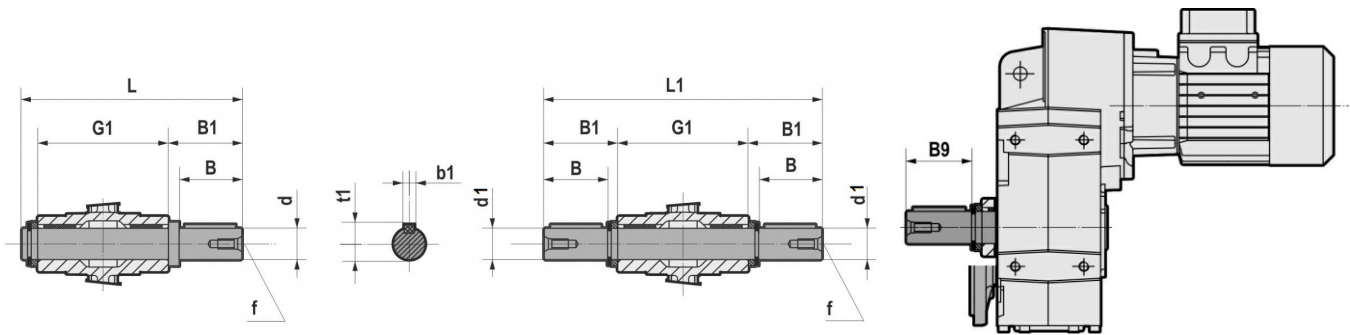
| P. | 63A  |      |      | 63B  |      | 63C  | 63D  | 71A  |      | 71B  |      | 71C  |
|----|------|------|------|------|------|------|------|------|------|------|------|------|
|    | TS   | TH   | TP   | TH   | TP   | TH   | TH   | TH   | TP   | TH   | TP   | TH   |
| 2  | -    | 0,18 | -    | 0,25 | -    | 0,37 | -    | 0,37 | -    | 0,55 | -    | -    |
| 4  | -    | 0,12 | 0,12 | 0,18 | 0,18 | -    | 0,25 | 0,25 | 0,25 | 0,37 | 0,37 | 0,55 |
| 6  | 0,09 | -    | -    | 0,12 | -    | -    | -    | 0,18 | -    | 0,25 | -    | 0,37 |

| P. | 80A  |      | 80B  |      | 90S  | 90L | 100LR | 100LA | 100L | 112MR | 112MS | 112M |
|----|------|------|------|------|------|-----|-------|-------|------|-------|-------|------|
|    | TH   | TP   | TH   | TP   | TP   | TP  | TP    | TP    | TP   | TP    | TP    | TP   |
| 2  | -    | 0,75 | -    | 1,1  | 1,5  | 2,2 | -     | -     | 3    | -     | -     | 4    |
| 4  | 0,55 | 0,55 | -    | 0,75 | 1,1  | 1,5 | -     | 2,2   | -    | 2,2   | 3     | 4    |
| 6  | 0,37 | -    | 0,55 | -    | 0,75 | -   | 1,1   | -     | 1,5  | -     | -     | 2,2  |

| P. | 132S | 132MS | 132MA | 132MB | 132M |
|----|------|-------|-------|-------|------|
|    | TP   | TP    | TP    | TP    | TP   |
| 2  | 5,5  | -     | -     | -     | 7,5  |
| 4  | -    | 5,5   | -     | -     | 7,5  |
| 6  | 3    | -     | 4     | 5,5   | -    |

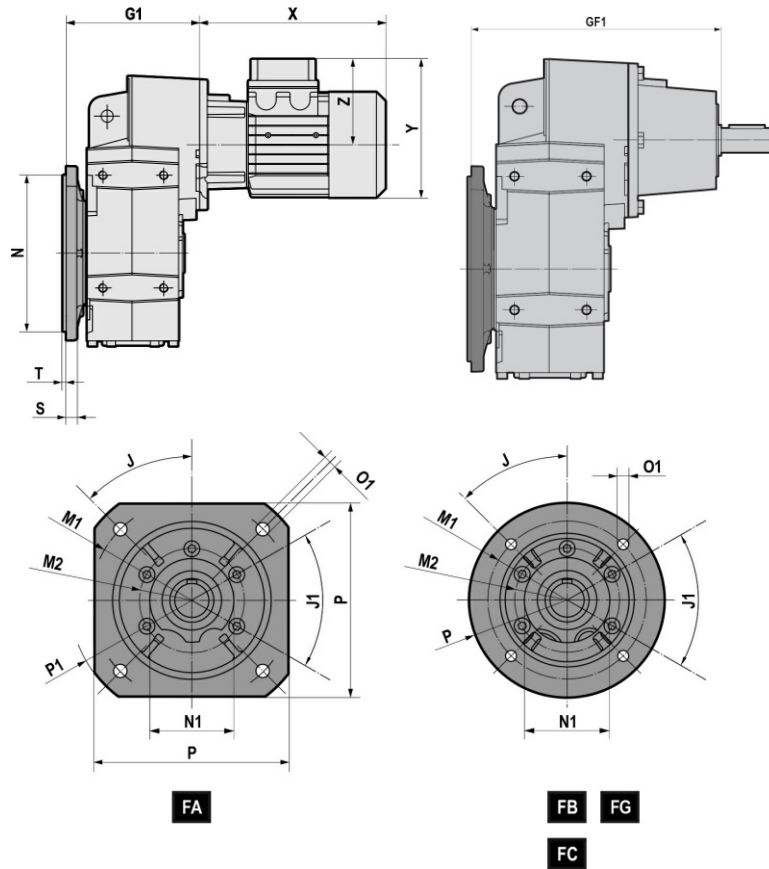
| P. | 160M | 160MA | 160MB | 160L | 160LA | 180M | 180L |
|----|------|-------|-------|------|-------|------|------|
|    | TP   | TP    | TP    | TP   | TP    | TP   | TP   |
| 2  | -    | 11    | 15    | 18,5 | -     | 22   | -    |
| 4  | -    | 11    | -     | -    | 15    | 18,5 | 22   |
| 6  | 7,5  | -     | -     | 11   | -     | -    | 15   |

| P. | 200L | 200LA | 200LB | 225S | 225M | 250M | 280S | 280M |
|----|------|-------|-------|------|------|------|------|------|
|    | TP   | TP    | TP    | TP   | TP   | TP   | TP   | TP   |
| 2  | -    | 30    | 37    | -    | -    | -    | -    | -    |
| 4  | 30   | -     | -     | 37   | 45   | 55   | 75   | 90   |
| 6  | -    | 18,5  | 22    | -    | -    | -    | -    | -    |



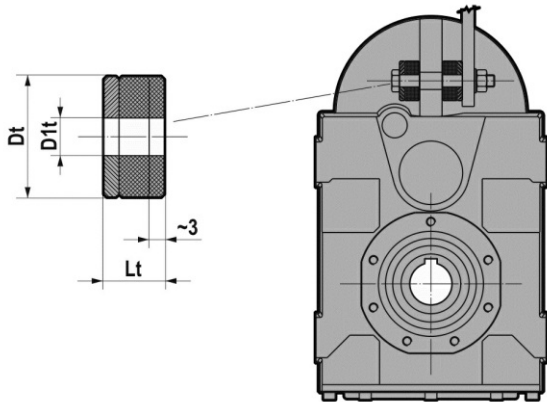
|                  | d h6 | B    | B1   | G1   | L     | f   | b1   | t1   |
|------------------|------|------|------|------|-------|-----|------|------|
| <b>S062/S063</b> | 1.38 | 2.28 | 2.44 | 5.51 | 8.29  | M12 | 0.39 | 1.50 |
| <b>S082/S083</b> | 1.57 | 3.15 | 3.32 | 7.09 | 10.75 | M16 | 0.47 | 1.69 |
| <b>S102/S103</b> | 1.97 | 3.94 | 4.13 | 8.27 | 12.80 | M16 | 0.55 | 2.11 |
| <b>S122/S123</b> | 2.36 | 4.72 | 4.92 | 9.45 | 14.76 | M20 | 0.71 | 2.52 |

|                  | d k5  | d1 h6 | B    | B1   | B9   | L1    | f         | b1    | t1   |
|------------------|-------|-------|------|------|------|-------|-----------|-------|------|
| <b>S142/S143</b> | 2.75  | 2.75  | 5.51 | 5.91 | 5.51 | 23.62 | 3/4-10UNC | 0.79  | 2.93 |
| <b>S152/S153</b> | 2.75  | 2.75  | 5.51 | 5.91 | 5.51 | 23.62 | 3/4-10UNC | 0.79  | 2.93 |
| <b>S152/S153</b> | 3.625 | 3.625 | 6.69 | 7.09 | 6.69 | 27.95 | 1-8UNC    | 0.875 | 4.01 |



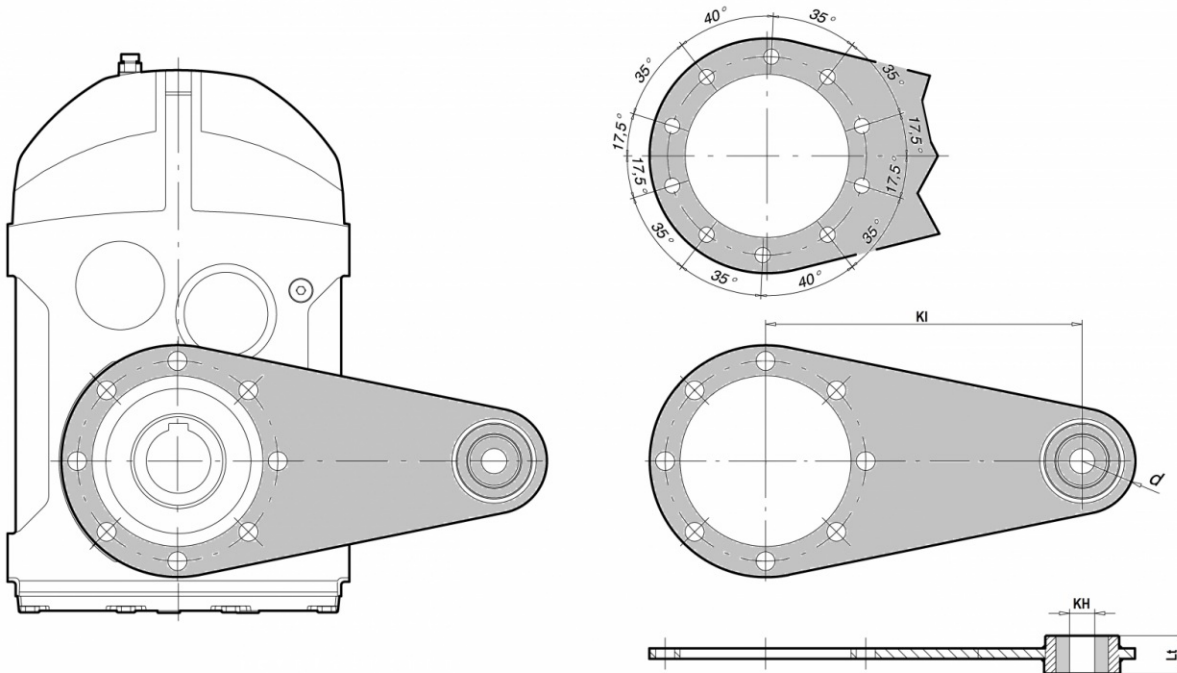
|              |    | J      | J1  | M1    | M2   | N f8     | N1   | O1         | P     | P1    | S    | T    | G1    | GF1   |
|--------------|----|--------|-----|-------|------|----------|------|------------|-------|-------|------|------|-------|-------|
| S052<br>S053 | FA | 45°    | 60° | 8.46  | 4.13 | 7.09     | 3.54 | 0.55 (n.4) | 7.87  | 9.84  | 0.47 | 0.16 | 6.02  | 9.57  |
|              | FB | 45°    | 60° | 6.50  | 4.13 | 5.12     | 3.54 | 0.43 (n.4) | 7.87  | /     | 0.47 | 0.14 | 6.02  | 9.57  |
| S062<br>S063 | FA | 45°    | 60° | 8.46  | 4.13 | 7.09     | 3.54 | 0.55 (n.4) | 7.87  | 9.84  | 0.47 | 0.16 | 6.79  | 10.33 |
|              | FB | 45°    | 60° | 6.50  | 4.13 | 5.12     | 3.54 | 0.43 (n.4) | 7.87  | /     | 0.47 | 0.14 | 6.79  | 10.33 |
| S082<br>S083 | FA | 45°    | 45° | 10.43 | 5.12 | 9.06     | 4.33 | 0.55 (n.4) | 9.84  | 11.81 | 0.59 | 0.16 | 8.94  | 13.39 |
|              | FB | 45°    | 45° | 8.46  | 5.12 | 7.09     | 4.33 | 0.55 (n.4) | 9.84  | /     | 0.59 | 0.16 | 8.94  | 13.39 |
|              | FC | 45°    | 45° | 6.50  | 5.12 | 5.12     | 4.33 | 0.43 (n.4) | 7.87  | /     | 0.59 | 0.14 | 8.94  | 13.39 |
| S102<br>S103 | FA | 45°    | 45° | 11.81 | 6.50 | 9.84     | 5.12 | 0.71 (n.4) | 11.81 | 13.78 | 0.63 | 0.20 | 9.74  | 14.19 |
|              | FB | 45°    | 45° | 10.43 | 6.50 | 9.06     | 5.12 | 0.55 (n.4) | 11.81 | /     | 0.63 | 0.16 | 9.74  | 14.19 |
|              | FC | 45°    | 45° | 8.46  | 6.50 | 7.09     | 5.12 | 0.55 (n.4) | 9.84  | /     | 0.63 | 0.16 | 9.74  | 14.19 |
| S122<br>S123 | FA | 45°    | 45° | 13.78 | 7.28 | 11.81    | 5.91 | 0.71 (n.4) | 13.78 | 15.75 | 0.71 | 0.20 | 11.30 | 16.28 |
|              | FB | 45°    | 45° | 11.81 | 7.28 | 9.84     | 5.91 | 0.71 (n.4) | 13.78 | /     | 0.71 | 0.20 | 11.30 | 16.28 |
|              | FC | 45°    | 45° | 10.43 | 7.28 | 9.06     | 5.91 | 0.55 (n.4) | 11.81 | /     | 0.71 | 0.16 | 11.30 | 16.28 |
| S142<br>S143 | FG | 22°30' | /   | 15.75 | /    | 13.78 g6 | /    | 0.71 (n.8) | 17.72 | /     | 0.79 | 0.20 | 13.33 | 16.77 |
| S152<br>S153 | FG | 22°30' | /   | 15.75 | /    | 13.78 g6 | /    | 0.71 (n.4) | 17.72 | /     | 0.79 | 0.20 | 13.33 | 18.94 |

## 4.3.1 Reaction bolt



|           | Dt   | D1t  | Lt   |
|-----------|------|------|------|
| S052/S053 | 1.57 | 0.49 | 0.79 |
| S062/S063 | 1.57 | 0.49 | 0.79 |
| S082/S083 | 1.57 | 0.49 | 0.79 |
| S102/S103 | 2.36 | 0.83 | 1.18 |
| S122/S123 | 2.36 | 0.83 | 1.18 |
| S142/S143 | 2.36 | 0.98 | 1.53 |
| S152/S153 | 2.36 | 0.98 | 1.40 |

## 4.3.2 Torque arm - S 142...153



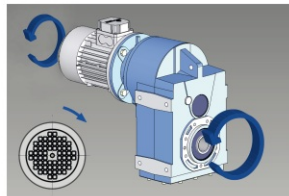
|           | KI    | KH   | d    | Lt   |
|-----------|-------|------|------|------|
| S142/S143 | 13.78 | 0.98 | 1.77 | 1.18 |
| S152/S153 | 17.72 | 0.98 | 1.97 | 1.18 |



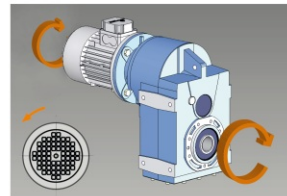
The gear reducer can be supplied with backstop device on input shaft. Backstop device allows output shaft rotation in only one sense of direction; according to the size, it is available in the input flange or in the motor with the same dimensions. It is important to specify the required sense of direction on the order. The backstop device is not available for mounting position V5 with motor size IEC 100...225.

## SENSE OF DIRECTION AVAILABLE

## S... 2/C-D-L

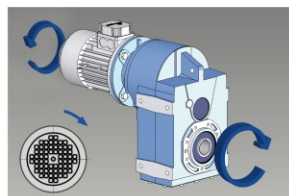


**CLOCKWISE** SENSE OF DIRECTION  
REFERRED TO HIGH SPEED SHAFT

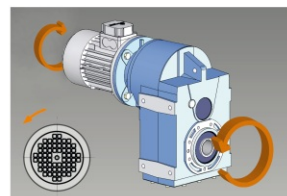


**COUNTER CLOCKWISE** SENSE OF DIRECTION  
REFERRED TO HIGH SPEED SHAFT

## S... 3/C-D-L



**CLOCKWISE** SENSE OF DIRECTION  
REFERRED TO HIGH SPEED SHAFT

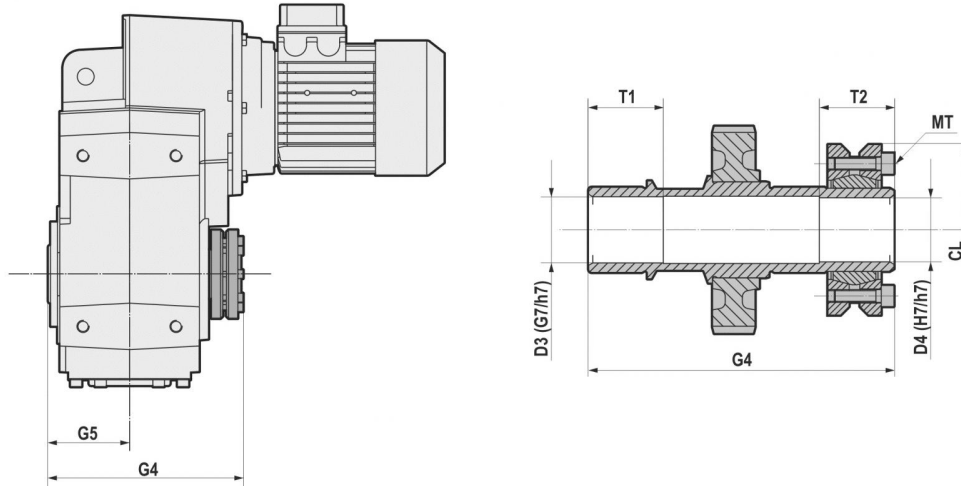


**COUNTER CLOCKWISE** SENSE OF DIRECTION  
REFERRED TO HIGH SPEED SHAFT

|             | 063    | 071    | 080    | 090    | 100-112 | 132    | 160    | 180    | 200    | 225    |
|-------------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
|             | 140x11 | 160x14 | 200x19 | 200x24 | 250x28  | 300x38 | 350x42 | 350x48 | 400x55 | 450x60 |
| <b>S052</b> |        | B5     | B5     | B5     | B5      |        |        |        |        |        |
| <b>S053</b> | B5     | B5     | B5     | B5     | B5      |        |        |        |        |        |
| <b>S062</b> |        | B5     | B5     | B5     | B5      |        |        |        |        |        |
| <b>S063</b> |        | B5     | B5     | B5     | B5      |        |        |        |        |        |
| <b>S082</b> |        |        | B5     | B5     | B5      | B5     |        |        |        |        |
| <b>S083</b> |        | B5     | B5     | B5     | B5      |        |        |        |        |        |
| <b>S102</b> |        |        | B5     | B5     | B5      | B5     | B5     |        |        |        |
| <b>S103</b> |        | B5     | B5     | B5     | B5      |        |        |        |        |        |
| <b>S122</b> |        |        | B5     | B5     | B5      | B5     | B5     | B5     | B5     |        |
| <b>S123</b> |        |        | B5     | B5     | B5      | B5     |        |        |        |        |
| <b>S142</b> |        |        |        |        |         | B5     | B5     | B5     | B5     |        |
| <b>S143</b> |        |        |        |        | B5      | B5     | B5     |        |        |        |
| <b>S152</b> |        |        |        |        |         |        | B5     | B5     | B5     | B5     |
| <b>S153</b> |        |        |        |        |         | B5     | B5     | B5     |        | B5     |

Dimensions are only in mm.

Clean and degrease the surfaces of the shaft to be fitted to. Comply with the indicated tightening torque of screws ( $M_T$ ).  
The shrink disc is designed only to transmit the output torque.  
In case of radial and/or axial loads or V5-V6 mounting positions, please contact the technical support.

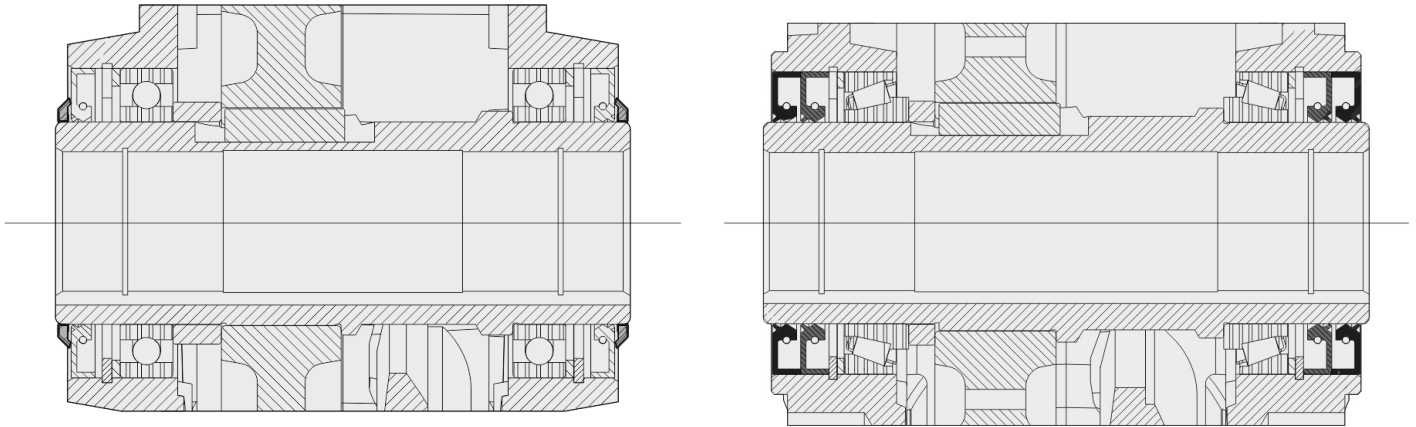


|                  | D3   | D4   | G4    | G5   | T1   | T2   | CL   | $M_T$ 12.9 [Nm] |
|------------------|------|------|-------|------|------|------|------|-----------------|
| <b>S052/S053</b> | 1.22 | 1.18 | 5.98  | 2.36 | 1.38 | 1.38 | 2.91 | 15              |
| <b>S062/S063</b> | 1.42 | 1.38 | 6.81  | 2.76 | 1.57 | 1.38 | 3.15 | 15              |
| <b>S082/S083</b> | 1.61 | 1.57 | 8.54  | 3.54 | 1.97 | 1.57 | 3.94 | 15              |
| <b>S102/S103</b> | 2.01 | 1.97 | 9.76  | 4.13 | 2.17 | 1.57 | 4.53 | 15              |
| <b>S122/S123</b> | 2.40 | 2.36 | 11.10 | 4.72 | 2.36 | 1.97 | 5.71 | 40              |

|                  | D3 - D4<br>(H7/h6) | G4    | CL   | $M_T$ 12.9 [Nm] |
|------------------|--------------------|-------|------|-----------------|
| <b>S142-S143</b> | 2.95               | 13.58 | 6.10 | 70              |
| <b>S152-S153</b> | 3.74               | 15.94 | 7.87 | 120             |

The reinforced seal can be done depending on the gearbox size by means of two oil seals or through the standard oil seal with VRM ring. The difference of the two solutions is explained on the drawings.

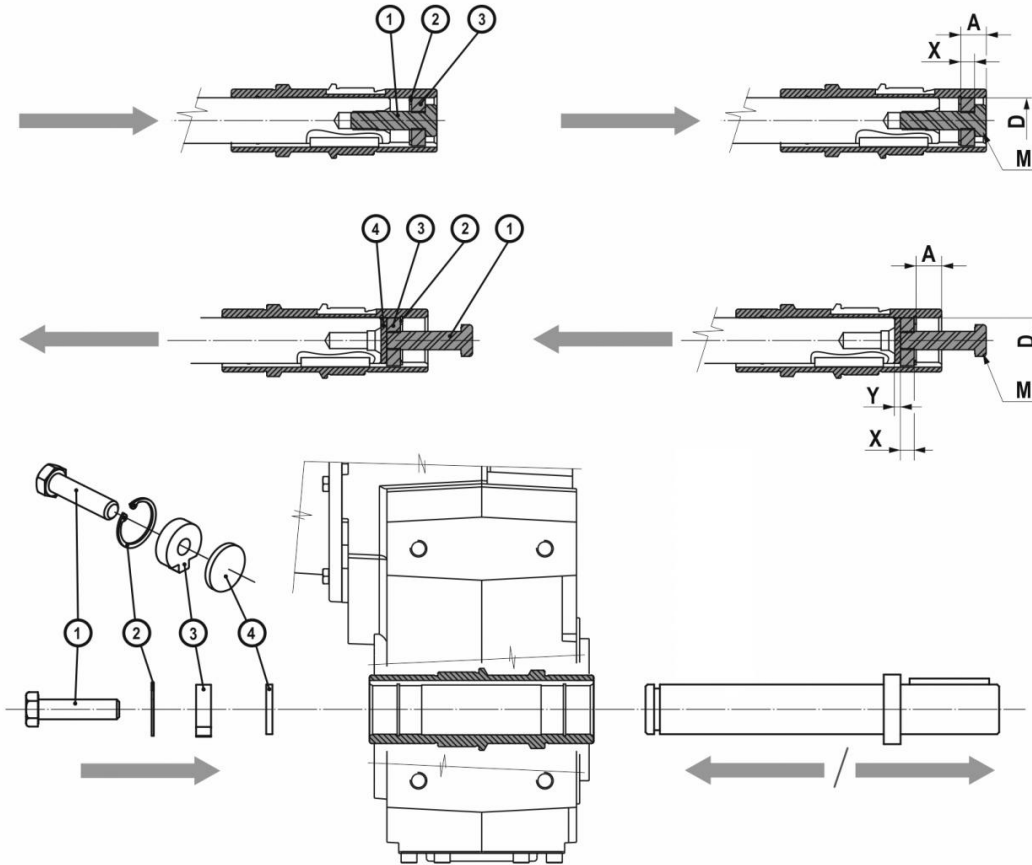
On request the gear reducer can be supplied with fluoroelastomer FPM (FKM) seals.



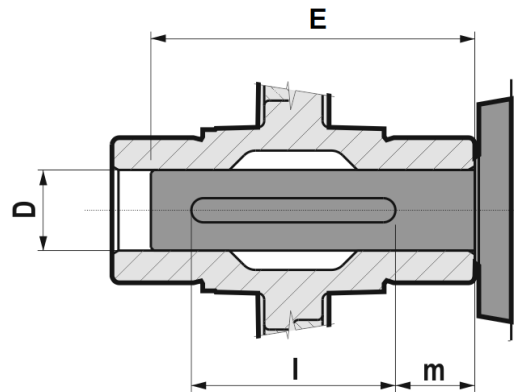
|          | Double oil seal | VRM ring |
|----------|-----------------|----------|
| S050 2/3 |                 | x        |
| S060 2/3 |                 | x        |
| S080 2/3 |                 | x        |
| S100 2/3 |                 | x        |
| S125 2/3 |                 | x        |
| S140 2/3 |                 | x        |
| S150 2/3 | x               |          |

Mounting/dismounting kit for hollow shaft gear reducers with keyway that includes:

1. Retaining bolt
2. Circlip
3. Fixed nut
4. Forcing washer



|                  | D    | A    | X    | Y   | M      |
|------------------|------|------|------|-----|--------|
| <b>S052/S053</b> | 1.18 | 0.54 | 0.39 | 0.2 | M10x35 |
| <b>S062/S063</b> | 1.38 | 0.47 | 0.47 | 0.2 | M12x45 |
| <b>S082/S083</b> | 1.57 | 0.88 | 0.47 | 0.2 | M16x50 |
|                  | 1.77 |      |      |     |        |
| <b>S102/S103</b> | 1.97 | 0.98 | 0.47 | 0.2 | M16x50 |
| <b>S122/S123</b> | 2.36 | 1.10 | 0.63 | 0.2 | M20x70 |



|           | D H7/h6 | E*   | l*   | m*   |
|-----------|---------|------|------|------|
| S052/S053 | 1.18    | 3.58 | 2.36 | 0.49 |
| S062/S063 | 1.38    | 4.25 | 3.15 | 0.49 |
| S082/S083 | 1.57    | 5.51 | 3.94 | 0.69 |
|           | 1.77    |      |      |      |
| S102/S103 | 1.97    | 6.5  | 4.72 | 0.79 |
| S122/S123 | 2.36    | 7.28 | 5.51 | 0.89 |

(\*) Suggested values.

## 0.16 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 202.9                 | 31.2                 | 48                        | 8.63             | 1505                    | 904                   | 904                  | -         | -     | PS052        | 56C          |
| 157.1                 | 27.0                 | 62                        | 11.14            | 1682                    | 982                   | 982                  | -         | -     | PS052        | 56C          |
| 145.8                 | 26.4                 | 67                        | 12.00            | 1770                    | 1006                  | 1006                 | -         | -     | PS052        | 56C          |
| 128.1                 | 24.4                 | 76                        | 13.66            | 1859                    | 1049                  | 1049                 | -         | -     | PS052        | 56C          |
| 114.6                 | 24.9                 | 85                        | 15.27            | 2124                    | 1088                  | 1088                 | -         | -     | PS052        | 56C          |
| 107.5                 | 23.3                 | 91                        | 16.29            | 2124                    | 1110                  | 1110                 | -         | -     | PS052        | 56C          |
| 93.9                  | 20.4                 | 104                       | 18.63            | 2124                    | 1160                  | 1160                 | -         | -     | PS052        | 56C          |
| 88.7                  | 19.3                 | 110                       | 19.73            | 2124                    | 1181                  | 1181                 | -         | -     | PS052        | 56C          |
| 83.2                  | 19.6                 | 118                       | 21.04            | 2301                    | 1206                  | 1206                 | -         | -     | PS052        | 56C          |
| 81.3                  | 19.1                 | 120                       | 21.53            | 2301                    | 1215                  | 1215                 | -         | -     | PS052        | 56C          |
| 72.7                  | 17.1                 | 134                       | 24.07            | 2301                    | 1259                  | 1259                 | -         | -     | PS052        | 56C          |
| 69.4                  | 18.2                 | 141                       | 25.20            | 2567                    | 1277                  | 1277                 | -         | -     | PS052        | 56C          |
| 67.9                  | 17.8                 | 144                       | 25.79            | 2567                    | 1287                  | 1287                 | -         | -     | PS052        | 56C          |
| 62.9                  | 16.5                 | 155                       | 27.81            | 2567                    | 1318                  | 1318                 | -         | -     | PS052        | 56C          |
| 58.3                  | 15.3                 | 168                       | 30.00            | 2567                    | 1349                  | 1349                 | -         | -     | PS052        | 56C/56C      |
| 53.8                  | 14.6                 | 182                       | 32.55            | 2655                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 53.0                  | 14.4                 | 184                       | 33.00            | 2655                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 51.3                  | 13.9                 | 190                       | 34.09            | 2655                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 47.9                  | 14.3                 | 204                       | 36.55            | 2921                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 45.2                  | 13.5                 | 217                       | 38.75            | 2921                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 43.9                  | 13.9                 | 223                       | 39.90            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 41.1                  | 13.0                 | 238                       | 42.63            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 38.0                  | 12.1                 | 257                       | 46.00            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 37.1                  | 11.7                 | 264                       | 47.20            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 33.5                  | 10.6                 | 292                       | 52.25            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 30.2                  | 9.6                  | 323                       | 57.86            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 29.5                  | 9.3                  | 332                       | 59.42            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 24.0                  | 7.6                  | 407                       | 72.83            | 3098                    | 1349                  | 1349                 | -         | -     | PS052        | 56C          |
| 47.9                  | 15.7                 | 198                       | 36.50            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 37.1                  | 12.1                 | 255                       | 47.14            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 30.3                  | 9.9                  | 313                       | 57.79            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 27.5                  | 9.0                  | 345                       | 63.74            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 23.6                  | 7.7                  | 402                       | 74.20            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 22.4                  | 7.3                  | 423                       | 78.14            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 18.3                  | 6.0                  | 519                       | 95.84            | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 14.9                  | 4.9                  | 636                       | 117.48           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 12.7                  | 4.2                  | 745                       | 137.45           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 9.9                   | 3.2                  | 962                       | 177.55           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |

## 0.16 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 8.8                   | 2.9                  | 1075                      | 198.45           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 8.0                   | 2.6                  | 1179                      | 217.64           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 6.8                   | 2.2                  | 1388                      | 256.33           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 5.6                   | 1.8                  | 1702                      | 314.21           | 3098                    | 1349                  | 1349                 | CS053     | 63A4  | PS053        | 56C          |
| 218.8                 | 65.3                 | 45                        | 8.00             | 2921                    | 1521                  | 608                  | -         | -     | PS062        | 56C          |
| 196.2                 | 58.6                 | 50                        | 8.92             | 2921                    | 1576                  | 630                  | -         | -     | PS062        | 56C          |
| 183.3                 | 59.7                 | 53                        | 9.55             | 3186                    | 1611                  | 645                  | -         | -     | PS062        | 56C          |
| 164.4                 | 53.6                 | 59                        | 10.65            | 3186                    | 1670                  | 668                  | -         | -     | PS062        | 56C          |
| 149.5                 | 52.8                 | 65                        | 11.71            | 3452                    | 1722                  | 689                  | -         | -     | PS062        | 56C          |
| 134.0                 | 51.0                 | 73                        | 13.06            | 3717                    | 1785                  | 714                  | -         | -     | PS062        | 56C          |
| 131.0                 | 49.8                 | 75                        | 13.36            | 3717                    | 1798                  | 719                  | -         | -     | PS062        | 56C          |
| 109.8                 | 44.7                 | 89                        | 15.94            | 3983                    | 1904                  | 762                  | -         | -     | PS062        | 56C          |
| 108.3                 | 44.1                 | 90                        | 16.16            | 3983                    | 1913                  | 765                  | -         | -     | PS062        | 56C          |
| 90.7                  | 37.0                 | 108                       | 19.29            | 3983                    | 2026                  | 810                  | -         | -     | PS062        | 56C          |
| 89.5                  | 37.3                 | 109                       | 19.55            | 4071                    | 2035                  | 814                  | -         | -     | PS062        | 56C          |
| 75.5                  | 32.1                 | 130                       | 23.18            | 4160                    | 2150                  | 860                  | -         | -     | PS062        | 56C          |
| 73.7                  | 31.3                 | 133                       | 23.75            | 4160                    | 2167                  | 867                  | -         | -     | PS062        | 56C          |
| 69.6                  | 30.2                 | 140                       | 25.14            | 4248                    | 2207                  | 883                  | -         | -     | PS062        | 56C          |
| 63.3                  | 27.5                 | 155                       | 27.66            | 4248                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 51.6                  | 25.2                 | 190                       | 33.93            | 4779                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 47.9                  | 26.0                 | 204                       | 36.57            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 44.4                  | 24.1                 | 220                       | 39.38            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 40.1                  | 21.8                 | 244                       | 43.64            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 38.0                  | 20.6                 | 258                       | 46.10            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 36.2                  | 19.7                 | 270                       | 48.30            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 32.7                  | 17.8                 | 299                       | 53.53            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 31.8                  | 17.3                 | 307                       | 55.00            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 25.9                  | 14.1                 | 377                       | 67.47            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 52.1                  | 28.9                 | 184                       | 33.57            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 46.3                  | 25.7                 | 207                       | 37.77            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 43.7                  | 24.2                 | 219                       | 40.05            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C/56C      |
| 35.6                  | 19.8                 | 269                       | 49.13            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 31.7                  | 17.6                 | 302                       | 55.29            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 29.8                  | 16.5                 | 321                       | 58.72            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 26.6                  | 14.7                 | 360                       | 65.85            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 25.6                  | 14.2                 | 373                       | 68.25            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 23.8                  | 13.2                 | 403                       | 73.63            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 21.5                  | 11.9                 | 445                       | 81.43            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |

## 0.16 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 17.5                  | 9.7                  | 546                       | 99.89            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 13.8                  | 7.7                  | 692                       | 126.43           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 11.6                  | 6.4                  | 825                       | 150.85           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 9.6                   | 5.3                  | 999                       | 182.53           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 9.5                   | 5.2                  | 1012                      | 185.05           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 8.0                   | 4.5                  | 1191                      | 217.79           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 6.6                   | 3.6                  | 1462                      | 267.16           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 238.5                 | 118.7                | 41                        | 7.34             | 4868                    | 2886                  | 825                  | -         | -     | PS082        | 56C          |
| 217.1                 | 117.9                | 45                        | 8.06             | 5310                    | 2977                  | 851                  | -         | -     | PS082        | 56C          |
| 176.0                 | 103.6                | 56                        | 9.94             | 5753                    | 3190                  | 911                  | -         | -     | PS082        | 56C          |
| 150.8                 | 95.5                 | 65                        | 11.61            | 6196                    | 3356                  | 959                  | -         | -     | PS082        | 56C          |
| 137.3                 | 93.2                 | 71                        | 12.75            | 6638                    | 3462                  | 989                  | -         | -     | PS082        | 56C          |
| 124.6                 | 85.7                 | 78                        | 14.04            | 6727                    | 3574                  | 1021                 | -         | -     | PS082        | 56C          |
| 113.4                 | 79.1                 | 86                        | 15.43            | 6815                    | 3686                  | 1053                 | -         | -     | PS082        | 56C          |
| 111.3                 | 77.6                 | 88                        | 15.73            | 6815                    | 3709                  | 1060                 | -         | -     | PS082        | 56C          |
| 101.2                 | 70.5                 | 97                        | 17.29            | 6815                    | 3827                  | 1093                 | -         | -     | PS082        | 56C          |
| 92.0                  | 64.1                 | 106                       | 19.03            | 6815                    | 3949                  | 1128                 | -         | -     | PS082        | 56C          |
| 86.9                  | 60.6                 | 113                       | 20.14            | 6815                    | 4023                  | 1149                 | -         | -     | PS082        | 56C          |
| 79.1                  | 57.3                 | 124                       | 22.13            | 7081                    | 4047                  | 1185                 | -         | -     | PS082        | 56C/56C      |
| 72.9                  | 52.8                 | 134                       | 24.00            | 7081                    | 4047                  | 1218                 | -         | -     | PS082        | 56C          |
| 67.2                  | 48.7                 | 146                       | 26.05            | 7081                    | 4047                  | 1251                 | -         | -     | PS082        | 56C          |
| 64.1                  | 52.2                 | 152                       | 27.29            | 7966                    | 4047                  | 1270                 | -         | -     | PS082        | 56C          |
| 61.0                  | 49.7                 | 160                       | 28.67            | 7966                    | 4047                  | 1291                 | -         | -     | PS082        | 56C          |
| 59.1                  | 48.2                 | 165                       | 29.60            | 7966                    | 4047                  | 1304                 | -         | -     | PS082        | 56C          |
| 55.1                  | 49.9                 | 178                       | 31.78            | 8851                    | 4047                  | 1335                 | -         | -     | PS082        | 56C          |
| 50.1                  | 45.4                 | 195                       | 34.91            | 8851                    | 4047                  | 1377                 | -         | -     | PS082        | 56C/56C      |
| 49.3                  | 44.6                 | 198                       | 35.50            | 8851                    | 4047                  | 1384                 | -         | -     | PS082        | 56C          |
| 40.6                  | 36.8                 | 241                       | 43.05            | 8851                    | 4047                  | 1475                 | -         | -     | PS082        | 56C          |
| 34.8                  | 31.5                 | 281                       | 50.25            | 8851                    | 4047                  | 1551                 | -         | -     | PS082        | 56C/56C      |
| 32.2                  | 29.2                 | 303                       | 54.27            | 8851                    | 4047                  | 1591                 | -         | -     | PS082        | 56C          |
| 28.2                  | 25.6                 | 346                       | 61.98            | 8851                    | 4047                  | 1619                 | -         | -     | PS082        | 56C          |
| 25.9                  | 24.0                 | 369                       | 67.52            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 23.6                  | 21.8                 | 406                       | 74.18            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |
| 21.4                  | 19.8                 | 447                       | 81.71            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 19.1                  | 17.7                 | 501                       | 91.49            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 17.4                  | 16.1                 | 550                       | 100.62           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 14.9                  | 13.8                 | 641                       | 117.17           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 13.6                  | 12.6                 | 704                       | 128.73           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |



## 0.16 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 12.8                  | 11.9                 | 746                       | 136.34           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 11.0                  | 10.2                 | 869                       | 158.76           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 9.5                   | 8.8                  | 1011                      | 184.88           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 8.6                   | 8.0                  | 1111                      | 203.11           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |
| 8.5                   | 7.9                  | 1123                      | 205.34           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 7.7                   | 7.2                  | 1237                      | 226.04           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 7.0                   | 6.5                  | 1370                      | 250.50           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 6.6                   | 6.1                  | 1456                      | 266.13           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 6.0                   | 5.5                  | 1599                      | 292.36           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |
| 5.5                   | 5.1                  | 1727                      | 315.73           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 4.9                   | 4.5                  | 1973                      | 360.58           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 92.1                  | 116.7                | 106                       | 19.00            | 12391                   | 4807                  | 1373                 | -         | -     | PS102        | 56C          |
| 84.0                  | 106.5                | 116                       | 20.83            | 12391                   | 4946                  | 1415                 | -         | -     | PS102        | 56C          |
| 72.1                  | 97.9                 | 136                       | 24.28            | 13276                   | 4946                  | 1489                 | -         | -     | PS102        | 56C          |
| 66.5                  | 90.2                 | 147                       | 26.33            | 13276                   | 4946                  | 1529                 | -         | -     | PS102        | 56C          |
| 58.6                  | 79.6                 | 167                       | 29.87            | 13276                   | 4946                  | 1594                 | -         | -     | PS102        | 56C          |
| 54.0                  | 73.3                 | 181                       | 32.40            | 13276                   | 4946                  | 1637                 | -         | -     | PS102        | 56C          |
| 45.7                  | 62.0                 | 214                       | 38.30            | 13276                   | 4946                  | 1729                 | -         | -     | PS102        | 56C          |
| 41.2                  | 52.2                 | 238                       | 42.53            | 12391                   | 4946                  | 1790                 | -         | -     | PS102        | 56C          |
| 39.8                  | 46.8                 | 246                       | 44.00            | 11506                   | 4946                  | 1810                 | -         | -     | PS102        | 56C          |
| 37.1                  | 53.8                 | 263                       | 47.13            | 14161                   | 4946                  | 1851                 | -         | -     | PS102        | 56C          |
| 31.7                  | 37.4                 | 308                       | 55.14            | 11506                   | 4946                  | 1949                 | -         | -     | PS102        | 56C          |
| 29.5                  | 42.7                 | 332                       | 59.40            | 14161                   | 4946                  | 1997                 | -         | -     | PS102        | 56C          |
| 25.8                  | 37.4                 | 379                       | 67.84            | 14161                   | 4946                  | 2023                 | -         | -     | PS102        | 56C          |
| 21.5                  | 31.8                 | 445                       | 81.39            | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 19.5                  | 28.8                 | 491                       | 89.77            | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 17.5                  | 25.8                 | 548                       | 100.15           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 15.8                  | 23.4                 | 605                       | 110.55           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 14.4                  | 21.3                 | 664                       | 121.29           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 12.4                  | 18.3                 | 773                       | 141.24           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 10.1                  | 14.9                 | 951                       | 173.78           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 9.3                   | 13.7                 | 1031                      | 188.51           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 7.9                   | 11.6                 | 1219                      | 222.85           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 7.8                   | 11.5                 | 1230                      | 224.76           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 6.4                   | 9.4                  | 1500                      | 274.20           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 6.2                   | 9.2                  | 1537                      | 280.89           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 5.5                   | 8.1                  | 1755                      | 320.79           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 5.1                   | 7.5                  | 1891                      | 345.60           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |

## 0.16 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 4.4                | 6.6               | 2159                   | 394.69        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |

## 0.25 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 202.9              | 20.0              | 75                     | 8.63          | 1505                 | 900                | 900               | -         | -     | PS052        | 56C          |
| 157.1              | 17.3              | 97                     | 11.14         | 1682                 | 977                | 977               | -         | -     | PS052        | 56C          |
| 145.8              | 16.9              | 105                    | 12.00         | 1770                 | 1001               | 1001              | -         | -     | PS052        | 56C          |
| 128.1              | 15.6              | 119                    | 13.66         | 1859                 | 1043               | 1043              | -         | -     | PS052        | 56C          |
| 114.6              | 15.9              | 133                    | 15.27         | 2124                 | 1081               | 1081              | -         | -     | PS052        | 56C          |
| 107.5              | 14.9              | 142                    | 16.29         | 2124                 | 1103               | 1103              | -         | -     | PS052        | 56C          |
| 93.9               | 13.1              | 163                    | 18.63         | 2124                 | 1151               | 1151              | -         | -     | PS052        | 56C          |
| 88.7               | 12.3              | 172                    | 19.73         | 2124                 | 1172               | 1172              | -         | -     | PS052        | 56C          |
| 83.2               | 12.5              | 184                    | 21.04         | 2301                 | 1196               | 1196              | -         | -     | PS052        | 56C          |
| 81.3               | 12.2              | 188                    | 21.53         | 2301                 | 1205               | 1205              | -         | -     | PS052        | 56C          |
| 72.7               | 11.0              | 210                    | 24.07         | 2301                 | 1247               | 1247              | -         | -     | PS052        | 56C          |
| 69.4               | 11.7              | 220                    | 25.20         | 2567                 | 1266               | 1266              | -         | -     | PS052        | 56C          |
| 67.9               | 11.4              | 225                    | 25.79         | 2567                 | 1275               | 1275              | -         | -     | PS052        | 56C          |
| 62.9               | 10.6              | 243                    | 27.81         | 2567                 | 1305               | 1305              | -         | -     | PS052        | 56C          |
| 58.3               | 9.8               | 262                    | 30.00         | 2567                 | 1336               | 1336              | -         | -     | PS052        | 56C/56C      |
| 53.8               | 9.3               | 284                    | 32.55         | 2655                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 53.0               | 9.2               | 288                    | 33.00         | 2655                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 51.3               | 8.9               | 298                    | 34.09         | 2655                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 47.9               | 9.2               | 319                    | 36.55         | 2921                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 45.2               | 8.6               | 338                    | 38.75         | 2921                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 43.9               | 8.9               | 348                    | 39.90         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 41.1               | 8.3               | 372                    | 42.63         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 38.0               | 7.7               | 402                    | 46.00         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 37.1               | 7.5               | 412                    | 47.20         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 33.5               | 6.8               | 456                    | 52.25         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 30.2               | 6.1               | 505                    | 57.86         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 29.5               | 6.0               | 519                    | 59.42         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 24.0               | 4.9               | 636                    | 72.83         | 3098                 | 1349               | 1349              | -         | -     | PS052        | 56C          |
| 47.9               | 10.0              | 309                    | 36.50         | 3098                 | 1349               | 1349              | CS053     | 63B4  | PS053        | 56C          |
| 37.1               | 7.8               | 399                    | 47.14         | 3098                 | 1349               | 1349              | CS053     | 63B4  | PS053        | 56C          |
| 30.3               | 6.3               | 489                    | 57.79         | 3098                 | 1349               | 1349              | CS053     | 63B4  | PS053        | 56C          |
| 27.5               | 5.7               | 539                    | 63.74         | 3098                 | 1349               | 1349              | CS053     | 63B4  | PS053        | 56C          |
| 23.6               | 4.9               | 628                    | 74.20         | 3098                 | 1349               | 1349              | CS053     | 63B4  | PS053        | 56C          |

## 0.25 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 22.4                  | 4.7                  | 661                       | 78.14            | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 18.3                  | 3.8                  | 811                       | 95.84            | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 14.9                  | 3.1                  | 994                       | 117.48           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 12.7                  | 2.7                  | 1163                      | 137.45           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 9.9                   | 2.1                  | 1503                      | 177.55           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 8.8                   | 1.8                  | 1680                      | 198.45           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 8.0                   | 1.7                  | 1842                      | 217.64           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 6.8                   | 1.4                  | 2169                      | 256.33           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 5.6                   | 1.2                  | 2659                      | 314.21           | 3098                    | 1349                  | 1349                 | CS053     | 63B4  | PS053        | 56C          |
| 218.8                 | 41.8                 | 70                        | 8.00             | 2921                    | 1517                  | 607                  | -         | -     | PS062        | 56C          |
| 196.2                 | 37.5                 | 78                        | 8.92             | 2921                    | 1572                  | 629                  | -         | -     | PS062        | 56C          |
| 183.3                 | 38.2                 | 83                        | 9.55             | 3186                    | 1606                  | 643                  | -         | -     | PS062        | 56C          |
| 164.4                 | 34.3                 | 93                        | 10.65            | 3186                    | 1664                  | 666                  | -         | -     | PS062        | 56C          |
| 149.5                 | 33.8                 | 102                       | 11.71            | 3452                    | 1716                  | 687                  | -         | -     | PS062        | 56C          |
| 134.0                 | 32.6                 | 114                       | 13.06            | 3717                    | 1778                  | 711                  | -         | -     | PS062        | 56C          |
| 131.0                 | 31.9                 | 117                       | 13.36            | 3717                    | 1791                  | 716                  | -         | -     | PS062        | 56C          |
| 109.8                 | 28.6                 | 139                       | 15.94            | 3983                    | 1896                  | 758                  | -         | -     | PS062        | 56C          |
| 108.3                 | 28.2                 | 141                       | 16.16            | 3983                    | 1905                  | 762                  | -         | -     | PS062        | 56C          |
| 90.7                  | 23.7                 | 168                       | 19.29            | 3983                    | 2016                  | 806                  | -         | -     | PS062        | 56C          |
| 89.5                  | 23.9                 | 171                       | 19.55            | 4071                    | 2025                  | 810                  | -         | -     | PS062        | 56C          |
| 75.5                  | 20.6                 | 202                       | 23.18            | 4160                    | 2138                  | 855                  | -         | -     | PS062        | 56C          |
| 73.7                  | 20.1                 | 207                       | 23.75            | 4160                    | 2155                  | 862                  | -         | -     | PS062        | 56C          |
| 69.6                  | 19.4                 | 219                       | 25.14            | 4248                    | 2195                  | 878                  | -         | -     | PS062        | 56C          |
| 63.3                  | 17.6                 | 241                       | 27.66            | 4248                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 51.6                  | 16.1                 | 296                       | 33.93            | 4779                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 47.9                  | 16.6                 | 319                       | 36.57            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 44.4                  | 15.4                 | 344                       | 39.38            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 40.1                  | 13.9                 | 381                       | 43.64            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 38.0                  | 13.2                 | 402                       | 46.10            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 36.2                  | 12.6                 | 422                       | 48.30            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 32.7                  | 11.4                 | 467                       | 53.53            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 31.8                  | 11.1                 | 480                       | 55.00            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 25.9                  | 9.0                  | 589                       | 67.47            | 5310                    | 2248                  | 899                  | -         | -     | PS062        | 56C          |
| 52.1                  | 18.5                 | 287                       | 33.57            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 46.3                  | 16.4                 | 323                       | 37.77            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 43.7                  | 15.5                 | 342                       | 40.05            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C/56C      |
| 35.6                  | 12.6                 | 420                       | 49.13            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 31.7                  | 11.2                 | 473                       | 55.29            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |

## 0.25 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 29.8                  | 10.6                 | 502                       | 58.72            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 26.6                  | 9.4                  | 563                       | 65.85            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 25.6                  | 9.1                  | 583                       | 68.25            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 23.8                  | 8.4                  | 629                       | 73.63            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 21.5                  | 7.6                  | 696                       | 81.43            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 17.5                  | 6.2                  | 854                       | 99.89            | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 13.8                  | 4.9                  | 1081                      | 126.43           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 11.6                  | 4.1                  | 1289                      | 150.85           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 9.6                   | 3.4                  | 1560                      | 182.53           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 9.5                   | 3.4                  | 1582                      | 185.05           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 8.0                   | 2.9                  | 1862                      | 217.79           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 6.6                   | 2.3                  | 2284                      | 267.16           | 5310                    | 2248                  | 899                  | -         | -     | PS063        | 56C          |
| 238.5                 | 76.0                 | 64                        | 7.34             | 4868                    | 2885                  | 824                  | -         | -     | PS082        | 56C          |
| 217.1                 | 75.4                 | 70                        | 8.06             | 5310                    | 2975                  | 850                  | -         | -     | PS082        | 56C          |
| 176.0                 | 66.3                 | 87                        | 9.94             | 5753                    | 3187                  | 911                  | -         | -     | PS082        | 56C          |
| 150.8                 | 61.2                 | 101                       | 11.61            | 6196                    | 3353                  | 958                  | -         | -     | PS082        | 56C          |
| 137.3                 | 59.6                 | 111                       | 12.75            | 6638                    | 3458                  | 988                  | -         | -     | PS082        | 56C          |
| 124.6                 | 54.9                 | 123                       | 14.04            | 6727                    | 3570                  | 1020                 | -         | -     | PS082        | 56C          |
| 113.4                 | 50.6                 | 135                       | 15.43            | 6815                    | 3682                  | 1052                 | -         | -     | PS082        | 56C          |
| 111.3                 | 49.6                 | 137                       | 15.73            | 6815                    | 3705                  | 1059                 | -         | -     | PS082        | 56C          |
| 101.2                 | 45.1                 | 151                       | 17.29            | 6815                    | 3822                  | 1092                 | -         | -     | PS082        | 56C          |
| 92.0                  | 41.0                 | 166                       | 19.03            | 6815                    | 3944                  | 1127                 | -         | -     | PS082        | 56C          |
| 86.9                  | 38.8                 | 176                       | 20.14            | 6815                    | 4018                  | 1148                 | -         | -     | PS082        | 56C          |
| 79.1                  | 36.7                 | 193                       | 22.13            | 7081                    | 4047                  | 1184                 | -         | -     | PS082        | 56C/56C      |
| 72.9                  | 33.8                 | 210                       | 24.00            | 7081                    | 4047                  | 1216                 | -         | -     | PS082        | 56C          |
| 67.2                  | 31.1                 | 227                       | 26.05            | 7081                    | 4047                  | 1249                 | -         | -     | PS082        | 56C          |
| 64.1                  | 33.4                 | 238                       | 27.29            | 7966                    | 4047                  | 1268                 | -         | -     | PS082        | 56C          |
| 61.0                  | 31.8                 | 250                       | 28.67            | 7966                    | 4047                  | 1289                 | -         | -     | PS082        | 56C          |
| 59.1                  | 30.8                 | 258                       | 29.60            | 7966                    | 4047                  | 1302                 | -         | -     | PS082        | 56C          |
| 55.1                  | 31.9                 | 277                       | 31.78            | 8851                    | 4047                  | 1333                 | -         | -     | PS082        | 56C          |
| 50.1                  | 29.0                 | 305                       | 34.91            | 8851                    | 4047                  | 1374                 | -         | -     | PS082        | 56C/56C      |
| 49.3                  | 28.6                 | 310                       | 35.50            | 8851                    | 4047                  | 1382                 | -         | -     | PS082        | 56C          |
| 40.6                  | 23.5                 | 376                       | 43.05            | 8851                    | 4047                  | 1471                 | -         | -     | PS082        | 56C          |
| 34.8                  | 20.2                 | 439                       | 50.25            | 8851                    | 4047                  | 1547                 | -         | -     | PS082        | 56C/56C      |
| 32.2                  | 18.7                 | 474                       | 54.27            | 8851                    | 4047                  | 1587                 | -         | -     | PS082        | 56C          |
| 28.2                  | 16.4                 | 541                       | 61.98            | 8851                    | 4047                  | 1619                 | -         | -     | PS082        | 56C          |
| 25.9                  | 15.3                 | 577                       | 67.52            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 23.6                  | 14.0                 | 634                       | 74.18            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |

## 0.25 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 21.4                  | 12.7                 | 698                       | 81.71            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 19.1                  | 11.3                 | 782                       | 91.49            | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 17.4                  | 10.3                 | 860                       | 100.62           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 14.9                  | 8.8                  | 1002                      | 117.17           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 13.6                  | 8.0                  | 1100                      | 128.73           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |
| 12.8                  | 7.6                  | 1165                      | 136.34           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 11.0                  | 6.5                  | 1357                      | 158.76           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 9.5                   | 5.6                  | 1580                      | 184.88           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 8.6                   | 5.1                  | 1736                      | 203.11           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |
| 8.5                   | 5.0                  | 1755                      | 205.34           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 7.7                   | 4.6                  | 1932                      | 226.04           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 7.0                   | 4.1                  | 2141                      | 250.50           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 6.6                   | 3.9                  | 2275                      | 266.13           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 6.0                   | 3.5                  | 2499                      | 292.36           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C/56C      |
| 5.5                   | 3.3                  | 2699                      | 315.73           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 4.9                   | 2.9                  | 3082                      | 360.58           | 8851                    | 4047                  | 1619                 | -         | -     | PS083        | 56C          |
| 92.1                  | 74.7                 | 166                       | 19.00            | 12391                   | 4803                  | 1372                 | -         | -     | PS102        | 56C          |
| 84.0                  | 68.1                 | 182                       | 20.83            | 12391                   | 4946                  | 1414                 | -         | -     | PS102        | 56C          |
| 72.1                  | 62.6                 | 212                       | 24.28            | 13276                   | 4946                  | 1487                 | -         | -     | PS102        | 56C          |
| 66.5                  | 57.8                 | 230                       | 26.33            | 13276                   | 4946                  | 1527                 | -         | -     | PS102        | 56C          |
| 58.6                  | 50.9                 | 261                       | 29.87            | 13276                   | 4946                  | 1592                 | -         | -     | PS102        | 56C          |
| 54.0                  | 46.9                 | 283                       | 32.40            | 13276                   | 4946                  | 1635                 | -         | -     | PS102        | 56C          |
| 45.7                  | 39.7                 | 334                       | 38.30            | 13276                   | 4946                  | 1727                 | -         | -     | PS102        | 56C          |
| 41.2                  | 33.4                 | 371                       | 42.53            | 12391                   | 4946                  | 1787                 | -         | -     | PS102        | 56C          |
| 39.8                  | 30.0                 | 384                       | 44.00            | 11506                   | 4946                  | 1807                 | -         | -     | PS102        | 56C          |
| 37.1                  | 34.4                 | 411                       | 47.13            | 14161                   | 4946                  | 1848                 | -         | -     | PS102        | 56C          |
| 31.7                  | 23.9                 | 481                       | 55.14            | 11506                   | 4946                  | 1946                 | -         | -     | PS102        | 56C          |
| 29.5                  | 27.3                 | 519                       | 59.40            | 14161                   | 4946                  | 1994                 | -         | -     | PS102        | 56C          |
| 25.8                  | 23.9                 | 592                       | 67.84            | 14161                   | 4946                  | 2023                 | -         | -     | PS102        | 56C          |
| 21.5                  | 20.4                 | 696                       | 81.39            | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 19.5                  | 18.5                 | 767                       | 89.77            | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 17.5                  | 16.5                 | 856                       | 100.15           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 15.8                  | 15.0                 | 945                       | 110.55           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 14.4                  | 13.7                 | 1037                      | 121.29           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 12.4                  | 11.7                 | 1207                      | 141.24           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 10.1                  | 9.5                  | 1485                      | 173.78           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 9.3                   | 8.8                  | 1611                      | 188.51           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |
| 7.9                   | 7.4                  | 1905                      | 222.85           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C          |

## 0.25 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 7.8                | 7.4               | 1921                   | 224.76        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |
| 6.4                | 6.0               | 2344                   | 274.20        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |
| 6.2                | 5.9               | 2401                   | 280.89        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |
| 5.5                | 5.2               | 2742                   | 320.79        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |
| 5.1                | 4.8               | 2954                   | 345.60        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |
| 4.4                | 4.2               | 3374                   | 394.69        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |

## 0.33 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |           | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-----------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor     | Reducer      | NEMA C-input |
| 24.0               | 3.7               | 831                    | 72.83         | 3098                 | 1349               | 1349              | CS052     | 63D4/71A4 | PS052        | 56C          |
| 23.6               | 3.7               | 829                    | 74.20         | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 22.4               | 3.5               | 873                    | 78.14         | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 18.3               | 2.9               | 1071                   | 95.84         | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 14.9               | 2.4               | 1312                   | 117.48        | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 12.7               | 2.0               | 1536                   | 137.45        | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 9.9                | 1.6               | 1983                   | 177.55        | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 8.8                | 1.4               | 2217                   | 198.45        | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 8.0                | 1.3               | 2431                   | 217.64        | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 6.8                | 1.1               | 2864                   | 256.33        | 3098                 | 1349               | 1349              | CS053     | 63D4/71A4 | PS053        | 56C          |
| 13.8               | 3.8               | 1412                   | 126.43        | 5310                 | 2248               | 899               | CS063     | 63D4/71A4 | PS063        | 56C          |
| 11.6               | 3.2               | 1685                   | 150.85        | 5310                 | 2248               | 899               | CS063     | 63D4/71A4 | PS063        | 56C          |
| 9.6                | 2.6               | 2039                   | 182.53        | 5310                 | 2248               | 899               | CS063     | 63D4/71A4 | PS063        | 56C          |
| 9.5                | 2.6               | 2067                   | 185.05        | 5310                 | 2248               | 899               | CS063     | 63D4/71A4 | PS063        | 56C          |
| 8.0                | 2.2               | 2433                   | 217.79        | 5310                 | 2248               | 899               | CS063     | 63D4/71A4 | PS063        | 56C          |
| 6.6                | 1.8               | 2985                   | 267.16        | 5310                 | 2248               | 899               | CS063     | 63D4/71A4 | PS063        | 56C          |
| 8.6                | 3.9               | 2269                   | 203.11        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 8.5                | 3.9               | 2294                   | 205.34        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 7.7                | 3.5               | 2525                   | 226.04        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 7.0                | 3.2               | 2798                   | 250.50        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 6.6                | 3.0               | 2973                   | 266.13        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 6.0                | 2.7               | 3266                   | 292.36        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 5.5                | 2.5               | 3527                   | 315.73        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 4.9                | 2.2               | 4028                   | 360.58        | 8851                 | 4047               | 1619              | CS083     | 63D4/71A4 | PS083        | 56C          |
| 5.5                | 4.0               | 3584                   | 320.79        | 14161                | 4946               | 2023              | CS103     | 63D4/71A4 | PS103        | 56C          |
| 5.1                | 3.7               | 3861                   | 345.60        | 14161                | 4946               | 2023              | CS103     | 63D4/71A4 | PS103        | 56C          |
| 4.4                | 3.2               | 4409                   | 394.69        | 14161                | 4946               | 2023              | CS103     | 63D4/71A4 | PS103        | 56C          |

## 0.5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 38.0                  | 3.9                  | 795                       | 46.00            | 3098                    | 1349                  | 1349                 | CS052     | 71B4  | PS052        | 56C          |
| 37.1                  | 3.8                  | 816                       | 47.20            | 3098                    | 1349                  | 1349                 | CS052     | 71B4  | PS052        | 56C          |
| 33.5                  | 3.4                  | 903                       | 52.25            | 3098                    | 1349                  | 1349                 | CS052     | 71B4  | PS052        | 56C          |
| 30.2                  | 3.1                  | 1000                      | 57.86            | 3098                    | 1349                  | 1349                 | CS052     | 71B4  | PS052        | 56C          |
| 29.5                  | 3.0                  | 1027                      | 59.42            | 3098                    | 1349                  | 1349                 | CS052     | 71B4  | PS052        | 56C          |
| 24.0                  | 2.5                  | 1259                      | 72.83            | 3098                    | 1349                  | 1349                 | CS052     | 71B4  | PS052        | 56C          |
| 37.1                  | 3.9                  | 798                       | 47.14            | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 30.3                  | 3.2                  | 978                       | 57.79            | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 27.5                  | 2.9                  | 1079                      | 63.74            | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 23.6                  | 2.5                  | 1256                      | 74.20            | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 22.4                  | 2.3                  | 1323                      | 78.14            | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 18.3                  | 1.9                  | 1622                      | 95.84            | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 14.9                  | 1.6                  | 1989                      | 117.48           | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 12.7                  | 1.3                  | 2327                      | 137.45           | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 9.9                   | 1.0                  | 3005                      | 177.55           | 3098                    | 1349                  | 1349                 | CS053     | 71B4  | PS053        | 56C          |
| 21.5                  | 3.9                  | 1378                      | 81.43            | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 17.5                  | 3.1                  | 1691                      | 99.89            | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 13.8                  | 2.5                  | 2140                      | 126.43           | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 11.6                  | 2.1                  | 2553                      | 150.85           | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 9.6                   | 1.7                  | 3090                      | 182.53           | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 9.5                   | 1.7                  | 3132                      | 185.05           | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 8.0                   | 1.4                  | 3687                      | 217.79           | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 6.6                   | 1.2                  | 4522                      | 267.16           | 5310                    | 2248                  | 899                  | CS063     | 71B4  | PS063        | 56C          |
| 12.8                  | 3.8                  | 2308                      | 136.34           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 11.0                  | 3.3                  | 2687                      | 158.76           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 9.5                   | 2.8                  | 3129                      | 184.88           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 8.6                   | 2.6                  | 3438                      | 203.11           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 8.5                   | 2.5                  | 3476                      | 205.34           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 7.7                   | 2.3                  | 3826                      | 226.04           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 7.0                   | 2.1                  | 4240                      | 250.50           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 6.6                   | 2.0                  | 4505                      | 266.13           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 6.0                   | 1.8                  | 4949                      | 292.36           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 5.5                   | 1.7                  | 5344                      | 315.73           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 4.9                   | 1.5                  | 6103                      | 360.58           | 8851                    | 4047                  | 1619                 | CS083     | 71B4  | PS083        | 56C          |
| 7.9                   | 3.8                  | 3772                      | 222.85           | 14161                   | 4946                  | 2023                 | CS103     | 71B4  | PS103        | 56C          |
| 7.8                   | 3.7                  | 3804                      | 224.76           | 14161                   | 4946                  | 2023                 | CS103     | 71B4  | PS103        | 56C          |
| 6.4                   | 3.1                  | 4641                      | 274.20           | 14161                   | 4946                  | 2023                 | CS103     | 71B4  | PS103        | 56C          |
| 6.2                   | 3.0                  | 4755                      | 280.89           | 14161                   | 4946                  | 2023                 | CS103     | 71B4  | PS103        | 56C          |

## 0.5 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 6.0                | 2.8               | 4998                   | 292.36        | 14161                | 4946               | 2023              | -         | -     | PS103        | 56C          |
| 5.5                | 2.6               | 5430                   | 320.79        | 14161                | 4946               | 2023              | CS103     | 71B4  | PS103        | 56C          |
| 5.1                | 2.4               | 5850                   | 345.60        | 14161                | 4946               | 2023              | CS103     | 71B4  | PS103        | 56C          |
| 4.4                | 2.1               | 6681                   | 394.69        | 14161                | 4946               | 2023              | CS103     | 71B4  | PS103        | 56C          |

## 0.75 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |           | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-----------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor     | Reducer      | NEMA C-input |
| 72.7               | 3.7               | 624                    | 24.07         | 2301                 | 1186               | 1186              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 69.4               | 3.9               | 653                    | 25.20         | 2567                 | 1202               | 1202              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 67.9               | 3.8               | 669                    | 25.79         | 2567                 | 1209               | 1209              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 62.9               | 3.6               | 721                    | 27.81         | 2567                 | 1234               | 1234              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 58.3               | 3.3               | 778                    | 30.00         | 2567                 | 1260               | 1260              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 53.8               | 3.1               | 844                    | 32.55         | 2655                 | 1288               | 1288              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 53.0               | 3.1               | 856                    | 33.00         | 2655                 | 1293               | 1293              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 51.3               | 3.0               | 884                    | 34.09         | 2655                 | 1304               | 1304              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 47.9               | 3.1               | 948                    | 36.55         | 2921                 | 1328               | 1328              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 45.2               | 2.9               | 1005                   | 38.75         | 2921                 | 1348               | 1348              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 43.9               | 3.0               | 1035                   | 39.90         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 41.1               | 2.8               | 1105                   | 42.63         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 38.0               | 2.6               | 1193                   | 46.00         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 37.1               | 2.5               | 1224                   | 47.20         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 33.5               | 2.3               | 1355                   | 52.25         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 30.2               | 2.1               | 1500                   | 57.86         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 29.5               | 2.0               | 1541                   | 59.42         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 24.0               | 1.6               | 1889                   | 72.83         | 3098                 | 1349               | 1349              | CS052     | 71C4/80A4 | PS052        | 56C          |
| 47.9               | 3.3               | 927                    | 36.50         | 3098                 | 1330               | 1330              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 37.1               | 2.6               | 1197                   | 47.14         | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 30.3               | 2.1               | 1467                   | 57.79         | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 27.5               | 1.9               | 1618                   | 63.74         | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 23.6               | 1.6               | 1884                   | 74.20         | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 22.4               | 1.6               | 1984                   | 78.14         | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 18.3               | 1.3               | 2433                   | 95.84         | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 14.9               | 1.0               | 2983                   | 117.48        | 3098                 | 1349               | 1349              | CS053     | 71C4/80A4 | PS053        | 56C          |
| 32.7               | 3.8               | 1388                   | 53.53         | 5310                 | 2248               | 899               | CS062     | 71C4/80A4 | PS062        | 56C          |
| 31.8               | 3.7               | 1426                   | 55.00         | 5310                 | 2248               | 899               | CS062     | 71C4/80A4 | PS062        | 56C          |
| 25.9               | 3.0               | 1749                   | 67.47         | 5310                 | 2248               | 899               | CS062     | 71C4/80A4 | PS062        | 56C          |
| 31.7               | 3.8               | 1404                   | 55.29         | 5310                 | 2248               | 899               | CS063     | 71C4/80A4 | PS063        | 56C          |



## 0.75 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |           | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-----------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor     | Reducer      | NEMA C-input |
| 29.8                  | 3.6                  | 1491                      | 58.72            | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 26.6                  | 3.2                  | 1672                      | 65.85            | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 25.6                  | 3.1                  | 1733                      | 68.25            | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 23.8                  | 2.8                  | 1869                      | 73.63            | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 21.5                  | 2.6                  | 2068                      | 81.43            | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 17.5                  | 2.1                  | 2536                      | 99.89            | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 13.8                  | 1.7                  | 3210                      | 126.43           | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 11.6                  | 1.4                  | 3830                      | 150.85           | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 9.6                   | 1.1                  | 4634                      | 182.53           | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 9.5                   | 1.1                  | 4698                      | 185.05           | 5310                    | 2248                  | 899                  | CS063     | 71C4/80A4 | PS063        | 56C          |
| 19.1                  | 3.8                  | 2323                      | 91.49            | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 17.4                  | 3.5                  | 2555                      | 100.62           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 14.9                  | 3.0                  | 2975                      | 117.17           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 13.6                  | 2.7                  | 3268                      | 128.73           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 12.8                  | 2.6                  | 3462                      | 136.34           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 11.0                  | 2.2                  | 4031                      | 158.76           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 9.5                   | 1.9                  | 4694                      | 184.88           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 8.6                   | 1.7                  | 5157                      | 203.11           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 8.5                   | 1.7                  | 5214                      | 205.34           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 7.7                   | 1.5                  | 5739                      | 226.04           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 7.0                   | 1.4                  | 6360                      | 250.50           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 6.6                   | 1.3                  | 6757                      | 266.13           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 6.0                   | 1.2                  | 7423                      | 292.36           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 5.5                   | 1.1                  | 8016                      | 315.73           | 8851                    | 4047                  | 1619                 | CS083     | 71C4/80A4 | PS083        | 56C          |
| 12.4                  | 3.9                  | 3586                      | 141.24           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 10.1                  | 3.2                  | 4412                      | 173.78           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 9.3                   | 3.0                  | 4786                      | 188.51           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 8.6                   | 2.7                  | 5208                      | 203.11           | 14161                   | 4946                  | 2023                 | -         | -         | PS103        | 56C          |
| 7.9                   | 2.5                  | 5658                      | 222.85           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 7.8                   | 2.5                  | 5707                      | 224.76           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 6.4                   | 2.0                  | 6962                      | 274.20           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 6.2                   | 2.0                  | 7132                      | 280.89           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 6.0                   | 1.9                  | 7497                      | 292.36           | 14161                   | 4946                  | 2023                 | -         | -         | PS103        | 56C          |
| 5.5                   | 1.7                  | 8145                      | 320.79           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 5.1                   | 1.6                  | 8775                      | 345.60           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 4.4                   | 1.4                  | 10021                     | 394.69           | 14161                   | 4946                  | 2023                 | CS103     | 71C4/80A4 | PS103        | 56C          |
| 6.2                   | 3.7                  | 7112                      | 280.10           | 26552                   | 6744                  | 2518                 | CS123     | 71C4/80A4 | -            | -            |
| 5.8                   | 3.5                  | 7646                      | 301.16           | 26552                   | 6744                  | 2518                 | CS123     | 71C4/80A4 | -            | -            |

## 0.75 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |           | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-----------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor     | Reducer      | NEMA C-input |
| 5.1                | 3.0               | 8732                   | 343.93        | 26552                | 6744               | 2518              | CS123     | 71C4/80A4 | -            | -            |

## 1 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |               |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|---------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 128.1              | 3.9               | 472                    | 13.66         | 1859                 | 991                | 991               | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 114.6              | 4.0               | 533                    | 15.27         | 2124                 | 1022               | 1022              | -         | -     | PS052        | 56C/143/145TC |
| 107.5              | 3.8               | 563                    | 16.29         | 2124                 | 1041               | 1041              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 93.9               | 3.3               | 644                    | 18.63         | 2124                 | 1080               | 1080              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 88.7               | 3.1               | 682                    | 19.73         | 2124                 | 1097               | 1097              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 83.2               | 3.2               | 727                    | 21.04         | 2301                 | 1116               | 1116              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 81.3               | 3.1               | 744                    | 21.53         | 2301                 | 1122               | 1122              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 72.7               | 2.8               | 832                    | 24.07         | 2301                 | 1156               | 1156              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 69.4               | 2.9               | 871                    | 25.20         | 2567                 | 1169               | 1169              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 67.9               | 2.9               | 892                    | 25.79         | 2567                 | 1176               | 1176              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 62.9               | 2.7               | 961                    | 27.81         | 2567                 | 1199               | 1199              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 58.3               | 2.5               | 1037                   | 30.00         | 2567                 | 1222               | 1222              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 53.8               | 2.4               | 1125                   | 32.55         | 2655                 | 1246               | 1246              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 53.0               | 2.3               | 1141                   | 33.00         | 2655                 | 1250               | 1250              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 51.3               | 2.3               | 1179                   | 34.09         | 2655                 | 1260               | 1260              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 47.9               | 2.3               | 1264                   | 36.55         | 2921                 | 1281               | 1281              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 45.2               | 2.2               | 1340                   | 38.75         | 2921                 | 1298               | 1298              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 43.9               | 2.2               | 1379                   | 39.90         | 3098                 | 1307               | 1307              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 41.1               | 2.1               | 1474                   | 42.63         | 3098                 | 1326               | 1326              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 38.0               | 1.9               | 1590                   | 46.00         | 3098                 | 1348               | 1348              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 37.1               | 1.9               | 1632                   | 47.20         | 3098                 | 1349               | 1349              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 33.5               | 1.7               | 1806                   | 52.25         | 3098                 | 1349               | 1349              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 30.2               | 1.5               | 2001                   | 57.86         | 3098                 | 1349               | 1349              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 29.5               | 1.5               | 2054                   | 59.42         | 3098                 | 1349               | 1349              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 24.0               | 1.2               | 2518                   | 72.83         | 3098                 | 1349               | 1349              | CS052     | 80B4  | PS052        | 56C/143/145TC |
| 47.9               | 2.5               | 1236                   | 36.50         | 3098                 | 1284               | 1284              | CS053     | 80B4  | PS053        | 56C/143/145TC |
| 37.1               | 1.9               | 1596                   | 47.14         | 3098                 | 1349               | 1349              | CS053     | 80B4  | PS053        | 56C/143/145TC |
| 30.3               | 1.6               | 1956                   | 57.79         | 3098                 | 1349               | 1349              | CS053     | 80B4  | PS053        | 56C/143/145TC |
| 27.5               | 1.4               | 2158                   | 63.74         | 3098                 | 1349               | 1349              | CS053     | 80B4  | PS053        | 56C/143/145TC |
| 23.6               | 1.2               | 2512                   | 74.20         | 3098                 | 1349               | 1349              | CS053     | 80B4  | PS053        | 56C/143/145TC |
| 22.4               | 1.2               | 2645                   | 78.14         | 3098                 | 1349               | 1349              | CS053     | 80B4  | PS053        | 56C/143/145TC |
| 44.4               | 3.9               | 1361                   | 39.38         | 5310                 | 2248               | 899               | CS062     | 80B4  | PS062        | 56C/143/145TC |
| 40.1               | 3.5               | 1509                   | 43.64         | 5310                 | 2248               | 899               | CS062     | 80B4  | PS062        | 56C/143/145TC |

## 1 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |               |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|---------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 38.0                  | 3.3                  | 1594                      | 46.10            | 5310                    | 2248                  | 899                  | CS062     | 80B4  | PS062        | 56C/143/145TC |
| 36.2                  | 3.2                  | 1670                      | 48.30            | 5310                    | 2248                  | 899                  | CS062     | 80B4  | PS062        | 56C/143/145TC |
| 32.7                  | 2.9                  | 1851                      | 53.53            | 5310                    | 2248                  | 899                  | CS062     | 80B4  | PS062        | 56C/143/145TC |
| 31.8                  | 2.8                  | 1902                      | 55.00            | 5310                    | 2248                  | 899                  | CS062     | 80B4  | PS062        | 56C/143/145TC |
| 25.9                  | 2.3                  | 2333                      | 67.47            | 5310                    | 2248                  | 899                  | CS062     | 80B4  | PS062        | 56C/143/145TC |
| 43.7                  | 3.9                  | 1356                      | 40.05            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 35.6                  | 3.2                  | 1663                      | 49.13            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 31.7                  | 2.8                  | 1872                      | 55.29            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 29.8                  | 2.7                  | 1988                      | 58.72            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 26.6                  | 2.4                  | 2229                      | 65.85            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 25.6                  | 2.3                  | 2310                      | 68.25            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 23.8                  | 2.1                  | 2492                      | 73.63            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 21.5                  | 1.9                  | 2757                      | 81.43            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 17.5                  | 1.6                  | 3382                      | 99.89            | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 13.8                  | 1.2                  | 4280                      | 126.43           | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 11.6                  | 1.0                  | 5107                      | 150.85           | 5310                    | 2248                  | 899                  | CS063     | 80B4  | PS063        | 56C/143/145TC |
| 25.9                  | 3.9                  | 2286                      | 67.52            | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 23.6                  | 3.5                  | 2511                      | 74.18            | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 21.4                  | 3.2                  | 2766                      | 81.71            | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 19.1                  | 2.9                  | 3097                      | 91.49            | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 17.4                  | 2.6                  | 3406                      | 100.62           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 14.9                  | 2.2                  | 3967                      | 117.17           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 13.6                  | 2.0                  | 4358                      | 128.73           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 12.8                  | 1.9                  | 4616                      | 136.34           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 11.0                  | 1.6                  | 5375                      | 158.76           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 9.5                   | 1.4                  | 6259                      | 184.88           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 8.6                   | 1.3                  | 6876                      | 203.11           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 8.5                   | 1.3                  | 6951                      | 205.34           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 7.7                   | 1.2                  | 7652                      | 226.04           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 7.0                   | 1.0                  | 8480                      | 250.50           | 8851                    | 4047                  | 1619                 | CS083     | 80B4  | PS083        | 56C/143/145TC |
| 15.8                  | 3.8                  | 3742                      | 110.55           | 14161                   | 4946                  | 2023                 | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 14.4                  | 3.4                  | 4106                      | 121.29           | 14161                   | 4946                  | 2023                 | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 13.6                  | 3.2                  | 4401                      | 128.73           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C/143/145TC |
| 12.4                  | 3.0                  | 4782                      | 141.24           | 14161                   | 4946                  | 2023                 | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 10.1                  | 2.4                  | 5883                      | 173.78           | 14161                   | 4946                  | 2023                 | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 9.3                   | 2.2                  | 6382                      | 188.51           | 14161                   | 4946                  | 2023                 | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 8.6                   | 2.0                  | 6945                      | 203.11           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C/143/145TC |
| 7.9                   | 1.9                  | 7544                      | 222.85           | 14161                   | 4946                  | 2023                 | CS103     | 80B4  | PS103        | 56C/143/145TC |

## 1 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |               |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|---------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 7.8                | 1.9               | 7609                   | 224.76        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 6.4                | 1.5               | 9282                   | 274.20        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 6.2                | 1.5               | 9509                   | 280.89        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 6.0                | 1.4               | 9898                   | 292.36        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 5.5                | 1.3               | 10860                  | 320.79        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 5.1                | 1.2               | 11700                  | 345.60        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 4.4                | 1.1               | 13362                  | 394.69        | 14161                | 4946               | 2023              | CS103     | 80B4  | PS103        | 56C/143/145TC |
| 9.0                | 4.0               | 6653                   | 194.59        | 26552                | 6744               | 2518              | -         | -     | PS123        | 143/145TC     |
| 8.1                | 3.6               | 7299                   | 215.60        | 26552                | 6744               | 2518              | CS123     | 80B4  | PS123        | 143/145TC     |
| 7.3                | 3.3               | 8089                   | 238.93        | 26552                | 6744               | 2518              | CS123     | 80B4  | PS123        | 143/145TC     |
| 6.8                | 3.1               | 8651                   | 255.54        | 26552                | 6744               | 2518              | CS123     | 80B4  | PS123        | 143/145TC     |
| 6.2                | 2.8               | 9482                   | 280.10        | 26552                | 6744               | 2518              | CS123     | 80B4  | PS123        | 143/145TC     |
| 5.8                | 2.6               | 10195                  | 301.16        | 26552                | 6744               | 2518              | CS123     | 80B4  | PS123        | 143/145TC     |
| 5.1                | 2.3               | 11643                  | 343.93        | 26552                | 6744               | 2518              | CS123     | 80B4  | PS123        | 143/145TC     |

## 1.5 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |               |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|---------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 202.9              | 3.4               | 447                    | 8.63          | 1505                 | 845                | 845               | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 157.1              | 2.9               | 578                    | 11.14         | 1682                 | 906                | 906               | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 145.8              | 2.8               | 622                    | 12.00         | 1770                 | 924                | 924               | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 128.1              | 2.6               | 708                    | 13.66         | 1859                 | 956                | 956               | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 114.6              | 2.7               | 792                    | 15.27         | 2124                 | 983                | 983               | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 107.5              | 2.5               | 845                    | 16.29         | 2124                 | 999                | 999               | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 93.9               | 2.2               | 966                    | 18.63         | 2124                 | 1032               | 1032              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 88.7               | 2.1               | 1023                   | 19.73         | 2124                 | 1046               | 1046              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 83.2               | 2.1               | 1091                   | 21.04         | 2301                 | 1062               | 1062              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 81.3               | 2.1               | 1117                   | 21.53         | 2301                 | 1068               | 1068              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 72.7               | 1.8               | 1248                   | 24.07         | 2301                 | 1094               | 1094              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 69.4               | 2.0               | 1307                   | 25.20         | 2567                 | 1105               | 1105              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 67.9               | 1.9               | 1337                   | 25.79         | 2567                 | 1111               | 1111              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 62.9               | 1.8               | 1442                   | 27.81         | 2567                 | 1128               | 1128              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 58.3               | 1.6               | 1556                   | 30.00         | 2567                 | 1145               | 1145              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 53.8               | 1.6               | 1688                   | 32.55         | 2655                 | 1163               | 1163              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 53.0               | 1.6               | 1711                   | 33.00         | 2655                 | 1166               | 1166              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 51.3               | 1.5               | 1768                   | 34.09         | 2655                 | 1173               | 1173              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 47.9               | 1.5               | 1895                   | 36.55         | 2921                 | 1188               | 1188              | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 45.2               | 1.5               | 2010                   | 38.75         | 2921                 | 1200               | 1200              | CS052     | 90S4  | PS052        | 56C/143/145TC |

## 1.5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |               |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|---------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 43.9                  | 1.5                  | 2069                      | 39.90            | 3098                    | 1205                  | 1205                 | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 41.1                  | 1.4                  | 2211                      | 42.63            | 3098                    | 1218                  | 1218                 | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 38.0                  | 1.3                  | 2386                      | 46.00            | 3098                    | 1231                  | 1231                 | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 37.1                  | 1.3                  | 2448                      | 47.20            | 3098                    | 1236                  | 1236                 | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 33.5                  | 1.1                  | 2710                      | 52.25            | 3098                    | 1251                  | 1251                 | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 30.2                  | 1.0                  | 3001                      | 57.86            | 3098                    | 1265                  | 1265                 | CS052     | 90S4  | PS052        | 56C/143/145TC |
| 29.5                  | 1.0                  | 3081                      | 59.42            | 3098                    | 1268                  | 1268                 | CS052     | 90S4  | -            | -             |
| 47.9                  | 1.7                  | 1853                      | 36.50            | 3098                    | 1193                  | 1193                 | CS053     | 90S4  | PS053        | 56C/143/145TC |
| 37.1                  | 1.3                  | 2394                      | 47.14            | 3098                    | 1243                  | 1243                 | CS053     | 90S4  | PS053        | 56C/143/145TC |
| 30.3                  | 1.1                  | 2934                      | 57.79            | 3098                    | 1274                  | 1274                 | CS053     | 90S4  | PS053        | 56C/143/145TC |
| 90.7                  | 4.0                  | 1000                      | 19.29            | 3983                    | 1882                  | 753                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 89.5                  | 4.0                  | 1024                      | 19.55            | 4071                    | 1887                  | 755                  | -         | -     | PS062        | 56C/143/145TC |
| 75.5                  | 3.5                  | 1202                      | 23.18            | 4160                    | 1977                  | 791                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 73.7                  | 3.4                  | 1232                      | 23.75            | 4160                    | 1990                  | 796                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 69.6                  | 3.3                  | 1304                      | 25.14            | 4248                    | 2020                  | 808                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 63.3                  | 3.0                  | 1434                      | 27.66            | 4248                    | 2070                  | 828                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 58.3                  | 2.8                  | 1571                      | 30.00            | 4425                    | 2111                  | 844                  | -         | -     | PS062        | 56C/143/145TC |
| 51.6                  | 2.7                  | 1759                      | 33.93            | 4779                    | 2178                  | 871                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 47.9                  | 2.8                  | 1897                      | 36.57            | 5310                    | 2218                  | 887                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 44.4                  | 2.6                  | 2042                      | 39.38            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 40.1                  | 2.3                  | 2263                      | 43.64            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 38.0                  | 2.2                  | 2391                      | 46.10            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 36.2                  | 2.1                  | 2505                      | 48.30            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 32.7                  | 1.9                  | 2776                      | 53.53            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 31.8                  | 1.9                  | 2852                      | 55.00            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 25.9                  | 1.5                  | 3499                      | 67.47            | 5310                    | 2248                  | 899                  | CS062     | 90S4  | PS062        | 56C/143/145TC |
| 52.1                  | 3.1                  | 1705                      | 33.57            | 5310                    | 2179                  | 871                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 46.3                  | 2.8                  | 1918                      | 37.77            | 5310                    | 2242                  | 897                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 43.7                  | 2.6                  | 2034                      | 40.05            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 35.6                  | 2.1                  | 2495                      | 49.13            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 31.7                  | 1.9                  | 2807                      | 55.29            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 29.8                  | 1.8                  | 2982                      | 58.72            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 26.6                  | 1.6                  | 3344                      | 65.85            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 25.6                  | 1.5                  | 3466                      | 68.25            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 23.8                  | 1.4                  | 3739                      | 73.63            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 21.5                  | 1.3                  | 4135                      | 81.43            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 17.5                  | 1.0                  | 5072                      | 99.89            | 5310                    | 2248                  | 899                  | CS063     | 90S4  | PS063        | 56C/143/145TC |
| 40.6                  | 4.0                  | 2233                      | 43.05            | 8851                    | 4047                  | 1427                 | CS082     | 90S4  | PS082        | 56C/143/145TC |

## 1.5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |               |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|---------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 34.8                  | 3.4                  | 2606                      | 50.25            | 8851                    | 4047                  | 1496                 | CS082     | 90S4  | PS082        | 56C/143/145TC |
| 32.2                  | 3.1                  | 2814                      | 54.27            | 8851                    | 4047                  | 1531                 | CS082     | 90S4  | PS082        | 56C/143/145TC |
| 28.2                  | 2.8                  | 3214                      | 61.98            | 8851                    | 4047                  | 1593                 | CS082     | 90S4  | PS082        | 56C/143/145TC |
| 25.9                  | 2.6                  | 3429                      | 67.52            | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 23.6                  | 2.3                  | 3767                      | 74.18            | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 21.4                  | 2.1                  | 4149                      | 81.71            | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 19.1                  | 1.9                  | 4646                      | 91.49            | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 17.4                  | 1.7                  | 5110                      | 100.62           | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 14.9                  | 1.5                  | 5950                      | 117.17           | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 13.6                  | 1.4                  | 6537                      | 128.73           | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 12.8                  | 1.3                  | 6923                      | 136.34           | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 11.0                  | 1.1                  | 8062                      | 158.76           | 8851                    | 4047                  | 1619                 | CS083     | 90S4  | PS083        | 56C/143/145TC |
| 31.7                  | 4.0                  | 2888                      | 55.14            | 11506                   | 4946                  | 1900                 | -         | -     | PS102        | 56C/143/145TC |
| 25.8                  | 4.0                  | 3553                      | 67.84            | 14161                   | 4946                  | 2023                 | -         | -     | PS102        | 56C/143/145TC |
| 23.6                  | 3.7                  | 3805                      | 74.18            | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C/143/145TC |
| 21.5                  | 3.4                  | 4133                      | 81.39            | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 19.5                  | 3.1                  | 4558                      | 89.77            | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 17.5                  | 2.8                  | 5085                      | 100.15           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 15.8                  | 2.5                  | 5614                      | 110.55           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 14.4                  | 2.3                  | 6159                      | 121.29           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 13.6                  | 2.1                  | 6602                      | 128.73           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C/143/145TC |
| 12.4                  | 2.0                  | 7172                      | 141.24           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 10.1                  | 1.6                  | 8825                      | 173.78           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 9.3                   | 1.5                  | 9573                      | 188.51           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 8.6                   | 1.4                  | 10314                     | 203.11           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 7.9                   | 1.3                  | 11317                     | 222.85           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 7.8                   | 1.2                  | 11413                     | 224.76           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 6.4                   | 1.0                  | 13924                     | 274.20           | 14161                   | 4946                  | 2023                 | CS103     | 90S4  | PS103        | 56C/143/145TC |
| 13.5                  | 4.0                  | 6670                      | 130.04           | 26552                   | 6744                  | 2518                 | -         | -     | PS123        | 143/145TC     |
| 13.1                  | 3.9                  | 6793                      | 133.78           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 11.6                  | 3.5                  | 7690                      | 151.43           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 9.9                   | 2.9                  | 9015                      | 177.53           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 9.0                   | 2.7                  | 9881                      | 194.59           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 8.1                   | 2.4                  | 10948                     | 215.60           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 7.3                   | 2.2                  | 12133                     | 238.93           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 6.8                   | 2.0                  | 12977                     | 255.54           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 6.2                   | 1.9                  | 14223                     | 280.10           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |
| 5.8                   | 1.7                  | 15293                     | 301.16           | 26552                   | 6744                  | 2518                 | CS123     | 90S4  | PS123        | 143/145TC     |

## 1.5 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 5.1                | 1.5               | 17465                  | 343.93        | 26552                | 6744               | 2518              | CS123     | 90S4  | PS123        | 143/145TC    |

## 2 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |               |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|---------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 202.9              | 2.5               | 596                    | 8.63          | 1505                 | 823                | 823               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 157.1              | 2.2               | 770                    | 11.14         | 1682                 | 878                | 878               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 145.8              | 2.1               | 830                    | 12.00         | 1770                 | 894                | 894               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 128.1              | 2.0               | 944                    | 13.66         | 1859                 | 921                | 921               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 114.6              | 2.0               | 1056                   | 15.27         | 2124                 | 944                | 944               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 107.5              | 1.9               | 1126                   | 16.29         | 2124                 | 958                | 958               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 93.9               | 1.6               | 1288                   | 18.63         | 2124                 | 985                | 985               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 88.7               | 1.6               | 1364                   | 19.73         | 2124                 | 996                | 996               | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 83.2               | 1.6               | 1455                   | 21.04         | 2301                 | 1008               | 1008              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 81.3               | 1.5               | 1489                   | 21.53         | 2301                 | 1013               | 1013              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 72.7               | 1.4               | 1664                   | 24.07         | 2301                 | 1033               | 1033              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 69.4               | 1.5               | 1743                   | 25.20         | 2567                 | 1041               | 1041              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 67.9               | 1.4               | 1783                   | 25.79         | 2567                 | 1045               | 1045              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 62.9               | 1.3               | 1923                   | 27.81         | 2567                 | 1057               | 1057              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 58.3               | 1.2               | 2074                   | 30.00         | 2567                 | 1069               | 1069              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 53.8               | 1.2               | 2251                   | 32.55         | 2655                 | 1080               | 1080              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 53.0               | 1.2               | 2282                   | 33.00         | 2655                 | 1082               | 1082              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 51.3               | 1.1               | 2357                   | 34.09         | 2655                 | 1086               | 1086              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 47.9               | 1.2               | 2527                   | 36.55         | 2921                 | 1095               | 1095              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 45.2               | 1.1               | 2679                   | 38.75         | 2921                 | 1101               | 1101              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 43.9               | 1.1               | 2759                   | 39.90         | 3098                 | 1103               | 1103              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 41.1               | 1.1               | 2947                   | 42.63         | 3098                 | 1109               | 1109              | CS052     | 90L4  | PS052        | 56C/143/145TC |
| 47.9               | 1.3               | 2471                   | 36.50         | 3098                 | 1102               | 1102              | CS053     | 90L4  | PS053        | 56C/143/145TC |
| 131.0              | 4.0               | 933                    | 13.36         | 3717                 | 1660               | 664               | -         | -     | PS062        | 56C/143/145TC |
| 109.8              | 3.6               | 1102                   | 15.94         | 3983                 | 1741               | 696               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 108.3              | 3.6               | 1118                   | 16.16         | 3983                 | 1747               | 699               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 90.7               | 3.0               | 1334                   | 19.29         | 3983                 | 1828               | 731               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 89.5               | 3.0               | 1352                   | 19.55         | 4071                 | 1835               | 734               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 75.5               | 2.6               | 1603                   | 23.18         | 4160                 | 1913               | 765               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 73.7               | 2.5               | 1642                   | 23.75         | 4160                 | 1924               | 770               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 69.6               | 2.4               | 1739                   | 25.14         | 4248                 | 1950               | 780               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 63.3               | 2.2               | 1912                   | 27.66         | 4248                 | 1993               | 797               | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 58.3               | 2.1               | 2095                   | 30.00         | 4425                 | 2026               | 811               | -         | -     | PS062        | 56C/143/145TC |

## 2 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |               |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|---------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 51.6                  | 2.0                  | 2346                      | 33.93            | 4779                    | 2084                  | 834                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 47.9                  | 2.1                  | 2529                      | 36.57            | 5310                    | 2116                  | 847                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 44.4                  | 2.0                  | 2723                      | 39.38            | 5310                    | 2147                  | 859                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 40.1                  | 1.8                  | 3017                      | 43.64            | 5310                    | 2189                  | 876                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 38.0                  | 1.7                  | 3187                      | 46.10            | 5310                    | 2211                  | 884                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 36.2                  | 1.6                  | 3340                      | 48.30            | 5310                    | 2228                  | 891                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 32.7                  | 1.4                  | 3701                      | 53.53            | 5310                    | 2248                  | 899                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 31.8                  | 1.4                  | 3803                      | 55.00            | 5310                    | 2248                  | 899                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 25.9                  | 1.1                  | 4665                      | 67.47            | 5310                    | 2248                  | 899                  | CS062     | 90L4  | PS062        | 56C/143/145TC |
| 52.1                  | 2.3                  | 2273                      | 33.57            | 5310                    | 2087                  | 835                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 46.3                  | 2.1                  | 2557                      | 37.77            | 5310                    | 2139                  | 856                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 43.7                  | 2.0                  | 2712                      | 40.05            | 5310                    | 2164                  | 865                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 35.6                  | 1.6                  | 3327                      | 49.13            | 5310                    | 2246                  | 898                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 31.7                  | 1.4                  | 3743                      | 55.29            | 5310                    | 2248                  | 899                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 29.8                  | 1.3                  | 3975                      | 58.72            | 5310                    | 2248                  | 899                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 26.6                  | 1.2                  | 4458                      | 65.85            | 5310                    | 2248                  | 899                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 25.6                  | 1.1                  | 4621                      | 68.25            | 5310                    | 2248                  | 899                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 23.8                  | 1.1                  | 4985                      | 73.63            | 5310                    | 2248                  | 899                  | CS063     | 90L4  | PS063        | 56C/143/145TC |
| 67.2                  | 3.9                  | 1801                      | 26.05            | 7081                    | 4047                  | 1211                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 61.0                  | 4.0                  | 2002                      | 28.67            | 7966                    | 4047                  | 1247                 | -         | -     | PS082        | 56C/143/145TC |
| 59.1                  | 3.9                  | 2047                      | 29.60            | 7966                    | 4047                  | 1259                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 55.1                  | 4.0                  | 2219                      | 31.78            | 8851                    | 4047                  | 1286                 | -         | -     | PS082        | 56C/143/145TC |
| 50.1                  | 3.7                  | 2414                      | 34.91            | 8851                    | 4047                  | 1324                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 49.3                  | 3.6                  | 2455                      | 35.50            | 8851                    | 4047                  | 1331                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 43.7                  | 3.2                  | 2797                      | 40.05            | 8851                    | 4047                  | 1379                 | -         | -     | PS082        | 56C/143/145TC |
| 40.6                  | 3.0                  | 2977                      | 43.05            | 8851                    | 4047                  | 1409                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 34.8                  | 2.5                  | 3475                      | 50.25            | 8851                    | 4047                  | 1475                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 32.2                  | 2.4                  | 3752                      | 54.27            | 8851                    | 4047                  | 1508                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 28.2                  | 2.1                  | 4285                      | 61.98            | 8851                    | 4047                  | 1567                 | CS082     | 90L4  | PS082        | 56C/143/145TC |
| 25.9                  | 1.9                  | 4572                      | 67.52            | 8851                    | 4047                  | 1608                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 23.6                  | 1.8                  | 5023                      | 74.18            | 8851                    | 4047                  | 1619                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 21.4                  | 1.6                  | 5532                      | 81.71            | 8851                    | 4047                  | 1619                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 19.1                  | 1.4                  | 6195                      | 91.49            | 8851                    | 4047                  | 1619                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 17.4                  | 1.3                  | 6813                      | 100.62           | 8851                    | 4047                  | 1619                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 14.9                  | 1.1                  | 7934                      | 117.17           | 8851                    | 4047                  | 1619                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 13.6                  | 1.0                  | 8716                      | 128.73           | 8851                    | 4047                  | 1619                 | CS083     | 90L4  | PS083        | 56C/143/145TC |
| 39.8                  | 3.8                  | 3042                      | 44.00            | 11506                   | 4946                  | 1757                 | CS102     | 90L4  | PS102        | 56C/143/145TC |
| 34.8                  | 3.5                  | 3509                      | 50.25            | 12391                   | 4946                  | 1830                 | -         | -     | PS102        | 56C/143/145TC |



## 2 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |               |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|---------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input  |
| 31.7                  | 3.0                  | 3812                      | 55.14            | 11506                   | 4946                  | 1883                 | CS102     | 90L4  | PS102        | 56C/143/145TC |
| 29.5                  | 3.4                  | 4107                      | 59.40            | 14161                   | 4946                  | 1926                 | CS102     | 90L4  | PS102        | 56C/143/145TC |
| 25.8                  | 3.0                  | 4691                      | 67.84            | 14161                   | 4946                  | 2005                 | CS102     | 90L4  | PS102        | 56C/143/145TC |
| 23.6                  | 2.8                  | 5073                      | 74.18            | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C/143/145TC |
| 21.5                  | 2.6                  | 5511                      | 81.39            | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 19.5                  | 2.3                  | 6078                      | 89.77            | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 17.5                  | 2.1                  | 6781                      | 100.15           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 15.8                  | 1.9                  | 7485                      | 110.55           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 14.4                  | 1.7                  | 8212                      | 121.29           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 13.6                  | 1.6                  | 8803                      | 128.73           | 14161                   | 4946                  | 2023                 | -         | -     | PS103        | 56C/143/145TC |
| 12.4                  | 1.5                  | 9563                      | 141.24           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 10.1                  | 1.2                  | 11766                     | 173.78           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 9.3                   | 1.1                  | 12763                     | 188.51           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 8.6                   | 1.0                  | 13752                     | 203.11           | 14161                   | 4946                  | 2023                 | CS103     | 90L4  | PS103        | 56C/143/145TC |
| 16.5                  | 3.7                  | 7242                      | 105.91           | 26552                   | 6744                  | 2518                 | -         | -     | PS123        | 143/145TC     |
| 15.6                  | 3.5                  | 7618                      | 112.52           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 14.2                  | 3.2                  | 8350                      | 123.33           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 13.5                  | 3.0                  | 8805                      | 130.04           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 13.1                  | 2.9                  | 9058                      | 133.78           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 11.6                  | 2.6                  | 10253                     | 151.43           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 9.9                   | 2.2                  | 12020                     | 177.53           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 9.0                   | 2.0                  | 13175                     | 194.59           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 8.1                   | 1.8                  | 14598                     | 215.60           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 7.3                   | 1.6                  | 16177                     | 238.93           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 6.8                   | 1.5                  | 17302                     | 255.54           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 6.2                   | 1.4                  | 18965                     | 280.10           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 5.8                   | 1.3                  | 20390                     | 301.16           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |
| 5.1                   | 1.1                  | 23287                     | 343.93           | 26552                   | 6744                  | 2518                 | CS123     | 90L4  | PS123        | 143/145TC     |

## 3 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 202.9                 | 1.7                  | 895                       | 8.63             | 1505                    | 779                   | 779                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 157.1                 | 1.5                  | 1156                      | 11.14            | 1682                    | 821                   | 821                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 145.8                 | 1.4                  | 1245                      | 12.00            | 1770                    | 832                   | 832                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 128.1                 | 1.3                  | 1416                      | 13.66            | 1859                    | 851                   | 851                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 114.6                 | 1.3                  | 1584                      | 15.27            | 2124                    | 867                   | 867                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 107.5                 | 1.3                  | 1689                      | 16.29            | 2124                    | 875                   | 875                  | CS052     | 112MR4 | PS052        | 182/184TC    |

## 3 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 93.9                  | 1.1                  | 1932                      | 18.63            | 2124                    | 890                   | 890                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 88.7                  | 1.0                  | 2046                      | 19.73            | 2124                    | 895                   | 895                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 83.2                  | 1.1                  | 2182                      | 21.04            | 2301                    | 901                   | 901                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 81.3                  | 1.0                  | 2233                      | 21.53            | 2301                    | 903                   | 903                  | CS052     | 112MR4 | PS052        | 182/184TC    |
| 218.8                 | 3.5                  | 830                       | 8.00             | 2921                    | 1395                  | 558                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 196.2                 | 3.2                  | 925                       | 8.92             | 2921                    | 1435                  | 574                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 183.3                 | 3.2                  | 990                       | 9.55             | 3186                    | 1461                  | 584                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 164.4                 | 2.9                  | 1104                      | 10.65            | 3186                    | 1501                  | 601                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 149.5                 | 2.8                  | 1214                      | 11.71            | 3452                    | 1537                  | 615                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 134.0                 | 2.7                  | 1354                      | 13.06            | 3717                    | 1578                  | 631                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 131.0                 | 2.7                  | 1385                      | 13.36            | 3717                    | 1587                  | 635                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 109.8                 | 2.4                  | 1653                      | 15.94            | 3983                    | 1652                  | 661                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 108.3                 | 2.4                  | 1676                      | 16.16            | 3983                    | 1657                  | 663                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 90.7                  | 2.0                  | 2000                      | 19.29            | 3983                    | 1721                  | 688                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 89.5                  | 2.0                  | 2028                      | 19.55            | 4071                    | 1726                  | 690                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 75.5                  | 1.7                  | 2404                      | 23.18            | 4160                    | 1784                  | 714                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 73.7                  | 1.7                  | 2463                      | 23.75            | 4160                    | 1792                  | 717                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 69.6                  | 1.6                  | 2608                      | 25.14            | 4248                    | 1810                  | 724                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 63.3                  | 1.5                  | 2869                      | 27.66            | 4248                    | 1839                  | 736                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 58.3                  | 1.4                  | 3112                      | 30.00            | 4425                    | 1863                  | 745                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 51.6                  | 1.4                  | 3519                      | 33.93            | 4779                    | 1895                  | 758                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 47.9                  | 1.4                  | 3793                      | 36.57            | 5310                    | 1913                  | 765                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 44.4                  | 1.3                  | 4084                      | 39.38            | 5310                    | 1928                  | 771                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 40.1                  | 1.2                  | 4526                      | 43.64            | 5310                    | 1946                  | 778                  | CS062     | 112MR4 | PS062        | 182/184TC    |
| 36.2                  | 1.1                  | 5010                      | 48.30            | 5310                    | 1959                  | 784                  | CS062     | 112MR4 | -            | -            |
| 101.2                 | 3.8                  | 1794                      | 17.29            | 6815                    | 3685                  | 1053                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 92.0                  | 3.5                  | 1974                      | 19.03            | 6815                    | 3793                  | 1084                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 86.9                  | 3.3                  | 2089                      | 20.14            | 6815                    | 3858                  | 1102                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 79.1                  | 3.1                  | 2295                      | 22.13            | 7081                    | 3968                  | 1134                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 72.9                  | 2.8                  | 2489                      | 24.00            | 7081                    | 4047                  | 1161                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 67.2                  | 2.6                  | 2702                      | 26.05            | 7081                    | 4047                  | 1190                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 64.1                  | 2.8                  | 2830                      | 27.29            | 7966                    | 4047                  | 1206                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 61.0                  | 2.7                  | 2974                      | 28.67            | 7966                    | 4047                  | 1224                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 59.1                  | 2.6                  | 3070                      | 29.60            | 7966                    | 4047                  | 1235                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 55.1                  | 2.7                  | 3296                      | 31.78            | 8851                    | 4047                  | 1261                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 50.1                  | 2.4                  | 3621                      | 34.91            | 8851                    | 4047                  | 1295                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 49.3                  | 2.4                  | 3682                      | 35.50            | 8851                    | 4047                  | 1301                 | CS082     | 112MR4 | PS082        | 182/184TC    |
| 43.7                  | 2.1                  | 4154                      | 40.05            | 8851                    | 4047                  | 1346                 | CS082     | 112MR4 | PS082        | 182/184TC    |

## 3 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 40.6                  | 2.0                  | 4466                      | 43.05            | 8851                    | 4047                  | 1374                 | CS082     | I12MR4 | PS082        | 182/184TC    |
| 34.8                  | 1.7                  | 5212                      | 50.25            | 8851                    | 4047                  | 1434                 | CS082     | I12MR4 | PS082        | 182/184TC    |
| 32.2                  | 1.6                  | 5629                      | 54.27            | 8851                    | 4047                  | 1464                 | CS082     | I12MR4 | PS082        | 182/184TC    |
| 28.2                  | 1.4                  | 6428                      | 61.98            | 8851                    | 4047                  | 1516                 | CS082     | I12MR4 | PS082        | 182/184TC    |
| 25.9                  | 1.3                  | 6858                      | 67.52            | 8851                    | 4047                  | 1554                 | CS083     | I12MR4 | PS083        | 182/184TC    |
| 23.6                  | 1.2                  | 7534                      | 74.18            | 8851                    | 4047                  | 1592                 | CS083     | I12MR4 | PS083        | 182/184TC    |
| 21.4                  | 1.1                  | 8299                      | 81.71            | 8851                    | 4047                  | 1619                 | CS083     | I12MR4 | PS083        | 182/184TC    |
| 54.0                  | 4.0                  | 3361                      | 32.40            | 13276                   | 4946                  | 1577                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 50.1                  | 3.4                  | 3657                      | 34.91            | 12391                   | 4946                  | 1612                 | -         | -      | PS102        | 182/184TC    |
| 45.7                  | 3.3                  | 3973                      | 38.30            | 13276                   | 4946                  | 1659                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 41.2                  | 2.8                  | 4411                      | 42.53            | 12391                   | 4946                  | 1711                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 39.8                  | 2.5                  | 4564                      | 44.00            | 11506                   | 4946                  | 1729                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 37.1                  | 2.9                  | 4888                      | 47.13            | 14161                   | 4946                  | 1764                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 34.8                  | 2.4                  | 5264                      | 50.25            | 12391                   | 4946                  | 1797                 | -         | -      | PS102        | 182/184TC    |
| 31.7                  | 2.0                  | 5719                      | 55.14            | 11506                   | 4946                  | 1847                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 29.5                  | 2.3                  | 6161                      | 59.40            | 14161                   | 4946                  | 1887                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 25.8                  | 2.0                  | 7036                      | 67.84            | 14161                   | 4946                  | 1961                 | CS102     | I12MR4 | PS102        | 182/184TC    |
| 23.6                  | 1.9                  | 7609                      | 74.18            | 14161                   | 4946                  | 2013                 | -         | -      | PS103        | 182/184TC    |
| 21.5                  | 1.7                  | 8266                      | 81.39            | 14161                   | 4946                  | 2023                 | CS103     | I12MR4 | PS103        | 182/184TC    |
| 19.5                  | 1.6                  | 9117                      | 89.77            | 14161                   | 4946                  | 2023                 | CS103     | I12MR4 | PS103        | 182/184TC    |
| 17.5                  | 1.4                  | 10171                     | 100.15           | 14161                   | 4946                  | 2023                 | CS103     | I12MR4 | PS103        | 182/184TC    |
| 15.8                  | 1.3                  | 11227                     | 110.55           | 14161                   | 4946                  | 2023                 | CS103     | I12MR4 | PS103        | 182/184TC    |
| 14.4                  | 1.1                  | 12319                     | 121.29           | 14161                   | 4946                  | 2023                 | CS103     | I12MR4 | PS103        | 182/184TC    |
| 13.6                  | 1.1                  | 13074                     | 128.73           | 14161                   | 4946                  | 2023                 | CS103     | I12MR4 | PS103        | 182/184TC    |
| 26.5                  | 3.9                  | 6846                      | 66.00            | 26552                   | 6744                  | 2518                 | CS122     | I12MR4 | PS122        | 182/184TC    |
| 27.0                  | 3.6                  | 6585                      | 64.84            | 23897                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 24.6                  | 3.3                  | 7218                      | 71.07            | 23897                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 22.3                  | 3.3                  | 7969                      | 78.46            | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 20.1                  | 3.0                  | 8863                      | 87.27            | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 16.5                  | 2.5                  | 10756                     | 105.91           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 15.6                  | 2.3                  | 11427                     | 112.52           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 14.2                  | 2.1                  | 12525                     | 123.33           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 13.5                  | 2.0                  | 13207                     | 130.04           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 13.1                  | 2.0                  | 13587                     | 133.78           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 11.6                  | 1.7                  | 15380                     | 151.43           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 9.9                   | 1.5                  | 18030                     | 177.53           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 9.0                   | 1.3                  | 19762                     | 194.59           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |
| 8.1                   | 1.2                  | 21896                     | 215.60           | 26552                   | 6744                  | 2518                 | CS123     | I12MR4 | PS123        | 182/184TC    |

## 3 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |        | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|--------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 7.3                | 1.1               | 24266                  | 238.93        | 26552                | 6744               | 2518              | CS123     | 112MR4 | PS123        | 182/184TC    |
| 6.8                | 1.0               | 25953                  | 255.54        | 26552                | 6744               | 2518              | CS123     | 112MR4 | PS123        | 182/184TC    |
| 17.7               | 3.9               | 10035                  | 98.81         | 39297                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 15.9               | 3.7               | 11177                  | 110.05        | 41895                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 14.2               | 3.4               | 12537                  | 123.44        | 42080                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 12.5               | 3.0               | 14182                  | 139.64        | 42845                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 11.7               | 2.8               | 15142                  | 149.10        | 42356                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 11.1               | 2.1               | 15994                  | 157.49        | 33645                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 10.2               | 2.4               | 17422                  | 171.55        | 41327                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 10.0               | 2.1               | 17814                  | 175.41        | 37473                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 8.9                | 2.1               | 19981                  | 196.74        | 42030                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 7.9                | 1.8               | 22604                  | 222.57        | 41731                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 7.4                | 1.8               | 24134                  | 237.63        | 43205                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |
| 6.4                | 1.5               | 27768                  | 273.41        | 42411                | 7868               | 4159              | S143      | 112MR4 | IS143        | 182/184TC    |

## 5 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 202.9              | 1.0               | 1491                   | 8.63          | 1505                 | 691                | 691               | CS052     | 112M4 | -            | -            |
| 218.8              | 2.1               | 1383                   | 8.00          | 2921                 | 1306               | 522               | CS062     | 112M4 | PS062        | 182/184TC    |
| 196.2              | 1.9               | 1542                   | 8.92          | 2921                 | 1336               | 534               | CS062     | 112M4 | PS062        | 182/184TC    |
| 183.3              | 1.9               | 1650                   | 9.55          | 3186                 | 1354               | 542               | CS062     | 112M4 | PS062        | 182/184TC    |
| 164.4              | 1.7               | 1840                   | 10.65         | 3186                 | 1383               | 553               | CS062     | 112M4 | PS062        | 182/184TC    |
| 149.5              | 1.7               | 2024                   | 11.71         | 3452                 | 1407               | 563               | CS062     | 112M4 | PS062        | 182/184TC    |
| 134.0              | 1.6               | 2257                   | 13.06         | 3717                 | 1433               | 573               | CS062     | 112M4 | PS062        | 182/184TC    |
| 131.0              | 1.6               | 2309                   | 13.36         | 3717                 | 1438               | 575               | CS062     | 112M4 | PS062        | 182/184TC    |
| 109.8              | 1.4               | 2755                   | 15.94         | 3983                 | 1475               | 590               | CS062     | 112M4 | PS062        | 182/184TC    |
| 108.3              | 1.4               | 2794                   | 16.16         | 3983                 | 1478               | 591               | CS062     | 112M4 | PS062        | 182/184TC    |
| 90.7               | 1.2               | 3334                   | 19.29         | 3983                 | 1506               | 603               | CS062     | 112M4 | PS062        | 182/184TC    |
| 89.5               | 1.2               | 3380                   | 19.55         | 4071                 | 1508               | 603               | CS062     | 112M4 | PS062        | 182/184TC    |
| 75.5               | 1.0               | 4007                   | 23.18         | 4160                 | 1526               | 610               | CS062     | 112M4 | PS062        | 182/184TC    |
| 73.7               | 1.0               | 4106                   | 23.75         | 4160                 | 1527               | 611               | CS062     | 112M4 | PS062        | 182/184TC    |
| 238.5              | 3.8               | 1269                   | 7.34          | 4868                 | 2784               | 795               | CS082     | 112M4 | PS082        | 182/184TC    |
| 217.1              | 3.8               | 1394                   | 8.06          | 5310                 | 2865               | 818               | CS082     | 112M4 | PS082        | 182/184TC    |
| 176.0              | 3.3               | 1719                   | 9.94          | 5753                 | 3051               | 872               | CS082     | 112M4 | PS082        | 182/184TC    |
| 150.8              | 3.1               | 2006                   | 11.61         | 6196                 | 3194               | 913               | CS082     | 112M4 | PS082        | 182/184TC    |
| 137.3              | 3.0               | 2204                   | 12.75         | 6638                 | 3284               | 938               | CS082     | 112M4 | PS082        | 182/184TC    |
| 124.6              | 2.8               | 2428                   | 14.04         | 6727                 | 3378               | 965               | CS082     | 112M4 | PS082        | 182/184TC    |

## 5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 113.4                 | 2.6                  | 2667                      | 15.43            | 6815                    | 3470                  | 992                  | CS082     | 112M4 | PS082        | 182/184TC    |
| 111.3                 | 2.5                  | 2718                      | 15.73            | 6815                    | 3489                  | 997                  | CS082     | 112M4 | PS082        | 182/184TC    |
| 101.2                 | 2.3                  | 2990                      | 17.29            | 6815                    | 3585                  | 1024                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 92.0                  | 2.1                  | 3289                      | 19.03            | 6815                    | 3683                  | 1052                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 86.9                  | 2.0                  | 3481                      | 20.14            | 6815                    | 3742                  | 1069                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 79.1                  | 1.9                  | 3825                      | 22.13            | 7081                    | 3840                  | 1097                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 72.9                  | 1.7                  | 4149                      | 24.00            | 7081                    | 3926                  | 1122                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 67.2                  | 1.6                  | 4503                      | 26.05            | 7081                    | 4014                  | 1147                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 64.1                  | 1.7                  | 4717                      | 27.29            | 7966                    | 4047                  | 1161                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 61.0                  | 1.6                  | 4957                      | 28.67            | 7966                    | 4047                  | 1176                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 59.1                  | 1.6                  | 5117                      | 29.60            | 7966                    | 4047                  | 1186                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 55.1                  | 1.6                  | 5493                      | 31.78            | 8851                    | 4047                  | 1208                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 50.1                  | 1.5                  | 6035                      | 34.91            | 8851                    | 4047                  | 1238                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 49.3                  | 1.4                  | 6137                      | 35.50            | 8851                    | 4047                  | 1243                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 43.7                  | 1.3                  | 6924                      | 40.05            | 8851                    | 4047                  | 1280                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 40.6                  | 1.2                  | 7443                      | 43.05            | 8851                    | 4047                  | 1303                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 34.8                  | 1.0                  | 8687                      | 50.25            | 8851                    | 4047                  | 1351                 | CS082     | 112M4 | PS082        | 182/184TC    |
| 101.7                 | 3.9                  | 2976                      | 17.21            | 11506                   | 4463                  | 1275                 | CS102     | 112M4 | -            | -            |
| 92.1                  | 3.8                  | 3285                      | 19.00            | 12391                   | 4597                  | 1313                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 84.0                  | 3.4                  | 3601                      | 20.83            | 12391                   | 4724                  | 1350                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 79.1                  | 3.2                  | 3863                      | 22.13            | 12391                   | 4807                  | 1373                 | -         | -     | PS102        | 182/184TC    |
| 72.1                  | 3.2                  | 4197                      | 24.28            | 13276                   | 4942                  | 1412                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 66.5                  | 2.9                  | 4552                      | 26.33            | 13276                   | 4946                  | 1446                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 58.6                  | 2.6                  | 5163                      | 29.87            | 13276                   | 4946                  | 1500                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 54.0                  | 2.4                  | 5601                      | 32.40            | 13276                   | 4946                  | 1535                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 50.1                  | 2.0                  | 6095                      | 34.91            | 12391                   | 4946                  | 1566                 | -         | -     | PS102        | 182/184TC    |
| 45.7                  | 2.0                  | 6621                      | 38.30            | 13276                   | 4946                  | 1609                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 41.2                  | 1.7                  | 7351                      | 42.53            | 12391                   | 4946                  | 1656                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 39.8                  | 1.5                  | 7606                      | 44.00            | 11506                   | 4946                  | 1671                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 37.1                  | 1.7                  | 8147                      | 47.13            | 14161                   | 4946                  | 1703                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 34.8                  | 1.4                  | 8774                      | 50.25            | 12391                   | 4946                  | 1731                 | -         | -     | PS102        | 182/184TC    |
| 31.7                  | 1.2                  | 9531                      | 55.14            | 11506                   | 4946                  | 1775                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 29.5                  | 1.4                  | 10268                     | 59.40            | 14161                   | 4946                  | 1810                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 25.8                  | 1.2                  | 11727                     | 67.84            | 14161                   | 4946                  | 1872                 | CS102     | 112M4 | PS102        | 182/184TC    |
| 23.6                  | 1.1                  | 12557                     | 74.18            | 14161                   | 4946                  | 1919                 | CS103     | 112M4 | PS103        | 182/184TC    |
| 21.5                  | 1.0                  | 13777                     | 81.39            | 14161                   | 4946                  | 1963                 | CS103     | 112M4 | PS103        | 182/184TC    |
| 42.6                  | 3.7                  | 7099                      | 41.07            | 26552                   | 6744                  | 2342                 | CS122     | 112M4 | PS122        | 182/184TC    |
| 40.1                  | 3.5                  | 7537                      | 43.60            | 26552                   | 6744                  | 2381                 | CS122     | 112M4 | PS122        | 182/184TC    |

## 5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 39.2                  | 2.8                  | 7715                      | 44.63            | 21242                   | 6744                  | 2396                 | CS122     | 112M4 | PS122        | 182/184TC    |
| 35.7                  | 2.5                  | 8477                      | 49.04            | 21242                   | 6744                  | 2457                 | CS122     | 112M4 | PS122        | 182/184TC    |
| 32.6                  | 2.5                  | 9292                      | 53.75            | 23012                   | 6744                  | 2518                 | CS122     | 112M4 | PS122        | 182/184TC    |
| 26.5                  | 2.3                  | 11409                     | 66.00            | 26552                   | 6744                  | 2518                 | CS122     | 112M4 | PS122        | 182/184TC    |
| 27.0                  | 2.2                  | 10975                     | 64.84            | 23897                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 24.6                  | 2.0                  | 12030                     | 71.07            | 23897                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 22.3                  | 2.0                  | 13281                     | 78.46            | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 20.1                  | 1.8                  | 14771                     | 87.27            | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 16.5                  | 1.5                  | 17927                     | 105.91           | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 15.6                  | 1.4                  | 19045                     | 112.52           | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 14.2                  | 1.3                  | 20875                     | 123.33           | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 13.5                  | 1.2                  | 22012                     | 130.04           | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 13.1                  | 1.2                  | 22644                     | 133.78           | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 11.6                  | 1.0                  | 25633                     | 151.43           | 26552                   | 6744                  | 2518                 | CS123     | 112M4 | PS123        | 182/184TC    |
| 27.1                  | 3.9                  | 10948                     | 64.68            | 42257                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 25.3                  | 3.7                  | 11689                     | 69.06            | 43158                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 22.0                  | 2.8                  | 13449                     | 79.45            | 37469                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 17.7                  | 2.3                  | 16725                     | 98.81            | 39297                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 15.9                  | 2.2                  | 18629                     | 110.05           | 41895                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 14.2                  | 2.0                  | 20894                     | 123.44           | 42080                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 12.5                  | 1.8                  | 23637                     | 139.64           | 42845                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 11.7                  | 1.7                  | 25237                     | 149.10           | 42356                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 11.1                  | 1.3                  | 26657                     | 157.49           | 33645                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 10.2                  | 1.4                  | 29037                     | 171.55           | 41327                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 10.0                  | 1.3                  | 29691                     | 175.41           | 37473                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 8.9                   | 1.3                  | 33302                     | 196.74           | 42030                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 7.9                   | 1.1                  | 37673                     | 222.57           | 41731                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |
| 7.4                   | 1.1                  | 40223                     | 237.63           | 43205                   | 7868                  | 4159                 | S143      | 112M4 | IS143        | 182/184TC    |

## 7.5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 238.5                 | 2.6                  | 1903                      | 7.34             | 4868                    | 2731                  | 780                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 217.1                 | 2.5                  | 2091                      | 8.06             | 5310                    | 2807                  | 802                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 176.0                 | 2.2                  | 2578                      | 9.94             | 5753                    | 2979                  | 851                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 150.8                 | 2.1                  | 3009                      | 11.61            | 6196                    | 3111                  | 889                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 137.3                 | 2.0                  | 3306                      | 12.75            | 6638                    | 3192                  | 912                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 124.6                 | 1.8                  | 3642                      | 14.04            | 6727                    | 3276                  | 936                  | CS082     | 132MS4 | PS082        | 213/215TC    |

## 7.5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 113.4                 | 1.7                  | 4001                      | 15.43            | 6815                    | 3359                  | 960                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 111.3                 | 1.7                  | 4078                      | 15.73            | 6815                    | 3376                  | 965                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 101.2                 | 1.5                  | 4485                      | 17.29            | 6815                    | 3461                  | 989                  | CS082     | 132MS4 | PS082        | 213/215TC    |
| 92.0                  | 1.4                  | 4934                      | 19.03            | 6815                    | 3546                  | 1013                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 86.9                  | 1.3                  | 5222                      | 20.14            | 6815                    | 3597                  | 1028                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 79.1                  | 1.2                  | 5737                      | 22.13            | 7081                    | 3681                  | 1052                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 72.9                  | 1.1                  | 6223                      | 24.00            | 7081                    | 3753                  | 1072                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 67.2                  | 1.0                  | 6754                      | 26.05            | 7081                    | 3826                  | 1093                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 64.1                  | 1.1                  | 7076                      | 27.29            | 7966                    | 3867                  | 1105                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 61.0                  | 1.1                  | 7435                      | 28.67            | 7966                    | 3911                  | 1117                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 59.1                  | 1.0                  | 7675                      | 29.60            | 7966                    | 3938                  | 1125                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 55.1                  | 1.1                  | 8240                      | 31.78            | 8851                    | 4000                  | 1143                 | CS082     | 132MS4 | PS082        | 213/215TC    |
| 217.1                 | 3.6                  | 2112                      | 8.06             | 7523                    | 3488                  | 997                  | -         | -      | PS102        | 213/215TC    |
| 197.8                 | 3.5                  | 2294                      | 8.85             | 7966                    | 3589                  | 1025                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 160.8                 | 3.0                  | 2822                      | 10.88            | 8408                    | 3819                  | 1091                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 137.3                 | 2.7                  | 3339                      | 12.75            | 8851                    | 4000                  | 1143                 | -         | -      | PS102        | 213/215TC    |
| 125.1                 | 2.9                  | 3628                      | 13.99            | 10621                   | 4112                  | 1175                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 113.4                 | 2.7                  | 4041                      | 15.43            | 11063                   | 4228                  | 1208                 | -         | -      | PS102        | 213/215TC    |
| 101.7                 | 2.6                  | 4463                      | 17.21            | 11506                   | 4365                  | 1247                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 92.1                  | 2.5                  | 4927                      | 19.00            | 12391                   | 4489                  | 1283                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 84.0                  | 2.3                  | 5401                      | 20.83            | 12391                   | 4606                  | 1316                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 79.1                  | 2.1                  | 5794                      | 22.13            | 12391                   | 4680                  | 1337                 | -         | -      | PS102        | 213/215TC    |
| 72.1                  | 2.1                  | 6295                      | 24.28            | 13276                   | 4804                  | 1373                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 66.5                  | 1.9                  | 6828                      | 26.33            | 13276                   | 4911                  | 1403                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 58.6                  | 1.7                  | 7745                      | 29.87            | 13276                   | 4946                  | 1451                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 54.0                  | 1.6                  | 8401                      | 32.40            | 13276                   | 4946                  | 1482                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 50.1                  | 1.4                  | 9052                      | 34.91            | 12391                   | 4946                  | 1511                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 45.7                  | 1.3                  | 9932                      | 38.30            | 13276                   | 4946                  | 1546                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 41.2                  | 1.1                  | 11027                     | 42.53            | 12391                   | 4946                  | 1587                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 37.1                  | 1.2                  | 12220                     | 47.13            | 14161                   | 4946                  | 1626                 | CS102     | 132MS4 | PS102        | 213/215TC    |
| 66.9                  | 3.9                  | 6782                      | 26.15            | 26552                   | 6744                  | 2000                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 61.2                  | 3.6                  | 7416                      | 28.60            | 26552                   | 6744                  | 2048                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 57.4                  | 3.4                  | 7912                      | 30.51            | 26552                   | 6744                  | 2083                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 53.4                  | 3.1                  | 8494                      | 32.76            | 26552                   | 6744                  | 2122                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 52.3                  | 3.1                  | 8672                      | 33.44            | 26552                   | 6744                  | 2133                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 49.7                  | 2.9                  | 9127                      | 35.20            | 26552                   | 6744                  | 2161                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 42.6                  | 2.5                  | 10649                     | 41.07            | 26552                   | 6744                  | 2245                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 40.1                  | 2.3                  | 11305                     | 43.60            | 26552                   | 6744                  | 2277                 | CS122     | 132MS4 | PS122        | 213/215TC    |

## 7.5 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 39.2                  | 1.8                  | 11572                     | 44.63            | 21242                   | 6744                  | 2290                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 35.7                  | 1.7                  | 12716                     | 49.04            | 21242                   | 6744                  | 2341                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 32.6                  | 1.7                  | 13938                     | 53.75            | 23012                   | 6744                  | 2390                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 26.5                  | 1.6                  | 17114                     | 66.00            | 26552                   | 6744                  | 2497                 | CS122     | 132MS4 | PS122        | 213/215TC    |
| 27.0                  | 1.5                  | 16463                     | 64.84            | 23897                   | 6744                  | 2498                 | CS123     | 132MS4 | PS123        | 213/215TC    |
| 24.6                  | 1.3                  | 18045                     | 71.07            | 23897                   | 6744                  | 2518                 | CS123     | 132MS4 | PS123        | 213/215TC    |
| 22.3                  | 1.3                  | 19921                     | 78.46            | 26552                   | 6744                  | 2518                 | CS123     | 132MS4 | PS123        | 213/215TC    |
| 20.1                  | 1.2                  | 22157                     | 87.27            | 26552                   | 6744                  | 2518                 | CS123     | 132MS4 | PS123        | 213/215TC    |
| 78.7                  | 3.7                  | 5768                      | 22.24            | 21418                   | 7868                  | 4159                 | S142      | 132MS4 | -            | -            |
| 69.3                  | 2.9                  | 6550                      | 25.26            | 18710                   | 7868                  | 4159                 | S142      | 132MS4 | IS142        | 213/215TC    |
| 61.8                  | 2.9                  | 7347                      | 28.33            | 20984                   | 7868                  | 4159                 | S142      | 132MS4 | IS142        | 213/215TC    |
| 54.6                  | 2.9                  | 8311                      | 32.05            | 23739                   | 7868                  | 4159                 | S142      | 132MS4 | IS142        | 213/215TC    |
| 51.1                  | 2.9                  | 8874                      | 34.22            | 25346                   | 7868                  | 4159                 | S142      | 132MS4 | IS142        | 213/215TC    |
| 44.4                  | 3.8                  | 10210                     | 39.38            | 39216                   | 7868                  | 4159                 | S142      | 132MS4 | IS142        | 213/215TC    |
| 38.2                  | 3.1                  | 11620                     | 45.77            | 35517                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 34.3                  | 3.1                  | 12942                     | 50.97            | 39561                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 30.6                  | 2.9                  | 14516                     | 57.17            | 41904                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 27.1                  | 2.6                  | 16422                     | 64.68            | 42257                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 25.3                  | 2.5                  | 17533                     | 69.06            | 43158                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 22.0                  | 1.9                  | 20173                     | 79.45            | 37469                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 17.7                  | 1.6                  | 25088                     | 98.81            | 39297                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 15.9                  | 1.5                  | 27943                     | 110.05           | 41895                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 14.2                  | 1.3                  | 31342                     | 123.44           | 42080                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 12.5                  | 1.2                  | 35456                     | 139.64           | 42845                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 11.7                  | 1.1                  | 37856                     | 149.10           | 42356                   | 7868                  | 4159                 | S143      | 132MS4 | IS143        | 213/215TC    |
| 23.8                  | 3.7                  | 18694                     | 73.63            | 68854                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 20.1                  | 2.8                  | 22129                     | 87.16            | 62889                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 18.0                  | 2.8                  | 24698                     | 97.27            | 70191                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 15.7                  | 2.8                  | 28353                     | 111.67           | 80575                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 14.3                  | 2.7                  | 31120                     | 122.57           | 84402                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 12.6                  | 2.3                  | 35346                     | 139.21           | 80913                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 11.4                  | 1.6                  | 39105                     | 154.02           | 63094                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 10.9                  | 1.8                  | 40628                     | 160.02           | 71552                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 9.9                   | 1.6                  | 44893                     | 176.81           | 72434                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 9.0                   | 1.6                  | 49273                     | 194.06           | 79497                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 7.9                   | 1.5                  | 55964                     | 220.42           | 82782                   | 8992                  | 4361                 | S153      | 132MS4 | IS153        | 213/215TC    |
| 6.9                   | 1.1                  | 64328                     | 253.36           | 73272                   | 8992                  | 4361                 | S153      | 132MS4 | -            | -            |
| 6.9                   | 1.1                  | 64971                     | 253.36           | 73272                   | 8992                  | 4361                 | -         | -      | IS153        | 213/215TC    |



## 10 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 238.5                 | 1.9                  | 2537                      | 7.34             | 4868                    | 2678                  | 765                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 217.1                 | 1.9                  | 2788                      | 8.06             | 5310                    | 2748                  | 785                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 176.0                 | 1.7                  | 3438                      | 9.94             | 5753                    | 2908                  | 831                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 150.8                 | 1.5                  | 4013                      | 11.61            | 6196                    | 3027                  | 865                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 137.3                 | 1.5                  | 4408                      | 12.75            | 6638                    | 3100                  | 886                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 124.6                 | 1.4                  | 4856                      | 14.04            | 6727                    | 3175                  | 907                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 113.4                 | 1.3                  | 5334                      | 15.43            | 6815                    | 3248                  | 928                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 111.3                 | 1.3                  | 5437                      | 15.73            | 6815                    | 3263                  | 932                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 101.2                 | 1.1                  | 5979                      | 17.29            | 6815                    | 3336                  | 953                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 92.0                  | 1.0                  | 6579                      | 19.03            | 6815                    | 3409                  | 974                  | CS082     | 132M4 | PS082        | 213/215TC    |
| 217.1                 | 2.7                  | 2815                      | 8.06             | 7523                    | 3442                  | 983                  | -         | -     | PS102        | 213/215TC    |
| 197.8                 | 2.6                  | 3059                      | 8.85             | 7966                    | 3539                  | 1011                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 160.8                 | 2.2                  | 3763                      | 10.88            | 8408                    | 3757                  | 1073                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 137.3                 | 2.0                  | 4452                      | 12.75            | 8851                    | 3926                  | 1122                 | -         | -     | PS102        | 213/215TC    |
| 125.1                 | 2.2                  | 4837                      | 13.99            | 10621                   | 4032                  | 1152                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 113.4                 | 2.1                  | 5388                      | 15.43            | 11063                   | 4139                  | 1183                 | -         | -     | PS102        | 213/215TC    |
| 101.7                 | 1.9                  | 5951                      | 17.21            | 11506                   | 4267                  | 1219                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 92.1                  | 1.9                  | 6569                      | 19.00            | 12391                   | 4381                  | 1252                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 84.0                  | 1.7                  | 7201                      | 20.83            | 12391                   | 4487                  | 1282                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 79.1                  | 1.6                  | 7649                      | 22.13            | 12391                   | 4557                  | 1302                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 72.1                  | 1.6                  | 8393                      | 24.28            | 13276                   | 4666                  | 1333                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 66.5                  | 1.5                  | 9104                      | 26.33            | 13276                   | 4761                  | 1360                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 58.6                  | 1.3                  | 10327                     | 29.87            | 13276                   | 4908                  | 1402                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 54.0                  | 1.2                  | 11202                     | 32.40            | 13276                   | 4946                  | 1429                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 50.1                  | 1.0                  | 12069                     | 34.91            | 12391                   | 4946                  | 1454                 | CS102     | 132M4 | PS102        | 213/215TC    |
| 45.7                  | 1.0                  | 13243                     | 38.30            | 13276                   | 4946                  | 1484                 | CS102     | 132M4 | -            | -            |
| 103.0                 | 3.9                  | 5934                      | 16.99            | 23012                   | 6067                  | 1733                 | -         | -     | PS122        | 213/215TC    |
| 82.4                  | 3.4                  | 7347                      | 21.25            | 24782                   | 6439                  | 1840                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 78.2                  | 3.2                  | 7733                      | 22.37            | 24782                   | 6523                  | 1864                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 75.1                  | 3.2                  | 8053                      | 23.29            | 25667                   | 6590                  | 1883                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 66.9                  | 2.9                  | 9042                      | 26.15            | 26552                   | 6744                  | 1938                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 61.2                  | 2.7                  | 9888                      | 28.60            | 26552                   | 6744                  | 1980                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 57.4                  | 2.5                  | 10549                     | 30.51            | 26552                   | 6744                  | 2011                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 53.4                  | 2.3                  | 11325                     | 32.76            | 26552                   | 6744                  | 2044                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 52.3                  | 2.3                  | 11563                     | 33.44            | 26552                   | 6744                  | 2053                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 49.7                  | 2.2                  | 12170                     | 35.20            | 26552                   | 6744                  | 2077                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 42.6                  | 1.9                  | 14198                     | 41.07            | 26552                   | 6744                  | 2147                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 40.1                  | 1.8                  | 15073                     | 43.60            | 26552                   | 6744                  | 2174                 | CS122     | 132M4 | PS122        | 213/215TC    |

## 10 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 39.2                  | 1.4                  | 15430                     | 44.63            | 21242                   | 6744                  | 2184                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 35.7                  | 1.3                  | 16954                     | 49.04            | 21242                   | 6744                  | 2224                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 32.6                  | 1.2                  | 18583                     | 53.75            | 23012                   | 6744                  | 2262                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 26.5                  | 1.2                  | 22819                     | 66.00            | 26552                   | 6744                  | 2340                 | CS122     | 132M4 | PS122        | 213/215TC    |
| 27.0                  | 1.1                  | 21950                     | 64.84            | 23897                   | 6744                  | 2347                 | CS123     | 132M4 | PS123        | 213/215TC    |
| 136.6                 | 3.8                  | 4430                      | 12.81            | 16928                   | 7868                  | 4159                 | S142      | 132M4 | -            | -            |
| 122.6                 | 3.2                  | 4934                      | 14.27            | 15765                   | 7868                  | 4159                 | S142      | 132M4 | -            | -            |
| 109.3                 | 3.1                  | 5534                      | 16.01            | 17133                   | 7868                  | 4159                 | S142      | 132M4 | -            | -            |
| 96.6                  | 3.1                  | 6260                      | 18.11            | 19382                   | 7868                  | 4159                 | S142      | 132M4 | -            | -            |
| 90.5                  | 3.1                  | 6684                      | 19.33            | 20699                   | 7868                  | 4159                 | S142      | 132M4 | -            | -            |
| 78.7                  | 2.8                  | 7691                      | 22.24            | 21418                   | 7868                  | 4159                 | S142      | 132M4 | IS142        | 213/215TC    |
| 69.3                  | 2.1                  | 8734                      | 25.26            | 18710                   | 7868                  | 4159                 | S142      | 132M4 | IS142        | 213/215TC    |
| 61.8                  | 2.1                  | 9796                      | 28.33            | 20984                   | 7868                  | 4159                 | S142      | 132M4 | IS142        | 213/215TC    |
| 54.6                  | 2.1                  | 11082                     | 32.05            | 23739                   | 7868                  | 4159                 | S142      | 132M4 | IS142        | 213/215TC    |
| 51.1                  | 2.1                  | 11832                     | 34.22            | 25346                   | 7868                  | 4159                 | S142      | 132M4 | IS142        | 213/215TC    |
| 44.4                  | 2.9                  | 13613                     | 39.38            | 39216                   | 7868                  | 4159                 | S142      | 132M4 | IS142        | 213/215TC    |
| 38.2                  | 2.3                  | 15493                     | 45.77            | 35517                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 34.3                  | 2.3                  | 17256                     | 50.97            | 39561                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 30.6                  | 2.2                  | 19355                     | 57.17            | 41904                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 27.1                  | 1.9                  | 21896                     | 64.68            | 42257                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 25.3                  | 1.8                  | 23378                     | 69.06            | 43158                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 22.0                  | 1.4                  | 26898                     | 79.45            | 37469                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 17.7                  | 1.2                  | 33451                     | 98.81            | 39297                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 15.9                  | 1.1                  | 37257                     | 110.05           | 41895                   | 7868                  | 4159                 | S143      | 132M4 | IS143        | 213/215TC    |
| 14.2                  | 1.0                  | 41789                     | 123.44           | 42080                   | 7868                  | 4159                 | S143      | 132M4 | -            | -            |
| 34.1                  | 4.0                  | 17568                     | 51.38            | 69614                   | 8992                  | 4361                 | -         | -     | IS153        | 213/215TC    |
| 31.0                  | 3.8                  | 19091                     | 56.39            | 73053                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 27.3                  | 3.6                  | 21684                     | 64.05            | 77845                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 23.8                  | 2.8                  | 24925                     | 73.63            | 68854                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 20.1                  | 2.1                  | 29506                     | 87.16            | 62889                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 18.0                  | 2.1                  | 32931                     | 97.27            | 70191                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 15.7                  | 2.1                  | 37804                     | 111.67           | 80575                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 14.3                  | 2.0                  | 41493                     | 122.57           | 84402                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 12.6                  | 1.7                  | 47128                     | 139.21           | 80913                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 11.4                  | 1.2                  | 52140                     | 154.02           | 63094                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 10.9                  | 1.3                  | 54171                     | 160.02           | 71552                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 9.9                   | 1.2                  | 59857                     | 176.81           | 72434                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |
| 9.0                   | 1.2                  | 65697                     | 194.06           | 79497                   | 8992                  | 4361                 | S153      | 132M4 | IS153        | 213/215TC    |

## 10 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor   |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-------------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer     | Motor | Reducer      | NEMA C-input |
| 7.9                | 1.1               | 74619                  | 220.42        | 82782                | 8992               | 4361              | <b>S153</b> | 132M4 | <b>IS153</b> | 213/215TC    |

## 15 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor    |        | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|--------------|--------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer      | Motor  | Reducer      | NEMA C-input |
| <b>238.5</b>       | 1.3               | 3806                   | 7.34          | 4868                 | 2572               | 735               | <b>CS082</b> | 132MC4 | -            | -            |
| <b>217.1</b>       | 1.3               | 4181                   | 8.06          | 5310                 | 2632               | 752               | <b>CS082</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>176.0</b>       | 1.1               | 5157                   | 9.94          | 5753                 | 2764               | 790               | <b>CS082</b> | 132MC4 | -            | -            |
| <b>150.8</b>       | 1.0               | 6019                   | 11.61         | 6196                 | 2860               | 817               | <b>CS082</b> | 132MC4 | -            | -            |
| <b>137.3</b>       | 1.0               | 6612                   | 12.75         | 6638                 | 2916               | 833               | <b>CS082</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>197.8</b>       | 1.7               | 4588                   | 8.85          | 7966                 | 3438               | 982               | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>160.8</b>       | 1.5               | 5645                   | 10.88         | 8408                 | 3633               | 1038              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>125.1</b>       | 1.5               | 7255                   | 13.99         | 10621                | 3873               | 1107              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>113.4</b>       | 1.4               | 8001                   | 15.43         | 11063                | 3967               | 1133              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>101.7</b>       | 1.3               | 8927                   | 17.21         | 11506                | 4071               | 1163              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>92.1</b>        | 1.3               | 9854                   | 19.00         | 12391                | 4164               | 1190              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>84.0</b>        | 1.1               | 10802                  | 20.83         | 12391                | 4250               | 1214              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>79.1</b>        | 1.1               | 11474                  | 22.13         | 12391                | 4305               | 1230              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>72.1</b>        | 1.1               | 12590                  | 24.28         | 13276                | 4389               | 1254              | <b>CS102</b> | 132MC4 | <b>PS102</b> | 254/256TC    |
| <b>206.3</b>       | 3.0               | 4443                   | 8.48          | 13276                | 4850               | 1386              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>188.2</b>       | 3.1               | 4870                   | 9.30          | 15046                | 4971               | 1420              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>170.9</b>       | 2.8               | 5363                   | 10.24         | 15046                | 5100               | 1457              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>153.3</b>       | 2.8               | 5980                   | 11.42         | 16816                | 5246               | 1499              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>138.6</b>       | 2.9               | 6613                   | 12.63         | 19472                | 5381               | 1538              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>126.5</b>       | 2.9               | 7249                   | 13.84         | 21242                | 5505               | 1573              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>103.0</b>       | 2.6               | 8901                   | 16.99         | 23012                | 5781               | 1652              | -            | -      | <b>PS122</b> | 254/256TC    |
| <b>82.4</b>        | 2.2               | 11020                  | 21.25         | 24782                | 6085               | 1739              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>78.2</b>        | 2.1               | 11599                  | 22.37         | 24782                | 6151               | 1758              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>75.1</b>        | 2.1               | 12079                  | 23.29         | 25667                | 6203               | 1772              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>66.9</b>        | 2.0               | 13564                  | 26.15         | 26552                | 6347               | 1814              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>61.2</b>        | 1.8               | 14832                  | 28.60         | 26552                | 6454               | 1844              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>57.4</b>        | 1.7               | 15824                  | 30.51         | 26552                | 6529               | 1865              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>53.4</b>        | 1.6               | 16987                  | 32.76         | 26552                | 6608               | 1888              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>52.3</b>        | 1.5               | 17344                  | 33.44         | 26552                | 6630               | 1894              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>49.7</b>        | 1.5               | 18255                  | 35.20         | 26552                | 6684               | 1910              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>42.6</b>        | 1.2               | 21297                  | 41.07         | 26552                | 6744               | 1952              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>40.1</b>        | 1.2               | 22610                  | 43.60         | 26552                | 6744               | 1966              | <b>CS122</b> | 132MC4 | <b>PS122</b> | 254/256TC    |
| <b>239.1</b>       | 3.3               | 3795                   | 7.32          | 12376                | 7245               | 4140              | <b>S142</b>  | 132MC4 | -            | -            |

## 15 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |        | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|--------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor  | Reducer      | NEMA C-input |
| 213.2                 | 3.3                  | 4257                      | 8.21             | 13883                   | 7462                  | 4159                 | S142      | 132MC4 | -            | -            |
| 188.5                 | 3.3                  | 4815                      | 9.29             | 15711                   | 7695                  | 4159                 | S142      | 132MC4 | -            | -            |
| 176.5                 | 3.3                  | 5141                      | 9.91             | 16778                   | 7819                  | 4159                 | S142      | 132MC4 | -            | -            |
| 153.4                 | 3.1                  | 5915                      | 11.41            | 18194                   | 7868                  | 4159                 | S142      | 132MC4 | -            | -            |
| 136.6                 | 2.5                  | 6645                      | 12.81            | 16928                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 122.6                 | 2.1                  | 7401                      | 14.27            | 15765                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 109.3                 | 2.1                  | 8301                      | 16.01            | 17133                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 96.6                  | 2.1                  | 9391                      | 18.11            | 19382                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 90.5                  | 2.1                  | 10026                     | 19.33            | 20699                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 78.7                  | 1.9                  | 11536                     | 22.24            | 21418                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 69.3                  | 1.4                  | 13100                     | 25.26            | 18710                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 61.8                  | 1.4                  | 14694                     | 28.33            | 20984                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 54.6                  | 1.4                  | 16623                     | 32.05            | 23739                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 51.1                  | 1.4                  | 17748                     | 34.22            | 25346                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 44.4                  | 1.9                  | 20420                     | 39.38            | 39216                   | 7868                  | 4159                 | S142      | 132MC4 | IS142        | 254/256TC    |
| 38.2                  | 1.5                  | 23240                     | 45.77            | 35517                   | 7868                  | 4159                 | S143      | 132MC4 | IS143        | 254/256TC    |
| 34.3                  | 1.5                  | 25884                     | 50.97            | 39561                   | 7868                  | 4159                 | S143      | 132MC4 | IS143        | 254/256TC    |
| 30.6                  | 1.4                  | 29032                     | 57.17            | 41904                   | 7868                  | 4159                 | S143      | 132MC4 | IS143        | 254/256TC    |
| 27.1                  | 1.3                  | 32843                     | 64.68            | 42257                   | 7868                  | 4159                 | S143      | 132MC4 | IS143        | 254/256TC    |
| 25.3                  | 1.2                  | 35067                     | 69.06            | 43158                   | 7868                  | 4159                 | S143      | 132MC4 | IS143        | 254/256TC    |
| 64.6                  | 3.8                  | 14198                     | 27.11            | 53894                   | 8992                  | 4361                 | -         | -      | IS152        | 254/256TC    |
| 58.8                  | 3.8                  | 15583                     | 29.75            | 59164                   | 8992                  | 4361                 | -         | -      | IS152        | 254/256TC    |
| 51.8                  | 3.8                  | 17699                     | 33.79            | 67198                   | 8992                  | 4361                 | -         | -      | IS152        | 254/256TC    |
| 45.1                  | 3.3                  | 20344                     | 38.84            | 68053                   | 8992                  | 4361                 | -         | -      | IS152        | 254/256TC    |
| 43.6                  | 2.7                  | 20364                     | 40.10            | 55595                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 39.1                  | 2.7                  | 22728                     | 44.76            | 62042                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 34.1                  | 2.7                  | 26092                     | 51.38            | 69614                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 31.0                  | 2.6                  | 28637                     | 56.39            | 73053                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 27.3                  | 2.4                  | 32526                     | 64.05            | 77845                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 23.8                  | 1.8                  | 37387                     | 73.63            | 68854                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 20.1                  | 1.4                  | 44259                     | 87.16            | 62889                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 18.0                  | 1.4                  | 49396                     | 97.27            | 70191                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 15.7                  | 1.4                  | 56707                     | 111.67           | 80575                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 14.3                  | 1.4                  | 62239                     | 122.57           | 84402                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |
| 12.6                  | 1.1                  | 70691                     | 139.21           | 80913                   | 8992                  | 4361                 | S153      | 132MC4 | IS153        | 254/256TC    |

## 20 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 217.1                 | 1.3                  | 5631                      | 8.06             | 7523                    | 3256                  | 930                  | -         | -     | PS102        | 254/256TC    |
| 197.8                 | 1.3                  | 6178                      | 8.85             | 7966                    | 3333                  | 952                  | -         | -     | PS102        | 254/256TC    |
| 160.8                 | 1.1                  | 7602                      | 10.88            | 8408                    | 3504                  | 1001                 | -         | -     | PS102        | 254/256TC    |
| 125.1                 | 1.1                  | 9770                      | 13.99            | 10621                   | 3707                  | 1059                 | -         | -     | PS102        | 254/256TC    |
| 113.4                 | 1.0                  | 10775                     | 15.43            | 11063                   | 3784                  | 1081                 | -         | -     | PS102        | 254/256TC    |
| 206.3                 | 2.2                  | 5924                      | 8.48             | 13276                   | 4707                  | 1345                 | -         | -     | PS122        | 254/256TC    |
| 188.2                 | 2.3                  | 6493                      | 9.30             | 15046                   | 4815                  | 1376                 | -         | -     | PS122        | 254/256TC    |
| 170.9                 | 2.1                  | 7150                      | 10.24            | 15046                   | 4928                  | 1408                 | -         | -     | PS122        | 254/256TC    |
| 153.3                 | 2.1                  | 7973                      | 11.42            | 16816                   | 5054                  | 1444                 | -         | -     | PS122        | 254/256TC    |
| 138.6                 | 2.2                  | 8818                      | 12.63            | 19472                   | 5169                  | 1477                 | -         | -     | PS122        | 254/256TC    |
| 126.5                 | 2.2                  | 9665                      | 13.84            | 21242                   | 5273                  | 1506                 | -         | -     | PS122        | 254/256TC    |
| 103.0                 | 1.9                  | 11868                     | 16.99            | 23012                   | 5496                  | 1570                 | -         | -     | PS122        | 254/256TC    |
| 82.4                  | 1.7                  | 14841                     | 21.25            | 24782                   | 5718                  | 1634                 | -         | -     | PS122        | 254/256TC    |
| 78.2                  | 1.6                  | 15621                     | 22.37            | 24782                   | 5764                  | 1647                 | -         | -     | PS122        | 254/256TC    |
| 75.1                  | 1.6                  | 16267                     | 23.29            | 25667                   | 5800                  | 1657                 | -         | -     | PS122        | 254/256TC    |
| 66.9                  | 1.5                  | 18266                     | 26.15            | 26552                   | 5895                  | 1684                 | -         | -     | PS122        | 254/256TC    |
| 61.2                  | 1.3                  | 19974                     | 28.60            | 26552                   | 5960                  | 1703                 | -         | -     | PS122        | 254/256TC    |
| 57.4                  | 1.2                  | 21310                     | 30.51            | 26552                   | 6001                  | 1715                 | -         | -     | PS122        | 254/256TC    |
| 53.4                  | 1.2                  | 22876                     | 32.76            | 26552                   | 6041                  | 1726                 | -         | -     | PS122        | 254/256TC    |
| 52.3                  | 1.1                  | 23357                     | 33.44            | 26552                   | 6052                  | 1729                 | -         | -     | PS122        | 254/256TC    |
| 49.7                  | 1.1                  | 24583                     | 35.20            | 26552                   | 6075                  | 1736                 | -         | -     | PS122        | 254/256TC    |
| 239.1                 | 3.3                  | 5111                      | 7.32             | 16953                   | 6982                  | 3990                 | -         | -     | IS142        | 254/256TC    |
| 213.2                 | 3.3                  | 5732                      | 8.21             | 19017                   | 7166                  | 4095                 | -         | -     | IS142        | 254/256TC    |
| 188.5                 | 3.3                  | 6485                      | 9.29             | 21522                   | 7361                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 176.5                 | 3.3                  | 6924                      | 9.91             | 22983                   | 7462                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 153.4                 | 3.1                  | 7966                      | 11.41            | 24924                   | 7673                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 136.6                 | 2.6                  | 8948                      | 12.81            | 23189                   | 7839                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 122.6                 | 2.2                  | 9967                      | 14.27            | 21596                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 109.3                 | 2.1                  | 11179                     | 16.01            | 23470                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 96.6                  | 2.1                  | 12646                     | 18.11            | 26551                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 90.5                  | 2.1                  | 13502                     | 19.33            | 28355                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 78.7                  | 1.9                  | 15535                     | 22.24            | 29340                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 69.3                  | 1.5                  | 17642                     | 25.26            | 25630                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 61.8                  | 1.5                  | 19788                     | 28.33            | 28745                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 54.6                  | 1.5                  | 22385                     | 32.05            | 32519                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 51.1                  | 1.5                  | 23900                     | 34.22            | 34721                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 44.4                  | 1.4                  | 27499                     | 39.38            | 39216                   | 7868                  | 4159                 | -         | -     | IS142        | 254/256TC    |
| 38.2                  | 1.1                  | 31296                     | 45.77            | 35517                   | 7868                  | 4159                 | -         | -     | IS143        | 254/256TC    |

## 20 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 34.3               | 1.1               | 34857                  | 50.97         | 39561                | 7868               | 4159              | -         | -     | IS143        | 254/256TC    |
| 30.6               | 1.1               | 39097                  | 57.17         | 41904                | 7868               | 4159              | -         | -     | IS143        | 254/256TC    |
| 140.4              | 3.4               | 8704                   | 12.46         | 29258                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 125.8              | 3.4               | 9714                   | 13.91         | 32640                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 109.6              | 3.4               | 11152                  | 15.97         | 37477                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 99.8               | 3.4               | 12240                  | 17.53         | 41140                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 87.9               | 3.4               | 13902                  | 19.91         | 46729                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 76.5               | 3.4               | 15980                  | 22.88         | 53726                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 64.6               | 2.8               | 18930                  | 27.11         | 53894                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 58.8               | 2.8               | 20777                  | 29.75         | 59164                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 51.8               | 2.8               | 23599                  | 33.79         | 67198                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 45.1               | 2.5               | 27126                  | 38.84         | 68053                | 8992               | 4361              | -         | -     | IS152        | 254/256TC    |
| 43.6               | 2.0               | 27424                  | 40.10         | 55595                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 39.1               | 2.0               | 30607                  | 44.76         | 62042                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 34.1               | 2.0               | 35137                  | 51.38         | 69614                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 31.0               | 1.9               | 38565                  | 56.39         | 73053                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 27.3               | 1.8               | 43802                  | 64.05         | 77845                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 23.8               | 1.4               | 50348                  | 73.63         | 68854                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 20.1               | 1.1               | 59602                  | 87.16         | 62889                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 18.0               | 1.1               | 66520                  | 97.27         | 70191                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 15.7               | 1.1               | 76365                  | 111.67        | 80575                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |
| 14.3               | 1.0               | 83815                  | 122.57        | 84402                | 8992               | 4361              | -         | -     | IS153        | 254/256TC    |

## 25 HP

| Output speed [rpm] | Service factor sf | Output torque [in-lbs] | Exact ratio i | Max. torque [in-lbs] | OHL                |                   | Gearmotor |       | Gear Reducer |              |
|--------------------|-------------------|------------------------|---------------|----------------------|--------------------|-------------------|-----------|-------|--------------|--------------|
|                    |                   |                        |               |                      | Output shaft [lbs] | Hollow bore [lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 206.3              | 1.8               | 7405                   | 8.48          | 13276                | 4565               | 1304              | -         | -     | PS122        | 284/286TC    |
| 188.2              | 1.9               | 8116                   | 9.30          | 15046                | 4659               | 1331              | -         | -     | PS122        | 284/286TC    |
| 170.9              | 1.7               | 8938                   | 10.24         | 15046                | 4756               | 1359              | -         | -     | PS122        | 284/286TC    |
| 153.3              | 1.7               | 9966                   | 11.42         | 16816                | 4862               | 1389              | -         | -     | PS122        | 284/286TC    |
| 138.6              | 1.8               | 11022                  | 12.63         | 19472                | 4957               | 1416              | -         | -     | PS122        | 284/286TC    |
| 126.5              | 1.8               | 12081                  | 13.84         | 21242                | 5040               | 1440              | -         | -     | PS122        | 284/286TC    |
| 103.0              | 1.6               | 14835                  | 16.99         | 23012                | 5210               | 1489              | -         | -     | PS122        | 284/286TC    |
| 82.4               | 1.3               | 18551                  | 21.25         | 24782                | 5361               | 1532              | -         | -     | PS122        | 284/286TC    |
| 78.2               | 1.3               | 19526                  | 22.37         | 24782                | 5389               | 1540              | -         | -     | PS122        | 284/286TC    |
| 75.1               | 1.3               | 20333                  | 23.29         | 25667                | 5409               | 1545              | -         | -     | PS122        | 284/286TC    |
| 66.9               | 1.2               | 22832                  | 26.15         | 26552                | 5456               | 1559              | -         | -     | PS122        | 284/286TC    |
| 61.2               | 1.1               | 24967                  | 28.60         | 26552                | 5479               | 1566              | -         | -     | PS122        | 284/286TC    |

## 25 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 425.0                 | 3.4                  | 3595                      | 4.12             | 12294                   | 5902                  | 3372                 | -         | -     | IS142        | 284/286TC    |
| 381.6                 | 3.4                  | 4004                      | 4.59             | 13702                   | 6060                  | 3463                 | -         | -     | IS142        | 284/286TC    |
| 340.2                 | 3.4                  | 4491                      | 5.14             | 15378                   | 6227                  | 3558                 | -         | -     | IS142        | 284/286TC    |
| 300.7                 | 3.4                  | 5080                      | 5.82             | 17382                   | 6405                  | 3660                 | -         | -     | IS142        | 284/286TC    |
| 281.7                 | 3.4                  | 5424                      | 6.21             | 18579                   | 6498                  | 3713                 | -         | -     | IS142        | 284/286TC    |
| 239.1                 | 2.7                  | 6388                      | 7.32             | 16953                   | 6726                  | 3843                 | -         | -     | IS142        | 284/286TC    |
| 213.2                 | 2.7                  | 7165                      | 8.21             | 19017                   | 6879                  | 3931                 | -         | -     | IS142        | 284/286TC    |
| 188.5                 | 2.7                  | 8106                      | 9.29             | 21522                   | 7036                  | 4021                 | -         | -     | IS142        | 284/286TC    |
| 176.5                 | 2.7                  | 8654                      | 9.91             | 22983                   | 7116                  | 4066                 | -         | -     | IS142        | 284/286TC    |
| 153.4                 | 2.5                  | 9957                      | 11.41            | 24924                   | 7274                  | 4156                 | -         | -     | IS142        | 284/286TC    |
| 136.6                 | 2.1                  | 11185                     | 12.81            | 23189                   | 7390                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 122.6                 | 1.7                  | 12458                     | 14.27            | 21596                   | 7484                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 109.3                 | 1.7                  | 13973                     | 16.01            | 23470                   | 7566                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 96.6                  | 1.7                  | 15808                     | 18.11            | 26551                   | 7629                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 90.5                  | 1.7                  | 16878                     | 19.33            | 28355                   | 7651                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 78.7                  | 1.5                  | 19419                     | 22.24            | 29340                   | 7664                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 69.3                  | 1.2                  | 22052                     | 25.26            | 25630                   | 7632                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 61.8                  | 1.2                  | 24735                     | 28.33            | 28745                   | 7560                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 54.6                  | 1.2                  | 27982                     | 32.05            | 32519                   | 7429                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 51.1                  | 1.2                  | 29876                     | 34.22            | 34721                   | 7335                  | 4159                 | -         | -     | IS142        | 284/286TC    |
| 44.4                  | 1.1                  | 34374                     | 39.38            | 39216                   | 7064                  | 4037                 | -         | -     | IS142        | 284/286TC    |
| 140.4                 | 2.7                  | 10880                     | 12.46            | 29258                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 125.8                 | 2.7                  | 12143                     | 13.91            | 32640                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 109.6                 | 2.7                  | 13940                     | 15.97            | 37477                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 99.8                  | 2.7                  | 15300                     | 17.53            | 41140                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 87.9                  | 2.7                  | 17378                     | 19.91            | 46729                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 76.5                  | 2.7                  | 19975                     | 22.88            | 53726                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 64.6                  | 2.3                  | 23663                     | 27.11            | 53894                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 58.8                  | 2.3                  | 25971                     | 29.75            | 59164                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 51.8                  | 2.3                  | 29498                     | 33.79            | 67198                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 45.1                  | 2.0                  | 33907                     | 38.84            | 68053                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 43.6                  | 1.6                  | 34280                     | 40.10            | 55595                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 39.1                  | 1.6                  | 38259                     | 44.76            | 62042                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 34.1                  | 1.6                  | 43921                     | 51.38            | 69614                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 31.0                  | 1.5                  | 48206                     | 56.39            | 73053                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 27.3                  | 1.4                  | 54752                     | 64.05            | 77845                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 23.8                  | 1.1                  | 62935                     | 73.63            | 68854                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |

## 30 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 206.3                 | 1.5                  | 8886                      | 8.48             | 13276                   | 4422                  | 1264                 | -         | -     | PS122        | 284/286TC    |
| 188.2                 | 1.5                  | 9740                      | 9.30             | 15046                   | 4503                  | 1286                 | -         | -     | PS122        | 284/286TC    |
| 170.9                 | 1.4                  | 10725                     | 10.24            | 15046                   | 4584                  | 1310                 | -         | -     | PS122        | 284/286TC    |
| 153.3                 | 1.4                  | 11959                     | 11.42            | 16816                   | 4670                  | 1334                 | -         | -     | PS122        | 284/286TC    |
| 138.6                 | 1.5                  | 13227                     | 12.63            | 19472                   | 4745                  | 1356                 | -         | -     | PS122        | 284/286TC    |
| 126.5                 | 1.5                  | 14498                     | 13.84            | 21242                   | 4808                  | 1374                 | -         | -     | PS122        | 284/286TC    |
| 103.0                 | 1.3                  | 17802                     | 16.99            | 23012                   | 4925                  | 1407                 | -         | -     | PS122        | 284/286TC    |
| 82.4                  | 1.1                  | 22261                     | 21.25            | 24782                   | 5004                  | 1430                 | -         | -     | PS122        | 284/286TC    |
| 78.2                  | 1.1                  | 23431                     | 22.37            | 24782                   | 5013                  | 1432                 | -         | -     | PS122        | 284/286TC    |
| 75.1                  | 1.1                  | 24400                     | 23.29            | 25667                   | 5018                  | 1434                 | -         | -     | PS122        | 284/286TC    |
| 425.0                 | 2.9                  | 4313                      | 4.12             | 12294                   | 5758                  | 3290                 | -         | -     | IS142        | 284/286TC    |
| 381.6                 | 2.9                  | 4804                      | 4.59             | 13702                   | 5899                  | 3371                 | -         | -     | IS142        | 284/286TC    |
| 340.2                 | 2.9                  | 5389                      | 5.14             | 15378                   | 6047                  | 3455                 | -         | -     | IS142        | 284/286TC    |
| 300.7                 | 2.9                  | 6096                      | 5.82             | 17382                   | 6201                  | 3544                 | -         | -     | IS142        | 284/286TC    |
| 281.7                 | 2.9                  | 6509                      | 6.21             | 18579                   | 6281                  | 3589                 | -         | -     | IS142        | 284/286TC    |
| 239.1                 | 2.2                  | 7666                      | 7.32             | 16953                   | 6470                  | 3697                 | -         | -     | IS142        | 284/286TC    |
| 213.2                 | 2.2                  | 8598                      | 8.21             | 19017                   | 6592                  | 3767                 | -         | -     | IS142        | 284/286TC    |
| 188.5                 | 2.2                  | 9727                      | 9.29             | 21522                   | 6712                  | 3835                 | -         | -     | IS142        | 284/286TC    |
| 176.5                 | 2.2                  | 10385                     | 9.91             | 22983                   | 6769                  | 3868                 | -         | -     | IS142        | 284/286TC    |
| 153.4                 | 2.1                  | 11949                     | 11.41            | 24924                   | 6875                  | 3929                 | -         | -     | IS142        | 284/286TC    |
| 136.6                 | 1.7                  | 13422                     | 12.81            | 23189                   | 6942                  | 3967                 | -         | -     | IS142        | 284/286TC    |
| 122.6                 | 1.4                  | 14950                     | 14.27            | 21596                   | 6985                  | 3991                 | -         | -     | IS142        | 284/286TC    |
| 109.3                 | 1.4                  | 16768                     | 16.01            | 23470                   | 7006                  | 4003                 | -         | -     | IS142        | 284/286TC    |
| 96.6                  | 1.4                  | 18969                     | 18.11            | 26551                   | 6996                  | 3998                 | -         | -     | IS142        | 284/286TC    |
| 90.5                  | 1.4                  | 20253                     | 19.33            | 28355                   | 6974                  | 3985                 | -         | -     | IS142        | 284/286TC    |
| 78.7                  | 1.3                  | 23303                     | 22.24            | 29340                   | 6886                  | 3935                 | -         | -     | IS142        | 284/286TC    |
| 268.3                 | 4.0                  | 6833                      | 6.52             | 27216                   | 8392                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 240.4                 | 3.8                  | 7627                      | 7.28             | 28845                   | 8634                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 209.4                 | 3.6                  | 8755                      | 8.36             | 31252                   | 8939                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 190.8                 | 3.5                  | 9610                      | 9.17             | 33199                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 168.0                 | 3.4                  | 10915                     | 10.42            | 37014                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 140.4                 | 2.2                  | 13056                     | 12.46            | 29258                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 125.8                 | 2.2                  | 14572                     | 13.91            | 32640                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 109.6                 | 2.2                  | 16728                     | 15.97            | 37477                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 99.8                  | 2.2                  | 18360                     | 17.53            | 41140                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 87.9                  | 2.2                  | 20854                     | 19.91            | 46729                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 76.5                  | 2.2                  | 23970                     | 22.88            | 53726                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 64.6                  | 1.9                  | 28395                     | 27.11            | 53894                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |



## 30 HP

| Output speed<br>[rpm] | Service factor<br>sf | Output torque<br>[in-lbs] | Exact ratio<br>i | Max. torque<br>[in-lbs] | OHL                   |                      | Gearmotor |       | Gear Reducer |              |
|-----------------------|----------------------|---------------------------|------------------|-------------------------|-----------------------|----------------------|-----------|-------|--------------|--------------|
|                       |                      |                           |                  |                         | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Reducer   | Motor | Reducer      | NEMA C-input |
| 58.8                  | 1.9                  | 31166                     | 29.75            | 59164                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 51.8                  | 1.9                  | 35398                     | 33.79            | 67198                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 45.1                  | 1.7                  | 40688                     | 38.84            | 68053                   | 8992                  | 4361                 | -         | -     | IS152        | 284/286TC    |
| 43.6                  | 1.4                  | 41136                     | 40.10            | 55595                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 39.1                  | 1.4                  | 45910                     | 44.76            | 62042                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 34.1                  | 1.3                  | 52705                     | 51.38            | 69614                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 31.0                  | 1.3                  | 57847                     | 56.39            | 73053                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |
| 27.3                  | 1.2                  | 65703                     | 64.05            | 77845                   | 8992                  | 4361                 | -         | -     | IS153        | 284/286TC    |

## 5.2 IS GEAR REDUCER - fs=1, 1750 rpm

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 1505                       | 202.9                 | 8.63             | 5.05                  | 689                   | 689                  | 161                  | PS052           | IS052       |
| 1682                       | 157.1                 | 11.14            | 4.37                  | 743                   | 743                  | 182                  | PS052           | IS052       |
| 1770                       | 145.8                 | 12.00            | 4.27                  | 755                   | 755                  | 185                  | PS052           | IS052       |
| 1859                       | 128.2                 | 13.66            | 3.94                  | 786                   | 786                  | 195                  | PS052           | IS052       |
| 2124                       | 114.6                 | 15.27            | 4.02                  | 787                   | 787                  | 193                  | PS052           | IS052       |
| 2124                       | 107.5                 | 16.29            | 3.77                  | 810                   | 810                  | 200                  | PS052           | IS052       |
| 2124                       | 93.9                  | 18.63            | 3.3                   | 861                   | 861                  | 215                  | PS052           | IS052       |
| 2124                       | 88.7                  | 19.73            | 3.11                  | 884                   | 884                  | 221                  | PS052           | IS052       |
| 2301                       | 83.2                  | 21.04            | 3.16                  | 883                   | 883                  | 219                  | PS052           | IS052       |
| 2301                       | 81.3                  | 21.53            | 3.09                  | 893                   | 893                  | 221                  | PS052           | IS052       |
| 2301                       | 72.7                  | 24.07            | 2.77                  | 939                   | 939                  | 231                  | PS052           | IS052       |
| 2567                       | 69.4                  | 25.20            | 2.95                  | 919                   | 919                  | 226                  | PS052           | IS052       |
| 2567                       | 67.9                  | 25.79            | 2.88                  | 929                   | 929                  | 228                  | PS052           | IS052       |
| 2567                       | 62.9                  | 27.81            | 2.67                  | 962                   | 962                  | 234                  | PS052           | IS052       |
| 2567                       | 58.3                  | 30.00            | 2.47                  | 996                   | 996                  | 240                  | PS052           | IS052       |
| 2655                       | 53.8                  | 32.55            | 2.36                  | 1021                  | 1021                 | 244                  | PS052           | IS052       |
| 2655                       | 53.0                  | 33.00            | 2.33                  | 1027                  | 1027                 | 245                  | PS052           | IS052       |
| 2655                       | 51.3                  | 34.09            | 2.25                  | 1042                  | 1042                 | 247                  | PS052           | IS052       |
| 2921                       | 47.9                  | 36.55            | 2.31                  | 1036                  | 1036                 | 245                  | PS052           | IS052       |
| 2921                       | 45.2                  | 38.75            | 2.18                  | 1065                  | 1065                 | 249                  | PS052           | IS052       |
| 3098                       | 43.9                  | 39.90            | 2.25                  | 1053                  | 1053                 | 247                  | PS052           | IS052       |
| 3098                       | 41.1                  | 42.63            | 2.1                   | 1087                  | 1087                 | 252                  | PS052           | IS052       |
| 3098                       | 38.0                  | 46.00            | 1.95                  | 1126                  | 1126                 | 256                  | PS052           | IS052       |
| 3098                       | 37.1                  | 47.20            | 1.9                   | 1140                  | 1140                 | 258                  | PS052           | IS052       |
| 3098                       | 33.5                  | 52.25            | 1.71                  | 1194                  | 1194                 | 264                  | PS052           | IS052       |
| 3098                       | 30.2                  | 57.86            | 1.55                  | 1251                  | 1251                 | 269                  | PS052           | IS052       |
| 3098                       | 29.4                  | 59.42            | 1.51                  | 1266                  | 1266                 | 270                  | PS052           | IS052       |
| 3098                       | 24.0                  | 72.83            | 1.23                  | 1349                  | 1349                 | 278                  | PS052           | IS052       |
| 3098                       | 48.0                  | 36.50            | 2.51                  | 1010                  | 1010                 | 241                  | PS053           | IS053       |
| 3098                       | 37.1                  | 47.14            | 1.94                  | 1139                  | 1139                 | 258                  | PS053           | IS053       |
| 3098                       | 30.3                  | 57.79            | 1.58                  | 1250                  | 1250                 | 269                  | PS053           | IS053       |
| 3098                       | 27.4                  | 63.74            | 1.44                  | 1306                  | 1306                 | 273                  | PS053           | IS053       |
| 3098                       | 23.6                  | 74.20            | 1.23                  | 1349                  | 1349                 | 279                  | PS053           | IS053       |
| 3098                       | 22.4                  | 78.14            | 1.17                  | 1349                  | 1349                 | 281                  | PS053           | IS053       |
| 3098                       | 18.3                  | 95.84            | 0.95                  | 1349                  | 1349                 | 287                  | PS053           | IS053       |
| 3098                       | 14.9                  | 117.48           | 0.78                  | 1349                  | 1349                 | 293                  | PS053           | IS053       |
| 3098                       | 12.7                  | 137.45           | 0.67                  | 1349                  | 1349                 | 296                  | PS053           | IS053       |
| 3098                       | 9.9                   | 177.55           | 0.52                  | 1349                  | 1349                 | 301                  | PS053           | IS053       |
| 3098                       | 8.8                   | 198.45           | 0.46                  | 1349                  | 1349                 | 302                  | PS053           | IS053       |
| 3098                       | 8.0                   | 217.64           | 0.42                  | 1349                  | 1349                 | 304                  | PS053           | IS053       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 3098                       | 6.8                   | 256.33           | 0.36                  | 1349                  | 1349                 | 305                  | PS053           | IS053       |
| 3098                       | 5.6                   | 314.21           | 0.29                  | 1349                  | 1349                 | 307                  | PS053           | IS053       |
| 2921                       | 218.8                 | 8.00             | 10.56                 | 1058                  | 423                  | 79                   | PS062           | IS062       |
| 2921                       | 196.2                 | 8.92             | 9.47                  | 1114                  | 446                  | 103                  | PS062           | IS062       |
| 3186                       | 183.3                 | 9.55             | 9.65                  | 1107                  | 443                  | 99                   | PS062           | IS062       |
| 3186                       | 164.4                 | 10.65            | 8.66                  | 1166                  | 467                  | 122                  | PS062           | IS062       |
| 3452                       | 149.5                 | 11.71            | 8.53                  | 1177                  | 471                  | 124                  | PS062           | IS062       |
| 3717                       | 134.0                 | 13.06            | 8.23                  | 1198                  | 479                  | 131                  | PS062           | IS062       |
| 3717                       | 131.0                 | 13.36            | 8.05                  | 1211                  | 485                  | 135                  | PS062           | IS062       |
| 3983                       | 109.8                 | 15.94            | 7.23                  | 1277                  | 511                  | 154                  | PS062           | IS062       |
| 3983                       | 108.3                 | 16.16            | 7.13                  | 1286                  | 514                  | 156                  | PS062           | IS062       |
| 3983                       | 90.7                  | 19.29            | 5.97                  | 1402                  | 561                  | 182                  | PS062           | IS062       |
| 4071                       | 89.5                  | 19.55            | 6.02                  | 1397                  | 559                  | 181                  | PS062           | IS062       |
| 4160                       | 75.5                  | 23.18            | 5.19                  | 1501                  | 600                  | 200                  | PS062           | IS062       |
| 4160                       | 73.7                  | 23.75            | 5.07                  | 1519                  | 607                  | 203                  | PS062           | IS062       |
| 4248                       | 69.6                  | 25.14            | 4.89                  | 1546                  | 618                  | 207                  | PS062           | IS062       |
| 4248                       | 63.3                  | 27.66            | 4.44                  | 1617                  | 647                  | 217                  | PS062           | IS062       |
| 4425                       | 58.3                  | 30.00            | 4.27                  | 1651                  | 661                  | 221                  | PS062           | IS062       |
| 4779                       | 51.6                  | 33.93            | 4.07                  | 1692                  | 677                  | 225                  | PS062           | IS062       |
| 5310                       | 47.9                  | 36.57            | 4.2                   | 1669                  | 667                  | 222                  | PS062           | IS062       |
| 5310                       | 44.4                  | 39.38            | 3.9                   | 1731                  | 692                  | 229                  | PS062           | IS062       |
| 5310                       | 40.1                  | 43.64            | 3.52                  | 1820                  | 728                  | 237                  | PS062           | IS062       |
| 5310                       | 38.0                  | 46.10            | 3.33                  | 1869                  | 748                  | 242                  | PS062           | IS062       |
| 5310                       | 36.2                  | 48.30            | 3.18                  | 1911                  | 764                  | 245                  | PS062           | IS062       |
| 5310                       | 32.7                  | 53.53            | 2.87                  | 2007                  | 803                  | 252                  | PS062           | IS062       |
| 5310                       | 31.8                  | 55.00            | 2.79                  | 2032                  | 813                  | 254                  | PS062           | IS062       |
| 5310                       | 25.9                  | 67.47            | 2.28                  | 2234                  | 893                  | 265                  | PS062           | IS062       |
| 5310                       | 52.1                  | 33.57            | 4.67                  | 1598                  | 639                  | 214                  | PS063           | IS063       |
| 5310                       | 46.3                  | 37.77            | 4.15                  | 1696                  | 678                  | 225                  | PS063           | IS063       |
| 5310                       | 43.7                  | 40.05            | 3.92                  | 1745                  | 698                  | 230                  | PS063           | IS063       |
| 5310                       | 35.6                  | 49.13            | 3.19                  | 1927                  | 771                  | 246                  | PS063           | IS063       |
| 5310                       | 31.6                  | 55.29            | 2.84                  | 2037                  | 815                  | 254                  | PS063           | IS063       |
| 5310                       | 29.8                  | 58.72            | 2.67                  | 2095                  | 838                  | 258                  | PS063           | IS063       |
| 5310                       | 26.6                  | 65.85            | 2.38                  | 2209                  | 884                  | 264                  | PS063           | IS063       |
| 5310                       | 25.6                  | 68.25            | 2.3                   | 2245                  | 898                  | 266                  | PS063           | IS063       |
| 5310                       | 23.8                  | 73.63            | 2.13                  | 2248                  | 899                  | 270                  | PS063           | IS063       |
| 5310                       | 21.5                  | 81.43            | 1.93                  | 2248                  | 899                  | 274                  | PS063           | IS063       |
| 5310                       | 17.5                  | 99.89            | 1.57                  | 2248                  | 899                  | 282                  | PS063           | IS063       |
| 5310                       | 13.8                  | 126.43           | 1.24                  | 2248                  | 899                  | 289                  | PS063           | IS063       |
| 5310                       | 11.6                  | 150.85           | 1.04                  | 2248                  | 899                  | 294                  | PS063           | IS063       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 5310                       | 9.6                   | 182.53           | 0.86                  | 2248                  | 899                  | 298                  | PS063           | IS063       |
| 5310                       | 9.5                   | 185.05           | 0.85                  | 2248                  | 899                  | 298                  | PS063           | IS063       |
| 5310                       | 8.0                   | 217.79           | 0.72                  | 2248                  | 899                  | 301                  | PS063           | IS063       |
| 5310                       | 6.5                   | 267.16           | 0.59                  | 2248                  | 899                  | 304                  | PS063           | IS063       |
| 4868                       | 238.4                 | 7.34             | 19.18                 | 2484                  | 710                  | 284                  | PS082           | IS082       |
| 5310                       | 217.1                 | 8.06             | 19.05                 | 2538                  | 725                  | 286                  | PS082           | IS082       |
| 5753                       | 176.0                 | 9.94             | 16.73                 | 2715                  | 776                  | 333                  | PS082           | IS082       |
| 6196                       | 150.8                 | 11.61            | 15.44                 | 2845                  | 813                  | 359                  | PS082           | IS082       |
| 6638                       | 137.2                 | 12.75            | 15.06                 | 2914                  | 833                  | 367                  | PS082           | IS082       |
| 6727                       | 124.6                 | 14.04            | 13.85                 | 3019                  | 863                  | 391                  | PS082           | IS082       |
| 6815                       | 113.4                 | 15.43            | 12.78                 | 3124                  | 893                  | 413                  | PS082           | IS082       |
| 6815                       | 111.3                 | 15.73            | 12.53                 | 3148                  | 899                  | 418                  | PS082           | IS082       |
| 6815                       | 101.2                 | 17.29            | 11.4                  | 3266                  | 933                  | 441                  | PS082           | IS082       |
| 6815                       | 92.0                  | 19.03            | 10.36                 | 3389                  | 968                  | 462                  | PS082           | IS082       |
| 6815                       | 86.9                  | 20.14            | 9.79                  | 3464                  | 990                  | 474                  | PS082           | IS082       |
| 7081                       | 79.1                  | 22.13            | 9.26                  | 3569                  | 1020                 | 484                  | PS082           | IS082       |
| 7081                       | 72.9                  | 24.00            | 8.53                  | 3682                  | 1052                 | 499                  | PS082           | IS082       |
| 7081                       | 67.2                  | 26.05            | 7.86                  | 3799                  | 1085                 | 513                  | PS082           | IS082       |
| 7966                       | 64.1                  | 27.29            | 8.44                  | 3793                  | 1084                 | 501                  | PS082           | IS082       |
| 7966                       | 61.0                  | 28.67            | 8.03                  | 3866                  | 1105                 | 509                  | PS082           | IS082       |
| 7966                       | 59.1                  | 29.60            | 7.78                  | 3914                  | 1118                 | 514                  | PS082           | IS082       |
| 8851                       | 55.1                  | 31.78            | 8.06                  | 3949                  | 1128                 | 509                  | PS082           | IS082       |
| 8851                       | 50.1                  | 34.91            | 7.33                  | 4047                  | 1170                 | 523                  | PS082           | IS082       |
| 8851                       | 49.3                  | 35.50            | 7.21                  | 4047                  | 1178                 | 526                  | PS082           | IS082       |
| 8851                       | 43.7                  | 40.05            | 6.39                  | 4047                  | 1234                 | 542                  | PS082           | IS082       |
| 8851                       | 40.6                  | 43.05            | 5.95                  | 4047                  | 1269                 | 551                  | PS082           | IS082       |
| 8851                       | 34.8                  | 50.25            | 5.09                  | 4047                  | 1347                 | 568                  | PS082           | IS082       |
| 8851                       | 32.2                  | 54.27            | 4.72                  | 4047                  | 1387                 | 576                  | PS082           | IS082       |
| 8851                       | 28.2                  | 61.98            | 4.13                  | 4047                  | 1458                 | 588                  | PS082           | IS082       |
| 8851                       | 25.9                  | 67.52            | 3.87                  | 4047                  | 1506                 | 595                  | PS083           | IS083       |
| 8851                       | 23.6                  | 74.18            | 3.52                  | 4047                  | 1561                 | 602                  | PS083           | IS083       |
| 8851                       | 21.4                  | 81.71            | 3.2                   | 4047                  | 1618                 | 608                  | PS083           | IS083       |
| 8851                       | 19.1                  | 91.49            | 2.86                  | 4047                  | 1619                 | 615                  | PS083           | IS083       |
| 8851                       | 17.4                  | 100.62           | 2.6                   | 4047                  | 1619                 | 620                  | PS083           | IS083       |
| 8851                       | 14.9                  | 117.17           | 2.23                  | 4047                  | 1619                 | 627                  | PS083           | IS083       |
| 8851                       | 13.6                  | 128.73           | 2.03                  | 4047                  | 1619                 | 631                  | PS083           | IS083       |
| 8851                       | 12.8                  | 136.34           | 1.92                  | 4047                  | 1619                 | 634                  | PS083           | IS083       |
| 8851                       | 11.0                  | 158.76           | 1.65                  | 4047                  | 1619                 | 639                  | PS083           | IS083       |
| 8851                       | 9.5                   | 184.88           | 1.41                  | 4047                  | 1619                 | 644                  | PS083           | IS083       |
| 8851                       | 8.6                   | 203.11           | 1.29                  | 4047                  | 1619                 | 646                  | PS083           | IS083       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 8851                       | 8.5                   | 205.34           | 1.27                  | 4047                  | 1619                 | 646                  | PS083           | IS083       |
| 8851                       | 7.7                   | 226.04           | 1.16                  | 4047                  | 1619                 | 649                  | PS083           | IS083       |
| 8851                       | 7.0                   | 250.50           | 1.04                  | 4047                  | 1619                 | 651                  | PS083           | IS083       |
| 8851                       | 6.6                   | 266.13           | 0.98                  | 4047                  | 1619                 | 652                  | PS083           | IS083       |
| 8851                       | 6.0                   | 292.36           | 0.89                  | 4047                  | 1619                 | 654                  | PS083           | IS083       |
| 8851                       | 5.5                   | 315.73           | 0.83                  | 4047                  | 1619                 | 655                  | PS083           | IS083       |
| 8851                       | 4.8                   | 360.58           | 0.73                  | 4047                  | 1619                 | 657                  | PS083           | IS083       |
| 7523                       | 217.1                 | 8.06             | 26.99                 | 3132                  | 895                  | 145                  | PS102           | IS102       |
| 7966                       | 197.8                 | 8.85             | 26.04                 | 3215                  | 919                  | 164                  | PS102           | IS102       |
| 8408                       | 160.8                 | 10.88            | 22.34                 | 3451                  | 986                  | 236                  | PS102           | IS102       |
| 8851                       | 137.2                 | 12.75            | 20.08                 | 3636                  | 1039                 | 280                  | PS102           | IS102       |
| 10621                      | 125.1                 | 13.99            | 21.96                 | 3651                  | 1043                 | 244                  | PS102           | IS102       |
| 11063                      | 113.4                 | 15.43            | 20.74                 | 3765                  | 1076                 | 267                  | PS102           | IS102       |
| 11506                      | 101.7                 | 17.21            | 19.33                 | 3901                  | 1114                 | 295                  | PS102           | IS102       |
| 12391                      | 92.1                  | 19.00            | 18.86                 | 3997                  | 1142                 | 304                  | PS102           | IS102       |
| 12391                      | 84.0                  | 20.83            | 17.21                 | 4145                  | 1184                 | 336                  | PS102           | IS102       |
| 12391                      | 79.1                  | 22.13            | 16.2                  | 4245                  | 1213                 | 356                  | PS102           | IS102       |
| 13276                      | 72.1                  | 24.28            | 15.82                 | 4344                  | 1241                 | 363                  | PS102           | IS102       |
| 13276                      | 66.5                  | 26.33            | 14.58                 | 4486                  | 1282                 | 387                  | PS102           | IS102       |
| 13276                      | 58.6                  | 29.87            | 12.86                 | 4713                  | 1347                 | 421                  | PS102           | IS102       |
| 13276                      | 54.0                  | 32.40            | 11.85                 | 4866                  | 1390                 | 441                  | PS102           | IS102       |
| 12391                      | 50.1                  | 34.91            | 10.27                 | 4946                  | 1448                 | 472                  | PS102           | IS102       |
| 13276                      | 45.7                  | 38.30            | 10.02                 | 4946                  | 1483                 | 476                  | PS102           | IS102       |
| 12391                      | 41.1                  | 42.53            | 8.43                  | 4946                  | 1561                 | 508                  | PS102           | IS102       |
| 11506                      | 39.8                  | 44.00            | 7.56                  | 4946                  | 1598                 | 524                  | PS102           | IS102       |
| 14161                      | 37.1                  | 47.13            | 8.69                  | 4946                  | 1589                 | 502                  | PS102           | IS102       |
| 12391                      | 34.8                  | 50.25            | 7.13                  | 4946                  | 1662                 | 533                  | PS102           | IS102       |
| 11506                      | 31.7                  | 55.14            | 6.04                  | 4946                  | 1738                 | 554                  | PS102           | IS102       |
| 14161                      | 29.5                  | 59.40            | 6.89                  | 4946                  | 1737                 | 537                  | PS102           | IS102       |
| 14161                      | 25.8                  | 67.84            | 6.04                  | 4946                  | 1826                 | 554                  | PS102           | IS102       |
| 14161                      | 23.6                  | 74.18            | 5.64                  | 4946                  | 1889                 | 564                  | PS103           | IS103       |
| 14161                      | 21.5                  | 81.39            | 5.14                  | 4946                  | 1956                 | 574                  | PS103           | IS103       |
| 14161                      | 19.5                  | 89.77            | 4.66                  | 4946                  | 2023                 | 583                  | PS103           | IS103       |
| 14161                      | 17.5                  | 100.15           | 4.18                  | 4946                  | 2023                 | 592                  | PS103           | IS103       |
| 14161                      | 15.8                  | 110.55           | 3.78                  | 4946                  | 2023                 | 600                  | PS103           | IS103       |
| 14161                      | 14.4                  | 121.29           | 3.45                  | 4946                  | 2023                 | 606                  | PS103           | IS103       |
| 14161                      | 13.6                  | 128.73           | 3.25                  | 4946                  | 2023                 | 610                  | PS103           | IS103       |
| 14161                      | 12.4                  | 141.24           | 2.96                  | 4946                  | 2023                 | 615                  | PS103           | IS103       |
| 14161                      | 10.1                  | 173.78           | 2.41                  | 4946                  | 2023                 | 626                  | PS103           | IS103       |
| 14161                      | 9.3                   | 188.51           | 2.22                  | 4946                  | 2023                 | 630                  | PS103           | IS103       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 14161                      | 8.6                   | 203.11           | 2.06                  | 4946                  | 2023                 | 633                  | PS103           | IS103       |
| 14161                      | 7.8                   | 222.85           | 1.88                  | 4946                  | 2023                 | 636                  | PS103           | IS103       |
| 14161                      | 7.8                   | 224.76           | 1.86                  | 4946                  | 2023                 | 636                  | PS103           | IS103       |
| 14161                      | 6.4                   | 274.20           | 1.53                  | 4946                  | 2023                 | 643                  | PS103           | IS103       |
| 14161                      | 6.2                   | 280.89           | 1.49                  | 4946                  | 2023                 | 643                  | PS103           | IS103       |
| 14161                      | 6.0                   | 292.36           | 1.43                  | 4946                  | 2023                 | 645                  | PS103           | IS103       |
| 14161                      | 5.5                   | 320.79           | 1.3                   | 4946                  | 2023                 | 647                  | PS103           | IS103       |
| 14161                      | 5.1                   | 345.60           | 1.21                  | 4946                  | 2023                 | 649                  | PS103           | IS103       |
| 14161                      | 4.4                   | 394.69           | 1.06                  | 4946                  | 2023                 | 652                  | PS103           | IS103       |
| 13276                      | 206.3                 | 8.48             | 45.27                 | 4000                  | 1143                 | 663                  | PS122           | IS122       |
| 15046                      | 188.2                 | 9.30             | 46.8                  | 3992                  | 1141                 | 656                  | PS122           | IS122       |
| 15046                      | 170.9                 | 10.24            | 42.5                  | 4168                  | 1191                 | 677                  | PS122           | IS122       |
| 16816                      | 153.3                 | 11.42            | 42.6                  | 4203                  | 1201                 | 677                  | PS122           | IS122       |
| 19472                      | 138.6                 | 12.63            | 44.6                  | 4144                  | 1184                 | 667                  | PS122           | IS122       |
| 21242                      | 126.5                 | 13.84            | 44.39                 | 4159                  | 1188                 | 668                  | PS122           | IS122       |
| 23012                      | 103.0                 | 16.99            | 39.17                 | 4423                  | 1264                 | 694                  | PS122           | IS122       |
| 24782                      | 82.3                  | 21.25            | 33.73                 | 4761                  | 1360                 | 721                  | PS122           | IS122       |
| 24782                      | 78.2                  | 22.37            | 32.04                 | 4883                  | 1395                 | 730                  | PS122           | IS122       |
| 25667                      | 75.1                  | 23.29            | 31.87                 | 4896                  | 1399                 | 731                  | PS122           | IS122       |
| 26552                      | 66.9                  | 26.15            | 29.36                 | 5098                  | 1456                 | 744                  | PS122           | IS122       |
| 26552                      | 61.2                  | 28.60            | 26.85                 | 5327                  | 1522                 | 756                  | PS122           | IS122       |
| 26552                      | 57.4                  | 30.51            | 25.17                 | 5497                  | 1571                 | 765                  | PS122           | IS122       |
| 26552                      | 53.4                  | 32.76            | 23.44                 | 5688                  | 1625                 | 773                  | PS122           | IS122       |
| 26552                      | 52.3                  | 33.44            | 22.96                 | 5744                  | 1641                 | 776                  | PS122           | IS122       |
| 26552                      | 49.7                  | 35.20            | 21.82                 | 5886                  | 1682                 | 782                  | PS122           | IS122       |
| 26552                      | 42.6                  | 41.07            | 18.7                  | 6326                  | 1808                 | 797                  | PS122           | IS122       |
| 26552                      | 40.1                  | 43.60            | 17.61                 | 6503                  | 1858                 | 803                  | PS122           | IS122       |
| 21242                      | 39.2                  | 44.63            | 13.77                 | 6744                  | 2024                 | 822                  | PS122           | IS122       |
| 21242                      | 35.7                  | 49.04            | 12.53                 | 6744                  | 2106                 | 828                  | PS122           | IS122       |
| 23012                      | 32.6                  | 53.75            | 12.38                 | 6744                  | 2141                 | 829                  | PS122           | IS122       |
| 26552                      | 26.5                  | 66.00            | 11.64                 | 6744                  | 2238                 | 833                  | PS122           | IS122       |
| 23897                      | 27.0                  | 64.84            | 10.89                 | 6744                  | 2293                 | 838                  | PS123           | IS123       |
| 23897                      | 24.6                  | 71.07            | 9.93                  | 6744                  | 2384                 | 842                  | PS123           | IS123       |
| 26552                      | 22.3                  | 78.46            | 10                    | 6744                  | 2412                 | 842                  | PS123           | IS123       |
| 26552                      | 20.1                  | 87.27            | 8.99                  | 6744                  | 2518                 | 847                  | PS123           | IS123       |
| 26552                      | 16.5                  | 105.91           | 7.41                  | 6744                  | 2518                 | 855                  | PS123           | IS123       |
| 26552                      | 15.6                  | 112.52           | 6.97                  | 6744                  | 2518                 | 857                  | PS123           | IS123       |
| 26552                      | 14.2                  | 123.33           | 6.36                  | 6744                  | 2518                 | 860                  | PS123           | IS123       |
| 26552                      | 13.5                  | 130.04           | 6.03                  | 6744                  | 2518                 | 862                  | PS123           | IS123       |
| 26552                      | 13.1                  | 133.78           | 5.86                  | 6744                  | 2518                 | 863                  | PS123           | IS123       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 26552                      | 11.6                  | 151.43           | 5.18                  | 6744                  | 2518                 | 866                  | PS123           | IS123       |
| 26552                      | 9.9                   | 177.53           | 4.42                  | 6744                  | 2518                 | 870                  | PS123           | IS123       |
| 26552                      | 9.0                   | 194.59           | 4.03                  | 6744                  | 2518                 | 872                  | PS123           | IS123       |
| 26552                      | 8.1                   | 215.60           | 3.64                  | 6744                  | 2518                 | 874                  | PS123           | IS123       |
| 26552                      | 7.3                   | 238.93           | 3.28                  | 6744                  | 2518                 | 875                  | PS123           | IS123       |
| 26552                      | 6.8                   | 255.54           | 3.07                  | 6744                  | 2518                 | 876                  | PS123           | IS123       |
| 12294                      | 425.0                 | 4.12             | 86.35                 | 4159                  | 2377                 | 539                  | S142            | IS142       |
| 13702                      | 381.6                 | 4.59             | 86.41                 | 4117                  | 2353                 | 539                  | S142            | IS142       |
| 15378                      | 340.2                 | 5.14             | 86.46                 | 4046                  | 2312                 | 538                  | S142            | IS142       |
| 17382                      | 300.7                 | 5.82             | 86.39                 | 3941                  | 2252                 | 539                  | S142            | IS142       |
| 18579                      | 281.7                 | 6.21             | 86.48                 | 3863                  | 2207                 | 538                  | S142            | IS142       |
| 16953                      | 239.2                 | 7.32             | 67                    | 4610                  | 2634                 | 665                  | S142            | IS142       |
| 19017                      | 213.2                 | 8.21             | 67.01                 | 4505                  | 2574                 | 665                  | S142            | IS142       |
| 21522                      | 188.5                 | 9.29             | 67.04                 | 4349                  | 2485                 | 665                  | S142            | IS142       |
| 22983                      | 176.5                 | 9.91             | 67.05                 | 4245                  | 2426                 | 665                  | S142            | IS142       |
| 24924                      | 153.4                 | 11.41            | 63.2                  | 4276                  | 2443                 | 690                  | S142            | IS142       |
| 23189                      | 136.6                 | 12.81            | 52.34                 | 4986                  | 2849                 | 760                  | S142            | IS142       |
| 21596                      | 122.6                 | 14.27            | 43.77                 | 5654                  | 3231                 | 816                  | S142            | IS142       |
| 23470                      | 109.3                 | 16.01            | 42.41                 | 5664                  | 3236                 | 825                  | S142            | IS142       |
| 26551                      | 96.6                  | 18.11            | 42.41                 | 5477                  | 3130                 | 825                  | S142            | IS142       |
| 28355                      | 90.5                  | 19.33            | 42.42                 | 5352                  | 3058                 | 824                  | S142            | IS142       |
| 29340                      | 78.7                  | 22.24            | 38.15                 | 5677                  | 3244                 | 852                  | S142            | IS142       |
| 25630                      | 69.3                  | 25.26            | 29.34                 | 6915                  | 3952                 | 909                  | S142            | IS142       |
| 28745                      | 61.8                  | 28.33            | 29.34                 | 6756                  | 3861                 | 909                  | S142            | IS142       |
| 32519                      | 54.6                  | 32.05            | 29.34                 | 6520                  | 3726                 | 909                  | S142            | IS142       |
| 34721                      | 51.1                  | 34.22            | 29.34                 | 6364                  | 3637                 | 909                  | S142            | IS142       |
| 39216                      | 44.4                  | 39.38            | 28.8                  | 6095                  | 3483                 | 913                  | S142            | IS142       |
| 35517                      | 38.2                  | 45.77            | 22.92                 | 7545                  | 4159                 | 944                  | S143            | IS143       |
| 39561                      | 34.3                  | 50.97            | 22.92                 | 7266                  | 4152                 | 944                  | S143            | IS143       |
| 41904                      | 30.6                  | 57.17            | 21.65                 | 7383                  | 4159                 | 944                  | S143            | IS143       |
| 42257                      | 27.1                  | 64.68            | 19.3                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 43158                      | 25.3                  | 69.06            | 18.46                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 37469                      | 22.0                  | 79.45            | 13.93                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 39297                      | 17.7                  | 98.81            | 11.75                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41895                      | 15.9                  | 110.05           | 11.24                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42080                      | 14.2                  | 123.44           | 10.07                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42845                      | 12.5                  | 139.64           | 9.06                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42356                      | 11.7                  | 149.10           | 8.39                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 33645                      | 11.1                  | 157.49           | 6.31                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41327                      | 10.2                  | 171.55           | 7.12                  | 7868                  | 4159                 | 944                  | S143            | IS143       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 37473                      | 10.0                  | 175.41           | 6.31                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42030                      | 8.9                   | 196.74           | 6.31                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41731                      | 7.9                   | 222.57           | 5.54                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 43205                      | 7.4                   | 237.63           | 5.37                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42411                      | 6.4                   | 273.41           | 4.58                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 22775                      | 430.9                 | 4.06             | 162.17                | 5051                  | 2886                 | 630                  | S152            | IS152       |
| 25411                      | 386.1                 | 4.53             | 162.13                | 5011                  | 2864                 | 630                  | S152            | IS152       |
| 25791                      | 336.3                 | 5.20             | 143.34                | 5346                  | 3055                 | 704                  | S152            | IS152       |
| 26039                      | 306.4                 | 5.71             | 131.85                | 5583                  | 3190                 | 749                  | S152            | IS152       |
| 27216                      | 268.3                 | 6.52             | 120.67                | 5832                  | 3332                 | 793                  | S152            | IS152       |
| 28845                      | 240.4                 | 7.28             | 114.59                | 5968                  | 3411                 | 817                  | S152            | IS152       |
| 31252                      | 209.4                 | 8.36             | 108.15                | 6113                  | 3493                 | 843                  | S152            | IS152       |
| 33199                      | 190.8                 | 9.17             | 104.67                | 6182                  | 3532                 | 856                  | S152            | IS152       |
| 37014                      | 168.0                 | 10.42            | 102.75                | 6147                  | 3512                 | 864                  | S152            | IS152       |
| 29258                      | 140.4                 | 12.46            | 67.9                  | 7779                  | 4361                 | 1001                 | S152            | IS152       |
| 32640                      | 125.8                 | 13.91            | 67.86                 | 7776                  | 4361                 | 1001                 | S152            | IS152       |
| 37477                      | 109.6                 | 15.97            | 67.88                 | 7722                  | 4361                 | 1001                 | S152            | IS152       |
| 41140                      | 99.8                  | 17.53            | 67.89                 | 7650                  | 4361                 | 1001                 | S152            | IS152       |
| 46729                      | 87.9                  | 19.91            | 67.89                 | 7498                  | 4285                 | 1001                 | S152            | IS152       |
| 53726                      | 76.5                  | 22.88            | 67.91                 | 7248                  | 4142                 | 1001                 | S152            | IS152       |
| 53894                      | 64.6                  | 27.11            | 57.5                  | 8031                  | 4361                 | 1042                 | S152            | IS152       |
| 59164                      | 58.8                  | 29.75            | 57.52                 | 7831                  | 4361                 | 1042                 | S152            | IS152       |
| 67198                      | 51.8                  | 33.79            | 57.52                 | 7477                  | 4273                 | 1042                 | S152            | IS152       |
| 68053                      | 45.1                  | 38.84            | 50.67                 | 8118                  | 4361                 | 1069                 | S152            | IS152       |
| 55595                      | 43.6                  | 40.10            | 40.95                 | 8992                  | 4361                 | 1111                 | S153            | IS153       |
| 62042                      | 39.1                  | 44.76            | 40.94                 | 8992                  | 4361                 | 1111                 | S153            | IS153       |
| 69614                      | 34.1                  | 51.38            | 40.02                 | 8992                  | 4361                 | 1114                 | S153            | IS153       |
| 73053                      | 31.0                  | 56.39            | 38.26                 | 8992                  | 4361                 | 1121                 | S153            | IS153       |
| 77845                      | 27.3                  | 64.05            | 35.9                  | 8992                  | 4361                 | 1130                 | S153            | IS153       |
| 68854                      | 23.8                  | 73.63            | 27.62                 | 8992                  | 4361                 | 1162                 | S153            | IS153       |
| 62889                      | 20.1                  | 87.16            | 21.31                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 70191                      | 18.0                  | 97.27            | 21.31                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 80575                      | 15.7                  | 111.67           | 21.31                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 84402                      | 14.3                  | 122.57           | 20.34                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 80913                      | 12.6                  | 139.21           | 17.17                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 63094                      | 11.4                  | 154.02           | 12.1                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 71552                      | 10.9                  | 160.02           | 13.21                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 72434                      | 9.9                   | 176.81           | 12.1                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 79497                      | 9.0                   | 194.06           | 12.1                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 82782                      | 7.9                   | 220.42           | 11.09                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |



# 5.2 IS GEAR REDUCER - fs=1, 1750 rpm

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 73272                      | 6.9                   | 253.36           | 8.54                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 1505                       | 132.2                 | 8.63             | 3.29                  | 828                   | 828                  | 161                  | PS052           | IS052       |
| 1682                       | 102.3                 | 11.14            | 2.84                  | 894                   | 894                  | 182                  | PS052           | IS052       |
| 1770                       | 95.0                  | 12.00            | 2.78                  | 909                   | 909                  | 185                  | PS052           | IS052       |
| 1859                       | 83.5                  | 13.66            | 2.56                  | 947                   | 947                  | 195                  | PS052           | IS052       |
| 2124                       | 74.6                  | 15.27            | 2.62                  | 954                   | 954                  | 193                  | PS052           | IS052       |
| 2124                       | 70.0                  | 16.29            | 2.46                  | 981                   | 981                  | 200                  | PS052           | IS052       |
| 2124                       | 61.2                  | 18.63            | 2.15                  | 1040                  | 1040                 | 215                  | PS052           | IS052       |
| 2124                       | 57.8                  | 19.73            | 2.03                  | 1066                  | 1066                 | 221                  | PS052           | IS052       |
| 2301                       | 54.2                  | 21.04            | 2.06                  | 1069                  | 1069                 | 219                  | PS052           | IS052       |
| 2301                       | 53.0                  | 21.53            | 2.01                  | 1080                  | 1080                 | 221                  | PS052           | IS052       |
| 2301                       | 47.4                  | 24.07            | 1.8                   | 1133                  | 1133                 | 231                  | PS052           | IS052       |
| 2567                       | 45.2                  | 25.20            | 1.92                  | 1116                  | 1116                 | 226                  | PS052           | IS052       |
| 2567                       | 44.2                  | 25.79            | 1.88                  | 1128                  | 1128                 | 228                  | PS052           | IS052       |
| 2567                       | 41.0                  | 27.81            | 1.74                  | 1166                  | 1166                 | 234                  | PS052           | IS052       |
| 2567                       | 38.0                  | 30.00            | 1.61                  | 1205                  | 1205                 | 240                  | PS052           | IS052       |
| 2655                       | 35.0                  | 32.55            | 1.54                  | 1235                  | 1235                 | 244                  | PS052           | IS052       |
| 2655                       | 34.5                  | 33.00            | 1.52                  | 1243                  | 1243                 | 245                  | PS052           | IS052       |
| 2655                       | 33.4                  | 34.09            | 1.47                  | 1260                  | 1260                 | 247                  | PS052           | IS052       |
| 2921                       | 31.2                  | 36.55            | 1.51                  | 1259                  | 1259                 | 245                  | PS052           | IS052       |
| 2921                       | 29.4                  | 38.75            | 1.42                  | 1292                  | 1292                 | 249                  | PS052           | IS052       |
| 3098                       | 28.6                  | 39.90            | 1.46                  | 1283                  | 1283                 | 247                  | PS052           | IS052       |
| 3098                       | 26.7                  | 42.63            | 1.37                  | 1321                  | 1321                 | 252                  | PS052           | IS052       |
| 3098                       | 24.8                  | 46.00            | 1.27                  | 1349                  | 1349                 | 256                  | PS052           | IS052       |
| 3098                       | 24.1                  | 47.20            | 1.24                  | 1349                  | 1349                 | 258                  | PS052           | IS052       |
| 3098                       | 21.8                  | 52.25            | 1.12                  | 1349                  | 1349                 | 264                  | PS052           | IS052       |
| 3098                       | 19.7                  | 57.86            | 1.01                  | 1349                  | 1349                 | 269                  | PS052           | IS052       |
| 3098                       | 19.2                  | 59.42            | 0.98                  | 1349                  | 1349                 | 270                  | PS052           | IS052       |
| 3098                       | 15.7                  | 72.83            | 0.8                   | 1349                  | 1349                 | 278                  | PS052           | IS052       |
| 3098                       | 31.2                  | 36.50            | 1.63                  | 1232                  | 1232                 | 241                  | PS053           | IS053       |
| 3098                       | 24.2                  | 47.14            | 1.26                  | 1349                  | 1349                 | 258                  | PS053           | IS053       |
| 3098                       | 19.7                  | 57.79            | 1.03                  | 1349                  | 1349                 | 269                  | PS053           | IS053       |
| 3098                       | 17.9                  | 63.74            | 0.94                  | 1349                  | 1349                 | 273                  | PS053           | IS053       |
| 3098                       | 15.4                  | 74.20            | 0.8                   | 1349                  | 1349                 | 279                  | PS053           | IS053       |
| 3098                       | 14.6                  | 78.14            | 0.76                  | 1349                  | 1349                 | 281                  | PS053           | IS053       |
| 3098                       | 11.9                  | 95.84            | 0.62                  | 1349                  | 1349                 | 287                  | PS053           | IS053       |
| 3098                       | 9.7                   | 117.48           | 0.51                  | 1349                  | 1349                 | 293                  | PS053           | IS053       |
| 3098                       | 8.3                   | 137.45           | 0.43                  | 1349                  | 1349                 | 296                  | PS053           | IS053       |
| 3098                       | 6.4                   | 177.55           | 0.34                  | 1349                  | 1349                 | 301                  | PS053           | IS053       |
| 3098                       | 5.7                   | 198.45           | 0.3                   | 1349                  | 1349                 | 302                  | PS053           | IS053       |
| 3098                       | 5.2                   | 217.64           | 0.27                  | 1349                  | 1349                 | 304                  | PS053           | IS053       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 3098                       | 4.5                   | 256.33           | 0.23                  | 1349                  | 1349                 | 305                  | PS053           | IS053       |
| 3098                       | 3.6                   | 314.21           | 0.19                  | 1349                  | 1349                 | 307                  | PS053           | IS053       |
| 2921                       | 142.5                 | 8.00             | 6.88                  | 1290                  | 516                  | 79                   | PS062           | IS062       |
| 2921                       | 127.8                 | 8.92             | 6.17                  | 1355                  | 542                  | 103                  | PS062           | IS062       |
| 3186                       | 119.4                 | 9.55             | 6.29                  | 1353                  | 541                  | 99                   | PS062           | IS062       |
| 3186                       | 107.1                 | 10.65            | 5.64                  | 1421                  | 569                  | 122                  | PS062           | IS062       |
| 3452                       | 97.4                  | 11.71            | 5.55                  | 1440                  | 576                  | 124                  | PS062           | IS062       |
| 3717                       | 87.3                  | 13.06            | 5.36                  | 1471                  | 588                  | 131                  | PS062           | IS062       |
| 3717                       | 85.3                  | 13.36            | 5.24                  | 1486                  | 595                  | 135                  | PS062           | IS062       |
| 3983                       | 71.5                  | 15.94            | 4.71                  | 1569                  | 627                  | 154                  | PS062           | IS062       |
| 3983                       | 70.5                  | 16.16            | 4.64                  | 1579                  | 632                  | 156                  | PS062           | IS062       |
| 3983                       | 59.1                  | 19.29            | 3.89                  | 1712                  | 685                  | 182                  | PS062           | IS062       |
| 4071                       | 58.3                  | 19.55            | 3.92                  | 1709                  | 683                  | 181                  | PS062           | IS062       |
| 4160                       | 49.2                  | 23.18            | 3.38                  | 1831                  | 732                  | 200                  | PS062           | IS062       |
| 4160                       | 48.0                  | 23.75            | 3.3                   | 1851                  | 740                  | 203                  | PS062           | IS062       |
| 4248                       | 45.3                  | 25.14            | 3.18                  | 1885                  | 754                  | 207                  | PS062           | IS062       |
| 4248                       | 41.2                  | 27.66            | 2.89                  | 1967                  | 787                  | 217                  | PS062           | IS062       |
| 4425                       | 38.0                  | 30.00            | 2.78                  | 2010                  | 804                  | 221                  | PS062           | IS062       |
| 4779                       | 33.6                  | 33.93            | 2.65                  | 2066                  | 826                  | 225                  | PS062           | IS062       |
| 5310                       | 31.2                  | 36.57            | 2.74                  | 2052                  | 821                  | 222                  | PS062           | IS062       |
| 5310                       | 28.9                  | 39.38            | 2.54                  | 2124                  | 849                  | 229                  | PS062           | IS062       |
| 5310                       | 26.1                  | 43.64            | 2.29                  | 2226                  | 891                  | 237                  | PS062           | IS062       |
| 5310                       | 24.7                  | 46.10            | 2.17                  | 2248                  | 899                  | 242                  | PS062           | IS062       |
| 5310                       | 23.6                  | 48.30            | 2.07                  | 2248                  | 899                  | 245                  | PS062           | IS062       |
| 5310                       | 21.3                  | 53.53            | 1.87                  | 2248                  | 899                  | 252                  | PS062           | IS062       |
| 5310                       | 20.7                  | 55.00            | 1.82                  | 2248                  | 899                  | 254                  | PS062           | IS062       |
| 5310                       | 16.9                  | 67.47            | 1.48                  | 2248                  | 899                  | 265                  | PS062           | IS062       |
| 5310                       | 34.0                  | 33.57            | 3.04                  | 1971                  | 788                  | 214                  | PS063           | IS063       |
| 5310                       | 30.2                  | 37.77            | 2.71                  | 2083                  | 833                  | 225                  | PS063           | IS063       |
| 5310                       | 28.5                  | 40.05            | 2.55                  | 2141                  | 856                  | 230                  | PS063           | IS063       |
| 5310                       | 23.2                  | 49.13            | 2.08                  | 2248                  | 899                  | 246                  | PS063           | IS063       |
| 5310                       | 20.6                  | 55.29            | 1.85                  | 2248                  | 899                  | 254                  | PS063           | IS063       |
| 5310                       | 19.4                  | 58.72            | 1.74                  | 2248                  | 899                  | 258                  | PS063           | IS063       |
| 5310                       | 17.3                  | 65.85            | 1.55                  | 2248                  | 899                  | 264                  | PS063           | IS063       |
| 5310                       | 16.7                  | 68.25            | 1.5                   | 2248                  | 899                  | 266                  | PS063           | IS063       |
| 5310                       | 15.5                  | 73.63            | 1.39                  | 2248                  | 899                  | 270                  | PS063           | IS063       |
| 5310                       | 14.0                  | 81.43            | 1.25                  | 2248                  | 899                  | 274                  | PS063           | IS063       |
| 5310                       | 11.4                  | 99.89            | 1.02                  | 2248                  | 899                  | 282                  | PS063           | IS063       |
| 5310                       | 9.0                   | 126.43           | 0.81                  | 2248                  | 899                  | 289                  | PS063           | IS063       |
| 5310                       | 7.6                   | 150.85           | 0.68                  | 2248                  | 899                  | 294                  | PS063           | IS063       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 5310                       | 6.2                   | 182.53           | 0.56                  | 2248                  | 899                  | 298                  | PS063           | IS063       |
| 5310                       | 6.2                   | 185.05           | 0.55                  | 2248                  | 899                  | 298                  | PS063           | IS063       |
| 5310                       | 5.2                   | 217.79           | 0.47                  | 2248                  | 899                  | 301                  | PS063           | IS063       |
| 5310                       | 4.3                   | 267.16           | 0.38                  | 2248                  | 899                  | 304                  | PS063           | IS063       |
| 4868                       | 155.3                 | 7.34             | 12.5                  | 2923                  | 835                  | 284                  | PS082           | IS082       |
| 5310                       | 141.4                 | 8.06             | 12.41                 | 2991                  | 855                  | 286                  | PS082           | IS082       |
| 5753                       | 114.6                 | 9.94             | 10.9                  | 3200                  | 914                  | 333                  | PS082           | IS082       |
| 6196                       | 98.2                  | 11.61            | 10.06                 | 3355                  | 959                  | 359                  | PS082           | IS082       |
| 6638                       | 89.4                  | 12.75            | 9.81                  | 3441                  | 983                  | 367                  | PS082           | IS082       |
| 6727                       | 81.2                  | 14.04            | 9.02                  | 3563                  | 1018                 | 391                  | PS082           | IS082       |
| 6815                       | 73.9                  | 15.43            | 8.32                  | 3685                  | 1053                 | 413                  | PS082           | IS082       |
| 6815                       | 72.5                  | 15.73            | 8.17                  | 3712                  | 1061                 | 418                  | PS082           | IS082       |
| 6815                       | 65.9                  | 17.29            | 7.42                  | 3849                  | 1100                 | 441                  | PS082           | IS082       |
| 6815                       | 59.9                  | 19.03            | 6.75                  | 3990                  | 1140                 | 462                  | PS082           | IS082       |
| 6815                       | 56.6                  | 20.14            | 6.38                  | 4047                  | 1165                 | 474                  | PS082           | IS082       |
| 7081                       | 51.5                  | 22.13            | 6.03                  | 4047                  | 1200                 | 484                  | PS082           | IS082       |
| 7081                       | 47.5                  | 24.00            | 5.56                  | 4047                  | 1237                 | 499                  | PS082           | IS082       |
| 7081                       | 43.8                  | 26.05            | 5.12                  | 4047                  | 1276                 | 513                  | PS082           | IS082       |
| 7966                       | 41.8                  | 27.29            | 5.5                   | 4047                  | 1277                 | 501                  | PS082           | IS082       |
| 7966                       | 39.8                  | 28.67            | 5.23                  | 4047                  | 1301                 | 509                  | PS082           | IS082       |
| 7966                       | 38.5                  | 29.60            | 5.07                  | 4047                  | 1317                 | 514                  | PS082           | IS082       |
| 8851                       | 35.9                  | 31.78            | 5.25                  | 4047                  | 1332                 | 509                  | PS082           | IS082       |
| 8851                       | 32.7                  | 34.91            | 4.78                  | 4047                  | 1380                 | 523                  | PS082           | IS082       |
| 8851                       | 32.1                  | 35.50            | 4.7                   | 4047                  | 1389                 | 526                  | PS082           | IS082       |
| 8851                       | 28.5                  | 40.05            | 4.16                  | 4047                  | 1454                 | 542                  | PS082           | IS082       |
| 8851                       | 26.5                  | 43.05            | 3.87                  | 4047                  | 1494                 | 551                  | PS082           | IS082       |
| 8851                       | 22.7                  | 50.25            | 3.32                  | 4047                  | 1584                 | 568                  | PS082           | IS082       |
| 8851                       | 21.0                  | 54.27            | 3.07                  | 4047                  | 1619                 | 576                  | PS082           | IS082       |
| 8851                       | 18.4                  | 61.98            | 2.69                  | 4047                  | 1619                 | 588                  | PS082           | IS082       |
| 8851                       | 16.9                  | 67.52            | 2.52                  | 4047                  | 1619                 | 595                  | PS083           | IS083       |
| 8851                       | 15.4                  | 74.18            | 2.3                   | 4047                  | 1619                 | 602                  | PS083           | IS083       |
| 8851                       | 13.9                  | 81.71            | 2.08                  | 4047                  | 1619                 | 608                  | PS083           | IS083       |
| 8851                       | 12.5                  | 91.49            | 1.86                  | 4047                  | 1619                 | 615                  | PS083           | IS083       |
| 8851                       | 11.3                  | 100.62           | 1.69                  | 4047                  | 1619                 | 620                  | PS083           | IS083       |
| 8851                       | 9.7                   | 117.17           | 1.45                  | 4047                  | 1619                 | 627                  | PS083           | IS083       |
| 8851                       | 8.9                   | 128.73           | 1.32                  | 4047                  | 1619                 | 631                  | PS083           | IS083       |
| 8851                       | 8.4                   | 136.34           | 1.25                  | 4047                  | 1619                 | 634                  | PS083           | IS083       |
| 8851                       | 7.2                   | 158.76           | 1.07                  | 4047                  | 1619                 | 639                  | PS083           | IS083       |
| 8851                       | 6.2                   | 184.88           | 0.92                  | 4047                  | 1619                 | 644                  | PS083           | IS083       |
| 8851                       | 5.6                   | 203.11           | 0.84                  | 4047                  | 1619                 | 646                  | PS083           | IS083       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 8851                       | 5.5                   | 205.34           | 0.83                  | 4047                  | 1619                 | 646                  | PS083           | IS083       |
| 8851                       | 5.0                   | 226.04           | 0.75                  | 4047                  | 1619                 | 649                  | PS083           | IS083       |
| 8851                       | 4.5                   | 250.50           | 0.68                  | 4047                  | 1619                 | 651                  | PS083           | IS083       |
| 8851                       | 4.3                   | 266.13           | 0.64                  | 4047                  | 1619                 | 652                  | PS083           | IS083       |
| 8851                       | 3.9                   | 292.36           | 0.58                  | 4047                  | 1619                 | 654                  | PS083           | IS083       |
| 8851                       | 3.6                   | 315.73           | 0.54                  | 4047                  | 1619                 | 655                  | PS083           | IS083       |
| 8851                       | 3.2                   | 360.58           | 0.47                  | 4047                  | 1619                 | 657                  | PS083           | IS083       |
| 7523                       | 141.4                 | 8.06             | 17.58                 | 3683                  | 1052                 | 145                  | PS102           | IS102       |
| 7966                       | 128.9                 | 8.85             | 16.96                 | 3784                  | 1081                 | 164                  | PS102           | IS102       |
| 8408                       | 104.7                 | 10.88            | 14.55                 | 4059                  | 1160                 | 236                  | PS102           | IS102       |
| 8851                       | 89.4                  | 12.75            | 13.08                 | 4278                  | 1222                 | 280                  | PS102           | IS102       |
| 10621                      | 81.5                  | 13.99            | 14.3                  | 4312                  | 1232                 | 244                  | PS102           | IS102       |
| 11063                      | 73.9                  | 15.43            | 13.51                 | 4447                  | 1271                 | 267                  | PS102           | IS102       |
| 11506                      | 66.2                  | 17.21            | 12.59                 | 4609                  | 1317                 | 295                  | PS102           | IS102       |
| 12391                      | 60.0                  | 19.00            | 12.29                 | 4728                  | 1351                 | 304                  | PS102           | IS102       |
| 12391                      | 54.7                  | 20.83            | 11.21                 | 4899                  | 1400                 | 336                  | PS102           | IS102       |
| 12391                      | 51.5                  | 22.13            | 10.55                 | 4946                  | 1433                 | 356                  | PS102           | IS102       |
| 13276                      | 47.0                  | 24.28            | 10.3                  | 4946                  | 1468                 | 363                  | PS102           | IS102       |
| 13276                      | 43.3                  | 26.33            | 9.5                   | 4946                  | 1514                 | 387                  | PS102           | IS102       |
| 13276                      | 38.2                  | 29.87            | 8.37                  | 4946                  | 1589                 | 421                  | PS102           | IS102       |
| 13276                      | 35.2                  | 32.40            | 7.72                  | 4946                  | 1639                 | 441                  | PS102           | IS102       |
| 12391                      | 32.7                  | 34.91            | 6.69                  | 4946                  | 1703                 | 472                  | PS102           | IS102       |
| 13276                      | 29.8                  | 38.30            | 6.53                  | 4946                  | 1747                 | 476                  | PS102           | IS102       |
| 12391                      | 26.8                  | 42.53            | 5.49                  | 4946                  | 1833                 | 508                  | PS102           | IS102       |
| 11506                      | 25.9                  | 44.00            | 4.93                  | 4946                  | 1873                 | 524                  | PS102           | IS102       |
| 14161                      | 24.2                  | 47.13            | 5.66                  | 4946                  | 1871                 | 502                  | PS102           | IS102       |
| 12391                      | 22.7                  | 50.25            | 4.65                  | 4946                  | 1950                 | 533                  | PS102           | IS102       |
| 11506                      | 20.7                  | 55.14            | 3.93                  | 4946                  | 2023                 | 554                  | PS102           | IS102       |
| 14161                      | 19.2                  | 59.40            | 4.49                  | 4946                  | 2023                 | 537                  | PS102           | IS102       |
| 14161                      | 16.8                  | 67.84            | 3.93                  | 4946                  | 2023                 | 554                  | PS102           | IS102       |
| 14161                      | 15.4                  | 74.18            | 3.67                  | 4946                  | 2023                 | 564                  | PS103           | IS103       |
| 14161                      | 14.0                  | 81.39            | 3.35                  | 4946                  | 2023                 | 574                  | PS103           | IS103       |
| 14161                      | 12.7                  | 89.77            | 3.04                  | 4946                  | 2023                 | 583                  | PS103           | IS103       |
| 14161                      | 11.4                  | 100.15           | 2.72                  | 4946                  | 2023                 | 592                  | PS103           | IS103       |
| 14161                      | 10.3                  | 110.55           | 2.46                  | 4946                  | 2023                 | 600                  | PS103           | IS103       |
| 14161                      | 9.4                   | 121.29           | 2.25                  | 4946                  | 2023                 | 606                  | PS103           | IS103       |
| 14161                      | 8.9                   | 128.73           | 2.12                  | 4946                  | 2023                 | 610                  | PS103           | IS103       |
| 14161                      | 8.1                   | 141.24           | 1.93                  | 4946                  | 2023                 | 615                  | PS103           | IS103       |
| 14161                      | 6.6                   | 173.78           | 1.57                  | 4946                  | 2023                 | 626                  | PS103           | IS103       |
| 14161                      | 6.0                   | 188.51           | 1.45                  | 4946                  | 2023                 | 630                  | PS103           | IS103       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 14161                      | 5.6                   | 203.11           | 1.34                  | 4946                  | 2023                 | 633                  | PS103           | IS103       |
| 14161                      | 5.1                   | 222.85           | 1.22                  | 4946                  | 2023                 | 636                  | PS103           | IS103       |
| 14161                      | 5.1                   | 224.76           | 1.21                  | 4946                  | 2023                 | 636                  | PS103           | IS103       |
| 14161                      | 4.2                   | 274.20           | 0.99                  | 4946                  | 2023                 | 643                  | PS103           | IS103       |
| 14161                      | 4.1                   | 280.89           | 0.97                  | 4946                  | 2023                 | 643                  | PS103           | IS103       |
| 14161                      | 3.9                   | 292.36           | 0.93                  | 4946                  | 2023                 | 645                  | PS103           | IS103       |
| 14161                      | 3.5                   | 320.79           | 0.85                  | 4946                  | 2023                 | 647                  | PS103           | IS103       |
| 14161                      | 3.3                   | 345.60           | 0.79                  | 4946                  | 2023                 | 649                  | PS103           | IS103       |
| 14161                      | 2.9                   | 394.69           | 0.69                  | 4946                  | 2023                 | 652                  | PS103           | IS103       |
| 13276                      | 134.4                 | 8.48             | 29.49                 | 4802                  | 1372                 | 663                  | PS122           | IS122       |
| 15046                      | 122.6                 | 9.30             | 30.49                 | 4818                  | 1377                 | 656                  | PS122           | IS122       |
| 15046                      | 111.3                 | 10.24            | 27.69                 | 5021                  | 1435                 | 677                  | PS122           | IS122       |
| 16816                      | 99.9                  | 11.42            | 27.75                 | 5087                  | 1454                 | 677                  | PS122           | IS122       |
| 19472                      | 90.3                  | 12.63            | 29.06                 | 5058                  | 1445                 | 667                  | PS122           | IS122       |
| 21242                      | 82.4                  | 13.84            | 28.92                 | 5101                  | 1457                 | 668                  | PS122           | IS122       |
| 23012                      | 67.1                  | 16.99            | 25.51                 | 5432                  | 1552                 | 694                  | PS122           | IS122       |
| 24782                      | 53.6                  | 21.25            | 21.97                 | 5847                  | 1671                 | 721                  | PS122           | IS122       |
| 24782                      | 51.0                  | 22.37            | 20.87                 | 5987                  | 1711                 | 730                  | PS122           | IS122       |
| 25667                      | 48.9                  | 23.29            | 20.76                 | 6015                  | 1718                 | 731                  | PS122           | IS122       |
| 26552                      | 43.6                  | 26.15            | 19.13                 | 6260                  | 1789                 | 744                  | PS122           | IS122       |
| 26552                      | 39.9                  | 28.60            | 17.49                 | 6524                  | 1864                 | 756                  | PS122           | IS122       |
| 26552                      | 37.4                  | 30.51            | 16.39                 | 6720                  | 1920                 | 765                  | PS122           | IS122       |
| 26552                      | 34.8                  | 32.76            | 15.27                 | 6744                  | 1983                 | 773                  | PS122           | IS122       |
| 26552                      | 34.1                  | 33.44            | 14.96                 | 6744                  | 2002                 | 776                  | PS122           | IS122       |
| 26552                      | 32.4                  | 35.20            | 14.21                 | 6744                  | 2048                 | 782                  | PS122           | IS122       |
| 26552                      | 27.8                  | 41.07            | 12.18                 | 6744                  | 2193                 | 797                  | PS122           | IS122       |
| 26552                      | 26.1                  | 43.60            | 11.47                 | 6744                  | 2251                 | 803                  | PS122           | IS122       |
| 21242                      | 25.5                  | 44.63            | 8.97                  | 6744                  | 2420                 | 822                  | PS122           | IS122       |
| 21242                      | 23.2                  | 49.04            | 8.16                  | 6744                  | 2515                 | 828                  | PS122           | IS122       |
| 23012                      | 21.2                  | 53.75            | 8.07                  | 6744                  | 2518                 | 829                  | PS122           | IS122       |
| 26552                      | 17.3                  | 66.00            | 7.58                  | 6744                  | 2518                 | 833                  | PS122           | IS122       |
| 23897                      | 17.6                  | 64.84            | 7.09                  | 6744                  | 2518                 | 838                  | PS123           | IS123       |
| 23897                      | 16.0                  | 71.07            | 6.47                  | 6744                  | 2518                 | 842                  | PS123           | IS123       |
| 26552                      | 14.5                  | 78.46            | 6.51                  | 6744                  | 2518                 | 842                  | PS123           | IS123       |
| 26552                      | 13.1                  | 87.27            | 5.85                  | 6744                  | 2518                 | 847                  | PS123           | IS123       |
| 26552                      | 10.8                  | 105.91           | 4.82                  | 6744                  | 2518                 | 855                  | PS123           | IS123       |
| 26552                      | 10.1                  | 112.52           | 4.54                  | 6744                  | 2518                 | 857                  | PS123           | IS123       |
| 26552                      | 9.2                   | 123.33           | 4.14                  | 6744                  | 2518                 | 860                  | PS123           | IS123       |
| 26552                      | 8.8                   | 130.04           | 3.93                  | 6744                  | 2518                 | 862                  | PS123           | IS123       |
| 26552                      | 8.5                   | 133.78           | 3.82                  | 6744                  | 2518                 | 863                  | PS123           | IS123       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 26552                      | 7.5                   | 151.43           | 3.37                  | 6744                  | 2518                 | 866                  | PS123           | IS123       |
| 26552                      | 6.4                   | 177.53           | 2.88                  | 6744                  | 2518                 | 870                  | PS123           | IS123       |
| 26552                      | 5.9                   | 194.59           | 2.63                  | 6744                  | 2518                 | 872                  | PS123           | IS123       |
| 26552                      | 5.3                   | 215.60           | 2.37                  | 6744                  | 2518                 | 874                  | PS123           | IS123       |
| 26552                      | 4.8                   | 238.93           | 2.14                  | 6744                  | 2518                 | 875                  | PS123           | IS123       |
| 26552                      | 4.5                   | 255.54           | 2                     | 6744                  | 2518                 | 876                  | PS123           | IS123       |
| 12294                      | 276.9                 | 4.12             | 56.25                 | 5165                  | 2952                 | 539                  | S142            | IS142       |
| 13702                      | 248.6                 | 4.59             | 56.29                 | 5159                  | 2948                 | 539                  | S142            | IS142       |
| 15378                      | 221.6                 | 5.14             | 56.32                 | 5129                  | 2931                 | 538                  | S142            | IS142       |
| 17382                      | 195.9                 | 5.82             | 56.28                 | 5068                  | 2896                 | 539                  | S142            | IS142       |
| 18579                      | 183.5                 | 6.21             | 56.34                 | 5015                  | 2866                 | 538                  | S142            | IS142       |
| 16953                      | 155.8                 | 7.32             | 43.65                 | 5826                  | 3329                 | 665                  | S142            | IS142       |
| 19017                      | 138.9                 | 8.21             | 43.65                 | 5768                  | 3296                 | 665                  | S142            | IS142       |
| 21522                      | 122.8                 | 9.29             | 43.67                 | 5665                  | 3237                 | 665                  | S142            | IS142       |
| 22983                      | 115.0                 | 9.91             | 43.68                 | 5590                  | 3194                 | 665                  | S142            | IS142       |
| 24924                      | 100.0                 | 11.41            | 41.17                 | 5684                  | 3248                 | 690                  | S142            | IS142       |
| 23189                      | 89.0                  | 12.81            | 34.1                  | 6449                  | 3685                 | 760                  | S142            | IS142       |
| 21596                      | 79.9                  | 14.27            | 28.51                 | 7170                  | 4097                 | 816                  | S142            | IS142       |
| 23470                      | 71.2                  | 16.01            | 27.63                 | 7238                  | 4136                 | 825                  | S142            | IS142       |
| 26551                      | 63.0                  | 18.11            | 27.62                 | 7117                  | 4067                 | 825                  | S142            | IS142       |
| 28355                      | 59.0                  | 19.33            | 27.63                 | 7028                  | 4016                 | 824                  | S142            | IS142       |
| 29340                      | 51.2                  | 22.24            | 24.85                 | 7432                  | 4159                 | 852                  | S142            | IS142       |
| 25630                      | 45.1                  | 25.26            | 19.12                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 28745                      | 40.2                  | 28.33            | 19.11                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 32519                      | 35.6                  | 32.05            | 19.11                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 34721                      | 33.3                  | 34.22            | 19.11                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 39216                      | 28.9                  | 39.38            | 18.76                 | 7868                  | 4159                 | 913                  | S142            | IS142       |
| 35517                      | 24.9                  | 45.77            | 14.93                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 39561                      | 22.4                  | 50.97            | 14.93                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41904                      | 19.9                  | 57.17            | 14.1                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42257                      | 17.6                  | 64.68            | 12.57                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 43158                      | 16.5                  | 69.06            | 12.03                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 37469                      | 14.3                  | 79.45            | 9.07                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 39297                      | 11.5                  | 98.81            | 7.65                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41895                      | 10.4                  | 110.05           | 7.32                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42080                      | 9.2                   | 123.44           | 6.56                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42845                      | 8.2                   | 139.64           | 5.9                   | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42356                      | 7.7                   | 149.10           | 5.47                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 33645                      | 7.2                   | 157.49           | 4.11                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41327                      | 6.7                   | 171.55           | 4.64                  | 7868                  | 4159                 | 944                  | S143            | IS143       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 37473                      | 6.5                   | 175.41           | 4.11                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42030                      | 5.8                   | 196.74           | 4.11                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41731                      | 5.1                   | 222.57           | 3.61                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 43205                      | 4.8                   | 237.63           | 3.5                   | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42411                      | 4.2                   | 273.41           | 2.98                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 22775                      | 280.7                 | 4.06             | 105.64                | 6253                  | 3573                 | 630                  | S152            | IS152       |
| 25411                      | 251.5                 | 4.53             | 105.62                | 6258                  | 3576                 | 630                  | S152            | IS152       |
| 25791                      | 219.1                 | 5.20             | 93.38                 | 6650                  | 3800                 | 704                  | S152            | IS152       |
| 26039                      | 199.6                 | 5.71             | 85.89                 | 6928                  | 3959                 | 749                  | S152            | IS152       |
| 27216                      | 174.8                 | 6.52             | 78.61                 | 7237                  | 4135                 | 793                  | S152            | IS152       |
| 28845                      | 156.6                 | 7.28             | 74.65                 | 7426                  | 4243                 | 817                  | S152            | IS152       |
| 31252                      | 136.4                 | 8.36             | 70.45                 | 7638                  | 4361                 | 843                  | S152            | IS152       |
| 33199                      | 124.3                 | 9.17             | 68.19                 | 7754                  | 4361                 | 856                  | S152            | IS152       |
| 37014                      | 109.4                 | 10.42            | 66.93                 | 7787                  | 4361                 | 864                  | S152            | IS152       |
| 29258                      | 91.5                  | 12.46            | 44.23                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 32640                      | 82.0                  | 13.91            | 44.21                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 37477                      | 71.4                  | 15.97            | 44.22                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 41140                      | 65.0                  | 17.53            | 44.22                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 46729                      | 57.3                  | 19.91            | 44.23                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 53726                      | 49.8                  | 22.88            | 44.24                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 53894                      | 42.1                  | 27.11            | 37.46                 | 8992                  | 4361                 | 1042                 | S152            | IS152       |
| 59164                      | 38.3                  | 29.75            | 37.47                 | 8992                  | 4361                 | 1042                 | S152            | IS152       |
| 67198                      | 33.7                  | 33.79            | 37.47                 | 8992                  | 4361                 | 1042                 | S152            | IS152       |
| 68053                      | 29.4                  | 38.84            | 33.01                 | 8992                  | 4361                 | 1069                 | S152            | IS152       |
| 55595                      | 28.4                  | 40.10            | 26.67                 | 8992                  | 4361                 | 1111                 | S153            | IS153       |
| 62042                      | 25.5                  | 44.76            | 26.67                 | 8992                  | 4361                 | 1111                 | S153            | IS153       |
| 69614                      | 22.2                  | 51.38            | 26.07                 | 8992                  | 4361                 | 1114                 | S153            | IS153       |
| 73053                      | 20.2                  | 56.39            | 24.92                 | 8992                  | 4361                 | 1121                 | S153            | IS153       |
| 77845                      | 17.8                  | 64.05            | 23.38                 | 8992                  | 4361                 | 1130                 | S153            | IS153       |
| 68854                      | 15.5                  | 73.63            | 17.99                 | 8992                  | 4361                 | 1162                 | S153            | IS153       |
| 62889                      | 13.1                  | 87.16            | 13.88                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 70191                      | 11.7                  | 97.27            | 13.88                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 80575                      | 10.2                  | 111.67           | 13.88                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 84402                      | 9.3                   | 122.57           | 13.25                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 80913                      | 8.2                   | 139.21           | 11.18                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 63094                      | 7.4                   | 154.02           | 7.88                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 71552                      | 7.1                   | 160.02           | 8.6                   | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 72434                      | 6.5                   | 176.81           | 7.88                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 79497                      | 5.9                   | 194.06           | 7.88                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 82782                      | 5.2                   | 220.42           | 7.23                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |



## 5.3 IS GEAR REDUCER - fs=1, 1140 rpm

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 73272                      | 4.5                   | 253.36           | 5.56                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 1505                       | 101.5                 | 8.63             | 2.5                   | 923                   | 923                  | 161                  | PS052           | IS052       |
| 1682                       | 78.5                  | 11.14            | 2.16                  | 998                   | 998                  | 182                  | PS052           | IS052       |
| 1770                       | 72.9                  | 12.00            | 2.11                  | 1016                  | 1016                 | 185                  | PS052           | IS052       |
| 1859                       | 64.1                  | 13.66            | 1.95                  | 1059                  | 1059                 | 195                  | PS052           | IS052       |
| 2124                       | 57.3                  | 15.27            | 1.99                  | 1070                  | 1070                 | 193                  | PS052           | IS052       |
| 2124                       | 53.7                  | 16.29            | 1.87                  | 1099                  | 1099                 | 200                  | PS052           | IS052       |
| 2124                       | 47.0                  | 18.63            | 1.63                  | 1163                  | 1163                 | 215                  | PS052           | IS052       |
| 2124                       | 44.4                  | 19.73            | 1.54                  | 1192                  | 1192                 | 221                  | PS052           | IS052       |
| 2301                       | 41.6                  | 21.04            | 1.57                  | 1198                  | 1198                 | 219                  | PS052           | IS052       |
| 2301                       | 40.6                  | 21.53            | 1.53                  | 1209                  | 1209                 | 221                  | PS052           | IS052       |
| 2301                       | 36.4                  | 24.07            | 1.37                  | 1267                  | 1267                 | 231                  | PS052           | IS052       |
| 2567                       | 34.7                  | 25.20            | 1.46                  | 1253                  | 1253                 | 226                  | PS052           | IS052       |
| 2567                       | 33.9                  | 25.79            | 1.43                  | 1265                  | 1265                 | 228                  | PS052           | IS052       |
| 2567                       | 31.5                  | 27.81            | 1.32                  | 1307                  | 1307                 | 234                  | PS052           | IS052       |
| 2567                       | 29.2                  | 30.00            | 1.22                  | 1349                  | 1349                 | 240                  | PS052           | IS052       |
| 2655                       | 26.9                  | 32.55            | 1.17                  | 1349                  | 1349                 | 244                  | PS052           | IS052       |
| 2655                       | 26.5                  | 33.00            | 1.15                  | 1349                  | 1349                 | 245                  | PS052           | IS052       |
| 2655                       | 25.7                  | 34.09            | 1.12                  | 1349                  | 1349                 | 247                  | PS052           | IS052       |
| 2921                       | 23.9                  | 36.55            | 1.14                  | 1349                  | 1349                 | 245                  | PS052           | IS052       |
| 2921                       | 22.6                  | 38.75            | 1.08                  | 1349                  | 1349                 | 249                  | PS052           | IS052       |
| 3098                       | 21.9                  | 39.90            | 1.11                  | 1349                  | 1349                 | 247                  | PS052           | IS052       |
| 3098                       | 20.5                  | 42.63            | 1.04                  | 1349                  | 1349                 | 252                  | PS052           | IS052       |
| 3098                       | 19.0                  | 46.00            | 0.96                  | 1349                  | 1349                 | 256                  | PS052           | IS052       |
| 3098                       | 18.5                  | 47.20            | 0.94                  | 1349                  | 1349                 | 258                  | PS052           | IS052       |
| 3098                       | 16.8                  | 52.25            | 0.85                  | 1349                  | 1349                 | 264                  | PS052           | IS052       |
| 3098                       | 15.1                  | 57.86            | 0.77                  | 1349                  | 1349                 | 269                  | PS052           | IS052       |
| 3098                       | 14.7                  | 59.42            | 0.75                  | 1349                  | 1349                 | 270                  | PS052           | IS052       |
| 3098                       | 12.0                  | 72.83            | 0.61                  | 1349                  | 1349                 | 278                  | PS052           | IS052       |
| 3098                       | 24.0                  | 36.50            | 1.24                  | 1349                  | 1349                 | 241                  | PS053           | IS053       |
| 3098                       | 18.6                  | 47.14            | 0.96                  | 1349                  | 1349                 | 258                  | PS053           | IS053       |
| 3098                       | 15.1                  | 57.79            | 0.78                  | 1349                  | 1349                 | 269                  | PS053           | IS053       |
| 3098                       | 13.7                  | 63.74            | 0.71                  | 1349                  | 1349                 | 273                  | PS053           | IS053       |
| 3098                       | 11.8                  | 74.20            | 0.61                  | 1349                  | 1349                 | 279                  | PS053           | IS053       |
| 3098                       | 11.2                  | 78.14            | 0.58                  | 1349                  | 1349                 | 281                  | PS053           | IS053       |
| 3098                       | 9.1                   | 95.84            | 0.47                  | 1349                  | 1349                 | 287                  | PS053           | IS053       |
| 3098                       | 7.5                   | 117.48           | 0.39                  | 1349                  | 1349                 | 293                  | PS053           | IS053       |
| 3098                       | 6.4                   | 137.45           | 0.33                  | 1349                  | 1349                 | 296                  | PS053           | IS053       |
| 3098                       | 4.9                   | 177.55           | 0.26                  | 1349                  | 1349                 | 301                  | PS053           | IS053       |
| 3098                       | 4.4                   | 198.45           | 0.23                  | 1349                  | 1349                 | 302                  | PS053           | IS053       |
| 3098                       | 4.0                   | 217.64           | 0.21                  | 1349                  | 1349                 | 304                  | PS053           | IS053       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 3098                       | 3.4                   | 256.33           | 0.18                  | 1349                  | 1349                 | 305                  | PS053           | IS053       |
| 3098                       | 2.8                   | 314.21           | 0.14                  | 1349                  | 1349                 | 307                  | PS053           | IS053       |
| 2921                       | 109.4                 | 8.00             | 5.23                  | 1451                  | 580                  | 79                   | PS062           | IS062       |
| 2921                       | 98.1                  | 8.92             | 4.69                  | 1521                  | 608                  | 103                  | PS062           | IS062       |
| 3186                       | 91.7                  | 9.55             | 4.78                  | 1523                  | 609                  | 99                   | PS062           | IS062       |
| 3186                       | 82.2                  | 10.65            | 4.29                  | 1598                  | 639                  | 122                  | PS062           | IS062       |
| 3452                       | 74.7                  | 11.71            | 4.22                  | 1623                  | 649                  | 124                  | PS062           | IS062       |
| 3717                       | 67.0                  | 13.06            | 4.08                  | 1660                  | 664                  | 131                  | PS062           | IS062       |
| 3717                       | 65.5                  | 13.36            | 3.98                  | 1677                  | 671                  | 135                  | PS062           | IS062       |
| 3983                       | 54.9                  | 15.94            | 3.58                  | 1770                  | 708                  | 154                  | PS062           | IS062       |
| 3983                       | 54.1                  | 16.16            | 3.53                  | 1782                  | 713                  | 156                  | PS062           | IS062       |
| 3983                       | 45.4                  | 19.29            | 2.96                  | 1927                  | 771                  | 182                  | PS062           | IS062       |
| 4071                       | 44.8                  | 19.55            | 2.98                  | 1924                  | 770                  | 181                  | PS062           | IS062       |
| 4160                       | 37.8                  | 23.18            | 2.57                  | 2059                  | 824                  | 200                  | PS062           | IS062       |
| 4160                       | 36.8                  | 23.75            | 2.51                  | 2081                  | 832                  | 203                  | PS062           | IS062       |
| 4248                       | 34.8                  | 25.14            | 2.42                  | 2119                  | 848                  | 207                  | PS062           | IS062       |
| 4248                       | 31.6                  | 27.66            | 2.2                   | 2209                  | 883                  | 217                  | PS062           | IS062       |
| 4425                       | 29.2                  | 30.00            | 2.11                  | 2248                  | 899                  | 221                  | PS062           | IS062       |
| 4779                       | 25.8                  | 33.93            | 2.02                  | 2248                  | 899                  | 225                  | PS062           | IS062       |
| 5310                       | 23.9                  | 36.57            | 2.08                  | 2248                  | 899                  | 222                  | PS062           | IS062       |
| 5310                       | 22.2                  | 39.38            | 1.93                  | 2248                  | 899                  | 229                  | PS062           | IS062       |
| 5310                       | 20.1                  | 43.64            | 1.74                  | 2248                  | 899                  | 237                  | PS062           | IS062       |
| 5310                       | 19.0                  | 46.10            | 1.65                  | 2248                  | 899                  | 242                  | PS062           | IS062       |
| 5310                       | 18.1                  | 48.30            | 1.57                  | 2248                  | 899                  | 245                  | PS062           | IS062       |
| 5310                       | 16.4                  | 53.53            | 1.42                  | 2248                  | 899                  | 252                  | PS062           | IS062       |
| 5310                       | 15.9                  | 55.00            | 1.38                  | 2248                  | 899                  | 254                  | PS062           | IS062       |
| 5310                       | 13.0                  | 67.47            | 1.13                  | 2248                  | 899                  | 265                  | PS062           | IS062       |
| 5310                       | 26.1                  | 33.57            | 2.31                  | 2229                  | 891                  | 214                  | PS063           | IS063       |
| 5310                       | 23.2                  | 37.77            | 2.06                  | 2248                  | 899                  | 225                  | PS063           | IS063       |
| 5310                       | 21.9                  | 40.05            | 1.94                  | 2248                  | 899                  | 230                  | PS063           | IS063       |
| 5310                       | 17.8                  | 49.13            | 1.58                  | 2248                  | 899                  | 246                  | PS063           | IS063       |
| 5310                       | 15.8                  | 55.29            | 1.4                   | 2248                  | 899                  | 254                  | PS063           | IS063       |
| 5310                       | 14.9                  | 58.72            | 1.32                  | 2248                  | 899                  | 258                  | PS063           | IS063       |
| 5310                       | 13.3                  | 65.85            | 1.18                  | 2248                  | 899                  | 264                  | PS063           | IS063       |
| 5310                       | 12.8                  | 68.25            | 1.14                  | 2248                  | 899                  | 266                  | PS063           | IS063       |
| 5310                       | 11.9                  | 73.63            | 1.05                  | 2248                  | 899                  | 270                  | PS063           | IS063       |
| 5310                       | 10.8                  | 81.43            | 0.95                  | 2248                  | 899                  | 274                  | PS063           | IS063       |
| 5310                       | 8.8                   | 99.89            | 0.78                  | 2248                  | 899                  | 282                  | PS063           | IS063       |
| 5310                       | 6.9                   | 126.43           | 0.61                  | 2248                  | 899                  | 289                  | PS063           | IS063       |
| 5310                       | 5.8                   | 150.85           | 0.51                  | 2248                  | 899                  | 294                  | PS063           | IS063       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 5310                       | 4.8                   | 182.53           | 0.43                  | 2248                  | 899                  | 298                  | PS063           | IS063       |
| 5310                       | 4.7                   | 185.05           | 0.42                  | 2248                  | 899                  | 298                  | PS063           | IS063       |
| 5310                       | 4.0                   | 217.79           | 0.36                  | 2248                  | 899                  | 301                  | PS063           | IS063       |
| 5310                       | 3.3                   | 267.16           | 0.29                  | 2248                  | 899                  | 304                  | PS063           | IS063       |
| 4868                       | 119.2                 | 7.34             | 9.5                   | 3226                  | 922                  | 284                  | PS082           | IS082       |
| 5310                       | 108.5                 | 8.06             | 9.43                  | 3304                  | 944                  | 286                  | PS082           | IS082       |
| 5753                       | 88.0                  | 9.94             | 8.28                  | 3536                  | 1010                 | 333                  | PS082           | IS082       |
| 6196                       | 75.4                  | 11.61            | 7.64                  | 3709                  | 1060                 | 359                  | PS082           | IS082       |
| 6638                       | 68.6                  | 12.75            | 7.45                  | 3805                  | 1087                 | 367                  | PS082           | IS082       |
| 6727                       | 62.3                  | 14.04            | 6.86                  | 3939                  | 1125                 | 391                  | PS082           | IS082       |
| 6815                       | 56.7                  | 15.43            | 6.32                  | 4047                  | 1164                 | 413                  | PS082           | IS082       |
| 6815                       | 55.6                  | 15.73            | 6.21                  | 4047                  | 1172                 | 418                  | PS082           | IS082       |
| 6815                       | 50.6                  | 17.29            | 5.64                  | 4047                  | 1215                 | 441                  | PS082           | IS082       |
| 6815                       | 46.0                  | 19.03            | 5.13                  | 4047                  | 1259                 | 462                  | PS082           | IS082       |
| 6815                       | 43.5                  | 20.14            | 4.84                  | 4047                  | 1286                 | 474                  | PS082           | IS082       |
| 7081                       | 39.5                  | 22.13            | 4.58                  | 4047                  | 1325                 | 484                  | PS082           | IS082       |
| 7081                       | 36.5                  | 24.00            | 4.22                  | 4047                  | 1366                 | 499                  | PS082           | IS082       |
| 7081                       | 33.6                  | 26.05            | 3.89                  | 4047                  | 1408                 | 513                  | PS082           | IS082       |
| 7966                       | 32.1                  | 27.29            | 4.18                  | 4047                  | 1411                 | 501                  | PS082           | IS082       |
| 7966                       | 30.5                  | 28.67            | 3.98                  | 4047                  | 1437                 | 509                  | PS082           | IS082       |
| 7966                       | 29.6                  | 29.60            | 3.85                  | 4047                  | 1455                 | 514                  | PS082           | IS082       |
| 8851                       | 27.5                  | 31.78            | 3.99                  | 4047                  | 1472                 | 509                  | PS082           | IS082       |
| 8851                       | 25.1                  | 34.91            | 3.63                  | 4047                  | 1525                 | 523                  | PS082           | IS082       |
| 8851                       | 24.6                  | 35.50            | 3.57                  | 4047                  | 1535                 | 526                  | PS082           | IS082       |
| 8851                       | 21.9                  | 40.05            | 3.16                  | 4047                  | 1606                 | 542                  | PS082           | IS082       |
| 8851                       | 20.3                  | 43.05            | 2.94                  | 4047                  | 1619                 | 551                  | PS082           | IS082       |
| 8851                       | 17.4                  | 50.25            | 2.52                  | 4047                  | 1619                 | 568                  | PS082           | IS082       |
| 8851                       | 16.1                  | 54.27            | 2.34                  | 4047                  | 1619                 | 576                  | PS082           | IS082       |
| 8851                       | 14.1                  | 61.98            | 2.04                  | 4047                  | 1619                 | 588                  | PS082           | IS082       |
| 8851                       | 13.0                  | 67.52            | 1.92                  | 4047                  | 1619                 | 595                  | PS083           | IS083       |
| 8851                       | 11.8                  | 74.18            | 1.74                  | 4047                  | 1619                 | 602                  | PS083           | IS083       |
| 8851                       | 10.7                  | 81.71            | 1.58                  | 4047                  | 1619                 | 608                  | PS083           | IS083       |
| 8851                       | 9.6                   | 91.49            | 1.41                  | 4047                  | 1619                 | 615                  | PS083           | IS083       |
| 8851                       | 8.7                   | 100.62           | 1.29                  | 4047                  | 1619                 | 620                  | PS083           | IS083       |
| 8851                       | 7.5                   | 117.17           | 1.1                   | 4047                  | 1619                 | 627                  | PS083           | IS083       |
| 8851                       | 6.8                   | 128.73           | 1.01                  | 4047                  | 1619                 | 631                  | PS083           | IS083       |
| 8851                       | 6.4                   | 136.34           | 0.95                  | 4047                  | 1619                 | 634                  | PS083           | IS083       |
| 8851                       | 5.5                   | 158.76           | 0.82                  | 4047                  | 1619                 | 639                  | PS083           | IS083       |
| 8851                       | 4.7                   | 184.88           | 0.7                   | 4047                  | 1619                 | 644                  | PS083           | IS083       |
| 8851                       | 4.3                   | 203.11           | 0.64                  | 4047                  | 1619                 | 646                  | PS083           | IS083       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 8851                       | 4.3                   | 205.34           | 0.63                  | 4047                  | 1619                 | 646                  | PS083           | IS083       |
| 8851                       | 3.9                   | 226.04           | 0.57                  | 4047                  | 1619                 | 649                  | PS083           | IS083       |
| 8851                       | 3.5                   | 250.50           | 0.52                  | 4047                  | 1619                 | 651                  | PS083           | IS083       |
| 8851                       | 3.3                   | 266.13           | 0.49                  | 4047                  | 1619                 | 652                  | PS083           | IS083       |
| 8851                       | 3.0                   | 292.36           | 0.44                  | 4047                  | 1619                 | 654                  | PS083           | IS083       |
| 8851                       | 2.8                   | 315.73           | 0.41                  | 4047                  | 1619                 | 655                  | PS083           | IS083       |
| 8851                       | 2.4                   | 360.58           | 0.36                  | 4047                  | 1619                 | 657                  | PS083           | IS083       |
| 7523                       | 108.5                 | 8.06             | 13.36                 | 4064                  | 1161                 | 145                  | PS102           | IS102       |
| 7966                       | 98.9                  | 8.85             | 12.89                 | 4177                  | 1193                 | 164                  | PS102           | IS102       |
| 8408                       | 80.4                  | 10.88            | 11.06                 | 4480                  | 1280                 | 236                  | PS102           | IS102       |
| 8851                       | 68.6                  | 12.75            | 9.94                  | 4721                  | 1349                 | 280                  | PS102           | IS102       |
| 10621                      | 62.5                  | 13.99            | 10.87                 | 4769                  | 1363                 | 244                  | PS102           | IS102       |
| 11063                      | 56.7                  | 15.43            | 10.27                 | 4920                  | 1406                 | 267                  | PS102           | IS102       |
| 11506                      | 50.8                  | 17.21            | 9.57                  | 4946                  | 1457                 | 295                  | PS102           | IS102       |
| 12391                      | 46.0                  | 19.00            | 9.34                  | 4946                  | 1495                 | 304                  | PS102           | IS102       |
| 12391                      | 42.0                  | 20.83            | 8.52                  | 4946                  | 1549                 | 336                  | PS102           | IS102       |
| 12391                      | 39.5                  | 22.13            | 8.02                  | 4946                  | 1585                 | 356                  | PS102           | IS102       |
| 13276                      | 36.0                  | 24.28            | 7.83                  | 4946                  | 1624                 | 363                  | PS102           | IS102       |
| 13276                      | 33.2                  | 26.33            | 7.22                  | 4946                  | 1675                 | 387                  | PS102           | IS102       |
| 13276                      | 29.3                  | 29.87            | 6.36                  | 4946                  | 1757                 | 421                  | PS102           | IS102       |
| 13276                      | 27.0                  | 32.40            | 5.87                  | 4946                  | 1812                 | 441                  | PS102           | IS102       |
| 12391                      | 25.1                  | 34.91            | 5.08                  | 4946                  | 1880                 | 472                  | PS102           | IS102       |
| 13276                      | 22.8                  | 38.30            | 4.96                  | 4946                  | 1929                 | 476                  | PS102           | IS102       |
| 12391                      | 20.6                  | 42.53            | 4.17                  | 4946                  | 2022                 | 508                  | PS102           | IS102       |
| 11506                      | 19.9                  | 44.00            | 3.74                  | 4946                  | 2023                 | 524                  | PS102           | IS102       |
| 14161                      | 18.6                  | 47.13            | 4.3                   | 4946                  | 2023                 | 502                  | PS102           | IS102       |
| 12391                      | 17.4                  | 50.25            | 3.53                  | 4946                  | 2023                 | 533                  | PS102           | IS102       |
| 11506                      | 15.9                  | 55.14            | 2.99                  | 4946                  | 2023                 | 554                  | PS102           | IS102       |
| 14161                      | 14.7                  | 59.40            | 3.41                  | 4946                  | 2023                 | 537                  | PS102           | IS102       |
| 14161                      | 12.9                  | 67.84            | 2.99                  | 4946                  | 2023                 | 554                  | PS102           | IS102       |
| 14161                      | 11.8                  | 74.18            | 2.79                  | 4946                  | 2023                 | 564                  | PS103           | IS103       |
| 14161                      | 10.8                  | 81.39            | 2.54                  | 4946                  | 2023                 | 574                  | PS103           | IS103       |
| 14161                      | 9.8                   | 89.77            | 2.31                  | 4946                  | 2023                 | 583                  | PS103           | IS103       |
| 14161                      | 8.7                   | 100.15           | 2.07                  | 4946                  | 2023                 | 592                  | PS103           | IS103       |
| 14161                      | 7.9                   | 110.55           | 1.87                  | 4946                  | 2023                 | 600                  | PS103           | IS103       |
| 14161                      | 7.2                   | 121.29           | 1.71                  | 4946                  | 2023                 | 606                  | PS103           | IS103       |
| 14161                      | 6.8                   | 128.73           | 1.61                  | 4946                  | 2023                 | 610                  | PS103           | IS103       |
| 14161                      | 6.2                   | 141.24           | 1.47                  | 4946                  | 2023                 | 615                  | PS103           | IS103       |
| 14161                      | 5.0                   | 173.78           | 1.19                  | 4946                  | 2023                 | 626                  | PS103           | IS103       |
| 14161                      | 4.6                   | 188.51           | 1.1                   | 4946                  | 2023                 | 630                  | PS103           | IS103       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 14161                      | 4.3                   | 203.11           | 1.02                  | 4946                  | 2023                 | 633                  | PS103           | IS103       |
| 14161                      | 3.9                   | 222.85           | 0.93                  | 4946                  | 2023                 | 636                  | PS103           | IS103       |
| 14161                      | 3.9                   | 224.76           | 0.92                  | 4946                  | 2023                 | 636                  | PS103           | IS103       |
| 14161                      | 3.2                   | 274.20           | 0.76                  | 4946                  | 2023                 | 643                  | PS103           | IS103       |
| 14161                      | 3.1                   | 280.89           | 0.74                  | 4946                  | 2023                 | 643                  | PS103           | IS103       |
| 14161                      | 3.0                   | 292.36           | 0.71                  | 4946                  | 2023                 | 645                  | PS103           | IS103       |
| 14161                      | 2.7                   | 320.79           | 0.65                  | 4946                  | 2023                 | 647                  | PS103           | IS103       |
| 14161                      | 2.5                   | 345.60           | 0.6                   | 4946                  | 2023                 | 649                  | PS103           | IS103       |
| 14161                      | 2.2                   | 394.69           | 0.52                  | 4946                  | 2023                 | 652                  | PS103           | IS103       |
| 13276                      | 103.2                 | 8.48             | 22.41                 | 5356                  | 1530                 | 663                  | PS122           | IS122       |
| 15046                      | 94.1                  | 9.30             | 23.17                 | 5390                  | 1540                 | 656                  | PS122           | IS122       |
| 15046                      | 85.5                  | 10.24            | 21.04                 | 5611                  | 1603                 | 677                  | PS122           | IS122       |
| 16816                      | 76.7                  | 11.42            | 21.09                 | 5699                  | 1628                 | 677                  | PS122           | IS122       |
| 19472                      | 69.3                  | 12.63            | 22.08                 | 5691                  | 1626                 | 667                  | PS122           | IS122       |
| 21242                      | 63.2                  | 13.84            | 21.98                 | 5753                  | 1644                 | 668                  | PS122           | IS122       |
| 23012                      | 51.5                  | 16.99            | 19.39                 | 6129                  | 1751                 | 694                  | PS122           | IS122       |
| 24782                      | 41.2                  | 21.25            | 16.7                  | 6598                  | 1885                 | 721                  | PS122           | IS122       |
| 24782                      | 39.1                  | 22.37            | 15.86                 | 6744                  | 1929                 | 730                  | PS122           | IS122       |
| 25667                      | 37.6                  | 23.29            | 15.78                 | 6744                  | 1940                 | 731                  | PS122           | IS122       |
| 26552                      | 33.5                  | 26.15            | 14.54                 | 6744                  | 2018                 | 744                  | PS122           | IS122       |
| 26552                      | 30.6                  | 28.60            | 13.29                 | 6744                  | 2101                 | 756                  | PS122           | IS122       |
| 26552                      | 28.7                  | 30.51            | 12.46                 | 6744                  | 2162                 | 765                  | PS122           | IS122       |
| 26552                      | 26.7                  | 32.76            | 11.61                 | 6744                  | 2230                 | 773                  | PS122           | IS122       |
| 26552                      | 26.2                  | 33.44            | 11.37                 | 6744                  | 2251                 | 776                  | PS122           | IS122       |
| 26552                      | 24.9                  | 35.20            | 10.8                  | 6744                  | 2301                 | 782                  | PS122           | IS122       |
| 26552                      | 21.3                  | 41.07            | 9.26                  | 6744                  | 2460                 | 797                  | PS122           | IS122       |
| 26552                      | 20.1                  | 43.60            | 8.72                  | 6744                  | 2518                 | 803                  | PS122           | IS122       |
| 21242                      | 19.6                  | 44.63            | 6.81                  | 6744                  | 2518                 | 822                  | PS122           | IS122       |
| 21242                      | 17.8                  | 49.04            | 6.2                   | 6744                  | 2518                 | 828                  | PS122           | IS122       |
| 23012                      | 16.3                  | 53.75            | 6.13                  | 6744                  | 2518                 | 829                  | PS122           | IS122       |
| 26552                      | 13.3                  | 66.00            | 5.76                  | 6744                  | 2518                 | 833                  | PS122           | IS122       |
| 23897                      | 13.5                  | 64.84            | 5.39                  | 6744                  | 2518                 | 838                  | PS123           | IS123       |
| 23897                      | 12.3                  | 71.07            | 4.92                  | 6744                  | 2518                 | 842                  | PS123           | IS123       |
| 26552                      | 11.2                  | 78.46            | 4.95                  | 6744                  | 2518                 | 842                  | PS123           | IS123       |
| 26552                      | 10.0                  | 87.27            | 4.45                  | 6744                  | 2518                 | 847                  | PS123           | IS123       |
| 26552                      | 8.3                   | 105.91           | 3.67                  | 6744                  | 2518                 | 855                  | PS123           | IS123       |
| 26552                      | 7.8                   | 112.52           | 3.45                  | 6744                  | 2518                 | 857                  | PS123           | IS123       |
| 26552                      | 7.1                   | 123.33           | 3.15                  | 6744                  | 2518                 | 860                  | PS123           | IS123       |
| 26552                      | 6.7                   | 130.04           | 2.99                  | 6744                  | 2518                 | 862                  | PS123           | IS123       |
| 26552                      | 6.5                   | 133.78           | 2.9                   | 6744                  | 2518                 | 863                  | PS123           | IS123       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 26552                      | 5.8                   | 151.43           | 2.56                  | 6744                  | 2518                 | 866                  | PS123           | IS123       |
| 26552                      | 4.9                   | 177.53           | 2.19                  | 6744                  | 2518                 | 870                  | PS123           | IS123       |
| 26552                      | 4.5                   | 194.59           | 2                     | 6744                  | 2518                 | 872                  | PS123           | IS123       |
| 26552                      | 4.1                   | 215.60           | 1.8                   | 6744                  | 2518                 | 874                  | PS123           | IS123       |
| 26552                      | 3.7                   | 238.93           | 1.62                  | 6744                  | 2518                 | 875                  | PS123           | IS123       |
| 26552                      | 3.4                   | 255.54           | 1.52                  | 6744                  | 2518                 | 876                  | PS123           | IS123       |
| 12294                      | 212.5                 | 4.12             | 42.75                 | 5861                  | 3349                 | 539                  | S142            | IS142       |
| 13702                      | 190.8                 | 4.59             | 42.78                 | 5880                  | 3360                 | 539                  | S142            | IS142       |
| 15378                      | 170.1                 | 5.14             | 42.8                  | 5878                  | 3359                 | 538                  | S142            | IS142       |
| 17382                      | 150.4                 | 5.82             | 42.77                 | 5848                  | 3342                 | 539                  | S142            | IS142       |
| 18579                      | 140.8                 | 6.21             | 42.81                 | 5812                  | 3321                 | 538                  | S142            | IS142       |
| 16953                      | 119.6                 | 7.32             | 33.17                 | 6667                  | 3810                 | 665                  | S142            | IS142       |
| 19017                      | 106.6                 | 8.21             | 33.17                 | 6642                  | 3796                 | 665                  | S142            | IS142       |
| 21522                      | 94.2                  | 9.29             | 33.19                 | 6575                  | 3757                 | 665                  | S142            | IS142       |
| 22983                      | 88.3                  | 9.91             | 33.19                 | 6520                  | 3726                 | 665                  | S142            | IS142       |
| 24924                      | 76.7                  | 11.41            | 31.29                 | 6658                  | 3805                 | 690                  | S142            | IS142       |
| 23189                      | 68.3                  | 12.81            | 25.91                 | 7461                  | 4159                 | 760                  | S142            | IS142       |
| 21596                      | 61.3                  | 14.27            | 21.67                 | 7868                  | 4159                 | 816                  | S142            | IS142       |
| 23470                      | 54.7                  | 16.01            | 20.99                 | 7868                  | 4159                 | 825                  | S142            | IS142       |
| 26551                      | 48.3                  | 18.11            | 20.99                 | 7868                  | 4159                 | 825                  | S142            | IS142       |
| 28355                      | 45.3                  | 19.33            | 21                    | 7868                  | 4159                 | 824                  | S142            | IS142       |
| 29340                      | 39.3                  | 22.24            | 18.88                 | 7868                  | 4159                 | 852                  | S142            | IS142       |
| 25630                      | 34.6                  | 25.26            | 14.53                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 28745                      | 30.9                  | 28.33            | 14.53                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 32519                      | 27.3                  | 32.05            | 14.53                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 34721                      | 25.6                  | 34.22            | 14.53                 | 7868                  | 4159                 | 909                  | S142            | IS142       |
| 39216                      | 22.2                  | 39.38            | 14.26                 | 7868                  | 4159                 | 913                  | S142            | IS142       |
| 35517                      | 19.1                  | 45.77            | 11.35                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 39561                      | 17.2                  | 50.97            | 11.35                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41904                      | 15.3                  | 57.17            | 10.72                 | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42257                      | 13.5                  | 64.68            | 9.55                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 43158                      | 12.7                  | 69.06            | 9.14                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 37469                      | 11.0                  | 79.45            | 6.9                   | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 39297                      | 8.9                   | 98.81            | 5.82                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41895                      | 8.0                   | 110.05           | 5.57                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42080                      | 7.1                   | 123.44           | 4.98                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42845                      | 6.3                   | 139.64           | 4.49                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42356                      | 5.9                   | 149.10           | 4.15                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 33645                      | 5.6                   | 157.49           | 3.12                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41327                      | 5.1                   | 171.55           | 3.52                  | 7868                  | 4159                 | 944                  | S143            | IS143       |

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 37473                      | 5.0                   | 175.41           | 3.12                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42030                      | 4.5                   | 196.74           | 3.12                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 41731                      | 3.9                   | 222.57           | 2.74                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 43205                      | 3.7                   | 237.63           | 2.66                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 42411                      | 3.2                   | 273.41           | 2.27                  | 7868                  | 4159                 | 944                  | S143            | IS143       |
| 22775                      | 215.4                 | 4.06             | 80.28                 | 7084                  | 4048                 | 630                  | S152            | IS152       |
| 25411                      | 193.0                 | 4.53             | 80.26                 | 7120                  | 4069                 | 630                  | S152            | IS152       |
| 25791                      | 168.1                 | 5.20             | 70.96                 | 7553                  | 4316                 | 704                  | S152            | IS152       |
| 26039                      | 153.2                 | 5.71             | 65.27                 | 7858                  | 4361                 | 749                  | S152            | IS152       |
| 27216                      | 134.1                 | 6.52             | 59.74                 | 8209                  | 4361                 | 793                  | S152            | IS152       |
| 28845                      | 120.2                 | 7.28             | 56.73                 | 8434                  | 4361                 | 817                  | S152            | IS152       |
| 31252                      | 104.7                 | 8.36             | 53.54                 | 8693                  | 4361                 | 843                  | S152            | IS152       |
| 33199                      | 95.4                  | 9.17             | 51.82                 | 8842                  | 4361                 | 856                  | S152            | IS152       |
| 37014                      | 84.0                  | 10.42            | 50.86                 | 8922                  | 4361                 | 864                  | S152            | IS152       |
| 29258                      | 70.2                  | 12.46            | 33.61                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 32640                      | 62.9                  | 13.91            | 33.6                  | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 37477                      | 54.8                  | 15.97            | 33.6                  | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 41140                      | 49.9                  | 17.53            | 33.61                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 46729                      | 44.0                  | 19.91            | 33.61                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 53726                      | 38.2                  | 22.88            | 33.62                 | 8992                  | 4361                 | 1001                 | S152            | IS152       |
| 53894                      | 32.3                  | 27.11            | 28.47                 | 8992                  | 4361                 | 1042                 | S152            | IS152       |
| 59164                      | 29.4                  | 29.75            | 28.47                 | 8992                  | 4361                 | 1042                 | S152            | IS152       |
| 67198                      | 25.9                  | 33.79            | 28.47                 | 8992                  | 4361                 | 1042                 | S152            | IS152       |
| 68053                      | 22.5                  | 38.84            | 25.09                 | 8992                  | 4361                 | 1069                 | S152            | IS152       |
| 55595                      | 21.8                  | 40.10            | 20.27                 | 8992                  | 4361                 | 1111                 | S153            | IS153       |
| 62042                      | 19.6                  | 44.76            | 20.27                 | 8992                  | 4361                 | 1111                 | S153            | IS153       |
| 69614                      | 17.0                  | 51.38            | 19.81                 | 8992                  | 4361                 | 1114                 | S153            | IS153       |
| 73053                      | 15.5                  | 56.39            | 18.94                 | 8992                  | 4361                 | 1121                 | S153            | IS153       |
| 77845                      | 13.7                  | 64.05            | 17.77                 | 8992                  | 4361                 | 1130                 | S153            | IS153       |
| 68854                      | 11.9                  | 73.63            | 13.67                 | 8992                  | 4361                 | 1162                 | S153            | IS153       |
| 62889                      | 10.0                  | 87.16            | 10.55                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 70191                      | 9.0                   | 97.27            | 10.55                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 80575                      | 7.8                   | 111.67           | 10.55                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 84402                      | 7.1                   | 122.57           | 10.07                 | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 80913                      | 6.3                   | 139.21           | 8.5                   | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 63094                      | 5.7                   | 154.02           | 5.99                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 71552                      | 5.5                   | 160.02           | 6.54                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 72434                      | 5.0                   | 176.81           | 5.99                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 79497                      | 4.5                   | 194.06           | 5.99                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |
| 82782                      | 4.0                   | 220.42           | 5.49                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |



# 5.4 IS GEAR REDUCER - fs=1, 875 rpm

| Maximum torque<br>[in-lbs] | Output speed<br>[rpm] | Exact ratio<br>i | Maximum Power<br>[HP] | OHL                   |                      |                      | Gear Reducer    |             |
|----------------------------|-----------------------|------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------|-------------|
|                            |                       |                  |                       | Output shaft<br>[lbs] | Hollow bore<br>[lbs] | Input shaft<br>[lbs] | Motorized Input | Shaft Input |
| 73272                      | 3.5                   | 253.36           | 4.23                  | 8992                  | 4361                 | 1169                 | S153            | IS153       |

**ATTENTION!**

The revised data and information, shown in this technical catalogue, replaces the data of the previous editions. Old data is now obsolete. All technical data, dimensions, weights in this catalogue are subject to changes without warning. Illustrations are not binding. You can find the above mentioned data and information on our site [www.motovario.com](http://www.motovario.com); please periodically consult the technical documentation on the web site to be always updated about possible modifications of performances and characteristics of the product.

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