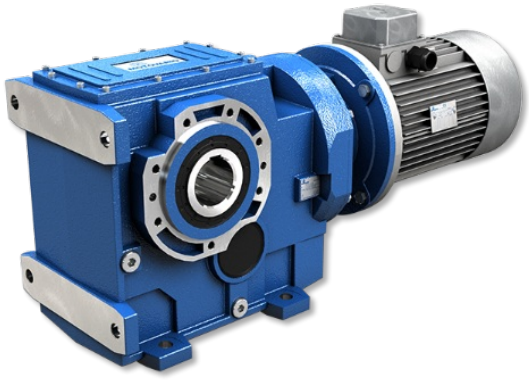
TECHNICAL CATALOGUE

B SERIES



HELICAL**BEVEL** GEARED**MOTORS**

MOTOVARIO®
HEART OF MOTION
a TECO Group company

1. GENERAL INFORMATION

2. PRODUCT INFORMATION

3. DIMENSIONS

4. ACCESSORIES AND OPTIONS

1.1 COMPANY PROFILE

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^2 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

1.1 COMPANY PROFILE

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 experienced 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.

1.2 PRODUCTS AND SOFTWARE MOTOVARIO

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.

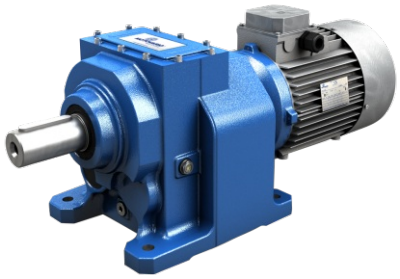
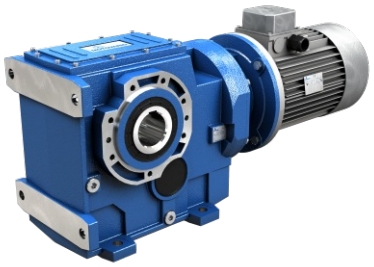
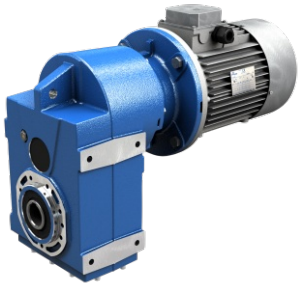
Range extension and ongoing evolution
The steady, significant growth of Motovario Group is achieved thanks to an ongoing search for new calculation and design tools, as well as to customer service. The new tools identified have led to innovation, improved product reliability as well as positive developments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

- Solidworks;
- Kissoft;
- 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.

1.2 PRODUCTS AND SOFTWARE MOTOVARIO

MOTOVARIO Products

HELICAL GEAR REDUCERS Cast iron or aluminum casing Output shaft up to 90 mm Mn_2 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_2 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_2 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_2 up to 23631 in-lb Ratios up to 1083 Atex units	

1.2 PRODUCTS AND SOFTWARE MOTOVARIO

PARALLEL HELICAL AND BEVEL HELICAL GEAR REDUCERS FOR MIDDLE HEAVY INDUSTRY Cast iron casing Output shaft up to 180 mm Mn_2 up to 973582 in-lb Reduction stages 1, 2, 3, 4 Ratios up to 636 Atex units	 
MOTOVARIATORS AND MOTOVARIATOR-GEAR REDUCERS Cast iron or aluminum casing Ratios infinite Mn_2 up to 44254 in-lb Atex units	

1.2 PRODUCTS AND SOFTWARE MOTOVARIO

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 SYMBOLS AND FORMULAS

1.3.1 Symbols

Physical dimension	Symbol	Symbol units of measure	Input	Output
Power	P	[HP]	P_1	P_2
Requested power	Pr	[HP]	Pr_1	Pr_2
Nominal power	Pn	[HP]	Pn_1	Pn_2
Torque	M	[in-lb]	M_1	M_2
Nominal torque	Mn	[in-lb]		Mn_2
Requested torque	Mr	[in-lb]	Mr_1	Mr_2
Speed	n	[rpm]	n_1	n_2
Load	F	[lb]		
Radial load	Fr	[lb]	Fr_1	Fr_2
Radial axial	Fa	[lb]	Fa_1	Fa_2
Reduction ratio	i			
Dynamic efficiency	η_d			
Speed	ips	[inch/second]		
Service factor	f.s.			
Static	s			
Dynamic	d			
Calculated	c			
Maximum	max			
Minimum	min			
Moment of inertia	J	[lb*in^2]	J_1	
Ambient temperature	T_{amb}	[°F]		
Dimensions		[inch]		

1.3 SYMBOLS AND FORMULAS

1.3.2 Formulas

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

MOTOR and GEARMOTOR		
Starting time	$ta = (Jext+Jm)*n_n/9{,}55+(M_{peak}-Mr)$	[s]
Braking time	$ts = (Jext+Jm)*n_n/9{,}55+(M_{peak}+Mr)$	[s]
Motor rotation angle during starting	$\varphi = n_n * ta / 19{,}1$	[rad]
Motor rotation angle during braking	$\varphi = n_n * ts / 19{,}1$	[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	$P1_{60Hz} = P1_{50Hz} * V_{60Hz}/V_{50Hz}$	[kW]
If input voltage at 60 Hz (V_{60Hz}) corresponds to winding voltage at 50 Hz (V_{50Hz}), power doesn't change $P1_{60Hz} = P1_{50Hz}$ If input voltage at 60 Hz (V_{60Hz}) is 20% higher than winding voltage at 50 Hz (V_{50Hz}), power increases by 20% $P1_{60Hz} = 1{,}2\ P1_{50Hz}$		
Torque at 60Hz	$M_{60hz} = M_{50Hz} * P1_{60Hz} / (1{,}2 * P1_{50Hz})$	[in-lb]
Service factor at 60Hz	$f.s_{60Hz} = f.s_{50Hz} * 1{,}175 * P1_{50Hz} / P1_{60Hz}$	-

1.3 SYMBOLS AND FORMULAS

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

1.4 PRODUCT SELECTION

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 **(Mr_2)**.

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 **Pr_1** using the required torque value **Mr_2**, the speed **n_2** and dynamic efficiency value. **$Pr_1=(Mr_2*n_2)/(\mu_d*63.025)$**. 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 normalised power value **Pn_1** exceeding the required power **Pr_1**, such that: **$Pn_1 \geq Pr_1$**
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 **Mc_2** for selecting the gear reducer through the torque required by the application **Mr_2** and the service factor s.f.: **$Mc_2=Mr_2*(f.s.)$**
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 **Mn_2** so that: **$Mn_2 \geq Mc_2$**

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**

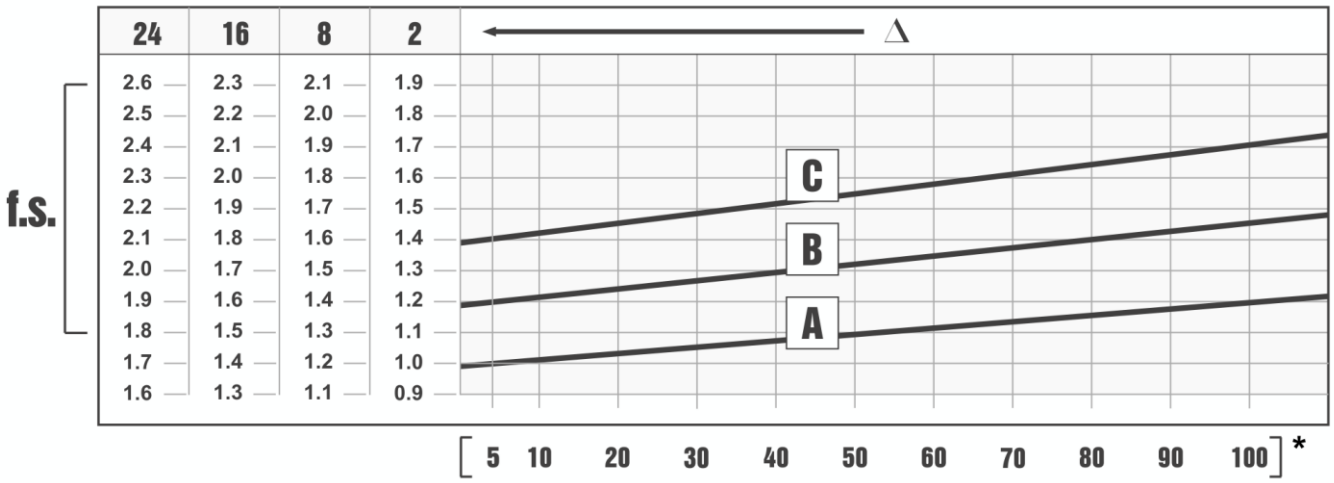
Generally, the maximum torque (peak instantaneous load) that can be applied to the gear reducer must not exceed 200% of the nominal torque **Mn_2** (ATEX - M_2max).

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.

1.5 SERVICE FACTOR



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 (Δ)
- start-up frequency: starts/hour (*)

LOAD:

- **A** - uniform = fa ≤ 0,3
- **B** - moderate shocks = fa ≤ 3
- **C** - heavy shocks = fa ≤ 10

fa = Je/Jm

- Je [lb-in^2] moment of reduced external inertia at the drive-shaft
- Jm [lb-in^2] moment of inertia of motor

If fa > 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 ≥ 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.

A. Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.
B. 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.
C. 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 INSTALLATION

1.6.1 Installation

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

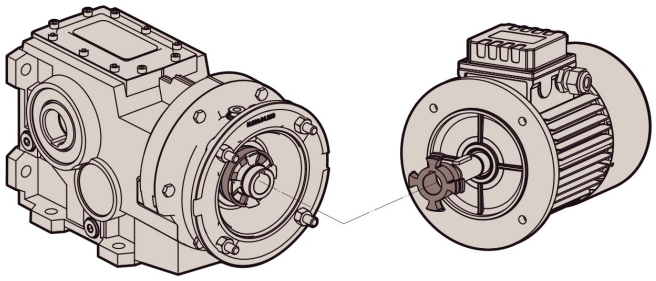
- Check the correct direction of rotation of the gear reducer output shaft before fitting the unit to the machine.
- In the case of particularly lengthy periods of storage (4/6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could 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.

1.6.2 Installation

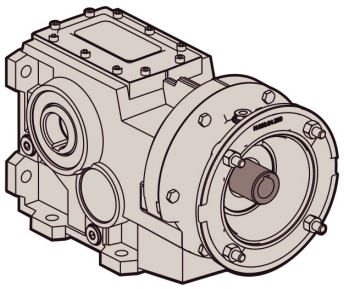
Assembling motor on pam flange

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



2.1 DESIGN FEATURES

Motovario products are supplied with the following surface treatment features:

Die-cast aluminium alloy cases for gears
Die-cast materials undergo the following surface cleaning operations:
- De-burring by means of a mechanically operated shearing system.
- Accurate shot-peening.
- Painting.
- Washing and passivation.

Grey-coloured cast-iron cases for gears
- Die-cast materials are always painted.
  Grey-coloured cast-iron inspection cover: The gear reducer B... series sizes 140, 150, 160 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.

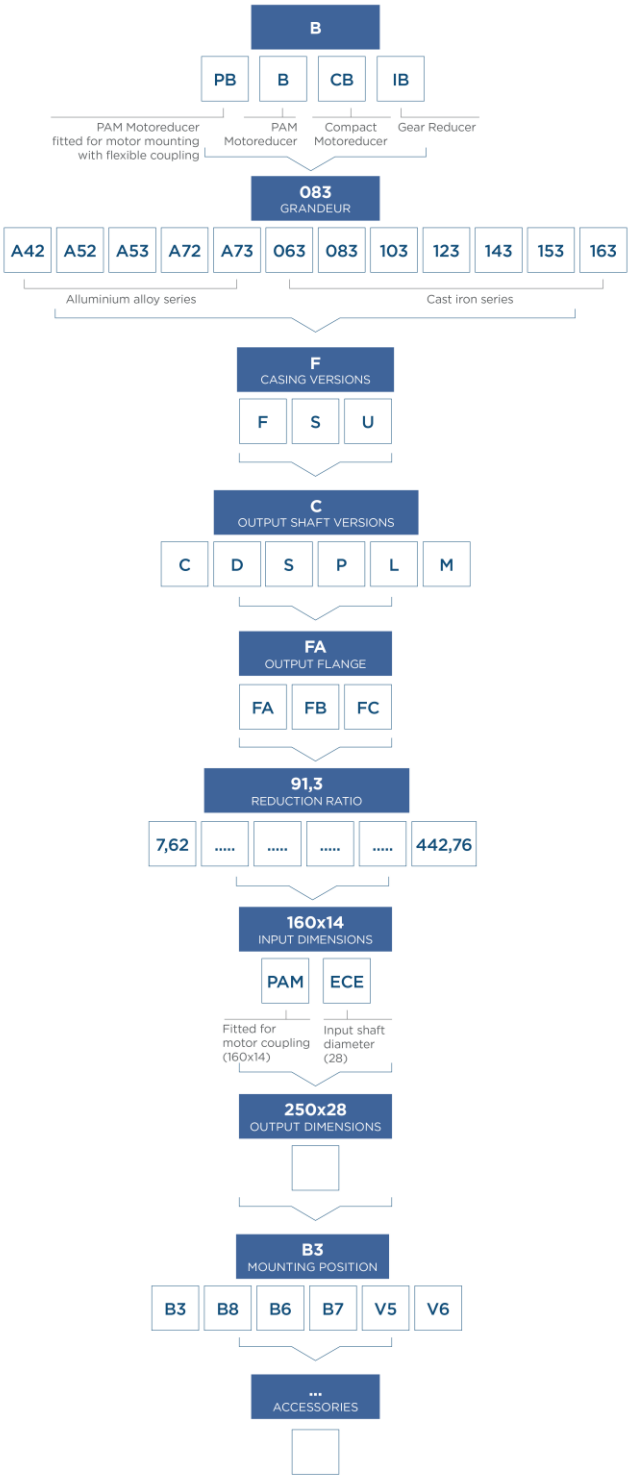
Performance:
- Loading capacity in accordance with DIN 3990, ISO 6336, AGMA 2101, ISO 10300, DIN 3991, ISO 281, DIN 743

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

B/BA-range helical bevel gear reducers have an average value equal to:
B..3 stages = 0,9
BA.2 stages = 0,95
BA.3 stages = 0,9

2.2 TYPOLOGY

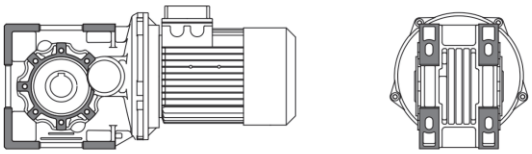
2.2.1 Designation



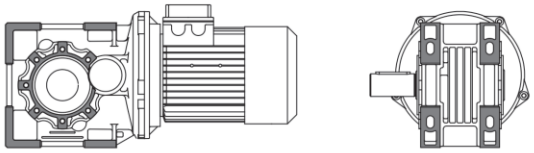
2.2.2 Versions

A40-A50-A70

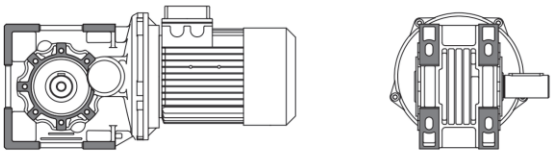
C FOOT MOUNTING / HOLLOW SHAFT



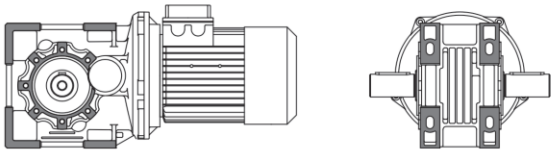
D FOOT MOUNTING / D SOLID SHAFT



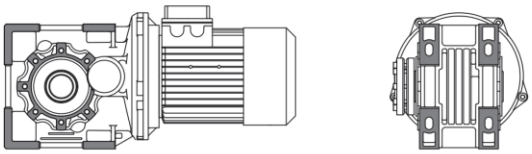
S FOOT MOUNTING / S SOLID SHAFT



P FOOT MOUNTING / DOUBLE OUTPUT SHAFT



L FOOT MOUNTING /SHRINK DISC SHAFT

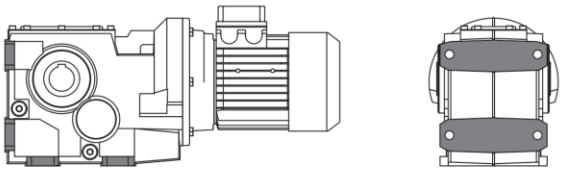


Sizes A42 - A52 - A53 are not available in versions D-S-P.

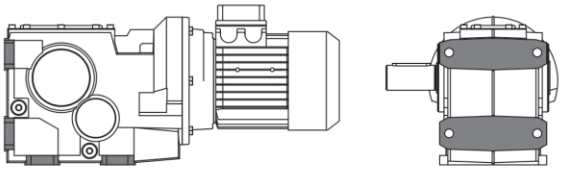
2.2 TYPOLOGY

063 - 083 - 103 - 123

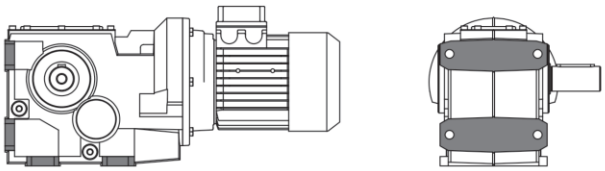
FC FOOT MOUNTING / HOLLOW SHAFT



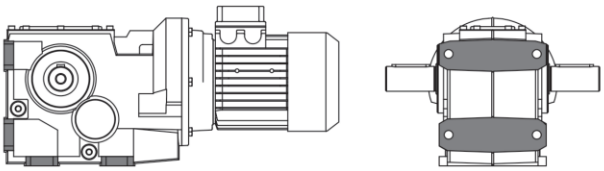
FD FOOT MOUNTING / D SOLID SHAFT



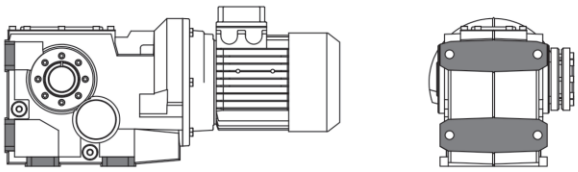
FS FOOT MOUNTING / S SOLID SHAFT



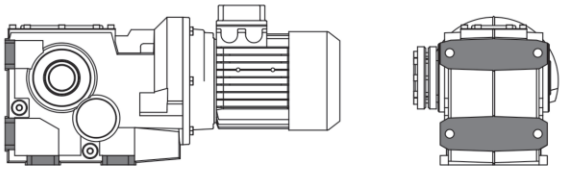
FP FOOT MOUNTING / DOUBLE OUTPUT SHAFT



FL FOOT MOUNTING / SHRINK DISC SHAFT



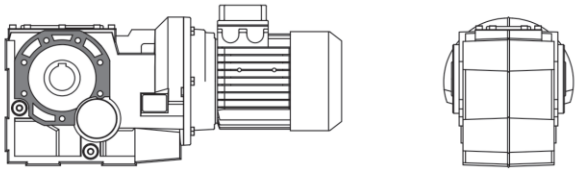
FM FOOT MOUNTING / SHRINK DISC SHAFT



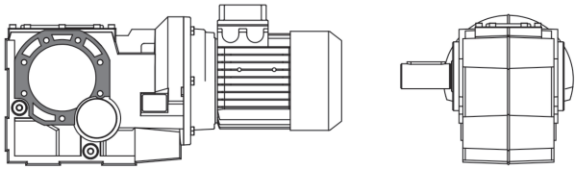
2.2 TYPOLOGY

063 - 083 - 103 - 123

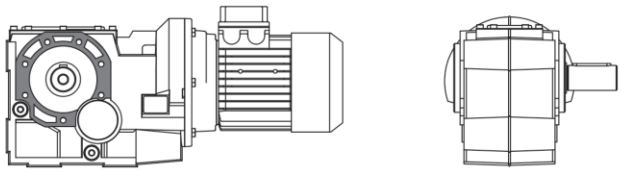
SC FLANGE MOUNTING / HOLLOW SHAFT



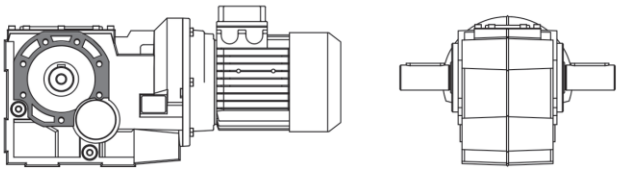
SD FLANGE MOUNTING / D SOLID SHAFT



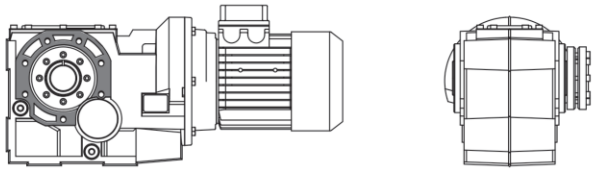
SS FLANGE MOUNTING / S SOLID SHAFT



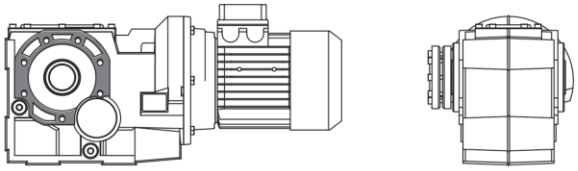
SP FLANGE MOUNTING / DOUBLE OUTPUT SHAFT



SL FLANGE MOUNTING / HOLLOW SHAFT



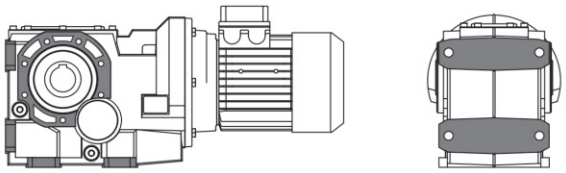
SM FLANGE MOUNTING / D SOLID SHAFT



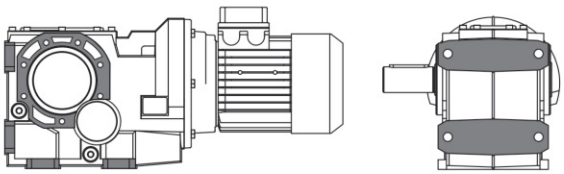
2.2 TYPOLOGY

063 - 083 - 103 - 123 - 143 - 153 - 163

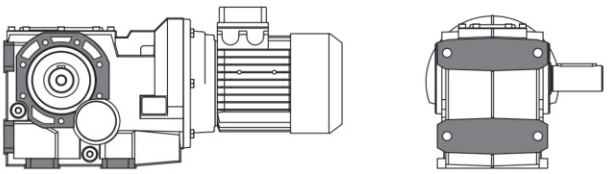
UC FOOT-FLANGE MOUNTING / HOLLOW SHAFT



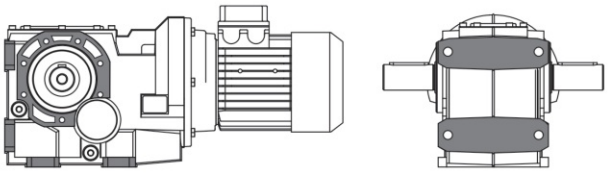
UD FOOT-FLANGE MOUNTING / D SOLID SHAFT



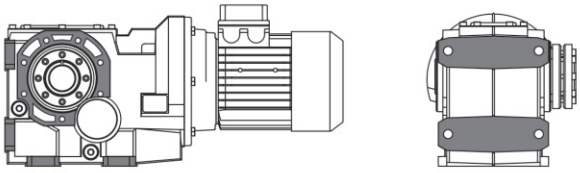
US FOOT-FLANGE MOUNTING / S SOLID SHAFT



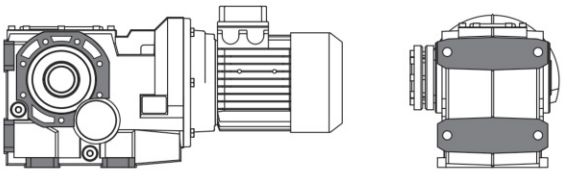
UP FOOT-FLANGE MOUNTING / DOUBLE OUTPUT SHAF



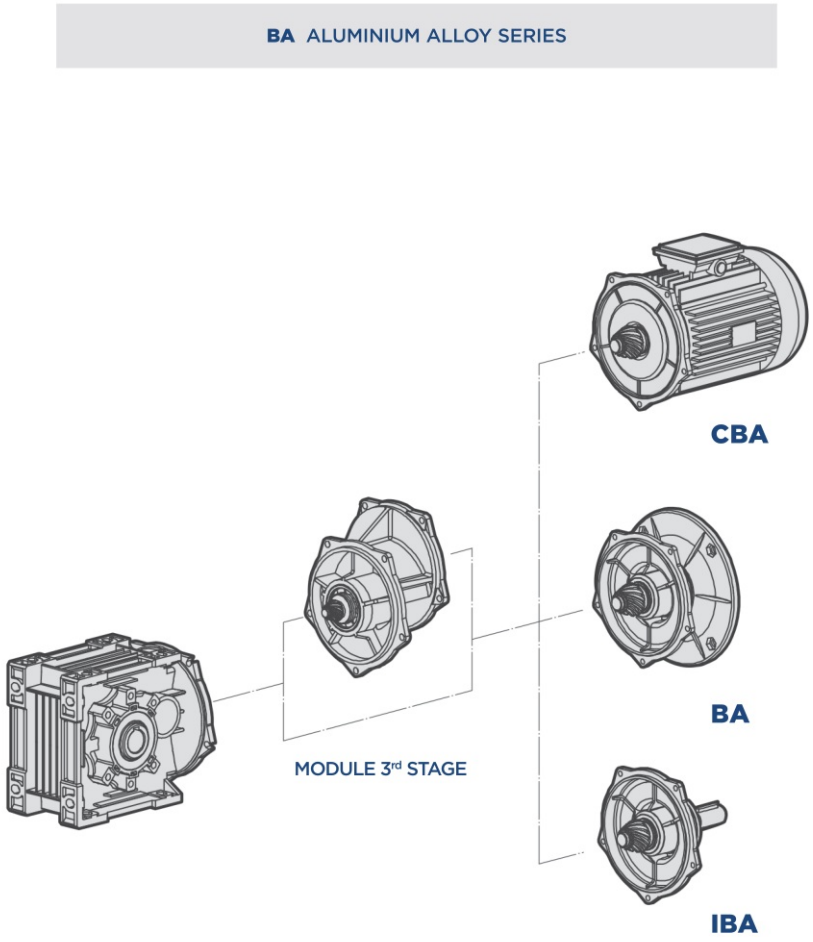
UL FOOT-FLANGE MOUNTING / SHRINK DISC SHAFT



UM FOOT-FLANGE MOUNTING / SHRINK DISC SHAFT



2.2.3 Modularity



CBA

Compact electric motor versions

BA

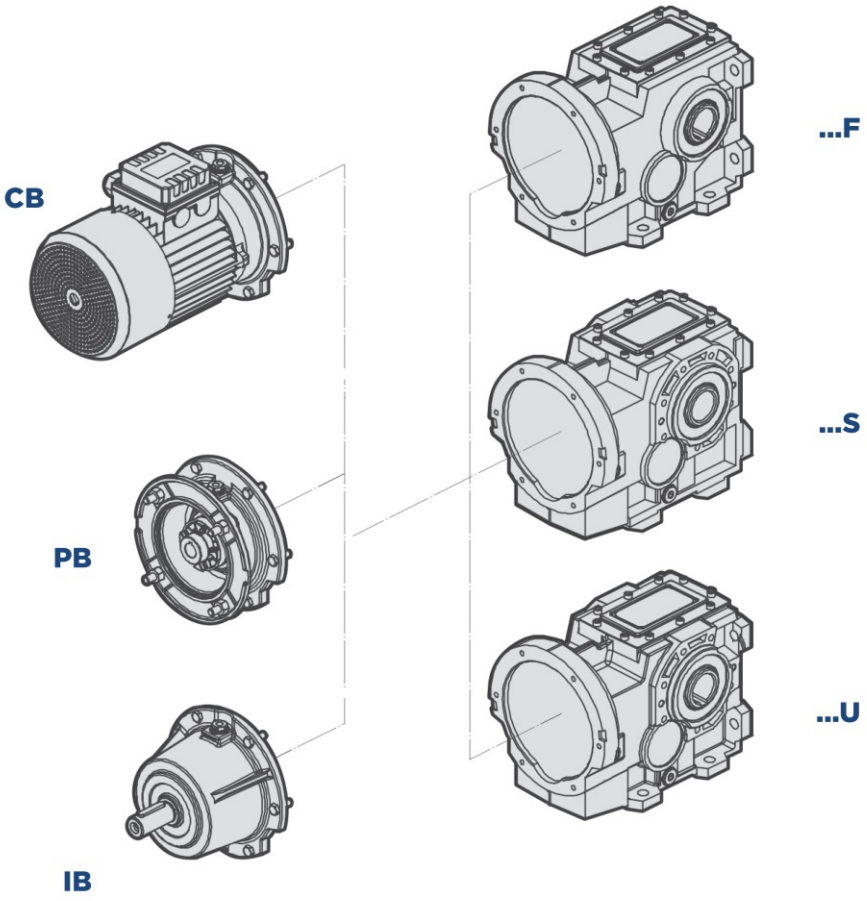
Fitted for motor coupling version (PAM)

IBA

Input shaft versions

2.2 TYPOLOGY

B GREY CAST IRON SERIES



CB

Compact electric motor versions

IB

Input shaft versions

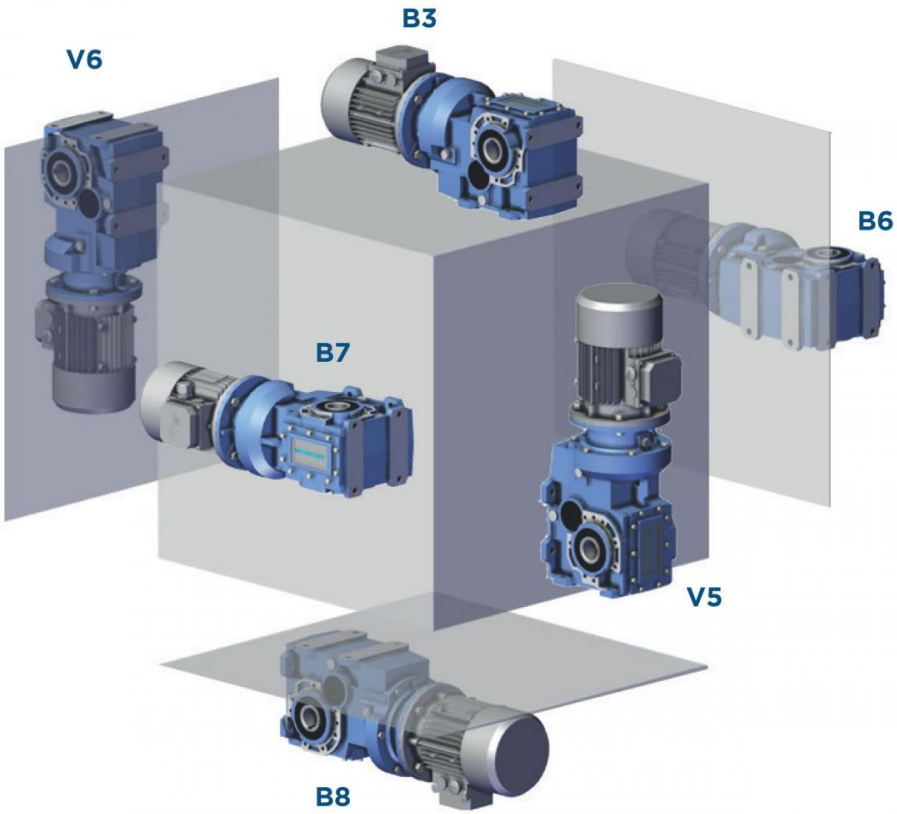
PB

Fitted for motor mounting
with flexible coupling

2.3 MOUNTING POSITIONS

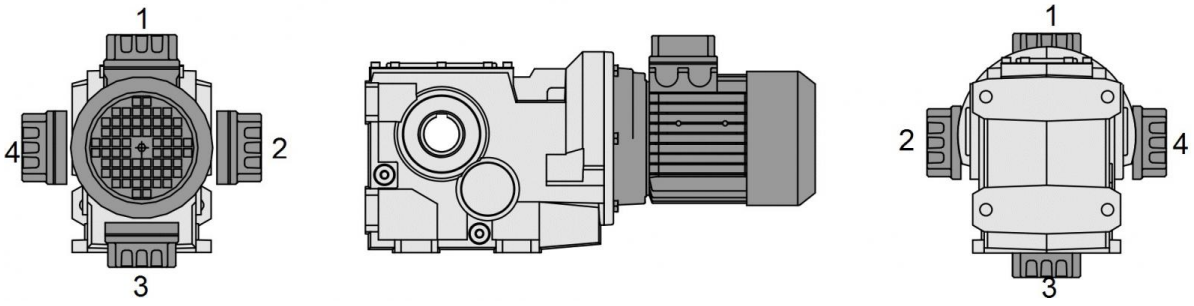
2.3.1 Mounting positions

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 THERMAL POWER

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 <= 1800 rpm
- environment temperature 77°F
- sea level altitude
- air speed around the gear reducer >=38 ips
- absence of external radial and/or axial loads

n_1 = 1,750rpm	
	Pth [HP]
B063	9
B083	10
B103	13
B123	20.5
B143	26
B153	41
B163	52

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: For the BA series it is not necessary to check the thermal power.

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 < Pth * Fc * Fv * Fa,** where:

- P_1 = input power to the gear reducer
- Pth = thermal power at the reference conditions (see above table)
- Fc = ambient and operating temperature correction factor
- Fv = ventilation correction factor
- Fa = altitude correction factor

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

		Duty per hour of operation %				
	Fc	100	80	70	40	20
Ambient temperature °F	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]	Fa
0*	1
2460	0.95
4921	0.9
7382	0.85
9843	0.81

Ventilation correction factor	Fv
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

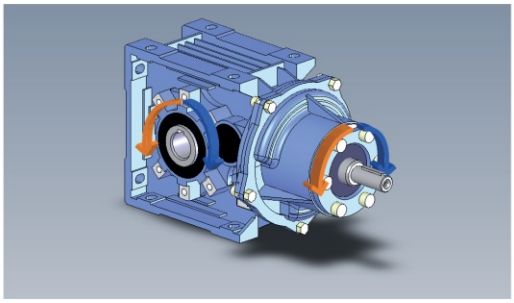
In case of operation at input speeds exceeding 2000 rpm, or ambient temperatures greater than 104°F, it is advisable to contact out technical department.

2.5 DIRECTION OF ROTATION

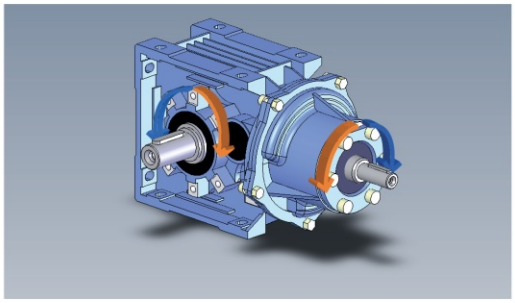
Helical bevel reduction units are supplied as “standard” with rotation as shown in the diagram. On request, the direction of rotation of low speed shaft can be reversed; in this case, it is necessary to specify “opposite rotation to catalogue” when ordering. The “opposite rotation to catalogue” is not possible for sizes BA42 - BA52 - BA53.

DIRECTION OF ROTATION - HIGH SPEED SHAFT

B-CB-IB A42-A52-A72

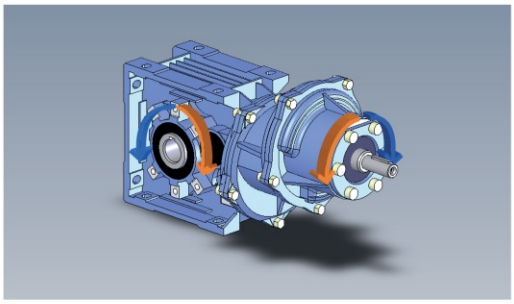


VERSIONS **C-D-P-L**

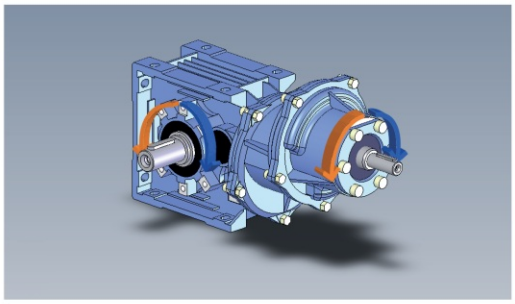


VERSION **S**

B-CB-IB A53-A73

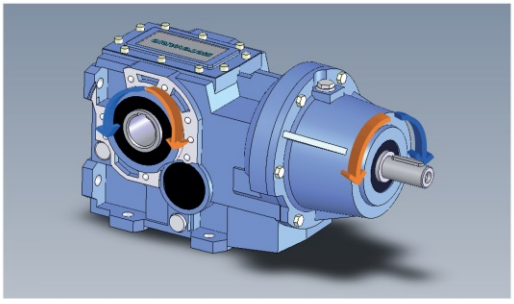


VERSIONS **C-D-P-L**

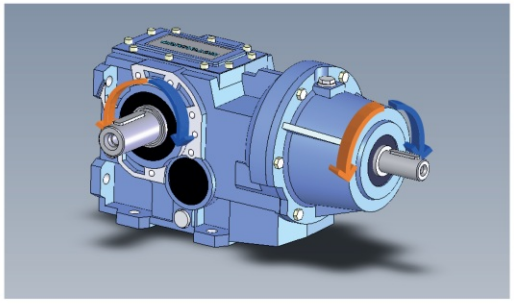


VERSION **S**

B-PB-CB-IB 063-163



VERSIONS **C-D-P-L**



VERSION **S-M**

2.6 CRITICAL APPLICATIONS

2.6.1 Critical applications

B	A40	A50	A70
2000 < n1 < 3000	✔	✔	✔
V6	B	B	B
n1 > 3000	B	B	B
...L : B6 - B7	B	B	B

B	060	080	100	125	140	150	160
2000 < n1 < 3000	✔	✔	✔	B	B	B	B
V6	B	B	B	B	B	B	B
n1 > 3000	B	B	B	B	A	A	A
...L : B6 - B7	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.

2.6.2 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 $2*Mn_2$.

2.7 MOTOR FLANGE AVAILABILITY

2.7.1 BA Motor flange availability

B10 = Compact electric motor versions.

These tables report all possible dimensions. Please verify service factor.

	i	56C	140TC	180TC
BA42	7.62 - 64.13	•	•	
BA42	78.17	•		
BA52	7.91 - 64.87	•	•	
BA52	79.07	•		
BA53	73.7 - 172.53	•	•	
BA53	197.11 - 342.65	•		
BA72	8.36 - 40.87	•	•	•
BA72	45.64 - 67.96	•	•	
BA73	43.89 - 222.93	•	•	
BA73	260.2 - 442.76	•		

2.7.2 B Motor flange availability

These tables report all possible dimensions. Please verify service factor.

PB 063			
i	56C	140TC	180TC
5.71	•	•	•
6.88	•	•	•
7.32	•	•	•
9.16	•	•	•
10.26	•	•	•
11.03	•	•	•
12.35	•	•	•
13.15	•	•	•
15.18	•	•	•
17.00	•	•	•
22.39	•	•	•
26.09	•	•	•
28.03	•	•	•
33.43	•	•	•
38.58	•	•	•
43.22	•	•	•
50.81	•	•	•
56.93	•	•	•
69.16	•	•	
77.48	•	•	
90.33	•	•	
101.20	•	•	
111,74	•	•	
124.20	•	•	
139.15	•	•	
157.42	•	•	

PB 083				
i	56C	140TC	180TC	210TC
7.81	•	•	•	•
8.62	•	•	•	•
10.49	•	•	•	•
11.59	•	•	•	•
14.43	•	•	•	•
16.60	•	•	•	•
18.32	•	•	•	•
22.82	•	•	•	•
26.71	•	•	•	•
29.50	•	•	•	•
31.80	•	•	•	•
34.49	•	•	•	•
39.60	•	•	•	•
42.95	•	•	•	•
45.44	•	•	•	•
51,19	•	•	•	•
55.52	•	•	•	•
59.96	•	•	•	•
63.74	•	•	•	•
69.14	•	•	•	•
73.14	•	•	•	•
80.76	•	•	•	•
92.19	•	•	•	
100.57	•	•	•	•
105.29	•	•	•	
116,25	•	•	•	
126.76	•	•	•	
144.77	•	•	•	

2.7 MOTOR FLANGE AVAILABILITY

PB 103					
i	56C	140TC	180TC	210TC	250TC
8.13	•	•	•	•	•
8.97	•	•	•	•	•
10.92	•	•	•	•	•
12,05	•	•	•	•	•
14.99	•	•	•	•	•
17.27	•	•	•	•	•
19.06	•	•	•	•	•
23.70	•	•	•	•	•
26.51	•	•	•	•	•
30.55	•	•	•	•	•
33.07	•	•	•	•	•
35.87	•	•	•	•	•
41.12	•	•	•	•	•
44.61	•	•	•	•	•
47.28	•	•	•	•	•
50.24	•	•	•	•	•
53.02	•	•	•	•	•
58.50	•	•	•	•	•
64.89	•	•	•	•	•
68.58	•	•	•	•	•
72.76	•	•	•	•	•
78.92	•	•	•	•	•
83.66	•	•	•	•	•
92.31	•	•	•	•	•
105.44	•	•	•		
114.80	•	•	•	•	•
120.42	•	•	•		
132.87	•	•	•		
144.69	•	•	•		
165.25	•	•	•		

PB 123					
i	140TC	180TC	210TC	250TC	280TC
7.97			•	•	•
9.62			•	•	•
10.33			•	•	•
12.48			•	•	•
13.84			•	•	•
15.38			•	•	•
18.58			•	•	•
20.61			•	•	•
22.78			•	•	•
25.89		•	•	•	•
27.51			•	•	•
30.79			•	•	•
31.26		•	•	•	•
34.68		•	•	•	•
40.53		•	•	•	•
44.89		•	•	•	•
49,80		•	•	•	•
54.30		•	•	•	•
59.36		•	•	•	•
62.59		•	•	•	•
69.43		•	•	•	•
74.42		•	•	•	•
80.04	•	•	•	•	
89.87		•	•	•	•
99.70		•	•	•	•
106.65	•	•	•	•	
119.60	•	•	•	•	
129.96	•	•	•	•	
144.43	•	•	•	•	
160.23	•	•	•	•	
180.40	•	•	•	•	

2.7 MOTOR FLANGE AVAILABILITY

PB 143					
i	180TC	210TC	250TC	280TC	320TC
10.84		•	•	•	•
11.87		•	•	•	•
14.49		•	•	•	•
17.04		•	•	•	•
18.66		•	•	•	•
21.00		•	•	•	•
22.77		•	•	•	•
25.63		•	•	•	•
27.44	•	•	•	•	•
30.05	•	•	•	•	•
33.01		•	•	•	•
36.67	•	•	•	•	•
40.29		•	•	•	•
44.16	•	•	•	•	•
48.35	•	•	•	•	•
53.16	•	•	•	•	•
54.63	•	•	•	•	•
59.02	•	•	•	•	•
64.88	•	•	•	•	•
70.43	•	•	•	•	
77.12	•	•	•	•	
85.54	•	•	•	•	•
94.13	•	•	•	•	
105.83	•	•	•		
111.94	•	•	•	•	
124.62	•	•	•	•	
136.44	•	•	•	•	
149.59	•	•	•	•	
166.53	•	•	•	•	
187.24	•	•	•		

PB 153						
i	180TC	210TC	250TC	280TC	320TC	360TC
10.49			•	•	•	•
12.64			•	•	•	•
14.01			•	•	•	•
15.40			•	•	•	•
18.56			•	•	•	•
20.56			•	•	•	•
23.86			•	•	•	•
25.19		•	•	•	•	•
28.23		•	•	•	•	•
30.35		•	•	•	•	•
33.63		•	•	•	•	•
35.02			•	•	•	•
38.81			•	•	•	•
42.30		•	•	•	•	•
47.53		•	•	•	•	•
50.56		•	•	•	•	•
54.64		•	•	•	•	•
57.27		•	•	•	•	•
60.92		•	•	•	•	•
63.47		•	•	•	•	•
71.10		•	•	•		
77.22		•	•	•	•	•
83.90		•	•	•		
87.70		•	•	•		
93.05		•	•	•	•	•
103.12		•	•	•	•	•
123.90	•	•	•	•		
134.30		•	•	•		
149.30	•	•	•	•		
165.40	•	•	•	•		

PB 163			
i	280TC	320TC	360TC
8.89		•	•
10.58		•	•
11.87	•	•	•
12.81	•	•	•
14.08	•	•	•
15.52	•	•	•
16.39	•	•	•
18.02	•	•	•
19.96	•	•	•
21.94	•	•	•
24.17	•	•	•
26.58	•	•	•
28.80	•	•	•
30.92	•	•	•
34.25	•	•	•
37.66	•	•	•
40.65	•	•	•
45.09	•	•	•
51.00	•	•	•
53.63	•	•	•
58.97	•	•	•
69.78	•	•	
76.72	•	•	
87.54	•	•	
96.25	•	•	
103.93	•		
114.27	•		
126.29	•		
138.85	•		
154.83	•		

2.8 OUTPUT SHAFT BEARINGS

BA		BA40		BA50		BA70	
Versions (*)		Standard	On request	Standard	On request	Standard	On request
U	C	1	/	1	/	1	/
	D/S/P	/	/	/	/	1	/
	L/M	1	/	1	/	1	/

(*) N.B. sizes A42 - A52 - A53 are not available in versions D-S-P.

B		B060		B080		B100/125		B140/150/160	
Versions		Standard	On request	Standard	On request	Standard	On request	Standard	On request
U	C	2	/	2 (Ø40)	1 (Ø45)	2	/	2	/
	D/S/P	2	/	2	/	2	/	2	/
	L/M	1	/	1	/	1	/	2	/
F/S	C	1	2	1	2	1	2	/	/
	D/S/P	2	/	2	/	2	/	/	/
	L/M	1	/	1	/	1	/	/	/

1 - Ball Bearing

2 - Roller bearings

/ - Not available

2.9 OVERHUNG LOAD

2.9.1 Information

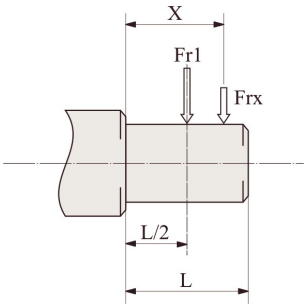
The value of the admissible radial load [lb] is given in the tables relating to the performance of the gear reducer at issue. It is related to the load applied on the centre line of the shaft and in the most unfavourable conditions of angle of application and direction of rotation. The maximum admissible 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 Sevice 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: **Fre= (2*M*fz)/D≤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

2.9.2 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: **Frx=(Fr1*a)/(b+x)**

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



IB	A42/A52/A53/A73	A72
a	3.31	3.50
b	2.52	2.72
Fr1 max (**)	112	187

IB	063	083	103	123	143	153	163
a	4.13	5.39	5.39	6.89	6.89	8.86	8.70
b	3.15	4.25	4.25	5.31	5.31	6.69	6.54
Fr1 max (**)	495	562	719	944	1574	2248	2698

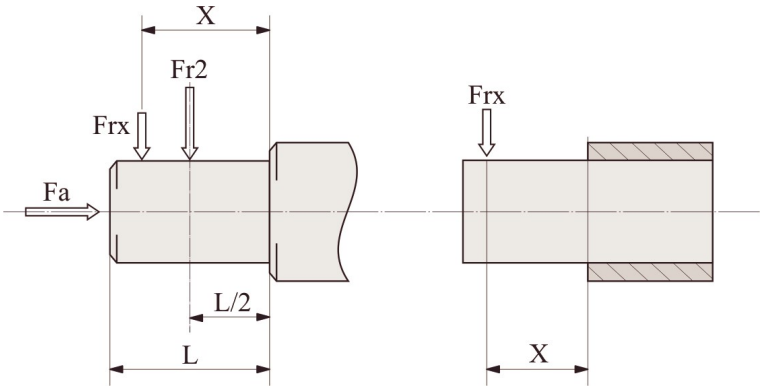
(**Fr1 max) Max admissible value of the reducer in static conditions and/or for limited operations. For continuous overhung loads please check the values on the performances tables calculated according to the casing, the shaft and bearings.

2.9 OVERHUNG LOAD

2.9.3 Output

When the radial load is not on the centre line of the shaft, it is necessary to adjust the admissible radial load Fr2 with the following formula: **Frx=(Fr2*a)/(b+x)**

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



B	A42	A52/A53	A72/A73
a	4.13	4.69	5.71
b	3.35	3.70	4.57
D-S-P (Fr2 max **)	-	-	2248
C (Fr2 max **)	899	899	1236

B	63	83	103	123	143	153	163
a	5.08	7.48	8.86	10.31	12.05	13.70	18.43
b	3.94	5.91	6.89	7.95	9.29	10.94	14.29
D-S-P (Fr2 max **)	2698	4047	4946	6744	8992	14613	17985
C (Fr2 max **)	1798	2698	3372	4496	8992	14613	14613

(**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.

2.10 LUBRICATION

2.10.1 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.

2.10.2 Lubricants

Specifications of lubricants recommended by Motovario.
The units **B063 ÷ 123** are supplied with ENI BLASIA 220 oil, unless otherwise specified by the client.
The units **B143 ÷ 163** are supplied without lubricant.

	B063 - 163		BA42 - A72/3
	Mineral oil		Mineral oil
T_{amb}°F ISO/SAE	(+23) - (+104) ISO VG220	(+5) - (+77) ISO VG150	(+23) - (+104) SAE 85W-140
ENI	BLASIA 220	BLASIA 150	ROTRA MP (85W-140)
SHELL	OMALA S2 G 220	OMALA S2 G 150	SPIRAX S2 A 85W-140
KLUBER	Kluberoil GEM 1-220N	Kluberoil GEM 1-150N	Kluberoil GEM 1-460N
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	TUTELA TRANSMISSION W 140/M-DA

2.10.3 Special lubricants

	T_{amb}°F	Polyglicol 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}°F	Polyglicol synthetic oil for food grade
KLUBER	(-22) - (+59)	Klubersynth UH1-6 100 (ISO VG100)
	(-13) - (+104)	Klubersynth UH1-6 220 (ISO VG220)
	(+5) - (+104)	Klubersynth UH1-6 320 (ISO VG320)
	(+5) - (+122)	Klubersynth UH1-6 460 (ISO VG460)
	(+14) - (+122)	Klubersynth UH1-6 680 (ISO VG680)

If ‘special’ lubricant is required please contact for Technical Assistance.

2.10.4 Quantity

- For the reduction units B series it is always necessary to specify the mounting position.
- The reduction units BA.. series with 2, 3 stages and B060, are supplied complete with lubricant, have no oil plugs and need no maintenance.
- The gear reducer B series sizes 080, 100 are supplied complete with lubricant and are fitted with oil plugs to suit any mounting position included in the catalogue.
- The gear reducer B series sizes 140, 150, 160 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.

It is recommended, after installation, to replace the closed plug used for transportation with the supplied breather plug. 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.

B	A42	A52	A53	A72	A73
B3	0,33	0,42	0,63	1	1,21
B8					
B6/B7					
V5					
V6					

CB	A42	A52	A53	A72	A73
B3	0,33	0,42	0,55	1	1,13
B8					
B6/B7					
V5					
V6					

B-CB	063	083	103	123	143	153	163
B3	1,2	2,5	3,7	5,7	11,1	19	33
B8	1,5	2,8	4,2	7,9	13	17,5	42,8
B6	1,5	3,5	6	8,5	14,5	26	43
B7	1,5	2,8	3,9	7,3	11,8	19	30
V5	2,1	3,7	7	9,9	18,5	32,5	54,5
V6	1,3	2,6	4,5	6,7	10,8	16,5	37,3

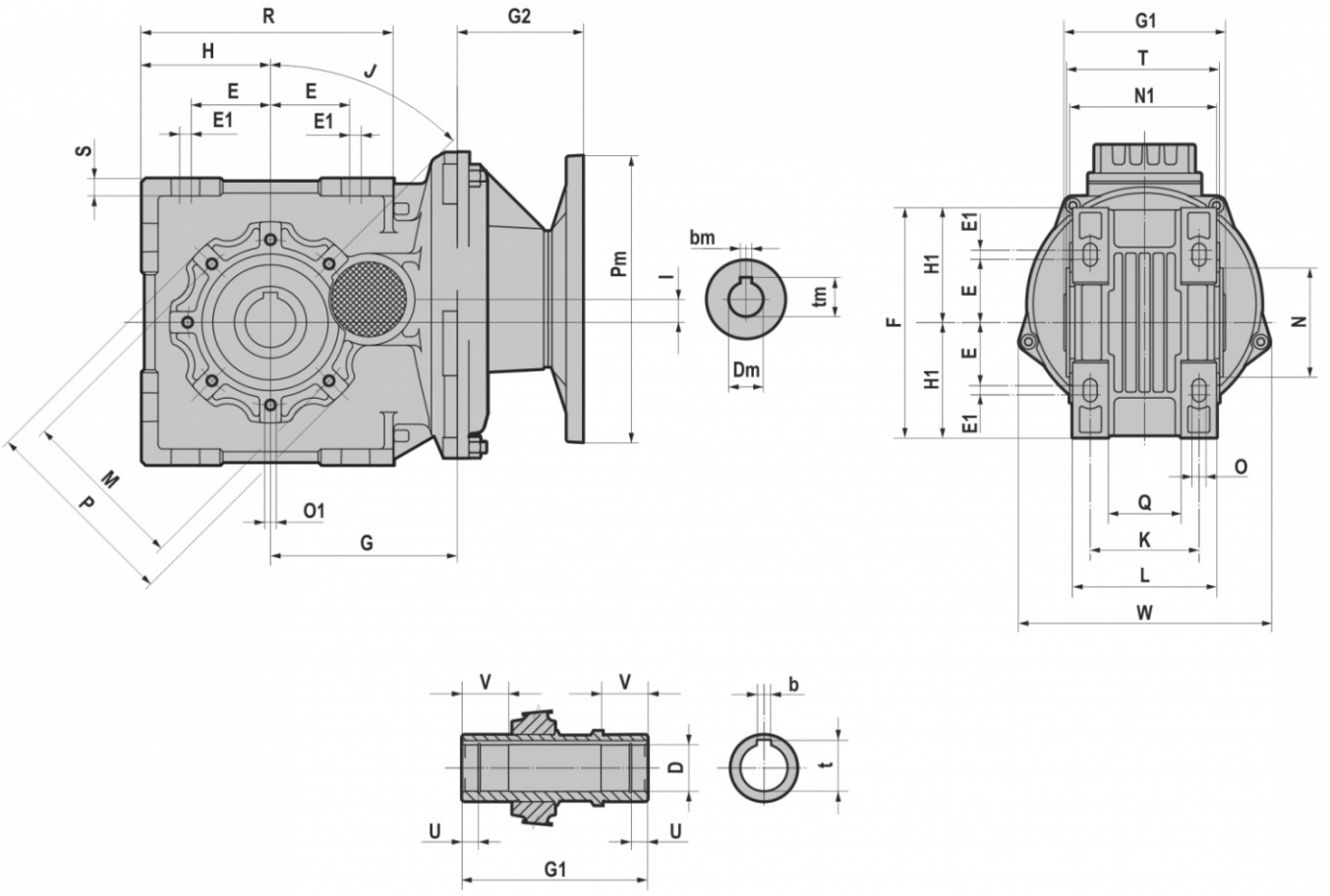
2.11 MOMENTS OF INERTIA

The following values of J_1 moment of inertia are only estimated, referred to the maximum calculated, and to the gearbox input side.

BA-2/3	J_1 [Kg*m^2]	J_1 [lb*in^2]
A42	0.0001	0.3926
A52/A53	0.0002	0.4101
A72/A73	0.0003	1.1584

B	J_1 [Kg*m^2]	J_1 [lb*in^2]
063	0.0001	0.3841
083	0.0002	0.8503
103	0.0007	2.3866
123	0.0010	3.5568
143	0.0023	7.8517
153	0.0035	11.8934
163	0.0093	31.7590

3.1.1 BA.2



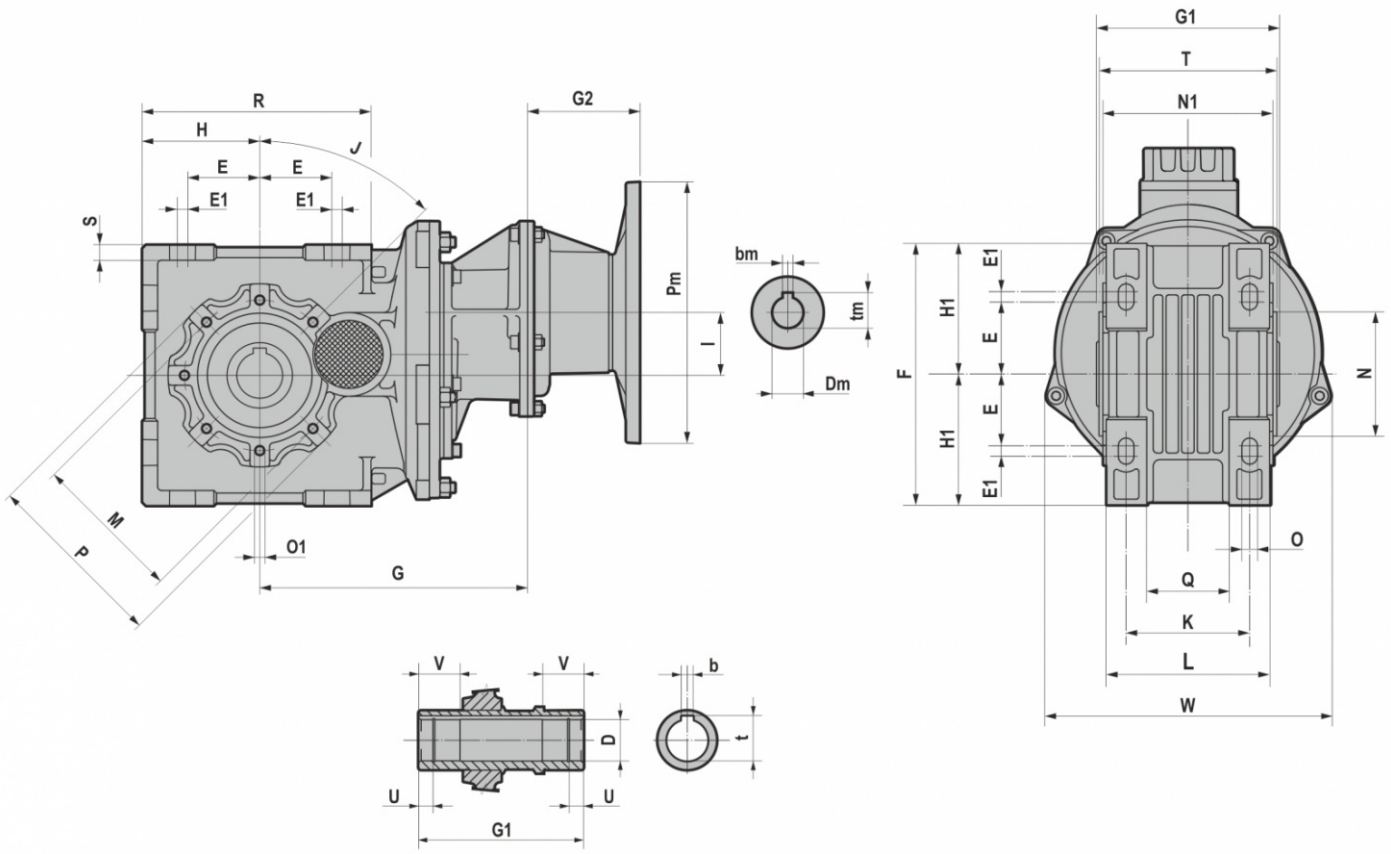
	D	b	t	U	V	E	E1	F	G	G1	H	H1	I	J
BA42	0.75	0.1875	0.84	/	1.18	1.77	/	5.12	3.74	3.94	2.56	2.56	0.315	45
BA52	1	0.25	1.12	/	1.18	2.17	/	6.3	3.86	4.41	3.15	3.15	0.165	45
BA72	1.375	0.3125	1.52	0.47	1.38	2.17	0.315	7.87	5.1	5.51	3.54	3.94	0.63	45

	K	L	M	N	N1	O	O1	P	Q	R	S	T	W
BA42	2.89	3.54	3.35	2.76 0/-0.0018	3.62	0.35	M8x12 n.4	3.94	1.77	5.02	0.31	3.82	5.98
BA52	3.15	3.94	3.74	3.15 0/-0.0018	4.02	0.35	M8x14 n.6	4.33	2.01	6.02	0.39	4.25	5.98
BA72	3.72	4.92	4.53	3.74 0/-0.0021	5.12	0.47	M8x14 n.7	5.35	2.48	6.89	0.47	5.35	8.58

		G2	
NEMA	Pm x Dm	BA42-BA52	BA72
56C	6.5"x0.625"	3.78	/
140TC	6.5"x0.875"	3.78	/
180TC	9"x1.125"	3.98	3.98

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

3.1.2 BA.3



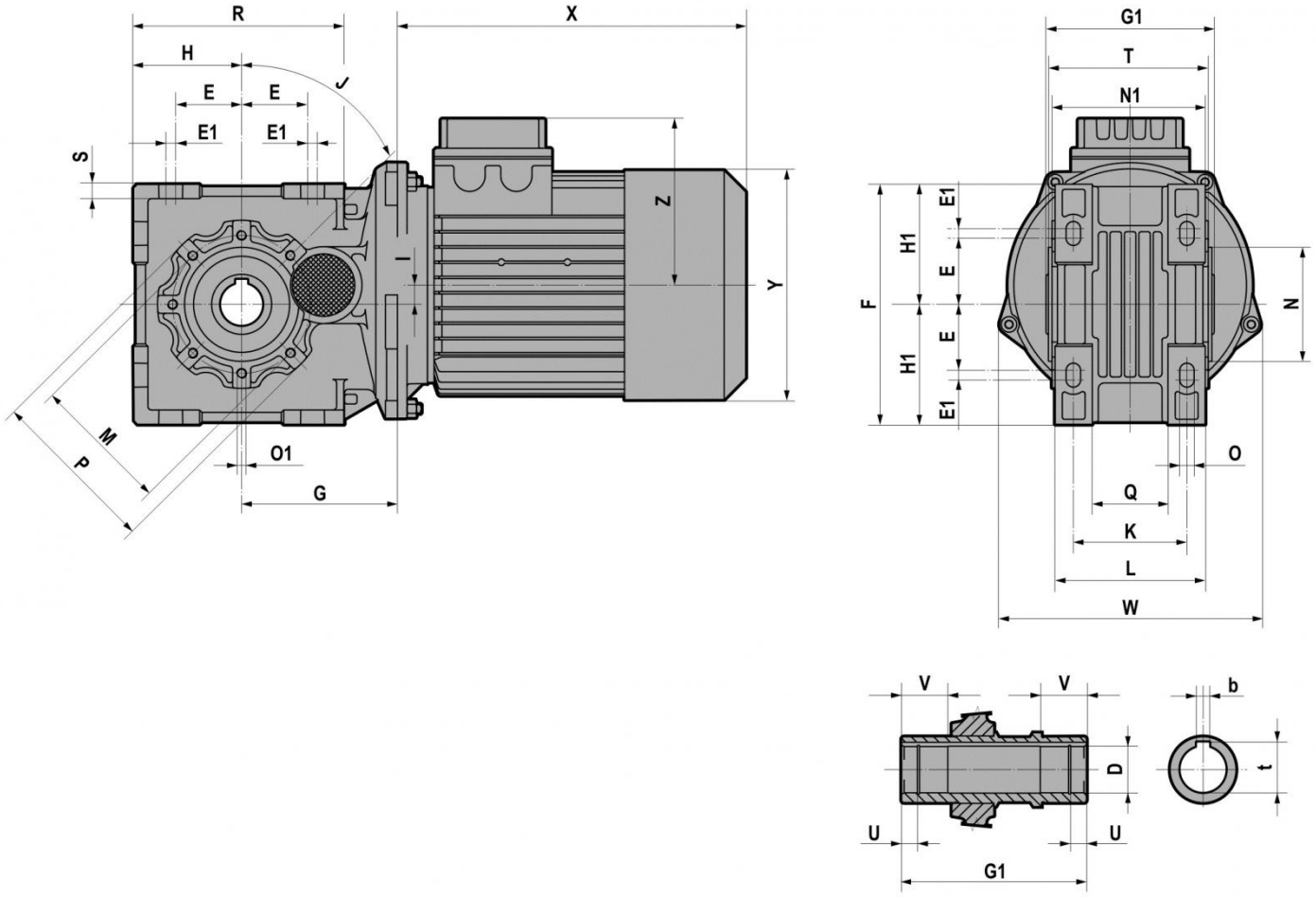
	D	b	t	U	V	E	E1	F	G	G1	H	H1	I	J
BA53	1	0.25	1.12	/	1.18	2.17	/	6.3	6.38	4.41	3.15	3.15	0.165	45
BA73	1.375	0.3125	1.52	0.47	1.38	2.17	0.315	7.87	8.05	5.51	3.54	3.94	0.63	45

	K	L	M	N	N1	O	O1	P	Q	R	S	T	W
BA53	3.15	3.94	3.74	3.15 0/-0.0018	4.02	0.35	M8x14 n.6	4.33	2.01	6.02	0.39	4.25	5.98
BA73	3.72	4.92	4.53	3.74 0/-0.0021	5.12	0.47	M8x14 n.7	5.35	2.48	6.89	0.47	5.35	8.58

		G2
NEMA	Pm x Dm	BA53-BA73
56C	6.5"x0.625"	3.78
140TC	6.5"x0.875"	3.78

NEMA	Pm	Dm	tm	bm
56C	6.69	0.625	0.71	0.1875
140TC	6.69	0.875	0.97	0.1875

3.1.3 CBA.2



	D	b	t	U	V	E	E1	F	G	G1	H	H1	I	J
CBA42	0.75	0.1875	0.84	/	1.18	1.77	/	5.12	3.74	3.94	2.56	2.56	0.315	45
CBA52	1	0.25	1.12	/	1.18	2.17	/	6.3	3.86	4.41	3.15	3.15	0.165	45
BA72	1.375	0.3125	1.52	0.47	1.38	2.17	0.315	7.87	5.1	5.51	3.54	3.94	0.63	45

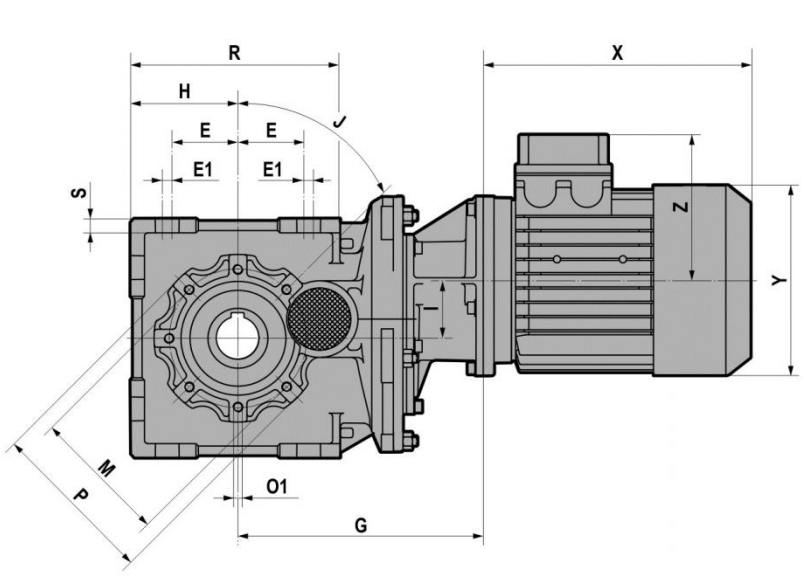
	K	L	M	N	N1	O	O1	P	Q	R	S	T	W
CBA42	2.89	3.54	3.35	2.76 0/-0.0018	3.62	0.35	M8x12 n.4	3.94	1.77	5.02	0.31	3.82	5.98
CBA52	3.15	3.94	3.74	3.15 0/-0.0018	4.02	0.35	M8x14 n.6	4.33	2.01	6.02	0.39	4.25	5.98
CBA72	3.72	4.92	4.53	3.74 0/-0.0021	5.12	0.47	M8x14 n.7	5.35	2.48	6.89	0.47	5.35	8.58

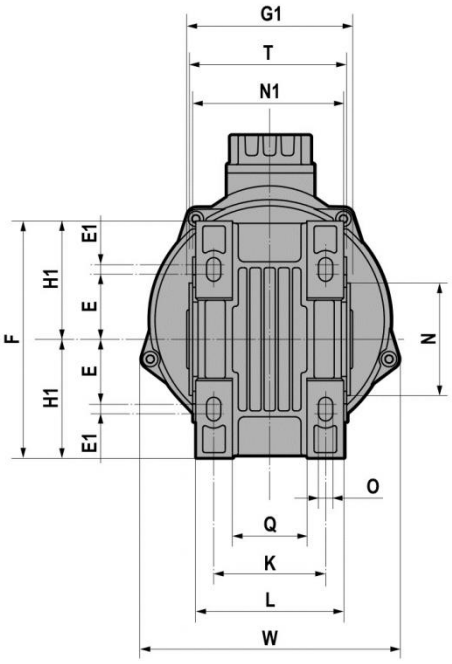
T (IE1 - IE2 - IE3)								
		063	071	080	090S	090L	100	112
CBA42 CBA52	X	7,09	8,07	8.78 *(9.69)	9.33 *(10.63)	10.31 *(11.61)	/	/
	Y	4,76	5,47	6,22	6,81	6,81	/	/
	Z	4,09	4,41	4,80	5,12	5,12	/	/
CBA72	X	/	/	8.58 *(9.49)	9.13 *(10.43)	10.12 *(11.42)	11.42	11.89 *(12.83)
	Y	/	/	6,22	6,81	6,81	7,52	8,31
	Z	/	/	4,80	5,12	5,12	5,47	6,06

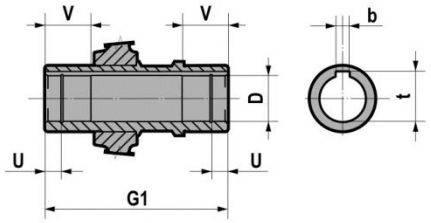
TB (IE1 - IE2 - IE3)								
		063	071	080	090S	090L	100	112
CBA42 CBA52	X	9,37	10,65	11.57 *(12.48)	12.32 *(13.62)	13.31 *(14.61)	/	/
	Y	4,76	5,47	6,22	6,81	6,81	/	/
	Z	4,69	5,08	5,39	6,18	6,18	/	/
CBA72	X	/	/	11.42 *(12.32)	12.16 *(13.46)	13.15 *(14.45)	14.65	15.75 *(16.69)
	Y	/	/	6,22	6,81	6,81	7,52	8,31
	Z	/	/	5,39	6,18	6,18	6,61	7,20

*TP80B4,TP90S4, TP90L4, TP90S6, TP112M4, TP112M6

3.1.4 CBA.3







	D	b	t	U	V	E	E1	F	G	G1	H	H1	I	J
CBA53	1	0.25	1.12	/	1.18	2.17	/	6.3	6.38	4.41	3.15	3.15	0.165	45
CBA73	1.375	0.3125	1.52	0.47	1.38	2.17	0.315	7.87	8.05	5.51	3.54	3.94	0.63	45

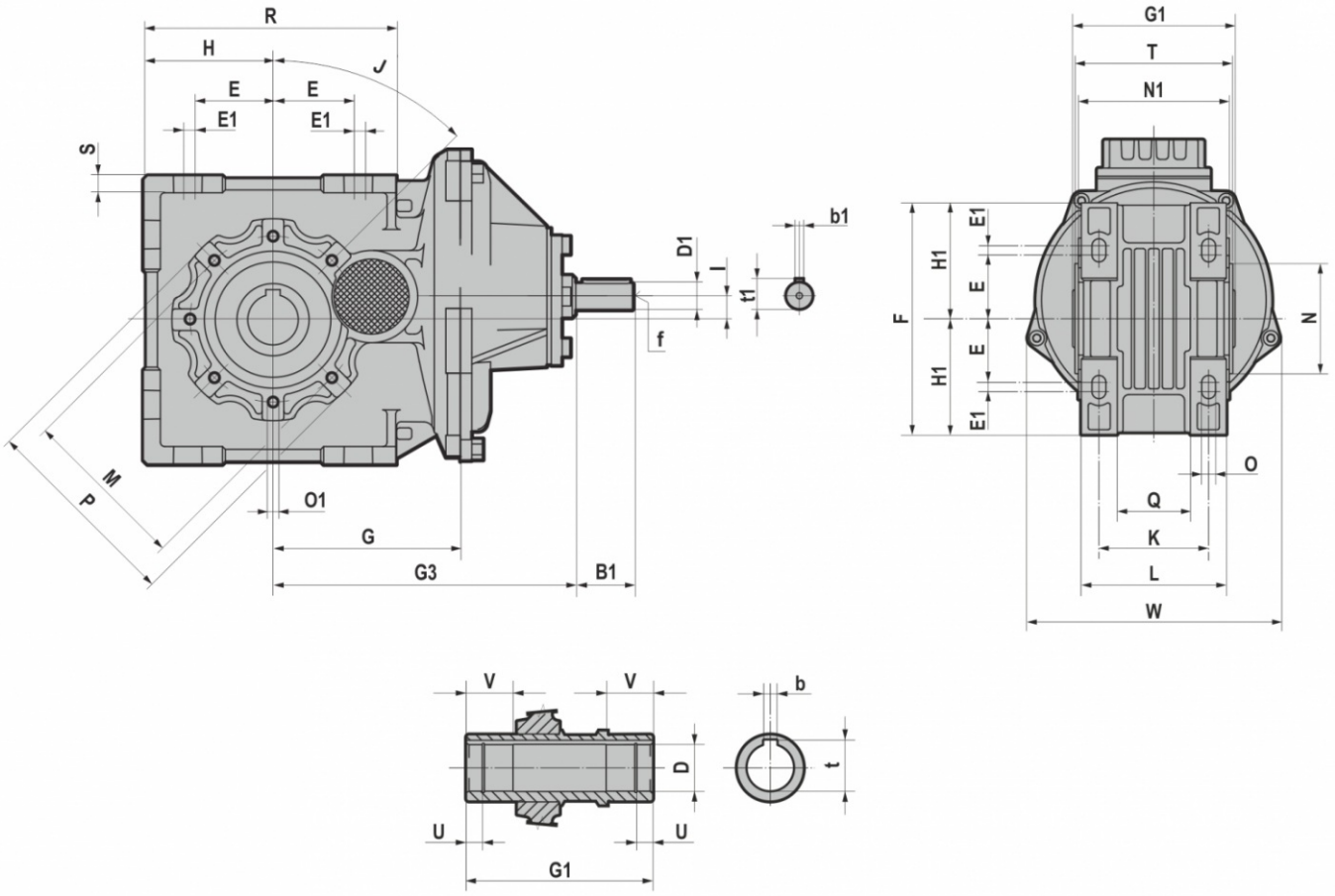
	K	L	M	N	N1	O	O1	P	Q	R	S	T	W
CBA53	3.15	3.94	3.74	3.15 0/-0.0018	4.02	0.35	M8x14 n.6	4.33	2.01	6.02	0.39	4.25	5.98
CBA73	3.72	4.92	4.53	3.74 0/-0.0021	5.12	0.47	M8x14 n.7	5.35	2.48	6.89	0.47	5.35	8.58

T (IE1 - IE2 - IE3)								
		063	071	080	090S	090L	100	112
CBA53 CBA73	X	7,09	8,07	8.78 *(9.69)	9.33 *(10.63)	10.315 *(11.61)	/	/
	Y	4,76	5,47	6,22	6,81	6,81	/	/
	Z	4,09	4,41	4,80	5,12	5,12	/	/

TB (IE1 - IE2 - IE3)								
		063	071	080	090S	090L	100	112
CBA53 CBA73	X	9,37	10,65	11.57 *(12.48)	12.32 *(13.62)	13.31 *(14.61)	/	/
	Y	4,76	5,47	6,22	6,81	6,81	/	/
	Z	4,69	5,08	5,39	6,18	6,18	/	/

*TP80B4,TP90S4, TP90L4, TP90S6, TP112M4, TP112M6

3.1.5 IBA.2

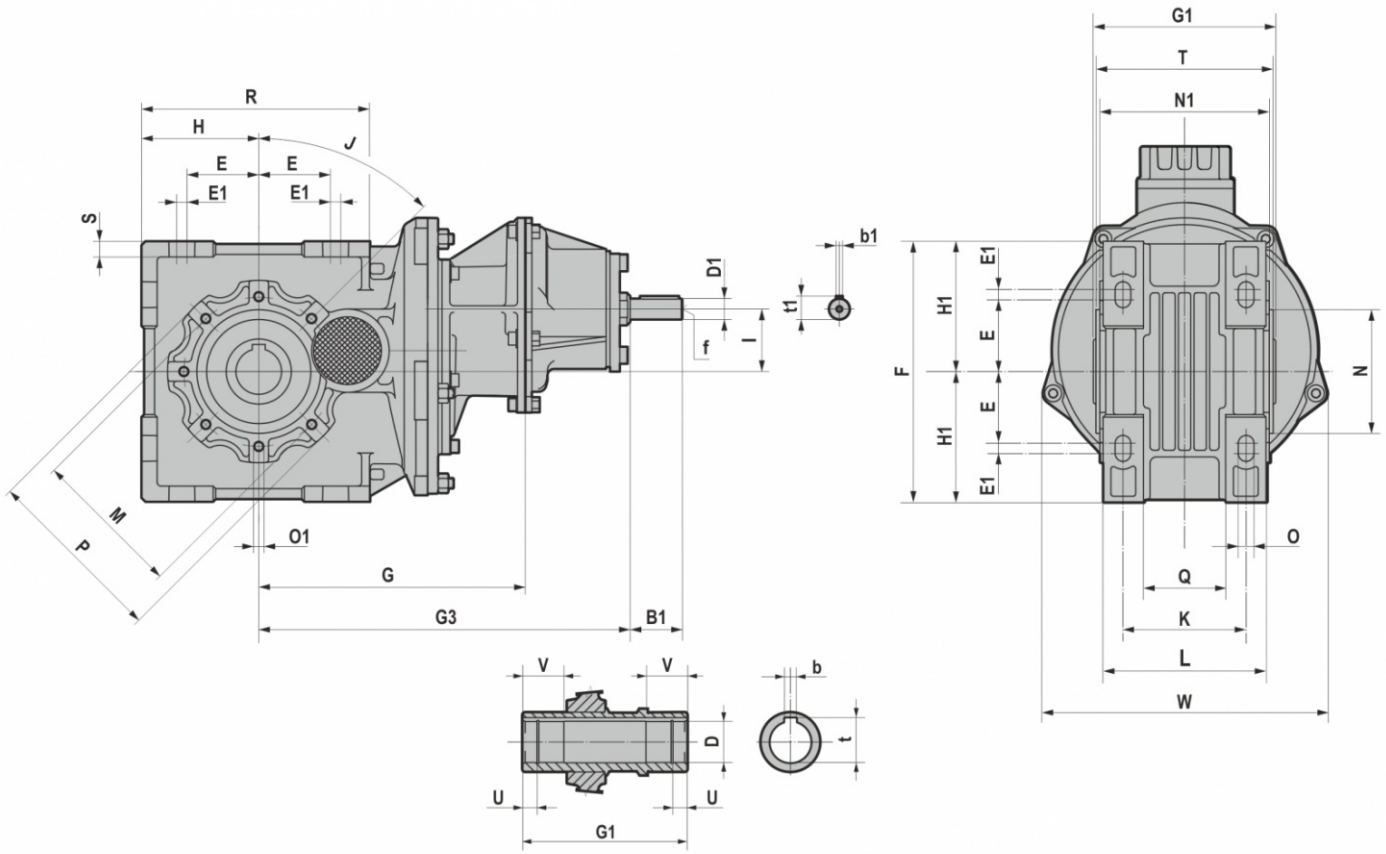


	D	b	t	U	V	E	E1	F	G	G1	H	H1	I	J
IBA42	0.75	0.1875	0.84	/	1.18	1.77	/	5.12	3.74	3.94	2.56	2.56	0.315	45
IBA52	1	0.25	1.12	/	1.18	2.17	/	6.3	3.86	4.41	3.15	3.15	0.165	45
IBA72	1.375	0.3125	1.52	0.47	1.38	2.17	0.315	7.87	5.1	5.51	3.54	3.94	0.63	45

	K	L	M	N	N1	O	O1	P	Q	R	S	T	W
BA42	2.89	3.54	3.35	2.76 0/-0.0018	3.62	0.35	M8x12 n.4	3.94	1.77	5.02	0.31	3.82	5.98
BA52	3.15	3.94	3.74	3.15 0/-0.0018	4.02	0.35	M8x14 n.6	4.33	2.01	6.02	0.39	4.25	5.98
BA72	3.72	4.92	4.53	3.74 0/-0.0021	5.12	0.47	M8x14 n.7	5.35	2.48	6.89	0.47	5.35	8.58

	G3	D1	B1	b1	t1	f
IBA42	6.91	0.75	1.57	0.1875	0.83	1/4 - 20
IBA52	7.05	0.75	1.57	0.1875	0.83	1/4 - 20
IBA72	8.27	0.875	1.97	0.1875	0.96	1/4 - 20

3.1.6 IBA.3



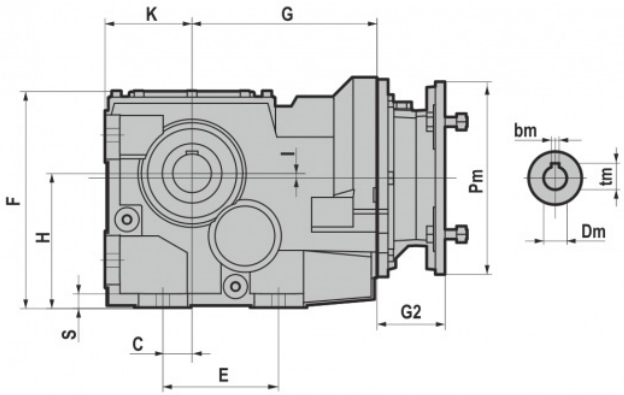
	D	b	t	U	V	E	E1	F	G	G1	H	H1	I	J
IBA53	1	0.25	1.12	/	1.18	2.17	/	6.3	6.38	4.41	3.15	3.15	0.165	45
IBA73	1.375	0.3125	1.52	0.47	1.38	2.17	0.315	7.87	8.05	5.51	3.54	3.94	0.63	45

	K	L	M	N	N1	O	O1	P	Q	R	S	T	W
IBA53	3.15	3.94	3.74	3.15 0/-0.0018	4.02	0.35	M8x14 n.6	4.33	2.01	6.02	0.39	4.25	5.98
IBA73	3.72	4.92	4.53	3.74 0/-0.0021	5.12	0.47	M8x14 n.7	5.35	2.48	6.89	0.47	5.35	8.58

	G3	D1	B1	b1	t1	f
IBA53	9.55	0.75	1.57	0.1875	0.83	1/4 - 20
IBA73	11.22	0.75	1.57	0.1875	0.83	1/4 - 20

3.1.7 B

B...F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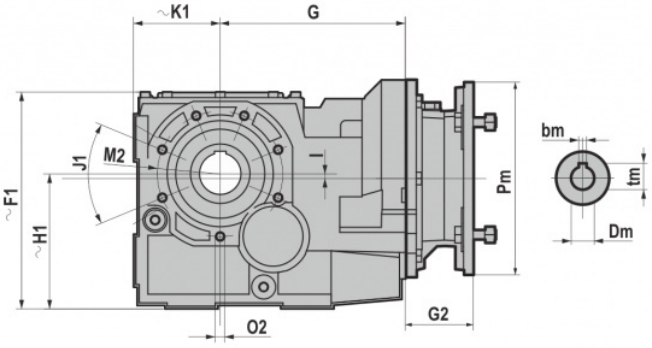
B...S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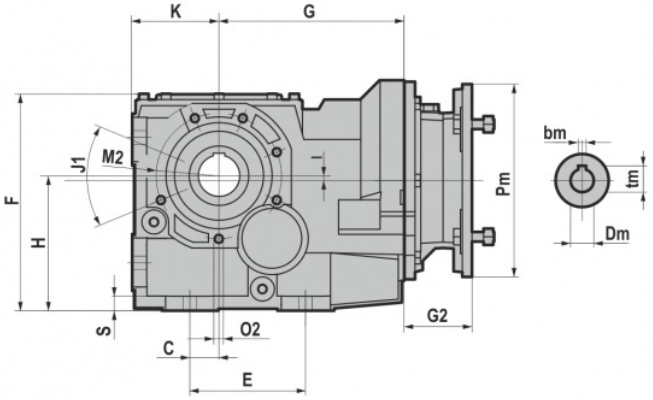
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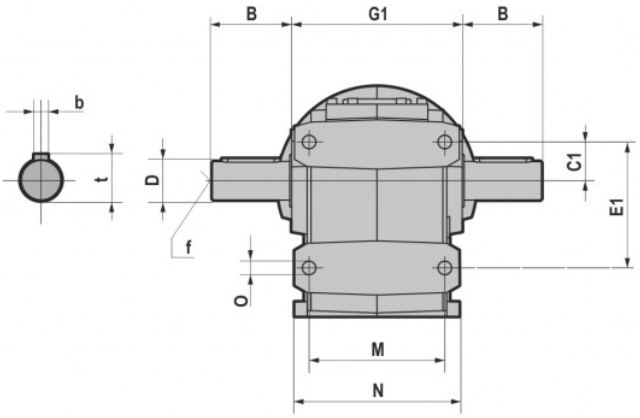
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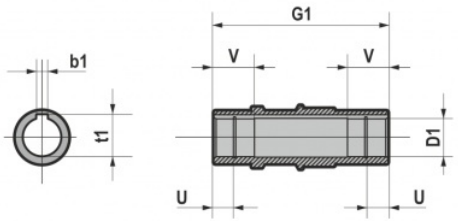
G1
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b1
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U

3.1 REDUCERS/GEARED MOTORS

	D1	b1	t1	U	V	B	D	b	t	f	C	C1	E	E1	F	F1
B063	1.375	0.3125	1.52	0.472	1.38	2.76	1.375 0/-0.0005	0.3125	1.51	1/2-13	1.18	1.53	5.12	4.96	8.46	8.64
	1.5	0.375	1.67													
B083	1.5	0.375	1.67	/	1.65	3.15	1.625 0/-0.001	0.375	1.79	5/8-11	1.18	1.57	4.72	5.12	8.86	8.86
B103	2	0.5	2.22	/	1.97	3.94	2 0/-0.001	0.5	2.22	3/4-10	1.57	1.97	5.91	6.3	11.14	11.14
B123	2.375	0.625	2.65	/	2.76	4.72	2.375 0/-0.001	0.625	2.65	3/4-10	2.17	3.07	7.09	8.66	13.43	13.46
B143	2.75	0.625	3.03	/	2.95	5.51	2.875 0/-0.001	0.75	3.2	3/4-10	2.95	3.54	9.45	11.02	16.65	/
B153	3.25	0.75	3.59	/	3.54	6.69	3.625 0/-0.001	0.875	4.01	1-8	3.74	4.33	11.02	12.99	19.61	/
B163	4	1	4.44	/	4.02	8.27	4.375 0/-0.001	1	4.82	1-8	4.58	6.1	13.78	16.53	24.21	/

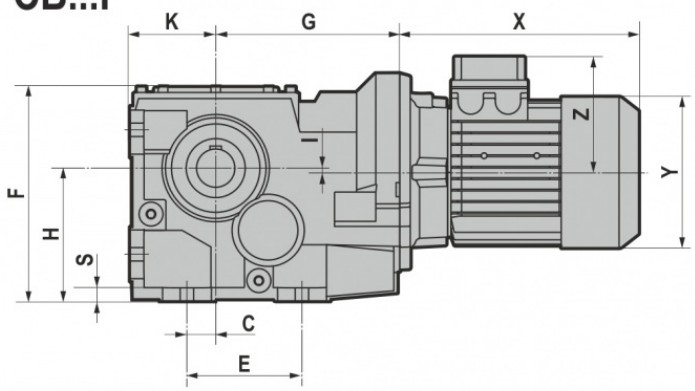
	G	G1	H	H1	I	K	K1	M	N	O	S	J1	M2	O2
B063	6.85	5.51	5.2	5.39	1.3	3.46	3.64	4.09	4.96	0.55	0.47	45	5.12	M10x20 (n.6)
B083	7.56	7.09	5.51	5.51	0.2	3.54	3.54	5.51	6.69	0.55	0.59	45	5.12	M10x20 (n.6/7)
B103	8.41	8.27	7.09	7.09	0.98	4.41	4.41	6.5	8.07	0.71	0.71	45	6.5	M12x22 (n.6/7)
B123	9.69	9.45	8.35	8.39	1.32	5.2	5.24	7.09	9.06	0.87	0.87	45	7.28	M14x28 (n.7)
B143	10.98	11.81	10.43	/	1.34	6.3	/	9.45	11.42	0.87	0.87	45	7.87	M14x30 (n.7)
B153	13.9	13.78	12.4	/	1.38	7.87	/	10.63	12.99	1.02	1.02	45	9.65	M16x32 (n.7)
B163	16.79	17.52	14.76	/	1.85	9.07	/	12.99	15.75	1.5	1.77	45	11.73	M18x40 (n.7)

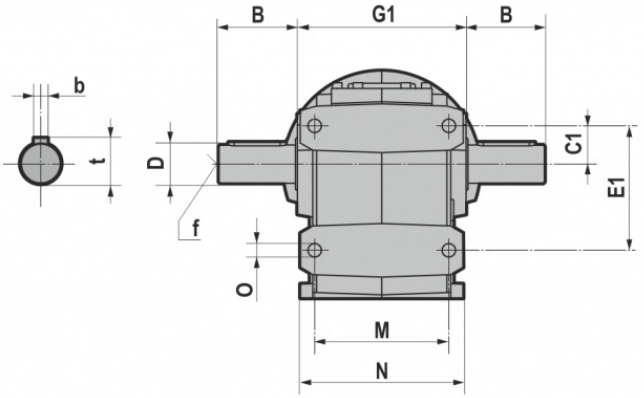
		G2						
NEMA	Pm x Dm	B063	B083	B103	B123	B143	B153	B163
56C	6.5"x0.625"	3.74	2.95	2.95	/	/	/	/
140TC	6.5"x0.875"	3.74	2.95	2.95	2.58	/	/	/
180TC	9"x1.125"	4.33	3.54	3.54	3.17	3.17	2.20	/
210TC	9"x1.375"	/	6.02	6.02	5.65	5.65	4.69	/
250TC	9"x1.625"	/	/	6.02	5.65	5.65	4.69	/
280TC	11"x1.875"	/	/	/	6.89	6.89	5.93	5.35
320TC	13.375"x2.125"	/	/	/	/	7.03	6.28	5.57
360TC	13.375"x2.375"	/	/	/	/	/	6.28	5.57

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

3.1.8 CB

CB...F





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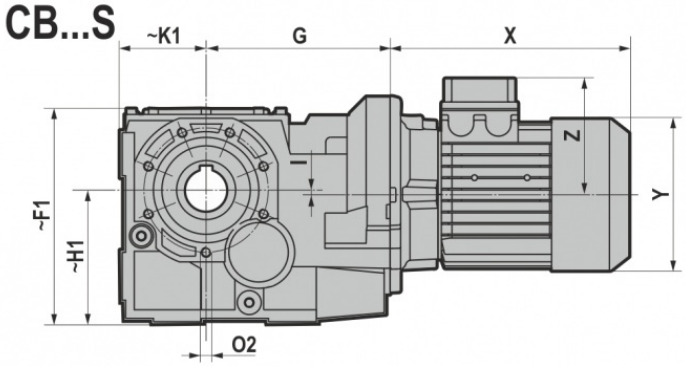

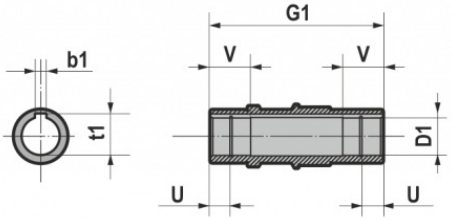

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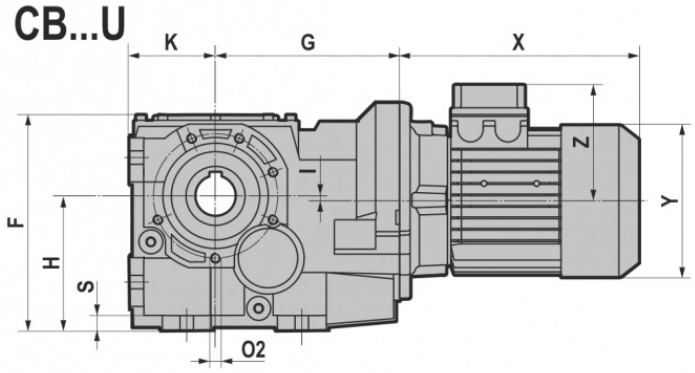


3.1 REDUCERS/GEARED MOTORS

	D1	b1	t1	U	V	B	D	b	t	f	C	C1	E	E1	F	F1
CB063	1.375	0.3125	1.52	0.472	1.38	2.76	1.375 0/-0.0005	0.3125	1.51	1/2-13	1.18	1.53	5.12	4.96	8.46	8.64
	1.5	0.375	1.67													
CB083	1.5	0.375	1.67	/	1.65	3.15	1.625 0/-0.001	0.375	1.79	5/8-11	1.18	1.57	4.72	5.12	8.86	8.86
CB103	2	0.5	2.22	/	1.97	3.94	2 0/-0.001	0.5	2.22	3/4-10	1.57	1.97	5.91	6.3	11.14	11.14
CB123	2.375	0.625	2.65	/	2.76	4.72	2.375 0/-0.001	0.625	2.65	3/4-10	2.17	3.07	7.09	8.66	13.43	13.46
CB143	2.75	0.625	3.03	/	2.95	5.51	2.875 0/-0.001	0.75	3.2	3/4-10	2.95	3.54	9.45	11.02	16.65	/
CB153	3.25	0.75	3.59	/	3.54	6.69	3.625 0/-0.001	0.875	4.01	1-8	3.74	4.33	11.02	12.99	19.61	/
CB163	4	1	4.44	/	4.02	8.27	4.375 0/-0.001	1	4.82	1-8	4.58	6.1	13.78	16.53	24.21	/

	G	G1	H	H1	I	K	K1	M	N	O	S	J1	M2	O2
CB063	6.85	5.51	5.2	5.39	1.3	3.46	3.64	4.09	4.96	0.55	0.47	45	5.12	M10x20 (n.6)
CB083	7.56	7.09	5.51	5.51	0.2	3.54	3.54	5.51	6.69	0.55	0.59	45	5.12	M10x20 (n.6/7)
CB103	8.41	8.27	7.09	7.09	0.98	4.41	4.41	6.5	8.07	0.71	0.71	45	6.5	M12x22 (n.6/7)
CB123	9.69	9.45	8.35	8.39	1.32	5.2	5.24	7.09	9.06	0.87	0.87	45	7.28	M14x28 (n.7)
CB143	10.98	11.81	10.43	/	1.34	6.3	/	9.45	11.42	0.87	0.87	45	7.87	M14x30 (n.7)
CB153	13.9	13.78	12.4	/	1.38	7.87	/	10.63	12.99	1.02	1.02	45	9.65	M16x32 (n.7)
CB163	16.79	17.52	14.76	/	1.85	9.07	/	12.99	15.75	1.5	1.77	45	11.73	M18x40 (n.7)

T (IE1 - IE2 - IE3)

		063	071	080	090S	090L	100	112	132S	132M
CB063	X	8.46	9.49	10.55 * (11.46)	11.65 * (12.95)	12.64 * (13.94)	13.11	13.82 * (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	/	/
CB083 CB103	X	/	8.7	9.76 * (10.67)	10.87 * (12.17)	11.85 *(13.15)	13.19	14.02 * (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
CB123 CB143	X	/	/	/	10.51 *(11.81)	11.5 *(12.8)	12.83	13.66 * (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

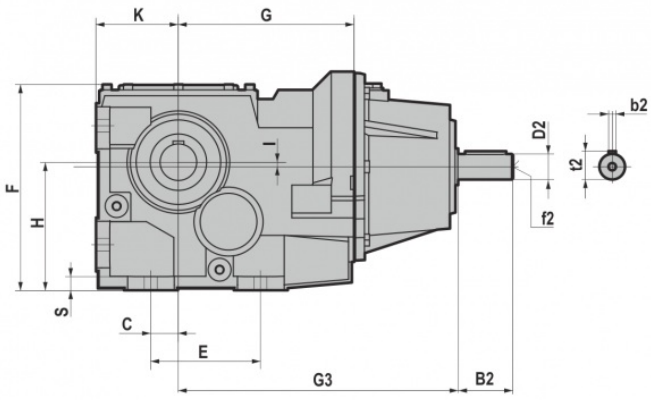
TB (IE1 - IE2 - IE3)

		063	071	080	090S	090L	100	112	132S	132M
CB063	X	10.75	12.07	13.43 * (14.33)	14.69 * (15.98)	15.67 * (16.97)	16.34	17.64 * (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	/	/
CB083 CB103	X	/	11.28	12.64 * (13.54)	13.9 *(15.2)	14.88 * (16.18)	16.42	17.83 * (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
CB123 CB143	X	/	/	/	13.5 *(14.8)	14.49 * (15.79)	16.02	17.44 * (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

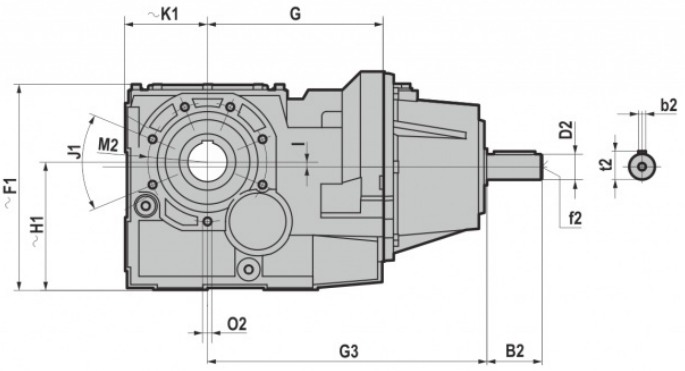
*TP80B4,TP90S4, TP90L4, TP90S6, TP112M4, TP112M6

3.1.9 IB

IB...F



IB...S



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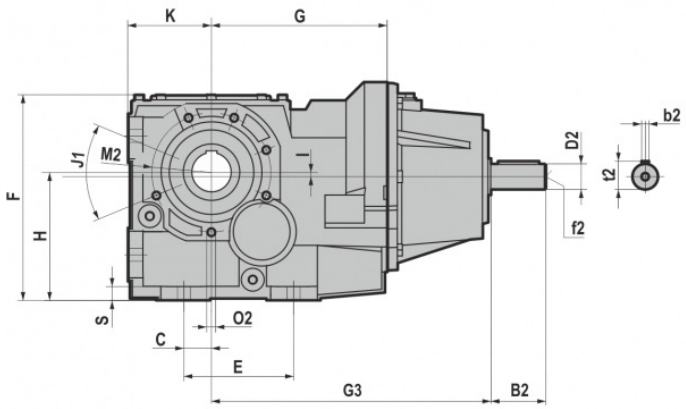
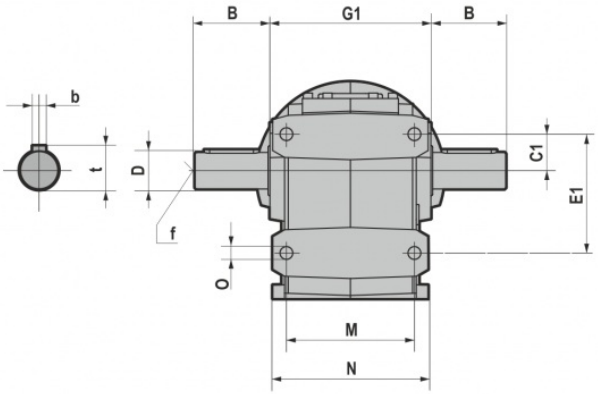
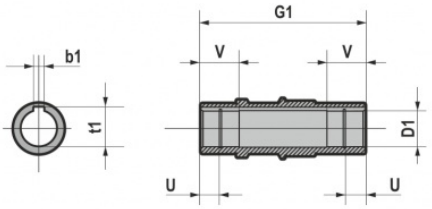






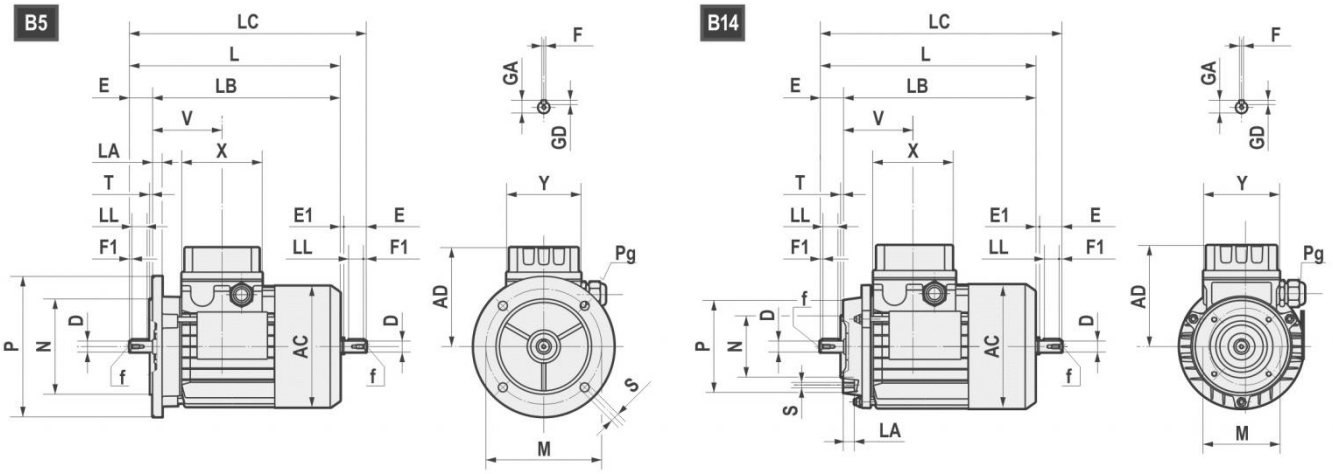
3.1 REDUCERS/GEARED MOTORS

	D1	b1	t1	U	V	B	D	b	t	f	C	C1	E	E1	F	F1
IB063	1.375	0.3125	1.52	0.472	1.38	2.76	1.375 0/-0.0005	0.3125	1.51	1/2-13	1.18	1.53	5.12	4.96	8.46	8.64
	1.5	0.375	1.67													
IB083	1.5	0.375	1.67	/	1.65	3.15	1.625 0/-0.001	0.375	1.79	5/8-11	1.18	1.57	4.72	5.12	8.86	8.86
IB103	2	0.5	2.22	/	1.97	3.94	2 0/-0.001	0.5	2.22	3/4-10	1.57	1.97	5.91	6.3	11.14	11.14
IB123	2.375	0.625	2.65	/	2.76	4.72	2.375 0/-0.001	0.625	2.65	3/4-10	2.17	3.07	7.09	8.66	13.43	13.46
IB143	2.75	0.625	3.03	/	2.95	5.51	2.875 0/-0.001	0.75	3.2	3/4-10	2.95	3.54	9.45	11.02	16.65	/
IB153	3.25	0.75	3.59	/	3.54	6.69	3.625 0/-0.001	0.875	4.01	1-8	3.74	4.33	11.02	12.99	19.61	/
IB163	4	1	4.44	/	4.02	8.27	4.375 0/-0.001	1	4.82	1-8	4.58	6.1	13.78	16.53	24.21	/

	G	G1	H	H1	I	K	K1	M	N	O	S	J1	M2	O2
IB063	6.85	5.51	5.2	5.39	1.3	3.46	3.64	4.09	4.96	0.55	0.47	45	5.12	M10x20 (n.6)
IB083	7.56	7.09	5.51	5.51	0.2	3.54	3.54	5.51	6.69	0.55	0.59	45	5.12	M10x20 (n.6/7)
IB103	8.41	8.27	7.09	7.09	0.98	4.41	4.41	6.5	8.07	0.71	0.71	45	6.5	M12x22 (n.6/7)
IB123	9.69	9.45	8.35	8.39	1.32	5.2	5.24	7.09	9.06	0.87	0.87	45	7.28	M14x28 (n.7)
IB143	10.98	11.81	10.43	/	1.34	6.3	/	9.45	11.42	0.87	0.87	45	7.87	M14x30 (n.7)
IB153	13.9	13.78	12.4	/	1.38	7.87	/	10.63	12.99	1.02	1.02	45	9.65	M16x32 (n.7)
IB163	16.79	17.52	14.76	/	1.85	9.07	/	12.99	15.75	1.5	1.77	45	11.73	M18x40 (n.7)

	G3	B2	D2	b2	t2	f2
IB063	10.39	1.97	0.875 0/-0.0005	0.188	0.96	1/4-20
IB083	12.01	2.76	1.375 0/-0.0005	0.313	1.51	1/2-13
IB103	12.85	2.76	1.375 0/-0.0005	0.313	1.51	1/2-13
IB123	14.67	3.15	1.625 0/-0.001	0.375	1.79	5/8-11
IB143	15.96	3.15	1.625 0/-0.001	0.375	1.79	5/8-11
IB153	19.41	3.15	1.625 0/-0.001	0.375	1.79	5/8-11
IB163	22.11	4.33	1.875 0/-0.001	0.5	2.09	5/8-11

3.2.1 Electric motors



	AC	AD	L	LB	LC	X	Y	V	D	E	E1	f	F1	GA	F	GD
63	121	104	211	188	235.5	80	74	69	11 j6	23	1.5	M4x10	2.5	12.5	4	4
71	139	112	238.5	208.5	271	80	74	74.5	14 j6	30	2.5	M5x12.5	3	16	5	5
80	158	122	272.5 *(296)	232.5 *(256)	314 *(337)	80	74	78	19 j6	40	1.5	M6x16	5	21.5	6	6
90S	173	146	298 *(331)	248 *(281)	349.5 *(381)	98	98	89.5	24 j6	50	1.5	M8x19	5	27	8	7
90L	173	146	323 *(356)	273 *(306)	374.5 *(408)	98	98	89.5	24 j6	50	1.5	M8x19	5	27	8	7
100	191	155	368	308	431.5	98	98	97.5	28 j6	60	3.5	M10x22	7.5	31	8	7
112	211	170	382.5 *(408)	322.5 *(348)	447 *(472)	98	98	100	28 j6	60	3.5	M10x22	7.5	31	8	7
132S	249	195	452	372	536.5	118	118	115.5	38 k6	80	4	M12x28	10	41	10	8
132L	249	195	490	410	574.5	118	118	115.5	38 k6	80	4	M12x28	10	41	10	8
160S	249	195	520	410	/	118	118	115.5	42k6	100	/	M16x36	10	45	12	8

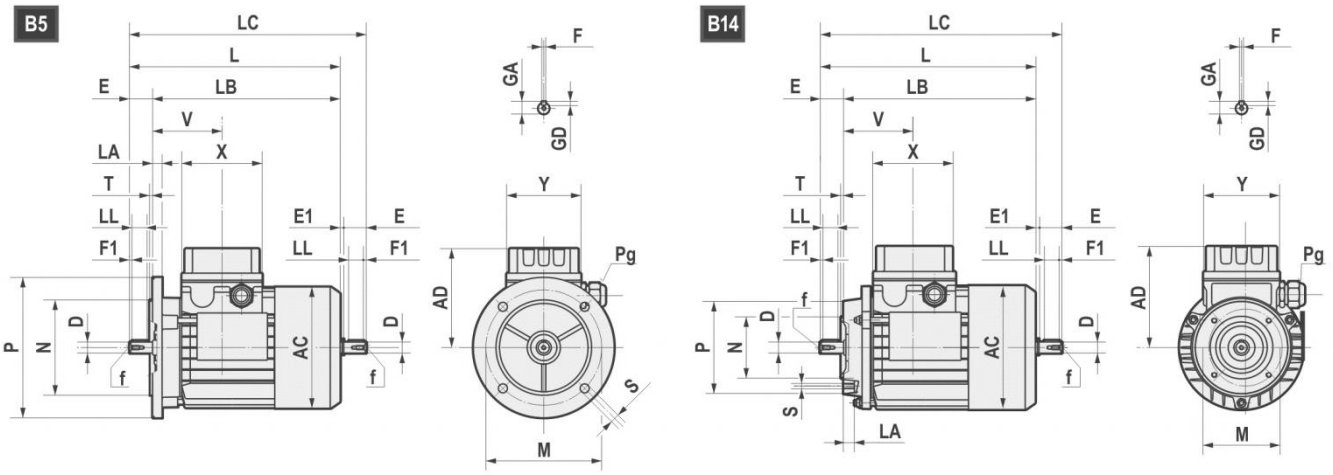
*TP80B4,TP90S4, TP90L4, TP90S6, TP112M4, TP112M6

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

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

All dimensions are in mm

3.2 ELECTRIC MOTORS



		AC	AD	L	LB	X	D	E	f	GA	F	GD	LL	Pg	
160M	2-4-6	314	251	600	490	158	42	110	M16	45	12	8	90	2-M40x1.5	1-M16x1.5
160L	2-4-6	314	251	645	535	158	42	110	M16	45	12	8	90	2-M40x1.5	1-M16x1.5
180M	2-4	355	267	680	570	158	48	110	M16	51.5	14	9	100	2-M40x1.5	1-M16x1.5
180L	4-6	355	267	720	610	158	48	110	M16	51.5	14	9	100	2-M40x1.5	1-M16x1.5
200L	2-4-6	397	300	785	675	187	55	110	M20	59	16	10	100	2-M50x1.5	1-M16x1.5
225S	4	446	325	820	680	187	60	140	M20	64	18	11	125	2-M50x1.5	1-M16x1.5
225M	2	446	325	815	705	187	55	110	M20	59	16	10	100	2-M50x1.5	1-M16x1.5
225M	4-6	446	325	845	705	187	60	140	M20	64	18	11	125	2-M50x1.5	1-M16x1.5
250M	2-4-6	485	360	910	770	238	60	140	M20	64	18	11	125	2-M63x1.5	1-M16x1.5
250M	2-4-6	485	360	910	770	238	65	140	M20	69	18	11	125	2-M63x1.5	1-M16x1.5
280S	2-4-6	547	390	970	830	238	65	140	M20	69	18	11	125	2-M63x1.5	1-M16x1.5
280S	2-4-6	547	390	970	830	238	75	140	M20	79.5	20	12	125	2-M63x1.5	1-M16x1.5
280M	2-4-6	547	390	1025	885	238	65	140	M20	69	18	11	125	2-M63x1.5	1-M16x1.5
280M	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
160	300	250	350	13	19	5
180	300	250	350	15	19	5
200	350	300	400	17	19	5
225	400	350	450	20	19	5
250	500	450	550	22	19	5
280	500	450	550	22	19	5

All dimensions are in mm

3.2.2 Nominal power - [HP]

	63A	63B	63C	71A	71B	71C	80A			80B		
Poles	TS	TS	TS	TS	TS	TS	TS	TH	TP	TS	TH	TP
2	0.24	0.34	0.5	0.5	0.75	-	-	1	1	-	1.5	1.5
4	0.16	0.24	0.3	0.34	0.5	0.75	0.75	-	-	-	1	1
6	0.12	0.16	0.2	0.24	0.34	0.5	0.5	-	-	0.75	-	-

	90S		90L		100LR	100L	100LA		112MR	112MS	112MA	112M
Poles	TH	TP	TH	TP	TP	TP	TH	TP	TP	TP	TH	TP
2	2	2	3	3	-	4	4	-	-	-	5.4	5.4
4	1.5	1.5	2	2	-	-	3	3	3	4	5.4	5.4
6	-	1	1	-	1.5	2	1.5	-	-	-	3	3

	112MR	112MS	132S	132SA	132MS	132SB	132M	132MA		132MB	
Poles	TP	TP	TP	TH	TP	TH	TP	TH	TP	TH	TP
2	-	-	7.5	7.5	-	10	10	12.5	-	-	-
4	3	4	-	7.5	7.5	-	10	10	-	12.5	-
6	-	-	4	4	-	-	-	5.4	5.4	7.5	7.5

	160M	160MA	160MB	160L	160LA	180M	180L
Poles	TP	TP	TP	TP	TP	TP	TP
2	-	15	20	25	-	30	-
4	-	15	-	-	20	25	30
6	10	-	-	15	-	-	20

	200L	200LA	200LB	225S	225M	250M	280S	280M
Poles	TP	TP	TP	TP	TP	TP	TP	TP
2	-	40	50	-	-	-	-	-
4	40	-	-	50	60	74	101	121
6	-	25	30	-	-	-	-	-

3.3 WEIGHTS

The values reported in the tables are referred to the weight of the gearbox with lubricant included.
*Weight without motor

* B-PB	56C	140TC	180TC	210TC	250TC	280TC	320TC	360TC	
A42	10.60	11.20	/	/	/	/	/	/	~ lb
A52	11.90	12.60	/	/	/	/	/	/	
A53	15.60	18.70	/	/	/	/	/	/	
A72	33.20	33.70	34.20	/	/	/	/	/	
A73	31.50	34.60	/	/	/	/	/	/	
063	54.10	53.94	57.21	/	/	/	/	/	
083	63.62	63.45	68.67	83.53	83.24	/	/	/	
103	170.98	170.81	176.03	190.89	190.60	/	/	/	
123	/	169.57	174.65	190.74	190.61	215.81	221.88	/	
143	/	420.37	425.45	441.54	441.41	466.61	472.68	/	
153	/	/	404.77	419.13	424.37	444.58	453.78	453.40	
163	/	/	/	/	/	1018.45	1026.52	1026.14	

IB	~ lb
A42	10.60
A53	18.10
A52	11.90
A72	33.90
A73	33.90
063	52.20
083	73.00
103	129.60
123	190.70
143	291.01
153	469.60
163	1004.45

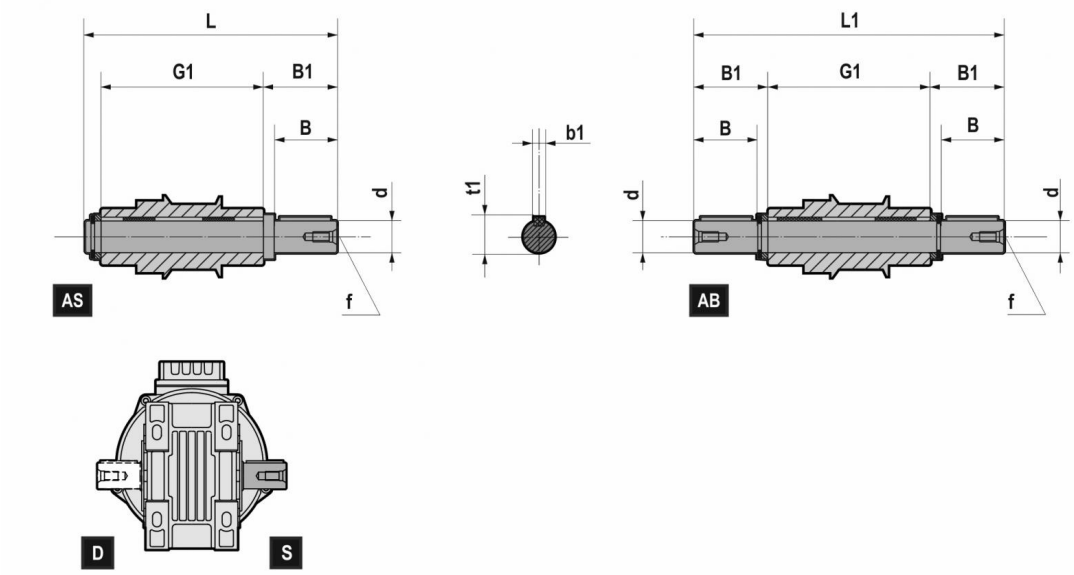
	TS									
CB	063	071	080	090S	090L	100	112	132S	132M	
A42	16.3	20.5	29.3	/	/	/	/	/	/	~ lb
A52	18.1	22.5	31.3	35.5	41.0	/	/	/	/	
A53	21.4	25.8	34.6	38.8	44.3	/	/	/	/	
A72	/	/	47.6	52.0	57.5	76.3	91.7	/	/	
A73	37.3	41.7	50.5	54.9	60.4	/	/	/	/	
063	53.1	55.1	65.5	74.1	78.5	90.6	116.0	/	/	
083	/	/	78.7	84.0	87.3	98.5	123.7	154.5	180.1	
103	/	/	135.4	140.7	144.0	155.2	180.3	211.2	236.8	
123	/	/	/	188.9	191.1	204.4	226.4	259.5	279.3	
143	/	/	/	/	/	304.2	326.3	359.4	379.2	

	TH							
CB	080	090S	090L	100	112	132S	132M	
A42	33.1	/	/	/	/	/	/	~ lb
A52	35.0	40.7	45.3	/	/	/	/	
A53	38.3	44.0	48.6	/	/	/	/	
A72	51.4	57.2	61.9	81.4	98.5	/	/	
A73	54.2	60.1	64.7	/	/	/	/	
063	69.2	79.2	82.8	95.7	122.7	/	/	
083	82.4	89.2	91.6	103.6	130.5	166.2	195.2	
103	139.1	145.8	148.3	160.3	187.1	222.9	251.8	
123	/	88.0	88,7	209.4	233.2	271.2	294.4	
143	/	/	/	309.3	333.1	371.0	394.2	

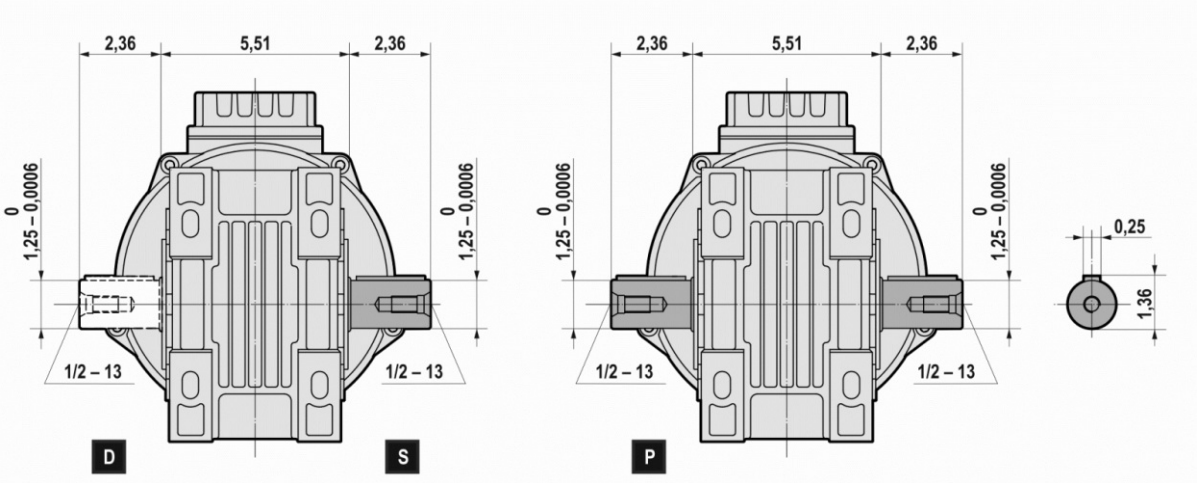
	TBS									
CB	063	071	080	090S	090L	100	112	132S	132M	
A42	19.4	24.9	36.2	/	/	/	/	/	/	~ lb
A52	21.2	26.7	38.1	46.1	29.8	/	/	/	/	
A53	24.5	30.0	41.4	49.4	55.1	/	/	/	/	
A72	/	/	56.4	59.7	69.7	91.7	113.8	/	/	
A73	40.6	46.1	59.3	63.7	72.5	/	/	/	/	
063	56.4	60.0	73.2	86.2	90.6	102.7	137.3	/	/	
083	/	/	86.4	96.1	99.4	110.7	145.1	177.0	212.3	
103	/	/	142.9	152.8	156.1	167.1	201.7	233.9	269.2	
123	/	/	/	201.1	203.3	216.5	247.8	282.2	311.7	
143	/	/	/	/	/	316.4	348.3	381.4	412.3	

	TBH							
CB	080	090S	090L	100	112	132S	132M	
A42	39.9	/	/	/	/	/	/	~ lb
A52	41.9	51.1	34.2	/	/	/	/	
A53	45.2	54.5	59.5	/	/	/	/	
A72	60.2	64.8	74.1	99.9	667.6	/	/	
A73	63.1	68.8	76.9	/	/	/	/	
063	76.9	91.3	95.0	110.9	144.2	/	/	
083	90.2	101.2	103.8	118.8	151.9	188.7	226.6	
103	146.6	157.9	160.5	175.3	208.6	245.6	283.5	
123	/	88.0	88.7	224.7	254.6	293.9	326.1	
143	/	/	/	324.5	355.2	393.1	426.6	

4.1 LOW SPEED SHAFTS



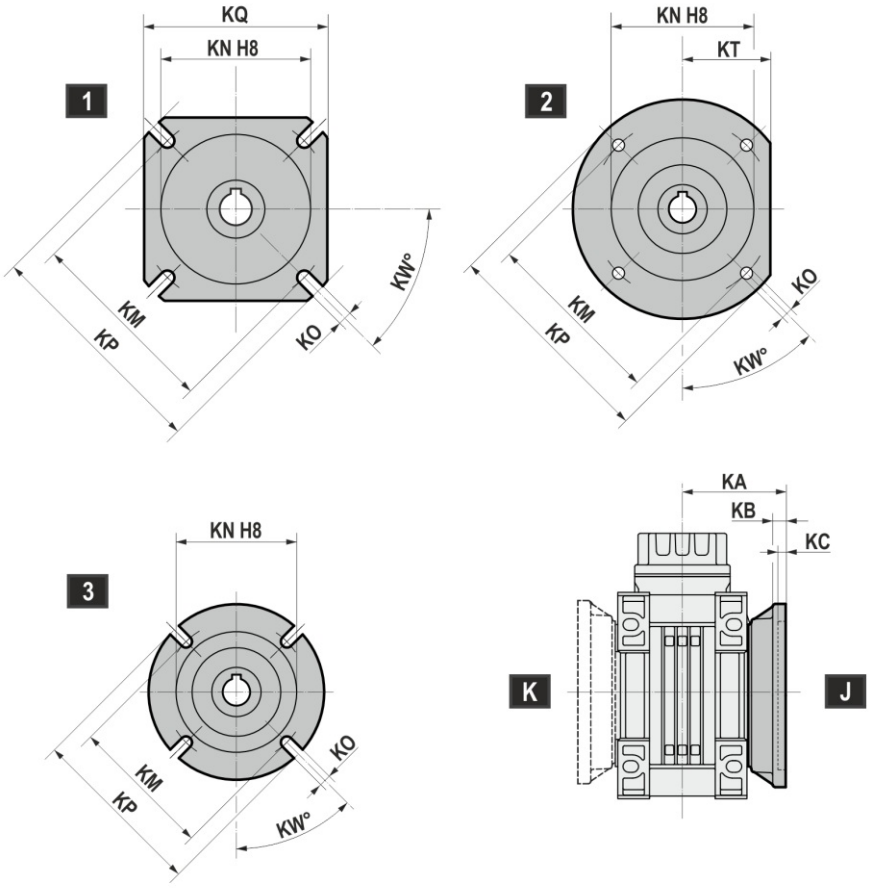
BA70 solid shaft



	d 0/-0.0005	B	B1	G1	L	L1	f	b1	t1
BA42	0.75	1.57	1.71	3.94	6.30	7.32	1/4-20	0.19	0.84
BA52-BA53	1.00	1.97	2.11	4.41	6.81	8.62	3/8-16	0.25	1.11

4.2 OUTPUT FLANGE

4.2.1 BA



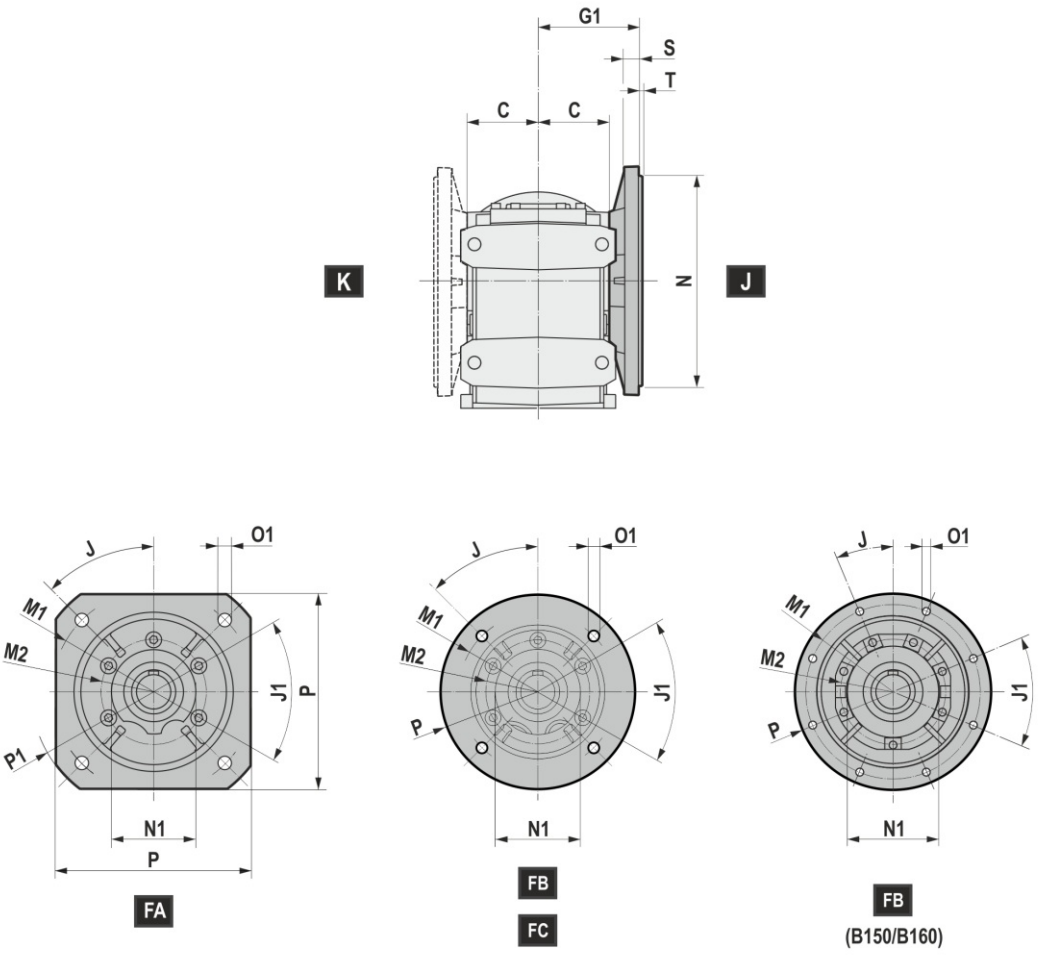
	A42	A52-A53	A72-A73
FA	1	1	1
FB	1	1	3
FC	2	2	-
FD	2	2	-

B..-CB..		KA	KB	KC	KN	KM	KO	KP	KQ	KT	KW
BA42	FA	3.54	0.35	0.2	2.76	3.54 min	0.43 (n.4)	4.92	4.33	-	45°
	FB	4.72	0.35	0.2	2.76	3.54 min	0.43 (n.4)	4.92	4.33	-	45°
	FC	3.5	0.39	0.2	4.33	5.12	0.37 (n.4)	7.87	-	3.15	45°
	FD	2.83	0.57	0.2	3.74	4.53	0.43 (n.4)	5.51	-	2.36	45°
BA52 BA53	FA	3.23	0.39	0.24	4.53	5.91	0.43 (n.4)	7.09	5.59	-	45°
	FB	4.41	0.39	0.24	4.53	5.91	0.43 (n.4)	7.09	5.59	-	45°
	FC	3.86	0.39	0.2	5.12	6.5	0.43 (n.4)	7.87	-	3.15	45°
	FD	4.21	0.39	0.2	5.12	6.5	0.43 (n.4)	7.87	-	-	45°
BA72 BA73	FA	4.37	0.51	0.24	5.12	6.5	0.55 (n.4)	7.87	6.69	-	45°
	FB	3.54	0.51	0.24	4.33	5.12	0.55 (n.4)	6.3	-	-	45°

Unless specified otherwise, the reduction unit is supplied with the accessorie in pos. J referred to position B3/B5.

4.2 OUTPUT FLANGE

4.2.2 B

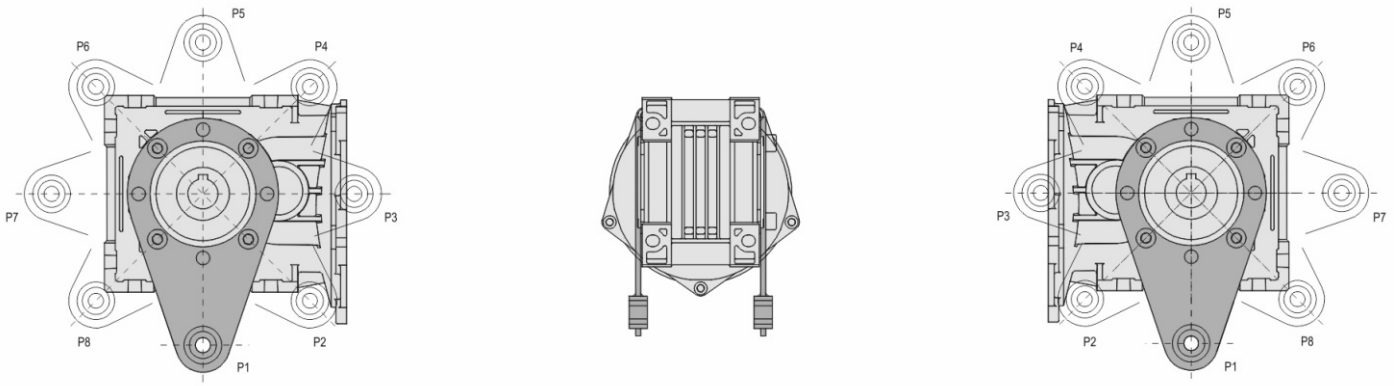


B..S - B..U		J	J1	M1	M2	N	N1	O1	P	P1	S	T	C	G1
B063	FA	45°	45°	10.43	5.12	9.06	4.33	0.55 (n.4)	9.84	11.81	0.59	0.16	2.42	3.68
	FB	45°	45°	8.46	5.12	7.09	4.33	0.55 (n.4)	9.84	/	0.59	0.16		
	FC	45°	45°	6.50	5.12	5.12	4.33	0.43 (n.4)	7.87	/	0.59	0.14		
B083	FA	45°	45°	10.43	5.12	9.06	4.33	0.55 (n.4)	9.84	11.81	0.59	0.16	3.07	4.33
	FB	45°	45°	8.46	5.12	7.09	4.33	0.55 (n.4)	9.84	/	0.59	0.16		
	FC	45°	45°	6.50	5.12	5.12	4.33	0.43 (n.4)	7.87	/	0.59	0.14		
B103	FA	45°	45°	11.81	6.50	9.84	5.12	0.71 (n.4)	11.81	13.78	0.63	0.20	3.74	5.31
	FB	45°	45°	10.43	6.50	9.06	5.12	0.55 (n.4)	11.81	/	0.63	0.16		
	FC	45°	45°	8.46	6.50	7.09	5.12	0.55 (n.4)	9.84	/	0.63	0.16		
B123	FA	45°	45°	13.78	7.28	11.81	5.91	0.71 (n.4)	13.78	15.75	0.71	0.20	4.23	5.91
	FB	45°	45°	11.81	7.28	9.84	5.91	0.71 (n.4)	13.78	/	0.71	0.20		
	FC	45°	45°	10.43	7.28	9.06	5.91	0.55 (n.4)	11.81	/	0.71	0.16		
B143	FB	45°	45°	13.78	7.87	11.81	6.69	0.71 (n.4)	15.75	/	0.71	0.20	5.43	7.38
B153	FB	22°30′	45°	15.75	9.65	13.78	8.27	0.71 (n.8)	17.72	/	0.98	0.20	6.40	8.17
	FC	45°	45°	13.78	9.65	11.81	8.27	0.71 (n.4)	15.75	/	0.98	0.20		
B163	FB	22°30′	45°	19.69	11.73	17.72	10.04	0.71 (n.8)	21.65	/	1.10	0.20	7.97	10.08

Unless specified otherwise, the reduction unit is supplied with the accessorie in pos. J referred to position B3/B5.

4.3 SHAFT MOUNTING FASTENING

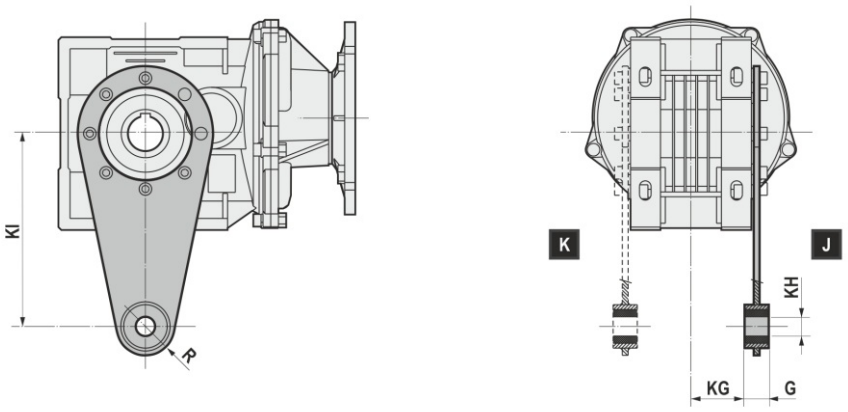
4.3.1 Torque arm: BA Mounting position



	P1		P2		P3		P4		P5		P6		P7		P8	
	J	K	J	K	J	K	J	K	J	K	J	K	J	K	J	K
BA42		*	/	/	/	/	/	/			/	/			/	/
BA52/A53			/	/	/	/	/	/								
BA72/A73			/	/	/	/	/	/								

(*) Not available with Shrink disc (/) Not available

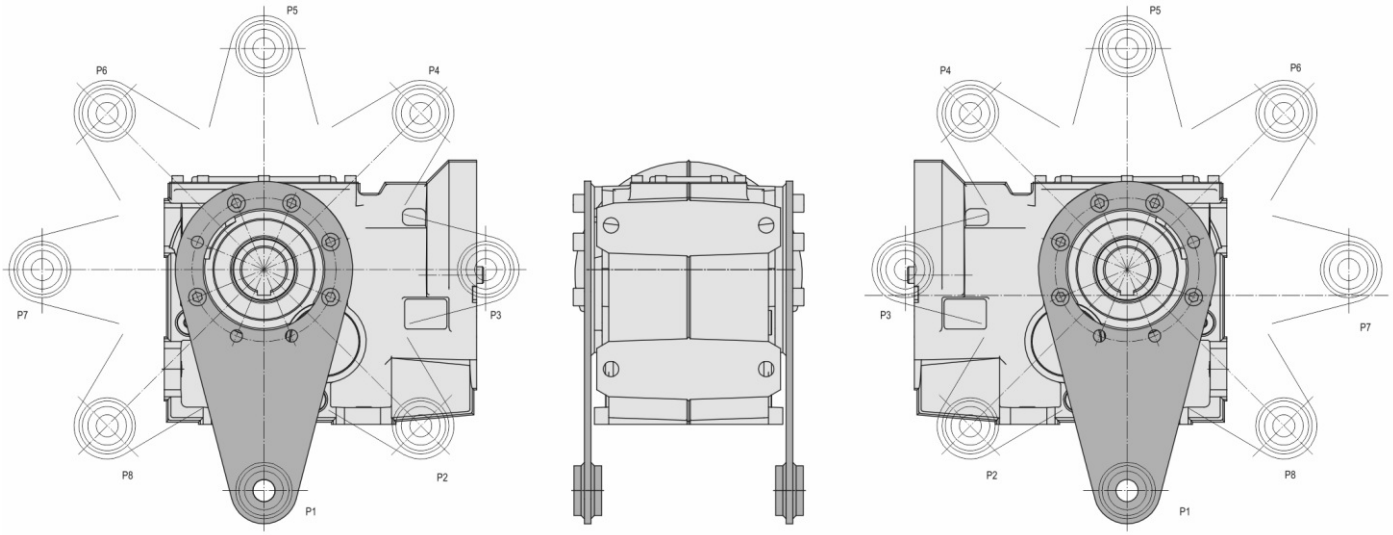
4.3.2 Torque arm: BA Dimensions



	KI	KG	KH +0,01/0	G	R
BA42	3.94	1.61	0.39	0.55	0.71
BA52-BA53	5.91	1.85	0.39	0.55	0.71
BA72-BA73	7.87	2.19	0.79	0.98	1.18

Unless specified otherwise, the reduction unit is supplied with the accessorie in pos. J referred to position B3/B5.

4.3.3 Torque arm: B Mounting position

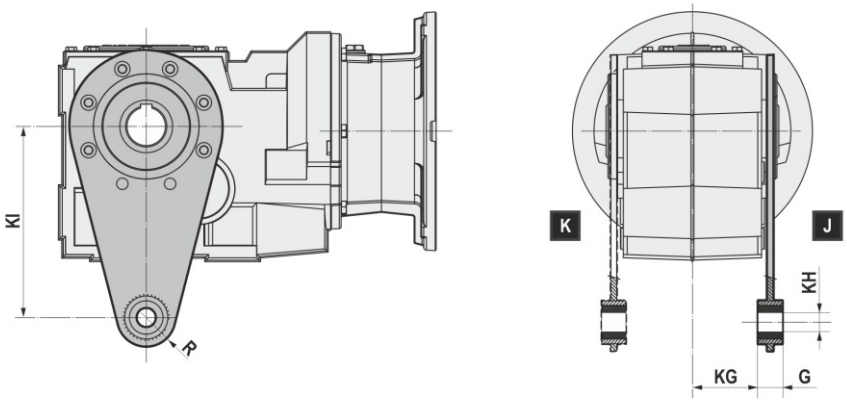


J K J K

	P1		P2		P3		P4		P5		P6		P7		P8	
	J	K	J	K	J	K	J	K	J	K	J	K	J	K	J	K
B063					/	/										
B083			/	/	/	/										
B103			/	/	/	/										
B123			/	/	/	/										

(/) Not available

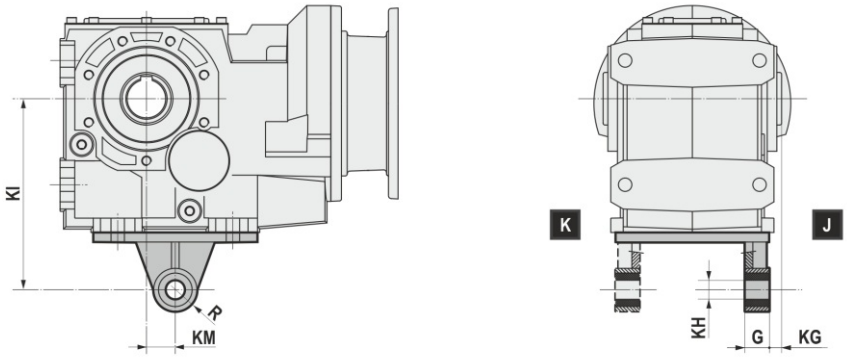
4.3.4 Torque arm: B063-083-103-123 Dimensions



	KI	KG	KH +0,008/0	G	R
B063S	7.87	2.44	0.79	0.98	1.18
B083S	7.87	3.09	0.79	0.98	1.18
B103S	9.84	3.74	0.98	1.18	1.38
B123S	11.81	4.07	0.98	1.57	1.57
B063U	7.87	2.44	0.79	0.98	1.18
B083U	7.87	3.09	0.79	0.98	1.18
B103U	9.84	3.74	0.98	1.18	1.38
B123U	11.81	4.07	0.98	1.57	1.57

Unless specified otherwise, the reduction unit is supplied with the accessorie in pos. J referred to position B3/B5.

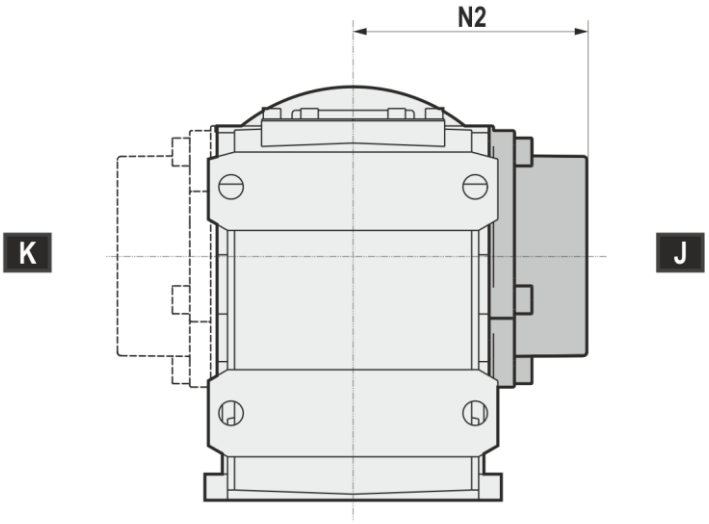
4.3.5 Torque arm: B143-153-163 Dimensions



	KM	KI	KG	KH +0,008/0	G	R
B143	1.77	13.78	1.57	1.18	2.36	1.77
B153	1.77	17.72	1.77	1.18	2.36	1.77
B163	2.36	21.65	0.30	1.57	4.33	2.56

Unless specified otherwise, the reduction unit is supplied with the accessorie in pos. J referred to position B3/B5.

4.4 OUTPUT SHAFT COVER



	N2
B063	4.63
B083	5.28
B103	5.91
B123	6.85
B143	8.54
B153	10.10
B163	11.87

Version FL, FM, SL, SM, UL, UM supplied not assembled.

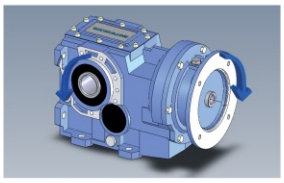
Accessory not certified ATEX.

4.5 BACKSTOP DEVICE

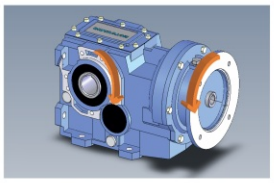
The gear reducer can be supplied with backstop device on input shaft. Backstop device allows output shaft rotation in only one sense of direction; according to the size, it is available in the input flange or in the motor with the same dimensions. It is important to specify the required sense of direction on the order. This device is not available for mounting position V5 with motor size IEC 100...280. On request, the direction of rotation of low speed shaft can be reversed; in this case, it is necessary to specify “opposite rotation" to catalogue when ordering.

SENSE OF DIRECTION AVAILABLE STANDARD

BA..2/S - **BA..**3/C-D-P-L - **B..**3/C-D-P-L

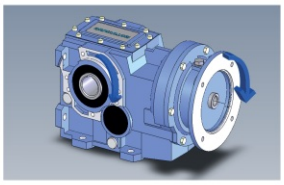


CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT

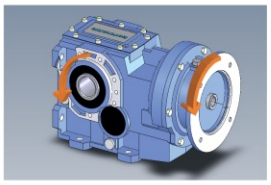


COUNTER CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT

BA..2/C-D-P-L - **BA..**3/S - **B..**3/S-M



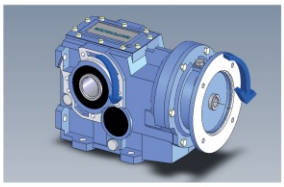
CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT



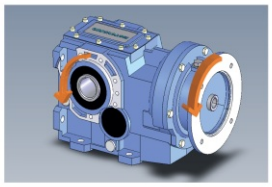
COUNTER CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT

SENSE OF DIRECTION AVAILABLE OPPOSITE ROTATION

BA..2/S - **BA..**3/C-D-P-L - **B..**3/C-D-P-L

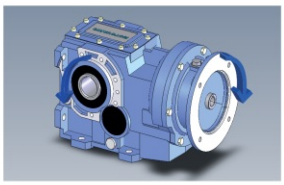


CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT

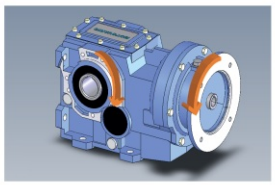


COUNTER CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT

BA..2/C-D-P-L - **BA..**3/S - **B..**3/S-M



CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT



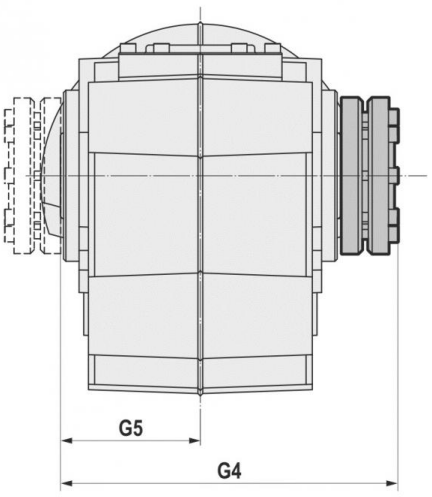
COUNTER CLOCKWISE SENSE OF DIRECTION REFERRED TO HIGH SPEED SHAFT

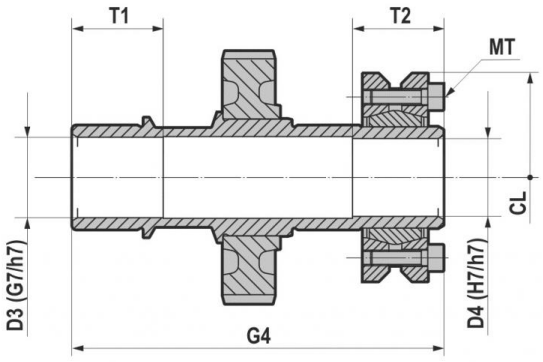
	063	071	080	090	100-112	132	160	180	200	225	250	280
	140x11	160x14	200x19	200x24	250x28	300x38	350x42	350x48	400x55	450x60	550x65	550x75
B063	B5	B5	B5	B5	B5							
B083			B5	B5	B5	B5						
B103			B5	B5	B5	B5	B5					
B123				B5	B5	B5	B5	B5				
B143					B5	B5	B5	B5	B5			
B153						B5	B5	B5	B5	B5		
B163							B5	B5	B5	B5	B5	B5

Dimensions are only in mm.

4.6 OUTPUT SHAFT WITH SHRINK DISC

Clean and degrease the surfaces of the shaft to be fitted to. Comply with the indicated tightening torque of screws (M_T).

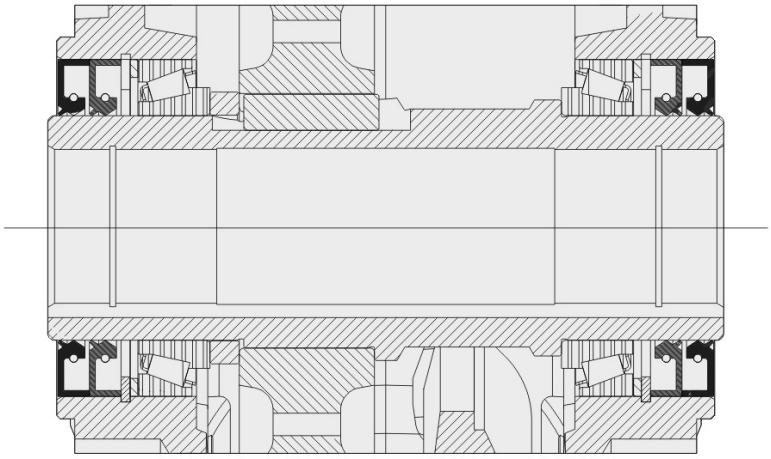


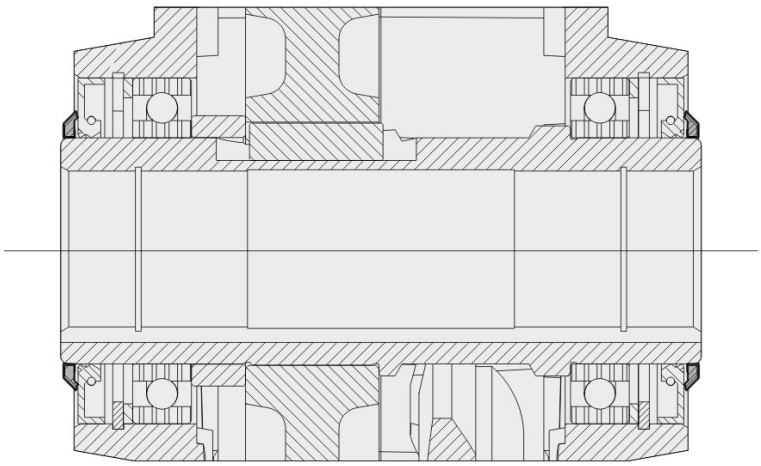


	D3	D4	G4	G5	T1	T2	CL	M_T 12,9 [Nm]
BA42	0.94	0.94	5.12	1.97	0.98	1.38	2.83	15
BA52-BA53	1.22	1.18	5.63	2.20	1.38	1.38	3.15	15
BA72-BA73	1.42	1.38	6.81	2.76	1.57	1.38	3.15	15
B063	1.42	1.38	6.81	2.76	1.57	1.38	3.15	15
B083	1.61	1.57	8.54	3.54	1.97	1.57	3.94	15
B103	2.01	1.97	9.76	4.13	2.17	1.57	4.53	15
B123	2.40	2.36	11.10	4.72	2.36	1.97	5.71	40
B143	2.83	2.76	13.98	5.91	2.76	2.56	6.69	50
B153	3.62	3.54	16.34	6.89	3.15	2.95	7.24	70
B163	4.02	3.94	20.16	8.76	3.94	3.94	8.46	70

4.7 REINFORCED OIL SEALS FOR OUTPUT SHAF..

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.



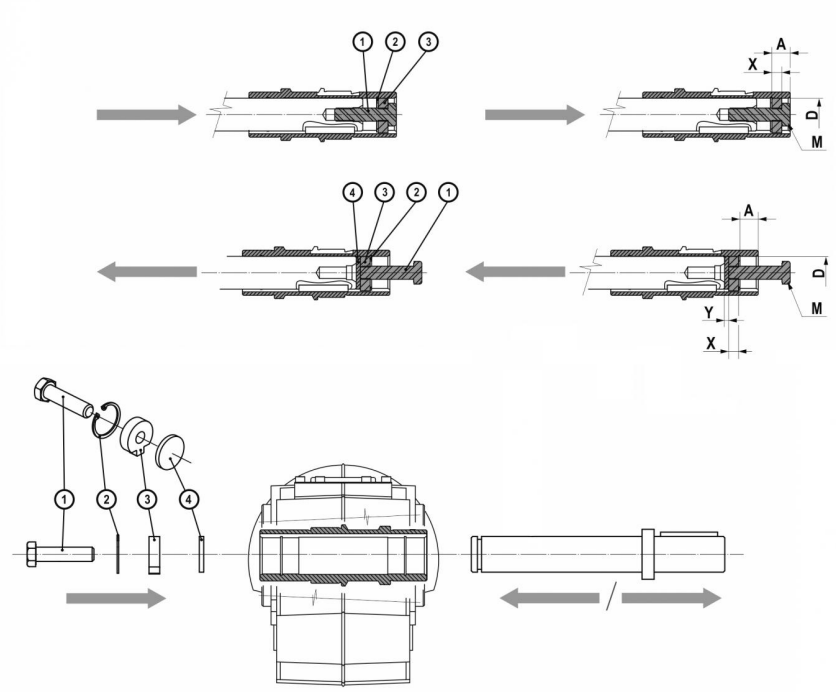


	Double oil seal	VRM ring
B063		x
B083		x
B103		x
B123		x
B143	x	
B153	x	
B163	x	

4.8 ASSEMBLING/DISASSEMBLING KIT

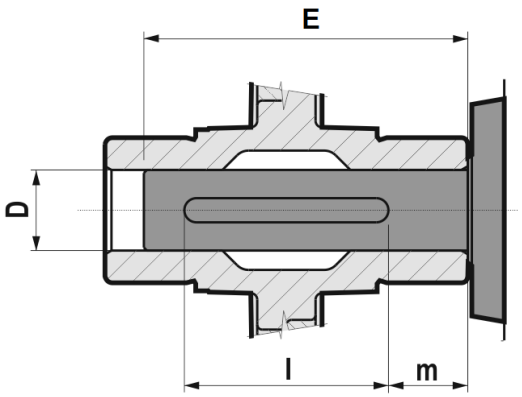
Mounting/dismounting kit for hollow shaft gear reducers with keyway that includes:

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



	D	A	X	Y	M
BA42	0.79	-	-	-	-
BA52-BA53	0.98	-	-	-	-
	1.10				
BA72-BA73	0.98	0.47	0.47	0.2	M12x45
	1.18	0.54	0.39		M10x35
B063	1.38	0.47	0.47	0.2	M12x45
	1.57				M16x50
B083	1.57	0.88	0.47	0.2	M16x50
	1.77				
B103	1.97	0.98	0.47	0.2	M16x50
B123	2.36	1.10	0.63	0.2	M20x70
B143	2.76	1.08	0.63	0.2	M20x70
B153	3.54	1.34	0.79	0.2	M24x60
B163	3.94	1.57	0.79	0.2	M24x120

4.9 MACHINE AXIS



	D H7/h6	E*	l*	m*
BA40	0.79	3.54	2.36	0.59
BA50	0.98	3.74	2.36	0.69
	1.10			
BA70	1.18	4.13	3.15	0.49
	1.38			
B063	1.38	4.13	3.15	0.49
	1.57			
B083	1.57	5.31	3.94	0.69
	1.77			
B103	1.97	6.3	4.72	0.79
B123	2.36	7.28	5.51	0.89
B143	2.76	9.45	6.69	1.38
B153	3.54	11.02	7.87	1.57
B163	0.39	14.57	10.63	1.97

(*) Suggested values.

5.1 B/BA GEARED MOTORS

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
230.0	17.9	42	7.62	749	-	379	**CBA42**	63A4	**BA42**	56C
165.0	12.8	58	10.62	749	-	423	**CBA42**	63A4	**BA42**	56C
135.0	10.5	71	12.95	749	-	452	**CBA42**	63A4	**BA42**	56C
121.0	9.4	80	14.46	749	-	469	**CBA42**	63A4	**BA42**	56C
106.0	11.0	91	16.47	998	-	490	**CBA42**	63A4	**BA42**	56C
76.0	7.9	127	22.97	998	-	547	**CBA42**	63A4	**BA42**	56C
63.0	6.5	154	28.00	998	-	584	**CBA42**	63A4	**BA42**	56C
56.0	5.8	172	31.27	998	-	606	**CBA42**	63A4	**BA42**	56C
52.0	5.4	186	33.78	998	-	622	**CBA42**	63A4	**BA42**	56C
37.0	3.8	259	47.12	998	-	695	**CBA42**	63A4	**BA42**	56C
30.0	3.2	316	57.43	998	-	742	**CBA42**	63A4	**BA42**	56C
27.0	2.6	353	64.13	915	-	770	**CBA42**	63A4	**BA42**	56C
22.0	2.1	430	78.17	915	-	823	**CBA42**	63A4	**BA42**	56C
22.0	3.8	435	79.07	1664	-	885	**CBA52**	63A4	**BA52**	56C
19.0	3.8	487	93.33	1830	-	899	**CBA53**	63A4	**BA53**	56C
16.0	3.1	582	111.61	1830	-	899	**CBA53**	63A4	**BA53**	56C
13.0	2.6	712	136.53	1830	-	899	**CBA53**	63A4	**BA53**	56C
10.0	2.0	900	172.53	1830	-	899	**CBA53**	63A4	**BA53**	56C
8.9	1.8	1028	197.11	1830	-	899	**CBA53**	63A4	**BA53**	56C
7.0	1.4	1299	249.08	1830	-	899	**CBA53**	63A4	**BA53**	56C
6.5	1.3	1414	271.16	1830	-	899	**CBA53**	63A4	**BA53**	56C
5.1	1.0	1787	342.65	1830	-	899	**CBA53**	63A4	**BA53**	56C
9.7	4.0	940	180.23	3744	2248	1236	**CBA73**	63A4	**BA73**	56C
7.9	3.2	1163	222.93	3744	2248	1236	**CBA73**	63A4	**BA73**	56C
6.7	2.8	1357	260.20	3744	2248	1236	**CBA73**	63A4	**BA73**	56C
5.4	2.2	1679	321.85	3744	2248	1236	**CBA73**	63A4	**BA73**	56C
4.9	2.0	1867	357.95	3744	2248	1236	**CBA73**	63A4	**BA73**	56C
4.0	1.6	2310	442.76	3744	2248	1236	**CBA73**	63A4	**BA73**	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
230.0	11.9	63	7.62	749	-	379	**CBA42**	63B4	**BA42**	56C
165.0	8.5	88	10.62	749	-	423	**CBA42**	63B4	**BA42**	56C
135.0	7.0	107	12.95	749	-	452	**CBA42**	63B4	**BA42**	56C
121.0	6.3	119	14.46	749	-	469	**CBA42**	63B4	**BA42**	56C
106.0	7.3	136	16.47	998	-	490	**CBA42**	63B4	**BA42**	56C
76.0	5.3	190	22.97	998	-	547	**CBA42**	63B4	**BA42**	56C
63.0	4.3	231	28.00	998	-	584	**CBA42**	63B4	**BA42**	56C
56.0	3.9	258	31.27	998	-	606	**CBA42**	63B4	**BA42**	56C
52.0	3.6	279	33.78	998	-	622	**CBA42**	63B4	**BA42**	56C

5.1 B/BA GEARED MOTORS

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
37.0	2.6	389	47.12	998	-	695	**CBA42**	63B4	**BA42**	56C
30.0	2.1	474	57.43	998	-	742	**CBA42**	63B4	**BA42**	56C
27.0	1.7	530	64.13	915	-	770	**CBA42**	63B4	**BA42**	56C
22.0	1.4	646	78.17	915	-	823	**CBA42**	63B4	**BA42**	56C
27.0	3.1	536	64.87	1664	-	828	**CBA52**	63B4	**BA52**	56C
22.0	2.5	653	79.07	1664	-	885	**CBA52**	63B4	**BA52**	56C
24.0	3.2	577	73.70	1830	-	864	**CBA53**	63B4	**BA53**	56C
19.0	2.5	730	93.33	1830	-	899	**CBA53**	63B4	**BA53**	56C
16.0	2.1	873	111.61	1830	-	899	**CBA53**	63B4	**BA53**	56C
13.0	1.7	1068	136.53	1830	-	899	**CBA53**	63B4	**BA53**	56C
10.0	1.4	1350	172.53	1830	-	899	**CBA53**	63B4	**BA53**	56C
8.9	1.2	1542	197.11	1830	-	899	**CBA53**	63B4	**BA53**	56C
15.0	4.0	942	120.34	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
12.0	3.2	1172	149.73	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
9.7	2.7	1410	180.23	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
7.9	2.1	1744	222.93	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
6.7	1.8	2036	260.20	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
5.4	1.5	2518	321.85	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
4.9	1.3	2801	357.95	3744	2248	1236	**CBA73**	63B4	**BA73**	56C
4.0	1.1	3464	442.76	3744	2248	1236	**CBA73**	63B4	**BA73**	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
14.0	3.7	1350	124.20	4992	2698	1336	**CB063**	63D4/71A4	**PB063**	56C
13.0	3.3	1512	139.15	4992	2698	1384	**CB063**	63D4/71A4	**PB063**	56C
11.0	2.9	1711	157.42	4992	2698	1438	**CB063**	63D4/71A4	**PB063**	56C
230.0	8.6	87	7.62	749	-	379	**CBA42**	63D4/71A4	**BA42**	56C
165.0	6.1	122	10.62	749	-	423	**CBA42**	63D4/71A4	**BA42**	56C
135.0	5.0	149	12.95	749	-	452	**CBA42**	63D4/71A4	**BA42**	56C
121.0	4.5	166	14.46	749	-	469	**CBA42**	63D4/71A4	**BA42**	56C
106.0	5.3	189	16.47	998	-	490	**CBA42**	63D4/71A4	**BA42**	56C
76.0	3.8	264	22.97	998	-	547	**CBA42**	63D4/71A4	**BA42**	56C
63.0	3.1	321	28.00	998	-	584	**CBA42**	63D4/71A4	**BA42**	56C
56.0	2.8	359	31.27	998	-	606	**CBA42**	63D4/71A4	**BA42**	56C
52.0	2.6	388	33.78	998	-	622	**CBA42**	63D4/71A4	**BA42**	56C
37.0	1.8	541	47.12	998	-	695	**CBA42**	63D4/71A4	**BA42**	56C
30.0	1.5	659	57.43	998	-	742	**CBA42**	63D4/71A4	**BA42**	56C
27.0	1.2	736	64.13	915	-	770	**CBA42**	63D4/71A4	**BA42**	56C
22.0	1.0	897	78.17	915	-	823	**CBA42**	63D4/71A4	**BA42**	56C
42.0	3.5	481	41.97	1664	-	716	**CBA52**	63D4/71A4	**BA52**	56C

5.1 B/BA GEARED MOTORS

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
34.0	3.1	589	51.34	1830	-	766	**CBA52**	63D4/71A4	**BA52**	56C
27.0	2.2	744	64.87	1664	-	828	**CBA52**	63D4/71A4	**BA52**	56C
22.0	1.8	907	79.07	1664	-	885	**CBA52**	63D4/71A4	**BA52**	56C
24.0	2.3	801	73.70	1830	-	864	**CBA53**	63D4/71A4	**BA53**	56C
19.0	1.8	1014	93.33	1830	-	899	**CBA53**	63D4/71A4	**BA53**	56C
16.0	1.5	1213	111.61	1830	-	899	**CBA53**	63D4/71A4	**BA53**	56C
13.0	1.2	1484	136.53	1830	-	899	**CBA53**	63D4/71A4	**BA53**	56C
26.0	3.7	780	67.96	2912	2131	1066	**-**	-	**BA72**	56C
18.0	3.5	1057	97.29	3744	2248	1201	**CBA73**	63D4/71A4	**BA73**	56C
15.0	2.9	1308	120.34	3744	2248	1236	**CBA73**	63D4/71A4	**BA73**	56C
12.0	2.3	1627	149.73	3744	2248	1236	**CBA73**	63D4/71A4	**BA73**	56C
9.7	1.9	1959	180.23	3744	2248	1236	**CBA73**	63D4/71A4	**BA73**	56C
7.9	1.5	2423	222.93	3744	2248	1236	**CBA73**	63D4/71A4	**BA73**	56C
6.7	1.3	2828	260.20	3744	2248	1236	**CBA73**	63D4/71A4	**BA73**	56C
5.4	1.1	3498	321.85	3744	2248	1236	**CBA73**	63D4/71A4	**BA73**	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
19.0	3.4	1453	90.33	4992	2698	1194	**CB063**	71B4	**PB063**	56C
17.0	3.1	1628	101.20	4992	2698	1236	**CB063**	71B4	**PB063**	56C
16.0	2.8	1797	111.74	4992	2698	1274	**CB063**	71B4	**PB063**	56C
14.0	2.5	1998	124.20	4992	2698	1315	**CB063**	71B4	**PB063**	56C
13.0	2.2	2238	139.15	4992	2698	1360	**CB063**	71B4	**PB063**	56C
11.0	2.0	2532	157.42	4992	2698	1411	**CB063**	71B4	**PB063**	56C
15.0	3.8	1870	116.25	7072	4047	1990	**-**	-	**PB083**	56C
14.0	3.5	2039	126.76	7072	4047	2045	**-**	-	**PB083**	56C
12.0	3.0	2328	144.77	7072	4047	2132	**-**	-	**PB083**	56C
230.0	5.8	129	7.62	749	-	379	**CBA42**	71B4	**BA42**	56C
165.0	4.2	180	10.62	749	-	423	**CBA42**	71B4	**BA42**	56C
135.0	3.4	220	12.95	749	-	452	**CBA42**	71B4	**BA42**	56C
121.0	3.1	245	14.46	749	-	469	**CBA42**	71B4	**BA42**	56C
106.0	3.6	280	16.47	998	-	490	**CBA42**	71B4	**BA42**	56C
76.0	2.6	390	22.97	998	-	547	**CBA42**	71B4	**BA42**	56C
63.0	2.1	475	28.00	998	-	584	**CBA42**	71B4	**BA42**	56C
56.0	1.9	531	31.27	998	-	606	**CBA42**	71B4	**BA42**	56C
52.0	1.7	574	33.78	998	-	622	**CBA42**	71B4	**BA42**	56C
37.0	1.2	800	47.12	998	-	695	**CBA42**	71B4	**BA42**	56C
30.0	1.0	975	57.43	998	-	742	**CBA42**	71B4	**BA42**	56C
70.0	3.9	425	25.03	1664	-	603	**CBA52**	71B4	**BA52**	56C
55.0	3.1	537	31.63	1664	-	652	**CBA52**	71B4	**BA52**	56C

5.1 B/BA GEARED MOTORS

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
50.0	2.8	596	35.10	1664	-	675	**CBA52**	71B4	**BA52**	56C
42.0	2.3	712	41.97	1664	-	716	**CBA52**	71B4	**BA52**	56C
34.0	2.1	872	51.34	1830	-	766	**CBA52**	71B4	**BA52**	56C
27.0	1.5	1101	64.87	1664	-	828	**CBA52**	71B4	**BA52**	56C
22.0	1.2	1342	79.07	1664	-	885	**CBA52**	71B4	**BA52**	56C
24.0	1.5	1185	73.70	1830	-	864	**CBA53**	71B4	**BA53**	56C
19.0	1.2	1501	93.33	1830	-	899	**CBA53**	71B4	**BA53**	56C
16.0	1.0	1795	111.61	1830	-	899	**CBA53**	71B4	**BA53**	56C
38.0	3.8	775	45.64	2912	1867	933	**-**	-	**BA72**	56C
32.0	3.1	933	54.94	2912	1986	993	**-**	-	**BA72**	56C
26.0	2.5	1154	67.96	2912	2131	1066	**-**	-	**BA72**	56C
27.0	3.6	1051	65.35	3744	2104	1052	**CBA73**	71B4	**BA73**	56C
22.0	2.9	1300	80.83	3744	2248	1129	**CBA73**	71B4	**BA73**	56C
18.0	2.4	1565	97.29	3744	2248	1201	**CBA73**	71B4	**BA73**	56C
15.0	1.9	1936	120.34	3744	2248	1236	**CBA73**	71B4	**BA73**	56C
12.0	1.6	2408	149.73	3744	2248	1236	**CBA73**	71B4	**BA73**	56C
9.7	1.3	2899	180.23	3744	2248	1236	**CBA73**	71B4	**BA73**	56C
7.9	1.0	3586	222.93	3744	2248	1236	**CBA73**	71B4	**BA73**	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
31.0	3.7	1361	56.93	4992	2698	1020	**CB063**	71C4/80A4	**PB063**	56C
25.0	3.0	1653	69.16	4992	2698	1082	**CB063**	71C4/80A4	**PB063**	56C
23.0	2.7	1852	77.48	4992	2698	1119	**CB063**	71C4/80A4	**PB063**	56C
19.0	2.3	2160	90.33	4992	2698	1171	**CB063**	71C4/80A4	**PB063**	56C
17.0	2.1	2420	101.20	4992	2698	1210	**CB063**	71C4/80A4	**PB063**	56C
16.0	1.9	2672	111.74	4992	2698	1245	**CB063**	71C4/80A4	**PB063**	56C
14.0	1.7	2969	124.20	4992	2698	1283	**CB063**	71C4/80A4	**PB063**	56C
13.0	1.5	3327	139.15	4992	2698	1325	**CB063**	71C4/80A4	**PB063**	56C
11.0	1.3	3764	157.42	4992	2698	1371	**CB063**	71C4/80A4	**PB063**	56C
22.0	3.7	1931	80.76	7072	4047	1755	**CB083**	80A4	**PB083**	56C
19.0	3.2	2204	92.19	7072	4047	1828	**CB083**	80A4	**PB083**	56C
17.0	2.9	2405	100.57	7072	4047	1878	**CB083**	80A4	**PB083**	56C
17.0	2.8	2517	105.29	7072	4047	1905	**CB083**	80A4	**PB083**	56C
15.0	2.5	2779	116.25	7072	4047	1964	**CB083**	80A4	**PB083**	56C
14.0	2.3	3031	126.76	7072	4047	2016	**CB083**	80A4	**PB083**	56C
12.0	2.0	3461	144.77	7072	4047	2099	**CB083**	80A4	**PB083**	56C
11.0	3.8	3951	165.25	14975	4946	2699	**CB103**	80A4	**PB103**	56C
230.0	3.9	192	7.62	749	-	379	**CBA42**	71C4/80A4	**BA42**	56C
165.0	2.8	268	10.62	749	-	423	**CBA42**	71C4/80A4	**BA42**	56C

5.1 B/BA GEARED MOTORS

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
135.0	2.3	327	12.95	749	-	452	**CBA42**	71C4/80A4	**BA42**	56C
121.0	2.1	365	14.46	749	-	469	**CBA42**	71C4/80A4	**BA42**	56C
106.0	2.4	416	16.47	998	-	490	**CBA42**	71C4/80A4	**BA42**	56C
76.0	1.7	580	22.97	998	-	547	**CBA42**	71C4/80A4	**BA42**	56C
63.0	1.4	707	28.00	998	-	584	**CBA42**	71C4/80A4	**BA42**	56C
56.0	1.3	789	31.27	998	-	606	**CBA42**	71C4/80A4	**BA42**	56C
52.0	1.2	853	33.78	998	-	622	**CBA42**	71C4/80A4	**BA42**	56C
120.0	3.6	369	14.63	1331	-	504	**CBA52**	71C4/80A4	**BA52**	56C
102.0	3.9	432	17.11	1664	-	531	**CBA52**	71C4/80A4	**BA52**	56C
86.0	3.2	516	20.46	1664	-	564	**CBA52**	71C4/80A4	**BA52**	56C
70.0	2.6	632	25.03	1664	-	603	**CBA52**	71C4/80A4	**BA52**	56C
55.0	2.1	798	31.63	1664	-	652	**CBA52**	71C4/80A4	**BA52**	56C
50.0	1.9	886	35.10	1664	-	675	**CBA52**	71C4/80A4	**BA52**	56C
42.0	1.6	1059	41.97	1664	-	716	**CBA52**	71C4/80A4	**BA52**	56C
34.0	1.4	1296	51.34	1830	-	766	**CBA52**	71C4/80A4	**BA52**	56C
27.0	1.0	1637	64.87	1664	-	828	**CBA52**	71C4/80A4	**BA52**	56C
24.0	1.0	1762	73.70	1830	-	864	**CBA53**	71C4/80A4	**BA53**	56C
43.0	3.2	1031	40.87	3328	1799	900	**CBA72**	80A4	**BA72**	56C
38.0	2.5	1152	45.64	2912	1867	933	**CBA72**	80A4	**BA72**	56C
32.0	2.1	1387	54.94	2912	1986	993	**CBA72**	80A4	**BA72**	56C
26.0	1.7	1715	67.96	2912	2131	1066	**CBA72**	80A4	**BA72**	56C
40.0	3.6	1049	43.89	3744	1842	921	**CBA73**	71C4/80A4	**BA73**	56C
33.0	3.0	1263	52.83	3744	1960	980	**CBA73**	71C4/80A4	**BA73**	56C
27.0	2.4	1562	65.35	3744	2104	1052	**CBA73**	71C4/80A4	**BA73**	56C
22.0	1.9	1932	80.83	3744	2248	1129	**CBA73**	71C4/80A4	**BA73**	56C
18.0	1.6	2326	97.29	3744	2248	1201	**CBA73**	71C4/80A4	**BA73**	56C
15.0	1.3	2877	120.34	3744	2248	1236	**CBA73**	71C4/80A4	**BA73**	56C
12.0	1.0	3580	149.73	3744	2248	1236	**CBA73**	71C4/80A4	**BA73**	56C

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
45.0	4.0	1258	38.58	4992	2698	894	**CB063**	80B4	**PB063**	56C/143/145TC
40.0	3.5	1409	43.22	4992	2698	925	**CB063**	80B4	**PB063**	56C/143/145TC
34.0	3.0	1656	50.81	4992	2698	971	**CB063**	80B4	**PB063**	56C/143/145TC
31.0	2.7	1856	56.93	4992	2698	1004	**CB063**	80B4	**PB063**	56C/143/145TC
25.0	2.2	2255	69.16	4992	2698	1062	**CB063**	80B4	**PB063**	56C/143/145TC
23.0	2.0	2526	77.48	4992	2698	1097	**CB063**	80B4	**PB063**	56C/143/145TC
19.0	1.7	2945	90.33	4992	2698	1145	**CB063**	80B4	**PB063**	56C/143/145TC
17.0	1.5	3299	101.20	4992	2698	1181	**CB063**	80B4	**PB063**	56C/143/145TC
16.0	1.4	3643	111.74	4992	2698	1213	**CB063**	80B4	**PB063**	56C/143/145TC

5.1 B/BA GEARED MOTORS

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
14.0	1.2	4049	124.20	4992	2698	1248	**CB063**	80B4	**PB063**	56C/143/145TC
13.0	1.1	4537	139.15	4992	2698	1285	**CB063**	80B4	**PB063**	56C/143/145TC
32.0	3.9	1810	55.52	7072	4047	1545	**CB083**	80B4	**PB083**	56C/143/145TC
29.0	3.6	1955	59.96	7072	4047	1583	**CB083**	80B4	**PB083**	56C/143/145TC
27.0	3.4	2078	63.74	7072	4047	1613	**CB083**	80B4	**PB083**	56C/143/145TC
25.0	3.1	2254	69.14	7072	4047	1654	**CB083**	80B4	**PB083**	56C/143/145TC
24.0	3.0	2385	73.14	7072	4047	1682	**CB083**	80B4	**PB083**	56C/143/145TC
22.0	2.7	2633	80.76	7072	4047	1734	**CB083**	80B4	**PB083**	56C/143/145TC
19.0	2.4	3006	92.19	7072	4047	1805	**CB083**	80B4	**PB083**	56C/143/145TC
17.0	2.2	3279	100.57	7072	4047	1852	**CB083**	80B4	**PB083**	56C/143/145TC
17.0	2.1	3433	105.29	7072	4047	1878	**CB083**	80B4	**PB083**	56C/143/145TC
15.0	1.9	3790	116.25	7072	4047	1934	**CB083**	80B4	**PB083**	56C/143/145TC
14.0	1.7	4133	126.76	7072	4047	1984	**CB083**	80B4	**PB083**	56C/143/145TC
12.0	1.5	4720	144.77	7072	4047	2062	**CB083**	80B4	**PB083**	56C/143/145TC
15.0	3.8	3926	120.42	14975	4946	2421	**CB103**	80B4	**PB103**	56C/143/145TC
13.0	3.5	4332	132.87	14975	4946	2496	**CB103**	80B4	**PB103**	56C/143/145TC
12.0	3.2	4717	144.69	14975	4946	2563	**CB103**	80B4	**PB103**	56C/143/145TC
11.0	2.8	5387	165.25	14975	4946	2669	**CB103**	80B4	**PB103**	56C/143/145TC
230.0	2.9	262	7.62	749	-	379	**CBA42**	80B4	**BA42**	56C/143/145TC
165.0	2.0	366	10.62	749	-	423	**CBA42**	80B4	**BA42**	56C/143/145TC
135.0	1.7	446	12.95	749	-	452	**CBA42**	80B4	**BA42**	56C/143/145TC
121.0	1.5	498	14.46	749	-	469	**CBA42**	80B4	**BA42**	56C/143/145TC
106.0	1.8	567	16.47	998	-	490	**CBA42**	80B4	**BA42**	56C/143/145TC
76.0	1.3	791	22.97	998	-	547	**CBA42**	80B4	**BA42**	56C/143/145TC
63.0	1.0	964	28.00	998	-	584	**CBA42**	80B4	**BA42**	56C/143/145TC
151.0	3.3	398	11.57	1331	-	466	**CBA52**	80B4	**BA52**	56C/143/145TC
120.0	2.6	503	14.63	1331	-	504	**CBA52**	80B4	**BA52**	56C/143/145TC
102.0	2.8	589	17.11	1664	-	531	**CBA52**	80B4	**BA52**	56C/143/145TC
86.0	2.4	704	20.46	1664	-	564	**CBA52**	80B4	**BA52**	56C/143/145TC
70.0	1.9	861	25.03	1664	-	603	**CBA52**	80B4	**BA52**	56C/143/145TC
55.0	1.5	1088	31.63	1664	-	652	**CBA52**	80B4	**BA52**	56C/143/145TC
50.0	1.4	1208	35.10	1664	-	675	**CBA52**	80B4	**BA52**	56C/143/145TC
42.0	1.2	1444	41.97	1664	-	716	**CBA52**	80B4	**BA52**	56C/143/145TC
34.0	1.0	1767	51.34	1830	-	766	**CBA52**	80B4	**BA52**	56C/143/145TC
64.0	3.7	945	27.45	3494	1576	788	**CBA72**	80B4	**BA72**	56C/143/145TC
53.0	3.1	1137	33.04	3494	1676	838	**CBA72**	80B4	**BA72**	56C/143/145TC
43.0	2.4	1406	40.87	3328	1799	900	**CBA72**	80B4	**BA72**	56C/143/145TC
38.0	1.9	1571	45.64	2912	1867	933	**CBA72**	80B4	**BA72**	56C/143/145TC
32.0	1.5	1891	54.94	2912	1986	993	**CBA72**	80B4	**BA72**	56C/143/145TC
26.0	1.2	2339	67.96	2912	2131	1066	**CBA72**	80B4	**BA72**	56C/143/145TC
40.0	2.6	1431	43.89	3744	1842	921	**CBA73**	80B4	**BA73**	56C/143/145TC

5.1 B/BA GEARED MOTORS

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
33.0	2.2	1722	52.83	3744	1960	980	**CBA73**	80B4	**BA73**	56C/143/145TC
27.0	1.8	2131	65.35	3744	2104	1052	**CBA73**	80B4	**BA73**	56C/143/145TC
22.0	1.4	2635	80.83	3744	2248	1129	**CBA73**	80B4	**BA73**	56C/143/145TC
18.0	1.2	3172	97.29	3744	2248	1201	**CBA73**	80B4	**BA73**	56C/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
62.0	3.7	1340	28.03	4992	2698	797	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
52.0	3.1	1599	33.43	4992	2698	839	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
45.0	2.7	1845	38.58	4992	2698	874	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
40.0	2.4	2067	43.22	4992	2698	903	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
34.0	2.1	2430	50.81	4992	2698	945	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
31.0	1.8	2722	56.93	4992	2698	975	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
25.0	1.5	3307	69.16	4992	2698	1027	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
23.0	1.3	3705	77.48	4992	2698	1058	**CB063**	80D4/90S4	**PB063**	56C/143/145TC
19.0	1.2	4319	90.33	4992	2698	1100	**CB063**	80D4	**PB063**	56C/143/145TC
17.0	1.0	4839	101.20	4992	2698	1131	**CB063**	80D4	**PB063**	56C/143/145TC
44.0	3.7	1893	39.60	7072	4047	1373	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
41.0	3.4	2054	42.95	7072	4047	1407	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
39.0	3.3	2173	45.44	7072	4047	1432	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
34.0	2.9	2448	51.19	7072	4047	1484	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
32.0	2.7	2655	55.52	7072	4047	1521	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
29.0	2.5	2867	59.96	7072	4047	1556	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
27.0	2.3	3048	63.74	7072	4047	1584	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
25.0	2.1	3306	69.14	7072	4047	1623	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
24.0	2.0	3497	73.14	7072	4047	1650	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
22.0	1.8	3862	80.76	7072	4047	1698	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
19.0	1.6	4408	92.19	7072	4047	1764	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
17.0	1.5	4809	100.57	7072	4047	1808	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
17.0	1.4	5034	105.29	7072	4047	1831	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
15.0	1.3	5559	116.25	7072	4047	1882	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
14.0	1.2	6061	126.76	7072	4047	1927	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
12.0	1.0	6922	144.77	7072	4047	1997	**CB083**	80D4/90S4	**PB083**	56C/143/145TC
22.0	3.7	3774	78.92	14143	4946	2095	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
21.0	3.7	4000	83.66	14975	4946	2133	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
19.0	3.4	4414	92.31	14975	4946	2199	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
17.0	3.0	5042	105.44	14975	4946	2289	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
15.0	2.7	5489	114.80	14975	4946	2349	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
15.0	2.6	5758	120.42	14975	4946	2383	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
13.0	2.4	6354	132.87	14975	4946	2454	**CB103**	80D4/90S4	**PB103**	56C/143/145TC

5.1 B/BA GEARED MOTORS

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
12.0	2.2	6919	144.69	14975	4946	2517	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
11.0	1.9	7901	165.25	14975	4946	2617	**CB103**	80D4/90S4	**PB103**	56C/143/145TC
11.0	3.8	7662	160.23	29119	6744	3644	**CB123**	90S4	**PB123**	143/145TC
9.7	3.4	8626	180.40	29119	6744	3769	**CB123**	90S4	**PB123**	143/145TC
230.0	1.9	384	7.62	749	-	379	**CBA42**	80D4	**BA42**	56C/143/145TC
165.0	1.4	536	10.62	749	-	423	**CBA42**	80D4	**BA42**	56C/143/145TC
135.0	1.1	653	12.95	749	-	452	**CBA42**	80D4	**BA42**	56C/143/145TC
121.0	1.0	730	14.46	749	-	469	**CBA42**	80D4	**BA42**	56C/143/145TC
106.0	1.2	831	16.47	998	-	490	**CBA42**	80D4	**BA42**	56C/143/145TC
221.0	3.3	399	7.91	1331	-	411	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
185.0	2.8	478	9.46	1331	-	436	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
151.0	2.3	584	11.57	1331	-	466	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
120.0	1.8	738	14.63	1331	-	504	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
102.0	1.9	864	17.11	1664	-	531	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
86.0	1.6	1033	20.46	1664	-	564	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
70.0	1.3	1263	25.03	1664	-	603	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
55.0	1.0	1596	31.63	1664	-	652	**CBA52**	80D4/90S4	**BA52**	56C/143/145TC
98.0	3.9	906	17.94	3494	1367	684	**CBA72**	90S4	**BA72**	56C/143/145TC
79.0	3.1	1120	22.19	3494	1468	734	**CBA72**	90S4	**BA72**	56C/143/145TC
64.0	2.5	1385	27.45	3494	1576	788	**CBA72**	80D4/90S4	**BA72**	56C/143/145TC
53.0	2.1	1668	33.04	3494	1676	838	**CBA72**	80D4/90S4	**BA72**	56C/143/145TC
43.0	1.6	2063	40.87	3328	1799	900	**CBA72**	80D4/90S4	**BA72**	56C/143/145TC
38.0	1.3	2304	45.64	2912	1867	933	**CBA72**	80D4/90S4	**BA72**	56C/143/145TC
32.0	1.1	2773	54.94	2912	1986	993	**CBA72**	80D4/90S4	**BA72**	56C/143/145TC
40.0	1.8	2099	43.89	3744	1842	921	**CBA73**	80D4/90S4	**BA73**	56C/143/145TC
33.0	1.5	2526	52.83	3744	1960	980	**CBA73**	80D4/90S4	**BA73**	56C/143/145TC
27.0	1.2	3125	65.35	3744	2104	1052	**CBA73**	80D4/90S4	**BA73**	56C/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
78.0	3.4	1460	22.39	4992	2562	732	**CB063**	90LA4	**PB063**	56C/143/145TC
67.0	2.9	1701	26.09	4992	2677	765	**CB063**	90LA4	**PB063**	56C/143/145TC
62.0	2.7	1828	28.03	4992	2698	781	**CB063**	90LA4	**PB063**	56C/143/145TC
52.0	2.3	2180	33.43	4992	2698	820	**CB063**	90LA4	**PB063**	56C/143/145TC
45.0	2.0	2515	38.58	4992	2698	852	**CB063**	90LA4	**PB063**	56C/143/145TC
40.0	1.8	2818	43.22	4992	2698	879	**CB063**	90LA4	**PB063**	56C/143/145TC
34.0	1.5	3313	50.81	4992	2698	916	**CB063**	90LA4	**PB063**	56C/143/145TC
31.0	1.3	3712	56.93	4992	2698	943	**CB063**	90LA4	**PB063**	56C/143/145TC
25.0	1.1	4509	69.16	4992	2698	988	**CB063**	90LA4	**PB063**	56C/143/145TC
59.0	3.7	1923	29.50	7072	4047	1238	**CB083**	90LA4	**PB083**	56C/143/145TC

5.1 B/BA GEARED MOTORS

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
55.0	3.4	2073	31.80	7072	4047	1267	**CB083**	90LA4	**PB083**	56C/143/145TC
51.0	3.1	2249	34.49	7072	4047	1298	**CB083**	90LA4	**PB083**	56C/143/145TC
44.0	2.7	2582	39.60	7072	4047	1352	**CB083**	90LA4	**PB083**	56C/143/145TC
41.0	2.5	2801	42.95	7072	4047	1385	**CB083**	90LA4	**PB083**	56C/143/145TC
39.0	2.4	2963	45.44	7072	4047	1408	**CB083**	90LA4	**PB083**	56C/143/145TC
34.0	2.1	3338	51.19	7072	4047	1458	**CB083**	90LA4	**PB083**	56C/143/145TC
32.0	2.0	3620	55.52	7072	4047	1492	**CB083**	90LA4	**PB083**	56C/143/145TC
29.0	1.8	3909	59.96	7072	4047	1525	**CB083**	90LA4	**PB083**	56C/143/145TC
27.0	1.7	4156	63.74	7072	4047	1552	**CB083**	90LA4	**PB083**	56C/143/145TC
25.0	1.6	4508	69.14	7072	4047	1588	**CB083**	90LA4	**PB083**	56C/143/145TC
24.0	1.5	4769	73.14	7072	4047	1612	**CB083**	90LA4	**PB083**	56C/143/145TC
22.0	1.3	5266	80.76	7072	4047	1657	**CB083**	90LA4	**PB083**	56C/143/145TC
19.0	1.2	6011	92.19	7072	4047	1717	**CB083**	90LA4	**PB083**	56C/143/145TC
17.0	1.1	6558	100.57	7072	4047	1756	**CB083**	90LA4	**PB083**	56C/143/145TC
17.0	1.0	6865	105.29	7072	4047	1777	**CB083**	90LA4	**PB083**	56C/143/145TC
30.0	3.7	3815	58.50	14143	4946	1888	**CB103**	90LA4	**PB103**	56C/143/145TC
27.0	3.3	4231	64.89	14143	4946	1948	**CB103**	90LA4	**PB103**	56C/143/145TC
26.0	3.2	4471	68.58	14143	4946	1981	**CB103**	90LA4	**PB103**	56C/143/145TC
24.0	3.0	4744	72.76	14143	4946	2017	**CB103**	90LA4	**PB103**	56C/143/145TC
22.0	2.7	5146	78.92	14143	4946	2067	**CB103**	90LA4	**PB103**	56C/143/145TC
21.0	2.7	5455	83.66	14975	4946	2103	**CB103**	90LA4	**PB103**	56C/143/145TC
19.0	2.5	6019	92.31	14975	4946	2165	**CB103**	90LA4	**PB103**	56C/143/145TC
17.0	2.2	6875	105.44	14975	4946	2251	**CB103**	90LA4	**PB103**	56C/143/145TC
15.0	2.0	7485	114.80	14975	4946	2307	**CB103**	90LA4	**PB103**	56C/143/145TC
15.0	1.9	7852	120.42	14975	4946	2339	**CB103**	90LA4	**PB103**	56C/143/145TC
13.0	1.7	8664	132.87	14975	4946	2406	**CB103**	90LA4	**PB103**	56C/143/145TC
12.0	1.6	9435	144.69	14975	4946	2464	**CB103**	90LA4	**PB103**	56C/143/145TC
11.0	1.4	10775	165.25	14975	4946	2557	**CB103**	90LA4	**PB103**	56C/143/145TC
15.0	3.7	7798	119.60	29119	6744	3277	**CB123**	90LA4	**PB123**	143/145TC
13.0	3.4	8474	129.96	29119	6744	3354	**CB123**	90LA4	**PB123**	143/145TC
12.0	3.1	9417	144.43	29119	6744	3453	**CB123**	90LA4	**PB123**	143/145TC
11.0	2.8	10448	160.23	29119	6744	3551	**CB123**	90LA4	**PB123**	143/145TC
9.7	2.5	11763	180.40	29119	6744	3664	**CB123**	90LA4	**PB123**	143/145TC
230.0	1.4	524	7.62	749	-	379	**-**	-	**BA42**	56C/143/145TC
165.0	1.0	731	10.62	749	-	423	**-**	-	**BA42**	56C/143/145TC
221.0	2.4	545	7.91	1331	-	411	**CBA52**	90LA4	**BA52**	56C/143/145TC
185.0	2.0	651	9.46	1331	-	436	**CBA52**	90LA4	**BA52**	56C/143/145TC
151.0	1.7	797	11.57	1331	-	466	**CBA52**	90LA4	**BA52**	56C/143/145TC
120.0	1.3	1007	14.63	1331	-	504	**CBA52**	90LA4	**BA52**	56C/143/145TC
102.0	1.4	1178	17.11	1664	-	531	**CBA52**	90LA4	**BA52**	56C/143/145TC
86.0	1.2	1408	20.46	1664	-	564	**CBA52**	90LA4	**BA52**	56C/143/145TC

5.1 B/BA GEARED MOTORS

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
141.0	3.4	856	12.44	2912	1210	605	**CBA72**	90LA4	**BA72**	56C/143/145TC
117.0	3.4	1026	14.91	3494	1285	643	**CBA72**	90LA4	**BA72**	56C/143/145TC
98.0	2.8	1235	17.94	3494	1367	684	**CBA72**	90LA4	**BA72**	56C/143/145TC
79.0	2.3	1528	22.19	3494	1468	734	**CBA72**	90LA4	**BA72**	56C/143/145TC
64.0	1.8	1889	27.45	3494	1576	788	**CBA72**	90LA4	**BA72**	56C/143/145TC
53.0	1.5	2274	33.04	3494	1676	838	**CBA72**	90LA4	**BA72**	56C/143/145TC
43.0	1.2	2813	40.87	3328	1799	900	**CBA72**	90LA4	**BA72**	56C/143/145TC
40.0	1.3	2862	43.89	3744	1842	921	**CBA73**	90LA4	**BA73**	56C/143/145TC
33.0	1.1	3445	52.83	3744	1960	980	**CBA73**	90LA4	**BA73**	56C/143/145TC

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
133.0	3.9	1258	13.15	4909	2142	612	**CB063**	100LA4	**PB063**	182/184TC
115.0	3.4	1451	15.18	4909	2231	637	**CB063**	100LA4	**PB063**	182/184TC
103.0	3.1	1626	17.00	4992	2304	658	**CB063**	100LA4	**PB063**	182/184TC
78.0	2.3	2142	22.39	4992	2484	710	**CB063**	100LA4	**PB063**	182/184TC
67.0	2.0	2495	26.09	4992	2586	739	**CB063**	100LA4	**PB063**	182/184TC
62.0	1.9	2681	28.03	4992	2634	753	**CB063**	100LA4	**PB063**	182/184TC
52.0	1.6	3197	33.43	4992	2698	787	**CB063**	100LA4	**PB063**	182/184TC
45.0	1.4	3689	38.58	4992	2698	814	**CB063**	100LA4	**PB063**	182/184TC
40.0	1.2	4133	43.22	4992	2698	836	**CB063**	100LA4	**PB063**	182/184TC
34.0	1.0	4859	50.81	4992	2698	866	**CB063**	100LA4	**PB063**	182/184TC
77.0	3.2	2182	22.82	7072	3936	1124	**CB083**	100LA4	**PB083**	182/184TC
66.0	2.8	2555	26.71	7072	4047	1178	**CB083**	100LA4	**PB083**	182/184TC
59.0	2.5	2821	29.50	7072	4047	1212	**CB083**	100LA4	**PB083**	182/184TC
55.0	2.3	3041	31.80	7072	4047	1238	**CB083**	100LA4	**PB083**	182/184TC
51.0	2.1	3299	34.49	7072	4047	1267	**CB083**	100LA4	**PB083**	182/184TC
44.0	1.9	3787	39.60	7072	4047	1317	**CB083**	100LA4	**PB083**	182/184TC
41.0	1.7	4108	42.95	7072	4047	1347	**CB083**	100LA4	**PB083**	182/184TC
39.0	1.6	4345	45.44	7072	4047	1368	**CB083**	100LA4	**PB083**	182/184TC
34.0	1.4	4895	51.19	7072	4047	1412	**CB083**	100LA4	**PB083**	182/184TC
32.0	1.3	5310	55.52	7072	4047	1443	**CB083**	100LA4	**PB083**	182/184TC
29.0	1.2	5734	59.96	7072	4047	1472	**CB083**	100LA4	**PB083**	182/184TC
27.0	1.2	6096	63.74	7072	4047	1495	**CB083**	100LA4	**PB083**	182/184TC
25.0	1.1	6612	69.14	7072	4047	1526	**CB083**	100LA4	**PB083**	182/184TC
24.0	1.0	6995	73.14	7072	4047	1547	**CB083**	100LA4	**PB083**	182/184TC
43.0	3.6	3933	41.12	14143	4946	1667	**CB103**	100LA4	**PB103**	182/184TC
39.0	3.3	4266	44.61	14143	4946	1709	**CB103**	100LA4	**PB103**	182/184TC
37.0	3.1	4522	47.28	14143	4946	1739	**CB103**	100LA4	**PB103**	182/184TC
35.0	2.9	4805	50.24	14143	4946	1770	**CB103**	100LA4	**PB103**	182/184TC

5.1 B/BA GEARED MOTORS

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
33.0	2.8	5071	53.02	14143	4946	1798	**CB103**	100LA4	**PB103**	182/184TC
30.0	2.5	5595	58.50	14143	4946	1851	**CB103**	100LA4	**PB103**	182/184TC
27.0	2.3	6205	64.89	14143	4946	1907	**CB103**	100LA4	**PB103**	182/184TC
26.0	2.2	6558	68.58	14143	4946	1938	**CB103**	100LA4	**PB103**	182/184TC
24.0	2.0	6958	72.76	14143	4946	1971	**CB103**	100LA4	**PB103**	182/184TC
22.0	1.9	7548	78.92	14143	4946	2017	**CB103**	100LA4	**PB103**	182/184TC
21.0	1.9	8001	83.66	14975	4946	2050	**CB103**	100LA4	**PB103**	182/184TC
19.0	1.7	8828	92.31	14975	4946	2106	**CB103**	100LA4	**PB103**	182/184TC
17.0	1.5	10084	105.44	14975	4946	2184	**CB103**	100LA4	**PB103**	182/184TC
15.0	1.4	10978	114.80	14975	4946	2234	**CB103**	100LA4	**PB103**	182/184TC
15.0	1.3	11516	120.42	14975	4946	2263	**CB103**	100LA4	**PB103**	182/184TC
13.0	1.2	12707	132.87	14975	4946	2321	**CB103**	100LA4	**PB103**	182/184TC
12.0	1.1	13837	144.69	14975	4946	2372	**CB103**	100LA4	**PB103**	182/184TC
22.0	3.8	7654	80.04	29119	6744	2839	**CB123**	100LA4	**PB123**	182/184TC
19.0	3.4	8594	89.87	29119	6744	2929	**CB123**	100LA4	**PB123**	182/184TC
18.0	3.1	9534	99.70	29119	6744	3011	**CB123**	100LA4	**PB123**	182/184TC
16.0	2.9	10200	106.65	29119	6744	3064	**CB123**	100LA4	**PB123**	182/184TC
15.0	2.5	11438	119.60	29119	6744	3156	**CB123**	100LA4	**PB123**	182/184TC
13.0	2.3	12429	129.96	29119	6744	3222	**CB123**	100LA4	**PB123**	182/184TC
12.0	2.1	13812	144.43	29119	6744	3306	**CB123**	100LA4	**PB123**	182/184TC
11.0	1.9	15323	160.23	29119	6744	3388	**CB123**	100LA4	**PB123**	182/184TC
9.7	1.7	17253	180.40	29119	6744	3481	**CB123**	100LA4	**PB123**	182/184TC
16.0	3.9	10705	111.94	41599	8990	8990	**CB143**	100LA4	**PB143**	182/184TC
14.0	3.5	11917	124.62	41599	8990	8990	**CB143**	100LA4	**PB143**	182/184TC
13.0	3.2	13048	136.44	41599	8990	8990	**CB143**	100LA4	**PB143**	182/184TC
12.0	2.9	14306	149.59	41599	8990	8990	**CB143**	100LA4	**PB143**	182/184TC
11.0	2.6	15926	166.53	41599	8990	8990	**CB143**	100LA4	**PB143**	182/184TC
9.3	2.3	17906	187.24	41599	8990	8990	**CB143**	100LA4	**PB143**	182/184TC
209.0	3.5	844	8.36	2912	1060	530	**CBA72**	100LA4	**BA72**	182/184TC
174.0	2.9	1015	10.06	2912	1128	564	**CBA72**	100LA4	**BA72**	182/184TC
141.0	2.3	1256	12.44	2912	1210	605	**CBA72**	100LA4	**BA72**	182/184TC
117.0	2.3	1505	14.91	3494	1285	643	**CBA72**	100LA4	**BA72**	182/184TC
98.0	1.9	1811	17.94	3494	1367	684	**CBA72**	100LA4	**BA72**	182/184TC
79.0	1.6	2240	22.19	3494	1468	734	**CBA72**	100LA4	**BA72**	182/184TC
64.0	1.3	2771	27.45	3494	1576	788	**CBA72**	100LA4	**BA72**	182/184TC
53.0	1.0	3335	33.04	3494	1676	838	**CBA72**	100LA4	**BA72**	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
306.0	2.4	994	5.71	2413	1617	462	**CB063**	112MA4	**PB063**	182/184TC

5.1 B/BA GEARED MOTORS

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
254.0	2.4	1196	6.88	2829	1705	487	**CB063**	112MA4	**PB063**	182/184TC
239.0	2.3	1273	7.32	2912	1735	496	**CB063**	112MA4	**PB063**	182/184TC
191.0	2.4	1593	9.16	3827	1844	527	**CB063**	112MA4	**PB063**	182/184TC
171.0	2.4	1785	10.26	4326	1900	543	**CB063**	112MA4	**PB063**	182/184TC
159.0	2.3	1917	11.03	4493	1936	553	**CB063**	112MA4	**PB063**	182/184TC
142.0	2.2	2148	12.35	4825	1992	569	**CB063**	112MA4	**PB063**	182/184TC
133.0	2.1	2287	13.15	4909	2024	578	**CB063**	112MA4	**PB063**	182/184TC
115.0	1.9	2639	15.18	4909	2095	599	**CB063**	112MA4	**PB063**	182/184TC
103.0	1.7	2956	17.00	4992	2151	615	**CB063**	112MA4	**PB063**	182/184TC
78.0	1.3	3894	22.39	4992	2283	652	**CB063**	112MA4	**PB063**	182/184TC
67.0	1.1	4537	26.09	4992	2352	672	**CB063**	112MA4	**PB063**	182/184TC
62.0	1.0	4874	28.03	4992	2383	681	**CB063**	112MA4	**PB063**	182/184TC
224.0	3.1	1358	7.81	4160	2770	792	**CB083**	112MA4	**PB083**	182/184TC
203.0	3.3	1499	8.62	4992	2853	815	**CB083**	112MA4	**PB083**	182/184TC
167.0	3.0	1825	10.49	5408	3023	864	**CB083**	112MA4	**PB083**	182/184TC
151.0	3.1	2015	11.59	6240	3112	889	**CB083**	112MA4	**PB083**	182/184TC
121.0	2.7	2509	14.43	6739	3313	947	**CB083**	112MA4	**PB083**	182/184TC
105.0	2.5	2886	16.60	7072	3444	984	**CB083**	112MA4	**PB083**	182/184TC
96.0	2.2	3186	18.32	7072	3539	1011	**CB083**	112MA4	**PB083**	182/184TC
77.0	1.8	3968	22.82	7072	3752	1072	**CB083**	112MA4	**PB083**	182/184TC
66.0	1.5	4645	26.71	7072	3907	1116	**CB083**	112MA4	**PB083**	182/184TC
59.0	1.4	5129	29.50	7072	4005	1144	**CB083**	112MA4	**PB083**	182/184TC
55.0	1.3	5529	31.80	7072	4047	1165	**CB083**	112MA4	**PB083**	182/184TC
51.0	1.2	5997	34.49	7072	4047	1188	**CB083**	112MA4	**PB083**	182/184TC
44.0	1.0	6885	39.60	7072	4047	1226	**CB083**	112MA4	**PB083**	182/184TC
145.0	4.0	2095	12.05	8320	3914	1118	**CB103**	112MA4	**PB103**	182/184TC
117.0	3.8	2606	14.99	9984	4183	1195	**CB103**	112MA4	**PB103**	182/184TC
101.0	3.9	3003	17.27	11648	4366	1247	**CB103**	112MA4	**PB103**	182/184TC
92.0	3.5	3313	19.06	11648	4496	1285	**CB103**	112MA4	**PB103**	182/184TC
74.0	2.8	4121	23.70	11648	4795	1370	**CB103**	112MA4	**PB103**	182/184TC
66.0	2.7	4610	26.51	12480	4946	1415	**CB103**	112MA4	**PB103**	182/184TC
57.0	2.5	5313	30.55	13312	4946	1474	**CB103**	112MA4	**PB103**	182/184TC
53.0	2.5	5750	33.07	14143	4946	1507	**CB103**	112MA4	**PB103**	182/184TC
49.0	2.3	6237	35.87	14143	4946	1541	**CB103**	112MA4	**PB103**	182/184TC
43.0	2.0	7151	41.12	14143	4946	1600	**CB103**	112MA4	**PB103**	182/184TC
39.0	1.8	7757	44.61	14143	4946	1636	**CB103**	112MA4	**PB103**	182/184TC
37.0	1.7	8222	47.28	14143	4946	1661	**CB103**	112MA4	**PB103**	182/184TC
35.0	1.6	8736	50.24	14143	4946	1688	**CB103**	112MA4	**PB103**	182/184TC
33.0	1.5	9219	53.02	14143	4946	1712	**CB103**	112MA4	**PB103**	182/184TC
30.0	1.4	10173	58.50	14143	4946	1755	**CB103**	112MA4	**PB103**	182/184TC
27.0	1.3	11282	64.89	14143	4946	1801	**CB103**	112MA4	**PB103**	182/184TC

5.1 B/BA GEARED MOTORS

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
26.0	1.2	11924	68.58	14143	4946	1826	**CB103**	112MA4	**PB103**	182/184TC
24.0	1.1	12651	72.76	14143	4946	1852	**CB103**	112MA4	**PB103**	182/184TC
22.0	1.0	13723	78.92	14143	4946	1888	**CB103**	112MA4	**PB103**	182/184TC
21.0	1.0	14546	83.66	14975	4946	1913	**CB103**	112MA4	**PB103**	182/184TC
50.0	3.9	6031	34.68	23295	6744	2140	**CB123**	112MA4	**PB123**	182/184TC
43.0	3.3	7047	40.53	23295	6744	2231	**CB123**	112MA4	**PB123**	182/184TC
39.0	3.2	7806	44.89	24959	6744	2291	**CB123**	112MA4	**PB123**	182/184TC
35.0	3.1	8660	49.80	26623	6744	2352	**CB123**	112MA4	**PB123**	182/184TC
32.0	2.8	9442	54.30	26623	6744	2404	**CB123**	112MA4	**PB123**	182/184TC
29.0	2.6	10321	59.36	26623	6744	2456	**CB123**	112MA4	**PB123**	182/184TC
28.0	2.5	10882	62.59	27455	6744	2487	**CB123**	112MA4	**PB123**	182/184TC
25.0	2.3	12073	69.43	27455	6744	2548	**CB123**	112MA4	**PB123**	182/184TC
24.0	2.3	12940	74.42	29119	6744	2588	**CB123**	112MA4	**PB123**	182/184TC
22.0	2.1	13917	80.04	29119	6744	2630	**CB123**	112MA4	**PB123**	182/184TC
19.0	1.9	15626	89.87	29119	6744	2694	**CB123**	112MA4	**PB123**	182/184TC
18.0	1.7	17335	99.70	29119	6744	2751	**CB123**	112MA4	**PB123**	182/184TC
16.0	1.6	18545	106.65	29119	6744	2786	**CB123**	112MA4	**PB123**	182/184TC
15.0	1.4	20796	119.60	29119	6744	2843	**CB123**	112MA4	**PB123**	182/184TC
13.0	1.3	22598	129.96	29119	6744	2883	**CB123**	112MA4	**PB123**	182/184TC
12.0	1.2	25113	144.43	29119	6744	2929	**CB123**	112MA4	**PB123**	182/184TC
11.0	1.0	27860	160.23	29119	6744	2970	**CB123**	112MA4	**PB123**	182/184TC
27.0	3.7	11282	64.88	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
25.0	3.4	12247	70.43	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
23.0	3.1	13409	77.12	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
20.0	2.8	14874	85.54	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
19.0	2.5	16367	94.13	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
17.0	2.3	18402	105.83	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
16.0	2.1	19464	111.94	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
14.0	1.9	21668	124.62	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
13.0	1.8	23724	136.44	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
12.0	1.6	26011	149.59	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
11.0	1.4	28956	166.53	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
9.3	1.3	32557	187.24	41599	8990	8990	**CB143**	112MA4	**PB143**	182/184TC
14.0	3.1	21540	123.88	66558	14613	14613	**-**	-	**PB153**	182/184TC
12.0	2.6	25953	149.26	66558	14613	14613	**-**	-	**PB153**	182/184TC
11.0	2.3	28762	165.42	66558	14613	14613	**-**	-	**PB153**	182/184TC
209.0	1.9	1534	8.36	2912	1060	530	**CBA72**	112MA4	**BA72**	182/184TC
174.0	1.6	1846	10.06	2912	1128	564	**CBA72**	112MA4	**BA72**	182/184TC
141.0	1.3	2284	12.44	2912	1210	605	**CBA72**	112MA4	**BA72**	182/184TC
117.0	1.3	2736	14.91	3494	1285	643	**CBA72**	112MA4	**BA72**	182/184TC
98.0	1.1	3293	17.94	3494	1367	684	**CBA72**	112MA4	**BA72**	182/184TC

5.1 B/BA GEARED MOTORS

7.5 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
224.0	2.2	1867	7.81	4160	2718	777	**CB083**	132S4	**PB083**	213/215TC
203.0	2.4	2062	8.62	4992	2796	799	**CB083**	132S4	**PB083**	213/215TC
167.0	2.2	2509	10.49	5408	2953	844	**CB083**	132S4	**PB083**	213/215TC
151.0	2.3	2770	11.59	6240	3034	867	**CB083**	132S4	**PB083**	213/215TC
121.0	2.0	3450	14.43	6739	3216	919	**CB083**	132S4	**PB083**	213/215TC
105.0	1.8	3968	16.60	7072	3333	952	**CB083**	132S4	**PB083**	213/215TC
96.0	1.6	4381	18.32	7072	3416	976	**CB083**	132S4	**PB083**	213/215TC
77.0	1.3	5456	22.82	7072	3599	1028	**CB083**	132S4	**PB083**	213/215TC
66.0	1.1	6387	26.71	7072	3728	1065	**CB083**	132S4	**PB083**	213/215TC
59.0	1.0	7052	29.50	7072	3807	1088	**CB083**	132S4	**PB083**	213/215TC
215.0	3.4	1943	8.13	6656	3425	979	**CB103**	132S4	**PB103**	213/215TC
195.0	3.5	2144	8.97	7488	3529	1008	**CB103**	132S4	**PB103**	213/215TC
160.0	3.2	2611	10.92	8320	3745	1070	**CB103**	132S4	**PB103**	213/215TC
145.0	2.9	2881	12.05	8320	3857	1102	**CB103**	132S4	**PB103**	213/215TC
117.0	2.8	3583	14.99	9984	4112	1175	**CB103**	132S4	**PB103**	213/215TC
101.0	2.8	4129	17.27	11648	4284	1224	**CB103**	132S4	**PB103**	213/215TC
92.0	2.6	4556	19.06	11648	4406	1259	**CB103**	132S4	**PB103**	213/215TC
74.0	2.1	5666	23.70	11648	4682	1338	**CB103**	132S4	**PB103**	213/215TC
66.0	2.0	6339	26.51	12480	4827	1379	**CB103**	132S4	**PB103**	213/215TC
57.0	1.8	7305	30.55	13312	4946	1432	**CB103**	132S4	**PB103**	213/215TC
53.0	1.8	7906	33.07	14143	4946	1462	**CB103**	132S4	**PB103**	213/215TC
49.0	1.6	8576	35.87	14143	4946	1493	**CB103**	132S4	**PB103**	213/215TC
43.0	1.4	9832	41.12	14143	4946	1544	**CB103**	132S4	**PB103**	213/215TC
39.0	1.3	10665	44.61	14143	4946	1575	**CB103**	132S4	**PB103**	213/215TC
37.0	1.3	11305	47.28	14143	4946	1597	**CB103**	132S4	**PB103**	213/215TC
35.0	1.2	12012	50.24	14143	4946	1620	**CB103**	132S4	**PB103**	213/215TC
33.0	1.1	12677	53.02	14143	4946	1640	**CB103**	132S4	**PB103**	213/215TC
30.0	1.0	13987	58.50	14143	4946	1676	**CB103**	132S4	**PB103**	213/215TC
68.0	3.8	6190	25.89	23295	6711	1917	**CB123**	132S4	**PB123**	213/215TC
64.0	3.5	6577	27.51	23295	6744	1948	**CB123**	132S4	**PB123**	213/215TC
57.0	3.2	7362	30.79	23295	6744	2005	**CB123**	132S4	**PB123**	213/215TC
56.0	3.1	7475	31.26	23295	6744	2012	**CB123**	132S4	**PB123**	213/215TC
50.0	2.8	8292	34.68	23295	6744	2065	**CB123**	132S4	**PB123**	213/215TC
43.0	2.4	9690	40.53	23295	6744	2143	**CB123**	132S4	**PB123**	213/215TC
39.0	2.3	10733	44.89	24959	6744	2193	**CB123**	132S4	**PB123**	213/215TC
35.0	2.2	11907	49.80	26623	6744	2244	**CB123**	132S4	**PB123**	213/215TC
32.0	2.1	12982	54.30	26623	6744	2286	**CB123**	132S4	**PB123**	213/215TC
29.0	1.9	14191	59.36	26623	6744	2327	**CB123**	132S4	**PB123**	213/215TC
28.0	1.8	14963	62.59	27455	6744	2351	**CB123**	132S4	**PB123**	213/215TC
25.0	1.7	16600	69.43	27455	6744	2397	**CB123**	132S4	**PB123**	213/215TC
24.0	1.6	17792	74.42	29119	6744	2426	**CB123**	132S4	**PB123**	213/215TC

5.1 B/BA GEARED MOTORS

7.5 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
22.0	1.5	19136	80.04	29119	6744	2456	**CB123**	132S4	**PB123**	213/215TC
19.0	1.4	21485	89.87	29119	6744	2499	**CB123**	132S4	**PB123**	213/215TC
18.0	1.2	23836	99.70	29119	6744	2534	**CB123**	132S4	**PB123**	213/215TC
16.0	1.1	25499	106.65	29119	6744	2554	**CB123**	132S4	**PB123**	213/215TC
15.0	1.0	28594	119.60	29119	6744	2583	**CB123**	132S4	**PB123**	213/215TC
40.0	3.8	10558	44.16	39935	8375	8375	**CB143**	132S4	**PB143**	213/215TC
36.0	3.6	11560	48.35	41599	8570	8570	**CB143**	132S4	**PB143**	213/215TC
33.0	3.3	12709	53.16	41599	8775	8775	**CB143**	132S4	**PB143**	213/215TC
32.0	3.2	13060	54.63	41599	8833	8833	**CB143**	132S4	**PB143**	213/215TC
30.0	2.9	14110	59.02	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
27.0	2.7	15512	64.88	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
25.0	2.5	16840	70.43	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
23.0	2.3	18437	77.12	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
20.0	2.0	20452	85.54	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
19.0	1.8	22504	94.13	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
17.0	1.6	25302	105.83	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
16.0	1.6	26763	111.94	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
14.0	1.4	29794	124.62	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
13.0	1.3	32620	136.44	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
12.0	1.2	35765	149.59	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
11.0	1.0	39815	166.53	41599	8990	8990	**CB143**	132S4	**PB143**	213/215TC
25.0	3.9	17010	71.15	66558	14613	14613	**-**	-	**PB153**	213/215TC
23.0	3.6	18463	77.22	66558	14613	14613	**-**	-	**PB153**	213/215TC
21.0	3.3	20056	83.89	66558	14613	14613	**-**	-	**PB153**	213/215TC
20.0	3.2	20956	87.65	66558	14613	14613	**-**	-	**PB153**	213/215TC
19.0	3.0	22246	93.05	66558	14613	14613	**-**	-	**PB153**	213/215TC
17.0	2.7	24653	103.12	66558	14613	14613	**-**	-	**PB153**	213/215TC
14.0	2.2	29617	123.88	66558	14613	14613	**-**	-	**PB153**	213/215TC
13.0	2.1	32101	134.27	66558	14613	14613	**-**	-	**PB153**	213/215TC
12.0	1.9	35686	149.26	66558	14613	14613	**-**	-	**PB153**	213/215TC
11.0	1.7	39548	165.42	66558	14613	14613	**-**	-	**PB153**	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
224.0	1.6	2546	7.81	4160	2648	757	**CB083**	132MA4	**PB083**	213/215TC
203.0	1.8	2811	8.62	4992	2719	777	**CB083**	132MA4	**PB083**	213/215TC
167.0	1.6	3421	10.49	5408	2859	817	**CB083**	132MA4	**PB083**	213/215TC
151.0	1.7	3778	11.59	6240	2931	837	**CB083**	132MA4	**PB083**	213/215TC
121.0	1.4	4704	14.43	6739	3087	882	**CB083**	132MA4	**PB083**	213/215TC
105.0	1.3	5410	16.60	7072	3185	910	**CB083**	132MA4	**PB083**	213/215TC

5.1 B/BA GEARED MOTORS

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
96.0	1.2	5974	18.32	7072	3253	929	**CB083**	132MA4	**PB083**	213/215TC
215.0	2.5	2650	8.13	6656	3373	964	**CB103**	132MA4	**PB103**	213/215TC
195.0	2.6	2924	8.97	7488	3472	992	**CB103**	132MA4	**PB103**	213/215TC
160.0	2.3	3560	10.92	8320	3676	1050	**CB103**	132MA4	**PB103**	213/215TC
145.0	2.1	3929	12.05	8320	3780	1080	**CB103**	132MA4	**PB103**	213/215TC
117.0	2.0	4886	14.99	9984	4017	1148	**CB103**	132MA4	**PB103**	213/215TC
101.0	2.1	5630	17.27	11648	4174	1193	**CB103**	132MA4	**PB103**	213/215TC
92.0	1.9	6213	19.06	11648	4285	1224	**CB103**	132MA4	**PB103**	213/215TC
74.0	1.5	7726	23.70	11648	4531	1295	**CB103**	132MA4	**PB103**	213/215TC
66.0	1.4	8644	26.51	12480	4659	1331	**CB103**	132MA4	**PB103**	213/215TC
57.0	1.3	9962	30.55	13312	4819	1377	**CB103**	132MA4	**PB103**	213/215TC
53.0	1.3	10781	33.07	14143	4907	1402	**CB103**	132MA4	**PB103**	213/215TC
49.0	1.2	11694	35.87	14143	4946	1428	**CB103**	132MA4	**PB103**	213/215TC
43.0	1.1	13407	41.12	14143	4946	1470	**CB103**	132MA4	**PB103**	213/215TC
126.0	3.9	4514	13.84	17471	5507	1573	**CB123**	132MA4	**PB123**	213/215TC
114.0	3.5	5015	15.38	17471	5664	1618	**CB123**	132MA4	**PB123**	213/215TC
94.0	3.0	6056	18.58	18303	5948	1699	**CB123**	132MA4	**PB123**	213/215TC
85.0	3.1	6719	20.61	20799	6105	1744	**CB123**	132MA4	**PB123**	213/215TC
77.0	3.1	7427	22.78	23295	6256	1787	**CB123**	132MA4	**PB123**	213/215TC
68.0	2.8	8440	25.89	23295	6448	1842	**CB123**	132MA4	**PB123**	213/215TC
64.0	2.6	8969	27.51	23295	6538	1868	**CB123**	132MA4	**PB123**	213/215TC
57.0	2.3	10039	30.79	23295	6704	1915	**CB123**	132MA4	**PB123**	213/215TC
56.0	2.3	10193	31.26	23295	6726	1922	**CB123**	132MA4	**PB123**	213/215TC
50.0	2.1	11308	34.68	23295	6744	1964	**CB123**	132MA4	**PB123**	213/215TC
43.0	1.8	13214	40.53	23295	6744	2025	**CB123**	132MA4	**PB123**	213/215TC
39.0	1.7	14636	44.89	24959	6744	2063	**CB123**	132MA4	**PB123**	213/215TC
35.0	1.6	16237	49.80	26623	6744	2100	**CB123**	132MA4	**PB123**	213/215TC
32.0	1.5	17703	54.30	26623	6744	2128	**CB123**	132MA4	**PB123**	213/215TC
29.0	1.4	19352	59.36	26623	6744	2155	**CB123**	132MA4	**PB123**	213/215TC
28.0	1.3	20404	62.59	27455	6744	2170	**CB123**	132MA4	**PB123**	213/215TC
25.0	1.2	22636	69.43	27455	6744	2196	**CB123**	132MA4	**PB123**	213/215TC
24.0	1.2	24262	74.42	29119	6744	2210	**CB123**	132MA4	**PB123**	213/215TC
22.0	1.1	26095	80.04	29119	6744	2223	**CB123**	132MA4	**PB123**	213/215TC
58.0	4.0	9796	30.05	39103	7320	7320	**CB143**	132MA4	**PB143**	213/215TC
53.0	3.6	10762	33.01	39103	7493	7493	**CB143**	132MA4	**PB143**	213/215TC
48.0	3.3	11956	36.67	39935	7687	7687	**CB143**	132MA4	**PB143**	213/215TC
43.0	3.0	13135	40.29	39935	7859	7859	**CB143**	132MA4	**PB143**	213/215TC
40.0	2.8	14398	44.16	39935	8025	8025	**CB143**	132MA4	**PB143**	213/215TC
36.0	2.6	15764	48.35	41599	8187	8187	**CB143**	132MA4	**PB143**	213/215TC
33.0	2.4	17331	53.16	41599	8353	8353	**CB143**	132MA4	**PB143**	213/215TC
32.0	2.3	17810	54.63	41599	8400	8400	**CB143**	132MA4	**PB143**	213/215TC

5.1 B/BA GEARED MOTORS

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
30.0	2.2	19241	59.02	41599	8531	8531	**CB143**	132MA4	**PB143**	213/215TC
27.0	2.0	21153	64.88	41599	8687	8687	**CB143**	132MA4	**PB143**	213/215TC
25.0	1.8	22963	70.43	41599	8817	8817	**CB143**	132MA4	**PB143**	213/215TC
23.0	1.7	25142	77.12	41599	8953	8953	**CB143**	132MA4	**PB143**	213/215TC
20.0	1.5	27889	85.54	41599	8990	8990	**CB143**	132MA4	**PB143**	213/215TC
19.0	1.4	30687	94.13	41599	8990	8990	**CB143**	132MA4	**PB143**	213/215TC
17.0	1.2	34503	105.83	41599	8990	8990	**CB143**	132MA4	**PB143**	213/215TC
16.0	1.1	36494	111.94	41599	8990	8990	**CB143**	132MA4	**PB143**	213/215TC
14.0	1.0	40628	124.62	41599	8990	8990	**CB143**	132MA4	**PB143**	213/215TC
32.0	3.7	17814	54.64	66558	13443	13443	**-**	-	**PB153**	213/215TC
31.0	3.6	18672	57.27	66558	13634	13634	**-**	-	**PB153**	213/215TC
29.0	3.4	19862	60.92	66558	13887	13887	**-**	-	**PB153**	213/215TC
28.0	3.2	20693	63.47	66558	14058	14058	**-**	-	**PB153**	213/215TC
25.0	2.9	23195	71.15	66558	14540	14540	**-**	-	**PB153**	213/215TC
23.0	2.6	25176	77.22	66558	14613	14613	**-**	-	**PB153**	213/215TC
21.0	2.4	27349	83.89	66558	14613	14613	**-**	-	**PB153**	213/215TC
20.0	2.3	28577	87.65	66558	14613	14613	**-**	-	**PB153**	213/215TC
19.0	2.2	30335	93.05	66558	14613	14613	**-**	-	**PB153**	213/215TC
17.0	2.0	33618	103.12	66558	14613	14613	**-**	-	**PB153**	213/215TC
14.0	1.6	40387	123.88	66558	14613	14613	**-**	-	**PB153**	213/215TC
13.0	1.5	43774	134.27	66558	14613	14613	**-**	-	**PB153**	213/215TC
12.0	1.4	48663	149.26	66558	14613	14613	**-**	-	**PB153**	213/215TC
11.0	1.2	53929	165.42	66558	14613	14613	**-**	-	**PB153**	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
224.0	1.1	3734	7.81	4160	2526	722	**CB083**	132MC4	**-**	-
203.0	1.2	4123	8.62	4992	2584	738	**CB083**	132MC4	**-**	-
167.0	1.1	5018	10.49	5408	2695	770	**CB083**	132MC4	**-**	-
151.0	1.1	5541	11.59	6240	2749	786	**CB083**	132MC4	**-**	-
215.0	1.7	3886	8.13	6656	3283	938	**CB103**	132MC4	**PB103**	254/256TC
195.0	1.7	4288	8.97	7488	3372	964	**CB103**	132MC4	**PB103**	254/256TC
160.0	1.6	5222	10.92	8320	3555	1016	**CB103**	132MC4	**PB103**	254/256TC
145.0	1.4	5762	12.05	8320	3646	1042	**CB103**	132MC4	**PB103**	254/256TC
117.0	1.4	7166	14.99	9984	3850	1100	**CB103**	132MC4	**PB103**	254/256TC
101.0	1.4	8258	17.27	11648	3982	1138	**CB103**	132MC4	**PB103**	254/256TC
92.0	1.3	9112	19.06	11648	4073	1164	**CB103**	132MC4	**PB103**	254/256TC
74.0	1.0	11332	23.70	11648	4268	1219	**CB103**	132MC4	**PB103**	254/256TC
220.0	3.3	3809	7.97	12480	4574	1307	**CB123**	132MC4	**PB123**	254/256TC
182.0	3.3	4600	9.62	14975	4807	1373	**CB123**	132MC4	**PB123**	254/256TC

5.1 B/BA GEARED MOTORS

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
169.0	3.4	4941	10.33	16639	4896	1399	**CB123**	132MC4	**PB123**	254/256TC
140.0	2.8	5967	12.48	16639	5132	1466	**CB123**	132MC4	**PB123**	254/256TC
126.0	2.6	6620	13.84	17471	5261	1503	**CB123**	132MC4	**PB123**	254/256TC
114.0	2.4	7355	15.38	17471	5390	1540	**CB123**	132MC4	**PB123**	254/256TC
94.0	2.1	8882	18.58	18303	5618	1605	**CB123**	132MC4	**PB123**	254/256TC
85.0	2.1	9854	20.61	20799	5738	1640	**CB123**	132MC4	**PB123**	254/256TC
77.0	2.1	10893	22.78	23295	5851	1672	**CB123**	132MC4	**PB123**	254/256TC
68.0	1.9	12379	25.89	23295	5988	1711	**CB123**	132MC4	**PB123**	254/256TC
64.0	1.8	13154	27.51	23295	6050	1728	**CB123**	132MC4	**PB123**	254/256TC
57.0	1.6	14724	30.79	23295	6157	1759	**CB123**	132MC4	**PB123**	254/256TC
56.0	1.6	14949	31.26	23295	6170	1763	**CB123**	132MC4	**PB123**	254/256TC
50.0	1.4	16585	34.68	23295	6258	1788	**CB123**	132MC4	**PB123**	254/256TC
43.0	1.2	19380	40.53	23295	6368	1820	**CB123**	132MC4	**PB123**	254/256TC
39.0	1.2	21466	44.89	24959	6424	1835	**CB123**	132MC4	**PB123**	254/256TC
35.0	1.1	23814	49.80	26623	6464	1847	**CB123**	132MC4	**PB123**	254/256TC
32.0	1.0	25964	54.30	26623	6484	1852	**CB123**	132MC4	**PB123**	254/256TC
121.0	3.7	6926	14.49	25791	5808	5808	**CB143**	132MC4	**PB143**	254/256TC
103.0	3.3	8148	17.04	26623	6055	6055	**CB143**	132MC4	**PB143**	254/256TC
94.0	3.4	8921	18.66	29951	6193	6193	**CB143**	132MC4	**PB143**	254/256TC
83.0	3.3	10040	21.00	33279	6373	6373	**CB143**	132MC4	**PB143**	254/256TC
77.0	3.4	10889	22.77	36607	6495	6495	**CB143**	132MC4	**PB143**	254/256TC
68.0	3.1	12254	25.63	38271	6672	6672	**CB143**	132MC4	**PB143**	254/256TC
64.0	2.9	13122	27.44	38271	6772	6772	**CB143**	132MC4	**PB143**	254/256TC
58.0	2.7	14367	30.05	39103	6903	6903	**CB143**	132MC4	**PB143**	254/256TC
53.0	2.5	15784	33.01	39103	7036	7036	**CB143**	132MC4	**PB143**	254/256TC
48.0	2.3	17536	36.67	39935	7178	7178	**CB143**	132MC4	**PB143**	254/256TC
43.0	2.1	19265	40.29	39935	7300	7300	**CB143**	132MC4	**PB143**	254/256TC
40.0	1.9	21117	44.16	39935	7413	7413	**CB143**	132MC4	**PB143**	254/256TC
36.0	1.8	23120	48.35	41599	7517	7517	**CB143**	132MC4	**PB143**	254/256TC
33.0	1.6	25418	53.16	41599	7616	7616	**CB143**	132MC4	**PB143**	254/256TC
32.0	1.6	26121	54.63	41599	7643	7643	**CB143**	132MC4	**PB143**	254/256TC
30.0	1.5	28219	59.02	41599	7713	7713	**CB143**	132MC4	**PB143**	254/256TC
27.0	1.3	31025	64.88	41599	7787	7787	**CB143**	132MC4	**PB143**	254/256TC
25.0	1.2	33680	70.43	41599	7840	7840	**CB143**	132MC4	**PB143**	254/256TC
23.0	1.1	36875	77.12	41599	7883	7883	**CB143**	132MC4	**PB143**	254/256TC
20.0	1.0	40905	85.54	41599	7911	7911	**CB143**	132MC4	**PB143**	254/256TC
50.0	4.0	16744	35.02	66558	11538	11538	**-**	-	**PB153**	254/256TC
45.0	3.6	18556	38.81	66558	11894	11894	**-**	-	**PB153**	254/256TC
41.0	3.3	20224	42.30	66558	12199	12199	**-**	-	**PB153**	254/256TC
37.0	2.9	22728	47.53	66558	12619	12619	**-**	-	**PB153**	254/256TC
35.0	2.8	24177	50.56	66558	12845	12845	**-**	-	**PB153**	254/256TC

5.1 B/BA GEARED MOTORS

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
32.0	2.5	26127	54.64	66558	13133	13133	-	-	**PB153**	254/256TC
31.0	2.4	27386	57.27	66558	13309	13309	-	-	**PB153**	254/256TC
29.0	2.3	29131	60.92	66558	13542	13542	-	-	**PB153**	254/256TC
28.0	2.2	30350	63.47	66558	13698	13698	-	-	**PB153**	254/256TC
25.0	2.0	34020	71.15	66558	14136	14136	-	-	**PB153**	254/256TC
23.0	1.8	36925	77.22	66558	14455	14455	-	-	**PB153**	254/256TC
21.0	1.7	40112	83.89	66558	14613	14613	-	-	**PB153**	254/256TC
20.0	1.6	41912	87.65	66558	14613	14613	-	-	**PB153**	254/256TC
19.0	1.5	44492	93.05	66558	14613	14613	-	-	**PB153**	254/256TC
17.0	1.3	49307	103.12	66558	14613	14613	-	-	**PB153**	254/256TC
14.0	1.1	59234	123.88	66558	14613	14613	-	-	**PB153**	254/256TC
13.0	1.0	64202	134.27	66558	14613	14613	-	-	**PB153**	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
215.0	1.3	5299	8.13	6656	3180	908	-	-	**PB103**	254/256TC
195.0	1.3	5847	8.97	7488	3259	931	-	-	**PB103**	254/256TC
160.0	1.2	7121	10.92	8320	3416	976	-	-	**PB103**	254/256TC
145.0	1.1	7857	12.05	8320	3493	998	-	-	**PB103**	254/256TC
117.0	1.0	9771	14.99	9984	3660	1046	-	-	**PB103**	254/256TC
101.0	1.0	11261	17.27	11648	3763	1075	-	-	**PB103**	254/256TC
220.0	2.4	5194	7.97	12480	4412	1261	-	-	**PB123**	254/256TC
182.0	2.4	6272	9.62	14975	4612	1318	-	-	**PB123**	254/256TC
169.0	2.5	6738	10.33	16639	4686	1339	-	-	**PB123**	254/256TC
140.0	2.0	8137	12.48	16639	4878	1394	-	-	**PB123**	254/256TC
126.0	1.9	9027	13.84	17471	4980	1423	-	-	**PB123**	254/256TC
114.0	1.7	10030	15.38	17471	5078	1451	-	-	**PB123**	254/256TC
94.0	1.5	12112	18.58	18303	5241	1497	-	-	**PB123**	254/256TC
85.0	1.5	13437	20.61	20799	5320	1520	-	-	**PB123**	254/256TC
77.0	1.6	14854	22.78	23295	5389	1540	-	-	**PB123**	254/256TC
68.0	1.4	16881	25.89	23295	5462	1561	-	-	**PB123**	254/256TC
64.0	1.3	17938	27.51	23295	5491	1569	-	-	**PB123**	254/256TC
57.0	1.2	20079	30.79	23295	5532	1580	-	-	**PB123**	254/256TC
56.0	1.1	20385	31.26	23295	5536	1582	-	-	**PB123**	254/256TC
50.0	1.0	22615	34.68	23295	5554	1587	-	-	**PB123**	254/256TC
161.0	3.5	7068	10.84	24959	5202	5202	-	-	**PB143**	254/256TC
147.0	3.3	7738	11.87	25791	5320	5320	-	-	**PB143**	254/256TC
121.0	2.7	9445	14.49	25791	5579	5579	-	-	**PB143**	254/256TC
103.0	2.4	11111	17.04	26623	5785	5785	-	-	**PB143**	254/256TC
94.0	2.5	12165	18.66	29951	5898	5898	-	-	**PB143**	254/256TC

5.1 B/BA GEARED MOTORS

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
83.0	2.4	13691	21.00	33279	6040	6040	-	-	**PB143**	254/256TC
77.0	2.5	14849	22.77	36607	6134	6134	-	-	**PB143**	254/256TC
68.0	2.3	16710	25.63	38271	6265	6265	-	-	**PB143**	254/256TC
64.0	2.1	17894	27.44	38271	6337	6337	-	-	**PB143**	254/256TC
58.0	2.0	19591	30.05	39103	6427	6427	-	-	**PB143**	254/256TC
53.0	1.8	21524	33.01	39103	6512	6512	-	-	**PB143**	254/256TC
48.0	1.7	23912	36.67	39935	6597	6597	-	-	**PB143**	254/256TC
43.0	1.5	26271	40.29	39935	6662	6662	-	-	**PB143**	254/256TC
40.0	1.4	28795	44.16	39935	6713	6713	-	-	**PB143**	254/256TC
36.0	1.3	31527	48.35	41599	6750	6750	-	-	**PB143**	254/256TC
33.0	1.2	34661	53.16	41599	6774	6774	-	-	**PB143**	254/256TC
32.0	1.2	35619	54.63	41599	6777	6777	-	-	**PB143**	254/256TC
30.0	1.1	38481	59.02	41599	6778	6778	-	-	**PB143**	254/256TC
73.0	3.6	15557	23.86	55742	10122	10122	-	-	**PB153**	254/256TC
69.0	3.4	16423	25.19	56574	10285	10285	-	-	**PB153**	254/256TC
62.0	3.6	18408	28.23	66558	10633	10633	-	-	**PB153**	254/256TC
58.0	3.4	19789	30.35	66558	10858	10858	-	-	**PB153**	254/256TC
52.0	3.0	21930	33.63	66558	11182	11182	-	-	**PB153**	254/256TC
50.0	2.9	22833	35.02	66558	11311	11311	-	-	**PB153**	254/256TC
45.0	2.6	25304	38.81	66558	11643	11643	-	-	**PB153**	254/256TC
41.0	2.4	27579	42.30	66558	11925	11925	-	-	**PB153**	254/256TC
37.0	2.1	30993	47.53	66558	12311	12311	-	-	**PB153**	254/256TC
35.0	2.0	32969	50.56	66558	12518	12518	-	-	**PB153**	254/256TC
32.0	1.9	35628	54.64	66558	12779	12779	-	-	**PB153**	254/256TC
31.0	1.8	37345	57.27	66558	12938	12938	-	-	**PB153**	254/256TC
29.0	1.7	39725	60.92	66558	13147	13147	-	-	**PB153**	254/256TC
28.0	1.6	41386	63.47	66558	13287	13287	-	-	**PB153**	254/256TC
25.0	1.4	46391	71.15	66558	13675	13675	-	-	**PB153**	254/256TC
23.0	1.3	50352	77.22	66558	13954	13954	-	-	**PB153**	254/256TC
21.0	1.2	54698	83.89	66558	14235	14235	-	-	**PB153**	254/256TC
20.0	1.2	57153	87.65	66558	14384	14384	-	-	**PB153**	254/256TC
19.0	1.1	60670	93.05	66558	14585	14585	-	-	**PB153**	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
220.0	1.9	6406	7.97	12480	4270	1220	-	-	**PB123**	284/286TC
182.0	1.9	7736	9.62	14975	4441	1269	-	-	**PB123**	284/286TC
169.0	2.0	8311	10.33	16639	4503	1287	-	-	**PB123**	284/286TC
140.0	1.7	10036	12.48	16639	4657	1330	-	-	**PB123**	284/286TC
126.0	1.6	11134	13.84	17471	4734	1352	-	-	**PB123**	284/286TC

5.1 B/BA GEARED MOTORS

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
114.0	1.4	12370	15.38	17471	4805	1373	-	-	**PB123**	284/286TC
94.0	1.2	14938	18.58	18303	4911	1403	-	-	**PB123**	284/286TC
85.0	1.3	16573	20.61	20799	4954	1415	-	-	**PB123**	284/286TC
77.0	1.3	18320	22.78	23295	4984	1424	-	-	**PB123**	284/286TC
68.0	1.1	20820	25.89	23295	5003	1429	-	-	**PB123**	284/286TC
64.0	1.1	22123	27.51	23295	5002	1429	-	-	**PB123**	284/286TC
161.0	2.9	8717	10.84	24959	5052	5052	-	-	**PB143**	284/286TC
147.0	2.7	9544	11.87	25791	5156	5156	-	-	**PB143**	284/286TC
121.0	2.2	11649	14.49	25791	5378	5378	-	-	**PB143**	284/286TC
103.0	1.9	13704	17.04	26623	5549	5549	-	-	**PB143**	284/286TC
94.0	2.0	15004	18.66	29951	5639	5639	-	-	**PB143**	284/286TC
83.0	2.0	16885	21.00	33279	5749	5749	-	-	**PB143**	284/286TC
77.0	2.0	18313	22.77	36607	5819	5819	-	-	**PB143**	284/286TC
68.0	1.9	20610	25.63	38271	5910	5910	-	-	**PB143**	284/286TC
64.0	1.7	22069	27.44	38271	5957	5957	-	-	**PB143**	284/286TC
58.0	1.6	24162	30.05	39103	6010	6010	-	-	**PB143**	284/286TC
53.0	1.5	26546	33.01	39103	6055	6055	-	-	**PB143**	284/286TC
48.0	1.4	29492	36.67	39935	6089	6089	-	-	**PB143**	284/286TC
43.0	1.2	32401	40.29	39935	6103	6103	-	-	**PB143**	284/286TC
40.0	1.1	35514	44.16	39935	6100	6100	-	-	**PB143**	284/286TC
36.0	1.1	38884	48.35	41599	6080	6080	-	-	**PB143**	284/286TC
138.0	3.7	10167	12.64	37439	8281	8281	-	-	**PB153**	284/286TC
125.0	3.7	11267	14.01	41599	8542	8542	-	-	**PB153**	284/286TC
114.0	3.4	12384	15.40	41599	8787	8787	-	-	**PB153**	284/286TC
94.0	3.3	14922	18.56	49918	9286	9286	-	-	**PB153**	284/286TC
85.0	3.3	16537	20.56	54078	9568	9568	-	-	**PB153**	284/286TC
73.0	2.9	19186	23.86	55742	9987	9987	-	-	**PB153**	284/286TC
69.0	2.8	20255	25.19	56574	10142	10142	-	-	**PB153**	284/286TC
62.0	2.9	22703	28.23	66558	10473	10473	-	-	**PB153**	284/286TC
58.0	2.7	24406	30.35	66558	10686	10686	-	-	**PB153**	284/286TC
52.0	2.5	27047	33.63	66558	10992	10992	-	-	**PB153**	284/286TC
50.0	2.4	28161	35.02	66558	11113	11113	-	-	**PB153**	284/286TC
45.0	2.1	31208	38.81	66558	11423	11423	-	-	**PB153**	284/286TC
41.0	2.0	34014	42.30	66558	11685	11685	-	-	**PB153**	284/286TC
37.0	1.7	38225	47.53	66558	12042	12042	-	-	**PB153**	284/286TC
35.0	1.6	40662	50.56	66558	12231	12231	-	-	**PB153**	284/286TC
32.0	1.5	43941	54.64	66558	12469	12469	-	-	**PB153**	284/286TC
31.0	1.4	46058	57.27	66558	12613	12613	-	-	**PB153**	284/286TC
29.0	1.4	48994	60.92	66558	12802	12802	-	-	**PB153**	284/286TC
28.0	1.3	51043	63.47	66558	12927	12927	-	-	**PB153**	284/286TC
25.0	1.2	57215	71.15	66558	13272	13272	-	-	**PB153**	284/286TC

5.1 B/BA GEARED MOTORS

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
23.0	1.1	62101	77.22	66558	13516	13516	-	-	**PB153**	284/286TC
61.0	3.7	23161	28.80	84861	16800	14613	-	-	**PB163**	284/286TC
57.0	3.8	24868	30.92	95677	17152	14613	-	-	**PB163**	284/286TC
51.0	3.6	27546	34.25	99004	17666	14613	-	-	**PB163**	284/286TC
46.0	3.4	30287	37.66	102332	17985	14613	-	-	**PB163**	284/286TC
43.0	3.2	32692	40.65	105660	17985	14613	-	-	**PB163**	284/286TC
39.0	2.8	36262	45.09	99836	17985	14613	-	-	**PB163**	284/286TC
34.0	2.6	41014	51.00	108156	17985	14613	-	-	**PB163**	284/286TC
33.0	2.5	43128	53.63	108156	17985	14613	-	-	**PB163**	284/286TC
30.0	2.3	47419	58.97	108156	17985	14613	-	-	**PB163**	284/286TC
25.0	1.9	56113	69.78	108156	17985	14613	-	-	**PB163**	284/286TC
23.0	1.8	61696	76.72	108156	17985	14613	-	-	**PB163**	284/286TC
20.0	1.5	70396	87.54	108156	17985	14613	-	-	**PB163**	284/286TC
18.0	1.4	77400	96.25	108156	17985	14613	-	-	**PB163**	284/286TC
17.0	1.3	83580	103.93	108156	17985	14613	-	-	**PB163**	284/286TC
15.0	1.2	91897	114.27	108156	17985	14613	-	-	**PB163**	284/286TC
14.0	1.1	101559	126.29	108156	17985	14613	-	-	**PB163**	284/286TC

30 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
220.0	1.6	7618	7.97	12480	4129	1180	-	-	**PB123**	284/286TC
182.0	1.6	9200	9.62	14975	4270	1220	-	-	**PB123**	284/286TC
169.0	1.7	9883	10.33	16639	4319	1234	-	-	**PB123**	284/286TC
140.0	1.4	11935	12.48	16639	4435	1267	-	-	**PB123**	284/286TC
126.0	1.3	13240	13.84	17471	4488	1282	-	-	**PB123**	284/286TC
114.0	1.2	14711	15.38	17471	4532	1295	-	-	**PB123**	284/286TC
94.0	1.0	17765	18.58	18303	4581	1309	-	-	**PB123**	284/286TC
85.0	1.1	19708	20.61	20799	4588	1311	-	-	**PB123**	284/286TC
77.0	1.1	21786	22.78	23295	4579	1308	-	-	**PB123**	284/286TC
161.0	2.4	10366	10.84	24959	4902	4902	-	-	**PB143**	284/286TC
147.0	2.3	11349	11.87	25791	4991	4991	-	-	**PB143**	284/286TC
121.0	1.9	13853	14.49	25791	5177	5177	-	-	**PB143**	284/286TC
103.0	1.6	16297	17.04	26623	5313	5313	-	-	**PB143**	284/286TC
94.0	1.7	17843	18.66	29951	5380	5380	-	-	**PB143**	284/286TC
83.0	1.7	20080	21.00	33279	5458	5458	-	-	**PB143**	284/286TC
77.0	1.7	21778	22.77	36607	5503	5503	-	-	**PB143**	284/286TC
68.0	1.6	24509	25.63	38271	5555	5555	-	-	**PB143**	284/286TC
64.0	1.5	26244	27.44	38271	5576	5576	-	-	**PB143**	284/286TC
58.0	1.4	28734	30.05	39103	5594	5594	-	-	**PB143**	284/286TC
53.0	1.2	31568	33.01	39103	5597	5597	-	-	**PB143**	284/286TC

5.1 B/BA GEARED MOTORS

30 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
48.0	1.1	35071	36.67	39935	5580	5580	-	-	**PB143**	284/286TC
43.0	1.0	38531	40.29	39935	5544	5544	-	-	**PB143**	284/286TC
167.0	3.7	10034	10.49	37439	7764	7764	-	-	**PB153**	284/286TC
138.0	3.1	12090	12.64	37439	8210	8210	-	-	**PB153**	284/286TC
125.0	3.1	13399	14.01	41599	8463	8463	-	-	**PB153**	284/286TC
114.0	2.8	14727	15.40	41599	8700	8700	-	-	**PB153**	284/286TC
94.0	2.8	17745	18.56	49918	9180	9180	-	-	**PB153**	284/286TC
85.0	2.7	19666	20.56	54078	9452	9452	-	-	**PB153**	284/286TC
73.0	2.4	22816	23.86	55742	9852	9852	-	-	**PB153**	284/286TC
69.0	2.3	24087	25.19	56574	9999	9999	-	-	**PB153**	284/286TC
62.0	2.5	26998	28.23	66558	10313	10313	-	-	**PB153**	284/286TC
58.0	2.3	29023	30.35	66558	10514	10514	-	-	**PB153**	284/286TC
52.0	2.1	32164	33.63	66558	10801	10801	-	-	**PB153**	284/286TC
50.0	2.0	33488	35.02	66558	10914	10914	-	-	**PB153**	284/286TC
45.0	1.8	37113	38.81	66558	11203	11203	-	-	**PB153**	284/286TC
41.0	1.6	40449	42.30	66558	11445	11445	-	-	**PB153**	284/286TC
37.0	1.5	45457	47.53	66558	11772	11772	-	-	**PB153**	284/286TC
35.0	1.4	48354	50.56	66558	11945	11945	-	-	**PB153**	284/286TC
32.0	1.3	52254	54.64	66558	12159	12159	-	-	**PB153**	284/286TC
31.0	1.2	54772	57.27	66558	12289	12289	-	-	**PB153**	284/286TC
29.0	1.1	58263	60.92	66558	12457	12457	-	-	**PB153**	284/286TC
28.0	1.1	60700	63.47	66558	12567	12567	-	-	**PB153**	284/286TC
72.0	3.8	23117	24.17	87357	15790	14613	-	-	**PB163**	284/286TC
66.0	3.6	25417	26.58	92349	16229	14613	-	-	**PB163**	284/286TC
61.0	3.1	27542	28.80	84861	16605	14613	-	-	**PB163**	284/286TC
57.0	3.2	29573	30.92	95677	16943	14613	-	-	**PB163**	284/286TC
51.0	3.0	32758	34.25	99004	17435	14613	-	-	**PB163**	284/286TC
46.0	2.8	36017	37.66	102332	17897	14613	-	-	**PB163**	284/286TC
43.0	2.7	38877	40.65	105660	17985	14613	-	-	**PB163**	284/286TC
39.0	2.3	43122	45.09	99836	17985	14613	-	-	**PB163**	284/286TC
34.0	2.2	48773	51.00	108156	17985	14613	-	-	**PB163**	284/286TC
33.0	2.1	51287	53.63	108156	17985	14613	-	-	**PB163**	284/286TC
30.0	1.9	56390	58.97	108156	17985	14613	-	-	**PB163**	284/286TC
25.0	1.6	66728	69.78	108156	17985	14613	-	-	**PB163**	284/286TC
23.0	1.5	73368	76.72	108156	17985	14613	-	-	**PB163**	284/286TC
20.0	1.3	83714	87.54	108156	17985	14613	-	-	**PB163**	284/286TC
18.0	1.2	92044	96.25	108156	17985	14613	-	-	**PB163**	284/286TC
17.0	1.1	99393	103.93	108156	17985	14613	-	-	**PB163**	284/286TC

5.1 B/BA GEARED MOTORS

40 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
161.0	1.8	14135	10.84	24959	4558	4558	-	-	**PB143**	324/326TC
147.0	1.7	15476	11.87	25791	4615	4615	-	-	**PB143**	324/326TC
121.0	1.4	18890	14.49	25791	4718	4718	-	-	**PB143**	324/326TC
103.0	1.2	22223	17.04	26623	4772	4772	-	-	**PB143**	324/326TC
94.0	1.2	24331	18.66	29951	4789	4789	-	-	**PB143**	324/326TC
83.0	1.2	27381	21.00	33279	4792	4792	-	-	**PB143**	324/326TC
77.0	1.2	29698	22.77	36607	4781	4781	-	-	**PB143**	324/326TC
68.0	1.1	33421	25.63	38271	4742	4742	-	-	**PB143**	324/326TC
64.0	1.1	35787	27.44	38271	4706	4706	-	-	**PB143**	324/326TC
167.0	2.7	13683	10.49	37439	7628	7628	-	-	**PB153**	324/326TC
138.0	2.3	16487	12.64	37439	8046	8046	-	-	**PB153**	324/326TC
125.0	2.3	18271	14.01	41599	8281	8281	-	-	**PB153**	324/326TC
114.0	2.1	20083	15.40	41599	8500	8500	-	-	**PB153**	324/326TC
94.0	2.1	24198	18.56	49918	8940	8940	-	-	**PB153**	324/326TC
85.0	2.0	26817	20.56	54078	9185	9185	-	-	**PB153**	324/326TC
73.0	1.8	31113	23.86	55742	9542	9542	-	-	**PB153**	324/326TC
69.0	1.7	32846	25.19	56574	9673	9673	-	-	**PB153**	324/326TC
62.0	1.8	36816	28.23	66558	9948	9948	-	-	**PB153**	324/326TC
58.0	1.7	39577	30.35	66558	10121	10121	-	-	**PB153**	324/326TC
52.0	1.5	43860	33.63	66558	10365	10365	-	-	**PB153**	324/326TC
50.0	1.5	45666	35.02	66558	10460	10460	-	-	**PB153**	324/326TC
45.0	1.3	50608	38.81	66558	10700	10700	-	-	**PB153**	324/326TC
41.0	1.2	55157	42.30	66558	10897	10897	-	-	**PB153**	324/326TC
37.0	1.1	61987	47.53	66558	11156	11156	-	-	**PB153**	324/326TC
35.0	1.0	65938	50.56	66558	11289	11289	-	-	**PB153**	324/326TC
107.0	3.9	21369	16.39	82365	13824	13824	-	-	**PB163**	324/326TC
97.0	3.7	23495	18.02	86525	14204	14204	-	-	**PB163**	324/326TC
88.0	3.4	26025	19.96	89021	14621	14613	-	-	**PB163**	324/326TC
80.0	3.0	28617	21.94	86525	15013	14613	-	-	**PB163**	324/326TC
72.0	2.8	31523	24.17	87357	15417	14613	-	-	**PB163**	324/326TC
66.0	2.7	34660	26.58	92349	15818	14613	-	-	**PB163**	324/326TC
61.0	2.3	37558	28.80	84861	16161	14613	-	-	**PB163**	324/326TC
57.0	2.4	40327	30.92	95677	16466	14613	-	-	**PB163**	324/326TC
51.0	2.2	44669	34.25	99004	16906	14613	-	-	**PB163**	324/326TC
46.0	2.1	49114	37.66	102332	17315	14613	-	-	**PB163**	324/326TC
43.0	2.0	53014	40.65	105660	17645	14613	-	-	**PB163**	324/326TC
39.0	1.7	58803	45.09	99836	17985	14613	-	-	**PB163**	324/326TC
34.0	1.6	66509	51.00	108156	17985	14613	-	-	**PB163**	324/326TC
33.0	1.5	69937	53.63	108156	17985	14613	-	-	**PB163**	324/326TC
30.0	1.4	76896	58.97	108156	17985	14613	-	-	**PB163**	324/326TC
25.0	1.2	90993	69.78	108156	17985	14613	-	-	**PB163**	324/326TC

5.1 B/BA GEARED MOTORS

40 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
23.0	1.1	100047	76.72	108156	17985	14613	-	-	**PB163**	324/326TC

50 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
161.0	1.4	17434	10.84	24959	4257	4257	-	-	**PB143**	324/326TC
147.0	1.4	19088	11.87	25791	4286	4286	-	-	**PB143**	324/326TC
121.0	1.1	23298	14.49	25791	4316	4316	-	-	**PB143**	324/326TC
167.0	2.2	16875	10.49	37439	7509	7509	-	-	**PB153**	324/326TC
138.0	1.8	20333	12.64	37439	7902	7902	-	-	**PB153**	324/326TC
125.0	1.8	22534	14.01	41599	8122	8122	-	-	**PB153**	324/326TC
114.0	1.7	24769	15.40	41599	8326	8326	-	-	**PB153**	324/326TC
94.0	1.7	29844	18.56	49918	8730	8730	-	-	**PB153**	324/326TC
85.0	1.6	33074	20.56	54078	8952	8952	-	-	**PB153**	324/326TC
73.0	1.5	38373	23.86	55742	9272	9272	-	-	**PB153**	324/326TC
69.0	1.4	40510	25.19	56574	9387	9387	-	-	**PB153**	324/326TC
62.0	1.5	45406	28.23	66558	9627	9627	-	-	**PB153**	324/326TC
58.0	1.4	48812	30.35	66558	9777	9777	-	-	**PB153**	324/326TC
52.0	1.2	54094	33.63	66558	9984	9984	-	-	**PB153**	324/326TC
50.0	1.2	56321	35.02	66558	10063	10063	-	-	**PB153**	324/326TC
45.0	1.1	62417	38.81	66558	10260	10260	-	-	**PB153**	324/326TC
197.0	4.0	14301	8.89	56574	11414	11414	-	-	**PB163**	324/326TC
165.0	3.9	17009	10.58	65726	12011	12011	-	-	**PB163**	324/326TC
147.0	3.4	19091	11.87	64062	12420	12420	-	-	**PB163**	324/326TC
137.0	3.6	20602	12.81	73213	12694	12694	-	-	**PB163**	324/326TC
124.0	3.5	22652	14.08	79869	13040	13040	-	-	**PB163**	324/326TC
113.0	3.3	24965	15.52	83197	13400	13400	-	-	**PB163**	324/326TC
107.0	3.1	26355	16.39	82365	13603	13603	-	-	**PB163**	324/326TC
97.0	3.0	28977	18.02	86525	13961	13961	-	-	**PB163**	324/326TC
88.0	2.8	32098	19.96	89021	14351	14351	-	-	**PB163**	324/326TC
80.0	2.5	35294	21.94	86525	14716	14613	-	-	**PB163**	324/326TC
72.0	2.2	38879	24.17	87357	15091	14613	-	-	**PB163**	324/326TC
66.0	2.2	42748	26.58	92349	15460	14613	-	-	**PB163**	324/326TC
61.0	1.8	46321	28.80	84861	15772	14613	-	-	**PB163**	324/326TC
57.0	1.9	49736	30.92	95677	16048	14613	-	-	**PB163**	324/326TC
51.0	1.8	55092	34.25	99004	16443	14613	-	-	**PB163**	324/326TC
46.0	1.7	60574	37.66	102332	16807	14613	-	-	**PB163**	324/326TC
43.0	1.6	65384	40.65	105660	17096	14613	-	-	**PB163**	324/326TC
39.0	1.4	72523	45.09	99836	17482	14613	-	-	**PB163**	324/326TC
34.0	1.3	82028	51.00	108156	17928	14613	-	-	**PB163**	324/326TC
33.0	1.3	86256	53.63	108156	17985	14613	-	-	**PB163**	324/326TC

5.1 B/BA GEARED MOTORS

50 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
30.0	1.1	94838	58.97	108156	17985	14613	-	-	**PB163**	324/326TC

60 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
167.0	1.8	20524	10.49	37439	7374	7374	-	-	**PB153**	364/365TC
138.0	1.5	24730	12.64	37439	7739	7739	-	-	**PB153**	364/365TC
125.0	1.5	27406	14.01	41599	7941	7941	-	-	**PB153**	364/365TC
114.0	1.4	30124	15.40	41599	8126	8126	-	-	**PB153**	364/365TC
94.0	1.4	36297	18.56	49918	8489	8489	-	-	**PB153**	364/365TC
85.0	1.3	40225	20.56	54078	8686	8686	-	-	**PB153**	364/365TC
73.0	1.2	46670	23.86	55742	8963	8963	-	-	**PB153**	364/365TC
69.0	1.1	49269	25.19	56574	9061	9061	-	-	**PB153**	364/365TC
62.0	1.2	55223	28.23	66558	9262	9262	-	-	**PB153**	364/365TC
58.0	1.1	59366	30.35	66558	9383	9383	-	-	**PB153**	364/365TC
52.0	1.0	65790	33.63	66558	9548	9548	-	-	**PB153**	364/365TC
197.0	3.3	17394	8.89	56574	11277	11277	-	-	**PB163**	364/365TC
165.0	3.2	20687	10.58	65726	11848	11848	-	-	**PB163**	364/365TC
147.0	2.8	23219	11.87	64062	12236	12236	-	-	**PB163**	364/365TC
137.0	2.9	25056	12.81	73213	12496	12496	-	-	**PB163**	364/365TC
124.0	2.9	27549	14.08	79869	12823	12823	-	-	**PB163**	364/365TC
113.0	2.7	30363	15.52	83197	13160	13160	-	-	**PB163**	364/365TC
107.0	2.6	32053	16.39	82365	13350	13350	-	-	**PB163**	364/365TC
97.0	2.5	35242	18.02	86525	13683	13683	-	-	**PB163**	364/365TC
88.0	2.3	39038	19.96	89021	14043	14043	-	-	**PB163**	364/365TC
80.0	2.0	42925	21.94	86525	14378	14378	-	-	**PB163**	364/365TC
72.0	1.8	47285	24.17	87357	14718	14613	-	-	**PB163**	364/365TC
66.0	1.8	51990	26.58	92349	15049	14613	-	-	**PB163**	364/365TC
61.0	1.5	56337	28.80	84861	15327	14613	-	-	**PB163**	364/365TC
57.0	1.6	60490	30.92	95677	15571	14613	-	-	**PB163**	364/365TC
51.0	1.5	67004	34.25	99004	15915	14613	-	-	**PB163**	364/365TC
46.0	1.4	73671	37.66	102332	16226	14613	-	-	**PB163**	364/365TC
43.0	1.3	79521	40.65	105660	16469	14613	-	-	**PB163**	364/365TC
39.0	1.1	88204	45.09	99836	16786	14613	-	-	**PB163**	364/365TC
34.0	1.1	99763	51.00	108156	17141	14613	-	-	**PB163**	364/365TC
33.0	1.0	104906	53.63	108156	17277	14613	-	-	**PB163**	364/365TC

5.1 B/BA GEARED MOTORS

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
167.0	1.5	25085	10.49	37439	7204	7204	-	-	**PB153**	364/365TC
138.0	1.2	30225	12.64	37439	7534	7534	-	-	**PB153**	364/365TC
125.0	1.2	33496	14.01	41599	7714	7714	-	-	**PB153**	364/365TC
114.0	1.1	36818	15.40	41599	7877	7877	-	-	**PB153**	364/365TC
94.0	1.1	44363	18.56	49918	8189	8189	-	-	**PB153**	364/365TC
85.0	1.1	49164	20.56	54078	8353	8353	-	-	**PB153**	364/365TC
197.0	2.7	21259	8.89	56574	11106	11106	-	-	**PB163**	364/365TC
165.0	2.6	25284	10.58	65726	11644	11644	-	-	**PB163**	364/365TC
147.0	2.3	28378	11.87	64062	12008	12008	-	-	**PB163**	364/365TC
137.0	2.4	30624	12.81	73213	12249	12249	-	-	**PB163**	364/365TC
124.0	2.4	33671	14.08	79869	12551	12551	-	-	**PB163**	364/365TC
113.0	2.2	37110	15.52	83197	12861	12861	-	-	**PB163**	364/365TC
107.0	2.1	39176	16.39	82365	13034	13034	-	-	**PB163**	364/365TC
97.0	2.0	43074	18.02	86525	13335	13335	-	-	**PB163**	364/365TC
88.0	1.9	47713	19.96	89021	13658	13658	-	-	**PB163**	364/365TC
80.0	1.6	52464	21.94	86525	13954	13954	-	-	**PB163**	364/365TC
72.0	1.5	57793	24.17	87357	14252	14252	-	-	**PB163**	364/365TC
66.0	1.5	63544	26.58	92349	14537	14537	-	-	**PB163**	364/365TC
61.0	1.2	68856	28.80	84861	14772	14613	-	-	**PB163**	364/365TC
57.0	1.3	73932	30.92	95677	14974	14613	-	-	**PB163**	364/365TC
51.0	1.2	81894	34.25	99004	15254	14613	-	-	**PB163**	364/365TC
46.0	1.1	90043	37.66	102332	15499	14613	-	-	**PB163**	364/365TC
43.0	1.1	97193	40.65	105660	15685	14613	-	-	**PB163**	364/365TC

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
2413	306.0	5.71	13	1455	416	82	**PB063**	**IB063**
2829	254.0	6.88	12.7	1518	434	87	**PB063**	**IB063**
2912	239.0	7.32	12.3	1547	442	93	**PB063**	**IB063**
3827	191.0	9.16	12.9	1588	454	84	**PB063**	**IB063**
4326	171.0	10.26	13	1607	459	83	**PB063**	**IB063**
4493	159.0	11.03	12.6	1639	468	89	**PB063**	**IB063**
4825	142.0	12.35	12	1684	481	96	**PB063**	**IB063**
4909	133.0	13.15	11.5	1723	492	104	**PB063**	**IB063**
4909	115.0	15.18	10	1837	525	126	**PB063**	**IB063**
4992	103.0	17.00	9.1	1917	548	139	**PB063**	**IB063**
4992	78.0	22.39	6.9	2159	617	170	**PB063**	**IB063**
4992	67.0	26.09	5.9	2301	657	184	**PB063**	**IB063**
4992	62.0	28.03	5.5	2376	679	190	**PB063**	**IB063**
4992	52.0	33.43	4.6	2554	730	202	**PB063**	**IB063**
4992	45.0	38.58	4	2698	774	211	**PB063**	**IB063**
4992	40.0	43.22	3.6	2698	811	217	**PB063**	**IB063**
4992	34.0	50.81	3	2698	866	225	**PB063**	**IB063**
4992	31.0	56.93	2.7	2698	898	229	**PB063**	**IB063**
4992	25.0	69.16	2.2	2698	977	236	**PB063**	**IB063**
4992	23.0	77.48	2	2698	1009	239	**PB063**	**IB063**
4992	19.0	90.33	1.7	2698	1086	243	**PB063**	**IB063**
4992	17.0	101.20	1.5	2698	1133	246	**PB063**	**IB063**
4992	16.0	111.74	1.4	2698	1160	248	**PB063**	**IB063**
4992	14.0	124.20	1.2	2698	1220	250	**PB063**	**IB063**
4992	13.0	139.15	1.1	2698	1255	252	**PB063**	**IB063**
4992	11.0	157.42	1	2698	1336	254	**PB063**	**IB063**
4160	224.0	7.81	16.4	2483	709	397	**PB083**	**IB083**
4992	203.0	8.62	17.9	2494	713	372	**PB083**	**IB083**
5408	167.0	10.49	15.9	2654	758	406	**PB083**	**IB083**
6240	151.0	11.59	16.6	2678	765	394	**PB083**	**IB083**
6739	121.0	14.43	14.4	2881	823	431	**PB083**	**IB083**
7072	105.0	16.60	13.1	3020	863	452	**PB083**	**IB083**
7072	96.0	18.32	11.9	3133	895	473	**PB083**	**IB083**
7072	77.0	22.82	9.6	3428	979	513	**PB083**	**IB083**
7072	66.0	26.71	8.2	3647	1042	536	**PB083**	**IB083**
7072	59.0	29.50	7.4	3813	1089	549	**PB083**	**IB083**
7072	55.0	31.80	6.9	3921	1120	558	**PB083**	**IB083**
7072	51.0	34.49	6.3	4039	1154	562	**PB083**	**IB083**
7072	44.0	39.60	5.5	4047	1223	562	**PB083**	**IB083**
7072	41.0	42.95	5.1	4047	1257	562	**PB083**	**IB083**
7072	39.0	45.44	4.8	4047	1281	562	**PB083**	**IB083**
7072	34.0	51.19	4.3	4047	1351	562	**PB083**	**IB083**
7072	32.0	55.52	3.9	4047	1383	562	**PB083**	**IB083**

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
7072	29.0	59.96	3.6	4047	1436	562	**PB083**	**IB083**
7072	27.0	63.74	3.4	4047	1476	562	**PB083**	**IB083**
7072	25.0	69.14	3.2	4047	1519	562	**PB083**	**IB083**
7072	24.0	73.14	3	4047	1543	562	**PB083**	**IB083**
7072	22.0	80.76	2.7	4047	1595	562	**PB083**	**IB083**
7072	19.0	92.19	2.4	4047	1685	562	**PB083**	**IB083**
7072	17.0	100.57	2.2	4047	1756	562	**PB083**	**IB083**
7072	17.0	105.29	2.1	4047	1756	562	**PB083**	**IB083**
7072	15.0	116.25	1.9	4047	1840	562	**PB083**	**IB083**
7072	14.0	126.76	1.7	4047	1888	562	**PB083**	**IB083**
7072	12.0	144.77	1.5	4047	1998	562	**PB083**	**IB083**
6656	215.0	8.13	25.3	3082	881	268	**PB103**	**IB103**
7488	195.0	8.97	25.8	3140	897	260	**PB103**	**IB103**
8320	160.0	10.92	23.5	3330	951	296	**PB103**	**IB103**
8320	145.0	12.05	21.3	3462	989	331	**PB103**	**IB103**
9984	117.0	14.99	20.6	3642	1041	343	**PB103**	**IB103**
11648	101.0	17.27	20.8	3740	1069	339	**PB103**	**IB103**
11648	92.0	19.06	18.9	3885	1110	370	**PB103**	**IB103**
11648	74.0	23.70	15.2	4241	1212	429	**PB103**	**IB103**
12480	66.0	26.51	14.5	4379	1251	439	**PB103**	**IB103**
13312	57.0	30.55	13.4	4583	1309	456	**PB103**	**IB103**
14143	53.0	33.07	13.2	4658	1331	460	**PB103**	**IB103**
14143	49.0	35.87	12.2	4809	1374	477	**PB103**	**IB103**
14143	43.0	41.12	10.6	4946	1448	501	**PB103**	**IB103**
14143	39.0	44.61	9.8	4946	1506	514	**PB103**	**IB103**
14143	37.0	47.28	9.2	4946	1538	523	**PB103**	**IB103**
14143	35.0	50.24	8.7	4946	1572	532	**PB103**	**IB103**
14143	33.0	53.02	8.2	4946	1609	539	**PB103**	**IB103**
14143	30.0	58.50	7.5	4946	1671	551	**PB103**	**IB103**
14143	27.0	64.89	6.7	4946	1741	563	**PB103**	**IB103**
14143	26.0	68.58	6.4	4946	1767	569	**PB103**	**IB103**
14143	24.0	72.76	6	4946	1822	575	**PB103**	**IB103**
14143	22.0	78.92	5.5	4946	1885	582	**PB103**	**IB103**
14975	21.0	83.66	5.5	4946	1901	582	**PB103**	**IB103**
14975	19.0	92.31	5	4946	1977	590	**PB103**	**IB103**
14975	17.0	105.44	4.4	4946	2063	600	**PB103**	**IB103**
14975	15.0	114.80	4	4946	2164	606	**PB103**	**IB103**
14975	15.0	120.42	3.8	4946	2164	609	**PB103**	**IB103**
14975	13.0	132.87	3.5	4946	2285	615	**PB103**	**IB103**
14975	12.0	144.69	3.2	4946	2355	619	**PB103**	**IB103**
14975	11.0	165.25	2.8	4946	2434	626	**PB103**	**IB103**
12480	220.0	7.97	48.3	3559	1017	595	**PB123**	**IB123**
14975	182.0	9.62	48	3595	1027	597	**PB123**	**IB123**

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
16639	169.0	10.33	49.7	3534	1010	587	**PB123**	**IB123**
16639	140.0	12.48	41.1	3889	1111	640	**PB123**	**IB123**
17471	126.0	13.84	38.9	4000	1143	654	**PB123**	**IB123**
17471	114.0	15.38	35	4205	1201	679	**PB123**	**IB123**
18303	94.0	18.58	30.4	4523	1292	708	**PB123**	**IB123**
20799	85.0	20.61	31.1	4458	1274	703	**PB123**	**IB123**
23295	77.0	22.78	31.5	4398	1256	701	**PB123**	**IB123**
23295	68.0	25.89	27.8	4699	1343	725	**PB123**	**IB123**
23295	64.0	27.51	26.1	4850	1386	735	**PB123**	**IB123**
23295	57.0	30.79	23.3	5148	1471	753	**PB123**	**IB123**
23295	56.0	31.26	23	5195	1484	755	**PB123**	**IB123**
23295	50.0	34.68	20.7	5500	1571	769	**PB123**	**IB123**
23295	43.0	40.53	17.7	5923	1692	788	**PB123**	**IB123**
24959	39.0	44.89	17.2	6015	1719	791	**PB123**	**IB123**
26623	35.0	49.80	16.5	6149	1757	796	**PB123**	**IB123**
26623	32.0	54.30	15.1	6429	1837	804	**PB123**	**IB123**
26623	29.0	59.36	13.8	6744	1928	812	**PB123**	**IB123**
27455	28.0	62.59	13.5	6744	1933	814	**PB123**	**IB123**
27455	25.0	69.43	12.2	6744	2043	823	**PB123**	**IB123**
29119	24.0	74.42	12.1	6744	2028	823	**PB123**	**IB123**
29119	22.0	80.04	11.2	6744	2116	829	**PB123**	**IB123**
29119	19.0	89.87	10	6744	2271	837	**PB123**	**IB123**
29119	18.0	99.70	9	6744	2330	843	**PB123**	**IB123**
29119	16.0	106.65	8.4	6744	2462	846	**PB123**	**IB123**
29119	15.0	119.60	7.5	6744	2537	852	**PB123**	**IB123**
29119	13.0	129.96	6.9	6744	2708	856	**PB123**	**IB123**
29119	12.0	144.43	6.2	6744	2808	860	**PB123**	**IB123**
29119	11.0	160.23	5.6	6744	2919	864	**PB123**	**IB123**
29119	9.7	180.40	5	6744	3085	868	**PB123**	**IB123**
24959	161.0	10.84	71	3577	3577	540	**PB143**	**IB143**
25791	147.0	11.87	67	3681	3681	560	**PB143**	**IB143**
25791	121.0	14.49	54.9	4085	4085	621	**PB143**	**IB143**
26623	103.0	17.04	48.2	4365	4365	656	**PB143**	**IB143**
29951	94.0	18.66	49.5	4271	4271	649	**PB143**	**IB143**
33279	83.0	21.00	48.9	4265	4265	652	**PB143**	**IB143**
36607	77.0	22.77	49.6	4146	4146	649	**PB143**	**IB143**
38271	68.0	25.63	46.1	4311	4311	666	**PB143**	**IB143**
38271	64.0	27.44	43	4470	4470	682	**PB143**	**IB143**
39103	58.0	30.05	40.1	4660	4660	696	**PB143**	**IB143**
39103	53.0	33.01	36.5	4911	4911	715	**PB143**	**IB143**
39935	48.0	36.67	33.6	5119	5119	730	**PB143**	**IB143**
39935	43.0	40.29	30.6	5447	5447	745	**PB143**	**IB143**
39935	40.0	44.16	27.9	5668	5668	758	**PB143**	**IB143**

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
41599	36.0	48.35	26.5	5849	5849	765	**PB143**	**IB143**
41599	33.0	53.16	24.1	6133	6133	777	**PB143**	**IB143**
41599	32.0	54.63	23.5	6235	6235	781	**PB143**	**IB143**
41599	30.0	59.02	21.7	6454	6454	790	**PB143**	**IB143**
41599	27.0	64.88	19.8	6820	6820	800	**PB143**	**IB143**
41599	25.0	70.43	18.2	7096	7096	807	**PB143**	**IB143**
41599	23.0	77.12	16.6	7402	7402	815	**PB143**	**IB143**
41599	20.0	85.54	15	7936	7936	824	**PB143**	**IB143**
41599	19.0	94.13	13.6	8138	8138	831	**PB143**	**IB143**
41599	17.0	105.83	12.1	8589	8589	838	**PB143**	**IB143**
41599	16.0	111.94	11.5	8842	8842	842	**PB143**	**IB143**
41599	14.0	124.62	10.3	8990	8990	848	**PB143**	**IB143**
41599	13.0	136.44	9.4	8990	8990	852	**PB143**	**IB143**
41599	12.0	149.59	8.6	8990	8990	856	**PB143**	**IB143**
41599	11.0	166.53	7.7	8990	8990	861	**PB143**	**IB143**
41599	9.3	187.24	6.9	8990	8990	865	**PB143**	**IB143**
37439	167.0	10.49	110.1	6740	6740	1619	**PB153**	**IB153**
37439	138.0	12.64	91.4	7274	7274	1721	**PB153**	**IB153**
41599	125.0	14.01	91.6	7410	7410	1720	**PB153**	**IB153**
41599	114.0	15.40	83.3	7689	7689	1765	**PB153**	**IB153**
49918	94.0	18.56	83	7993	7993	1767	**PB153**	**IB153**
54078	85.0	20.56	81.1	8174	8174	1777	**PB153**	**IB153**
55742	73.0	23.86	72.1	8642	8642	1827	**PB153**	**IB153**
56574	69.0	25.19	69.3	8814	8814	1842	**PB153**	**IB153**
66558	62.0	28.23	72.7	8839	8839	1823	**PB153**	**IB153**
66558	58.0	30.35	67.7	9093	9093	1851	**PB153**	**IB153**
66558	52.0	33.63	61	9522	9522	1887	**PB153**	**IB153**
66558	50.0	35.02	58.6	9680	9680	1900	**PB153**	**IB153**
66558	45.0	38.81	52.9	10115	10115	1931	**PB153**	**IB153**
66558	41.0	42.30	48.5	10512	10512	1955	**PB153**	**IB153**
66558	37.0	47.53	43.2	10964	10964	1984	**PB153**	**IB153**
66558	35.0	50.56	40.6	11215	11215	1998	**PB153**	**IB153**
66558	32.0	54.64	37.6	11630	11630	2015	**PB153**	**IB153**
66558	31.0	57.27	35.9	11781	11781	2024	**PB153**	**IB153**
66558	29.0	60.92	33.7	12101	12101	2036	**PB153**	**IB153**
66558	28.0	63.47	32.3	12273	12273	2043	**PB153**	**IB153**
66558	25.0	71.15	28.9	12841	12841	2062	**PB153**	**IB153**
66558	23.0	77.22	26.6	13272	13272	2075	**PB153**	**IB153**
66558	21.0	83.89	24.5	13757	13757	2086	**PB153**	**IB153**
66558	20.0	87.65	23.4	14024	14024	2092	**PB153**	**IB153**
66558	19.0	93.05	22.1	14308	14308	2100	**PB153**	**IB153**
66558	17.0	103.12	19.9	14613	14613	2111	**PB153**	**IB153**
66558	14.0	123.88	16.6	14613	14613	2130	**PB153**	**IB153**

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
66558	13.0	134.27	15.3	14613	14613	2137	**PB153**	**IB153**
66558	12.0	149.26	13.8	14613	14613	2145	**PB153**	**IB153**
66558	11.0	165.42	12.4	14613	14613	2152	**PB153**	**IB153**
56574	197.0	8.89	196.3	9535	9535	1634	**PB163**	**IB163**
65726	165.0	10.58	191.7	9862	9862	1650	**PB163**	**IB163**
64062	147.0	11.87	166.5	10437	10437	1738	**PB163**	**IB163**
73213	137.0	12.81	176.3	10346	10346	1704	**PB163**	**IB163**
79869	124.0	14.08	175	10510	10510	1708	**PB163**	**IB163**
83197	113.0	15.52	165.4	10805	10805	1742	**PB163**	**IB163**
82365	107.0	16.39	155.1	11108	11108	1778	**PB163**	**IB163**
86525	97.0	18.02	148.2	11414	11414	1802	**PB163**	**IB163**
89021	88.0	19.96	137.6	11806	11806	1839	**PB163**	**IB163**
86525	80.0	21.94	121.6	12426	12426	1895	**PB163**	**IB163**
87357	72.0	24.17	111.5	12970	12970	1930	**PB163**	**IB163**
92349	66.0	26.58	107.2	13245	13245	1945	**PB163**	**IB163**
84861	61.0	28.80	90.9	14038	14038	2002	**PB163**	**IB163**
95677	57.0	30.92	95.4	13965	13965	1986	**PB163**	**IB163**
99004	51.0	34.25	89.2	14506	14506	2008	**PB163**	**IB163**
102332	46.0	37.66	83.8	15019	14613	2027	**PB163**	**IB163**
105660	43.0	40.65	80.2	15316	14613	2039	**PB163**	**IB163**
99836	39.0	45.09	68.3	16237	14613	2081	**PB163**	**IB163**
108156	34.0	51.00	65.4	16835	14613	2091	**PB163**	**IB163**
108156	33.0	53.63	62.2	17051	14613	2102	**PB163**	**IB163**
108156	30.0	58.97	56.6	17756	14613	2122	**PB163**	**IB163**
108156	25.0	69.78	47.8	17985	14613	2153	**PB163**	**IB163**
108156	23.0	76.72	43.5	17985	14613	2168	**PB163**	**IB163**
108156	20.0	87.54	38.1	17985	14613	2186	**PB163**	**IB163**
108156	18.0	96.25	34.7	17985	14613	2198	**PB163**	**IB163**
108156	17.0	103.93	32.1	17985	14613	2207	**PB163**	**IB163**
108156	15.0	114.27	29.2	17985	14613	2218	**PB163**	**IB163**
108156	14.0	126.29	26.4	17985	14613	2227	**PB163**	**IB163**
108156	13.0	138.85	24	17985	14613	2236	**PB163**	**IB163**
108156	11.0	154.83	21.5	17985	14613	2244	**PB163**	**IB163**
749	230.0	7.62	2.9	-	378	84	**BA42**	**IBA42**
749	165.0	10.62	2.1	-	423	80	**BA42**	**IBA42**
749	135.0	12.95	1.7	-	452	91	**BA42**	**IBA42**
749	121.0	14.46	1.5	-	469	100	**BA42**	**IBA42**
998	106.0	16.47	1.8	-	490	130	**BA42**	**IBA42**
998	76.0	22.97	1.3	-	547	80	**BA42**	**IBA42**
998	63.0	28.00	1	-	583	91	**BA42**	**IBA42**
998	56.0	31.27	0.9	-	606	100	**BA42**	**IBA42**
998	52.0	33.78	0.9	-	621	103	**BA42**	**IBA42**
998	37.0	47.12	0.6	-	696	80	**BA42**	**IBA42**

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
998	30.0	57.43	0.5	-	746	91	**BA42**	**IBA42**
915	27.0	64.13	0.4	-	773	91	**BA42**	**IBA42**
915	22.0	78.17	0.3	-	828	91	**BA42**	**IBA42**
1331	221.0	7.91	4.9	-	411	84	**BA52**	**IBA52**
1331	185.0	9.46	4.1	-	436	93	**BA52**	**IBA52**
1331	151.0	11.57	3.4	-	467	91	**BA52**	**IBA52**
1331	120.0	14.63	2.7	-	504	88	**BA52**	**IBA52**
1664	102.0	17.11	2.8	-	532	119	**BA52**	**IBA52**
1664	86.0	20.46	2.4	-	563	93	**BA52**	**IBA52**
1664	70.0	25.03	1.9	-	603	91	**BA52**	**IBA52**
1664	55.0	31.63	1.5	-	653	88	**BA52**	**IBA52**
1664	50.0	35.10	1.4	-	674	100	**BA52**	**IBA52**
1664	42.0	41.97	1.2	-	715	93	**BA52**	**IBA52**
1830	34.0	51.34	1	-	767	100	**BA52**	**IBA52**
1664	27.0	64.87	0.7	-	828	80	**BA52**	**IBA52**
1664	22.0	79.07	0.6	-	887	91	**BA52**	**IBA52**
1830	24.0	73.70	0.8	-	861	106	**BA53**	**IBA53**
1830	19.0	93.33	0.6	-	899	106	**BA53**	**IBA53**
1830	16.0	111.61	0.5	-	899	106	**BA53**	**IBA53**
1830	13.0	136.53	0.4	-	899	106	**BA53**	**IBA53**
1830	10.0	172.53	0.3	-	899	106	**BA53**	**IBA53**
1830	8.9	197.11	0.3	-	899	106	**BA53**	**IBA53**
1830	7.0	249.08	0.2	-	899	106	**BA53**	**IBA53**
1830	6.5	271.16	0.2	-	899	106	**BA53**	**IBA53**
1830	5.1	342.65	0.2	-	899	106	**BA53**	**IBA53**
2912	209.0	8.36	10.2	1061	530	149	**BA72**	**IBA72**
2912	174.0	10.06	8.5	1127	564	154	**BA72**	**IBA72**
2912	141.0	12.44	6.8	1209	605	150	**BA72**	**IBA72**
3494	117.0	14.91	6.9	1287	643	186	**BA72**	**IBA72**
3494	98.0	17.94	5.7	1365	683	154	**BA72**	**IBA72**
3494	79.0	22.19	4.6	1467	733	150	**BA72**	**IBA72**
3494	64.0	27.45	3.7	1574	787	150	**BA72**	**IBA72**
3494	53.0	33.04	3.1	1676	838	154	**BA72**	**IBA72**
3328	43.0	40.87	2.4	1797	898	143	**BA72**	**IBA72**
2912	38.0	45.64	1.9	1872	936	145	**BA72**	**IBA72**
2912	32.0	54.94	1.5	1983	991	154	**BA72**	**IBA72**
2912	26.0	67.96	1.3	2125	1062	150	**BA72**	**IBA72**
3744	40.0	43.89	2.6	1840	920	74	**BA73**	**IBA73**
3744	33.0	52.83	2.2	1962	981	92	**BA73**	**IBA73**
3744	27.0	65.35	1.8	2098	1049	90	**BA73**	**IBA73**
3744	22.0	80.83	1.4	2246	1123	90	**BA73**	**IBA73**
3744	18.0	97.29	1.2	2248	1201	92	**BA73**	**IBA73**
3744	15.0	120.34	1	2248	1236	90	**BA73**	**IBA73**

5.2 IB/IBA GEAR REDUCER - fs=1, 1750 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
3744	12.0	149.73	0.8	2248	1236	89	**BA73**	**IBA73**
3744	9.7	180.23	0.6	2248	1236	92	**BA73**	**IBA73**
3744	7.9	222.93	0.5	2248	1236	90	**BA73**	**IBA73**
3744	6.7	260.20	0.4	2248	1236	95	**BA73**	**IBA73**
3744	5.4	321.85	0.4	2248	1236	90	**BA73**	**IBA73**
3744	4.9	357.95	0.3	2248	1236	100	**BA73**	**IBA73**
3744	4.0	442.76	0.3	2248	1236	90	**BA73**	**IBA73**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
2631	199.0	5.71	9.5	1697	485	66	**PB063**	**IB063**
3084	166.0	6.88	9.3	1770	506	71	**PB063**	**IB063**
3175	156.0	7.32	8.9	1804	515	77	**PB063**	**IB063**
4173	124.0	9.16	9.4	1862	532	68	**PB063**	**IB063**
4717	111.0	10.26	9.5	1887	539	66	**PB063**	**IB063**
4899	103.0	11.03	9.2	1928	551	73	**PB063**	**IB063**
5262	92.0	12.35	8.8	1982	566	81	**PB063**	**IB063**
5352	87.0	13.15	8.4	2020	577	89	**PB063**	**IB063**
5352	75.0	15.18	7.3	2154	615	113	**PB063**	**IB063**
5443	67.0	17.00	6.6	2249	643	127	**PB063**	**IB063**
5443	51.0	22.39	5	2523	721	161	**PB063**	**IB063**
5443	44.0	26.09	4.3	2682	766	176	**PB063**	**IB063**
5443	41.0	28.03	4	2698	789	183	**PB063**	**IB063**
5443	34.0	33.43	3.4	2698	851	196	**PB063**	**IB063**
5443	30.0	38.58	2.9	2698	895	206	**PB063**	**IB063**
5443	26.0	43.22	2.6	2698	947	212	**PB063**	**IB063**
5443	22.0	50.81	2.2	2698	1012	221	**PB063**	**IB063**
5443	20.0	56.93	2	2698	1050	226	**PB063**	**IB063**
5443	16.0	69.16	1.6	2698	1145	233	**PB063**	**IB063**
5443	15.0	77.48	1.4	2698	1174	237	**PB063**	**IB063**
5443	13.0	90.33	1.2	2698	1240	241	**PB063**	**IB063**
5443	11.0	101.20	1.1	2698	1321	244	**PB063**	**IB063**
5443	10.0	111.74	1	2698	1369	246	**PB063**	**IB063**
5443	9.2	124.20	0.9	2698	1413	249	**PB063**	**IB063**
5443	8.2	139.15	0.8	2698	1475	251	**PB063**	**IB063**
5443	7.2	157.42	0.7	2698	1548	253	**PB063**	**IB063**
4536	146.0	7.81	12	2890	826	371	**PB083**	**IB083**
5443	132.0	8.62	13	2912	832	345	**PB083**	**IB083**
5897	109.0	10.49	11.6	3094	884	381	**PB083**	**IB083**
6804	98.0	11.59	12.1	3134	896	368	**PB083**	**IB083**
7348	79.0	14.43	10.5	3364	961	409	**PB083**	**IB083**
7711	69.0	16.60	9.6	3517	1005	432	**PB083**	**IB083**
7711	62.0	18.32	8.7	3673	1049	455	**PB083**	**IB083**
7711	50.0	22.82	7	4005	1144	498	**PB083**	**IB083**
7711	43.0	26.71	6	4047	1215	524	**PB083**	**IB083**
7711	39.0	29.50	5.4	4047	1263	538	**PB083**	**IB083**
7711	36.0	31.80	5	4047	1303	548	**PB083**	**IB083**
7711	33.0	34.49	4.6	4047	1348	558	**PB083**	**IB083**
7711	29.0	39.60	4	4047	1417	562	**PB083**	**IB083**
7711	27.0	42.95	3.7	4047	1457	562	**PB083**	**IB083**
7711	25.0	45.44	3.5	4047	1501	562	**PB083**	**IB083**
7711	22.0	51.19	3.1	4047	1576	562	**PB083**	**IB083**
7711	21.0	55.52	2.9	4047	1604	562	**PB083**	**IB083**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
7711	19.0	59.96	2.7	4047	1666	562	**PB083**	**IB083**
7711	18.0	63.74	2.5	4047	1700	562	**PB083**	**IB083**
7711	16.0	69.14	2.3	4047	1778	562	**PB083**	**IB083**
7711	16.0	73.14	2.2	4047	1778	562	**PB083**	**IB083**
7711	14.0	80.76	2	4047	1869	562	**PB083**	**IB083**
7711	12.0	92.19	1.7	4047	1979	562	**PB083**	**IB083**
7711	11.0	100.57	1.6	4047	2044	562	**PB083**	**IB083**
7711	11.0	105.29	1.5	4047	2044	562	**PB083**	**IB083**
7711	9.8	116.25	1.4	4047	2133	562	**PB083**	**IB083**
7711	9.0	126.76	1.3	4047	2201	562	**PB083**	**IB083**
7711	7.9	144.77	1.1	4047	2309	562	**PB083**	**IB083**
7258	140.0	8.13	18.4	3587	1025	232	**PB103**	**IB103**
8165	127.0	8.97	18.8	3657	1045	223	**PB103**	**IB103**
9072	104.0	10.92	17.1	3883	1110	262	**PB103**	**IB103**
9072	95.0	12.05	15.5	4023	1149	300	**PB103**	**IB103**
10886	76.0	14.99	15	4252	1215	313	**PB103**	**IB103**
12701	66.0	17.27	15.2	4362	1246	309	**PB103**	**IB103**
12701	60.0	19.06	13.8	4533	1295	343	**PB103**	**IB103**
12701	48.0	23.70	11.1	4946	1416	407	**PB103**	**IB103**
13608	43.0	26.51	10.6	4946	1460	418	**PB103**	**IB103**
14515	37.0	30.55	9.8	4946	1530	437	**PB103**	**IB103**
15422	34.0	33.07	9.6	4946	1564	441	**PB103**	**IB103**
15422	32.0	35.87	8.9	4946	1602	459	**PB103**	**IB103**
15422	28.0	41.12	7.7	4946	1690	486	**PB103**	**IB103**
15422	26.0	44.61	7.1	4946	1740	500	**PB103**	**IB103**
15422	24.0	47.28	6.7	4946	1796	510	**PB103**	**IB103**
15422	23.0	50.24	6.3	4946	1826	519	**PB103**	**IB103**
15422	22.0	53.02	6	4946	1858	527	**PB103**	**IB103**
15422	19.0	58.50	5.4	4946	1967	541	**PB103**	**IB103**
15422	18.0	64.89	4.9	4946	2009	553	**PB103**	**IB103**
15422	17.0	68.58	4.6	4946	2054	560	**PB103**	**IB103**
15422	16.0	72.76	4.4	4946	2102	566	**PB103**	**IB103**
15422	14.0	78.92	4	4946	2213	574	**PB103**	**IB103**
16330	14.0	83.66	4	4946	2194	574	**PB103**	**IB103**
16330	12.0	92.31	3.7	4946	2327	583	**PB103**	**IB103**
16330	11.0	105.44	3.2	4946	2406	594	**PB103**	**IB103**
16330	9.9	114.80	2.9	4946	2504	600	**PB103**	**IB103**
16330	9.5	120.42	2.8	4946	2543	604	**PB103**	**IB103**
16330	8.6	132.87	2.5	4946	2641	610	**PB103**	**IB103**
16330	7.9	144.69	2.3	4946	2726	615	**PB103**	**IB103**
16330	6.9	165.25	2	4946	2868	622	**PB103**	**IB103**
13608	143.0	7.97	35.2	4202	1200	568	**PB123**	**IB123**
16330	119.0	9.62	35	4250	1214	570	**PB123**	**IB123**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
18144	110.0	10.33	36.2	4201	1200	558	**PB123**	**IB123**
18144	91.0	12.48	30	4614	1318	617	**PB123**	**IB123**
19051	82.0	13.84	28.4	4746	1356	632	**PB123**	**IB123**
19051	74.0	15.38	25.6	4988	1425	659	**PB123**	**IB123**
19958	61.0	18.58	22.2	5362	1532	691	**PB123**	**IB123**
22680	55.0	20.61	22.7	5314	1518	686	**PB123**	**IB123**
25402	50.0	22.78	23	5254	1501	683	**PB123**	**IB123**
25402	44.0	25.89	20.2	5611	1603	709	**PB123**	**IB123**
25402	41.0	27.51	19.1	5816	1662	720	**PB123**	**IB123**
25402	37.0	30.79	17	6121	1749	739	**PB123**	**IB123**
25402	36.0	31.26	16.8	6205	1773	742	**PB123**	**IB123**
25402	33.0	34.68	15.1	6475	1850	757	**PB123**	**IB123**
25402	28.0	40.53	12.9	6744	2002	778	**PB123**	**IB123**
27216	25.0	44.89	12.5	6744	2051	782	**PB123**	**IB123**
29030	23.0	49.80	12	6744	2074	786	**PB123**	**IB123**
29030	21.0	54.30	11	6744	2167	796	**PB123**	**IB123**
29030	19.0	59.36	10.1	6744	2274	804	**PB123**	**IB123**
29938	18.0	62.59	9.9	6744	2302	807	**PB123**	**IB123**
29938	16.0	69.43	8.9	6744	2435	816	**PB123**	**IB123**
31752	15.0	74.42	8.8	6744	2449	817	**PB123**	**IB123**
31752	14.0	80.04	8.2	6744	2530	822	**PB123**	**IB123**
31752	13.0	89.87	7.3	6744	2620	831	**PB123**	**IB123**
31752	11.0	99.70	6.6	6744	2831	838	**PB123**	**IB123**
31752	11.0	106.65	6.1	6744	2831	842	**PB123**	**IB123**
31752	9.5	119.60	5.5	6744	3026	848	**PB123**	**IB123**
31752	8.8	129.96	5	6744	3131	852	**PB123**	**IB123**
31752	7.9	144.43	4.5	6744	3285	857	**PB123**	**IB123**
31752	7.1	160.23	4.1	6744	3442	861	**PB123**	**IB123**
31752	6.3	180.40	3.6	6744	3625	865	**PB123**	**IB123**
27216	105.0	10.84	51.8	4267	4267	507	**PB143**	**IB143**
28123	96.0	11.87	48.9	4389	4389	529	**PB143**	**IB143**
28123	79.0	14.49	40.1	4856	4856	596	**PB143**	**IB143**
29030	67.0	17.04	35.2	5192	5192	633	**PB143**	**IB143**
32659	61.0	18.66	36.1	5110	5110	626	**PB143**	**IB143**
36288	54.0	21.00	35.7	5115	5115	630	**PB143**	**IB143**
39917	50.0	22.77	36.2	5003	5003	626	**PB143**	**IB143**
41731	44.0	25.63	33.6	5214	5214	645	**PB143**	**IB143**
41731	42.0	27.44	31.4	5354	5354	662	**PB143**	**IB143**
42638	38.0	30.05	29.3	5582	5582	678	**PB143**	**IB143**
42638	35.0	33.01	26.7	5846	5846	698	**PB143**	**IB143**
43546	31.0	36.67	24.5	6165	6165	714	**PB143**	**IB143**
43546	28.0	40.29	22.3	6514	6514	731	**PB143**	**IB143**
43546	26.0	44.16	20.3	6777	6777	746	**PB143**	**IB143**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
45360	24.0	48.35	19.4	6902	6902	753	**PB143**	**IB143**
45360	21.0	53.16	17.6	7404	7404	766	**PB143**	**IB143**
45360	21.0	54.63	17.1	7404	7404	770	**PB143**	**IB143**
45360	19.0	59.02	15.9	7796	7796	780	**PB143**	**IB143**
45360	18.0	64.88	14.4	8013	8013	790	**PB143**	**IB143**
45360	16.0	70.43	13.3	8499	8499	799	**PB143**	**IB143**
45360	15.0	77.12	12.1	8774	8774	808	**PB143**	**IB143**
45360	13.0	85.54	10.9	8990	8990	817	**PB143**	**IB143**
45360	12.0	94.13	9.9	8990	8990	824	**PB143**	**IB143**
45360	11.0	105.83	8.8	8990	8990	833	**PB143**	**IB143**
45360	10.0	111.94	8.4	8990	8990	836	**PB143**	**IB143**
45360	9.1	124.62	7.5	8990	8990	843	**PB143**	**IB143**
45360	8.4	136.44	6.9	8990	8990	848	**PB143**	**IB143**
45360	7.6	149.59	6.3	8990	8990	852	**PB143**	**IB143**
45360	6.8	166.53	5.6	8990	8990	857	**PB143**	**IB143**
45360	6.1	187.24	5	8990	8990	862	**PB143**	**IB143**
40824	109.0	10.49	80.3	7857	7857	1565	**PB153**	**IB153**
40824	90.0	12.64	66.6	8475	8475	1676	**PB153**	**IB153**
45360	81.0	14.01	66.8	8664	8664	1675	**PB153**	**IB153**
45360	74.0	15.40	60.8	8980	8980	1724	**PB153**	**IB153**
54432	61.0	18.56	60.5	9352	9352	1726	**PB153**	**IB153**
58968	55.0	20.56	59.2	9583	9583	1737	**PB153**	**IB153**
60782	48.0	23.86	52.6	10062	10062	1791	**PB153**	**IB153**
61690	45.0	25.19	50.5	10296	10296	1808	**PB153**	**IB153**
72576	40.0	28.23	53	10395	10395	1787	**PB153**	**IB153**
72576	38.0	30.35	49.3	10621	10621	1817	**PB153**	**IB153**
72576	34.0	33.63	44.5	11124	11124	1857	**PB153**	**IB153**
72576	33.0	35.02	42.8	11262	11262	1871	**PB153**	**IB153**
72576	29.0	38.81	38.6	11877	11877	1905	**PB153**	**IB153**
72576	27.0	42.30	35.4	12228	12228	1931	**PB153**	**IB153**
72576	24.0	47.53	31.5	12826	12826	1963	**PB153**	**IB153**
72576	23.0	50.56	29.6	13048	13048	1978	**PB153**	**IB153**
72576	21.0	54.64	27.4	13533	13533	1996	**PB153**	**IB153**
72576	20.0	57.27	26.1	13799	13799	2007	**PB153**	**IB153**
72576	19.0	60.92	24.6	14084	14084	2019	**PB153**	**IB153**
72576	18.0	63.47	23.6	14389	14389	2027	**PB153**	**IB153**
72576	16.0	71.15	21	14613	14613	2048	**PB153**	**IB153**
72576	15.0	77.22	19.4	14613	14613	2062	**PB153**	**IB153**
72576	14.0	83.89	17.9	14613	14613	2074	**PB153**	**IB153**
72576	13.0	87.65	17.1	14613	14613	2081	**PB153**	**IB153**
72576	12.0	93.05	16.1	14613	14613	2089	**PB153**	**IB153**
72576	11.0	103.12	14.5	14613	14613	2101	**PB153**	**IB153**
72576	9.2	123.88	12.1	14613	14613	2121	**PB153**	**IB153**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
72576	8.5	134.27	11.2	14613	14613	2129	**PB153**	**IB153**
72576	7.6	149.26	10	14613	14613	2138	**PB153**	**IB153**
72576	6.9	165.42	9.1	14613	14613	2146	**PB153**	**IB153**
61690	128.0	8.89	143.2	11169	11169	1572	**PB163**	**IB163**
71669	108.0	10.58	139.8	11537	11537	1589	**PB163**	**IB163**
69855	96.0	11.87	121.4	12207	12207	1685	**PB163**	**IB163**
79834	89.0	12.81	128.6	12155	12155	1648	**PB163**	**IB163**
87091	81.0	14.08	127.6	12334	12334	1653	**PB163**	**IB163**
90720	73.0	15.52	120.6	12744	12744	1690	**PB163**	**IB163**
89813	70.0	16.39	113.1	13020	13020	1729	**PB163**	**IB163**
94349	63.0	18.02	108.1	13427	13427	1755	**PB163**	**IB163**
97071	57.0	19.96	100.4	13904	13904	1795	**PB163**	**IB163**
94349	52.0	21.94	88.7	14590	14590	1856	**PB163**	**IB163**
95256	47.0	24.17	81.3	15194	14613	1895	**PB163**	**IB163**
100699	43.0	26.58	78.2	15537	14613	1911	**PB163**	**IB163**
92535	40.0	28.80	66.3	16387	14613	1973	**PB163**	**IB163**
104328	37.0	30.92	69.6	16403	14613	1956	**PB163**	**IB163**
107957	33.0	34.25	65	17060	14613	1980	**PB163**	**IB163**
111586	30.0	37.66	61.1	17604	14613	2000	**PB163**	**IB163**
115215	28.0	40.65	58.5	17968	14613	2014	**PB163**	**IB163**
108864	25.0	45.09	49.8	17985	14613	2059	**PB163**	**IB163**
117936	22.0	51.00	47.7	17985	14613	2070	**PB163**	**IB163**
117936	21.0	53.63	45.4	17985	14613	2083	**PB163**	**IB163**
117936	19.0	58.97	41.3	17985	14613	2104	**PB163**	**IB163**
117936	16.0	69.78	34.9	17985	14613	2137	**PB163**	**IB163**
117936	15.0	76.72	31.7	17985	14613	2154	**PB163**	**IB163**
117936	13.0	87.54	27.8	17985	14613	2174	**PB163**	**IB163**
117936	12.0	96.25	25.3	17985	14613	2187	**PB163**	**IB163**
117936	11.0	103.93	23.4	17985	14613	2197	**PB163**	**IB163**
117936	10.0	114.27	21.3	17985	14613	2208	**PB163**	**IB163**
117936	9.0	126.29	19.3	17985	14613	2219	**PB163**	**IB163**
117936	8.2	138.85	17.5	17985	14613	2228	**PB163**	**IB163**
117936	7.4	154.83	15.7	17985	14613	2237	**PB163**	**IB163**
816	150.0	7.62	2.1	-	436	84	**BA42**	**IBA42**
816	107.0	10.62	1.5	-	488	80	**BA42**	**IBA42**
816	88.0	12.95	1.2	-	521	91	**BA42**	**IBA42**
816	79.0	14.46	1.1	-	540	100	**BA42**	**IBA42**
1089	69.0	16.47	1.3	-	565	130	**BA42**	**IBA42**
1089	50.0	22.97	0.9	-	629	80	**BA42**	**IBA42**
1089	41.0	28.00	0.8	-	673	91	**BA42**	**IBA42**
1089	36.0	31.27	0.7	-	702	100	**BA42**	**IBA42**
1089	34.0	33.78	0.6	-	716	103	**BA42**	**IBA42**
1089	24.0	47.12	0.5	-	804	80	**BA42**	**IBA42**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
1089	20.0	57.43	0.4	-	854	91	**BA42**	**IBA42**
998	18.0	64.13	0.3	-	885	91	**BA42**	**IBA42**
998	15.0	78.17	0.2	-	899	91	**BA42**	**IBA42**
1452	144.0	7.91	3.6	-	474	84	**BA52**	**IBA52**
1452	120.0	9.46	3	-	504	93	**BA52**	**IBA52**
1452	98.0	11.57	2.5	-	539	91	**BA52**	**IBA52**
1452	78.0	14.63	1.9	-	582	88	**BA52**	**IBA52**
1814	67.0	17.11	2.1	-	612	119	**BA52**	**IBA52**
1814	56.0	20.46	1.7	-	649	93	**BA52**	**IBA52**
1814	46.0	25.03	1.4	-	693	91	**BA52**	**IBA52**
1814	36.0	31.63	1.1	-	752	88	**BA52**	**IBA52**
1814	32.0	35.10	1	-	783	100	**BA52**	**IBA52**
1814	27.0	41.97	0.8	-	828	93	**BA52**	**IBA52**
1996	22.0	51.34	0.8	-	887	100	**BA52**	**IBA52**
1814	18.0	64.87	0.5	-	899	80	**BA52**	**IBA52**
1814	14.0	79.07	0.4	-	899	91	**BA52**	**IBA52**
1996	15.0	73.70	0.6	-	899	106	**BA53**	**IBA53**
1996	12.0	93.33	0.4	-	899	106	**BA53**	**IBA53**
1996	10.0	111.61	0.4	-	899	106	**BA53**	**IBA53**
1996	8.3	136.53	0.3	-	899	106	**BA53**	**IBA53**
1996	6.6	172.53	0.2	-	899	106	**BA53**	**IBA53**
1996	5.8	197.11	0.2	-	899	106	**BA53**	**IBA53**
1996	4.6	249.08	0.2	-	899	106	**BA53**	**IBA53**
1996	4.2	271.16	0.2	-	899	106	**BA53**	**IBA53**
1996	3.3	342.65	0.1	-	899	106	**BA53**	**IBA53**
3175	136.0	8.36	7.4	1224	612	149	**BA72**	**IBA72**
3175	113.0	10.06	6.2	1302	651	154	**BA72**	**IBA72**
3175	92.0	12.44	5	1394	697	150	**BA72**	**IBA72**
3810	76.0	14.91	5	1486	743	186	**BA72**	**IBA72**
3810	64.0	17.94	4.2	1574	787	154	**BA72**	**IBA72**
3810	51.0	22.19	3.4	1697	849	150	**BA72**	**IBA72**
3810	42.0	27.45	2.7	1811	905	150	**BA72**	**IBA72**
3810	35.0	33.04	2.3	1924	962	154	**BA72**	**IBA72**
3629	28.0	40.87	1.7	2073	1036	143	**BA72**	**IBA72**
3175	25.0	45.64	1.4	2153	1076	145	**BA72**	**IBA72**
3175	21.0	54.94	1.1	2248	1141	154	**BA72**	**IBA72**
3175	17.0	67.96	0.9	2248	1224	150	**BA72**	**IBA72**
4082	26.0	43.89	1.9	2125	1062	74	**BA73**	**IBA73**
4082	22.0	52.83	1.6	2246	1123	92	**BA73**	**IBA73**
4082	17.0	65.35	1.3	2248	1224	90	**BA73**	**IBA73**
4082	14.0	80.83	1	2248	1236	90	**BA73**	**IBA73**
4082	12.0	97.29	0.9	2248	1236	92	**BA73**	**IBA73**
4082	9.5	120.34	0.7	2248	1236	90	**BA73**	**IBA73**

5.3 IB/IBA GEAR REDUCER - fs=1, 1140 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
4082	7.6	149.73	0.6	2248	1236	89	**BA73**	**IBA73**
4082	6.3	180.23	0.5	2248	1236	92	**BA73**	**IBA73**
4082	5.1	222.93	0.4	2248	1236	90	**BA73**	**IBA73**
4082	4.4	260.20	0.3	2248	1236	95	**BA73**	**IBA73**
4082	3.5	321.85	0.3	2248	1236	90	**BA73**	**IBA73**
4082	3.2	357.95	0.2	2248	1236	100	**BA73**	**IBA73**
4082	2.6	442.76	0.2	2248	1236	90	**BA73**	**IBA73**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
2695	153.0	5.71	7.5	1873	535	61	**PB063**	**IB063**
3160	127.0	6.88	7.3	1959	560	66	**PB063**	**IB063**
3253	119.0	7.32	7	2000	571	73	**PB063**	**IB063**
4275	96.0	9.16	7.4	2059	588	63	**PB063**	**IB063**
4833	85.0	10.26	7.5	2100	600	61	**PB063**	**IB063**
5018	79.0	11.03	7.2	2144	613	68	**PB063**	**IB063**
5390	71.0	12.35	6.9	2200	629	76	**PB063**	**IB063**
5483	67.0	13.15	6.6	2245	641	85	**PB063**	**IB063**
5483	58.0	15.18	5.7	2386	682	109	**PB063**	**IB063**
5576	51.0	17.00	5.2	2508	716	124	**PB063**	**IB063**
5576	39.0	22.39	4	2698	801	158	**PB063**	**IB063**
5576	34.0	26.09	3.4	2698	847	174	**PB063**	**IB063**
5576	31.0	28.03	3.2	2698	879	180	**PB063**	**IB063**
5576	26.0	33.43	2.6	2698	943	195	**PB063**	**IB063**
5576	23.0	38.58	2.3	2698	990	204	**PB063**	**IB063**
5576	20.0	43.22	2	2698	1046	211	**PB063**	**IB063**
5576	17.0	50.81	1.7	2698	1114	220	**PB063**	**IB063**
5576	15.0	56.93	1.6	2698	1169	225	**PB063**	**IB063**
5576	13.0	69.16	1.3	2698	1235	232	**PB063**	**IB063**
5576	11.0	77.48	1.1	2698	1317	236	**PB063**	**IB063**
5576	9.7	90.33	1	2698	1381	241	**PB063**	**IB063**
5576	8.6	101.20	0.9	2698	1445	244	**PB063**	**IB063**
5576	7.8	111.74	0.8	2698	1499	246	**PB063**	**IB063**
5576	7.0	124.20	0.7	2698	1560	248	**PB063**	**IB063**
5576	6.3	139.15	0.6	2698	1623	250	**PB063**	**IB063**
5576	5.6	157.42	0.6	2698	1695	252	**PB063**	**IB063**
4647	112.0	7.81	9.4	3189	911	364	**PB083**	**IB083**
5576	101.0	8.62	10.3	3222	921	337	**PB083**	**IB083**
6041	83.0	10.49	9.1	3431	980	374	**PB083**	**IB083**
6970	76.0	11.59	9.5	3456	988	361	**PB083**	**IB083**
7528	61.0	14.43	8.3	3716	1062	402	**PB083**	**IB083**
7899	53.0	16.60	7.6	3893	1112	426	**PB083**	**IB083**
7899	48.0	18.32	6.8	4047	1158	450	**PB083**	**IB083**
7899	38.0	22.82	5.5	4047	1270	494	**PB083**	**IB083**
7899	33.0	26.71	4.7	4047	1342	520	**PB083**	**IB083**
7899	30.0	29.50	4.2	4047	1393	535	**PB083**	**IB083**
7899	28.0	31.80	3.9	4047	1431	545	**PB083**	**IB083**
7899	25.0	34.49	3.6	4047	1495	555	**PB083**	**IB083**
7899	22.0	39.60	3.2	4047	1570	562	**PB083**	**IB083**
7899	20.0	42.95	2.9	4047	1628	562	**PB083**	**IB083**
7899	19.0	45.44	2.8	4047	1661	562	**PB083**	**IB083**
7899	17.0	51.19	2.4	4047	1732	562	**PB083**	**IB083**
7899	16.0	55.52	2.3	4047	1772	562	**PB083**	**IB083**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
7899	15.0	59.96	2.1	4047	1816	562	**PB083**	**IB083**
7899	14.0	63.74	2	4047	1863	562	**PB083**	**IB083**
7899	13.0	69.14	1.8	4047	1916	562	**PB083**	**IB083**
7899	12.0	73.14	1.7	4047	1974	562	**PB083**	**IB083**
7899	11.0	80.76	1.6	4047	2039	562	**PB083**	**IB083**
7899	9.5	92.19	1.4	4047	2152	562	**PB083**	**IB083**
7899	8.7	100.57	1.2	4047	2223	562	**PB083**	**IB083**
7899	8.3	105.29	1.2	4047	2262	562	**PB083**	**IB083**
7899	7.5	116.25	1.1	4047	2348	562	**PB083**	**IB083**
7899	6.9	126.76	1	4047	2421	562	**PB083**	**IB083**
7899	6.0	144.77	0.9	4047	2547	562	**PB083**	**IB083**
7435	108.0	8.13	14.5	3946	1127	221	**PB103**	**IB103**
8364	98.0	8.97	14.8	4026	1150	212	**PB103**	**IB103**
9293	80.0	10.92	13.5	4283	1224	252	**PB103**	**IB103**
9293	73.0	12.05	12.2	4436	1268	291	**PB103**	**IB103**
11152	58.0	14.99	11.8	4708	1345	305	**PB103**	**IB103**
13011	51.0	17.27	12	4815	1376	300	**PB103**	**IB103**
13011	46.0	19.06	10.8	4946	1433	335	**PB103**	**IB103**
13011	37.0	23.70	8.7	4946	1562	401	**PB103**	**IB103**
13940	33.0	26.51	8.3	4946	1613	412	**PB103**	**IB103**
14869	29.0	30.55	7.7	4946	1678	431	**PB103**	**IB103**
15799	26.0	33.07	7.6	4946	1732	436	**PB103**	**IB103**
15799	24.0	35.87	7	4946	1788	454	**PB103**	**IB103**
15799	21.0	41.12	6.1	4946	1884	481	**PB103**	**IB103**
15799	20.0	44.61	5.6	4946	1921	496	**PB103**	**IB103**
15799	19.0	47.28	5.3	4946	1959	506	**PB103**	**IB103**
15799	17.0	50.24	5	4946	2046	516	**PB103**	**IB103**
15799	17.0	53.02	4.7	4946	2046	524	**PB103**	**IB103**
15799	15.0	58.50	4.3	4946	2147	538	**PB103**	**IB103**
15799	13.0	64.89	3.9	4946	2268	551	**PB103**	**IB103**
15799	13.0	68.58	3.7	4946	2268	557	**PB103**	**IB103**
15799	12.0	72.76	3.4	4946	2338	563	**PB103**	**IB103**
15799	11.0	78.92	3.2	4946	2417	572	**PB103**	**IB103**
16728	10.0	83.66	3.2	4946	2486	572	**PB103**	**IB103**
16728	9.5	92.31	2.9	4946	2535	581	**PB103**	**IB103**
16728	8.3	105.44	2.5	4946	2668	592	**PB103**	**IB103**
16728	7.6	114.80	2.3	4946	2758	599	**PB103**	**IB103**
16728	7.3	120.42	2.2	4946	2800	602	**PB103**	**IB103**
16728	6.6	132.87	2	4946	2907	608	**PB103**	**IB103**
16728	6.0	144.69	1.8	4946	3012	613	**PB103**	**IB103**
16728	5.3	165.25	1.6	4946	3154	620	**PB103**	**IB103**
13940	110.0	7.97	27.8	4692	1341	559	**PB123**	**IB123**
16728	91.0	9.62	27.6	4779	1365	562	**PB123**	**IB123**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
18587	85.0	10.33	28.5	4717	1348	550	**PB123**	**IB123**
18587	70.0	12.48	23.6	5177	1479	610	**PB123**	**IB123**
19516	63.0	13.84	22.4	5331	1523	626	**PB123**	**IB123**
19516	57.0	15.38	20.1	5589	1597	653	**PB123**	**IB123**
20445	47.0	18.58	17.5	6004	1715	686	**PB123**	**IB123**
23233	42.0	20.61	17.9	5999	1714	680	**PB123**	**IB123**
26021	38.0	22.78	18.1	5969	1705	678	**PB123**	**IB123**
26021	34.0	25.89	15.9	6309	1803	704	**PB123**	**IB123**
26021	32.0	27.51	15	6500	1857	716	**PB123**	**IB123**
26021	28.0	30.79	13.4	6744	1981	735	**PB123**	**IB123**
26021	28.0	31.26	13.2	6744	1981	738	**PB123**	**IB123**
26021	25.0	34.68	11.9	6744	2091	754	**PB123**	**IB123**
26021	22.0	40.53	10.2	6744	2220	775	**PB123**	**IB123**
27880	19.0	44.89	9.9	6744	2312	779	**PB123**	**IB123**
29739	18.0	49.80	9.5	6744	2309	783	**PB123**	**IB123**
29739	16.0	54.30	8.7	6744	2441	793	**PB123**	**IB123**
29739	15.0	59.36	7.9	6744	2516	802	**PB123**	**IB123**
30668	14.0	62.59	7.8	6744	2567	804	**PB123**	**IB123**
30668	13.0	69.43	7	6744	2656	814	**PB123**	**IB123**
32526	12.0	74.42	6.9	6744	2694	815	**PB123**	**IB123**
32526	11.0	80.04	6.4	6744	2805	821	**PB123**	**IB123**
32526	9.7	89.87	5.7	6744	2972	829	**PB123**	**IB123**
32526	8.8	99.70	5.2	6744	3105	836	**PB123**	**IB123**
32526	8.2	106.65	4.8	6744	3205	840	**PB123**	**IB123**
32526	7.3	119.60	4.3	6744	3375	847	**PB123**	**IB123**
32526	6.7	129.96	4	6744	3504	851	**PB123**	**IB123**
32526	6.1	144.43	3.6	6744	3650	856	**PB123**	**IB123**
32526	5.5	160.23	3.2	6744	3816	860	**PB123**	**IB123**
32526	4.9	180.40	2.9	6744	4009	864	**PB123**	**IB123**
27880	81.0	10.84	40.8	4816	4816	498	**PB143**	**IB143**
28809	74.0	11.87	38.5	4957	4957	520	**PB143**	**IB143**
28809	60.0	14.49	31.6	5506	5506	589	**PB143**	**IB143**
29739	51.0	17.04	27.7	5874	5874	627	**PB143**	**IB143**
33456	47.0	18.66	28.4	5772	5772	619	**PB143**	**IB143**
37173	42.0	21.00	28.1	5770	5770	623	**PB143**	**IB143**
40890	38.0	22.77	28.5	5742	5742	619	**PB143**	**IB143**
42749	34.0	25.63	26.5	5930	5930	639	**PB143**	**IB143**
42749	32.0	27.44	24.7	6131	6131	656	**PB143**	**IB143**
43678	29.0	30.05	23.1	6380	6380	673	**PB143**	**IB143**
43678	27.0	33.01	21	6630	6630	693	**PB143**	**IB143**
44608	24.0	36.67	19.3	6970	6970	710	**PB143**	**IB143**
44608	22.0	40.29	17.6	7295	7295	727	**PB143**	**IB143**
44608	20.0	44.16	16	7662	7662	742	**PB143**	**IB143**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
46466	18.0	48.35	15.2	7912	7912	750	**PB143**	**IB143**
46466	16.0	53.16	13.9	8398	8398	763	**PB143**	**IB143**
46466	16.0	54.63	13.5	8398	8398	767	**PB143**	**IB143**
46466	15.0	59.02	12.5	8673	8673	777	**PB143**	**IB143**
46466	13.0	64.88	11.4	8990	8990	788	**PB143**	**IB143**
46466	12.0	70.43	10.5	8990	8990	797	**PB143**	**IB143**
46466	11.0	77.12	9.6	8990	8990	806	**PB143**	**IB143**
46466	10.0	85.54	8.6	8990	8990	815	**PB143**	**IB143**
46466	9.3	94.13	7.8	8990	8990	823	**PB143**	**IB143**
46466	8.3	105.83	7	8990	8990	831	**PB143**	**IB143**
46466	7.8	111.94	6.6	8990	8990	835	**PB143**	**IB143**
46466	7.0	124.62	5.9	8990	8990	841	**PB143**	**IB143**
46466	6.4	136.44	5.4	8990	8990	847	**PB143**	**IB143**
46466	5.8	149.59	4.9	8990	8990	851	**PB143**	**IB143**
46466	5.3	166.53	4.4	8990	8990	856	**PB143**	**IB143**
46466	4.7	187.24	3.9	8990	8990	861	**PB143**	**IB143**
41820	83.0	10.49	63.2	8712	8712	1549	**PB153**	**IB153**
41820	69.0	12.64	52.5	9364	9364	1663	**PB153**	**IB153**
46466	62.0	14.01	52.6	9587	9587	1662	**PB153**	**IB153**
46466	57.0	15.40	47.9	9909	9909	1712	**PB153**	**IB153**
55760	47.0	18.56	47.7	10336	10336	1714	**PB153**	**IB153**
60406	43.0	20.56	46.6	10536	10536	1725	**PB153**	**IB153**
62265	37.0	23.86	41.4	11124	11124	1781	**PB153**	**IB153**
63194	35.0	25.19	39.8	11341	11341	1798	**PB153**	**IB153**
74346	31.0	28.23	41.8	11490	11490	1777	**PB153**	**IB153**
74346	29.0	30.35	38.9	11811	11811	1808	**PB153**	**IB153**
74346	26.0	33.63	35.1	12351	12351	1848	**PB153**	**IB153**
74346	25.0	35.02	33.7	12550	12550	1863	**PB153**	**IB153**
74346	23.0	38.81	30.4	12982	12982	1897	**PB153**	**IB153**
74346	21.0	42.30	27.9	13467	13467	1924	**PB153**	**IB153**
74346	18.0	47.53	24.8	14323	14323	1957	**PB153**	**IB153**
74346	17.0	50.56	23.3	14613	14613	1972	**PB153**	**IB153**
74346	16.0	54.64	21.6	14613	14613	1991	**PB153**	**IB153**
74346	15.0	57.27	20.6	14613	14613	2001	**PB153**	**IB153**
74346	14.0	60.92	19.4	14613	14613	2015	**PB153**	**IB153**
74346	14.0	63.47	18.6	14613	14613	2023	**PB153**	**IB153**
74346	12.0	71.15	16.6	14613	14613	2044	**PB153**	**IB153**
74346	11.0	77.22	15.3	14613	14613	2058	**PB153**	**IB153**
74346	10.0	83.89	14.1	14613	14613	2071	**PB153**	**IB153**
74346	10.0	87.65	13.5	14613	14613	2077	**PB153**	**IB153**
74346	9.4	93.05	12.7	14613	14613	2085	**PB153**	**IB153**
74346	8.5	103.12	11.4	14613	14613	2099	**PB153**	**IB153**
74346	7.1	123.88	9.5	14613	14613	2119	**PB153**	**IB153**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
74346	6.5	134.27	8.8	14613	14613	2127	**PB153**	**IB153**
74346	5.9	149.26	7.9	14613	14613	2136	**PB153**	**IB153**
74346	5.3	165.42	7.1	14613	14613	2144	**PB153**	**IB153**
63194	98.0	8.89	112.8	12397	12397	1554	**PB163**	**IB163**
73417	83.0	10.58	110.1	12809	12809	1571	**PB163**	**IB163**
71558	74.0	11.87	95.6	13518	13518	1670	**PB163**	**IB163**
81781	68.0	12.81	101.3	13542	13542	1631	**PB163**	**IB163**
89216	62.0	14.08	100.5	13749	13749	1637	**PB163**	**IB163**
92933	56.0	15.52	95	14195	14195	1674	**PB163**	**IB163**
92004	53.0	16.39	89.1	14576	14576	1714	**PB163**	**IB163**
96650	49.0	18.02	85.1	14864	14613	1741	**PB163**	**IB163**
99438	44.0	19.96	79.1	15440	14613	1783	**PB163**	**IB163**
96650	40.0	21.94	69.9	16204	14613	1845	**PB163**	**IB163**
97579	36.0	24.17	64	16896	14613	1884	**PB163**	**IB163**
103155	33.0	26.58	61.6	17273	14613	1901	**PB163**	**IB163**
94791	30.0	28.80	52.2	17985	14613	1965	**PB163**	**IB163**
106873	28.0	30.92	54.8	17985	14613	1947	**PB163**	**IB163**
110590	26.0	34.25	51.2	17985	14613	1972	**PB163**	**IB163**
114307	23.0	37.66	48.2	17985	14613	1992	**PB163**	**IB163**
118025	22.0	40.65	46.1	17985	14613	2007	**PB163**	**IB163**
111519	19.0	45.09	39.2	17985	14613	2053	**PB163**	**IB163**
120813	17.0	51.00	37.6	17985	14613	2064	**PB163**	**IB163**
120813	16.0	53.63	35.7	17985	14613	2077	**PB163**	**IB163**
120813	15.0	58.97	32.5	17985	14613	2099	**PB163**	**IB163**
120813	13.0	69.78	27.5	17985	14613	2133	**PB163**	**IB163**
120813	11.0	76.72	25	17985	14613	2150	**PB163**	**IB163**
120813	10.0	87.54	21.9	17985	14613	2171	**PB163**	**IB163**
120813	9.1	96.25	19.9	17985	14613	2184	**PB163**	**IB163**
120813	8.4	103.93	18.4	17985	14613	2194	**PB163**	**IB163**
120813	7.7	114.27	16.8	17985	14613	2206	**PB163**	**IB163**
120813	6.9	126.29	15.2	17985	14613	2216	**PB163**	**IB163**
120813	6.3	138.85	13.8	17985	14613	2226	**PB163**	**IB163**
120813	5.7	154.83	12.4	17985	14613	2235	**PB163**	**IB163**
836	115.0	7.62	1.7	-	477	84	**BA42**	**IBA42**
836	82.0	10.62	1.2	-	534	80	**BA42**	**IBA42**
836	68.0	12.95	1	-	568	91	**BA42**	**IBA42**
836	61.0	14.46	0.9	-	589	100	**BA42**	**IBA42**
1115	53.0	16.47	1	-	617	130	**BA42**	**IBA42**
1115	38.0	22.97	0.7	-	690	80	**BA42**	**IBA42**
1115	31.0	28.00	0.6	-	738	91	**BA42**	**IBA42**
1115	28.0	31.27	0.5	-	764	100	**BA42**	**IBA42**
1115	26.0	33.78	0.5	-	783	103	**BA42**	**IBA42**
1115	19.0	47.12	0.4	-	869	80	**BA42**	**IBA42**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
1115	15.0	57.43	0.3	-	899	91	**BA42**	**IBA42**
1022	14.0	64.13	0.2	-	899	91	**BA42**	**IBA42**
1022	11.0	78.17	0.2	-	899	91	**BA42**	**IBA42**
1487	111.0	7.91	2.8	-	517	84	**BA52**	**IBA52**
1487	92.0	9.46	2.4	-	550	93	**BA52**	**IBA52**
1487	76.0	11.57	1.9	-	587	91	**BA52**	**IBA52**
1487	60.0	14.63	1.5	-	635	88	**BA52**	**IBA52**
1859	51.0	17.11	1.6	-	670	119	**BA52**	**IBA52**
1859	43.0	20.46	1.4	-	709	93	**BA52**	**IBA52**
1859	35.0	25.03	1.1	-	760	91	**BA52**	**IBA52**
1859	28.0	31.63	0.9	-	818	88	**BA52**	**IBA52**
1859	25.0	35.10	0.8	-	850	100	**BA52**	**IBA52**
1859	21.0	41.97	0.7	-	899	93	**BA52**	**IBA52**
2045	17.0	51.34	0.6	-	899	100	**BA52**	**IBA52**
1859	13.0	64.87	0.4	-	899	80	**BA52**	**IBA52**
1859	11.0	79.07	0.4	-	899	91	**BA52**	**IBA52**
2045	12.0	73.70	0.4	-	899	106	**BA53**	**IBA53**
2045	9.4	93.33	0.3	-	899	106	**BA53**	**IBA53**
2045	7.8	111.61	0.3	-	899	106	**BA53**	**IBA53**
2045	6.4	136.53	0.2	-	899	106	**BA53**	**IBA53**
2045	5.1	172.53	0.2	-	899	106	**BA53**	**IBA53**
2045	4.4	197.11	0.2	-	899	106	**BA53**	**IBA53**
2045	3.5	249.08	0.1	-	899	106	**BA53**	**IBA53**
2045	3.2	271.16	0.1	-	899	106	**BA53**	**IBA53**
2045	2.6	342.65	0.1	-	899	106	**BA53**	**IBA53**
3253	105.0	8.36	5.8	1334	667	149	**BA72**	**IBA72**
3253	87.0	10.06	4.9	1421	710	154	**BA72**	**IBA72**
3253	70.0	12.44	3.9	1527	764	150	**BA72**	**IBA72**
3903	59.0	14.91	3.9	1617	808	186	**BA72**	**IBA72**
3903	49.0	17.94	3.3	1720	860	154	**BA72**	**IBA72**
3903	39.0	22.19	2.6	1856	928	150	**BA72**	**IBA72**
3903	32.0	27.45	2.1	1983	991	150	**BA72**	**IBA72**
3903	26.0	33.04	1.8	2125	1062	154	**BA72**	**IBA72**
3717	21.0	40.87	1.4	2248	1141	143	**BA72**	**IBA72**
3253	19.0	45.64	1.1	2248	1179	145	**BA72**	**IBA72**
3253	16.0	54.94	0.9	2248	1236	154	**BA72**	**IBA72**
3253	13.0	67.96	0.7	2248	1236	150	**BA72**	**IBA72**
4182	20.0	43.89	1.5	2248	1159	74	**BA73**	**IBA73**
4182	17.0	52.83	1.3	2248	1224	92	**BA73**	**IBA73**
4182	13.0	65.35	1	2248	1236	90	**BA73**	**IBA73**
4182	11.0	80.83	0.8	2248	1236	90	**BA73**	**IBA73**
4182	9.0	97.29	0.7	2248	1236	92	**BA73**	**IBA73**
4182	7.3	120.34	0.6	2248	1236	90	**BA73**	**IBA73**

5.4 IB/IBA GEAR REDUCER - fs=1, 875 rpm

Maximum torque [in-lbs]	Output speed [rpm]	Exact ratio i	Maximum Power [HP]	OHL			Gear Reducer	
				Output shaft [lbs]	Hollow bore [lbs]	Input shaft [lbs]	Motorized Input	Shaft Input
4182	5.8	149.73	0.4	2248	1236	89	**BA73**	**IBA73**
4182	4.9	180.23	0.4	2248	1236	92	**BA73**	**IBA73**
4182	3.9	222.93	0.3	2248	1236	90	**BA73**	**IBA73**
4182	3.4	260.20	0.3	2248	1236	95	**BA73**	**IBA73**
4182	2.7	321.85	0.2	2248	1236	90	**BA73**	**IBA73**
4182	2.4	357.95	0.2	2248	1236	100	**BA73**	**IBA73**
4182	2.0	442.76	0.1	2248	1236	90	**BA73**	**IBA73**

6.1 SALES CONDITIONS

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; 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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B / US / STD / REV.0 / 2020