DANA BREVINI® Motion Systems

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Product Catalog

Brevini® Planetary Gearboxes
S Series

Torques from 16.000 Nm to 1.100.000 Nm

Industrial solutions

Brevini® S Series planetary gearboxes are designed to ensure effective performances and quite operation in multiple possible configurations.

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B

Description	Measurement unit	Symbol
Radial load constant		c
Diameter of element mounted on shaft	[mm]	d
Permissible axial load on output shaft	[N]	F_{a2}
Required axial load on the output shaft	[N]	F_{aR2}
Permissible radial load on input/output shaft	[N]	$F_{r1,2}$
Required radial load on the input/output shaft	[N]	$F_{rR1,2}$
Power increase factor		f_I
Thermal factor		f_K
Environmental factor		f_R
Duty factor		f_S
Speed factor		f_V
Operating life	[h]	h
Required operating life	[h]	h_R
Duty cycle		I
Reduction ratio		i
Input/output duration factor		$L_{h1,2}$
Number of starts per hour	[1/h]	N
Input speed	[rpm]	n_1
Max input speed	[rpm]	n_{1MAX}
Output speed	[rpm]	n_2
Hydraulic motor operating pressure	[bar]	p_A
Input power	[kW]	P_1
Output power	[kW]	P_2
Thermal power to be dissipated	[kW]	P_C
Electric motor nominal power	[kW]	P_n
Thermal power	[kW]	P_T
Corrected thermal power	[kW]	P_{T1}
Hydraulic motor capacity	[l/min]	q
Brake safety factor		S_f
Required input torque	[Nm]	T_{1R}
Transmissible output torque	[Nm]	T_2
Output braking torque	[Nm]	T_{2B}
Max output torque	[Nm]	T_{2MAX}
Nominal output torque	[Nm]	T_{2N}
Required output torque	[Nm]	T_{2R}
Required maximum output torque	[Nm]	T_{2RMAX}
Input braking torque	[Nm]	T_B
Required input braking torque	[Nm]	T_{BR}
Work environment temperature	[°C]	t_a
Operating time	[s]	t_f
Stopping time	[s]	t_r
Hydraulic motor displacement	[cm^3]	V
Required hydraulic motor displacement	[cm^3]	V_R
Input/output radial load application distance	[mm]	$X_{1,2}$
Dynamic efficiency		η_d
Hydraulic motor mechanical efficiency		η_{mh}
Hydraulic motor volumetric efficiency		η_v

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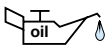
In-line gearboxes	SL	
Right-angle gearboxes	SC	
Tightening torque	[Nm]	
Lubrication	[l]	

Bevel gear dimensions by ratios	
Refer to page	

Outputs					
Female splined shaft	FE FAR		Male splined shaft	MP	
Hollow shaft for shrink disc	FS		Keyed cylindrical shaft	MP1	

Inputs	
Universal coupling	
Universal coupling	
Direct coupling	

Accessories	
Wheel flange	
Pinion	
Splined sleeve	
Lock washer	

Brevini Industrial Series

The Brevini Industrial series is a complete range of modular planetary gearboxes that combines high performance with low cost and size. The commercial success this range has achieved for more than 40 years testifies to its quality, reliability, ease of installation and low maintenance requirements.
Brevini Industrial series covers a full range of sizes that ensure optimum durability, quiet operation in all working conditions and efficiency to reduce operating costs and maximise availability.

The ISO 9001:2000 quality system for design, development, production, assembly and after-sales service guarantees a high supply standard at an international level.

The Brevini Industrial Series

The modular transmission system offers customers various benefits, including:
- Short lead times due to a high level of standardisation
- The torque is distributed proportionately among the sizes means the most suitable gearbox can be selected for every application
- High product quality
- Numerous available variants allow more flexible configuration for a wide range of applications
- Customised variants based on the modular system

Available options:
- From 1 to 4 planetary stages with the in-line configuration
- From 2 to 4 stages with the right-angle configuration
- Configurations with more stages are available on request
- 9 sizes based on the principle of modularity

Construction and Design:
- Keyed cylindrical shafts: male and female
- Splined shafts: male and female
- Female cylindrical shaft with retaining ring
  Horizontal and vertical installation possible

Output torques
T_{2N} from 34000 Nm to 530000 Nm

Ratios:
- i = 3.4 up to 3000 with the in-line configuration
- i = 10 up to 3000 with the right-angle configuration
- i > 3000 by combining more than 4 planetary stages

Casings
The Brevini Industrial series casings basically consist of an input flange, reduction stages, intermediate coupling flanges and output supports.
They are dimensioned to suit the loads transmitted through the gearbox, which increase from the input to the output.

Casing materials:
- Input supports: EN-GJL-250 grey cast iron
- Rim: high-quality hardened steel
- Intermediate coupling flange: EN-GJS-400-15 spheroidal-graphite cast iron
- Output supports: EN-GJS-400-15 spheroidal-graphite cast iron

Output shafts:
- Solid shaft, keyed or splined according to DIN5482
- Hollow shaft, keyed, splined according to DIN5482 or with keyway

Available inputs:
- Direct coupling with adapter flange for electric and hydraulic motors
- Keyed solid shaft
- SAHR (Spring Applied Hydraulically Released) brakes

IN-LINE AND RIGHT-ANGLE PLANETARY GEARBOXES

Gears
The Brevini S series uses gears designed to optimise load distribution and minimise noise. The case-hardening processes are applied to the gears in-house to ensure control over the entire production process.

Bearings:
Only Class A bearings are used in the planet carriers to ensure that they meet the durability criteria required for industrial applications.

Seals:
The following sealing systems are available as standard for the input and output shafts:
- NBR and FKM radial shaft seals, VMQ on request
- Taconite seals on input and output shafts exposed to harsh environmental conditions

Lubrication:
- Oil bath lubricated gears and roller bearings as standard
- Sight glass plug as standard for vertical mounting configurations

Accessories:

Output:
Available for male splined output shaft:
- Wheel flange
- Sleeve
- Tab washer

Available for female hollow output shaft:
- Keyway
- Tab washer

Available for female splined output shaft:
- Splined rod

Input:
- Anti-backlash devices

General:
- Quoted dimensional drawings are available as CAD files for various computer systems and interfaces
- Digital programs for selecting units
- Gear, shaft and bearing calculations with calculation proof
- Surface protection: painting cycles according to ISO 12944

Noise level:
- The gearbox noise level may vary with the size and number of stages, so no specific value has been declared
- If the noise does not cause abnormal vibration or overheating, do not consider it to be a risk for the application
- Unless specifically requested by the customer during the selection process or while developing the gearbox, the gearbox noise is not considered for design purposes
- Warranty claims related to noise will be assessed case-by-case

Nominal output torque T_{2N} [Nm]
This is the conventional output torque that defines the size of the gearbox.

Transmissible output torque T_2 [Nm]
This is the output torque that the gearbox can transmit with a uniform and continuous load (duty factor fs=1), for different values of gearbox input speed and a **duration of 10000 hours**.

The T_2 values are calculated according to ISO 6336 for the gears and ISO 281 for the bearings, and are given in the size selection tables.

Max output torque T_{2MAX} [Nm]
This is the peak transmissible output torque that a gearbox can provide for short periods. For drives involving a high number of starts or reversals, the maximum operational torque must also be limited to suit the strength of the gears or shafts. The T_{2MAX} values are given in the size selection tables.

Required output torque T_{2R} [Nm]
This is the output torque required by the application, which must always be less than the transmissible output torque T_2 of the selected gearbox.

Required maximum output torque T_{2RMAX} [Nm]
This is the maximum output torque required by the application, which must always be less than the maximum transmissible output torque T_{2MAX} of the selected gearbox.

Input braking torque T_B [Nm]
This is the static braking torque delivered by the multi-disc brake that may be installed on the gearbox input.
The T_B values for the various brake configurations are given in the “Oil bath multi-disc brakes” section.

Required input braking torque T_{BR} [Nm]
This is the braking torque required at the gearbox input if the application involves the use of an input brake.
It can be calculated with the following equation:

$$T_{BR} = \frac{S_f \times T_{2R}}{i} \quad [Nm] \qquad \textbf{(1)}$$

where

- S_f is the brake safety factor
- T_{2R} is the required output torque
- i is the reduction ratio

The brake safety factor S_f depends on the type of application and must be specified by the customer. Sometimes its minimum value is indicated by specific regulations relevant to the application.

Input speed n_1 [rpm]
This is the speed of the motor coupled to the gearbox or, in general, the speed of the gearbox input stage. For drives with pulleys and belts, for example, its value must take the reduction ratio into account.

Max input speed n_{1MAX} [rpm]
This is the maximum gearbox input speed for short periods or for intermittent duty. The gearbox may remain at a speed of n_{1MAX} for a maximum of 1 minute followed by a cooling period. If longer periods at that speed are expected and/or higher speed values are foreseen, we recommend contacting the Dana Sales Department.
The n_{1MAX} values are given in the selection tables.

Output speed n_2 [rpm]
This is the gearbox output speed. It can be calculated with the following formula:

$$n_2 = \frac{n_1}{i} \quad [rpm] \qquad (2)$$

where n_1 is the input speed and i is the gearbox reduction ratio.

Reduction ratio i
This is the ratio between the input speed n_1 and output speed n_2.

$$i = \frac{n_1}{n_2} \qquad (3)$$

Input power P_1 [kW]
This is the power applied to the gearbox input. It can be calculated with the following formula:

$$P_1 = \frac{P_2}{\eta_d} \quad [kW] \qquad (4)$$

where
- P_2 is the output power
- η_d is the dynamic efficiency of the gearbox, the value of which is given in the table (4)

Output power P_2 [kW]
This is the power transmitted at the gearbox output. It can be calculated with the following formula:

$$P_2 = \frac{T_{2R} \times n_2}{9550} \quad [kW] \qquad (5)$$

where T_{2R} is the required output torque and n_2 is the output speed.

Thermal power P_T [kW]
This is the power that the gearbox can transmit continuously in the following conditions:

- with splash lubrication, without an auxiliary cooling circuit
- with horizontal mounting
- at an input speed of 1500 rpm
- for a maximum oil temperature of 80°C (oil viscosity ISO VG150)
- at an ambient temperature of 20°C
- for use in a “large environment”

The P_T values are given in the tables for selection of the various sizes.

If the type of operation, mounting position, input speed, ambient temperature or operating environment are different from those indicated above, it is advisable to use the factors f_K, f_V and f_R given below to correct the thermal power.

Thermal factor f_K
With work cycles that involve intermittent gearbox use and/or an ambient temperature other than 20°C, the gearbox thermal rating can be adjusted to the specific application with the factor f_K given in the table below.

	Duty cycle I [%]	Ambient temperature [°C]				
		10°	20°	30°	40°	50°
f_K	100	1.15	1	0.85	0.7	0.6
	80	1.25	1.1	1	0.85	0.7
	60	1.4	1.25	1.1	1	0.85
	40	1.6	1.4	1.25	1.1	1
	20	1.8	1.6	1.4	1.25	1.1

Tab.(1)

The duty cycle I can be calculated as follows:

$$I = \frac{t_f}{t_r + t_f} \times 100 \qquad \textbf{(6)}$$

where t_f is the operating time at constant power and t_r is the rest time.

Speed factor f_V

If the input speed is not 1500 rpm, the thermal power can be adapted to the specific situation with the factor f_V given in the table below. The table refers to the different gearbox mounting positions.

	Mounting position	n_1 [rpm]					
		3000	2500	2000	1500	1000	700
f_V	Horizontal mounting	0.50	0.65	0.80	1.00	1.15	1.30
	Vertical mounting	0.40	0.48	0.58	0.71	0.88	1.00

Tab.(2)

Environmental factor f_R

If the gearbox is located in a restricted space or outdoors, the thermal power can be adapted with the aid of the factor f_R given in the table below.

	Restricted environment	Large environment	Outdoors
f_R	0.70	1.00	1.35

Tab.(3)

In general, the corrected thermal power of the gearbox will be

$$P_{T1} = P_T \times f_K \times f_V \times f_R \quad [kW] \qquad \textbf{(7)}$$

The power P_1 applied to the gearbox must always be less than the corrected thermal power P_{T1}.

$$P_1 \leq P_{T1} \qquad \textbf{(8)}$$

If the thermal power of the gearbox is less than the power applied, even in just one possible operating cycle condition, an auxiliary cooling circuit must be provided.
In such conditions, the thermal power to be dissipated P_C can be calculated with the following equation:

$$P_C = (P_1 - P_{T1}) \times (1 - \eta_d) \quad [kW] \qquad \textbf{(9)}$$

where η_d is the dynamic efficiency of the gearbox given by the table (4).

Temperature [°C]
The recommended ambient temperature is in the range -20°C/+40°C. The ideal gearbox operating temperature is from 50°C to 70°C, which corresponds to an oil temperature of approximately 60°C to 80°C. For short periods, the oil temperature can reach 90°C.
The best system to keep the temperature under control is to use an auxiliary heat exchange system.
For low ambient temperatures, or for applications involving high operating temperatures, select appropriate lubricants and seals made of suitable materials.
Seals made of different types of elastomer, such as nitrile butadiene (NB), fluoride (PF) and silicone(SI), are available for this purpose.
Contact the Dana Sales Department for the relevant indications. The “Lubrication” section contains advice on choosing the most appropriate lubricant for different conditions.

Dynamic efficiency η_d
This is given by the ratio between the output power P_2 transmitted by the gearbox and power P_1 applied at the input, and can be calculated with the following formula:

$$\eta_d = \frac{P_2}{P_1} \qquad \textbf{(10)}$$

Its value depends on many factors, including: transmitted power, input speed, lubricant viscosity, operating temperature and reduction ratio. The table below gives the approximate dynamic efficiency values.

	Reduction stages			
	1	2	3	4
	EM	ED - EC	ET - EC	EQ - EC
η_d	0.98	0.96	0.94	0.92

Tab.(4)

Duty factor f_s
The duty factor depends on the type of prime mover and the type of machine driven by the gearbox. This is an empirical value drawn from experience with various applications, and takes into account load variations, transmission shocks and the variation uncertainty related to the parameters involved in power transmission.
The table below gives the duty factor values according to the nature of the load, the type of drive (electric, hydraulic and endothermic motor) and the number of starts per hour of the driven machine.

	Nature of the load		**Drive type**	**No. of starts/h**				
				16	32	63	125	250
f_s	**a**	Smooth	Electric mot.	1.05	1.10	1.15	1.25	1.40
			Hydraulic mot.	1.05	1.05	1.10	1.15	1.20
			Endothermic engine	1.25	--	--	--	--
	b	Variable with moderate shocks	Electric mot.	1.10	1.15	1.20	1.40	1.60
			Hydraulic mot.	1.05	1.00	1.10	1.20	1.30
			Endothermic engine	1.50	--	--	--	--
	c	Variable with strong shocks	Electric mot.	1.20	1.30	1.40	1.60	1.80
			Hydraulic mot.	1.10	1.20	1.25	1.35	1.50
			Endothermic engine	2.00	--	--	--	--

Tab.(5)

Regarding the nature of the load, the table below (6) classifies the most common machines into the three levels **a**, **b** and **c** given in the previous table (5).

Nature of the load	Application field		Driven machine
a	Stirrers/Mixers		Liquids
b			Semi-liquids
b			Non-homogeneous liquid
b	Stone and clay processing		Brick presses
b			Tile machine
c			Compactors
a	Conveyors		Screw
a			Fed smoothly
b		For continuous cycle	Not fed smoothly
b			With motion reversal
c	Crane	Port	Load lifting
c			Auxiliary lifting
c			Arm lifting
c			Arm rotation
c			Crane travel
c		Container	Container lifting
c			Arm lifting
c		Industrial applications	Main lifting
c			Auxiliary lifting
c			Bridge
c			Trolley movement
b	Shredders		Stones and metals

Nature of the load	Application field		Driven machine
b	Dredgers		Cable coiler
b			Conveyor
c			Cutter head
b			Sieves
b			Bucket conveyor
b			Winches
b	Elevators		Bucket
a			Escalator
b	Extruders		In general
b		Plastic	Variable speed
b			Fixed speed
b		Rubber	Continuous cycle - screw
b			Intermittent cycle - screw
b		Food	Plate
b			Belt
b			Screw
a	Food industry		Cereal processing
b			Pasta mixers
b			Meat mincing

Tab. (6)

Nature of the load	Application field	Driven machine
b	Lifters/Elevators	Continuous cycle
b		Intermittent cycle
b		Skip lifting
b	Washing machines	Drums
b		Washing machine
c	Metal processing	Tippers
b		Ingot pusher
c		Shears
b		Extruder
b		Winder
b	Woodworking machines	Conveyors
b		Continuous cycle
b		Log processing
b		Planer
b		Traverser
b		Debarker
b		Planer feed
b		Chain traverser
b	Fabric processing	Dosing systems
b		Calenders
b		Driers

Nature of the load	Application field	Driven machine
b	Tape processing	Taping machnines
a		Winder & Unwinder
b		Trimmer
b		Flattener
b		Cylinder regulation
b		Scrap treatment
c		Shears
b		Slitters
b	Concrete processing	Concrete oven
b		Driers
b		Mixers
b	Plastic processing	Batch mixer
b		Continuous cycle mixer
b		Calenders
b	Rubber processing	Batch mixer
b		Continuous cycle mixer
b		Calenders
b		Sand heating

Tab. (6)

Nature of the load	Application field		Driven machine
b	Paper processing		Stirrers (mixers)
b			Liquid stirrers
b			Calenders
c			Chippers
b			Chipper feeder
b			Polishing rollers
b		Conveyors	Bark chips
c			Logs
b		Driers	Cutter
b			Conveyors
b			Extruders
b		Screeners	Chips
b			Rotary
c			Vibrating
b			Size press
b			Super calender
b			Thickener (AC motor)
b			Thickener (DC motor)
b			Washing machine (AC motor)
b			Washing machine (DC motor)

Nature of the load	Application field		Driven machine
b	Water treatment		Bar screen
b			Chemical feeders
b			Dehydrator screens
b			Scum breakers
b			Mixer
b			Sludge collector
b			Thickener
b			Vacuum filters
a		Screens	Air washing
b			Rotary for gravel
c	Sugar processing		Beetroot slicer
b			Cane crushers
b			Shredders
b			Grinders

Tab. (6)

Lifetime factor

L_{h1}, L_{h2}

This is the product of the gearbox input speed n_1 or output speed n_2 and the hours of operation required by the application h_R:

$$L_{h1} = n_1 \times h_R \quad \textbf{(11)}$$

$$L_{h2} = n_2 \times h_R \quad \textbf{(12)}$$

Permissible radial loads on output / input shafts

F_{r2}, F_{r1} [N]

For each gearbox size, the selection tables give the diagrams of permissible radial loads F_{r2} and F_{r1} on the output and input shafts respectively as a function of the distance X between the load application point and the shaft shoulder; the values are given for various values of bearing duration factor nxh.

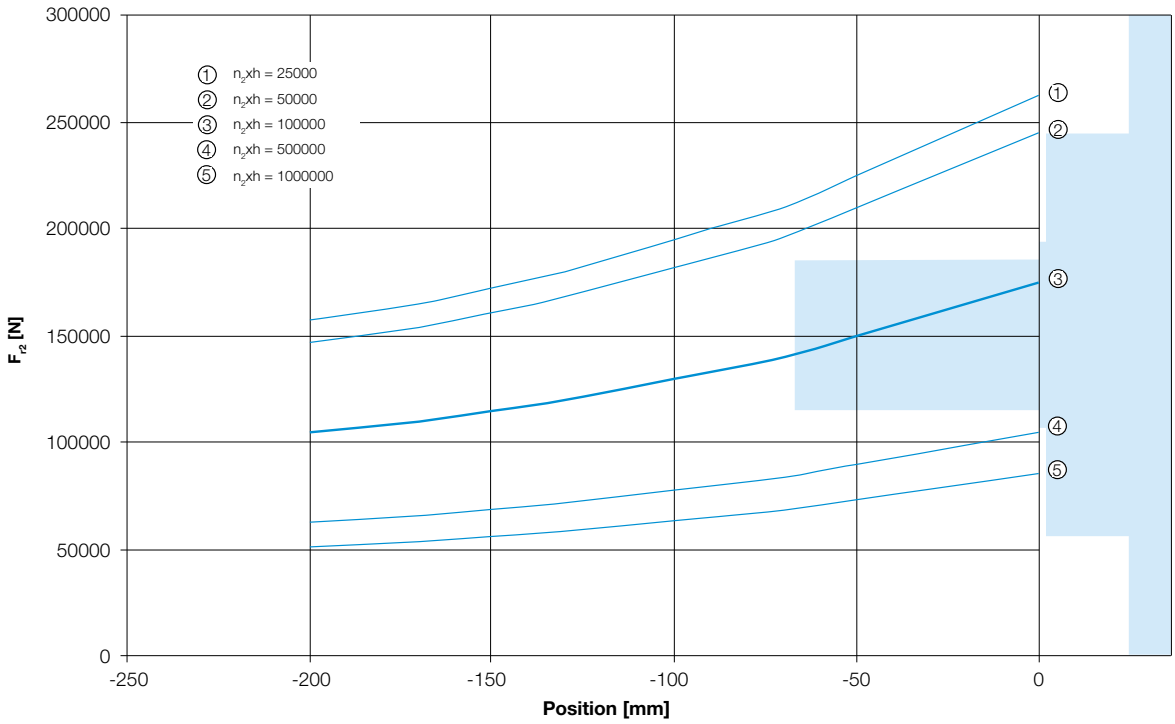


Fig. (1)

Contact the Dana Sales Department for duration factors $n_2$xh < 25000 cycles.

For sizes 150, 155, 250 and 255, the radial loads on output supports MN, MN1, MR and MR1 only apply if both support spigots are used on the customer's structure.
Contact the Dana Sales Department if the second spigot is not used.

Permissible output shaft axial loads F_{a2} [N] and F_{a2MAX} [N]

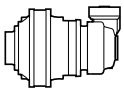
For each gearbox size, the tables give the permissible axial loads F_{a2} for continuous duration and F_{a2MAX} for intermittent duration.
If there are radial and axial loads on the output shaft at the same time, we recommend contacting the Dana Sales Department.
FE and FET gearboxes with female output shafts are normally used to transmit torque only, and are not designed to withstand radial and/or axial loads.

When using FP, FP1 and FS gearboxes with hollow shafts, contact the Dana Sales Department if there are axial loads.

The characteristic application data is required when selecting the gearbox; the list below can be used for that purpose.

Type of application:

	Description	Value	
T_{2R}	Required output torque		[ftlb]
T_{2RMAX}	Required maximum output torque		[ftlb]
n_2	Output speed		[rpm]
n_1	Input speed		[rpm]
P_2	Output power		[HP]
F_{rR2}	Required radial load on the output shaft		[lbf]
X_2 *	Radial load F_{rR2} application distance		[in]
F_{aR2} **	Required axial load on the output shaft		[lbf]
F_{rR1}	Required radial load on the input shaft		[lbf]
X_1 *	Radial load F_{rR1} application distance		[in]
h_R	Required duration		[h]
I	Duty cycle		[%]
N	Number of starts per hour		[1/h]
t_a	Work environment temperature		[°F]

Type of configuration required:  ☐ In-line  ☐ Right-angle

Output support type:

Parking brake: Yes ☐ No ☐

T_{BR}	Required braking torque:		[ftlb]

Mounting position:

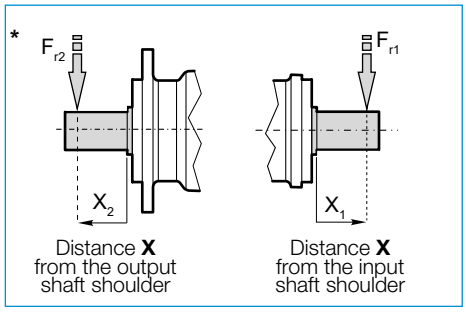
Motor type:

Hydraulic ☐ Electric ☐ Endothermic ☐ Other ☐

Work environment:

Restricted ☐ Large ☐ Outdoors ☐

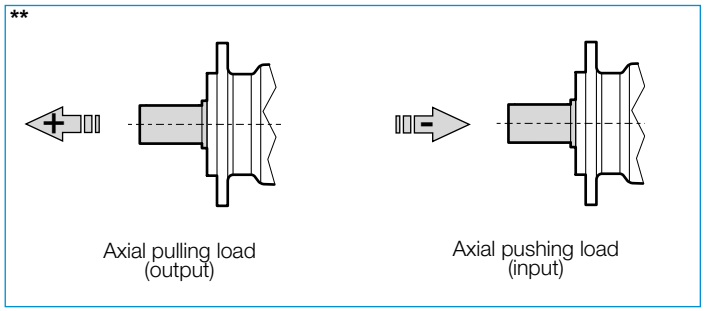
* **X** is the distance between the load application point and the shaft shoulder (see diagrams in the selection tables)



Distance **X** from the output shaft shoulder

Distance **X** from the input shaft shoulder

** indicate the gearbox output loads with "+" and the input loads with "-".



Axial pulling load (output)

Axial pushing load (input)

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SELECTING THE GEARBOX

Make the selection as indicated below:

- select the appropriate duty factor f_S from the tables (5) and (6) above on the basis of the application, drive type and expected number of starts;
- calculate the required duration factor from the required duration h_R and the output speed n_2;

$$L_{h2} = n_2 \times h_R \qquad \textbf{(13)}$$

- calculate the required reduction ratio;

$$i = \frac{n_1}{n_2} \qquad \textbf{(14)}$$

- from the selection tables, choose the gearbox and configuration (in-line or right-angle) whose specifications satisfy the equation;

$$T_{2R} \times f_S \leq T_2 \qquad \textbf{(15)}$$

The chosen gearbox must have a reduction ratio as close as possible to the required ratio.

This type of selection is suitable when the required torque and rotation speed are almost constant during use; for an operating cycle with highly variable loads and speeds, base the selection on the gearbox size that is best for the application.
To do this, we recommend contacting the Dana Sales Department.

If a multi-disc brake is required at the gearbox input, proceed as follows:

1. calculate the required braking torque T_{BR} using the formula (1) on page A5:
2. from the brake selection tables (see the “Oil bath multi-disc brakes” section), choose the brake with the braking torque T_B that satisfies the equation:

$$T_{BR} \leq T_B \qquad \textbf{(17)}$$

After selecting the gearbox, carry out the following checks:

- check that the input speed n_1 required by the application is lower than the maximum permissible value n_{1MAX} given in the gearbox selection table
- check that the maximum torque required by the application T_{2RMAX} is lower than the maximum permissible torque T_{2MAX} given in the gearbox selection table
- check that the radial loads acting on the shafts F_{rR1} and F_{rR2} are lower than those given in the gearbox support selection table. The radial loads on the output shaft can be calculated as follows:

$$F_{rR2} = \frac{2000 \times T_{2R} \times f_S \times c}{d} \quad [N] \qquad \textbf{(18)}$$

The radial loads on the input shaft can be calculated as follows:

$$F_{rR1} = \frac{2000 \times T_{2R} \times f_S \times c}{d \times i \times \eta_d} \quad [N] \qquad \textbf{(19)}$$

Where T_{2R} is the required output torque, f_S is the duty factor and η_d is the dynamic efficiency of the gearbox.
Also,

c is a constant that depends on the type of transmission element mounted on the shaft.
The constant can have the following values:

c = 1 chain pinions
c = 1.06 gear wheels
c = 2 belt pulleys

d is the diameter (mm) of the transmission element mounted on the shaft.

Using the value X_2, refer to the output support selection tables for the selected gearbox, locate the permissible radial load F_{r2} for a duration factor $n_2 xh \geq L_{h2}$ and check:

$$F_{rR2} \leq F_{r2} \qquad \textbf{(20)}$$

Similarly, using the value X_1, refer to the input support selection tables for the selected gearbox, locate the permissible radial load F_{r1} for a duration factor $n_1 xh \geq L_{h1}$ and check:

$$F_{rR1} \leq F_{r1} \qquad \textbf{(21)}$$

check that the axial loads on the output shafts F_{aR2} are lower than those given in the output support selection tables. To do so, refer to the support selection tables for the selected gearbox, identify the permissible load for continuous and intermittent duration, F_{a2} and F_{a2MAX} respectively, and check that:

$$F_{aR2} \leq F_{a2} \quad \text{for continuous duration}$$
$$F_{aR2} \leq F_{a2MAX} \quad \text{for intermittent duration} \qquad \textbf{(22)}$$

If the radial and axial loads vary significantly during use, or the application involves numerous reversals, contact the Dana Sales Department for a more thorough check.
Take into account the recommendations given in the “Permissible loads on output shafts” section (page A12).

Check that the applied power P_1 is always lower than the corrected thermal power P_{T1} given by the formula (8). If the corrected thermal power of the gearbox is less than the power to be transmitted, even in just one of the possible operating cycle conditions, an auxiliary cooling circuit must be provided. Contact the Dana Sales Department to select this circuit.

If an input brake has been selected for the gearbox concerned, check that the calculated gearbox output braking torque is less than the maximum output torque T_{2MAX} transmissible by the gearbox:

1. calculate the gearbox output braking torque

$$T_{2B} = T_B \times i \quad [Nm] \qquad \textbf{(23)}$$

2. check that

$$T_{2B} \leq T_{2MAX} \qquad \textbf{(24)}$$

CHOOSING THE MOTOR

This section provides some general information that is useful for selecting the gearbox drive motor.

Hydraulic motor
Based on the application, choose the most appropriate type of motor according to the table below. The values are only a guide

Type of application	**Light**		**Medium**		**Heavy**	
Operating pressure p_A [bar]	< 175		175 – 250		250 – 450	
Motor type	Orbital	Gear	Radial piston	Axial piston	Cam	Axial piston
Speed n_1 [rpm]	< 700	< 3000	< 500	< 4000	< 200	< 4000
Mechanical efficiency η_{mh}	0.80	0.85	0.95	0.93	0.93	0.93
Volumetric efficiency η_v	0.90	0.87	0.95	0.95	0.95	0.95

Tab. (7)

Determine the required gearbox input torque with the formula:

$$T_{1R} = \frac{T_{2R}}{i \times \eta_d} \quad [Nm] \qquad \textbf{(25)}$$

Where T_{2R} is the required output torque and η_d is the dynamic efficiency of the gearbox (table 4)

Calculate the theoretical displacement required for the hydraulic motor with the following formula:

$$V_R = \frac{62.8 \times T_{1R}}{p_A \times \eta_{mh}} \quad [cm^3] \qquad \textbf{(26)}$$

where η_{mh} is the mechanical efficiency of the selected hydraulic motor (table 7) and p_A is the operating pressure of the motor. The actual motor displacement V must be such that:

$$V_R \leq V \qquad \textbf{(27)}$$

Lastly, calculate the required flow q for the motor feed:

$$q = \frac{V \times n_1}{1000 \times \eta_v} \quad [l/min] \qquad \textbf{(28)}$$

where n_1 is the gearbox input speed and η_v is the volumetric efficiency of the chosen motor (table 7).

Refer to the Dana Fluid Power catalogue, or the technical data sheets of other manufacturers for the final motor choice.

Electric motor
Calculate the gearbox input power with the formula:

$$P_1 = \frac{P_2}{\eta_d} \text{ [kW]} \quad \textbf{(29)}$$

Where P_2 is the output power and hd is the dynamic efficiency of the chosen gearbox (table 4).
From the technical data tables of the manufacturers of electric motors, select a motor whose nominal power P_n is such that:

$$P_1 \leq P_n \quad \textbf{(30)}$$

Unless otherwise specified, the power P_n refers to continuous duty S1. If the operating conditions of the motors are different from S1, identify the corresponding type of duty according to the EN 60034-1 (CEI 2-3)/IEC 34-1 standards.

For S2 and S3 with motor sizes smaller than or equal to 132, a suitable factor f_l can be used to obtain the power increase relative to continuous duty S1.

The power increase factor fl can be obtained from the following table:

	Type of duty							
	S2				**S3**			
	Cycle duration [min]				**Duty cycle I [%]**			
	10	30	60	90	15%	25%	40%	60%
f_l	1.4	1.2	1.1	1.05	1.4	1.25	1.13	1.07

Tab. (8)

For the definition of the duty cycle I, refer to the formula (6) on page A7.

For duty S2 and S3, select an electric motor whose nominal power P_n satisfies the following equation:

$$P_1 \leq P_n \times f_l \quad \textbf{(31)}$$

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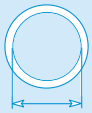
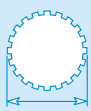
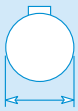
Size	i	 [mm]	 [mm]	 [mm]	 [mm]	T_{2N} [Nm]
300	4.04-2401	N120x5x30x22x9H DIN 5480	140	W120x3x30x38x8f DIN 5480	120	34000
400	4.18-1958	N140x5x30x26x9H DIN 5480	140	W130x3x30x42x8f DIN 5480	130	48000
600	4.18-2785	N150x5x30x28x9H DIN 5480	165	W150x5x30x28x8f DIN 5480	160	64000
850	4.18-1987	N170x5x30x32x9H DIN 5480	180	W170x5x30x32x8f DIN 5480	170	90000
1200	4.18-1620	N200x5x30x38x9H DIN 5480	220	W200x5x30x38x8f DIN 5480	200	133000
1800	4.18-2305	N210x5x30x40x9H DIN 5480	240	W220x5x30x42x8f DIN 5480	250	190000
2500	4.18-1987	N240x5x30x46x9H DIN 5480	260	-	-	260000
3500	4.18-1620	N280x8x30x34x9H DIN 5480	290	-	-	370000
5000	4.18-1338	N340x8x30x41x9H DIN 5480	340	-	-	530000
7500	85.80-11486	N400x8x30x48x9H DIN 5480	400	-	-	735000

Tab. (9)

DESIGNATION

SL	400	1	MP

VERSION

- Linear
  - **SL** 
- Right-angle
  - **SC** 

SIZE

- **300**
- **400**
- **600**
- **850**
- **1200**
- **1800**
- **2500**
- **3500**
- **5000**
- **7500**

STAGES

- Linear
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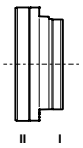
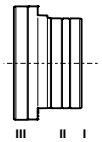
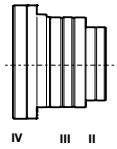
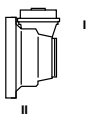
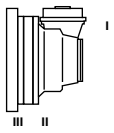
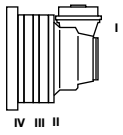
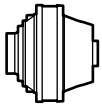
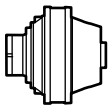
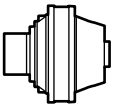
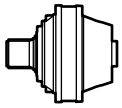
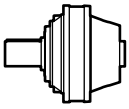
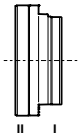
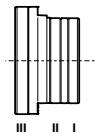
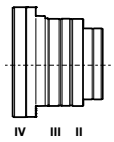
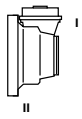
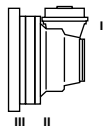
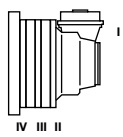
  - **2** 
  - **3** 
  - **4** 
- Right-angle
  - **2** 
  - **3** 
  - **4** 

OUTPUT CONFIGURATION

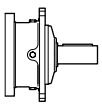
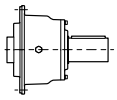
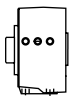
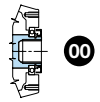
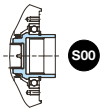
- Flanged version
  - **FE** 
  - **FAR** 
  - **FS** 
  - **MP** 
  - **MP1** 

4.18	IS300	B3	FR S400

ACTUAL RATIO

- Linear
  - 4.04 ↕ 7.36 
  - 15.96 ↕ 45.00 
  - 55.85 ↕ 218.2 
  - 172.0 ↕ 2785 
- Right-angle
  - 10.26 ↕ 27.36 
  - 42.89 ↕ 201.4 
  - 167.6 ↕ 1871 

INPUT CONFIGURATION

- Male input supports
  - S-45CR1
  - S-46C1
  - S-65CR1
  - S-90CR1 
  - ISL150
  - ISL250
  - ISL300
  - IS300
  - IS600
  - IS850 
  - 65.105
  - 48.82
  - 45.70 
- Multi-disc brakes
  - FL250
  - FL350
  - FL450
  - FL650
  - FL750
  - FL960 
  - FL620.U
  - FL635.U 
- Universal input
  - 00 
  - S00 

MOUNTING POSITION

- Linear
  - B3
  - V5
  - V6
- Right-angle
  - B3A
  - B3C
  - B3B
  - B3D
  - V5B
  - V6B

ADDITIONAL ACCESSORIES *

- FR.. 
- MS.. 
- RDF.. 

* based on actual configuration

Click *i* button to return to main index

Click **DANA** button to return to section index

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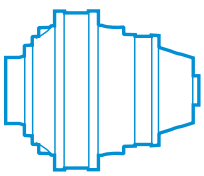
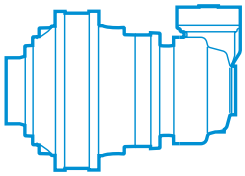
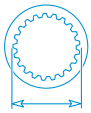
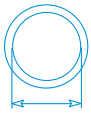
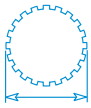
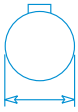


300



i_{eff}	4.04 - 2401
T_{2N}	34000 Nm
	N120x5x30x22x9H DIN5480
	140 mm
	W120x3x30x38x8f DIN5480
	120 mm

TECHNICAL DATA

10000 hours life

i_{eff}	1500 n_2 [rpm]	1500 T_2 [Nm]	1500 P_2 [kW]	1000 n_2 [rpm]	1000 T_2 [Nm]	1000 P_2 [kW]	500 n_2 [rpm]	500 T_2 [Nm]	500 P_2 [kW]	n_{1MAX} [rpm]	T_{2MAX} [Nm]	P_T [kW]
SL3001												
4.04				248	16362	424	124	20143	261		76000	
4.50				222	16609	387	111	20448	238		74000	
5.12	1)			195	17067	349	98	21011	215	2000	59000	58
6.00				167	17528	306	83	20709	181		54000	
7.36				136	13696	195	68	14291	102		36000	
SL3002												
15.96	94	21760	214	63	24574	161	31	30255	99		76000	
17.86	84	22471	198	56	25378	149	28	31244	92		76000	
19.89	75	22969	181	50	25940	137	25	31224	82		74000	
22.77	66	23920	165	44	27014	124	22	31484	72		74000	
24.24	62	23751	154	41	26823	116	21	32776	71		76000	
27.00	56	25174	146	37	28430	110	18	31814	62	2500	74000	38
30.72	49	23601	121	33	24195	82	16	25246	43		59000	
33.75	44	25273	118	30	25910	80	15	27035	41.9		58500	
38.4	39	23926	98	26	24529	67	13	25594	34.9		59000	
45.00	33	21906	76	22	22458	52	11	23433	27.3		54000	
SL3003												
55.85	27	31687	89	18	33061	62	9.0	34559	32			
62.50	24	32472	82	16	33290	56	8.0	35151	29			
71.55	21	32743	72	14	33568	49	7.0	35878	26			
79.79	19	32963	65	12	33793	44	6.3	36474	24			
93.57	16	33286	56	11	34125	38	5.3	37364	21			
105.0	14	33522	50	9.5	34366	34	4.8	38019	19	2500	76000	25
107.1	14	33564	49	9.3	34409	34	4.7	38137	19			
122.7	12	33844	43	8.2	35051	30	4.1	38925	17			
145.4	10	34199	37	6.9	35966	26	3.4	39942	14			
162.0	9.3	33196	32	6.2	34812	22	3.1	38660	12		74000	
SL3004												
172.0	8.7	34697	32	5.8	36891	22	2.9	40969	12			
195.5	7.7	35374	28	5.1	37611	20	2.6	41769	11			
230.7	6.5	36271	25	4.3	38565	17	2.2	42828	9.7			
261.3	5.7	36961	22	3.8	39299	16	1.9	42181	8.5			
288.8	5.2	37524	20	3.5	39897	14	1.7	44308	8.0			
330.0	4.5	38289	18	3.0	40711	13	1.5	45211	7.2			
369.9	4.1	38956	16	2.7	41420	12	1.4	45999	6.5			
414.6	3.6	39634	15	2.4	42141	11	1.2	46799	5.9		76000	
463.9	3.2	40314	14	2.2	42864	9.7	1.1	47602	5.4			
518.7	2.9	41001	12	1.9	43594	8.8	0.96	48413	4.9			
578.5	2.6	41682	11	1.7	44319	8.0	0.86	49218	4.5			
647.3	2.3	42397	10	1.5	45079	7.3	0.77	50062	4.0	3000		17
741.0	2.0	43273	9.2	1.3	46010	6.5	0.67	51096	3.6			
776.8	1.9	43583	8.8	1.3	46339	6.2	0.64	51462	3.5			
889.2	1.7	44483	7.9	1.1	47297	5.6	0.56	52525	3.1			
990.5	1.5	43056	6.8	1.0	45779	4.8	0.50	50839	2.7		74000	
1175	1.3	44180	5.9	0.85	46974	4.2	0.43	52166	2.3			
1205	1.2	34413	4.5	0.83	36438	3.2	0.41	40465	1.8			
1392	1.1	35170	4.0	0.72	37239	2.8	0.36	41356	1.6		59000	
1670	0.90	36154	3.4	0.60	38281	2.4	0.30	42512	1.3			
1733	0.87	21604	2.0	0.58	22970	1.4	0.29	25509	0.8		36000	
1958	0.77	32996	2.6	0.51	35083	1.9	0.26	38961	1.0		54000	
2401	0.62	22696	1.5	0.42	24132	1.1	0.21	26799	0.6		36000	

1) Consult the DANA area contact person.

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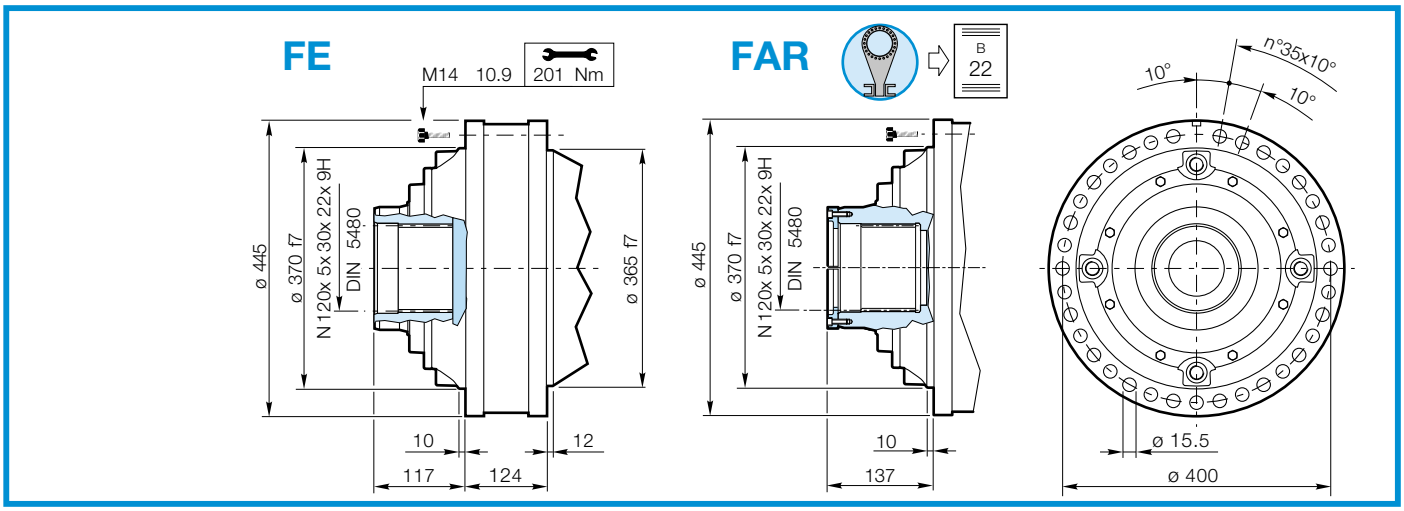
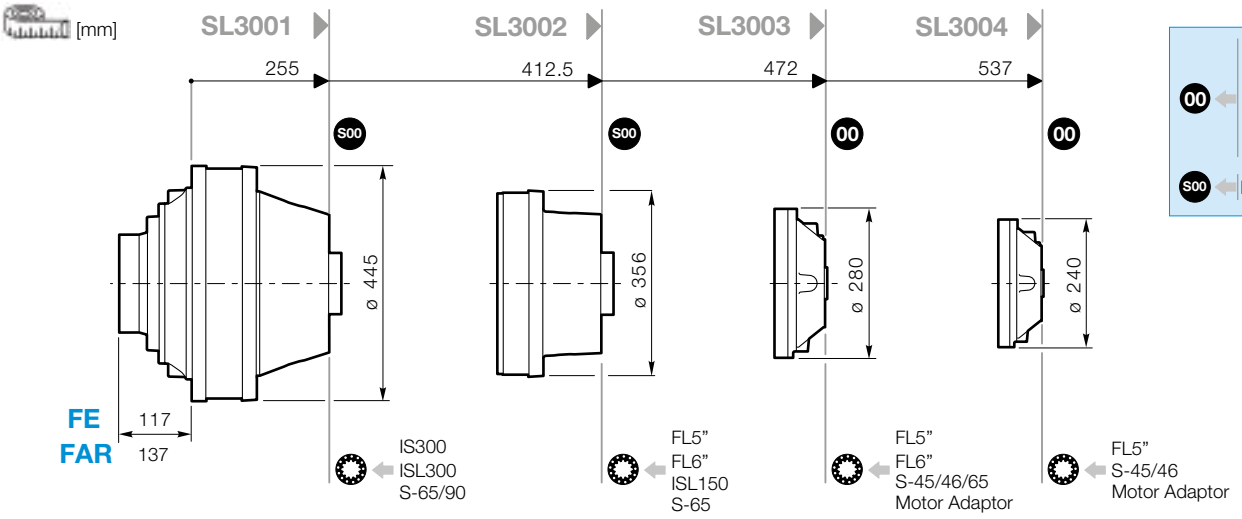
10000 hours life

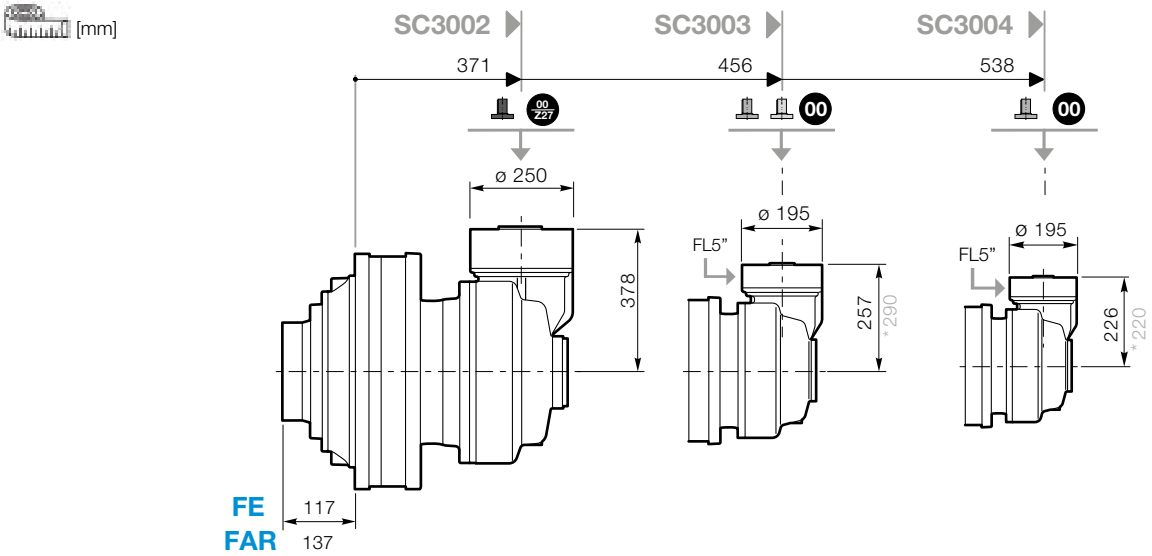
i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC3002												
10.26	146	8369	128	97	9452	96	49	11637	59		50300	
11.43	131	9322	128	87	10528	96	44	12962	59	1800	56000	
13.01	115	10607	128	77	11979	96	38	14747	59		59000	
15.24	98	12430	128	66	14037	96	33	17282	59		54000	21
17.52	86	15311	137	57	17291	103	28	21288	64	1500	54000	
20.52	73	11963	92	49	13510	69	24	16633	42	2500	57600	
21.49	70	14267	104	47	14627	71	23	15262	37	1500	36000	
SC3003												
43.88*	34	17101	61	23	19313	46	11	23777	28			
49.11*	30	19136	61	20	21611	46	10	26606	28		76000	
56.22*	27	21906	61	18	24740	46	8.9	30459	28			
62.62*	24	24401	61	16	27557	46	8.0	33499	28			
74.25*	20	28934	61	13	32442	46	6.7	34357	24	2000	74000	
83.33*	18	24142	45	12	24750	31	6.0	25825	16		76000	18
92.81*	16	26891	45	11	27568	31	5.4	28766	16		74000	
99.00*	15	22992	36	10	23571	25	5.1	24808	13		54000	
107.5	14	24154	35	9.3	26128	25	4.7	28192	14		59000	
126.0	12	23334	29	7.9	23922	20	4.0	25730	11	3000	54000	
134.4	11	25838	30	7.4	26488	21	3.7	29160	11		59000	
SC3004												
167.60	9.0	34559	32	6.0	36745	23	3.0	40806	13			
187.50	8.0	35151	29	5.3	37375	21	2.7	41506	12			
207.30	7.2	35689	27	4.8	37947	19	2.4	42141	11			
232.00	6.5	36301	25	4.3	38597	17	2.2	42864	9.7			
254.50	5.9	36815	23	3.9	39143	16	2.0	42113	8.7	2700		
287.20	5.2	37494	20	3.5	39866	14	1.7	44272	8.1		76000	
321.40	4.7	38137	19	3.1	40549	13	1.6	45032	7.3			
368.0	4.1	38925	17	2.7	41387	12	1.4	45962	6.5			
412.5*	3.6	39604	15	2.4	42109	11	1.2	46763	5.9			13
472.2*	3.2	40422	13	2.1	42979	9.5	1.1	47730	5.3			
495.0*	3.0	40711	13	2.0	43286	9.2	1.0	48071	5.1			
566.7*	2.6	41552	11	1.8	44181	8.2	0.88	49064	4.5			
631.2*	2.4	40219	10	1.6	42763	7.1	0.79	47489	3.9	3500	74000	
718.1*	2.1	31820	7.0	1.4	33833	4.9	0.70	37573	2.7			
768.2*	2.0	32146	6.6	1.3	34179	4.7	0.65	37799	2.6		59000	
887.0*	1.7	32853	5.8	1.1	34931	4.1	0.56	38631	2.3			
1040*	1.4	29984	4.5	0.96	31880	3.2	0.48	35404	1.8		54000	

* (bg) All the ratios in light grey (ie. 43.88) have particular dimensions of bevel gears in some versions. See dimensional tables.

GEARBOX DIMENSIONS WITH OUTPUT







* (bg) ⇨ 300 3 S-45/46//65/90 IS ISL ⇨ 300 8 SU SUF SUS ⇨ 300 9 65.105 48.82 45.70 ⇨ 300 9 FL5" FL6" FL620/635 ⇨ 300 10 Motor Adaptor ⇨ 300 12
00 ⇨ B 11 00 Z27 ⇨ B 11 S00 ⇨ B 12

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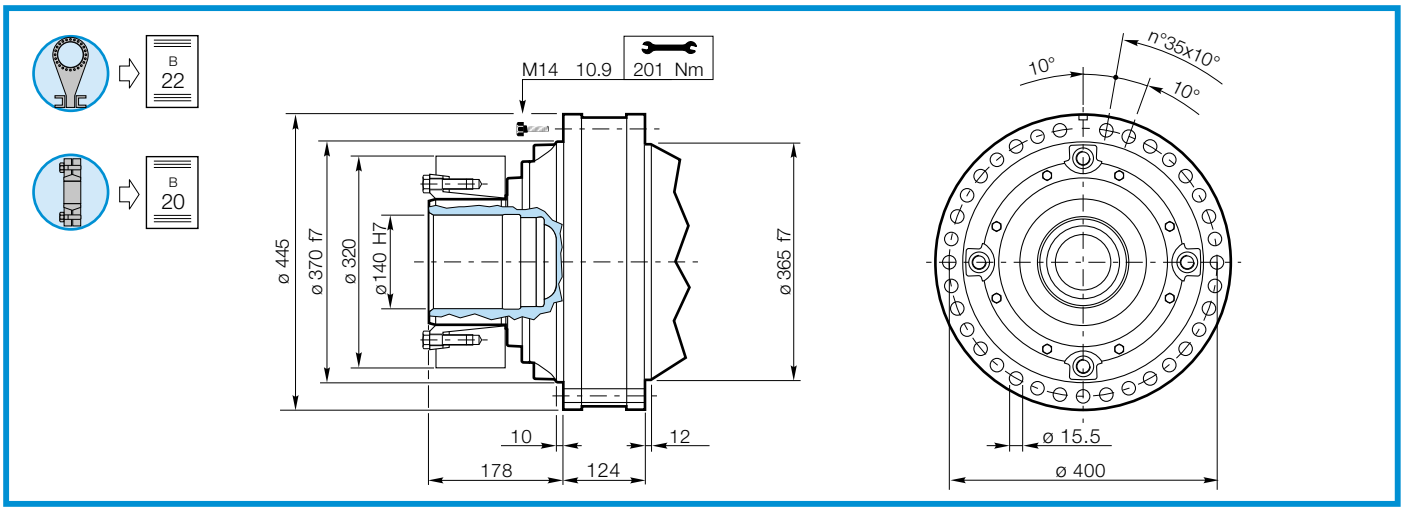

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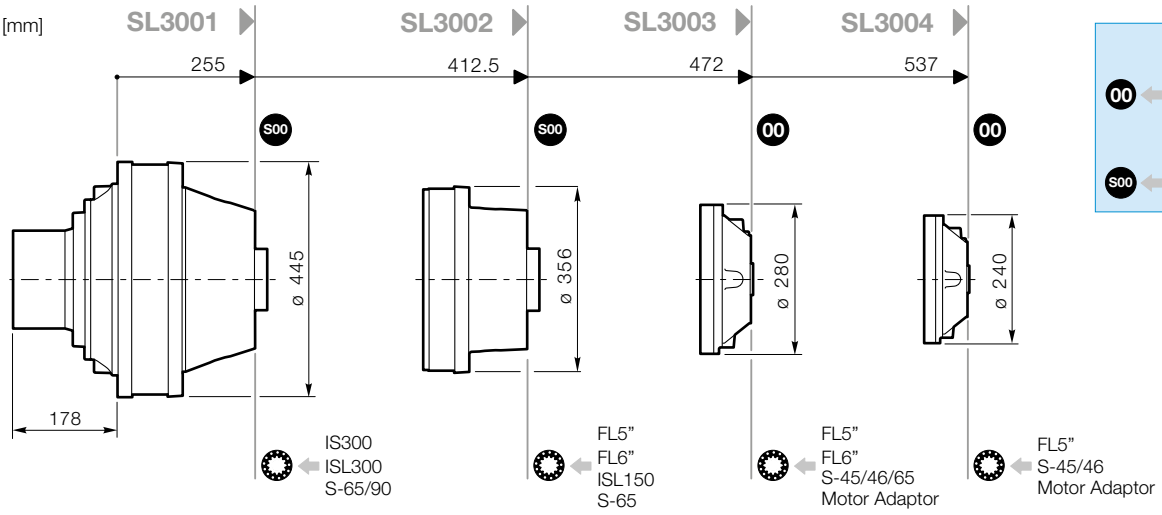

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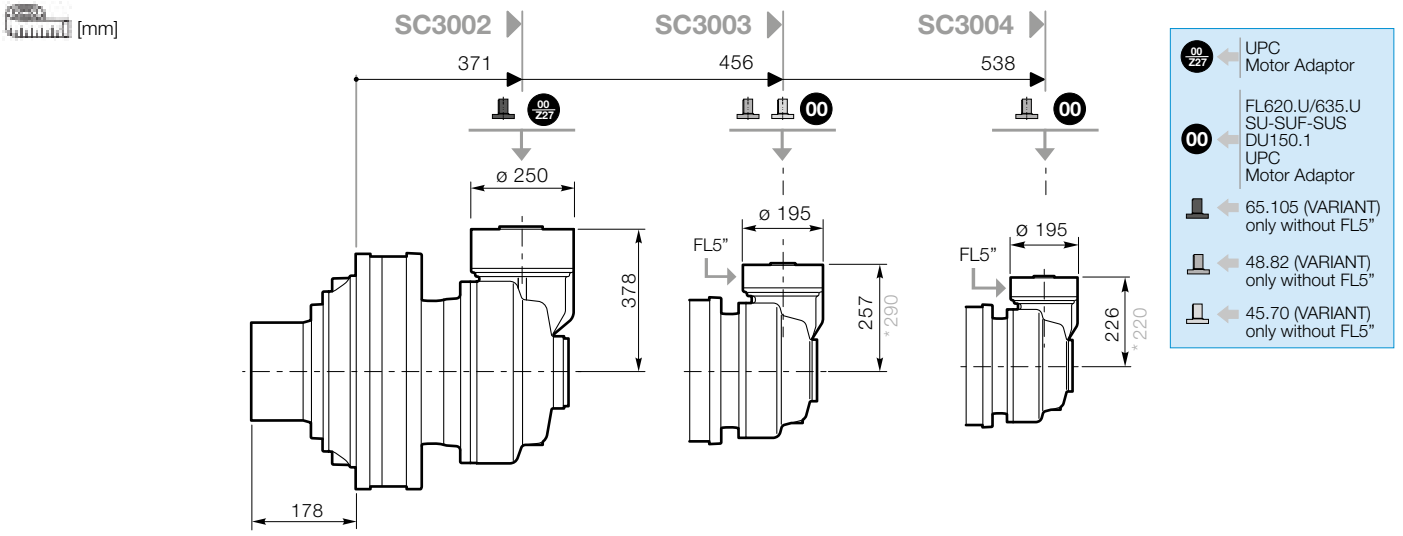

* bg → 300 3 S-45/46//65/90 IS ISL → 300 8 SU SUF SUS → 300 9 65.105 48.82 45.70 → 300 9 FL5” FL6” FL620/635 → 300 10 Motor Adaptor → 300 12 00 → B 11 00 Z27 → B 11 S00 → B 12

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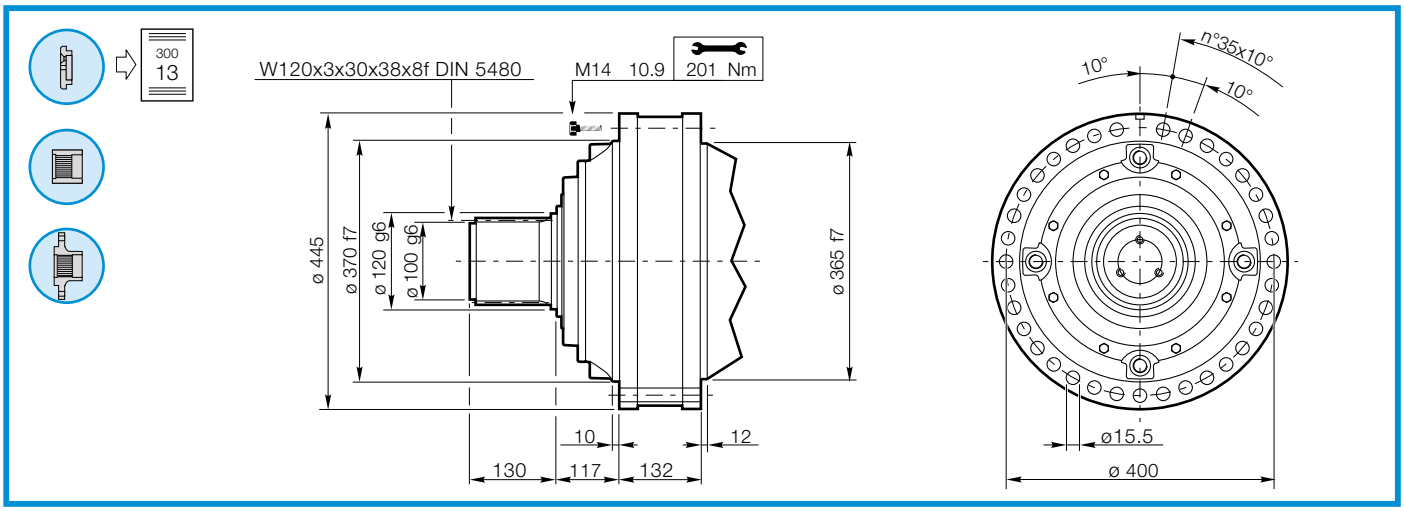
GEARBOX DIMENSIONS WITH OUTPUT



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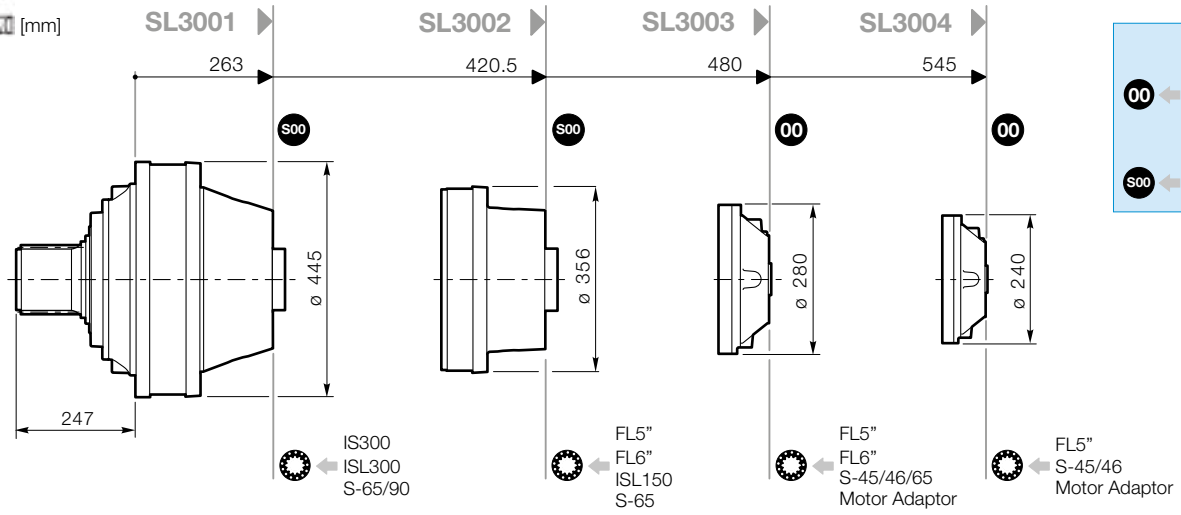

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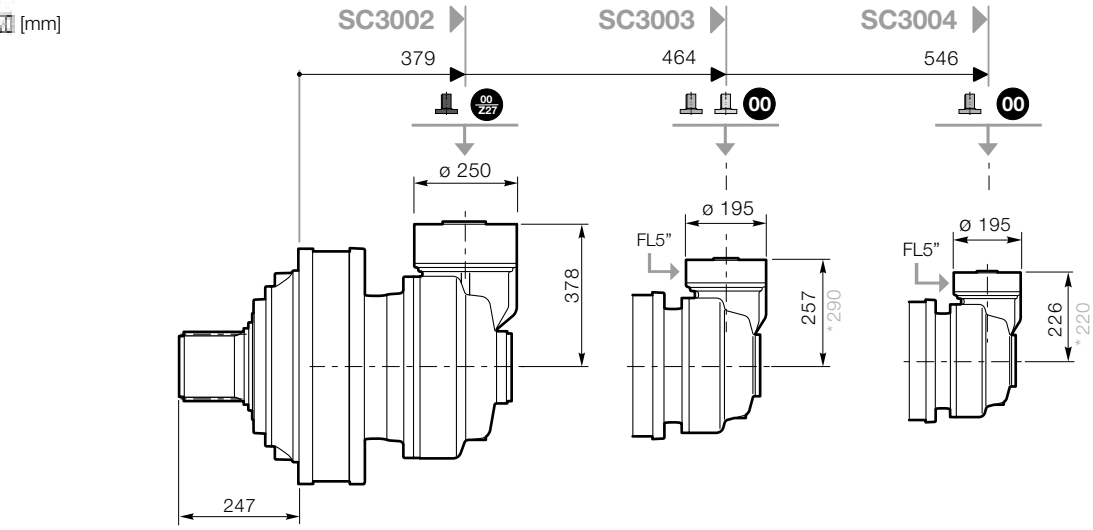

* (bg) → 300 3 S-45/46//65/90 IS ISL → 300 8 SU SUF SUS → 300 9 65.105 48.82 45.70 → 300 9 FL5" FL6" FL620/635 → 300 10 Motor Adaptor → 300 12 → 00 → B 11 → 00 Z27 → B 11 → S00 → B 12

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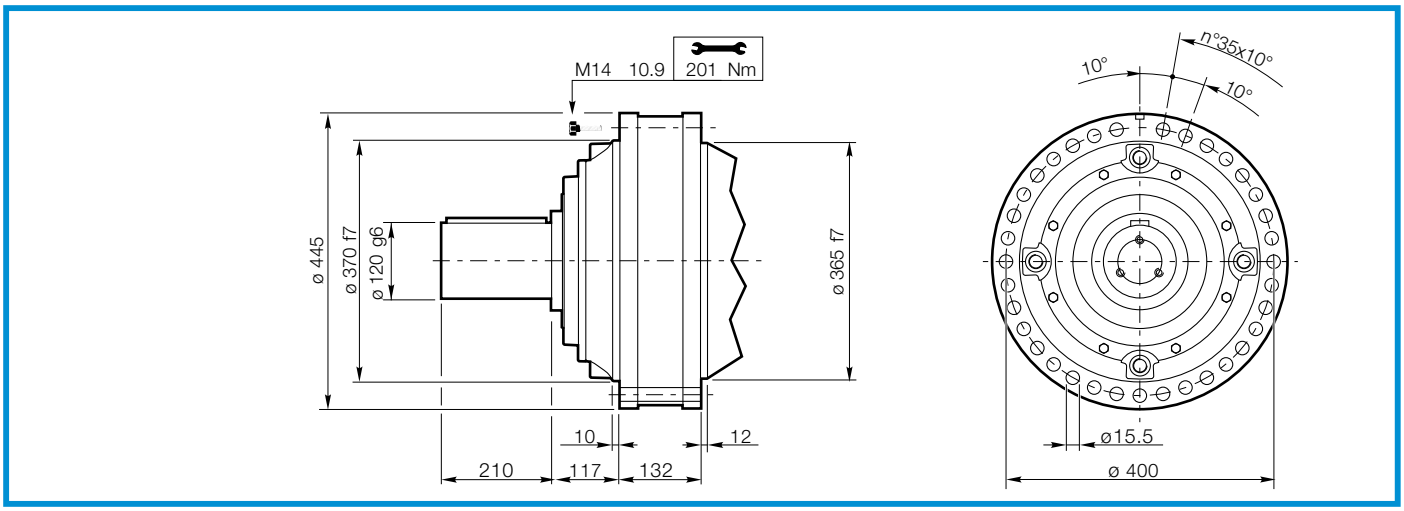

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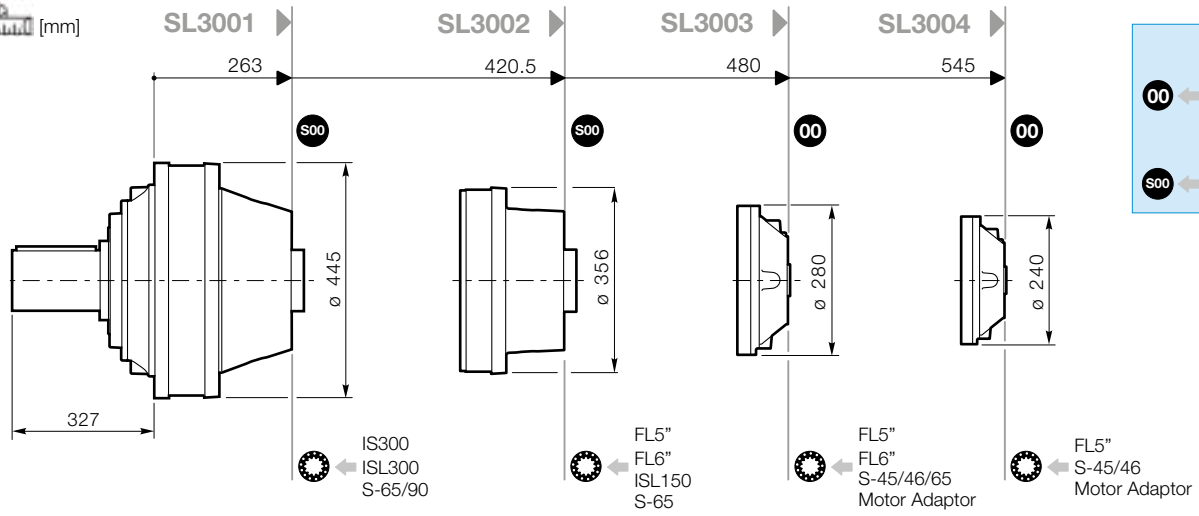

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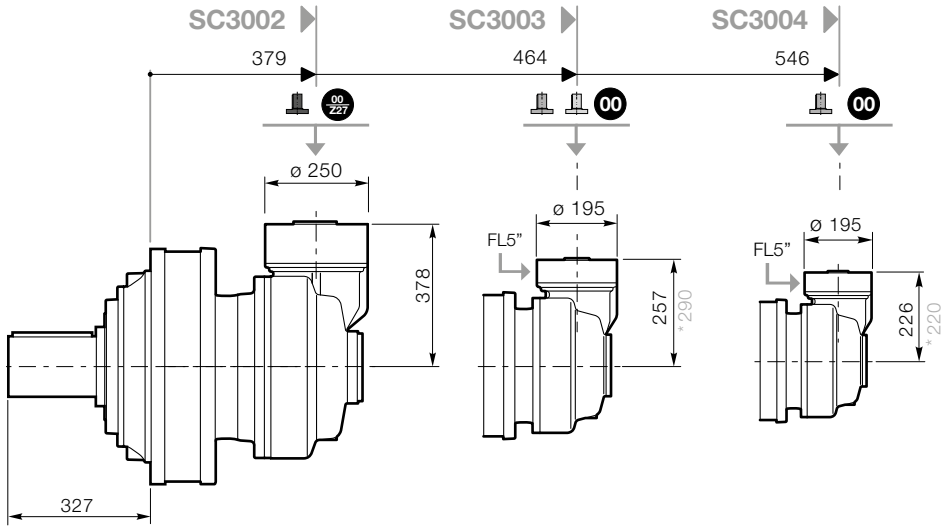

* bg ⇨ 300 3 S-45/46//65/90 IS ISL ⇨ 300 8 SU SUF SUS ⇨ 300 9 65.105 48.82 45.70 ⇨ 300 9 FL5" FL6" FL620/635 ⇨ 300 10 Motor Adaptor ⇨ 300 12 00 ⇨ B 11 00 Z27 ⇨ B 11 S00 ⇨ B 12

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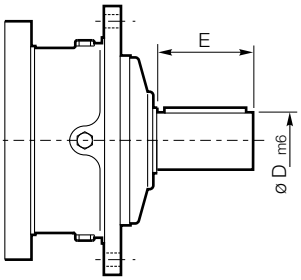
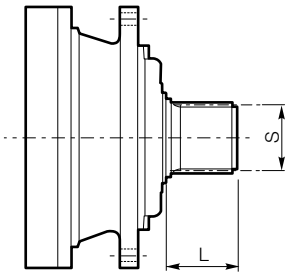
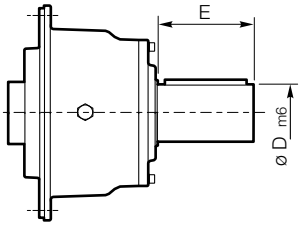
S-45 S-46 S-65 S-90 IS ISL



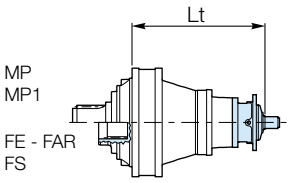
S-45CR1 - S-46C1
S-65CR1 - S90CR1



S-45SR - S-46S

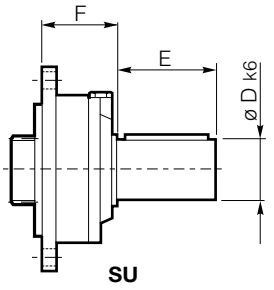


IS / ISL

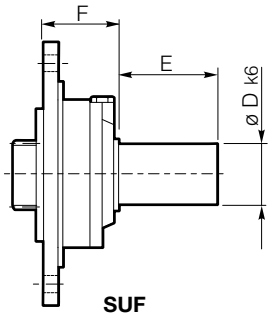


	D m6	E	L	S DIN5482		Lt			
						SL3001	SL3002	SL3003	SL3004
S-45CR1	65	105	-	-	FE-FAR-FS	-	-	599	599
					MP-MP1	-	-	607	607
S-45SR	-	-	68	B58x53	FE-FAR-FS	-	-	599	599
					MP-MP1	-	-	607	607
S-46C1	65	105	-	-	FE-FAR-FS	-	-	641	641
					MP-MP1	-	-	649	649
S-46S	-	-	68	B58x53	FE-FAR-FS	-	-	641	641
					MP-MP1	-	-	649	649
S-65CR1	80	130	-	-	FE-FAR-FS	460.5	604.5	638.5	-
					MP-MP1	468.5	612.5	646.5	-
S-90CR1	90	170	-	-	FE-FAR-FS	466.5	-	-	-
					MP-MP1	474.5	-	-	-
ISL150	90	130	-	-	FE-FAR-FS	-	482.5	-	-
					MP-MP1	-	490.5	-	-
ISL300	90	130	-	-	FE-FAR-FS	325	-	-	-
					MP-MP1	333	-	-	-
IS300	100	210	-	-	FE-FAR-FS	446	-		-
					MP-MP1	454	-	-	-

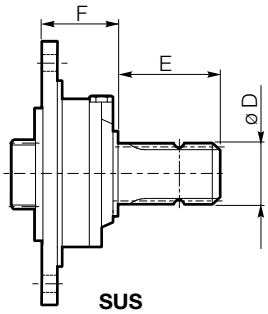
SU - SUF - SUS



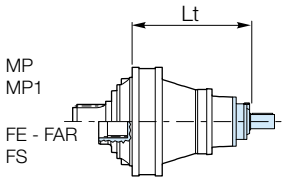
SU

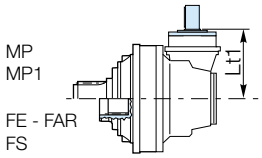


SUF



SUS

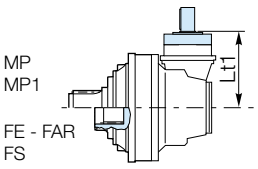


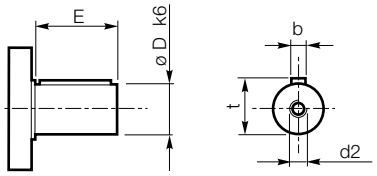


	D k6	E	F		Lt - Lt1 (00) SL3003	SL3004	SC3002	SC3003	SC3004
SU/SUF.1	28	50	60	FE-FAR-FS	532	597	438	317	286
				MP-MP1	540	605		350*	280*
SU/SUF.2	40	58	60	FE-FAR-FS	532	597	438	317	286
				MP-MP1	540	605		350*	280*
SU/SUF.3	48	82	60	FE-FAR-FS	532	597	438	317	286
				MP-MP1	540	605		350*	280*
SU2 1.5X3.25	38.1	82.55	60	FE-FAR-FS	532	597	438	317	286
				MP-MP1	540	605		350*	280*
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	FE-FAR-FS	573.5	638.5	479.5	358.5	327.5
				MP-MP1	581.5	646.5		391.5*	321.5*
SU 42x80	48	80	101.5	FE-FAR-FS	573.5	638.5	479.5	358.5	327.5
				MP-MP1	581.5	646.5		391.5*	321.5*

* bg 300 3

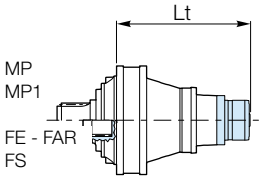
65.105 - 48.82 - 45.70

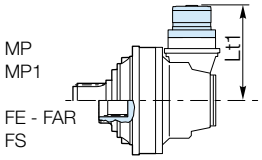


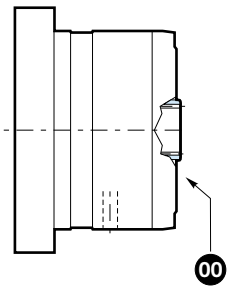


		D k6	E	b	t	d2		Lt1 SC3002	SC3003	SC3004
	65.105	65	105	18	69	M20x42	FE-FAR-FS	376	-	-
							MP-MP1			
	48.82	48	82	14	51.5	M10x22	FE-FAR-FS	-	350	280
							MP-MP1			
	45.70	45	70	14	48.5	M10x22	FE-FAR-FS	-	340	-
							MP-MP1			

FL5” - FL6”



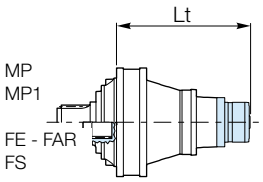


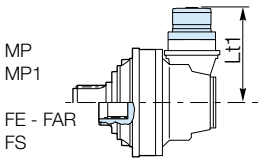


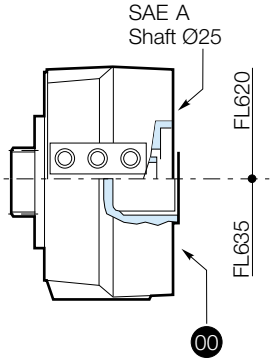
			Lt - Lt1					
			SL3001	SL3002	SL3003	SL3004	SC3003	SC3004
FL5”	FL250.4C FL250.6C	FE-FAR-FS	-	491.5	577.5	630.5	408.5	286
		MP-MP1	-	499.5	585.5	638.5	441.5*	280*
	FL350.6C FL350.8C	FE-FAR-FS	-	491.5	577.5	630.5	408.5	286
		MP-MP1	-	499.5	585.5	638.5	441.5*	280*
	FL450.6C FL450.8C	FE-FAR-FS	-	491.5	577.5	630.5	408.5	286
		MP-MP1	-	499.5	585.5	638.5	441.5*	280*
	FL650.10C FL650.12C FL650.14C	FE-FAR-FS	-	505	591	644	422	299.5
		MP-MP1	-	513	599	652	455*	293.5*
	FL750.10C FL750.12C FL750.14C	FE-FAR-FS	-	505	591	644	422	299.5
		MP-MP1	-	513	599	652	455*	293.5*
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	FE-FAR-FS	388	519	605	-	-	-
		MP-MP1	396	527	613	-	-	-

* bg 300 3

FL620.U - FL635.U



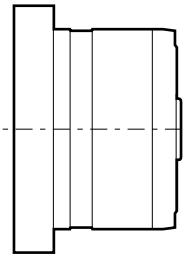


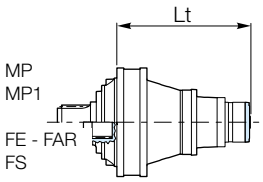


		Lt - Lt1				
		SL3003	SL3004	SC3002	SC3003	SC3004
FL620.U	FE-FAR-FS	576.5	641.5	482.5	361.5	330.5
	MP-MP1	584.5	649.5		394.5*	324.5*
FL635.U	FE-FAR-FS	563	628	469	348	317
	MP-MP1	571	636		381*	311*

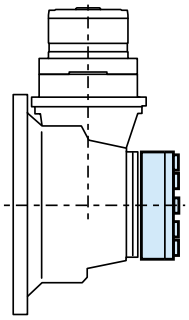
* bg 300 3

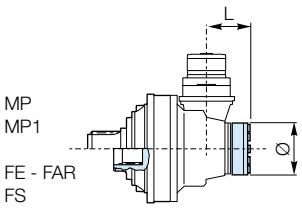
RL



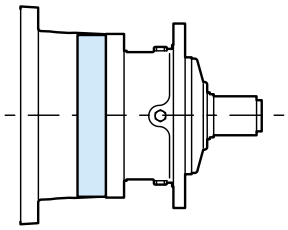


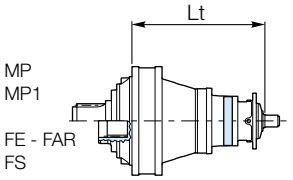
				Lt			
				SL3001	SL3002	SL3003	SL3004
RL	+	FL250 FL350 FL450	FE-FAR-FS	-	517.5	603.5	656.5
			MP-MP1	-	525.5	611.5	664.5
		FL650 FL750	FE-FAR-FS	-	531	617	670
			MP-MP1	-	539	625	678
		FL960	FE-FAR-FS	414	545	631	-
			MP-MP1	422	553	639	-





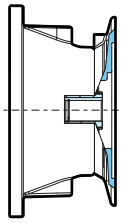
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

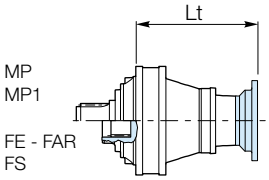


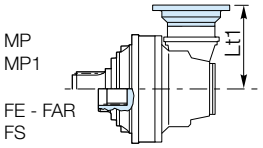


				Lt	
				SL3003	SL3004
RL	+	S46C1	FE-FAR-FS	661	661
			MP-MP1	669	669

IEC Motor







		Lt - Lt1						
		SL3001 S00	SL3002 S00	SL3003 00	SL3004 00	SC3002 00 227	SC3003 00	SC3004 00
IEC 80 -90	FE-FAR-FS	-	-	-	564	-	-	253
	MP-MP1	-	-	-	572	-	-	247*
IEC 100 - 112	FE-FAR-FS	-	-	-	565	-	-	254
	MP-MP1	-	-	-	573	-	-	248*
IEC 132	FE-FAR-FS	-	-	-	632	-	352	321
	MP-MP1	-	-	-	640	-	365*	315*
IEC 160	FE-FAR-FS	-	-	579	663	-	383	352
	MP-MP1	-	-	587	671	-	416*	346*
IEC 180	FE-FAR-FS	-	-	579	663	504.5	383	352
	MP-MP1	-	-	587	671		416*	346*
IEC 200	FE-FAR-FS	330	487.5	609	673	540.5	394	-
	MP-MP1	338	495.5	617	681		427*	-
IEC 225	FE-FAR-FS	360	517.5	609	673	538	424	-
	MP-MP1	368	525.5	647	711		457*	-
IEC 250	FE-FAR-FS	360	-	-	-	-	-	-
	MP-MP1	368	-	-	-	-	-	-
SHAFT_IEC225	FE-FAR-FS	360	-	-	-	560	-	-
	MP-MP1	368	-	-	-		-	-

* bg ⇨ 300 3

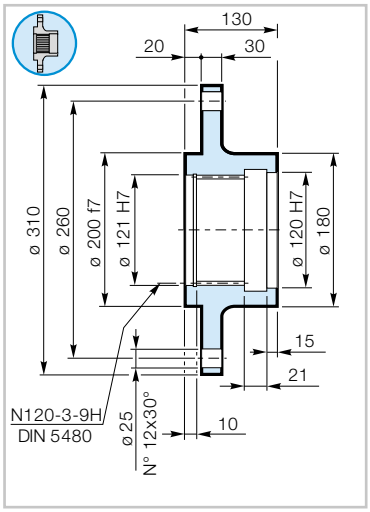
NEMA Motor

Please consult NEMA Motor Flange in page ⇨ B 15

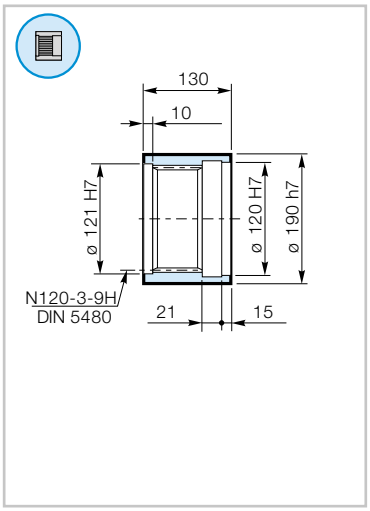
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page ⇨ B 14

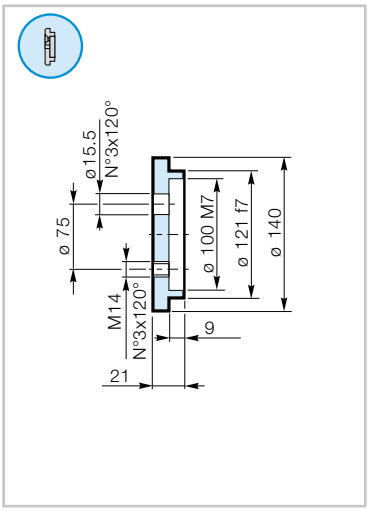
FR 400 Wheel Flange



MS 400 Splined Sleeve



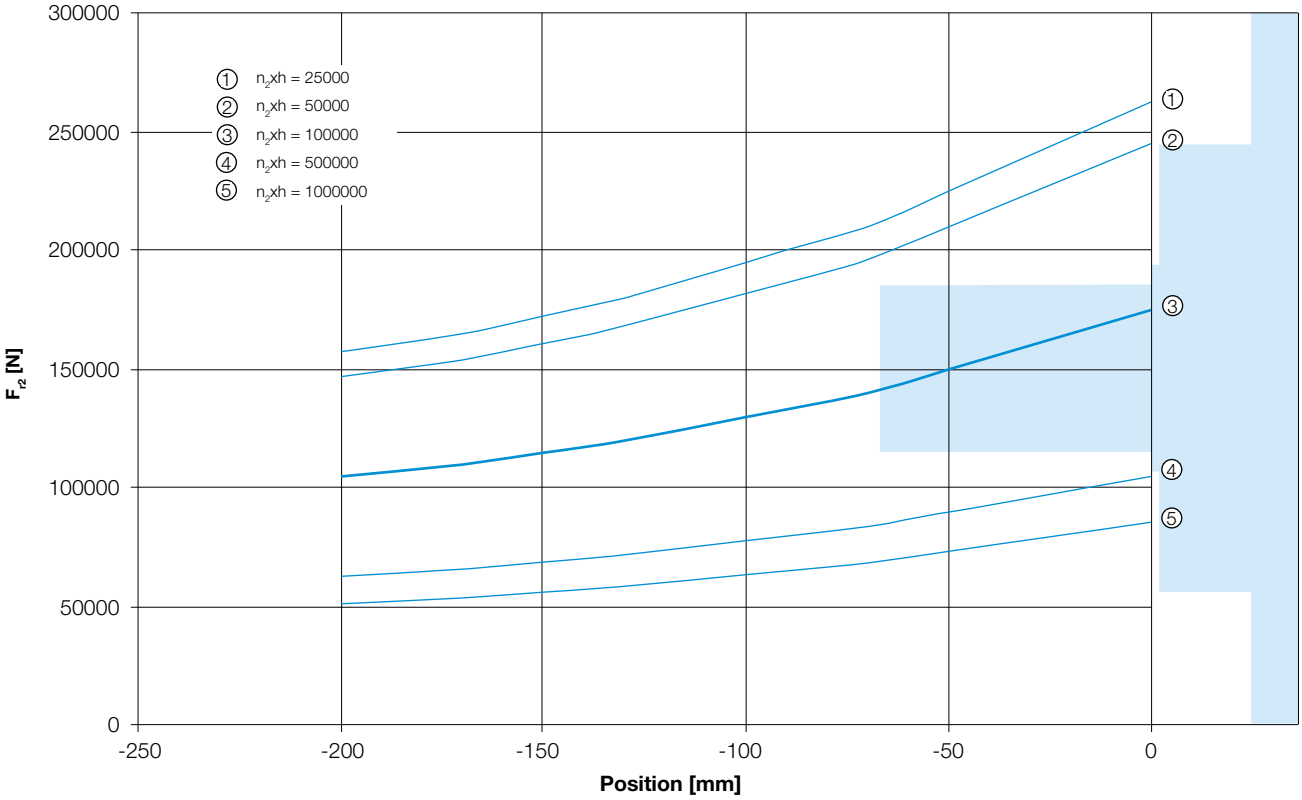
RDF S300 Lock Washer



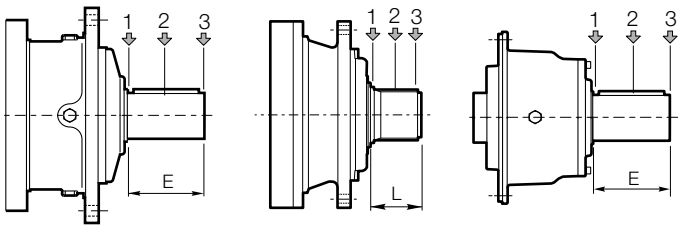
Output Radial Loads

Gearbox output version for:
SL, SC

MP - MP1

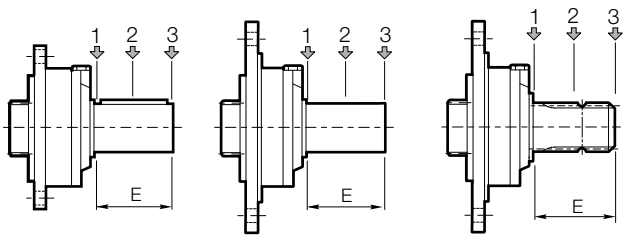


Input Radial Loads



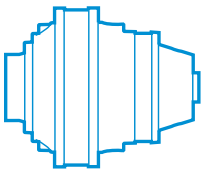
S... IS / ISL

			F_{r1} [N]					
			$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**L**	**1**	**2**	**3**	**1**	**2**	**3**
S-45CR1	105	-	10000	6000	4000	5000	3000	2000
S-45SR	-	68	10000	6000	4000	5000	3000	2000
S-46C1	105	-	14000	8800	6400	7000	4400	3200
S-46S	-	68	14000	8800	6400	7000	4400	3200
S-65CR1	130	-	23800	15500	9600	11900	7800	4800
S-90CR1	170	-	29700	17000	10000	14800	8500	5000
ISL150	130	-	7631	4302	2995	3824	2156	1501
ISL300	130	-	7631	4302	2995	3824	2156	1501
IS300	210	-	48814	33068	22914	24465	16573	11484

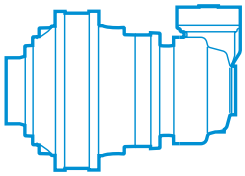


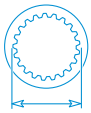
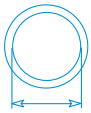
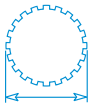
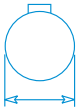
SU SUF SUS

		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700



400



i_{eff}	4.18 - 1958
T_{2N}	48000 Nm
	N140x5x30x26x9H DIN5480
	140 mm
	W130x3x30x42x8f DIN5480
	130 mm

TECHNICAL DATA

10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL4001												
4.18	1)			239	21853	547	120	26904	337	2000	84000	58
4.89				204	22482	481	102	27679	296		84000	
6.00				167	23371	408	83	27275	238		72000	
SL4002												
16.51	91	22514	214	61	25426	161	30	31303	99	2500	84000	38
18.48	81	23250	198	54	26257	149	27	32327	92			
19.32	78	26338	214	52	29745	161	26	36620	99			
21.61	69	27199	198	46	30717	149	23	37779	92			
24.74	61	27621	175	40	31194	132	20	38094	81			
29.34	51	28748	154	34	32466	116	17	38494	69			
30.36	49	28164	146	33	28873	100	17	30127	52		72000	
36.00	42	28460	124	28	29176	85	14	30444	44			
45.00	33	28852	101	22	29579	69	11	30864	36			
SL4003												
57.79	26	32785	89	17	37025	67	8.7	45584	41	2500	84000	25
64.67	23	33856	82	16	38236	62	7.7	47074	38			
67.60	22	37876	88	15	38830	60	7.4	40517	31			
83.64	18	38374	72	12	39340	49	6.0	41049	26			
93.59	16	38639	65	11	39613	44	5.3	41345	23			
102.7	15	38860	59	9.7	39839	41	4.9	41930	21			
110.9	14	39799	56	9.0	44946	43	4.5	51108	24			
126.9	12	40416	50	7.9	45644	38	3.9	52164	22			
146.7	10	39720	43	6.8	40720	29	3.4	44254	16			
159.1	9.4	31176	31	6.3	31962	21	3.1	34209	11		72000	
SL4004												
178.0	8.4	45945	41	5.6	49438	29	2.8	54903	16	3000	84000	17
202.3	7.4	47741	37	4.9	50403	26	2.5	55975	15			
226.3	6.6	48269	34	4.4	51268	24	2.2	56935	13			
259.1	5.8	49214	30	3.9	52327	21	1.9	56892	12			
288.9	5.2	50033	27	3.5	53197	19	1.7	59078	11			
330.4	4.5	51058	24	3.0	54287	17	1.5	60288	10			
370.1	4.1	51943	22	2.7	55228	16	1.4	59162	8.4			
419.0	3.6	52925	20	2.4	56273	14	1.2	62493	7.8			
468.8	3.2	53833	18	2.1	57238	13	1.1	63565	7.1			
524.1	2.9	54748	16	1.9	56932	11	1.0	62358	6.2			
580.0	2.6	55594	15	1.7	59110	11	0.86	65644	5.9			
656.1	2.3	56304	14	1.5	58092	9.3	0.76	64513	5.1			
718.2	2.1	57421	13	1.4	61053	8.9	0.70	67801	4.9			
803.7	1.9	58406	11	1.2	62100	8.1	0.62	68964	4.5			
920.1	1.6	57503	10	1.1	61140	7.0	0.54	67898	3.9			
1042	1.4	38498	5.8	1.0	40933	4.1	0.48	45288	2.3		72000	
1076	1.4	50664	7.4	0.93	53869	5.2	0.46	59823	2.9		84000	
1276	1.2	51987	6.4	0.78	55117	4.5	0.39	61209	2.5			
1413	1.1	40310	4.5	0.71	42700	3.2	0.35	47420	1.8		72000	
1631	0.92	41197	4.0	0.61	43640	2.8	0.31	48464	1.6			
1958	0.77	42349	3.4	0.51	44860	2.4	0.26	49819	1.3			

1) Consult the DANA area contact person.

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10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC4002												
12.21	123	10667	137	82	12046	103	41	14831	64		81900	
14.28	105	12478	137	70	14092	103	35	17350	64	1500	84000	
15.24	98	12430	128	66	14037	96	32.8	17282	59		72000	
17.52	86	15311	137	57	17291	103	28.5	21288	64		72000	21
19.06	79	11112	92	52	12549	69	26.2	15450	42.4		53400	
22.30	67	12999	92	44.8	14681	69	22.4	18074	42.4	2500	62570	
27.36	55	15950	92	36.5	18013	69	18.3	22177	42.4		72000	
SC4003												
45.41*	33.0	17693	61	22.0	19982	46.1	11	24601	28.4			
50.81*	29.5	19799	61	19.7	22360	46.1	9.8	27528	28.4		84000	
58.17*	25.8	22666	61	17.2	25597	46.1	8.6	31514	28.4			
65.18*	23.0	25397	61	15.3	28682	46.1	7.7	31573	25.4		72000	
72.93*	20.6	28419	61	13.7	30468	43.7	6.9	31791	22.8	2000		
80.69*	18.6	31441	61	12.4	35508	46.1	6.2	40959	26.6		84000	
86.21*	17.4	24979	45.5	11.6	25608	31.1	5.8	26720	16.2			18
99.00*	15.2	30282	48.0	10.1	31044	32.8	5.1	32393	17.1		72000	
109.7	13.7	24649	35.3	9.1	25990	24.8	4.6	27119	12.9	3000	84000	
123.8*	12.1	30699	39.0	8.1	31472	26.6	4.0	32933	13.9	2000	72000	
142.9	10.5	23075	25.4	7.0	26060	19.1	3.5	32083	11.8	3500	84000	
157.5	9.5	31157	31.1	6.3	31941	21.2	3.2	34156	11.4	3000	72000	
SC4004												
173.4	8.7	39100	35	5.8	44157	26.7	2.9	54364	16			
194.0	7.7	43752	35	5.2	49411	26.7	2.6	55623	15			
214.5	7.0	48110	35	4.7	50853	24.8	2.3	56474	14			
247.7	6.1	48880	31	4.0	51971	22.0	2.0	57716	12	2700		
277.1	5.4	49718	28	3.6	52863	20.0	1.8	58706	11			
317.3	4.7	50745	25	3.2	53955	17.8	1.6	57799	9.5			
371.2	4.0	43128	18	2.7	45856	12.9	1.3	50925	7.2		84000	
380.7	3.9	52164	22	2.6	55464	15.3	1.3	59415	8.2			
457.7*	3.3	44795	15	2.2	50590	11.6	1.1	62283	7.1			13
512.1*	2.9	50126	15	2.0	56609	11.6	0.98	64420	6.6			
586.3*	2.6	55685	15	1.7	57325	10.2	0.85	63425	5.7			
599.1*	2.5	46368	12	1.7	49301	8.6	0.83	54750	4.8			
685.9*	2.2	47326	11	1.5	50319	7.7	0.73	55882	4.3	3500		
813.3*	1.8	48562	9.4	1.2	51633	6.6	0.61	57176	3.7			
900.2*	1.7	37654	6.6	1.1	40036	4.7	0.56	44296	2.6			
1040*	1.4	38483	5.8	0.96	40917	4.1	0.48	45271	2.3		72000	
1247*	1.2	39559	5.0	0.80	42061	3.5	0.40	46536	2.0			

* (bg) All the ratios in light grey (ie. 45.41) have particular dimensions of bevel gears in some versions. See dimensional tables.

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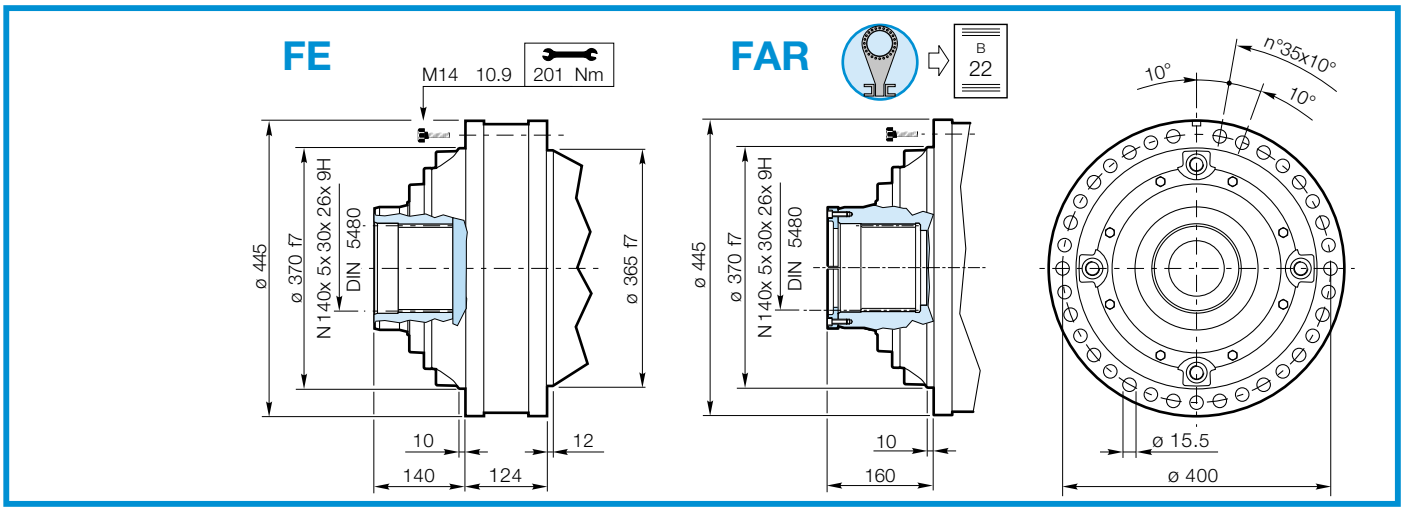
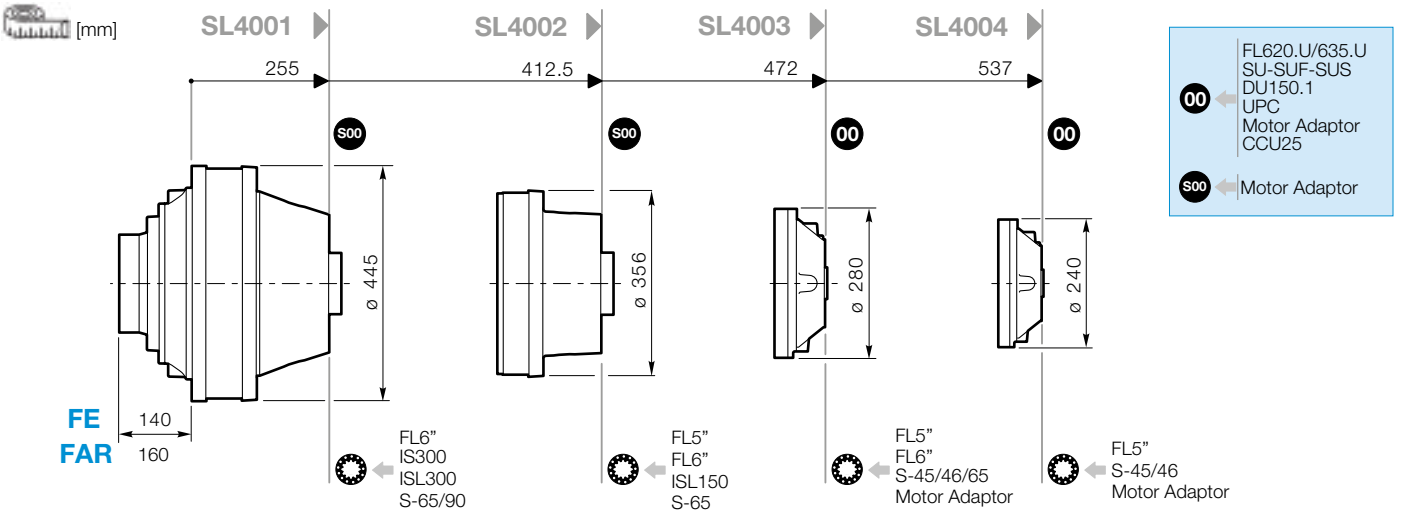
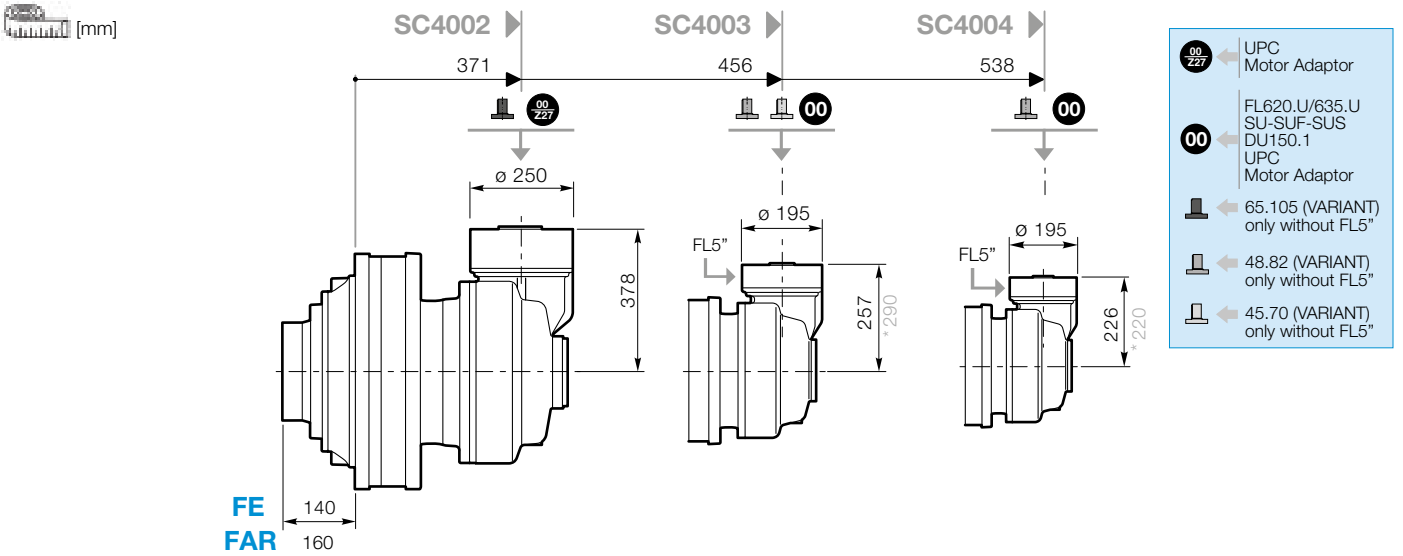
GEARBOX DIMENSIONS WITH OUTPUT







* bg → 400 3 S-45/46/65/90 IS ISL → 400 8 SU SUF SUS → 400 9 65.105 48.82 45.70 → 400 9 FL5" FL6" FL620/635 → 400 10 Motor Adaptor → 400 12
00 → B 11
00 Z27 → B 11
S00 → B 12

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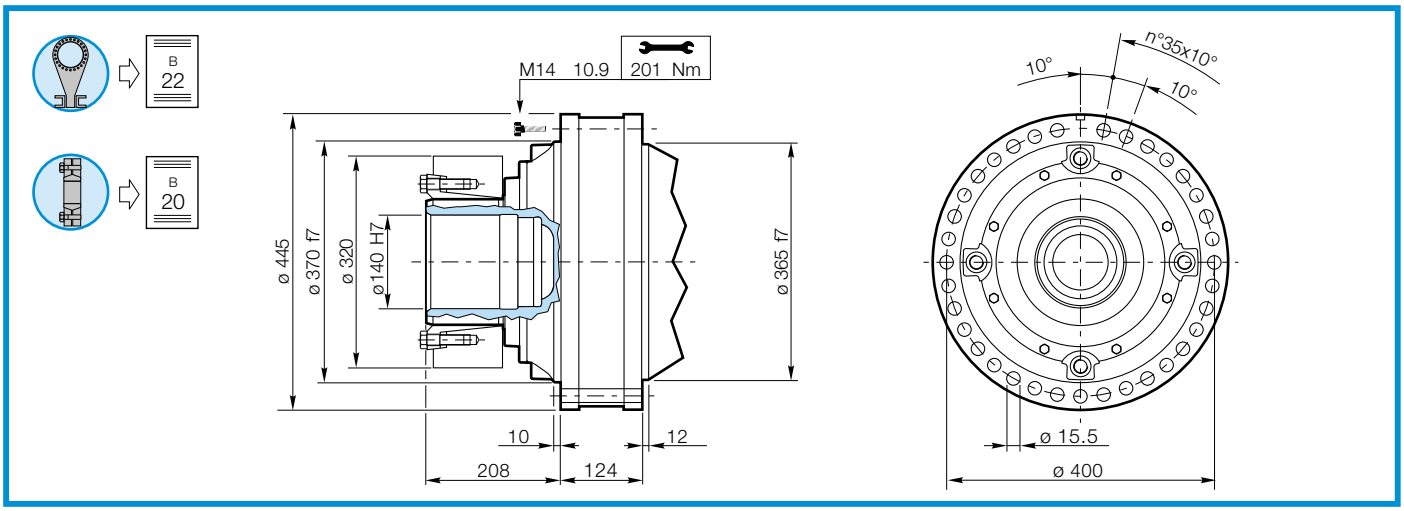
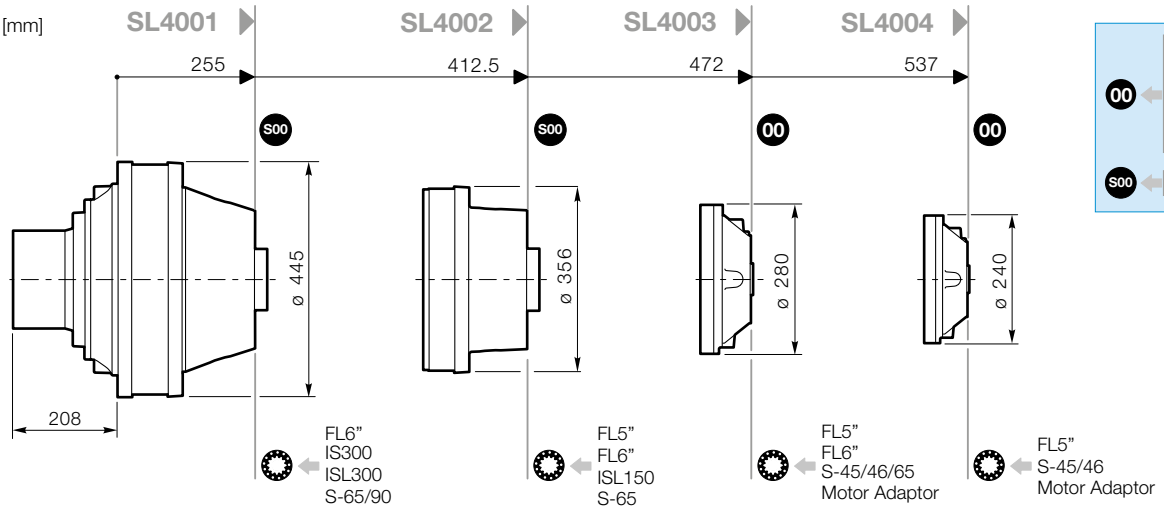


[mm]



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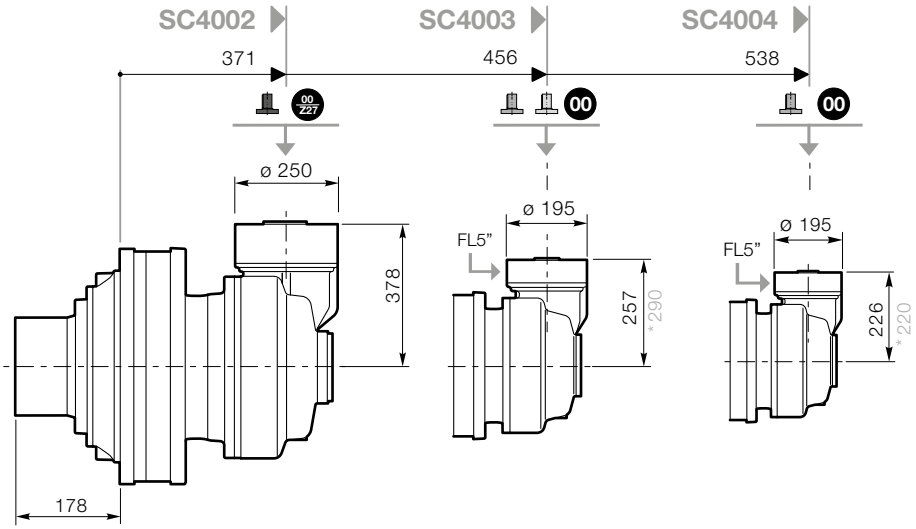
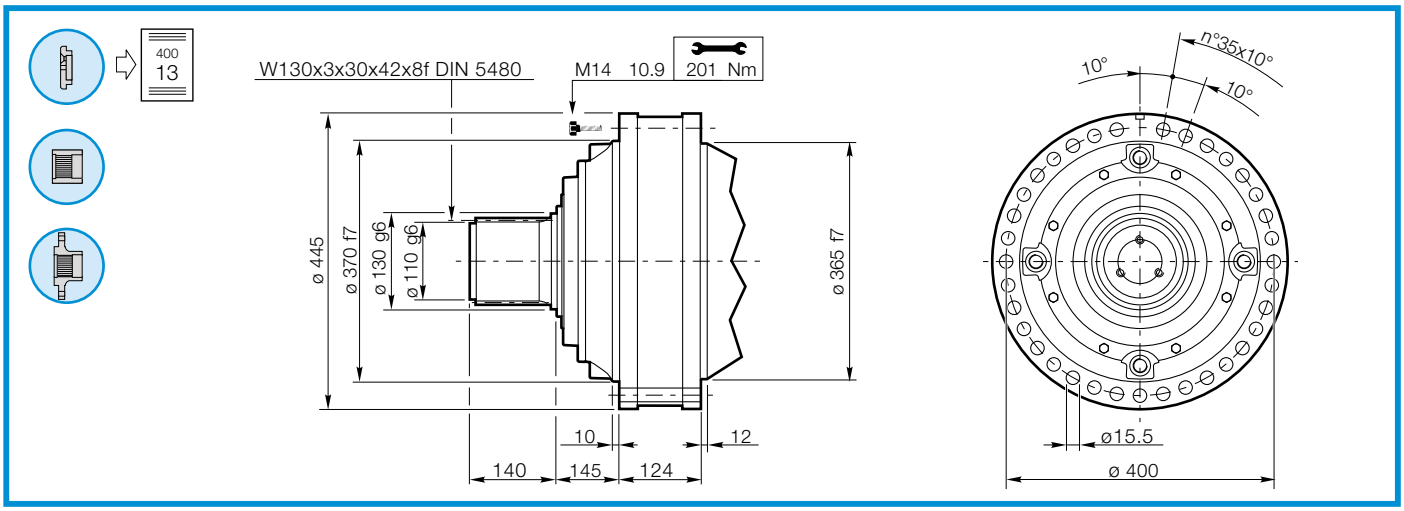


* bg → 400 3 → S-45/46/65/90 IS ISL → 400 8 → SU SUF SUS → 400 9 → 65.105 48.82 45.70 → 400 9 → FL5" FL6" FL620/635 → 400 10 → Motor Adaptor → 400 12 → 00 → B 11 → 00 Z27 → B 11 → S00 → B 12

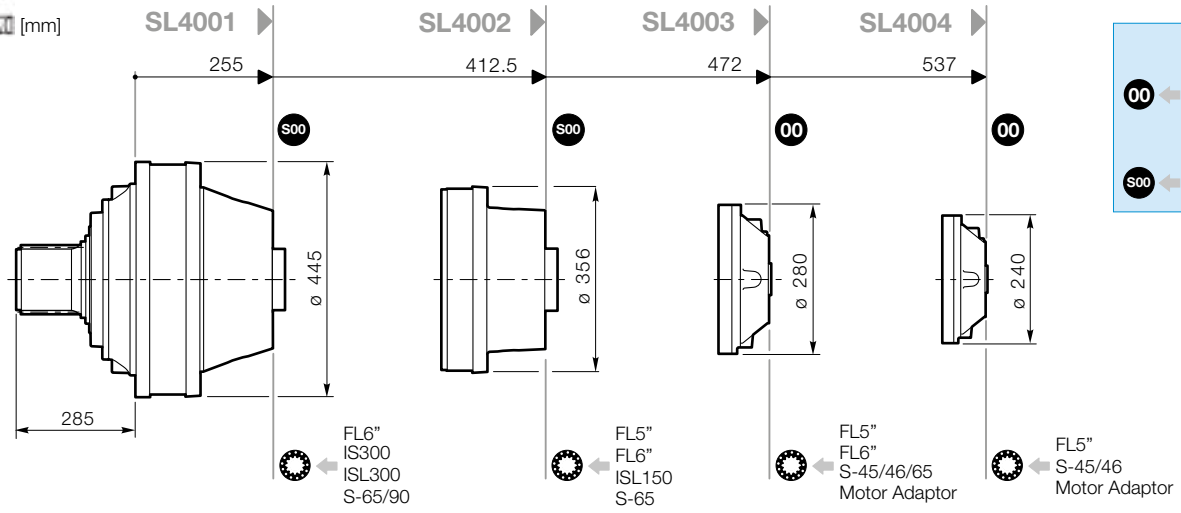
Click *i* button to return to main index

Click **DANA** button to return to section index

GEARBOX DIMENSIONS WITH OUTPUT



[mm]



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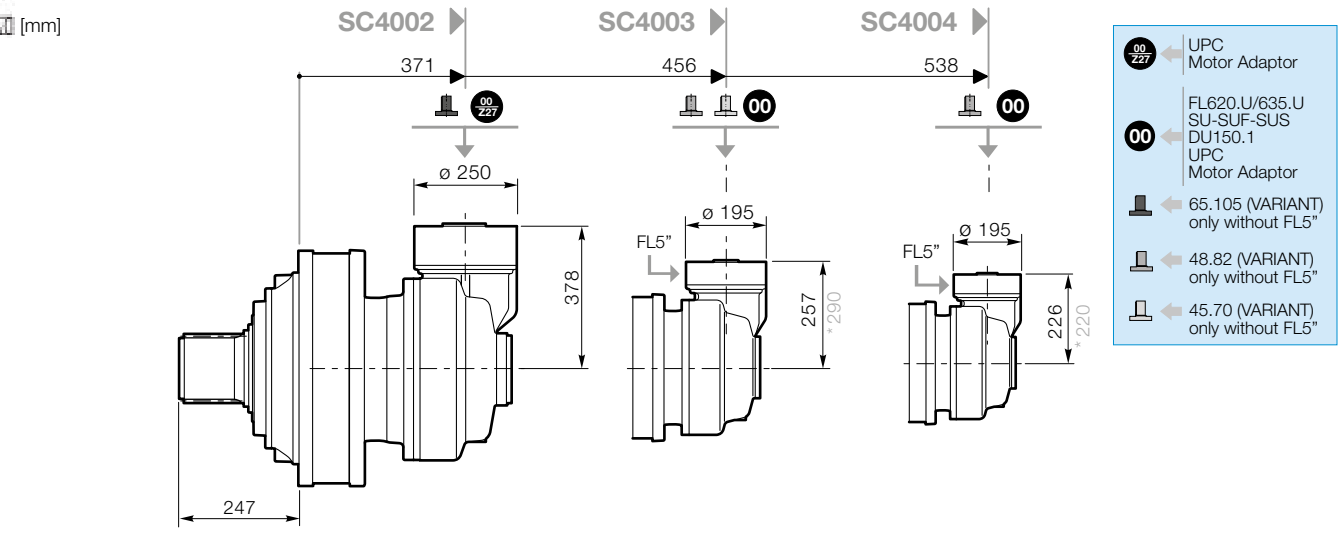
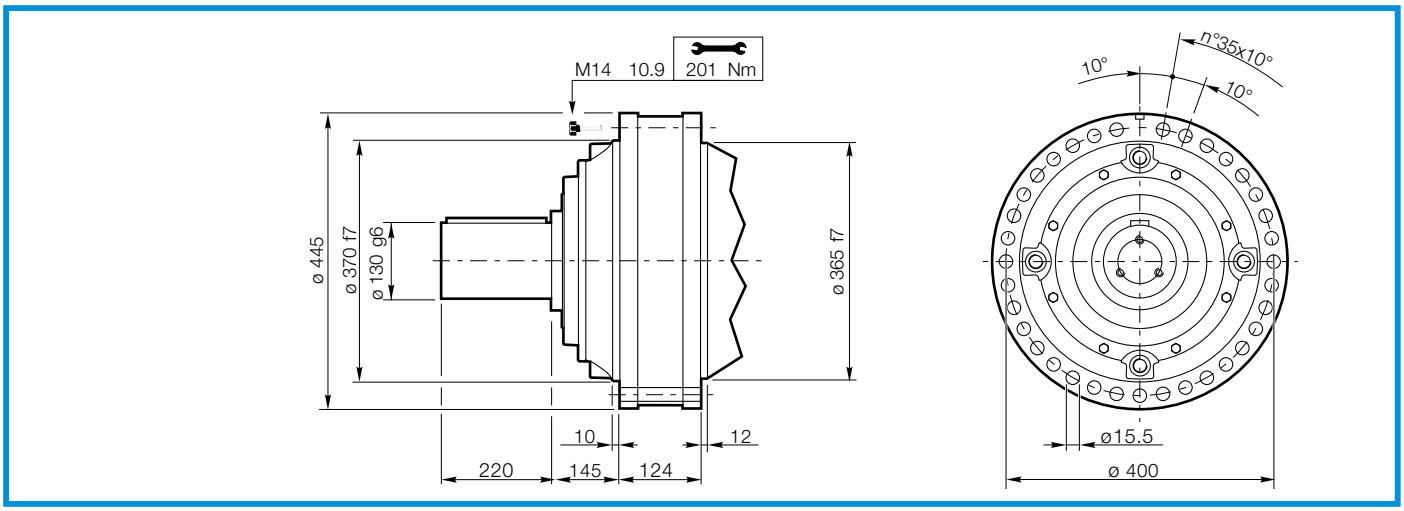


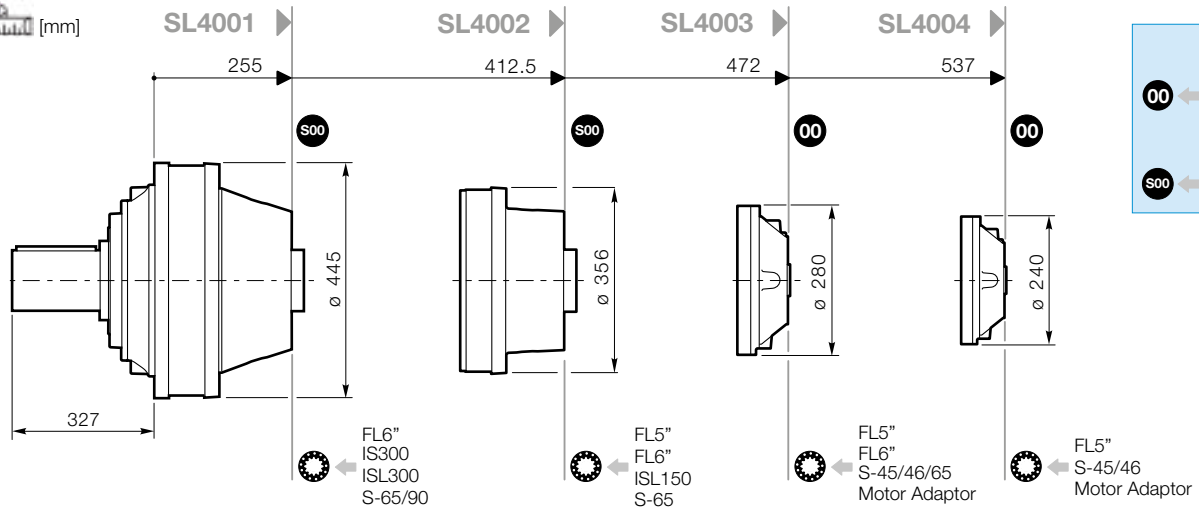
* bg → 400 3 S-45/46/65/90 IS ISL → 400 8 SU SUF SUS → 400 9 65.105 48.82 45.70 → 400 9 FL5" FL6" FL620/635 → 400 10 Motor Adaptor → 400 12 → 00 B 11 → 00 Z27 B 11 → S00 B 12

Click **DANA** button to return to section index

Click *i* button to return to main index



[mm]



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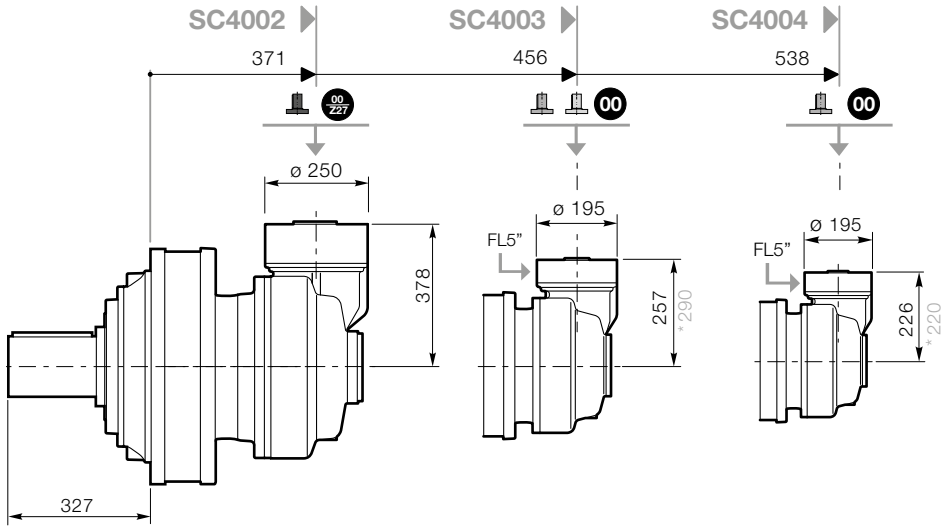
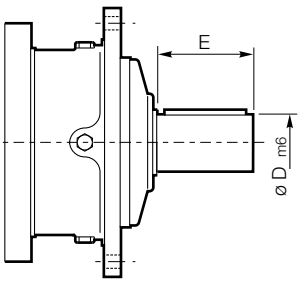


* bg ⇨ 400 3 S-45/46/65/90 IS ISL ⇨ 400 8 SU SUF SUS ⇨ 400 9 65.105 48.82 45.70 ⇨ 400 9 FL5" FL6" FL620/635 ⇨ 400 10 Motor Adaptor ⇨ 400 12 00 ⇨ B 11 00 Z27 ⇨ B 11 S00 ⇨ B 12

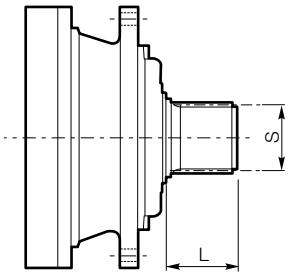
Click *i* button to return to main index

Click **DANA** button to return to section index

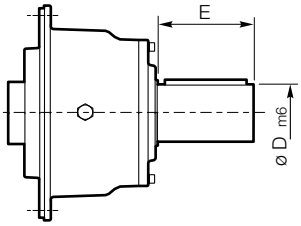
S-45 S-46 S-65 S-90 IS ISL



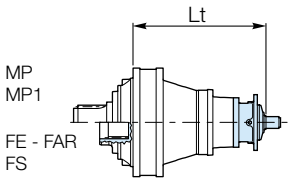
S-45CR1 - S-46C1
S-65CR1 - S90CR1



S-45SR - S-46S

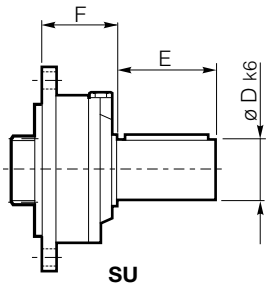


IS / ISL

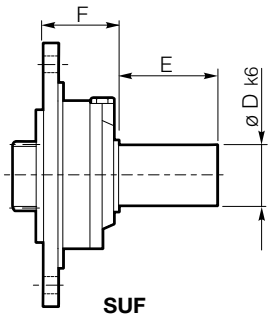


	D m6	E	L	S DIN5482	Lt			
					SL4001	SL4002	SL4003	SL4004
S-45CR1	65	105	-	-	-	-	599	599
S-45SR	-	-	68	B58x53	-	-	599	599
S-46C1	65	105	-	-	-	-	641	641
S-46S	-	-	68	B58x53	-	-	641	641
S-65CR1	80	130	-	-	460.5	604.5	638.5	-
S-90CR1	90	170	-	-	466.5	-	-	-
ISL150	90	130	-	-	-	482.5	-	-
ISL300	90	130	-	-	325	-	-	-
IS300	100	210	-	-	446	-		-

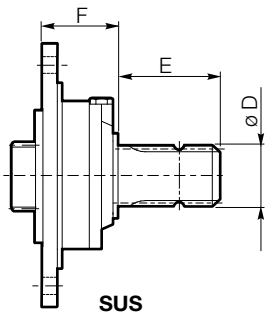
SU - SUF - SUS



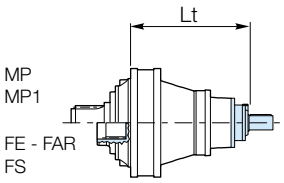
SU

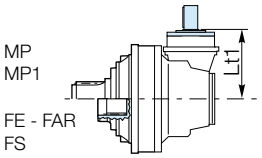


SUF



SUS

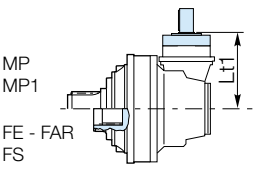


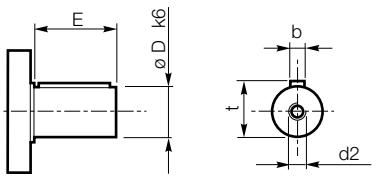


	D k6	E	F	Lt - Lt1 (00)				
				SL4003	SL4004	SC4002	SC4003	SC4004
SU/SUF.1	28	50	60	532	597	438	317	286
							350*	280*
SU/SUF.2	40	58	60	532	597	438	317	286
							350*	280*
SU/SUF.3	48	82	60	532	597	438	317	286
							350*	280*
SU2 1.5X3.25	38.1	82.55	60	532	597	438	317	286
							350*	280*
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	573.5	638.5	479.5	358.5	327.5
							391.5*	321.5*
SU 42x80	48	80	101.5	573.5	638.5	479.5	358.5	327.5
							391.5*	321.5*

* bg ⇨ 400 3

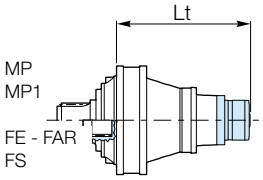
65.105 - 48.82 - 45.70

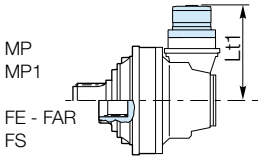


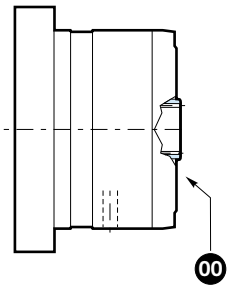


		D k6	E	b	t	d2	Lt1		
							SC4002	SC4003	SC4004
	65.105	65	105	18	69	M20x42	376	-	-
	48.82	48	82	14	51.5	M10x22	-	350	280
	45.70	45	70	14	48.5	M10x22	-	340	-

FL5” - FL6”



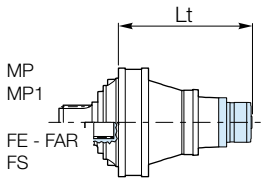


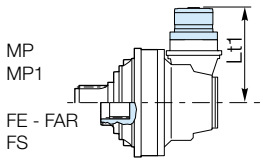


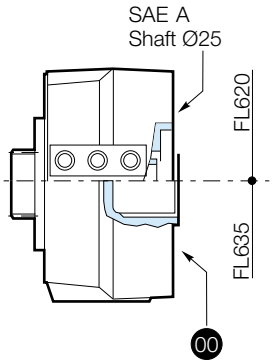
		Lt - Lt1					
		SL4001	SL4002	SL4003	SL4004	SC4003	SC4004
FL5”	FL250.4C FL250.6C	-	491.5	577.5	630.5	408.5 441.5*	377.5 280*
	FL350.6C FL350.8C	-	491.5	577.5	630.5	408.5 441.5*	377.5 280*
	FL450.6C FL450.8C	-	491.5	577.5	630.5	408.5 441.5*	377.5 280*
	FL650.10C FL650.12C FL650.14C	-	505	591	644	422 455*	391 293.5*
	FL750.10C FL750.12C FL750.14C	-	505	591	644	422 455*	391 293.5*
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	388	519	605	-	-	-

* bg ⇨ 400 3

FL620.U - FL635.U



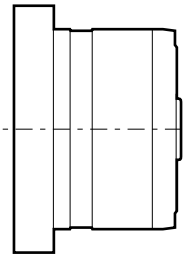


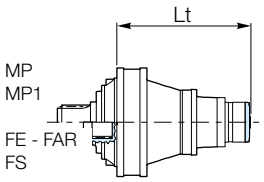


	Lt - Lt1				
	SL4003	SL4004	SC4002	SC4003	SC4004
FL620.U	576.5	641.5	482.5	361.5 394.5*	330.5 324.5*
FL635.U	563	628	469	348 381*	317 311*

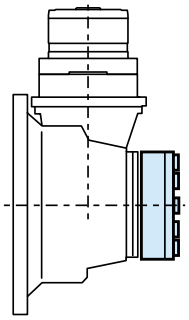
* bg ⇨ 400 3

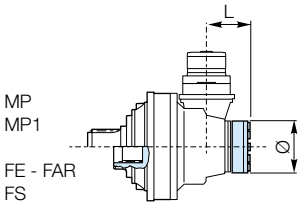
RL



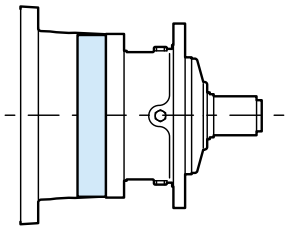


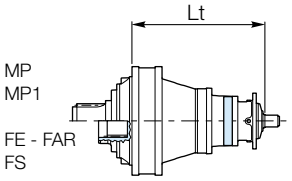
			Lt			
			SL4001	SL4002	SL4003	SL4004
RL	+	FL250 FL350 FL450	-	517.5	603.5	656.5
		FL650 FL750	-	531	617	670
		FL960	414	545	631	-





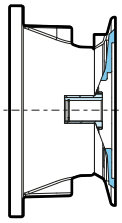
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

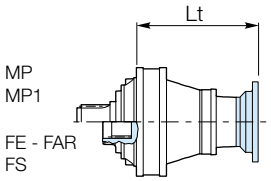


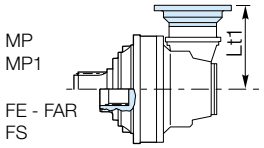


			Lt	
			SL4003	SL4004
RL	+	S46C1	661	661

IEC Motor







	Lt - Lt1						
	SL4001 S00	SL4002 S00	SL4003 00	SL4004 00	SC4002 00 227	SC4003 00	SC4004 00
IEC 80 -90	-	-	-	564	-	-	-
IEC 100 - 112	-	-	-	565	-	-	254 248*
IEC 132	-	-	-	632	-	-	321 315*
IEC 160	-	-	579	663	-	383 416*	352 346*
IEC 180	-	-	579	663	504.5	383 416*	352 346*
IEC 200	330	487.5	609	673	540.5	394 427*	363 357*
IEC 225	360	517.5	609	673	538	424 457*	-
IEC 250	360	-	-	-	-	-	-
SHAFT_IEC225	360	-	-	-	560	-	-

* bg ⇨ 400 3

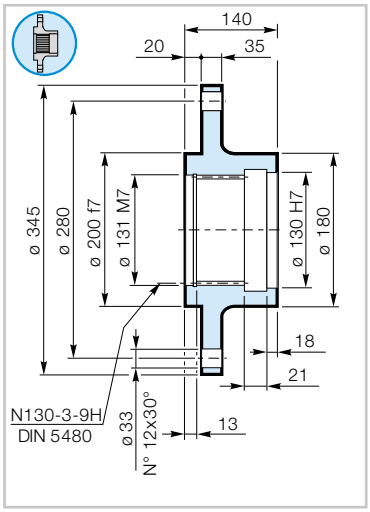
NEMA Motor

Please consult NEMA Motor Flange in page ⇨ B 15

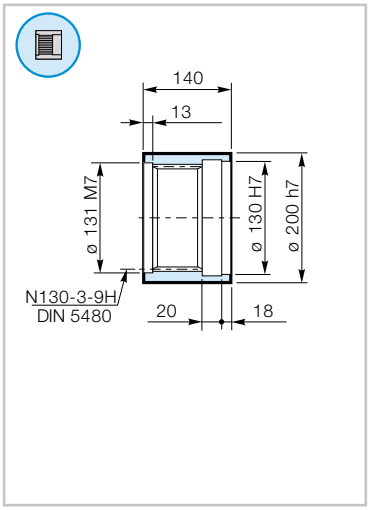
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page ⇨ B 14

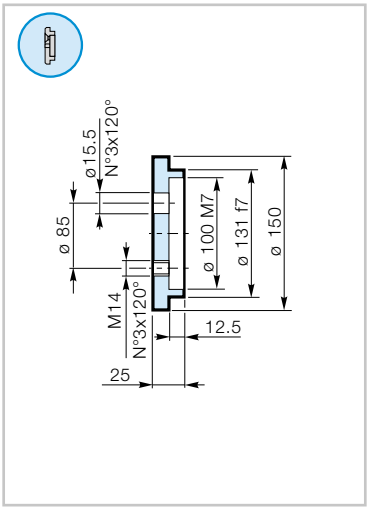
FR S400 Wheel Flange



MS S400 Splined Sleeve



RDF 520 Lock Washer

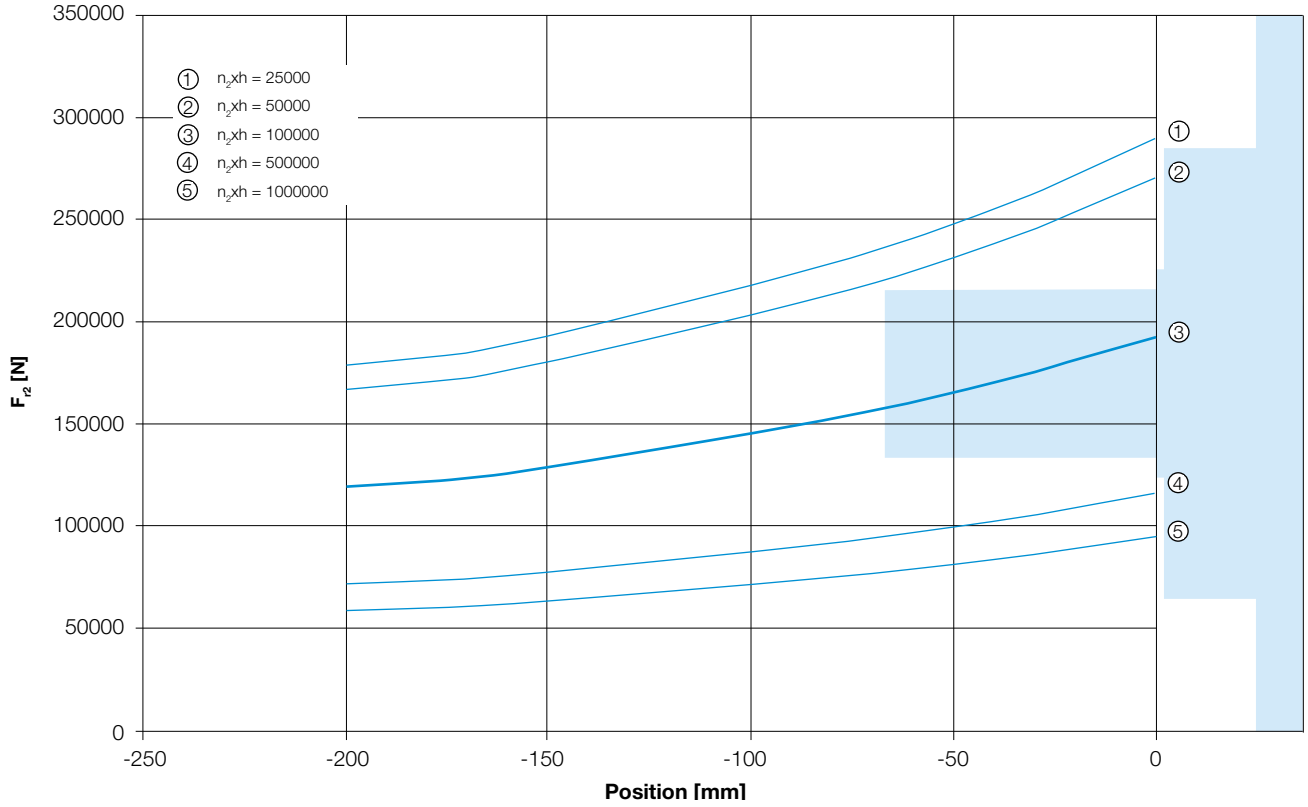


400

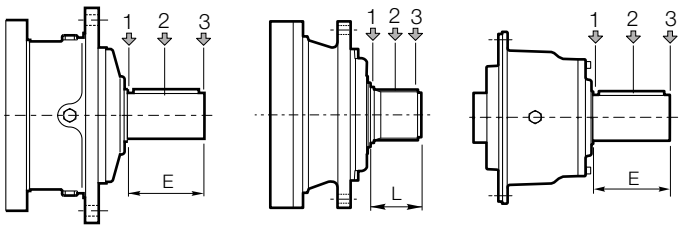
Output Radial Loads

Gearbox output version for:
SL, SC

MP - MP1

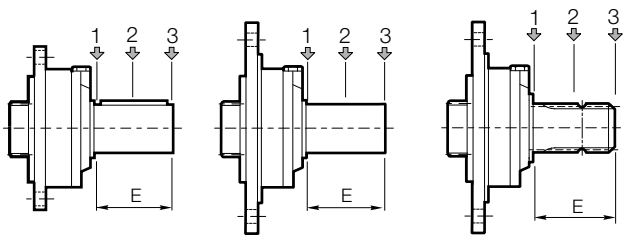


Input Radial Loads



S... IS / ISL

			F_{r1} [N]					
			$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**L**	**1**	**2**	**3**	**1**	**2**	**3**
S-45CR1	105	-	10000	6000	4000	5000	3000	2000
S-45SR	-	68	10000	6000	4000	5000	3000	2000
S-46C1	105	-	14000	8800	6400	7000	4400	3200
S-46S	-	68	14000	8800	6400	7000	4400	3200
S-65CR1	130	-	23800	15500	9600	11900	7800	4800
S-90CR1	170	-	29700	17000	10000	14800	8500	5000
ISL150	130	-	7631	4302	2995	3824	2156	1501
ISL300	130	-	7631	4302	2995	3824	2156	1501
IS300	210	-	48814	33068	22914	24465	16573	11484

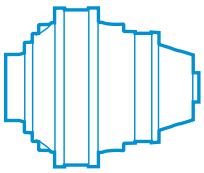


SU SUF SUS

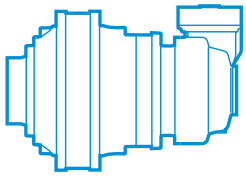
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

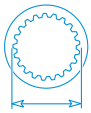
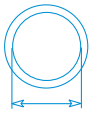
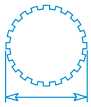
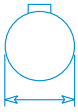
Click **DANA** button to return to section index

Click *i* button to return to main index



600



i_{eff}	4.18 - 2785
T_{2N}	64000 Nm
	N150x5x30x28x9H DIN5480
	165 mm
	W150x5x30x28x8f DIN5480
	160 mm

TECHNICAL DATA

10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL6001												
4.18	1)			239	26654	668	120	32815	411	2000	140000	72
4.89				204	27422	587	102	33761	361		120000	
6.00				167	28506	498	83	35095	306		94000	
SL6002												
18.81	80	32558	272	53	36769	205	27	45268	126	2500	140000	47
19.76	76	36914	294	51	41689	221	25	49588	131		120000	
22.01	68	38088	272	45	43015	205	23	49917	119			
25.04	60	38864	244	40	43891	184	20	50314	105			
29.34	51	40237	215	34	45441	162	17	50806	91			
30.72	49	37213	190	33	38150	130	16	39808	68		94000	
35.99	42	38902	170	28	43934	128	14	46759	68		120000	
44.16	34	38051	135	23	39009	93	11	40704	48		94000	
SL6003												
68.90	22	48892	111	15	55216	84	7.3	63350	48	2500	140000	31
80.60	19	50532	98	12	51805	67	6.2	54055	35		120000	
89.78	17	50868	89	11	52149	61	5.6	54414	32			
98.12	15	52731	84	10	59552	64	5.1	66217	35		140000	
109.3	14	55196	79	9.2	62336	60	4.6	67306	32			
130.2	12	58169	70	7.7	63129	51	3.8	69109	28			
145.7	10	58310	63	6.9	60253	43	3.4	62870	23			
163.6	9.2	62304	60	6.1	64423	41	3.1	69840	22			
186.2	8.1	62946	53	5.4	65693	37	2.7	72955	21			
203.0	7.4	53479	41	4.9	55244	29	2.5	61351	16		120000	
218.2	6.9	60246	43	4.6	61764	30	2.3	64447	16		140000	
SL6004												
241.1	6.2	64250	42	4.1	68314	30	2.1	75865	17	3000	140000	31
284.6	5.3	65879	36	3.5	70046	26	1.8	77788	14			
317.0	4.7	66962	33	3.2	71198	24	1.6	79068	13			
360.6	4.2	68282	30	2.8	72601	21	1.4	80626	12			
413.4	3.6	69708	27	2.4	74117	19	1.2	82309	10			
460.5	3.3	70854	24	2.2	75335	17	1.1	83663	10			
523.9	2.9	72251	22	1.9	76821	15	1.0	85312	8.5			
569.9	2.6	73177	20	1.8	77806	14	0.88	86406	7.9			
655.7	2.3	74745	18	1.5	79473	13	0.76	88258	7.0			
711.3	2.1	75672	17	1.4	80458	12	0.70	89351	6.6			
792.3	1.9	76916	15	1.3	81781	11	0.63	90821	6.0			
943.7	1.6	78977	13	1.1	83972	9.3	0.53	93254	5.2			
962.6	1.6	79215	13	1.0	84225	9.2	0.52	87889	4.8			
1117	1.3	81019	11	0.90	85003	8.0	0.45	88695	4.2			
1307	1.1	68861	8.3	0.77	73216	5.9	0.38	81309	3.3		120000	
1350	1.1	83371	9.7	0.74	85995	6.7	0.37	89731	3.5		140000	
1579	0.95	70860	7.0	0.63	75342	5.0	0.32	83670	2.8		120000	
1851	0.81	72581	6.2	0.54	77172	4.4	0.27	85702	2.4			
1986	0.76	56039	4.4	0.50	59584	3.1	0.25	66170	1.7		94000	
2270	0.66	57916	4.0	0.44	61579	2.8	0.22	68386	1.6		120000	
2785	0.54	58980	3.3	0.36	62710	2.4	0.18	69642	1.3		94000	

1) Consult the DANA area contact person.

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10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC6003												
42.89	35	34984	128	23	39509	96	12	48641	59	1800	140000	22
49.31	30	43093	137	20	48667	103	10	59916	64	1500		
57.69	26	49506	135	17	50753	92	8.7	52957	48		120000	
64.26	23	49834	122	16	51090	83	7.8	53309	43	1800		
74.52	20	50290	106	13	51556	72	6.7	53796	38			
74.52	20	50290	106	13	51556	72	6.7	53796	38			
77.01	20	44892	92	13	50699	69	6.5	62418	42	2500		
90.09	17	50878	89	11	52160	61	5.6	54425	32		140000	
97.59	15	52373	84	10	59147	63	5.1	66163	36			
114.4	13	54222	74	8.7	59364	54	4.4	61943	28			
128.9	12	40636	50	7.8	41660	34	3.9	43755	18	1500	94000	
133.8	11	52128	61	7.5	53441	42	3.7	57600	23	2500	120000	
164.1	9.1	47975	46	6.1	49184	31	3.0	51320	16			
201.4	7.4	41763	33	5.0	42815	22	2.5	46806	12		94000	
SC6004												
234.5*	6.4	63980	43	4.3	68026	30	2.1	75546	17	2000	140000	17
261.2*	5.7	65032	39	3.8	69145	28	1.9	76788	15			
269.8*	5.6	65351	38	3.7	69484	27	1.9	77165	15			
321.4*	4.7	67102	33	3.1	71347	23	1.6	79233	13			
358.0*	4.2	68206	30	2.8	72520	21	1.4	80536	12			
409.0	3.7	69595	27	2.4	73997	19	1.2	82177	11	3000		
462.6	3.2	70904	24	2.2	75388	17	1.1	83721	9.5	3500		
518.3	2.9	72134	22	1.9	76697	16	1.0	85175	8.6	3000		
569.1	2.6	73161	20	1.8	77788	14	0.88	86387	7.9	3500		
651.7	2.3	74676	18	1.5	79399	13	0.77	85810	6.9	3000		
721.2	2.1	75830	17	1.4	80626	12	0.69	89538	6.5	3500		
797.0	1.9	71947	14	1.3	73759	9.7	0.63	76963	5.1			
906.8	1.7	78502	14	1.1	83467	9.6	0.55	87567	5.1			
988.8	1.5	66015	11	1.0	70191	7.4	0.51	77950	4.1		120000	
1096	1.4	53902	7.7	0.91	55260	5.3	0.46	61253	2.9	3000		
1243	1.2	68341	8.6	0.80	72664	6.1	0.40	80696	3.4	3500		
1345	1.1	52828	6.2	0.74	56170	4.4	0.37	62379	2.4	3000	94000	
1525	0.98	55006	5.7	0.66	57982	4.0	0.33	64391	2.2	3500	120000	
1871	0.80	55535	4.7	0.53	59048	3.3	0.27	65574	1.8		94000	

* (bg) All the ratios in light grey (ie.234.5) have particular dimensions of bevel gears in some versions. See dimensional tables.

600

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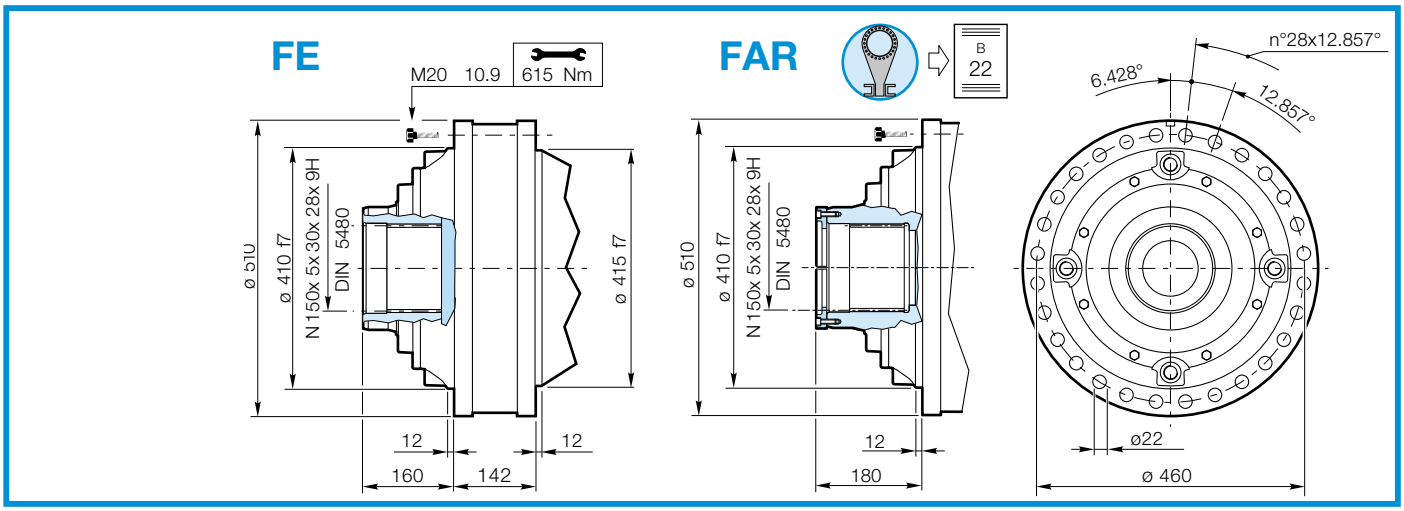
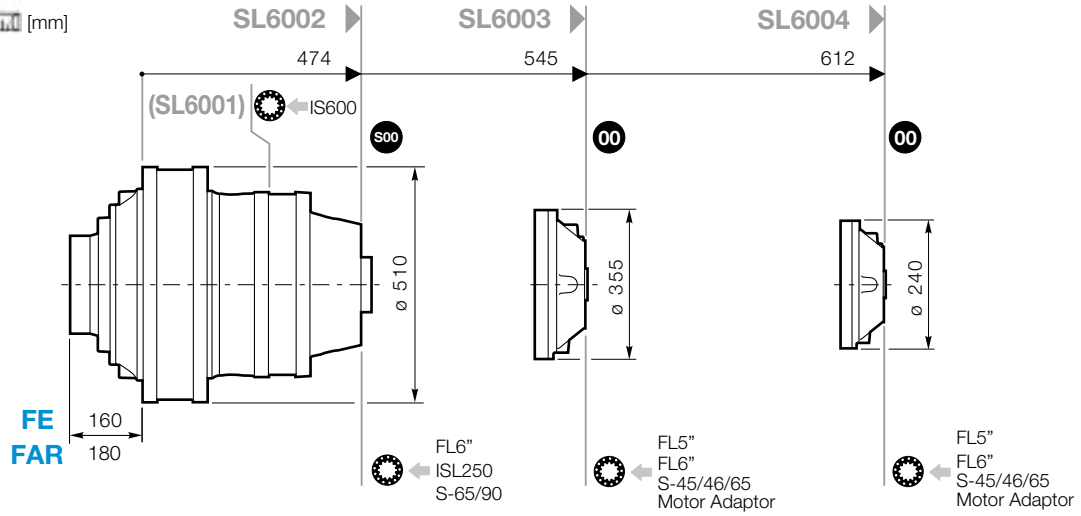
GEARBOX DIMENSIONS WITH OUTPUT



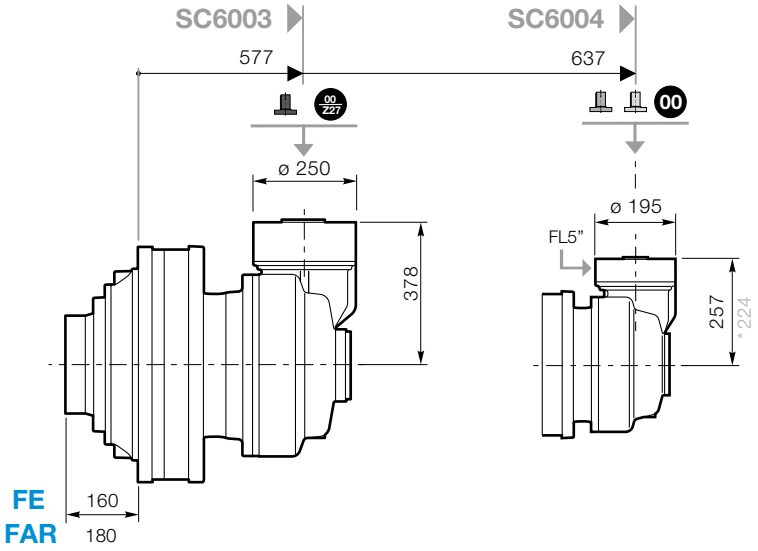
[mm]



00 FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 Motor Adaptor

[mm]



00 227 UPC
Motor Adaptor

00 FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

48.82 (VARIANT)
only without FL5"

45.70 (VARIANT)
only without FL5"

* bg → 600 3 S-45/46/65/90 IS ISL → 600 8 SU SUF SUS → 600 9 65.105 48.82 45.70 → 600 9 FL5" FL6" FL620/635 → 600 10 Motor Adaptor → 600 12 → 00 → B 11 → 00 227 → B 11 → S00 → B 12

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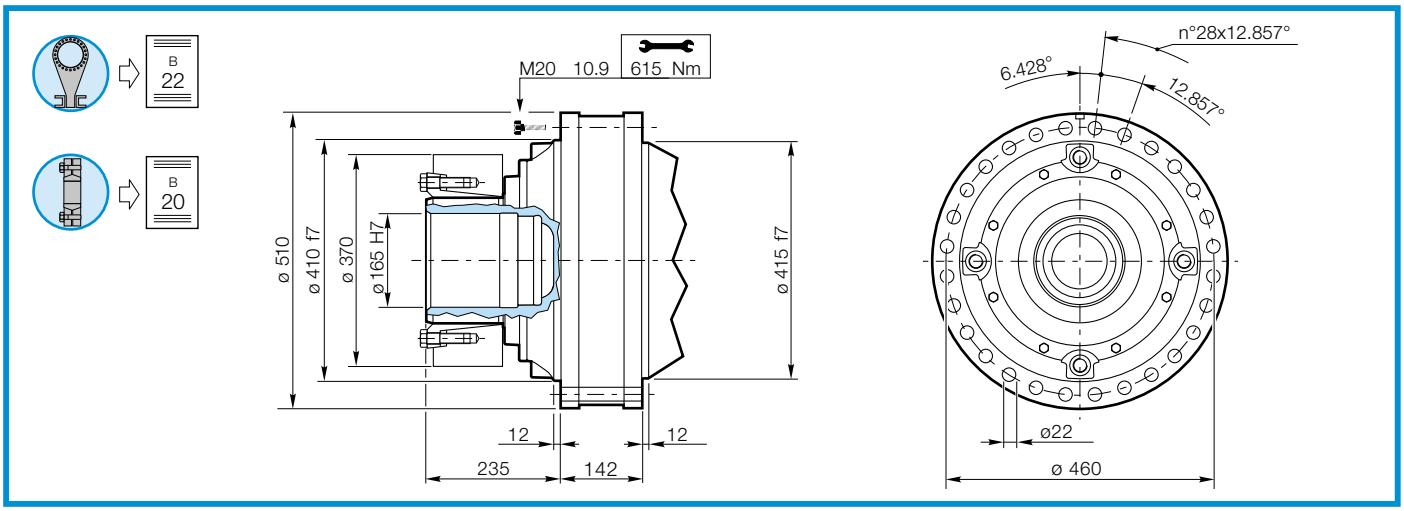
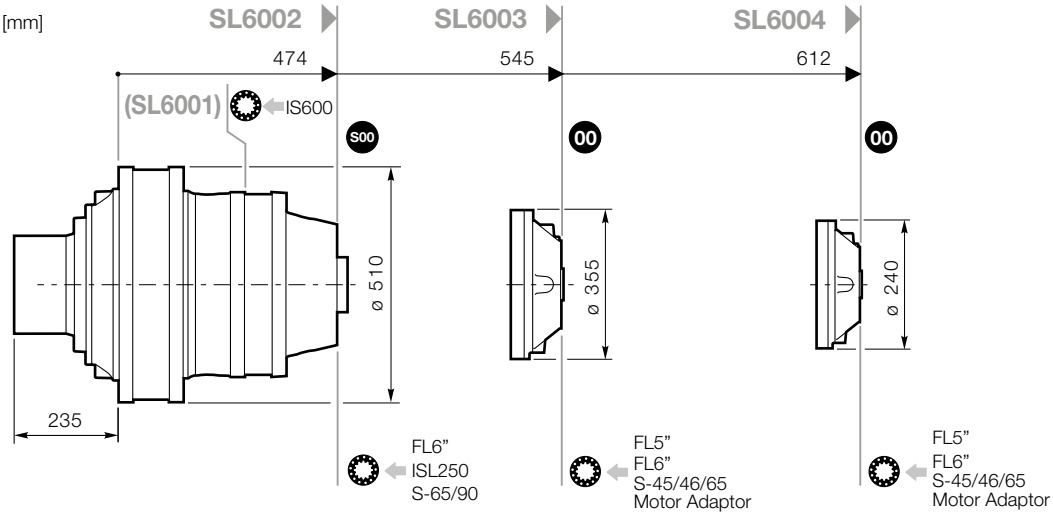


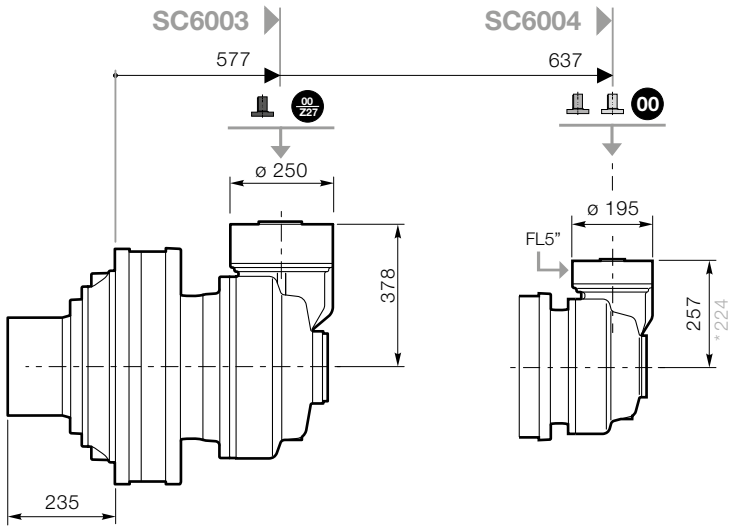
[mm]



00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 Z27 ← UPC
Motor Adaptor

00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

48.82 (VARIANT)
only without FL5"

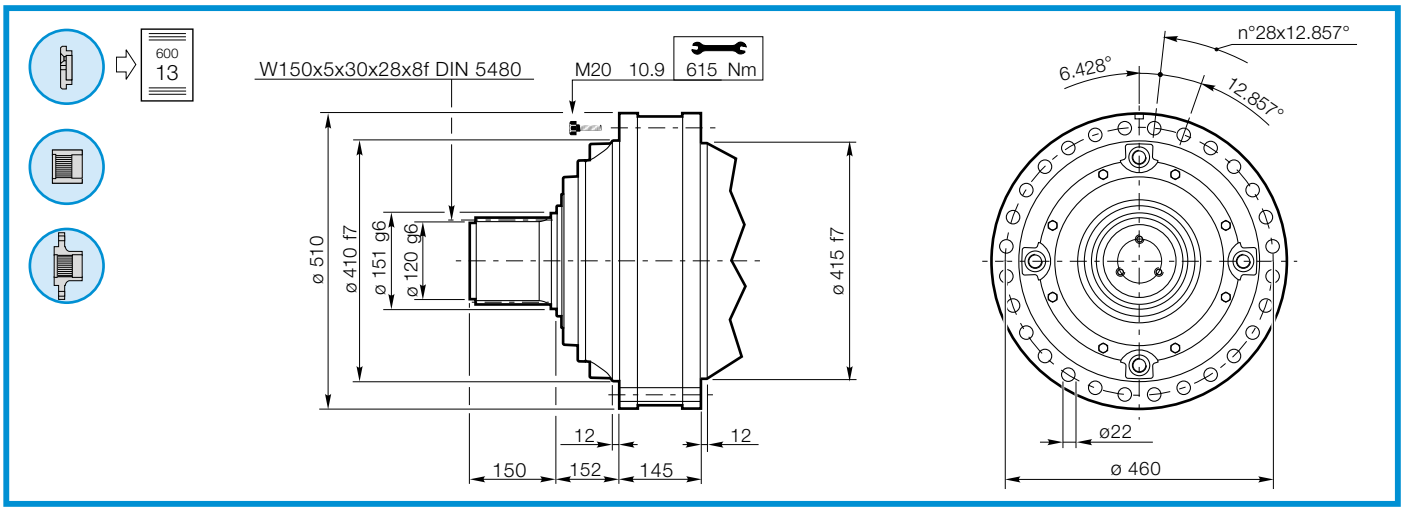
45.70 (VARIANT)
only without FL5"

* (bg) → 600 3 S-45/46/65/90 IS ISL → 600 8 SU SUF SUS → 600 9 65.105 48.82 45.70 → 600 9 FL5" FL6" FL620/635 → 600 10 Motor Adaptor → 600 12 00 → B 11 00 Z27 → B 11 S00 → B 12

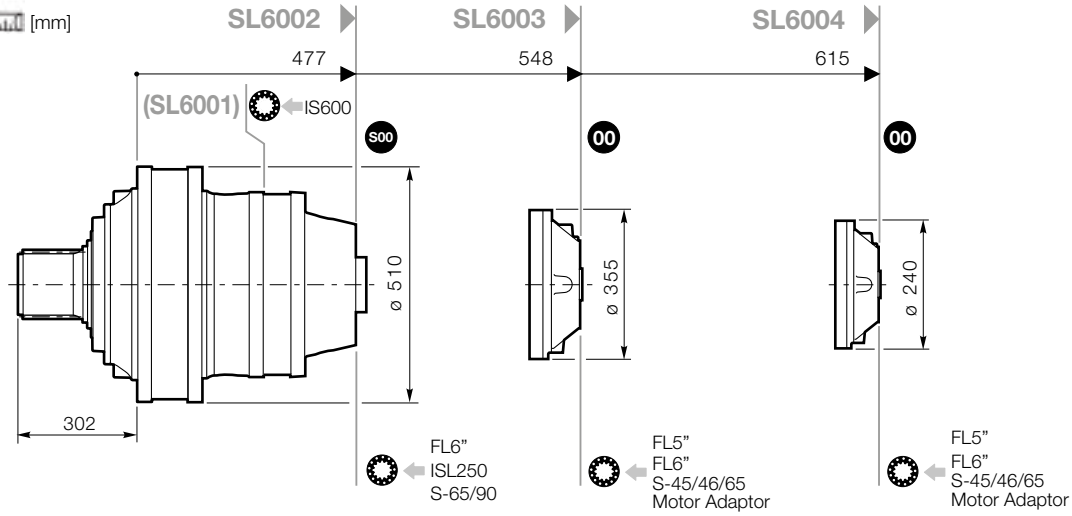
Click *i* button to return to main index

Click **DANA** button to return to section index

GEARBOX DIMENSIONS WITH OUTPUT



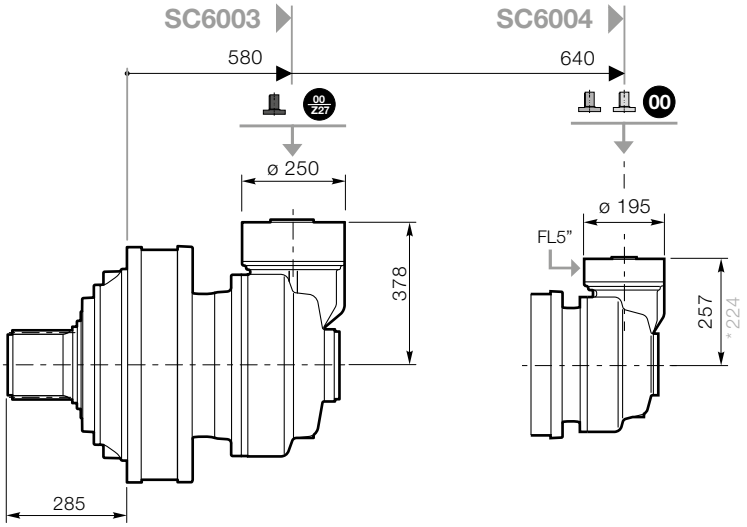
[mm]



00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 Z27 ← UPC
Motor Adaptor

00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

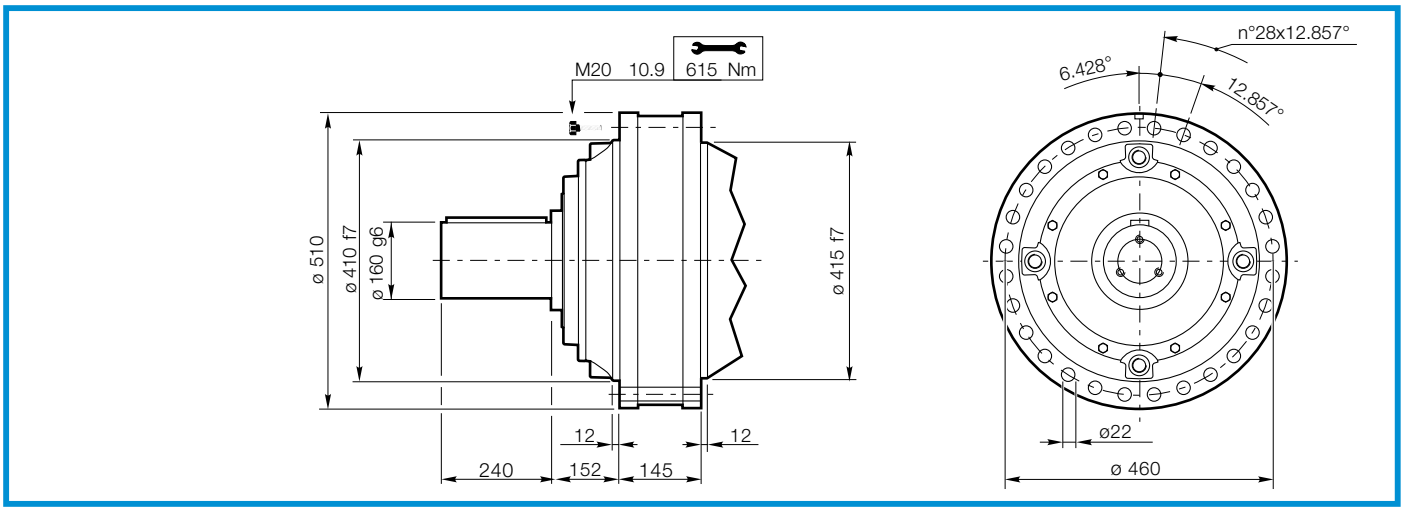
48.82 (VARIANT)
only without FL5"

45.70 (VARIANT)
only without FL5"

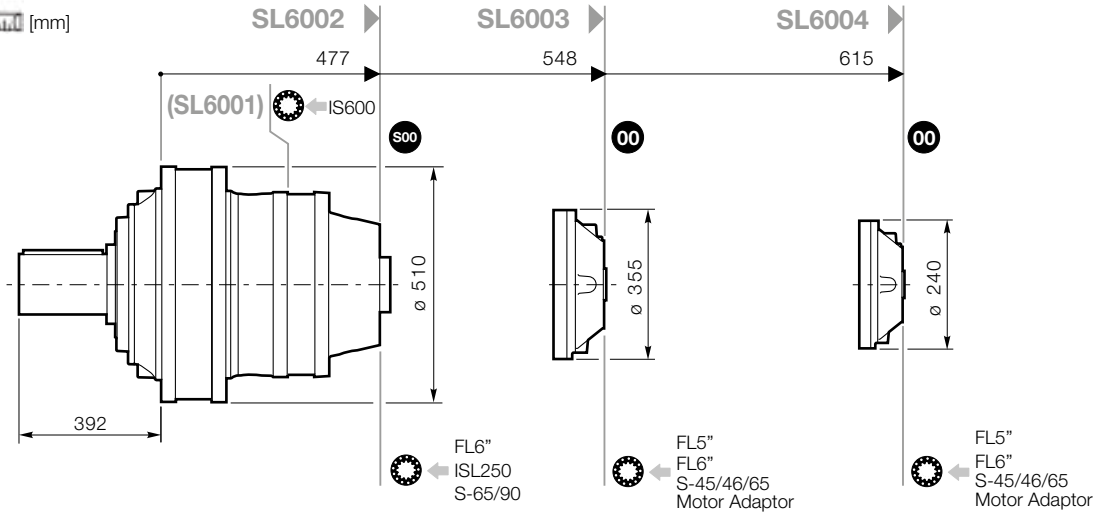
* (bg) → 600 3 S-45/46/65/90 IS ISL → 600 8 SU SUF SUS → 600 9 65.105 48.82 45.70 → 600 9 FL5" FL6" FL620/635 → 600 10 Motor Adaptor → 600 12 → 00 → B 11 → 00 Z27 → B 11 → S00 → B 12

Click **DANA** button to return to section index

Click *i* button to return to main index



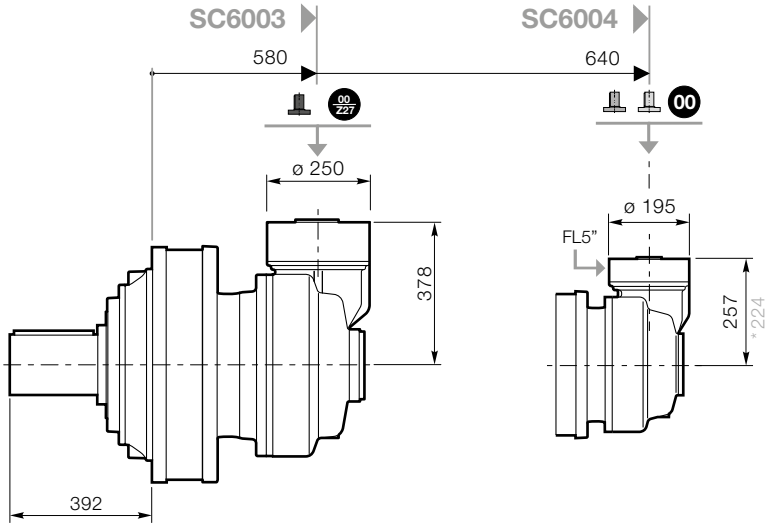
[mm]



00 FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 Motor Adaptor

[mm]



00 Z27 UPC
Motor Adaptor

00 FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

48.82 (VARIANT)
only without FL5"

45.70 (VARIANT)
only without FL5"

* bg ⇨ 600 3 S-45/46/65/90 IS ISL ⇨ 600 8 SU SUF SUS ⇨ 600 9 65.105 48.82 45.70 ⇨ 600 9 FL5" FL6" FL620/635 ⇨ 600 10 Motor Adaptor ⇨ 600 12 00 ⇨ B 11 00 Z27 ⇨ B 11 S00 ⇨ B 12

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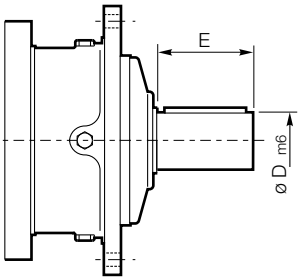
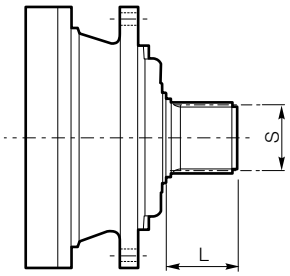
Click **DANA** button to return to section index

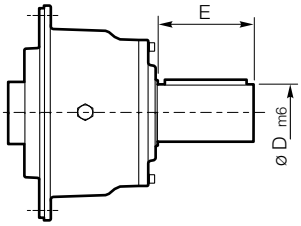
S-45 S-46 S-65 S-90 IS ISL



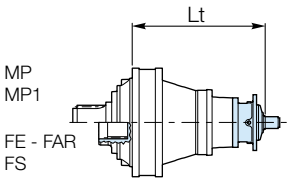
S-45CR1 - S-46C1
S-65CR1 - S90CR1



S-45SR - S-46S

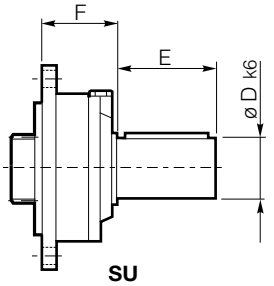


IS / ISL

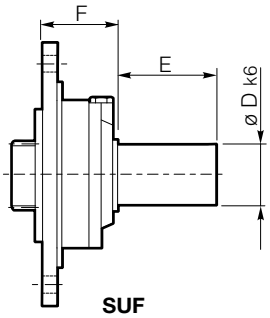


	D m6	E	L	S DIN5482		Lt			
						SL6001	SL6002	SL6003	SL6004
S-45CR1	65	105	-	-	FE-FAR-FS	-	-	674	674
					MP-MP1			677	677
S-45SR	-	-	68	B58x53	FE-FAR-FS	-	-	674	674
					MP-MP1			677	677
S-46C1	65	105	-	-	FE-FAR-FS	-	-	716	716
					MP-MP1			719	719
S-46S	-	-	68	B58x53	FE-FAR-FS	-	-	716	716
					MP-MP1			719	719
S-65CR1	80	130	-	-	FE-FAR-FS	-	666.5	714	-
					MP-MP1		669.5	717	
S-90CR1	90	170	-	-	FE-FAR-FS	-	672.5	-	-
					MP-MP1		675.5		
IS600	110	210	-	-	FE-FAR-FS	488	-	-	-
					MP-MP1	491			
ISL250	90	130	-	-	FE-FAR-FS	-	544	-	-
					MP-MP1		547		

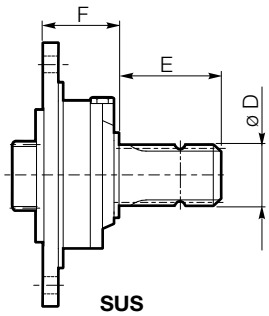
SU - SUF - SUS



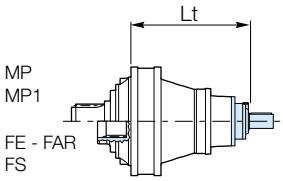
SU

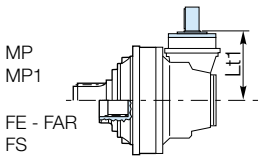


SUF



SUS

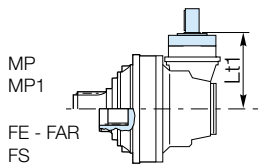


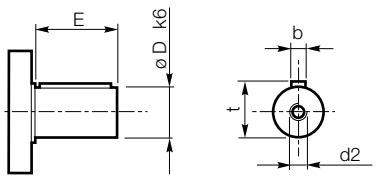


	D k6	E	F		Lt - Lt1 SL6003	Lt - Lt1 SL6004	Lt - Lt1 SC6003	Lt - Lt1 SC6004
SU/SUF.1	28	50	60	FE-FAR-FS	605	672	438	284
				MP-MP1	608	675		317*
SU/SUF.2	40	58	60	FE-FAR-FS	605	672	438	284
				MP-MP1	608	675		317*
SU/SUF.3	48	82	60	FE-FAR-FS	605	672	438	284
				MP-MP1	608	675		317*
SU2 1.5X3.25	38.1	82.55	60	FE-FAR-FS	605	672	438	284
				MP-MP1	608	675		317*
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	FE-FAR-FS	646.5	713.5	479.5	325.5
				MP-MP1	649.5	716.5		358.5*
SU 42x80	48	80	101.5	FE-FAR-FS	646.5	713.5	479.5	325.5
				MP-MP1	649.5	716.5		358.5*

* bg ⇨ 600 3

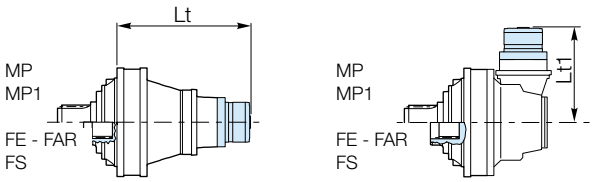
65.105 - 48.82 - 45.70

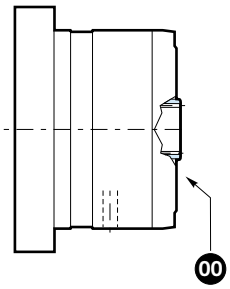




		D k6	E	b	t	d2		Lt1 SC6003	Lt1 SC6004
	65.105	65	105	18	69	M20x42	FE-FAR-FS	376	-
							MP-MP1		
	48.82	48	82	14	51.5	M10x22	FE-FAR-FS	-	317
							MP-MP1		
	45.70	45	70	14	48.5	M10x22	FE-FAR-FS	-	307
							MP-MP1		

FL5” - FL6”

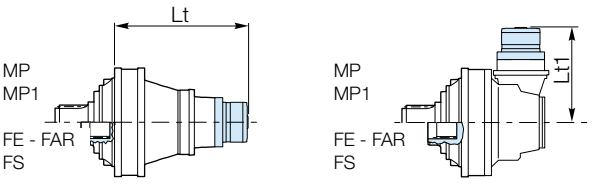


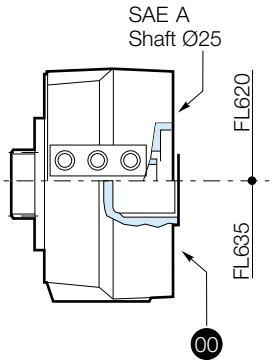


			Lt - Lt1			
			SL6002	SL6003	SL6004	SC6004
FL5”	FL250.4C FL250.6C	FE-FAR-FS	-	644.5	705.5	375.5
		MP-MP1	-	647.5	708.5	408.5*
	FL350.6C FL350.8C	FE-FAR-FS	-	644.5	705.5	375.5
		MP-MP1	-	647.5	708.5	408.5*
	FL450.6C FL450.8C	FE-FAR-FS	-	644.5	705.5	375.5
		MP-MP1	-	647.5	708.5	408.5*
	FL650.10C FL650.12C FL650.14C	FE-FAR-FS	-	658.5	719	389
		MP-MP1	-	661.5	722	422*
	FL750.10C FL750.12C FL750.14C	FE-FAR-FS	-	658.5	719	389
		MP-MP1	-	661.5	722	422*
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	FE-FAR-FS	594	672.5	746	-
		MP-MP1	597	675.5	749	-

* bg ⇨ 600 3

FL620.U - FL635.U

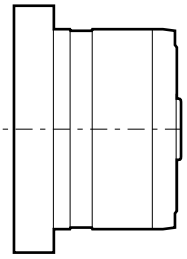


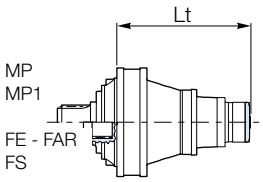


		Lt - Lt1			
		SL6003	SL6004	SC6003	SC6004
FL620.U	FE-FAR-FS	649.5	716.5	482.5	328.5
	MP-MP1	652.5	719.5		361.5*
FL635.U	FE-FAR-FS	636	703	482.5	315
	MP-MP1	639	706		348*

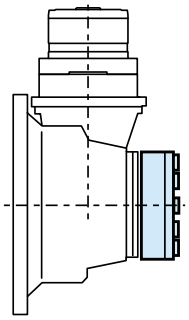
* bg ⇨ 600 3

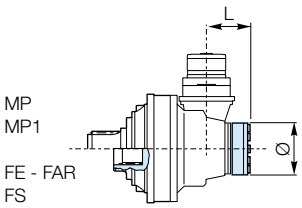
RL



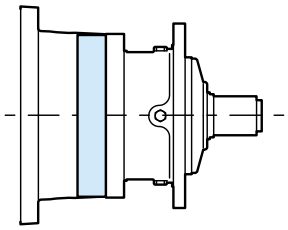


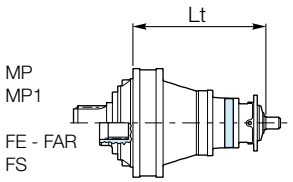
				Lt		
				SL6002	SL6003	SL6004
RL	+	FL250 FL350 FL450	FE-FAR-FS	-	670.5	731.5
			MP-MP1	-	673.5	734.5
		FL650 FL750	FE-FAR-FS	-	684.5	745
			MP-MP1	-	687.5	748
		FL960	FE-FAR-FS	620	698.5	772
			MP-MP1	623	701.5	775





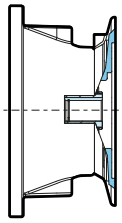
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

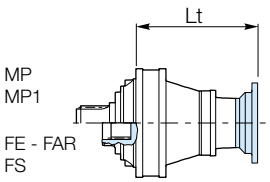


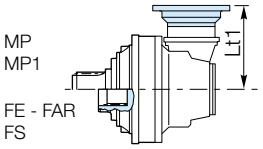


				Lt	
				SL6003	SL6004
RL	+	S46C1	FE-FAR-FS	736	736
			MP-MP1	739	739

IEC Motor







		Lt - Lt1				
		SL6002 S00	SL6003 00	SL6004 00	SC6003 00 Z27	SC6004 00
IEC 100 - 112	FE-FAR-FS	-	-	640	-	285
	MP-MP1	-	-	643	-	318*
IEC 132	FE-FAR-FS	-	-	707	-	352
	MP-MP1	-	-	710	-	365*
IEC 160	FE-FAR-FS	-	645	738	-	383
	MP-MP1	-	648	741	-	416*
IEC 180	FE-FAR-FS	-	645	738	504	383
	MP-MP1	-	648	741		416*
IEC 200	FE-FAR-FS	549	684	748	540	394
	MP-MP1	552	687	751		427*
IEC 225	FE-FAR-FS	579	712	778	-	424
	MP-MP1	582	715	781	-	457*
IEC 250	FE-FAR-FS	579	-	-	-	-
	MP-MP1	582	-	-	-	-
IEC 280	FE-FAR-FS	579	-	-	-	-
	MP-MP1	582	-	-	-	-
SHAFT_IEC225	FE-FAR-FS	-	-	-	560	-
	MP-MP1	-	-	-		-

* bg ⇨ 600 3

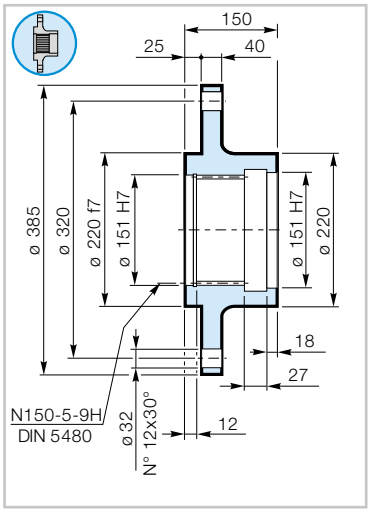
NEMA Motor

Please consult NEMA Motor Flange in page ⇨ B 15

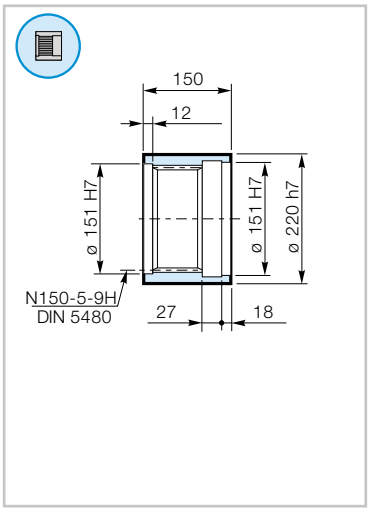
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page ⇨ B 14

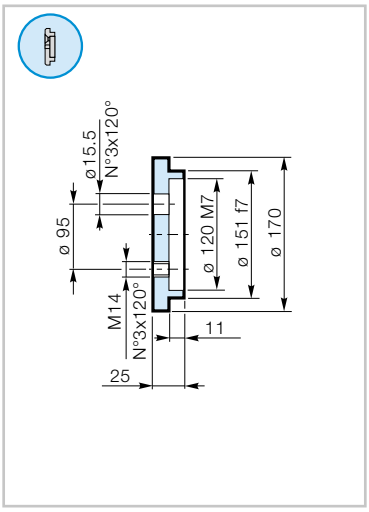
FR 600 Wheel Flange



MS 600 Splined Sleeve



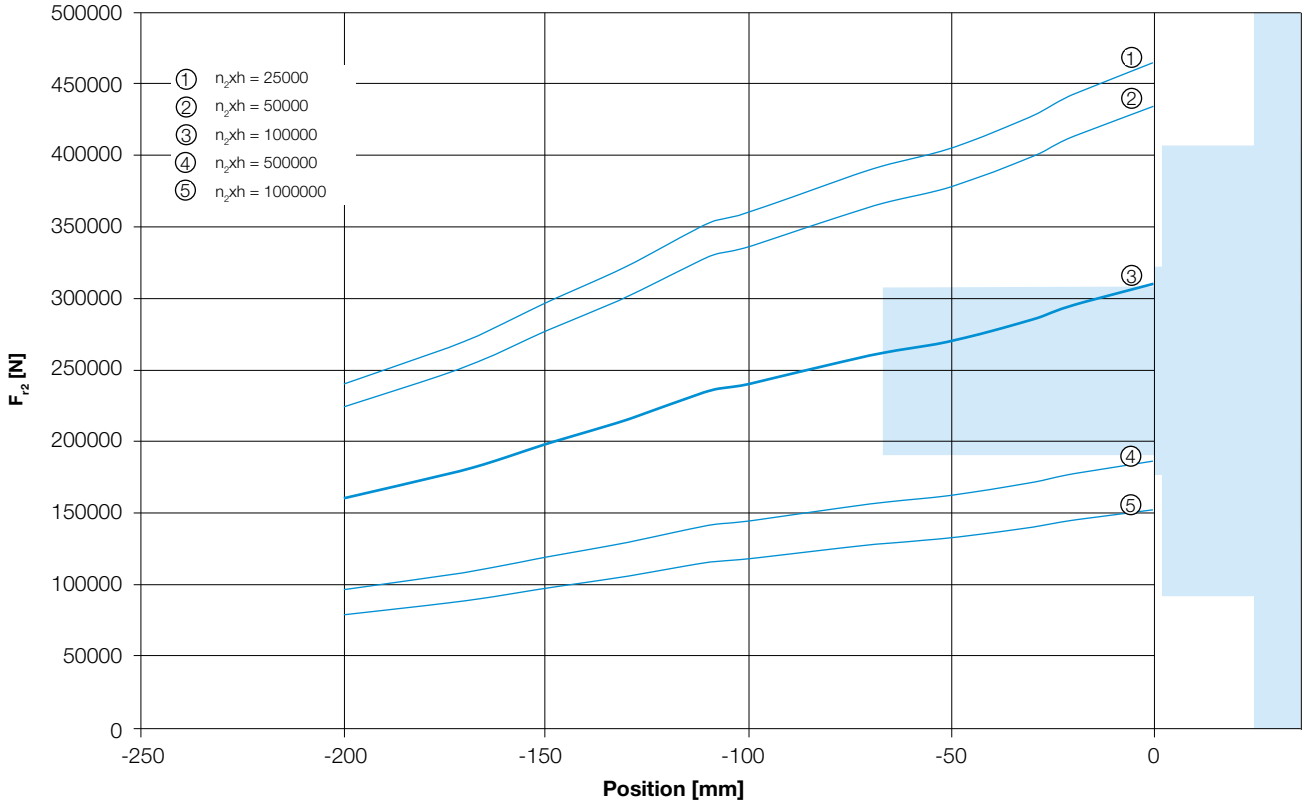
RDF 520 Lock Washer



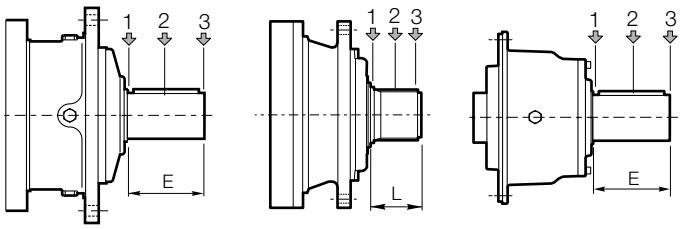
Output Radial Loads

Gearbox output version for:
SL, SC

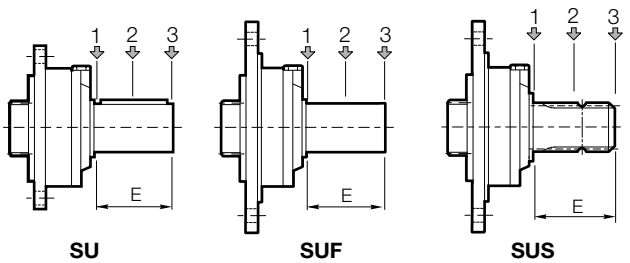
MP - MP1



Input Radial Loads



			F_{r1} [N]					
			$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**L**	**1**	**2**	**3**	**1**	**2**	**3**
S-45CR1	105	-	10000	6000	4000	5000	3000	2000
S-45SR	-	68	10000	6000	4000	5000	3000	2000
S-46C1	105	-	14000	8800	6400	7000	4400	3200
S-46S	-	68	14000	8800	6400	7000	4400	3200
S-65CR1	130	-	23800	15500	9600	11900	7800	4800
S-90CR1	170	-	29700	17000	10000	14800	8500	5000
ISL250	130	-	7631	4302	2995	3824	2156	1501
IS600	210	-	54336	36909	26346	27248	18498	13204



		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

Click **DANA** button to return to section index

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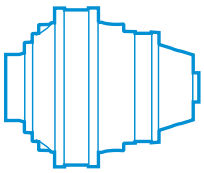
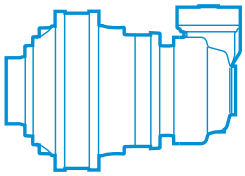
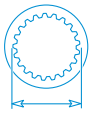
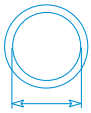
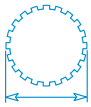
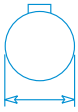


850



i_{eff}	4.18 - 1987
T_{2N}	90000 Nm
	N170x5x30x32x9H DIN5480
	180 mm
	W170x5x30x32x8f DIN5480
	170 mm

TECHNICAL DATA

10000
hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL8501												
4.18	1)			1)			120	42957	538	1500	195000	83
4.89							102	44196	473		167000	
6.00							83	45944	401		123000	
SL8502												
18.81	1)			53	54789	305	27	67453	188	2000	195000	56
19.76				51	54574	289	25	67189	178		167000	
21.40				47	56952	279	23	70117	172		195000	
25.08				40	59727	249	20	73533	154			
29.34				34	61449	219	17	70921	127		167000	
30.77				33	57250	195	16	59737	102		150480	
35.99				28	65333	190	14	69884	102		167000	
SL8503												
74.30	20	73256	155	14	82732	117	6.7	89127	63	2500	195000	38
83.14	18	75769	143	12	85569	108	6.0	90435	57			
87.32	17	70886	128	12	72671	87	5.7	75828	46		167000	
101.3	15	80401	125	10	87058	90	4.9	93182	48		195000	
112.9	13	83044	116	8.9	87635	81	4.4	94714	44			
128.4	12	86162	105	7.8	88332	72	3.9	96582	39			
141.1	11	86661	96	7.1	88843	66	3.5	97965	36			
160.5	9.3	87350	85	6.2	89954	59	3.1	99897	33			
188.1	8.0	88204	74	5.3	92138	51	2.7	97951	27			
202.5	7.4	58475	45	4.9	59948	31	2.5	65570	17		123000	
SL8504												
233.5	6.4	89536	60	4.3	95199	43	2.1	105722	24	2500	195000	26
261.2	5.7	91071	55	3.8	96831	39	1.9	107535	22			
291.0	5.2	92569	50	3.4	98424	35	1.7	109303	20			
329.8	4.6	94340	45	3.0	100307	32	1.5	111394	18			
371.5	4.0	96053	41	2.7	102128	29	1.4	113417	16			
418.0	3.6	97782	37	2.4	103967	26	1.2	115459	15			
468.9	3.2	99496	33	2.1	105789	24	1.1	117483	13			
512.7	2.9	100849	31	2.0	107227	22	1.0	119080	12			
571.1	2.6	102507	28	1.8	108991	20	0.88	121038	11			
649.8	2.3	104528	25	1.5	111140	18	0.77	123425	9.9			
705.4	2.1	105835	24	1.4	112529	17	0.71	124733	9.3			
802.6	1.9	107922	21	1.3	114748	15	0.62	127432	8.3			
940.5	1.6	101069	17	1.1	105722	12	0.53	117408	6.5			
963.1	1.6	110939	18	1.0	117956	13	0.52	130995	7.1			
1129	1.3	102213	14	0.89	108678	10	0.44	120691	5.6			
1296	1.2	81392	9.9	0.77	84549	6.8	0.39	93895	3.8			
1350	1.1	81596	9.5	0.74	85072	6.6	0.37	94476	3.7		167000	
1620	0.93	82514	8.0	0.62	87451	5.7	0.31	97118	3.1			
1987	0.75	78443	6.2	0.50	83405	4.4	0.25	92624	2.4		123000	

1) Consult the DANA area contact person.

Click **DANA** button to return to section index

Click *i* button to return to main index

10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC8503												
42.89	35	34984	128	23	39509	96	12	48641	59	1800	195000	27
49.31	30	43093	137	20	48667	103	10	59916	64	1500	167000	
57.69	26	50413	137	17	56933	103	8.7	70093	64			
64.26	23	56153	137	16	63416	103	7.8	74415	61			
73.23	21	64000	137	14	72278	103	6.8	88984	64	1800	195000	
78.14	19	59130	119	13	60619	81	6.4	63253	42	1500	167000	
85.67	18	70803	130	12	72586	89	5.8	75740	46			
100.3	15	58497	92	10	66064	69	5.0	76981	40	2500	195000	
114.4	13	66672	92	8.7	75295	69	4.4	92699	42			
128.9	12	56878	69	7.8	58311	47	3.9	61243	25	1500	123000	
133.8	11	72766	85	7.5	74599	58	3.7	80404	32	2500	167000	
164.1	9.1	71702	69	6.1	73508	47	3.0	76701	25			
SC8504												
183.4*	8.2	71482	61	5.5	80727	46	2.7	99387	28	2000	195000	20
205.3*	7.3	79987	61	4.9	90333	46	2.4	103683	26			
235.0*	6.4	89624	60	4.3	95292	43	2.1	105826	24			
261.7*	5.7	91097	55	3.8	96859	39	1.9	107566	22			
278.6*	5.4	91964	52	3.6	97780	37	1.8	108589	20			
310.4*	4.8	93476	47	3.2	99388	34	1.6	110374	19			
353.1*	4.2	95319	42	2.8	101348	30	1.4	112550	17			
388.0*	3.9	96685	39	2.6	102800	28	1.3	114163	15			
449.4	3.3	98860	35	2.2	105113	25	1.1	116732	14	3000		
493.8	3.0	100277	32	2.0	106619	23	1.0	118404	13			
561.8	2.7	102254	29	1.8	108721	20	0.9	120739	11			
625.4	2.4	100991	25	1.6	110498	19	0.8	122712	10	3500		
687.0	2.2	105414	24	1.5	112082	17	0.7	124471	9.5			
781.7	1.9	107492	22	1.3	114291	15	0.6	126925	8.5			
916.0	1.6	100906	17	1.1	105302	12	0.6	116942	6.7			
986.2	1.5	70555	11	1.00	75018	8.0	0.51	83310	4.4		123000	
1072	1.4	93281	14	0.93	99181	9.7	0.47	110144	5.4		167000	
1290	1.2	73483	8.9	0.77	78131	6.3	0.39	86768	3.5		123000	
1613	0.93	76006	7.4	0.62	80813	5.2	0.31	89746	2.9			

* (bg) All the ratios in light grey (ie.234.5) have particular dimensions of bevel gears in some versions. See dimensional tables.

Click *i* button to return to main index

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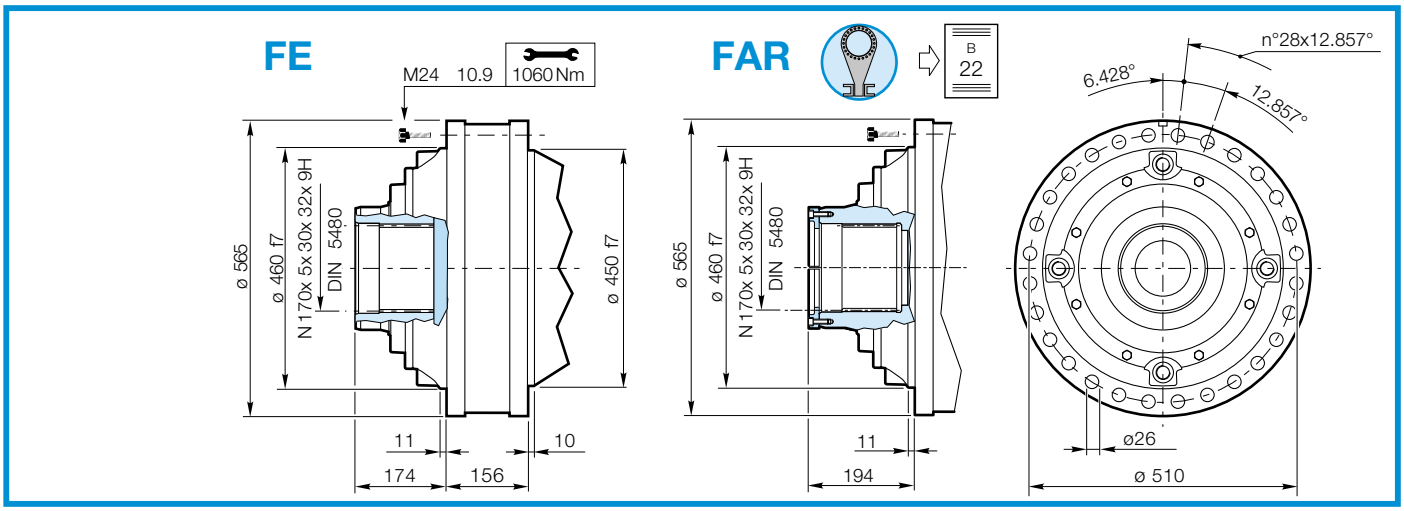
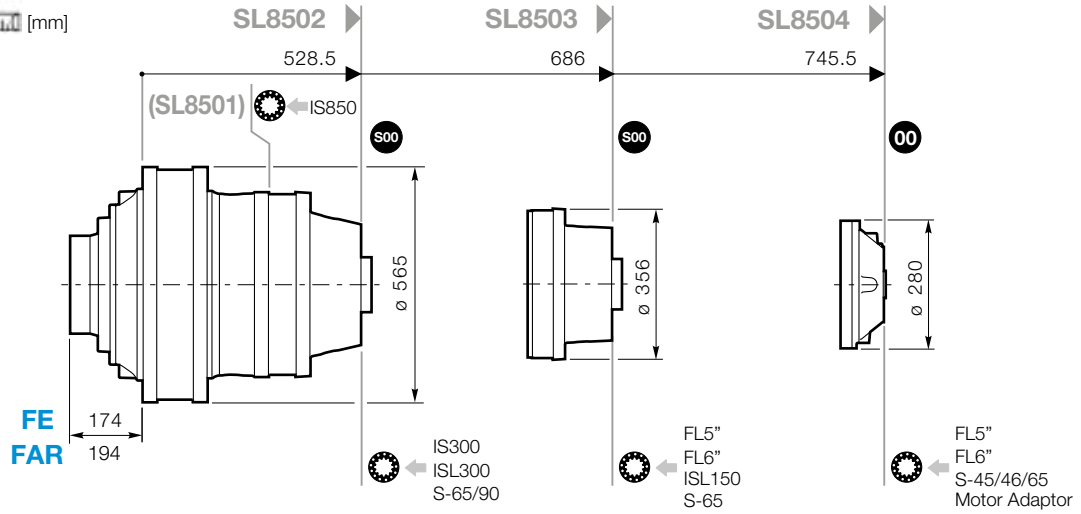
GEARBOX DIMENSIONS WITH OUTPUT



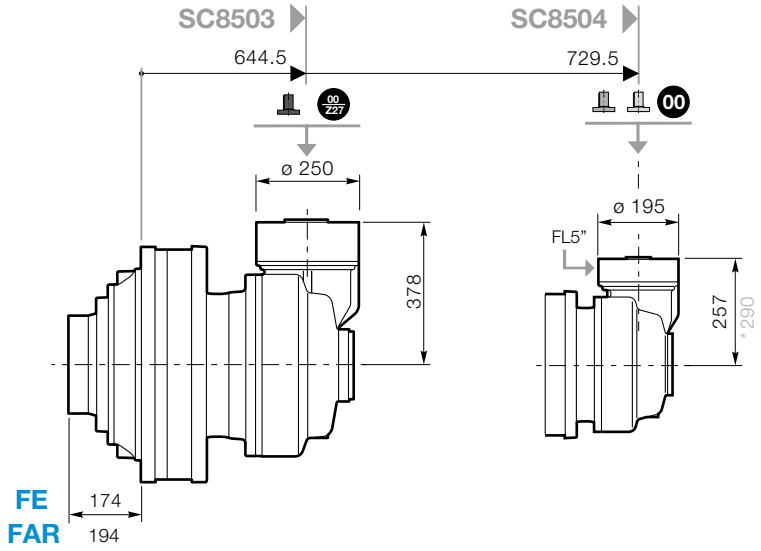
[mm]



00 FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 Motor Adaptor

[mm]



00 227 UPC
Motor Adaptor

00 FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5”

48.82 (VARIANT)
only without FL5”

45.70 (VARIANT)
only without FL5”

* bg ⇨ 850 3 S-45/46/65/90 IS ISL ⇨ 850 8 SU SUF SUS ⇨ 850 9 65.105 48.82 45.70 ⇨ 850 9 FL5” FL6” FL620/635 ⇨ 850 10 Motor Adaptor ⇨ 850 12
00 ⇨ B 11 00 227 ⇨ B 11 S00 ⇨ B 12

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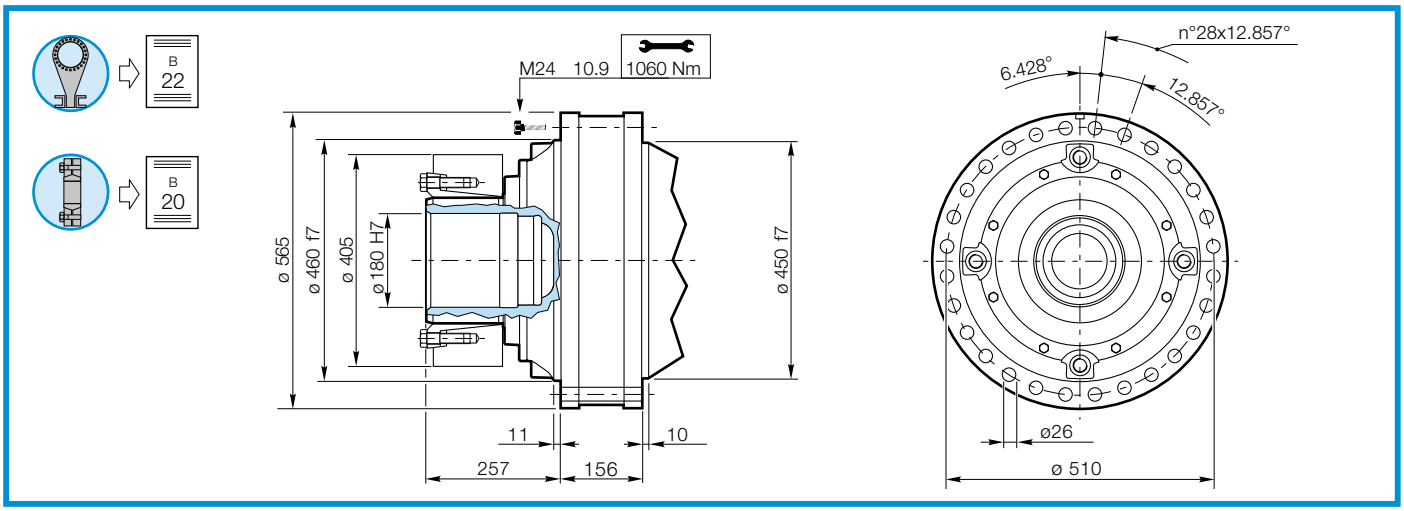
Click *i* button to return to main index



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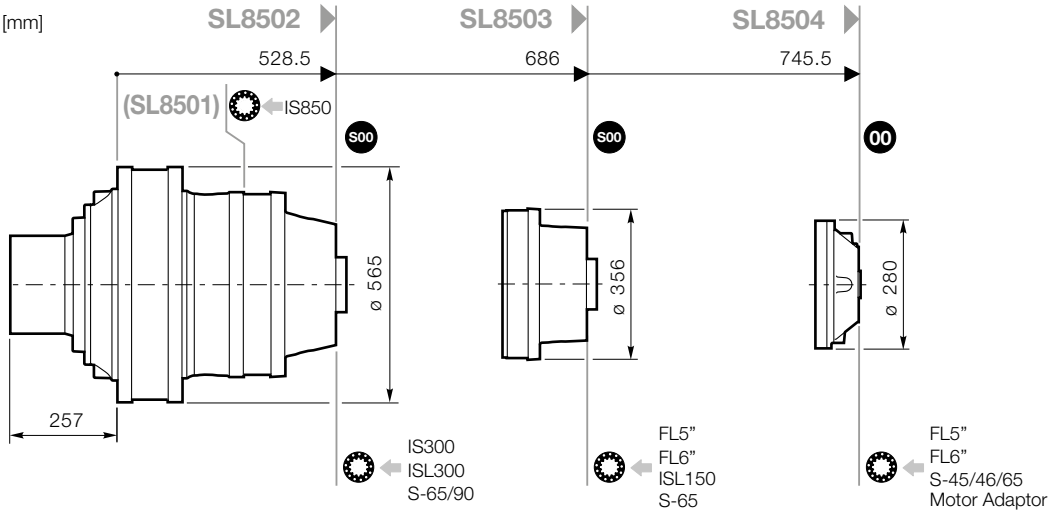
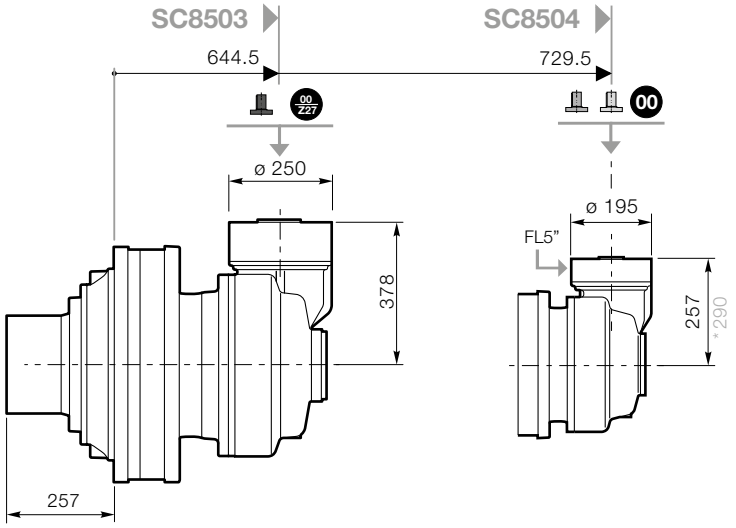


00 ← FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor CCU25

S00 ← Motor Adaptor

[mm]



00 Z27 ← UPC Motor Adaptor

00 ← FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

48.82 (VARIANT) only without FL5"

45.70 (VARIANT) only without FL5"

* (bg) → 850 3 S-45/46/65/90 IS ISL → 850 8 SU SUF SUS → 850 9 65.105 48.82 45.70 → 850 9 FL5" FL6" FL620/635 → 850 10 Motor Adaptor → 850 12 → 00 → B 11 → 00 Z27 → B 11 → S00 → B 12

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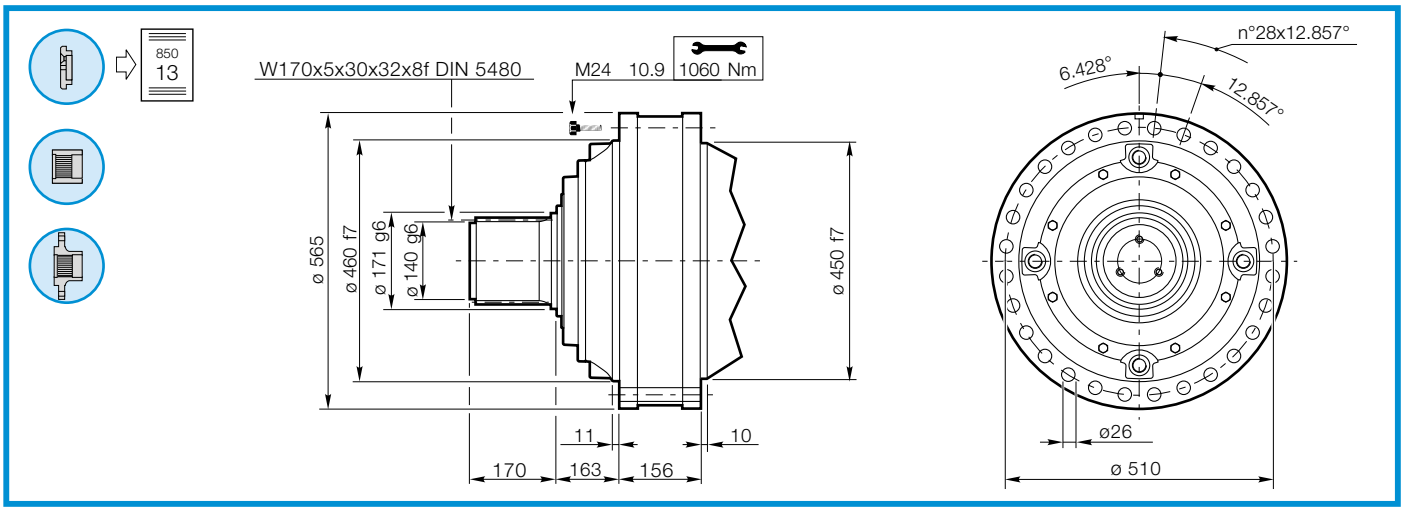
Click **DANA** button to return to section index

GEARBOX DIMENSIONS WITH OUTPUT



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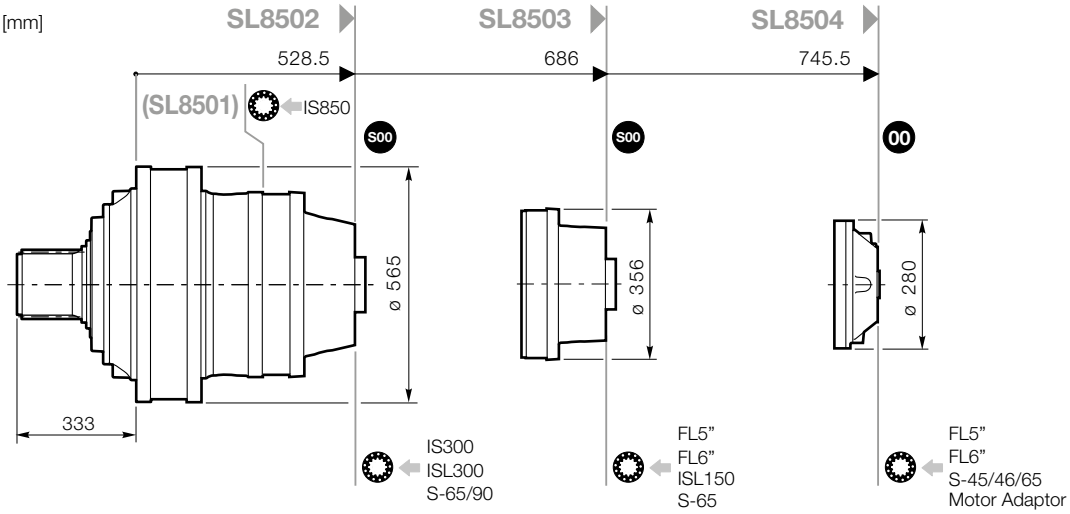
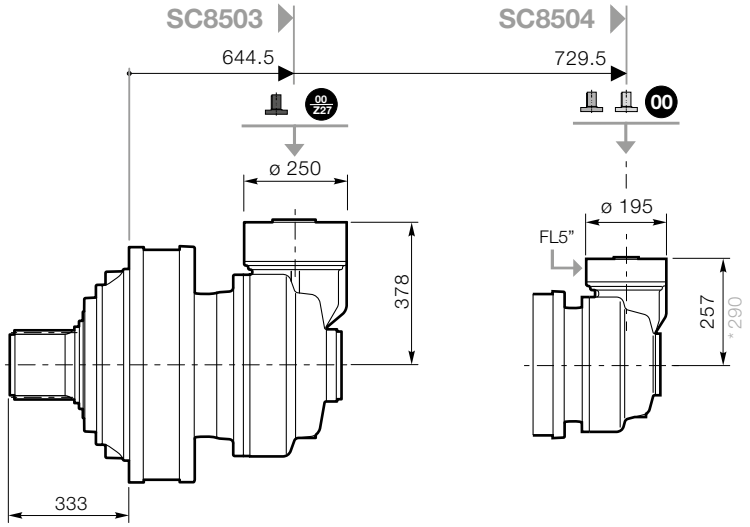


00 FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor CCU25

S00 Motor Adaptor

[mm]



00 Z27 UPC Motor Adaptor

00 FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

48.82 (VARIANT) only without FL5"

45.70 (VARIANT) only without FL5"

* (bg) → 850 3 S-45/46/65/90 IS ISL → 850 8 SU SUF SUS → 850 9 65.105 48.82 45.70 → 850 9 FL5" FL6" FL620/635 → 850 10 Motor Adaptor → 850 12 → 00 → B 11 → 00 Z27 → B 11 → S00 → B 12

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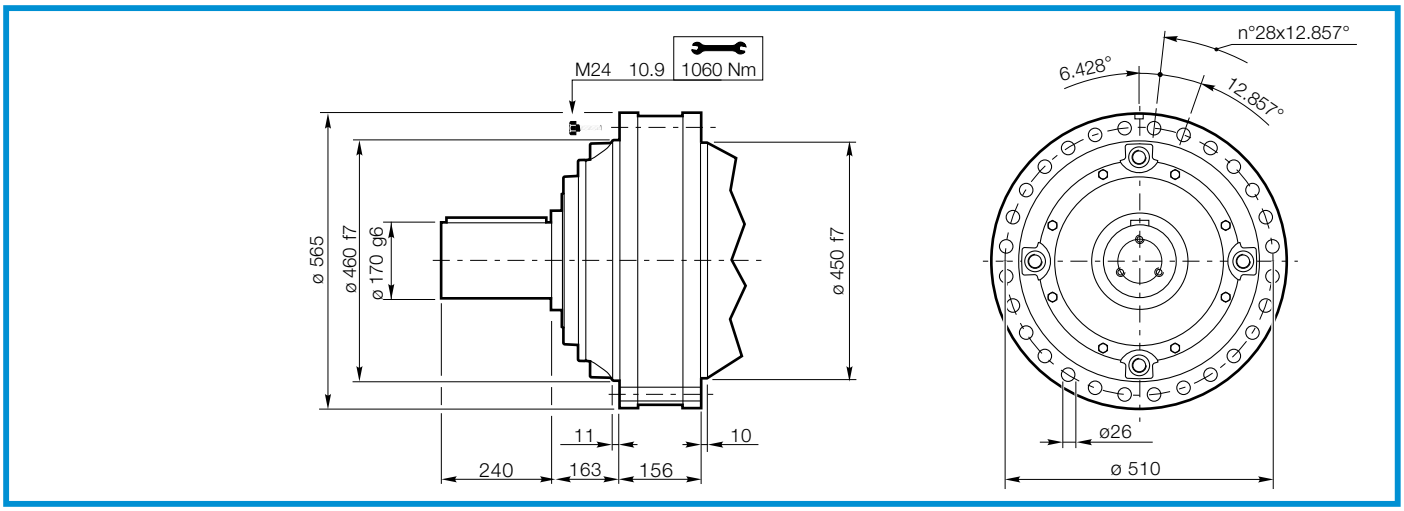

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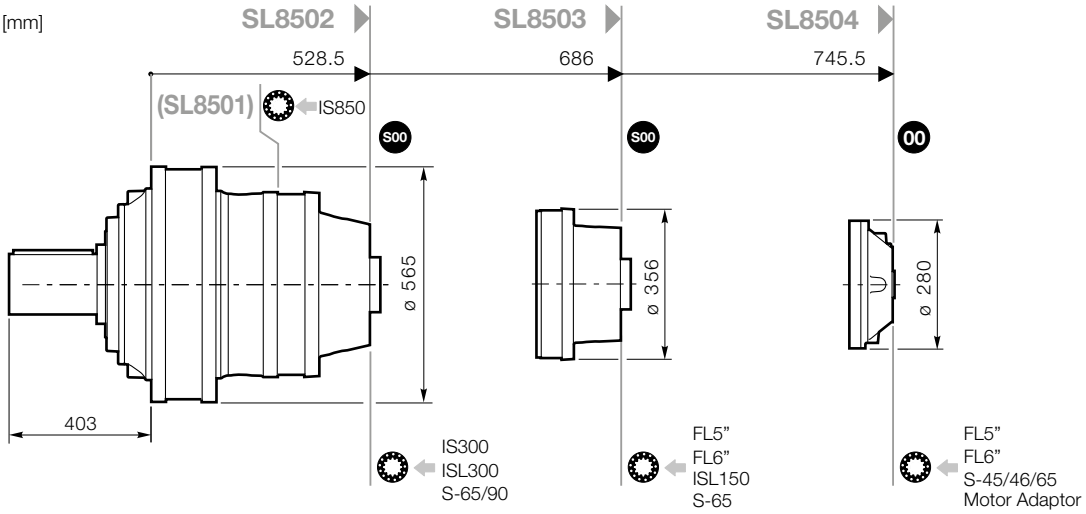
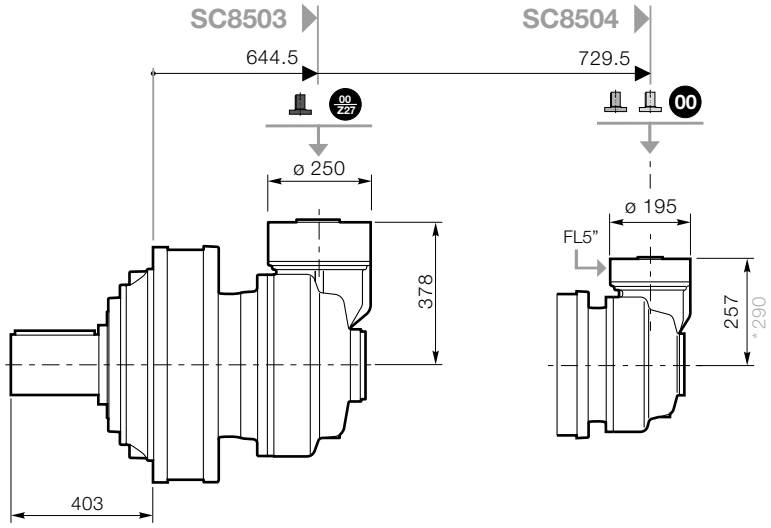


00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 Z27 ← UPC
Motor Adaptor

00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT) only without FL5"

48.82 (VARIANT) only without FL5"

45.70 (VARIANT) only without FL5"

* (bg) ⇨ 850 3 S-45/46/65/90 IS ISL ⇨ 850 8 SU SUF SUS ⇨ 850 9 65.105 48.82 45.70 ⇨ 850 9 FL5" FL6" FL620/635 ⇨ 850 10 Motor Adaptor ⇨ 850 12 00 ⇨ B 11 00 Z27 ⇨ B 11 S00 ⇨ B 12

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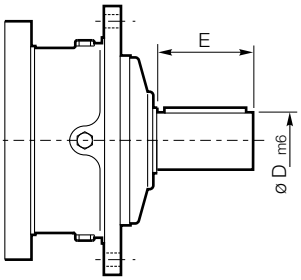
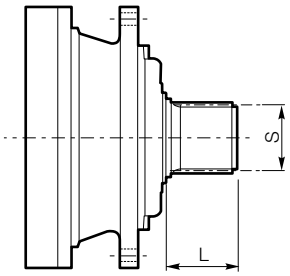
Click **DANA** button to return to section index

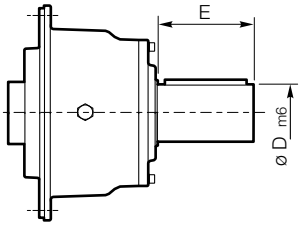
S-45 S-46 S-65 S-90 IS ISL



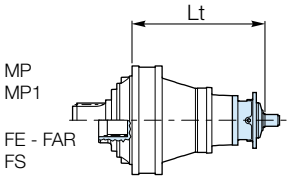
S-45CR1 - S-46C1
S-65CR1 - S90CR1



S-45SR - S-46S

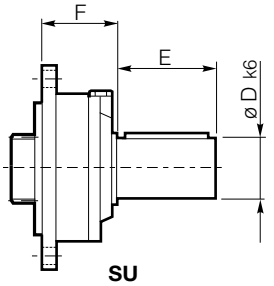


IS / ISL

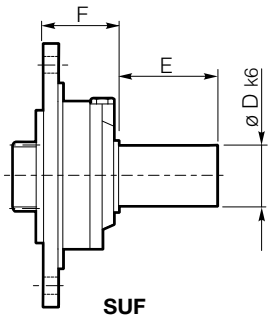


	D m6	E	L	S DIN5482	Lt			
					SL8501	SL8502	SL8503	SL8504
S-45CR1	65	105	-	-	-	-	-	873
S-45SR	-	-	68	B58x53	-	-	-	873
S-46C1	65	105	-	-	-	-	-	914.5
S-46S	-	-	68	B58x53	-	-	-	914.5
S-65CR1	80	130	-	-	-	734	878	912
S-90CR1	90	170	-	-	-	740	-	-
ISL150	90	130	-	-	-		756	-
ISL300	90	130	-	-	-	598.5	-	-
IS300	100	210	-	-	-	719.5	-	-
IS850	110	210	-	-	578.5	-	-	-

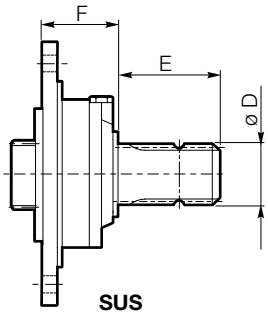
SU - SUF - SUS



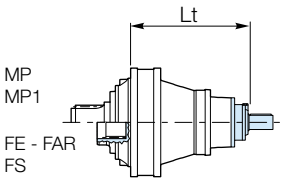
SU

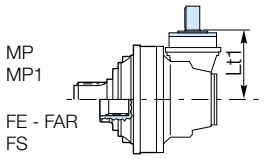


SUF



SUS

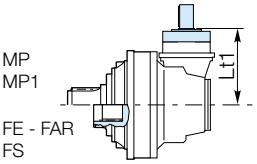


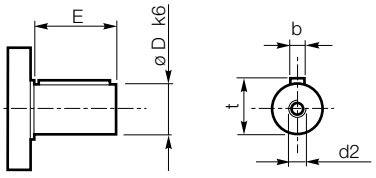


	D k6	E	F	Lt - Lt1 (00)		
				SL8504	SC8503	SC8504
SU/SUF.1	28	50	60	805.5	438	317 350*
SU/SUF.2	40	58	60	805.5	438	317 350*
SU/SUF.3	48	82	60	805.5	438	317 350*
SU2 1.5X3.25	38.1	82.55	60	805.5	438	317 350*
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	847	479.5	358.5 391.5*
SU 42x80	48	80	101.5	847	479.5	358.5 391.5*

* bg ⇨ 850 3

65.105 - 48.82 - 45.70





		D k6	E	b	t	d2	Lt1	
							SC8502	SC8504
	65.105	65	105	18	69	M20x42	376	-
	48.82	48	82	14	51.5	M10x22	-	350
	45.70	45	70	14	48.5	M10x22	-	340

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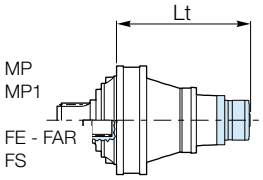
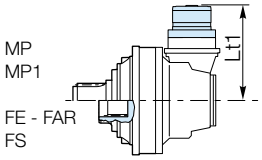
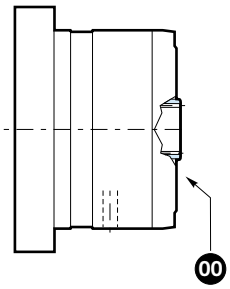
FL5” - FL6”



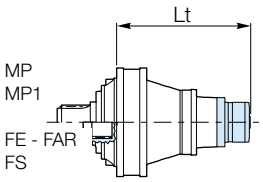


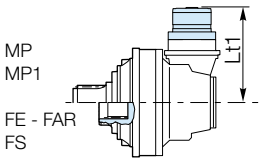


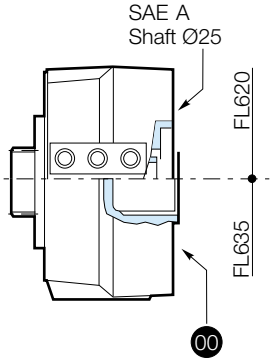
		Lt - Lt1			
		SL8502	SL8503	SL8504	SC8504
FL5”	FL250.4C FL250.6C	-	765	851	408.5 441.5*
	FL350.6C FL350.8C	-	765	851	408.5 441.5*
	FL450.6C FL450.8C	-	765	851	408.5 441.5*
	FL650.10C FL650.12C FL650.14C	-	778.5	864.5	422 455*
	FL750.10C FL750.12C FL750.14C	-	778.5	864.5	422 455*
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	661.5	792.5	878.5	-

* bg ⇨ 850 3

FL620.U - FL635.U



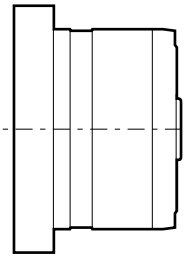


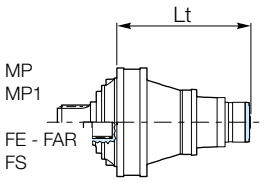


	Lt - Lt1 00		
	SL8504	SC8503	SC8504
FL620.U	850	482.5	361.5 394.5*
FL635.U	836.5	469	348 381*

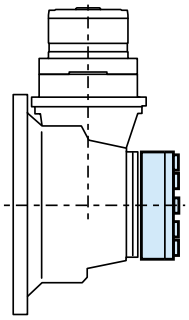
* bg ⇨ 850 3

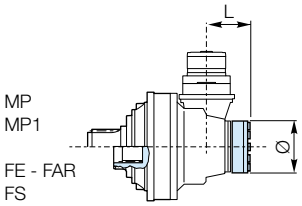
RL



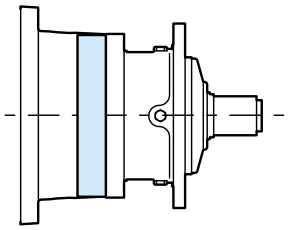


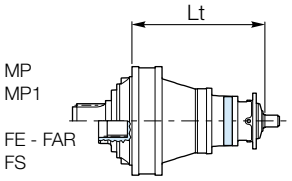
			Lt		
			SL8502	SL8503	SL8504
RL	+	FL250 FL350 FL450	-	791	877
		FL650 FL750	-	804.5	890.5
		FL960	687.5	818.5	904.5





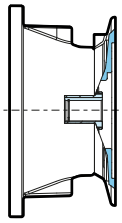
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

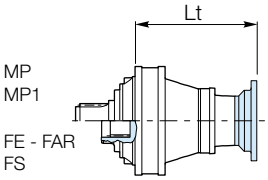


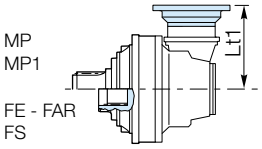


			Lt
			SL8504
RL	+	S46C1	934.5

IEC Motor







	Lt - Lt1				
	SL8502 S00	SL8503 S00	SL8504 00	SC8503 00 Z27	SC8504 00
IEC 100-112	-	-	774.5	-	285 318*
IEC 132	-	-	841.5	-	352 365*
IEC 160	-	-	852.5	-	383 416*
IEC 180	-	-	852.5	504	383 416*
IEC 200	616.5	761	882.5	540	394 427*
IEC 225	646.5	791	912.5	-	424 457*
IEC 250	646.5	-	-	-	-
IEC 280	646.5	-	-	-	-
SHAFT_IEC225	-	-	-	560	-

* bg ⇨ 850 3

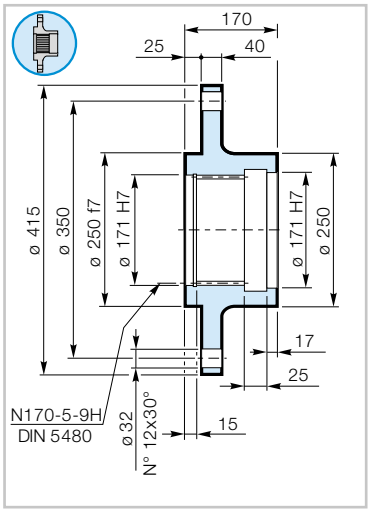
NEMA Motor

Please consult NEMA Motor Flange in page ⇨ B 15

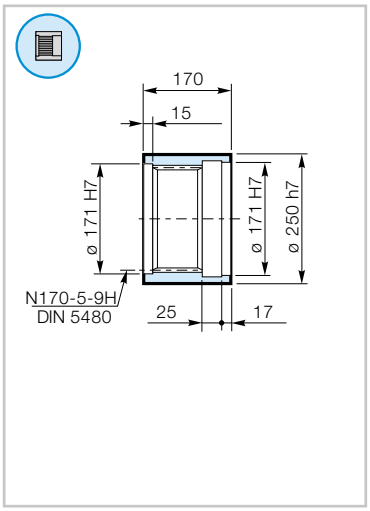
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page ⇨ B 14

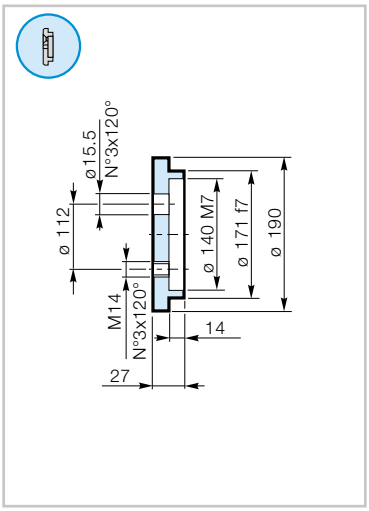
FR 800 Wheel Flange



MS 800 Splined Sleeve



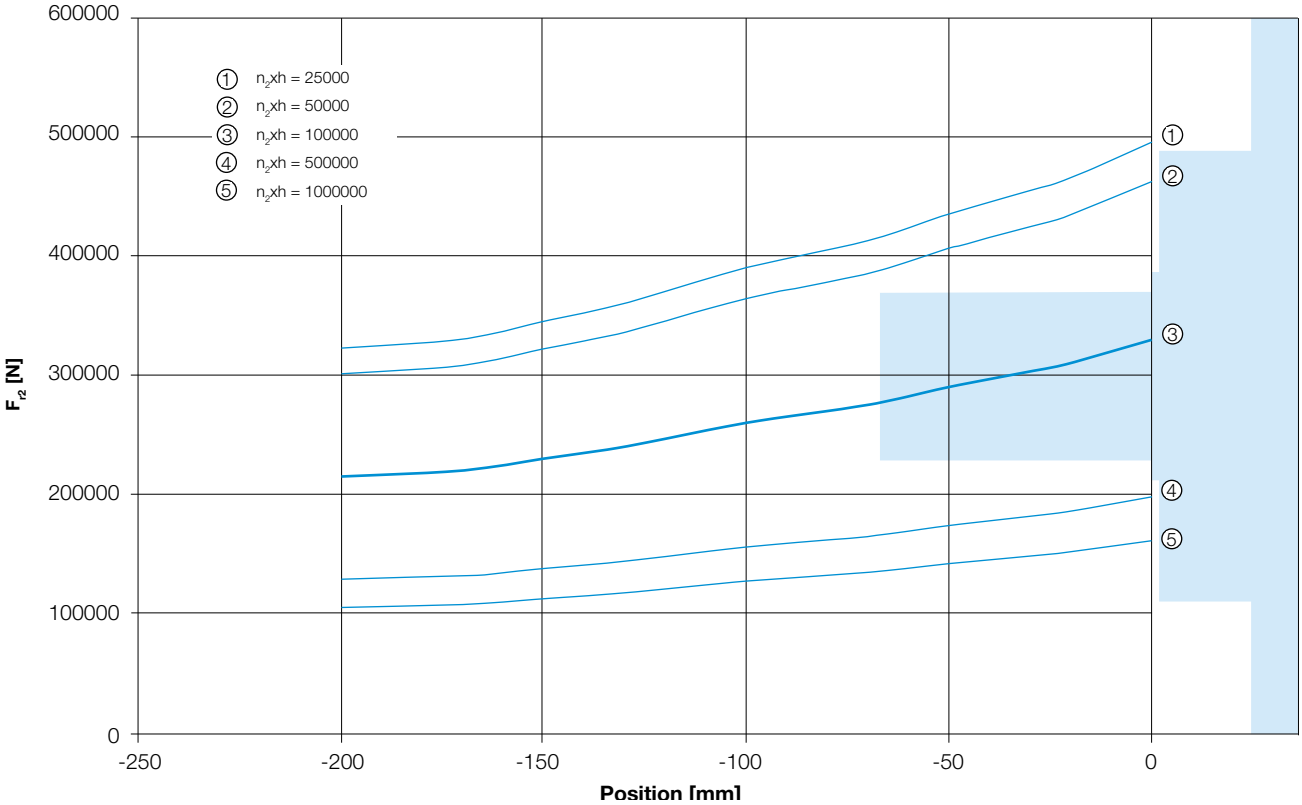
RDF S850 Lock Washer



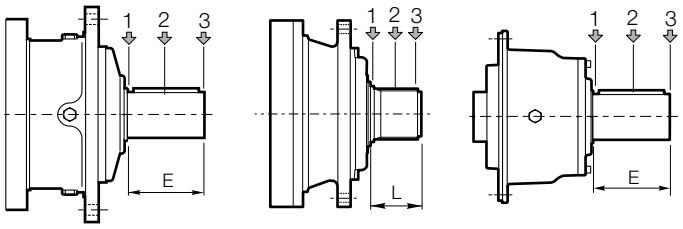
Output Radial Loads

Gearbox output version for:
SL, SC

MP - MP1

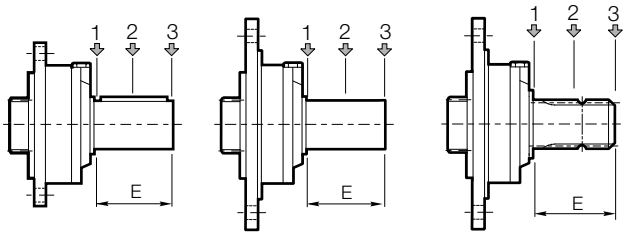


Input Radial Loads



S... IS / ISL

			F_{r1} [N]					
			$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	E	L	1	2	3	1	2	3
S-45CR1	105	-	10000	6000	4000	5000	3000	2000
S-45SR	-	68	10000	6000	4000	5000	3000	2000
S-46C1	105	-	14000	8800	6400	7000	4400	3200
S-46S	-	68	14000	8800	6400	7000	4400	3200
S-65CR1	130	-	23800	15500	9600	11900	7800	4800
S-90CR1	170	-	29700	17000	10000	14800	8500	5000
ISL150	130	-	7631	4302	2995	3824	2156	1501
ISL300	130	-	7631	4302	2995	3824	2156	1501
IS300	210	-	48814	33068	22914	24465	16573	11484
IS850	210	-	52261	39088	29352	28197	19590	14711



SU SUF SUS

		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	E	1	2	3	1	2	3
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

Click **DANA** button to return to section index

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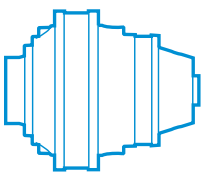
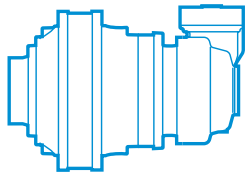
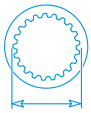
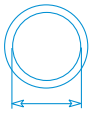
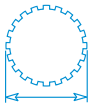
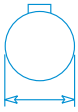


1200



i_{eff}	4.18 - 1620
T_{2N}	133000 Nm
	N200x5x30x38x9H DIN5480
	220 mm
	W200x5x30x38x8f DIN5480
	200 mm

TECHNICAL DATA

10000
hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL12001												
4.18	1)			1)			120	69101	866	1500	293000	100
4.89							102	71091	761		250000	
6.00							83	73904	645		198000	
SL12002												
17.47	1)			57	86204	517	29	106129	318	2000	293000	68
20.44				49	90358	463	25	111244	285			
25.08				40	96078	401	20	114009	238			
29.34				34	98845	353	17	106273	190		250000	
36.00				28	80734	235	14	84241	123		198000	
SL12003												
69.02	22	94108	214	15	106281	161	7.2	130847	99	2500	293000	45
80.74	19	110093	214	12	124333	161	6.2	134413	87			
90.35	17	113692	198	11	128398	149	5.5	136718	79			
99.07	15	115949	184	10	118870	126	5.0	124033	66			
110.9	14	116752	165	9.0	119692	113	4.5	124892	59			
122.6	12	120165	154	8.2	131499	112	4.1	143187	61			
143.5	11	109506	120	7.00	112264	82	3.5	121764	44		250000	
153.3	9.8	114796	118	6.5	117688	80	3.3	122800	42		293000	
188.1	8.0	120601	101	5.3	123639	69	2.7	129009	36			
220.1	6.8	112418	80	4.5	116972	56	2.3	129902	31		250000	
SL12004												
241.6	6.2	134358	87	4.1	142856	62	2.1	158647	34	3000	293000	31
282.6	5.3	137584	76	3.5	146286	54	1.8	162456	30			
316.2	4.7	139944	70	3.2	148795	49	1.6	165242	27			
366.9	4.1	143128	61	2.7	152181	43	1.4	169002	24			
414.1	3.6	145770	55	2.4	154990	39	1.2	172123	22			
463.4	3.2	148270	50	2.2	157648	36	1.1	175075	20			
524.2	2.9	151062	45	1.9	160616	32	1.0	174027	17			
542.1	2.8	151831.0	44	1.8	161434	31	0.92	179278	17			
629.0	2.4	155285.0	39	1.6	165107	28	0.79	175984	15			
735.8	2.0	159014.0	34	1.4	169072	24	0.68	187761	13			
778.1	1.9	133173	27	1.3	141596	19	0.64	157247	11		250000	
896.7	1.7	136061	24	1.1	144667	17	0.56	158567	9.3			
952.8	1.6	137316	23	1.0	146001	16	0.52	162140	8.9			
1100	1.4	140337	20	0.91	149213	14	0.45	165707	7.9			
1296	1.2	110097	13	0.77	117061	9.5	0.39	130000	5.3		198000	
1350	1.1	110779	13	0.74	117786	9.1	0.37	130806	5.1			
1620	0.93	113877	11	0.62	121079	7.8	0.31	134463	4.3			

1) Consult the DANA area contact person.

Click **DANA** button to return to section index

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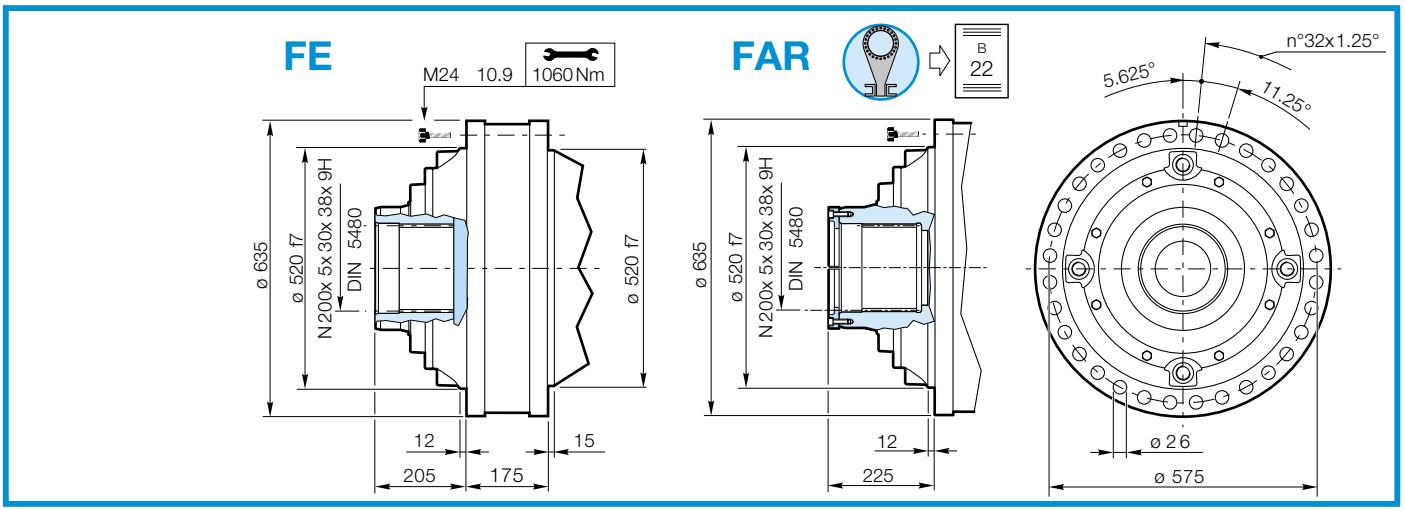
10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC12003												
44.38	34	36196	128	23	40878	96	11	50327	59	1800		
51.02	29	44586	137	20	50353	103	9.8	61992	64	1500	293000	
63.70	24	51956	128	16	58676	96	7.8	72239	59	1800		
73.23	21	64000	137	14	72278	103	6.8	87992	63	1500	198000	35
79.67	19	46448	92	13	52456	69	6.3	64580	42	2500	293000	
85.67	18	74871	137	12	84555	103	5.8	104099	64	1500	250000	
114.4	13	66672	92	8.7	75296	69	4.4	90431	41	2500	198000	
133.8	11	77996	92	7.5	87505	68	3.7	92210	36			
SC12004												
222.0*	6.8	86521	61	4.5	97712	46	2.3	120298	28			
259.7*	5.8	101217	61	3.8	114309	46	1.9	133202	27		250000	
290.7*	5.2	113260	61	3.4	122001	44	1.7	135486	24	2000		
304.8*	4.9	118792	61	3.3	127356	44	1.6	132888	23			
337.3*	4.4	131424	61	3.0	148424	46	1.5	166861	26			
413.8*	3.6	126578	48	2.4	129766	33	1.2	135403	17			
458.7	3.3	103033	35	2.2	108637	24.8	1.1	113356	13	3000		
517.3	2.9	128323	39	1.9	131555	26.6	0.97	137659	14	2000	293000	28
536.6	2.8	120534	35	1.9	127089	25	0.93	132610	13	3000		
658.4	2.3	130235	31	1.5	133515	21	0.76	142774	11			
732.8	2.0	118349	25	1.4	133657	19	0.68	145107	10	3500		
770.2	1.9	132966	27	1.3	141376	19	0.65	157004	11	3000		
873.4	1.7	135520	24	1.1	144092	17	0.57	158310	9.5	3500	250000	
1072	1.4	139779	21	0.93	148620	15	0.47	165048	8.1			

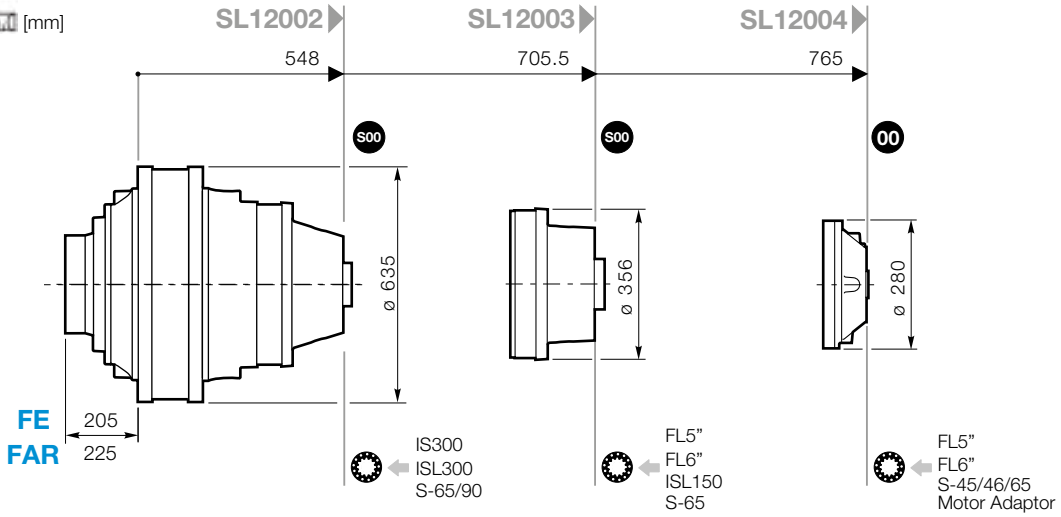
* (bg) All the ratios in light grey (ie.220.0) have particular dimensions of bevel gears in some versions. See dimensional tables.

GEARBOX DIMENSIONS WITH OUTPUT



1200

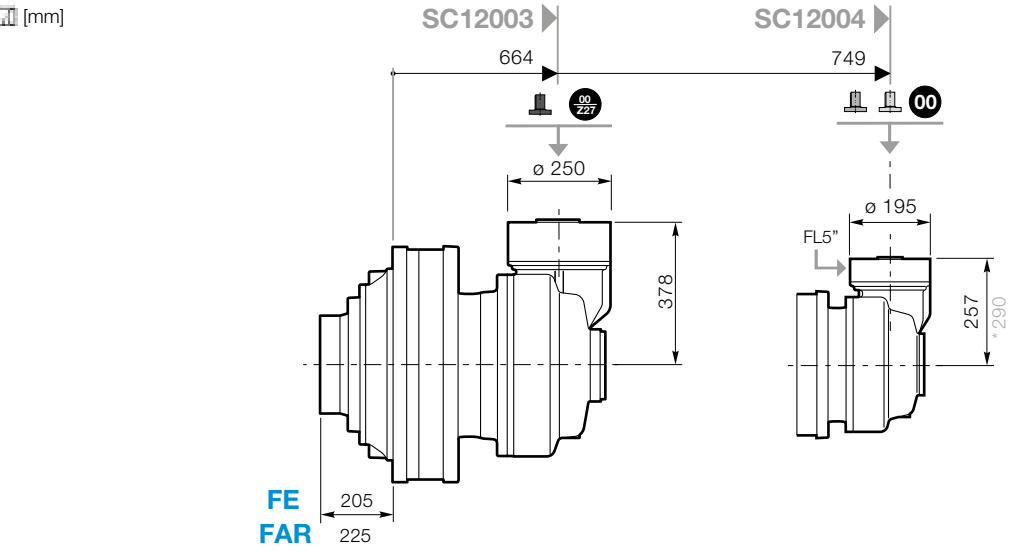
[mm]



00 FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor CCU25

S00 Motor Adaptor

[mm]



00 Z27 UPC Motor Adaptor

00 FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

48.82 (VARIANT) only without FL5"

45.70 (VARIANT) only without FL5"

* (bg) → 1200 3 S-45/46/65/90 IS ISL → 1200 8 SU SUF SUS → 1200 9 65.105 48.82 45.70 → 1200 9 FL5" FL6" FL620/635 → 1200 10 Motor Adaptor → 1200 12 → 00 B 11 → 00 Z27 B 11 → S00 B 12

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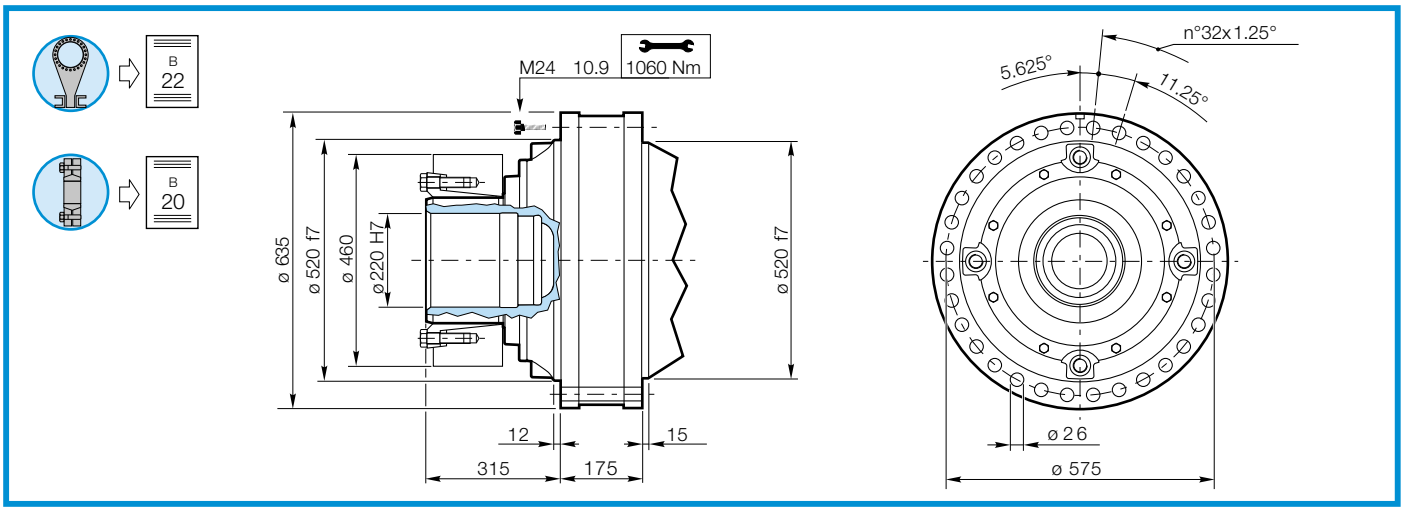
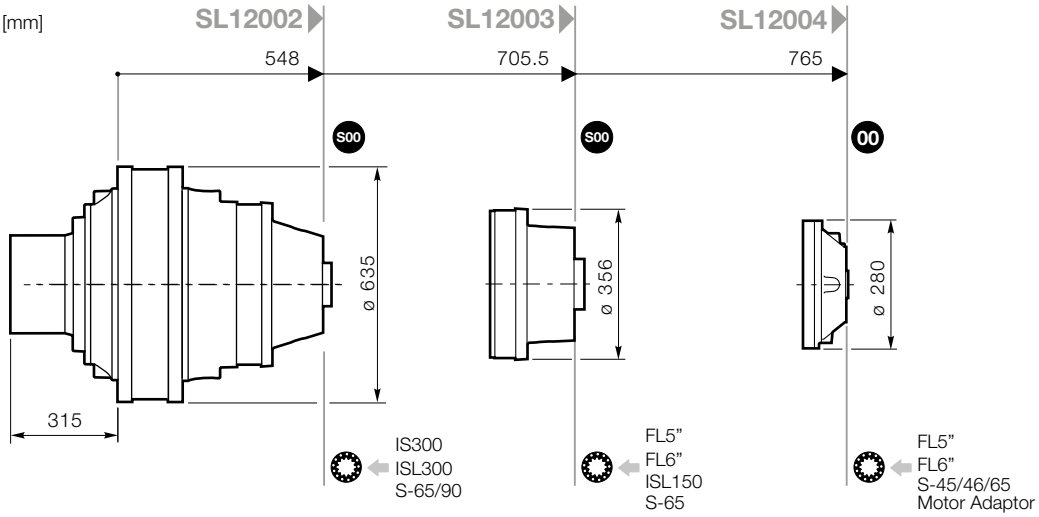


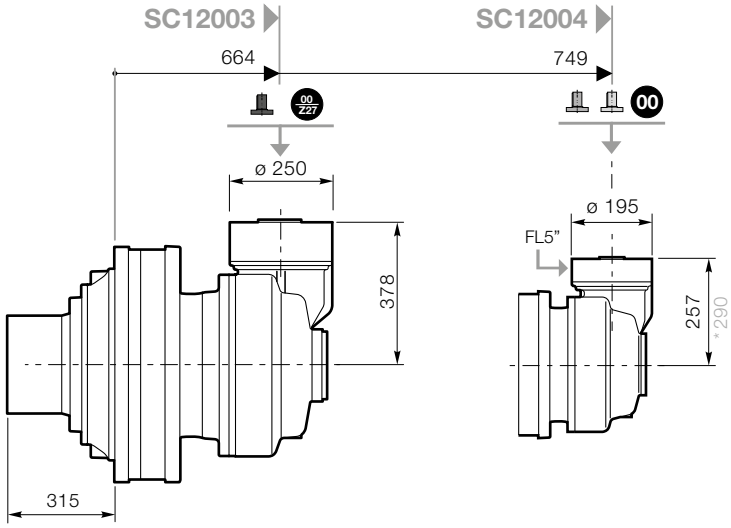
[mm]



00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← UPC
Motor Adaptor

00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5”

48.82 (VARIANT)
only without FL5”

45.70 (VARIANT)
only without FL5”

* bg → 1200 3 S-45/46/65/90 IS ISL → 1200 8 SU SUF SUS → 1200 9 65.105 48.82 45.70 → 1200 9 FL5” FL6” FL620/635 → 1200 10 Motor Adaptor → 1200 12 → 00 → B 11 → 00 227 → B 11 → S00 → B 12

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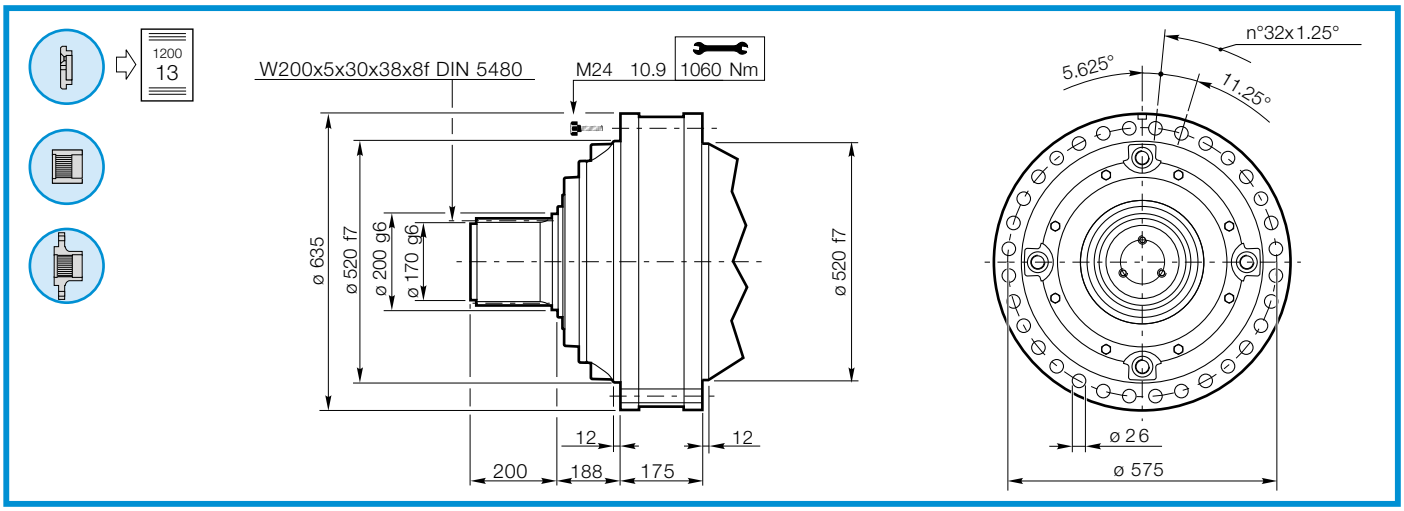
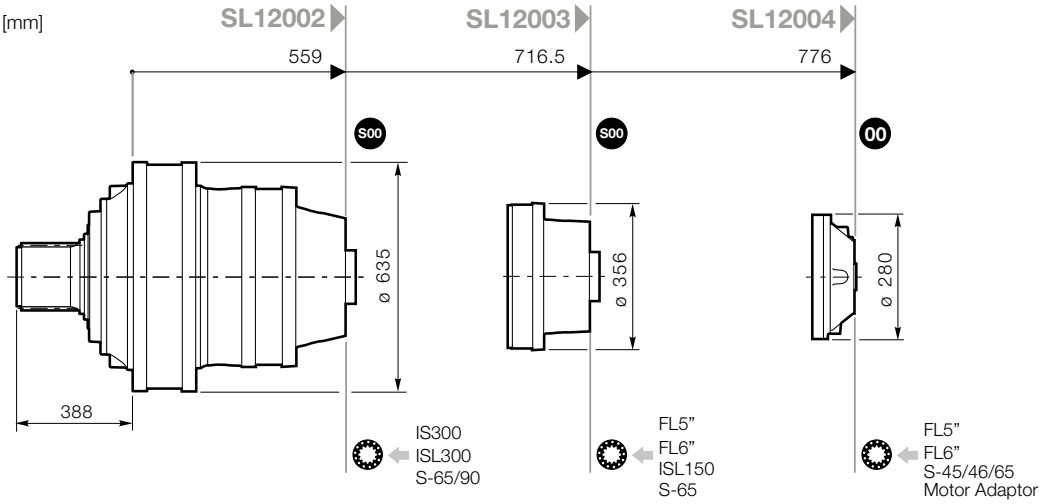
Click **DANA** button to return to section index

GEARBOX DIMENSIONS WITH OUTPUT



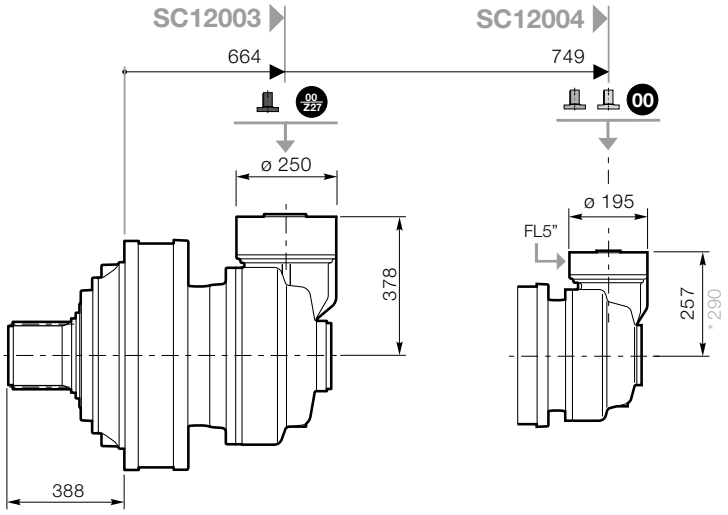
[mm]



00 ← FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← UPC Motor Adaptor

00 ← FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

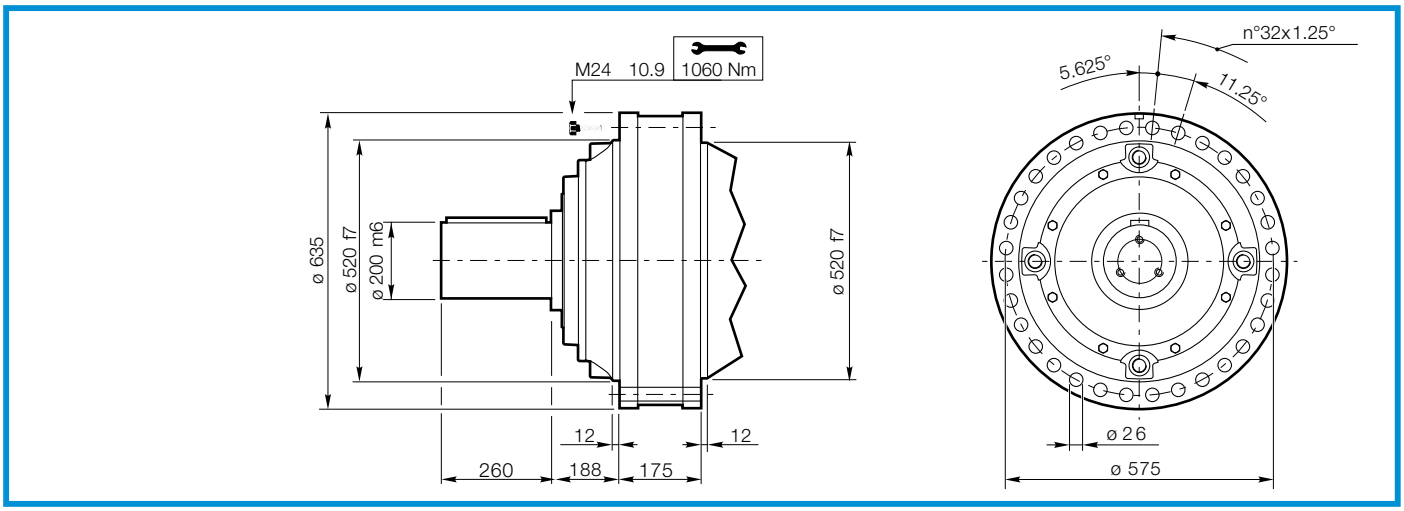
48.82 (VARIANT) only without FL5"

45.70 (VARIANT) only without FL5"

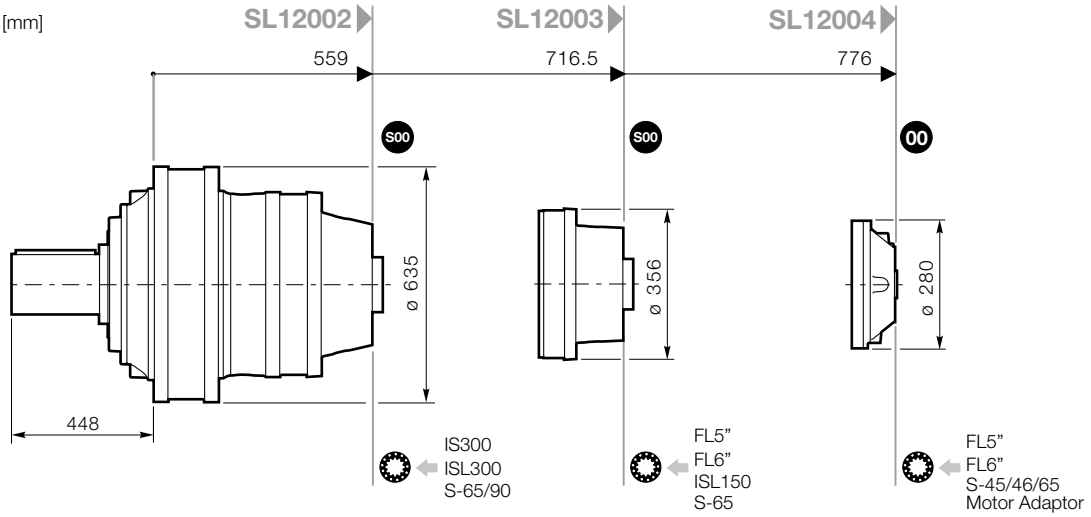
* (bg) → 1200 3 S-45/46/65/90 IS ISL → 1200 8 SU SUF SUS → 1200 9 65.105 48.82 45.70 → 1200 9 FL5" FL6" FL620/635 → 1200 10 Motor Adaptor → 1200 12 → 00 → B 11 → 00 227 → B 11 → S00 → B 12

Click **DANA** button to return to section index

Click *i* button to return to main index



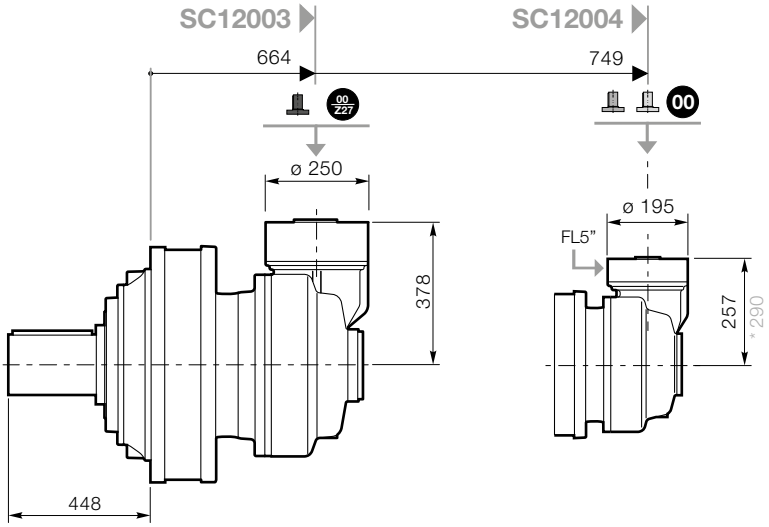
[mm]



00 ← FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← UPC Motor Adaptor

00 ← FL620.U/635.U SU-SUF-SUS DU150.1 UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

48.82 (VARIANT) only without FL5"

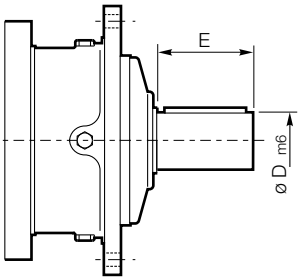
45.70 (VARIANT) only without FL5"

* (bg) → 1200 3 S-45/46/65/90 IS ISL → 1200 8 SU SUF SUS → 1200 9 65.105 48.82 45.70 → 1200 9 FL5" FL6" FL620/635 → 1200 10 Motor Adaptor → 1200 12 00 → B 11 00 227 → B 11 S00 → B 12

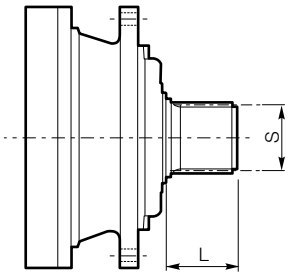
Click *i* button to return to main index

Click **DANA** button to return to section index

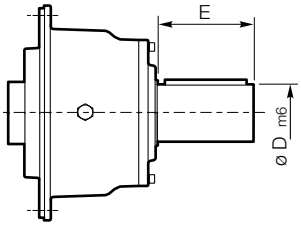
S-45 S-46 S-65 S-90 IS ISL



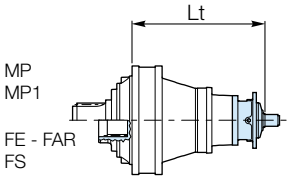
S-45CR1 - S-46C1
S-65CR1 - S90CR1



S-45SR - S-46S

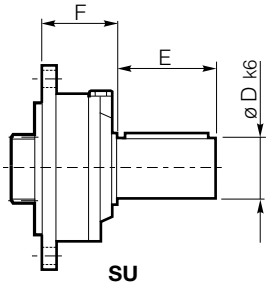


IS / ISL



	D m6	E	L	S DIN5482		Lt		
						SL12002	SL12003	SL12004
S-45CR1	65	105	-	-	FE-FAR-FS	-	-	892
					MP-MP1			903
S-45SR	-	-	68	B58x53	FE-FAR-FS	-	-	892
					MP-MP1			903
S-46C1	65	105	-	-	FE-FAR-FS	-	-	934
					MP-MP1			945
S-46S	-	-	68	B58x53	FE-FAR-FS	-	-	934
					MP-MP1			945
S-65CR1	80	130	-	-	FE-FAR-FS	753.5	897.5	931.5
					MP-MP1	764.5	908.5	942.5
S-90CR1	90	170	-	-	FE-FAR-FS	759.5	-	-
					MP-MP1	770.5		
ISL150	90	130	-	-	FE-FAR-FS	-	775.5	-
					MP-MP1		786.5	
ISL300	90	130	-	-	FE-FAR-FS	618	-	-
					MP-MP1	629		
IS300	100	210	-	-	FE-FAR-FS	739	-	-
					MP-MP1	750		

SU - SUF - SUS



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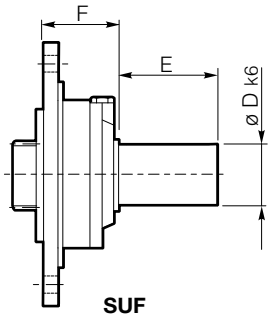
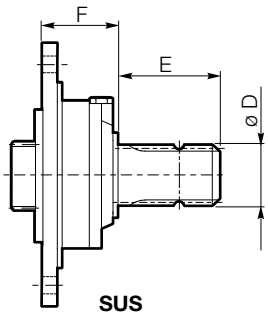
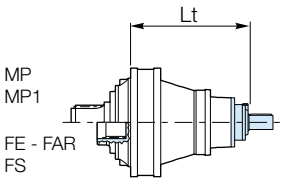
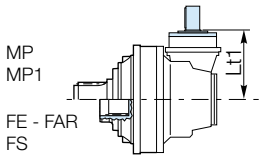


SUF



SUS

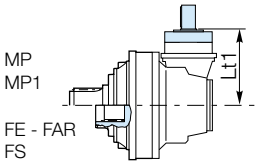


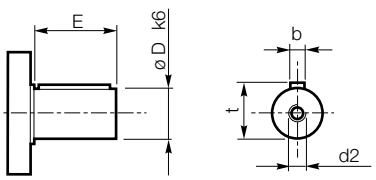


	D k6	E	F		Lt - Lt1 SL12004	Lt - Lt1 SC12003	Lt - Lt1 SC12004
SU/SUF.1	28	50	60	FE-FAR-FS	825	438	317
				MP-MP1	836		350*
SU/SUF.2	40	58	60	FE-FAR-FS	825	438	317
				MP-MP1	836		350*
SU/SUF.3	48	82	60	FE-FAR-FS	825	438	317
				MP-MP1	836		350*
SU2 1.5X3.25	38.1	82.55	60	FE-FAR-FS	825	438	317
				MP-MP1	836		350*
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	FE-FAR-FS	866.5	479.5	358.5
				MP-MP1	877.5		391.5*
SU 42x80	48	80	101.5	FE-FAR-FS	866.5	479.5	358.5
				MP-MP1	877.5		391.5*

* bg 1200 3

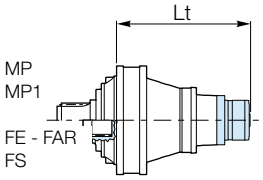
65.105 - 48.82 - 45.70

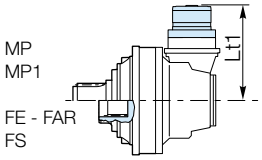


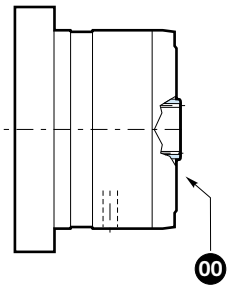


		D k6	E	b	t	d2		Lt1 SC12003	Lt1 SC12004
	65.105	65	105	18	69	M20x42	FE-FAR-FS	376	-
							MP-MP1		
	48.82	48	82	14	51.5	M10x22	FE-FAR-FS	-	350
							MP-MP1		
	45.70	45	70	14	48.5	M10x22	FE-FAR-FS	-	340
							MP-MP1		

FL5” - FL6”



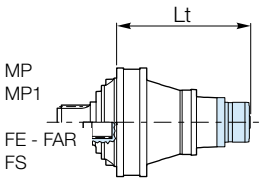


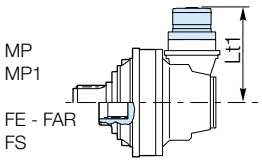


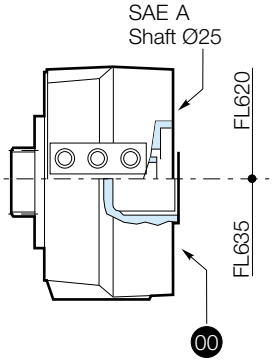
			Lt - Lt1			
			SL12002	SL12003	SL12004	SC12004
FL5”	FL250.4C FL250.6C	FE-FAR-FS	-	784.5	870.5	408.5
		MP-MP1	-	795.5	881.5	441.5*
	FL350.6C FL350.8C	FE-FAR-FS	-	784.5	870.5	408.5
		MP-MP1	-	795.5	881.5	441.5*
	FL450.6C FL450.8C	FE-FAR-FS	-	784.5	870.5	408.5
		MP-MP1	-	795.5	881.5	441.5*
	FL650.10C FL650.12C FL650.14C	FE-FAR-FS	-	798	884	422
		MP-MP1	-	809	895	455*
	FL750.10C FL750.12C FL750.14C	FE-FAR-FS	-	798	884	422
		MP-MP1	-	809	895	455*
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	FE-FAR-FS	681	812	898	-
		MP-MP1	692	823	909	

* bg 1200 3

FL620.U - FL635.U



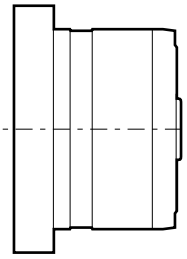


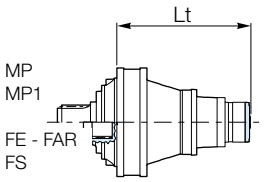


		Lt - Lt1 (00)		
		SL12004	SC12003	SC12004
FL620.U	FE-FAR-FS	869.5	482.5	361.5
	MP-MP1	880.5		394.5*
FL635.U	FE-FAR-FS	856	469	348
	MP-MP1	867		381*

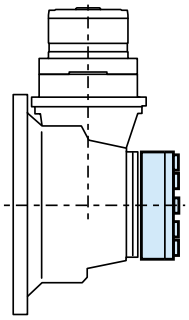
* bg 1200 3

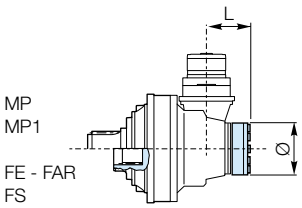
RL



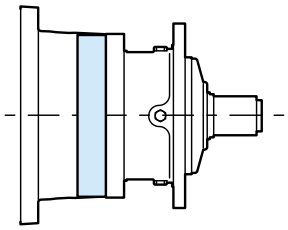


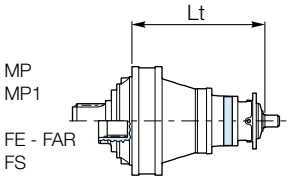
				Lt		
				SL12002	SL12003	SL12004
RL	+	FL250 FL350 FL450	FE-FAR-FS	-	810.5	896.5
			MP-MP1		821.5	907.5
		FL650 FL750	FE-FAR-FS	-	824	910
			MP-MP1		835	921
		FL960	FE-FAR-FS	707	838	924
			MP-MP1	718	849	935





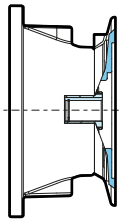
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

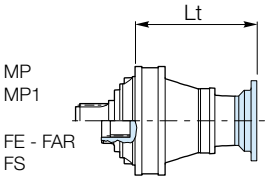


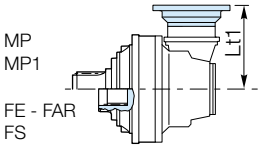


				Lt
				SL12004
RL	+	S46C1	FE-FAR-FS	954
			MP-MP1	965

IEC Motor







		Lt - Lt1				
		SL12002 S00	SL12003 S00	SL12004 00	SC12003 00 Z27	SC12004 00
IEC 132	FE-FAR-FS	-	-	861	-	-
	MP-MP1			872		
IEC 160	FE-FAR-FS	629	780.5	872	-	383
	MP-MP1	634	791.5	883		416*
IEC 180	FE-FAR-FS	738	889.5	872	504	383
	MP-MP1	743	990.5	883		416*
IEC 200	FE-FAR-FS	629	780.5	902	540	394
	MP-MP1	634	791.5	913		427*
IEC 225	FE-FAR-FS	659	810.5	932	-	424
	MP-MP1	664	821.5	943		457*
IEC 250	FE-FAR-FS	659	810.5	-	-	-
	MP-MP1	664	821.5			
IEC 280	FE-FAR-FS	-	-	-	-	-
	MP-MP1					
SHAFT_IEC225	FE-FAR-FS	-	-	-	560	-
	MP-MP1					

* bg ⇨ 1200 3

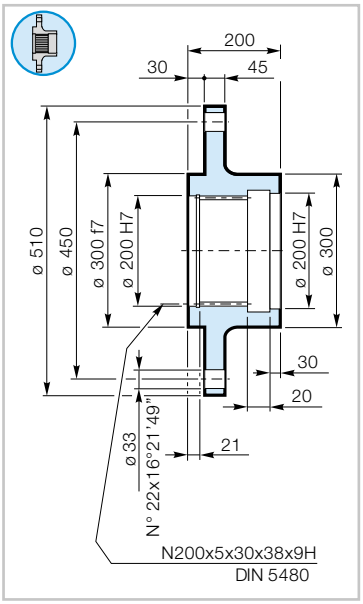
NEMA Motor

Please consult NEMA Motor Flange in page ⇨ B 15

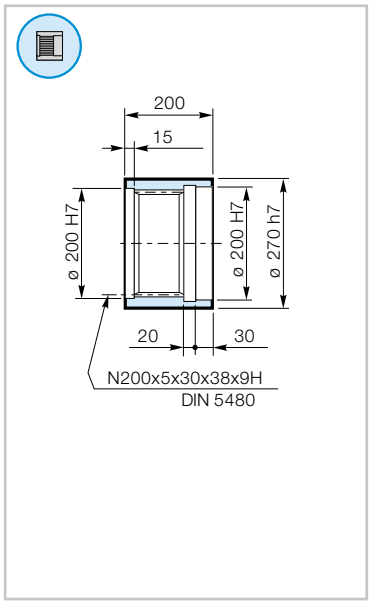
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page ⇨ B 14

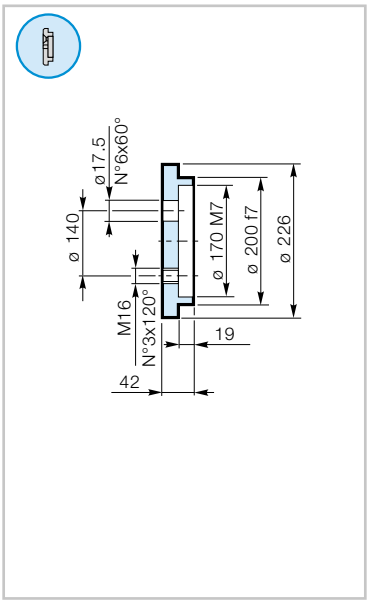
FR 1200 Wheel Flange



MS 1200 Splined Sleeve



RDF S1200 Lock Washer

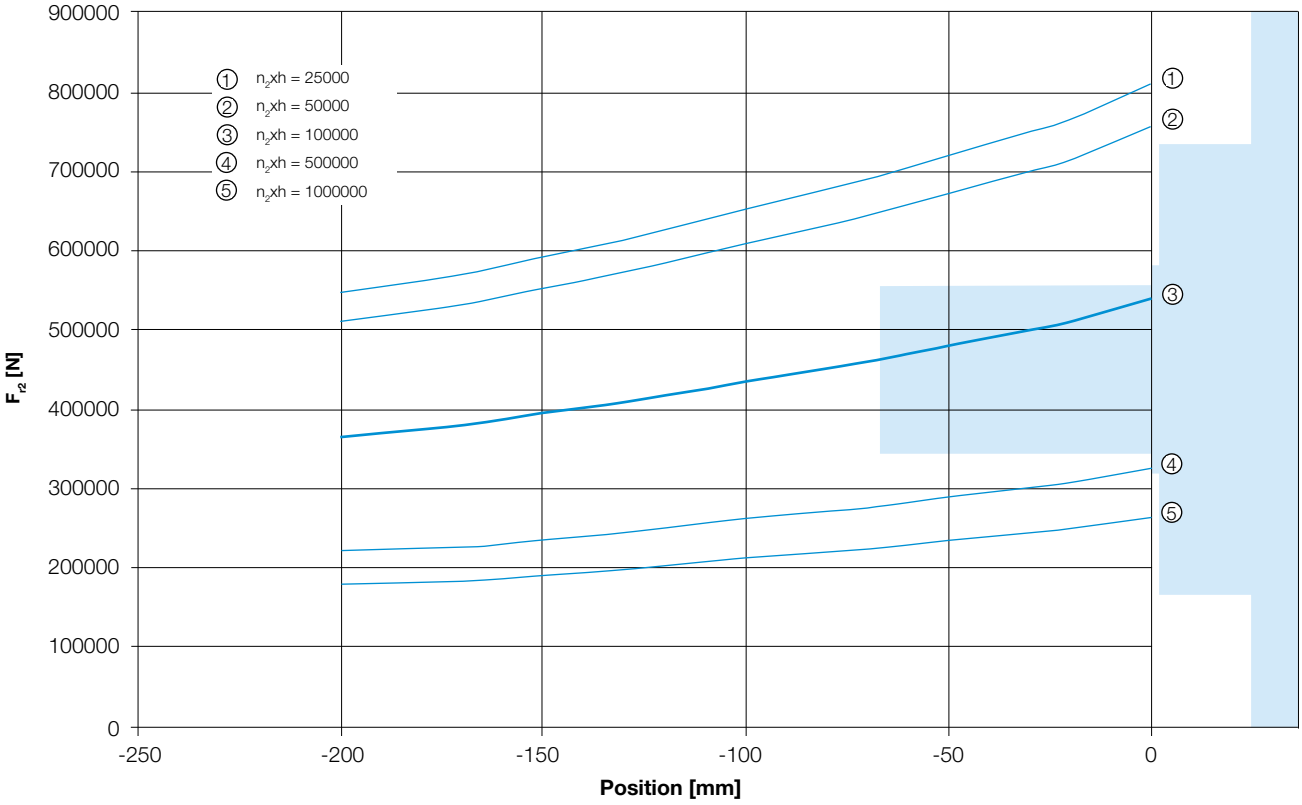


1200

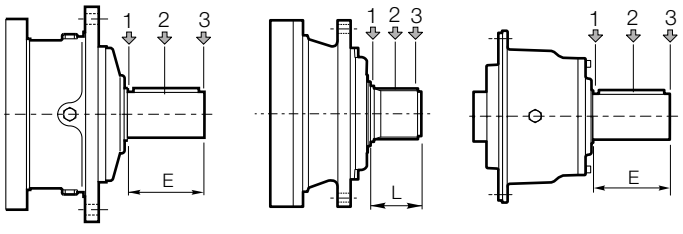
Output Radial Loads

Gearbox output version for:
SL, SC

MP - MP1

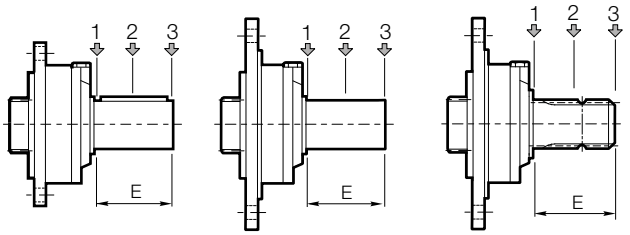


Input Radial Loads



S... **IS / ISL**

			F_{r1} [N]					
			$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**L**	**1**	**2**	**3**	**1**	**2**	**3**
S-45CR1	105	-	10000	6000	4000	5000	3000	2000
S-45SR	-	68	10000	6000	4000	5000	3000	2000
S-46C1	105	-	14000	8800	6400	7000	4400	3200
S-46S	-	68	14000	8800	6400	7000	4400	3200
S-65CR1	130	-	23800	15500	9600	11900	7800	4800
S-90CR1	170	-	29700	17000	10000	14800	8500	5000
ISL150	130	-	7631	4302	2995	3824	2156	1501
ISL300	130	-	7631	4302	2995	3824	2156	1501
IS300	210	-	48814	33068	22914	24465	16573	11484

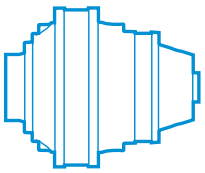


SU **SUF** **SUS**

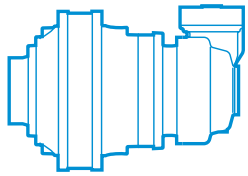
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

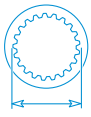
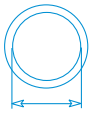
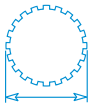
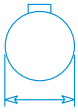
Click **DANA** button to return to section index

Click *i* button to return to main index



1800



i_{eff}	4.18 - 2305
T_{2N}	190000 Nm
	N210x5x30x40x9H DIN5480
	240 mm
	W220x5x30x42x8f DIN5480
	250 mm

TECHNICAL DATA

10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL18001												
4.18	1)			1)			120	95462	1196	1500	390000	105
4.89							102	98212	1052		354000	
6.00							83	102096	891		284000	
SL18002												
17.47	1)			57	111413	668	29	137165	411	2000	390000	75
20.44				49	122520	628	25	148268	380		354000	
23.91				42	128424	562	21	149702	328			
29.34				34.1	136553	487	17	151592	271			
36.00				27.8	112783	328	14	118909	173		284000	
SL18003												
70.59	21	134034	298	14	151371	225	7.1	186360	138	2500	390000	54
82.58	18	154298	294	12	174257	221	6.1	191895	122			
91.98	16	159208	272	11	179801	205	5.4	195050	111			
104.7	14	162452	244	10	183464	184	4.8	198896	100			
112.9	13	154324	215	8.9	158211	147	4.4	165083	77			
122.6	12	168189	215	8.2	187096	160	4.1	203725	87			
143.5	11	156205	171	7.0	160139	117	3.5	173690	63		354000	
162.0	9.3	123329	120	6.2	126436	82	3.1	135546	44		284000	
184.6	8.1	159053	135	5.4	163058	93	2.7	170142	48		390000	
215.9	6.9	160172	117	4.6	166380	81	2.3	184770	45		354000	
SL18004												
288.0	5.2	196317	107	3.5	208734	76	1.7	231806	42	3000	390000	38
320.8	4.7	199545	98	3.1	212166	69	1.6	235618	39			
365.0	4.1	203479	88	2.7	216349	62	1.4	240264	35			
417.0	3.6	207622	78	2.4	219397	55	1.2	230314	29			
464.5	3.2	211036	71	2.2	220853	50	1.1	234101	26			
519.8	2.9	214655	65	1.9	228231	46	1.0	253460	26			
571.4	2.6	217755	60	1.7	223678	41	0.87	241554	22			
619.1	2.4	220407	56	1.6	234347	40	0.81	260252	22			
725.5	2.1	225758	49	1.4	240038	35	0.69	265630	19			
778.3	1.9	228172	46	1.3	242603	33	0.64	269421	18			
912.1	1.6	233712	40	1.1	248494	29	0.55	269387	16			
1041	1.4	205734	31	1.0	210916	21	0.48	220078	11			
1067	1.4	226703	33	0.94	239056	24	0.47	265481	13			
1309	1.1	208643	25	0.76	213898	17	0.38	223190	8.9			
1409	1.1	159231	18	0.71	169302	13	0.35	188017	7.0		284000	
1531	1.0	210444	22	0.65	223754	15	0.33	248487	8.5		354000	
1879	0.80	213738	18	0.53	227256	13	0.27	252377	7.0			
2305	0.65	171533	12	0.43	182382	8.3	0.22	202542	4.6		284000	

1) Consult the DANA area contact person.

Click **DANA** button to return to section index

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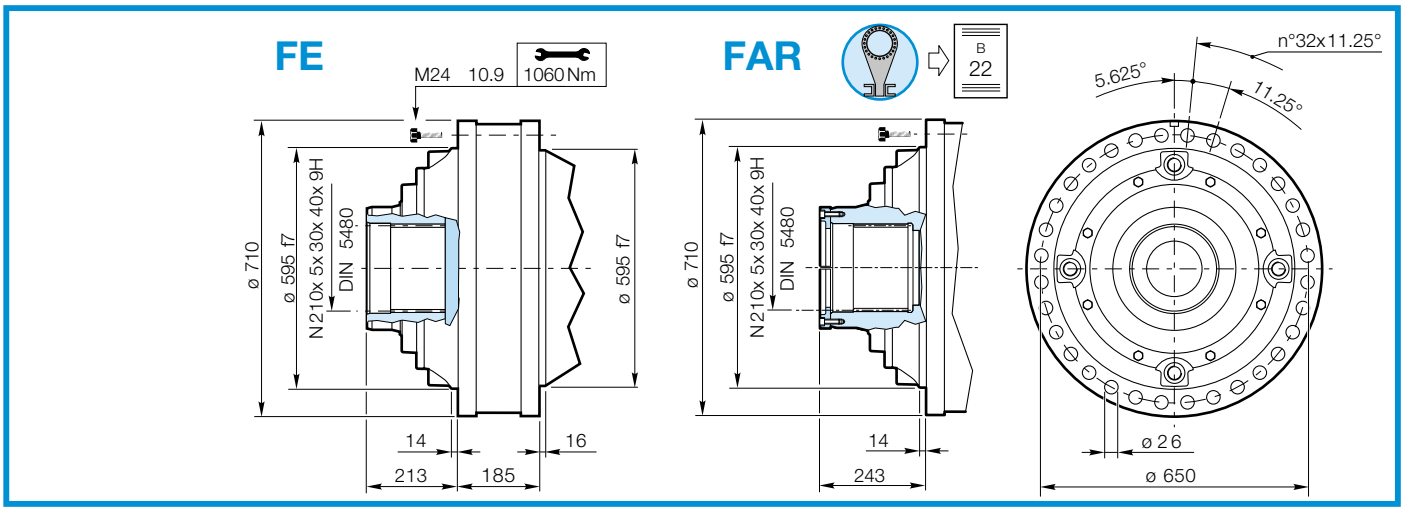
10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC18004												
179.3	8.4	146232	128	6	165146	96	2.8	203320	59	1800		
206.1	7.3	180128	137	5	198435	101	2.4	220369	56	1500		
233.6	6.4	190201	128	4	202231	91	2.1	220933	50	1800		
261.2	5.7	191516	115	4	205674	82	1.9	228409	46	1500		
268.6	5.6	194255	114	4	206541	81	1.9	222831	43			
311.5	4.8	198660	100	3	211226	71	1.6	224867	38	1800		
358.5	4.2	202930	89	3	215766	63	1.4	239615	35		390000	
358.5	4.2	202930	89	3	215766	63	1.4	239615	35	2500		
419.4	3.6	207804	78	2	219474	55	1.2	230515	29			30
439.3	3.4	195127	70	2	200042	48	1.1	208731	25	1500		
478.0	3.1	211956	70	2	225361	49	1.0	250273	27			
559.2	2.7	217045	61	2	223382	42	0.89	240767	23			
654.2	2.3	185046	44	2	196750	32	0.76	218498	18		354000	
686.0	2.2	200536	46	2	205587	31	0.73	214518	16	2500	390000	
802.7	1.9	190861	37	1	202933	27	0.62	221918	15		354000	
984.7	1.5	196851	31	1	209302	22	0.51	228883	12			
1208	1.2	155564	20	1	165404	14	0.41	183687	8.0		284000	

GEARBOX DIMENSIONS WITH OUTPUT



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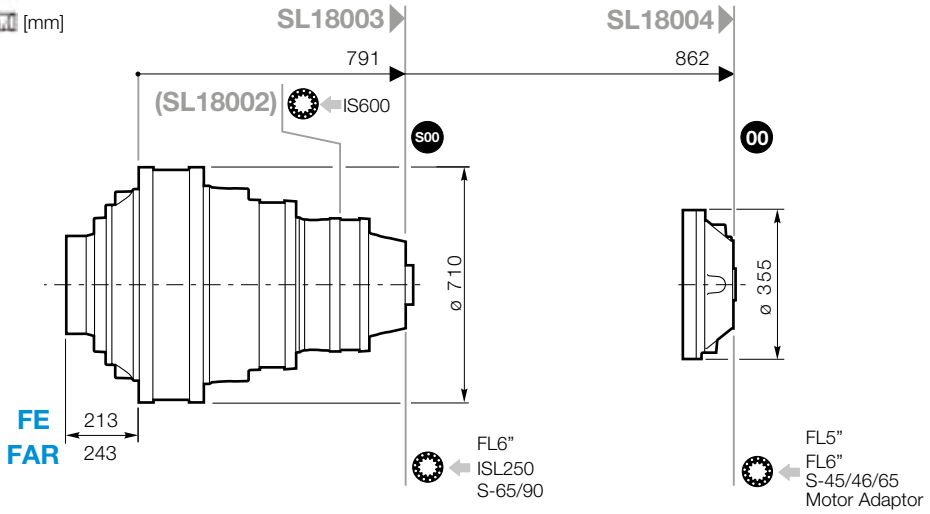
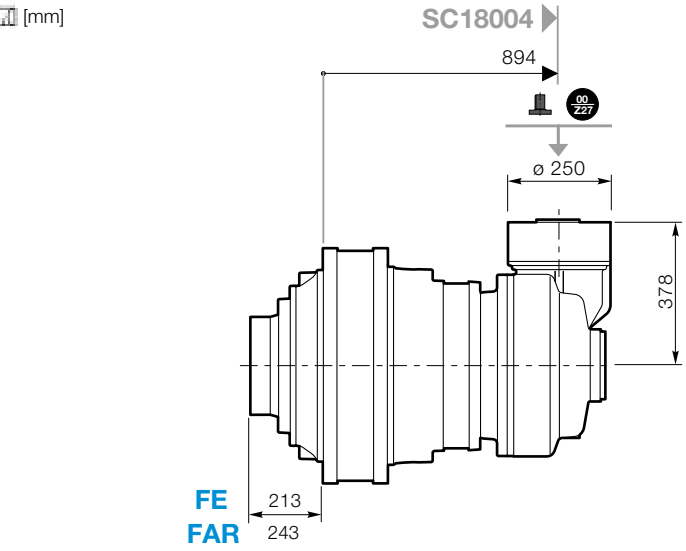


00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← FL620.U/635.U
SU-SUF-SUS
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

S-45/46/65/90
IS
ISL
→ 1800 8

SU
SUF
SUS
→ 1800 9

65.105
→ 1800 9

FL5"
FL6"
FL620/635
→ 1800 10

Motor Adaptor
→ 1800 12

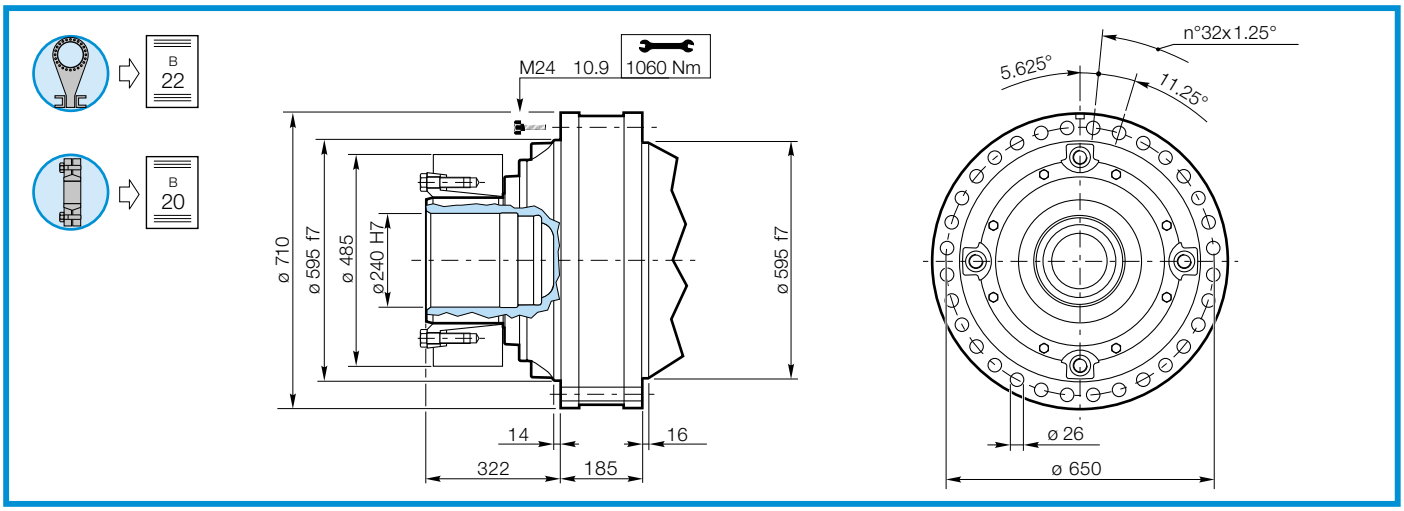
00 → B 11

00 227 → B 11

S00 → B 12

Click **DANA** button to return to section index

Click *i* button to return to main index



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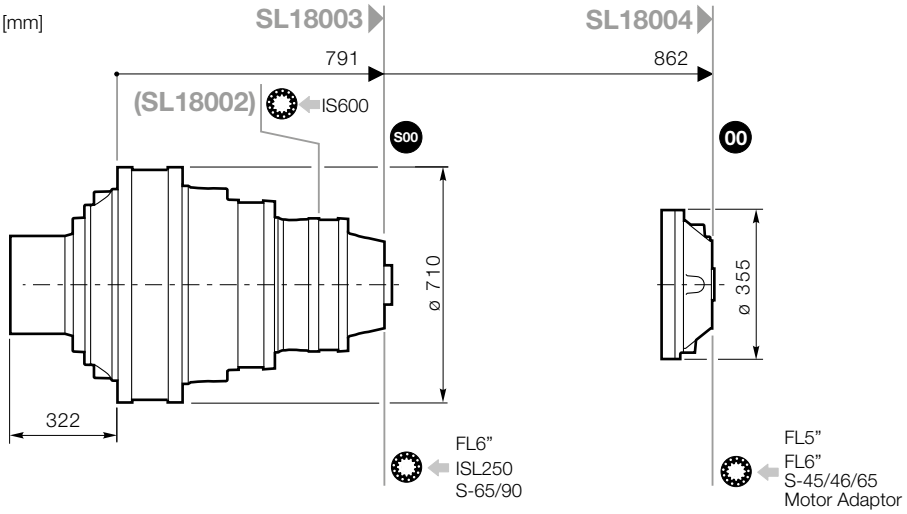
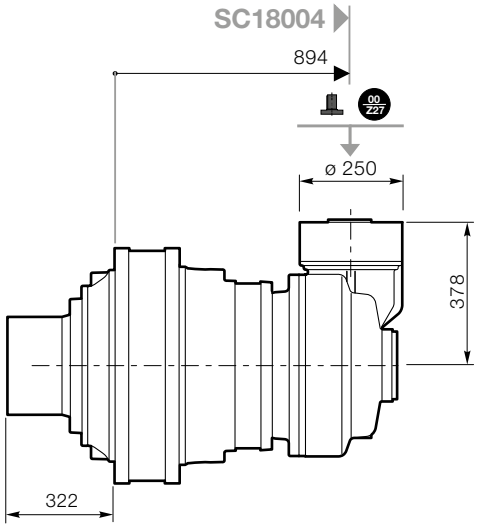


00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← FL620.U/635.U
SU-SUF-SUS
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

S-45/46/65/90
IS
ISL
→ 1800 8

SU
SUF
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65.105 → 1800 9

FL5"
FL6"
FL620/635
→ 1800 10

Motor
Adaptor
→ 1800 12

00 → B 11

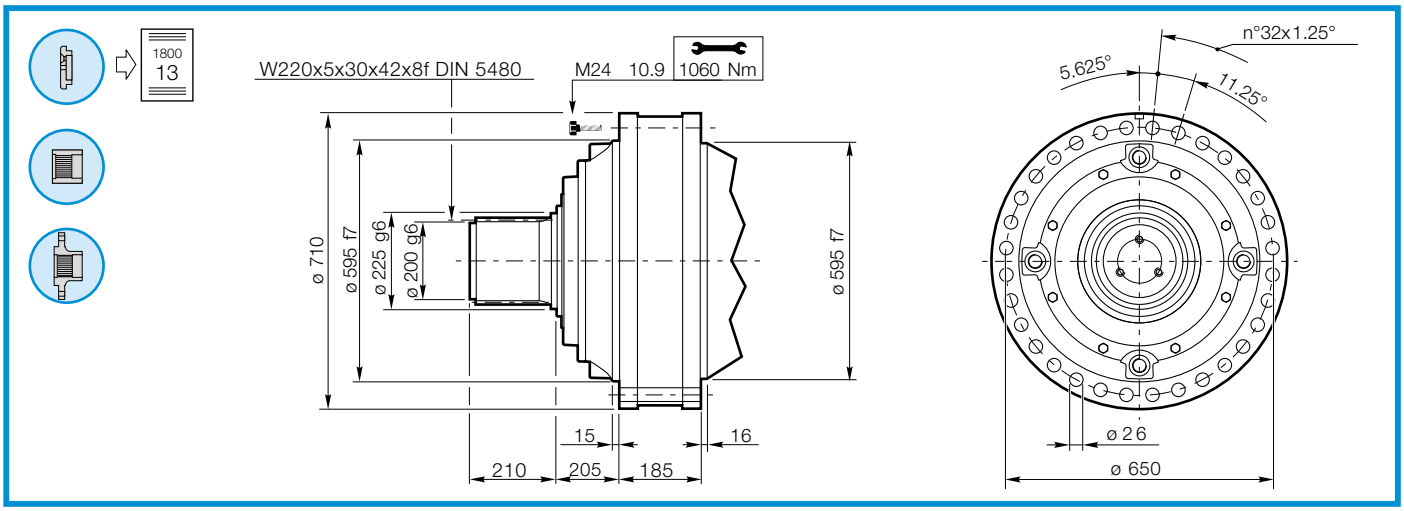
00 227 → B 11

S00 → B 12

Click *i* button to return to main index

Click **DANA** button to return to section index

GEARBOX DIMENSIONS WITH OUTPUT



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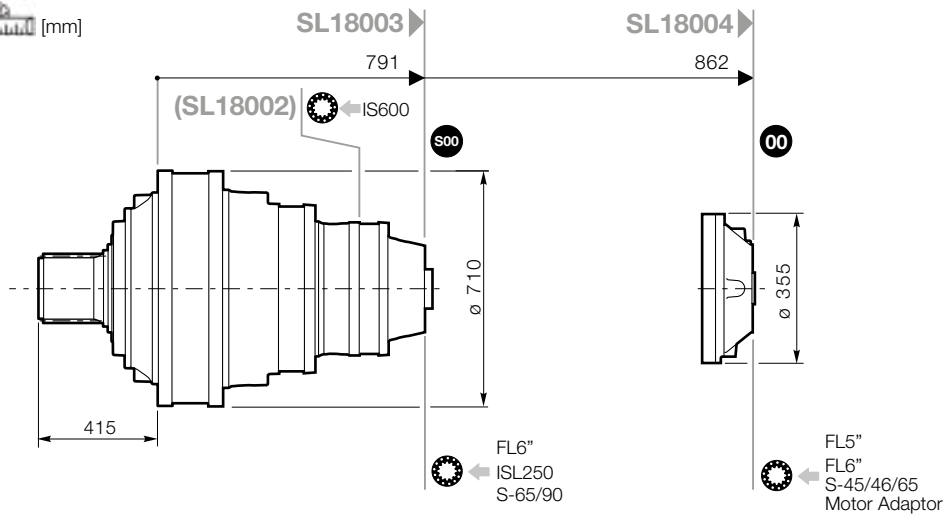
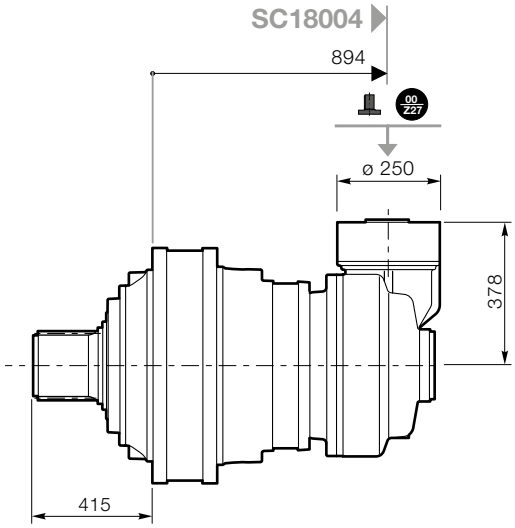


00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← FL620.U/635.U
SU-SUF-SUS
UPC
Motor Adaptor

65.105 (VARIANT) ← only without FL5"

S-45/46/65/90
IS
ISL
→ 1800 8

SU
SUF
SUS
→ 1800 9

65.105 → 1800 9

FL5"
FL6"
FL620/635
→ 1800 10

Motor Adaptor → 1800 12

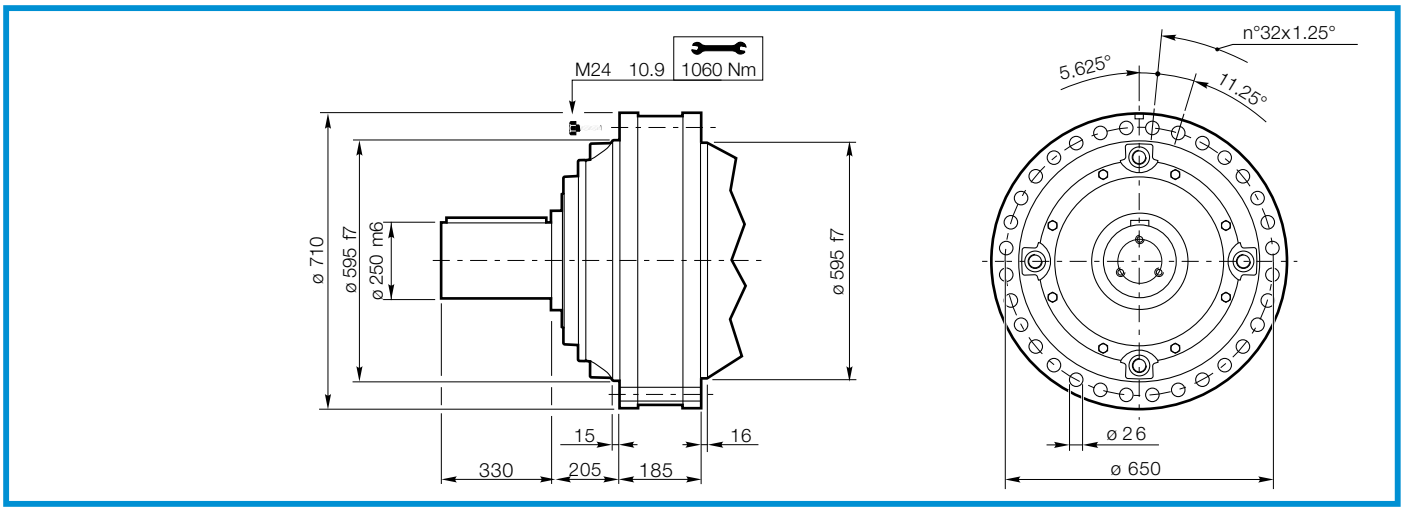
00 → B 11

00 227 → B 11

S00 → B 12

Click **DANA** button to return to section index

Click *i* button to return to main index



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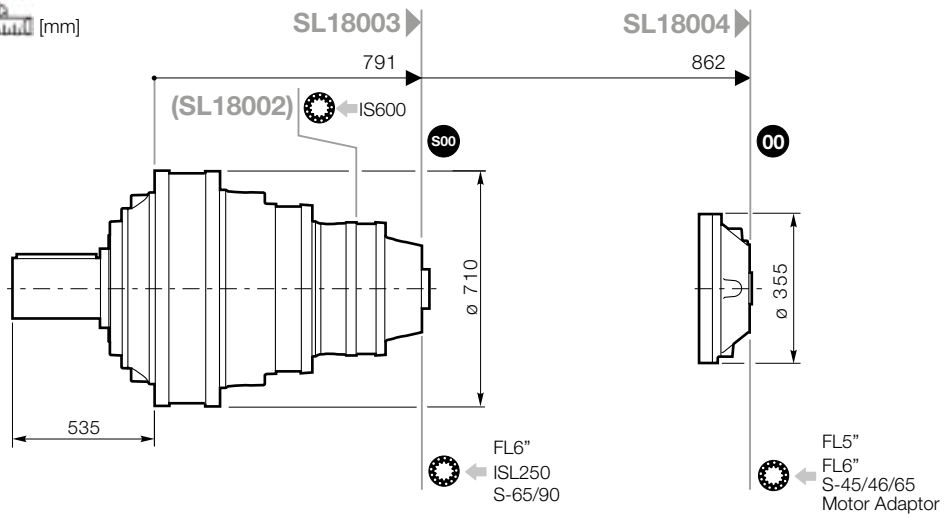
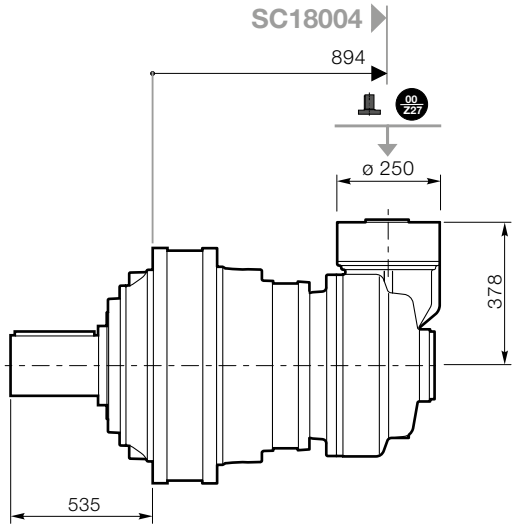


00 ← FL620.U/635.U
SU-SUF-SUS
DU150.1
UPC
Motor Adaptor
CCU25

S00 ← Motor Adaptor

[mm]



00 227 ← FL620.U/635.U
SU-SUF-SUS
UPC
Motor Adaptor

65.105 (VARIANT)
only without FL5"

S-45/46/65/90
IS
ISL
→ 1800 8

SU
SUF
SUS
→ 1800 9

65.105 → 1800 9

FL5"
FL6"
FL620/635
→ 1800 10

Motor
Adaptor
→ 1800 12

00 → B 11

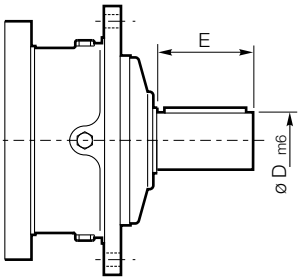
00 227 → B 11

S00 → B 12

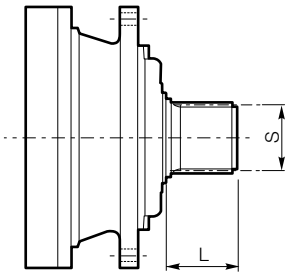
Click *i* button to return to main index

Click **DANA** button to return to section index

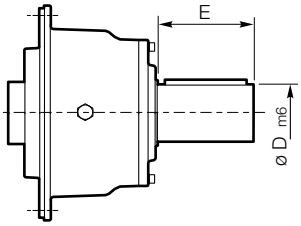
S-45 S-46 S-65 S-90 IS ISL



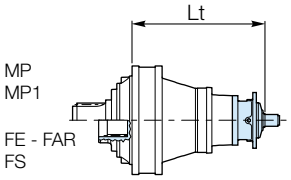
S-45CR1 - S-46C1
S-65CR1 - S90CR1



S-45SR - S-46S

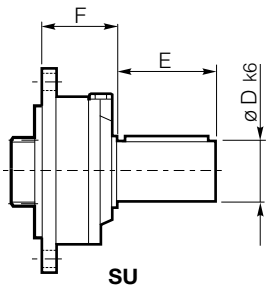


IS / ISL

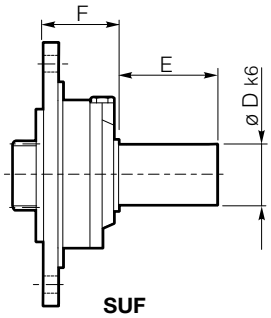


	D m6	E	L	S DIN5482	Lt		
					SL18002	SL18003	SL18004
S-45CR1	65	105	-	-	-	-	991
S-45SR	-	-	68	B58x53	-	-	991
S-46C1	65	105	-	-	-	-	1033
S-46S	-	-	68	B58x53	-	-	1033
S-65CR1	80	130	-	-	-	983.5	1031
S-90CR1	90	170	-	-	-	989.5	-
ISL250	90	130	-	-	-	861	-
IS600	110	210	-	-	805	-	-

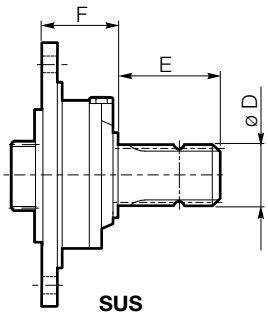
SU - SUF - SUS



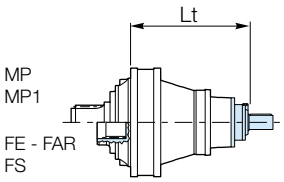
SU

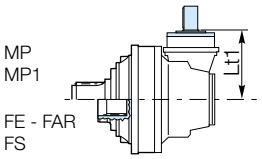


SUF



SUS

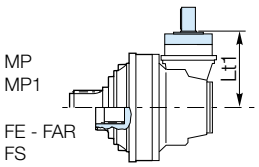


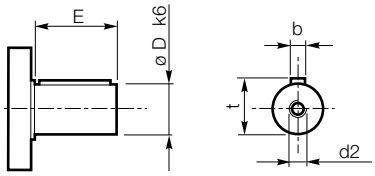


	D k6	E	F	Lt - Lt1 (00)	
				SL18004	SC18004
SU/SUF.1	28	50	60	922	438
SU/SUF.2	40	58	60		
SU/SUF.3	48	82	60		
SU2 1.5X3.25	38.1	82.55	60		
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	963.5	479.5
SU 42x80	48	80	101.5		

1800

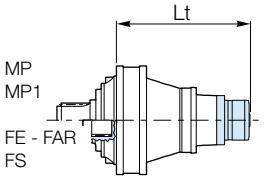
65.105

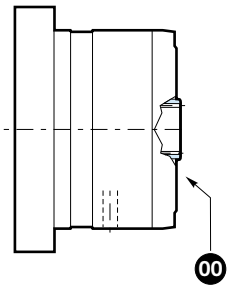




	D k6	E	b	t	d2	Lt1
						SC18004
65.105	65	105	18	69	M20x42	376

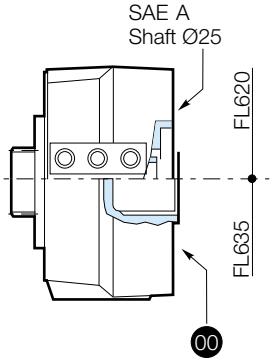
FL5” - FL6”

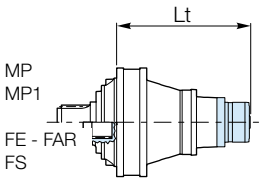


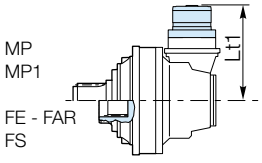


		Lt - Lt1	
		SL18003	SL18004
FL5”	FL250.4C FL250.6C	-	961.5
	FL350.6C FL350.8C	-	961.5
	FL450.6C FL450.8C	-	961.5
	FL650.10C FL650.12C FL650.14C	-	975.5
	FL750.10C FL750.12C FL750.14C	-	975.5
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	911	989.5

FL620.U - FL635.U

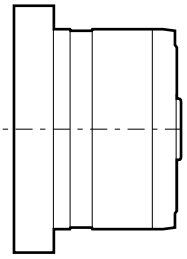


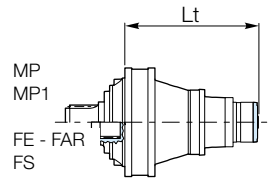




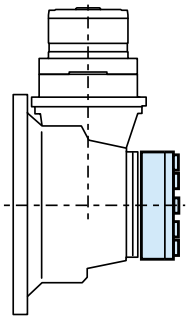
	Lt	
	SL18004	SC18004
FL620.U	966.5	482.5
FL635.U	953	469

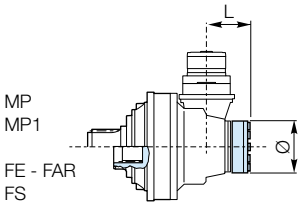
RL



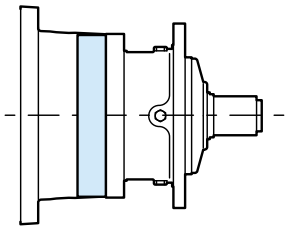


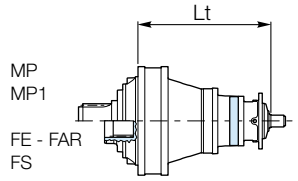
			Lt	
			SL18003	SL18004
RL	+	FL250 FL350 FL450	-	987.5
		FL650 FL750	-	1001.5
		FL960	937	1015.5





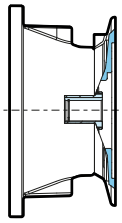
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

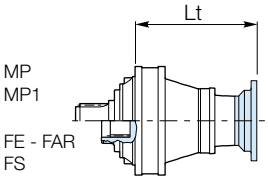


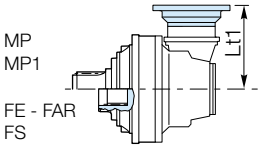


			Lt
			SL18004
RL	+	S46C1	1053

IEC Motor







	Lt - Lt1		
	SL18003 S00	SL18004 00	SC18004 00 Z27
IEC 132	-	957	-
IEC 160	-	962	-
IEC 180	-	962	504
IEC 200	866	1001	540
IEC 225	896	1029	-
IEC 250	896	-	-
IEC 280	896	-	-
SHAFT_IEC225	-	-	560

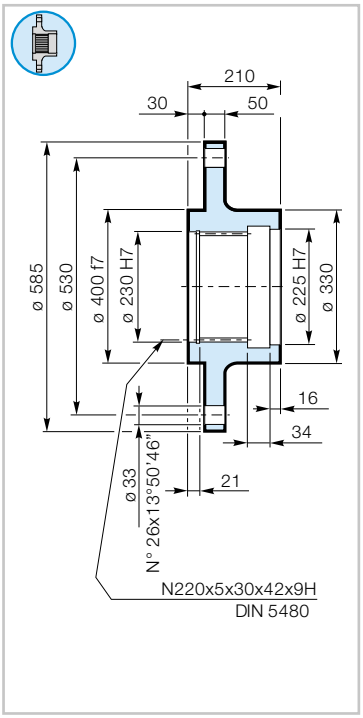
NEMA Motor

Please consult NEMA Motor Flange in page B 15

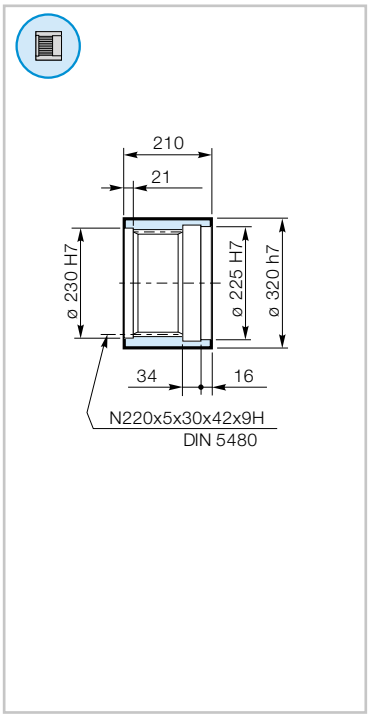
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page B 14

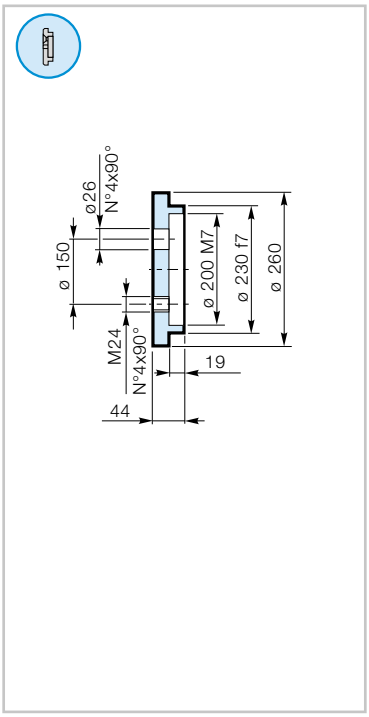
FR 1800 Wheel Flange



MS 1800 Splined Sleeve



RDF S1800 Lock Washer

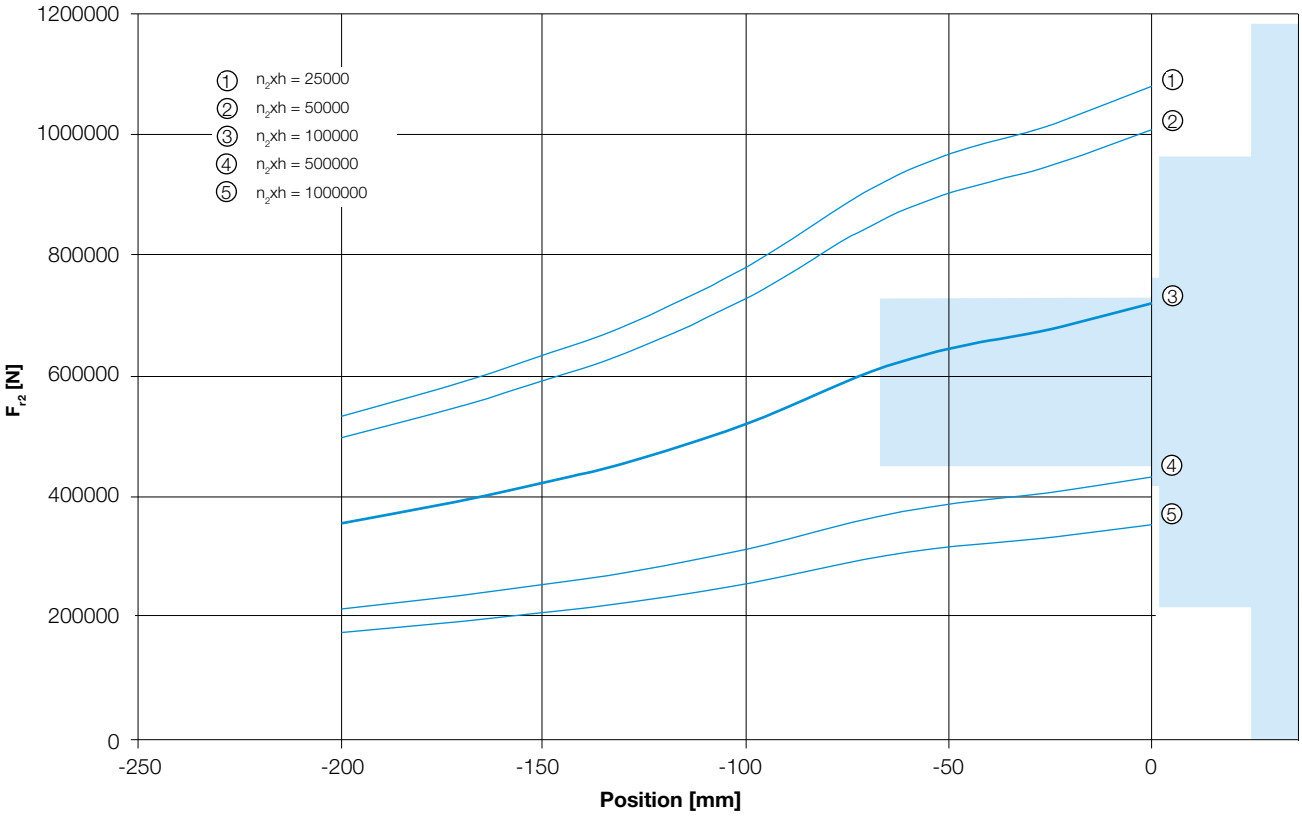


1800

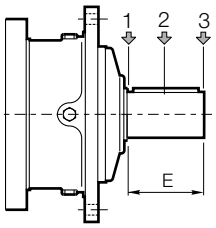
Output Radial Loads

Gearbox output version for:
SL, SC

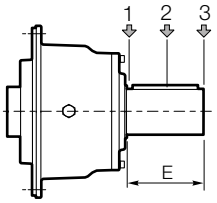
MP - MP1



Input Radial Loads

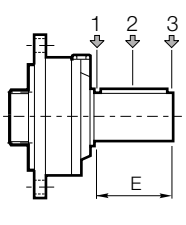


S...

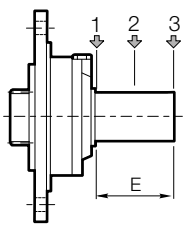


IS / ISL

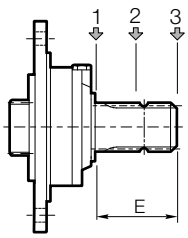
			F_{r1} [N]					
			$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**L**	**1**	**2**	**3**	**1**	**2**	**3**
S-45CR1	105	-	10000	6000	4000	5000	3000	2000
S-45SR	-	68	10000	6000	4000	5000	3000	2000
S-46C1	105	-	14000	8800	6400	7000	4400	3200
S-46S	-	68	14000	8800	6400	7000	4400	3200
S-65CR1	130	-	23800	15500	9600	11900	7800	4800
S-90CR1	170	-	29700	17000	10000	14800	8500	5000
ISL250	130	-	7631	4302	2995	3824	2156	1501
IS600	210	-	54366	36909	26346	27248	18498	13204



SU



SUF



SUS

		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

Click **DANA** button to return to section index

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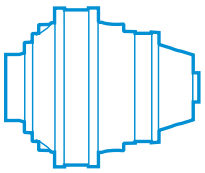
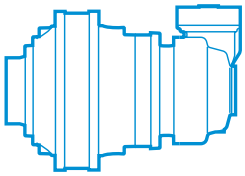
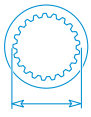
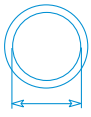


2500



i_{eff}	4.18 - 1987
T_{2N}	260000 Nm
	N240x5x30x46x9H DIN5480
	260 mm

TECHNICAL DATA

10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL25001												
4.18	1)			1)			120	142542	1786	1500	570000	144
4.89							102	146649	1570		487000	
6.00							83	147340	1286		386000	
SL25002												
17.47	1)			1)			29	179560	538	1500	570000	100
20.44							25	203328	521			
23.91							21	205295	450		487000	
29.34							17	207887	371			
36.00							14	164459	239		386000	
SL25003												
70.59	1)			14	221727	329	7.1	259215	192	2000	570000	70
82.58				12	212290	269	6.1	221512	140		487000	
89.46				11	238059	279	5.6	266789	156		570000	
104.8				10	249660	249	4.8	273266	136			
112.9				8.9	221446	205	4.4	231065	107			
128.6				7.8	239305	195	3.9	249701	102			
143.5				7.0	219608	160	3.5	238191	87		487000	
162.0				6.2	172847	112	3.1	185302	60		386000	
184.6				5.4	228231	129	2.7	238146	68		570000	
215.9				4.6	228166	111	2.3	253386	61		487000	
SL25004												
278.8	5.4	268334	151	3.6	285306	107	1.8	316843	59	2500	570000	50
326.2	4.6	274777	132	3.1	292157	94	1.5	314783	51			
365.0	4.1	279490	120	2.7	297168	85	1.4	316961	46			
417.8	3.6	285266	107	2.4	303309	76	1.2	321595	40			
471.8	3.2	290550	97	2.1	308927	69	1.1	343075	38			
495.5	3.00	292713	93	2.0	309515	65	1.00	329991	35			
551.9	2.7	297527	85	1.8	311569	59	0.91	335417	32			
629.0	2.4	303472	76	1.6	322666	54	0.79	358333	30			
735.8	2.00	309326	66	1.4	317117	45	0.68	350335	25			
786.3	1.9	313890	63	1.3	333744	45	0.64	370634	25			
919.8	1.6	313589	54	1.1	326294	37	0.54	362362	21			
990.2	1.5	270183	43	1.0	287271	30	0.50	319025	17		487000	
1128	1.3	309005	43	0.89	316787	29	0.44	330548	15		570000	
1296	1.2	281396	34	0.77	299193	24	0.39	332265	13		487000	
1384	1.1	251916	29	0.72	265868	20	0.36	295256	11		570000	
1620	0.93	291055	28	0.62	309465	20	0.31	343672	11		487000	
1987	0.75	229293	18	0.50	243795	13	0.25	270744	7.1		386000	

1) Consult the DANA area contact person.

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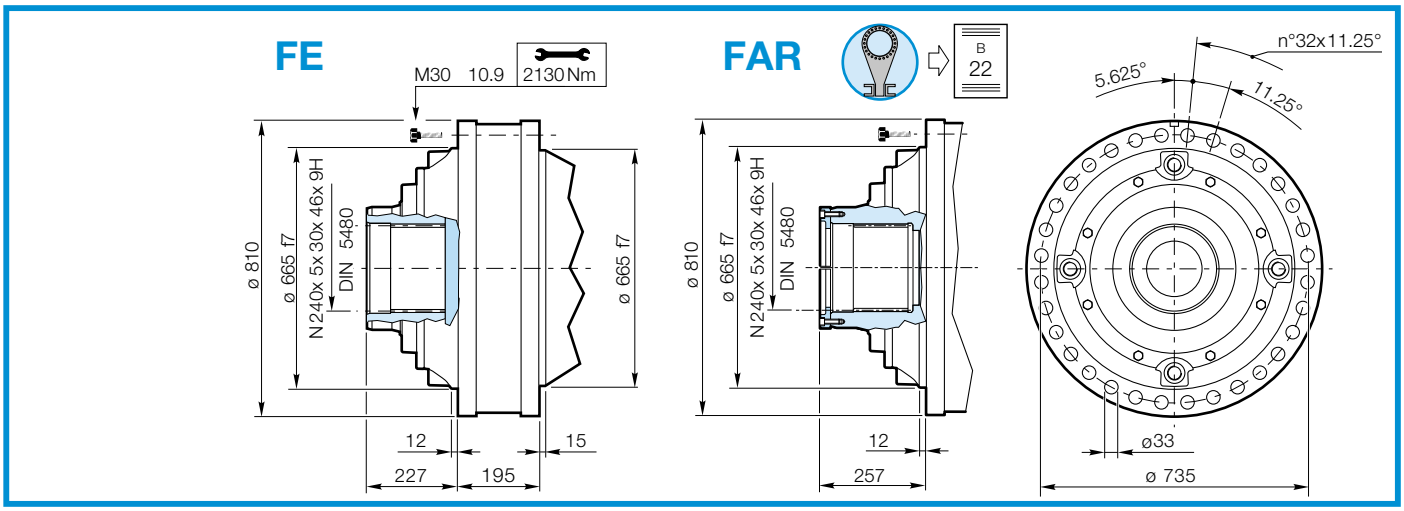
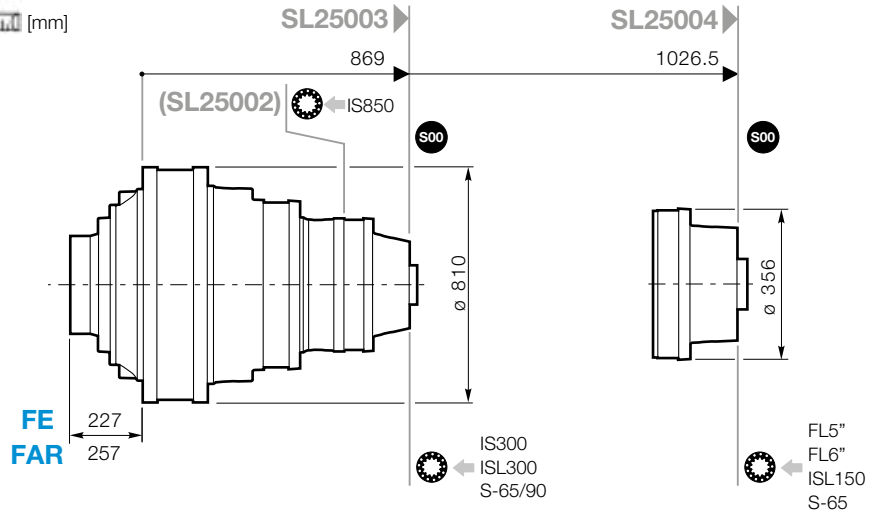
10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC25004												
179.3	8.4	146232	128	5.6	165147	96	2.8	203320	59	1800		
206.1	7.3	180129	137	4.9	203428	103	2.4	250449	64			
229.6	6.5	200639	137	4.4	226590	103	2.2	278966	64			
261.2	5.7	228282	137	3.8	257810	103	1.9	313733	63	1500		
268.6	5.6	234718	137	3.7	265079	103	1.9	311053	61			
306.1	4.9	267518	137	3.3	289365	99	1.6	321350	55		570000	
358.1	4.2	278687	122	2.8	296313	87	1.4	316591	46			
382.1	3.9	281434	116	2.6	296429	81	1.3	309306	42	1800		40
439.3	3.4	287433	103	2.3	298975	71	1.1	311962	37	1500		
478.0	3.1	278687	92	2.1	309546	68	1.0	343763	38			
559.2	2.7	298124	84	1.8	311822	58	0.89	336090	32			
654.2	2.3	253764	61	1.5	269815	43	0.76	299639	24		487000	
686.0	2.2	299715	69	1.5	307263	47	0.73	320611	25	2500	570000	
802.7	1.9	261739	51	1.2	278294	36	0.62	309056	20		487000	
984.7	1.5	269954	43	1.0	287028	31	0.51	318755	17			
1208	1.2	212669	28	0.8	226120	20	0.41	251114	11		386000	

GEARBOX DIMENSIONS WITH OUTPUT

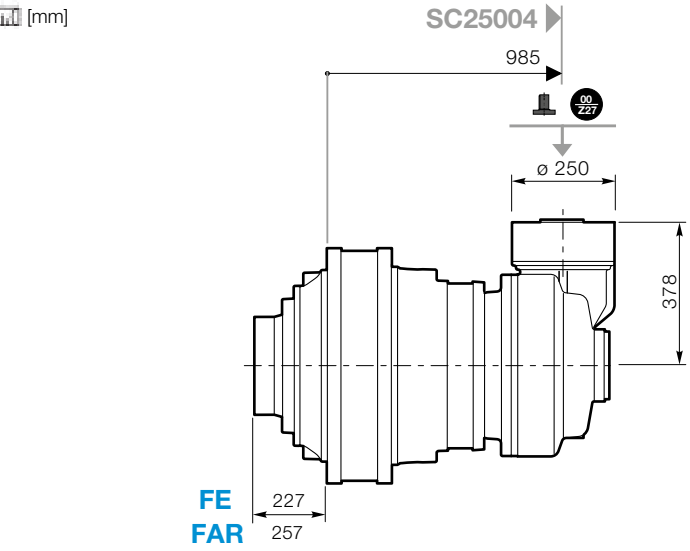


[mm]



S00 Motor Adaptor

[mm]



00 227 FL620.U/635.U SU-SUF-SUS UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

S-65/90 IS ISL → 2500 6
SU SUF SUS → 2500 6
65.105 → 2500 7
FL5" FL6" FL620/635 → 2500 8
Motor Adaptor → 2500 10
00 227 → B 11
S00 → B 12

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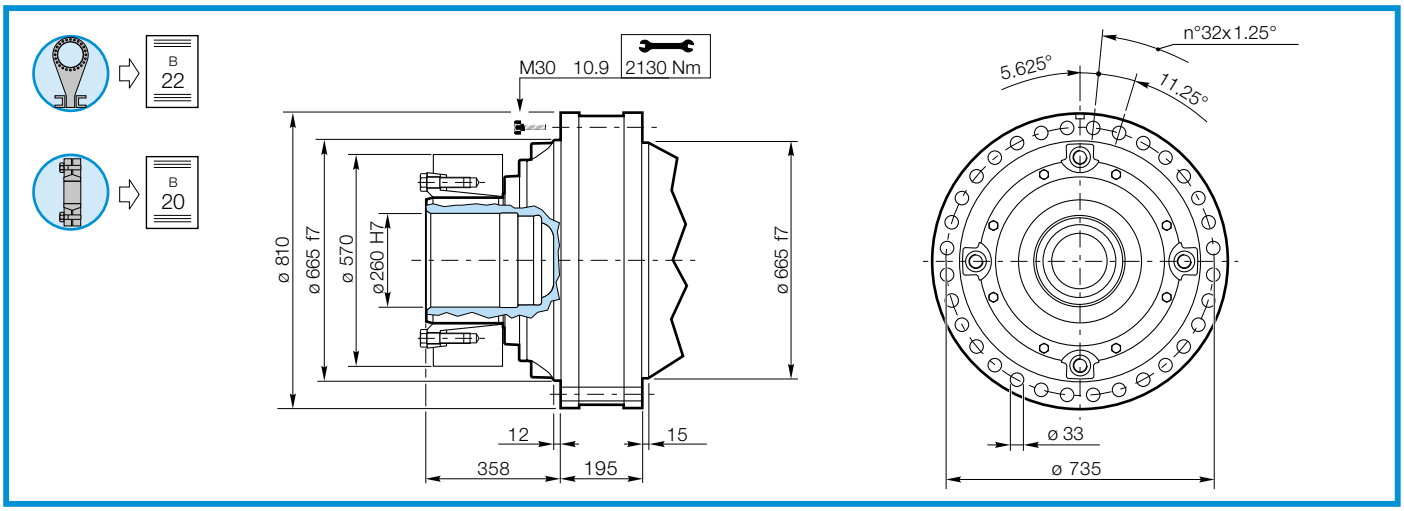
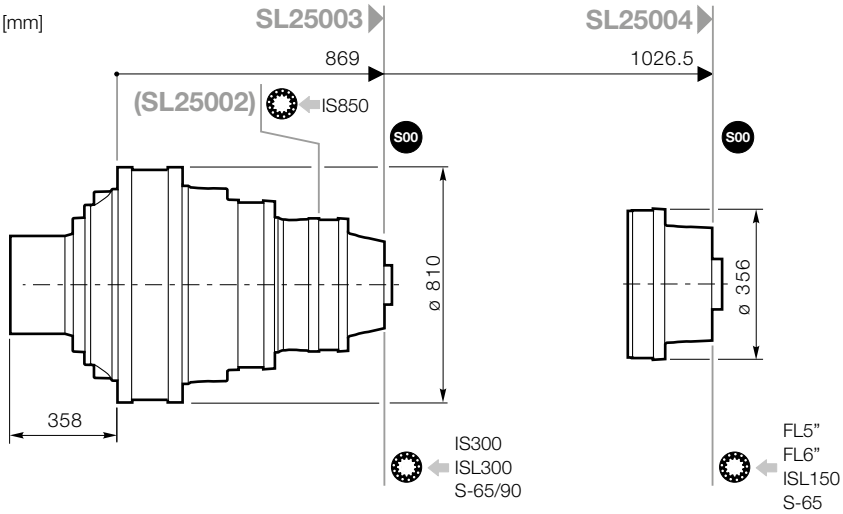
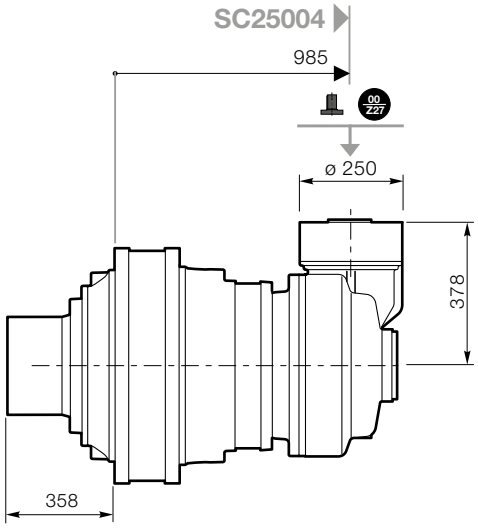


[mm]



S00 Motor Adaptor

[mm]



00 227 FL620.U/635.U SU-SUF-SUS UPC Motor Adaptor

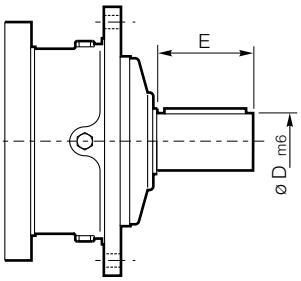
65.105 (VARIANT) only without FL5"

S-65/90 IS ISL → 2500 6
SU SUF SUS → 2500 6
65.105 → 2500 7
FL5" FL6" FL620/635 → 2500 8
Motor Adaptor → 2500 10
00 227 → B 11
S00 → B 12

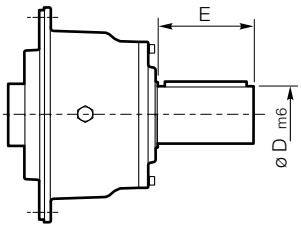
Click *i* button to return to main index

Click **DANA** button to return to section index

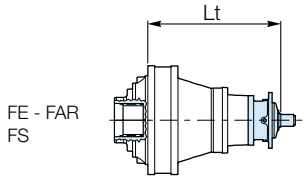
S-65 S-90 IS ISL



S-65CR1 - S-90CR1

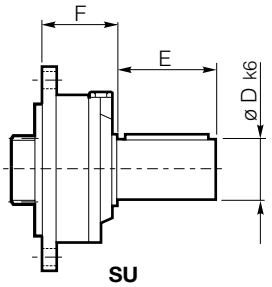


IS / ISL

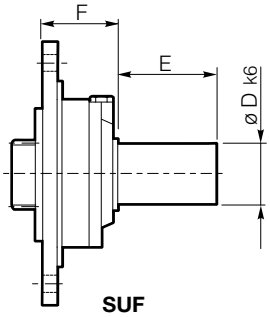


	D m6	E	Lt		
			SL25002	SL25003	SL25004
S-65CR1	80	130	-	1074.5	1218.5
S-90CR1	90	170	-	1080.5	-
ISL150	90	130	-	-	1096.5
ISL300	90	130	-	939	-
IS300	100	210	-	1060	-
IS850	110	210	919	-	

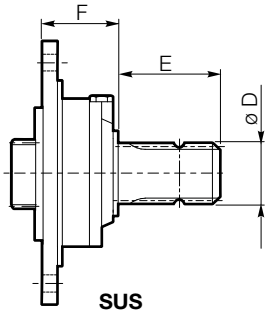
SU - SUF - SUS



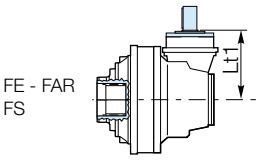
SU



SUF

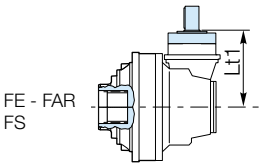


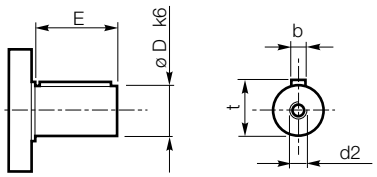
SUS



	D k6	E	F	Lt1 00
				SC25004
SU/SUF.1	28	50	60	438
SU/SUF.2	40	58	60	
SU/SUF.3	48	82	60	
SU2 1.5X3.25	38.1	82.55	60	
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	479.5
SU 42x80	48	80	101.5	

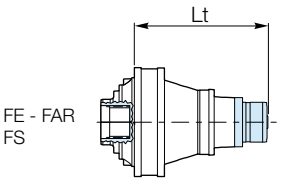
65.105

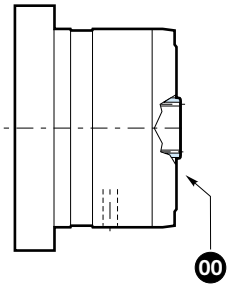




		D k6	E	b	t	d2	Lt1 SC25004
	65.105	65	105	18	69	M20x42	376

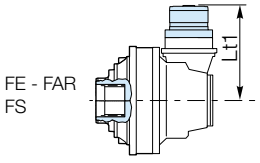
FL5” - FL6”

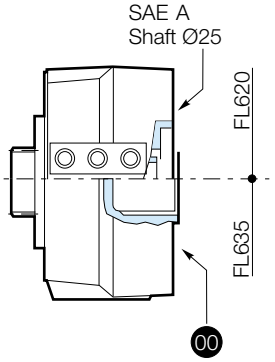




		Lt	
		SL25004	SL25004
FL5”	FL250.4C FL250.6C	-	1105.5
	FL350.6C FL350.8C	-	1105.5
	FL450.6C FL450.8C	-	1105.5
	FL650.10C FL650.12C FL650.14C	-	1119
	FL750.10C FL750.12C FL750.14C	-	1119
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	1002	1133

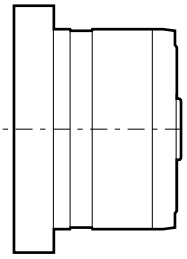
FL620.U - FL635.U

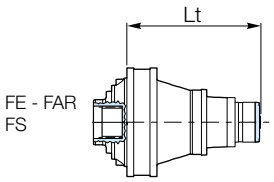




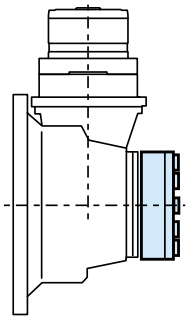
	Lt 00
	SC25004
FL620.U	482.5
FL635.U	469

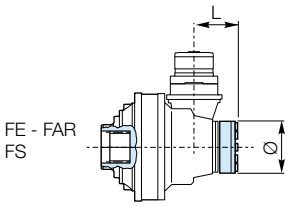
RL





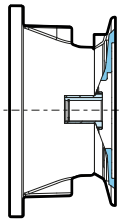
			Lt	
			SL25003	SL25004
RL	+	FL250 FL350 FL450	-	1131.5
		FL650 FL750	-	1145
		FL960	1028	1159

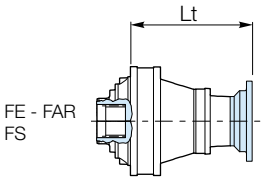


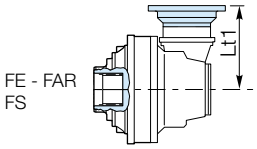


			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

IEC Motor







	Lt - Lt1		
	SL25003 S00	SL25004 S00	SC25004 00 Z27
IEC 160	944	1101.5	-
IEC 180	1053	1101.5	504
IEC 200	944	1101.5	540
IEC 225	974	1131.5	-
IEC 250	974	-	-
IEC 280	-	-	-
SHAFT_IEC225	-	-	560

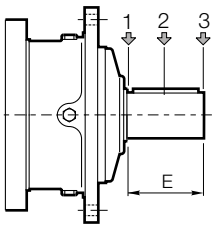
NEMA Motor

Please consult NEMA Motor Flange in page B 15

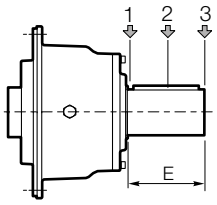
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page B 14

Input Radial Loads

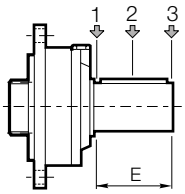


S...

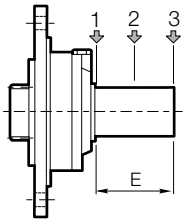


IS / ISL

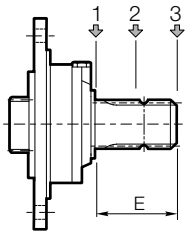
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484
IS850	210	54366	36909	26346	27248	18498	13204



SU



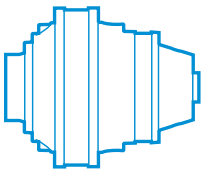
SUF



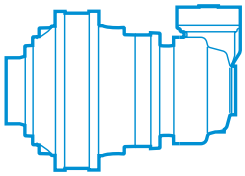
SUS

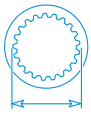
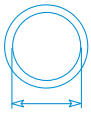
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

DANA
BREVINI®
Motion Systems



3500



i_{eff}	4.18 - 1620
T_{2N}	370000 Nm
	N280x8x30x34x9H DIN5480
	290 mm

TECHNICAL DATA

10000 hours life

i_{eff}	1500 n_2 [rpm]	1500 T_2 [Nm]	1500 P_2 [kW]	1000 n_2 [rpm]	1000 T_2 [Nm]	1000 P_2 [kW]	500 n_2 [rpm]	500 T_2 [Nm]	500 P_2 [kW]	n_{1MAX} [rpm]	T_{2MAX} [Nm]	P_T [kW]
SL35001												
4.18	1)			1)			120	186583	2337	1500	810000	162
4.89							102	191960	2055		694000	
6.00							83	199552	1741		551000	
SL35002												
17.47	1)			1)			29	286564	859	1500	810000	115
20.44							25	297161	761			
23.91							21	292706	641		694000	
29.34							17	296403	529			
36.00							14	234491	341		551000	
SL35003												
73.04	1)			14	354321	508	6.8	369712	265	2000	810000	82
104.8				10	362265	362	4.8	388938	194			
116.9				8.6	309209	277	4.3	329262	147		694000	
122.6				8.2	365768	312	4.1	398278	170		810000	
143.5				7.0	313114	229	3.5	339610	124		694000	
176.0				5.7	317068	189	2.8	350282	104			
216.0				4.6	250840	122	2.3	275961	67		551000	
SL35004												
288.5	5.2	383892	209	3.5	408173	148	1.7	453292	82	2500	810000	60
322.8	4.6	390476	190	3.1	415173	135	1.5	461065	75			
369.6	4.1	398545	169	2.7	423753	120	1.4	470593	67			
414.1	3.6	405464	154	2.4	431110	109	1.2	478764	61			
463.4	3.2	412418	140	2.2	438503	99	1.1	486975	55			
512.6	2.9	418771	128	2.0	445257	91	1.0	494475	51			
542.1	2.8	422322	122	1.8	449033	87	0.92	498667	48			
640.8	2.3	433146	106	1.6	460542	75	0.78	511449	42			
735.8	2.0	442303	94	1.4	470278	67	0.68	522262	37			
786.3	1.9	446758	89	1.3	475015	63	0.64	527522	35			
919.8	1.6	457486	78	1.1	486422	55	0.54	540190	31			
954.7	1.6	292619	48	1.0	311127	34	0.52	345519	19		551000	
1076	1.4	390096	57	0.93	414770	40	0.46	460616	22		694000	
1296	1.2	306464	37	0.77	325848	26	0.39	361866	15		551000	
1620	0.93	316984	31	0.62	337033	22	0.31	374289	12			

1) Consult the DANA area contact person.

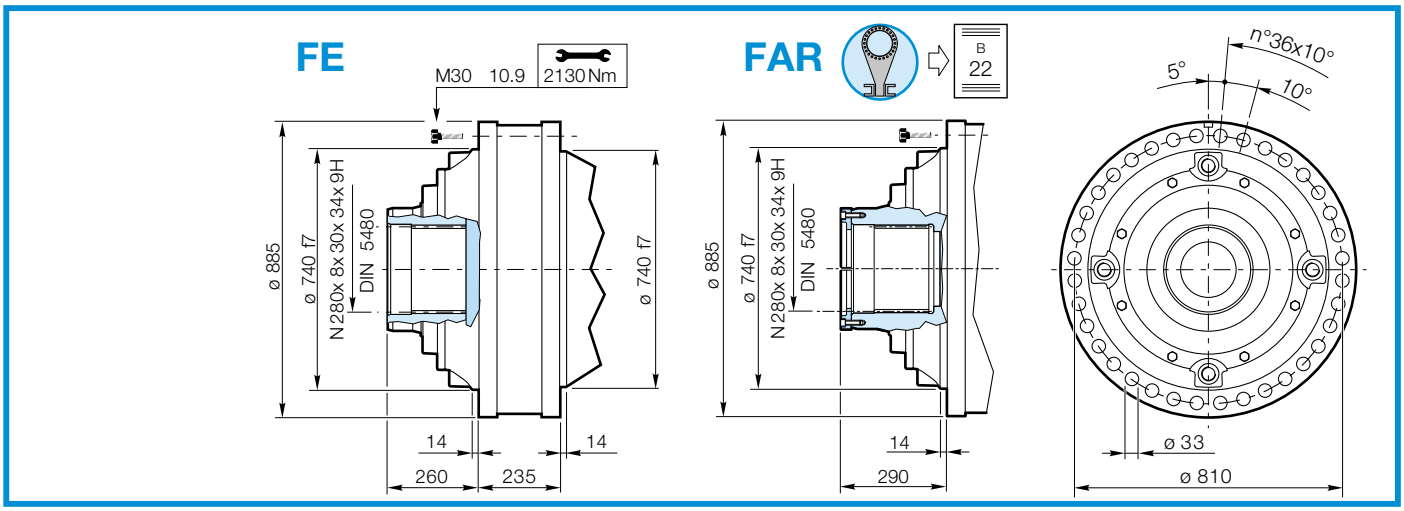
Click **DANA** button to return to section index

Click *i* button to return to main index

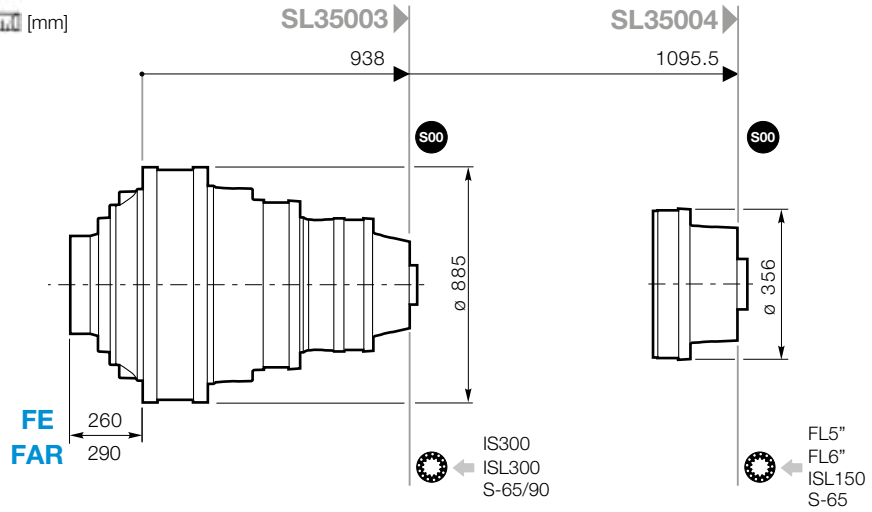
10000 hours life

i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC35004												
185.5	8.1	151300	128	5.4	170869	96	2.7	210366	59	1800		
213.3	7.0	186370	137	4.7	210478	103	2.3	259129	64			
249.5	6.0	218027	137	4.0	246228	103	2.0	303143	64		810000	
291.9	5.1	255062	137	3.4	288052	103	1.7	354634	64			
306.1	4.9	267519	137	3.3	302121	103	1.6	367806	63	1500		
358.1	4.2	312959	137	2.8	351183	103	1.4	390002	57		694000	
418.9	3.6	338224	127	2.4	359616	90	1.2	399367	50			40
439.4	3.4	351543	126	2.3	360397	86	1.1	376053	45		810000	
514.0	2.9	348853	107	1.9	370918	76	0.97	411918	42			
559.2	2.7	326025	92	1.8	368193	69	0.89	417204	39		694000	
654.2	2.3	361814	87	1.5	384698	62	0.76	427221	34			
686.2	2.2	361289	83	1.5	370388	57	0.73	397550	30	2500	810000	
802.7	1.9	373185	73	1.2	396788	52	0.62	440647	29		694000	
985.0	1.5	294003	47	1.0	312598	33	0.51	347152	18.5		551000	

GEARBOX DIMENSIONS WITH OUTPUT

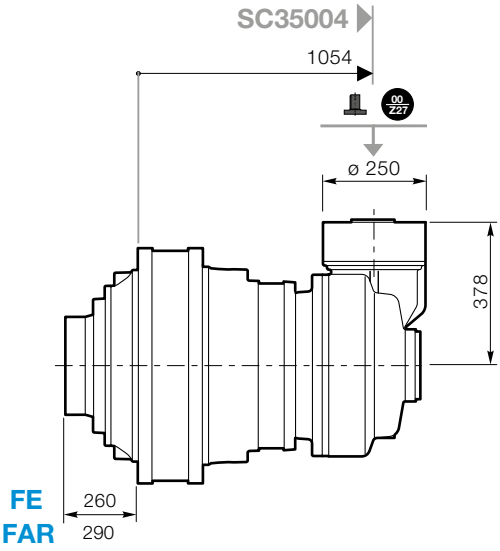


[mm]



S00 ← Motor Adaptor

[mm]

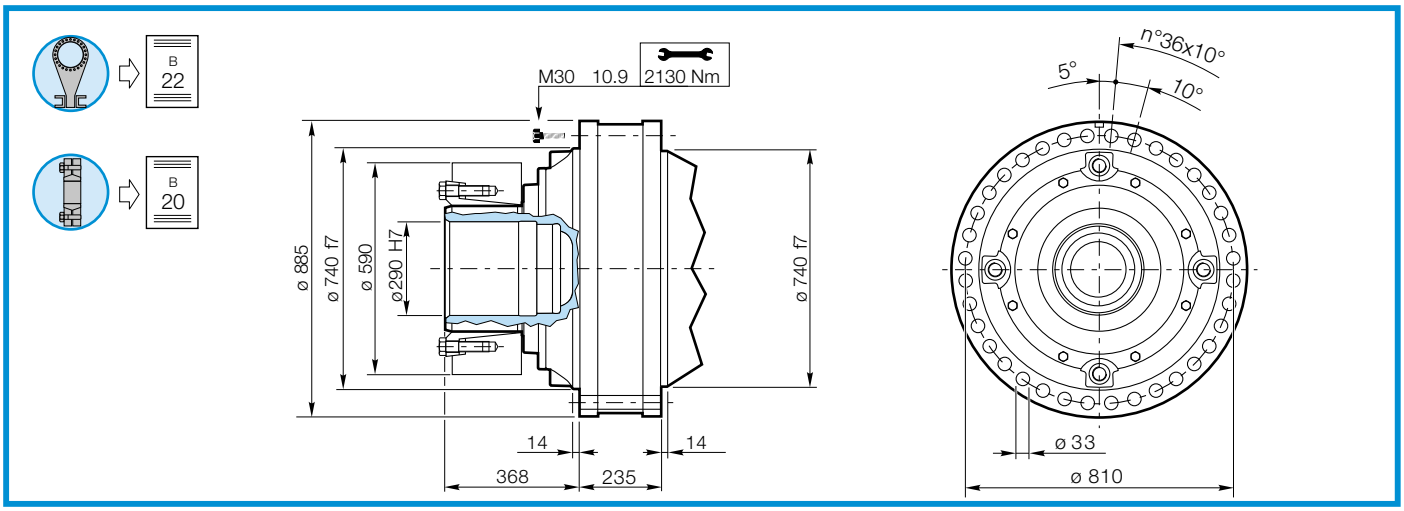


00 227 ← FL620.U/635.U SU-SUF-SUS UPC Motor Adaptor

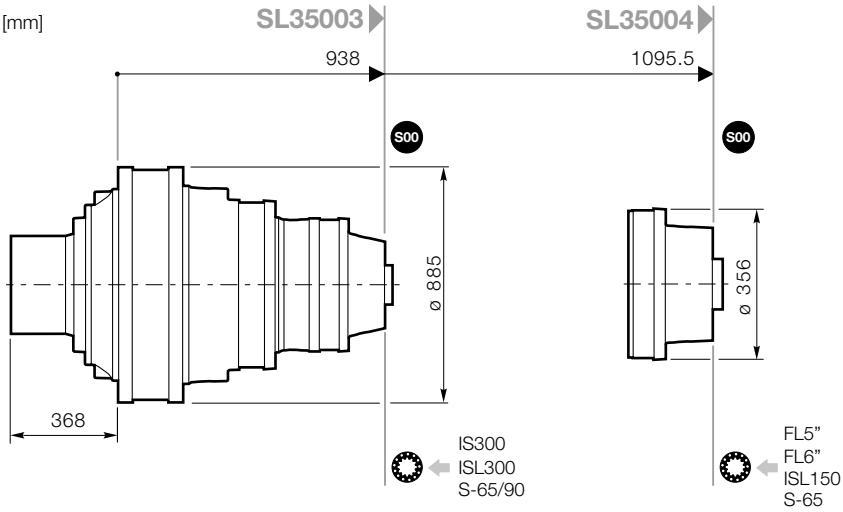
65.105 (VARIANT) only without FL5"

S-65/90 IS ISL → 3500 6
SU SUF SUS → 3500 6
65.105 → 3500 7
FL5" FL6" FL620/635 → 3500 8
Motor Adaptor → 3500 10
00 227 → B 11
S00 → B 12

Click **DANA** button to return to section index
Click *i* button to return to main index

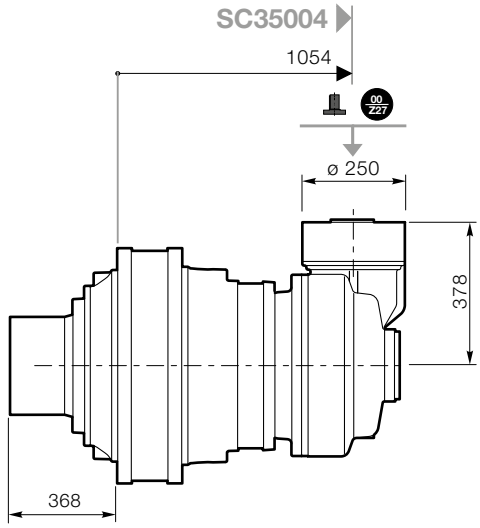


[mm]



S00 Motor Adaptor

[mm]



00 227 FL620.U/635.U SU-SUF-SUS UPC Motor Adaptor

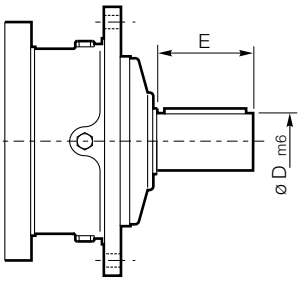
65.105 (VARIANT) only without FL5"

S-65/90 IS ISL → 3500 6
SU SUF SUS → 3500 6
65.105 → 3500 7
FL5" FL6" FL620/635 → 3500 8
Motor Adaptor → 3500 10
00 227 → B 11
S00 → B 12

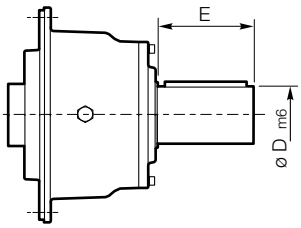
Click *i* button to return to main index

Click **DANA** button to return to section index

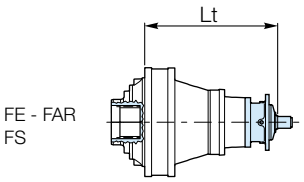
S-65 S-90 IS ISL



S-65CR1 - S-90CR1

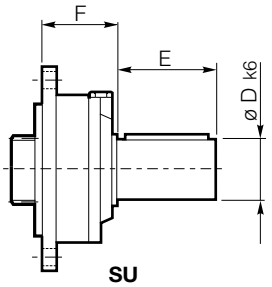


IS / ISL

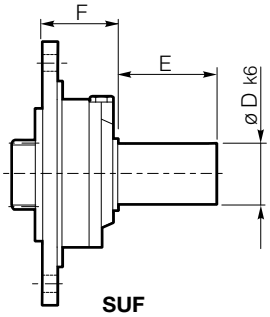


	D m6	E	Lt	
			SL35003	SL35004
S-65CR1	80	130	1143.5	1287.5
S-90CR1	90	170	1149.5	-
ISL150	90	130	-	1165.5
ISL300	90	130	1008	-
IS300	100	210	1129	-

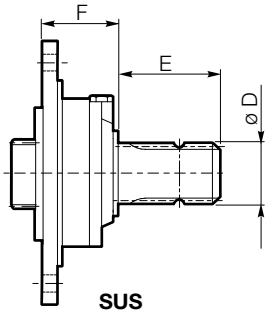
SU - SUF - SUS



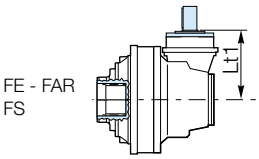
SU



SUF

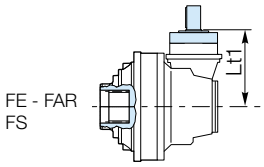


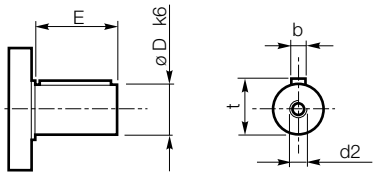
SUS



	D k6	E	F	Lt1 00
				SC35004
SU/SUF.1	28	50	60	438
SU/SUF.2	40	58	60	
SU/SUF.3	48	82	60	
SU2 1.5X3.25	38.1	82.55	60	
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	479.5
SU 42x80	48	80	101.5	

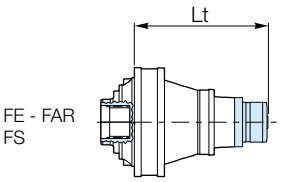
65.105

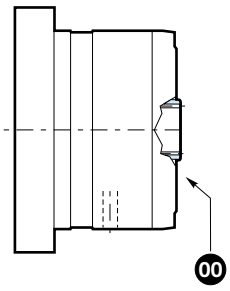




	D k6	E	b	t	d2	Lt1 SC35004
65.105	65	105	18	69	M20x42	376

FL5” - FL6”

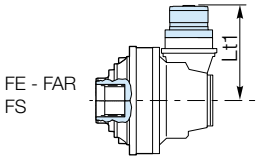


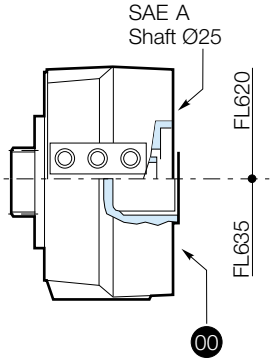


		Lt	
		SL35003	SL35004
FL5”	FL250.4C FL250.6C	-	1174.5
	FL350.6C FL350.8C	-	1174.5
	FL450.6C FL450.8C	-	1174.5
	FL650.10C FL650.12C FL650.14C	-	1188
	FL750.10C FL750.12C FL750.14C	-	1188
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	1071	1202

3500

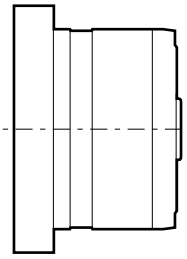
FL620.U - FL635.U

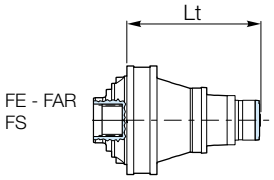




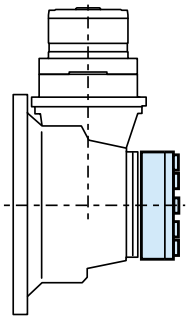
	Lt 00
	SC35004
FL620.U	482.5
FL635.U	469

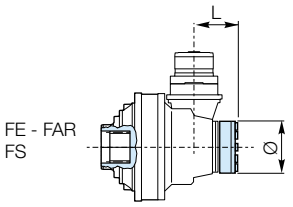
RL





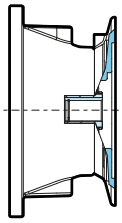
			Lt	
			SL35003	SL35004
RL	+	FL250 FL350 FL450	-	1200.5
		FL650 FL750	-	1214
		FL960	1097	1128

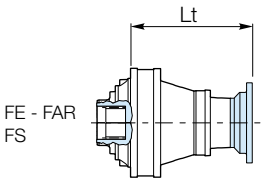


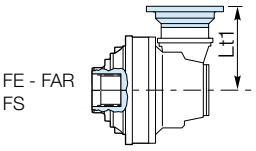


			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

IEC Motor







	Lt - Lt1		
	SL35003 S00	SL35004 S00	SC35004 00 Z27
IEC 180	-	1170.5	504
IEC 200	1026	1170.5	540
IEC 225	1056	1200.5	-
IEC 250	1056	-	-
IEC 280	1056	-	-
SHAFT_IEC225	-	-	560

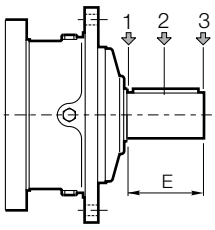
NEMA Motor

Please consult NEMA Motor Flange in page B 15

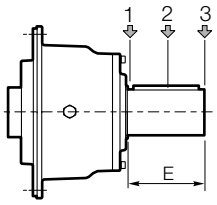
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page B 14

Input Radial Loads

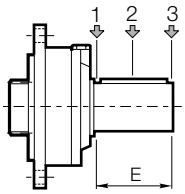


S...



IS / ISL

		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484



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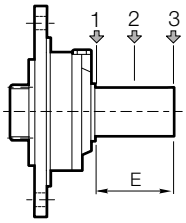
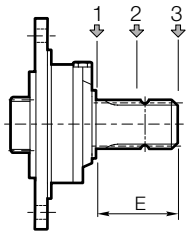


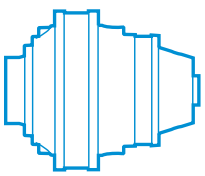
SUF



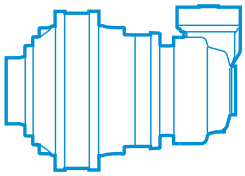
SUS

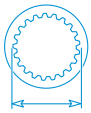
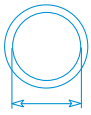
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

DANA
BREVINI®
Motion Systems



5000



i_{eff}	4.18 - 1338
T_{2N}	530000 Nm
	N340x8x30x41x9H DIN5480
	340 mm

5000

TECHNICAL DATA

10000 hours life

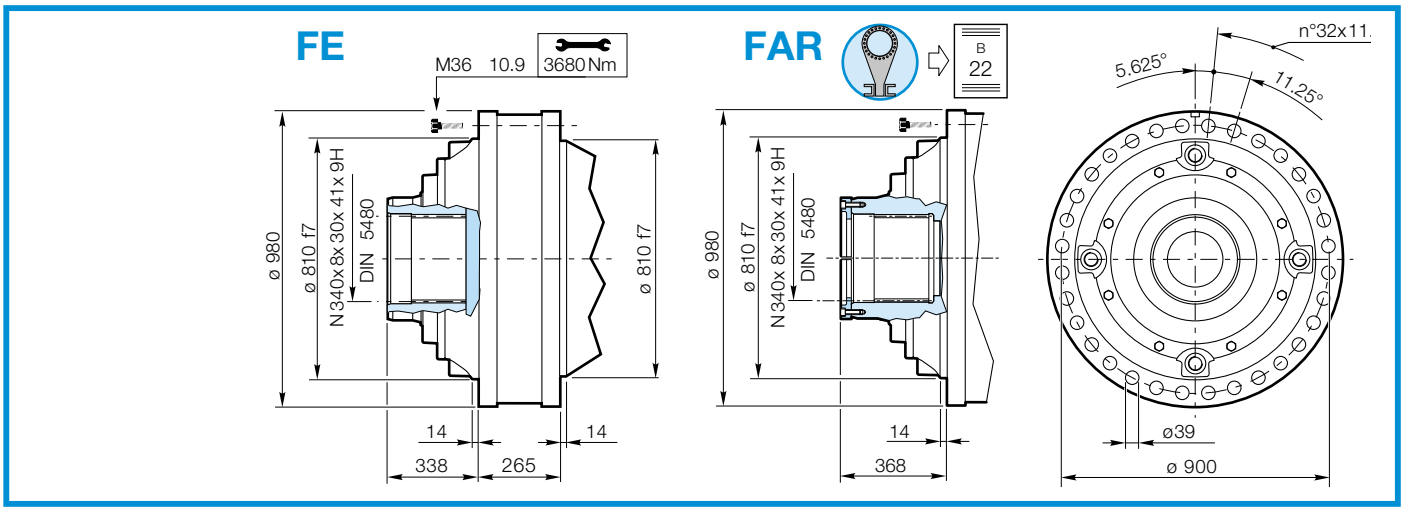
i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL50003												
76.01	20	428141	887	13	484649	668	6.6	511731	352			
88.92	17	471922	834	11	492649	580	5.6	522649	308			
104.0	14	483882	731	10	498202	502	4.8	536721	270			
109.1	14	458962	661	9.2	499894	480	4.6	541061	260			
120.8	12	413737	538	8.3	426013	369	4.1	457258	198	2000	1100000	100
127.6	12	491094	604	7.8	505477	415	3.9	555554	228			
148.2	10	419915	445	6.7	432262	306	3.4	473447	167			
156.6	9.6	474948	476	6.4	490609	328	3.2	517256	173			
181.8	8.3	426125	368	5.5	438558	253	2.8	490129	141			
SL50004												
307.1	4.9	535259	274	3.3	573053	195	1.6	609705	104			
342.0	4.4	545094	250	2.9	583487	179	1.5	617925	95			
389.1	3.9	557071	225	2.6	596196	160	1.3	627896	84			
400.1	3.7	559680	220	2.5	598965	157	1.2	630063	82			
420.2	3.6	564309	211	2.4	602363	150	1.2	633902	79			
468.1	3.2	574604	193	2.1	603811	135	1.1	642416	72			
490.9	3.1	579208	185	2.0	604451	129	1.0	646215	69			
515.6	2.9	583978	178	1.9	605109	123	1.0	650143	66			
558.6	2.7	591835	166	1.8	606183	114	0.90	656599	62	2500	1100000	75
598.6	2.5	497885	131	1.7	532956	93	0.84	598047	52			
653.5	2.4	602846	145	1.6	614426	98	0.79	669425	54			
704.7	2.1	533003	119	1.4	548979	82	0.71	595167	44			
803.0	1.9	605612	118	1.2	630329	82	0.62	686619	45			
939.3	1.6	611187	102	1.1	642687	72	0.53	699983	39			
1091	1.4	550531	79	0.92	588884	57	0.46	660106	32			
1153	1.3	552424	75	0.87	574624	52	0.43	648065	29			
1338	1.1	569590	67	0.75	609137	47	0.37	682586	27			

10000 hours life

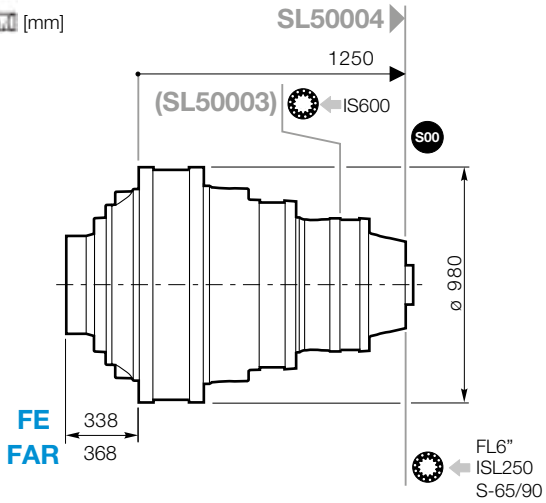
i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SC50005												
779.9	1.9	605221	122	1)			1)			1800	1100000	50
912.4	1.6	608980	105									
1050	1.4	619616	93									
1156	1.3	627152	85									
1310	1.1	636900	76									
1459	1.0	645451	70									

1) Consult the DANA area contact person.

GEARBOX DIMENSIONS WITH OUTPUT

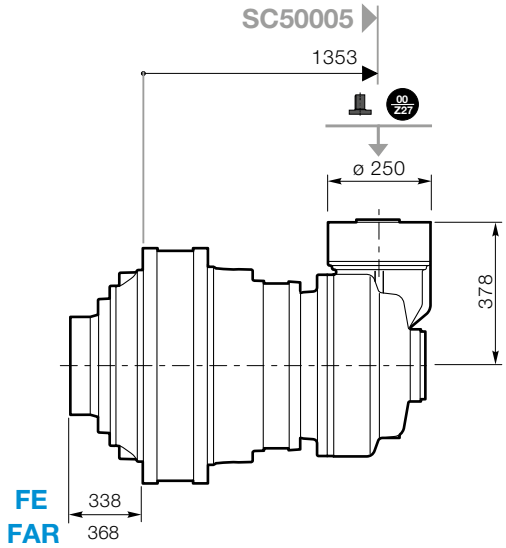


[mm]



S00 Motor Adaptor

[mm]

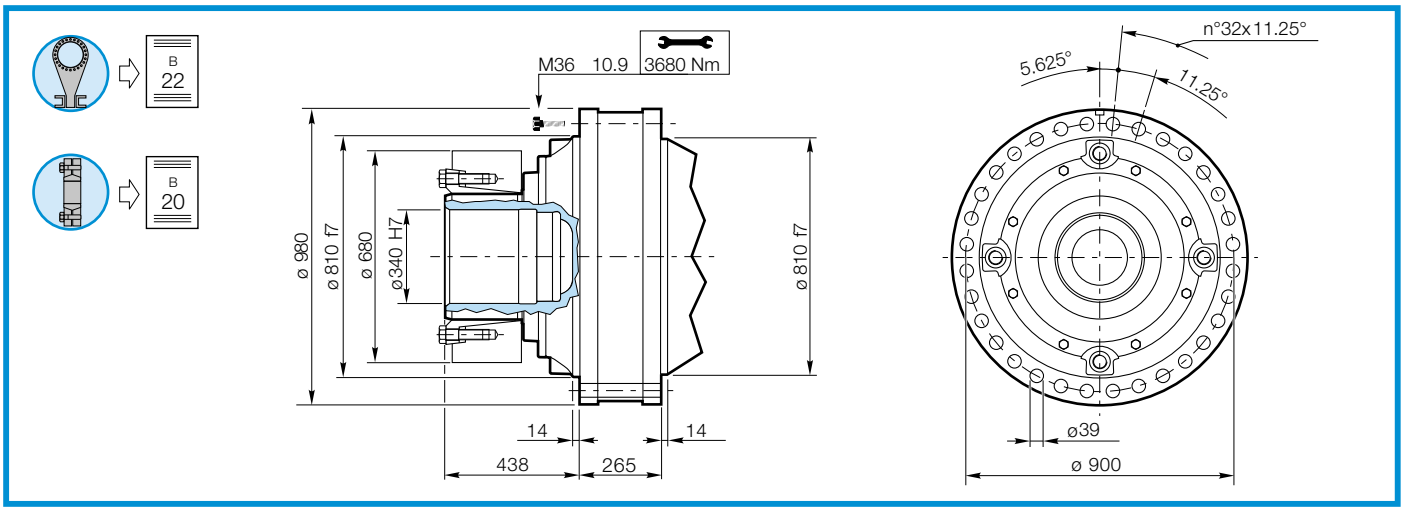


00 227 FL620.U/635.U SU-SUF-SUS UPC Motor Adaptor

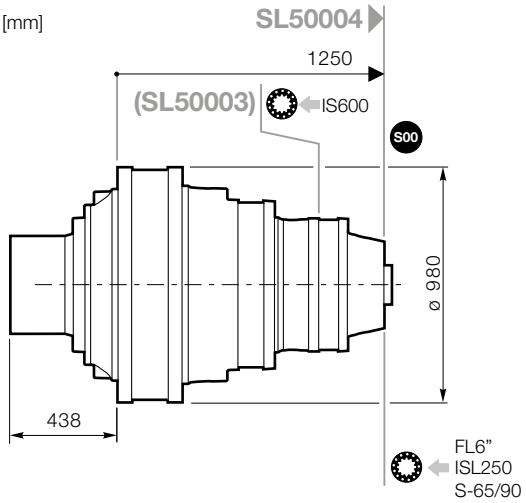
65.105 (VARIANT) only without FL5"

S-65/90 IS ISL → 5000 6
SU SUF SUS → 5000 6
65.105 → 5000 7
FL6" FL620/635 → 5000 8
Motor Adaptor → 5000 10
00 227 → B 11
S00 → B 12

Click **DANA** button to return to section index
Click *i* button to return to main index

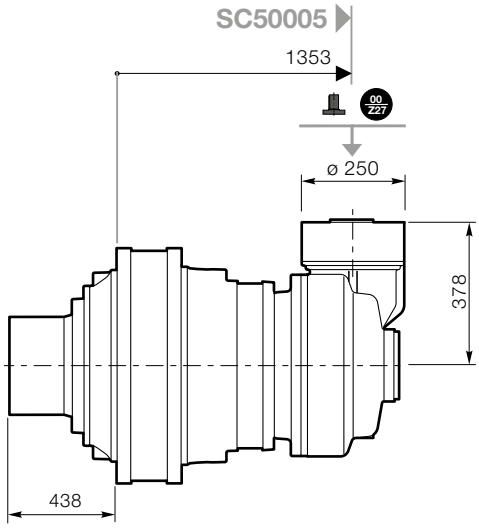


[mm]



S00 Motor Adaptor

[mm]



00 227 FL620.U/635.U SU-SUF-SUS UPC Motor Adaptor

65.105 (VARIANT) only without FL5"

5000

S-65/90 IS ISL → 5000 6

SU SUF SUS → 5000 6

65.105 → 5000 7

FL6" FL620/635 → 5000 8

Motor Adaptor → 5000 10

00 227 → B 11

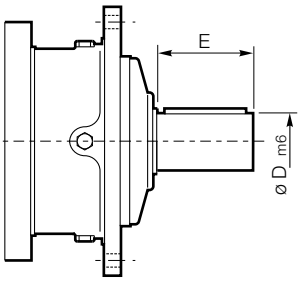
S00 → B 12

Click *i* button to return to main index

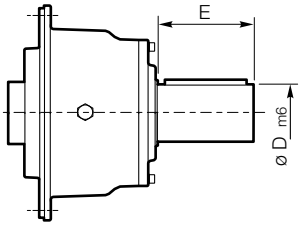
Click **DANA** button to return to section index

INPUT SHAFT

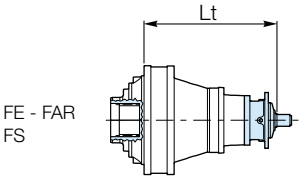
S-65 S-90 IS ISL



S-65CR1 - S-90CR1

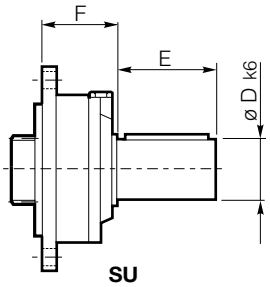


IS / ISL

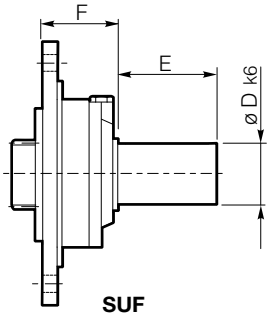


	D m6	E	L	S DIN5482	Lt	
					SL50003	SL50004
S-65CR1	80	130	-	-	-	1442.5
S-90CR1	90	170	-	-	-	1448.5
ISL250	90	130	-	-	-	1320
IS600	110	210	-	-	1264	-

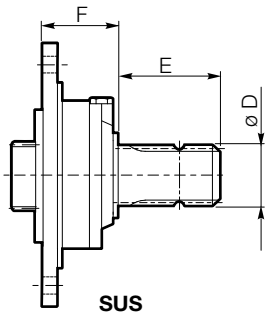
SU - SUF - SUS



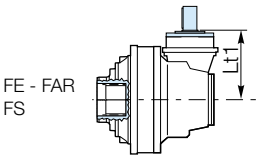
SU



SUF



SUS



	D k6	E	F	Lt1
				SC50005
SU/SUF.1	28	50	60	438
SU/SUF.2	40	58	60	
SU/SUF.3	48	82	60	
SU2 1.5X3.25	38.1	82.55	60	
SUS 1 3/8"	1 3/8" DIN9611	97	101.5	479.5
SU 42x80	48	80	101.5	

5000

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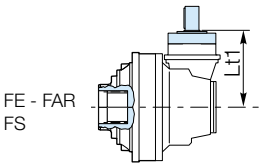
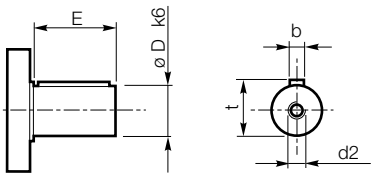
Click *i* button to return to main index

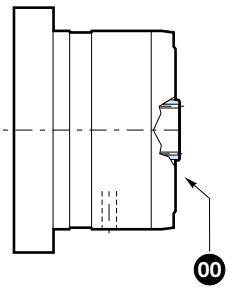
65.105

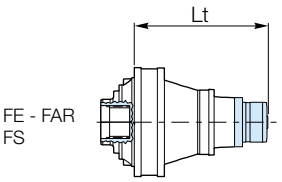




		D k6	E	b	t	d2	Lt1 SC50005
	65.105	65	105	18	69	M20x42	376

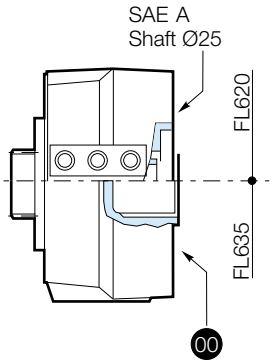
FL5” - FL6”

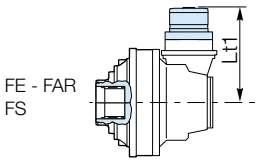




		Lt
		SL50004
FL6”	FL960.12C FL960.14C FL960.16C FL960.18C	1370

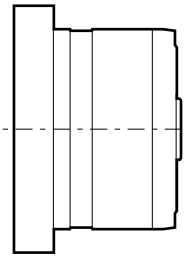
FL620.U - FL635.U

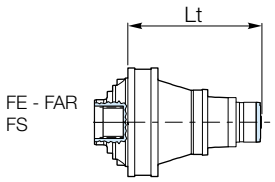




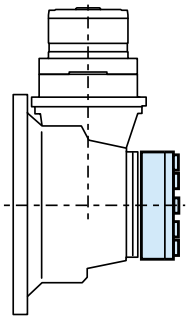
	Lt1 00
	SC50004
FL620.U	482.5
FL635.U	469

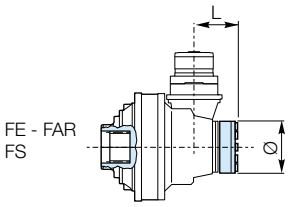
RL





			Lt
			SL50004
RL	+	FL250 FL350 FL450	-
		FL650 FL750	-
		FL960	1396

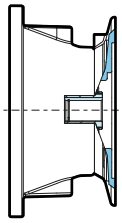


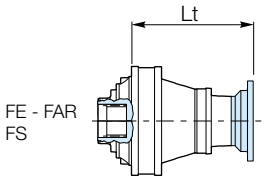


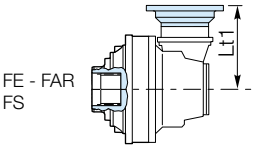
			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

5000

IEC Motor







	Lt - Lt1	
	SL50004 S00	SC50005 00 Z27
IEC 180	-	504
IEC 200	-	540
IEC 225	-	-
IEC 250	-	-
IEC 280	1355	-
SHAFT_IEC225	-	560

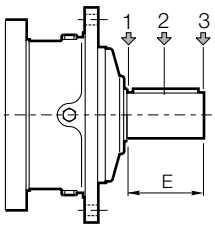
NEMA Motor

Please consult NEMA Motor Flange in page B 15

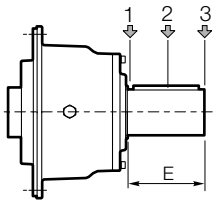
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page B 14

Input Radial Loads

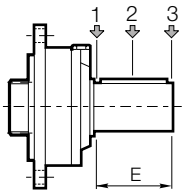


S...

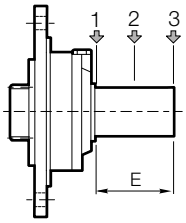


IS / ISL

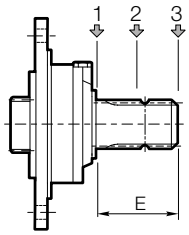
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL250	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484



SU



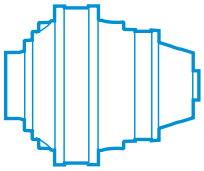
SUF



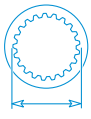
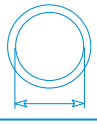
SUS

		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

DANA
BREVINI®
Motion Systems



7500

i_{eff}	85.80 - 11486
T_{2N}	735000 Nm
	N400x8x30x48x9H DIN5480
	400 mm

TECHNICAL DATA

10000 hours life

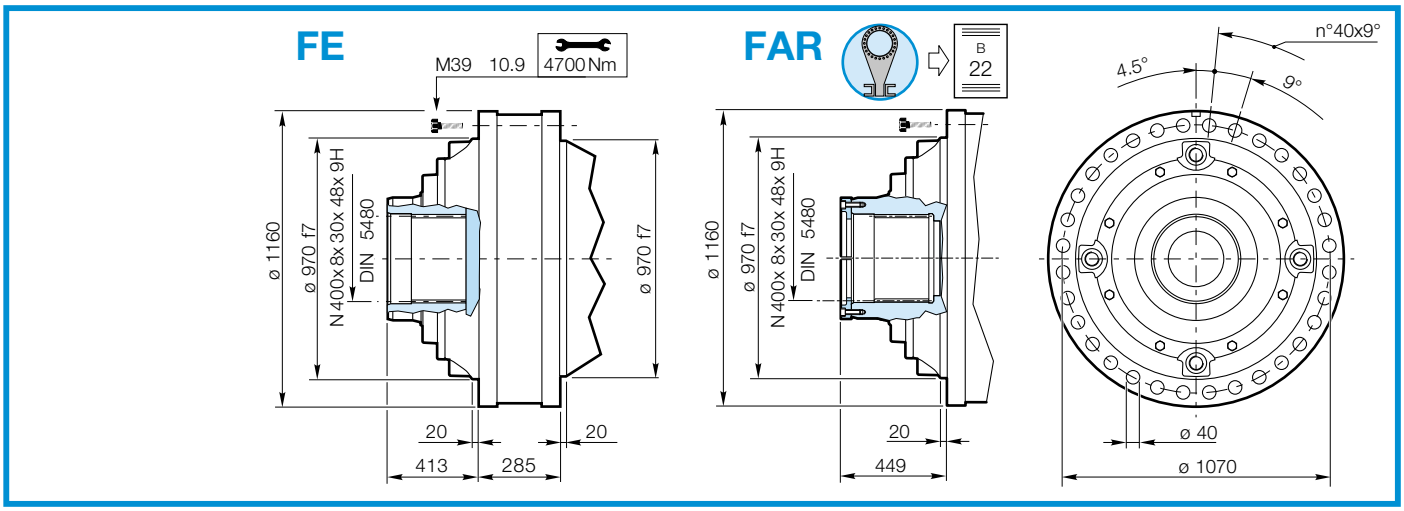
i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL75003												
85.80	18	633972	1161	12	696113	850	5.8	731251	446			
100.4	15	683605	1070	10	704020	735	5.0	744277	388			
117.4	13	691497	925	8.5	711947	635	4.3	764264	341			
123.1	12	693897	885	8.1	714362	608	4.1	770431	328	1500	1800000	120
144.1	10	701799	765	6.9	722329	525	3.5	791015	288			
176.8	8.5	712133	633	5.7	732775	434	2.8	799062	237			
208.1	7.2	605370	457	4.8	622977	314	2.4	693908	175		1500000	
SL75004												
346.6	4.3	762189	346	2.9	815869	247						
405.5	3.7	782585	303	2.5	836709	216						
451.6	3.3	796876	277	2.2	838731	195						
497.5	3.0	809887	256	2.0	840544	177						
554.1	2.7	824609	234	1.8	842564	159						
630.5	2.4	837384	209	1.6	856058	142						
704.5	2.1	839464	187	1.4	867918	129	-			2000	1800000	90
795.4	1.9	823049	163	1.3	847372	112						
906.3	1.7	851545	148	1.1	895413	103						
1060	1.4	868284	129	0.9	912926	90						
1301	1.2	852615	103	0.8	886391	71						
1532	1.0	806091	83	0.7	861922	59					1500000	

10000 hours life

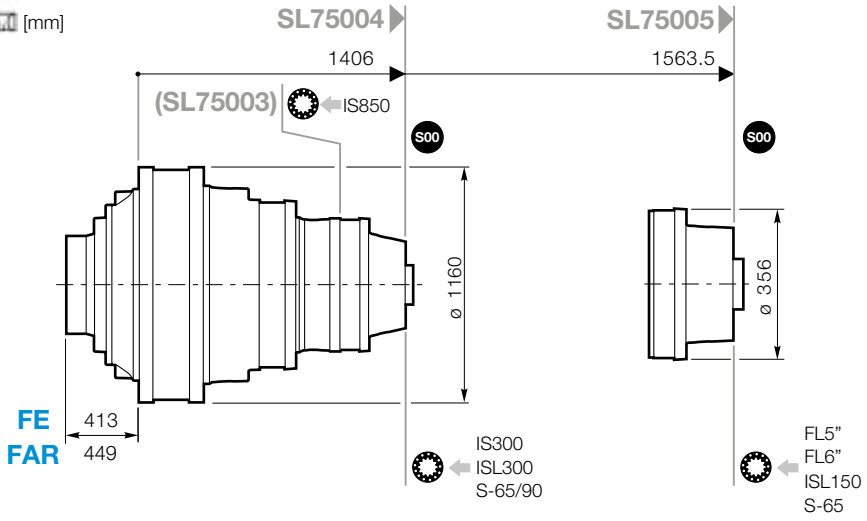
i_{eff}	1500			1000			500			n_{1MAX}	T_{2MAX}	P_T
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	[rpm]	[Nm]	[kW]
SL75005												
1369	1.1	896186	103									
1602	0.90	913713	90									
1784	0.80	925941	82									
1874	0.80	931552	78									
1996	0.80	938849	74									
2223	0.70	951336	67									
2517	0.60	966004	60									
2804	0.50	978872	55									
3170	0.50	993708	49									
3558	0.40	1007839	45	-			-			2500	1800000	70
4006	0.40	1022585	40									
4433	0.30	1035326	37									
5139	0.30	1045706	32									
5750	0.30	1065738	29									
6362	0.20	1081994	27									
6798	0.20	1090725	25									
7954	0.20	1111780	22									
9757	0.15	1139724	18									
11486	0.13	1102669	15								1500000	

1) Consult the DANA area contact person.

GEARBOX DIMENSIONS WITH OUTPUT



[mm]

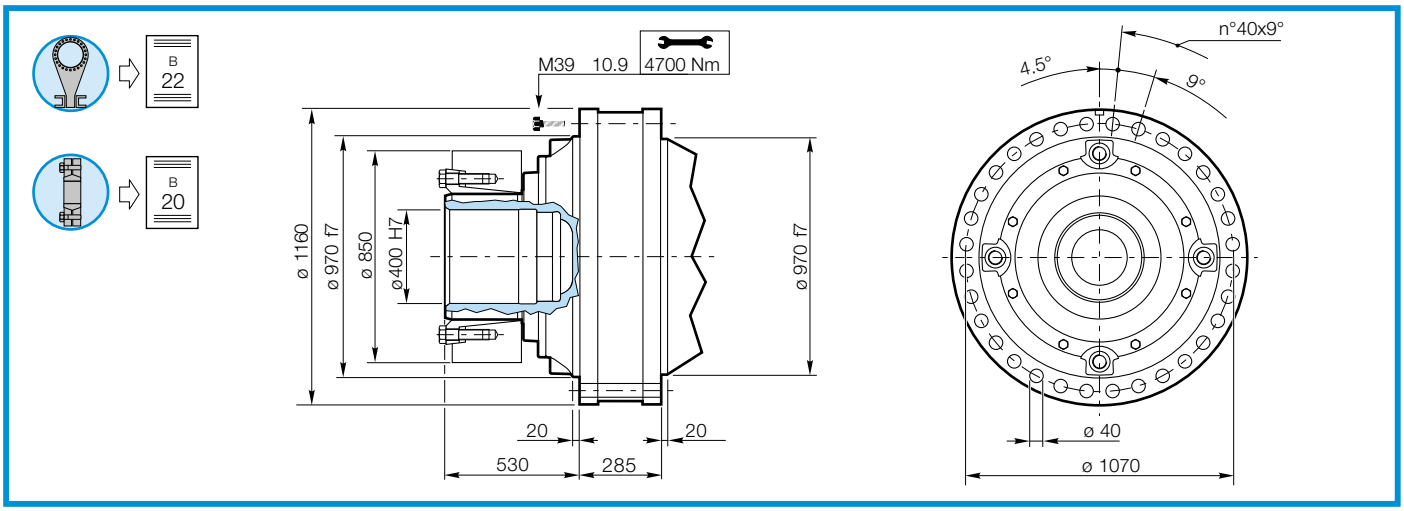


S00 Motor Adaptor

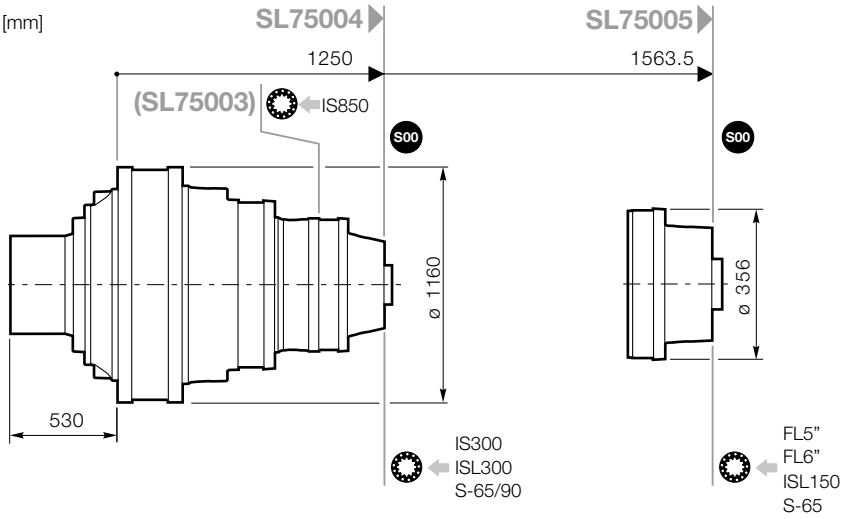
7500

S-65/90 IS ISL → 7500 6
FL5" FL6" → 7500 6
Motor Adaptor → 7500 8
S00 → B 12

Click **DANA** button to return to section index
Click *i* button to return to main index



[mm]



S00 Motor Adaptor

S-65/90 IS ISL → 7500 6

FL5" FL6" → 7500 6

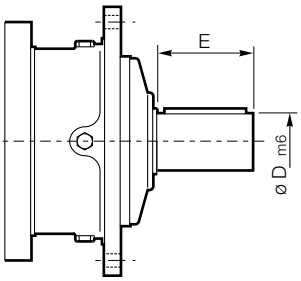
Motor Adaptor → 7500 8

S00 → B 12

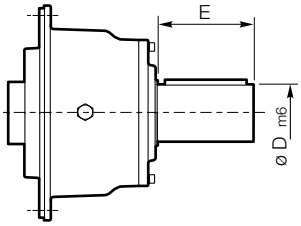
Click *i* button to return to main index

Click **DANA** button to return to section index

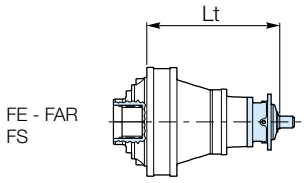
S-65 S-90 IS ISL



S-65CR1 - S-90CR1

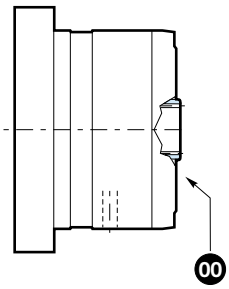


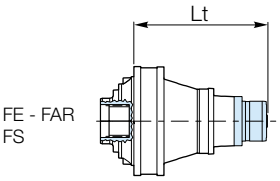
IS / ISL



	D m6	E	Lt		
			SL75003	SL75004	SL75005
S-65CR1	80	130	-		1755.5
S-90CR1	90	170	-	1611.5	-
ISL150	90	130	-	1617.5	1633.5
ISL300	90	130	-	1476	-
IS300	100	210	-	1597	-
IS850	110	210	1456	-	-

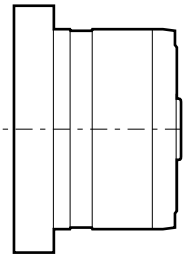
FL5" - FL6"

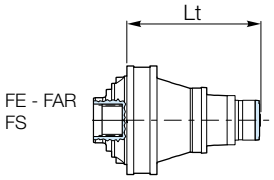




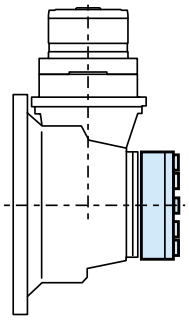
		Lt	
		SL75004	SL75005
FL5"	FL250.4C FL250.6C	-	1642.5
	FL350.6C FL350.8C	-	1642.5
	FL450.6C FL450.8C	-	1642.5
	FL650.10C FL650.12C FL650.14C	-	1656
	FL750.10C FL750.12C FL750.14C	-	1656
FL6"	FL960.12C FL960.14C FL960.16C FL960.18C	1539	1670

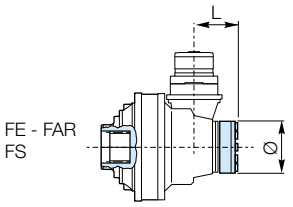
RL





			Lt	
			SL75004	SL75005
RL	+	FL250 FL350 FL450	-	1668.5
		FL650 FL750	-	1682
		FL960	1565	1696

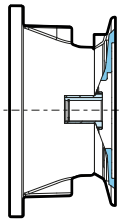


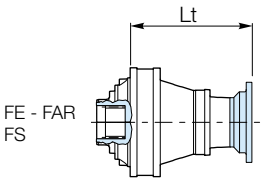


			L	Ø
RL	+	CC40	135.2	150
		CC41	135.8	150

7500

IEC Motor





	Lt S00	
	SL75004	**SL75005**
IEC200	-	1645
IEC225	-	1675
IEC280	1511	-

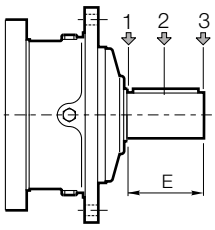
NEMA Motor

Please consult NEMA Motor Flange in page B 15

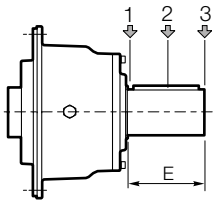
Other flanges available on request for NEMA sizes 254 to 500.
Please contact Sales for further information.

For further flange types, please consult from page B 14

Input Radial Loads

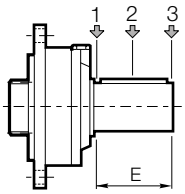


S...

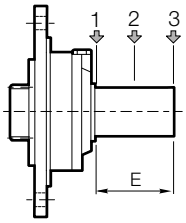


IS / ISL

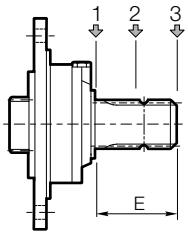
		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48824	33068	22914	24465	16573	11484
IS850	210	52261	39088	29352	28197	19590	14711



SU



SUF



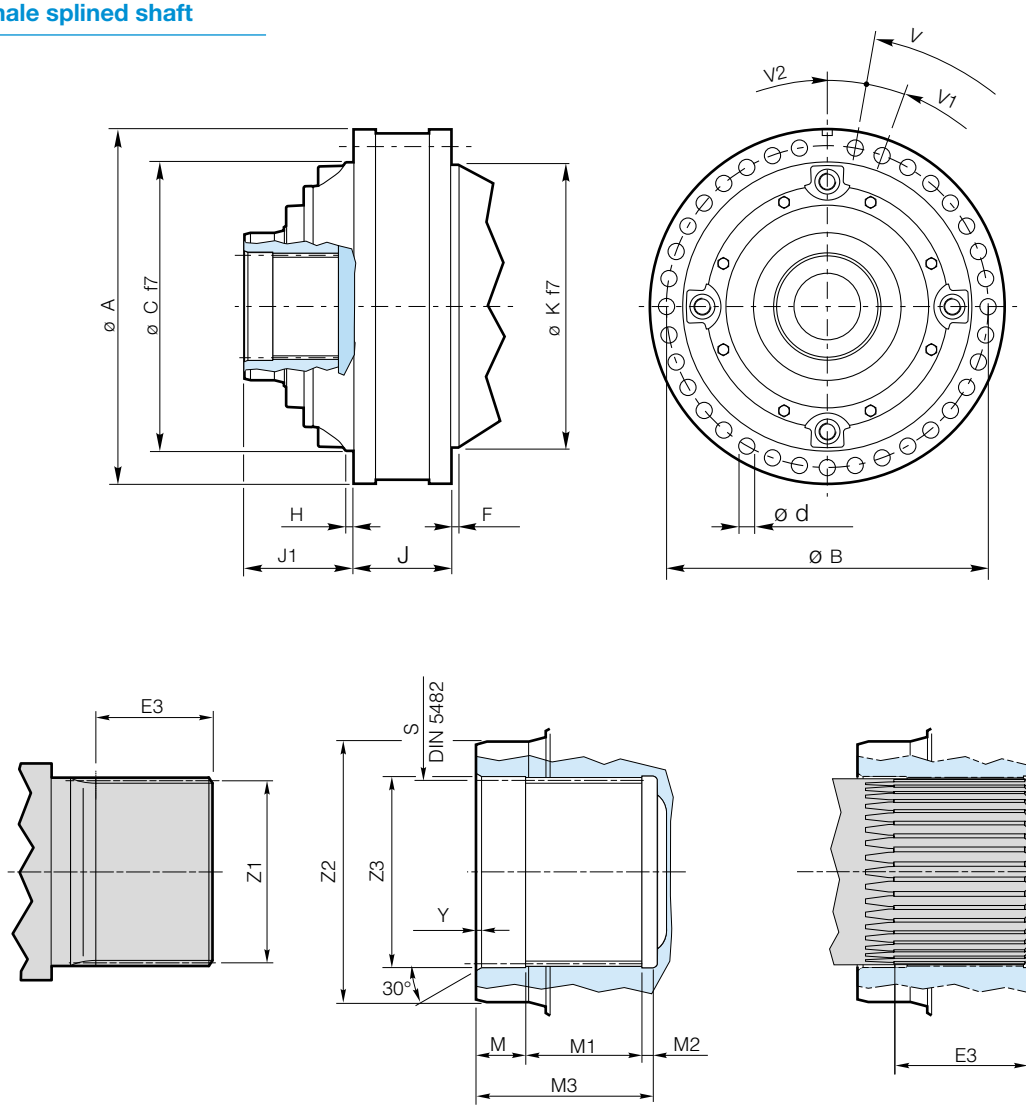
SUS

		F_{r1} [N]					
		$n_1 . h = 10^7$			$n_1 . h = 10^8$		
Type	**E**	**1**	**2**	**3**	**1**	**2**	**3**
SU 42x80	80	3000	2000	1500	1400	1000	700
SUS 1 3/8”	97	2800	1800	1500	1300	900	600
SU2 1 1/2”x 3 1/4”	82.55	3000	2000	1500	1400	1000	700
SUF1 28x50	50	3000	2000	1500	1400	1000	700
SUF2 40x58	58	3000	2000	1500	1400	1000	700
SUF3 48x82	82	3000	2000	1500	1400	1000	700

DANA
BREVINI®
Motion Systems

B

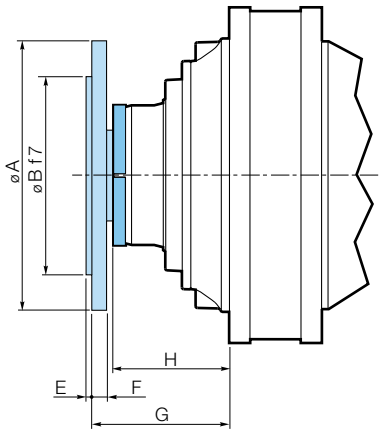
FE Female splined shaft

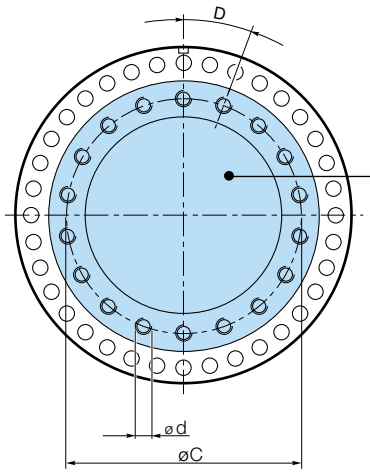


	A	B	C	d	E2	E3	F	H	J	J1	K	M	M1	M2	M3
S300	445	400	370	15.5	2	>90	12	10	124	117	365	15	90	–	105
S400	445	400	370	15.5	10	>92	12	10	124	140	365	15	90	10	115
S600	510	460	410	22	10	>87	12	12	142	160	415	45	85	10	140
S850	565	510	460	26	10	>107	10	11	156	174	450	45	105	10	160
S1200	635	575	520	26	15	>125	15	12	175	205	520	45	120	15	180
S1800	710	650	595	26	15	>135	16	14	185	213	595	45	130	15	190
S2500	810	735	665	33	15	>145	15	12	195	227	665	50	140	15	205
S3500	885	810	740	33	17	>178	14	14	235	260	740	50	170	17	237
S5000	980	900	810	39	17	>208	14	14	265	338	810	60	200	17	277

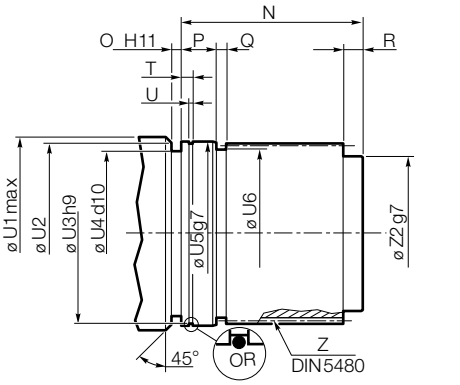
	S	V	V1	V2	Y	Z1	Z2	Z3
S300	N120x5x30x22x9H	n°35x10°	10°	10°	1x45°	W120x5x30x22x8g	165	122
S400	N140x5x30x26x9H	n°35x10°	10°	10°	3x30°	W140x5x30x26x8g	185	142
S600	N150x5x30x28x9H	n°28x12.857°	12.857°	6.428°	5x30°	W150x5x30x28x8g	218	152
S850	N170x5x30x32x9H	n°28x12.857°	12.857°	6.428°	5x30°	W170x5x30x32x8g	235	172
S1200	N200x5x30x38x9H	n°32x11.25°	11.25°	5.625°	5x30°	W200x5x30x38x8g	275	202
S1800	N210x5x30x40x9H	n°32x11.25°	11.25°	5.625°	5x30°	W210x5x30x40x8g	297	212
S2500	N240x5x30x46x9H	n°32x11.25°	11.25°	5.625°	5x30°	W240x5x30x46x8g	338	242
S3500	N280x8x30x34x9H	n°36x10°	10°	5°	5x30°	W280x8x30x34x8g	358	282
S5000	N340x8x30x41x9H	n°32x11.25°	11.25°	5.625°	5x30°	W340x8x30x41x8g	435	342

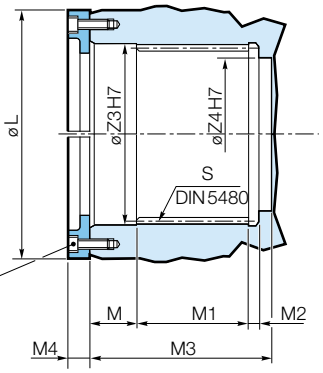
FAR Female splined shaft





Driving flange (on request)	code
S300	9008238
S400	9005880
S600	9005939
S850	9005821
S1200	9006563
S1800	9006601
S2500	9008239
S3500	9007702
S5000	9006094





S300 ÷ S850	23.5 ÷ 25 Nm
S1200 ÷ S1800	47 ÷ 50 Nm
S2500 ÷ S5000	81 ÷ 86 Nm

	A	B	C	d*	D	E	F	G	H	L	M	M1	M2	M3	M4	N	O	OR
S300	360	220	300	M30	12x30°	10	30	177	137	165	15	90	–	117	20	115	9	113.97x2.62
S400	360	220	300	M30	14x25.71°	10	30	200	160	185	15	90	10	135	20	133	9	133.02x2.62
S600	400	260	340	M30	18x20°	10	30	220	180	218	45	85	10	157	20	155	9	145.72x2.62
S850	450	310	395	M30	22x16.36°	10	35	260	194	235	45	105	10	173	20	171	9	164.77x2.62
S1200	510	375	450	M30	22x16.36°	10	35	280	225	275	45	120	15	198	20	196	9	190.9x3.53
S1800	585	445	530	M30	30x12°	10	40	294	233	300	45	130	15	208	20	206	9	202.79x3.53
S2500	655	480	580	M36	24x15°	10	40	317	257	324	50	140	15	227	30	225	11	234.54x3.53
S3500	730	545	650	M36	30x12°	10	50	360	290	358	50	170	17	259	30	257	12	266.29x3.53
S5000	800	620	730	M36	36x10°	10	50	425	368	430	60	200	17	320	30	318	13	304.39x3.53

	P	Q	R	S	T	U	U1	U2	U3	U4	U5	U6	Z	Z2	Z3	Z4
S300	14	8	11.5	N120x5x30x22x9H	8.6	3.6	120	115	117.8	102	122	107	W120x5x30x22x8g	105	122	105
S400	14	10	26	N140x5x30x26x9H	8.6	3.6	140	130	137.8	122	142	127	W140x5x30x26x8g	120	142	120
S600	33	10	22	N150x5x30x28x9H	11	3.6	160	150	147.8	134	152	137	W150x5x30x28x8g	122	152	122
S850	33	10	18	N170x5x30x32x9H	11	3.6	180	170	167.8	154	172	157	W170x5x30x32x8g	145	172	145
S1200	33	10	28	N200x5x30x38x9H	12	4.8	220	206	196.4	189	202	187	W200x5x30x38x8g	170	202	170
S1800	33	10	28	N210x5x30x40x9H	12	4.8	240	226	206.4	199	212	197	W210x5x30x40x8g	180	212	180
S2500	38	10	36	N240x5x30x46x9H	12	4.8	260	246	236.4	228	242	227	W240x5x30x46x8g	220	242	220
S3500	38	10	34	N280x8x30x34x9H	12	4.8	300	280	276.4	264	282	260	W280x8x30x34x8g	235	282	235
S5000	45	15	58	N340x8x30x41x9H	14	4.8	360	340	336.4	320	342	320	W340x8x30x41x8g	320	342	320

* for screw class 10.9

Click *i* button to return to main index

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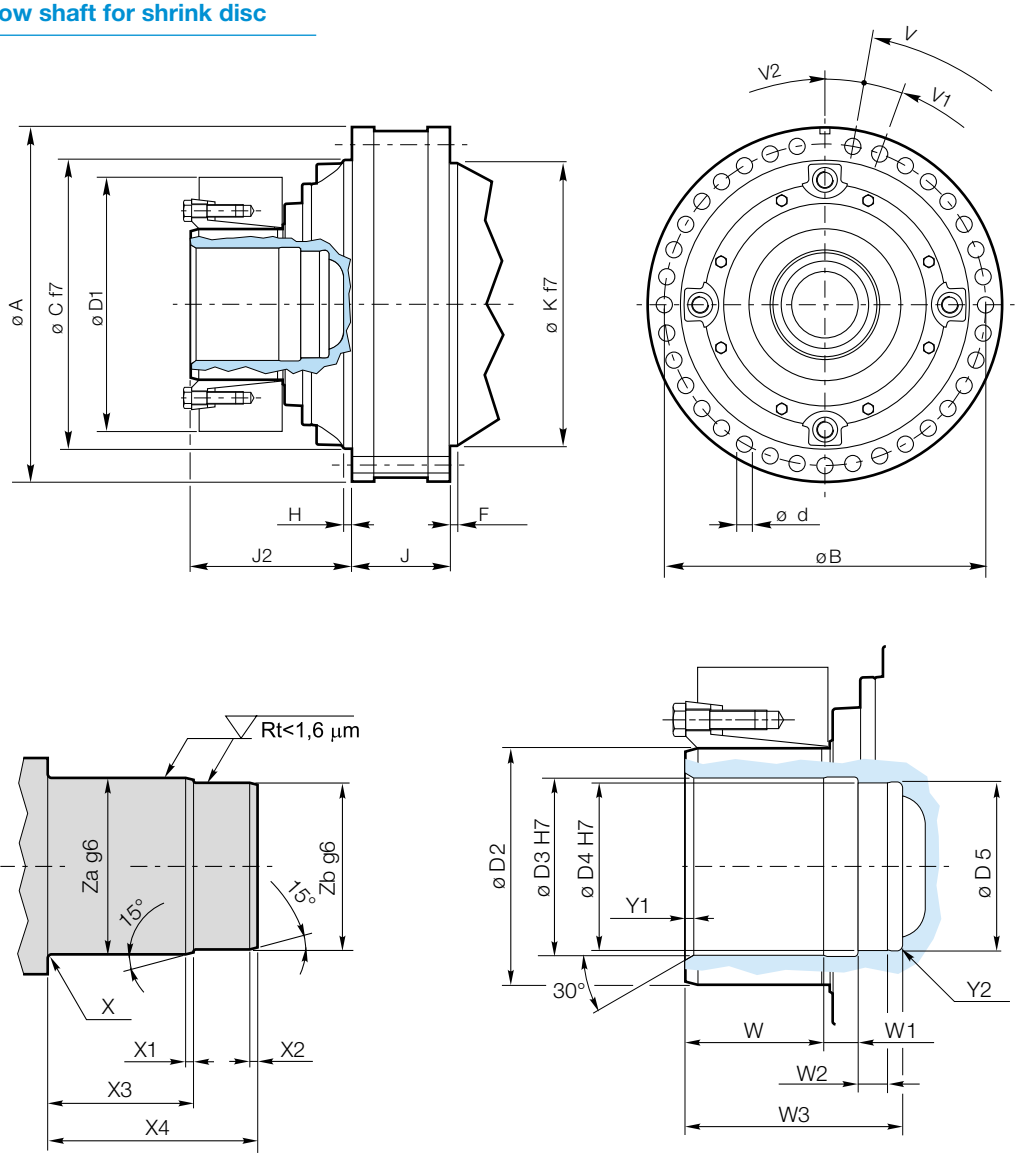
FS Hollow shaft for shrink disc



	A	B	C	d	D1	D2	D3	D4	D5	F	H	J	J2	K
S300	445	400	370	15.5	320	185	140	130	132	12	10	124	178	365
S400	445	400	370	15.5	320	185	140	130	132	12	10	124	208	365
S600	510	460	410	22	370	220	165	155	157	12	12	142	235	415
S850	565	510	460	26	405	240	180	170	172	10	11	156	257	450
S1200	635	575	520	26	460	280	220	210	212	15	12	175	315	520
S1800	710	650	595	26	485	300	240	230	232	16	14	185	322	595
S2500	810	735	665	33	570	340	260	250	252	15	12	195	358	665
S3500	885	810	740	33	590	360	290	280	282	14	14	235	368	740
S5000	980	900	810	39	680	420	340	330	332	14	14	265	438	810

	V	V1	V2	W	W1	W2	W3	X	X1	X2	X3	X4	Y1	Y2	Za	Zb
S300	n°35x10°	10°	10°	83	27	30	150	R 2 max	4	4	87	57	4	R 3.5	140	130
S400	n°35x10°	10°	10°	110	25	22	167	R 2.5 max	4	4	114	47	5	R 3.5	140	130
S600	n°28x12.857°	12.857°	6.428°	132	28	25	200	R 4 max	5	5	137	53	6	R 5	165	155
S850	n°28x12.857°	12.857°	6.428°	140	35	30	220	R 4 max	5	5	145	65	5	R 6	180	170
S1200	n°32x11.25°	11.25°	5.625°	179	40	32	269	R 4 max	5	5	184	72	8	R 10	220	210
S1800	n°32x11.25°	11.25°	5.625°	181	40	32	271	R 4 max	5	5	186	72	8	R 10	240	230
S2500	n°32x11.25°	11.25°	5.625°	211	45	37	311	R 4 max	5	5	216	82	8	R 10	260	250
S3500	n°36x10°	10°	5°	218	45	40	323	R 4 max	5	5	223	85	8	R 12	290	280
S5000	n°32x11.25°	11.25°	5.625°	260	45	40	365	R 4 max	5	5	265	85	8	R 12	340	330

Click **DANA** button to return to section index

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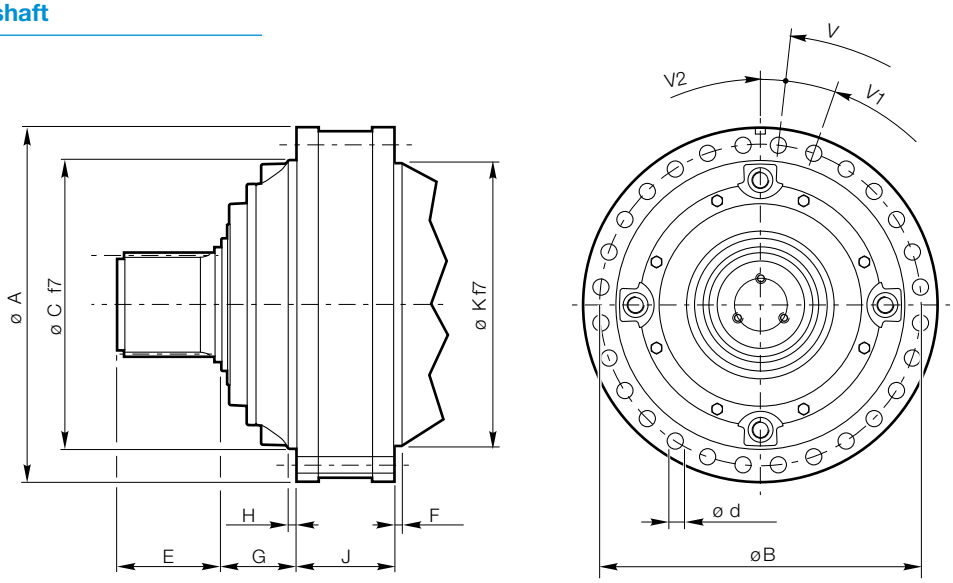
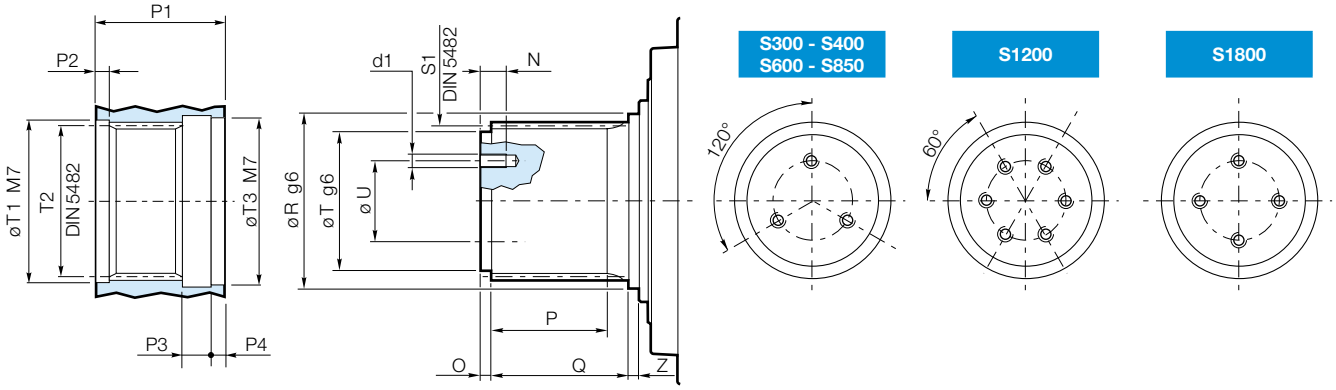
MP Splined shaft

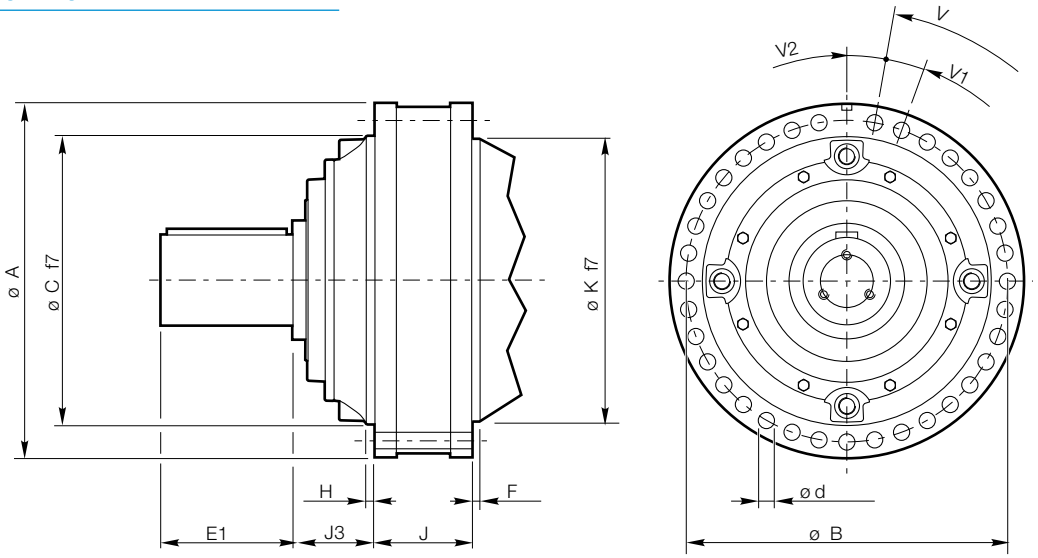


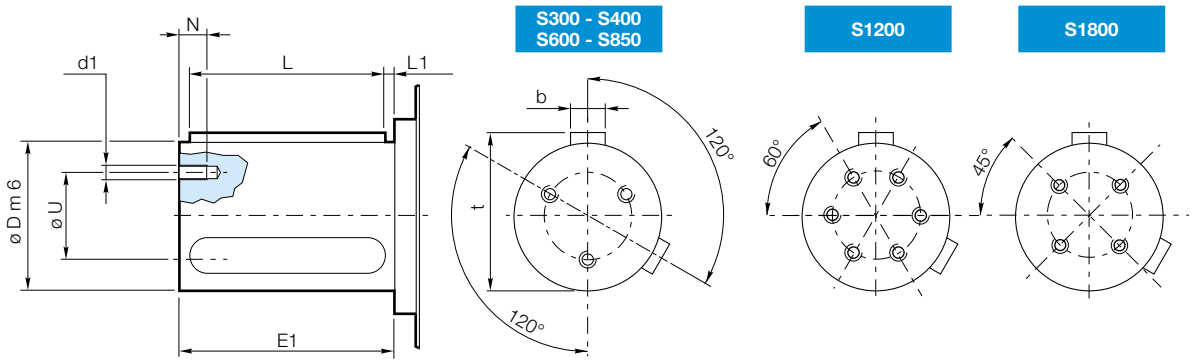


	A	B	C	d	d1	E	F	G	H	J	K	N	O	P
S300	445	400	370	15.5	M14	130	12	117	10	132	365	27	10	85
S400	445	400	370	15.5	M14	140	12	145	10	124	365	27	13	90
S600	510	460	410	22	M14	150	12	152	12	145	415	27	12	95
S850	565	510	460	26	M14	170	10	163	11	156	450	27	15	115
S1200	635	575	520	26	M16	200	12	188	12	175	520	30	20	130
S1800	710	650	595	26	M24	210	16	205	15	185	595	45	20	140

	P1	P2	P3	P4	Q	R	S1	T	T1	T2	T3	U	V	V1	V2	Z
S300	130	10	15	21	105	120	W120x3x30x38x8f	100	121	N120x3x9H	120	75	n°35x10°	10°	10°	15
S400	140	13	20	18	109	130	W130x3x30x42x8f	110	131	N130x3x9H	130	85	n°35x10°	10°	10°	18
S600	150	12	18	27	123	151	W150x5x30x28x8f	120	151	N150x5x9H	151	95	n°28x12.857°	12.857°	6.428°	15
S850	170	15	17	25	140	171	W170x5x30x32x8f	140	171	N170x5x9H	171	112	n°28x12.857°	12.857°	6.428°	15
S1200	200	21	20	30	180	200	W200x5x30x38x8f	170	200	N200x5x38x9H	200	140	n°32x11.25°	11.25°	5.625°	30
S1800	210	21	34	16	190	210	W220x5x30x42x8f	200	230	N220x5x30X42 9H	225	150	n°32x11.25°	11.25°	5.625°	15

MP1 Keyed cylindrical shaft

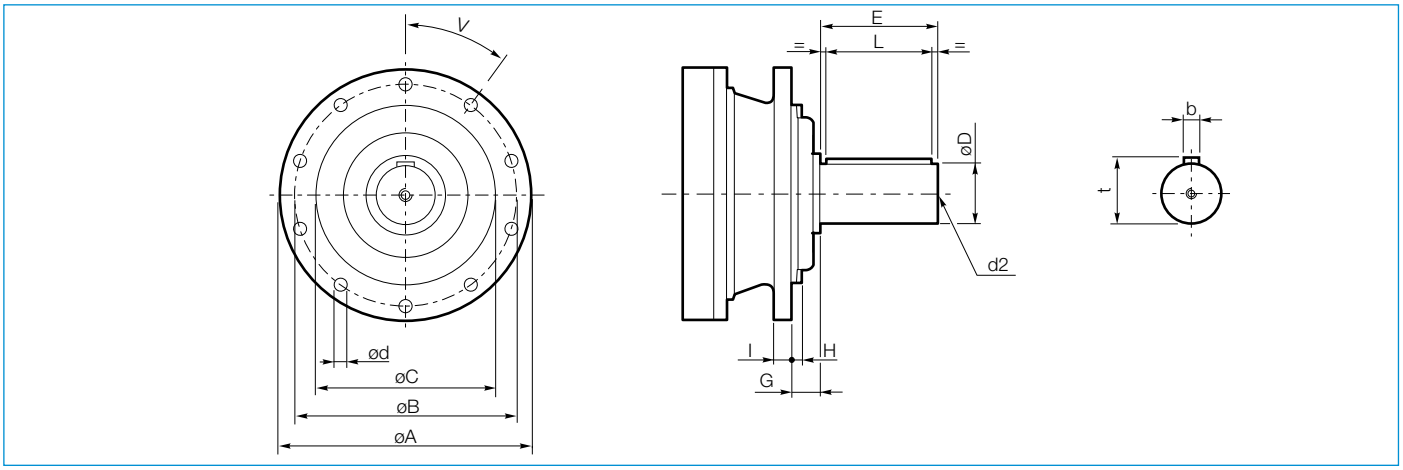




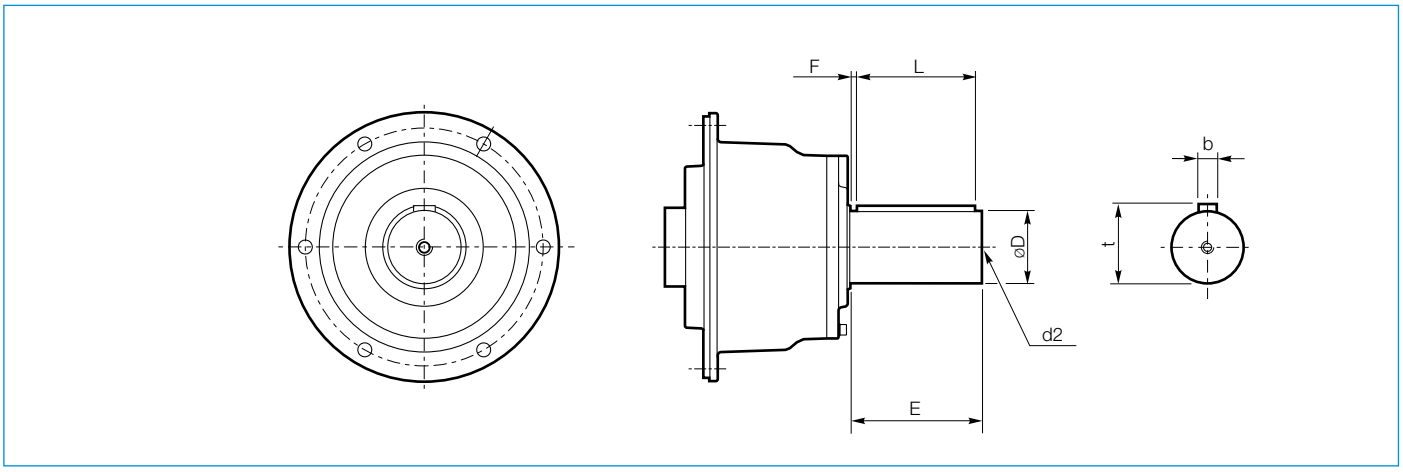
	A	B	b	C	D	d	d1	E1	F	H	J	J3	K	L	L1	N	t	U	V	V1	V2
S300	445	400	32	370	120	15.5	M14	210	12	10	132	117	365	200	5	27	127	75	n°35x10°	10°	10°
S400	445	400	32	370	130	15.5	M14	220	12	10	124	145	365	200	10	27	137	85	n°35x10°	10°	10°
S600	510	460	40	410	160	22	M14	240	12	12	145	152	415	220	10	27	169	120	n°28x12.857°	12.857°	6.428°
S850	565	510	40	460	170	26	M14	240	10	11	156	163	450	220	10	27	179	125	n°28x12.857°	12.857°	6.428°
S1200	635	575	45	520	200	26	M16	260	12	12	175	188	520	250	5	30	210	140	n°32x11.25°	11.25°	5.625°
S1800	710	650	56	595	250	26	M24	330	16	15	185	205	595	310	10	45	262	150	n°32x11.25°	11.25°	5.625°

Integral input version - inline version

Input shafts described below are used when the driving motor, which is usually electric, is connected to the input shaft by flexible coupling or belts and pulleys.
Normal mounting position is with horizontal axis; for different positions the lubrication solution must be adjusted: please consult the Dana area contact person.
Max working speed is generally 1800 min^{-1}.
The input shafts ISL are suitable for connection with elastic coupling.These types are suitable for using on specific gears types, as shown in the dimensional table of each gear size.



	A	B	C f7	D m6	E	G	H	I	L	b	d	d2 DIN332	t	V
S-45CR1	220	195	150	65	105	15	5	16	90	18	14	M20x42	69	n°10x36°
S-46C1	272	245	175	65	105	39	10	18	90	18	14	M20x42	69	n°10x36°
S-65CR1	280	250	200	80	130	40	14.5	20	110	22	16	M20x42	85	n°10x36°
S-90CR1	325	295	230	90	170	36	5	25	160	25	18	M24x50	95	n°12x30°

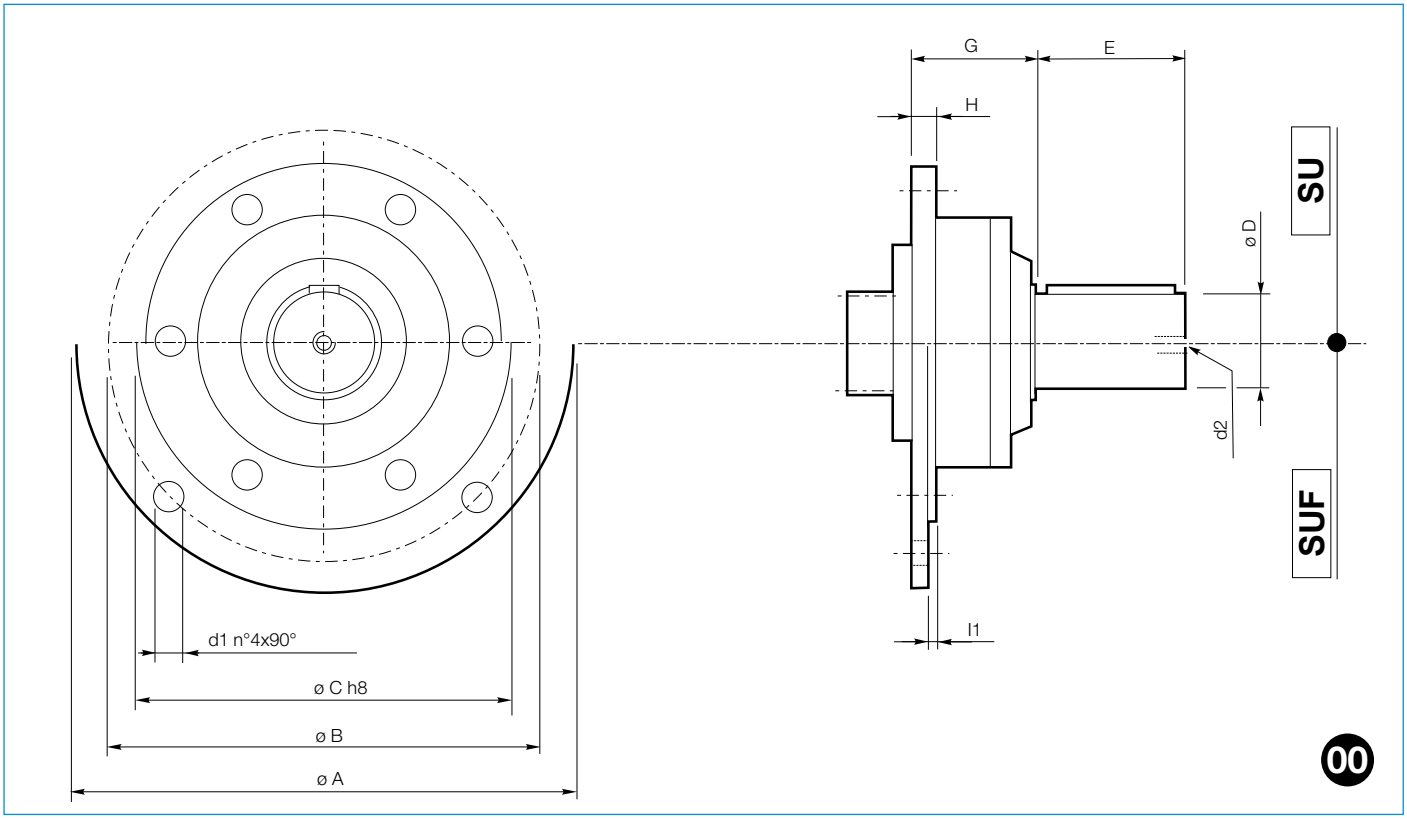


	D m6	E	t	b	F	L	d2 DIN332
ISL150	90	130	95	25	10	110	M24x50
ISL250							
ISL300							

	D m6	E	t	b	F	L	d2 DIN332
IS300	100	210	106	28	10	180	M24x50
IS600	110	210	116	28	10	180	M24x50
IS850	110	210	116	28	10	180	M24x50

Male supports for universal inputs

SU/SUF types are generally used with a flexible coupling. They can be mounted directly to any type of gearbox with universal input 00, and can be supplied separately. See the gearbox section for the dimensions and radial loads.



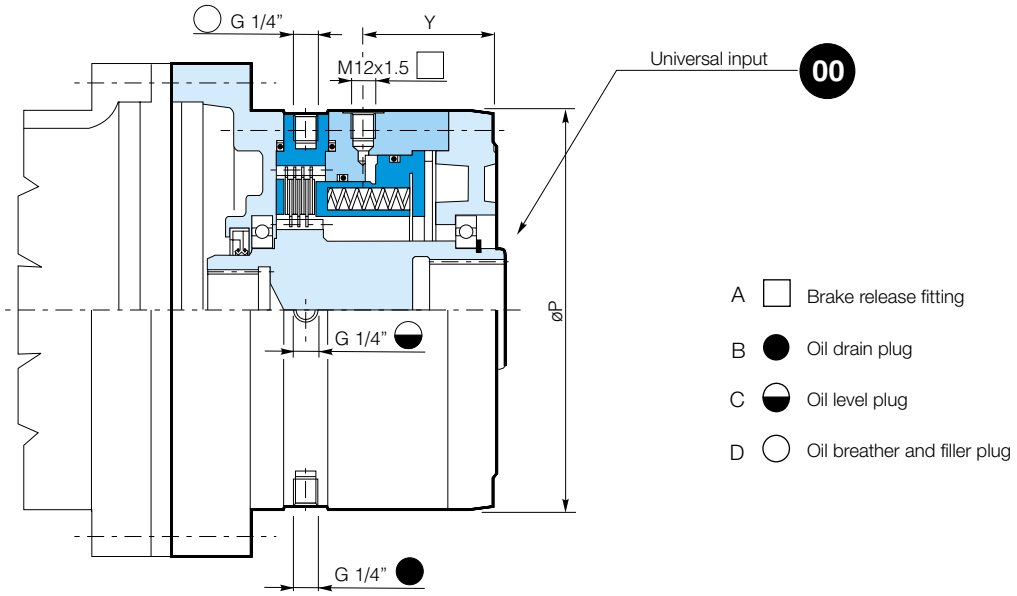
	A	B	C	D	d1	d2	E	G	H	l1	Code
SU1	–	–	–	28	–	M10x22	50	60	12	–	C1129800420
SU2	–	–	–	40	–	M10x22	58	60	12	–	C1129800380
SU3	–	–	–	48	–	M10x25	82	60	12	–	C1129800910
SUF1	250	215	180	28	13	M10x22	50	60	12	3	C1131900420
SUF2	250	215	180	40	13	M10x22	58	60	12	3	C1131900380
SUF3	250	215	180	48	13	M10x25	82	60	12	3	C1131900910

Oil-bath multi-disc brakes

The gearbox inputs can be equipped with hydraulically released oil-bath multi-disc brakes.

	T_B [Nm]	P [bar]	P_{max} [bar]	Vo [l] Mounting position horizontal	Vo [l] Mounting position vertical	Va [cm³]
FL250.4C	181	14	315	0.3	0.6	15
FL250.6C	278	14	315	0.3	0.6	15
FL350.6C	417	20	315	0.3	0.6	15
FL350.8C	571	20	315	0.3	0.6	15
FL450.6C	540	26	315	0.3	0.6	15
FL450.8C	737	26	315	0.3	0.6	15
FL620.14C	273	26	210	0.2	0.4	15
FL635.4C	125	15	300	0.2	0.4	15
FL.635.6C	188	15	300	0.2	0.4	15
FL635.10C	314	15	300	0.2	0.4	15
FL635.12C	377	15	300	0.2	0.4	15
FL650.10C	642	20	315	0.5	1.0	15
FL650.12C	792	20	315	0.5	1.0	15
FL650.14C	949	20	315	0.5	1.0	15
FL750.10C	834	26	315	0.5	1.0	15
FL750.12C	1027	26	315	0.0	1.0	15
FL750.14C	1229	26	315	0.5	1.0	15
FL960.12C	1528	22	315	1.2	2.4	22
FL960.14C	1783	22	315	1.2	2.4	22
FL960.16C	2038	22	315	1.2	2.4	22
FL960.18C	2293	22	315	1.2	2.4	22

T_B: Average static brake torque
P: Brake release pressure
Pmax: Max. pressure
Vo: Oil volume
Va: Oil volume for brake release control. It refers with new discs.



	P [mm]	Y [mm]	PLUGS A	PLUGS B	PLUGS C	PLUGS D	Weight [kg]
FL250	195	67	M12x1.5	R 1/4"	R 1/4"	R 1/4"	24
FL350	195	67					24
FL450	195	67					26
FL650	195	67					36
FL750	195	67					37
FL960	225	72.5					42

Click *i* button to return to main index
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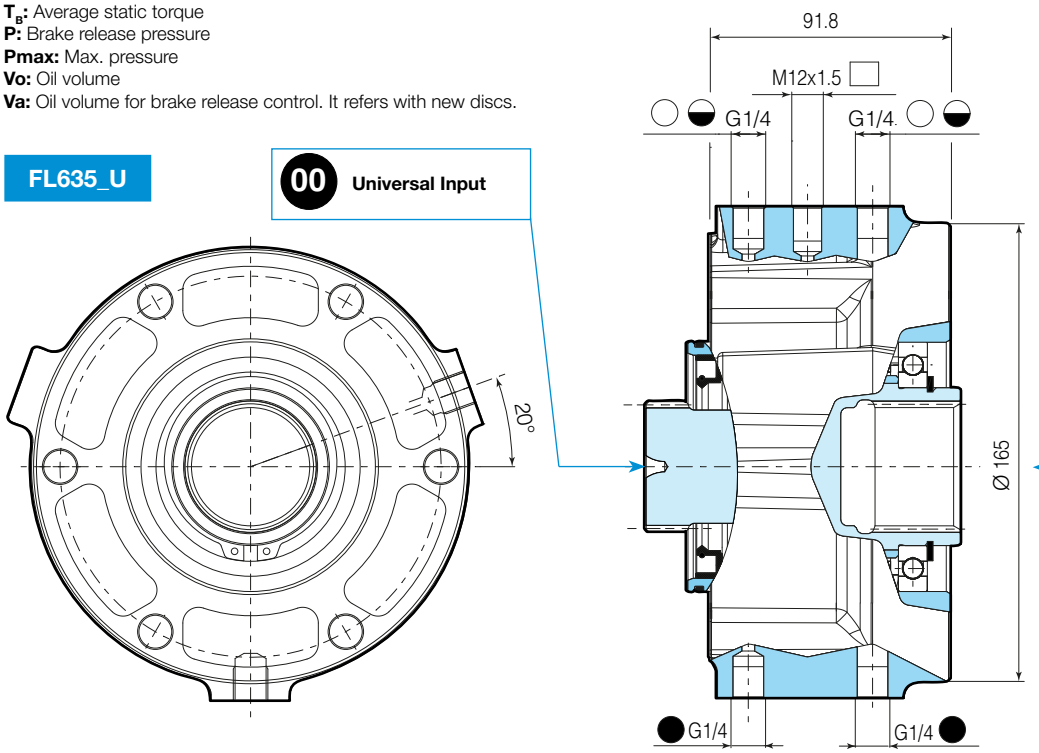
Universal multi-disc brakes

	T_B [Nm]	P [bar]	P_{max} [bar]	Vo [l] Mounting position horizontal	Vo [l] Mounting position vertical	Va [cm³]	Weight [kg]	Code
FL635.U	377	13.6	315	0.1	0.2	10	9	C1109200160
FL620.U	271	24.9	210	0.1	0.2	10	8	C1103704120 (shaft FE ϕ 25)

T_B: Average static torque
P: Brake release pressure
Pmax: Max. pressure
Vo: Oil volume
Va: Oil volume for brake release control. It refers with new discs.

FL635_U

00 Universal Input

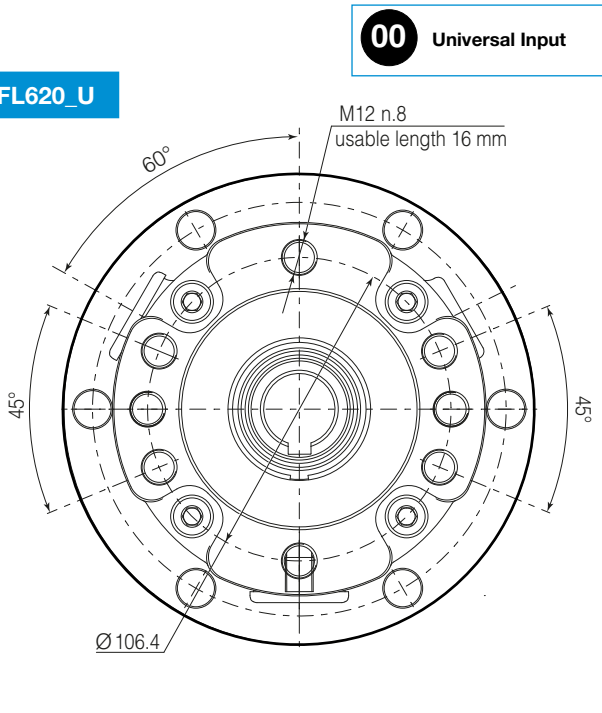


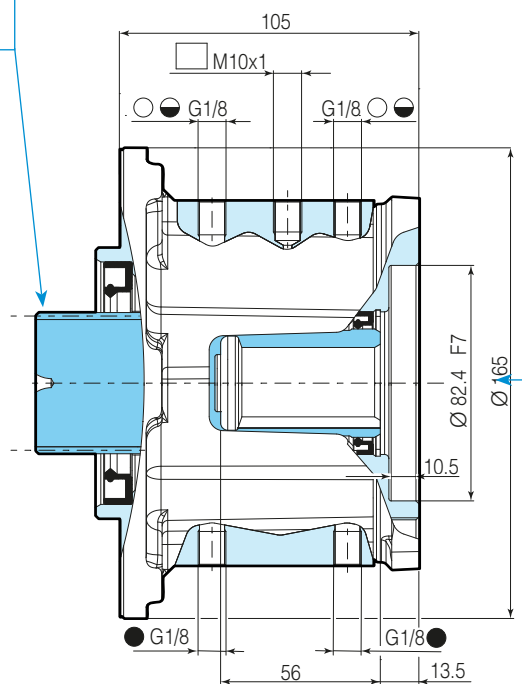
00 Universal Input

A Brake release fitting
B Oil drain plug
C Oil level plug
D Oil breather and filler plug

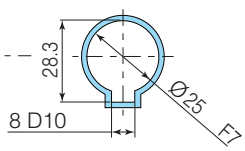
FL620_U

00 Universal Input



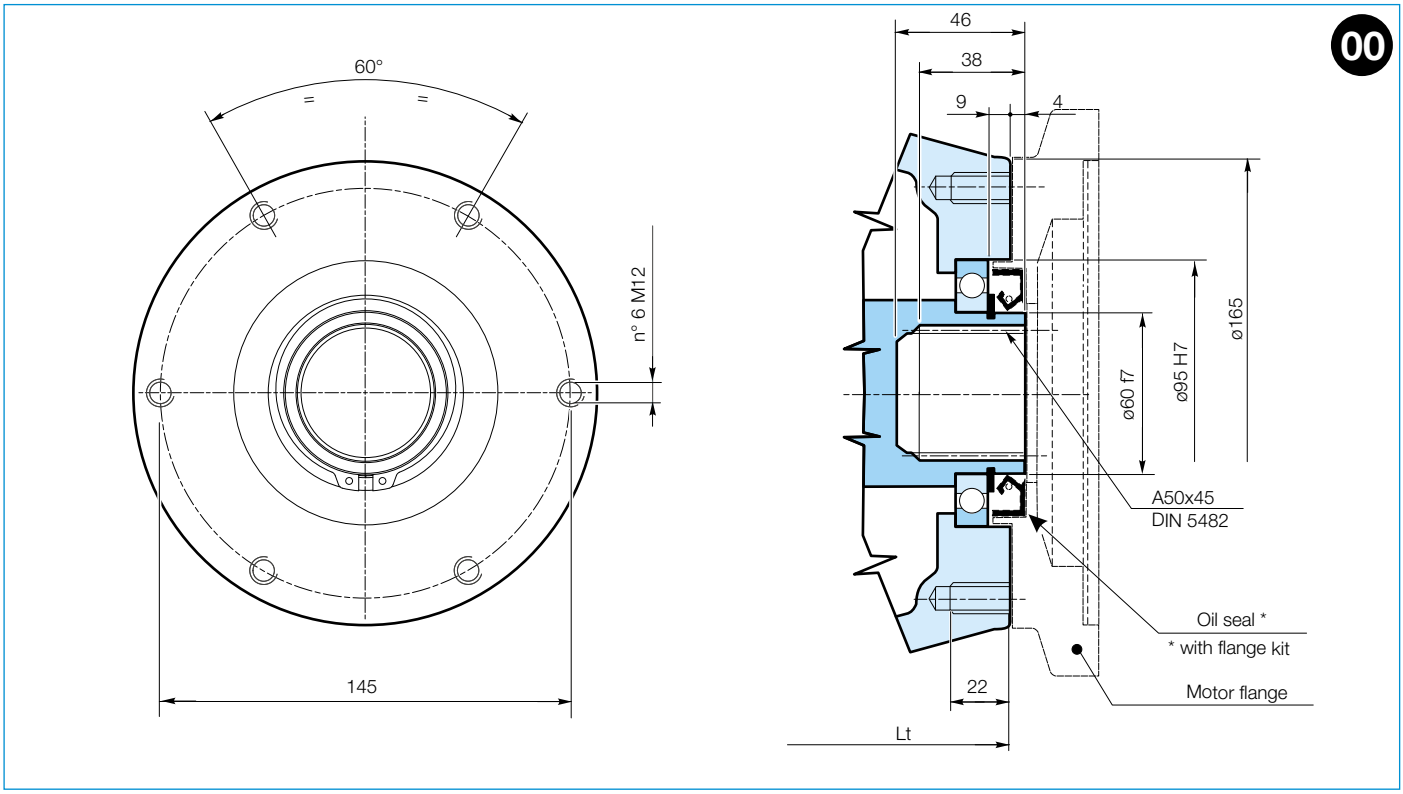


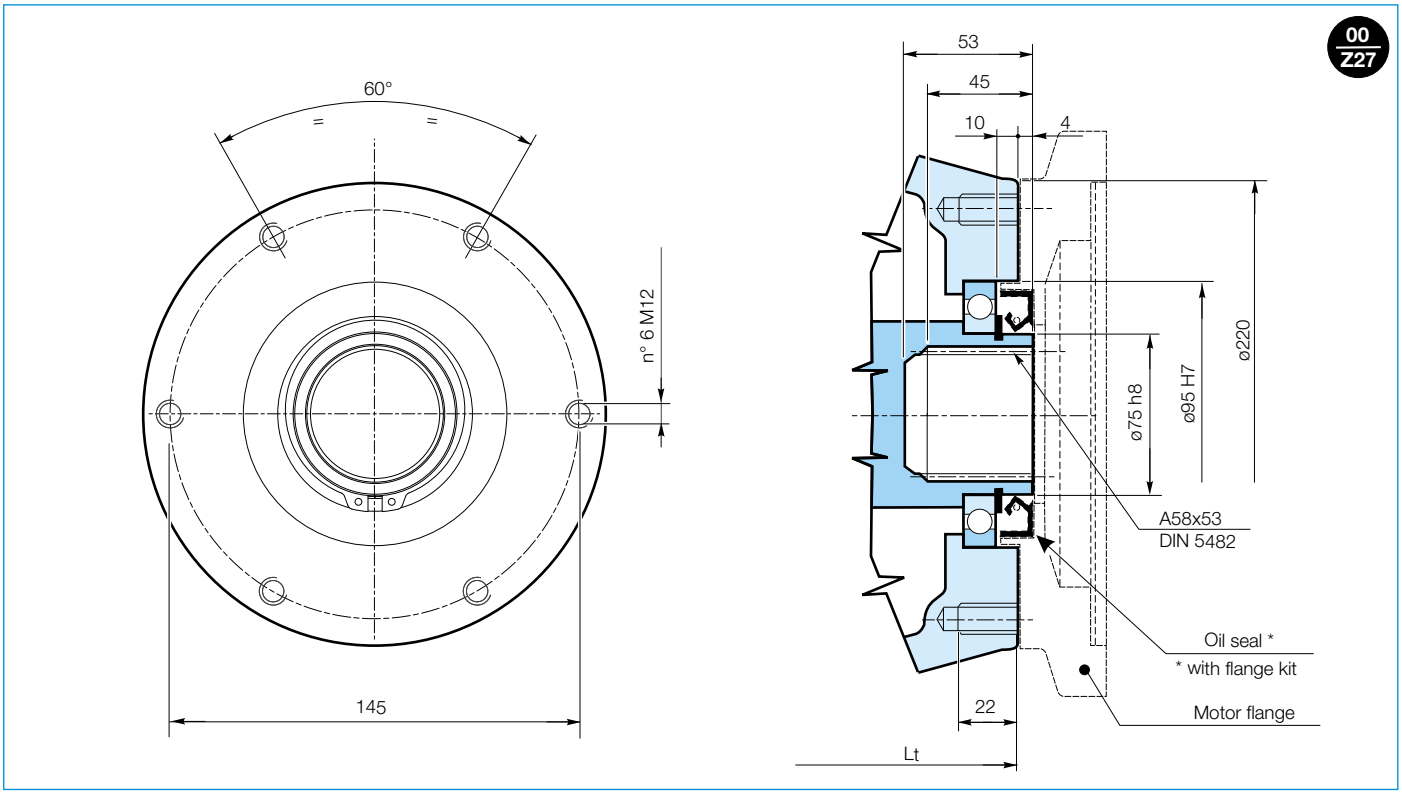
Direct Motor Coupling
SAE A shaft ø 25



Universal inputs

The universal input is a configuration mounted on the gearbox input so that various types of drives can be coupled by means of a special flange and adapter sleeve.
There are two different universal input sizes, depending on the size mounted as the gearbox input stage.
The dimension tables for the various sizes give the applicability.

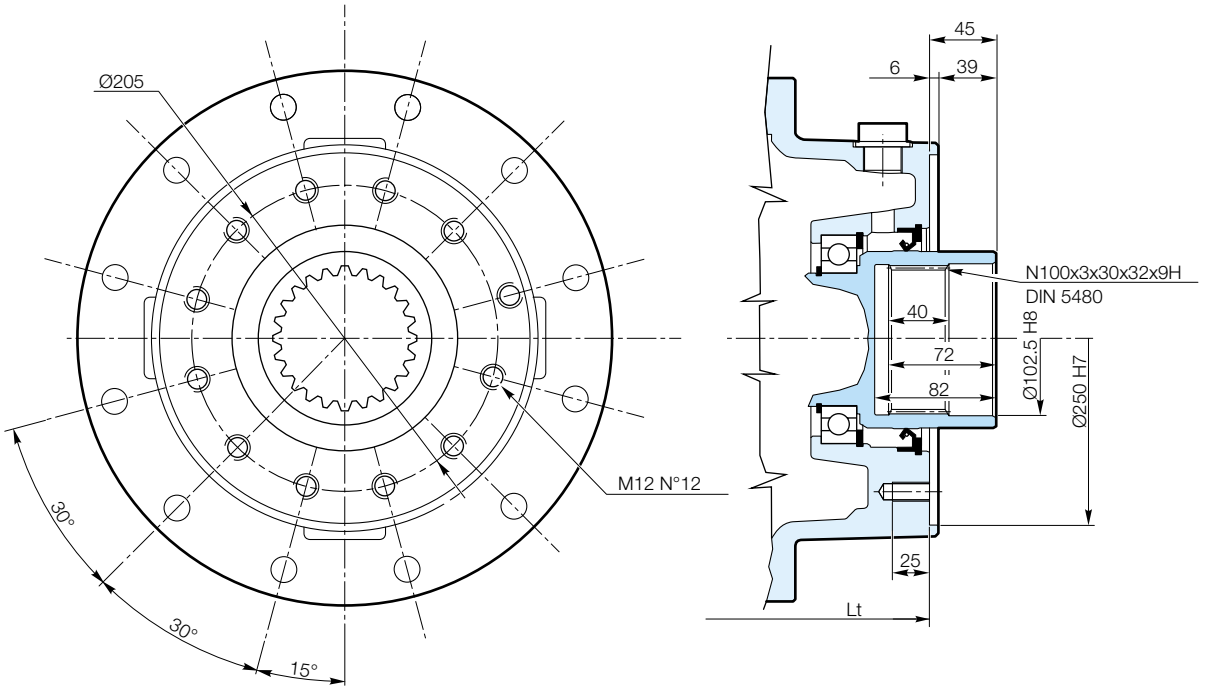




Details & Installation

Universal inputs

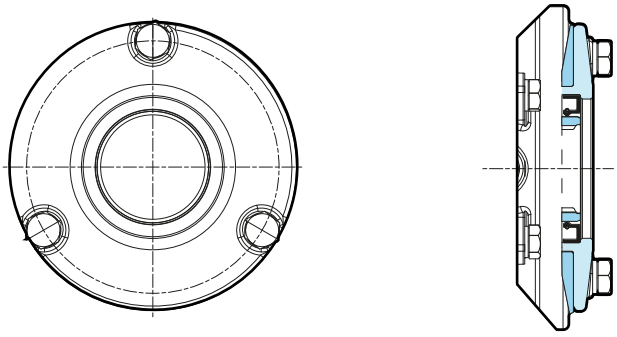
S00



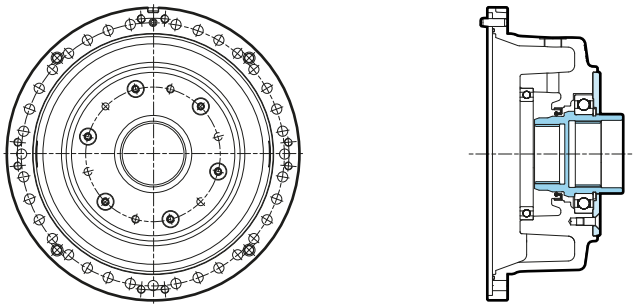
Universal protection cover

00

00 Z27

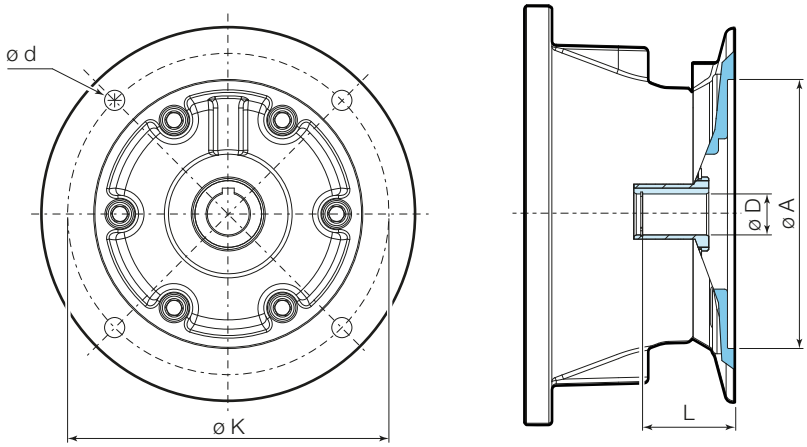


S00



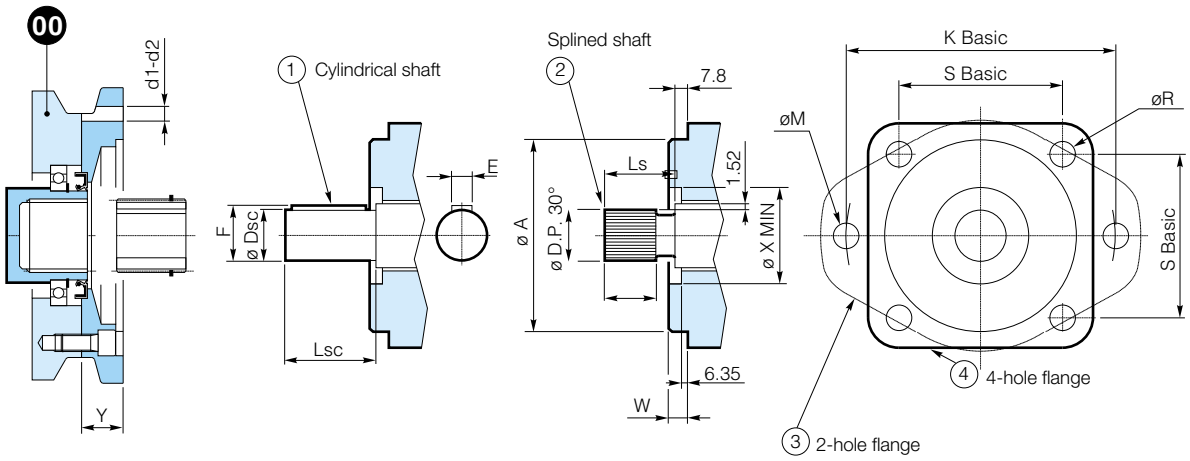
Details & Installation

Motor adaptors



IEC B5 Motor size	ØD [mm]	L [mm]	ØA [mm]	ØK [mm]	nr. holes x Ød [mm]
63	11	23	95	115	4 x 9
71	14	30	110	130	4 x M8
80	19	40	130	165	4 x M10
90	24	50	130	165	4 x 11
100-112	28	60	180	215	4 x 14
132	38	80	230	265	4 x 13.5
160	42	110	250	300	4 x 18
180	48	110	250	300	4 x 18
200	55	110	300	350	12 x 18
225	60	140	350	400	12 x 18
250	65	140	450	500	4 x 18
280	75	140	450	500	4 x 18

SAE J 744C motor flanges



SAE	Ø A [mm]	W [mm]	Ø X MIN. [mm]	K basic [mm]	Ø M [mm]	S basic [mm]	Ø R [mm]	Splined shaft				Cylindrical shaft			
								No. of teeth	30° D.P.	LS [mm]	LA MIN. [mm]	Ø DSC [mm]	LSC [mm]	F [mm]	E [mm]
A	82.55	6.35	-	106.4	13	75.22	-	9	16/32	24	7.6	15.88	24	17.6	4
B	101.6	9.65	50.8	146	14.3	89.8	14.3	13	16/32	33.3	10.2	22.22	33.3	24.95	6.35
B-B	101.6	9.65	50.8	146	14.3	89.8	14.3	15	16/32	38.1	12.7	25.4	38.1	28.1	6.35
C	127.0	12.7	63.5	181	17.5	114.5	14.3	14	12/24	47.6	15.2	31.75	47.6	35.2	7.8
C-C	127.0	12.7	63.5	181	17.5	114.5	14.3	17	12/24	54	17.8	38.1	54	42.25	9,525
D	152.4	12.7	70	228.6	20.6	161.6	20.6	13	8/16	66.67	20.3	44.45	66.67	49.3	11.1
E	165.1	15.87	70	317.5	27	224.5	20.6	13	8/16	66.67	20.3	44.45	66.67	49.3	11.1

SAE	Y [mm]	No. of Bolts	Order code					
			Flange with d1			Flange with d2		
			d1 Metric	Splined shaft	Cylindrical shaft	d2 [in]	Splined shaft	Cylindrical shaft
A	25	2 – 4	M10 T.U. 15	61125502680	61125500900	3/8 0.59 Min	61147702680	61147700900
B	25	2 – 4	M12 T.U. 25	61125700580	61125700460	1/2 - 13 1.00 Min	61143900580	61143900460
B-B	25	2 – 4	M12 T.U. 25	61125701940	61125700500	1/2 - 13 1.00 Min	61143901940	61143900460
C	28	2	M16 T.U. 20	61101801480	61101800510	5/8-11 0.78 Min	61145301480	61145300510
		4	M14 T.U. 20			1/2-13 0.78 Min		
C-C	79	2	M16 T.U. 20	61101802540	61101801750	5/8-11 0.78 Min	61145302540	61145301750
		4	M14 T.U. 20			1/2-13 0.78 Min		
D	93	2 – 4	M18 T.U. 20	61103501930	61103501720	3/4 - 10 1.00 Min	61147801930	61147801720
E	93	2 – 4	Æ 22 T.U. 30	61118201930	61118201720	Ø 0.875 1.11 Min	61118201930	61118201720

Click **DANA** button to return to section index

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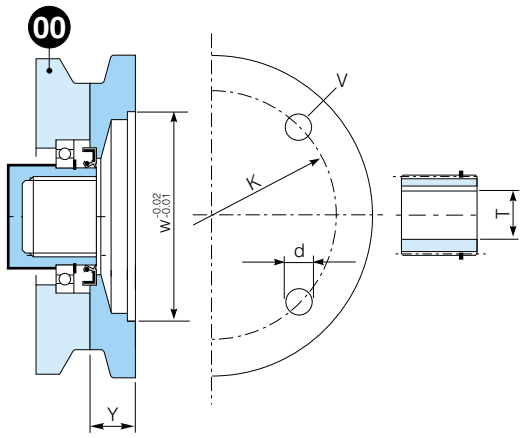
NEMA motor flanges



NEMA Motor size	Motor coupling flange					Sleeve		Order code
						T		
	W [in]	V [in]	d [in]	K [in]	Y [in]	Diameter [in]	Key [in]	
143/145 TD	9	4	0.55	10	1.18	0.875	0.187	61135501060
182/184 TC	8.5	4	0.55	7.25	1.18	1.125	0.25	61130800070
182/184 TD	9	4	0.55	10	1.18	1.25	0.25	61135502200
210 TD	9	4	0.55	10	1.18	1.375	0.312	61135502500
213/215 TC	8.5	4	0.55	7.25	1.81	1.375	0.312	61130802500

Dimensions in inches
In addition to the flanges given in the table, other models are available on request.

SUPPLY AND STORAGE

Supply status

Unless otherwise specified in the contract, the gearboxes are painted externally with an anticorrosive 2-component water-soluble epoxy resin based primer, blue RAL 5012.
The protection is suitable for withstanding normal industrial environments (also outdoors) and can be finished with synthetic, nitro-synthetic or 2-component enamel paints.
In case of particularly aggressive ambient conditions, it is necessary to use special painting cycles, which can be carried out on request. The machined external parts of the gearbox, such as the shaft ends, support surfaces, spigots, etc., must be protected with antioxidant oil (Tectyl).
The inside walls of the gearbox casings are painted with oil-proof paint and the kinematic mechanisms are protected with antioxidant oil. Unless otherwise specified in the contract, all gearboxes are supplied without lubricant, as shown by a special sticker applied to the gearbox to indicate its condition.
The gearboxes are packed and shipped in crates or on pallets able to withstand normal industrial environments.
Each gearbox comes with an "Installation and Maintenance Manual", "Manufacturer's Declaration" and "Certificate of Conformity" 2.1 according to EN10204.

Storage conditions

If the product is to be stored for more than 2 months:

protect shafts and spigots with a film of grease or corrosion protection products

- fill the gearbox completely with the lubricant required for the application
- store in a dry place with a temperature from -5 °C to +30 °C
- protect the gearbox from dirt, dust and damp
- always place a wooden support or other material between the gearbox and the ground to prevent direct contact with the ground.

When storing for more than 1 year, the rotary seals will lose efficiency. In this case, it is advisable to carry out a periodic check by turning the input shaft by hand to rotate the gears.
If there is a negative multi-disc brake, release the brake with a hydraulic pump or similar (see the "Oil bath multi-disc brakes" section for the brake release pressure).
At start-up, it is advisable to replace the seals.

General

The gearboxes must be carefully installed by suitably trained technical personnel.
Preparation for operation must occur in compliance with all the technical specifications given on the reference Dimensional Drawing.
All installation operations must ensure:

1. safety of operators and third parties
2. correct gearbox operation
3. safe operation

In this respect:

- any arbitrary tampering with the gearbox and with any accessories originally provided is strictly prohibited
- when lifting and transporting, do not knock the shaft ends and use specific lifting straps or the eye-bolts provided for this purpose, and make sure that the lifting equipment has adequate lifting capacity
- never carry out welding work on gearboxes.
- only carry out installation or maintenance work with the gearbox stationary. It is therefore advisable to ensure that the driving force cannot be activated unintentionally.
- regarding the gearbox input, electric or hydraulic motors are often mounted with the DANA 00 universal flange system (see the "Universal Input" section). Note that the 00 flange is normally used for motors weighing up to approximately 100 kg and 1000 Nm of maximum torque. Specific adapters can be used with heavier motors: in this case, please contact you local DANA representative.
- with connections involving the use of rotating parts such as shafts, couplings or pulleys with belts, always provide adequate accident-prevention protection.

For flange-mounted gearboxes, we recommend observing the following requirements:

- the structures to which the gearboxes are secured must be rigid, with flat machined support surfaces that are free of paint, perpendicular to the driven shaft, and centred with a tolerance of H8.
- the mating surfaces must be perfectly degreased in advance.
- take care to align the gearbox with the driven shaft, especially with gearboxes that have splined female outputs, which cannot take external radial or axial loads.
- use at least class 10.9 screws with 75% tightening yield strength for fastening
- during assembly, take care to avoid violent axial impacts that could damage the inner bearings.
- the drive parts to be keyed to the output must be machined as specified in the “Outputs” section.

Note:

For right-angle gearboxes with male input shafts, the input shaft may not be in its ideal position during installation. To remedy this situation, we recommend:

- when connecting with couplings that are able to recover misalignments, measure the existing misalignment and check that it is acceptable for the coupling; if the misalignment is too big, shim the motor to bring it within the permissible play
- when connecting with mechanical parts that do not allow an play adjustment, align the motor using shims.

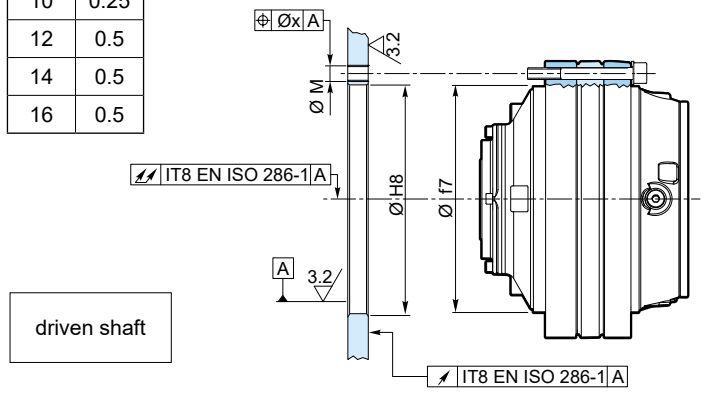
Shaft mounting

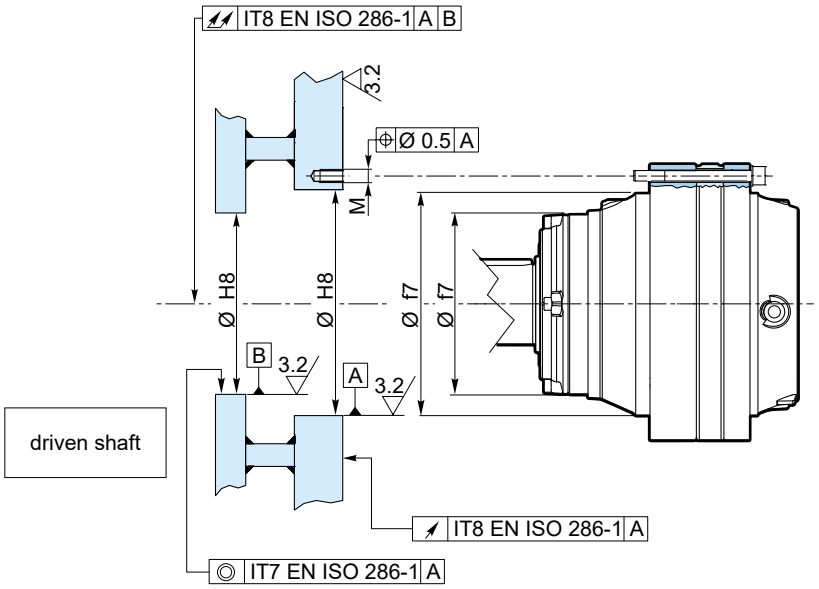
Before mounting, carefully clean the mating surfaces and lubricate them with suitable anti-seizure products (except for versions with FS hollow shafts - see the "Shrink disc" section).
Installation and removal must be carried out with suitable equipment, such as pullers and puller screws, using the threaded holes provided on the shafts; in any case, avoid any impacts or shocks that could cause permanent damage to the internal parts of the gearbox.
For the sizes of the driven shaft, refer to the section "Outputs".

Flange support mounting

The mating surfaces must be machined with a degree of finish that ensures the required coefficient of friction (approx. Ra 3.2 mm). To ensure alignment between the gearbox, motor and driven machine, observe the tolerances given in the diagrams below.
Before installation, clean and degrease the mating surfaces thoroughly, removing any traces of paint.
If the maximum torque to be transmitted is higher than $0.7 \times T_{2MAX}$, or if frequent reversals are foreseen, apply a suitable adhesive product for clamping on the coupling surfaces.
Installation must ensure the alignment of the gearbox and the shaft to be driven, or the gearbox and the motor whenever the motor is not directly flange-mounted to the gearbox.

M	x
10	0.25
12	0.5
14	0.5
16	0.5





A particularly important measure to prevent stress on the gearbox support flanges even during mounting, is to ensure that the mounting counter-flange adheres perfectly to the gearbox flange before tightening the fastening screws.

Fastening screws

Secure the gearboxes with class 10.9 screws with ISO 7089 washers (300 HV min.)
The screws must be tightened (depending on their size) according to the torque values given in the dimension table for the specific size; the tightening torque values refer to screws in the conditions of supply, or with phosphate coating.

Do not lubricate the screws before tightening, as the consequent variation in surface friction coefficient of could overload the screws during tightening
Always check the tightening torque of the screws after the first few hours of machine operation.

Shrink discs are not supplied pre-installed on gearboxes and must be ordered separately. They are designed to be mounted on FS output.
Given below are the characteristics and measures to be considered for correct assembly and disassembly of these parts used for the transmission of motion.

Mounting

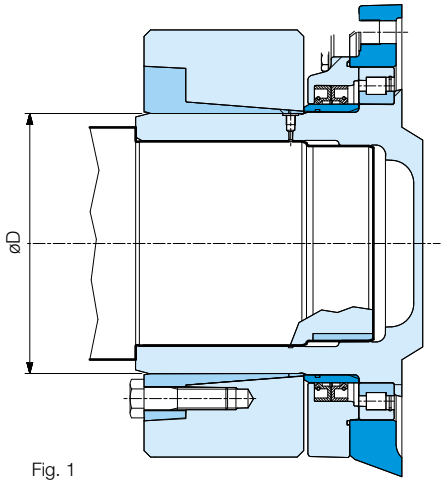


Fig. 1

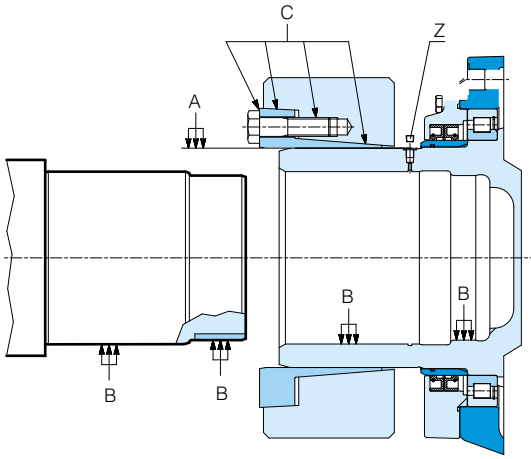


Fig. 2

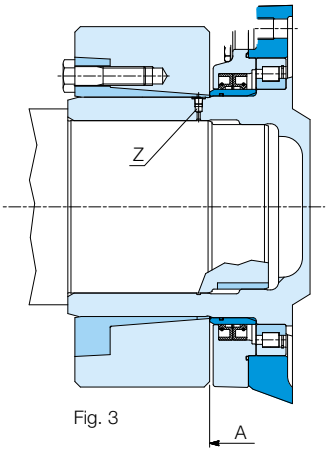


Fig. 3

	T_N [Nm]	D [mm]	T_{GN} [Nm]	Coupling Type	Order code
S300	34000	185	72200	3009-185X320	448J43GT800
S400	48000	185	96000	3208-185X320	448J43GT900
S600	64000	220	139000	3208-220X370	448J43GU000
S850	90000	240	187000	3208-240X405	448J43GU100
S1200	133000	280	355000	3208-280X460	448J43GU200
S1800	190000	300	397000	3208-300X485	448J43GU300
S2500	260000	340	604000	3208-340X570	448J43GU400
S3500	370000	360	766000	3208-360X590	448J43GU500
S5000	510000	420	1163000	3208-420X680	448J43G0011

T_N: Nominal gearbox torque
T_{GN}: Nominal coupling torque
D: Shaft diameter

1. Thoroughly clean and degrease the shaft and its seat (see point B). To facilitate subsequent removal, it is advisable to make the small spigot for the shaft from a suitably machined bushing.

2. Lubricate the coupling seat (see point A) with molybdenum disulfide grease (MoS_2). When new, the coupling does not have to be disassembled for greasing. Greasing of the areas C is advisable only when reinstalling a used coupling.

3. Fit the coupling on the gearbox without tightening the screws. If the mounting position is vertical and the respective shaft is facing downward, make sure the coupling cannot slip off and fall. In all cases, never tighten the screws before fitting the shaft in its seat.

4. Fit the shaft in its seat. Mounting must take place without any interference, and this is only possible with precise gearbox/shaft alignment using suitable lifting equipment.

CAUTION!
Assembly must be carried out without applying axial forces, blows or impacts that could damage the gearbox bearings.

5. Fit the coupling up against the shoulder on the shaft before tightening the screws.

6. Tighten the screws gradually in a circular order, using a suitable torque wrench set to the tightening torque specified in the table below. Carry out final tightening, setting the wrench to a torque of 3-5% higher than that indicated.

Set the wrench to the torque specified in the table and make sure that no screws can be tightened further, otherwise repeat the procedure from point 5.
Mounting is complete and correct if the front surfaces of the inner and outer ring are at the same level.

The tightening torque does not have to be rechecked after the coupling is put into service.

7. Protect the coupling area with suitable sheet metal casing (point P) if there is risk of stones, sand or other material damaging the coupling or the gearbox seals.

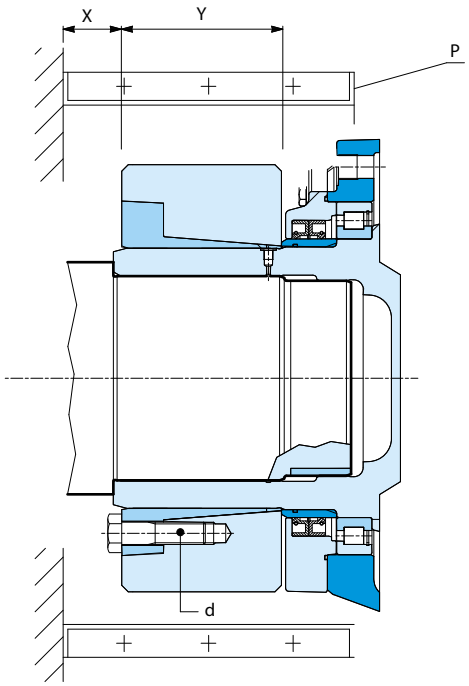
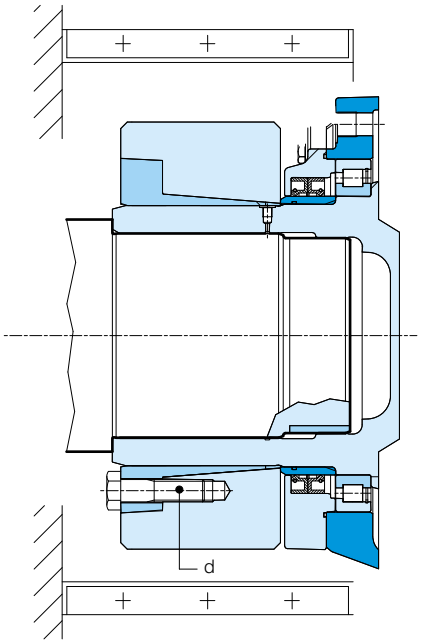


Fig. 4

	Coupling Type	Y			X [mm] for type of wrench		
			d	T [Nm]			
S300	3009-185x320	85	M16	290	50	100	58
S400	3208-185x320	112	M20	490	55	115	58
S600	3208-220x370	134	M20	490	55	115	58
S850	3208-240x405	144	M20	490	55	115	58
S1200	3208-280x460	172	M24	840	65	120	70
S1800	3208-300x485	176	M24	840	65	120	70
S2500	3208-340x570	206	M27	1250	–	125	85
S3500	3208-360x590	210	M27	1250	–	125	85
S5000	3208-420x680	246	M27	1250	–	125	85

Disassembly



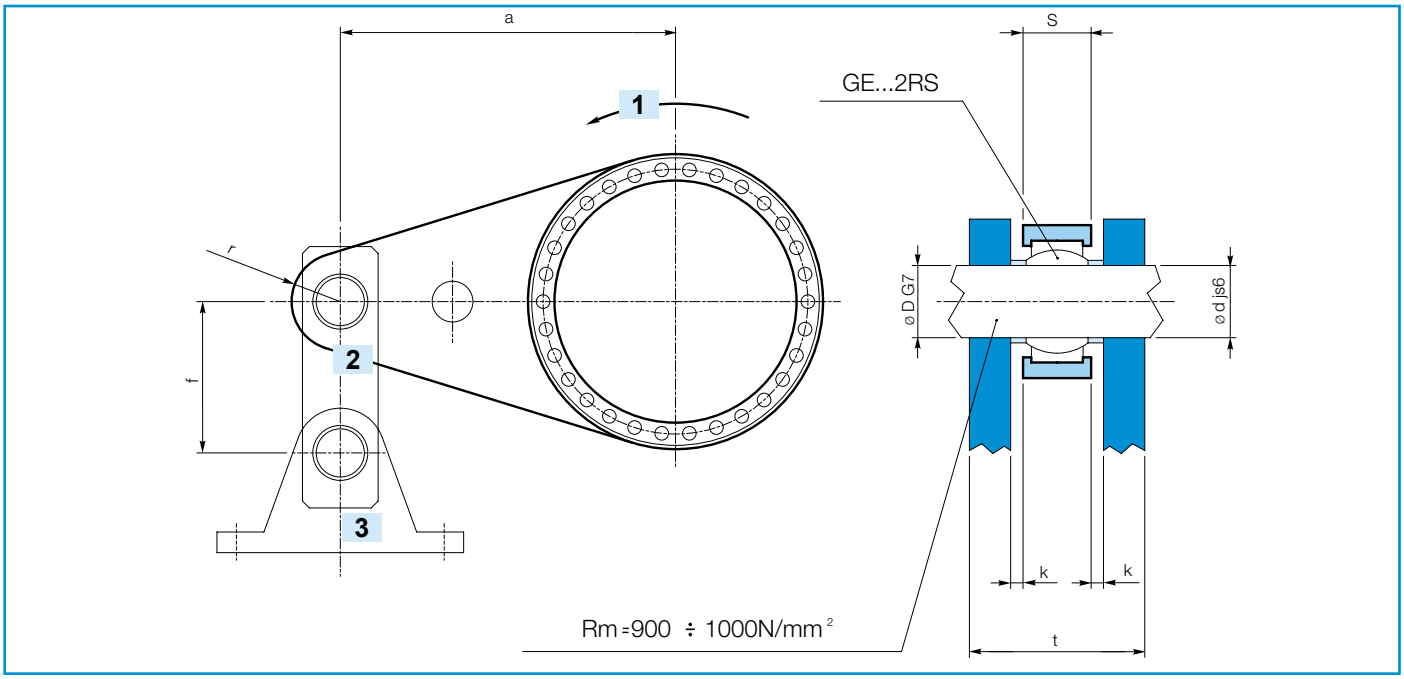
1) Loosen the screws “d” in several passes and in sequence so that the coupling can move on the hub.

CAUTION! Do not undo the screws completely so that the rings can separate on their own.
High axial forces could cause violent removal, resulting in a hazard to operators.

2) This normally releases the clamping unit. Use suitable equipment to support the gearbox and separate the gearbox from the machine shaft.

CAUTION!
Refer to the maintenance manual to check the permissible axial loads.

Indications for torque arm construction and anchoring



1
Preferential direction of rotation output shaft side

2 – 3
GE...2RS in positions 2 and 3

	a min [mm]	s [mm]	r min [mm]	f min [mm]	GE...2RS	D / d [mm]	k [mm]	t min [mm]
S300	600	30	45	150	35	35	4	70
S400	700	32	50	160	40	40	4	72
S600	800	32	50	180	40	40	4	72
S850	1000	35	55	200	45	45	4	81
S1200	1000	40	65	230	50	50	5	90
S1800	1200	50	75	250	60	60	5	104
S2500	1400	55	85	300	70	70	5	115
S3500	1600	60	95	350	80	80	5	120
S5000	2000	70	105	380	90	90	7.5	135

Mounting the arm

1. The torque arm must be free to move axially and have enough play in the couplings to allow small gearbox oscillations (always present) without overloading the gearbox. Therefore ball joints must be used in all connections.
2. It is advisable to use long-life ball joints in which the rubbing surfaces are protected with PTFE. Alternatively, “steel to steel” joints can be used, provided they are greased periodically.
3. The anchoring connecting rod must be parallel to the torque arm in order to ensure the side clearance “k” (unloaded), which ensures free movement of the structure in case of deformation.
4. The fixed support to which the second end of the connecting rod is connected must ensure adequate anchorage for the load.
5. The torque arm and corresponding connecting rod may have different design solutions from those proposed, but the following measures must be taken:

   CAUTION!
   Do not carry out any welding work involving the gearbox, not even earthing.

6. Always use a torque wrench to tighten the coupling screws.
7. The drawing is only by way of example, since the correct configuration depends on the gear unit rotation direction. In fact, during work it is advisable for the connecting rod to be in traction and not compression. Therefore mounting on the opposite side with respect to that represented may be convenient. If necessary, due to specific encumbrance the connecting rod can be assembled upwards.
8. When carrying out an assembly by means of friction coupling and torque arm, remember that the weights of the gear unit, the torque arm and all the elements connected to them, bring about loads and tipping moments that are supported by the output stage planetary carrier bearings. Therefore the relative position of all the masses involved in transmitting power must be appraised in the design phase, in order to minimize the resultant value on the bearings. Likewise, the weight of the components connected to the gear unit must be limited, carefully appraising the hicknesses of the structures actually necessary for supporting the stresses, and decentralizing all the elements not involved in power transmission. An incorrect design can shorten the life of the bearing and gears due to possible excessive elastic deformation of the stages and determine the possibility of slipping and seizing of the friction coupling.

DANA gearboxes are supplied without lubricant; therefore the user must fill them correctly before starting the machine.

Essential oil specifications

The important parameters to consider when choosing the oil type are:

- viscosity under nominal operating conditions
- additives

The same oil must lubricate the bearings and the gears and all these components work inside the same box, in different operating conditions.

Viscosity

Nominal viscosity refers to a temperature of 40 °C, but decreases rapidly as the temperature increases. If the gearbox operating temperature is from 50 °C to 70 °C, a nominal viscosity can be chosen from the following guide table; choose the highest viscosity if a higher operating temperature is expected.

Output speed n_2 [rpm]	**Working temperature**	
	50° C	**70° C**
$n_2 \geq 20$	VG 150	VG 220
$5 < n_2 < 20$	VG 220	VG 320
$n_2 \leq 5$	VG 320	VG 460

Special attention must be paid to highly loaded output stages and those with very low speeds (<1 rpm). In such cases, always use high viscosity oils and with a good amount of Extreme Pressure (EP) additive.

Additives

In addition to the normal anti-foam and antioxidant additives, it is important to use oils with additives offering EP (extreme-pressure) and anti-wear properties, according to ISO 67436 L-CKC or DIN 515173 CLP. The lower the gearbox output speed, the more marked the EP characteristics of the products have to be. It should be remembered that the chemical compounds replacing hydrodynamic lubrication are formed to the detriment of the original EP load.

Therefore in case of very low speeds and high loads, it is important to observe the maintenance intervals so as not to lower the lubricating properties of the oil excessively.

Oil types

Oil types

The oils available generally belong to three large families.

- Mineral oils
- Polyalphaolefin (PAO) synthetic oils
- Polyalkylene glycol (PAG) synthetic oils

The most suitable choice is generally tied to the conditions of use.

Gearboxes that are not particularly loaded and with an intermittent operating cycle but without considerable temperature ranges can be lubricated with mineral oil.
In cases of heavy use, when the gearboxes are highly and continuously loaded resulting in a temperature increase, it is best to use polyalphaolefin synthetic lubricants.
The use of polyalkylene glycol oils is not allowed as they are not compatible with other oils and are often completely mixable with water:;this phenomenon is particularly dangerous because it can go unnoticed, but rapidly diminishes the lubricating properties of the oil. Moreover, these lubricants may chemically attack the oil seals and paint inside the gearbox.

In addition to the above, there are also hydraulic oils and oils for the food industry.
The former are used for negative brakes.
The latter are used specifically in the food industry as they are special products that are not harmful to health.
The tables below contain lubricants offered by the best-known manufacturers, with specifications suitable for lubricating DANA gearboxes.

Contamination

During normal operation, due to run-in of the surfaces, metallic microparticles will inevitably form in the oil.
This contamination can shorten the life of the bearings, resulting in premature gearbox failure.
To limit and control this phenomenon, without resorting to frequent and costly oil changes, a suitable auxiliary oil circulation system with filtering and cooling of the oil must be provided.
This system offers the dual advantage of controlling the level of contamination through the use of special filters and stabilising the operating temperature at a level more suitable for ensuring the required viscosity.

For lubrication problems with gearboxes intended for special uses, it is advisable to contact your local DANA representative regarding the construction type and operating parameters.

Lubricant oils for general use

Manufacturer	Mineral Oil			Polyalphaolefin Synthetic Oils (PAO)		
	ISO VG 150	ISO VG 220	ISO VG 320	ISO VG 150	ISO VG 220	ISO VG 320
ADDINOL	Eco Gear 150 M	Eco Gear 220 M	Eco Gear 320 M	Eco Gear 150 S	Eco Gear 220 S	Eco Gear 320 S
ARAL	Degol BG 50 Plus	Degol BG 220 Plus	Degol BG 320 Plus	Degol PAS 150	Degol PAS 220	Degol PAS 320
BP	Energol GR-XP 150	Energol GR-XP 220	Energol GR-XP 320	Enersyn EPX 150	Enersyn EPX 220	Enersyn EPX 320
CASTROL	Alpha SP 150	Alpha SP 220	Alpha SP 320	Alphasyn EP 150	Alphasyn EP 220	Alphasyn EP 320
CEPSA	Engranajes XMP 150	Engranajes XMP 220	Engranajes XMP 320	-	Aerogear Synt 220	Aerogear Synt 320
CHEVRON	-	-	-	Tegra Synthetic Gear 150	Tegra Synthetic Gear 220	Tegra Synthetic Gear 320
ENI	Blasia 150	Blasia 220	Blasia 320	Blasia SX 150	Blasia SX 220	Blasia SX 320
FUCHS	Renolin CLP Gear Oil 150	Renolin CLP Gear Oil 220	Renolin CLP Gear Oil 320	Renolin Unisyn CLP 150	Renolin Unisyn CLP 220	Renolin Unisyn CLP 320
KLÜBER	Klüberoil GEM 1-150 N	Klüberoil GEM 1-220 N	Klüberoil GEM 1-320 N	Klübersynth GEM 4-150 N	Klübersynth GEM 4-220 N	Klübersynth GEM 4-320 N
LUBRITECH	Gearmaster CLP 150	Gearmaster CLP 220	Gearmaster CLP 320	Gearmaster SYN 150	Gearmaster SYN 220	Gearmaster SYN 320
MOBIL	Mobilgear XMP 150	Mobilgear XMP 220	Mobilgear XMP 320	Mobil SHC Gear 150	Mobil SHC Gear 220	Mobil SHC Gear 320
MOLIKOTE	L-0115	L-0122	L-0132	L-2115	L-2122	L-2132
NILS	Ripress EP 150	Ripress EP 220	Ripress EP 320	Atoil Synth PAO 150	-	Atol Synth PAO 320
Q8	Goya NT 150	Goya NT 220	Goya NT 320	El Greco 150	El Greco 220	El Greco 320
REPSOL	Super Tauro 150	Super Tauro 220	Super Tauro 320	Super Tauro Sintetico 150	Super Tauro Sintetico 220	Super Tauro Sintetico 320
SHELL	Omala S2 G 150	Omala S2 G 220	Omala S2 320	Omala S4 GX 150	Omala S4 GX 220	Omala S4 GX 320
SUNOCO	Sun EP 150	Sun EP 220	Sun EP 320	-	-	-
TEXACO	Meropa 150	Meropa 220	Meropa 320	Pinnacle EP 150	Pinnacle EP 220	Pinnacle EP 320
TOTAL	Carter EP 150	Carter EP 220	Carter EP 320	Carter SH 150	Carter SH 220	Carter SH 320
TRIBOL	1100/150	1100/220	1100/320	-	-	1510/320

Click **DANA** button to return to section index

Click *i* button to return to main index

Lubricant oils for use in the food industry

(USDA-H1 and NSF-H1 approved)

Manufacturer	Hydraulic Oil			Gear Oil		
	ISO VG 32	**ISO VG 46**	**ISO VG 68**	**ISO VG 150**	**ISO VG 220**	**ISO VG 320**
ARAL	Eural Hyd 32	Eural Hyd 46	Eural Hyd 68	Eural Gear 150	Eural Gear 220	-
CASTROL	Optileb HY 32	Optileb HY 46	Optileb HY 68	Optileb GT 150	Optileb GT 220	Optileb GT 320
CHEVRON	Lubricating Oil FM 32	Lubricating Oil FM 46	Lubricating Oil FM 68	-	Lubricating Oil FM 220	-
ENI	Rocol Foodlube Hi-Power 32	Rocol Foodlube Hi-Power 46	Rocol Foodlube Hi-Power 68	Rocol Foodlube Hi-Torque 150	Rocol Foodlube Hi-Torque 220	Rocol Foodlube Hi-Torque 320
FUCHS	Cassida Fluid HF 32	Cassida Fluid HF 46	Cassida Fluid HF 68	Cassida Fluid GL 150	Cassida Fluid GL 220	Cassida Fluid GL 320
KLÜBER	Klüberfood 4 NH1-32	Klüberfood 4 NH1-46	Klüberfood 4 NH1-68	Klüberoil 4 UH1-150N	Klüberoil 4 UH1-220N	Klüberoil 4 UH1-320N
MOBIL	Mobil SHC Cibus 32	Mobil SHC Cibus 46	Mobil SHC CIbus 68	Mobil SHC Cibus 150	Mobil SHC CIbus 220	Mobil SHC Cibus 320
NILS	Mizar 32	Mizar 46	Mizar 68	Ripress Synt Food 150	Ripress Synt Food 220	Ripress Synt Food 320
TEXACO	Cygnus Hydraulic Oil 32	Cygnus Hydraulic Oil 32	Cygnus Hydraulic Oil 32	Cygnus Gear PAO 150	Cygnus Gear PAO 220	-
TRIBOL	Foodproof 1840/32	Foodproof 1840/46	Foodproof 1840/68	-	Foodproof 1810/220	Foodproof 1810/320

Oil checking with unforced lubrication

Horizontal mounting
Levels
When the gearbox is mounted horizontally, the normal level to ensure correct lubrication is at the centre line, Fig. (A). For applications with very low output rotation speeds ($n_2 \leq 5$ rpm), it is advisable to fix the level at a value above 50–100 mm. Fig. (B).
The correct level can be easily checked using a transparent tube positioned as shown in figure (B).
If the output speed is extremely low ($n_2 \leq 1$ rpm), or if long idle periods are expected, it is advisable to fill the entire box. In this case a special auxiliary tank must be provided.
To fit an instrument for visually checking the level (or by means of an electrical signal), mount it as shown in the diagram in Fig. (C).
Mount the breather plug above the sight glass with a tube that is long enough. Connect the top part (empty) of the gearbox just below the breather. This will prevent the leakage of oil.

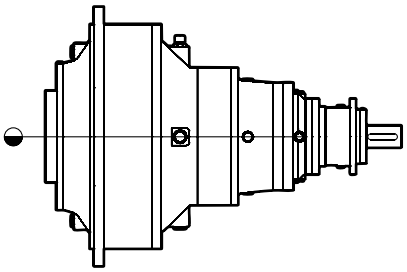


Fig. A

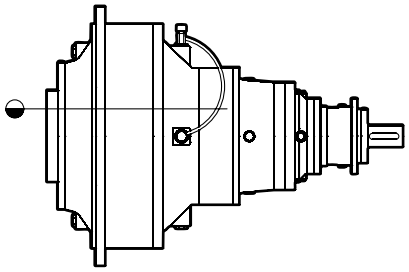


Fig. B

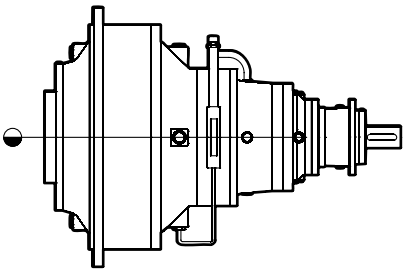
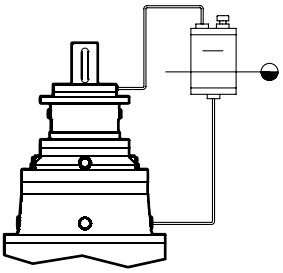


Fig. C

Expansion vessel
Several rules must be followed with vertical mounting, and in any case whenever the gearbox has to be filled completely.
During filling, an air bubble can form at the top, at the output shaft rotary seal, which must be eliminated to ensure that the seal is lubricated properly.
Also, since the oil volume increases with the temperature, an auxiliary tank must be provided to allow it to expand without creating hazardous pressures inside the gearbox.



For dimensioning, the oil expansion volume (Ve) must be determined at the operating temperature:

$$V_e = V_t \times \Delta T / 1000$$

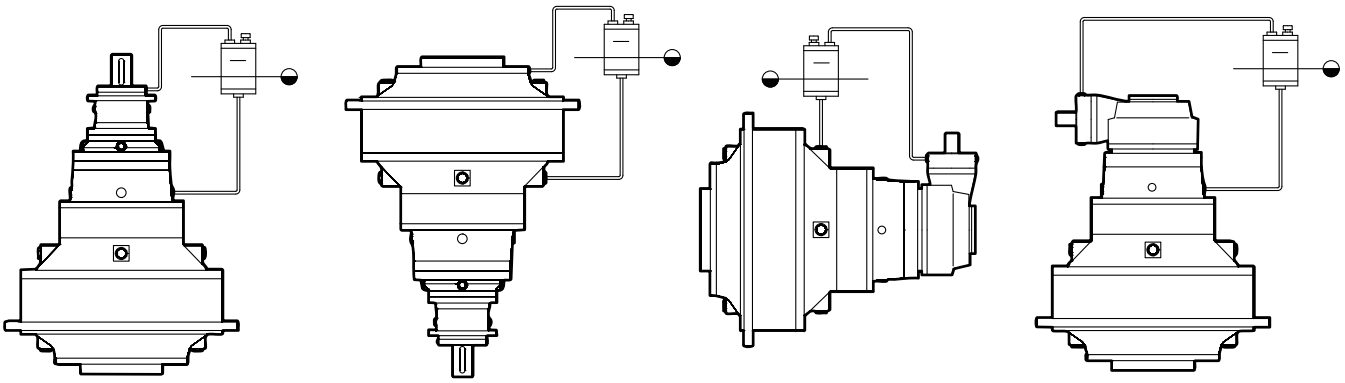
V_t = total oil volume
ΔT = difference between operating temperature and ambient temperature

The capacity (Vs) of the expansion vessel is:

$$V_S = 2 \times V_e$$

To remove any residual air, the holes at the top of the gearbox and the top of the expansion tank must be connected; the latter must be located at a height that allows the gearbox to be filled up to the minimum level. It is advisable to make the bleed pipe or the expansion vessel with transparent material in order to easily check the exact position of the lubricant level.

Vertical in-line mounting and right-angle versions
The gearboxes must be completely full, so an expansion vessel must be fitted. As already mentioned, it is very important to connect the top gearbox breather to the expansion vessel to allow the oil to rise up to the rotary seal ring on the upper gearbox shaft.
When fitting an instrument for visual checking (or by means of a special electric signal), the instrument must be placed on the side of the tank.



Auxiliary cooling and filtering systems

If the power applied is greater than the thermal power that can be dissipated by the gearbox, an auxiliary cooling system (air-oil) must be used to dissipate the excess thermal power and keep the lubricating oil clean by means of constant filtering.

To fulfil this function, DANA offers a range of cooling units: contact your local DANA representative for details. The control units consist of an air-oil heat exchanger, a filter, an electric motor, a hydraulic pump with safety valve and a coaxial fan integral with the pump. If a different type of auxiliary system is to be fitted, make sure not to use systems with an external tank.

If an auxiliary tank is required (e.g. for cooling several gearboxes with a single system), we recommend contacting your local DANA representative. When designing an oil circulation circuit, it is advisable for the suction to be at the lowest point, so that this branch of the circuit can also be used to drain the gearbox.

In any case, the oil suction and delivery points must be far enough apart to ensure that fresh oil passes through the gearbox. The diameter of the oil holes is very important, especially in suction. In fact, the pump tends to cavitate if the holes are too small. Not being able to change the pump delivery, which is a function of the power to be dissipated, the capacity of the holes must be verified.

When sucking oil from the input supports or flanges of fast gearboxes, the use of one hole may be insufficient for the entire flow; therefore 2 or 3 holes must be connected by means of a manifold connected to the suction pipe.
Delivery is usually less problematic since, if the natural flow rate is too low, a small pressure is generated which ensures the flow.

For correct dimensioning of the circuit, it is advisable to follow these rules.

Suction:

- suck from several holes when the oil speed v_o is higher than 1.30 m/s with just one hole;

Delivery:

- deliver to several holes when the oil velocity v_o is higher than 2.10 m/s with just one hole.

The speed can be obtained from the table below, or calculated with the following equation:

$$v = (Q \times 21.2) / d^2$$

where:

v = oil speed in m/s
Q = flow rate in l/min
d = inside diameter of the union in mm

The calculation takes the kinematic oil viscosity of 60 cSt into account.

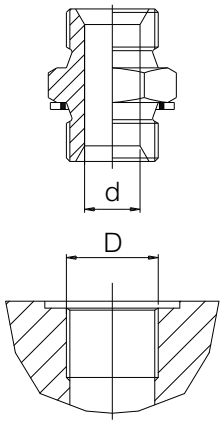


Fig. 15

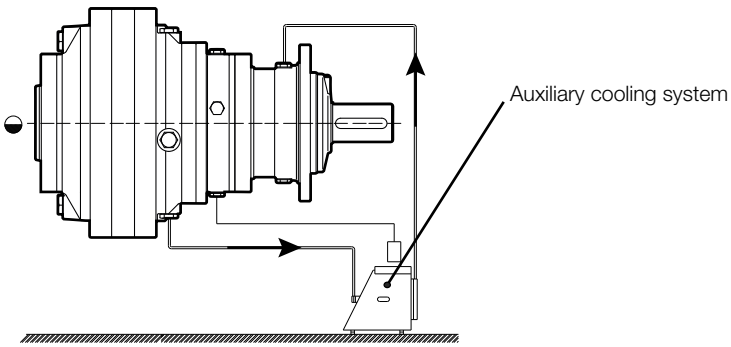
Oil speed table
v
[m/s]

Hole diameter [mm]		**Pump flow** **Q** [l/min]		
D (nom.)	**d**	**6**	**12**	**20**
G 1/4”	7	2.59	5.19	8.6
G 3/8”	10	1.27	2.54	4.4
G 1/2”	12	0.9	1.76	2.94
G 3/4”	16	0.5	1	1.65
G 1”	22	0.26	0.52	0.87
G 1 1/4”	30	0.14	0.28	0.47

Oil checking with auxiliary cooling system

In-line horizontal gearbox

Refer to the figure below to check the oil level and the position of the cooling circuit fittings.



In-line and right-angle vertical gearbox
Refer to Fig. (D), (E) and (F) to check the oil level and the position of the cooling circuit fittings.

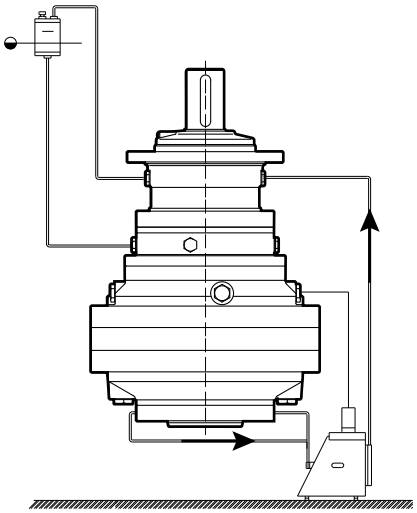


Fig. D

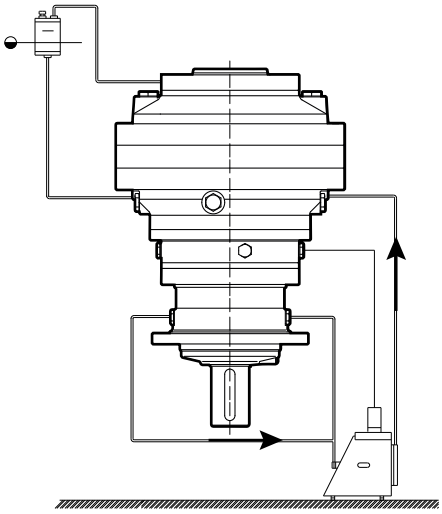


Fig. E

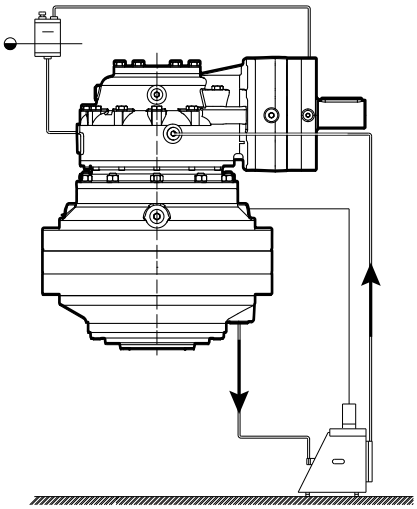


Fig. F

Caution
The auxiliary oil cooling and filtration systems described above are the minimum condition required to control the gearbox lubrication. The end-user can always extend the system by adding auxiliary safety checks on the flow, temperature and level.
The system may also be fitted with valves to facilitate oil changes with the aid of the service pump and auxiliary suction filter to protect the pump from unwanted debris from inside the gearbox.

Oil change

If there is no filtering and cooling circuit, the first oil change must be done after 500–600 hours of operation.
Subsequently, the following oil change frequencies are recommended:

Oil temperature [°C]	**Oil change interval** [h]	
	Synthetic Oil	**Mineral Oil**
≤ 65	10'000	4'000
65 ÷ 80	8'000	3'000

In case of heavy duty applications, the above values must be halved. The values given in the table refer to a work environments free from external contamination.
It is advisable to carry out the oil change with the gearbox hot, (approximately 104 °F) to prevent sludge from forming and to help it drain completely.

For the correct procedure, follow the rules given in the installation and maintenance manual supplied with each gearbox.
It is advisable to check the oil level periodically.
Check for leaks if more than 10% the total volume has to be added.

Lubricant quantity [l]

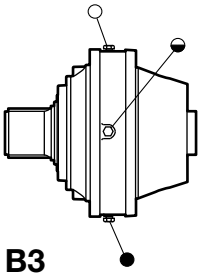
The quantities of oil indicated are approximate and to be used for supply purposes.
The exact quantity of oil to be introduced into the reducer is defined by its level.

		B3 [l]	V5 V6 [l]	B3A B3C [l]	B3B [l]	B3D [l]	V5B V6B [l]	Weight [kg]
SL 3001	FE	5.7	11.4					
	MP	6	12					213
SL 3002	FE	7.2	14.5					
	MP	8.0	15.9					278
SL 3003	FE	7.7	15.3					
	MP	8	16					288
SL 3004	FE	8.3	16.5					
	MP	8.8	17.6					301
SC 3002	FE							
	MP							348
SC 3003	FE			8.9	8.9	8.9	17.8	
	MP			9.9	9.9	9.9	19.8	328
SC 3004	FS			9.0	9.0	9.0	18.0	
	MP			10.0	10.0	10.0	20.0	335
SL 4001	FE	5.8	11.6					
	MP	6.2	12.4					227
SL 4002	FE	7.6	15.2					
	MP	8.0	16.0					290
SL 4003	FE	8.0	16.0					
	MP	8.6	17.2					305
SL 4004	FE	8.7	17.4					
	MP	9.0	18.0					317
SC 4002	FE							
	MP							366
SC 4003	FE			10.7	10.7	10.7	21.3	
	MP			11.2	11.2	11.2	22.4	332
SC 4004	FE			11.3	11.3	11.3	22.6	
	MP			12.0	12.0	12.0	24.0	342
SL 6001	FE							
	MP							
SL 6002	FS							
	MP							423
SL 6003	FE	11.6	23.3					
	MP	10.9	21.8					436
SL 6004	FS	12.5	25.0					
	MP	11.7	23.4					444
SC 6003	FS			19.0	19.0	19.0	38.0	
	MP							564
SC 6004	FE			14.5	14.5	14.5	29.0	
	MP			15.5	15.5	15.5	31.1	496
SL 8501	FE							
	MP							
SL 8502	FS	15.8	31.6					
	MP	16.9	33.8					529
SL 8503	FE	16.2	32.4					
	MP	17.3	34.6					617
SL 8504	FE	17.0	34.0					
	MP	19.0	38.0					617
SC 8503	FS			24	24	24	48	
	MP			25	25	25	50	670
SC 8504	FE							
	MP			22	22	22	44	662

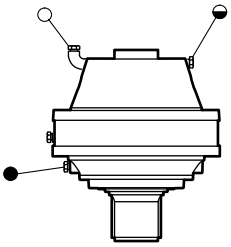
		B3 [l]	V5 V6 [l]	B3A B3C [l]	B3B [l]	B3D [l]	V5B V6B [l]	Weight [kg]
SL 12001								
SL 12002	FE	20	40					666
SL 12003	FE	22	44					727
SL 12004	FE	23	46					748
SC 12003	FE			27	27	27	54	827
SC 12004	FE			18	18	18	36	837
SL 18001								
SL 18002								
SL 18003	FE	29	58					917
SL 18004	FE	30	60					945
SC 18004	FS			39	39	39	78	1050
SL 25001								
SL 25002								
SL 25003	FE	39	78					1416
SL 25004	FE	41	82					1459
SC 25004	FS			49	49	49	98	1596
SL 35001								
SL 35002								
SL 35003	FS	51	102					1896
SL 35004	FE	53	106					2009
SC 35004	FE			54	54	54	108	2110
SL 50003	FE	61	121.5					2286
SL 50004	FE	71	142					2324
SC 50005	FE			81	81	81	163	2466
SL 75003	FE	110	220					4450
	FS	110	220					4450
SL 75004	FE	115	230					4550
	FS	115	230					4550
SC 75005	FE	118	236					4650
	FS	118	236					4650

Mounting positions and plugs

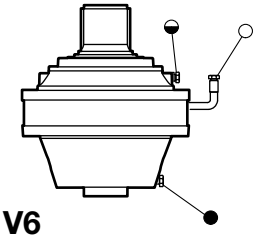
SL



B3

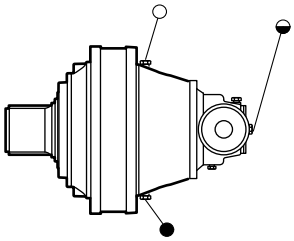


V5

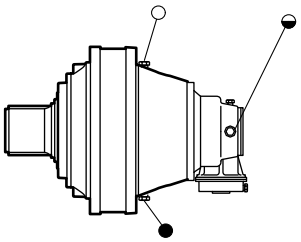


V6

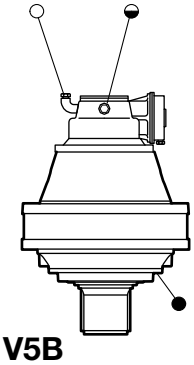
SC



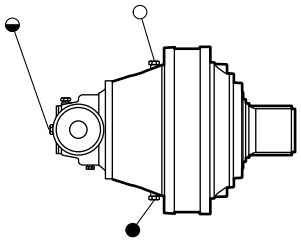
B3A



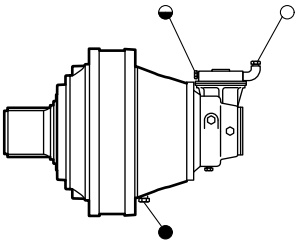
B3B



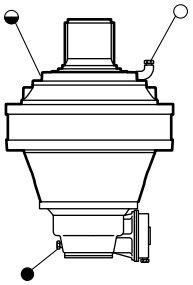
V5B



B3C



B3D



V6B

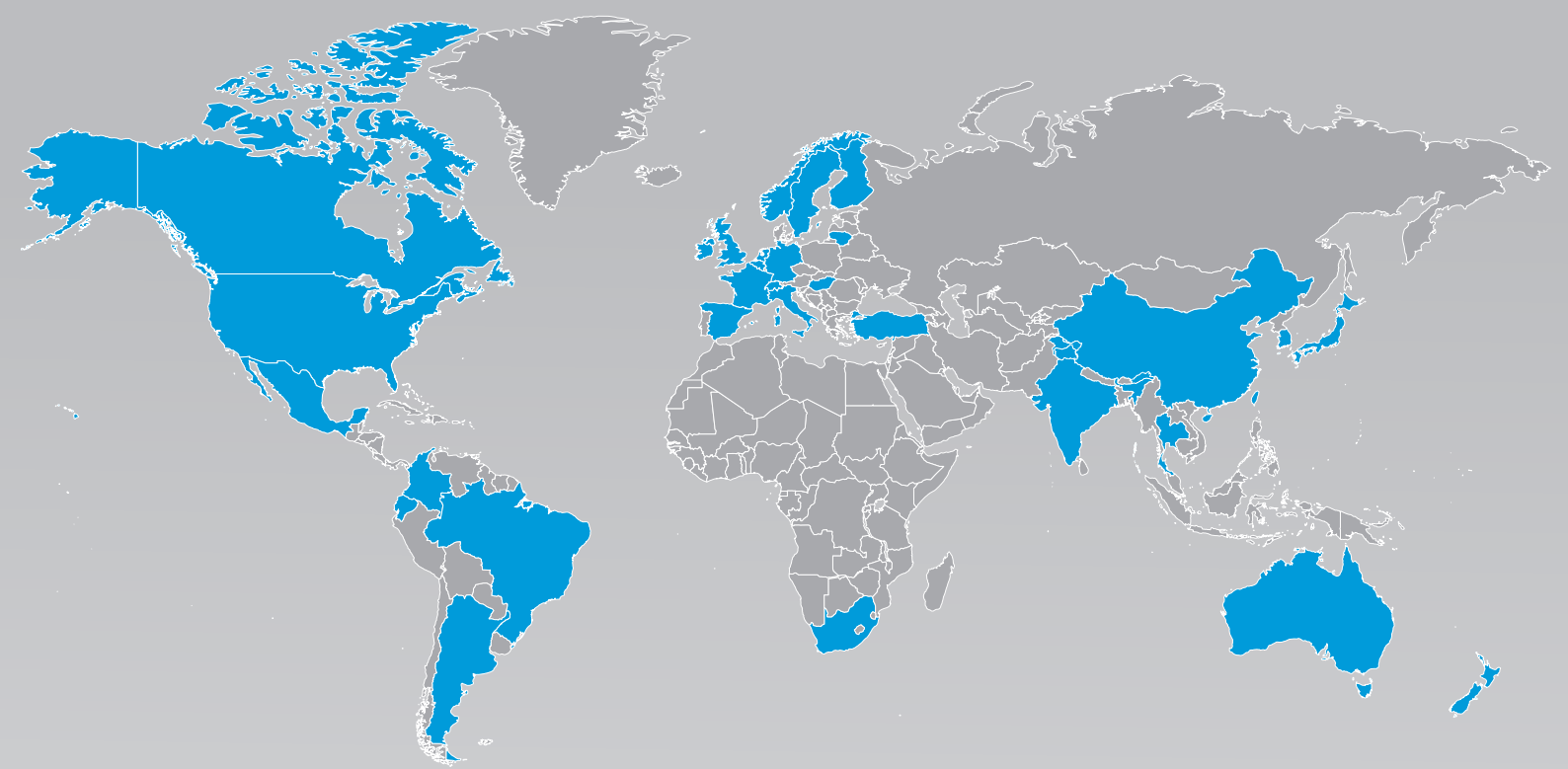
Oil drain plug

Oil level plug

Oil breather and filler plug

Details & Installation

NOTE



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