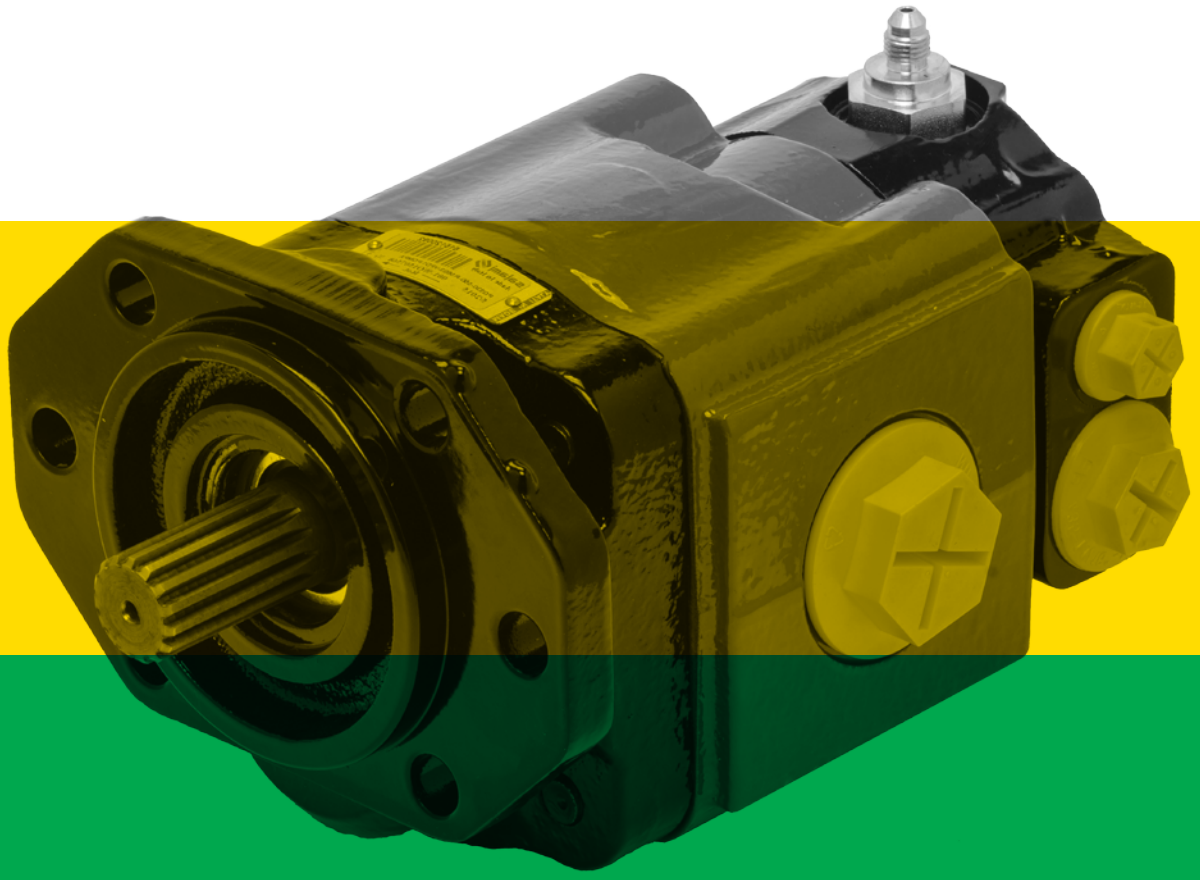
Gear Motors

Cast Iron Gear Housing

Technical/Spare Parts Catalogue



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FLUID POWER SYSTEMS ®

Final revised edition - September 2021

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Contents

Symbol Designation

INFORMATION:
Indicates reminders and communications to be taken into account for the correct configuration and mounting of the product.

CAUTION:
Indicates the recommendations and rules, to be observed before proceeding with the product's configuration.

REVIEW:
Indicates update or modify data.

Gear Motors

Cast Iron body:
2MGE/MG330

Features

E0.100.0921.02.011M01

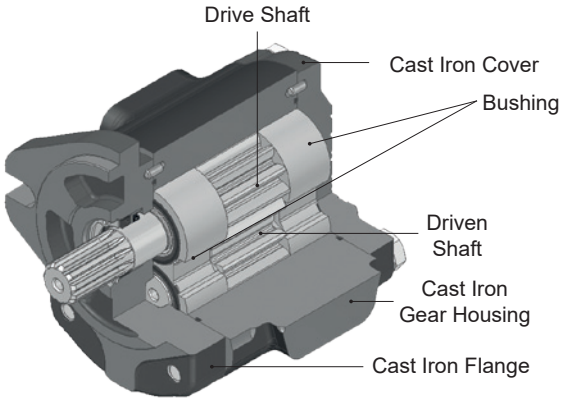
2MGE and MG330 Features

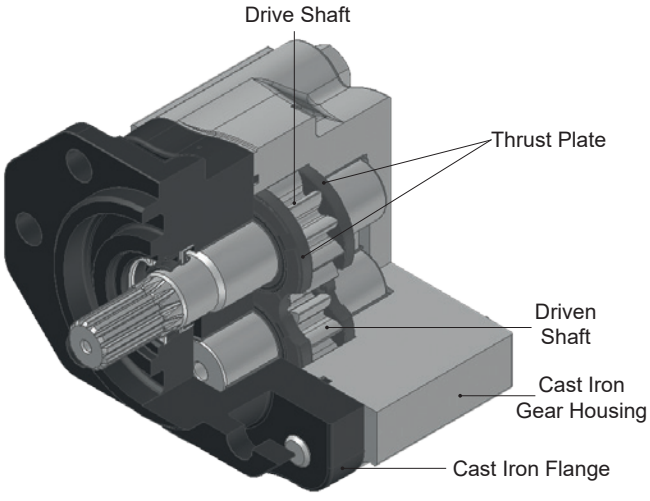
The MG330 and 2MGE Series Cast Iron Motors has been specifically designed for high flow applications, demanding peak performance and long life in extreme operating conditions. MG330 optimized for high volume and for OEM's customers. Displacements available:

2MGE: 6.5 cm^3/rev to 26.6 cm^3/rev (from 0.40 cu.in/rev to 1.62 cu.in/rev)
MG330: 23.4 cm^3/rev to 73.4 cm^3/rev (from 1.43 cu.in/rev to 4.48 cu.in/rev)

Several options of shafts, flanges and ports as for European, German and American standards are available for all the Motors.

- Rated pressure up to 250 bar (*3625psi*).
- Speed up to 4000 rpm.
- Available in uni and bi-directional version for all the frame sizes, displacements and configurations.
- High volumetric efficiency by innovative design and accurate control of machining tolerances.
- DU bearings to ensure high pressure capability.
- 12 teeth integral gear and shaft.
- Cast iron contruction.
- Double shaft seals in all motor series, SBHP High Pressure Shaft Seals are employed in all the motors.
- Nitrile seals as standard and Viton seals in high temperature applications.
- Available with different valves and circuit configurations built-in rear cover.
- All Motors are hydraulically tested after assembly to ensure the highest standard performance.
- Typical applications: construction, agriculture, material handling, municipality vehicles, light duty equipment, aerial working platforms, hoists, fan drive.





2MGE

- Cast iron body, flange and cover.
- High resistance.
- Axial compensation achieved by the use of floating bushes that allow high volumetric efficiency throughout the working pressure range.
- Available with SAE 13T splined shaft that allow torque up to 200 Nm.
- Telltale leakage inspection hole on mounting flanges.

MG330

- Two pieces compact construction made with high strenght cast iron. Cast iron offers thermal stability, contamination resistance and strenght for consistent performance and durability in severe duty cycle applications.
- Advanced pressure-balanced thrust plates optimize volumetric efficiency across the range of operating speeds and pressures.
- Heavy duty low friction DU bushes provide long life in low viscosity and high pressure conditions.
- Compact design is ideal for fitting into narrow spaces.

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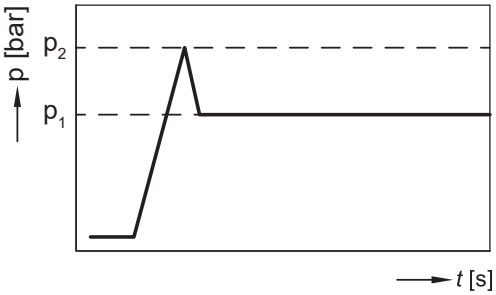
Definition of Pressures



p_2 = starting pressure
(depending on the application, this must be taken into consideration when setting the pressure of the hydraulic system's pressure relief valve).

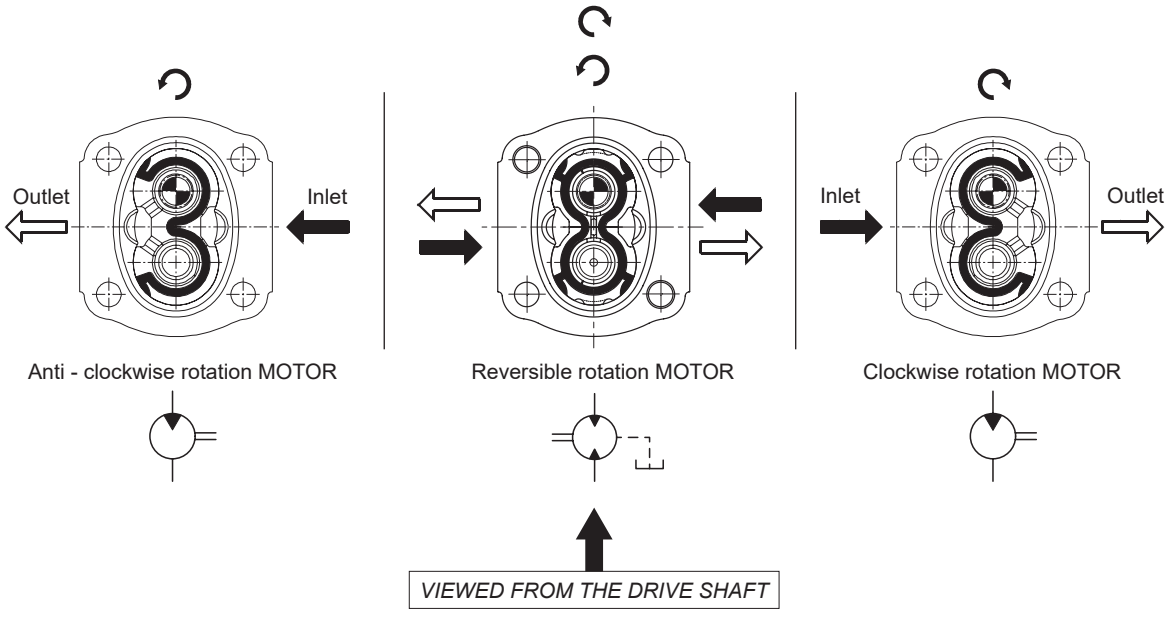
p_1 = max. continuous pressure

Drive Shaft

Radial and axial loads on the shafts must be avoided since they reduce the life of the unit.

In order to avoid misalignment during the assembly with the primary engine, a connection with "Oldham" coupling (or coupling having convex toothed hub) is recommended.

Motor Rotation



Working Conditions

HYDRAULIC FLUID
Mineral oil according to DIN 51524, other hydraulic fluids on request.

Max pressure drain		20 bar *(290 psi)*
Viscosity	Minimum operating fluid viscosity	12 mm²/sec
	Permitted viscosity range	12 - 800 mm²/sec
	Max starting viscosity	2000 mm²/sec
	Suggested fluid viscosity range	20 ÷ 80 mm²/sec
Temperature	fluid operating temperature range	-25 ÷ 80 °C
	fluid operating temperature range with FPM seals (Viton)	-15 ÷ 110°C
	fluid operating temperature range with HNBR* seals	-30 ÷ 110°C

* Available on request

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Hydraulic Pipe Line

To ensure favorable suction conditions it is important to keep pressure drop in suction pipe line to a minimum value (see Working Conditions). To calculate hydraulic pipe line size, the designer can use; as an approximate guide, the following fluid speed figures:

From 1 to 2 m/sec on suction pipe line From 6 to 10 m/sec on pressure pipe line	From *3.28* to *6.36 ft/sec* on suction pipe line From *19.7* to *32.8 ft/sec* on pressure pipe line

The lowest fluid speed values in pipe lines is recommended when the operating temperature range is high and/or for continuos duty. The highest value is recommended when the temperature difference is low and/or for intermittent duty.

Filtration Index Recommended

Working pressure	**>200 bar/2900 psi**	**<200 bar/2900 psi**
Contamination class NAS 1638	9	10
Contamination class ISO 4406	19/18/15	20/19/16
Achieved with filter β_x=75	15 µm	25 µm

Common Formulas

Based on SI units

Input flow: $Q = \frac{V \cdot n}{1000 \cdot \eta_v}$ l/min

Output torque: $M = \frac{V \cdot \Delta p \cdot \eta_m}{20 \cdot \pi}$ Nm

Output power: $P = \frac{M \cdot n}{9550} = \frac{Q \cdot \Delta p \cdot \eta_t}{600}$ kW

Variables: SI units [US units]

Based on US units

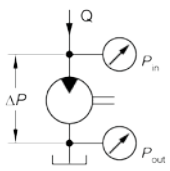
Input flow: $Q = \frac{V \cdot n}{231 \cdot \eta_v}$ [US gal/min]

Output torque: $M = \frac{V \cdot \Delta p \cdot \eta_m}{2 \cdot \pi}$ [lbf•in]

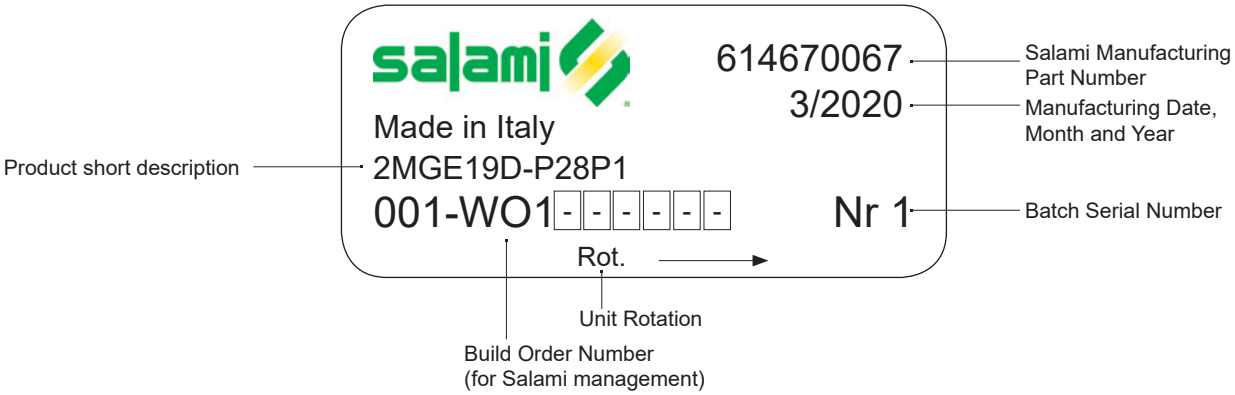
Output power: $P = \frac{M \cdot n}{63\,025} = \frac{Q \cdot \Delta p \cdot \eta_t}{1714}$ [hp]

LEGENDA

V= Displacement	cm³/rev [in³/rev]
P_{out}= Outlet pressure	bar [psi]
P_{in}= Inlet pressure	bar [psi]
$\Delta p = P_{out} - P_{in}$ (system pressure)	(rpm)
n= Speed min^{-1}	
$\eta_{m=}$ Mechanical efficiency	
$\eta_{v=}$ Volumetric efficiency	
$\eta_{t=}$ Overall efficiency ($\eta_v \cdot \eta_m$)	



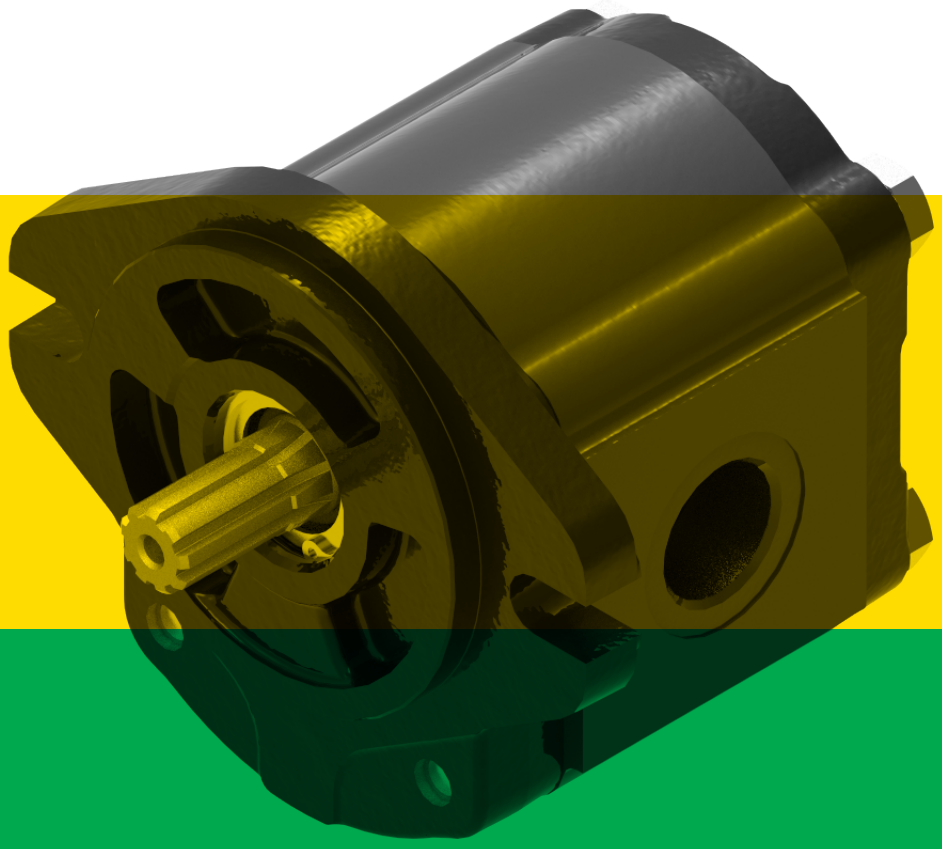
Identification Label



2MGE

Cast Iron Gear Motors

Technical/Spare Parts Catalogue



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Contents

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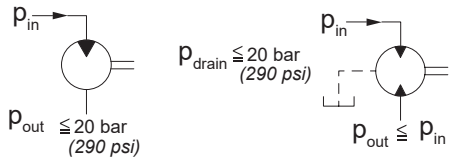
2MGE Motor - Dimensions and Technical Data

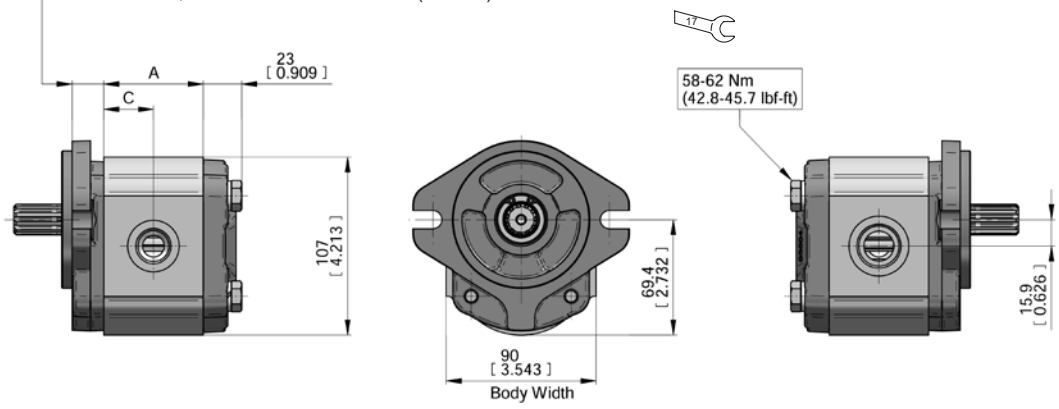


Displacements up to 26.6 cm3/rev - *1.62 cu.in./rev*
Pressure up to 280 bar - *4060 psi*

TYPE	Displacement		Dimension A		Dimension C		Max continuous pressure p[1]		Max starting pressure p[2]		Min. speed	Max. speed	Weight	
	cm³/rev	*cu.in/rev*	mm	*in*	mm	*in*	bar	*psi*	bar	*psi*	min⁻¹		kg	*lbs*
2MGE - 6.5	6.5	*0.40*	49.95	*1.97*	25	*0.98*	250	*3625*	280	*4060*	600	4000	4.8	*10.6*
2MGE - 8.3	8.2	*0.50*	52.8	*2.07*	26.4	*1.04*	250	*3625*	280	*4060*	600	3600	5.0	*11.0*
2MGE - 11.3	11.5	*0.68*	59.7	*2.35*	29.75	*1.17*	250	*3625*	280	*4060*	600	3500	5.2	*11.5*
2MGE - 13.8	13.8	*0.84*	63.5	*2.50*	31.75	*1.25*	250	*3625*	280	*4060*	600	3400	5.4	*11.9*
2MGE - 16	16.6	*1.01*	67.5	*2.65*	39.5	*1.56*	250	*3625*	280	*4060*	450	3200	6.6	*14.5*
2MGE - 19	19.4	*1.18*	75.6	*2.97*	39.5	*1.56*	220	*3190*	240	*3480*	450	3200	7.1	*15.6*
2MGE - 22.5	22.9	*1.37*	81	*3.19*	47.5	*1.87*	200	*2900*	220	*3190*	450	3000	7.5	*16.5*
2MGE - 26	26.6	*1.62*	86.8	*3.42*	47.5	*1.87*	180	*2615*	200	*2900*	450	2850	7.8	*17.2*

From Displacement
6.5 to 13.8

For flanges code:
P1-B1-S2-S3, this dimension is 19 mm (0.75 in.)
B4-B5-C1, this dimension is 16.5 mm (0.65 in.)



From Displacement
16 to 26

For flanges code:
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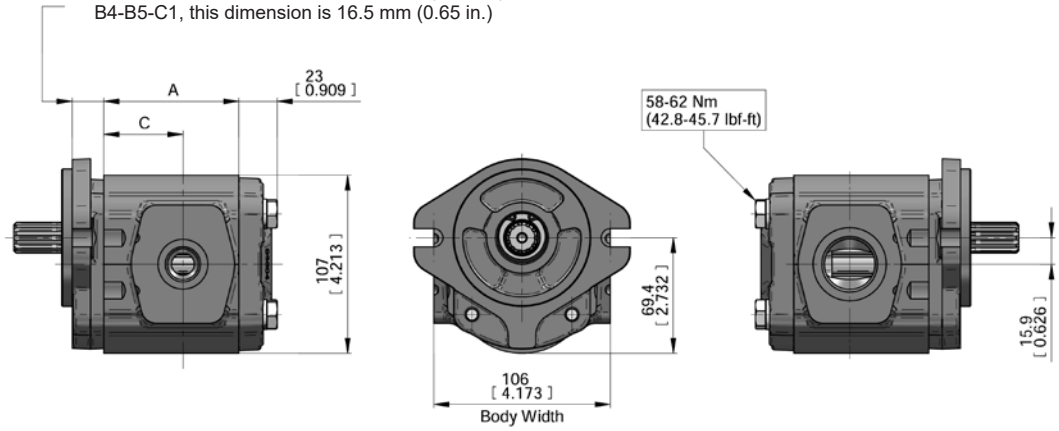
B4-B5-C1, this dimension is 16.5 mm (0.65 in.)



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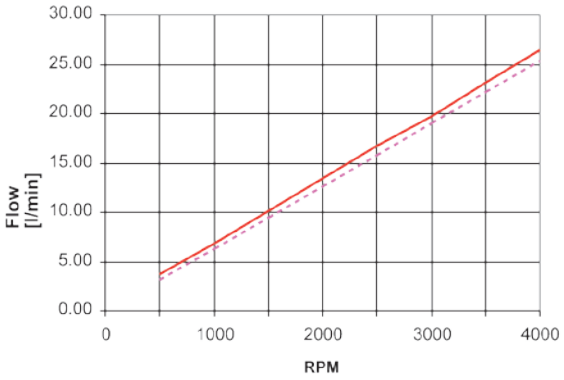
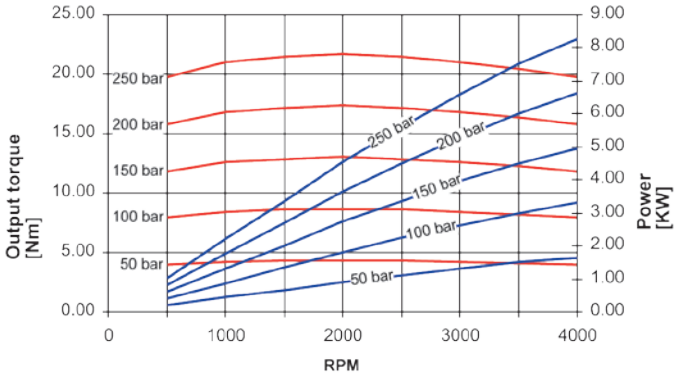
Motor Performance Charts

Performance curves carried out with oil viscosity at 21 cSt and oil temperature at 50°C





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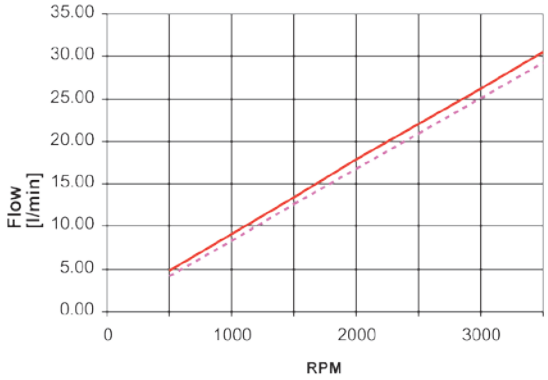

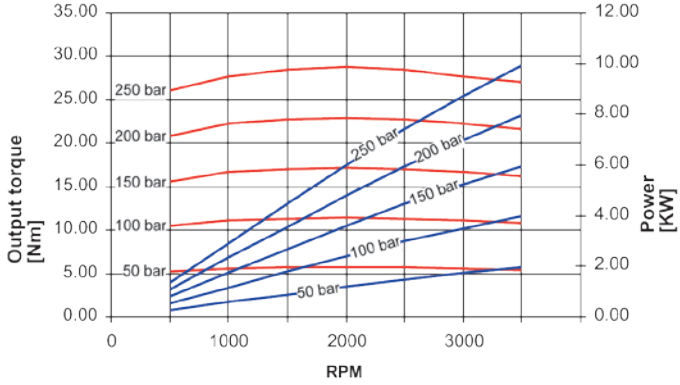

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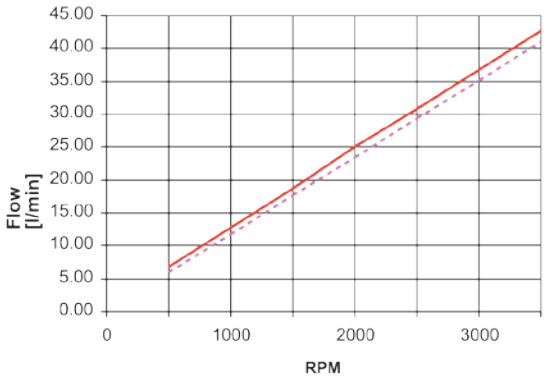

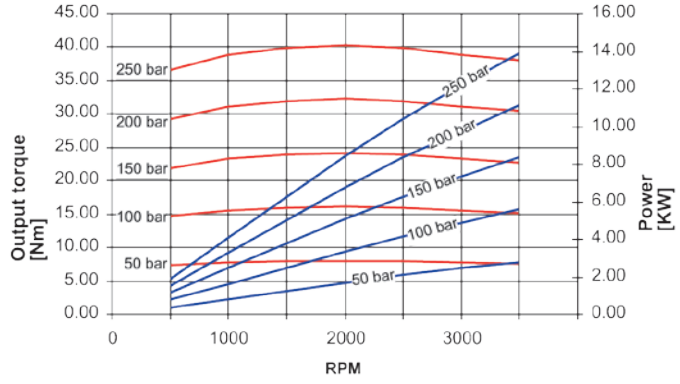

2MGE - 11.3

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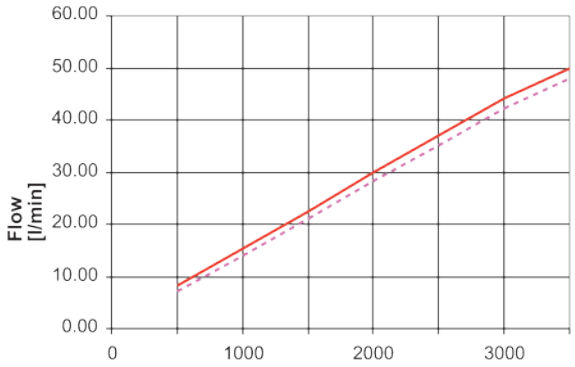
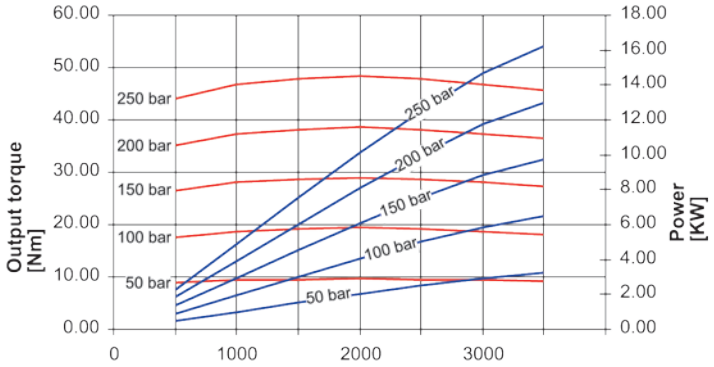
Motor Performance Charts

Performance curves carried out with oil viscosity at 21 cSt and oil temperature at 50°C





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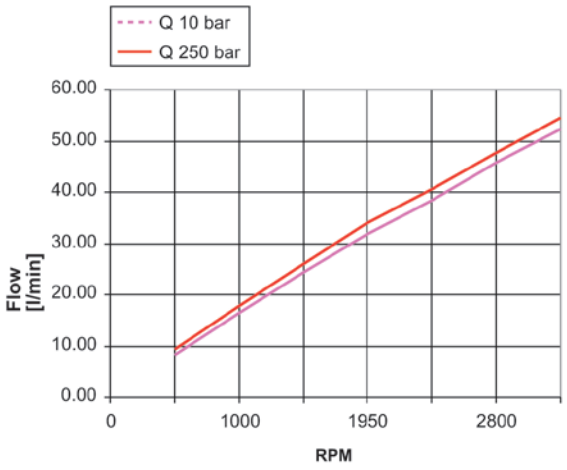

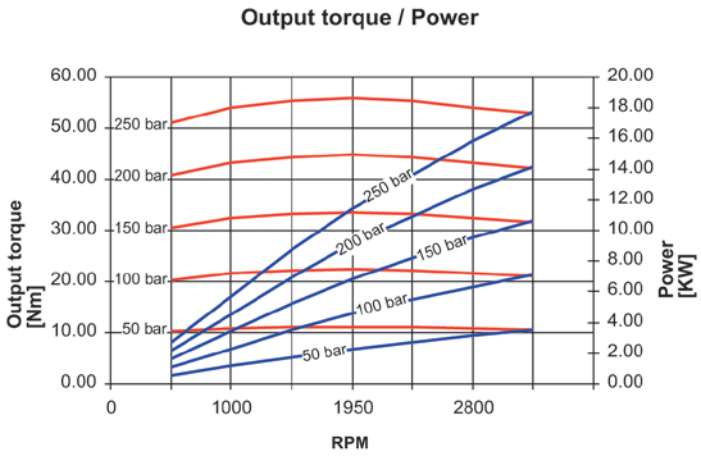

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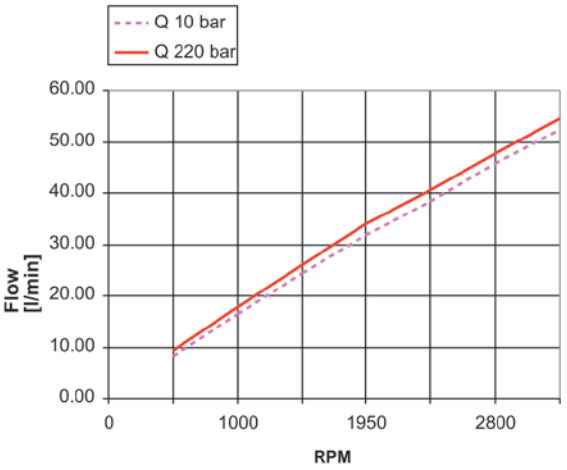

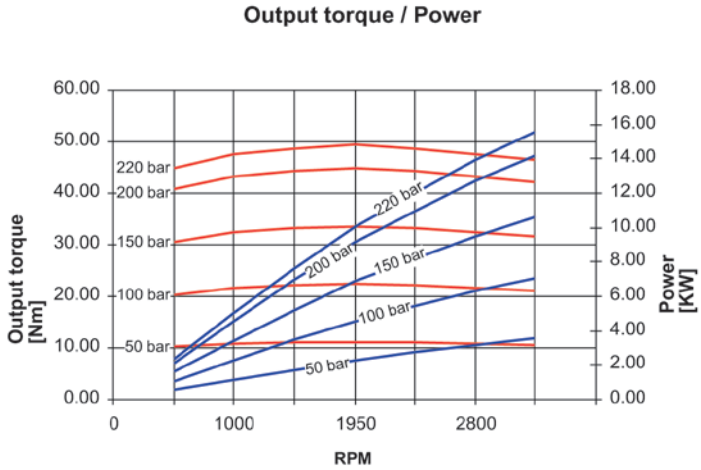

2MGE - 19

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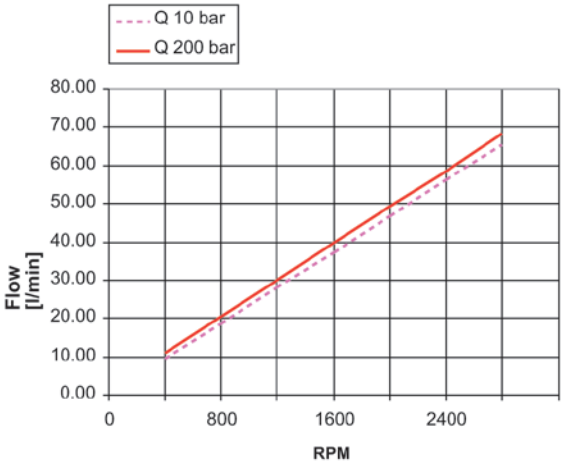
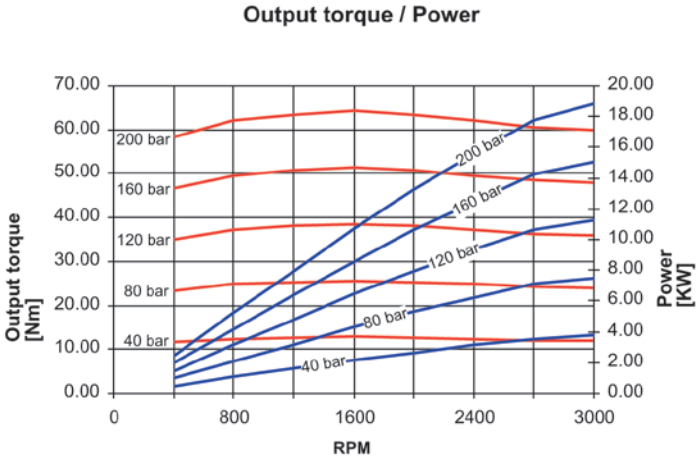
Motor Performance Charts

Performance curves carried out with oil viscosity at 21 cSt and oil temperature at 50°C





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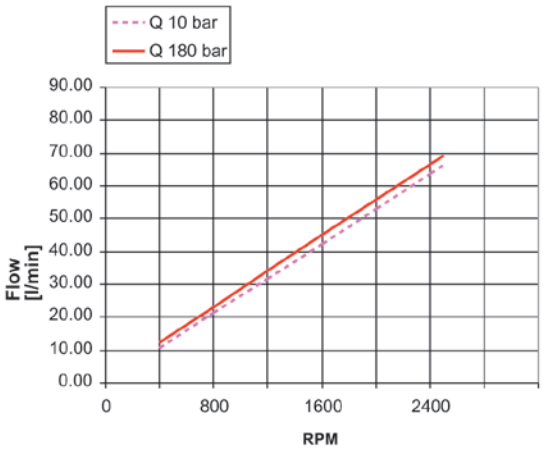

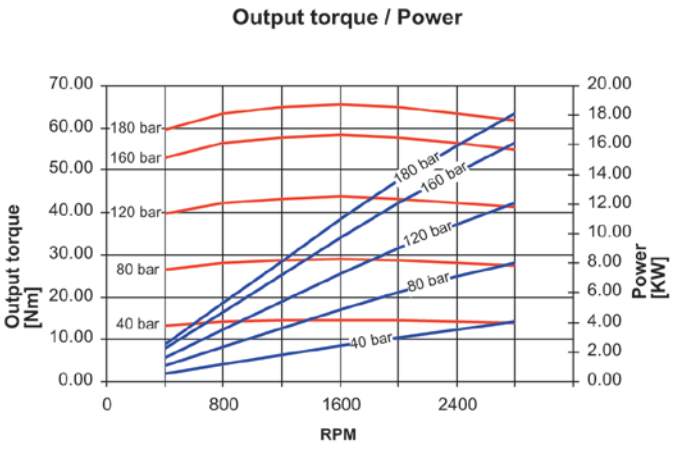

2MGE - 26

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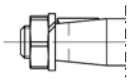
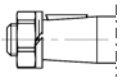
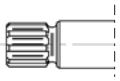
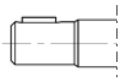
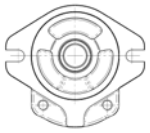
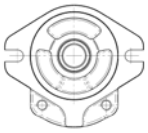
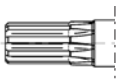
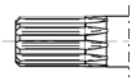
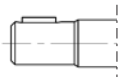
Shaft and Flange Combinations

2MGE		 CODE **P1**	 CODE **B1**	 CODE **B2-B3**	 CODE **B4-B5**
		FLANGES			
SHAFT END	 CODE **03**			03B2 03B3	
	 CODE **25**		25B1		25B4 25B5
	 CODE **28**	28P1			
	 CODE **62**	62P1	62B1		62B4 62B5
	 CODE **82**	82P1			

Shaft and Flange Combinations

2MGE		 CODE **S2**	 CODE **S6**	 CODE **T1**	 CODE **Z2**
		FLANGES		**FLANGES WITH OUTRIGGER BEARING**	
SHAFT END	 CODE **52**	52S2	52S6		
	 CODE **54**	54S2	54S6		
	 CODE **82**	82S2	82S6		
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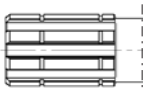
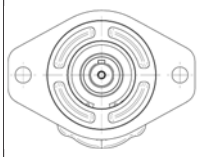
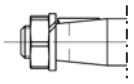
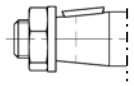
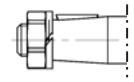
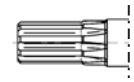
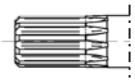
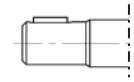
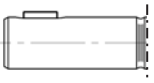
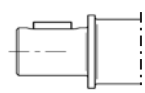
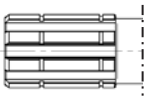
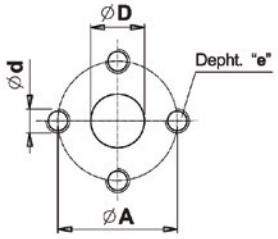
CONTINENTAL SHAFT END	 CODE **67**				67Z2
	 CODE **73**			73T1	

Continental Shaft and Flange With Outrigger Bearing Combinations

2MGE								
		CODE **CL**	CODE **CF**	CODE **CS**	CODE **CB**	CODE **CP**	CODE **CSB**	CODE **Z1**
		FLANGES WITH OUTRIGGER BEARING						
CONTINENTAL SHAFT END	 CODE **25**	25CL	25CF		25CB			
	 CODE **26**	26CL			26CB			
	 CODE **28**					28CP		
	 CODE **52**			52CS				
	 CODE **54**			54CS				
	 CODE **82**			82CS				
	 CODE **85**			85CS				
	 CODE **87**						87CSB	
	 CODE **66**							66Z1

Flanged Ports



code P

Flanged ports
european standard

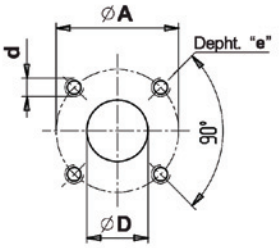
M6	8 Nm (5.9 lbf-ft)
M8	20 Nm (14.7 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET				INLET			
	Ø D	Ø A	d	e	Ø D	Ø A	d	e
From 6.5 to 8.3	13 *(0.51")*	30 *(1.18")*	M6	13 *(0.51")*	13 *(0.51")*	30 *(1.18")*	M6	13 *(0.51")*
From 11.3 to 22.5	20 *(0.79")*	40 *(1.57")*	M8	13 *(0.51")*	13 *(0.51")*	30 *(1.18")*	M6	13 *(0.51")*
26	22 *(0.87")*							

BI-DIRECTIONAL

MOTORS	OUTLET				INLET			
	Ø D	Ø A	d	e	Ø D	Ø A	d	e
From 6.5 to 16	13 *(0.51")*	30 *(1.18")*	M6	13 *(0.51")*	13 *(0.51")*	30 *(1.18")*	M6	13 *(0.51")*
From 19 to 26	20 *(0.79")*	40 *(1.57")*	M8	13 *(0.51")*	20 *(0.79")*	40 *(1.57")*	M8	13 *(0.51")*



code B

Flanged ports
german standard

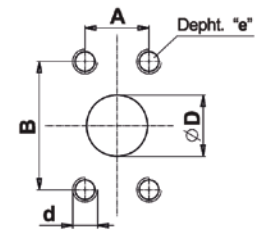
M6	8 Nm (5.9 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET				INLET			
	Ø D	Ø A	d	e	Ø D	Ø A	d	e
From 6.5 to 22.5	20 *(0.79")*	40 *(1.57")*	M6	13 *(0.51")*	15 *(0.59")*	35 *(1.38")*	M6	13 *(0.51")*
26	22 *(0.87")*							

BI-DIRECTIONAL

MOTORS	OUTLET				INLET			
	Ø D	Ø A	d	e	Ø D	Ø A	d	e
From 6.5 to 16	15 *(0.59")*	35 *(1.38")*	M6	13 *(0.51")*	15 *(0.59")*	35 *(1.38")*	M6	13 *(0.51")*
From 19 to 26	20 *(0.79")*	40 *(1.57")*	M6	13 *(0.51")*	20 *(0.79")*	40 *(1.57")*	M6	13 *(0.51")*



code W

Flanged ports
SAE J518
METRIC THREAD

M8	20 Nm (14.7 lbf-ft)
M10	35 Nm (25.8 lbf-ft)

UNI-DIRECTIONAL

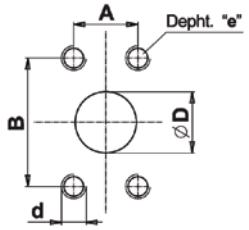
MOTORS	OUTLET					INLET				
	ØD	B	A	d	e	ØD	B	A	d	e
From 16 to 19	19 *(0.75")*	47.6 *(1.87")*	22.2 *(0.87")*	M10	15 *(0.59")*	12.7 *(0.50")*	38.1 *(1.50")*	17.5 *(0.69")*	M8	15 *(0.59")*
From 22.5 to 26	25.4 *(1.00")*	52.4 *(2.06")*	26.2 *(1.03")*	M10	15 *(0.59")*	19 *(0.75")*	47.6 *(1.87")*	22.2 *(0.87")*	M10	15 *(0.59")*

BI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	ØD	B	A	d	e	ØD	B	A	d	e
16	12.7 *(0.50")*	38.1 *(1.50")*	17.5 (0.69")	M8	15 *(0.59")*	12.7 *(0.50")*	38.1 *(1.50")*	17.5 *(0.69")*	M8	15 *(0.59")*
From 19 to 26	19 *(0.75")*	47.6 *(1.87")*	22.2 *(0.87")*	M10	15 *(0.59")*	19 *(0.75")*	47.6 *(1.87")*	22.2 *(0.87")*	M10	15 *(0.59")*

E0.146.0921.14.00M01

Flanged Ports



code S

Flanged ports
SAE J518
AMERICAN STANDARD
THREAD

5/16-18 UNC	20 Nm (14.7 lbf-ft)
3/8-16 UNC	30 Nm (22.1 lbf-ft)

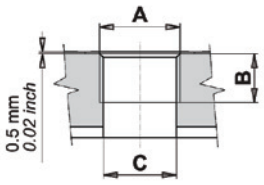
UNI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	ØD	B	A	d	e	ØD	B	A	d	e
From 16 to 19	19 *(0.75”)*	47.6 *(1.87”)*	22.2 *(0.87”)*	3/8-16 UNC	15 (0.59”)	12.7 (0.50”)	38.1 (1.50”)	17.5 (0.69”)	5/16-18 UNC	15 (0.59”)
From 22.5 to 26	25.4 *(1.00”)*	52.4 *(2.06”)*	26.2 *(1.03”)*	3/8-16 UNC	15 *(0.59”)*	19 *(0.75”)*	47.6 *(1.87”)*	22.2 *(0.87”)*	3/8-16 UNC	15 *(0.59”)*

BI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	ØD	B	A	d	e	ØD	B	A	d	e
16	12.7 *(0.50”)*	38.1 *(1.50”)*	17.5 *(0.69”)*	5/16-18 UNC	15 *(0.59”)*	12.7 *(0.50”)*	38.1 *(1.50”)*	17.5 *(0.69”)*	5/16-18 UNC	15 *(0.59”)*
From 19 to 26	19 *(0.75”)*	47.6 *(1.87”)*	22.2 *(0.87”)*	3/8-16 UNC	15 *(0.59”)*	19 *(0.75”)*	47.6 *(1.87”)*	22.2 *(0.87”)*	3/8-16 UNC	15 *(0.59”)*

Threaded Ports



code G

Threaded ports
GAS (BSPP)

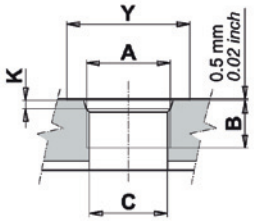
G1/2	60 Nm (44.3 lbf-ft)
G3/4	90 Nm (66.4 lbf-ft)
G1	130 Nm (95.8 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET			INLET		
	A	B	C	A	B	C
From 6.5 to 19	G 3/4	17 *(0.67”)*	18 *(0.71”)*	G 1/2	15 *(0.59”)*	13 *(0.79”)*
From 22.5 to 26	G1	20 *(0.79”)*	25 *(0.98”)*			

BI-DIRECTIONAL

MOTORS	OUTLET			INLET		
	A	B	C	A	B	C
From 6.5 to 16	G 1/2	15 *(0.59”)*	13 *(0.79”)*	G 1/2	15 *(0.59”)*	13 *(0.79”)*
From 19 to 26	G 3/4	17 *(0.67”)*	20 *(0.79”)*	G 3/4	17 *(0.67”)*	20 *(0.79”)*



code R

Threaded ports
SAE (ODT)

SAE10	60 Nm (44.3 lbf-ft)
SAE12	90 Nm (66.4 lbf-ft)
SAE16	130 Nm (95.8 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	A	B	C	Y	K	A	B	C	Y	K
From 6.5 to 19	1-1/16-12 UN (SAE 12)	19 *(0.75”)*	18 *(0.71”)*	41 *(1.61”)*	3.3 *(0.13”)*	7/8-14 UNF (SAE 10)	17 *(0.67”)*	13 *(0.79”)*	34 *(1.32”)*	2.5 *(0.10”)*
From 22.5 to 26	1-5/16-12 UN (SAE 16)	19 *(0.75”)*	25 *(0.98”)*	49 *(1.93”)*	3.3 *(0.13”)*					

BI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	A	B	C	Y	K	A	B	C	Y	K
From 6.5 to 16	7/8-14 UNF (SAE 10)	17 *(0.67”)*	13 *(0.79”)*	34 *(1.32”)*	2.5 *(0.10”)*	7/8-14 UNF (SAE 10)	17 *(0.67”)*	13 *(0.79”)*	34 *(1.32”)*	2.5 *(0.10”)*
From 19 to 26	1-1/16 12 UN (SAE 12)	19 *(0.75”)*	20 *(0.79”)*	41 *(1.61”)*	3.3 *(0.13”)*	1-1/16 12 UN (SAE 12)	19 *(0.75”)*	20 *(0.79”)*	41 *(1.61”)*	3.3 *(0.13”)*

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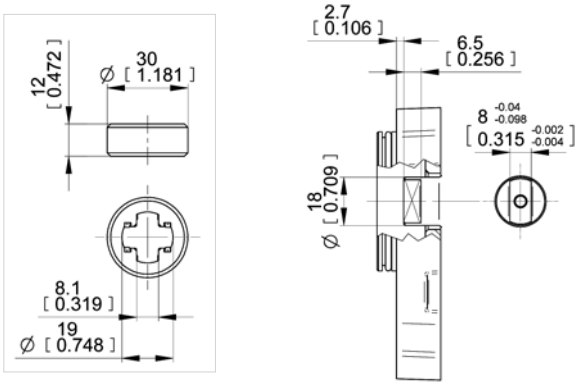
Drive Shaft



code 03	Max torque 70 Nm (620 lbf in)

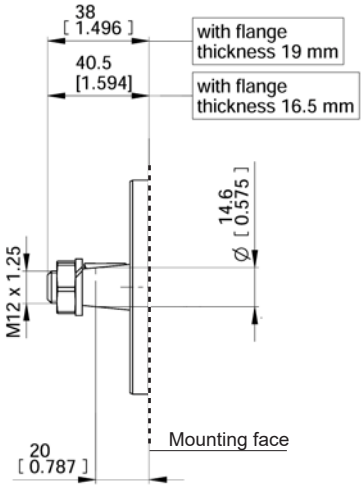
TANG DRIVE FOR ELECTRIC MOTORS (without shaft seal)

Woodruff Key
3x6,5-UNI 6606
3x5 (for bearing version
CL-CF-CB)

Washer
M12 TE-UNI 1751B

Nut
M12x1,25-UNI 5589
40 Nm-29.7 lbf-ft

Part Number
Kit Woodruff Key+Nut+Washer
R12280180
R12283030 (bearing version)



code 25	Max torque 130 Nm (1151 lbf in)

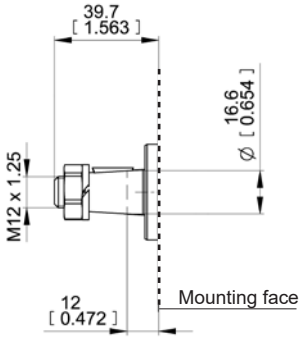
TAPERED 1:5

Woodruff Key
3,165x6,2

Washer
M12 TE-UNI 1751B

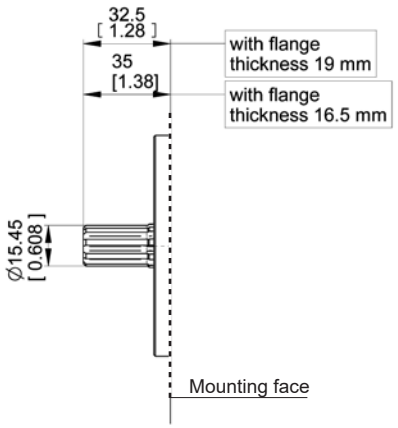
Nut
M12x1,25-UNI 5589
40 Nm-29.7 lbf-ft

Part Number
Kit Woodruff Key+Nut+Washer
R12280170



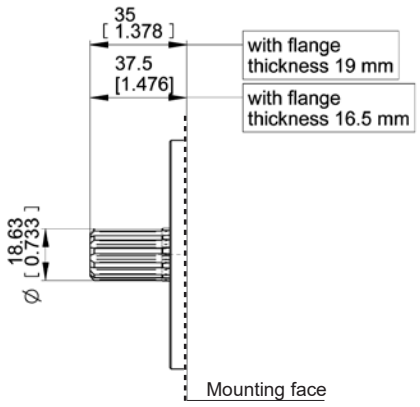
code 28	Max torque 130 Nm (1151 lbf in)

TAPERED 1:8



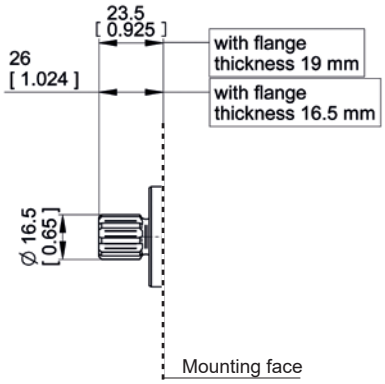
code 52	Max torque 110 Nm (974 lbt in)

SAE A 9T-16/32DP SPLINED



code 54	Max torque 160 Nm (1416 lbt in)

SAE A 11T-16/32DP SPLINED



code 62	Max torque 140 Nm (1239 lbt in)

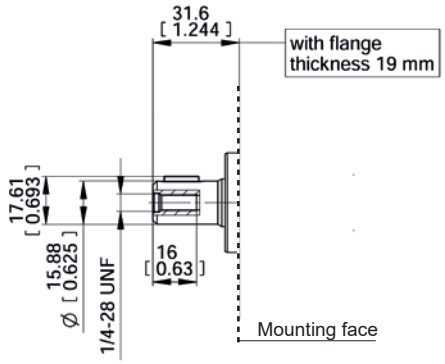
9 TEETH DIN 5482 SPLINED

E0.146.0921.14.00IM01

Drive Shaft

Key
3,97x3.97x12,7

Part Number
Key
796620700

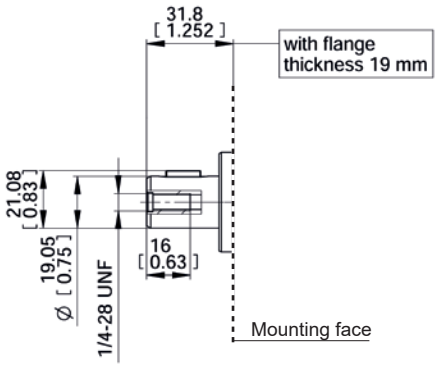


code 82	Max torque 75 Nm (664 lbt in)

5/8” SAE A PARALLEL

Key
4,76x4,76x12,7

Part Number
Key
796621000



code 85	Max torque 110 Nm (974 lbt in)

3/4” SAE A PARALLEL

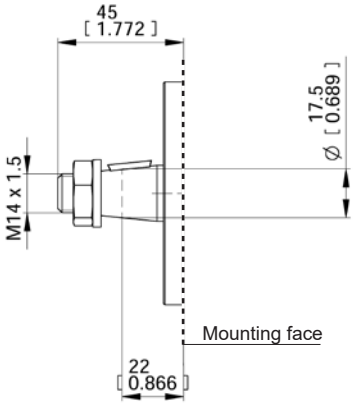
Continental Shaft

Woodruff Key
4x6,5 UNI 6606

Washer
M14 UNI 1751

Nut
M14x1,5 IS0 8675
40 Nm-29.7 lbf-ft

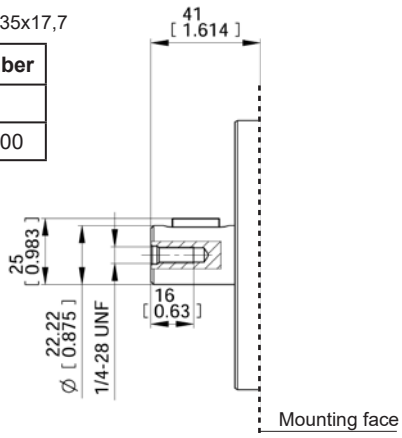
Part Number
Kit Woodruff Key+Nut+Washer
R12240080



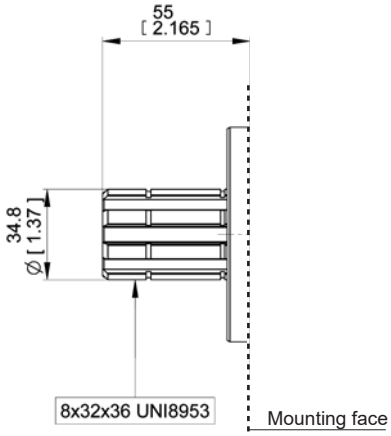
code 26	Max torque 100 Nm (885 lbt in)
TAPERED 1:5 (ONLY FOR CB, CL)	

Key
6,35x6,35x17,7

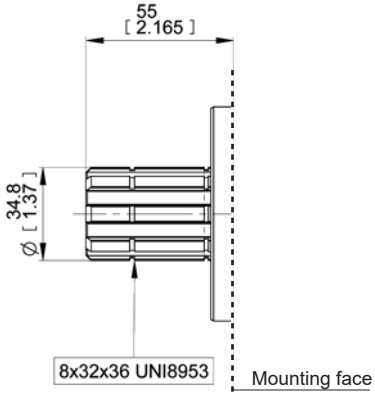
Part Number
Key
796620800



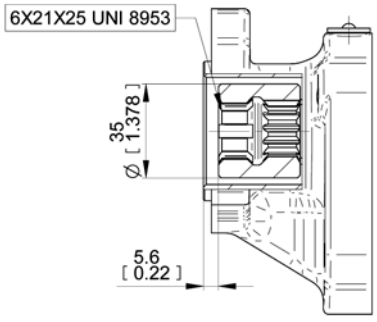
code 87	Max torque 200 Nm (1770 lbt in)
7/8” SAE B PARALLEL	



code 66	Max torque 200 Nm (1770 lbt in)
8X32X36 UNI 8953 SPLINED	



code 67	Max torque 200 Nm (1770 lbt in)
8X32X36 UNI 8953 SPLINED	



code 73	Max torque 200 Nm (1770 lbt in)
6X21X25 UNI 8953 INTERNAL SPLINED	

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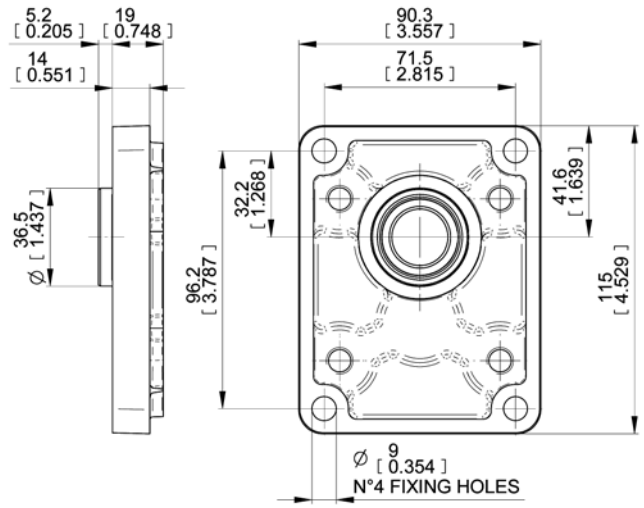
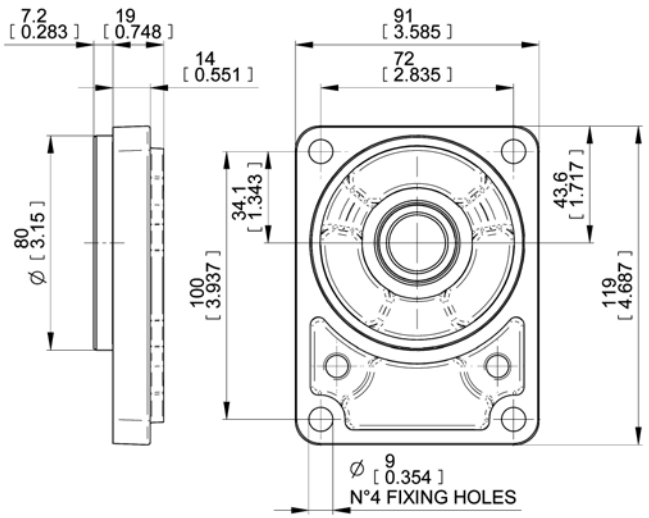
Mounting Flanges



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
28P1	R12040320 (NBR) R12040321 (FPM)	R12040122 (NBR) R12040123 (FPM)
62P1		
82P1		

code P1 — With shaft code 28-62-82

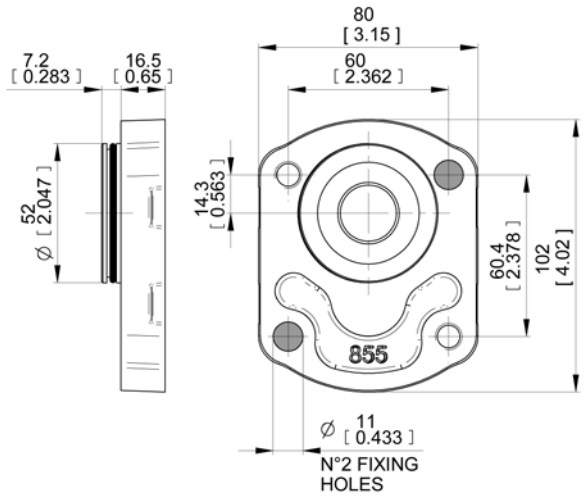
EUROPEAN STANDARD



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
25B1	R12240131 (NBR) R12040330 (FPM)	R12040122 (NBR) R12040123 (FPM)
62B1		

code B1 — With shaft code 25-62

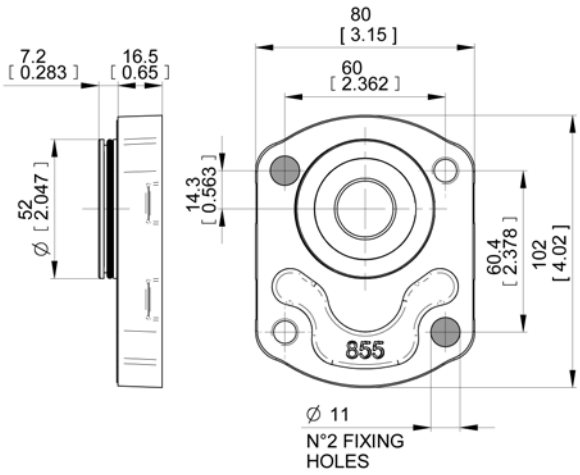
GERMAN STANDARD



Code	Part Number	
	Flange+O-ring	O-ring (OR3187-AT 47,29x2,62-NBR)
03B2	R12240050	799113400

code B2 — With shaft code 03

GERMAN STANDARD



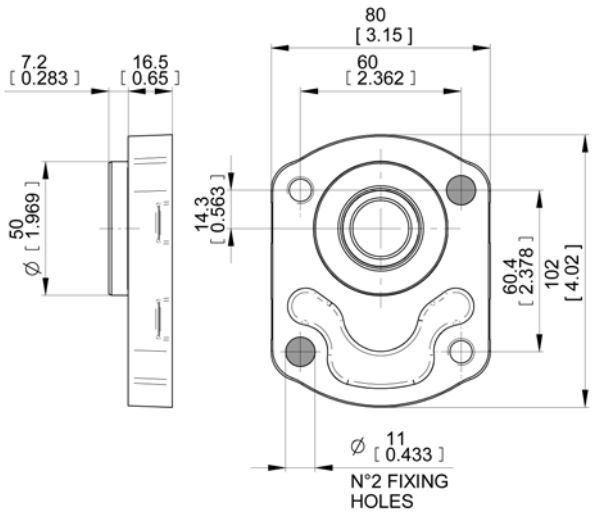
Code	Part Number	
	Flange+O-ring	O-ring (OR3187-AT 47,29x2,62-NBR)
03B3	R12240050	799113400

code B3 — With shaft code 03

GERMAN STANDARD

E0.146.0921.14.00IM01

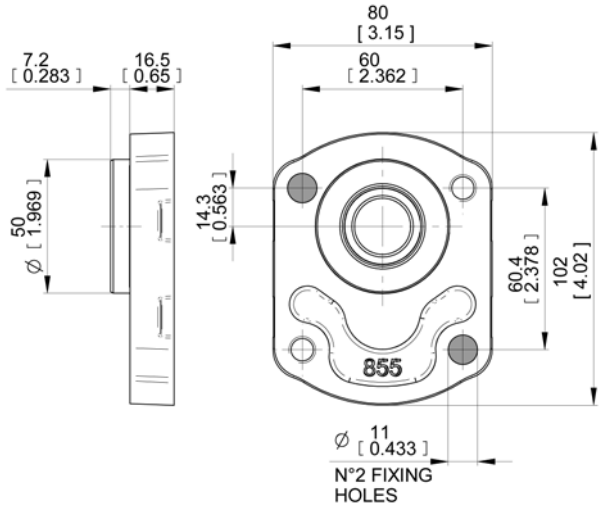
Mounting Flanges



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
25B4	R12240101 (NBR) R12240103 (FPM)	R12040122 (NBR) R12040123 (FPM)
62B4		

B4 — With shaft code 04-25-62

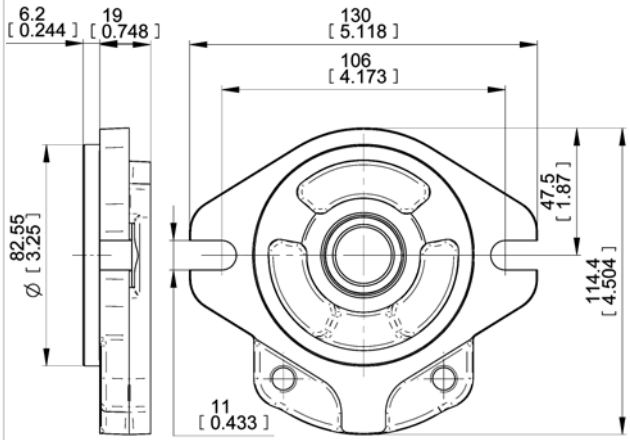
GERMAN STANDARD



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
25B5	R12240139 (NBR) R12240135 (FPM)	R12040122 (NBR) R12040123 (FPM)
62B5		

B5 — With shaft code 04-25-62

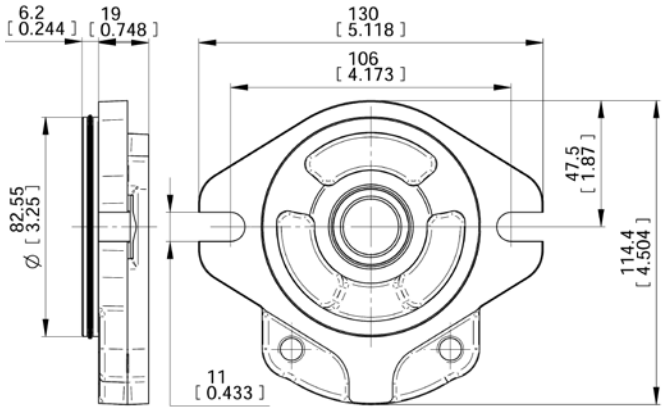
GERMAN STANDARD



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
52S2	R14640030 (NBR) R14640031 (FPM)	R12040122 (NBR) R12040123 (FPM)
82S2		
54S2	R14640040 (NBR) R14640041 (FPM)	R12240114 (NBR) R12240113 (FPM)
85S2		

S2 — With shaft code 52-54-82-85

SAE A 2 BOLTS



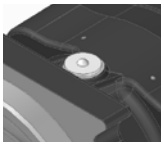
Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
52S6	R14640024 (NBR) R14640025 (FPM)	R12040122 (NBR) R12040123 (FPM)
82S6		
54S6	R14640026 (NBR) R14640027 (FPM)	R12240114 (NBR) R12240113 (FPM)
85S6		

S6 — With shaft code 52-54-82-85

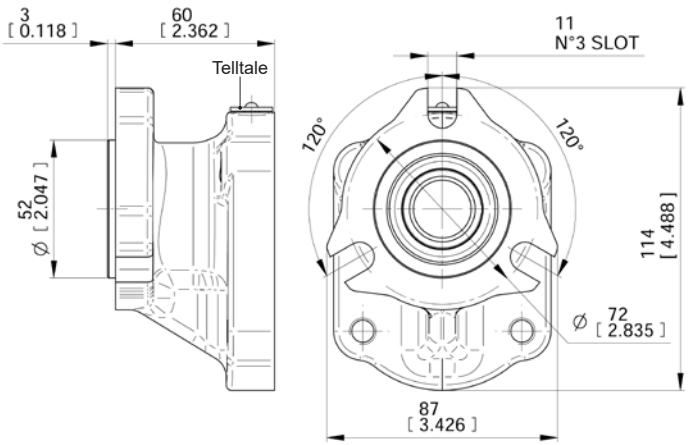
SAE A 2 BOLTS (with O-ring on the centering collar)

E0.146.0921.14.00IM01

Mounting Flanges



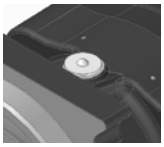
TellTale
drop in plug in case of failure, outside leakage trough the crossing hole is visible.



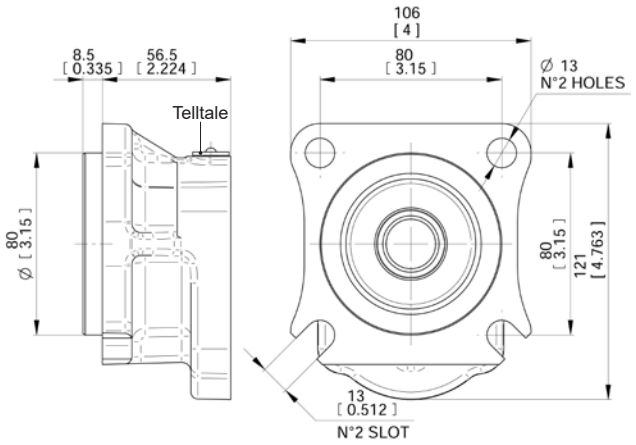
Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
73T1	R14640080 (NBR) R14640081 (FPM)	R14640012 (NBR) R14640013 (FPM)

T1	With shaft code 73

3 BOLTS UNI 8953 FOR GEAR BOX



TellTale
drop in plug in case of failure, outside leakage trough the crossing hole is visible.



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 119-120)
67Z2	R14640090 (NBR) R14640091 (FPM)	R14640012 (NBR) R14640013 (FPM)

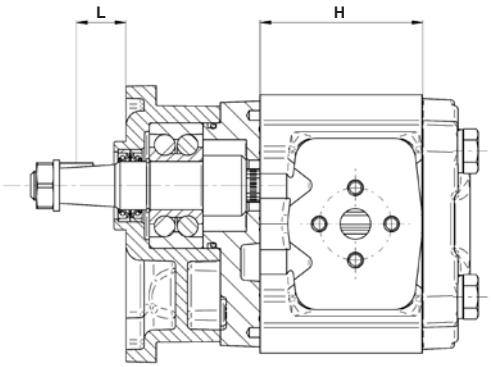
Z2	With shaft code 67

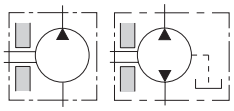
4 BOLTS FOR ZF GEAR BOX

Mounting Flanges with Outrigger Bearing

The following diagrams show radial load capability of the bearing.
Calculation according to ISO 281 at 10 cSt

L=Distance between mounting flange and radial force point of application.

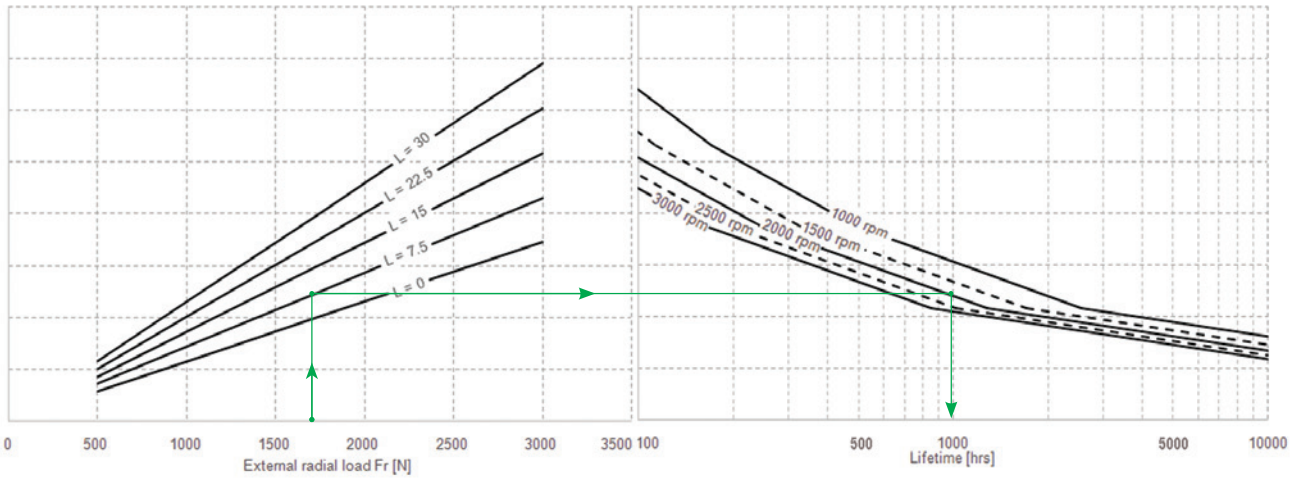




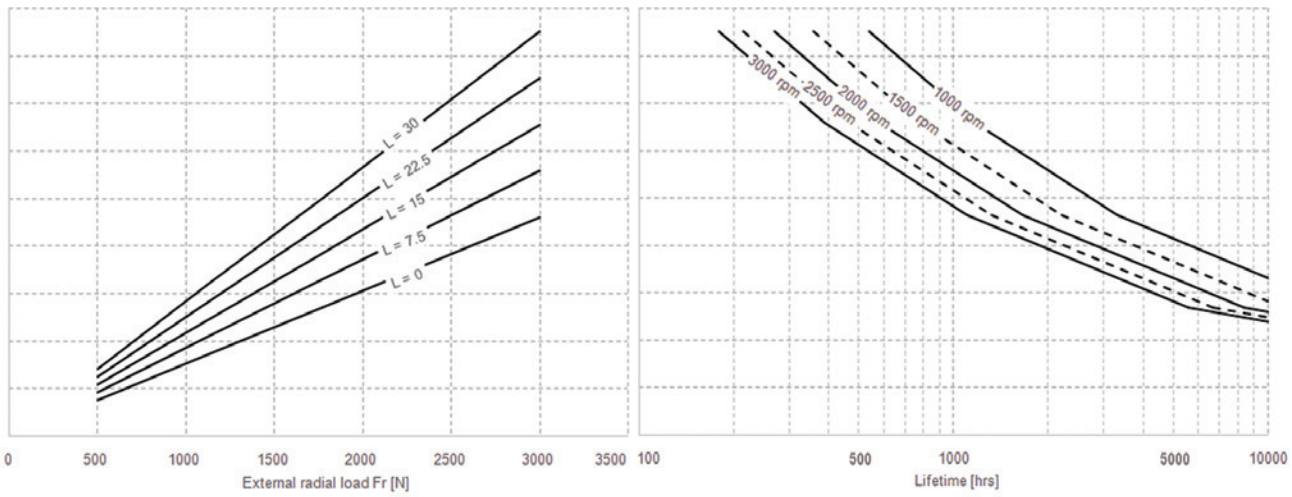
TYPE	H
6.5	49.95 (*1.97”*)
8.3	52.8 (*2.08”*)
11.3	59.7 (*2.35”*)
13.8	63.5 (*2.5”*)
16	67.5 (*2.66”*)
19	75.6 (*2.97”*)
22.5	81 (*3.19”*)
26	86.6 (*3.42”*)

Example:
Fr = 1700 N
L = 7.5 → Expected life: 1000 hrs
Speed = 2000 rpm

For Code CP-CB-CL-CS



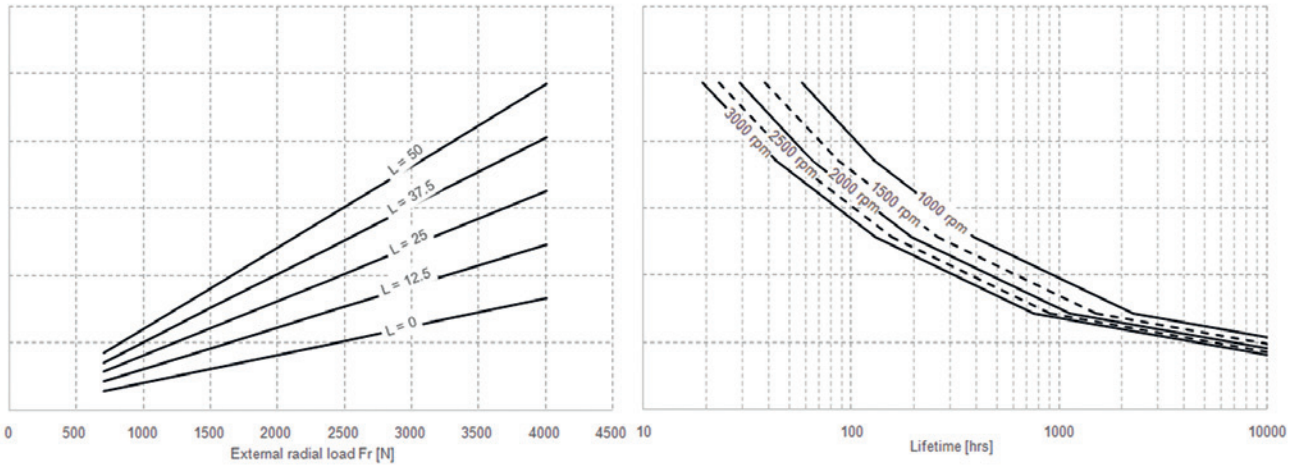
For Code CF



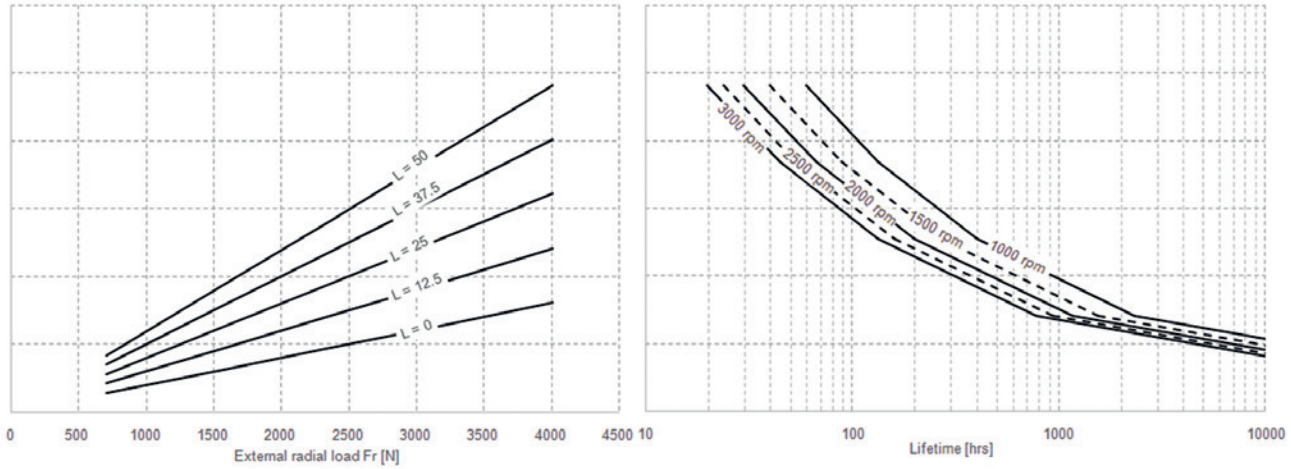
E0.146.0921.14.00IM01

Mounting Flanges with Outrigger Bearing

For Code Z1



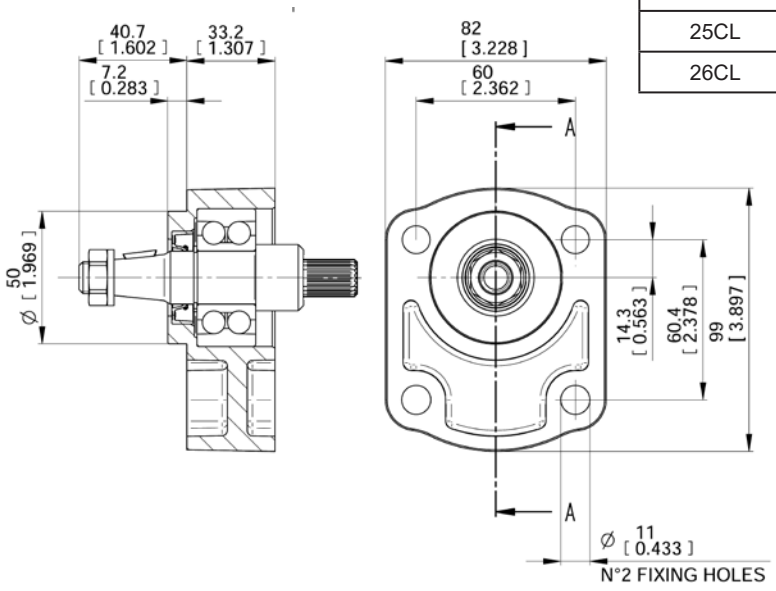
For Code CSB



Aluminium Mounting Flanges with Outrigger Bearing

Code	Part Number	
	Flange+Bearing support	Kit Woodruff Key+Nut+Washer
25CL	R12040091	R12283030
26CL	R12040061	R12240080

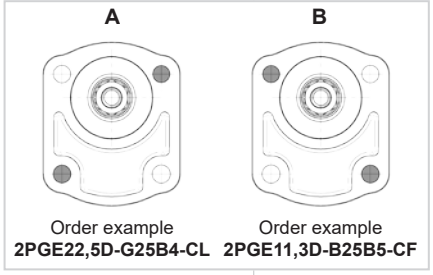
Coupling Sleeve Splined W14x0.6x8f DIN 5480
312002515

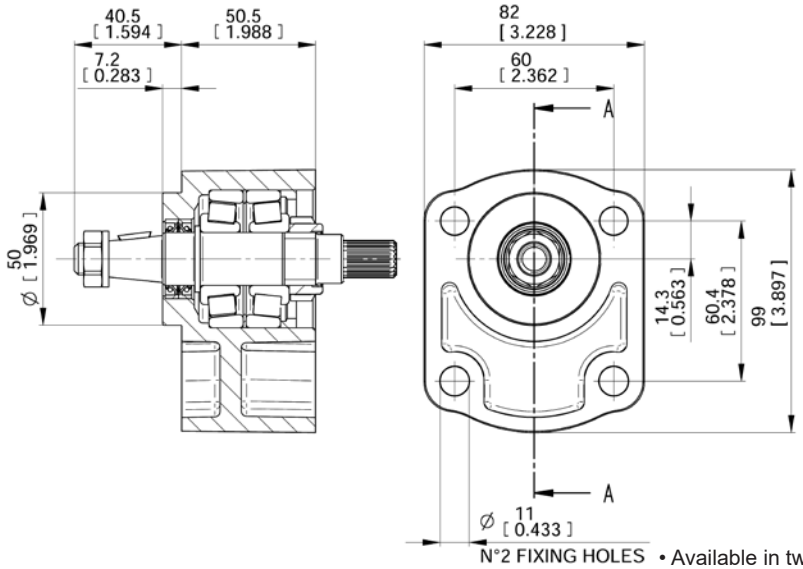


• Available in two positions: A - B

Mounting with shaft code 25

CL	With shaft code 25-26 - Max torque 100 Nm (885 lbt in)
FOR INTERNAL COMBUSTION ENGINES	





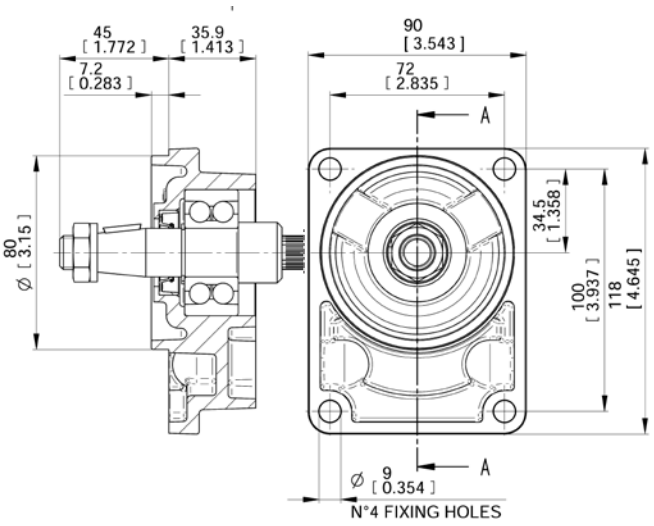
• Available in two positions: A - B

Code	Part Number	
	Flange+Bearing support	Kit Woodruff Key+Nut+Washer
25CF	R12040103	R12283030

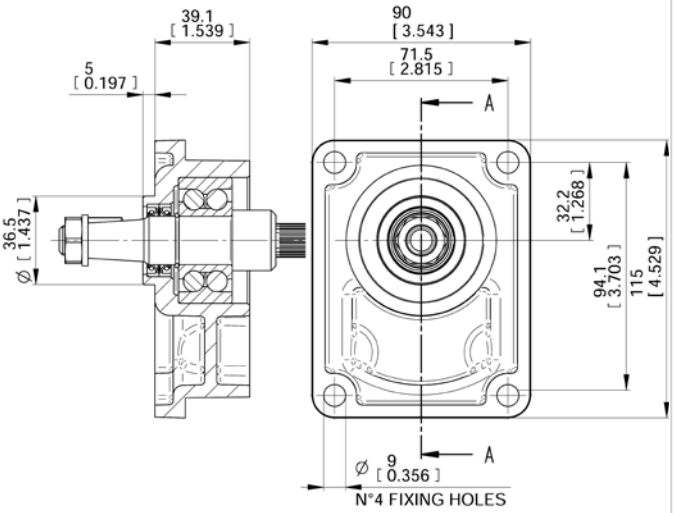
CF	With shaft code 25-26 - Max torque 100 Nm (885 lbt in)
FOR INTERNAL COMBUSTION ENGINES WITH AXIAL AND RADIAL LOADS	

E0.146.0921.14.00IM01

Aluminium Mounting Flanges with Outrigger Bearing



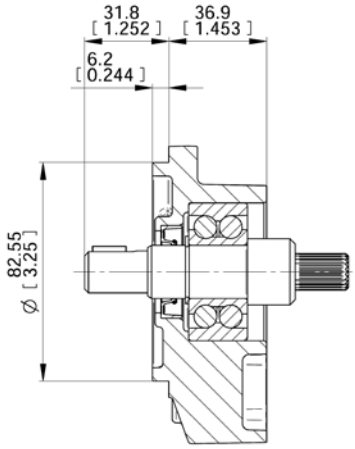
Code	Part Number	
	Flange+Bearing support	Kit Woodruff Key+Nut+Washer
25CB	R12040071	R12283030
26CB	R12040081	R12240080



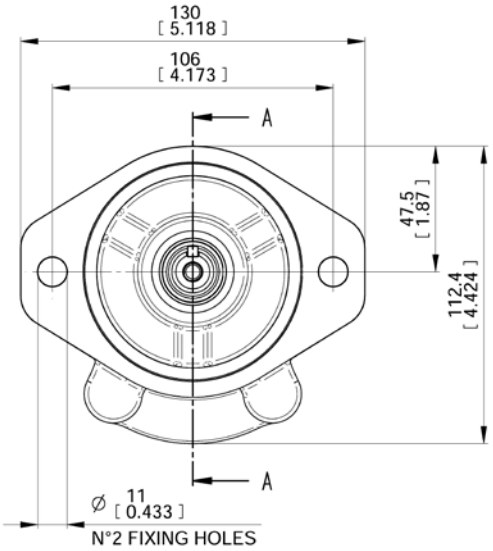
Code	Part Number	
	Flange+Bearing support	Kit Woodruff Key+Nut+Washer
28CP	R12040011	R12240070

CB	With shaft code 25-26 Max torque 100 Nm (885 lbt in)
GERMAN STANDARD	

CP	With shaft code 28 Max torque 100 Nm (885 lbt in)
EUROPEAN STANDARD	



Example with shaft code 82

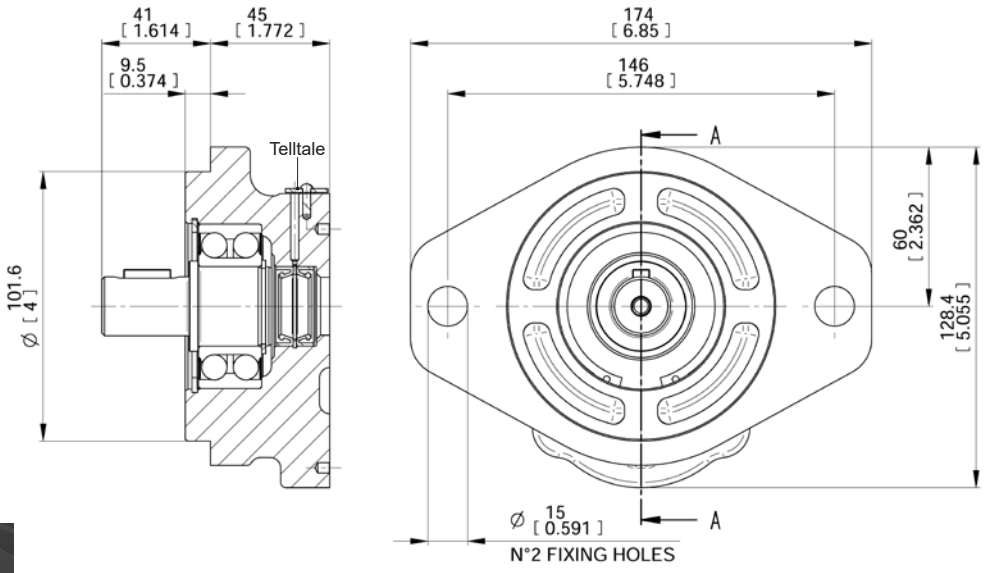


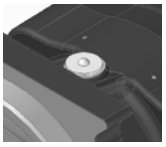
Code	Part Number
	Flange+Bearing support
52CS	R12040031
54CS	R12040021

Code	Part Number	
	Flange+Bearing support	Key
82CS	R12040041	796620700
85CS	R12040051	796621000
86CS	R12040131	796622800

CS	With shaft code 52-54-82-85-86 - Max torque 100 Nm (885 lbt in)
SAE A	

Cast Iron Mounting Flanges with Outrigger Bearing

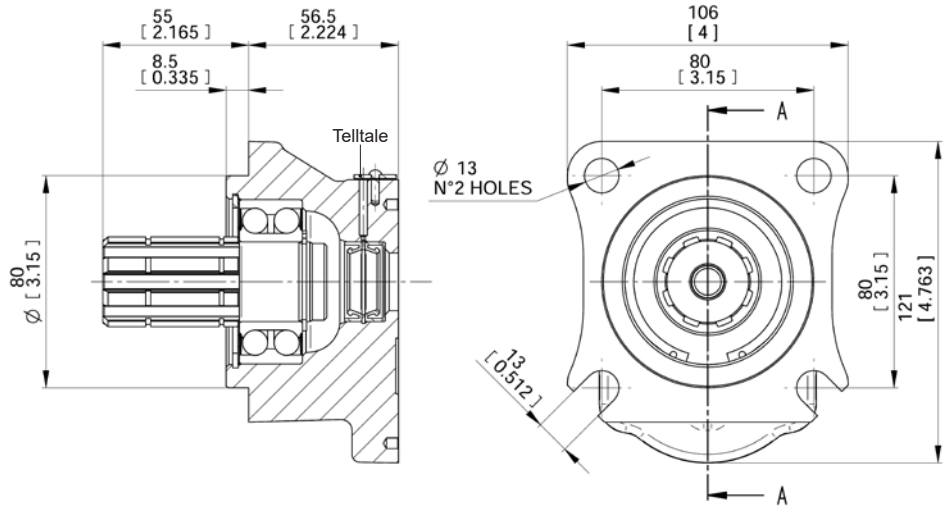




TellTale
drop in plug in case of failure, outside leakage trough the crossing hole is visible.

Code	Part Number	
	Flange+Bearing support	Key
87CSB	R14620020	796620800

CSB	With shaft code 87 - Max torque 200 Nm (1770 lbt in)
SAE B	



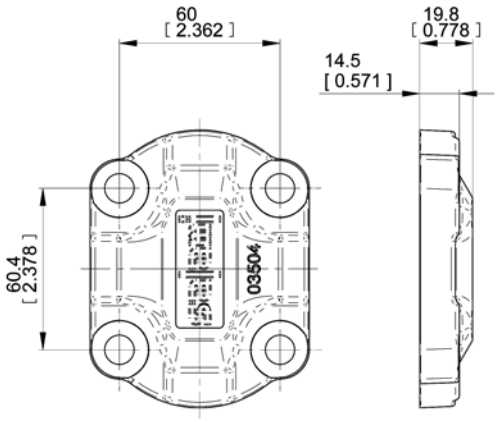
Available only for displacements from 11.3 to 26

Code	Part Number
	Flange+Bearing support
66Z1	R14620010

Z1	With shaft code 66 - Max torque 200 Nm (1770 lbt in)
4 BOLTS FOR ZF GEAR BOX	

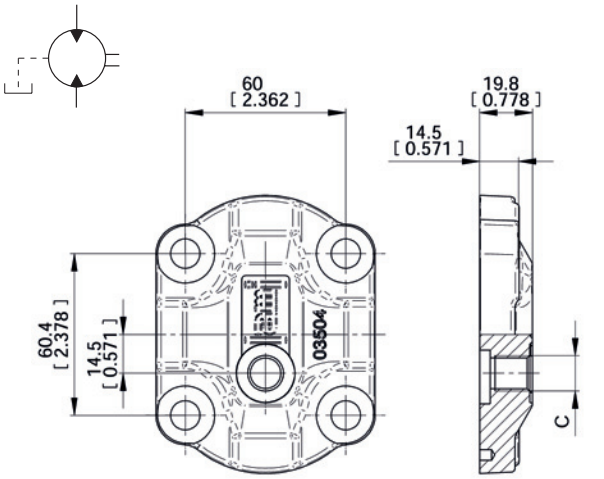
E0.146.0921.14.00IM01

Rear Covers



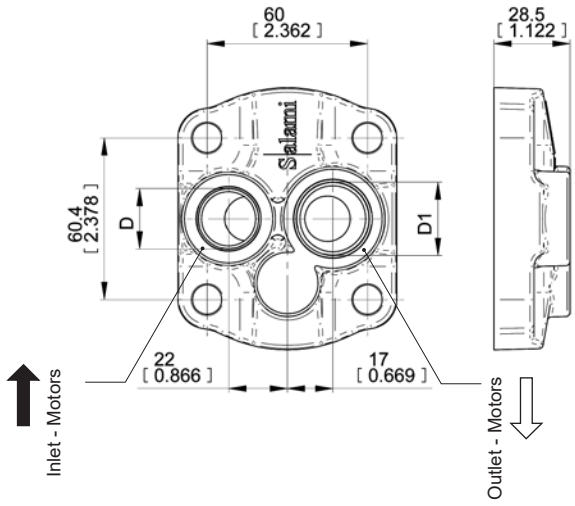
Code	Part Number
Standard Cover	312203529

STANDARD REAR COVER FOR UNIDIRECTIONAL MOTORS



Code	Part Number	Threaded Port
		C (Drain)
Cover with External Drain	312203552 (SAE)	7/16-20 UNF-2B SAE 4
	312203551 (GAS)	G 1/4

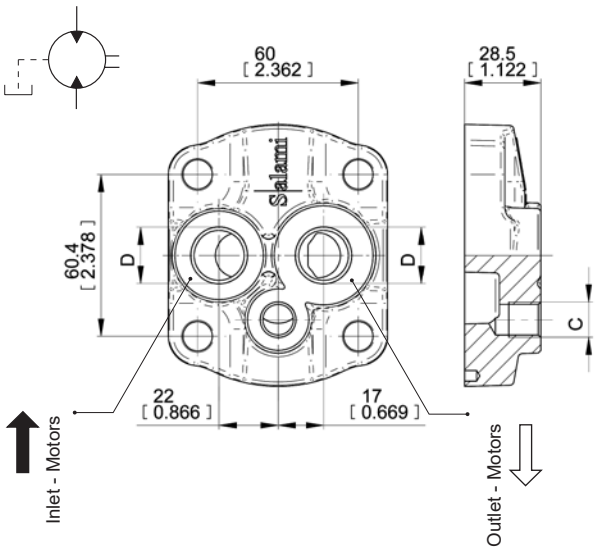
REAR COVER WITH EXTERNAL DRAIN C FOR BIDIRECTIONAL MOTORS



Code	Part Number	Threaded Ports	
		D (Outlet)	D1 (Inlet)
1 Cover with rear ports	312203535	7/8-14 UNF-2B SAE 10	1-1/16-12 UN-2B SAE 12
	312203543	G 1/2	G 3/4

On request outlet port only.

REAR COVER WITH REAR PORTS FOR UNIDIRECTIONAL MOTORS



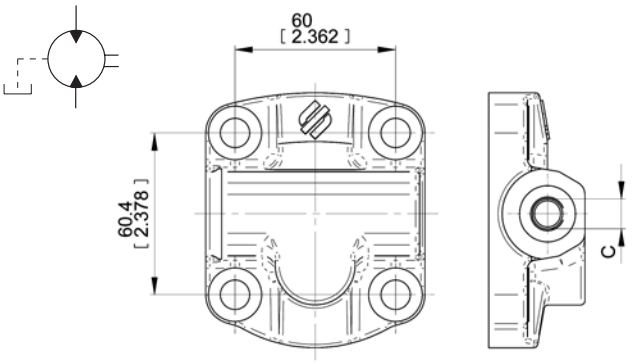
For motors with threaded rear ports until 22 l/min delivery.

Code	Part Number	Threaded Ports	
		D (Inlet/ Outlet)	C (Drain)
1 Cover with rear ports with drain	312203526	M18x1,5	G1/4
	312203527	7/8-14 UNF-2B SAE 10	7/16-20 UNF-2B SAE 4
	312203528	G 1/2	G 1/4

For rear ports if requested please advise type using note.

REAR COVER WITH REAR PORTS FOR BIDIRECTIONAL MOTORS WITH EXTERNAL DRAIN C

Rear Covers

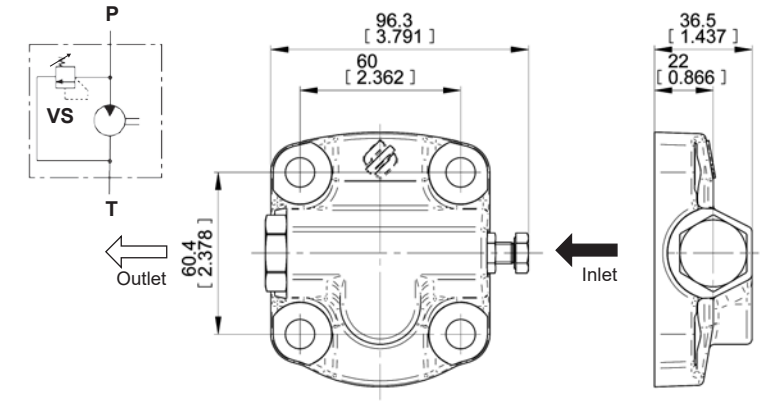


Code	Part Number	Threaded Port
		C (Drain)
LD Cover with External Drain	312203545	7/16-20 UNF-2B SAE 4
	312003509	G 1/4

LD

REAR COVER WITH LATERAL DRAIN FOR BIDIRECTIONAL PUMPS

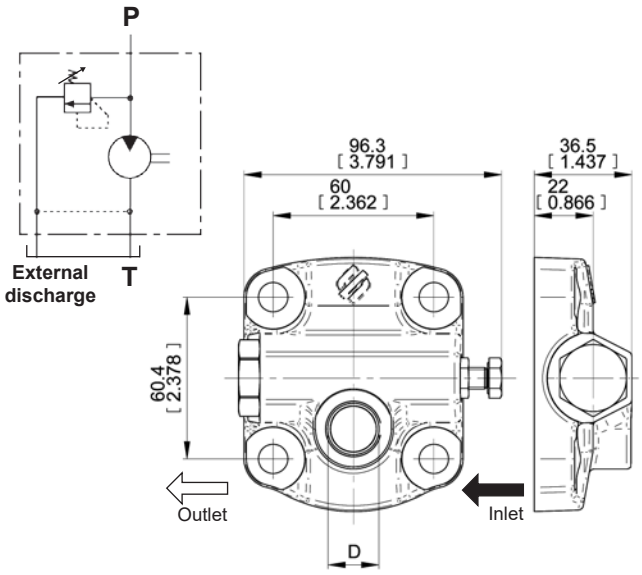
Rear Covers with Valves



Code	Part Number	Pressure relief valve setting range
VS Internal Discharge	R12275013	15-30 bar
	R12275020	30-60 bar
	R12275040	61-120 bar
	R12275050	121-170 bar
	R12275060	171-250 bar

VS

INTERNAL DISCHARGE



Code	Part Number	Pressure relief valve setting range	D (external discharge)
VSE External Discharge	R12275014	15-30 bar	SAE 8
	R12275021	30-60 bar	
	R12275041	61-120 bar	
	R12275051	121-170 bar	
	R12275061	171-250 bar	
	R12275015	15-30 bar	M18x1.5
	R12275022	30-60 bar	
	R12275042	61-120 bar	
	R12275052	121-170 bar	
	R12275062	171-250 bar	
	R12275016	15-30 bar	G 3/8
	R12275023	30-60 bar	
	R12275043	61-120 bar	
	R12275053	121-170 bar	
	R12275063	171-250 bar	

VSE

EXTERNAL DISCHARGE

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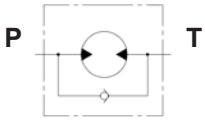
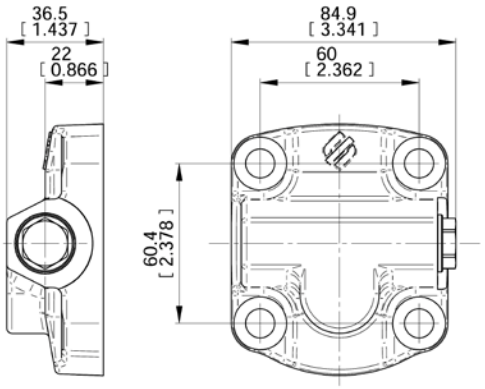
Rear Covers with Valves

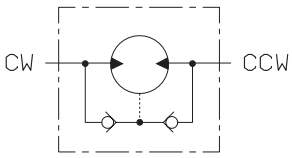


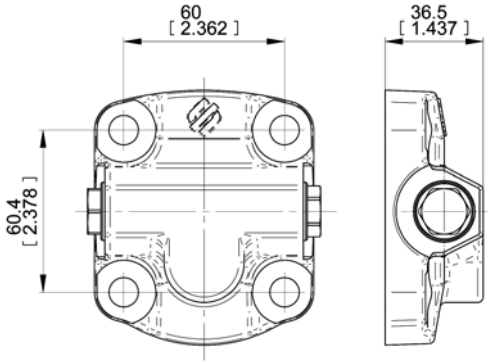


Code	Part Number
VR Anti-cavitation	R12203502

VR

ANTI-CAVITATION VALVE





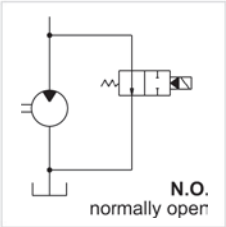
Code	Part Number
IDV Internal drain	R12203501

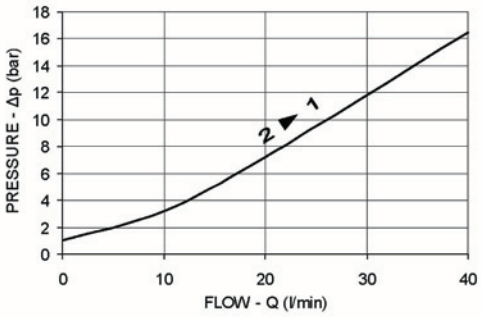
IDV

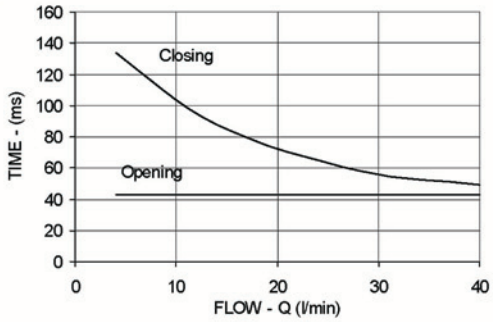
REAR COVERS WITH INTERNAL DRAIN

Rear Covers with Valves

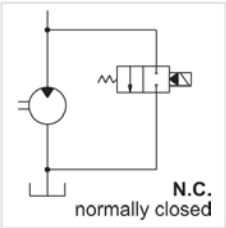
EV1 - 12 Vcc
EV2 - 24 Vcc

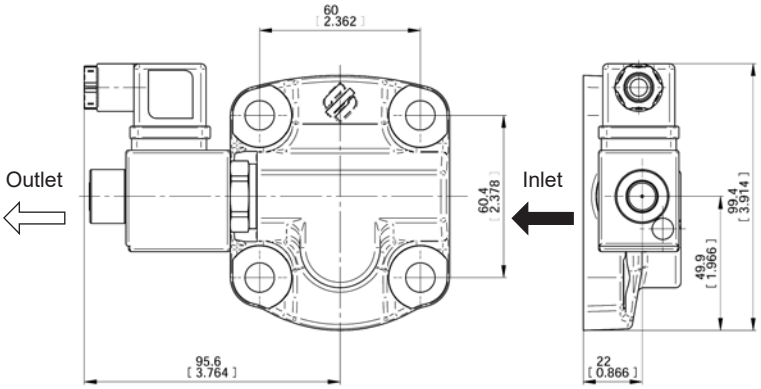






EV3 - 12 Vcc
EV4 - 24 Vcc

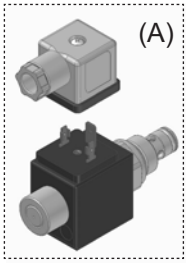




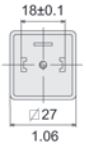
Code	Part Number
EV1	R12273273
EV2	R12273272
EV3	R12273275
EV4	R12273274

EV1-EV2-EV3-EV4

ELECTRIC UNLOADING VALVE

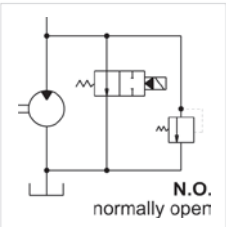


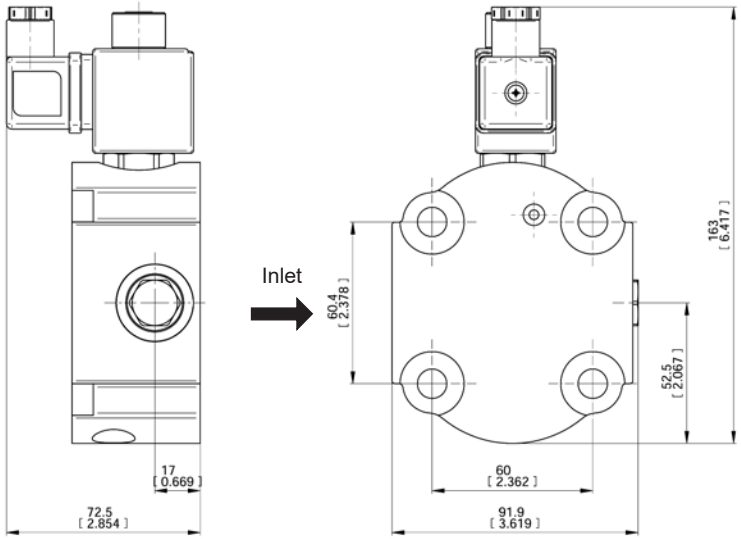
Part Number			
(A) Coil+Mech.Part+**Connector**			
EV1/EVS1	EV2/EVS2	EV3/EVS3	EV4/EVS4
796332680	796332681	412271232	412271233



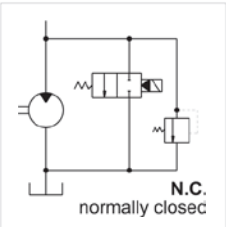
Part Number
Connector DIN 43650 A/ISO 4400
796361600

EVS1 - 12 Vcc
EVS2 - 24 Vcc





EVS3 - 12 Vcc
EVS4 - 24 Vcc



PRESSURE RELIEF VALVE setting ranges
25-250 bar

Code	Part Number
EVS1	R12273290
EVS2	R12273291
EVS3	R12273292
EVS4	R12273293

EVS1-EVS2-EVS3-EVS4

ELECTRIC UNLOADING VALVE WITH BUILT-IN PRESSURE RELIEF VALVE

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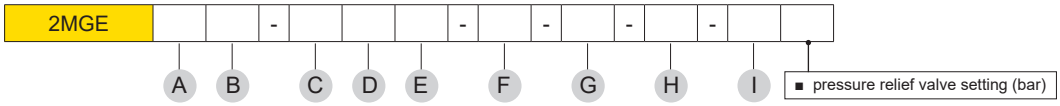

A CODES	DISPLACEMENTS	
6.5	6.5 cm³/rev.	*0.40 cu.in/rev.*
8.3	8.2 cm³/rev.	*0.50 cu.in/rev.*
11.3	11.5 cm³/rev.	*0.68 cu.in/rev.*
13.8	13.8 cm³/rev.	*0.84 cu.in/rev.*
16	16.6 cm³/rev.	*1.01 cu.in/rev.*
19	19.4 cm³/rev.	*1.18 cu.in/rev.*
22.5	22.9 cm³/rev.	*1.37 cu.in/rev.*
26	26.6 cm³/rev.	*1.62 cu.in/rev.*

B ROTATION	CODES
Clockwise	D
Anti-clockwise	S
Reversible	R

C PORTS (page 100)	CODES
Flanged ports european standard	P
Flanged ports german standard	B
Flanged ports SAE J518 Metric thread	W
Flanged ports SAE J518 American standard thread	S
Threaded ports GAS (BSPP)	G
Threaded ports SAE (ODT)	R

D DRIVE SHAFT (page 102)	CODES
Tang drive for electric motors	03
Tapered 1:5	25
Tapered 1:8	28
SAE A splined 9T	52
SAE A splined 11T	54
9 teeth DIN 5482 splined	62
5/8” SAE A parallel	82
3/4” SAE A parallel	85
Tapered 1:5 Continental shaft	26
SAE B Parallel Continental shaft	87
8x32x36 UNI 8953 splined Continental shaft	66
8x32x36 UNI 8953 splined Continental shaft	67
6x21x25 UNI 8953 splined Continental shaft	73

I REAR COVERS (page 114)	CODES
Lateral drain	LD
Adjustable main relief valve-Internal discharge	■ VS
Adjustable setting main relief valve-External discharge	■ VSE
Internal drain	IDV
Anti-cavitation valve	VR
Electric unloading valve (12V)	EV1/EV3
Electric unloading valve (24V)	EV2/EV4
Main relief and electric unloading valves (12V)	EVS1/ EVS3
Main relief and electric unloading valves (24V)	EVS2/ EVS4

H OUTRIGGER BEARING (page 108)	CODES
For engine endothermic motors	CL
For endothermic motors with axial and radial loads	CF
SAE A	CS
German standard	CB
European standard	CP
SAE B	CSB
4 Bolts for ZF gear box	Z1

G PORTS LAYOUT	CODE
Side ports (standard configuration)	-
Rear ports (page 119)	1

F SEAL	CODE
Buna standard (standard configuration)	-
Viton	V

E MOUNTING FLANGES (page 105)	CODES
European standard	P1
German standard Ø80	B1
German standard Ø52	B2-B3
German standard Ø50	B4-B5
SAE A 2 bolts	S2
SAE A 2 Bolts (with o-ring on the centering collar)	S6
3 BOLT UNI 8953 for gear box	T1
4 Bolts for ZF gear box	Z2

How to order Motor: 2MGE19D, ports SAE (R), drive shaft (54), mounting flange (S2).
2MGE19D-R54S2

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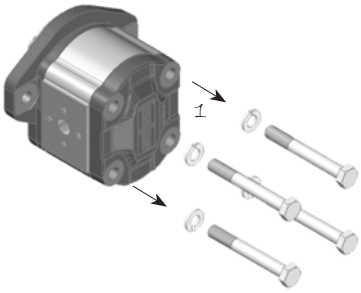
Motor Changing Rotation Instructions

Keep the working surface cleaned as well as the exterior of the pump before starting and avoid inner contamination of the pump. The motor shown below is a anti - clockwise rotating motor.
To achieve clockwise rotation, please read the following instructions carefully.

ANTI - CLOCKWISE ROTATION

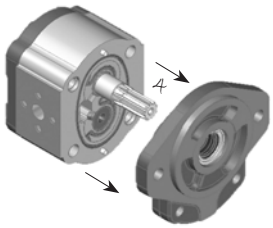
Outlet ⇦ ↺ ⇦ Inlet



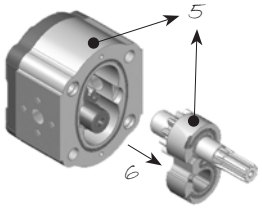
1 - Loosen and fully unscrew the screws.

2 - Lay the motor on the working area in order to have the mounting flange turned upside.

3 - Coat the shaft extension with grease to avoid damaging the shaft seal.

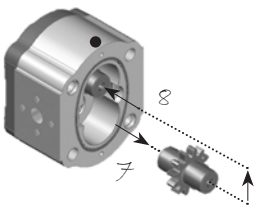


4 - Remove the flange and lay it on the working area; verify that the seal is correctly located in the body seat.



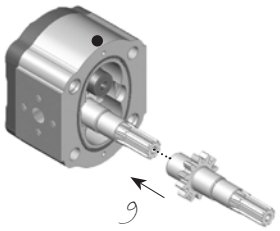
5 - Mark the position of the bushing and eventually the thrust plate, relative to the body.

6 - Remove the bushing, thrust plate and the driving gear taking care to avoid driven gear axial shifts.

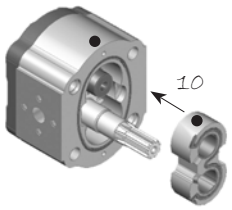


7 - Draw out the driven gear from its housing, taking care to avoid rear cover axial shifts.

8 - Re-locate the driven gear in the position previously occupied by the driving gear.



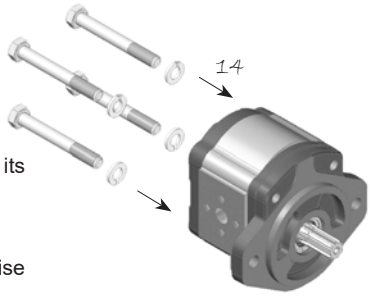
9 - Re-locate the driving gear in the position previously occupied by the driven gear.



10 - Replace the bushing and thrust plate taking care that:
- marks are located as on the picture
- surface containing the seal is visible
- seal and its protection are correctly located.

11 - Clean body and mounting flange refaced surfaces.

12 - Verify that the two plugs are located in the body.



13 - Refit the mounting flange, turned 180° from its original position.

14 - Replace the clamp bolts and tighten crosswise evenly to an appropriate torque.

15 - Check that the shaft rotates freely.

16 - Mark on the flange the new direction of rotation.

CLOCKWISE ROTATION

Inlet ⇨ ↻ ⇨ Outlet

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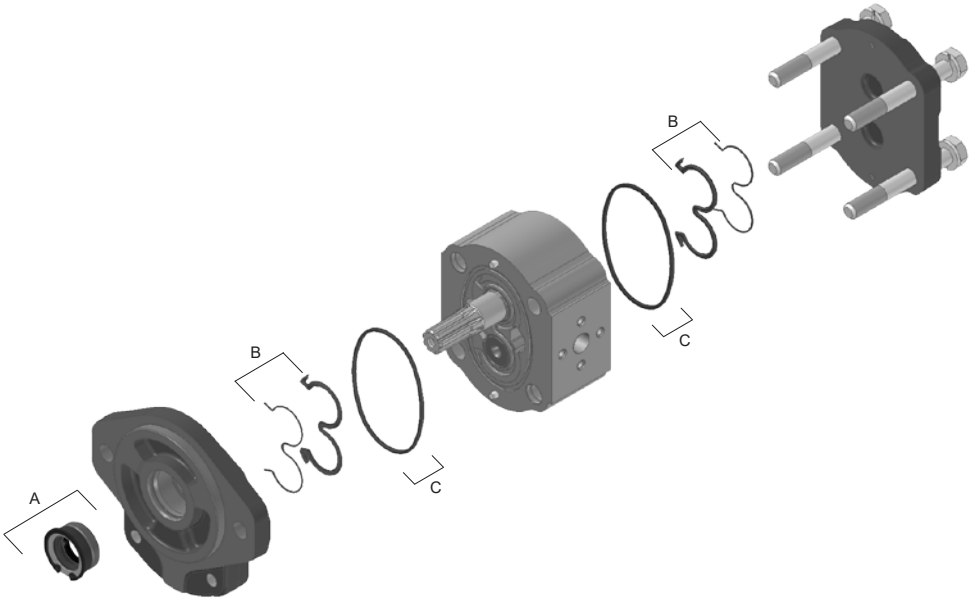
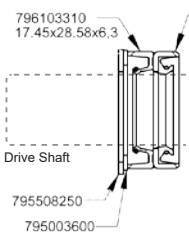
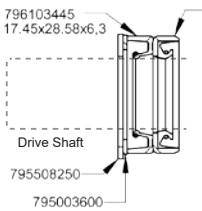
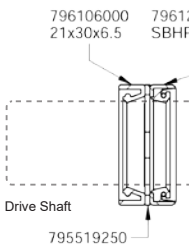
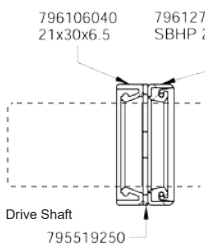
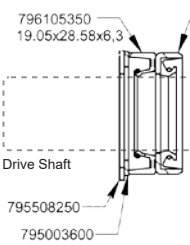
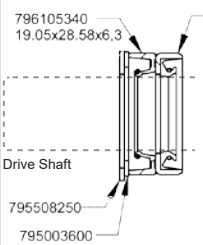
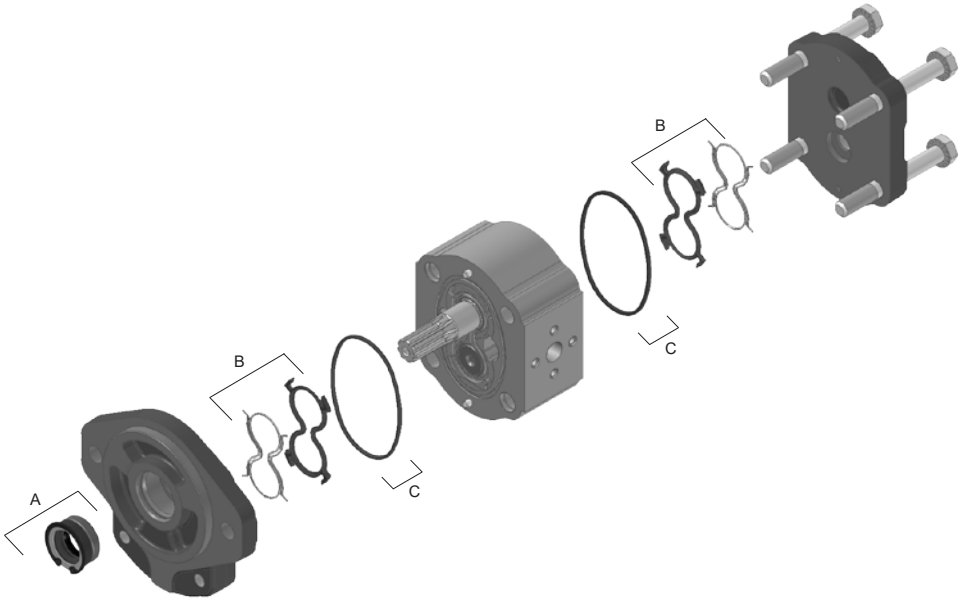
Unidirectional Motor Seal Spare Parts Kit



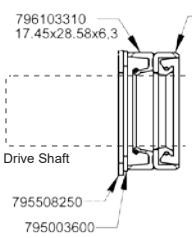
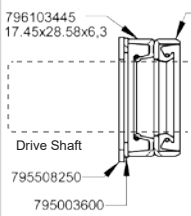
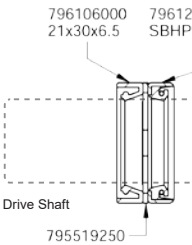
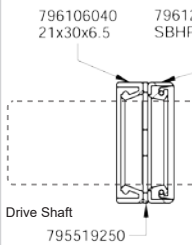
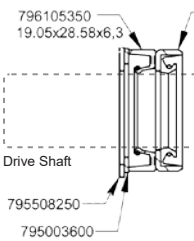
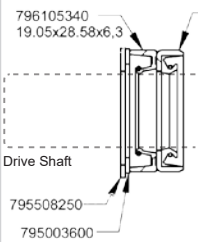
A	*Shaft seal*
B	*Bushing seal kit*
C	*Body seal kit*

SHAFT & FLANGE TYPE	NBR COMPOUND		FPM COMPOUND	
	Complete seal kit (A+B+C)	Shaft seal kit (A)	Complete seal kit (A+B+C)	Shaft seal kit (A)
28P1 25B1/B4/B5 62P1/B1/B4/B5 82P1/S2/S6 52S2/S6	**Part Number** R12092850	 **Part Number** R12040122	**Part Number** R12092860	 **Part Number** R12040123
73T1 67Z2	**Part Number** R14690030	 **Part Number** R14640012	**Part Number** R14690040	 **Part Number** R14640013
54S2/S6 85S2/S6	**Part Number** R12092870	 **Part Number** R12240114	**Part Number** R12092880	 **Part Number** R12240113

Bidirectional Motor Seal Spare Parts Kit



A	*Shaft seal*
B	*Bushing seal kit*
C	*Body seal kit*

SHAFT & FLANGE TYPE	NBR COMPOUND		FPM COMPOUND	
	Complete seal kit (A+B+C)	Shaft seal kit (A)	Complete seal kit (A+B+C)	Shaft seal kit (A)
28P1 25B1/B4/B5 62P1/B1/B4/B5 82P1/S2/S6 52S2/S6	**Part Number** R12081820	 **Part Number** R12040122	**Part Number** R12081830	 **Part Number** R12040123
73T1 67Z2	**Part Number** R14690031	 **Part Number** R14640012	**Part Number** R14690041	 **Part Number** R14640013
54S2/S6 85S2/S6	**Part Number** R12092835	 **Part Number** R12240114	**Part Number** R12092836	 **Part Number** R12240113

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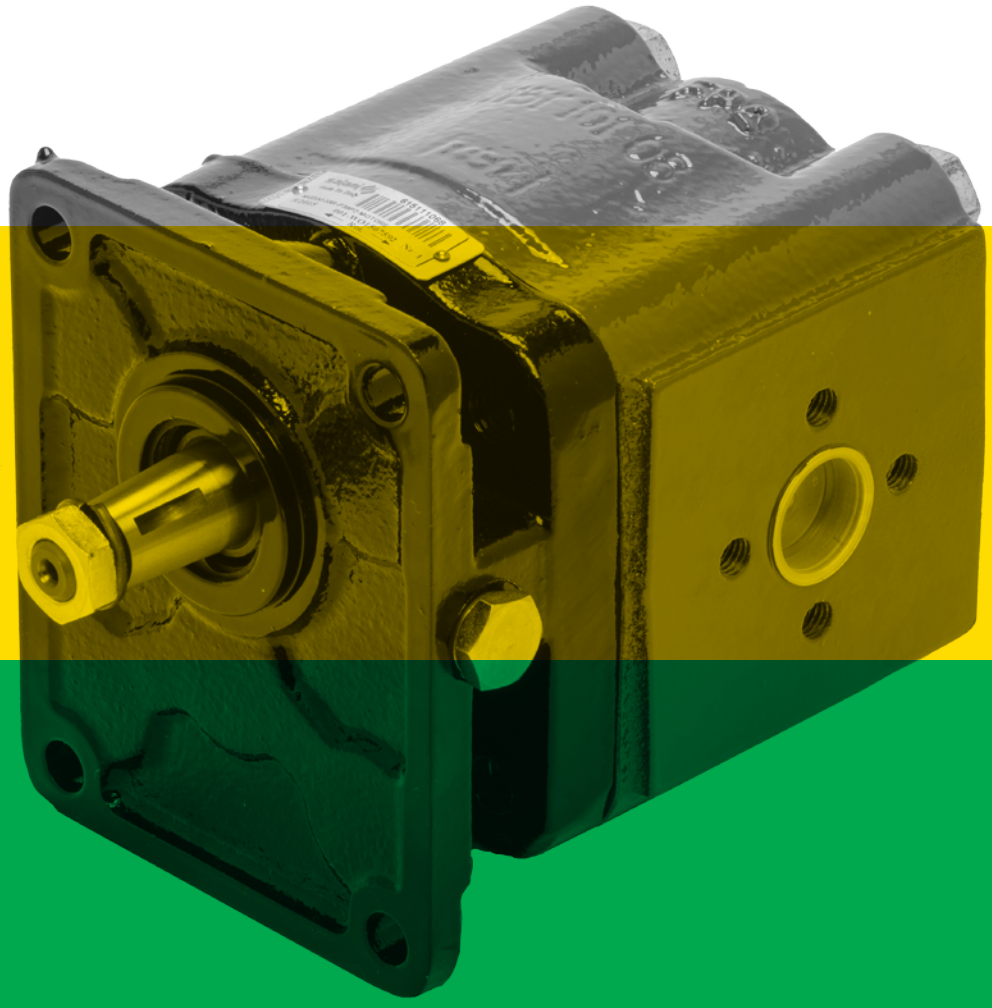
MG330

Cast Iron Gear Motors

Technical/Spare Parts Catalogue



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COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
ISO 9001

salami
FLUID POWER SYSTEMS ®

Final revised edition - July 2021

The data in this catalogue refers to the standard product.The policy of Salami S.p.A. consists of a continuous improvement of its products. It reserves the right to change the specifications of the different products whenever necessary and without giving prior information.
If any doubts, please contact our sales department.

Contents

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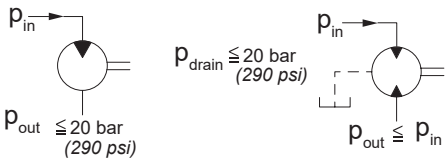
MG330 Motor - Dimensions and Technical Data

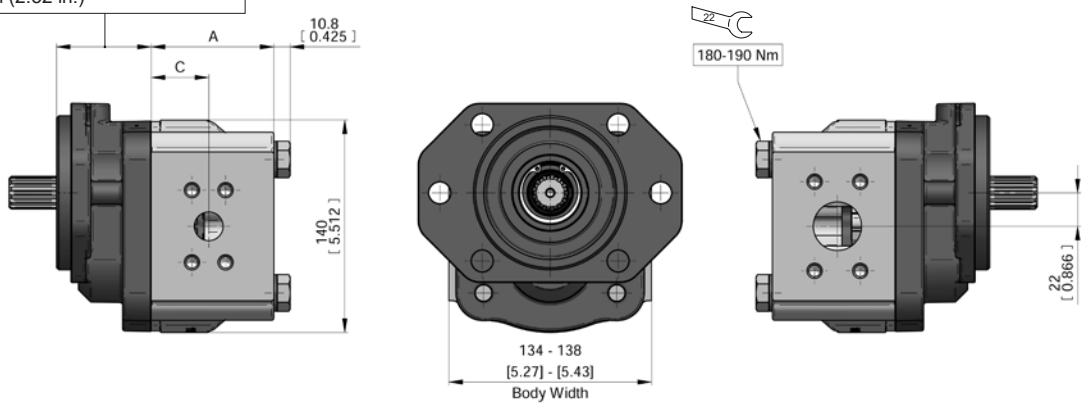


Displacements up to 73.4 cm3/rev - *4.48 cu.in./rev*
Pressure up to 300 bar - *4350 psi*

TYPE	Displacement		Dimension A		Dimension C		Max. continuous pressure p[1]		Max. starting pressure p[2]		Min. speed at p[2]	Max. speed at p[1**]	Weight	
	cm³/rev	*cu.in/rev*	mm	*in*	mm	*in*	bar	*psi*	bar	*psi*	min⁻¹		kg	*lbs*
MG330 - 23	23.4	*1.43*	77	*3.03*	35	*1.38*	240	*3480*	300	*4350*	600	3000	13.2	*29.21*
MG330 - 28	28.6	*1.74*	81	*3.19*	38	*1.49*	240	*3480*	300	*4350*	600	3000	13.7	*30.20*
MG330 - 34	34.4	*2.10*	85.5	*3.36*	42.5	*1.67*	240	*3480*	300	*4350*	600	3000	14.2	*31.30*
MG330 - 40	40.3	*2.46*	90	*3.54*	47	*1.85*	220	*3190*	280	*4060*	550	2700	14.7	*32.41*
MG330 - 47	47.4	*2.89*	101.5	*3.40*	50	*1.97*	240	*3480*	280	*4060*	550	2700	17.0	*37.48*
MG330 - 55	55.2	*3.37*	107.5	*4.23*	56	*2.20*	220	*3190*	280	*4060*	550	2700	17.7	*39.02*
MG330 - 64	64.3	*3.92*	114.5	*4.51*	58	*2.28*	200	*2900*	260	*3750*	500	2500	18.5	*40.79*
MG330 - 72	73.4	*4.48*	121.5	*4.78*	61	*2.40*	200	*2900*	260	*3750*	500	2500	19.4	*42.77*

**Permissible drain pressure decrease with encreasing speed

For flanges code:
S3→ 53 mm (2.09 in.) for displ. 23 to 40
64 mm (2.52 in.) for displ. 47 to 80
P2→ 54 mm (2.13 in.)
S4/R8/Z1/Z2→ 85 mm (3.35 in.)
R3→ 64 mm (2.52 in.)



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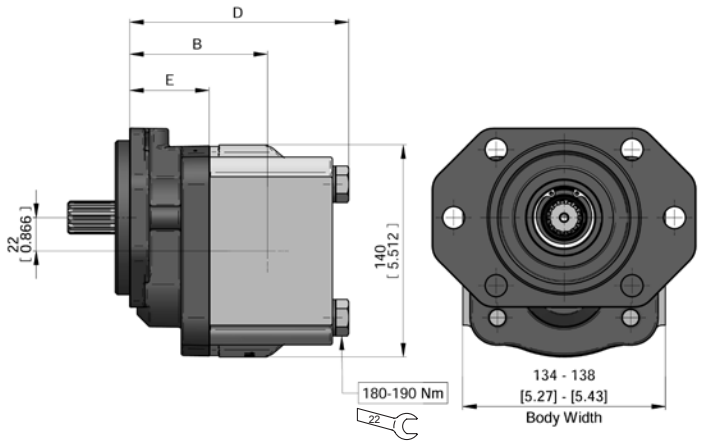
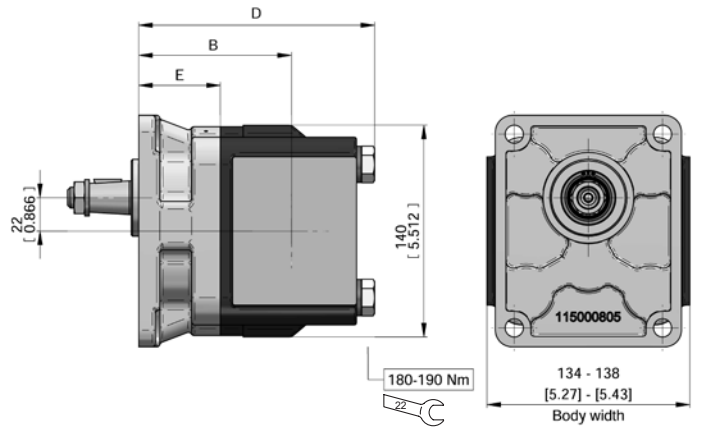
Dimensions - Shaft 55/Flange S3 (SAE B)

TYPE	Dimension D		Dimension B		Dimension E	
	mm	in	mm	in	mm	in
23	140.8	*5.54*	88	*3.46*	53	*2.09*
28	144.8	*5.70*	91	*3.58*		
34	149.3	*5.88*	95.5	*3.76*		
40	153.8	*6.00*	100	*3.94*		
47	176.3	*6.94*	114	*4.49*	64	*2.52*
55	182.3	*7.18*	120	*4.72*		
64	189.3	*7.45*	122	*4.80*		
72	196.3	*7.73*	125	*4.92*		



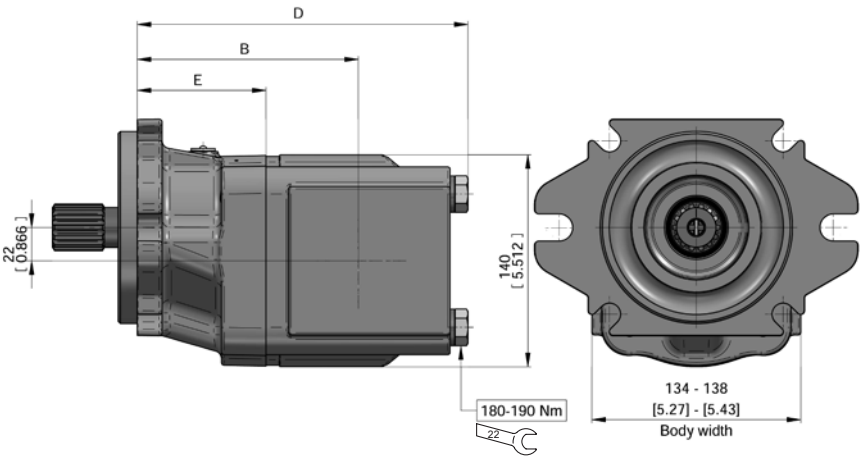
Dimensions - Shaft 38/Flange P2 (European)

TYPE	Dimension D		Dimension B		Dimension E	
	mm	in	mm	in	mm	in
23	141.8	*5.58*	89	*3.50*	54	*2.13*
28	145.8	*5.74*	92	*3.62*		
34	150.3	*5.92*	96.5	*3.80*		
40	154.3	*6.10*	101	*3.98*		
47	166.3	*6.55*	104	*4.10*		
55	172.3	*6.78*	110	*4.33*		
64	179.3	*7.05*	112	*4.41*		
72	186.3	*7.33*	115	*4.53*		



Dimensions - Shaft 58/Flange S4 (SAE C)

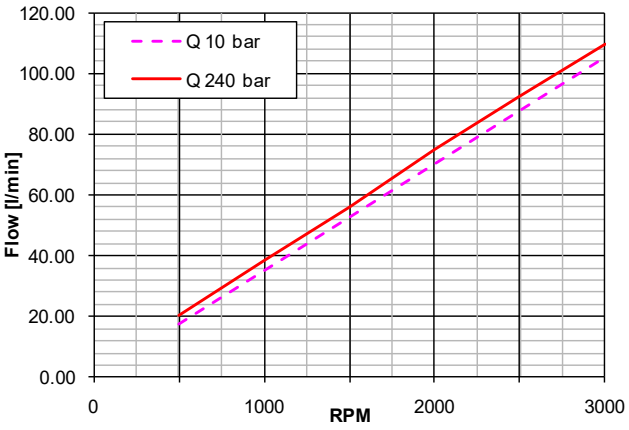
TYPE	Dimension D		Dimension B		Dimension E	
	mm	in	mm	in	mm	in
23	172.8	*6.80*	120	*4.72*	85	*3.35*
28	176.8	*6.96*	123	*4.84*		
34	181.3	*7.14*	127.5	*5.02*		
40	185.3	*7.30*	132	*5.20*		
47	197.3	*7.77*	135	*5.31*		
55	203.3	*8.00*	141	*5.55*		
64	210.3	*8.28*	143	*5.63*		
72	217.3	*8.55*	146	*5.75*		

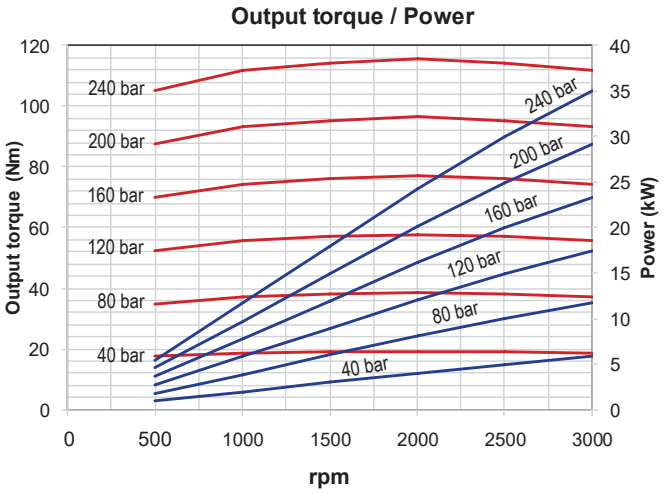


E0.151.0721.14.00IM00

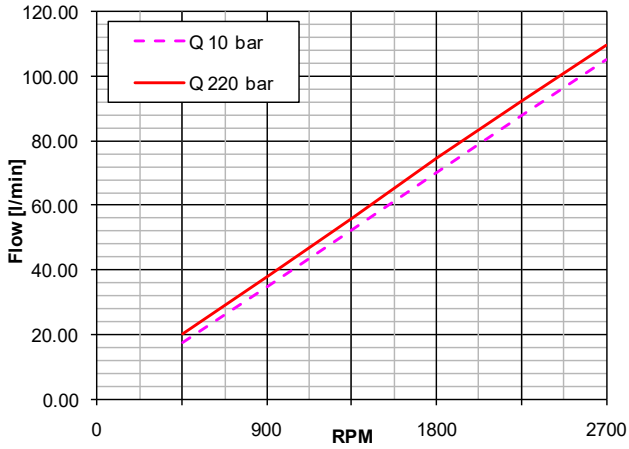
Motor Performance Curves

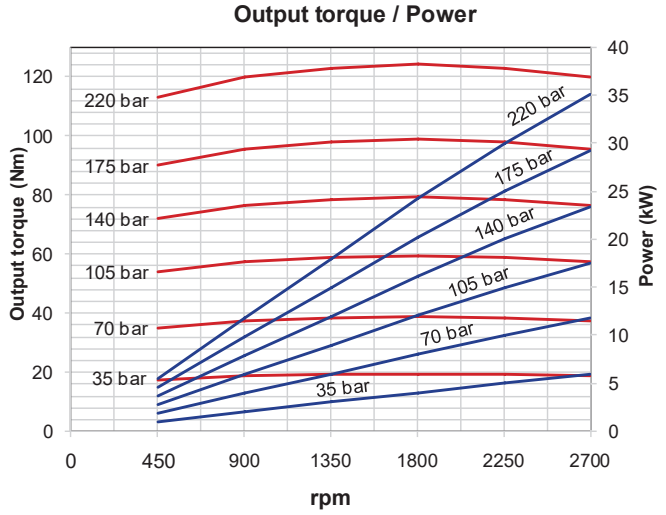
Performance curves carried out with oil viscosity at 21 cSt and oil temperature at 50°C



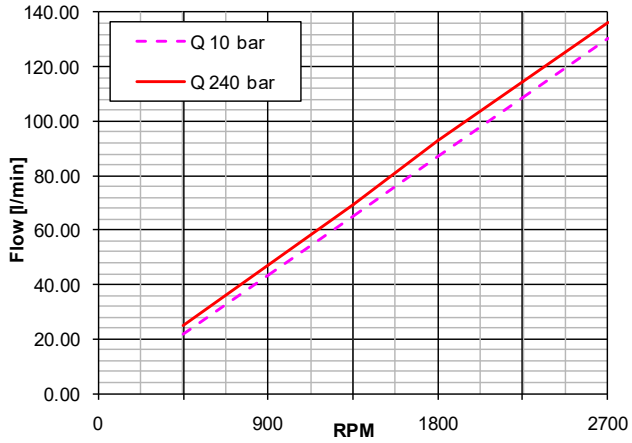


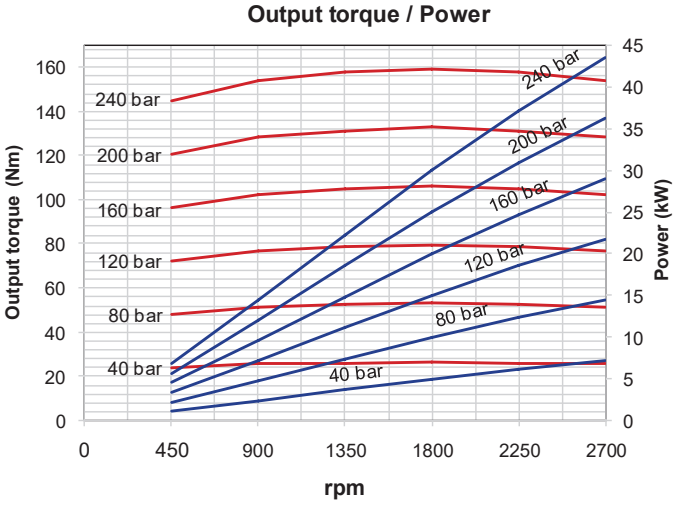
MG330 - 34





MG330 - 40

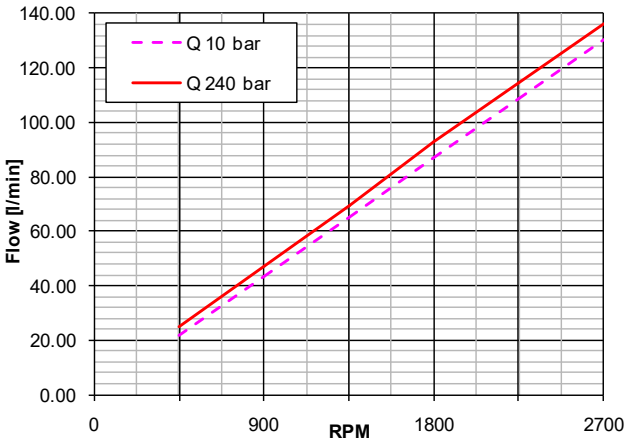


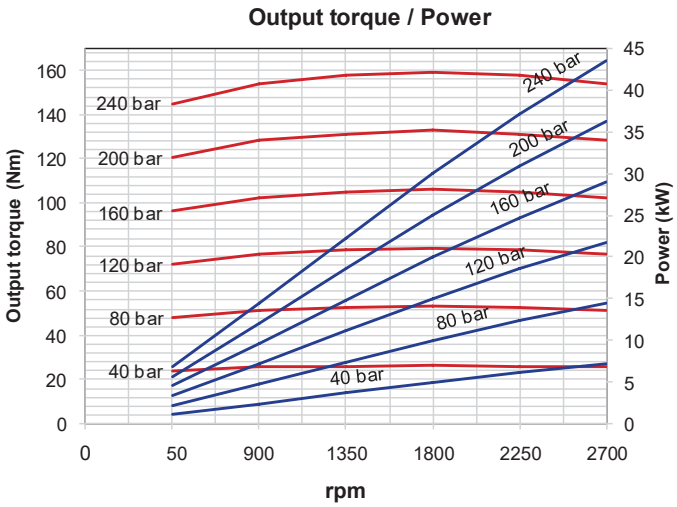


2MGE - 47

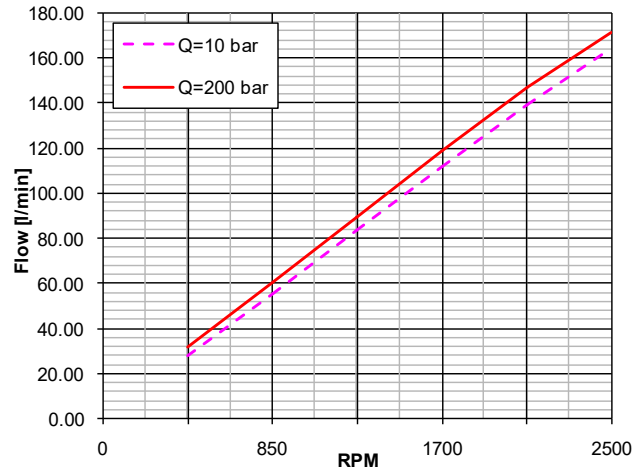
Motor Performance Curves

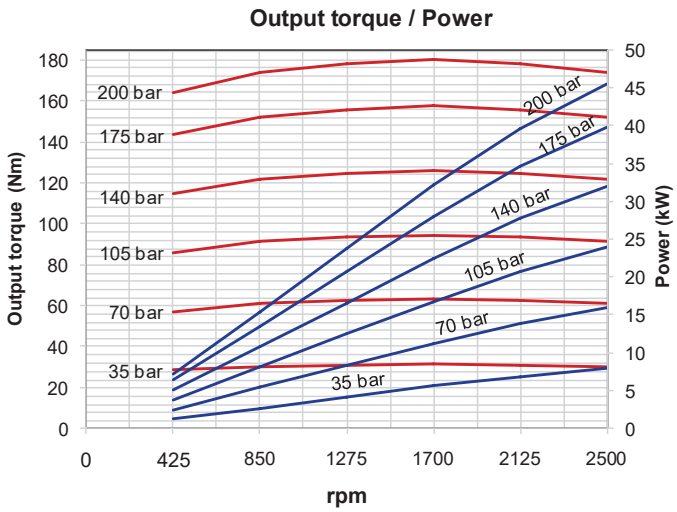
Performance curves carried out with oil viscosity at 21 cSt and oil temperature at 50°C



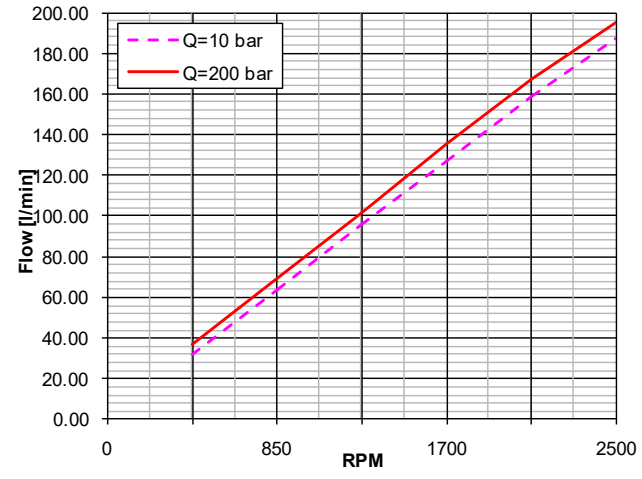


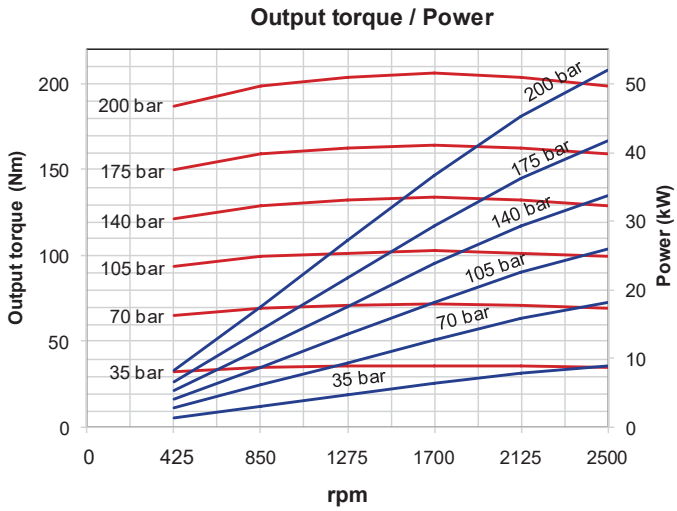
MG330 - 55





MG330 - 64





MG330 - 72

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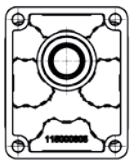
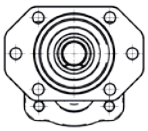
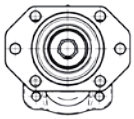
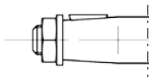
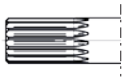
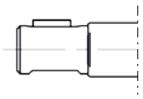
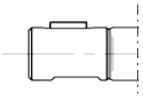
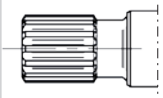
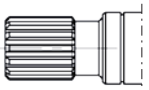
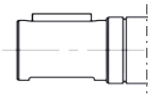
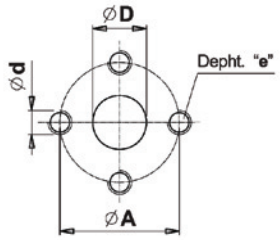
Shaft And Flange Combinations

	MG330					
		CODE **P2**	CODE **S3**	CODE **S4**	CODE **R3**	CODE **R8**
		FLANGES			**FLANGES WITH OUTRIGGER BEARING**	
SHAFT END	 CODE **38**	38P2				
	 CODE **55**		55S3		55R3	
	 CODE **56**		56S3		56R3	
	 CODE **87**		87S3		87R3	
	 CODE **88**		88S3		88R3	
CONTINENTAL SHAFT END	 CODE **58**		58S3	58S4		
	 CODE **57**					57R8
	 CODE **89**					89R8

Flanged Ports



code P

Flanged ports
european standard

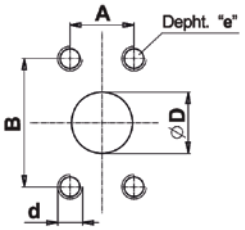
M8	20 Nm (14.7 lbf-ft)
M10	35 Nm (25.8 lbf-ft)
M12	65 Nm (47.9 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET				INLET			
	Ø D	Ø A	d	e	Ø D	Ø A	d	e
From 23 to 47	27 *(1.07”)*	51 *(2.01”)*	M10	16 *(0.63”)*	16 *(0.63”)*	40 *(1.57”)*	M8	16 *(0.63”)*
From 55 to 72	33 *(1.3”)*	62 *(2.44”)*	M12	16 *(0.63”)*	21 *(0.83”)*	51 *(2.01”)*	M10	16 *(0.63”)*

BI-DIRECTIONAL

MOTORS	INLET				OUTLET			
	Ø D	Ø A	d	e	Ø D	Ø A	d	e
From 23 to 47	16 *(0.63)*	40 *(1.57”)*	M8	16 *(0.63”)*	16 *(0.63)*	40 *(1.57”)*	M8	16 *(0.63”)*
From 55 to 72	27 *(1.07”)*	51 *(2.01”)*	M10	16 *(0.63”)*	27 *(1.07”)*	51 *(2.01”)*	M10	16 *(0.63”)*



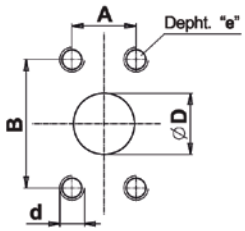
code W

Flanged ports
SAE J518
METRIC THREAD

M10	35 Nm (25.8 lbf-ft)
M12	65 Nm (47.9 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	ØD	B	A	d	e	ØD	B	A	d	e
From 23 to 47	32 *(1.26”)*	58.72 *(2.31”)*	38.18 *(1.19”)*	M10	18 *(0.71”)*	19 *(0.75”)*	47.6 *(1.87”)*	22.2 *(0.87”)*	M10	18 *(0.71”)*
From 55 to 72	39.3 *(1.55”)*	69.8 *(2.75”)*	35.7 *(1.40”)*	M12	15 *(0.59”)*	32 *(1.26”)*	58.72 *(2.31”)*	30.18 *(1.19”)*	M10	18 *(0.71”)*



code S

Flanged ports
SAE J518
AMERICAN STANDARD
THREAD

3/8-16 UNC	35 Nm (25.8 lbf-ft)
7/16-14 UNC	45 Nm (33.2 lbf-ft)
1/2-13 UNC	65 Nm (47.9 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	ØD	B	A	d	e	ØD	B	A	d	e
From 23 to 47	32 *(1.26”)*	58.72 *(2.31”)*	30.18 *(1.19”)*	7/16-14 UNC	18 *(0.71”)*	19 *(0.75”)*	47.6 *(1.87”)*	22.2 *(0.87”)*	3/8-16 UNC	18 *(0.71”)*
From 55 to 72	39.3 *(1.55”)*	69.8 *(2.75”)*	35.7 *(1.40”)*	1/2-13 UNC	15 *(0.59”)*	32 *(1.26”)*	58.72 *(2.31”)*	30.18 *(1.19”)*	3/8-16 UNC	18 *(0.71”)*

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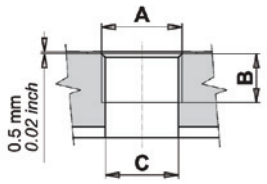
Threaded Ports



code G

Threaded ports
GAS (BSPP)

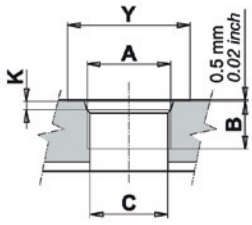
G 3/4	90 Nm (66.4 lbf-ft)
G 1	130 Nm (95.8 lbf-ft)
G 1 1/4	170 Nm (125.4 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET			INLET		
	A	B	C	A	B	C
From 23 to 40	G1	22 *(0.87”)*	30.5 *(1.2”)*	G3/4	16 *(0.62”)*	24.4 *(0.96”)*
From 47 to 72	G1 1/4	24 *(0.94”)*	37 *(1.46”)*	G1	22 *(0.87”)*	30.5 *(1.2”)*

BI-DIRECTIONAL/REAR PORTS (CODE 1)

MOTORS	INLET			OUTLET		
	A	B	C	A	B	C
From 23 to 40	G3/4	16 *(0.62”)*	24.4 *(0.96”)*	G3/4	16 *(0.62”)*	24.4 *(0.96”)*
From 47 to 72	G1	22 *(0.87”)*	30.5 *(1.2”)*	G1	22 *(0.87”)*	30.5 *(1.2”)*



code R

Threaded ports
SAE (ODT)

SAE 12	90 Nm (66.4 lbf-ft)
SAE 16	130 Nm (95.8 lbf-ft)
SAE 20	170 Nm (125.4 lbf-ft)

UNI-DIRECTIONAL

MOTORS	OUTLET					INLET				
	A	B	C	Y	K	A	B	C	Y	K
From 23 to 40	1-5/16-12 UN (SAE 16)	19 *(0.75”)*	31 *(1.22”)*	49 *(1.93”)*	3.3 *(0.13”)*	1-1/16-12 UN (SAE 12)	19 *(0.75”)*	24.7 *(0.97”)*	41 *(1.16”)*	3.3 *(0.13”)*
From 47 to 72	1-5/8-12 UN (SAE 20)	19 *(0.75”)*	38.9 *(1.53”)*	58 *(2.28”)*	3.3 *(0.13”)*	1-5/16-12 UN (SAE 16)	19 *(0.75”)*	31 *(1.22”)*	49 *(1.93”)*	3.3 *(0.13”)*

BI-DIRECTIONAL/REAR PORTS (CODE 1)

MOTORS	INLET					OUTLET				
	A	B	C	Y	K	A	B	C	Y	K
From 23 to 40	1-1/16-12 UN (SAE 12)	19 *(0.75”)*	24.7 *(0.97”)*	41 *(1.16”)*	3.3 *(0.13”)*	1-1/16-12 UN (SAE 12)	19 *(0.75”)*	24.7 *(0.97”)*	41 *(1.16”)*	3.3 *(0.13”)*
From 47 to 72	1-5/16-12 UN (SAE 16)	19 *(0.75”)*	31 *(1.22”)*	49 *(1.93”)*	3.3 *(0.13”)*	1-5/16-12 UN (SAE 16)	19 *(0.75”)*	31 *(1.22”)*	49 *(1.93”)*	3.3 *(0.13”)*

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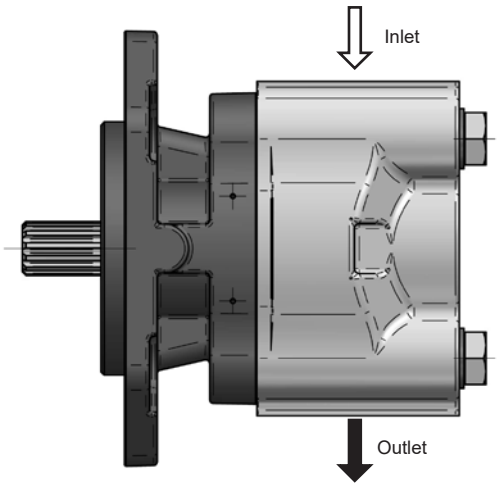
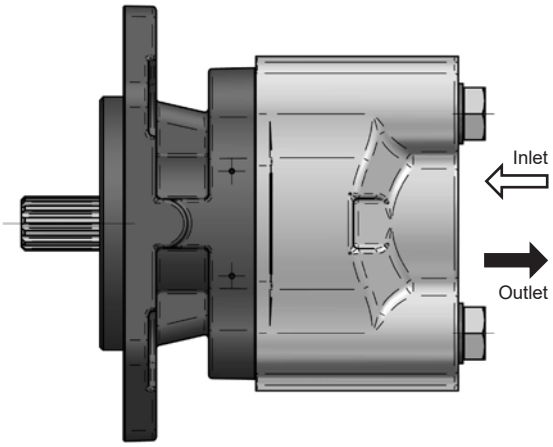
Ports layout

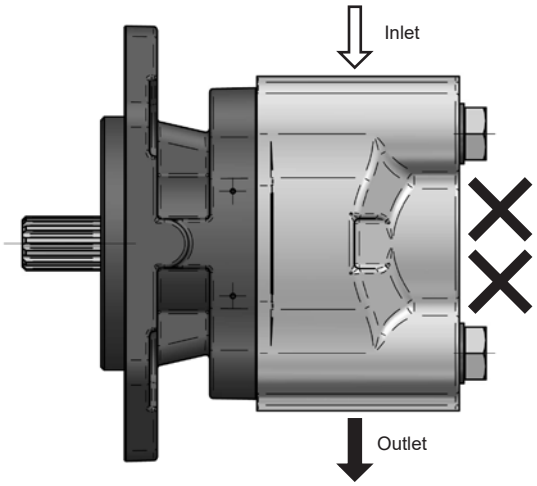
example with anti -clockwise rotation



CODE 0



CODE 1



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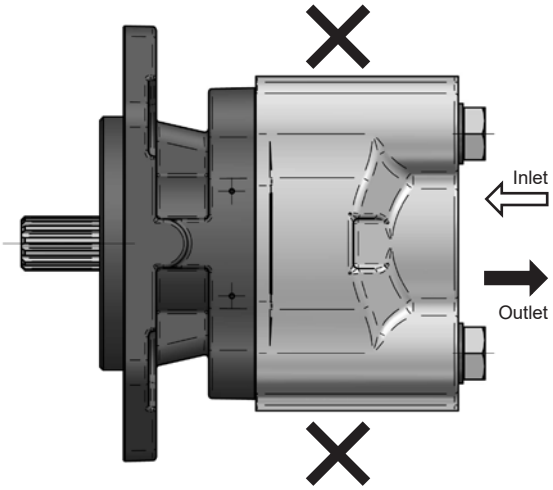

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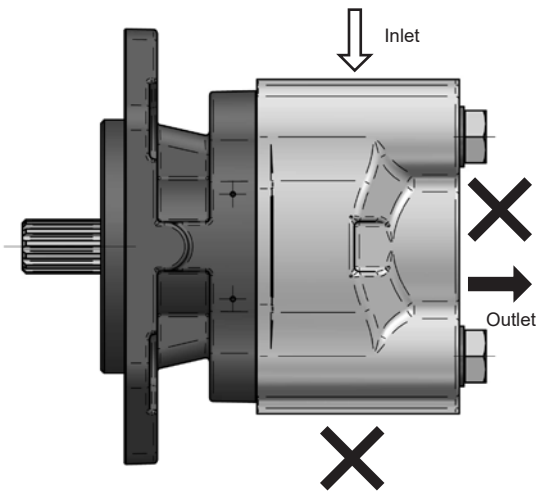

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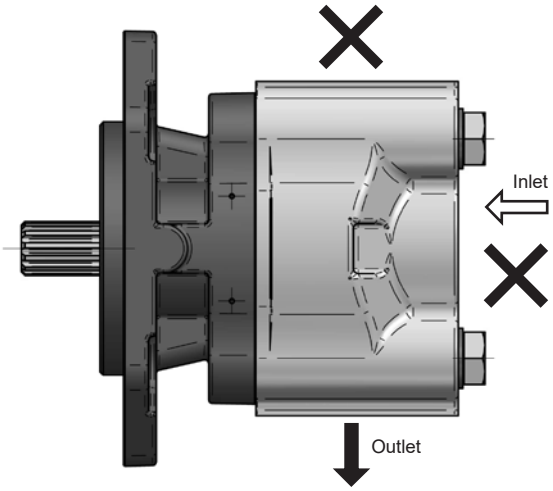
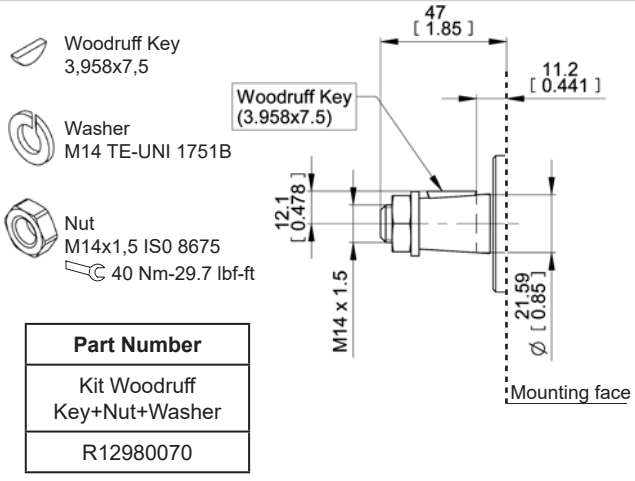


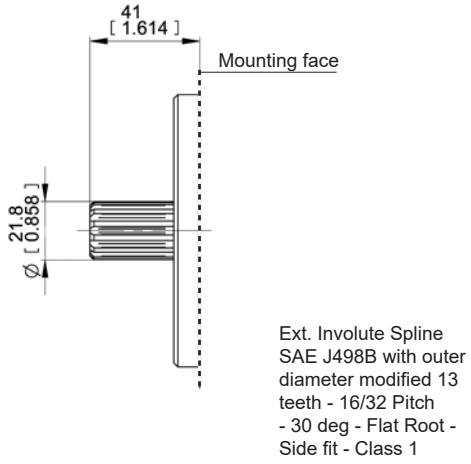
CODE 5

E0.151.0721.14.00IM00

Drive Shaft



Part Number
Kit Woodruff Key+Nut+Washer
R12980070



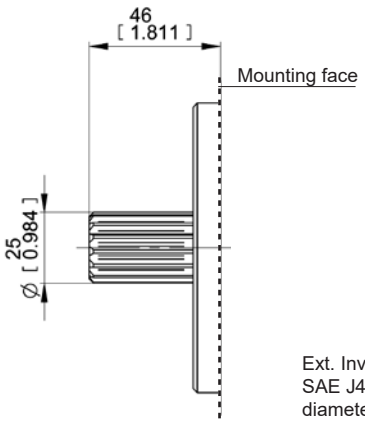
Ext. Involute Spline SAE J498B with outer diameter modified 13 teeth - 16/32 Pitch - 30 deg - Flat Root - Side fit - Class 1

code 38	Max torque 250 Nm (2213 lbf in)

TAPERED 1:8

code 55	Max torque 330 Nm (2921 lbf in)

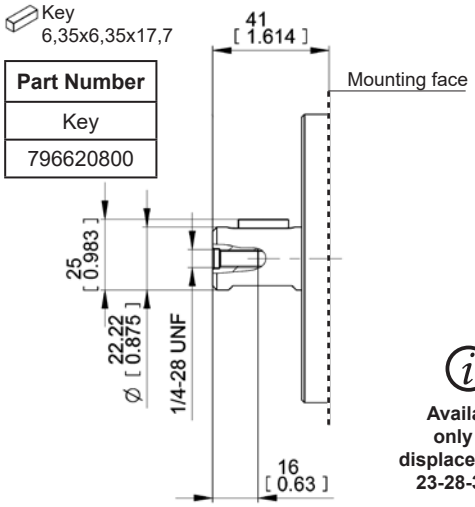
SAE B 13T-16/32DP SPLINED



Ext. Involute Spline SAE J498B with outer diameter modified 15 teeth - 16/32 Pitch - 30 deg - Flat Root - Side fit - Class 1

code 56	Max torque 480 Nm (4250 lbf in)

SAE BB 15T-16/32DP SPLINED

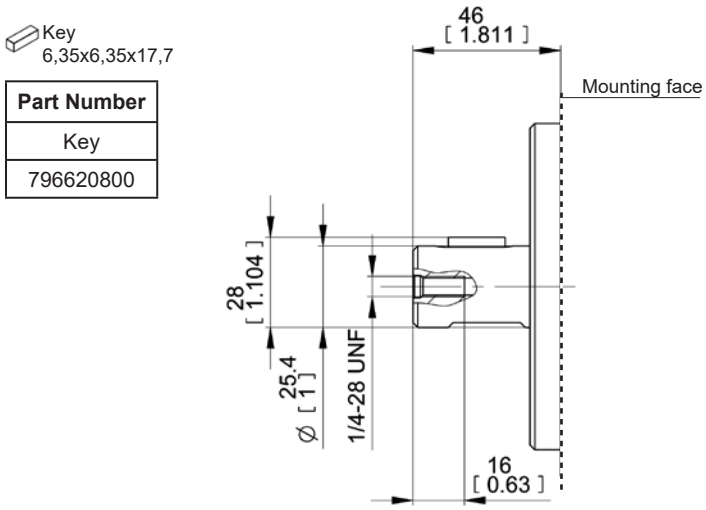


Part Number
Key
796620800

Available only for displacements: 23-28-34-40

code 87	Max torque 220 Nm (1950 lbt in)

SAE B PARALLEL



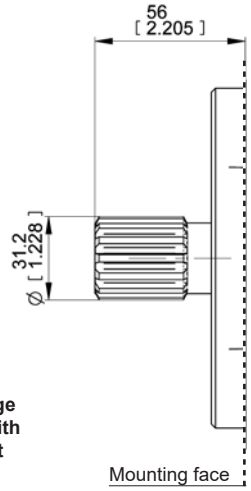
Part Number
Key
796620800

code 88	Max torque 320 Nm (2830 lbt in)

SAE BB PARALLEL

E0.151.0721.14.00IM00

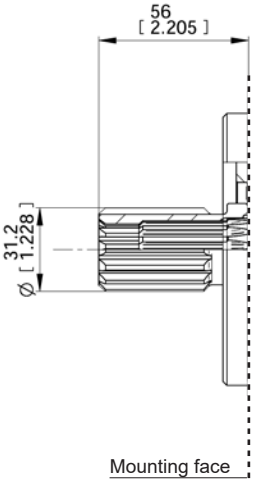
Continental Shaft



for S4
SAE C flange
Mounting with solid shaft

Ext. Involute Spline SAE J498B with outer diameter modified 14 teeth - 12/24 Pitch - 30 deg - Flat Root - Side fit - Class 1

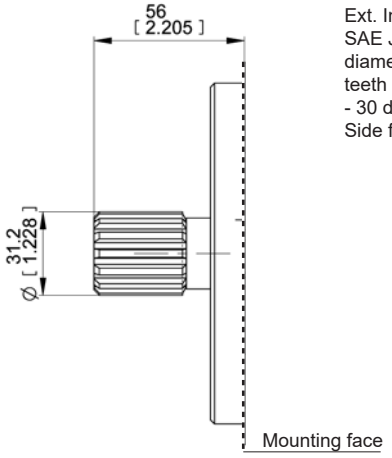
Part Number
Coupling Sleeve+O ring
R15170390



for S3
SAE B flange
Mounting with coupling sleeve

Ext. Involute Spline SAE J498B with outer diameter modified 14 teeth - 12/24 Pitch - 30 deg - Flat Root - Side fit - Class 1

code 58	
Max torque 480 Nm (4250 lbt in)	Max torque 330 Nm (4250 lbt in)
SAE C 14T-12/24DP SPLINED	

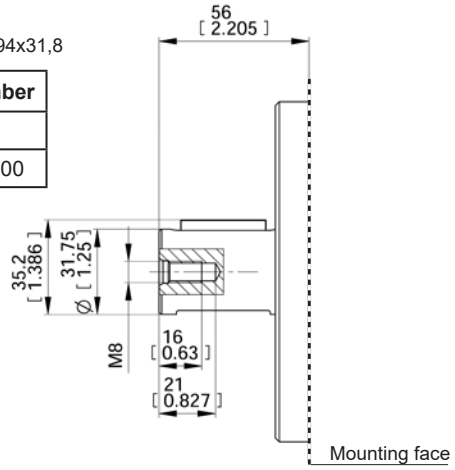


Ext. Involute Spline SAE J498B with outer diameter modified 14 teeth - 12/24 Pitch - 30 deg - Flat Root - Side fit - Class 1

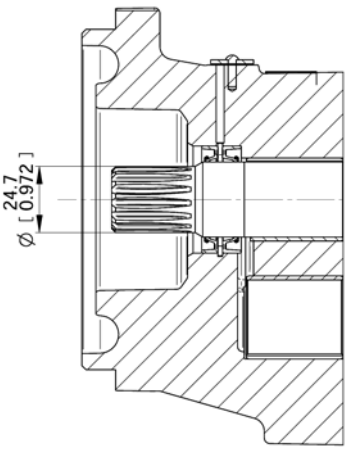
code 57	Max torque 480 Nm (4250 lbt in)
SAE C 14T-12/24DP SPLINED	

Key 7,94x7,94x31,8

Part Number
Key
796620800



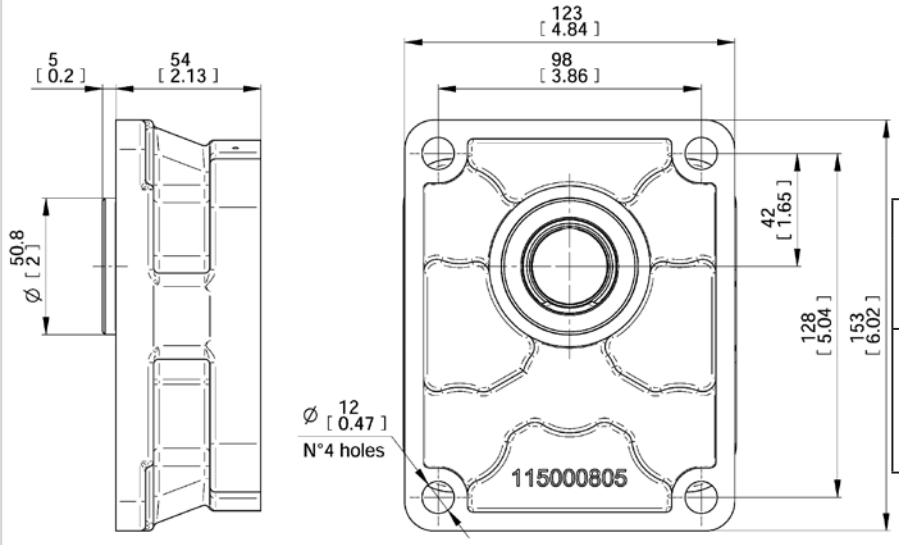
code 89	Max torque 480 Nm (4250 lbt in)
SAE C PARALLEL	



code 70	Max torque 480 Nm (4250 lbt in)
INTERNAL DRIVE SHAFT - W25X1.5X15X8F DIN 5480 SPLINED	

E0.151.0721.14.00IM00

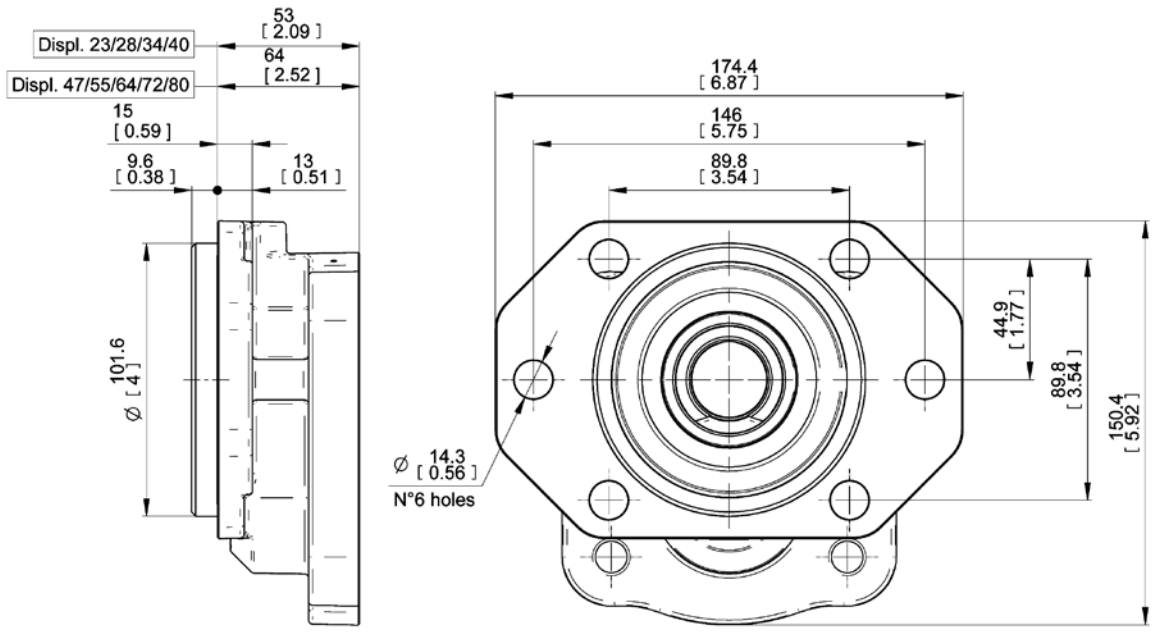
Mounting Flanges



Code	Part Number	
	Flange+ Shaft seal kit	Shaft seal kit (See page 143-144)
38P2	R15170210 (NBR) R15170220 (FPM)	R12940080 (NBR) R12940083 (FPM)

P2	With shaft code 38

EUROPEAN STANDARD

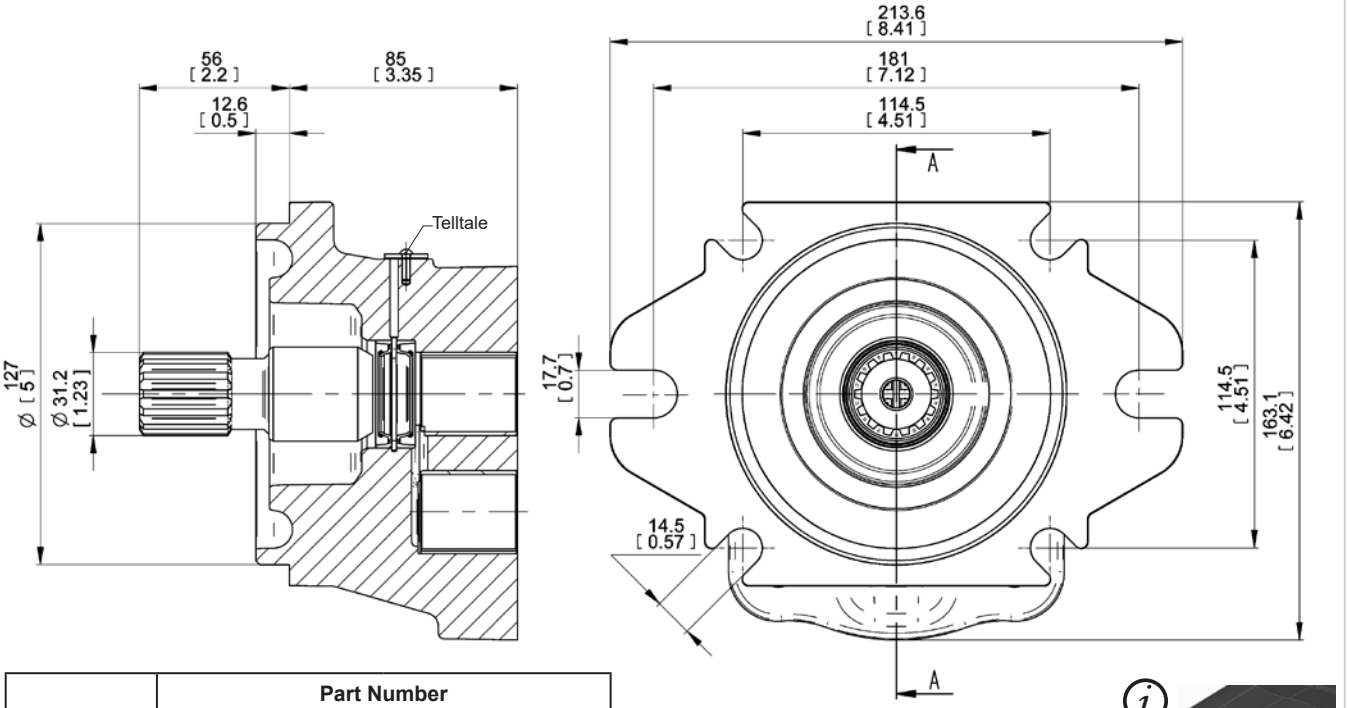


Code	Part Number				
	Flange+Shaft seal kit				Shaft seal kit (See page 143-144)
55S3	Displ. from 23 to 40	R15170230 (NBR) R15170240 (FPM)	Displ. from 47 to 80	R15170250 (NBR) R15170260 (FPM)	R15170140 (NBR) R15170080 (FPM)
56S3					
87S3					
88S3		R15170270 (NBR) R15170280 (FPM)		R15170290 (NBR) R15170300 (FPM)	R15170130 (NBR) R15170131 (FPM)
58S3		R15170310 (NBR) R15170320 (FPM)		R15170330 (NBR) R15170340 (FPM)	R15020190 (NBR) R15020191 (FPM)

S3	With shaft code 55-56-58-87-88

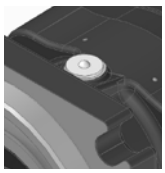
SAE B 2-4 BOLTS

Mounting Flanges



Code	Part Number	
	Flange+Shaft seal kit	Shaft seal kit (See page 143-144)
58S4	R15020015 (NBR) R15020017 (FPM)	R15020190 (NBR) R15020191 (FPM)

TellTale
drop in plug in case of failure, outside leakage trough the crossing hole is visible.

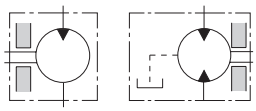


S4	With shaft code 58
SAE C 2-4 BOLTS	

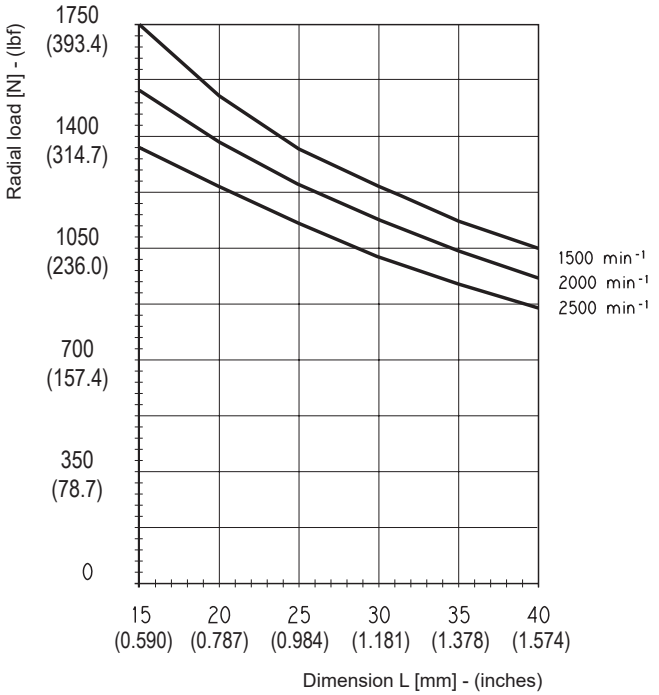
E0.151.0721.14.00IM00

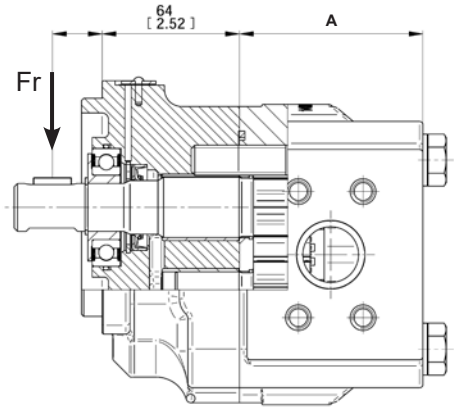
Mounting Flanges with Outrigger Bearing for Medium Loads (R3)

The following diagram shows radial load bearing capacity, in case of parallel axis drag.
The duty life of 3500 - 4000 hours is referred to a tipical mobile application, when duty cycle is less than 100%.



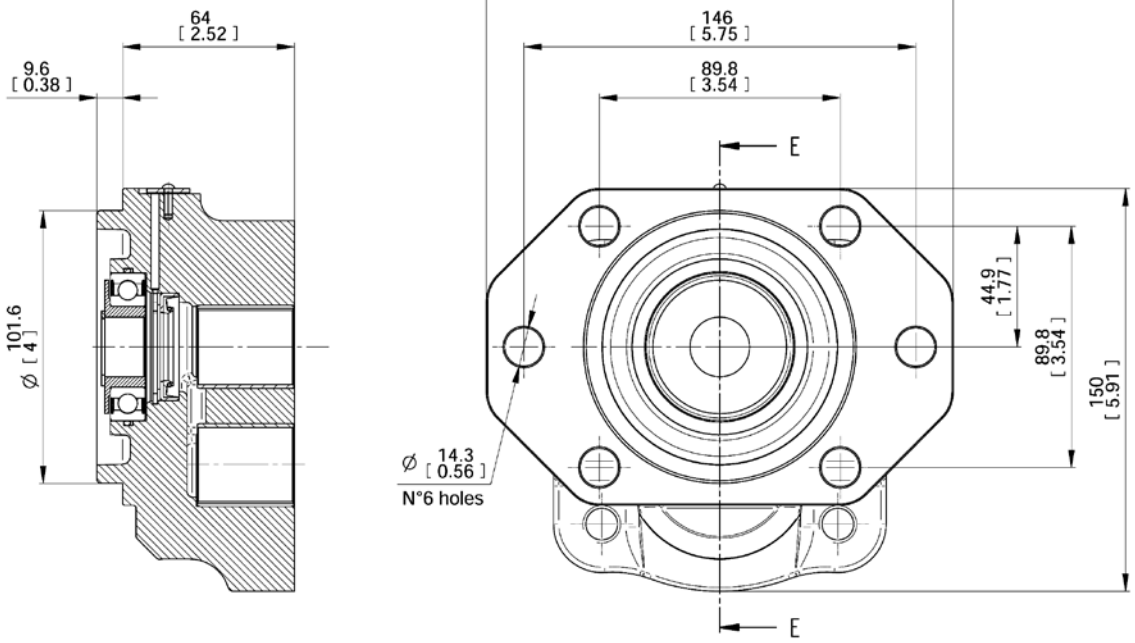
L=Distance between mounting flange and radial force point of application [mm-inches]





Type	A	
	mm	*in*
MG330 - 23	77	*3.03*
MG330 - 28	81	*3.19*
MG330 - 34	85.5	*3.36*
MG330 - 40	90	*3.54*
MG330 - 47	101.5	*3.40*
MG330 - 55	107.5	*4.23*
MG330 - 64	114.5	*4.51*
MG330 - 72	121.5	*4.78*
MG330 - 80	127.5	*5.02*

Code	Part Number
	Flange+Bearing support
55R3	R15020023 (NBR)
87R3	R15020090 (FPM)
56R3	R15020021 (NBR)
88R3	R15020080 (FPM)

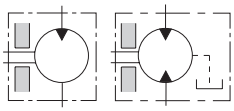


R3	With shaft code 55-56-87-88
SAE B 2-4 BOLTS	

E0.151.0721.14.00IM00

Mounting Flanges with Outrigger Bearing for Heavy Loads (R8)

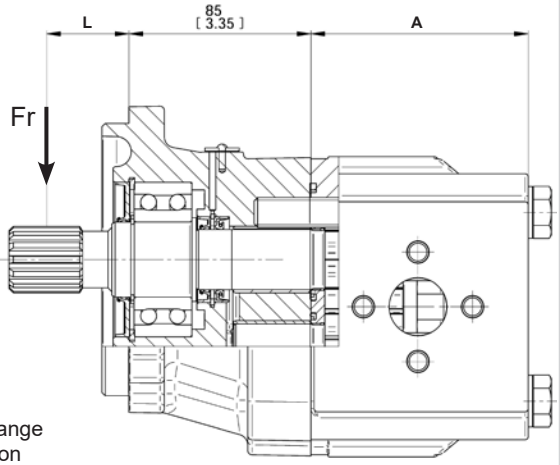
The following diagram shows radial load bearing capacity, in case of parallel axis drag. The duty life of 3500 - 4000 hours is referred to a tipical mobile application, when duty cycle is less than 100%.



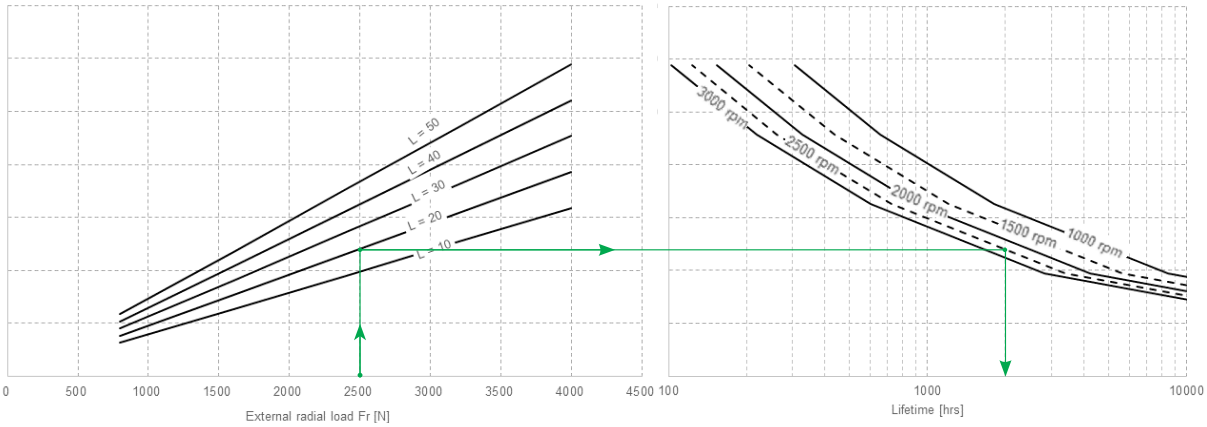
Example:
Fr = 2500 N
L = 20 → Expected life: 2000 hrs
Speed = 2500 rpm

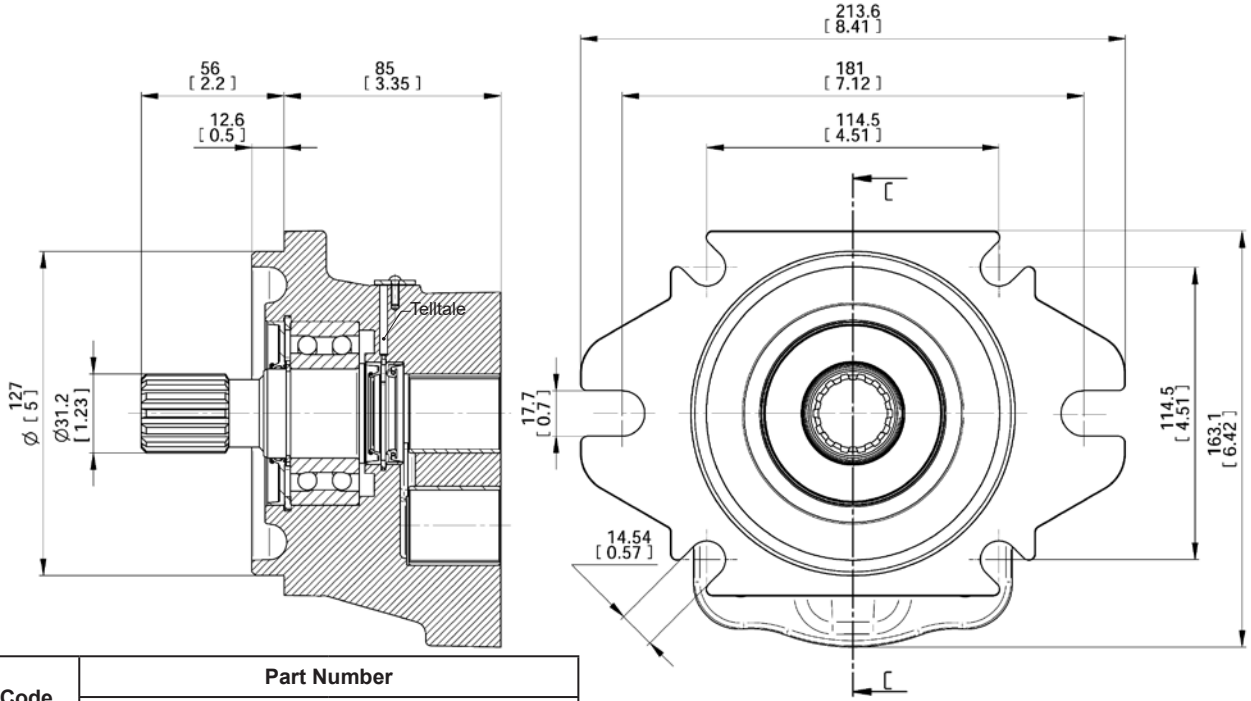
Type	A	
	mm	*in*
MG330 - 23	77	*3.03*
MG330 - 28	81	*3.19*
MG330 - 34	85.5	*3.36*
MG330 - 40	90	*3.54*
MG330 - 47	101.5	*3.40*
MG330 - 55	107.5	*4.23*
MG330 - 64	114.5	*4.51*
MG330 - 72	121.5	*4.78*
MG330 - 80	127.5	*5.02*

L=Distance between mounting flange and radial force point of application [mm-inches]



Code R8





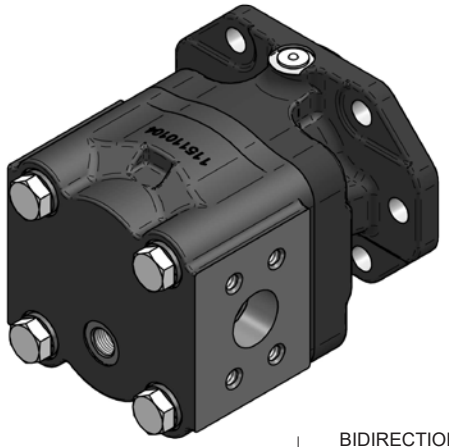
Code	Part Number	
	Flange+Bearing support	
57R8	R15020060 (NBR)	R15020061 (NBR)
89R8	R15020070 (NBR)	R15020071 (NBR)

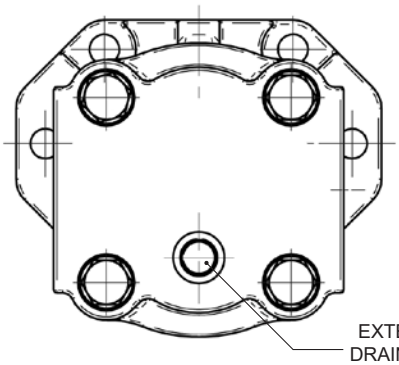
TellTale
drop in plug in case of failure, outside leakage trough the crossing hole is visible.

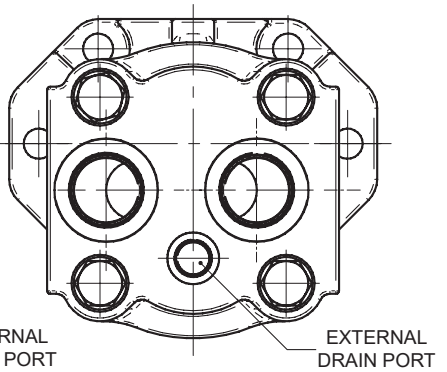
R8	With shaft code 57-89
SAE C 2-4 BOLTS	

E0.151.0721.14.00IM00

External Drain for Bidirectional Motor



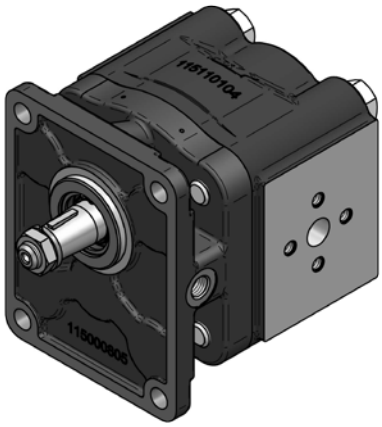


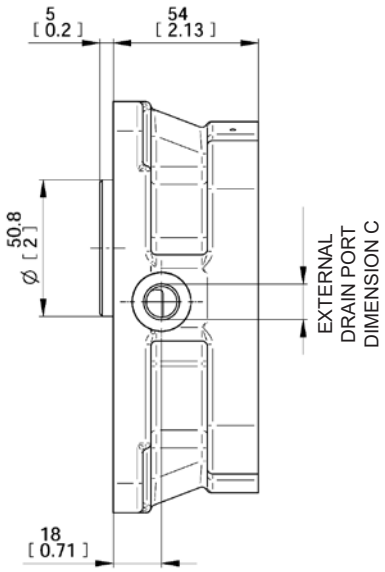


Threaded Drain Port
C
9/16-18 UNF-2B SAE 6
G 3/8

Available only threaded ports see page 131

GEAR HOUSING TYPES

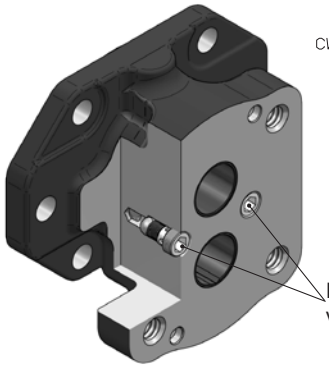


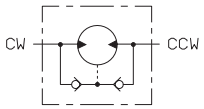


Code	Part Number	Threaded Drain Port
		C
P2 with lateral drain	R15080015 (GAS)	G 1/4

LD	P2 (EUROPEAN STANDARD) WITH LATERAL DRAIN

Internal Drain Valve for Bidirectional Motor



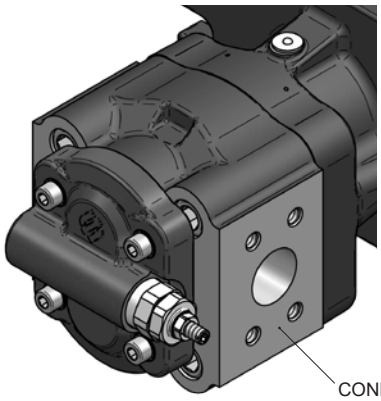


Code	Part Number		
	Flange+Shaft seal kit+Internal drain valve		Internal drain valve (A)
P2-IDV	R15030020 (NBR)	R15030030 (FPM)	R15012501
S3-IDV	R15012503 (NBR) (from 23cc to 40cc) R15012502 (NBR) (from 47cc to 72cc)	R15012505 (FPM) (from 23cc to 40cc) R15012506 (FPM) (from 47cc to 72cc)	
S4-IDV	R15012507 (NBR)	R15012508 (FPM)	
R8-IDV	R15012509 (NBR)	R15012510 (FPM)	

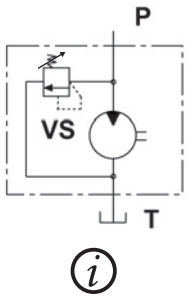
IDV	INTERNAL DRAIN FOR BI-DIRECTIONAL PUMP

E0.151.0721.14.00IM00

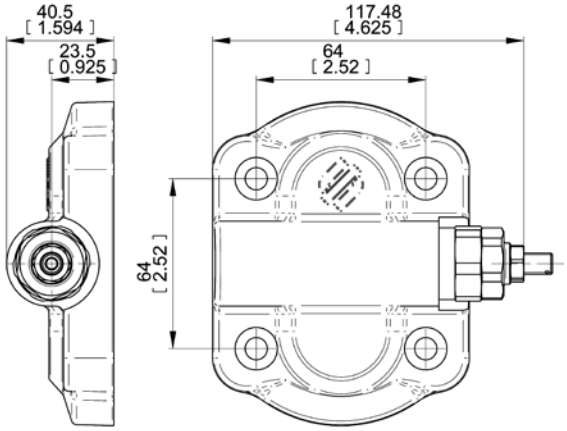
Rear Cover with Valves

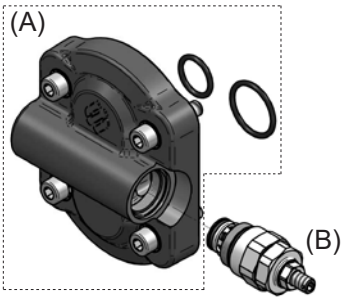


CONFIGURATION WITH SPECIAL GEAR HOUSING



Available up to 80 l/min

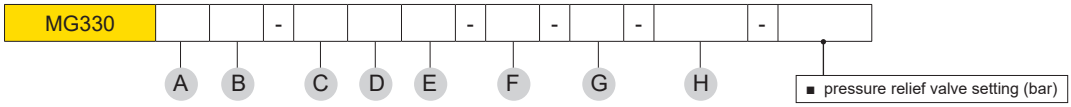




Code	Part Number		
	Cast iron Cover+O-ring (A)	Pressure relief valve (B) setting range	
VS Internal Discharge	R15030010	796366200	20-70 bar
		796366300	71-150 bar
		796366400	151-215 bar
		796366500	216-265 bar

VS - MAIN RELIEF VALVE

E0.151.0721.14.00IM00



A	CODES	DISPLACEMENTS	
	23	23.4 cm³/rev.	*1.43 cu.in/rev.*
	28	28.6 cm³/rev.	*1.74 cu.in/rev.*
	34	34.4 cm³/rev.	*2.1 cu.in/rev.*
	40	40.3 cm³/rev.	*2.46 cu.in/rev.*
	47	47.5 cm³/rev.	*2.89 cu.in/rev.*
	55	55.2 cm³/rev.	*3.37 cu.in/rev.*
	64	64.3 cm³/rev.	*3.92 cu.in/rev.*
	72	73.4 cm³/rev.	*4.48 cu.in/rev.*

B	ROTATION	CODES
	Clockwise	D
	Anti-clockwise	S
	Reversible	R

C	PORTS (page 130)	CODES
	Flanged ports european standard	P
	Flanged ports SAE J518 Metric thread	W
	Flanged ports SAE J518 American standard thread	S
	Threaded ports GAS (BSPP)	G
	Threaded ports SAE (ODT)	R

D	DRIVE SHAFT (page 134)	CODES
	Tapered 1:8	38
	SAE B splined 13T	55
	SAE BB splined 15T	56
	SAE B PARALLEL	87
	SAE BB PARALLEL	88
	SAE C 14T-12/24DP Continental Shaft	58
	SAE C 14T-12/24DP Continental Shaft	57
	SAE C PARALLEL Continental Shaft	89

H	FLANGES AND REAR COVERS (page 139)	CODES
	Adjustable main relief valve	■ VS
	Internal drain valve (Flange)	IDV
	Lateral drain on P2 (Flange European standard)	LD

G	PORTS LAYOUT (page 132)	CODE
	Side ports (standard configuration)	-
	Rear ports	1
	Side ports - Rear ports plugged	2
	Rear ports - Side ports plugged	3
	Side Inlet port - Rear outlet port	4
	Rear Inlet port - Side outlet port	5

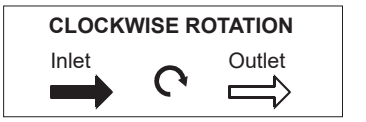
F	SEAL	CODE
	Buna standard (standard configuration)	-
	Viton	V

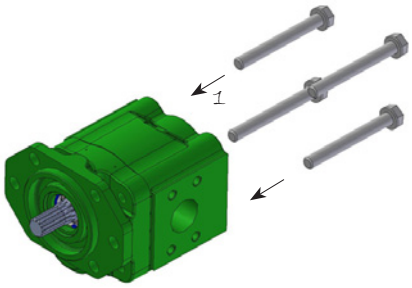
E	MOUNTING FLANGES (page 135)	CODES
	European standard Ø50.8	P2
	SAE B 2-4 BOLTS	S3
	SAE C 2-4 BOLTS	S4
	SAE B 2-4 BOLTS (Medium Loads)	R3
	SAE C 2-4 BOLTS (Heavy Loads)	R8

How to order Motor: MG330 28D, ports European (P), drive shaft (38), mounting flange (P2) **MG330-28D-P38P2**

Motor Changing Rotation Instructions

Keep the working surface cleaned as well as the exterior of the motor before starting and avoid inner contamination of the motor. The motor shown below is a clockwise rotating motor.
To achieve clockwise rotation, please read the following instructions carefully.

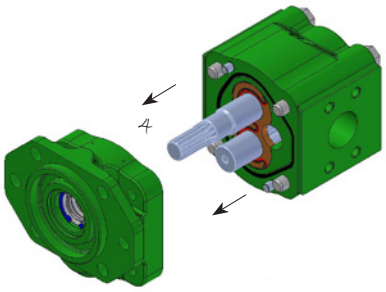




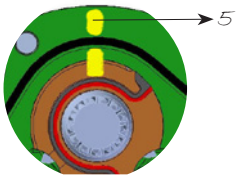
1 - Loosen and fully unscrew the screws.

2 - Lay the motor on the working area in order to have the mounting flange turned upside.

3 - Coat the shaft extension with grease to avoid damaging the shaft seal.

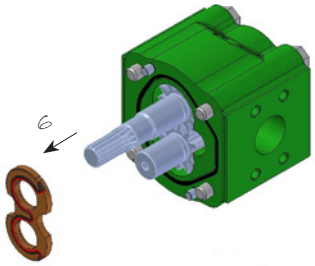


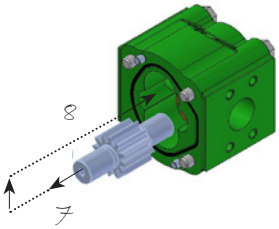
4 - Remove the flange and lay it on the working area; verify that the seal is correctly located in the body seat.



5 - Mark the position of the bushing and eventually the thrust plate, relative to the body.

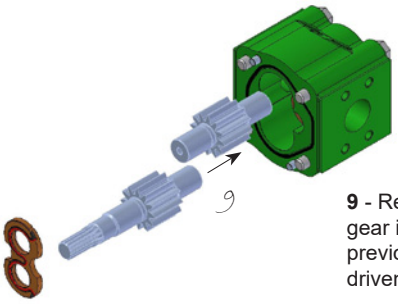
6 - Remove the bushing, thrust plate and the driving gear taking care to avoid driven gear axial shifts.



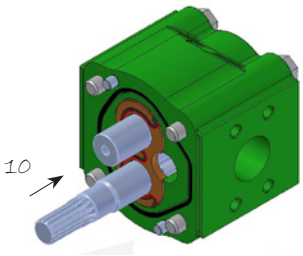


7 - Draw out the driven gear from its housing, taking care to avoid rear cover axial shifts.

8 - Re-locate the driven gear in the position previously occupied by the driving gear.



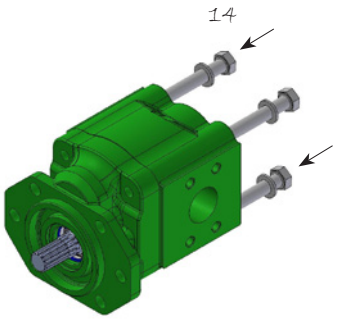
9 - Re-locate the driving gear in the position previously occupied by the driven gear.



10 - Replace the bushing and thrust plate taking care that:
- marks are located as on the picture
- surface containing the seal is visible
- seal and its protection are correctly located.

11 - Clean body and mounting flange refaced surfaces.

12 - Verify that the two plugs are located in the body.

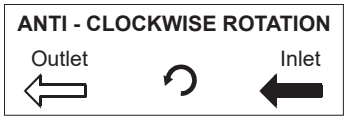


13 - Refit the mounting flange, turned 180° from its original position.

14 - Replace the clamp bolts and tighten crosswise evenly to an appropriate torque.

15 - Check that the shaft rotates freely.

16 - Mark on the flange the new direction of rotation.



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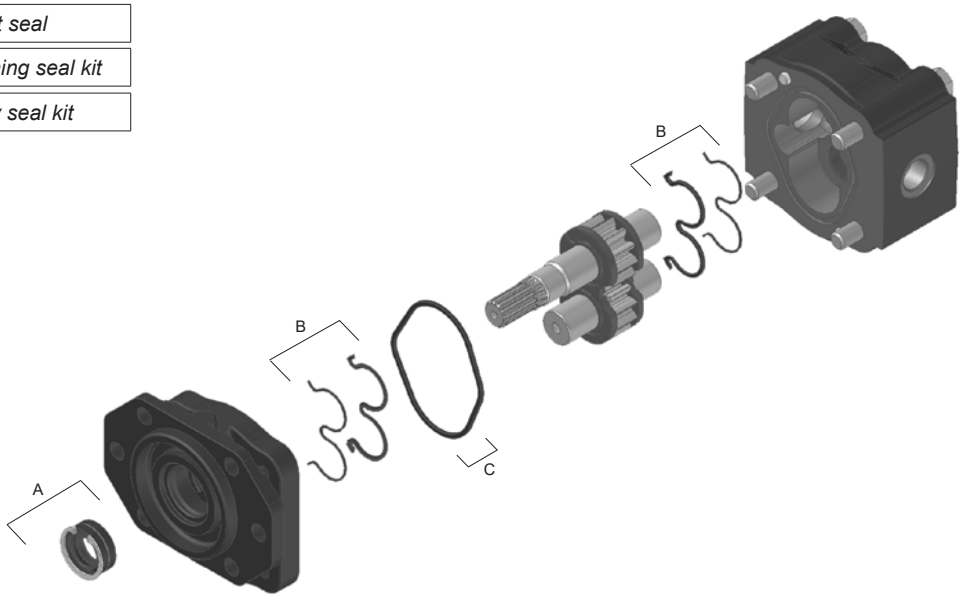
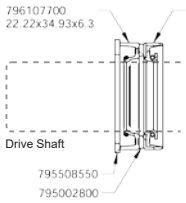
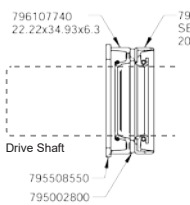
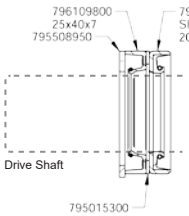
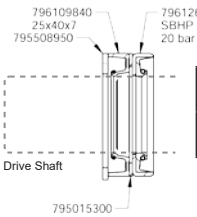
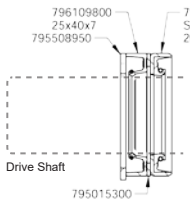
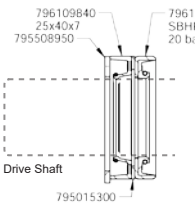
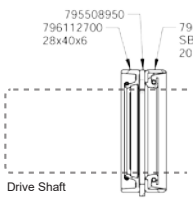
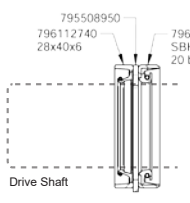
Unidirectional Motor Seal Spare Parts Kit

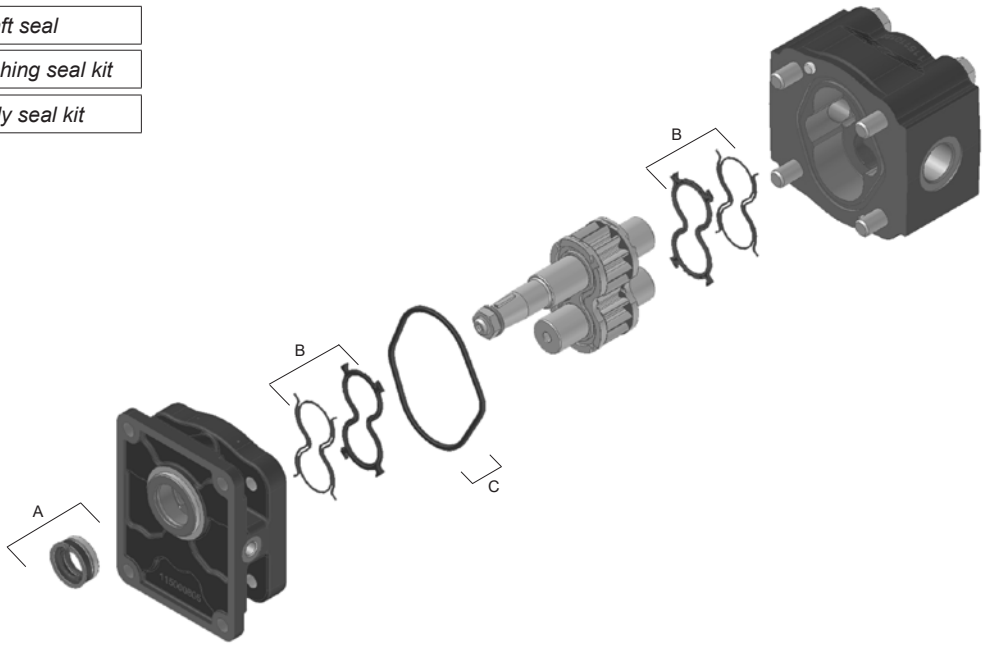
A	*Shaft seal*
B	*Bushing seal kit*
C	*Body seal kit*

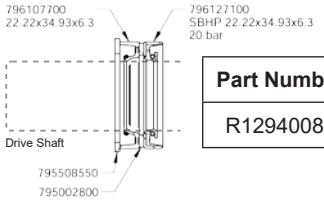
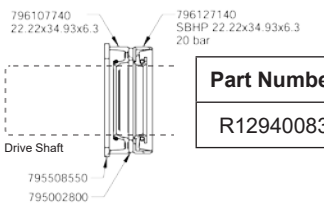
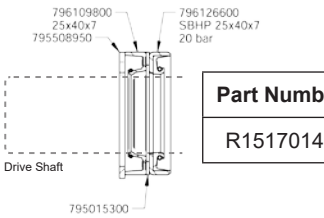
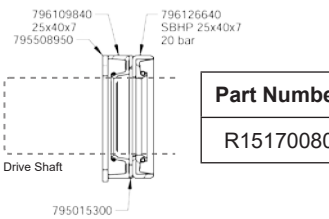
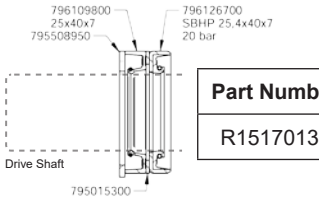
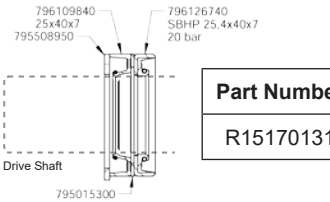
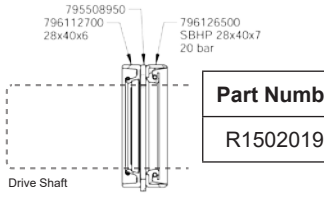
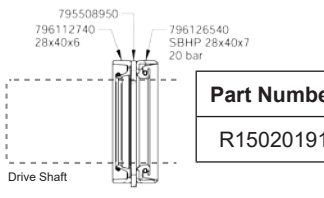


SHAFT & FLANGE TYPE	NBR COMPOUND		FPM COMPOUND	
	Complete seal kit (A+B+C)	Shaft seal kit (A)	Complete seal kit (A+B+C)	Shaft seal kit (A)
38P2	**Part Number** R15170351	 **Part Number** R12940080	**Part Number** R15170361	 **Part Number** R12940083
55S3 56S3 58S3 87S3	**Part Number** R15170371	 **Part Number** R15170140	**Part Number** R15170381	 **Part Number** R15170080
88S3	**Part Number** R15170391	 **Part Number** R15170130	**Part Number** R15170401	 **Part Number** R15170131
58S4	**Part Number** R15170030	 **Part Number** R15020190	**Part Number** R15170421	 **Part Number** R15020191

Bidirectional Motor Seal Spare Parts Kit

A	*Shaft seal*
B	*Bushing seal kit*
C	*Body seal kit*



SHAFT & FLANGE TYPE	NBR COMPOUND		FPM COMPOUND	
	Complete seal kit (A+B+C)	Shaft seal kit (A)	Complete seal kit (A+B+C)	Shaft seal kit (A)
38P2	**Part Number** R15170350	 **Part Number** R12940080	**Part Number** R15170360	 **Part Number** R12940083
55S3 56S3 58S3 87S3	**Part Number** R15170370	 **Part Number** R15170140	**Part Number** R15170380	 **Part Number** R15170080
88S3	**Part Number** R15170160	 **Part Number** R15170130	**Part Number** R15170400	 **Part Number** R15170131
58S4	**Part Number** R15170410	 **Part Number** R15020190	**Part Number** R15170420	 **Part Number** R15020191

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Note

Note

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Note

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