



Brevini[®] Hydraulic motors

Orbital motors

Displacement from 12.9 to 523 cc/rev, pressure up to 210 bar,
flow up to 125 l/min



Low speed high torque motors

Extensive range of hydraulic orbital motors for general purposes, including valves.
Gerotor and Geroller type, for light and heavy duty


BREVINI[®]
Motion Systems


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Use of the products in this catalogue must comply with the operating limits given in the technical specifications. The type of application and operating conditions must be assessed as normal or in malfunction in order to avoid endangering the safety of people and/or items.

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BREVINI[®]

Motion Systems

GENERAL INFORMATION

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Hydraulic Motors

i Operating Principle

Hydraulic motors convert hydraulic energy (pressure, oil flow) into mechanical energy (torque, revolutions).

In the case of orbital motors, this conversion is made by the drive component (orbital unit): an external stator with internal tothing and a rotor (with planetary motion) of suitable profile. Our orbital motors have fixed displacement.

Gearwheel Set

There are two types of gearing: the BGM, BG, and BH have gears with matching profiles (Gerotor gear set: fig. 1 a-b), whereas the BR, BS, ARS, ARF, HR and HT have rollers between the two gears (Geroller gear set: fig. 1 c-d-e).

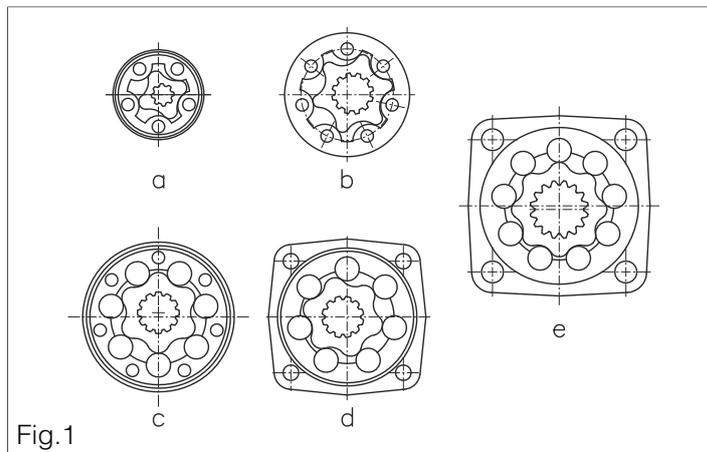


Fig.1

Timing Valve

In orbital motors the motor shaft and timing valve are driven by a cardan shaft that ensures the synchronism between the gearwheel set and the fluid timing valve. There are three types of timing valve:

- Spool valve
BGM, BG, BH, BR and BS motors have a spool valve: the timing valve has been integrated in the output shaft design (fig. 2).
- Pressure compensated valve plate
ARS and ARF motors have a pressure compensated valve plate: The timing valve is driven by the output shaft through an Oldham type coupling (fig. 3).
- Separated pressure compensated valve plate.
HR and HT motors have a disc valve, hydraulically compensated and separately driven by a dedicated Cardan type coupling (fig. 4).

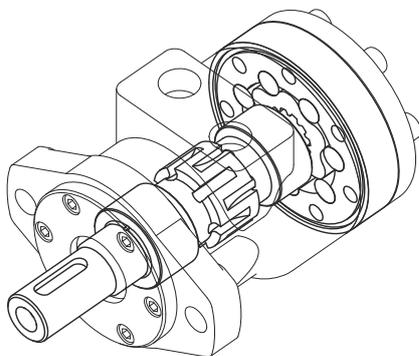


Fig.2

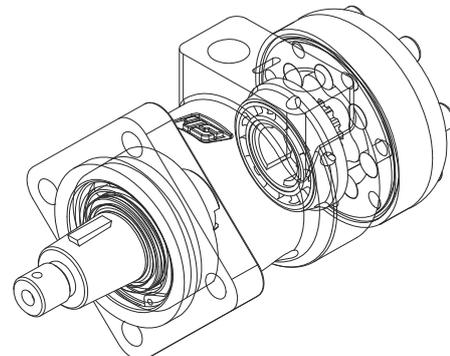


Fig.3

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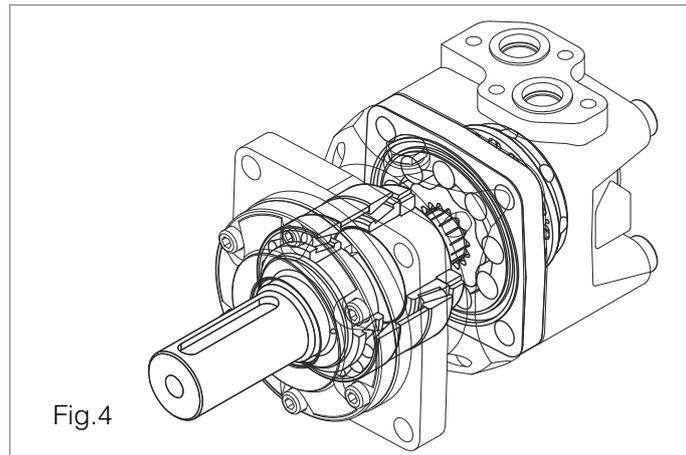


Fig.4

Features of main Types

BGM

Spool valve design and Gerotor gear set hydraulic motor with compact design and small displacement. Suitable for application where high speed and small dimensions are required.

BG - BH

BG series motors feature spool valve design and Gerotor gear set. They are economical motors able to accomplish light to medium duty applications.

BR - BS

The BR series motors feature spool valve and roller gear set design. They feature compact design, high efficiency, smooth rotational and good starting torque.

ARS

Roller gear set hydraulic motors with pressure compensated valve disc and tapered roller bearings support. The ARS series can withstand large radial and axial forces.

HR

Squared stator roller gear set, compensated valve disc featuring separate drive shaft and the tapered roller bearings make the HR series motors suited for application where high power is required. The technical solutions adopted with this model allow to reach an output power up to 44.2 kW [59.2 hp].

HT

Orbital motors with high performance squared stator roller, separately driven and hydraulically compensated disc valve and tapered roller bearings. Working pressure up to 280 bar [4060 psi] and power up to 40 kW [53.6 hp]. These motors are suitable for all those applications where high torque is required and continuous duty or frequent inversions of the sense of rotation make necessary the use of high performance motors.

ARSW - HRW

Hydraulic wheel drive motors with tapered roller bearings and recessed mounting flange. The recessed mounting flange allows to mount a wheel hub or a winch drum so that the radial load acts midway between the two motor bearings. In this way the motor can withstand larger radial and axial forces.

ARF - HRF - HRL

Hydraulic motors with built-in hydraulically released multi-disc static brake. The ball bearings shaft support and the full torque holding brake make this motors a very compact solution for applications like winches and small hydrostatic transmission systems.

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Motors Performance

The power, speed and torque ratings both for continuous and intermittent duties, of the several motors in the Dana Brevini production range, are available in the following histograms (picture 5).

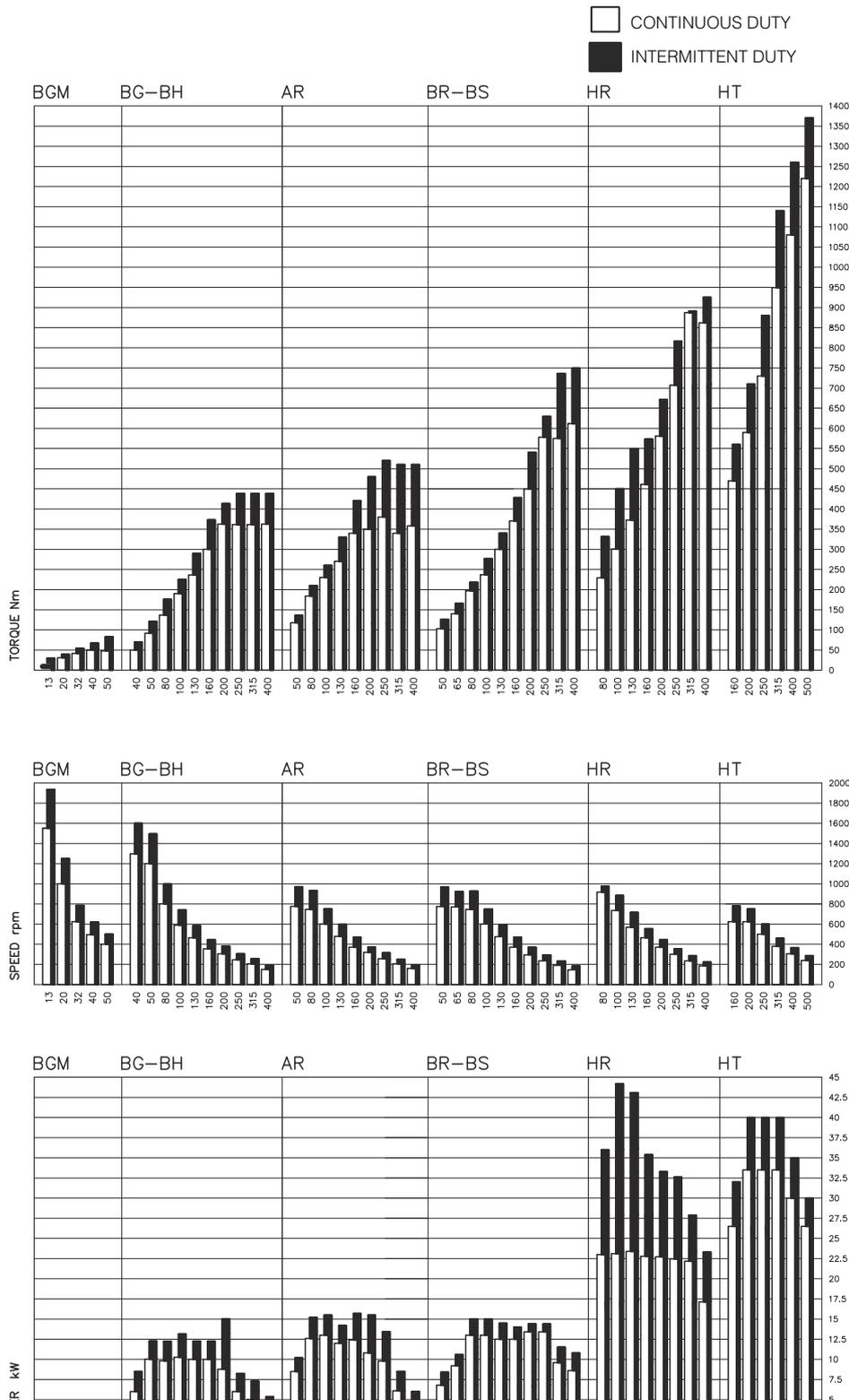


Fig.5

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General Maintenance and Installation rules

- 1) Motors must be operated not exceeding the working parameters published in the corresponding catalogue. Motors should be filled with oil before operation, particularly for large displacement units.
- 2) Working oil temperatures in the hydraulic system should be kept between + 30°C and + 60°C. The anti-wear and lubrication properties of the oil are greatly reduced at higher temperatures.
- 3) The ambient temperature around the motor should be between -30°C and + 90°C.
- 4) Only use an oil containing antiwear additives ISO 46 or with a viscosity at normal operating temperature of approx. 37 cSt. Fluid should also have an adequate viscosity index. Under no circumstances should oil viscosity be outside the range of 22 cSt to 75 cSt at the above mentioned temperature range. Minimum acceptable viscosity for short periods: 10 cst.
- 5) Brevini Dana Fluid Power motors can be used with fire resistant fluid. Contact Dana Brevini technical department for advice.
- 6) Before starting the hydraulic system check oil level and correct mounting of all components
- 7) Run the system unloaded for 10÷15 minutes to purge air from the circuit and to prevent foaming and jerky movement.
- 8) Flush the system for 30 minutes, unloaded and connected to an auxiliary filter. This filter should be at least 10 µm or finer than the normal circuit filtering capacity.
- 9) Check for leaks, and top up reservoir.
- 10) Check oil level regularly and clean filters or replace them according to filter manufacturers advice.

Oil Filtering

For maximum life from Dana Brevini motors oil contamination should never exceed 22/20/17 (see ISO 4406:1999).

To ensure this level, return line filters should have filtering capability of 40 µm absolute or 25 µm nominal in open circuit, 20 µm absolute and 10 µm nominal in closed circuit.

Static and Dynamic Seals

Dana Brevini standard motors have static and dynamic seals (rotating) made of NBR.

These seals offer improved efficiency and prolonged life with all types of mineral oil.

For other fluids or seals material contact Dana Brevini. Under no circumstances should seals be subjected to temperatures outside the range of - 30°C to + 90°C.

Drain Line

When the back pressure of the return line exceeds the maximum acceptable level shown in the corresponding catalogue, it will be necessary to provide a separate drain line connected to the reservoir. A drain line is always recommended for brake motors (as drain oil passing through the motor provides essential cooling), also for short motors (those without output shaft) and in general when it is necessary to reduce the pressure on the shaft seal.

In some models internal check valves ensure the pressure in the motor case never exceeds that of the return line.

Circuit and Connections

i Dana Brevini motors can be used in open circuit (fig. 6) as well as closed circuit (fig. 7). They can also be connected in series (fig. 8) or in parallel (fig. 9) or even to switch between series and parallel circuit (fig. 10).

Series Connections

In series connection (fig. 8) all the oil coming from the pump passes through each motor which therefore turn (theoretically) at the same shaft speed (assuming they have same displacement) or each to a speed proportional to its size (for different displacements). However, external oil leakage on each motor (depending on Δp due to load variations) will possibly result in a variation in speed compared to the theoretical one: if an external drain line is provided, the leakage flow will reduce the available flow to the following motor. Therefore, the theoretical speed can not be maintained in the following motor.

Dana Brevini motors with pressure compensated distribution guarantee a smaller drain flow and smaller leakages, therefore reducing the above mentioned problem.

The most precise and constant output speed is achieved using motors with high pressure shaft seals and without the external drain. In series connection the pump pressure is equal to the sum of the working Δp of all the motors.

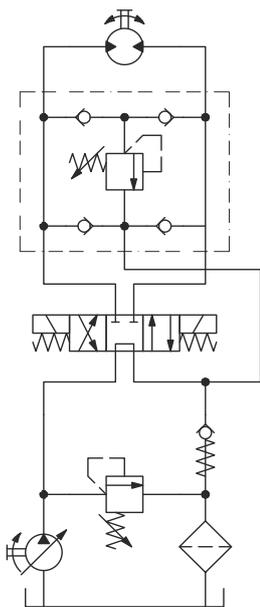


Fig.6

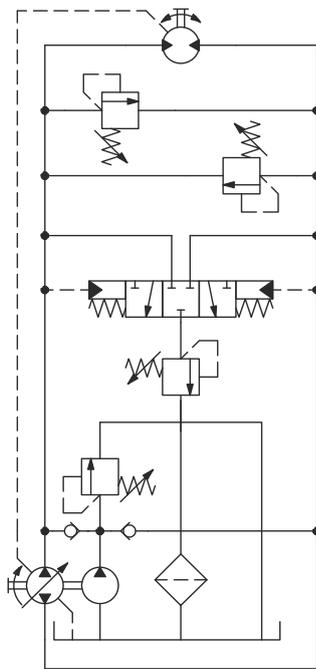


Fig.7

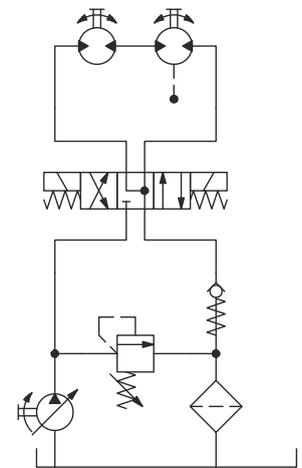


Fig.8

Parallel Connections

With motors connected in parallel (fig. 9) every motor is subjected to the Δp provided by the pump.

Hence motors of same displacement will provide the same torque, or if of different displacement will provide torque proportional to their displacements. In this circuit all motors will require flow under pressure from the pump according to their desired speed.

This makes the system work as a “hydraulic differential” and is ideal for traction drive for mobile machinery.

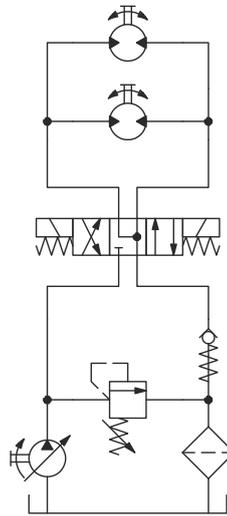


Fig.9

Series - Parallel Connections

With this configuration (fig. 10) by using an additional control valve it is possible to switch between series and parallel circuit, making the system able to perform like a multi speed gearbox.

In series configuration the motors provide maximum speed and low torque, vice versa in parallel. In series circuit the motor will run at the same speed.

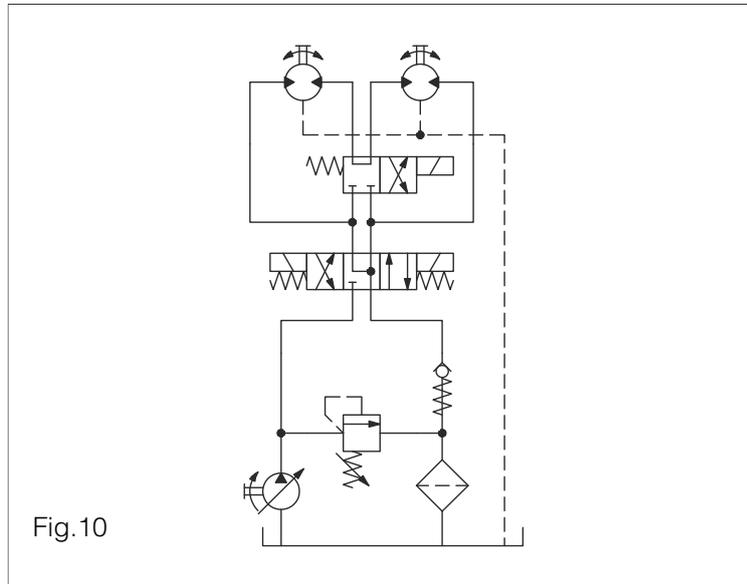


Fig.10

Use of Sam Motors in Braking Mode

When using Dana Brevini motors it is necessary to use the correct braking valves when dissipating the inertia of the load. In such circumstance the motor will operate as a pump converting the inertia into hydraulic energy and this energy is then dissipated across the braking valves.

The greater the motors displacement and the higher the pressure setting of the valve, the greater will be the braking torque.

Calculation of the setting pressure of the braking valve:

Considering the total efficiency of the motor while being used as a pump, the absorbed torque during braking action is:

$$M_t = 1.3 \times M_m$$

M_t : torque absorbed by the motor during braking with a given pressure setting of the valve.

M_m : the torque output of the motor (see performance charts) for a given pressure and speed during normal operation.

To avoid overloading the motor during deceleration it is recommended that the flow through the valve is not greater than the maximum flow of the motor in normal operating mode. During braking it will also be necessary to provide a boosted inlet flow to avoid cavitation.

Recommended Braking Valves

To control a moving or suspended load it is possible to use a variety of valves.

When no static brake is required, then a simple anti-shock and anti-cavitation valve is recommended (fig. 11).

When using an hydraulically released static brake, a shuttle valve is required to ensure automatic release of the brake (fig. 12). In this case it is necessary to use an open centre directional valve, to ensure that the motor is fed with oil during braking and therefore avoiding cavitation.

When using the anti-shock valve, however, closed centre valves are required as this is the only way to open the pressure valve during braking.

Both types of valve need a check valve on the return line which is set at sufficient pressure to avoid cavitation of the motor.



Holding a Load

It is important to be aware that because of internal motor leakage and other possible circuit leakage it is not possible to ensure hydraulic holding of the load.

Because of the inevitable leakages, the motor will creep when driven by the load. The designer of the application should therefore implement a static brake, hydraulically released, capable of holding the maximum design load.

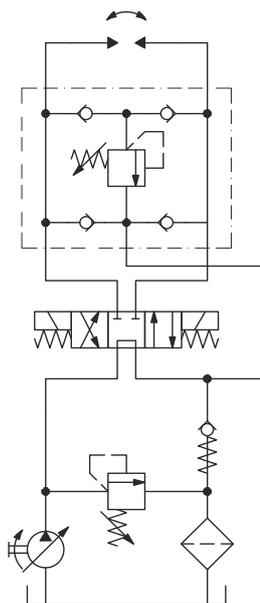


Fig.11

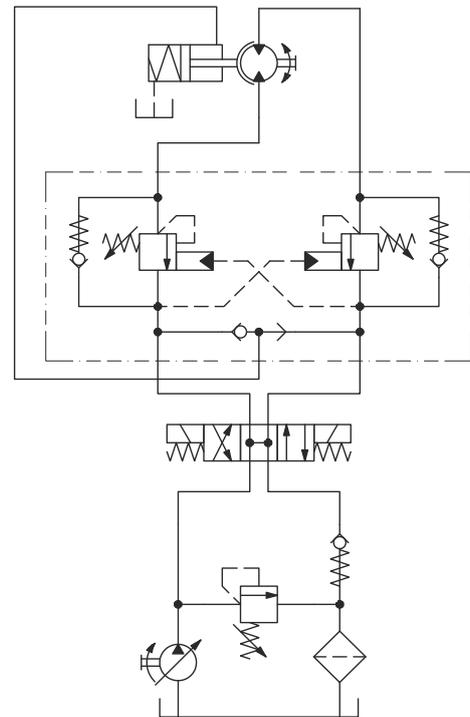


Fig.12

Nominal Values Calculation



Pumps

Output flow	$Q = \frac{V_g \cdot n \cdot \eta_v}{1000}$	(l/min)	V_g = geometrical displacement (cm ³ /rev) Δp = drop of pressure (bar) n = speed (rpm) Q = flow (l/min) M = torque (Nm) W = power (kW) η_v = volumetric efficiency η_{hm} = mech-hyd. efficiency η_t = overall efficiency ($\eta_t = \eta_v \cdot \eta_{hm}$)
Drive torque	$M = \frac{\Delta p \cdot V_g}{62.8} \cdot \frac{1}{\eta_{hm}}$	(Nm)	
Driver power	$W = \frac{M \cdot n}{9550} = \frac{Q \cdot \Delta p}{600} \cdot \frac{1}{\eta_t}$	(kW)	

Motors

Input flow	$Q = \frac{V_g \cdot n}{1000} \cdot \frac{1}{\eta_v}$	(l/min)	V_g = geometrical displacement (cm ³ /rev) Δp = drop of pressure (bar) n = speed (rpm) Q = flow (l/min) M = torque (Nm) W = power (kW) η_v = volumetric efficiency η_{hm} = mech-hyd. efficiency η_t = overall efficiency ($\eta_t = \eta_v \cdot \eta_{hm}$)
Output torque	$M = \frac{\Delta p \cdot V_g \cdot \eta_{hm}}{62.8}$	(Nm)	
Output power	$W = \frac{M \cdot n}{9550} = \frac{Q \cdot \Delta p \cdot \eta_t}{600}$	(kW)	
Output speed	$n = \frac{Q \cdot 1000 \cdot \eta_v}{V_g}$	(rpm)	

Conversion Factors

The following table report the conversion factor from metric units of measure to english units for the main units used in hydraulic.

	to convert		multiply by	to convert		multiply by
	from	to		from	to	
length	mm	in	0.039	in	mm	25.4
capacity	l	gal	0.219	gal	l	4.546
mass	kg	lb	2.204	lb	kg	0.4536
force	N	lbf	0.225	lbf	N	4.45
torque	N·m	lbf·ft	0.737	lbf·ft	N·m	1.357
pressure	bar	psi	14.5	psi	bar	0.06895
flow	l/min	U.S. gpm	0.264	U.S. gpm	l/min	3.79
power	kW	hp	1.34	hp	kW	0.746
rotation speed	giri/min	r.p.m.	1	r.p.m.	giri/min	1
displacement	cm ³ /giro	in ³ /rev	0.061	in ³ /rev	cm ³ /giro	16.387
temperature	°C	°F	1.8x°C+32	°F	°C	(°F-32)/1.8

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Name Plate

Each Dana Brevini ORBITAL products are supplied with an identification plate. The identification of the product is made through the serial number. Every request of information must quote this number.



Product description



Serial number

YYMM = Year and Month of production
 SSSSSS = Batch number
 BB = Batch progressive number (where required)

Product description



Serial number

YM = Year and Month of production
 SSSSSS = Batch number
 BB = Batch progressive number (where required)

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BREVINI[®]

Motion Systems

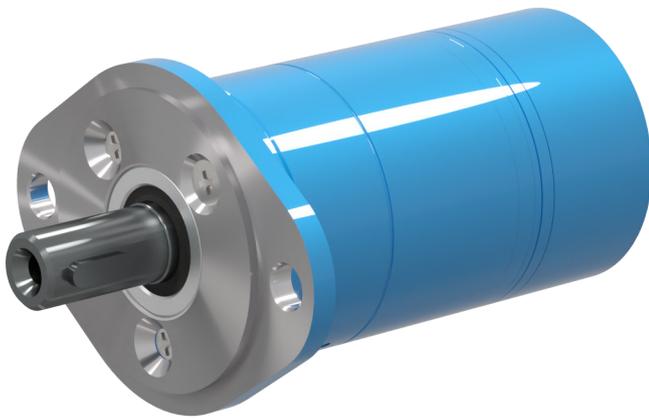
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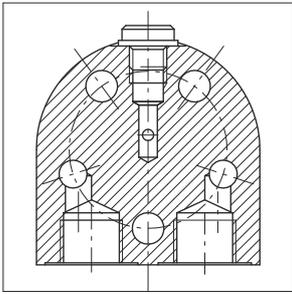
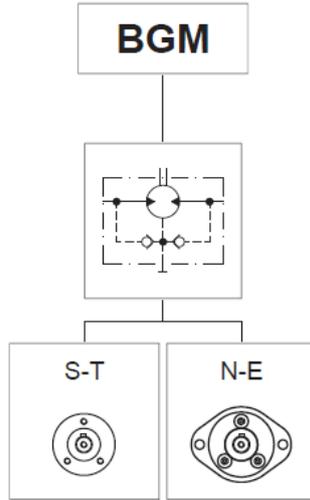


BGM Orbital Motors

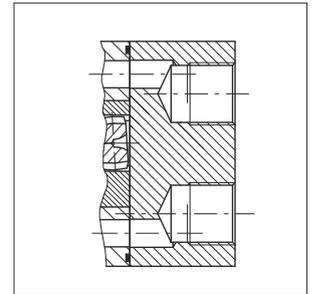


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Side ports configuration.

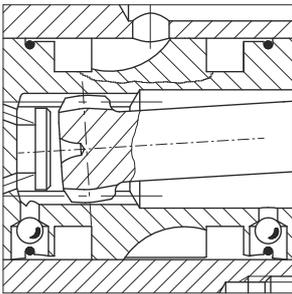


Rear ports configuration.

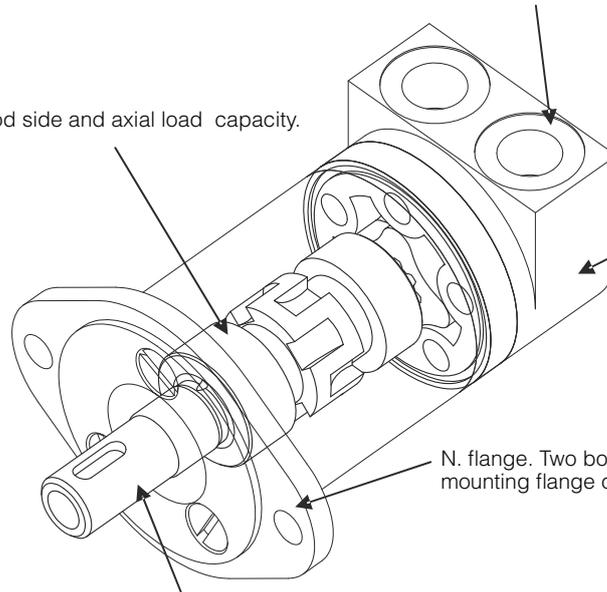
Very good side and axial load capacity.

Rear and side ports option.

Built - in check valves.

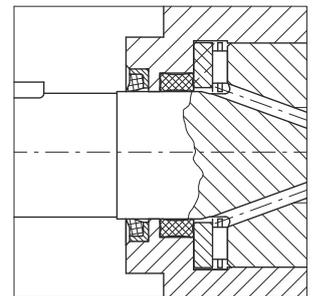


Optimized spool valve design to minimize the leakage - built-in check valves.



N. flange. Two bolt mounting flange option.

High torque/weight ratio and very good low speed performance.



Dust seal to protect the high pressure shaft seal.

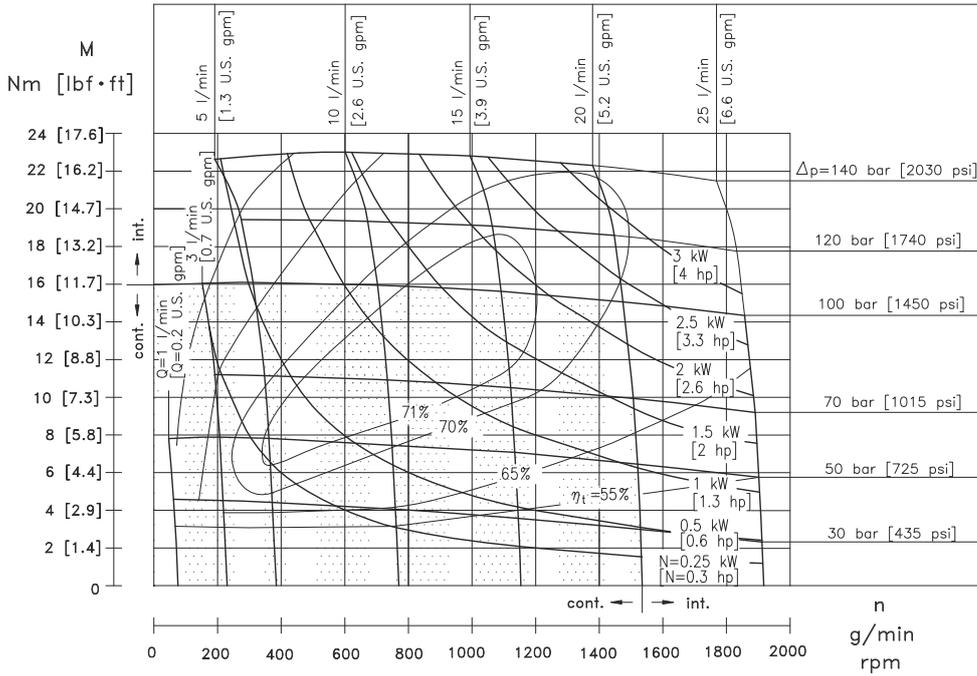
Motor	Displacement cm ³ /giro [in ³ /rev]	Max. input pressure bar [psi]	Max. differential pressure bar [psi]	Max. torque* Nm [lbf-ft]	Max. flow l/min [U.S. gpm]	Max. speed rpm	Max. power kW [hp]
BGM 013	12.9 [0.78]	Cont 140 [2030] Int ¹⁾ 175 [2537] Peak ²⁾ 225 [3265]	Cont 100 [1450] Int ¹⁾ 140 [2030] Peak ²⁾ 200 [2900]	Cont 16 [11.7] Int ¹⁾ 23 [16.9] Peak ²⁾ 33 [24.3]	Cont 20 [5.28] Int ¹⁾ 25 [6.60]	Cont 1550 Int ¹⁾ 1935	Cont 2.3 [3.08] Int ¹⁾ 3.2 [4.28]
BGM 020	20 [1.22]	Cont 140 [2030] Int ¹⁾ 175 [2537] Peak ²⁾ 225 [3265]	Cont 100 [1450] Int ¹⁾ 140 [2030] Peak ²⁾ 200 [2900]	Cont 25 [18.4] Int ¹⁾ 35 [25.7] Peak ²⁾ 51 [37.5]	Cont 20 [5.28] Int ¹⁾ 25 [6.60]	Cont 1000 Int ¹⁾ 1250	Cont 2.3 [3.08] Int ¹⁾ 3.3 [4.42]
BGM 032	31.8 [1.93]	Cont 140 [2030] Int ¹⁾ 175 [2537] Peak ²⁾ 225 [3265]	Cont 100 [1450] Int ¹⁾ 140 [2030] Peak ²⁾ 160 [2320]	Cont 39 [28.7] Int ¹⁾ 54 [39.7] Peak ²⁾ 60 [44.2]	Cont 20 [5.28] Int ¹⁾ 25 [6.60]	Cont 625 Int ¹⁾ 785	Cont 2.3 [3.08] Int ¹⁾ 2.8 [3.75]
BGM 040	40.1 [2.44]	Cont 140 [2030] Int ¹⁾ 175 [2537] Peak ²⁾ 225 [3265]	Cont 100 [1450] Int ¹⁾ 140 [2030] Peak ²⁾ 160 [2320]	Cont 50 [36.8] Int ¹⁾ 67 [49.3] Peak ²⁾ 76 [56.0]	Cont 20 [5.28] Int ¹⁾ 25 [6.60]	Cont 495 Int ¹⁾ 620	Cont 1.8 [2.41] Int ¹⁾ 2.5 [3.35]
BGM 050	50 [3.05]	Cont 140 [2030] Int ¹⁾ 175 [2537] Peak ²⁾ 225 [3265]	Cont 80 [1160] Int ¹⁾ 140 [2030] Peak ²⁾ 160 [2320]	Cont 49 [36.1] Int ¹⁾ 83 [61.1] Peak ²⁾ 94 [69.2]	Cont 20 [5.28] Int ¹⁾ 25 [6.60]	Cont 400 Int ¹⁾ 500	Cont 1.8 [2.41] Int ¹⁾ 2.4 [3.21]

¹⁾ Intermittent duty must not exceed 10% each minute.

²⁾ Peak duty must not exceed 1% each minute.

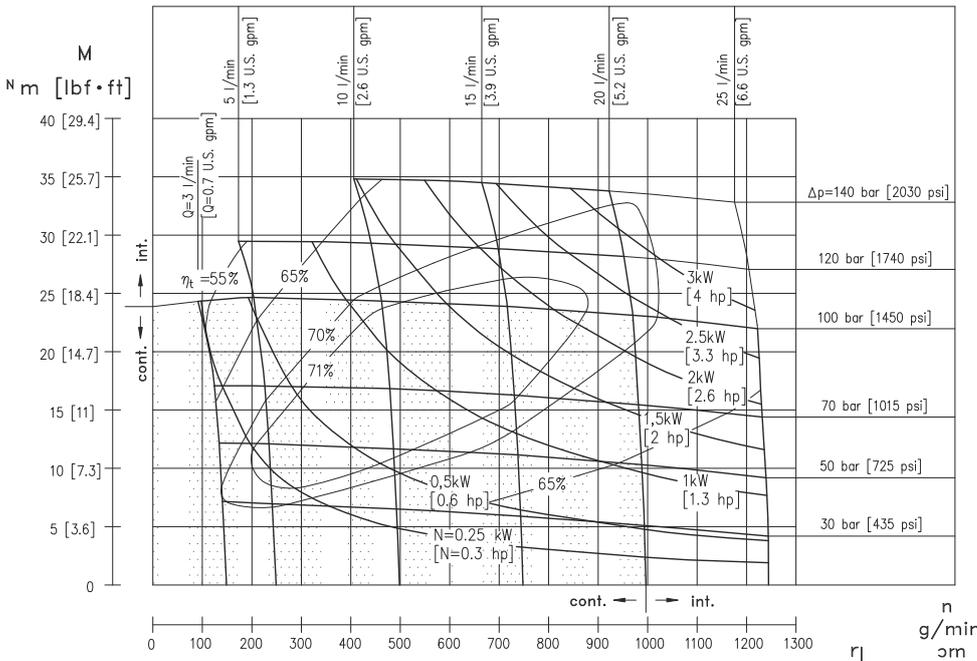
BGM 013

BGM



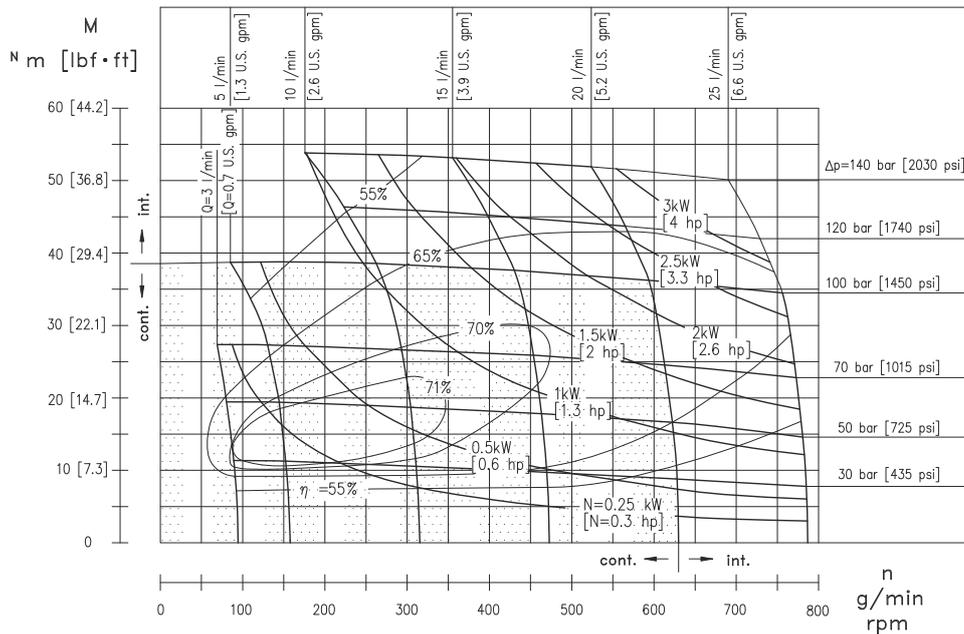
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BGM 020



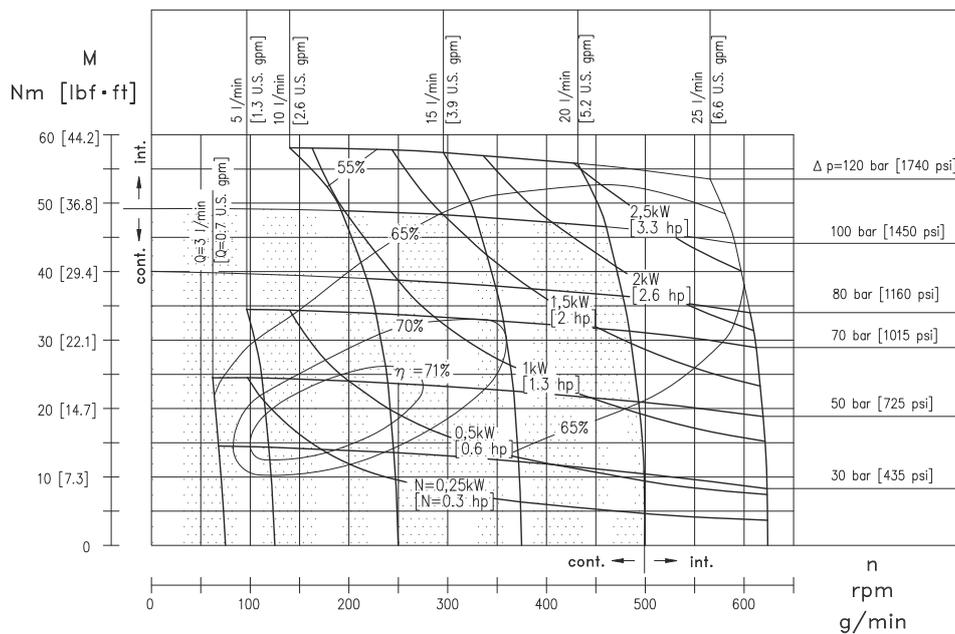
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BGM 032



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BGM 040



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

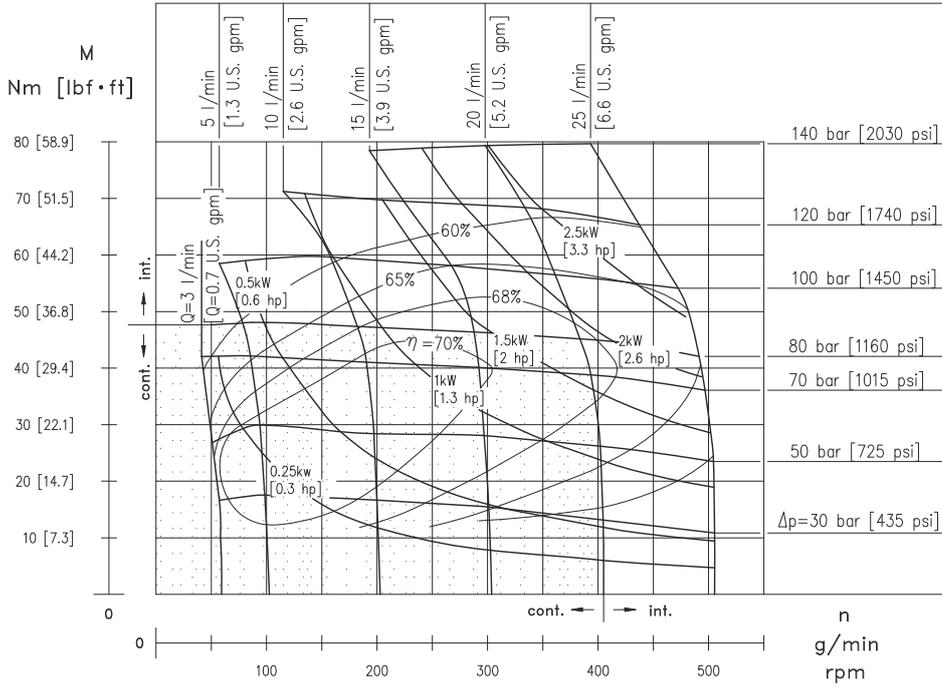
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BGM 050

BGM



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Max. Pressure

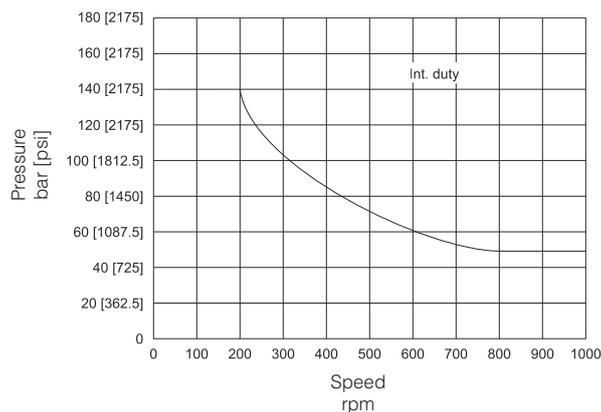
Motor	Max return pressure with drain line bar [psi]	Max starting pressure with no load bar [psi]	Min starting torque	
			Nm [lbf-ft]	
BGM 013	140 [2030]	4 [58]	At max Δp	Cont Int ¹⁾ 12 [8.8] 17 [12.5]
BGM 020	140 [2030]	4 [58]	At max Δp	Cont Int ¹⁾ 21 [15.4] 30 [22.1]
BGM 032	140 [2030]	4 [58]	At max Δp	Cont Int ¹⁾ 35 [25.7] 51 [37.5]
BGM 040	140 [2030]	4 [58]	At max Δp	Cont Int ¹⁾ 34 [25] 48 [35.3]
BGM 050	140 [2030]	4 [58]	At max Δp	Cont Int ¹⁾ 40 [29.4] 70 [51.5]

Max. Permissible Shaft Seal Pressure

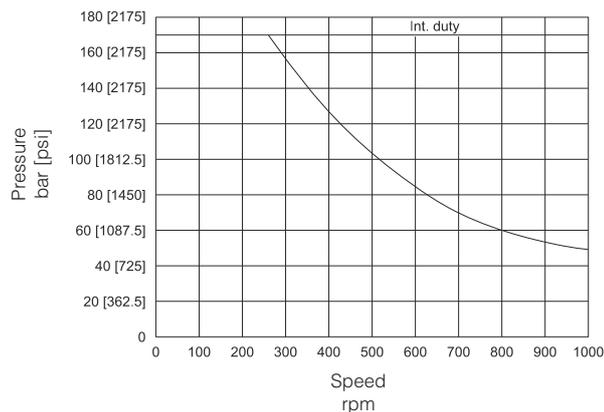
Max. return pressure without drain line or max. pressure in the drain line. Motor are supplied in standard seal version (Standard chart) or in HPS seal version (HPS chart).

For pressure and speeds not showed in the curve below, please contact Dana Brevini.

STANDARD



HPS



Pressure Loss

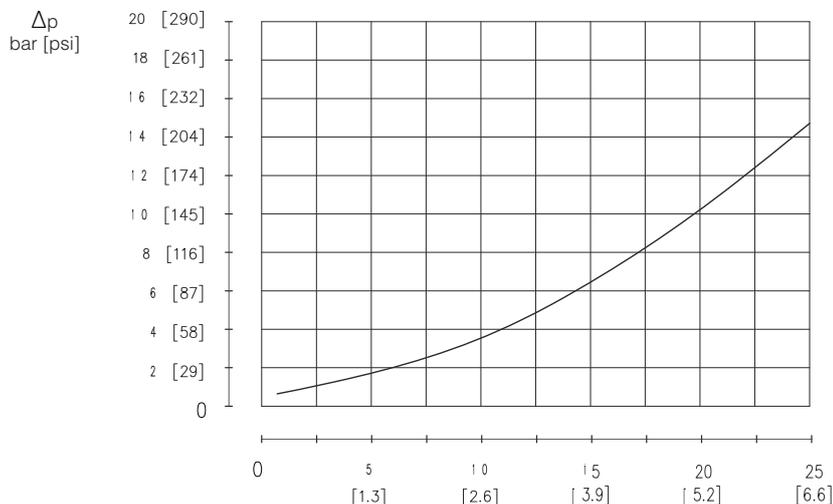


Diagram according tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45° C temperature.

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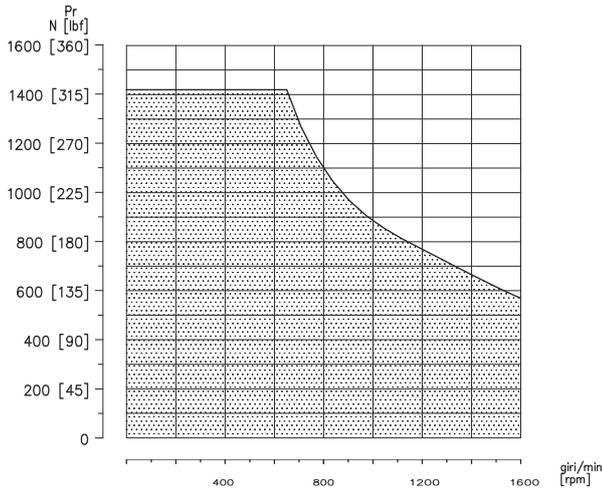


Shaft Load

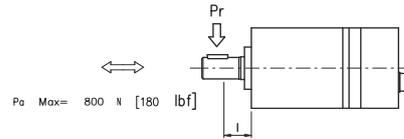
The permissible radial shaft load depends on:

- Speed (n)
- Distance (L) from the point of load to the mounting flange

Radial load capacity (Pr) curve according to speed (n) and distance (L) from flange



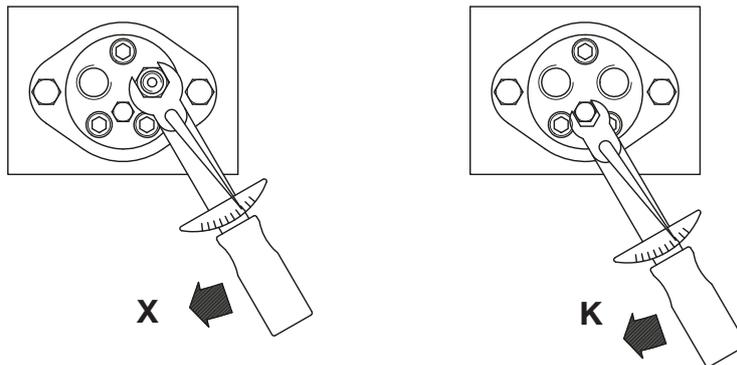
$$Pr = \frac{1500}{n} \cdot \frac{52300}{55.5 - L} \quad [N]$$



This formula being valid for $n \geq 650$ rpm
For $n < 650$ rpm $Pr_{max} = 1450$ N [326.25 lbf]

The curve show the relation between (Pr) and (n) L= 20 mm [0.78 in]

Tightening Torque



	X	K
Nipples	3/8 G (BSPP)	1/8 G (BSPP)
with steel washer	60 Nm 44.2 [lbf-ft]	20 Nm 14.7 [lbf-ft]
with aluminium washer	40 Nm 29.4 [lbf-ft]	10 Nm 7.3 [lbf-ft]
with copper washer	60 Nm 44.2 [lbf-ft]	20 Nm 14.7 [lbf-ft]

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The following alphanumeric digits system has been developed to identify all of the configuration options for the BGM motors. Use the model code below to specify the desired features. All alphanumeric digits system of the code must be present when ordering.

We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12
Series	Displacement	Version	Mount flange	Shaft end	Main port	Seal	Valve	Valve feature	Option	Version feature	Painting
BGM	020	FR0	S	SC160	M06	N	xxxx	000	xxx	QDG	xx

1	Series	
BGM	Orbital motor	

2	Displacement	
013	13 cm ³ /giro [0.793 in ³ /rev]	
020	20 cm ³ /giro [1.22 in ³ /rev]	
032	32 cm ³ /giro [1.952 in ³ /rev]	
040	40 cm ³ /giro [2.44 in ³ /rev]	
050	50 cm ³ /giro [3.05 in ³ /rev]	

3	Version	
FR0	Standard Version	
FRQ	Q Version	
SP1	SP1 Version	

4	Mount flange	
S	3 bolts M6 - Ø31.5mm [Ø 1.240 in] (standard)	
T	3 bolts 1/4 - 28 UNF - Ø31.5mm [Ø 1.240 in]	
Z	5 bolts 1/4 - 28 UNF - Ø31.5mm [Ø 1.240 in]	
N	2 bolts - Ø63mm [Ø 2.480 in] - (combination with S flange)	
E	2 bolts - Ø63mm [Ø 2.480 in] - (combination with T flange)	

5	Shaft end	
CL160	Cylindrical keyed Ø16 mm [0.629 in]	
SC160	B17x14 DIN5482 Splined	
CL158	Cylindrical keyed Ø15.88 mm [Ø0.625 in]	
CS158	Cylindrical crosshole Ø15.88 mm [Ø0.625 in]	

Click  button to return to main index

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



6

Main port		Version		
		FR0	SP1	FRQ
M06	3/8 G (BSPP) Main Ports (standard)	●	●	●
S06	9/16 - 18 UNF Main Ports	●	●	-

7

Seal	
N	NBR

8

Valve		Main port	
		M06	S06
xxxx	Not required	●	●
M061	Pressure relief valve VAF 06 - D (available only with SP1 Version)	●	-



9

Valve feature		Valve	
		xxxx	M061
000	Feature not necessary	●	-
030	Not Set 50÷150 bar [725 to 2175 psi]	-	●

10

Option	
xx	None

11

Valve feature		Flange			
		S	T	N	E
QDG	QUAD-RING version with Rear drain 1/8 G (BSPP)	●	●	●	●
HPS	High Pressure Seal	●	●	●	●
TES	TAC-E Tachometer (with sensor arrangement) - CCW suitable direction of rotation (Standard)	●	-	●	-
TED	TAC-E Tachometer (with sensor arrangement) - CW suitable direction of rotation (Optional)	●	-	●	-

12

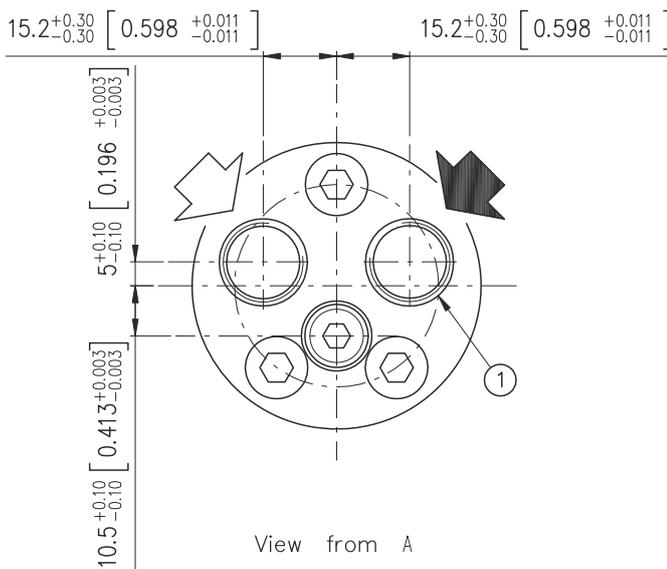
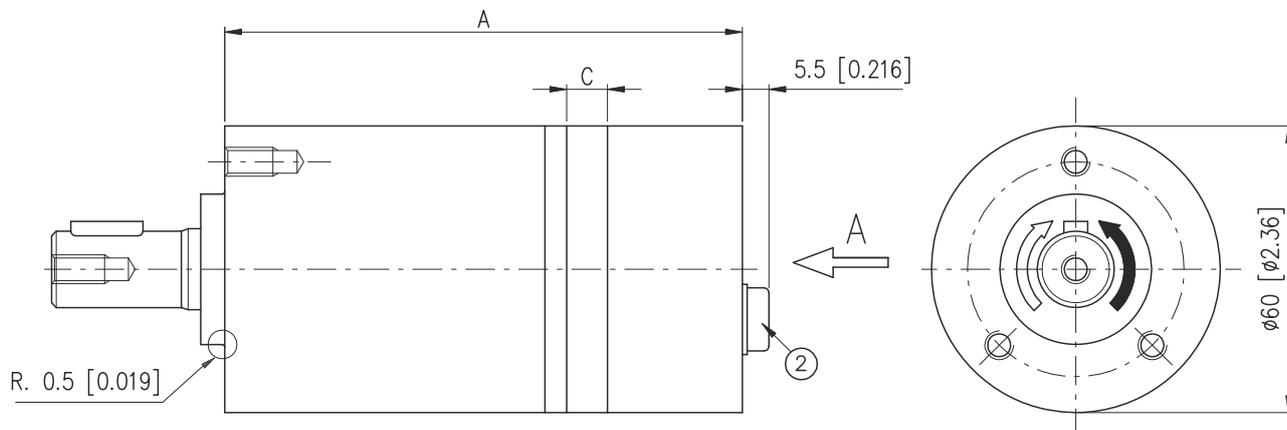
Painting	
xx	Not Painted
01	Black Painted RAL 9005
22	Grey Painted RAL 7035

- Available
- Not Available

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

FR0



M06 MAIN PORTS

S06 MAIN PORTS

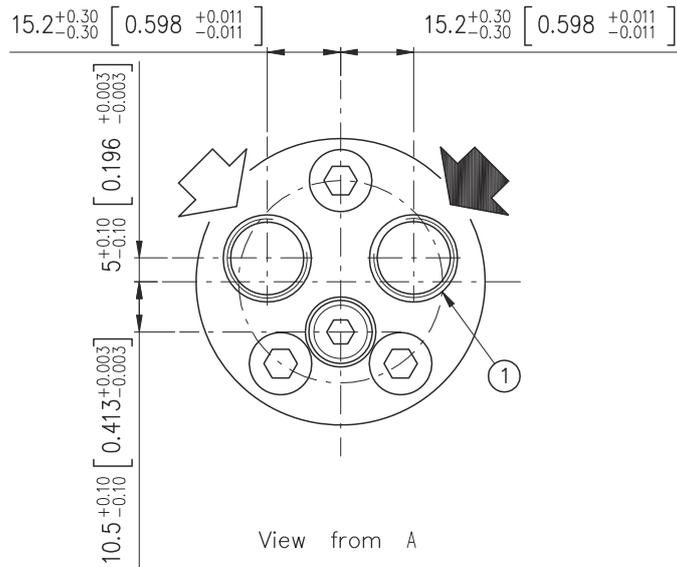
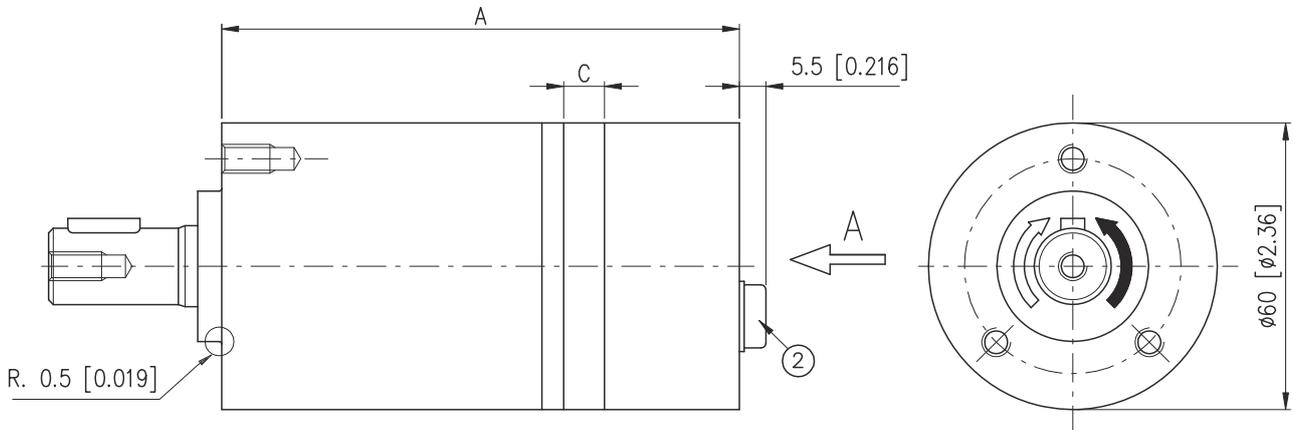
- ① N.2 3/8 G (BSPP) main ports thread depth 12 mm [0.472 in]
- ② 1/8 G (BSPP) drain port thread depth 9 mm [0.354 in]
- ① N.2 9/16"-18 UNF main ports thread depth 13 mm [0.511 in]
- ② 7/16"-20 UNF drain port thread depth 12 mm [0.472 in]

		BGM 013	BGM 020	BGM 032	BGM 040	BGM 050
A	mm [in]	104.5 [4.11]	107.5 [4.23]	112.5 [4.42]	116 [4.56]	120 [4.72]
B	mm [in]	-	-	-	-	-
C	mm [in]	5.5 [0.216]	8.5 [0.334]	13.5 [0.531]	17 [0.66]	21 [0.82]
Weight	kg [lb]	2 [4.4]	2.06 [4.5]	2.15 [4.7]	2.2 [4.8]	2.25 [4.9]

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

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





M06 MAIN PORTS

- ① N.2 3/8 G (BSPP) main ports thread depth 12 mm [0.472 in]
- ② 1/8 G (BSPP) drain port thread depth 9 mm [0.354 in]

S06 MAIN PORTS

- ① N.2 9/16"-18 UNF main ports thread depth 13 mm [0.511 in]
- ② 7/16"-20 UNF drain port thread depth 12 mm [0.472 in]

		BGM 013	BGM 020	BGM 032	BGM 040	BGM 050
A	mm [in]	104.5 [4.11]	107.5 [4.23]	112.5 [4.42]	116 [4.56]	120 [4.72]
B	mm [in]	-	-	-	-	-
C	mm [in]	5.5 [0.216]	8.5 [0.334]	13.5 [0.531]	17 [0.66]	21 [0.82]
Weight	kg [lb]	2 [4.4]	2.06 [4.5]	2.15 [4.7]	2.2 [4.8]	2.25 [4.9]

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

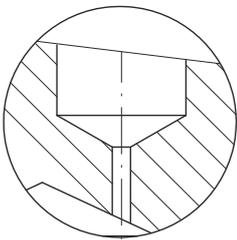
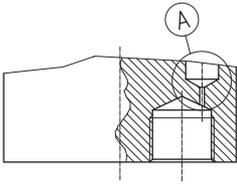
Click **i** button to return to main index



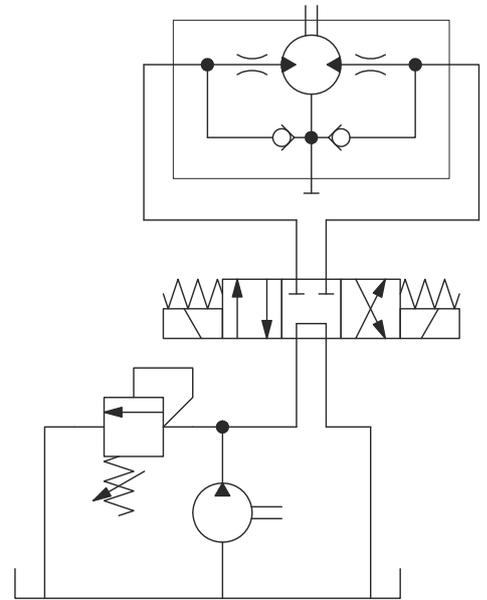
1	2	3	4	5	6	7	8	9	10	11	12
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FRQ

Fixed flow restrictor option



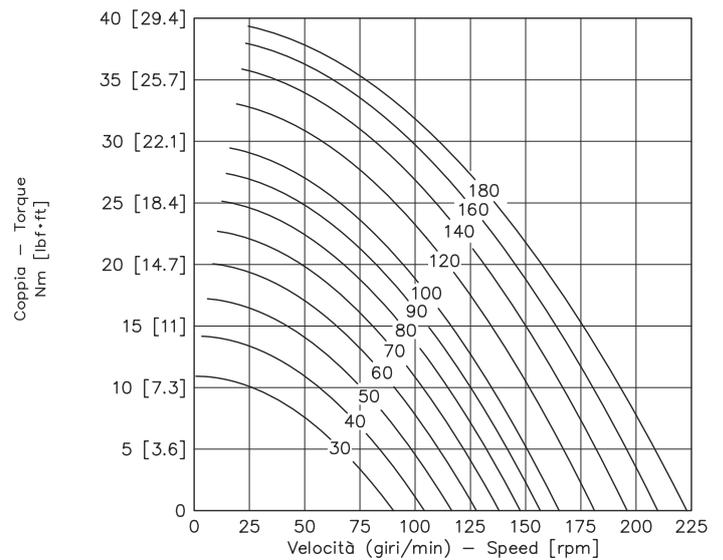
PART. A
Flow restrictor



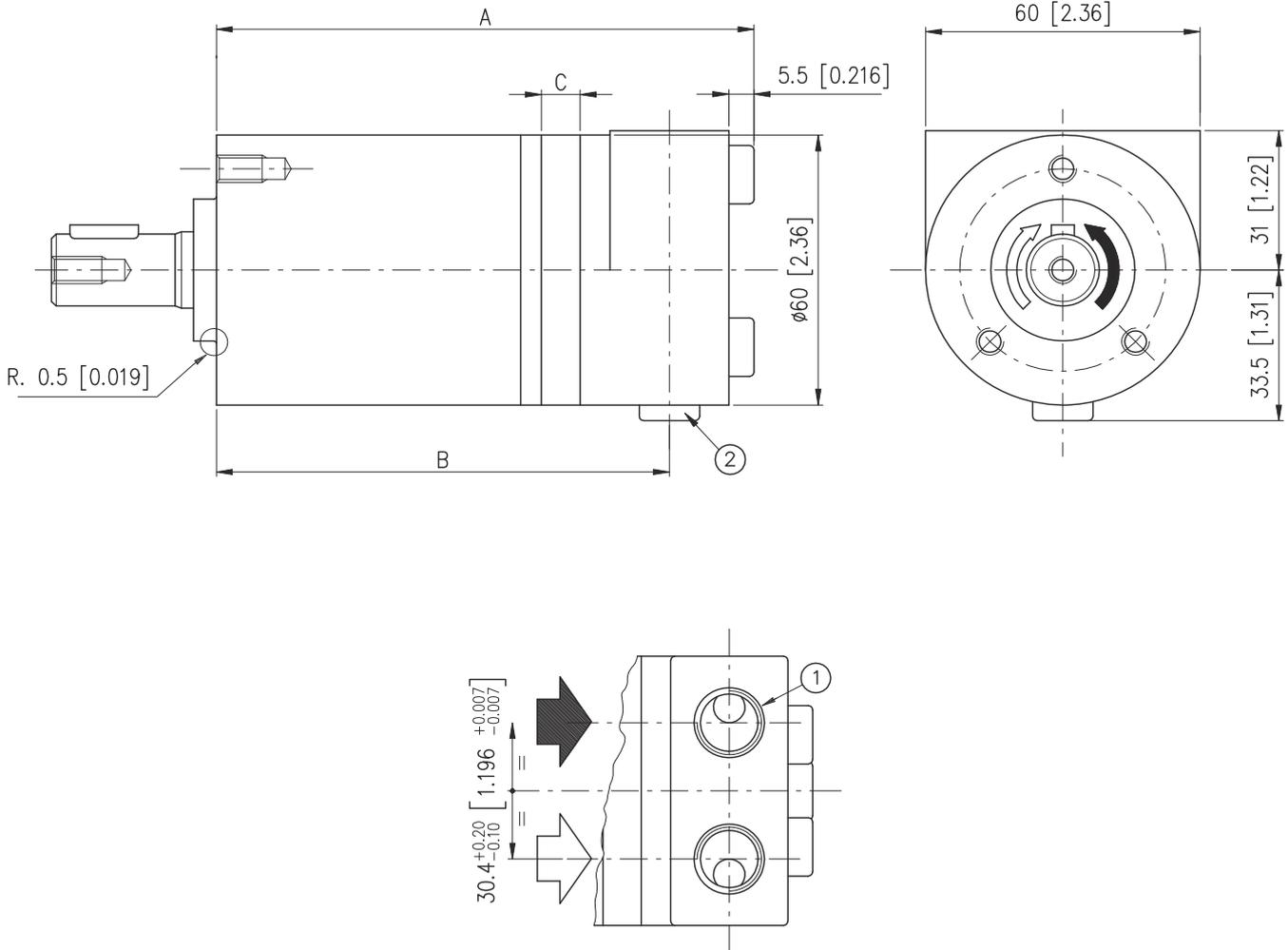
BGM/FRQ motors feature a restrictor at the back of the motor meant to ensure very low shaft speed though in presence of high flow. Typical applications are truck or tractor mounted snow blowers.

Performance curves

Performance curves (torque/speed) according to pressure relief valve setting and 1.2 mm [0.047 in] diameter (for BGM32) of flow restrictor.



SP1



M06 MAIN PORTS

- ① N.2 3/8 G (BSPP) main ports thread depth 12mm [0.472 in]
- ② 1/8 G (BSPP) drain port thread depth 10 mm [0.393 in]

S06 MAIN PORTS

- ① N.2 9/16"-18 UNF main ports thread depth 13mm [0.511 in]
- ② 7/16"-20 UNF drain port thread depth 12mm [0.472 in]

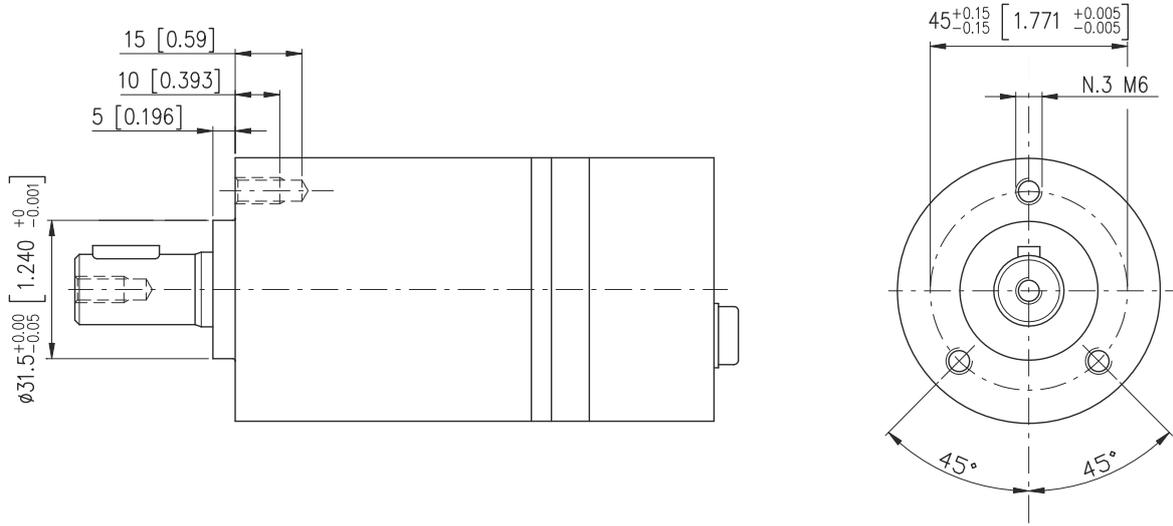
		BGM 013	BGM 020	BGM 032	BGM 040	BGM 050
A	mm [in]	113.8 [4.48]	116.8 [4.59]	121.8 [4.79]	125.3 [4.93]	129.3 [5.09]
B	mm [in]	95.3 [3.75]	98.3 [3.87]	103.3 [4.06]	106.8 [4.20]	110.8 [4.36]
C	mm [in]	5.5 [0.216]	8.5 [0.334]	13.5 [0.531]	17 [0.66]	21 [0.82]
Weight	kg [lb]	2.1 [4.6]	2.16 [4.7]	2.25 [4.9]	2.3 [5]	2.35 [5.1]

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

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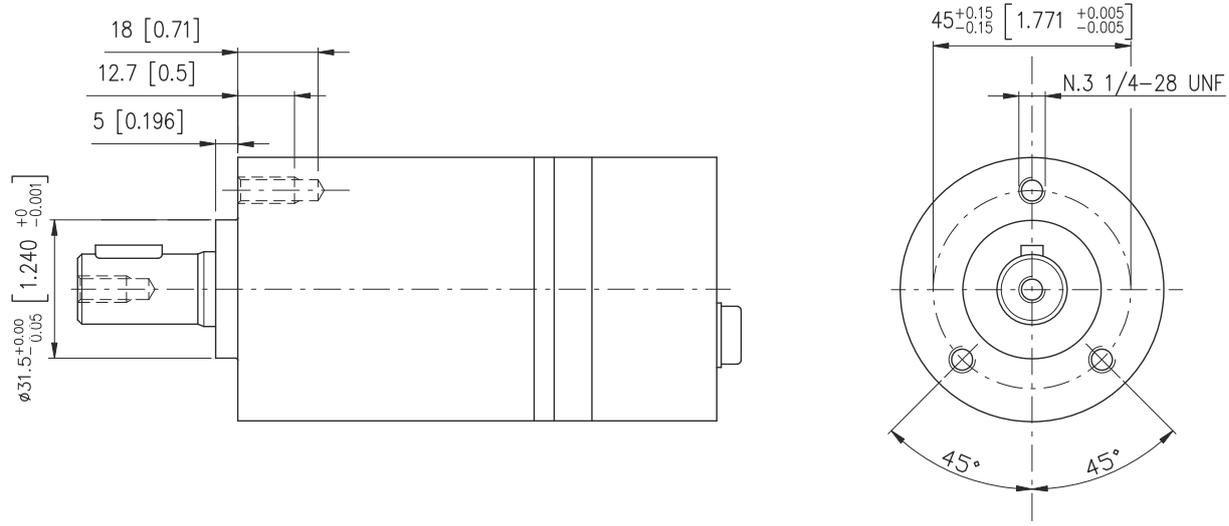
1	2	3	4	5	6	7	8	9	10	11	12
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S 3 bolts M6



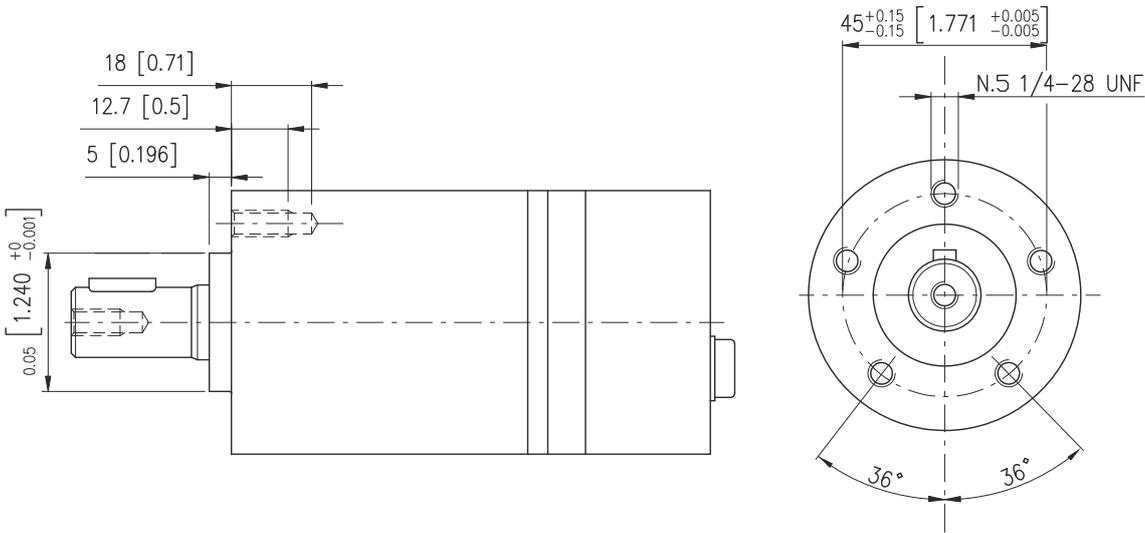
BGM

T 3 bolts 1/4 - 28 UNF

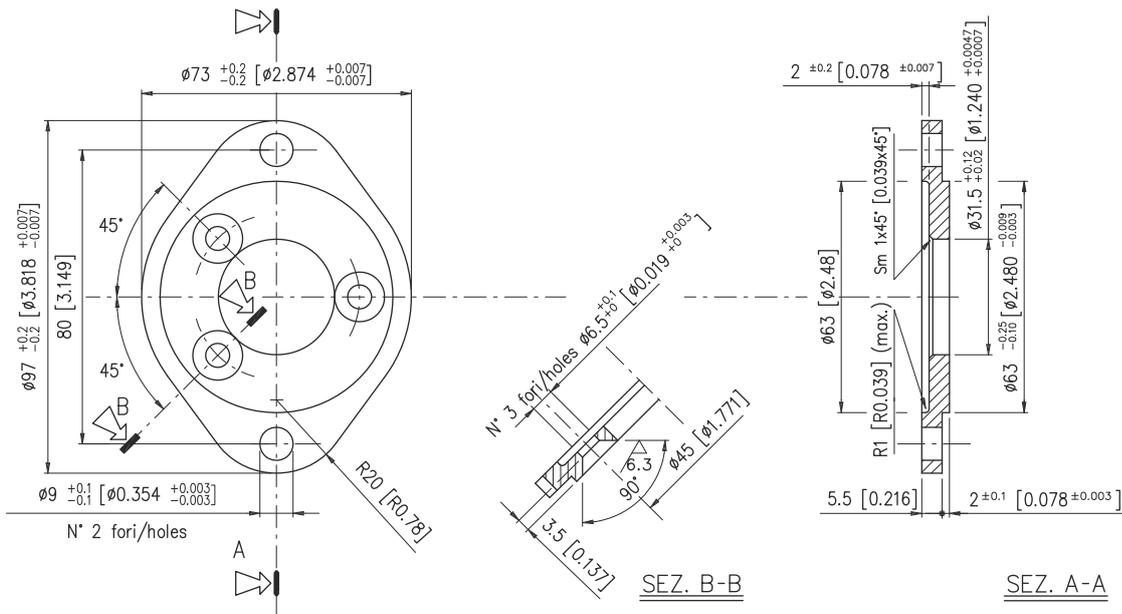


1	2	3	4	5	6	7	8	9	10	11	12
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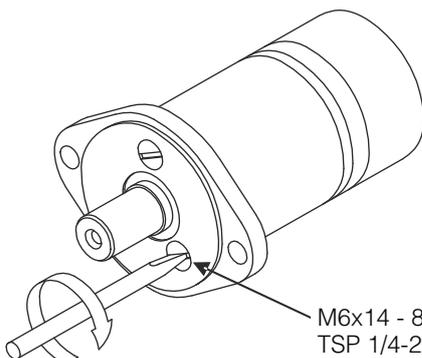
Z 5 bolts 1/4 - 28 UNF



N / E 2 bolts



Flange - Assembling



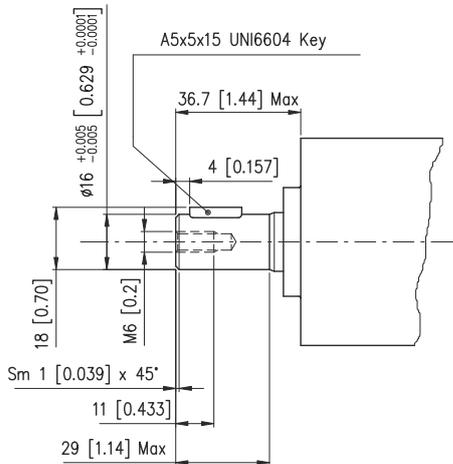
M6x14 - 8.8 UNI 7688 flathead screw (with S flange).
TSP 1/4-28 UNF 1/2" - 8.8 DIN 965 screw (with T flange)

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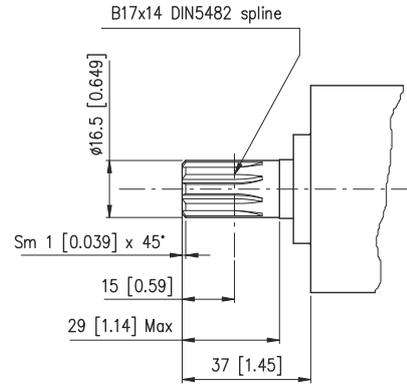
1	2	3	4	5	6	7	8	9	10	11	12
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CL160 Cylindrical Shaft



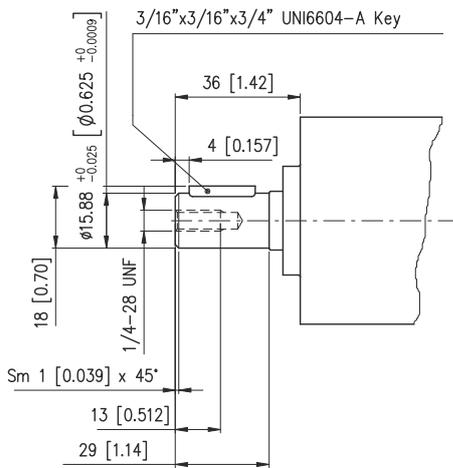
Max Torque Continuous 39Nm [28.743 lbf-ft]

SC160 Splined Shaft



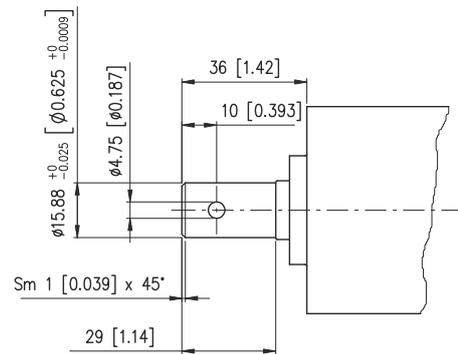
Max Torque Continuous 44Nm [32.428 lbf-ft]

CL158 Cylindrical Shaft



Max Torque Continuous 39Nm [28.743 lbf-ft]

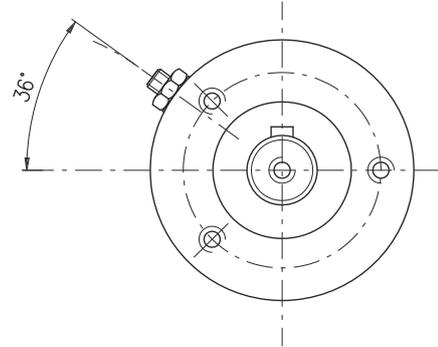
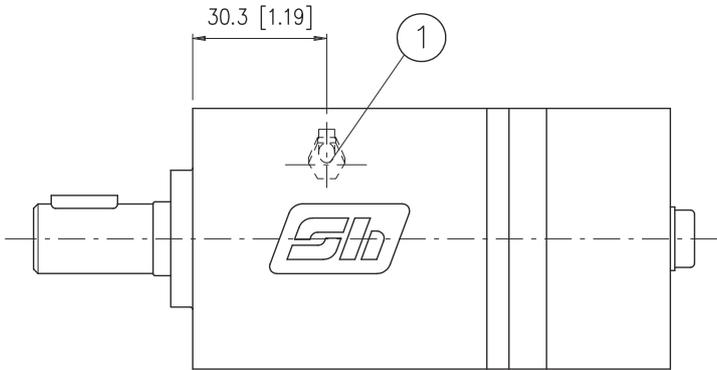
CS158 Cylindrical Crosshole Shaft



Max Torque Continuous 39Nm [28.743 lbf-ft]

TES Tachometer - CCW

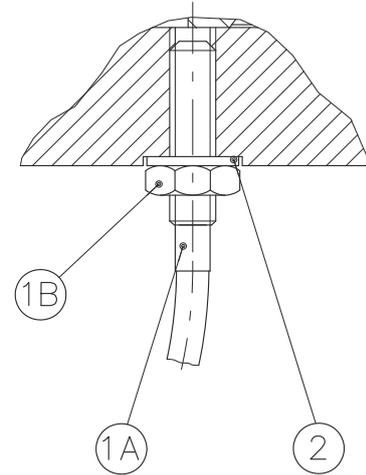
TED Tachometer - CW



① Sensor connection M5x0.5

Sensor Kit

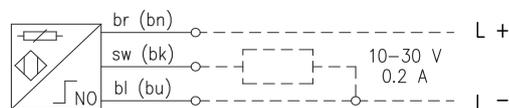
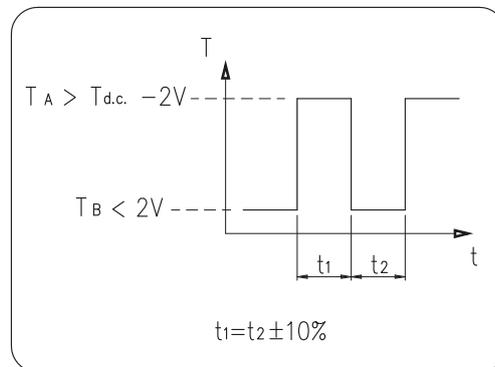
- ① Cod. 424.0090.0000 inductive sensor (1A) + M5x0.5 locking nut (1B)
- ② Cod. 406.0730.0000 Sealing washer GM2000 M5



Electronic sensor technical features

- Number of pulses for revolution = 4
- Inductive principle
- Output current PNP
- Voltage 10-30 V d.c.
- Max load 200 mA
- Max frequency 3000 Hz
- Temperature range -25°C +85°C
- Enclosure IP 67
- Cable length 2 m

Output signal electronic tacho

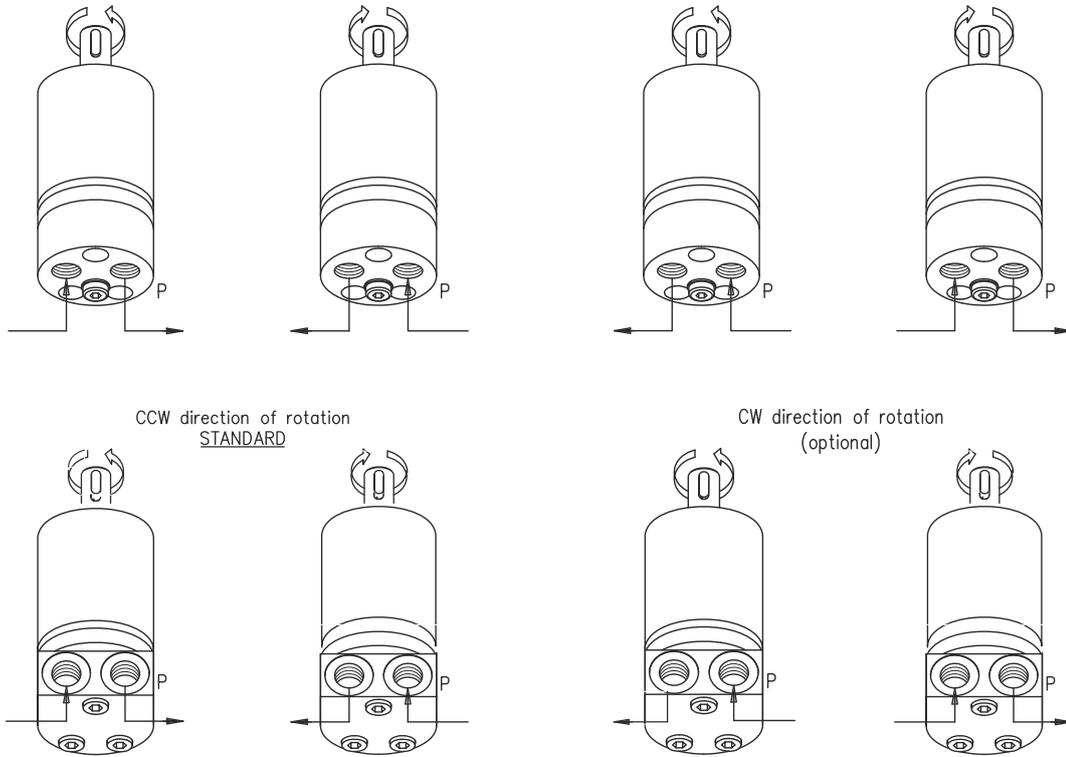


Click **DANA** button to return to section index

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1	2	3	4	5	6	7	8	9	10	11	12
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Preferential Direction of Rotation



The selection of the version CW or CCW depends on the prevailing direction of rotation of the motor, in order to use the sensor at the lower working pressure.



BREVINI[®]

Motion Systems





BREVINI®

Motion Systems



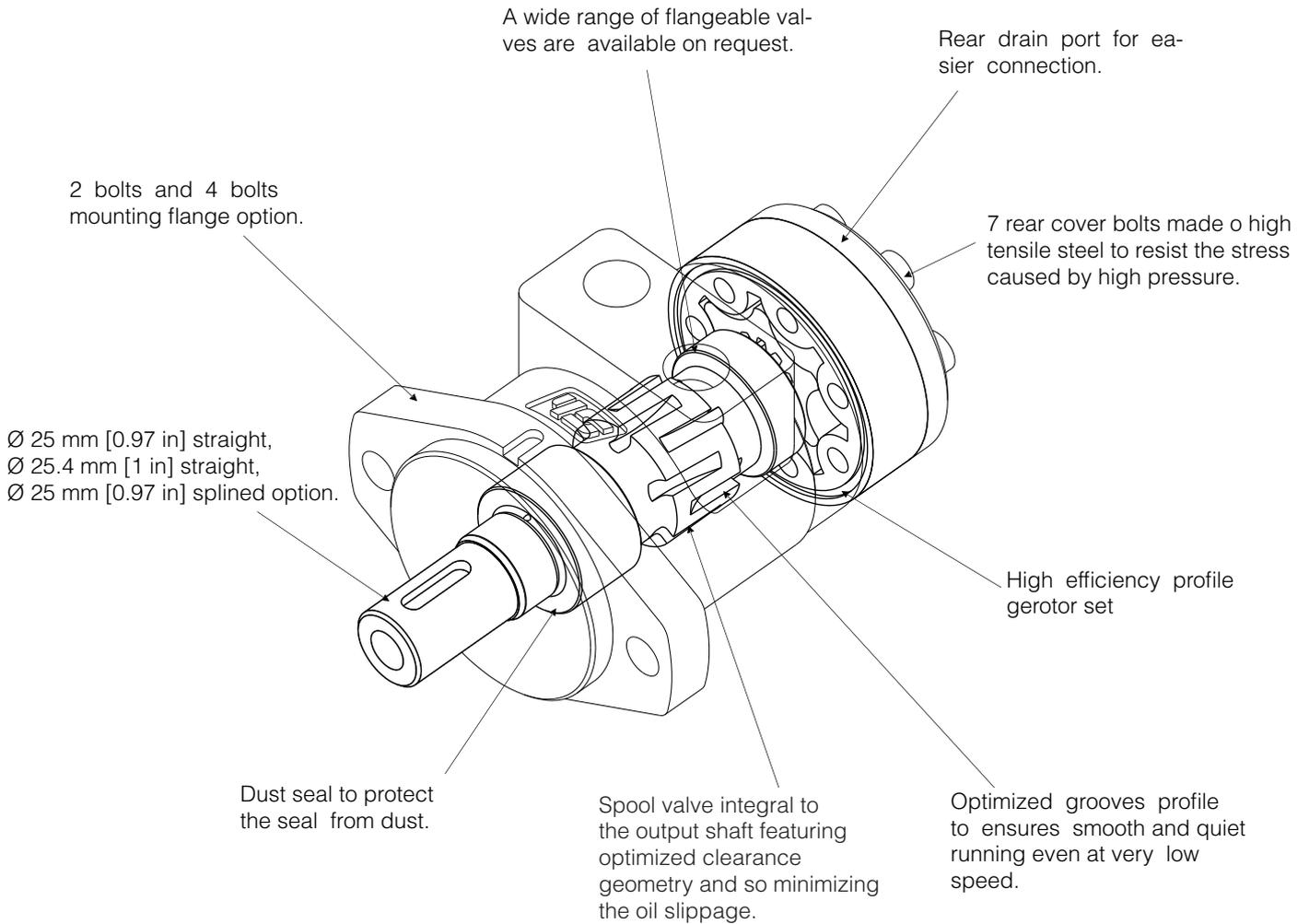
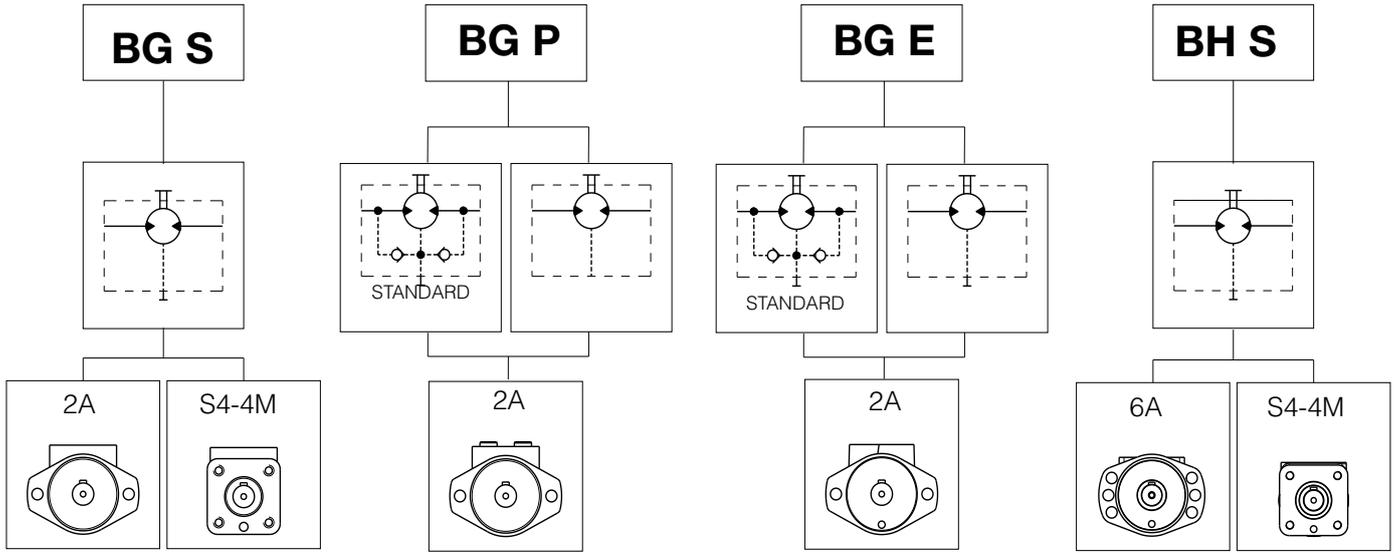
BG - BH Orbital Motors

	Page
Motor Features	C2
Motor Technical Specifications	C3
Performance Curves	C4
Pressure Data	C9
Max. Permissible Shaft Seal Pressure Without Drain	C9
Pressure Loss	C10
Other Informations	C11
BG - Ordering Code	C12
BG - Dimensions and Weight	C15
BG - Shaft End	C19
BG - Valve Feature	C20
BH - Ordering Code	C22
BH - Dimensions and Weight	C24
BH - Shaft End	C26
BH - Main Port	C27

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BG / BH MOTOR TECHNICAL DATA WITH CL250-CL254 PARALLEL KEYED SHAFT

Motor	Displacement cm ³ /rev [in ³ /rev]	Max. input pressure bar [psi]		Max. differential pressure bar [psi]		Max. torque Nm [lbf-ft]		Max. flow l/min [U.S. gpm]		Max. speed rpm		Max. power kW [hp]	
		Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	91 [67.1] 115 [84.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	1220 1530	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 050	47.8 [2.91]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	91 [67.1] 115 [84.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	1220 1530	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 080	71.9 [4.38]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	135 [99.5] 175 [128.9]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	820 1025	Cont Int ¹⁾	9.5 [12.7] 12 [16.1]
BG-BH 100	100.1 [6.10]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	190 [140] 230 [169.5]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	590 740	Cont Int ¹⁾	10.5 [14] 13 [17.4]
BG-BH 130	127.2 [7.76]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	240 [176.8] 290 [213.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	465 585	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 160	165.3 [10.08]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	300 [221.1] 370 [272.6]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	355 445	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 200	192.4 [11.73]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	115 [1670] 160 [2320] 200 [2900]	Cont Int ¹⁾	300 [221.1] 390 [287.4]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	305 380	Cont Int ¹⁾	8 [10.7] 15 [20.1]
BG-BH 250	239.1 [14.58]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 195 [2827] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	95 [1377] 125 [1810] 180 [2610]	Cont Int ¹⁾	300 [221.1] 400 [294.8]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	245 305	Cont Int ¹⁾	6 [8.1] 8 [10.7]
BG-BH 315	286.9 [17.50]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 195 [2827] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	80 [1160] 105 [1522] 160 [2320]	Cont Int ¹⁾	300 [221.1] 400 [294.8]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	205 255	Cont Int ¹⁾	5 [6.7] 7 [9.4]
BG-BH 400	382.5 [23.33]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 195 [2827] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	60 [870] 80 [1160] 130 [1890]	Cont Int ¹⁾	300 [221.1] 400 [294.8]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	150 190	Cont Int ¹⁾	4 [5.4] 6 [8.1]

BG - BH

**BG MOTOR TECHNICAL DATA WITH SD250 SPLINED SHAFT
BH MOTOR TECHNICAL DATA WITH SE250 SPLINED SHAFT**

Motor	Displacement cm ³ /rev [in ³ /rev]	Max. input pressure bar [psi]		Max. differential pressure bar [psi]		Max. torque Nm [lbf-ft]		Max. flow l/min [U.S. gpm]		Max. speed rpm		Max. power kW [hp]	
		Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	91 [67.1] 115 [84.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	1220 1530	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 050	47.8 [2.91]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	91 [67.1] 115 [84.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	1220 1530	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 080	71.9 [4.38]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	135 [99.5] 175 [128.9]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	820 1025	Cont Int ¹⁾	9.5 [12.7] 12 [16.1]
BG-BH 100	100.1 [6.10]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	190 [140] 230 [169.5]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	590 740	Cont Int ¹⁾	10.5 [14] 13 [17.4]
BG-BH 130	127.2 [7.76]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	240 [176.8] 290 [213.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	465 585	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 160	165.3 [10.08]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	300 [221.1] 370 [272.7]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	355 445	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 200	192.4 [11.73]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	360 [265.3] 420 [309.5]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	305 380	Cont Int ¹⁾	10 [13.4] 12 [16.1]
BG-BH 250	239.1 [14.58]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 195 [2827] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	110 [1595] 140 [2030] 180 [2610]	Cont Int ¹⁾	360 [265.3] 440 [324.2]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	245 305	Cont Int ¹⁾	8 [10.7] 10 [13.4]
BG-BH 315	286.9 [17.50]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 195 [2827] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	90 [1310] 120 [1740] 160 [2320]	Cont Int ¹⁾	340 [250.6] 440 [324.2]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	205 255	Cont Int ¹⁾	5.6 [7.8] 7.5 [10.1]
BG-BH 400	382.5 [23.33]	Cont Int ¹⁾ Peak ²⁾	165 [2392] 195 [2827] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	70 [1020] 95 [1377] 130 [1890]	Cont Int ¹⁾	360 [265.3] 460 [339]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	150 190	Cont Int ¹⁾	4.7 [6.3] 6 [8.1]

¹⁾ Intermittent duty must not exceed 10% each minute.

²⁾ Peak duty must not exceed 1% each minute.

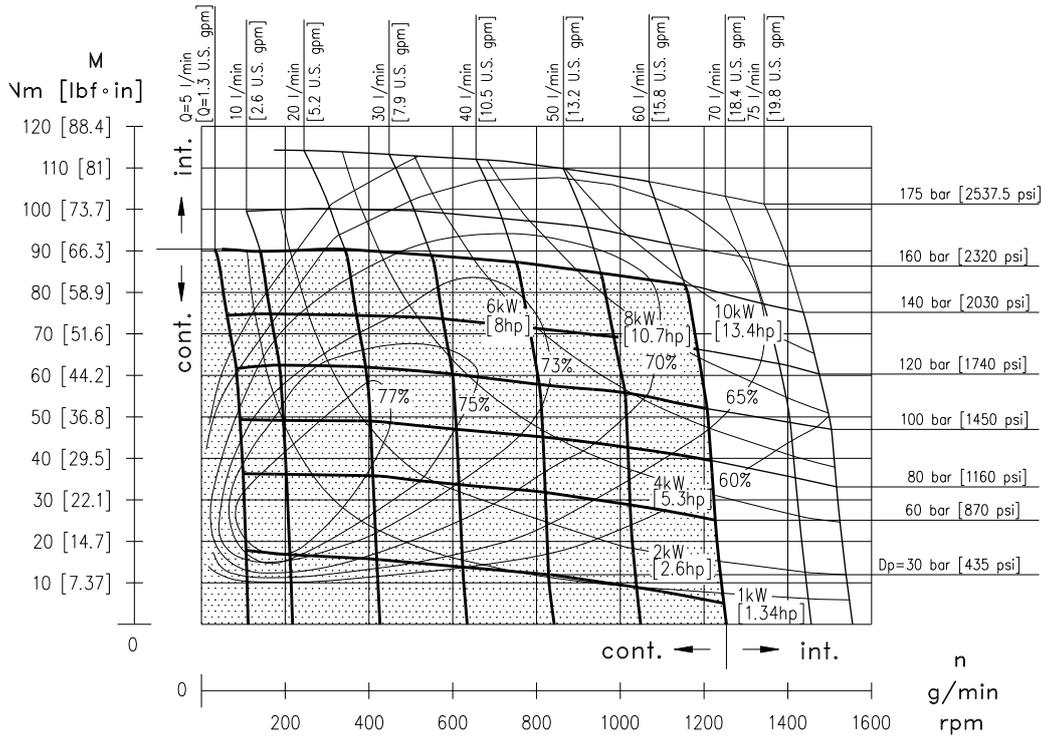
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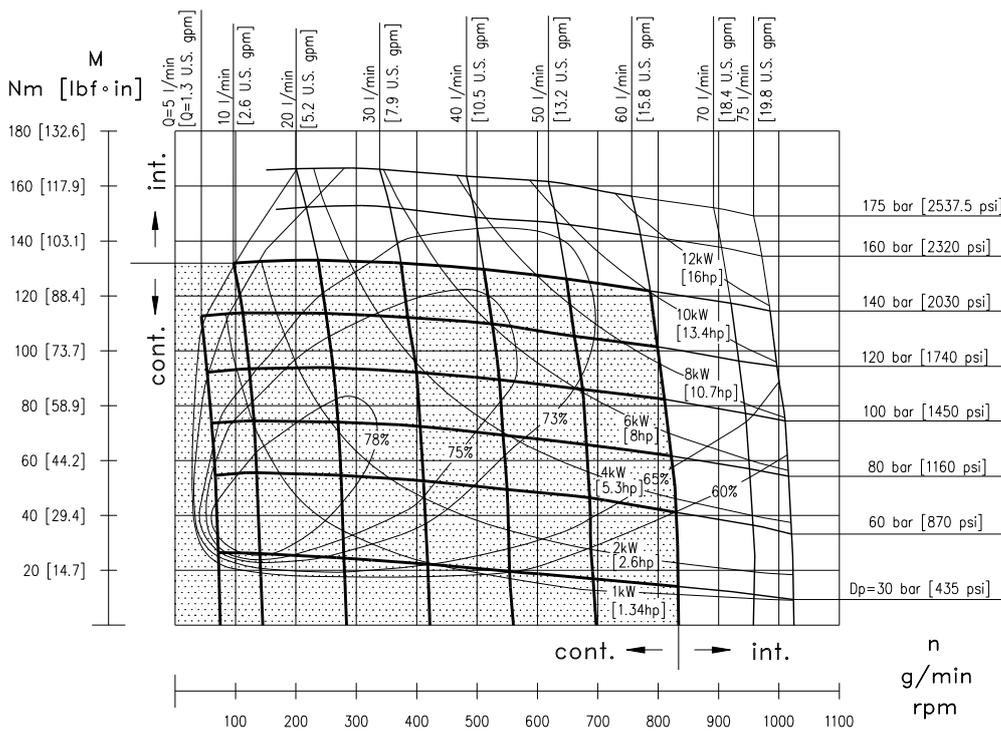
BG - BH 050

BG - BH



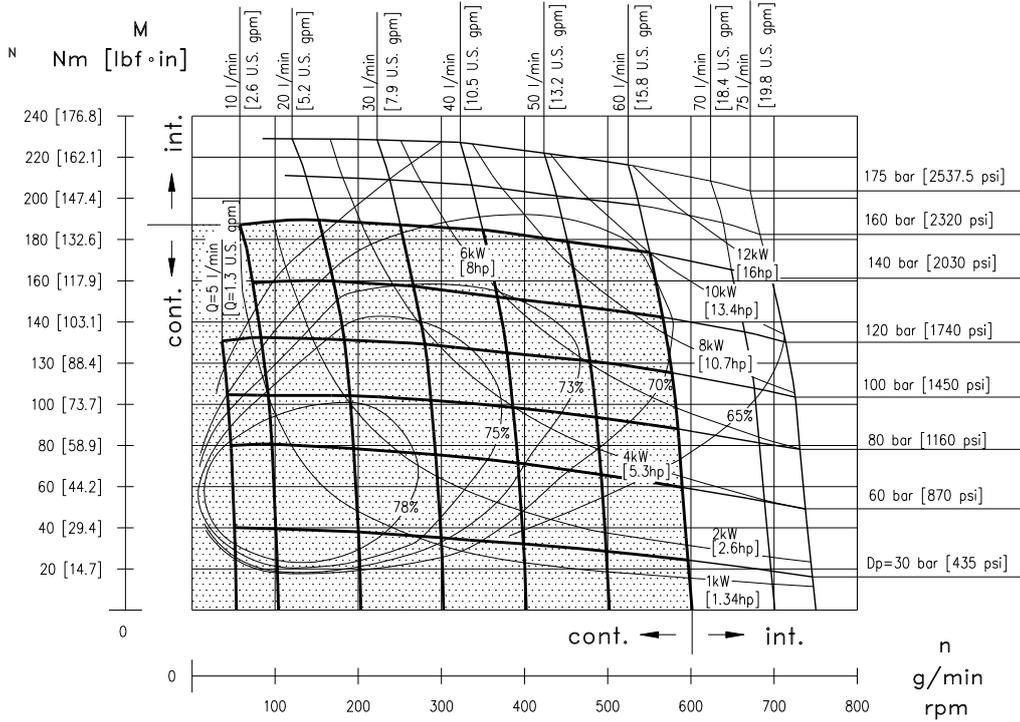
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BG - BH 080



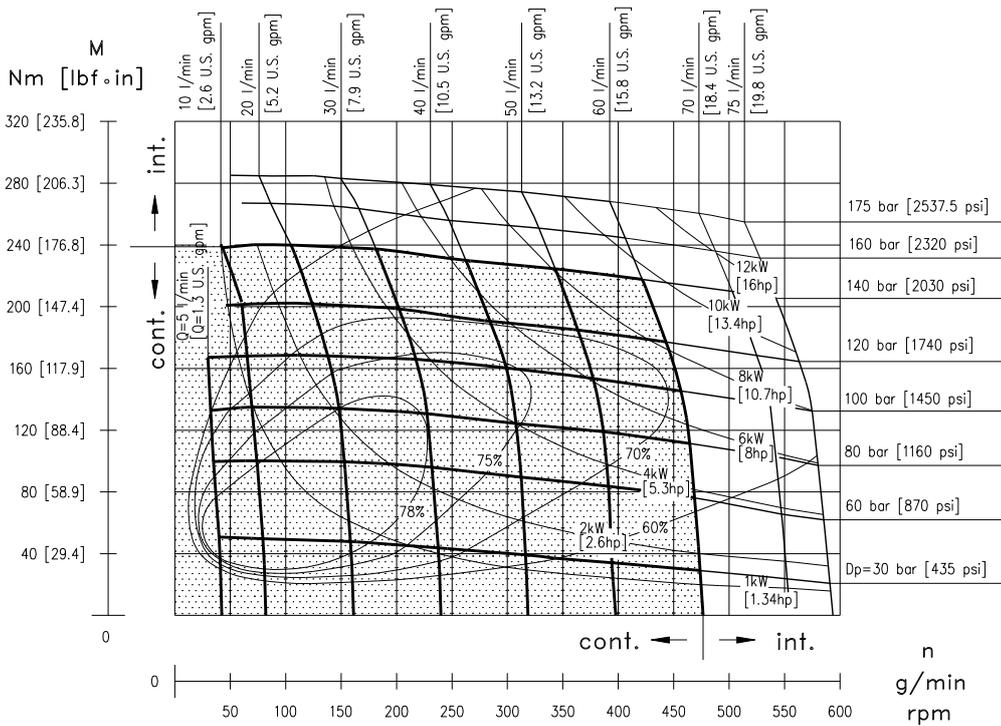
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BG - BH 100



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BG - BH 130

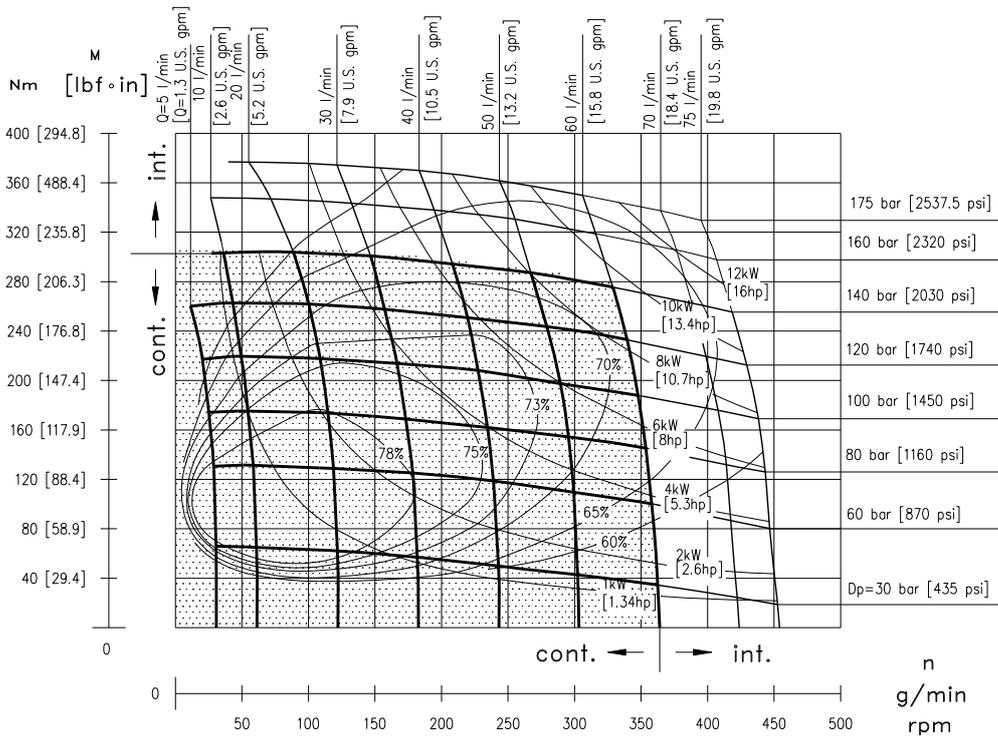


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.



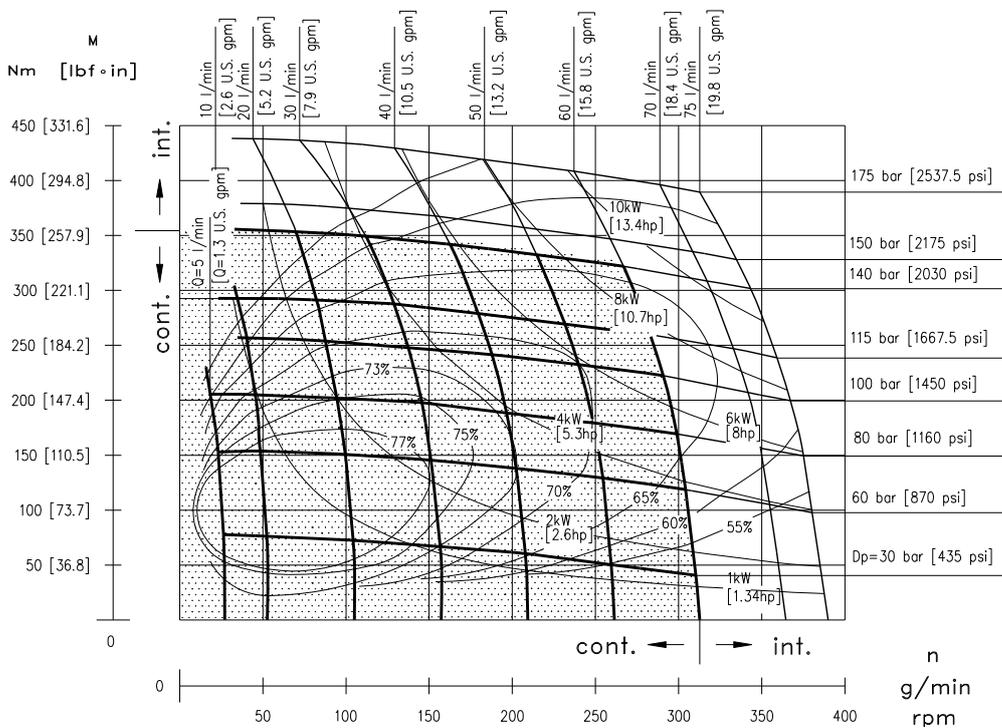
BG - BH 160

BG - BH



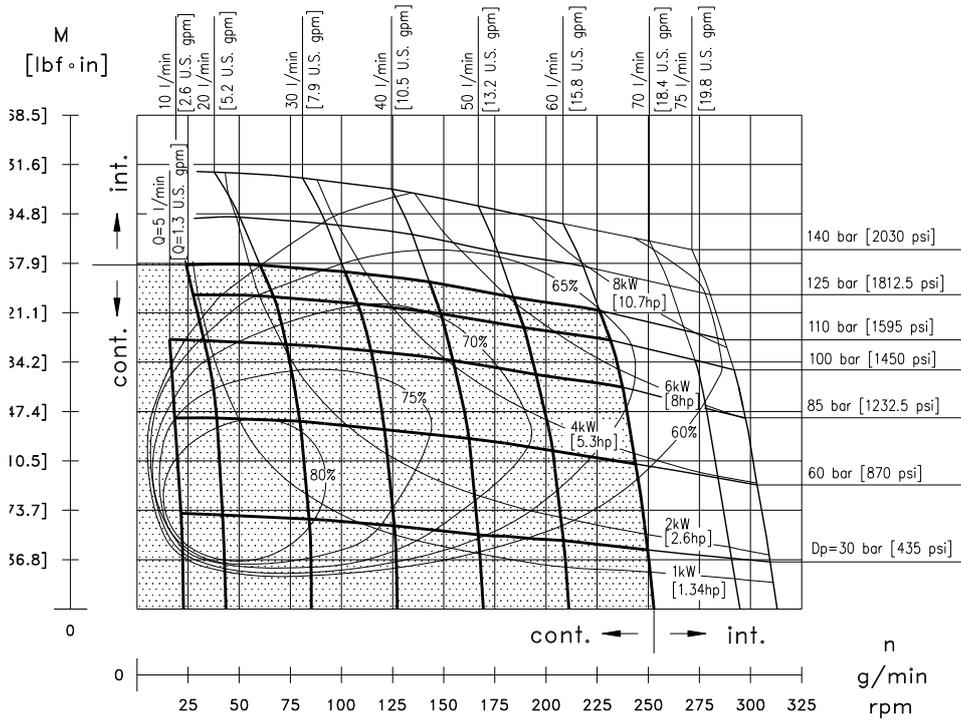
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BG - BH 200



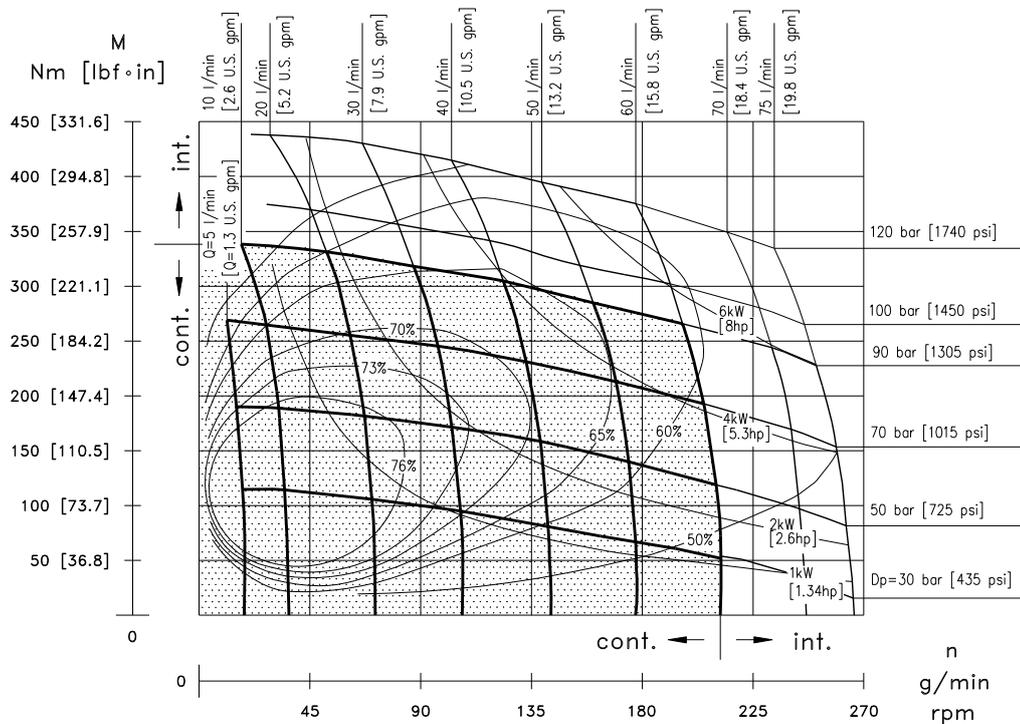
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BG - BH 250



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

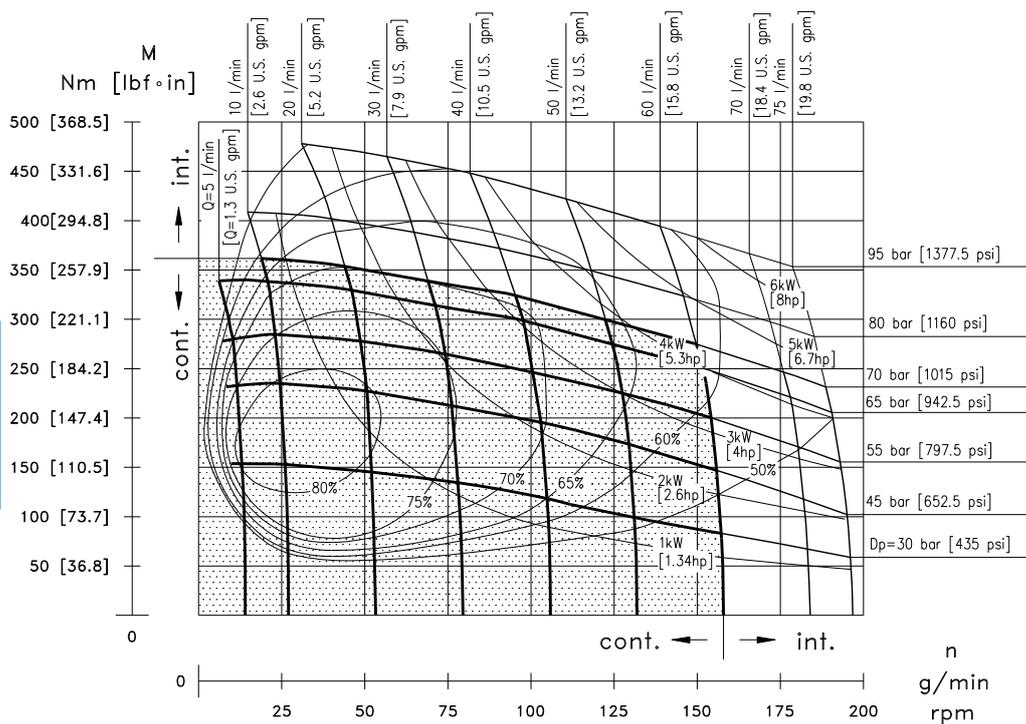
BG - BH 315



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BG - BH 400

BG - BH



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note: Diagrams according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 C° temperature.

Max. Pressure

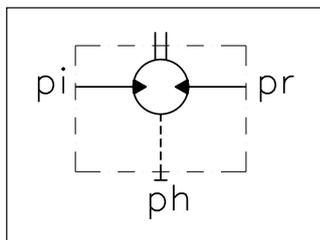
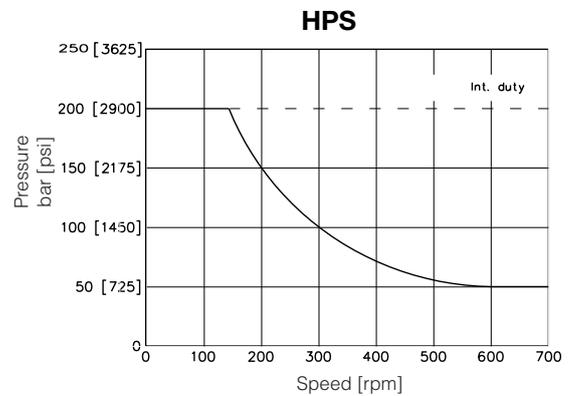
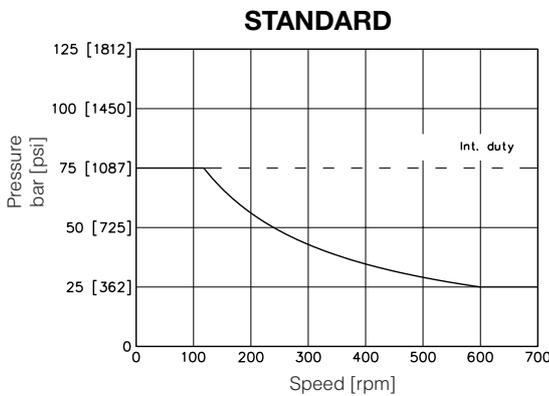
Motor		Max return pressure with drain line	Max starting pressure with no load	Min starting torque		
		bar [psi]	bar [psi]	Nm [lbf ft]		
BG	050	140 [2030]	10 [145]	At max Δp	Cont. Int.	70 [51.6] 90 [66.3]
BG	080	140 [2030]	10 [145]	At max Δp	Cont. Int.	105 [77.4] 135 [99.5]
BG	100	140 [2030]	10 [145]	At max Δp	Cont. Int.	150 [111] 190 [140]
BG	130	140 [2030]	9 [131]	At max Δp	Cont. Int.	190 [140] 240 [177]
BG	160	140 [2030]	8 [116]	At max Δp	Cont. Int.	250 [184] 315 [232]
BG	200	140 [2030]	7 [102]	At max Δp	Cont. Int.	255 [188] 320 [236]
BG	250	140 [2030]	6 [87]	At max Δp	Cont. Int.	265 [195] 345 [254]
BG	315	140 [2030]	6 [87]	At max Δp	Cont. Int.	250 [184] 330 [243]
BG	400	140 [2030]	6 [87]	At max Δp	Cont. Int.	265 [195] 355 [262]

- 1) Intermittent duty must not exceed 10% every minute.
- 2) Peak duty must not exceed 1% of every minute.
- 3) Oil viscosity 35 cSt.

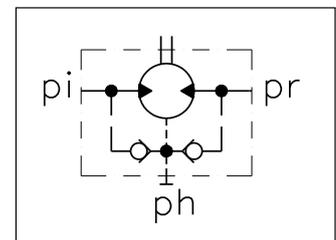
Max. Permissible Shaft Seal Pressure Without Drain

Max. return pressure without drain line or max. pressure in the drain line. Motor are supplied in standard seal version (Standard chart) or in HPS seal version (HPS chart).
For pressure and speeds not showed in the curve below, please contact Dana Brevini.

N.B.: TAC/U version is not available with HPS seals.



$$ph = \frac{pi + pr}{2} \text{ [bar]}$$



ph = housing pressure
pi = inlet pressure
pr = outlet pressure

The case pressure without drain line is the average between inlet and return pressure. As standard, BH motors are supplied with drain port. Max. permissible return (back) pressure with drain line 138 bar [2000 psi] Cont.

In the motors without built-in check valves, the (ph) pressure on the seal is the average between inlet and return pressure. If (ph) exceeds the allowed values (see the curves in this page), the drain line must be connected.

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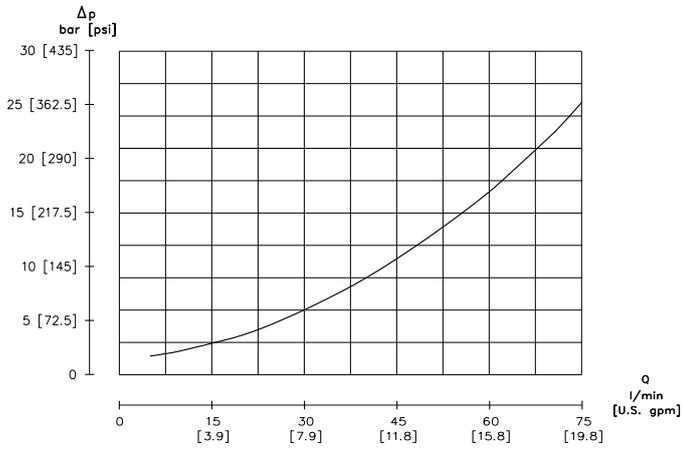


Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45° C temperature.

Shaft Load

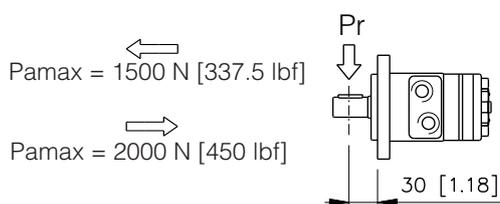
The permissible radial shaft load depends on:

- Speed (n)
- Distance (L) from the point of load to the mounting flange
- Mounting flange version

BG MOTOR

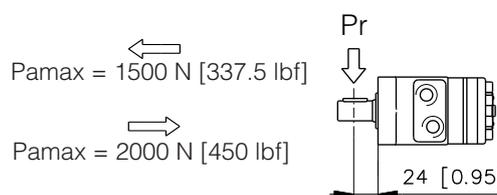
Radial load capacity (Pr) curve according to speed (n) and distance (L) from flange, valid for the 2-bolt flange type "2A"

$$Pr = \frac{800}{n} \cdot \frac{242000}{91 + L} \quad [N]$$



Radial load capacity (Pr) curve according to speed (n) and distance (L) from flange, valid for the 4-bolt flange type "S4-4M"

$$Pr = \frac{800}{n} \cdot \frac{242000}{97 + L} \quad [N]$$

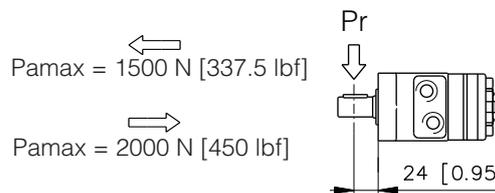


BH MOTOR

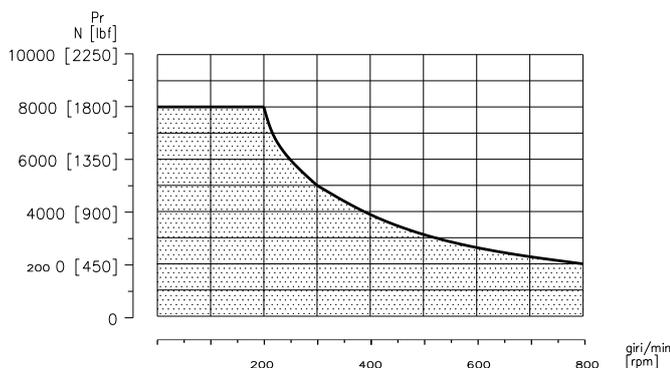
Radial load capacity (Pr) curve according to speed (n) and distance (L) from flange, valid for the 6-bolt flange type "6A"

$$Pr = \frac{800}{n} \cdot \frac{242000}{97 + L} \quad [N]$$

Radial load capacity (Pr) curve according to speed (n) and distance (L) from flange, valid for the 4-bolt flange type "S4-4M"



This formulas being valid for n >= 200 rpm. For n < 200 rpm Pr_{max} = 8000 N [1800 lbf]



The curve show the relation between (Pr) and (n):

- L = 30 mm [1.18 in] for motors with 2A flange
- L = 24 mm [0.95 in] for motors with S4-4M and 6A flange

The following alphanumeric digits system has been developed to identify all of the configuration options for the BG motors. Use the model code below to specify the desired features. All alphanumeric digits system of the code must be present when ordering.

We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12
Series	Displacement	Version	Mount flange	Shaft end	Maint port	Seal	Valve	Valve feature	Option	Version feature	Painting
BG	160	S	2A	CL250	M08	N	M081	028	XX	HPS	XX

1	Series	
BG	Orbital motor	

2	Displacement	
050	50 cm ³ /giro [3.05 in ³ /rev]	
080	80 cm ³ /giro [4.88 in ³ /rev]	
100	100 cm ³ /giro [6.10 in ³ /rev]	
130	130 cm ³ /giro [7.93 in ³ /rev]	
160	160 cm ³ /giro [9.76 in ³ /rev]	
200	200 cm ³ /giro [12.20 in ³ /rev]	
250	250 cm ³ /giro [15.25 in ³ /rev]	
315	315 cm ³ /giro [19.21 in ³ /rev]	
400	400 cm ³ /giro [24.40 in ³ /rev]	

3	Version	
S	S (standard)	
E	E Version	
P	P Version	

4	Mounting Flange	Version		
		S	E	P
2A	Oval 2 bolts (standard)	●	●	●
S4	4 bolts 3/8 16 UNC - Ø44.45 mm [Ø1.75 in]	●	-	-
4M	4 bolts M10 - Ø44.45 mm [Ø1.75 in]	●	-	-

5	Shaft end	
CL250	Ø25 mm [0.97 in] Parallel keyed (standard)	
CL254	Ø25.4 mm [1 in] Parallel keyed	
SD250	Splined Shaft (SAE 6B 1" 6T spline)	

● Available
- Not Available

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6

Main Port		Version		
		S	E	P
M08	1/2 G BSPP (40x8) Main Ports (standard)	●	-	-
F08	1/2 G BSPP Main Ports	-	-	●
R08	1/2 G BSPP (36x36) Main Ports	-	●	-

7

Seal	
N	NBR (standard)
V	FKM (Not available in HPS version)

8

Valve		Main port		
		M08	F08	R08
XXXX	Not required (standard)	●	●	●
M081	VAF 08 - D pressure relief valve	●	-	-
M082	VAF 08 - D/AF pressure relief valve	●	-	-
M083	VAAF 31 anticavitation and Anti-Shock Valve	●	-	-
M084	AF shuttle-valve	●	-	-
M085	VCD 08 - S/AF overcentre Valve	●	-	-
M086	VCR1 08 - D/AF double-acting overcentre valve with shuttle valve	●	-	-
M087	VCR1 08 D/AF LDP double-acting overcentre valve with shuttle valve	●	-	-
R081⁽¹⁾	VAF E8 - D pressure relief valve	-	-	●
R082⁽¹⁾	VCD E8 - S/AF overcentre Valve	-	-	●
R083⁽¹⁾	VCR1 E8 - D/AF double-acting overcentre valve with shuttle valve	-	-	●
R084⁽¹⁾	VCR1 E8 D/AF LDP double-acting overcentre valve with shuttle valve	-	-	●



9

Valve feature		Valve											
		XXXX	M081	M082	M083	M084	M085	M086	M087	R081	R082	R083	R084
000	Feature not necessary	●	-	-	-	●	-	-	-	-	-	-	-
028	Not Set 30÷70 bar [435 to 1015 psi]	-	●	●	-	-	-	-	-	-	-	-	-
017	Not Set 70÷200 bar [1015 to 2900 psi]	-	●	●	-	-	-	-	-	-	-	-	-
031	Not Set 50÷130 bar [725 to 1885 psi]	-	-	-	●	-	-	-	-	●	-	-	-
021	Not Set 100÷250 bar [1450 to 3625 psi]	-	-	-	●	-	-	-	-	-	-	-	-
020	Not Set 100÷200 bar [1450 to 2900 psi]	-	-	-	-	-	-	-	-	●	-	-	-
425	Pilot Ratio 4.25:1	-	-	-	-	-	-	●	●	-	-	●	●
800	Pilot Ratio 8:1	-	-	-	-	-	-	●	●	-	-	-	-
700	Pilot Ratio 7:1 - Direction of rotation CW	-	-	-	-	-	●	-	-	-	-	-	-
35D	Pilot Ratio 3.5:1 - Direction of rotation CW	-	-	-	-	-	●	-	-	-	●	-	-
70S	Pilot Ratio 7:1 - Direction of rotation CCW	-	-	-	-	-	●	-	-	-	-	-	-
35S	Pilot Ratio 3.5:1 - Direction of rotation CCW	-	-	-	-	-	●	-	-	-	●	-	-

10

Option	
XX	None

¹⁾ Minimum quantity for order 20 pieces

- Available
- Not Available

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11

Version Feature		Version		
		S	E	P
QDR	QUAD-RING version with Rear drain 1/4" G (BSPP) (standard)	●	●	●
HPS	High Pressure Seal (without Rear Drain)	●	●	●
TC1	TAC/U tachometer (with sensor arrangement)	●	-	-
SV0	Version without built-in check valves + Rear Drain - 1/4" G (BSPP)	-	●	●
SVH	Version without built-in check valves + High Pressure Seal (without Rear Drain)	-	●	●
SVA	Version without built-in check valves + High Pressure Seal + Rear Drain - 1/4"G (BSPP)	-	●	-
DPM	High Pressure Seal + Rear Drain - 1/4" G (BSPP)	●	●	-

12

Painting	
XX	Not Painted (standard)
01	Black Painted RAL 9005
02	Blue Painted RAL 5015
06	Grey Painted RAL 7015
07	Grey Painted RAL 7021
22	Grey Painted RAL 7035

● Available
- Not Available

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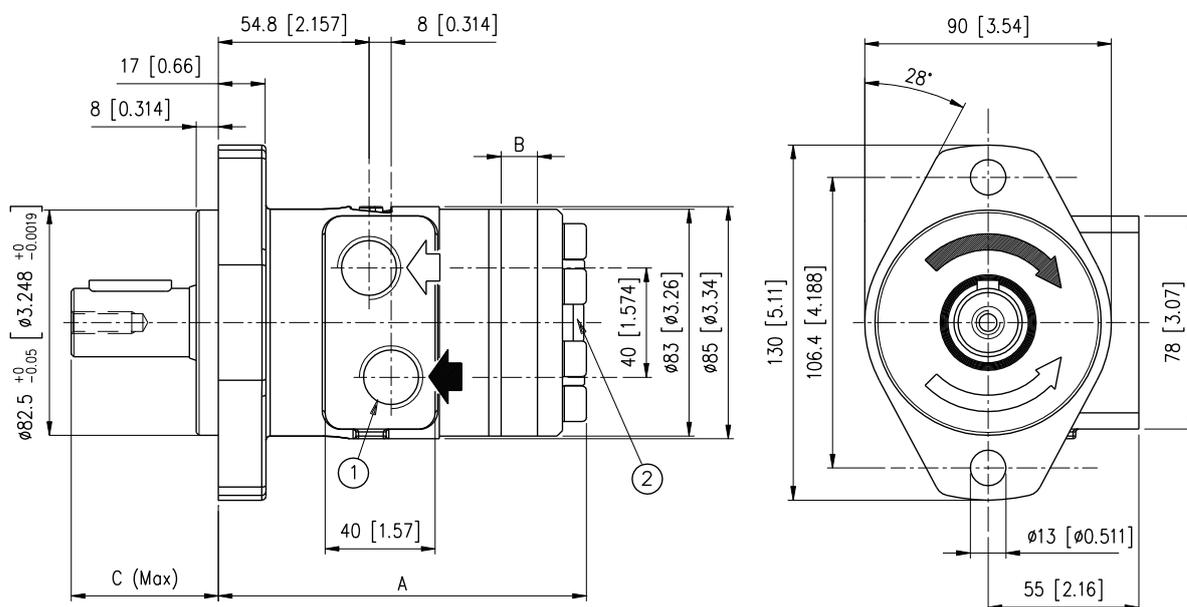
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11

12

BG S 2A M08



- ① No. 2 1/2 G (BSPP) main ports thread depth 18 mm [0.70 in]
- ② 1/4 G (BSPP) drain motor thread depth 12 mm [0.472 in]

For shafts dimensions see page [C19](#)

BG

SHAFT	CL250	CL254	SD250
C mm [in]	53.5 [2.10]	53.5 [2.10]	53.5 [2.10]

	BG S 050	BG S 080	BG S 100	BG S 130	BG S 160	BG S 200	BG S 250	BG S 315	BG S 400
A mm [in]	127.5 [5.01]	130.5 [5.13]	134.5 [5.29]	138.5 [5.45]	143.5 [5.64]	146.5 [5.76]	153.5 [6.04]	162.5 [6.39]	172.5 [6.79]
B mm [in]	6.3 [0.248]	9.5 [0.374]	13.3 [0.523]	16.2 [0.63]	21.9 [0.86]	25.5 [1.003]	31.7 [1.24]	38.1 [1.50]	50.8 [2.00]
Weight kg [lb]	5.5 [12.1]	5.6 [12.3]	5.8 [12.8]	5.9 [13.0]	6.1 [13.4]	6.3 [13.9]	6.5 [14.3]	6.8 [15.0]	7.3 [16.1]

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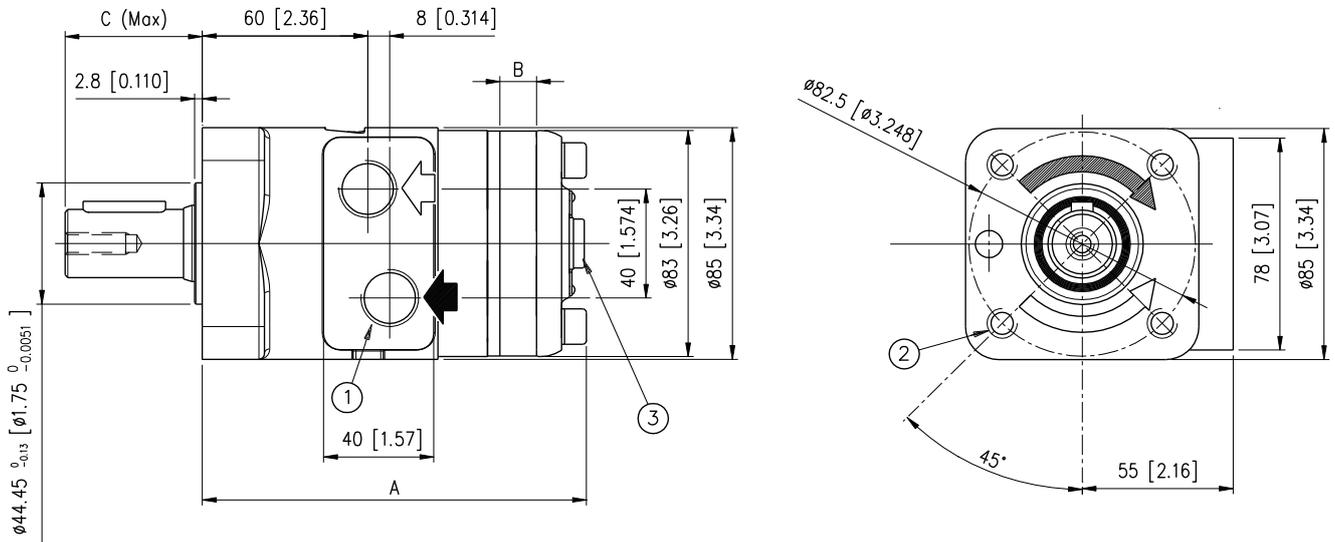
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Dimensions and Weight

- 1
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- 10
- 11
- 12

BG S S4 / 4M M08



- ① No. 2 1/2 G (BSPP) main ports thread depth 18 mm [0.70 in]
- ② No. 4 3/8 16UNC thread depth 17 mm [0.66 in] (S4 flange)
No. 4 M10 thread depth 17 mm [0.66 in] (4M flange)
- ③ 1/4 G (BSPP) drain motor thread depth 12 mm [0.472 in]

For shafts dimensions see page [C19](#)

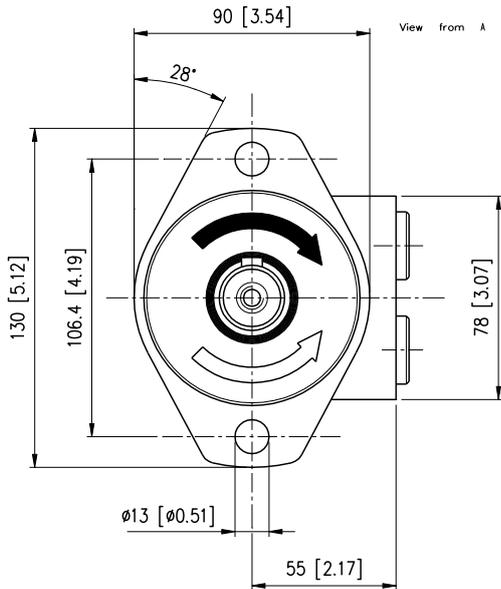
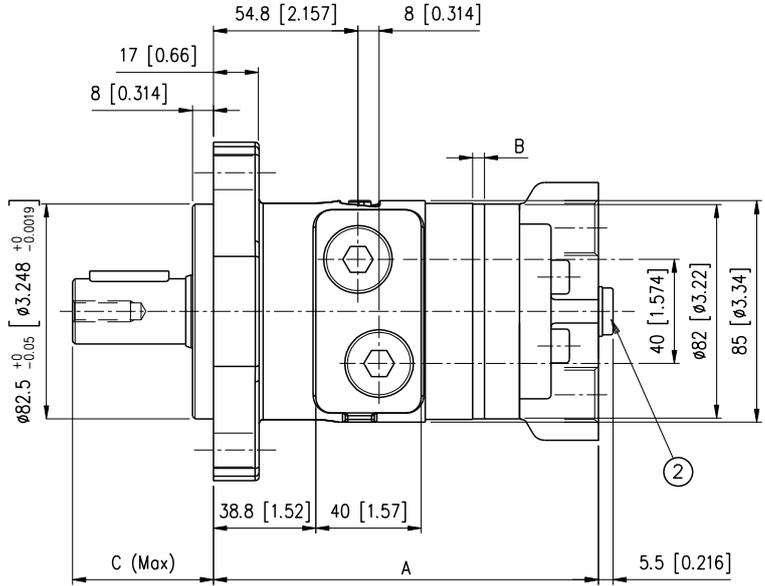
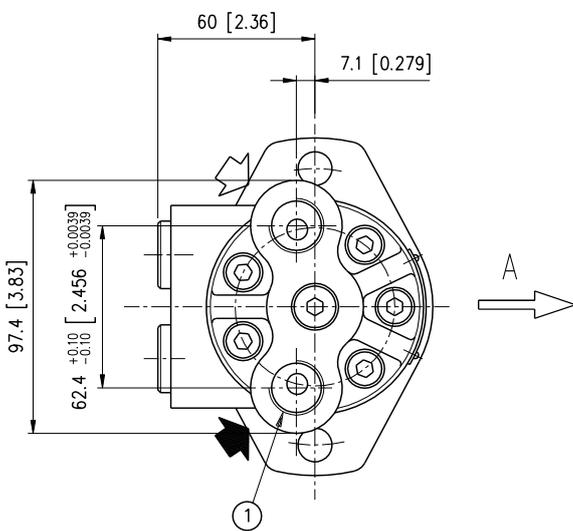
SHAFT	CL250	CL254	SD250
C mm [in]	50 [1.96]	45 [1.77]	50 [1.96]

	BG S 050	BG S 080	BG S 100	BG S 130	BG S 160	BG S 200	BG S 250	BG S 315	BG S 400
A mm [in]	133.1[5.24]	136.3 [5.36]	140 [5.51]	143.7 [5.65]	148.7 [5.85]	152.2 [5.99]	158.5 [6.24]	165 [6.49]	177.5 [6.98]
B mm [in]	6.3 [0.248]	9.5 [0.374]	13.3 [0.523]	16.2 [0.63]	21.9 [0.86]	25.5 [1.003]	31.7 [1.24]	38.1 [1.50]	50.8 [2.00]
Weight kg [lb]	5.5 [12.1]	5.6 [12.3]	5.8 [12.8]	5.9 [13.0]	6.1 [13.4]	6.3 [13.9]	6.5 [14.3]	6.8 [15.0]	7.3 [16.1]

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

BG P 2A F08

BG



- ① No. 2 1/2 G (BSPP) main ports thread depth 18 mm [0.70 in]
- ② 1/4 G (BSPP) drain motor thread depth 15.5 mm [0.61 in]

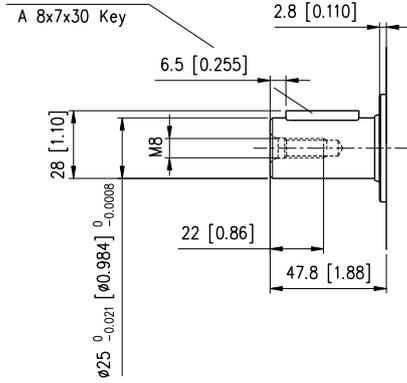
For shafts dimensions see page [C19](#)

SHAFT		CL250	CL254	SD250
C	mm [in]	53.5 [2.10]	53.5 [2.10]	53.5 [2.10]

		BG P 050	BG P 080	BG P 100	BG P 130	BG P 160	BG P 200	BG P 250	BG P 315	BG P 400
A	mm [in]	140 [5.51]	143 [5.62]	147 [5.78]	150.2 [5.91]	155.5 [6.12]	159 [6.25]	165 [6.49]	171.5 [6.75]	187.5 [7.38]
B	mm [in]	6.3 [0.248]	9.5 [0.374]	13.3 [0.523]	16.2 [0.63]	21.9 [0.86]	25.5 [1.003]	31.7 [1.24]	38.1 [1.50]	50.8 [2.00]
Weight	kg [lb]	6.5 [14.3]	6.6 [14.5]	6.8 [15.0]	6.9 [15.2]	7.1 [15.6]	7.3 [16.1]	7.5 [16.5]	7.8 [17.2]	8.3 [18.3]

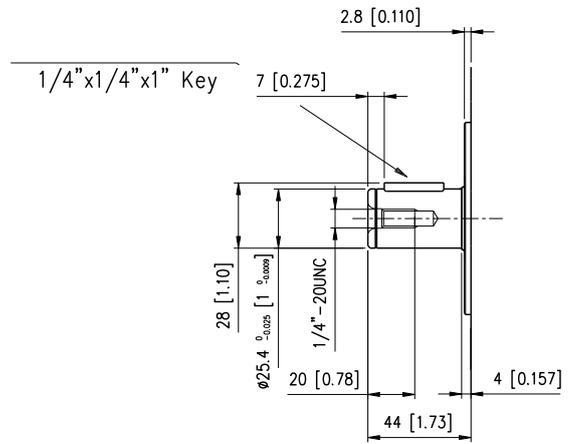
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CL250 Cylindrical Shaft



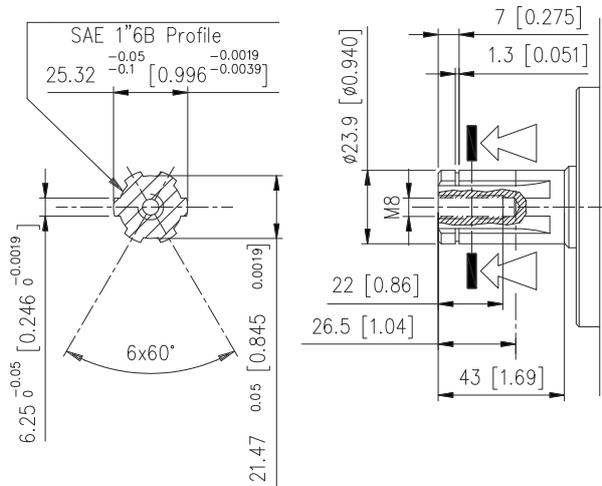
Max Torque Continuous 300 Nm [221.1 lbf-ft]

CL254 Cylindrical Shaft



Max Torque Continuous 300 Nm [221.1 lbf-ft]

SD250 Splined Shaft

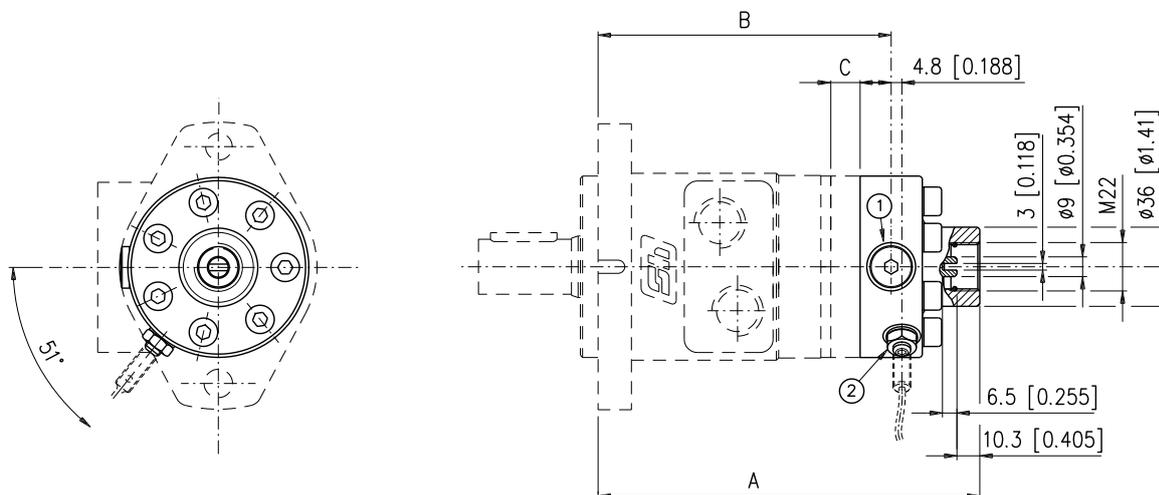


Max Torque Continuous 360 Nm [265.32 lbf-ft]



TC1 TAC/U tachometer

- 1) 1/4 G (BSPP) drain motor thread depth 12 mm [0.472 in]
- 2) Sensor connection M8x1



WARNING:
Tacho shaft has a 6 times higher revolution speed than the motor shaft and opposite direction of rotation.

NOTE:
Axial or radial load on tacho shaft must be avoided. Max torque on tacho 1 Nm [0.73 lbf-ft].
The electronic sensor is not supplied: if required, please state it clearly on order form.
Max pressure admissible on the shaft seal with closed drain port 25 bar [363 psi].

		BG S 050	BG S 080	BG S 100	BG S 130	BG S 160	BG S 200	BG S 250	BG S 315	BG S 400
A	mm [in]	163 [6.41]	166 [6.53]	170 [6.69]	174 [6.85]	179 [7.04]	182 [7.16]	189 [7.44]	195 [7.67]	208 [8.18]
B	mm [in]	123 [4.84]	126 [4.96]	130 [5.11]	134 [5.27]	139 [5.47]	142 [5.59]	149 [5.86]	155 [6.10]	168 [6.61]
C	mm [in]	6.3 [0.248]	9.5 [0.374]	13.3 [0.523]	16.2 [0.63]	21.9 [0.86]	25.5 [1.003]	31.7 [1.24]	38.1 [1.50]	50.8 [2.00]
Weight	kg [lb]	6 [13.2]	6.1 [13.4]	6.3 [13.9]	6.4 [14.1]	6.6 [14.5]	6.8 [15.0]	7.0 [15.4]	7.3 [16.1]	7.8 [17.2]

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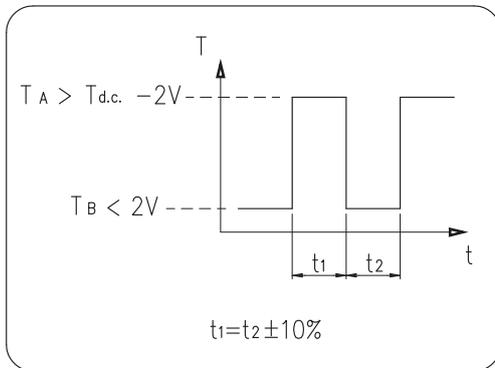
9

10

11

12

Output signal electronic tachometer



- Number of pulses per revolution = 90 Inductive principle
- Output current PNP
- Voltage 10-65 V d.c.
- Max load 300 mA
- Max frequency 10000 Hz
- Temperature range -25C +85C
- Enclosure IP 67

Available versions:

- Sensor with 2 metres three wires cable (cod.424.0050.0000)
- Sensor with binder plug connection (cod.424.0060.0000) + binder connecting
- Plug with 5 metres three wires cable (cod.424.0080.0000)

The following alphanumeric digits system has been developed to identify all of the configuration options for the BH motors. Use the model code below to specify the desired features. All alphanumeric digits system of the code must be present when ordering.

We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12
Series	Displacement	Version	Mount flange	Shaft end	Mounting port	Seal	Valve	Valve feature	Option	Version feature	Painting
BH	130	S	6A	CL254	S08	N	XXXX	000	XX	HPS	XX

1

Series

BH	Orbital motor
-----------	---------------

2

Displacement

050	50 cm ³ /giro [3.05 in ³ /rev]
080	80 cm ³ /giro [4.88 in ³ /rev]
100	100 cm ³ /giro [6.10 in ³ /rev]
130	130 cm ³ /giro [7.93 in ³ /rev]
160	160 cm ³ /giro [9.76 in ³ /rev]
200	200 cm ³ /giro [12.20 in ³ /rev]
250	250 cm ³ /giro [15.25 in ³ /rev]
315	315 cm ³ /giro [19.21 in ³ /rev]
400	400 cm ³ /giro [24.40 in ³ /rev]

3

Version

S	S (standard)
----------	--------------

4

Mounting Flange

6A	Oval 6 bolts (standard)
S4	4 bolts 3/8 16 UNC - Ø44.45 mm [Ø1.75 in]
4M	4 bolts M10 - Ø44.45 mm [Ø1.75 in]

5

Shaft end

CL250	Ø25 mm [0.97 in] Parallel keyed
CL254	Ø25.4 mm [1 in] Parallel keyed (standard)
LC250	Ø25 mm [0.97 in] Parallel keyed (7x7x31.5mm [0.275x0.275x1.24in] key)
CS254	Ø25.4 mm [1 in] Parallel crosshole
SE250	Splined Shaft (SAE 6B 1" 6T spline)

6	
Main Port	
F08	1/2 G BSPP Main Ports
FS8	3/4 - 16 UNF (End Main Ports) (not 4M flange)
S08	7/8 - 14 UNF SAE10 Main Ports (not 4M flange) (BH standard)
SS8	1/2 - 14 NPTF Main Ports (not 4M flange)
MS8	1/2 G BSPP Main Ports (not 4M flange)
BFL	Manifold Main Ports (not 4M flange)
BFM	Manifold Main Ports (ISO) (Only with 4M flange)

7	
Seal	
N	NBR (standard)

8	
Valve	
xx	Not required (standard)

9	
Valves features	
xx	Not required (standard)

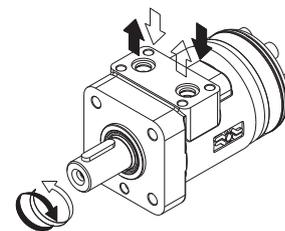
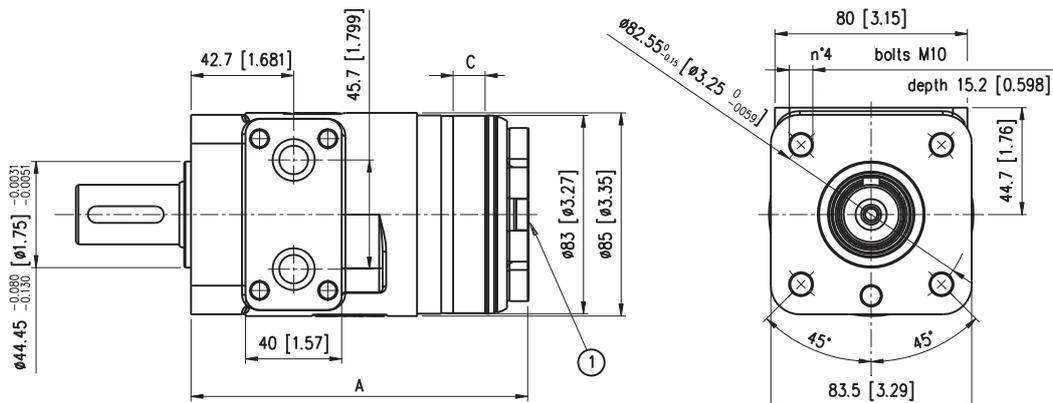
10	
Option	
xxx	None

11	
Version Feature	
HPS	High Pressure Seal (without Rear Drain)
QDR	QUAD-RING version with Rear drain 1/4" G (BSPP)
QDS	QUAD-RING version with Rear drain 7/16" 20 UNF 2B
DPS	High Pressure Seal + Rear Drain - 7/16" 20 UNF 2B
DPM	High Pressure Seal + Rear Drain - 1/4" G (BSPP)

12	
Painting	
xx	Not Painted
01	Black Painted RAL 9005 (standard)

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BH S 4M



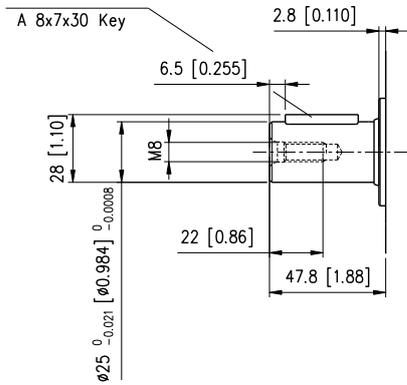
- ① 1/4 G (BSPP) drain motor thread depth 12 mm (0.472 in). Not in HPS version (XXX)
 7/16" 20UNF2B drain motor thread depth 12 mm (0.472 in). Not in HPS version (XXX)

		BH 050	BH 080	BH 100	BH 130	BH 160	BH 200	BH 250	BH 315	BH 400
A	mm [in]	133.45 [5.25]	136.65 [5.38]	140.4 [5.53]	143.9 [5.66]	149.05 [5.87]	152.65 [6]	158.85 [6.25]	165.2 [6.5]	177.9 [7]
C	mm [in]	6.3 [0.248]	9.5 [0.374]	13.2 [0.519]	16.9 [0.66]	21.9 [0.86]	25.4 [1.00]	31.7 [1.24]	38.1 [1.50]	50.8 [2.00]
Wiegth	kg [lb]	5.5 [12.12]	5.6 [12.34]	5.8 [12.78]	5.9 [13]	6 [13.4]	6.3 [13.88]	6.5 [14.3]	6.8 [14.98]	7.2 [16]



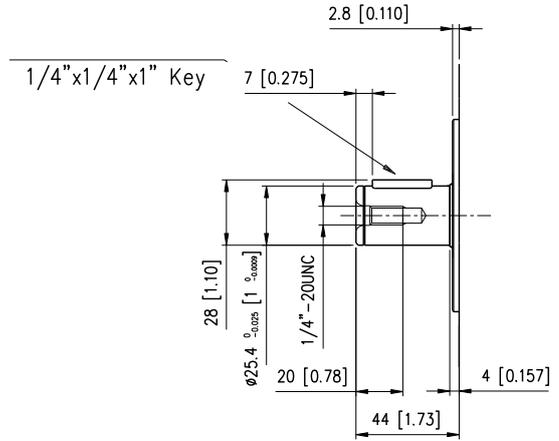
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CL250 Cylindrical Shaft



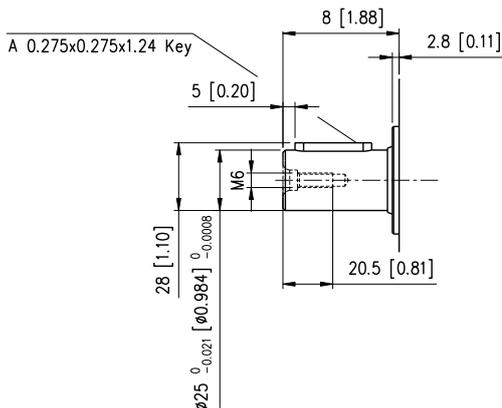
Max Torque Continuous 300 Nm [221.1 lbf-ft]

CL254 Cylindrical Shaft



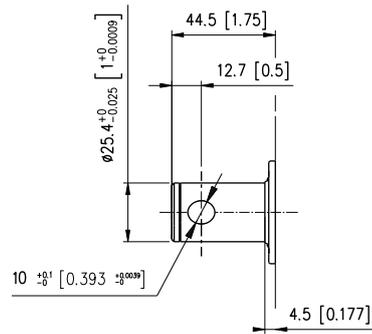
Max Torque Continuous 300 Nm [221.1 lbf-ft]

LC250 Cylindrical Shaft



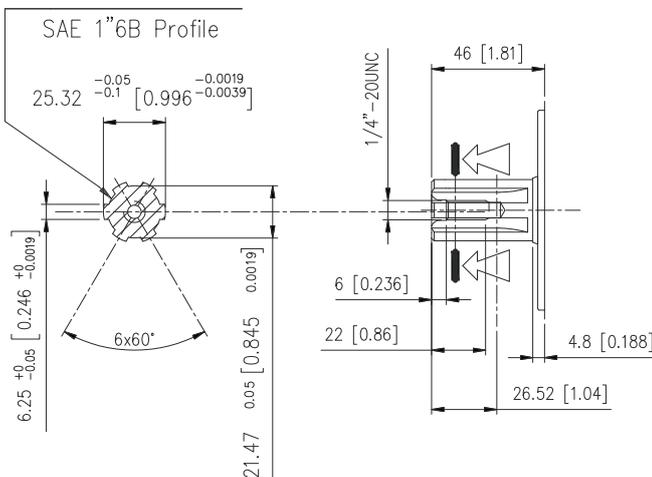
Max Torque Continuous 300 Nm [221.1 lbf-ft]

CS254 Cylindrical Crosshole Shaft



Max Torque Continuous 300 Nm [221.1 lbf-ft]

SE250 Splined Shaft



Max Torque Continuous 360 Nm [265.32 lbf-ft]

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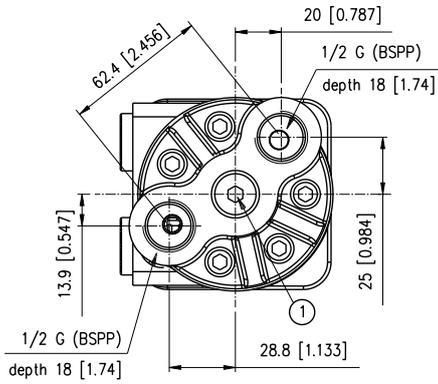
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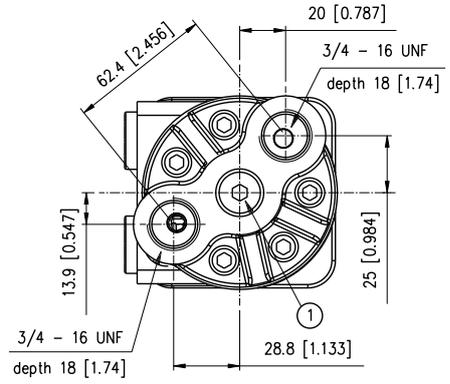
12

F08 1/2 G BSPP



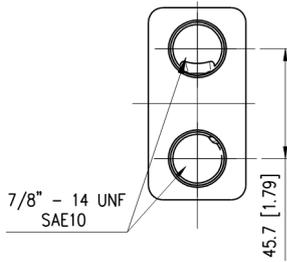
① 1/4 G (BSPP) drain motor thread depth 12 mm [0.472 in].

FS8 3/4 - 16 UNF

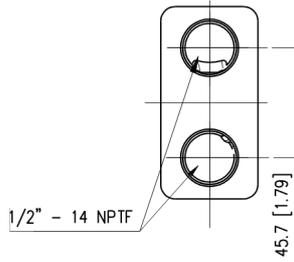


① 7/16"-20 UNF drain motor thread depth 12 mm [0.472 in].

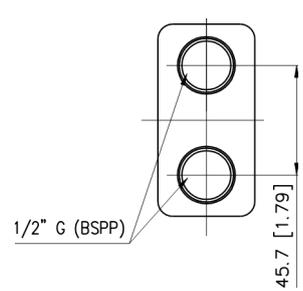
S08 7/8 - 14 UNF



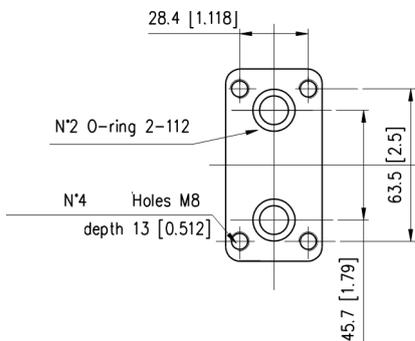
SS8 1/2 - 14 NPTF



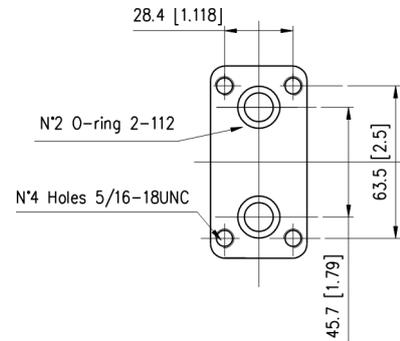
MS8 1/2 G BSPP



BFM Manifold ISO



BFL Manifold





BREVINI[®]

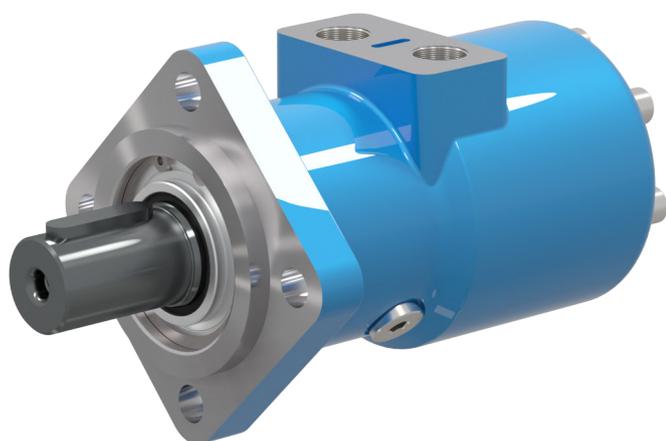
Motion Systems





BREVINI®

Motion Systems



AR Orbital Motors

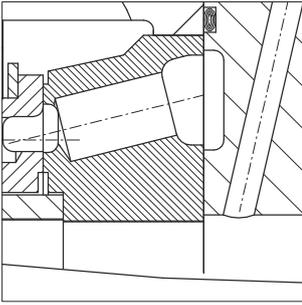


	Page
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Versions	D3
Motor Technical Specifications	D4
Performance Curves	D5
Pressure Data	D10
Max. Permissible Shaft Pressure	D10
Pressure Loss	D11
Other Informations	D12
Ordering Code	D13
Dimensions and Weight	D14
Shaft End	D18
Options	D19

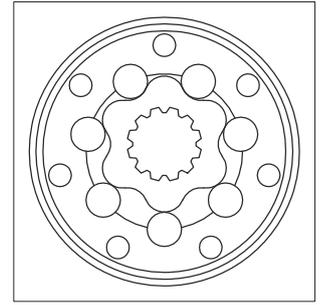
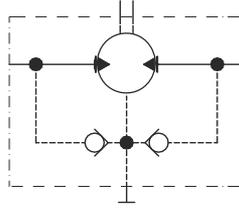
Click **i** button to return to main index

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

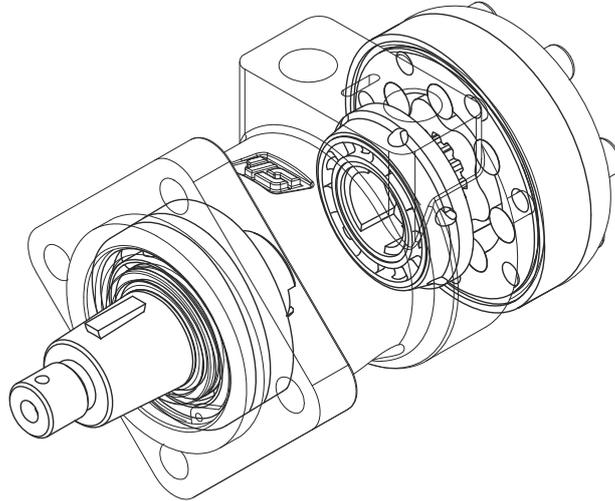




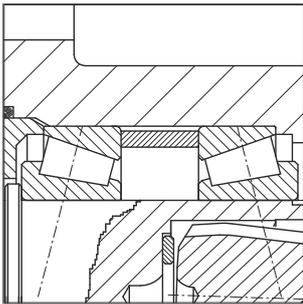
Pressure compensated valve plate maintains minimal leakage and provides compensated wear.



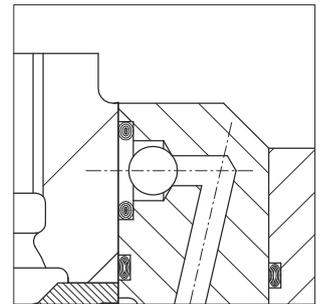
7 sockets - 6 teeth roller set.

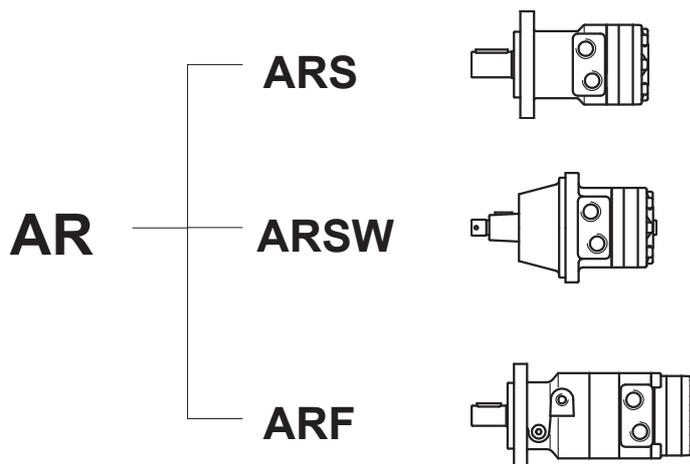


Built-in check valves to relieve case pressure to the low pressure side of the motor and adequate for application without the need to connect the drain.



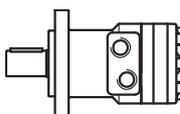
Two options of bearing for heavy shaft loads.





Versions

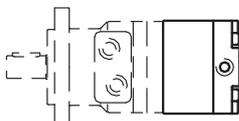
HPS
High Pressure Seal



Available with motor

ARS

FP
Brake motor



ARS - ARSW

.../N..
Dual shaft oval flange



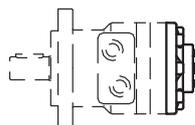
ARS - ARF

.../D..
Dual shaft square flange



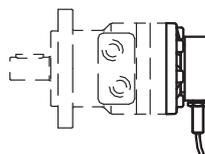
ARS - ARF

TAC
Rev-counter connection



ARS - ARF

TAC - E
Electronic tachometer



ARS - ARF

Motor	Displacement cm ³ /rev [in ³ /rev]	Max. input pressure bar [psi]		Max. differential pressure bar [psi]		Max. torque Nm [lbf-ft]		Max. flow l/min [U.S. gpm]		Max. speed rpm		Max. power kW [hp]	
		Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	160 [2320] 190 [2755] 250 [3625]	Cont Int ¹⁾	118 [86.9] 136 [100.2]	Cont Int ¹⁾	40 [11] 50 [13]	Cont Int ¹⁾	775 970	Cont Int ¹⁾	8.5 [11.3] 10.2 [13.6]
AR 50	51.6 [3.14]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	160 [2320] 190 [2755] 250 [3625]	Cont Int ¹⁾	118 [86.9] 136 [100.2]	Cont Int ¹⁾	40 [11] 50 [13]	Cont Int ¹⁾	775 970	Cont Int ¹⁾	8.5 [11.3] 10.2 [13.6]
AR 80	80.4 [4.9]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	160 [2320] 190 [2755] 250 [3625]	Cont Int ¹⁾	184 [135.6] 210 [154.7]	Cont Int ¹⁾	60 [16] 75 [20]	Cont Int ¹⁾	746 933	Cont Int ¹⁾	12.6 [16.8] 15.2 [20.3]
AR 100	100 [6.1]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	160 [2320] 190 [2755] 250 [3625]	Cont Int ¹⁾	230 [169.5] 260 [191.6]	Cont Int ¹⁾	60 [16] 75 [20]	Cont Int ¹⁾	600 750	Cont Int ¹⁾	13 [17.4] 15.5 [20.7]
AR 130	125.7 [7.66]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	150 [2175] 190 [2755] 250 [3625]	Cont Int ¹⁾	270 [198.9] 330 [243.2]	Cont Int ¹⁾	60 [16] 75 [20]	Cont Int ¹⁾	477 597	Cont Int ¹⁾	12 [16] 14.2 [19]
AR160	160 [9.76]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	150 [2175] 190 [2755] 250 [3625]	Cont Int ¹⁾	340 [250.5] 420 [309.5]	Cont Int ¹⁾	60 [16] 75 [20]	Cont Int ¹⁾	375 470	Cont Int ¹⁾	12.4 [16.6] 15.7 [21]
AR 200	200 [12.2]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	125 [1813] 175 [2538] 230 [3335]	Cont Int ¹⁾	350 [257.9] 480 [353.7]	Cont Int ¹⁾	65 [17] 75 [20]	Cont Int ¹⁾	325 375	Cont Int ¹⁾	10.8 [14.4] 15.5 [20.7]
AR 250	250 [15.2]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	110 [1595] 155 [2248] 200 [2900]	Cont Int ¹⁾	380 [280] 520 [383.2]	Cont Int ¹⁾	65 [17] 80 [21]	Cont Int ¹⁾	260 320	Cont Int ¹⁾	9.8 [13.1] 13.4 [17.9]
AR 315	314 [19.2]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	80 [1160] 120 [1740] 150 [2175]	Cont Int ¹⁾	340 [250.5] 510 [375.8]	Cont Int ¹⁾	65 [17] 80 [21]	Cont Int ¹⁾	207 254	Cont Int ¹⁾	6.1 [8.1] 8.5 [11.3]
AR 400	393 [23.9]	Cont Int ¹⁾ Peak ²⁾	175 [2538] 190 [2755] 250 [3625]	Cont Int ¹⁾ Peak ²⁾	65 [943] 100 [1450] 120 [1740]	Cont Int ¹⁾	358 [263.8] 510 [375.8]	Cont Int ¹⁾	65 [17] 80 [21]	Cont Int ¹⁾	165 203	Cont Int ¹⁾	4.7 [6.2] 6 [8]

Test conditions: 37 cSt oil at 45°C.

¹⁾ Intermittent duty must not exceed 10% each minute.

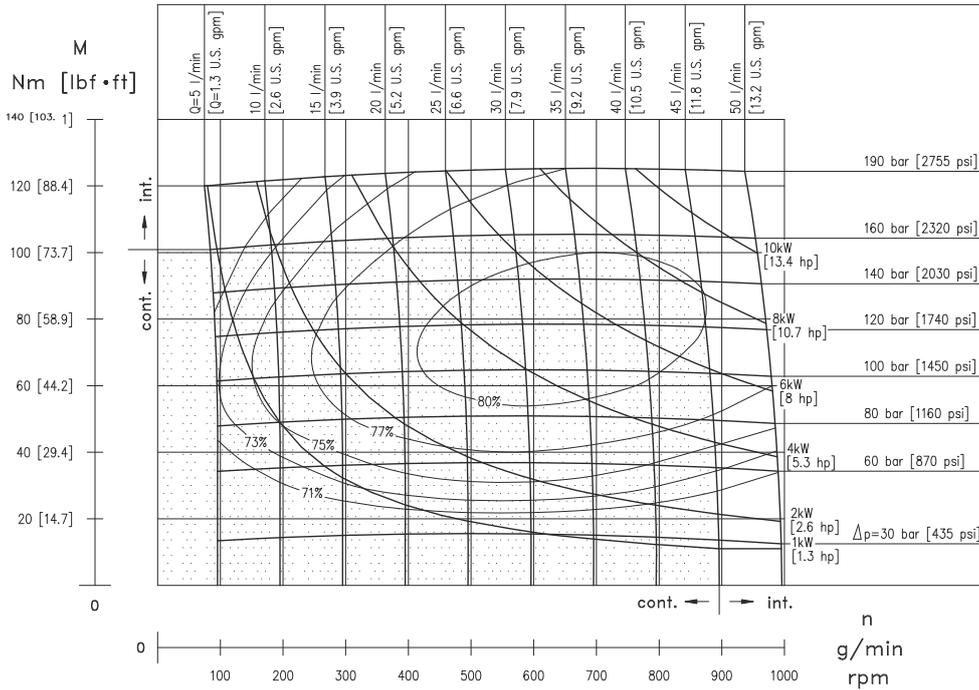
²⁾ Peak duty must not exceed 1% each minute.

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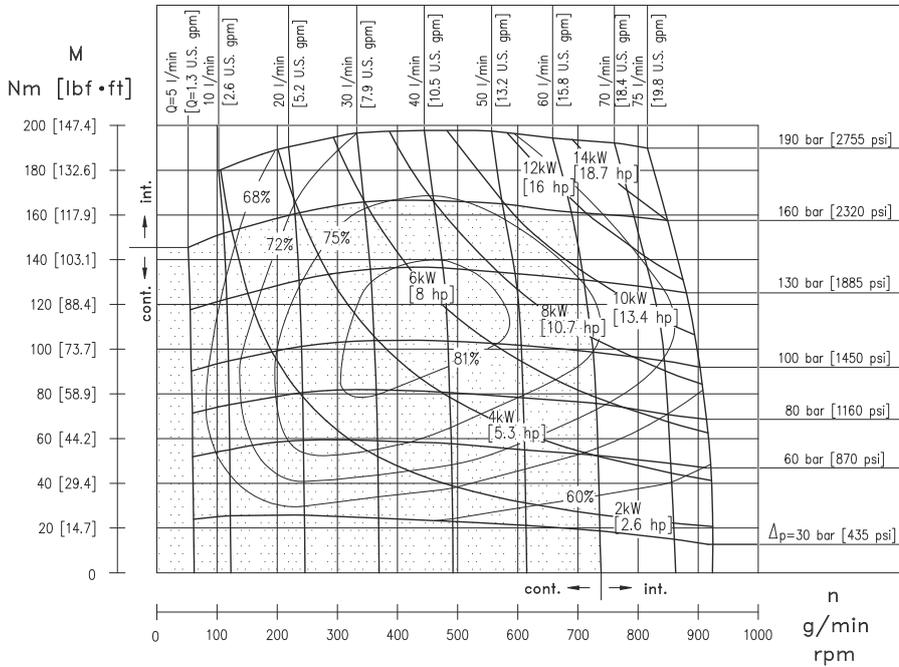


AR 50



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

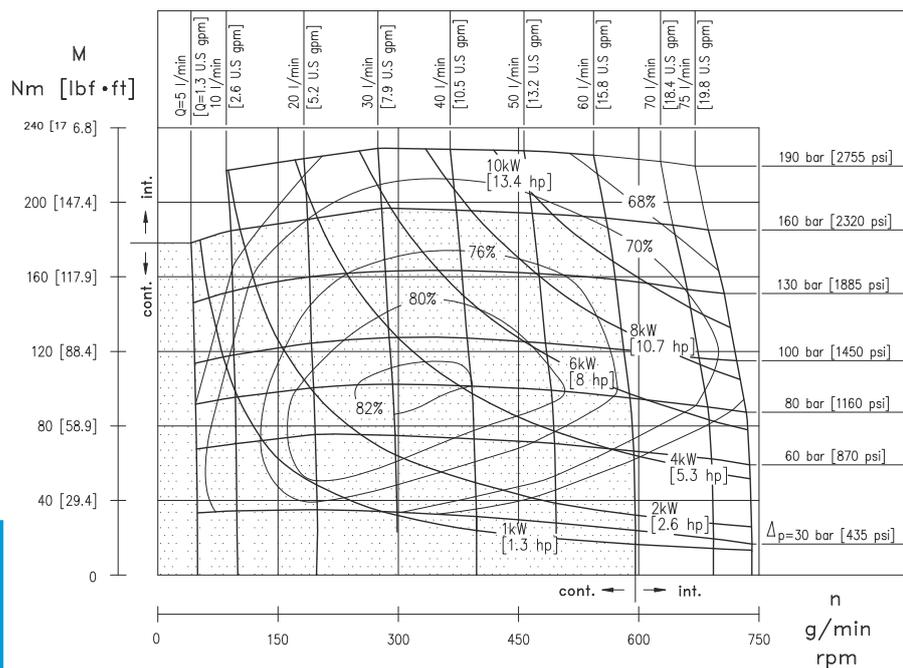
AR 80



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

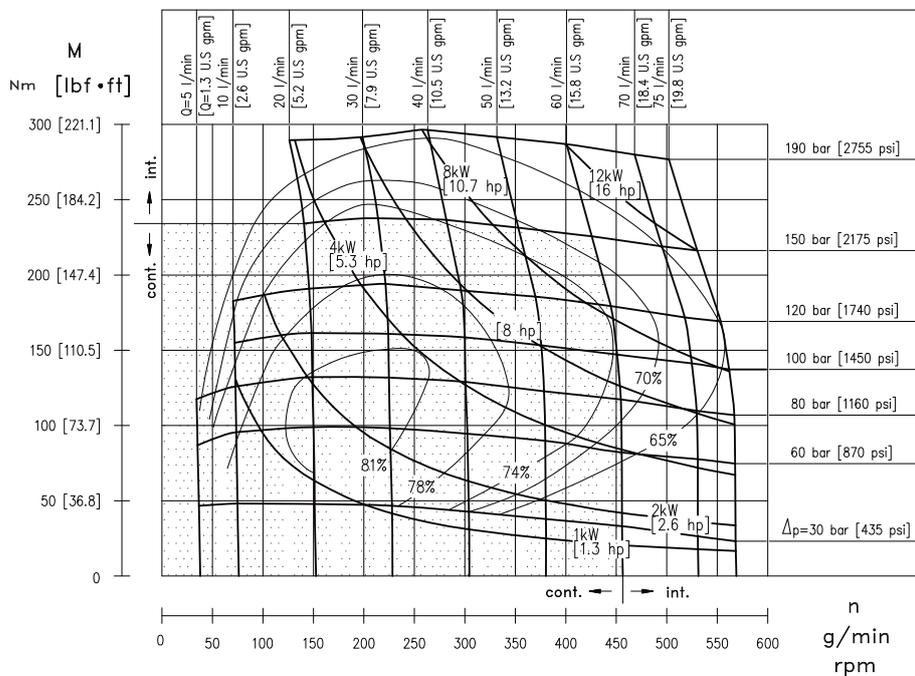


AR 100



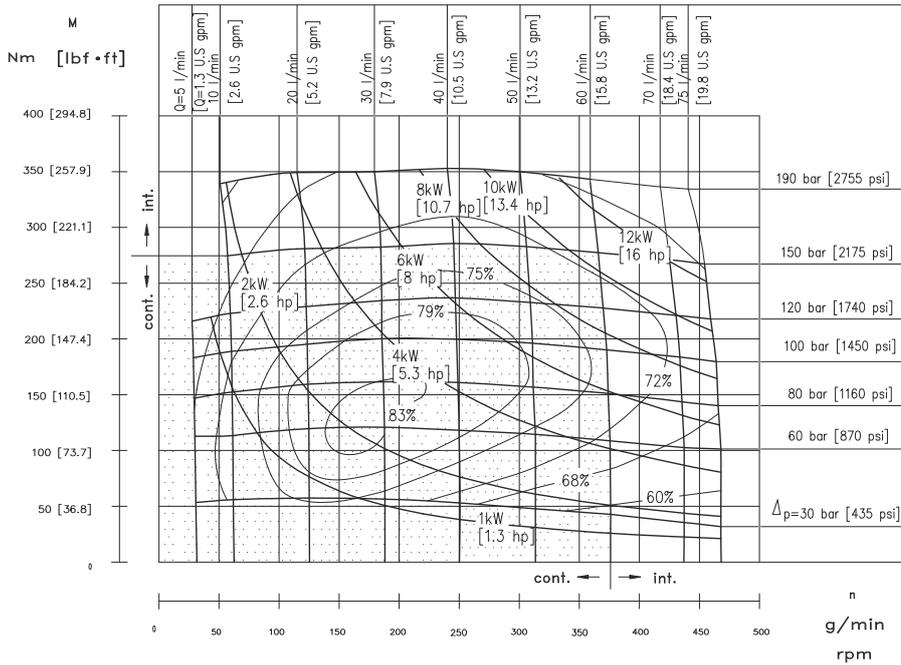
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

AR 130



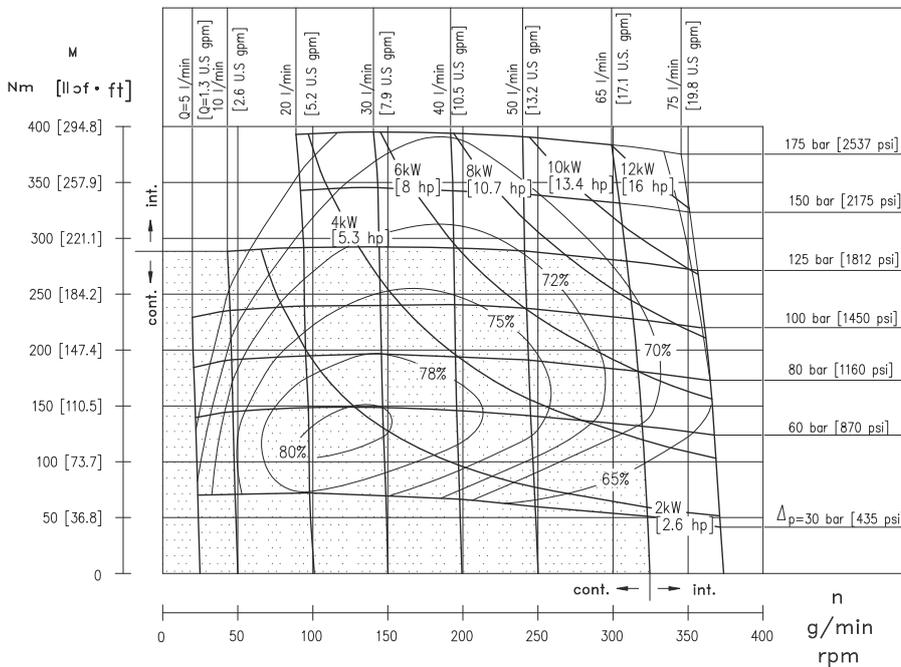
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

AR 160



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

AR 200



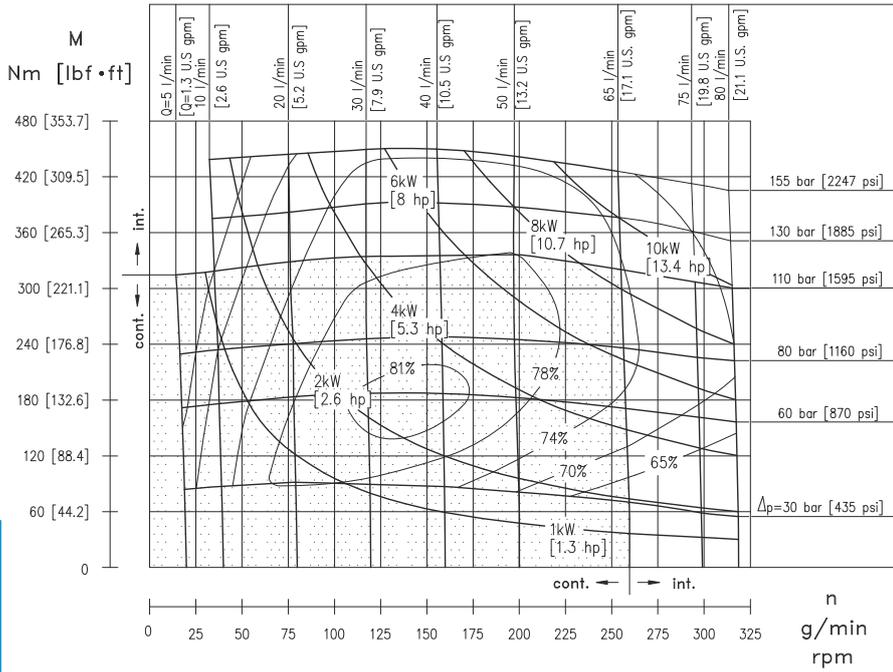
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

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

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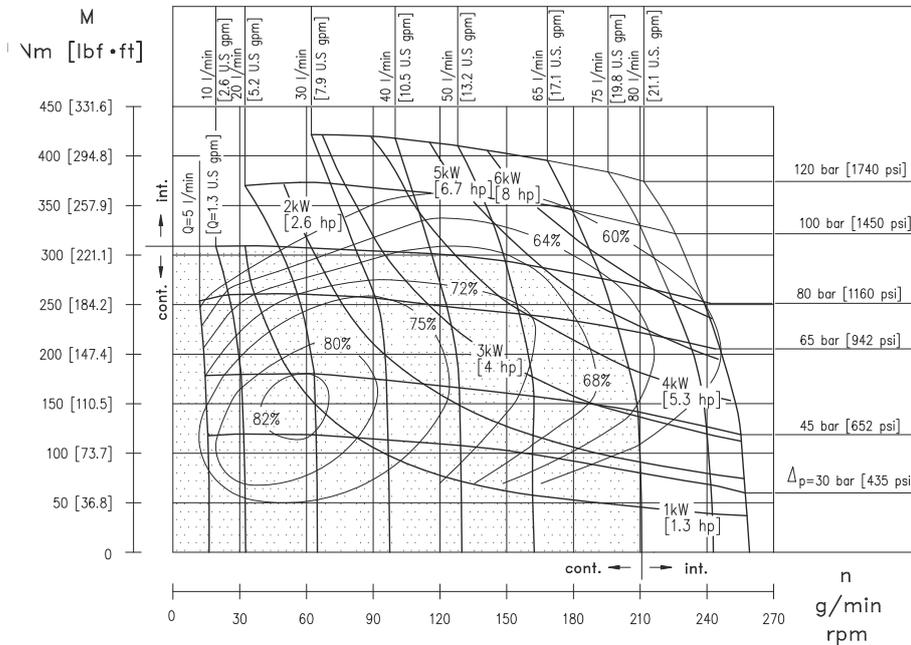


AR 250



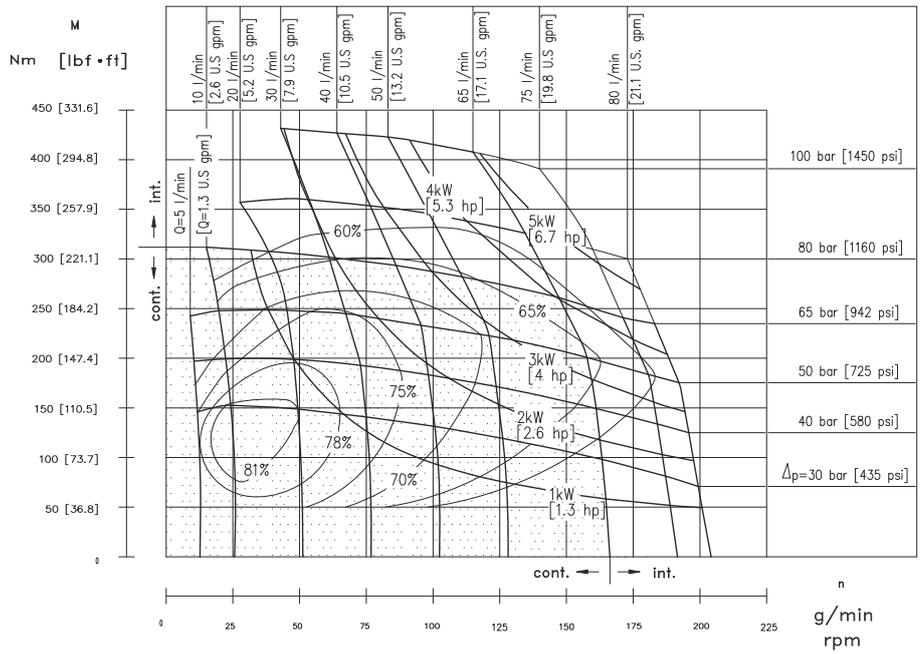
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

AR 315



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

AR 400



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.



Max. Pressure

	Motor	Displacement																																
		50			80			100			130			160			200			250			315			400								
		0	100	>	0	100	>	0	100	>	0	100	>	0	100	>	0	100	>	0	100	>	0	100	>	0	100	>						
	Speed rpm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
		100	300	300	100	300	300	100	300	300	100	300	300	100	300	300	100	300	300	100	300	300	100	300	300	100	300	300	100	300	300			
Max cont. Return pressure without drain line (bar) Conversions: 75 bar = 1088 psi 55 bar = 798 psi 50 bar = 725 psi 25 bar = 363 psi 20 bar = 290 psi	ARS	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25			
	ARSW	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25			
	ARF	20			20			20			20			20			20			20			20			20								
	../FP ⁴⁾	-			-			-			-			-			-			-			-			-								
	../N ³⁾	20			20			20			20			20			20			20			20			20								
	../D ³⁾	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25
	TAC	20			20			20			20			20			20			20			20			20								
	TAC-E ³⁾	20			20			20			20			20			20			20			20			20								
Max return pressure with drain line bar [psi]		140 [2030]			140 [2030]			140 [2030]			140 [2030]			140 [2030]			140 [2030]			140 [2030]			140 [2030]			140 [2030]								
Min starting torque N [lbf]	Cont.	62 [46]			120 [88]			150 [111]			187 [138]			242 [178]			282 [208]			310 [228]			269 [198]			286 [211]								
	Int. ¹⁾	70 [51.6]			139 [102]			172 [127]			230 [170]			294 [217]			390 [287]			415 [306]			397 [293]			413 [304]								

AR

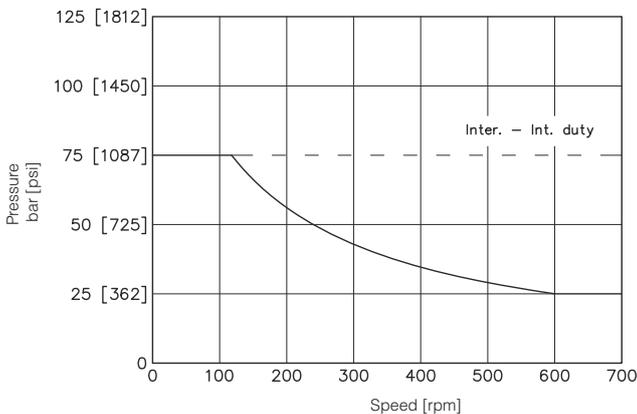
- 1) Intermittent duty must not exceed 10% each minute.
- 2) Peak duty must not exceed 1% each minute.
- 3) The back up pressure must be lower between the motor and the motor version considered.
- 4) In order to eliminate overheating it is necessary to use the drain port.

Max. Permissible Shaft Seal Pressure

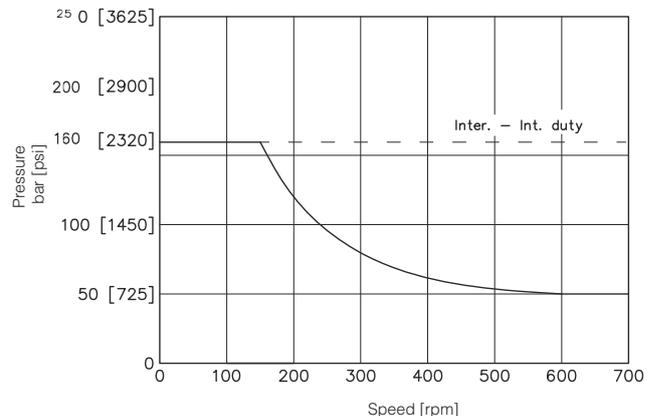
ARS Motor are supplied in standard seal version (Standard chart) or in HPS seal version (HPS chart). For pressure and speeds not showed in the curve below, please contact Dana Brevini.

N.B.: Tachometer and Brake versions is not available with HPS seals.

STANDARD



HPS

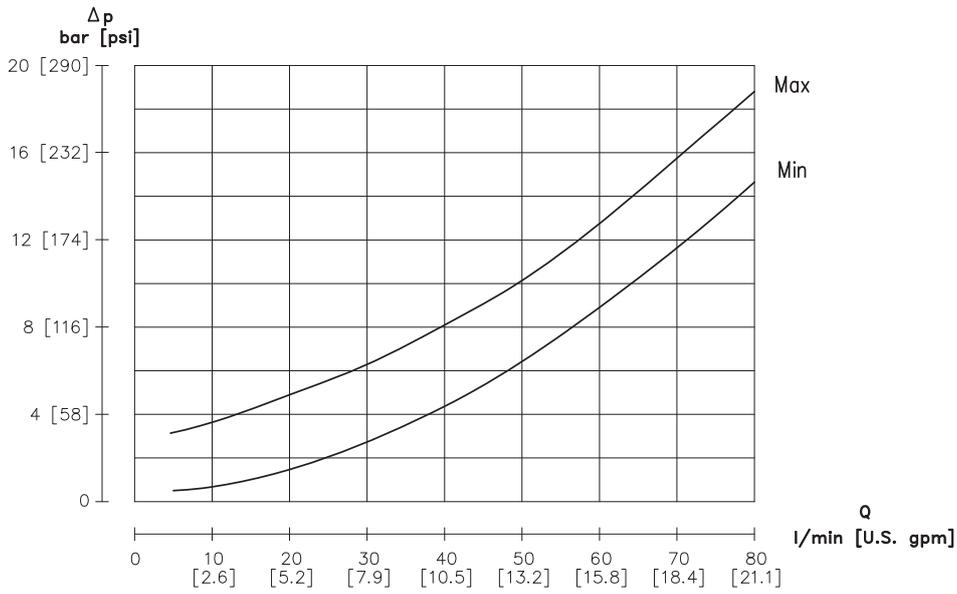


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Pressure Loss



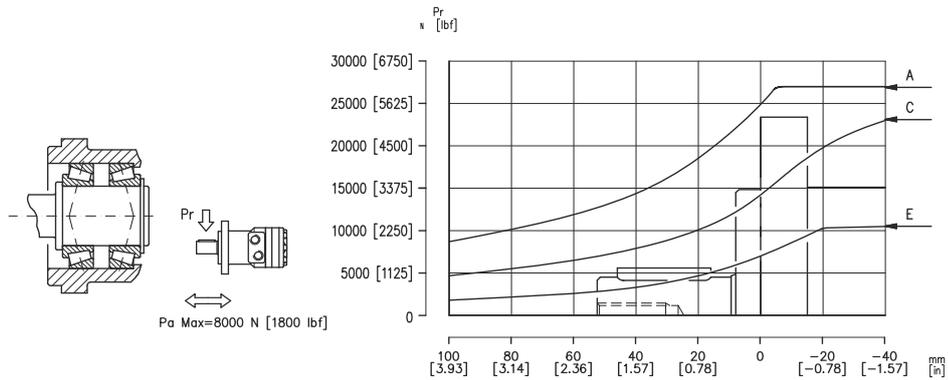
Low displacement motors have the tendency to operate near the “Max” curve, while high displacement ones have the opposite tendency.

Shaft Load

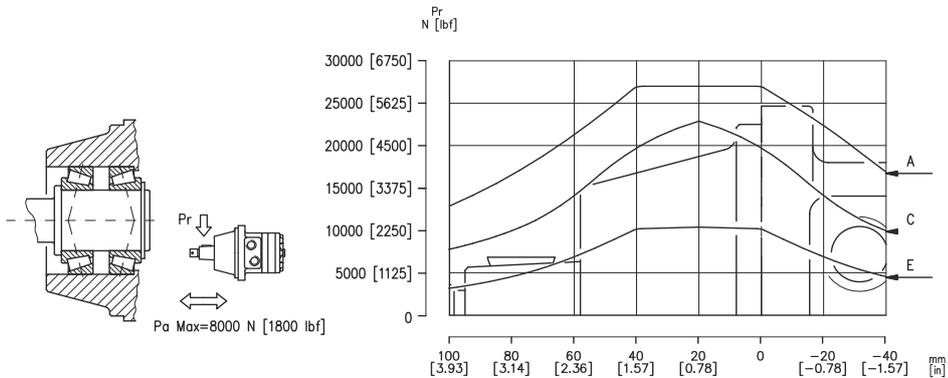
The load diagrams are valid for an average bearings life of 1.600 hrs at 200 r.p.m. with mineral base lubricating oil containing anti-wear additives (ref. ISO 281 (3.3) standard).

The "A" curve gives the maximum static load affordable by the bearings.
 The "B" curve gives the radial load top limit without axial loading.
 The "C" curve gives the radial load top limit with an axial load of 2000 N [450 lbf].
 The "D" curve gives the radial load top limit with an axial load of 6000 N [1350 lbf].
 The "E" curve gives the radial load top limit with an axial load of 8000 N [1800 lbf].

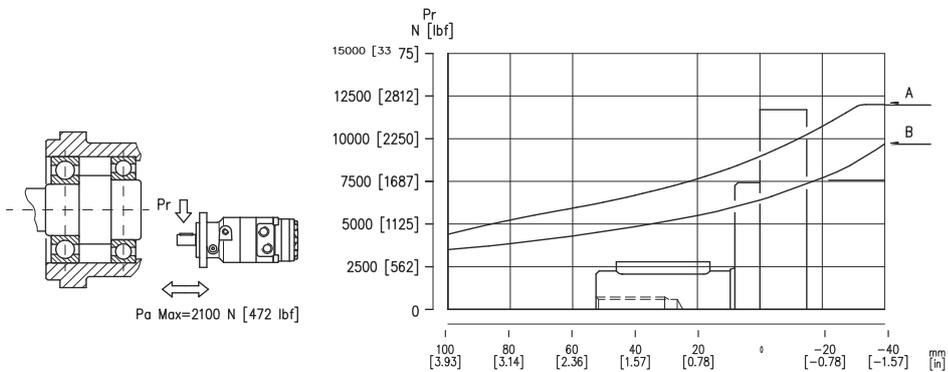
ARS



ARSW



ARF



The following alphanumeric digits system has been developed to identify all of the configuration options for the AR motors. Use the model code below to specify the desired features. All alphanumeric digits system of the code must be present when ordering.

We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5
Series	Displacement	Mounting flange	Shaft end	Option
ARS	160	DR	C32	HPS

1	
Series	
ARS	Orbital motor
ARSW	Orbital motor
ARF	Orbital motor

2	
Displacement	
050	50 cm ³ /giro [3.05 in ³ /rev]
080	80 cm ³ /giro [4.88 in ³ /rev]
100	100 cm ³ /giro [6.10 in ³ /rev]
130	130 cm ³ /giro [7.93 in ³ /rev]
160	160 cm ³ /giro [9.76 in ³ /rev]
200	200 cm ³ /giro [12.20 in ³ /rev]
250	250 cm ³ /giro [15.25 in ³ /rev]
315	315 cm ³ /giro [19.21 in ³ /rev]
400	400 cm ³ /giro [24.40 in ³ /rev]

3		Series		
Mounting Flange		ARS	ARSW	ARF
N	2 bolts	-	-	●
D	4 bolts	●	●	-

4		Series		
Shaft end		ARS	ARSW	ARF
C25	Parallel keyed Ø25 mm [0.984 in]	●	●	●
C32	Parallel keyed Ø32 mm [1.259 in]	●	●	-
S32	Splined 14T 12/24 DP	●	●	-
SD25	Splined 1" 6B Tooth	●	●	-
CN32	Tapered	●	●	-

5		Series		
Option		ARS	ARSW	ARF
HPS	High Pressure Seal	●	-	-
FP	Brake-motor	●	●	-
/N	Dual shaft oval flange	●	-	●
/D	Dual shaft square flange	●	-	●
TAC	Rev-counter connection	●	-	●
TAC-E	Electronic tachometer	●	-	●

● Available
- Not Available

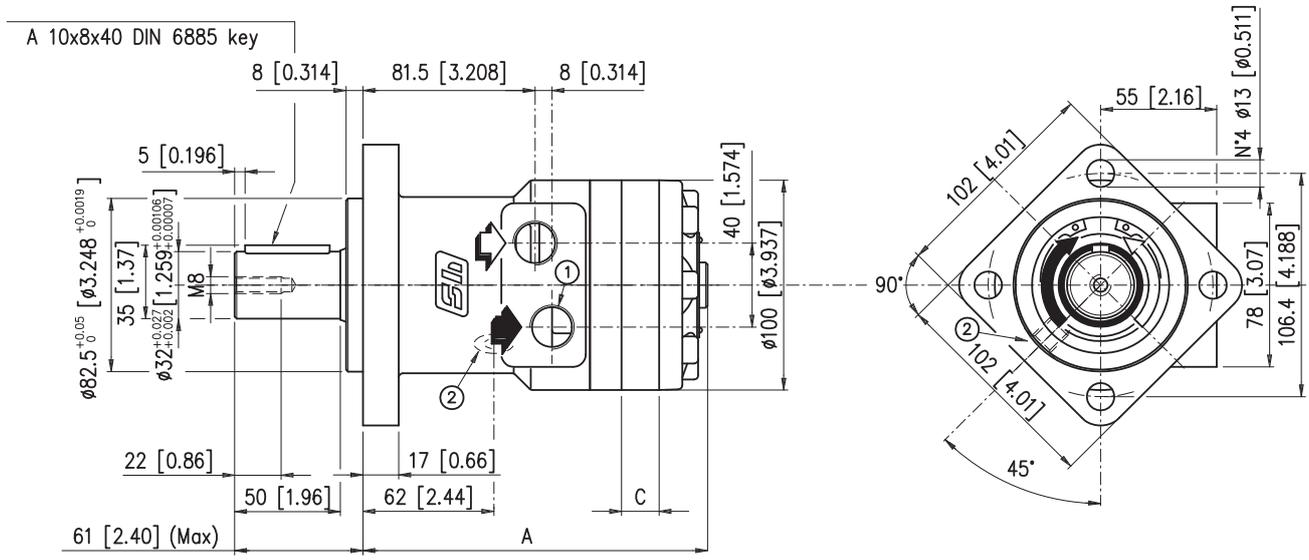
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- 1
- 2
- 3
- 4
- 5

ARS D C32

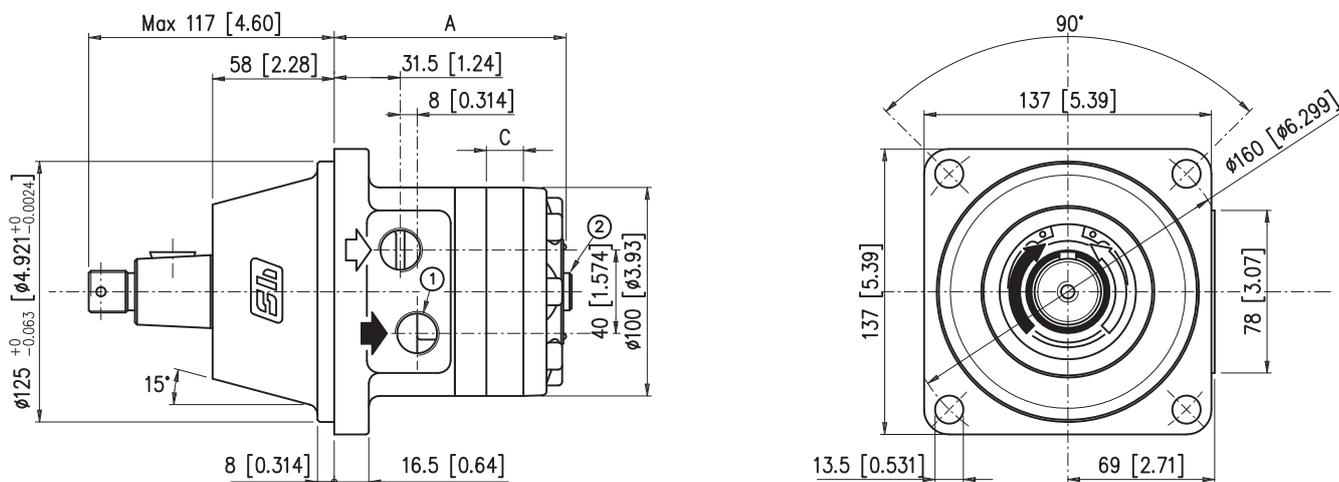


- ① No. 2 1/2 G (BSPP) main ports thread depth 18mm [0.70 in]
- ② 1/4 G (BSPP) drain motor depth 12 mm [0.472 in]

		ARS 50	ARS 80	ARS 100	ARS 130	ARS 160	ARS 200	ARS 250	ARS 315	ARS 400
A	mm [in]	152.5 [6.00]	157.5 [6.20]	160.9 [6.33]	165.3 [6.50]	171.3 [6.74]	178.3 [7.01]	187 [7.36]	198.3 [7.80]	211.8 [8.33]
C	mm [in]	9 [0.354]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight	kg [lb]	7.5 [16.5]	7.7 [16.9]	7.9 [17.4]	8.2 [18]	8.4 [18.5]	8.8 [19.3]	9.2 [20.2]	9.7 [21.3]	10.4 [22.9]

- 1
- 2
- 3
- 4
- 5

ARSW D



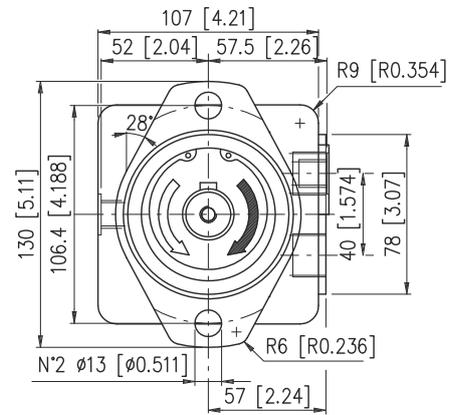
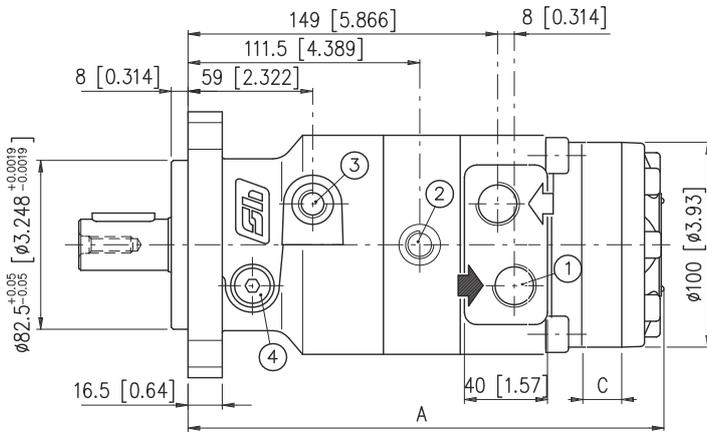
- ① No. 2 1/2 G (BSPP) main ports thread depth 18mm [0.70 in]
- ② 1/4 G (BSPP) drain motor depth 12 mm [0.472 in]

		ARSW 50	ARSW 80	ARSW 100	ARSW 130	ARSW 160	ARSW 200	ARSW 250	ARSW 315	ARSW 400
A	mm [in]	102.5 [4.03]	107.5 [4.23]	110.9 [4.36]	115.3 [4.53]	121.3 [4.77]	128.3 [5.05]	137 [5.39]	148.3 [5.83]	161.8 [6.37]
C	mm [in]	9 [0.354]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight	kg [lb]	9.8 [21.5]	10.1 [22.2]	10.3 [22.7]	10.5 [23.1]	10.8 [23.8]	11.2 [24.6]	16.1 [35.4]	12.1 [26.6]	12.8 [28.2]



- 1
- 2
- 3
- 4
- 5

ARF N



- ① No. 2 1/2 G (BSPP) main ports thread depth 18mm [0.70 in]
- ② 1/4 G (BSPP) drain motor depth 13 mm [0.511 in]
- ③ Brake releasing plug 1/4 G (BSPP) thread depth 13 mm [0.511 in]
- ④ N°2 brake filling and drain plugs 1/4 G (BSPP) thread depth 13 mm [0.511 in]

		ARF 50	ARF 80	ARF 100	ARF 130	ARF 160	ARF 200	ARF 250	ARF 315	ARF 400
A	mm [in]	220 [8.66]	225 [8.85]	228.4 [8.99]	232.8 [9.16]	238.8 [9.40]	245.8 [9.67]	254.5 [10.01]	265.8 [10.46]	279.3 [10.99]
C	mm [in]	9 [0.354]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight	kg [lb]	13.5 [29.7]	13.8 [30.4]	14.1 [31]	14.3 [31.5]	14.6 [32.1]	15.1 [33.2]	15.8 [34.8]	16.3 [35.9]	16.9 [37.2]

1

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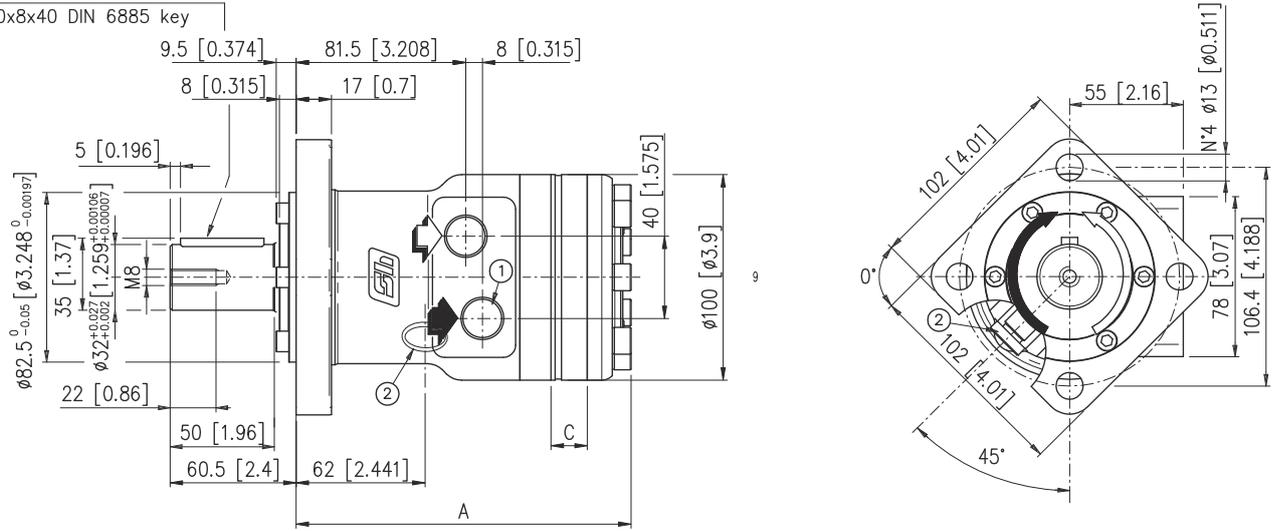
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ARS D C32 HPS

A 10x8x40 DIN 6885 key



- ① No. 2 1/2 G (BSPP) main ports thread depth 18mm [0.70 in]
- ② 1/4 G (BSPP) drain motor depth 12 mm [0.472 in]

		ARS 50	ARS 80	ARS 100	ARS 130	ARS 160	ARS 200	ARS 250	ARS 315	ARS 400
A	mm [in]	152 [5.98]	157 [6.18]	161 [6.34]	165 [6.50]	171 [6.73]	178 [7.01]	187 [7.36]	198 [7.79]	212 [8.35]
C	mm [in]	9 [0.354]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight	kg [lb]	7.5 [16.5]	7.7 [16.9]	7.9 [17.4]	8.2 [18]	8.4 [18.5]	8.8 [19.3]	9.2 [20.2]	9.7 [21.3]	10.4 [22.9]

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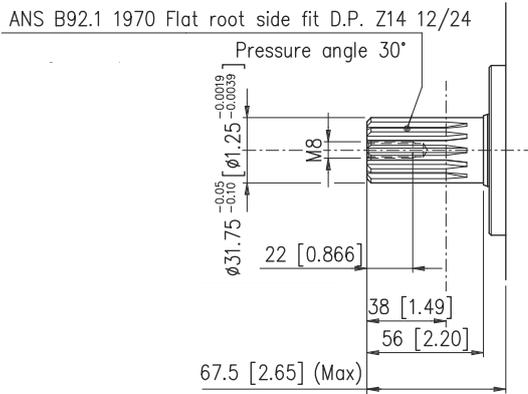
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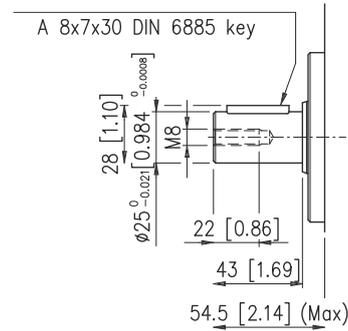
S32 Splined Shaft

Max Torque Continuous 768 Nm [566 lbf-ft]



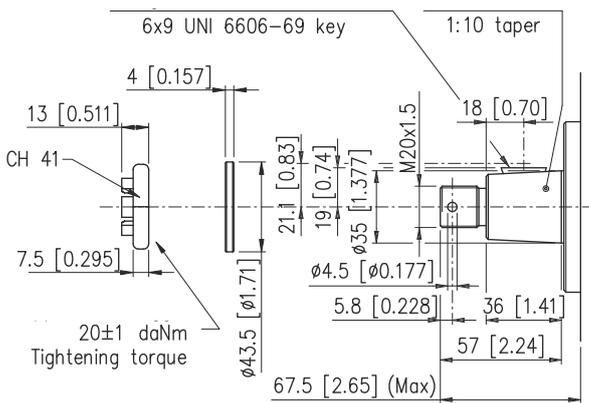
C25 Cylindrical Shaft

Max Torque Continuous 300 Nm [221.1 lbf-ft]



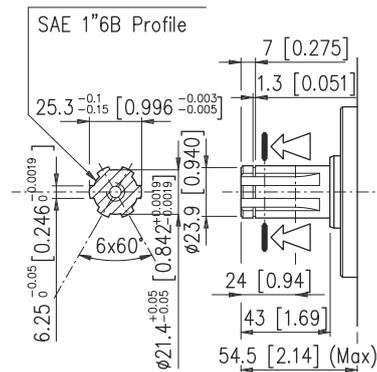
CN32 Tapered Shaft

Max Torque Continuous 860 Nm [633.8 lbf-ft]



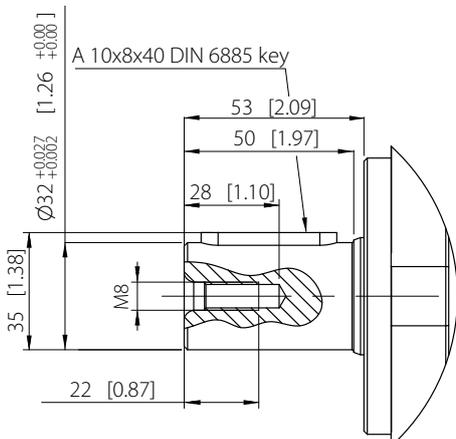
D25 Splined Shaft

Max Torque Continuous 360 Nm [225.3 lbf-ft]



C32 Cylindrical Shaft

Max Torque Continuous 768 Nm [566 lbf-ft]



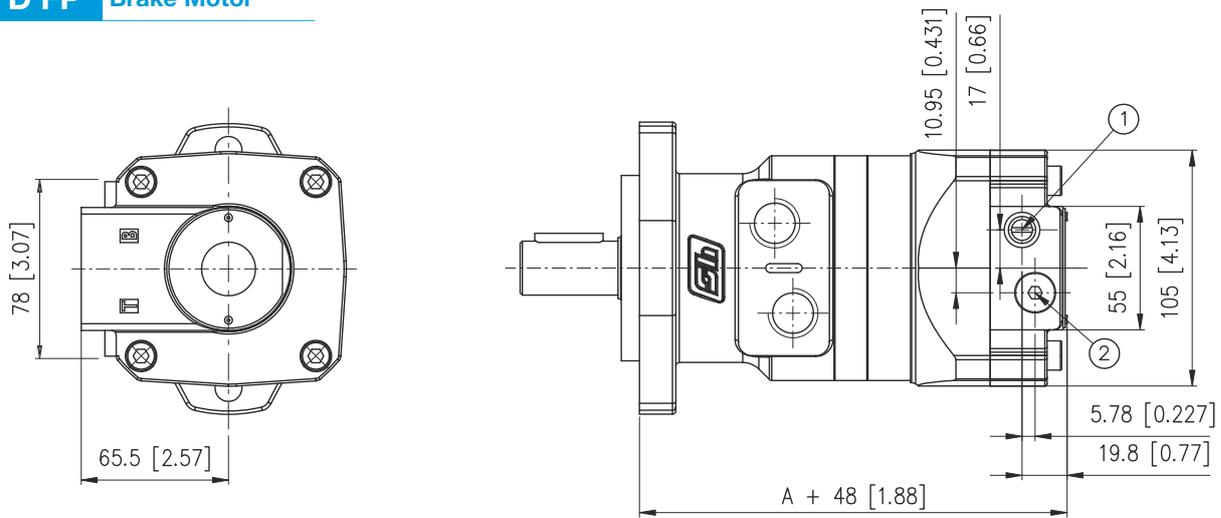
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ARS D FP Brake Motor

- ① 1/4 G (BSPP) brake releasing port; thread depth 13 mm [0.511 in]
 ② 1/4 G (BSPP) drain port thread depth 13 mm [0.511 in]

Brake available on following engines: ARS - ARSW
 "A" Dimension is related to motor length without FP brake

Brake Feature

The ARF and FP motors have a multi-plate disc brake built in, which is hydraulically released. This mechanical type brake has springs that push together the plates, which are mounted side by side, so that a static braking action is obtained. Whenever an hydraulic pressure acts on the piston, the brake is released. The so called "negative brake" is suitable for duties like parking or safety brakes and/or whenever a static braking action is required. A dynamic braking action must be obtained using the hydraulic circuit. If a motor is to be used for dynamic braking (which is unadvisable) please contact Dana Brevini Engineering Service first. High rotation speed and/or vertical position use of the motor might cause discs to overheat, particularly in FP brakes, and consequential malfunctioning. In this case, please contact Dana Brevini Engineering Service.

Brake features:	ARF (*)
Mimimum releare pressure	22 bar [319 psi]
Complete brake release press.	27 bar [391.5 psi]
Max. pressure	200 bar [2900 psi]
Max static torque	350 Nm [257.9 lbf-ft]

Brake features:	FP
Mimimum releare pressure	22 bar [319 psi]
Complete brake release press.	25 bar [362.5 psi]
Max. pressure	160 bar [2320 psi]
Max static torque	370 Nm [272.6 lbf-ft]
Max motor speed	350 rpm

(*) : The ARF motor has a separate brake chamber which must be filled with 80 cm³ of hydraulic oil.

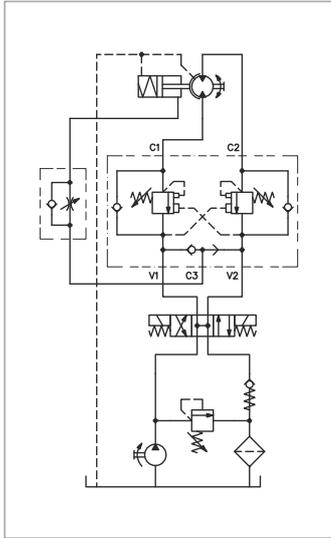
- The FP hydraulic motors must always have the drain port (on casing) directly connected with tank. This improves oil cooling, which is important to avoid brake overheating.
- It is advisable to use heat and wear resistant hydraulic oils in ARF type motors: viscosity grade ISO VG 32; viscosity index 95
- If open circuit layout is needed, it is advisable to use a flow control valve on brake piston ports, in order to avoid dynamic braking.

Common application layouts on following page.

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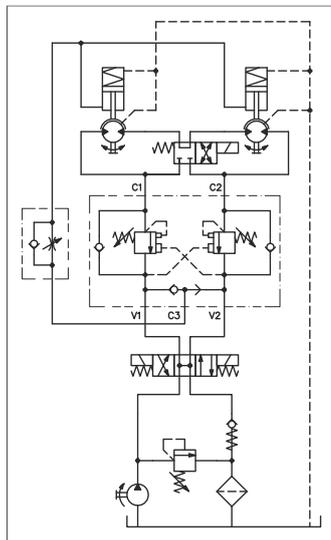
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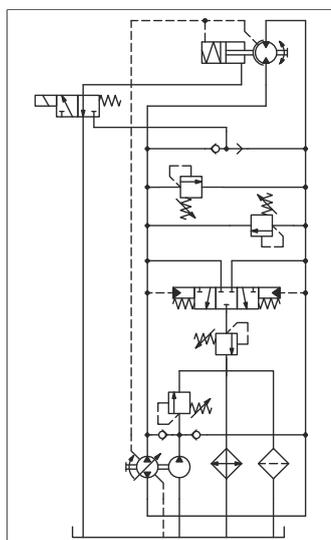
OPEN LOOP SYSTEM , ONE BRAKE-MOTOR, BI-DIRECTIONAL TURNING AND AUTOMATIC BRAKE OPERATION.

This configuration is typically that of a slew drive (cranes, excavators, aerial platforms, derricks, etc.).
 When the pump delivers oil to the motor the consequent generation of pressure will operate the shuttle valve and activate the brake line, thus disengaging the brake itself.
 When the oil delivery is shut off to stop the machine, a double overcentre valve will slow down the rotating mass to an almost complete stop when the static brake will engage.



OPEN LOOP SYSTEM , TWO BRAKEMOTORS, BI-DIRECTIONAL TURNING AND AUTOMATIC BRAKES OPERATION.

This is a typical layout of the travelling system of a mobile machine (aerial platforms, etc.). Fluid under pressure disengages the brakes and starts the two motors; a commutation device will connect the two motors either in series or parallel mode in order to have either speed or torque as main performance.
 The double overcentre valve will steadily slow down the machine and bring it to an almost complete stop when the brakes will engage.



CLOSED LOOP SYSTEM, ONE BRAKEMOTOR, BI-DIRECTIONAL TURNING, AUTOMATIC BRAKE OPERATION AND VARIABLE PUMP.

A very typical system for sweepers.
 The pump delivers a variable flow of oil to the motor hence the machine can travel at variable speed.
 The brake is disengaged by the deliver of flow from the shuttle valve via the electrovalve (top, right) that will also release the fluid under pressure from inside the brake piston chamber when the motor stops and the brake engages.

1

2

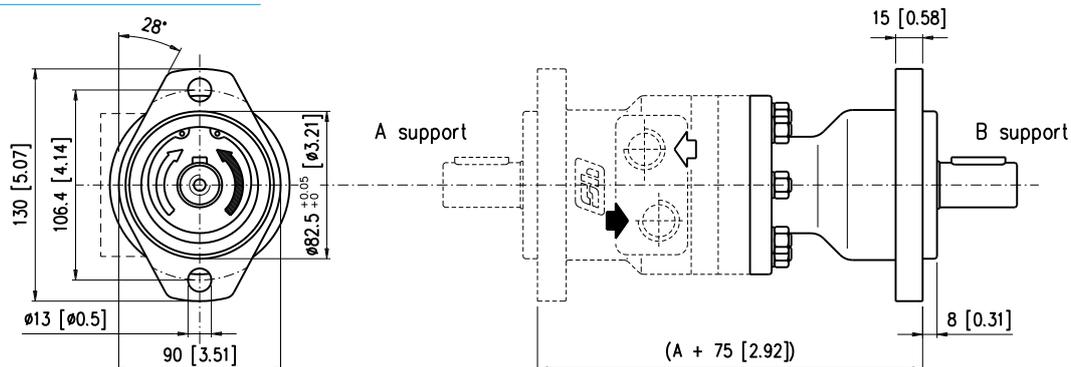
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.../N..

Dual shaft oval flange



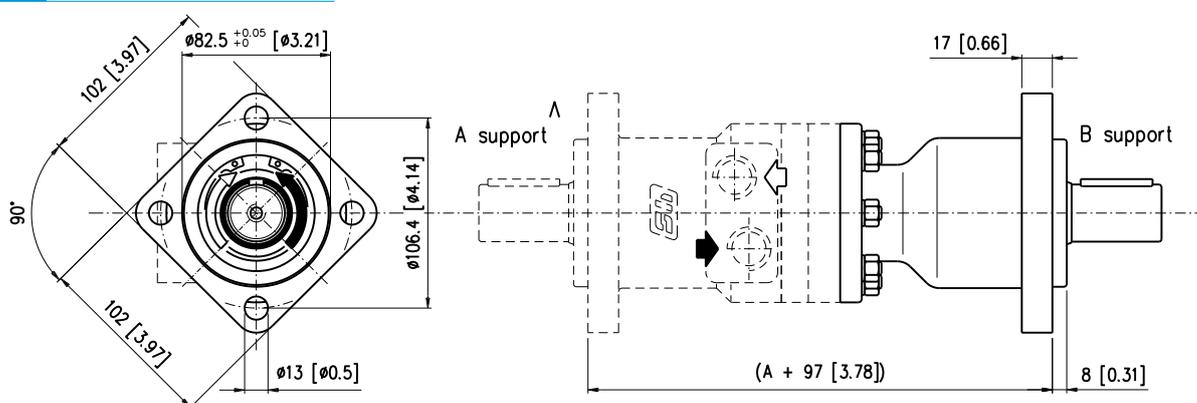
“A” dimension is related to motor length without double-shaft .../N..

Available on following motors: ARS, ARF

Available shafts for B support: C25, SD25, S25

.../D..

Dual shaft square flange



“A” dimension is related to motor length without double-shaft .../D..

Available on following motors: ARS, ARF

Available shafts for B support: C25, SD25, C32, S32, CN32, C31.75

Max. trasmission torque from double-shaft motors

Motor	Displacement cm ³ /rev [in ³ /rev]	Max. torque		Max. torque A shaft Nm [lbf ft]	Max. torque B shaft Nm [lbf-ft]	Supp.../N weight kg [lbs]	Supp.../D weight kg [lbs]
		Cont	Int				
AR 50	51.6 [3.14]	Cont	100 [74]	85 [63] 95 [70]	45 [33] 50 [37]	3.5 [7.71]	4.5 [9.92]
		Int	115 [85]				
AR 80	80.4 [4.9]	Cont	170 [125]	115 [85] 130 [96]	115 [85] 130 [96]	3.5 [7.71]	4.5 [9.92]
		Int	200 [147]				
AR 100	100 [6.1]	Cont	200 [147]	125 [92] 140 [103]	125 [92] 140 [103]	3.5 [7.71]	4.5 [9.92]
		Int	230 [170]				
AR 130	125.7 [7.66]	Cont	240 [177]	200 [147] 230 [170]	200 [147] 230 [170]	3.5 [7.71]	4.5 [9.92]
		Int	300 [221]				
AR 160	160 [9.76]	Cont	290 [214]	200 [147] 230 [170]	200 [147] 230 [170]	3.5 [7.71]	4.5 [9.92]
		Int	355 [262]				
AR 200	200 [12.2]	Cont	295 [217]	200 [147] 230 [170]	200 [147] 230 [170]	3.5 [7.71]	4.5 [9.92]
		Int	395 [291]				
AR 250	250 [15.2]	Cont	335 [247]	335 [247] 455 [335]	200 [147] 230 [170]	3.5 [7.71]	4.5 [9.92]
		Int	455 [335]				
AR 315	314.5 [19.1]	Cont	310 [228]	310 [228] 425 [313]	310 [228] 425 [313]	3.5 [7.71]	4.5 [9.92]
		Int	425 [313]				
AR 400	393 [23.9]	Cont	315 [232]	315 [232] 435 [321]	315 [232] 435 [321]	3.5 [7.71]	4.5 [9.92]
		Int	435 [321]				

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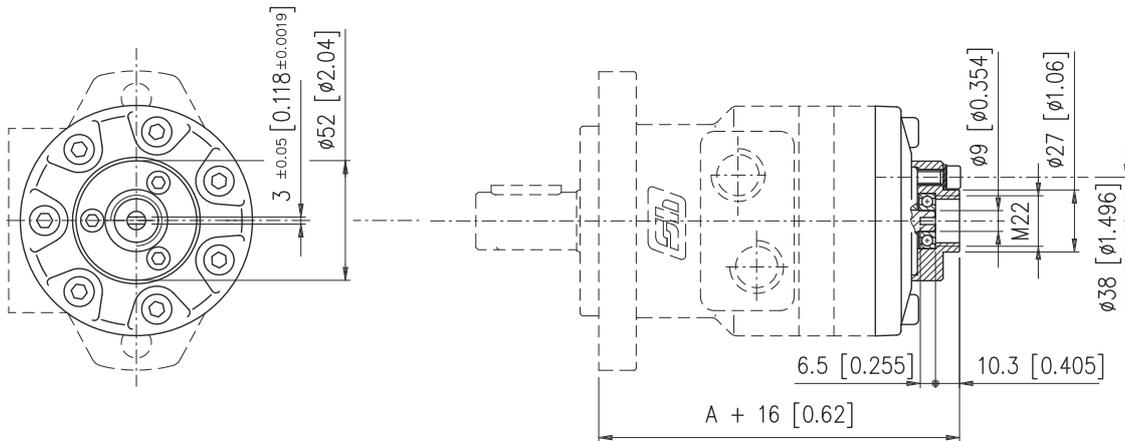
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TAC* Rev-counter connection

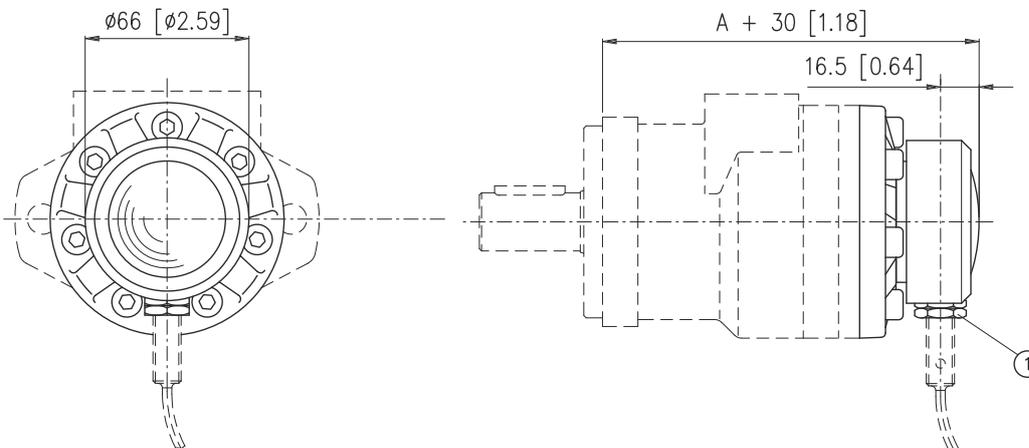
“A” dimension is related to motor length without tacho.

NOTE:

Axial or radial load on tacho shaft must be avoided. Max torque on tacho shaft 1 Nm [0.73 lbf-ft].

WARNING:

The tacho shaft revolution speed is 6 times more than the motor one and opposite direction of rotation.

TAC-E* Electronic tachometer

① Sensor thread M8x1

“A” dimension is related to motor length without electronic tacho.

Number of pulses per revolution = 90

WARNING:

The electronic sensor is not supplied: if required, please state it clearly on order form.

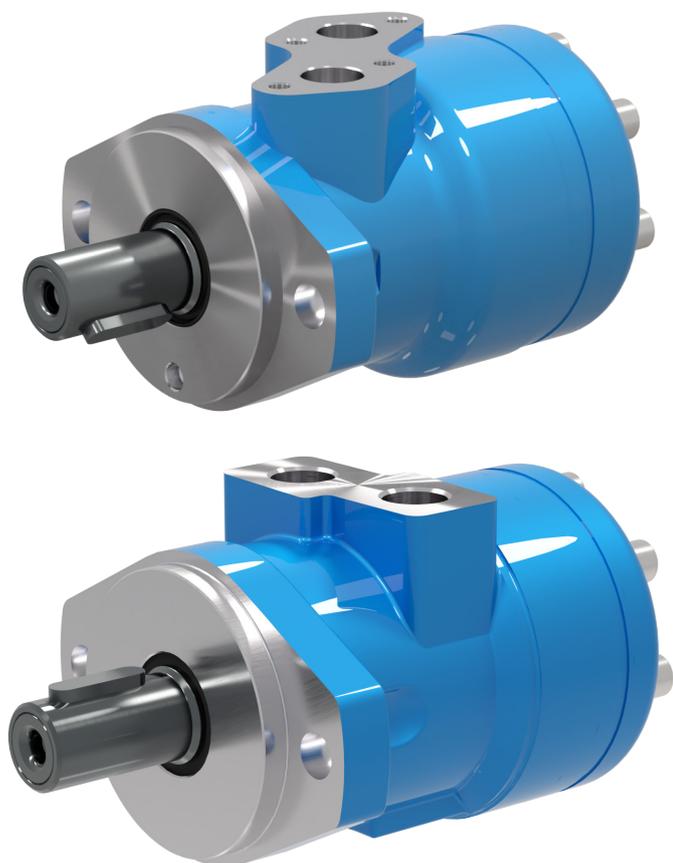
Max case pressure admissible on the shaft seal with closed drain port: 20 bar [290 psi].

* Tachometer is not available on ARSW motor



BREVINI®

Motion Systems



BR Orbital Motors

Second series of roller motors
with increased performance

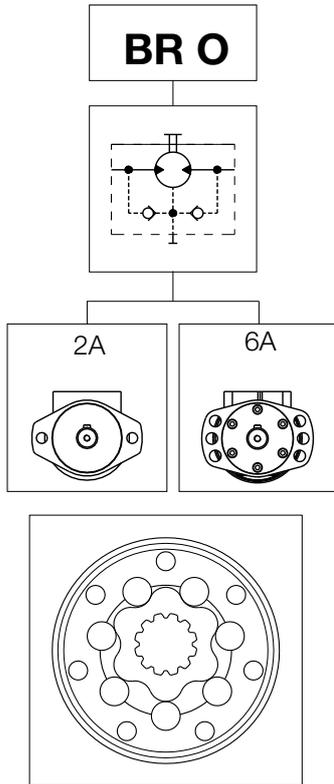


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Motor Technical Specifications	E3
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Max. Permissible Shaft Seal Pressure	E9
Pressure Loss	E10
Other Informations - Shaft load	E11
Ordering Code	E12
Dimensions and Weight	E15
Shaft End	E18
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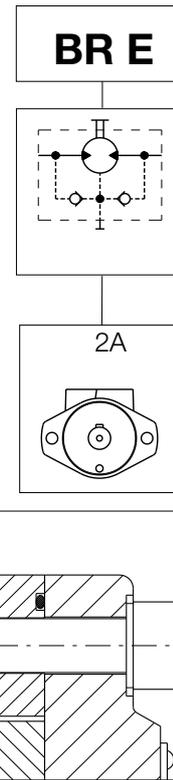
Click **i** button to return to main index

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

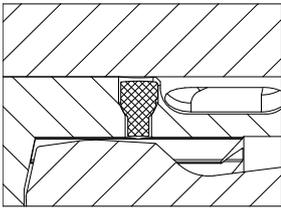




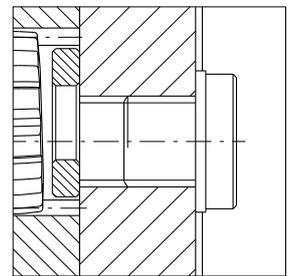
High-performance roller for improved efficiency and life.



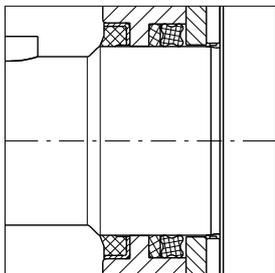
High resistance stainless steel screws capable of withstanding the stress induced by high pressure.



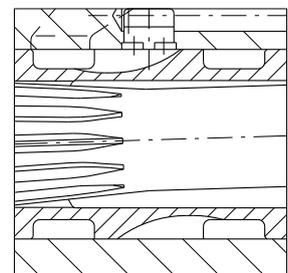
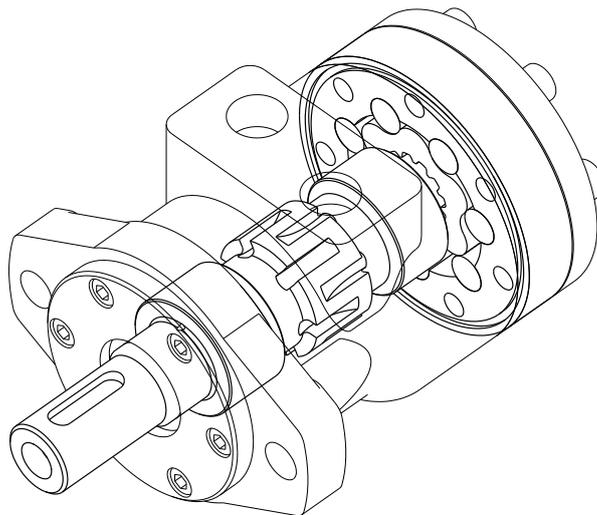
Built in check valves: to relieve case pressure to the low pressure side of the motor.



Case drain at rear (shown with plug).



Dust seal to protect the high pressure shaft seal from dust and debris.



Spool valve integral to the output shaft of new design features optimizing clearance geometry and so minimizing the oil slippage.

BR MOTOR TECHNICAL DATA

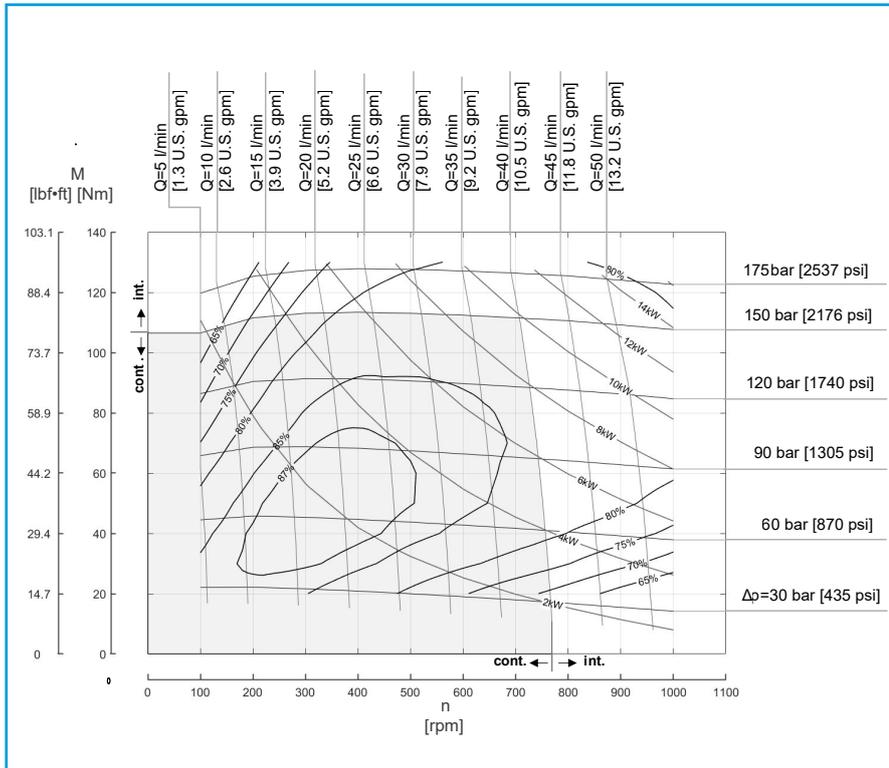
Motor	Displacement	Max. input pressure		Max. differential pressure		Max. torque ¹⁾		Max. flow		Max. speed		Max. power			
	cm ³ /rev [in ³ /rev]	Cont	Int	Cont	Int	Nm [lbf·ft]	Cont	Int	l/min [U.S. gpm]	Cont	Int	kW [hp]	Cont	Int	
BR050	51.6 [3.14]	Cont	200 [2900] Int 225 [3262]	Cont	150 [2175] Int 175 [2540]	Cont	100 [890] Int 120 [1060]	Cont	40 [11] Int 50 [13]	Cont	775 Int 970	Cont	7.0 [9.4] Int 8.8 [11.7]	Cont	Int
BR065	64.9 [3.95]	Cont	200 [2900] Int 225 [3262]	Cont	180 [2610] Int 200 [2900]	Cont	160 [1420] Int 175 [1550]	Cont	50 [13] Int 60 [16]	Cont	770 Int 925	Cont	11 [14.7] Int 11.8 [15.8]	Cont	Int
BR080	80.4 [4.9]	Cont	200 [2900] Int 225 [3262]	Cont	200 [2900] Int 225 [3262]	Cont	215 [1900] Int 235 [2080]	Cont	60 [16] Int 75 [20]	Cont	750 Int 940	Cont	14 [18.8] Int 15.8 [21.1]	Cont	Int
BR100	99.9 [6.1]	Cont	200 [2900] Int 225 [3262]	Cont	200 [2900] Int 225 [3262]	Cont	275 [2435] Int 300 [2655]	Cont	60 [16] Int 75 [20]	Cont	600 Int 750	Cont	14 [18.8] Int 17.5 [23.5]	Cont	Int
BR130	125.1 [7.66]	Cont	200 [2900] Int 225 [3262]	Cont	200 [2900] Int 225 [3262]	Cont	330 [2920] Int 360 [3185]	Cont	60 [16] Int 75 [20]	Cont	475 Int 600	Cont	14 [18.8] Int 17.5 [23.5]	Cont	Int
BR160	159.6 [9.76]	Cont	200 [2900] Int 225 [3262]	Cont	180 [2610] Int 215 [3118]	Cont	380 [3365] Int 435 [3580]	Cont	60 [16] Int 75 [20]	Cont	385 Int 480	Cont	12.6 [16.9] Int 15.8 [21.1]	Cont	Int
BR200	199.7 [12.2]	Cont	200 [2900] Int 225 [3262]	Cont	175 [2465] Int 200 [2900]	Cont	450 [3985] Int 540 [4780]	Cont	60 [16] Int 75 [20]	Cont	300 Int 380	Cont	13.4 [17.9] Int 14.4 [19.2]	Cont	Int
BR250	249.7 [15.2]	Cont	200 [2900] Int 225 [3262]	Cont	175 [2540] Int 200 [2900]	Cont	578 [5115] Int 630 [5575]	Cont	60 [16] Int 75 [20]	Cont	240 Int 300	Cont	13.8 [18.4] Int 14.2 [19]	Cont	Int
BR315	314.5 [19.1]	Cont	200 [2900] Int 225 [3262]	Cont	135 [1958] Int 175 [2540]	Cont	575 [5090] Int 736 [6515]	Cont	60 [16] Int 75 [20]	Cont	190 Int 240	Cont	9.6 [12.8] Int 11.5 [15.4]	Cont	Int
BR400	392.5 [23.9]	Cont	200 [2900] Int 225 [3262]	Cont	115 [1668] Int 150 [2175]	Cont	612 [5415] Int 750 [6640]	Cont	60 [16] Int 75 [20]	Cont	155 Int 195	Cont	8.6 [11.5] Int 10.8 [14.4]	Cont	Int

¹⁾ Intermittent operation: the permissible values may occur for max. 10% of every minute.

Maximum torque values for the different output shafts can be found in page

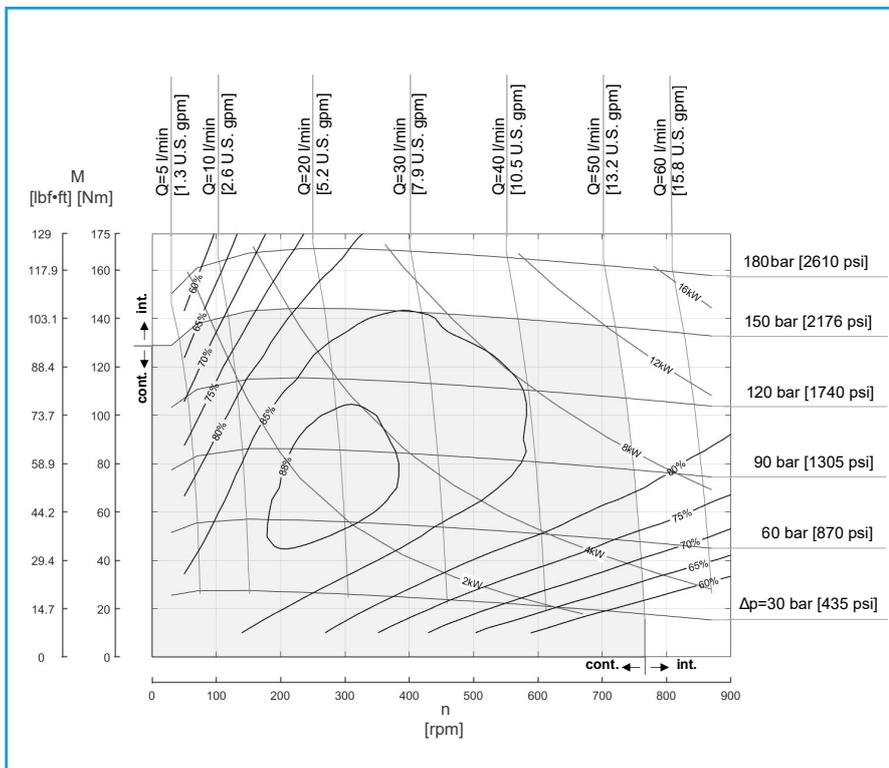


BR50



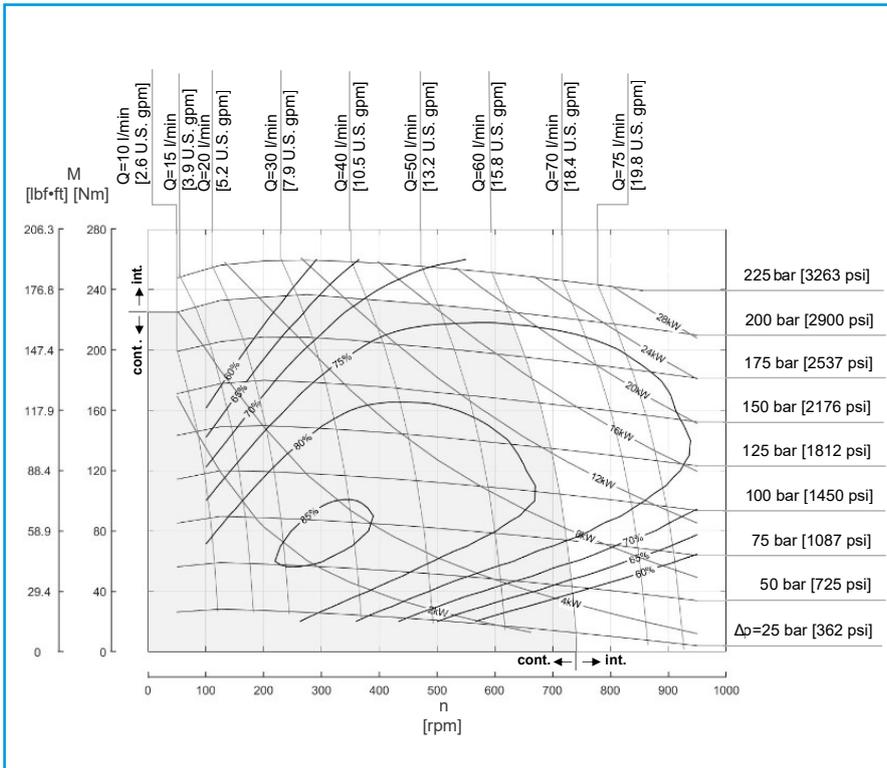
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR65



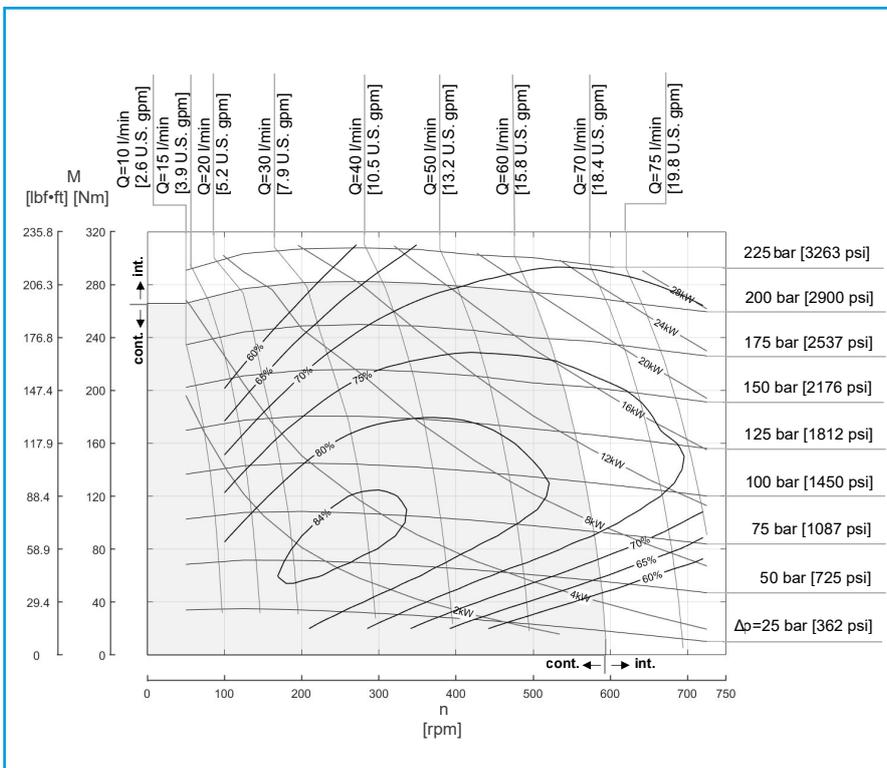
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR80



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR100



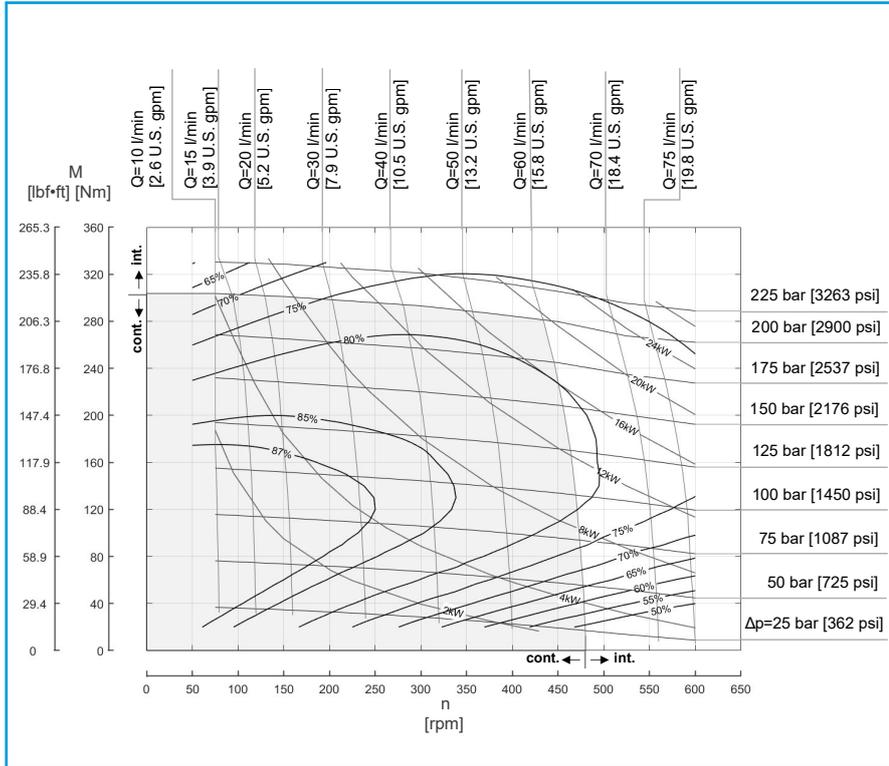
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

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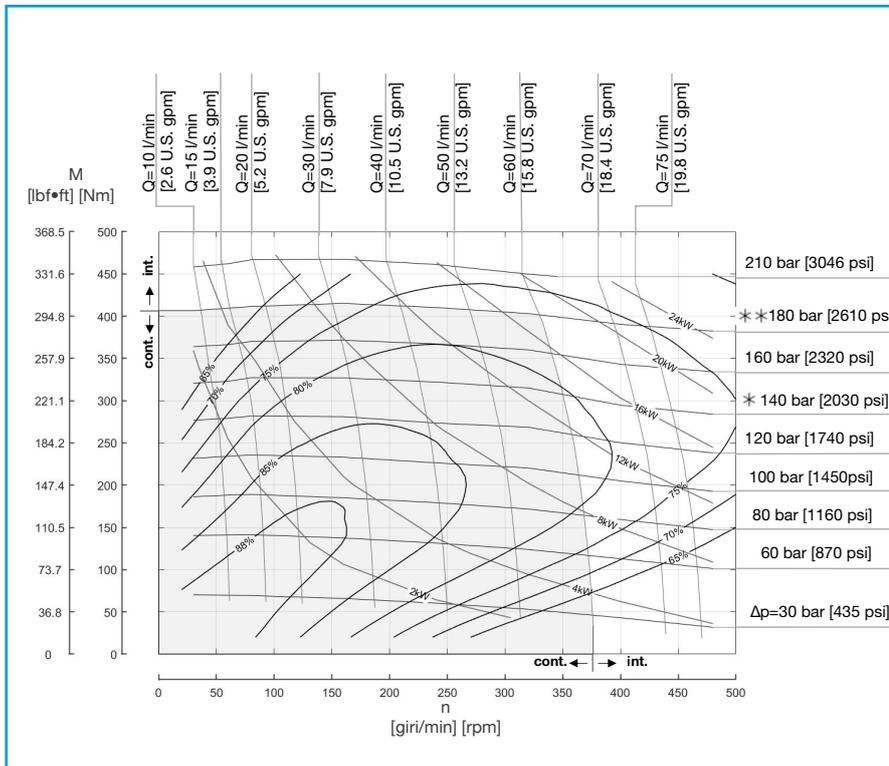


BR130



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR160

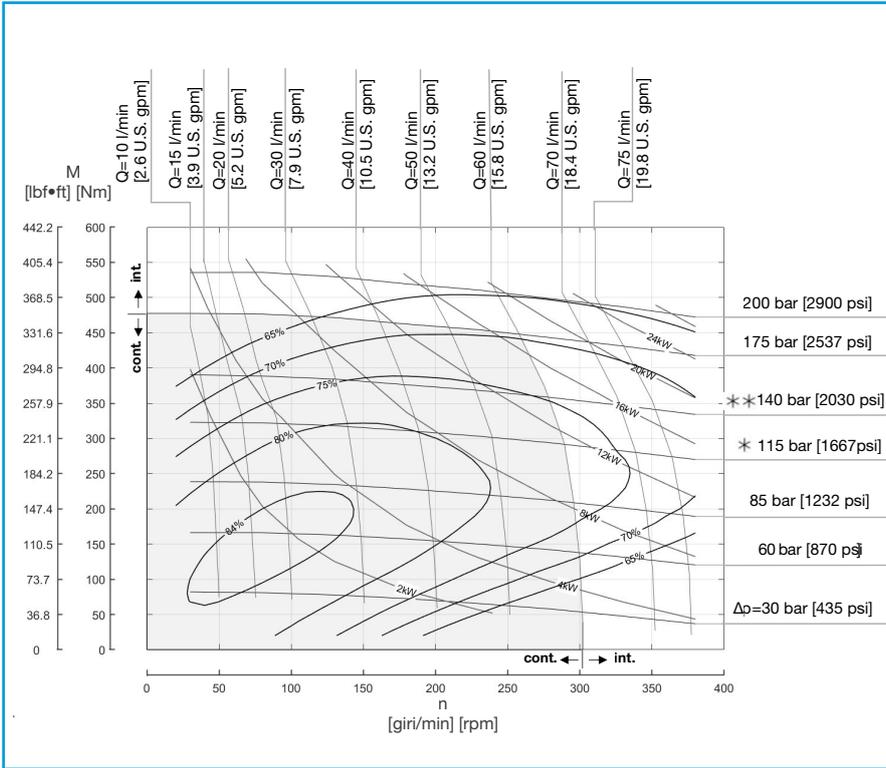


* Constant maximum pressure for Ø25 shaft model.

** Intermittent maximum pressure for Ø25 shaft model.

Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR200

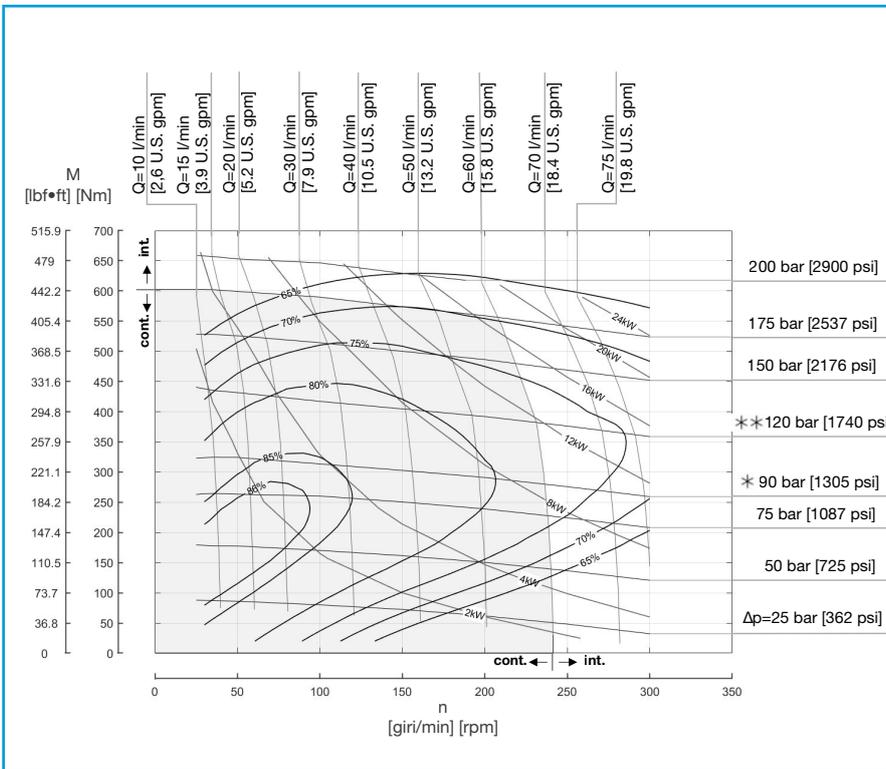


* Constant maximum pressure for Ø25 shaft model.

** Intermittent maximum pressure for Ø25 shaft model.

Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR250



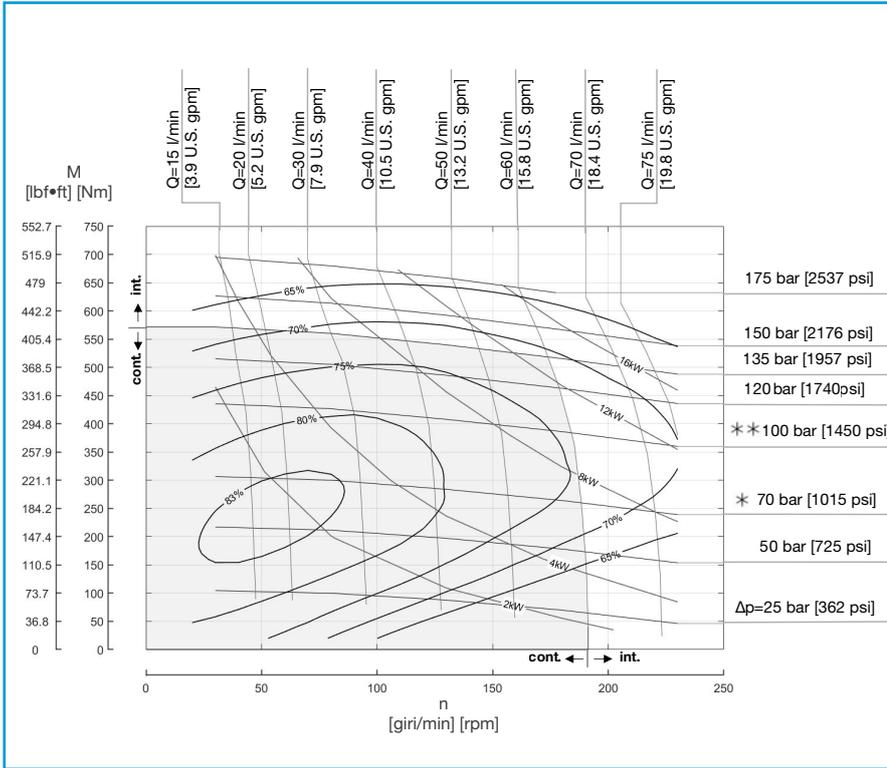
* Constant maximum pressure for Ø25 shaft model.

** Intermittent maximum pressure for Ø25 shaft model.

Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.



BR315

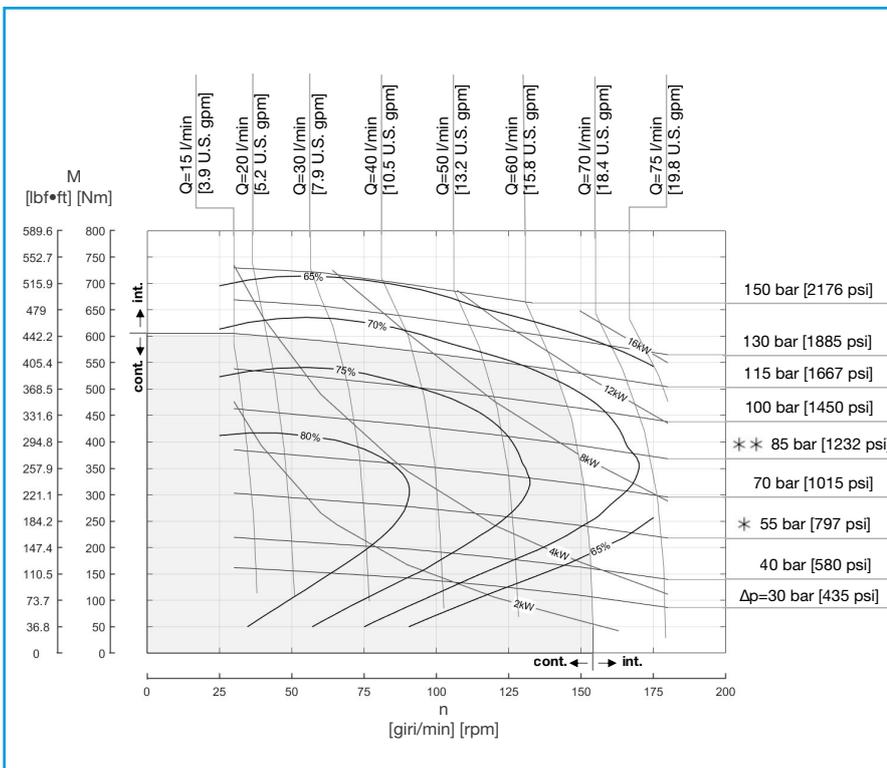


* Constant maximum pressure for Ø25 shaft model.

** Intermittent maximum pressure for Ø25 shaft model.

Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

BR400



* Constant maximum pressure for Ø25 shaft model.

** Intermittent maximum pressure for Ø25 shaft model.

Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Motor	Displacement cm ³ /rev [in ³ /rev]	Max back pressure with drain line bar[psi]		Max starting pressure in unloaded conditions bar[psi]	Min starting torque Nm[lbf-ft]		Max flow l/min [U.S. gpm]		Min speed [rpm]			
		Cont	Int ¹⁾		Cont	Int ¹⁾	Cont	Int ¹⁾				
BR 050	51.6 [3.14]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	85 [750] 100 [890]	Cont	Int ¹⁾	40 [11] 50 [13]	10
BR 065	64.9 [3.95]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	135 [1195] 150 [1325]	Cont	Int ¹⁾	50 [13] 60 [16]	10
BR 080	80.4 [4.9]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	190 [1680] 215 [1900]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 100	99.9 [6.1]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	230 [2035] 255 [2255]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 130	125.1 [7.66]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	295 [2610] 335 [2965]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 160	159.6 [9.76]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	310 [2745] 360 [3185]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 200	199.7 [12.2]	Cont	Int ¹⁾	200 [2900] 225 [3262]	10 [145]	Cont	Int ¹⁾	390 [3450] 450 [3985]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 250	249.7 [15.2]	Cont	Int ¹⁾	200 [2900] 225 [3262]	7 [100]	Cont	Int ¹⁾	490 [4335] 560 [4955]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 315	314.5 [19.1]	Cont	Int ¹⁾	200 [2900] 225 [3262]	7 [100]	Cont	Int ¹⁾	470 [4160] 610 [5400]	Cont	Int ¹⁾	60 [16] 75 [20]	10
BR 400	392.5 [23.9]	Cont	Int ¹⁾	200 [2900] 225 [3262]	5 [75]	Cont	Int ¹⁾	510 [4515] 670 [5930]	Cont	Int ¹⁾	60 [16] 75 [20]	10

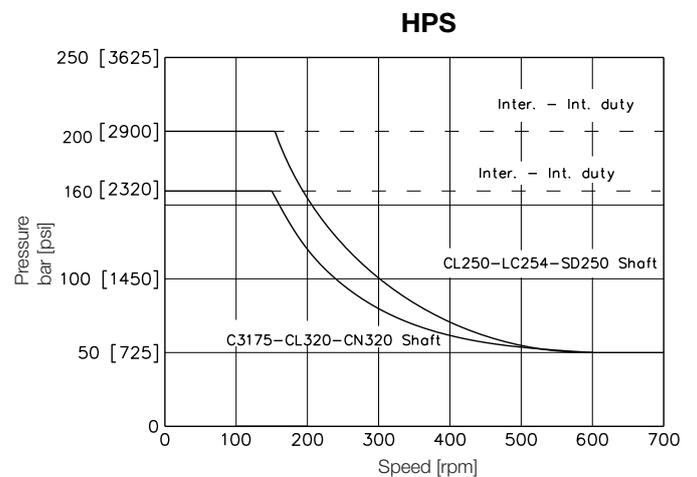
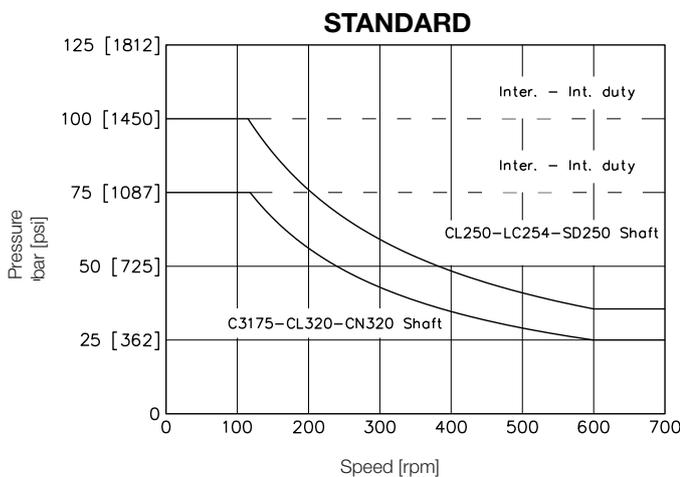
¹⁾ Intermittent operation: the permissible values may occur for max. 10% of every minute.
Oil Viscosity 37 cSt.
For applications at lower rpm or at high radial loads pls. consult DPC Hydraulic.

Maximum torque values for the different output shafts can be found in page [E18](#)

Max. Permissible Shaft Seal Pressure (ph)

Max. return pressure without drain line or max. pressure in the drain line. Motor are supplied in standard seal version (Standard chart) or in HPS seal version (HPS chart). For pressure and speeds not showed in the curve below, please contact DPC Hydraulic.

Note: Tachometer or Brake versions is not available with HPS seals.



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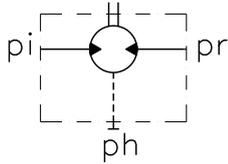


Max. Permissible Shaft Seal Pressure (ph)

ph = housing pressure
 pi = inlet pressure
 pr = outlet pressure

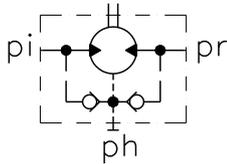
To calculate the maximum permissible shaft seal pressure (ph), consider the three different conditions.

1. Version without internal drain valve and closed drain



$$ph = \frac{pi + pr}{2} \text{ [bar]}$$

2. Version with internal drain valve and closed drain

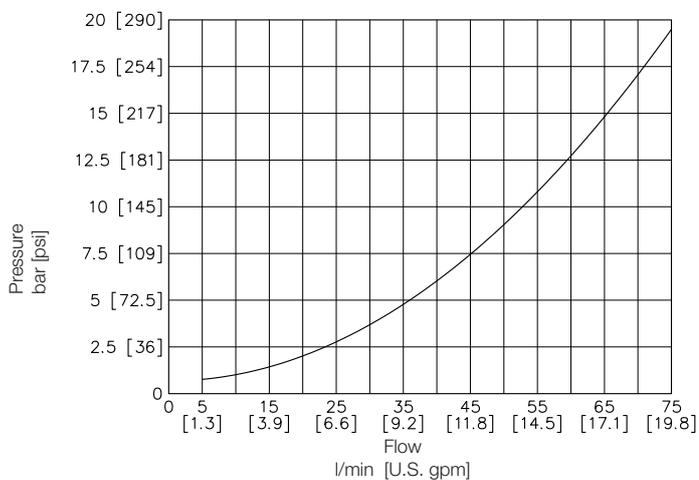


$$ph = \min (pi, pr) \text{ [bar]}$$

3. Version with opened drain

$$ph = p_{\text{drain}} \text{ [bar]}$$

Pressure Loss



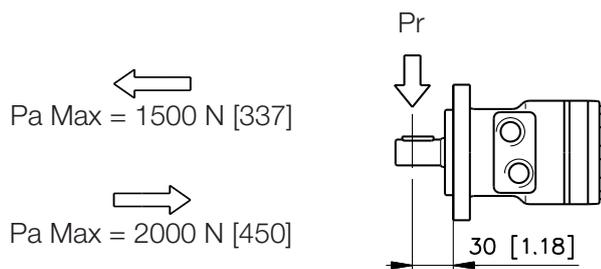
Curve according to tests carried out with a relevant number of motors and using hydraulic oil with a cinematic viscosity of 37 cSt at 45° C temperature.

Shaft Load

The permissible radial shaft load depends on

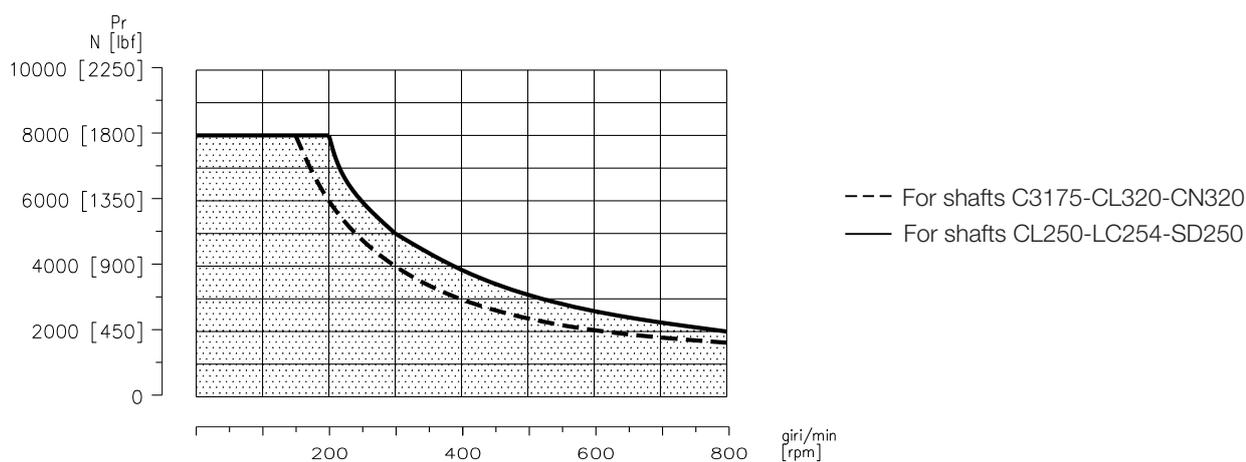
- Speed (n)
- Distance (L) from the point of load to the mounting flange
- Mounting flange version
- Shaft version

Radial load capacity (Pr) curve according to speed (n) and distance (L) from flange, valid for the 2 -bolt flange type "2A" and 6-bolt flange type "6A".



Shafts	2A Flange	6A Flange
CL250 LC254 SD250	$Pr = \frac{800}{n} \cdot \frac{250000}{95 + L} [N]$	$Pr = \frac{800}{n} \cdot \frac{250000}{95 + L} [N]$
C3175 CL320 CN320		$Pr = \frac{800}{n} \cdot \frac{187500}{95 + L} [N]$

This formula being valid for $n \geq 200$ rpm
For $n < 200$ rpm $P_{max} = 8000$ N [1800 lbf]



The following alphanumeric digits system has been developed to identify all of the configuration options for the BR motors. Use the model code below to specify the desired features. All alphanumeric digits system of the code must be present when ordering. We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12
Series	Displacement	Version	Mount flange	Shaft end	Main port	Seal	Valve	Valve feature	Option	Version feature	Painting
BR	130	O	2A	CL250	M08	N	M081	028	xx	QDR	xx

1	Series	
BR	Orbital motor	

2	Displacement	
050	50 cm ³ /giro [3.05 in ³ /rev]	
065	65 cm ³ /giro [3.965 in ³ /rev]	
080	80 cm ³ /giro [4.88 in ³ /rev]	
100	100 cm ³ /giro [6.1 in ³ /rev]	
130	130 cm ³ /giro [7.93 in ³ /rev]	
160	160 cm ³ /giro [9.76 in ³ /rev]	
200	200 cm ³ /giro [12.2 in ³ /rev]	
250	250 cm ³ /giro [15.25 in ³ /rev]	
315	315 cm ³ /giro [19.21 in ³ /rev]	
400	400 cm ³ /giro [24.4 in ³ /rev]	

3	Version	
O	O Version	
E	E Version	

4	Mounting Flange	Version	
		O	E
2A	Oval 2 bolts	●	●
6A	Oval 6 bolts	●	-

● Available
- Not Available

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5

Shaft end		Version		
		O Flange		E Flange
		2A	6A	2A
CL250	Ø25 mm [0.97 in] Parallel keyed (standard BR)	●	●	●
LC254	Ø25.4 mm [1 in] Parallel keyed (standard BS)	●	●	●
C3175	Ø31.75 mm [1.23 in] Parallel keyed	-	●	-
CL320	Ø32 mm [1.24 in] Parallel keyed	-	●	-
SD250	Splined Shaft (SAE 6B 1" 6T spline)	●	●	●

6

Main Port		Version	
		O	E
M08	1/2 G BSPP (40x8) Main Ports	●	-
R08	1/2 G BSPP (36x36) Main Ports	-	●

7

Seal	
N	NBR (standard)
V	FKM (Not available in HPS version)

8

Valve		Main port	
		M08	R08
xxxx	Not required (standard)	●	●
M081	VAF 08 - D pressure relief valve	●	-
M082	VAF 08 - D/AF pressure relief valve	●	-
M083	VAAF 31 anticavitation and Anti-Shock Valve	●	-
M084	AF shuttle-valve	●	-
M085	VCD 08 - S/AF overcentre Valve	●	-
M086	VCR1 08 - D/AF double-acting overcentre valve with shuttle valve	●	-
M087	VCR1 08 D/AF LDP double-acting overcentre valve with shuttle valve	●	-
R081⁽¹⁾	VAF E8 - D pressure relief valve	-	●
R082⁽¹⁾	VCD E8 - S/AF overcentre Valve	-	●
R083⁽¹⁾	1/2 G BSP VCR1 E8 - D/AF double-acting overcentre valve with shuttle valve P (36x36) Main Ports	-	●
R084⁽¹⁾	VCR1 E8 D/AF LDP double-acting overcentre valve with shuttle valve (36x36) Main Ports	-	●



¹⁾ Minimum quantity for order 20 pieces

- Available
- Not Available

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9

Valve feature		Valve											
		xxxx	M081	M082	M083	M084	M085	M086	M087	R081	R082	R083	R084
000	Feature not necessary (standard)	●	-	-	-	●	-	-	-	-	-	-	-
028	Not Set 30÷70 bar [435 to 1015 psi]	-	●	●	-	-	-	-	-	-	-	-	-
017	Not Set 70÷200 bar [1015 to 2900 psi]	-	●	●	-	-	-	-	-	-	-	-	-
031	Not Set 50÷130 bar [725 to 1885 psi]	-	-	-	●	-	-	-	-	●	-	-	-
021	Not Set 100÷250 bar [1450 to 3625 psi]	-	-	-	●	-	-	-	-	-	-	-	-
020	Not Set 100÷200 bar [1450 to 2900 psi]	-	-	-	-	-	-	-	-	●	-	-	-
425	Pilot Ratio 4.25:1	-	-	-	-	-	-	●	●	-	-	●	●
800	Pilot Ratio 8:1	-	-	-	-	-	-	●	●	-	-	-	-
70D	Pilot Ratio 7:1 - Direction of rotation CW	-	-	-	-	-	●	-	-	-	-	-	-
35D	Pilot Ratio 3.5:1 - Direction of rotation CW	-	-	-	-	-	●	-	-	-	●	-	-
70S	Pilot Ratio 7:1 - Direction of rotation CCW	-	-	-	-	-	●	-	-	-	-	-	-
35S	Pilot Ratio 3.5:1 - Direction of rotation CCW	-	-	-	-	-	●	-	-	-	●	-	-

10

Option

xx	None
-----------	------

11

Version Feature

QDR	QUAD-RING version with Rear drain 1/4" G (BSPP) (standard BR)
HPS	High Pressure Seal (without Rear Drain)
TC1	TAC/U tachometer (with sensor arrangement)
TC4	TAC/M tachometer
TC5	TAC/M-E tachometer (with sensor arrangement)
FP0	Brake
DPM	High Pressure Seal + Rear Drain - 1/4" G (BSPP)

12

Painting

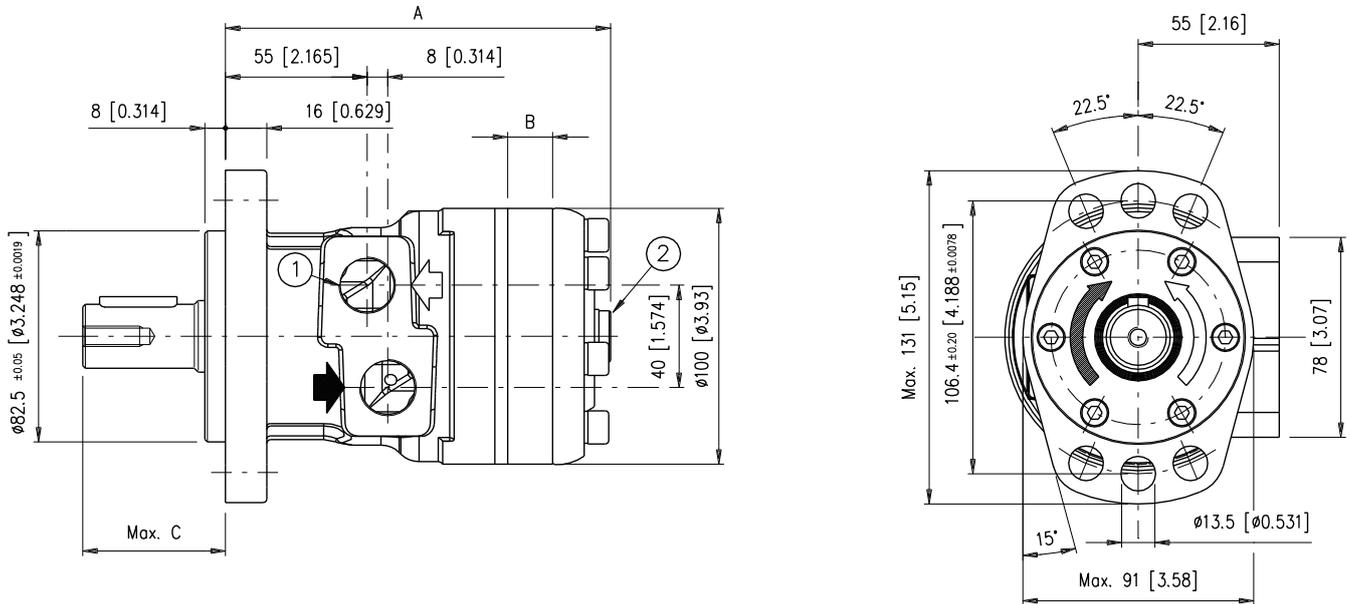
xx	Not Painted (standard)
01	Black Painted RAL 9005
02	Blue Painted RAL 5015
23	Grey Painted RAL 7036

Other version available on request

- Available
- Not Available

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BR O 6A M08



- ① No. 2 1/2 G (BSPP) main ports thread depth 18 mm [0.70 in]
 ② 1/4 G (BSPP) drain motor thread depth 15 mm [0.59 in]

For shafts dimensions see page



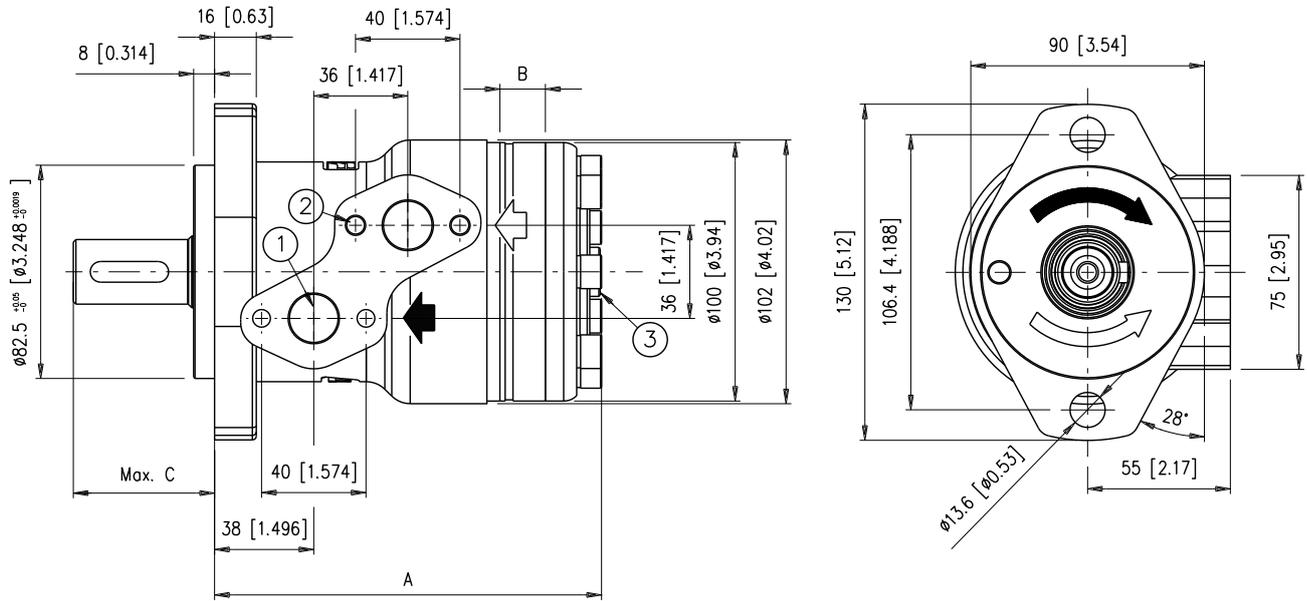
SHAFT	CL250	SD250	CL320	C3175	
C	mm [in]	55.3 [2.17]	55.3 [2.17]	68.3 [2.68]	59.1 [2.32]

	BR O 050	BR O 065	BR O 080	BR O 100	BR O 130	BR O 160	BR O 200	BR O 250	BR O 315	BR O 400	
A	mm [in]	139.5 [5.49]	141.8 [5.58]	144.5 [5.68]	147.7 [5.81]	152.1 [5.98]	158.2 [6.22]	165.3 [6.50]	173.9 [6.84]	185.1 [7.28]	198.4 [7.81]
B	mm [in]	9 [0.354]	11.3 [0.444]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight	kg [lb]	7.3 [16] ¹⁾ 7.4 [16.3]	7.5 [16.5] ¹⁾ 7.6 [16.7]	7.6 [16.7] ¹⁾ 7.7 [16.9]	7.8 [17.1] ¹⁾ 9 [19.8]	8.1 [17.8] ¹⁾ 8.3 [18.2]	8.4 [18.5] ¹⁾ 8.6 [18.9]	8.7 [19.1] ¹⁾ 9 [19.8]	9.2 [20.2] ¹⁾ 9.5 [20.9]	9.9 [21.8] ¹⁾ 10.2 [22.4]	10.2 [22.4] ¹⁾ 10.5 [23.1]

¹⁾ The values are referred to CL250 / LC254 / SD250 shaft

1	2	3	4	5	6	7	8	9	10	11	12
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BR E 2A R08



- ① No. 2 1/2 G (BSPP) main ports thread depth 18 mm [0.70 in]
- ② No. 4 M8 thread depth 15 mm [0.59 in]
- ③ 1/4 G (BSPP) drain motor thread depth 12 mm [0.472 in] (not in HPS version)

For shafts dimensions see page [E18](#)

SHAFT	CL250	SD250
C mm [in]	54 [2.12]	54 [2.12]

	BR E 050	BR E 065	BR E 080	BR E 100	BR E 130	BR E 160	BR E 200	BR E 250	BR E 315	BR E 400
A mm [in]	139.8 [5.50]	144.8 [5.70]	148.2 [5.83]	152.6 [6.01]	158.6 [6.24]	165.6 [6.52]	174.3 [6.86]	185.6 [7.31]	199.2 [7.84]	142.1 [5.59]
B mm [in]	9 [0.354]	11.3 [0.444]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight kg [lb]	7.2 [15.8]	7.4 [16.3]	7.5 [16.5]	7.7 [16.9]	8 [17.6]	8.3 [18.2]	8.6 [18.9]	9.1 [20]	9.8 [21.5]	10.1 [22.2]

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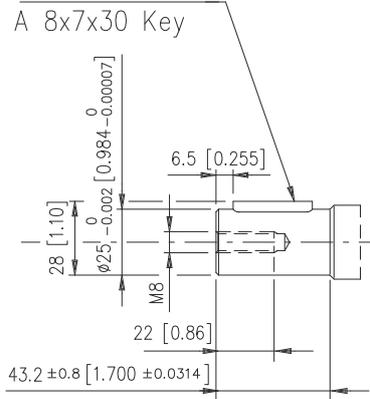
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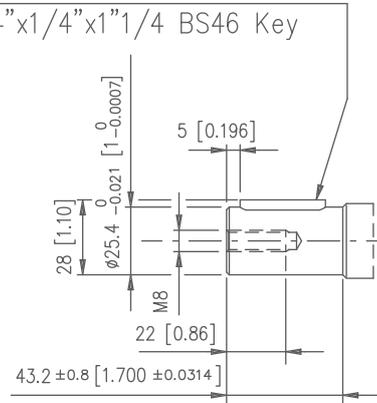
12

CL250 Cylindrical Shaft

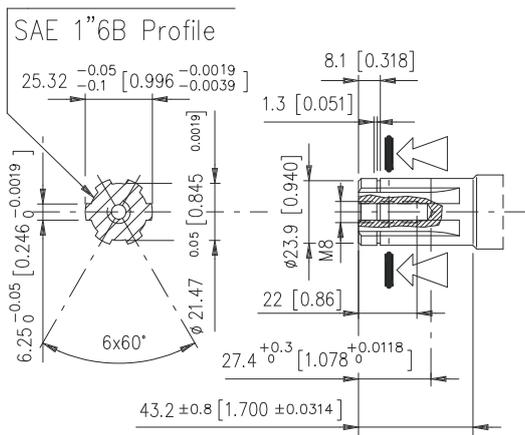
Max Torque Continuous 300 Nm [221.1 lbf-ft]

**LC254** Cylindrical Shaft

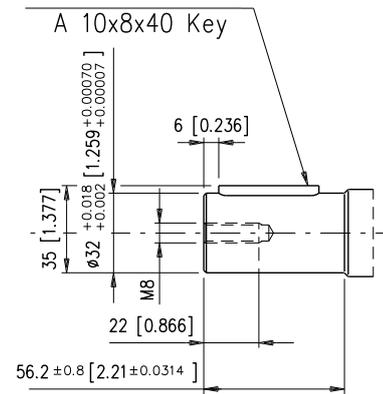
Max Torque Continuous 300 Nm [221.1 lbf-ft]

**SD250** Splined Shaft

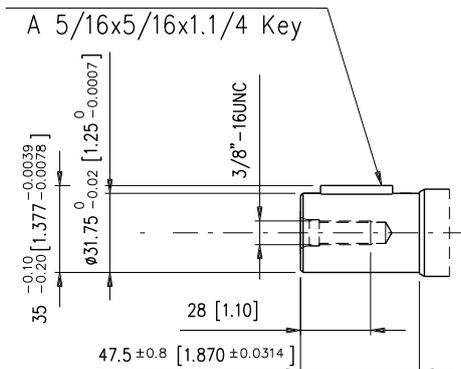
Max Torque Continuous 360 Nm [265.32 lbf-ft]

**CL320** Cylindrical Shaft

Max. Torque Continuous 768 Nm [566 lbf-ft)]

**C3175** Cylindrical Shaft

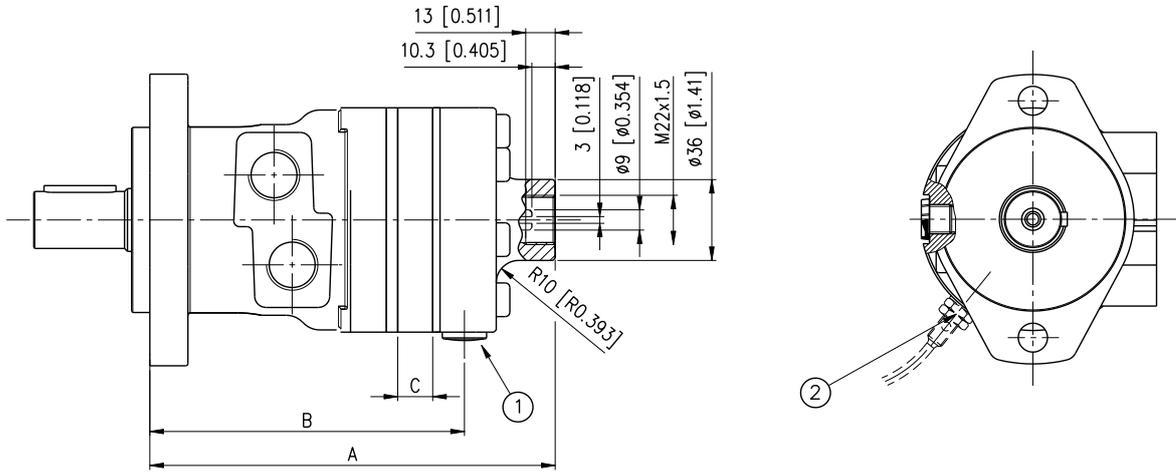
Max. Torque Continuous 768 Nm [566 lbf-ft)]

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1	2	3	4	5	6	7	8	9	10	11	12
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TC1 TAC/U tachometer

- 1) 1/4 G (BSPP) drain motor thread depth 12mm [0.472 in]
- 2) Sensor connection M8x1



WARNING:

Tacho shaft has a 6 times higher revolution speed than the motor shaft and opposite direction of rotation.

NOTE:

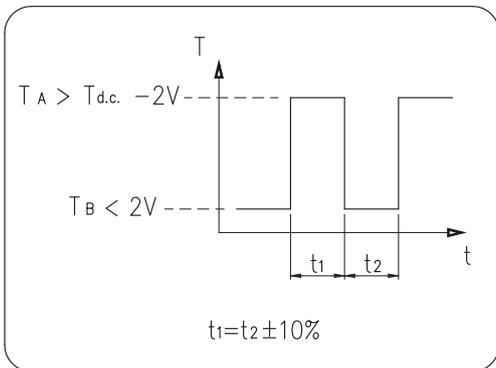
Axial or radial load on tacho shaft must be avoided. Max torque on tacho 1 Nm [0.737 lbf-ft].

The electronic sensor is not supplied: if required, please state it clearly on order form.

Max pressure admissible on the shaft seal with closed drain port 25 bar [362.5 psi].

	BR O 050	BR O 065	BR O 080	BR O 100	BR O 130	BR O 160	BR O 200	BR O 250	BR O 315	BR O 400
A mm [in]	172 [6.77]	174.3 [6.86]	177 [6.96]	180.4 [7.10]	184.8 [7.27]	190.8 [7.51]	197.8 [7.78]	206.5 [8.12]	217.8 [8.57]	231.3 [9.10]
B mm [in]	132 [5.19]	134.3 [5.28]	137 [5.39]	140.4 [5.52]	144.8 [5.70]	150.8 [5.93]	157.8 [6.21]	166.5 [6.55]	177.8 [7.00]	191.3 [7.53]
C mm [in]	9 [0.354]	11.3 [0.444]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight kg [lb]	7.7 [16.9]	7.9 [17.4]	8 [17.6]	8.2 [18]	8.5 [18.7]	8.8 [19.3]	9.1 [20]	9.6 [21.1]	10.3 [22.7]	10.6 [23.3]

Output signal electronic tacho



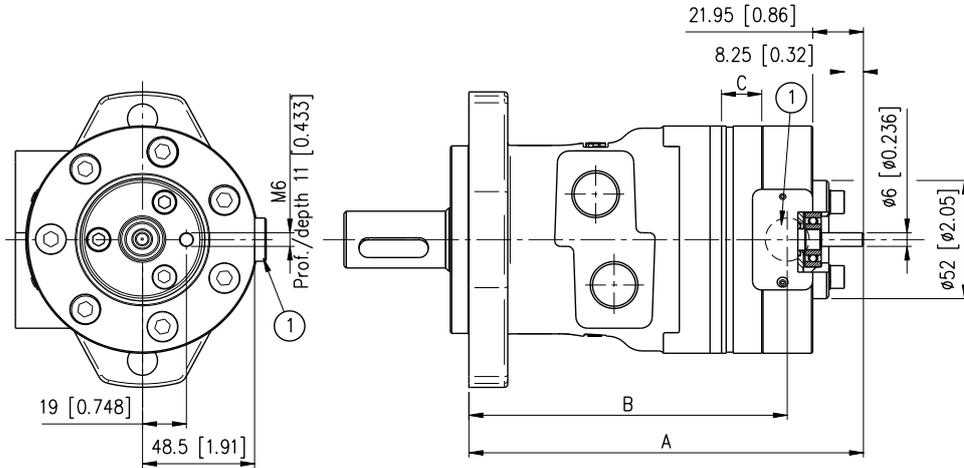
- Number of pulses per revolution = 90 Inductive principle
- Output current PNP
- Voltage 10-65 V d.c.
- Max load 300 mA
- Max frequency 10000 Hz
- Temperature range -25C +85C
- Enclosure IP 67

Available versions:

- Sensor with 2 metres three wires cable (cod.424.0050.0000)
- Sensor with binder plug connection (cod.424.0060.0000) + binder connecting
- Plug with 5 metres three wires cable (cod.424.0080.0000)

TC4 TAC/M tachometer

1) 1/4 G (BSPP) drain motor thread depth 13 mm [0.511 in]

**WARNING:**

Tacho shaft has a 6 times higher revolution speed than the motor shaft and opposite direction of rotation.

NOTE:

Axial or radial load on tacho shaft must be avoided.

	BR O 050	BR O 065	BR O 080	BR O 100	BR O 130	BR O 160	BR O 200	BR O 250	BR O 315	BR O 400
A mm [in]	162.2 [6.38]	164.5 [6.48]	167.2 [6.58]	170.5 [6.71]	175 [6.89]	181 [7.12]	188 [7.40]	196.6 [7.74]	208 [8.19]	221.5 [8.72]
B mm [in]	129.3 [5.09]	131.6 [5.18]	134.3 [5.29]	137.7 [5.42]	142.1 [5.59]	148.1 [5.83]	155.1 [6.11]	163.8 [6.45]	175.1 [6.89]	188.7 [7.43]
C mm [in]	9 [0.354]	11.3 [0.444]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight kg [lb]	7.7 [16.9]	7.9 [17.4]	8 [17.6]	8.2 [18]	8.5 [18.7]	8.8 [19.3]	9.1 [20]	9.6 [21.1]	10.3 [22.7]	10.6 [23.3]

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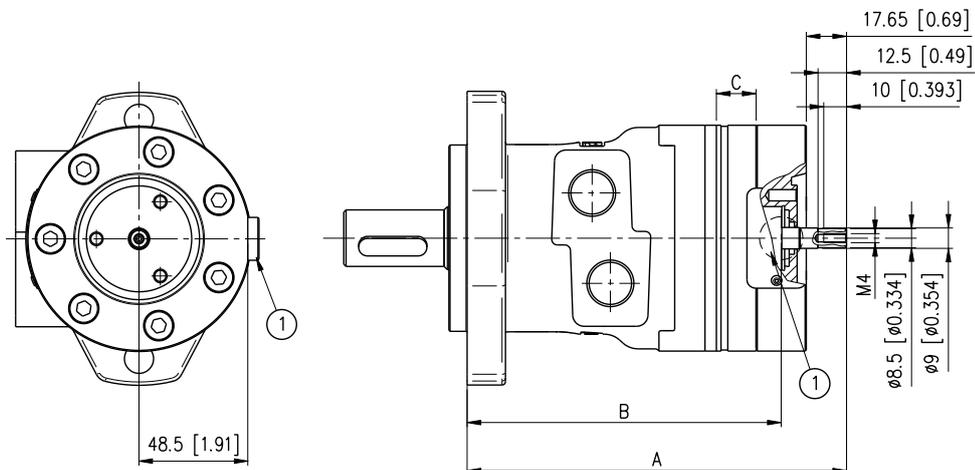
10

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12

TC5 TAC/M-E tachometer

1) 1/4 G (BSPP) drain motor thread depth 13 mm [0.511 in]

**WARNING:**

Tacho shaft has a 6 times higher revolution speed than the motor shaft and opposite direction of rotation.

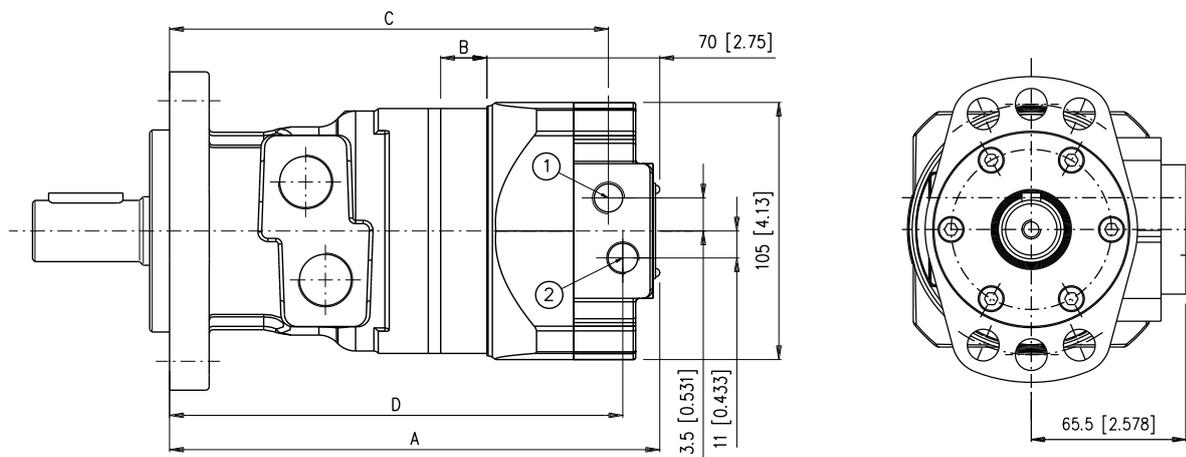
NOTE:

Axial or radial load on tacho shaft must be avoided.

	BR O 050	BR O 065	BR O 080	BR O 100	BR O 130	BR O 160	BR O 200	BR O 250	BR O 315	BR O 400	
A	mm [in]	157.9 [6.21]	160.2 [6.31]	162.9 [6.41]	166.2 [6.54]	170.7 [6.72]	176.7 [6.96]	183.7 [7.23]	192.3 [7.57]	203.7 [8.02]	217.2 [8.55]
B	mm [in]	129.3 [5.09]	131.6 [5.18]	134.3 [5.29]	137.7 [5.42]	142.1 [5.59]	148.1 [5.83]	155.1 [6.11]	163.8 [6.45]	175.1 [6.89]	188.7 [7.43]
C	mm [in]	9 [0.354]	11.3 [0.444]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
Weight	kg [lb]	7.7 [16.9]	7.9 [17.4]	8 [17.6]	8.2 [18]	8.5 [18.7]	8.8 [19.3]	9.1 [20]	9.6 [21.1]	10.3 [22.7]	10.6 [23.3]

FP0 Brake

- 1) 1/4 G (BSPP) brake releasing thread depth 13 mm [0.511 in]
- 2) 1/4 G (BSPP) drain motor thread depth 13 mm [0.511 in]



	BR O 050	BR O 065	BR O 080	BR O 100	BR O 130	BR O 160	BR O 200	BR O 250	BR O 315	BR O 400
A mm [in]	187.9 [7.39]	190.2 [7.48]	192.9 [7.59]	196.3 [7.72]	200.7 [7.90]	206.7 [8.13]	213.7 [8.41]	222.4 [8.75]	233.7 [9.20]	247.2 [9.73]
B mm [in]	9 [0.354]	11.3 [0.444]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.38 [2.69]
C mm [in]	169.9 [6.68]	172.2 [6.77]	174.9 [6.88]	178.3 [7.01]	182.7 [7.19]	188.7 [7.42]	195.7 [7.70]	204.4 [8.04]	215.7 [8.49]	229.2 [9.02]
D mm [in]	173 [6.81]	175.3 [6.90]	178 [7.00]	181.4 [7.14]	185.8 [7.31]	191.8 [7.55]	198.8 [7.82]	207.5 [8.16]	218.8 [8.61]	232.2 [9.14]
Weight kg [lb]	10.6 [23.4]	10.7 [23.6]	10.8 [23.8]	11 [24.3]	11.2 [24.7]	11.9 [26.2]	11.8 [26]	12.2 [26.9]	12.7 [28]	13.3 [29.3]

The brakes integrated in FP motors are holding brakes type (negative brake) and cannot be used for dynamic braking action.

Installation layout

The FP hydraulic motors must always have the drain port (on casing) directly connected with tank

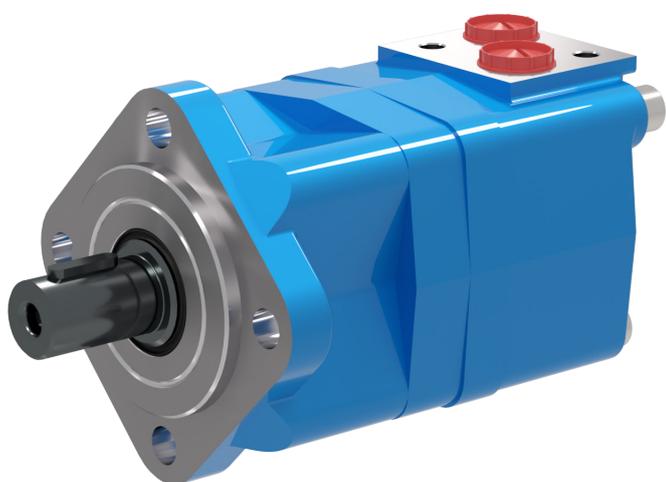
If open circuit layout is needed, it is advisable to use a flow control valve on brake piston ports (in order to avoid dynamic braking), on overcentre valve and a open -centre directional valve.

Motor-brake features	
Minim release pressure	22 bar [319 psi]
Complete brake release pressure	25 bar [362.5 psi]
Max. brake pressure	160 bar [2320 psi]
Max. static torque	370 Nm [272.7 lbf-ft]
Max. motor speed	350 rpm



BREVINI[®]

Motion Systems



HR Orbital Motors



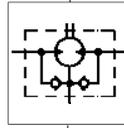
Motor Features	F2
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Performance Curves	F4
Pressure Data	F8
Max. Permissible Shaft Seal Pressure	F8
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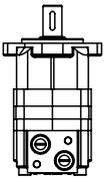
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HR



S
Standard Version



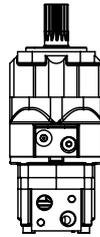
W
Wheel Version



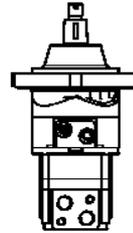
C
Bearingless Version



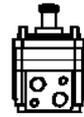
F
Brake Version



L
Wheel Version with brake



M
Short Version for Gear Box



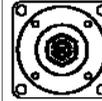
A4



A2



C4



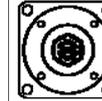
B4



A4



C4

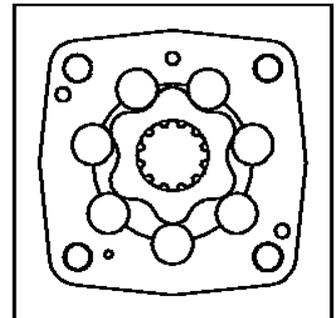
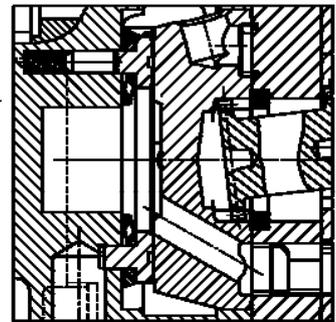
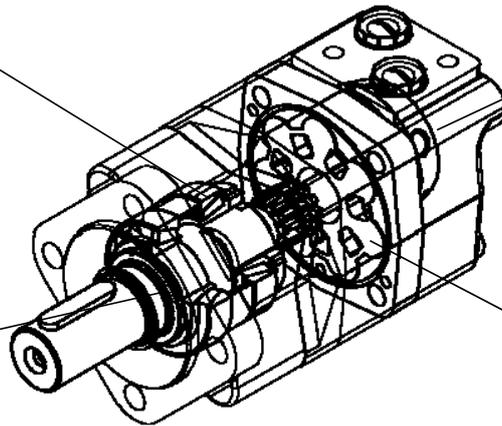
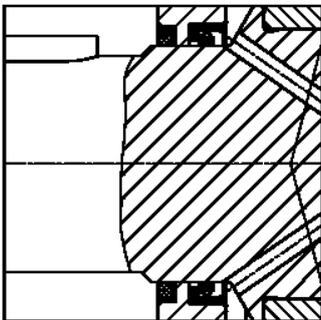
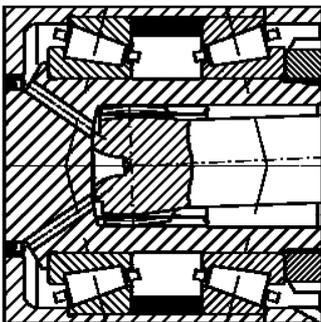


M4



Shaft supported by two heavy duty tapered roller bearings that ensure outstanding radial load capacity Max 40000 N [Max. 9000 lbf].

Disc valve distribution with automatic compensation of backlash done by fluid under pressure: lower drain figures are then guaranteed together with high efficiency. The motor is supplied with internally built-in check valves.



Dust Seal for high pressure of the output shaft. The motor can work with casing pressure up to 160 bar [2320 psi].

Heavy duty, roller type stator meant to work at high pressure and to guarantee extra long lasting.

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Motor	Displacement cm ³ /rev [in ³ /rev]	Max. input pressure bar [psi]			Max. differential pressure bar [psi]			Max. torque Nm [lbf-ft]		Max. flow l/min [U.S. gpm]		Max. speed rpm		Max. power kW [hp]	
		Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 310 [4495] 310 [4495]	Cont Int ¹⁾	235 [173] 345 [254]	Cont Int ¹⁾	75 [19.8] 80 [21.1]	Cont Int ¹⁾	932 995	Cont Int ¹⁾	23 [30.8] 36 [48.2]		
HR 080	80.4 [4.9]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 310 [4495] 310 [4495]	Cont Int ¹⁾	235 [173] 345 [254]	Cont Int ¹⁾	75 [19.8] 80 [21.1]	Cont Int ¹⁾	932 995	Cont Int ¹⁾	23 [30.8] 36 [48.2]		
HR 100	100 [6.1]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 310 [4495] 310 [4495]	Cont Int ¹⁾	295 [217] 445 [328]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	750 950	Cont Int ¹⁾	23.1 [30.9] 44.2 [59.2]		
HR 130	125.7 [7.66]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 310 [4495] 310 [4495]	Cont Int ¹⁾	375 [276] 545 [401]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	596 755	Cont Int ¹⁾	23.4 [31.3] 43.1 [57.7]		
HR 160	160 [9.76]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 260 [3770] 310 [4495]	Cont Int ¹⁾	465 [342] 570 [420]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	468 593	Cont Int ¹⁾	18.2 [24.3] 22.5 [30.1]		
HR 200	200 [12.2]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 260 [3770] 310 [4495]	Cont Int ¹⁾	580 [427] 670 [494]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	375 475	Cont Int ¹⁾	15.2 [20.3] 22.5 [30.1]		
HR 250	250 [15.25]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 260 [3770] 310 [4495]	Cont Int ¹⁾	710 [523] 820 [604]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	300 380	Cont Int ¹⁾	14.2 [19] 19.5 [26.1]		
HR 315	314.5 [19.18]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	205 [2972] 240 [3480] 310 [4495]	Cont Int ¹⁾	885 [652] 960 [707]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	238 302	Cont Int ¹⁾	11 [14.7] 19.5 [26.1]		
HR 400	393 [23.97]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 310 [4495] 310 [4495]	Cont Int ¹⁾ Peak ²⁾	155 [2247] 190 [2755] 225 [3250]	Cont Int ¹⁾	860 [633] 980 [722]	Cont Int ¹⁾	75 [19.8] 95 [25]	Cont Int ¹⁾	190 241	Cont Int ¹⁾	11 [14.7] 13 [17.4]		

		HR 080	HR 100	HR 130	HR 160	HR 200	HR 250	HR 315	HR 400
Max starting pressure with no load	bar [psi]	11 [159]	10 [145]	10 [145]	8 [116]	8 [116]	8 [116]	8 [116]	8 [116]
Min. starting torque (At. Max Δp)	Nm [lbf-ft]	Cont. 180 [133] Int. 270 [199]	Cont. 230 [169] Int. 340 [250]	Cont. 300 [221] Int. 420 [309]	Cont. 370 [272] Int. 440 [324]	Cont. 465 [343] Int. 522 [385]	Cont. 568 [419] Int. 640 [472]	Cont. 700 [516] Int. 760 [560]	Cont. 680 [501] Int. 775 [571]

¹⁾ Intermittent duty must not exceed 10% each minute.

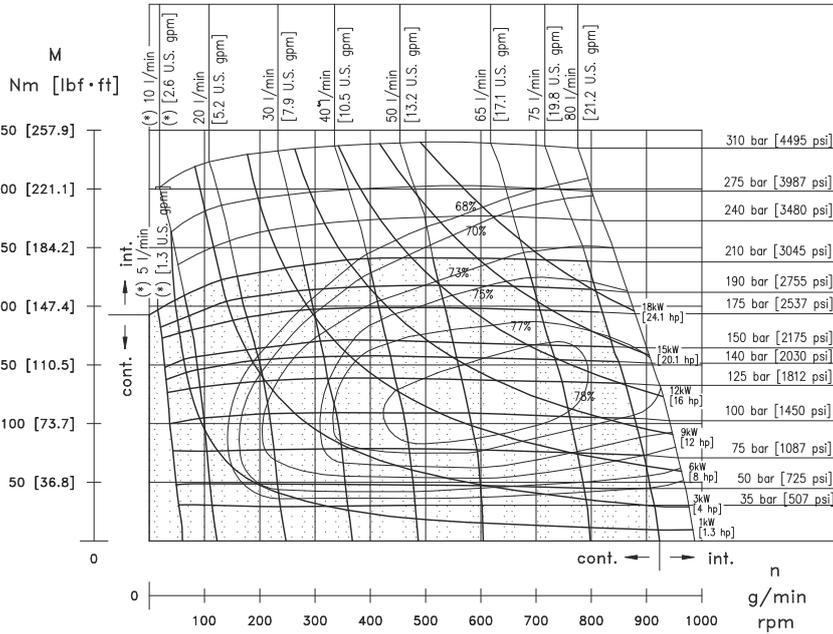
²⁾ Peak duty must not exceed 1% each minute.

* For motors with the shafts in the table below the Max. admissible torque is reduced as follows:

* Max. admissible torque for shaft type	Nm [lbf-ft]	CL254 CYLINDRICAL SHAFT		SE250 SPLINED SHAFT	
		Cont	Int ¹⁾	Cont	Int ¹⁾
		300 [221]	410 [302]	360 [265]	450 [332]

¹⁾ Intermittent duty must not exceed 10% each minute.

HR 080

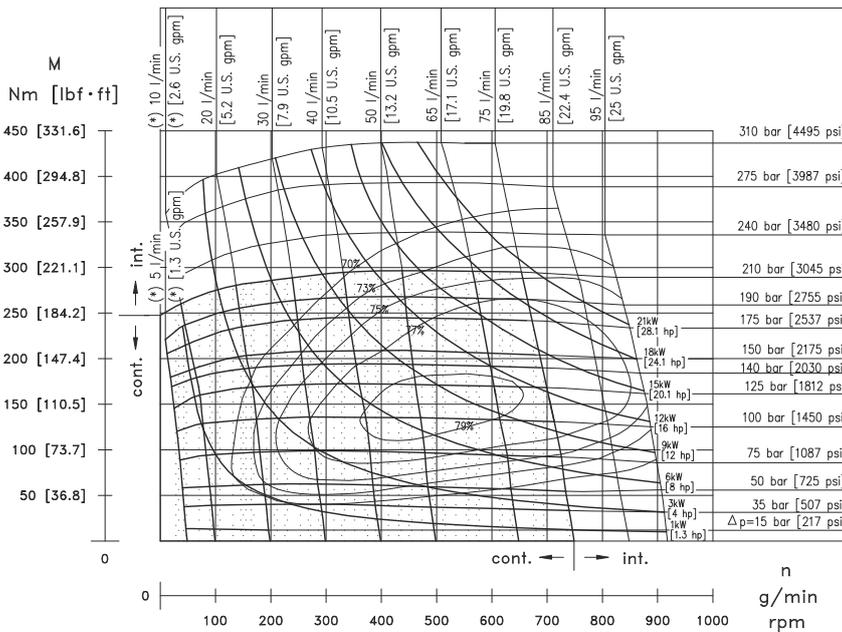


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

(*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.

HR 100

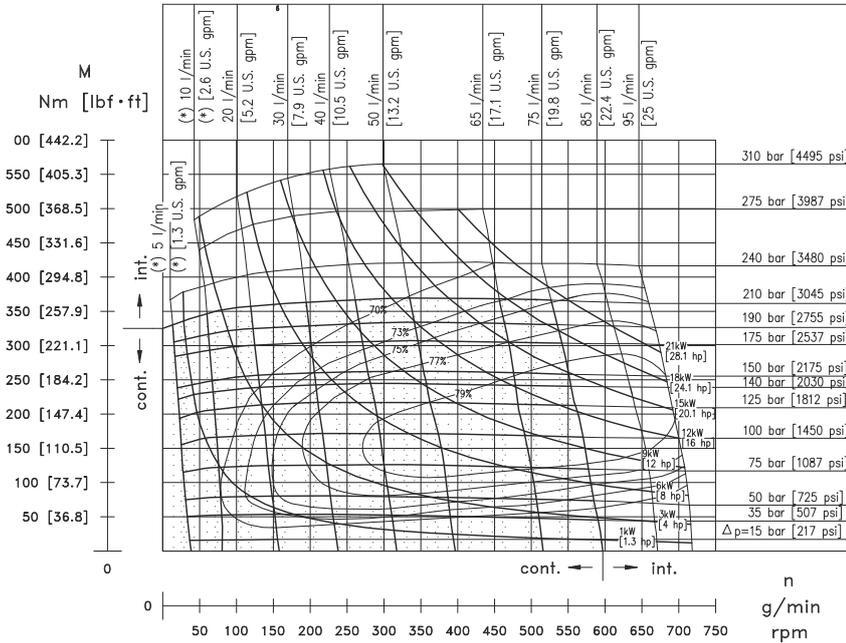


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

(*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.

HR 130

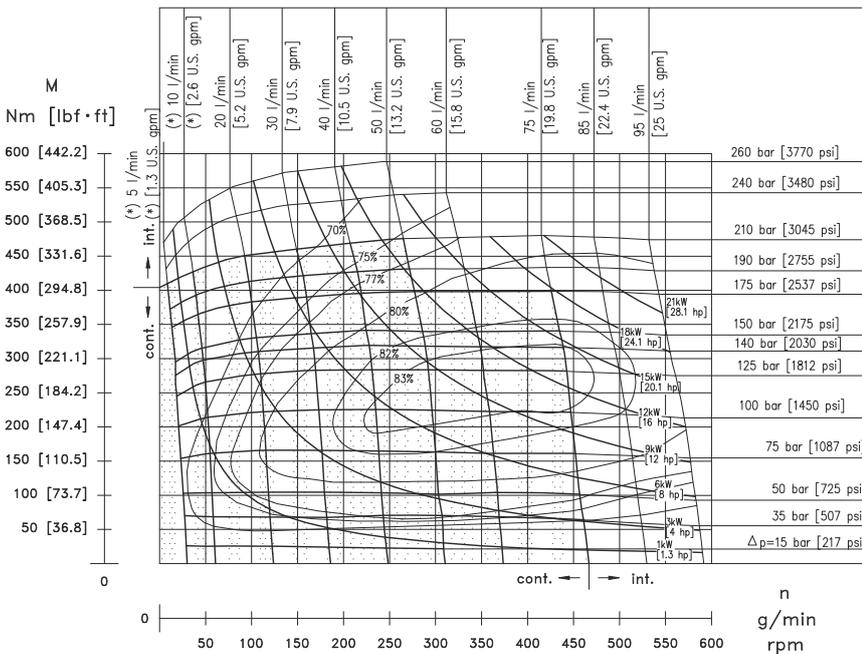


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

(*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.

HR 160



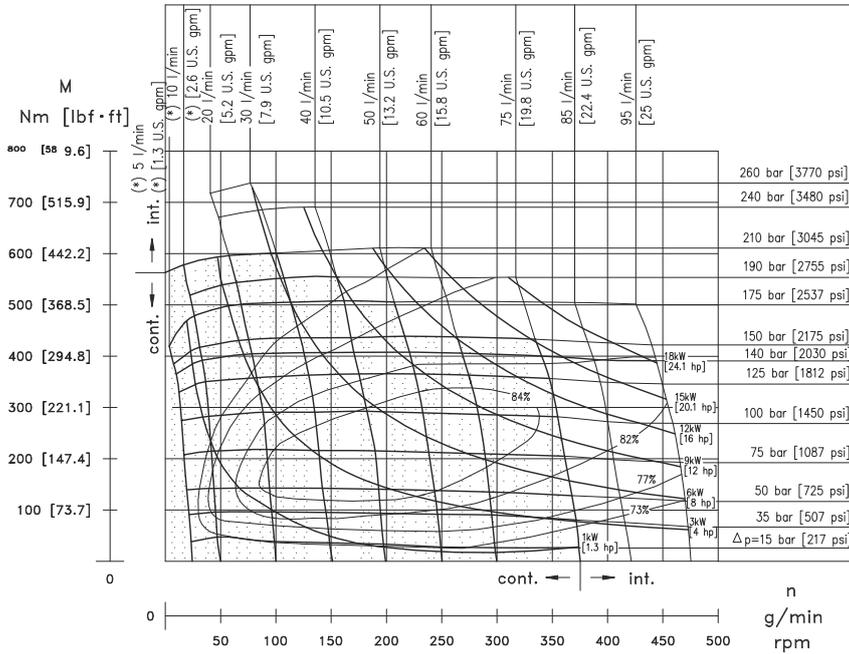
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

(*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.



HR 200

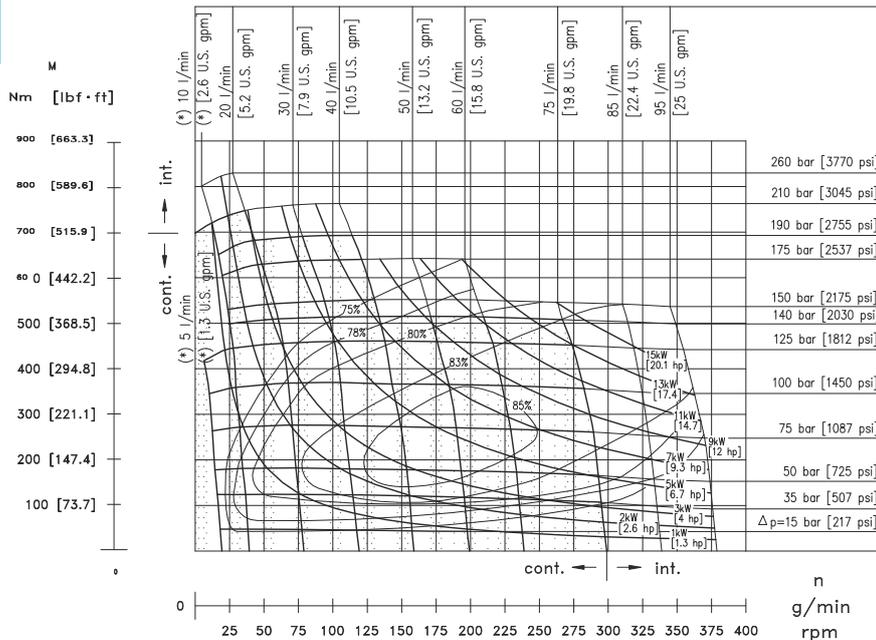


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

(*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.

HR 250

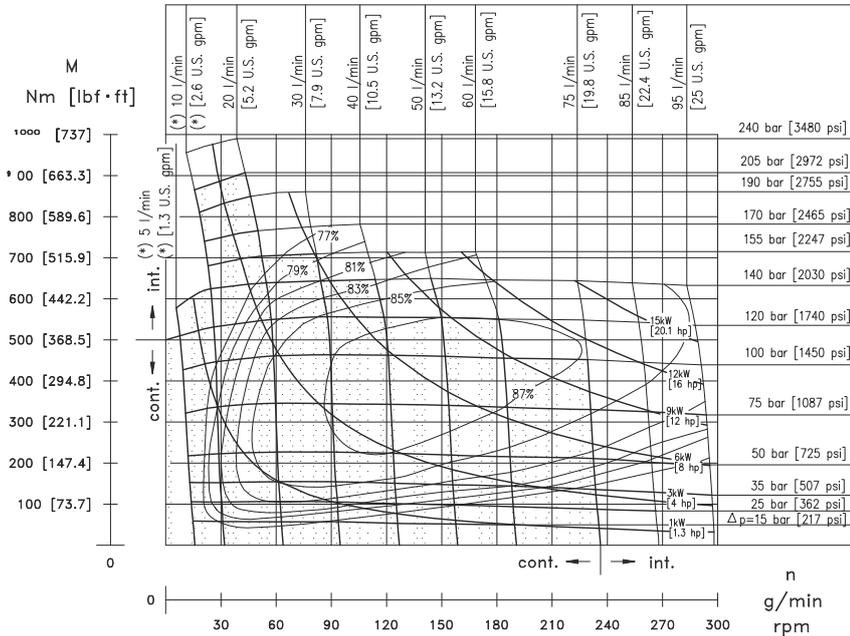


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

(*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.

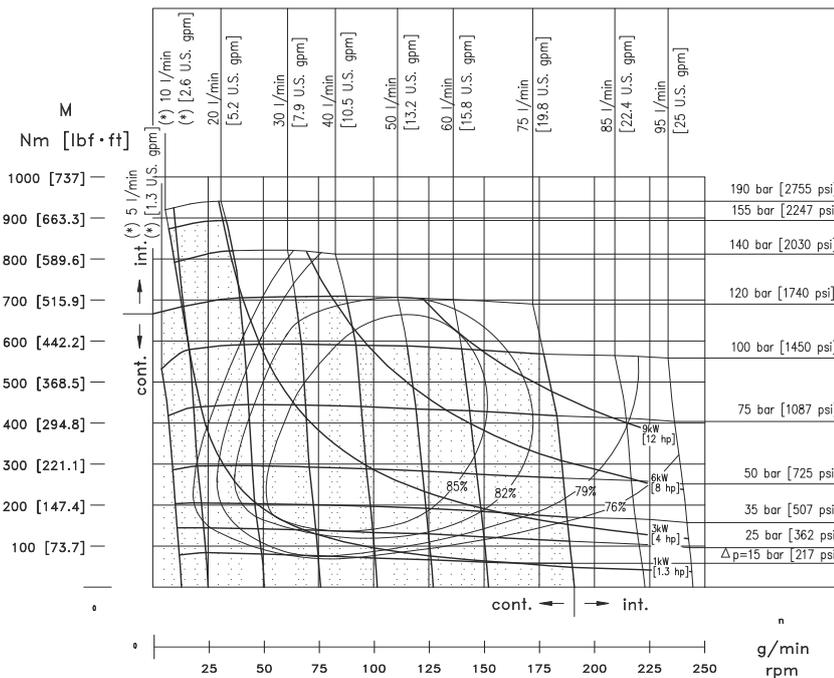
HR 315



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.
 (*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.

HR 400



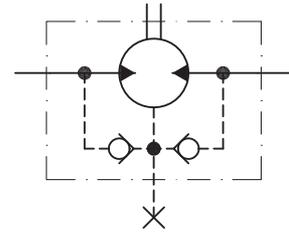
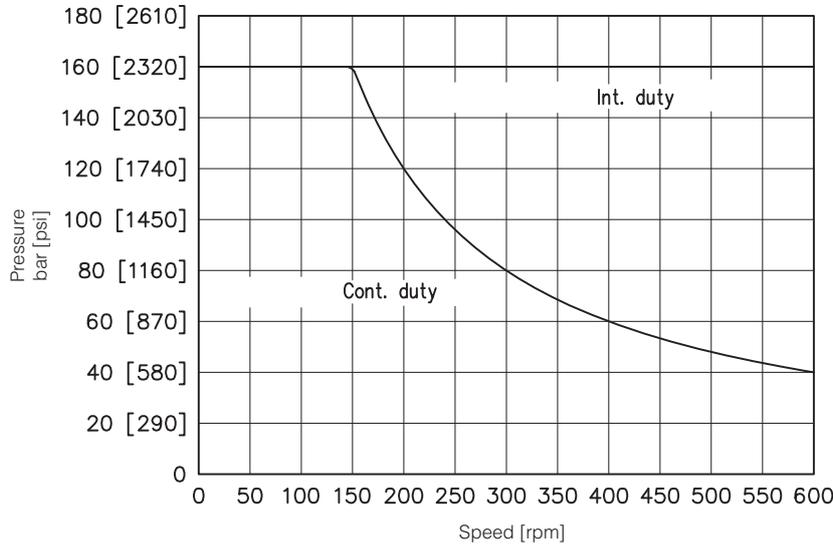
Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.
 (*) Performances data are referred to standard motors.

For obtain higher performances, when the motor is used with flow < 10 l/min [< 2.64 U.S. gpm], we suggest to use LW (Low Leakage) version.



Max. Permissible Shaft Seal Pressure

Max. return pressure without drain line or max. pressure in the drain line.
For pressure and speeds not showed in the curve below, please contact Dana Brevini.



Pressure Loss

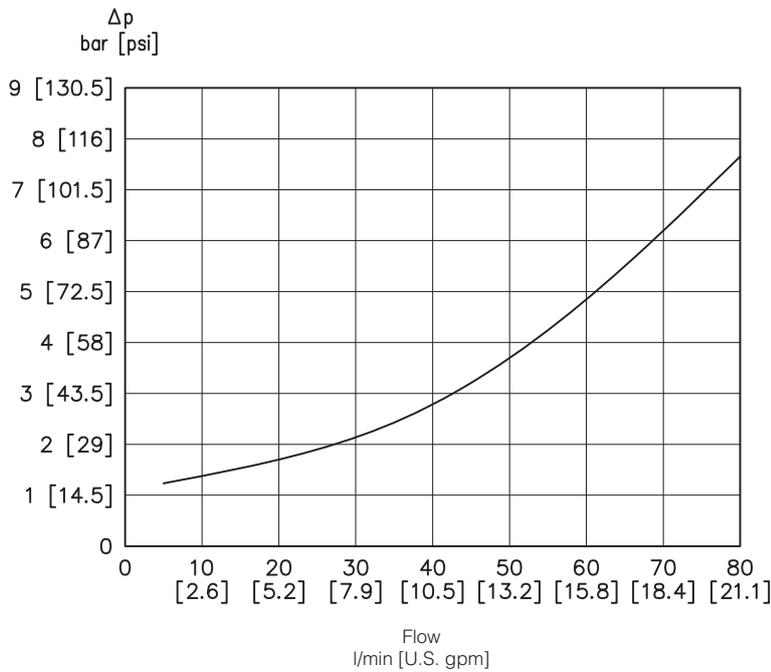
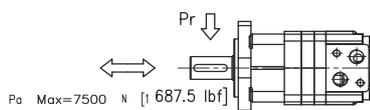
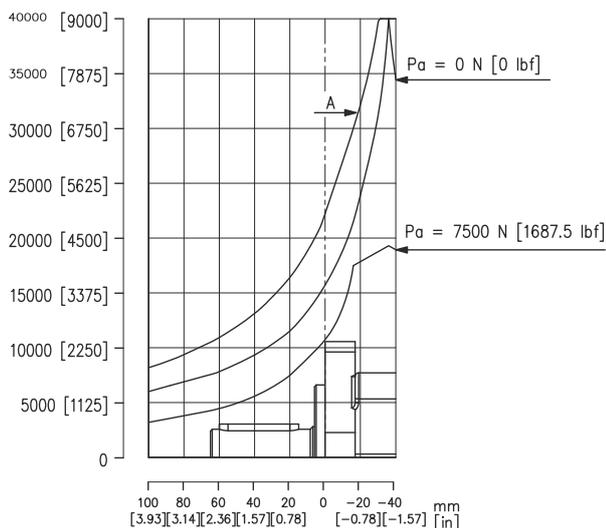


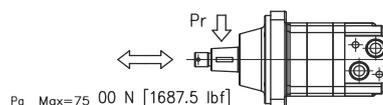
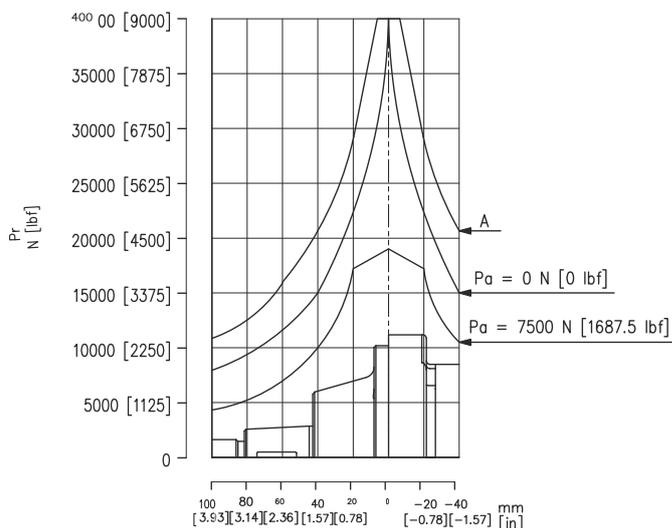
Diagram according to tests done with a relevant number of motors and using hydraulic oil with cinematic viscosity of 37 cSt at 45 C° temperature.

Shaft Load

S Version - F Version



W Version - L Version



Loads diagram is for a bearings life L_{10h} of 1600 hours at 200 rpm when mineral base hydraulic oil with a sufficient content of anti-wear additives is used. Bearing life calculation refers to a 90% degree of reliability.

Curve "A" shows the maximum radial load that can be taken by the bearings under maximum static load duty.

The following alphanumeric digits system has been developed to identify all of the configuration options for the HR motors. Use the model code below to specify the desired features. All alphanumeric digits system of the code must be present when ordering.

We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12	13
Series	Displacement	Version	Mount flange	Shaft end	Main port	Seal	Valve	Valve feature	Flushing valve	Option	Version feature	Painting
HR	200	S	A4	CL025	M09	N	M091	032	06	TZ	OKK	01

1	Series	
HR	Orbital motor	

2	Displacement	
080	80 cm ³ /giro [4.88 in ³ /rev]	
100	100 cm ³ /giro [6.1 in ³ /rev]	
130	130 cm ³ /giro [7.93 in ³ /rev]	
160	160 cm ³ /giro [9.76 in ³ /rev]	
200	200 cm ³ /giro [12.2 in ³ /rev]	
250	250 cm ³ /giro [15.25 in ³ /rev]	
315	315 cm ³ /giro [19.21 in ³ /rev]	
400	400 cm ³ /giro [24.4 in ³ /rev]	

3	Version	
S	Standard Version	
W	Wheel Version	
C	Bearingless Version	
M	Short Bearingless Version for Gear Box	
F	Brake Version	
L	Wheel Version with brake	

4	Mounting Flange	Version					
		S	W	C	M	F	L
M4	Short flange for Gear Box	-	-	-	●	-	-
A4	4 Bolt Ø 82.5 mm [Ø 3.2 in]	●	-	-	-	●	-
A2	SAE A 2 Bolt	●	-	-	-	1)	-
B4	ISO 4 Bolt Ø 100 mm [Ø 3.9 in]	-	-	●	-	-	-
CM	ISO 4 Bolt Ø 125 mm [Ø 4.9 in]	-	●	-	-	-	●

1) On request

- Available
- Not Available

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5

Shaft end		Version					
		S	W	C	M	F	L
DB001	Dog Bone T=12 12/24 DP	-	-	●	●	-	-
CL025	Parallel keyed Ø25 mm [0.97 in]	●	-	-	-	-	-
CL254	Parallel keyed Ø25.4 mm [1 in]	●	-	-	-	-	-
C3175	Parallel keyed Ø31.75 mm [1.23 in]	●	-	-	-	-	-
CL320	Parallel keyed Ø32 mm [1.24]	●	●	-	-	●	●
CN320	Tapered Shaft	●	●	-	-	●	●
SE250	Splined Shaft (SAE 6B 1" spline)	●	-	-	-	-	-
SC320	Splined Shaft (ASA 12/24 spline) - Europe Version	●	●	-	-	-	-
SE320	Splined Shaft (ASA 12/24 spline) - USA Version	●	-	-	-	-	-
SE350	Splined Shaft (P.t.o. DIN 9611 Form1)	●	-	-	-	-	-

6

Main Port		Version					
		S	W	C	M	F	L
M09	1/2 G BSPP (32x22) Main Ports (standard)	●	●	●	●	●	●
S09	7/8" - 14 UNF (32x22) Main Ports	●	●	●	-	●	●
L09	1" 1/16 - 12 UN (Main Ports Positioned 180° apart)	●	●	●	-	●	●
F09	1" 1/16 - 12 UN (End Main Ports)	●	●	●	-	●	●

7

Seal	
N	NBR (standard)
V	FKM

8

Valve		Main Port			
		M09	S09	L09	F09
xxxx	Not required	●	●	●	●
M091	Pressure relief valve VAF 09 - D	●	-	-	-
M092	Anticavitation and Anti-Shock Valve VAAF 09 / 40	●	-	-	-
M093	Overcentre Valve with VCD1 09 - S/AF	●	-	-	-
M094	Double-acting overcentre valve with shuttle valve VCR1 09 - D/AF	●	-	-	-
M095	Double-acting overcentre valve with shuttle valve VCR1 09 D/AF LDP	●	-	-	-
M096	Flow Control Valve VRP 09	●	-	-	-
M097	Pressure relief valve VAF 09 - D/AF	●	-	-	-



● Available
- Not Available

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9		Valve		Valve						
				xxxx	M091	M092	M093	M094	M095	M096
000	Feature not necessary	●	-	-	-	-	-	-	-	
032	Not Set (50÷100 bar [725 to 1450 psi])	-	●	-	-	-	-	-	-	
018	Not Set (50÷210 bar [725 to 3045 psi])	-	-	●	-	-	-	-	-	
029	Not Set (30÷220 bar [435 to 3190 psi])	-	-	-	-	●	●	-	-	
019	Not Set (Max pressure 315 bar [4567 psi])	-	-	-	-	-	-	●	-	
020	Not Set (100÷200 bar [1450 to 2900 psi])	-	●	-	-	-	-	-	-	
022	Not Set (100÷280 bar [1450 to 4060 psi])	-	-	-	-	-	-	-	●	
70D	Pilot Ratio 7:1 - Control rotation CW	-	-	-	●	-	-	-	-	
70S	Pilot Ratio 7:1 - Control rotation CCW	-	-	-	●	-	-	-	-	
30D	Pilot Ratio 3:1 - Control rotation CW	-	-	-	●	-	-	-	-	
30S	Pilot Ratio 3:1 - Control rotation CCW	-	-	-	●	-	-	-	-	

10		Flushing Valve (*)		Main Port			
				M09	S09	L09	F09
xx	Not required	●	●	●	●		
06	VSC/F Flushing valve - 6 l/min [1.58 U.S. gpm]	●	●	-	-		
09	VSC/F Flushing valve - 10.5 l/min [2.77 U.S. gpm]	●	●	-	-		
15	VSC/F Flushing valve - 15 l/min [3.96 U.S. gpm]	●	●	-	-		

11		Option		Version					
				S	W	C	M	F	L
xx	None	●	●	●	●	●	●		
03	Reverse rotation	●	●	●	●	●	●		
TZ	Tachometer + sensor 2-channel-Hall effect (30 pulse)	●	-	-	-	-	-		
ZT	Tachometer + sensor 2-channel-Hall effect (55 pulse)	●	-	-	-	-	-		
ZJ	Tachometer + 9046087 sensor Hall effect (55 pulse)	●	-	-	-	-	-		

12		Shaft end		Version					
				S	W	C	M	F	L
xxx	Standard version	●	●	-	-	●	●		
OKK	Double drain port 1/4 G (BSPP) (at delivery side)	●	●	-	-	-	-		
SKK	Double drain port 7/16" - 20UNF (at delivery side)	●	●	-	-	-	-		
LWK	Low leakage	●	●	●	●	●	●		
SWK	Double drain port 7/16" - 20UNF (at delivery side) + Low leakage	●	●	● ¹⁾	-	-	-		
KWK	Double drain port 1/4 G (BSPP) (at delivery side) + Low leakage	●	●	● ¹⁾	-	-	-		
03K	Brevini SDU31 gear box Version + Low leakage	-	-	-	●	-	-		
04K	12 Springs / 10 Contacts Version (available with displacement 100-315)	-	-	-	-	●	●		
05K	8 Springs Version (available with displacement 250 - 315 - 400)	-	-	-	-	●	●		
06K	Increased braking torque Version (available with displacement 200-250)	-	-	-	-	●	●		
08K	Low leakage + 8 Springs Version (available with displacement 250 - 315 - 400)	-	-	-	-	●	●		
09K	Increased braking torque Version (available with displacement 200-250) + Low leakage	-	-	-	-	●	●		
10K	Brake housing SAE ports	-	-	-	-	-	-		

*) It is possible to combine the flushing valves only with VAF 09 - D valve.

1) Assembly, please contact Dana Brevini for further information.

● Available
- Not Available

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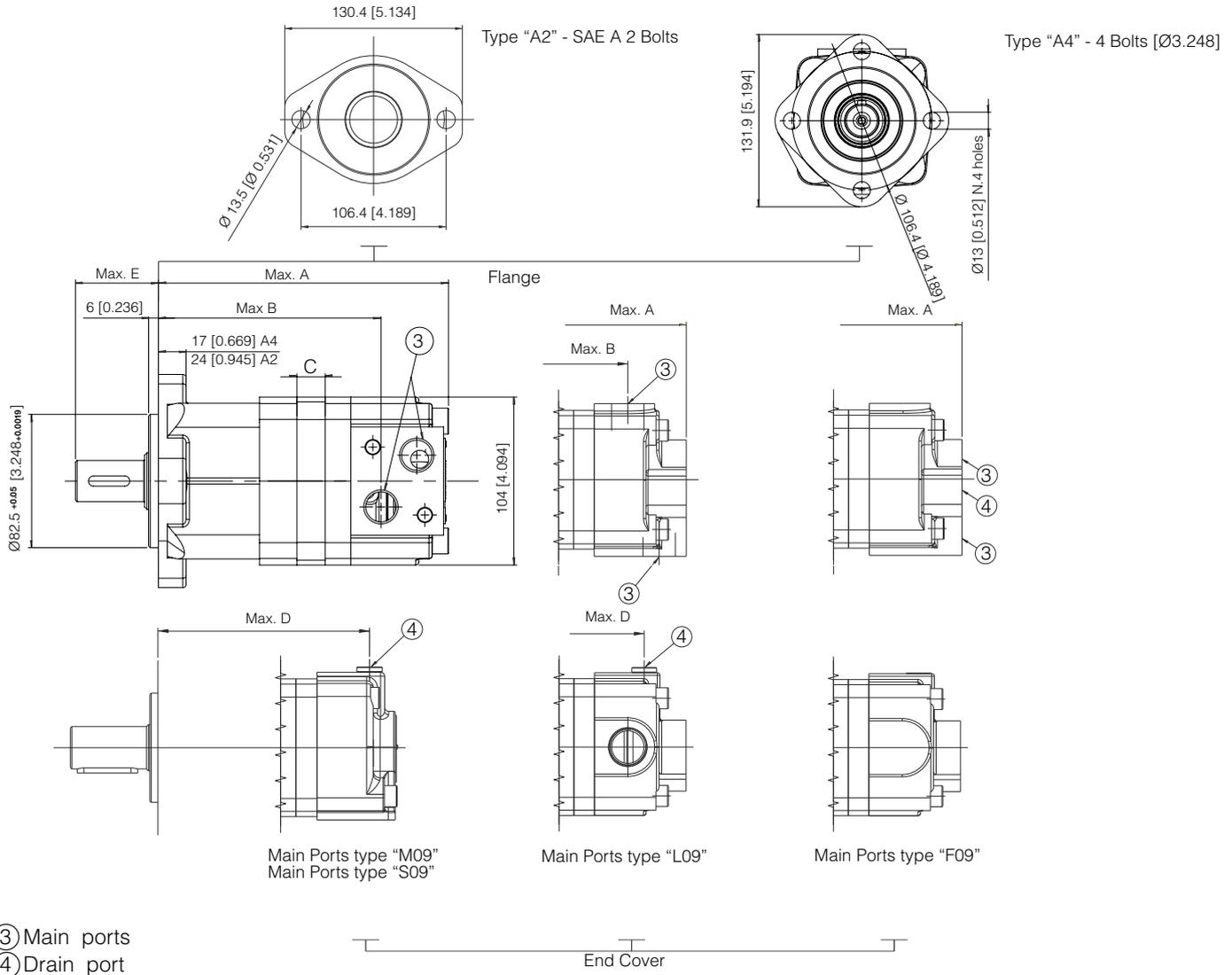
13	
	Painting
xx	Not Painted
01	Black Painted RAL 9005
02	Blue Painted RAL 5015
05	Gray Painted RAL 7016



Dimensions and Weight

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HR S A2/A4 M09/S09/L09/F09



- ③ Main ports
- ④ Drain port

* For shafts dimensions see page [F24](#)

* For main ports dimensions see page [F26](#)

Main Ports type "S09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	174.5 [6.87]	177.5 [6.98]	182 [7.16]	188 [7.40]	195 [7.67]	203.5 [8.01]	215 [8.46]	228.5 [8.99]
B mm [in]	134 [5.27]	137.5 [5.41]	142 [5.59]	148 [5.82]	155 [6.10]	164 [6.45]	175 [6.88]	188.5 [7.42]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	154 [6.06]	157 [6.18]	161 [6.33]	167.5 [6.59]	174.5 [6.87]	183.5 [7.22]	194.5 [7.65]	208 [8.18]
Weight kg [lb]	10.5 [23.1]	10.7 [23.6]	11 [24.5]	11.4 [25.1]	11.8 [26]	12.4 [27.3]	13.1 [28.8]	14 [30.8]

Main Ports type "L09" - Main Ports type "F09" - Main Ports type "R09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	185 [7.28]	188 [7.40]	192.5 [7.57]	198.5 [7.81]	205.5 [8.09]	214 [8.42]	225.5 [8.87]	239 [9.40]
B mm [in]	140 [5.51]	143.5 [5.64]	148 [5.82]	154 [6.06]	161 [6.33]	170 [6.69]	181 [7.12]	194.5 [7.65]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	153 [6.02]	156 [6.14]	160 [6.29]	166.5 [6.55]	173.5 [6.83]	182.5 [7.18]	193.5 [7.61]	207 [8.14]
Weight kg [lb]	10.5 [23.1]	10.7 [23.6]	11 [24.5]	11.4 [25.1]	11.8 [26]	12.4 [27.3]	13.1 [28.8]	14 [30.8]

SHAFT	CL320	C3175	CL254	CN320	SE250	SE320	SC320	SE350
E mm [in]	65 [2.55]	56 [2.20]	51 [2.00]	65.9 [2.59]	51 [2.00]	55.9 [2.20]	65 [2.55]	110 [4.29]

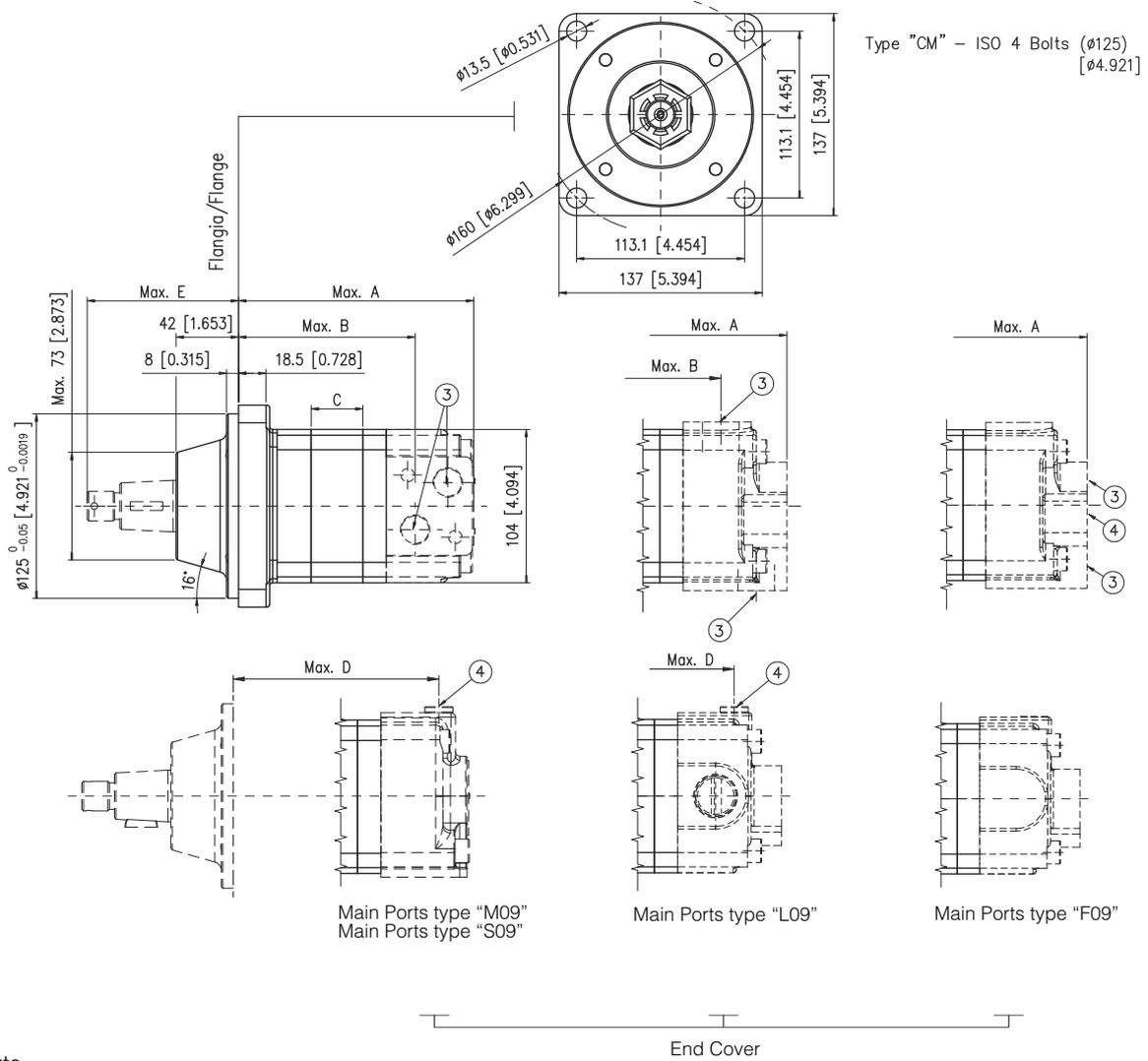
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HR W CM M09/S09/L09/F09



- ③ Main ports
- ④ Drain port

* For shafts dimensions see page [F24](#)

* For main ports dimensions see page [F26](#)

Main Ports type "M09" - Main Ports type "S09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	136.5 [5.37]	140 [5.51]	144.5 [5.68]	150.5 [5.92]	157.5 [6.20]	166 [6.53]	177.5 [6.98]	191 [7.51]
B mm [in]	97.5 [3.83]	101 [3.97]	105.3 [4.14]	111.3 [4.38]	118.3 [4.65]	127 [5.00]	138.5 [5.45]	152 [5.98]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	117 [4.60]	120.5 [4.74]	124.8 [4.91]	130.8 [5.14]	137.8 [5.42]	146.5 [5.76]	158 [6.22]	171.5 [6.75]
Weight kg [lb]	10.9 [24]	11.1 [24.4]	11.5 [25.3]	11.8 [26]	12.2 [26.8]	12.9 [28.4]	13.6 [29.9]	14.4 [31.7]

Main Ports type "L09" - Main Ports type "F09" - Main Ports type "R09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	149.5 [5.88]	153 [6.02]	157.5 [6.20]	163.5 [6.43]	170.5 [6.71]	179 [7.04]	190.5 [7.50]	204 [8.03]
B mm [in]	103.5 [4.07]	107 [4.21]	111.3 [4.38]	117.3 [4.61]	124.3 [4.89]	133 [5.23]	144.5 [5.68]	158 [6.22]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	114.5 [4.50]	118 [4.64]	122.3 [4.81]	128.3 [5.05]	135.5 [5.33]	144 [5.66]	155.5 [6.12]	169 [6.65]
Weight kg [lb]	10.9 [24]	11.1 [24.4]	11.5 [25.3]	11.8 [26]	12.2 [26.8]	12.9 [28.4]	13.6 [29.9]	14.4 [31.7]

SHAFT	CL320	CN320	SC320
E mm [in]	101 [3.97]	102 [4.01]	101 [3.97]

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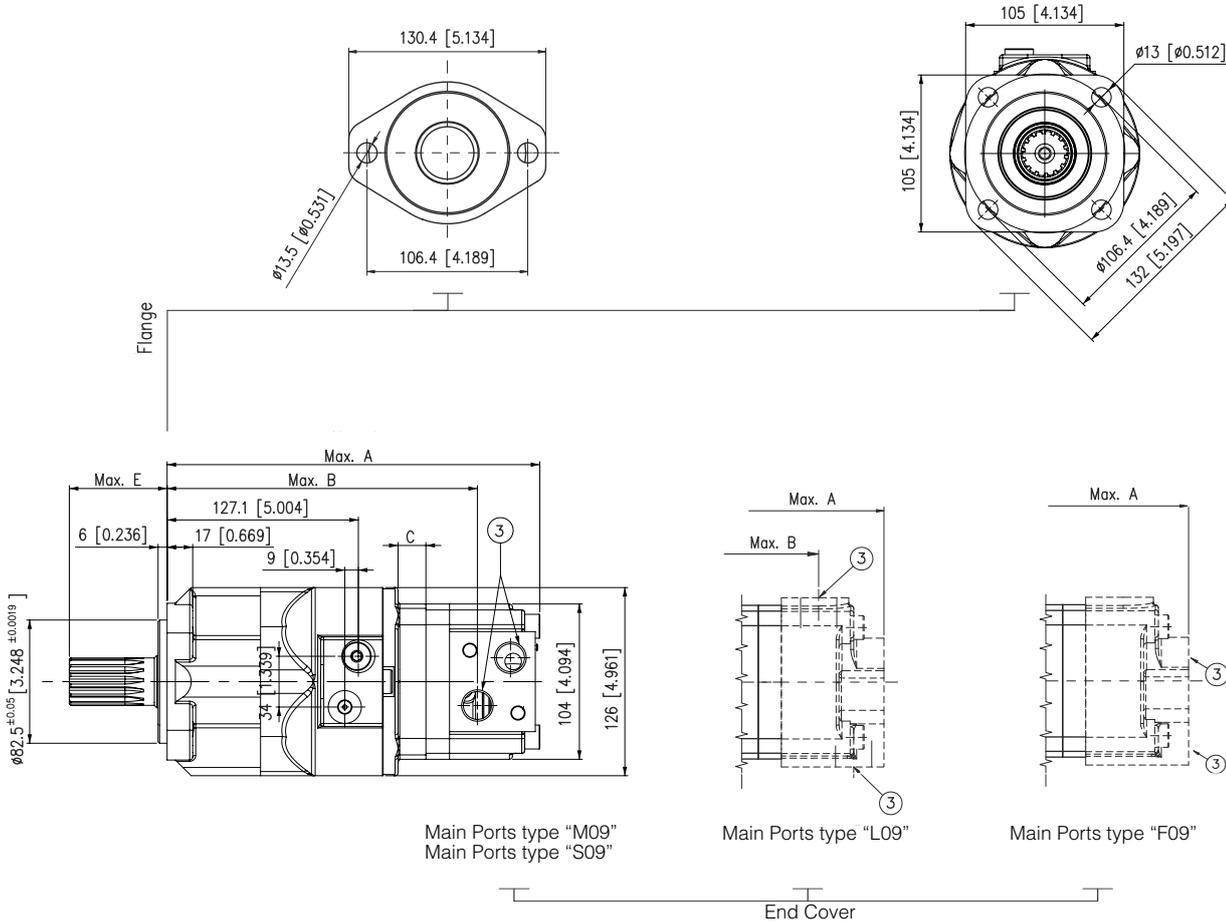
Dimensions and Weight

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HR F A2/A4 M09/S09/L09/F09

Type "A2" – SAE A 2 Bolts

Type "A4" – 4 Bolts [ø3.248]



- ① 1/8 G (BSPP) Brake releasing plug, thread depth 11 mm [0.42 in] (ISO)
7/16" - 20 UNF Brake releasing plug, thread depth 11mm [0.42 in] (SAE)
- ② 1/4 G (BSPP) Drain port, thread depth 11 mm [0.42 in] (ISO)
7/16" - 20 UNF Drain port, thread depth 11 mm [0.42 in] (SAE)
- ③ Main ports

* For shafts dimensions see page [F24](#)

* For main ports dimensions see page [F26](#)

* For brake feature see page [F18](#)

Main Ports type "M09" - Main Ports type "S09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	243.3 [9.57]	246.7 [9.71]	251.1 [9.88]	257.1 [10.12]	264.1 [10.39]	272.8 [10.74]	284.1 [11.18]	297.7 [11.72]
B mm [in]	203.8 [8.02]	207.2 [8.15]	211.6 [8.33]	217.6 [8.56]	224.6 [8.84]	233.3 [9.18]	244.6 [9.62]	258.2 [10.16]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
Weight kg [lb]	17.3 [38.1]	17.5 [38.5]	17.9 [39.4]	18.2 [40.1]	18.6 [40.9]	19.3 [42.5]	20 [44]	20.8 [45.8]

Main Ports type "L09" - Main Ports type "F09" - Main Ports type "R09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	254.3 [10.01]	257.7 [10.14]	262.1 [10.31]	268.1 [10.55]	275.1 [10.83]	283.8 [11.17]	295.1 [11.61]	308.7 [12.15]
B mm [in]	209.8 [8.25]	213.2 [8.39]	217.6 [8.56]	223.6 [8.80]	230.6 [9.07]	239.3 [9.42]	250.6 [9.86]	264.2 [10.40]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
Weight kg [lb]	17.3 [38.1]	17.5 [38.5]	17.9 [39.4]	18.2 [40.1]	18.6 [40.9]	19.3 [42.5]	20 [44]	20.8 [45.8]

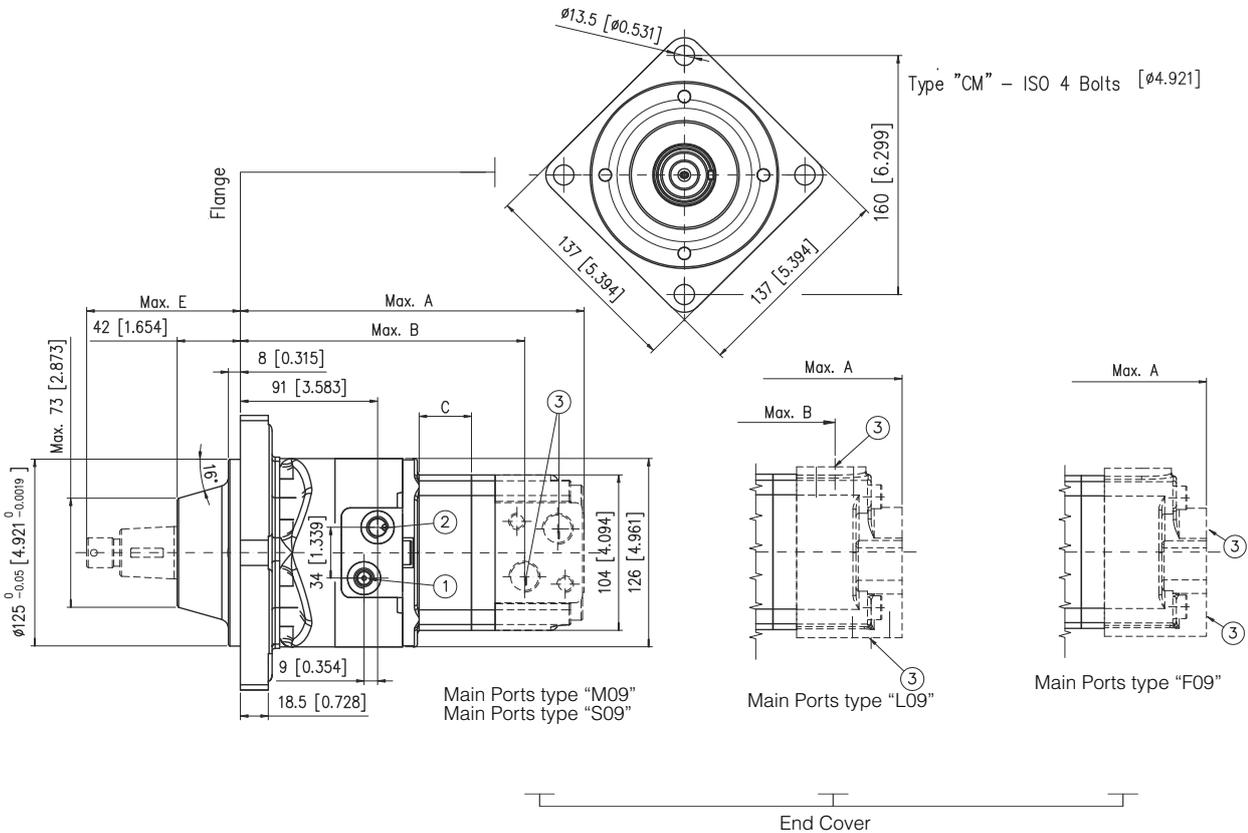
SHAFT	CL320	CN320
E mm [in]	65 [2.55]	65.9 [2.59]

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HR L CM M09/S09/L09/F09



- ① 1/8 G (BSPP) Brake releasing plug, thread depth 11mm [0.42 in] (ISO)
7/16" - 20 UNF Brake releasing plug, thread depth 11mm [0.42 in] (SAE)
- ② 1/4 G (BSPP) Drain port, thread depth 11 mm [0.42 in] (ISO)
7/16" - 20 UNF Drain port, thread depth 11 mm [0.42 in] (SAE)
- ③ Main ports

* For shafts dimensions see page [F24](#)

* For main ports dimensions see page [F26](#)

* For brake feature see page [F18](#)

Main Ports type "M09" - Main Ports type "S09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	207.2 [8.15]	210.6 [8.29]	215 [8.46]	221 [8.70]	228 [8.97]	236.7 [9.31]	248 [9.76]	261.6 [10.29]
B mm [in]	167.7 [6.60]	171.1 [6.73]	175.5 [6.90]	181.5 [7.14]	188.5 [7.42]	197.2 [7.76]	208.5 [8.20]	222.1 [8.74]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
Weight kg [lb]	17.7 [39]	17.9 [39.4]	18.3 [40.3]	18.6 [40.9]	19 [41.8]	19.7 [43.4]	20.4 [44.9]	21.2 [46.7]

Main Ports type "L09" - Main Ports type "F09" - Main Ports type "R09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	218.2 [8.59]	221.6 [8.72]	226 [8.89]	232 [9.13]	239 [9.40]	247.7 [9.75]	259 [10.19]	272.6 [10.73]
B mm [in]	173.7 [6.83]	177.1 [6.97]	181.5 [7.14]	187.5 [7.38]	194.5 [7.65]	203.2 [8.00]	214.5 [8.44]	228.1 [8.98]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
Weight kg [lb]	17.7 [39]	17.9 [39.4]	18.3 [40.3]	18.6 [40.9]	19 [41.8]	19.7 [43.4]	20.4 [44.9]	21.2 [46.7]

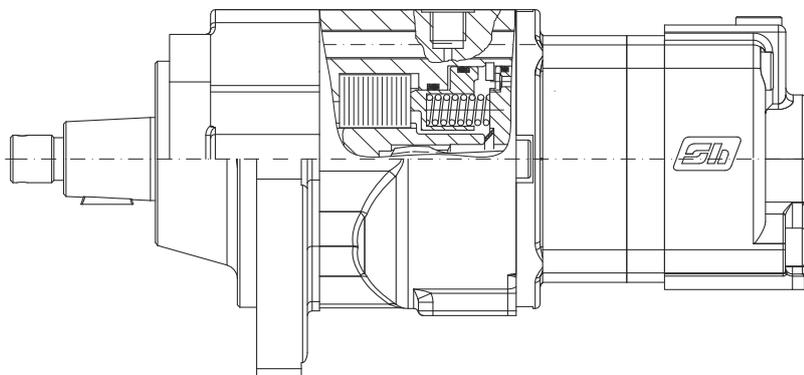
SHAFT	CL320	CN320
E mm [in]	101 [3.97]	102 [4.01]

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F Version - L Version



Starting release pressure	25 bar [362 psi]
Full release pressure	30 bar [435 psi]
Brake control pressure Max.	210 bar [3045 psi]

MOTOR	STATIC BRAKING TORQUE			
	STANDARD	12 Springs / 10 Contacts	8 Springs	Increased Braking Torque
F Version - L Version 080	210 Nm [154.7 lbf-ft]			
F Version - L Version 100	280 Nm [206.3 lbf-ft]	259 Nm [190.8 lbf-ft]		
F Version - L Version 130	340 Nm [250.5 lbf-ft]			
F Version - L Version 160	340 Nm [250.5 lbf-ft]			
F Version - L Version 200	420 Nm [309.5 lbf-ft]			560 Nm [412.7 lbf-ft]
F Version - L Version 250	470 Nm [346.3 lbf-ft]		313 Nm [230.6 lbf-ft]	560 Nm [412.7 lbf-ft]
F Version - L Version 315	560 Nm [412.7 lbf-ft]	259 Nm [190.8 lbf-ft]	373 Nm [274.9 lbf-ft]	
F Version - L Version 400	560 Nm [412.7 lbf-ft]		373 Nm [274.9 lbf-ft]	

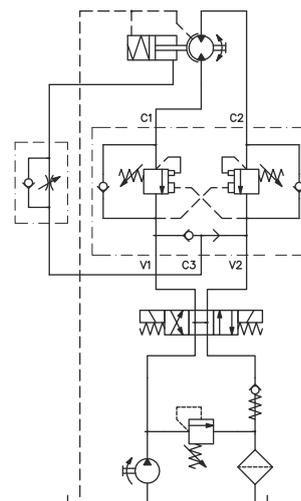
The brakes built into F version and L version motors are multidisc pressure released ones for static operation. With no pressure from the pump to the motor, a set of springs will push the discs one against the other, hence the motor shaft will not be allowed to rotate unless the shaft itself is driven with a torque widely exceeding the max. static torque of the brake.

By sending pressure to the motor a shuttle valve (to be included in the system) will send pressure to the brake, overcome the resistance of the springs and release the brake hence allowing the start of the motor. Wheel motors require some care in the engineering of the machine. The major aspects to consider are:

- Hub and motor shaft tapers must be perfectly matching, in order to avoid excessive key stress, which can occur in case of bottoming of shaft tip washer and nut at the end of the thread.
- A proper service factor should be considered in case of shocks to the shaft (eg. With the machine travelling on very uneven soil).
- L version brake motors operating mobile machines should always have a flanged on double overcentre + shuttle valve, in order to ensure safe slow-down of the machine and engaging of brake when a complete stop has been reached.

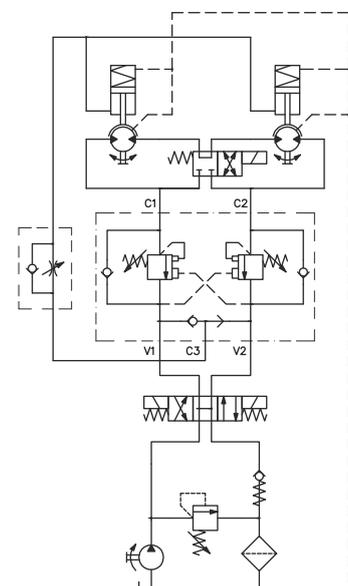
OPEN LOOP SYSTEM, ONE BRAKE-MOTOR, BI-DIRECTIONAL TURNING AND AUTOMATIC BRAKE OPERATION.

This configuration is typically that of a slew drive (cranes, excavators, aerial platforms, derricks, etc.).
 When the pump delivers oil to the motor the consequent generation of pressure will operate the shuttle valve and activate the brake line, thus disengaging the brake itself. When the oil delivery is shut off to stop the machine, a double overcentre valve will slow down the rotative mass to an almost complete stop when the static brake will engage.



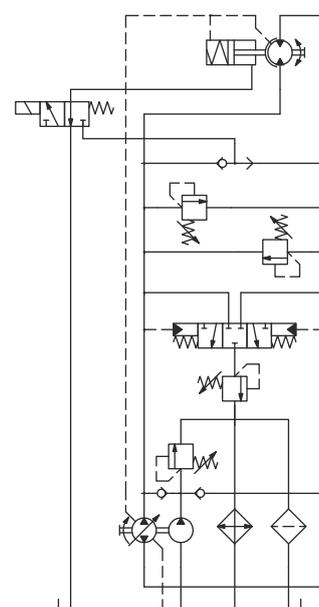
OPEN LOOP SYSTEM, TWO BRAKE-MOTORS, BI-DIRECTIONAL TURNING AND AUTOMATIC BRAKES OPERATION.

This is a typical layout of the travelling system of a mobile machine (aerial platforms, etc.). Fluid under pressure disengages the brakes and starts the two motors; a commutation device will connect the two motors either in series or parallel mode in order to have either speed or torque as main performance. The double overcentre valve will steadily slow down the machine and bring it to an almost complete stop when the brakes will engage.

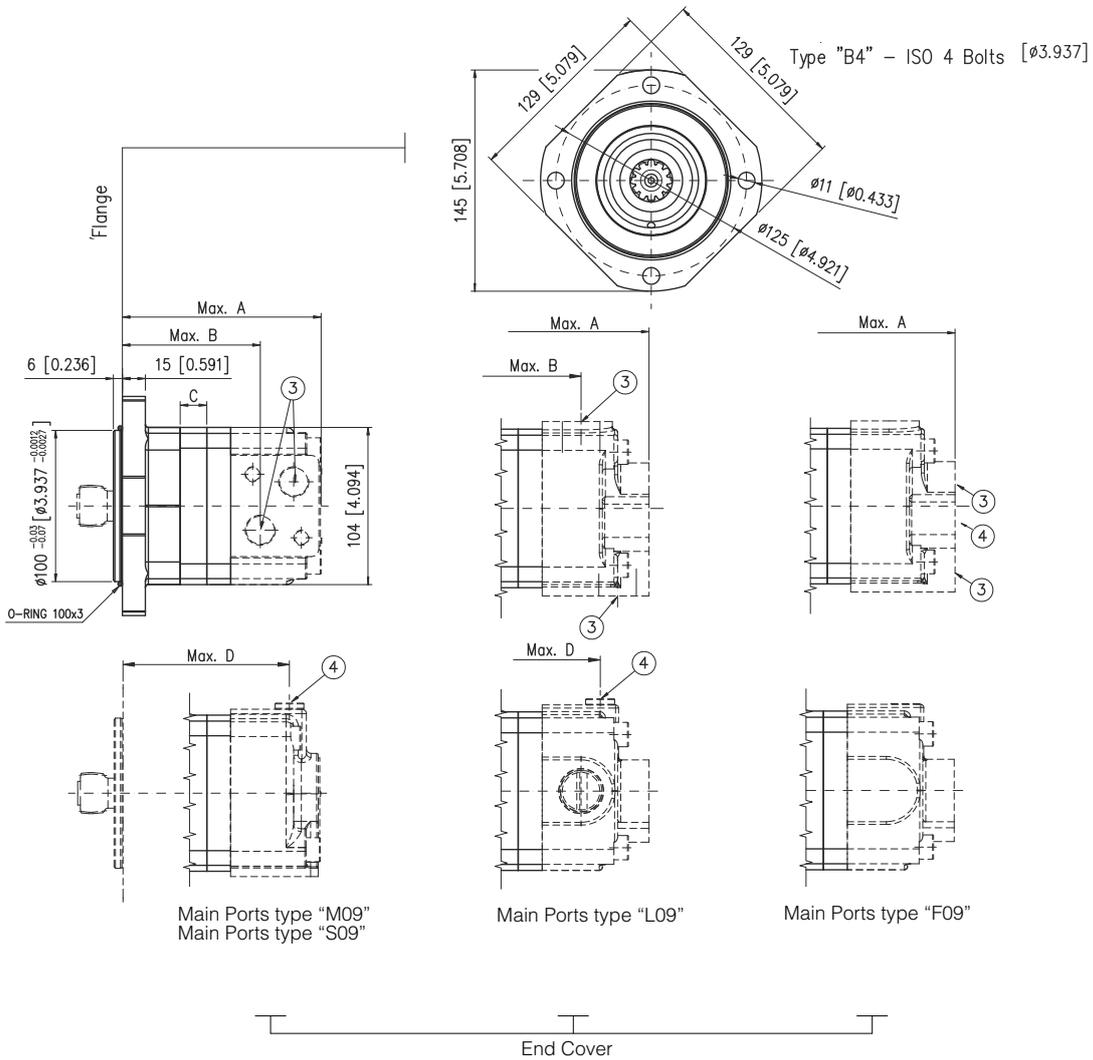


CLOSED LOOP SYSTEM, ONE BRAKEMOTOR, BI-DIRECTIONAL TURNING, AUTOMATIC BRAKE OPERATION AND VARIABLE PUMP.

A very typical system for sweepers. The pump delivers a variable flow of oil to the motor hence the machine can travel at variable speed. The brake is disengaged by the delivery of flow from the shuttle valve via the electro-valve (top, right) that will also release the fluid under pressure from inside the brake piston chamber when the motor stops and the brake engages.



HR C B4 M09/S09/L09/F09



- ③ Main ports
- ④ Drain port

* For main ports dimensions see page [F26](#)

* For interface drawing see page [F21](#)

Main Ports type "M09" - Main Ports type "S09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	127.7 [5.02]	131 [5.15]	135.5 [5.33]	141.5 [5.57]	148.5 [5.84]	157.2 [6.18]	168.5 [6.63]	182 [7.16]
B mm [in]	87.2 [3.43]	90.6 [3.56]	95 [3.74]	101 [3.97]	108 [4.25]	116.7 [4.59]	128 [5.03]	141.6 [5.57]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	106.7 [4.20]	110 [4.33]	114.5 [4.50]	120.5 [4.74]	127.5 [5.01]	136.2 [5.36]	147.5 [5.80]	161 [6.33]
Weight kg [lb]	8 [17.6]	8.2 [18]	8.6 [18.9]	8.9 [19.6]	9.3 [20.4]	10 [22]	10.7 [23.5]	11.5 [25.3]

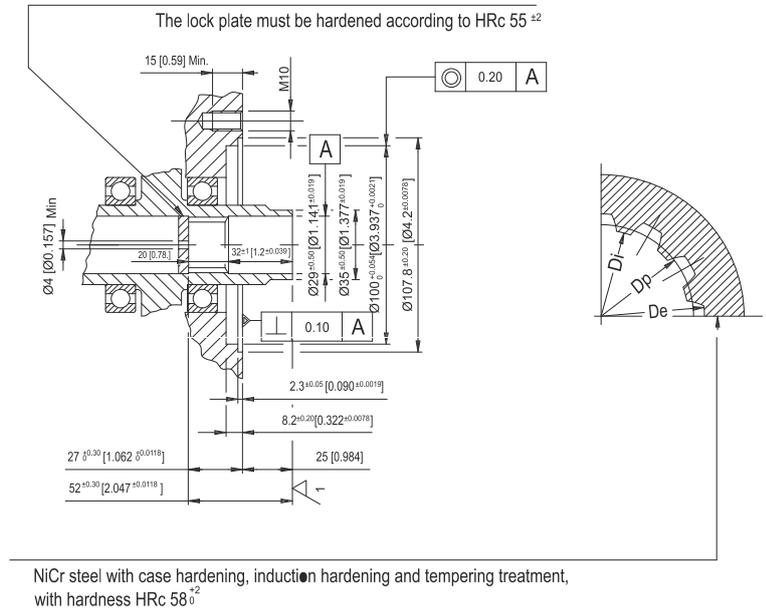
Main Ports type "L09" - Main Ports type "F09" - Main Ports type "R09"								
Displ. cm ³ /giro [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	140.7 [5.53]	144 [5.66]	149.5 [5.88]	154.5 [6.08]	161.5 [6.35]	170.2 [6.70]	181.5 [7.14]	195 [7.67]
B mm [in]	93.2 [3.66]	96.6 [3.80]	101 [3.97]	107 [4.21]	114 [4.48]	122.7 [4.83]	134 [5.27]	147.6 [5.81]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	104.2 [4.10]	107.5 [4.23]	112 [4.40]	118 [4.64]	125 [4.92]	133.7 [5.26]	145 [5.70]	158.5 [6.24]
Weight kg [lb]	8 [17.6]	8.2 [18]	8.6 [18.9]	8.9 [19.6]	9.3 [20.4]	10 [22]	10.7 [23.5]	11.5 [25.3]

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

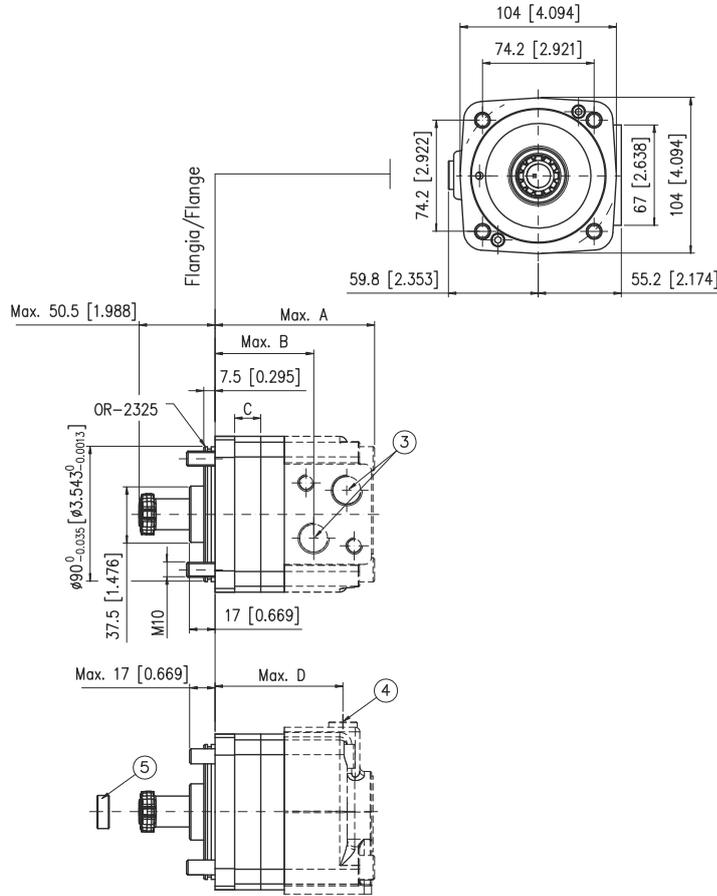
Click **i** button to return to main index

INTERFACE DRAWING FOR HR MOTOR "C" VERSION

Spline ANS B 92.1 + 1970 Class 5 (corrected $m \cdot x=0.8$)	
Diametral pitch	12/24
Number of teeth	Z=12
Pitch diameter	Dp=25.4
Pressure angle	30°
Module	m=2.1166
Minor diameter	Di=23.0 +0.033 0
Major diameter	De=28.0 0 -0.1
Max measurement between pins*	17.62 +0.15 0
Pins diameter	4.835 ±0.001
* Finished dimensions (when hardened)	



HR M M4 M09



Main Ports type "M09"

End Cover

- ③ Main ports
- ④ Drain port
- ⑤ The motors are supplied with spacer

* For interface drawing see page [F23](#)

Main Ports type "M09"								
Displ. (cm ³ /giro) [in ³ /rev]	080 [4.8]	100 [6.1]	130 [7.9]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]
A mm [in]	102.6 [4.03]	106 [4.17]	110.4 [4.34]	116.4 [4.58]	123.4 [4.85]	132.1 [5.20]	143.4 [5.64]	157 [6.18]
B mm [in]	62.2 [2.44]	65.6 [2.58]	70 [2.75]	76 [2.99]	83 [3.26]	91.7 [3.61]	103 [4.05]	116.6 [4.59]
C mm [in]	14 [0.551]	17.4 [0.68]	21.8 [0.85]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.15]	68.4 [2.69]
D mm [in]	81.6 [3.21]	85 [3.34]	89.4 [3.51]	95.4 [3.75]	102.4 [4.03]	111.1 [4.37]	122.4 [4.81]	136 [5.35]
Weight kg (lb)	6.5 [14.3]	6.7 [14.7]	7.1 [15.6]	7.5 [16.5]	8 [17.6]	8.6 [18.9]	9.4 [20.7]	10.3 [22.7]

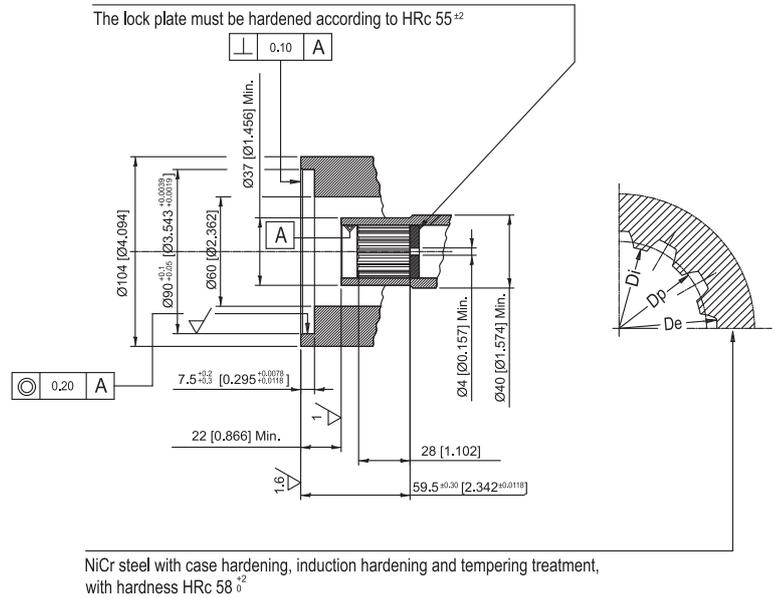
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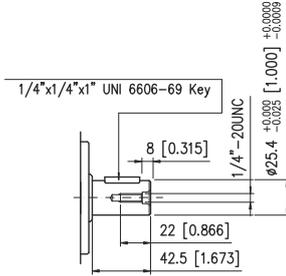
INTERFACE DRAWING FOR HR MOTOR "M" VERSION

Spline ANS B 92.1 + 1970 Class 5 (corrected $m \cdot x = 0.8$)	
Diametral pitch	12/24
Number of teeth	Z=12
Pitch diameter	$D_p = 25.4$
Pressure angle	30°
Module	$m = 2.1166$
Minor diameter	$D_i = 23.0 \begin{matrix} +0.033 \\ 0 \end{matrix}$
Major diameter	$D_e = 28.0 \begin{matrix} 0 \\ -0.1 \end{matrix}$
Max measurement between pins*	$17.62 \begin{matrix} +0.15 \\ 0.1 \end{matrix}$
Pins diameter	$4.835 \begin{matrix} +0.001 \\ -0.001 \end{matrix}$
* Finished dimensions (when hardened)	



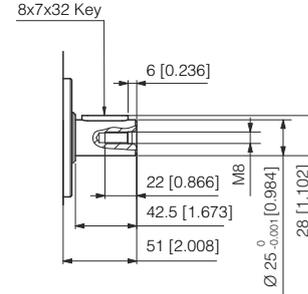
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CL254 Cylindrical Shaft



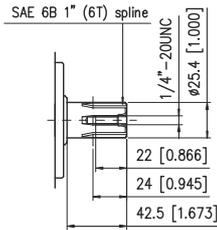
Max. admissible Torque
(Cont. 300 Nm [221 lbf·ft] - Int. 410 Nm [302 lbf·ft])

CL025 Cylindrical Shaft



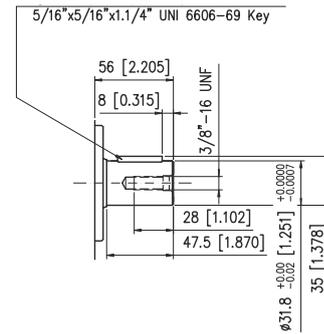
Max. admissible Torque
(Cont. 300 Nm [221 lbf·ft] - Int. 410 Nm [302 lbf·ft])

SE250 Splined Shaft



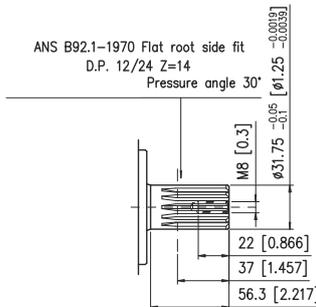
Max. admissible Torque
(Cont. 360 Nm [265 lbf·ft] - Int. 450 Nm [332 lbf·ft])

C3175 Cylindrical Shaft



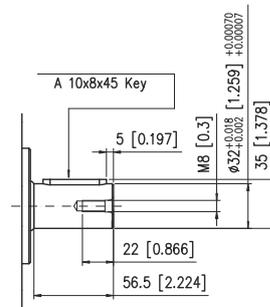
Max. admissible Torque
(Cont. 768 Nm [566 lbf·ft])

SC320 Splined Shaft



Max. admissible Torque
(Cont. 768 Nm [566 lbf·ft])

CL320 Cylindrical Shaft



Max. admissible Torque
(Cont. 768 Nm [566 lbf·ft])

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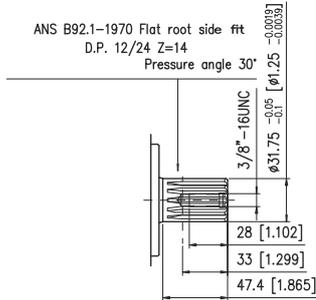
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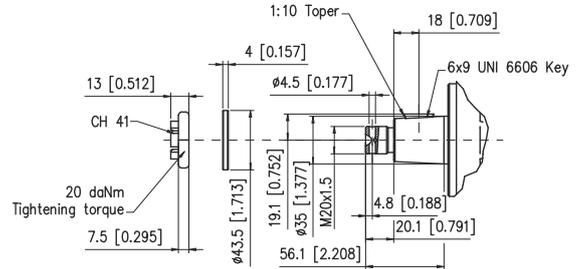
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SE320 Splined Shaft



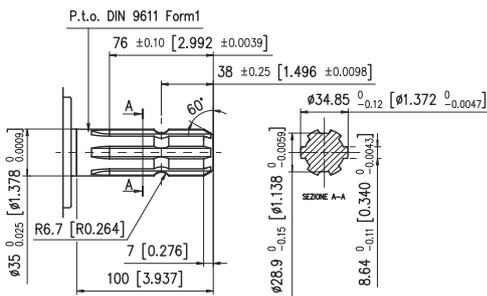
Max. admissible Torque
(Cont. 768 Nm [566 lbf-ft])

CN320 Tapered Shaft



Max. admissible Torque
(Cont. 860 Nm [633.82 lbf-ft])

SE350 Splined Shaft

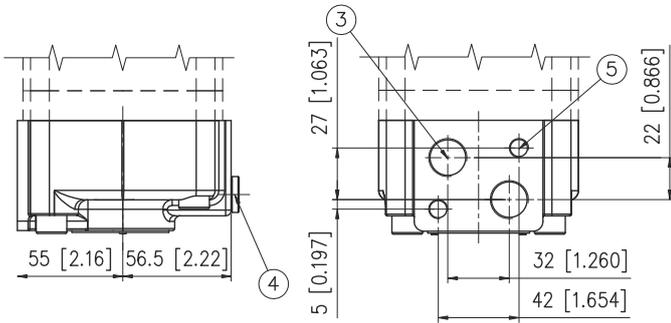


Max. admissible Torque
(Cont. 860 Nm [633.82 lbf-ft])

Main ports dimensions and direction of rotation

1	2	3	4	5	6	7	8	9	10	11	12	13
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M09 1/2 G BSPP (32x22)



- ③ N° 2 Bolts 1/2 G (BSPP) main ports thread depth 15 mm [0.59 in]
- ④ 1/4 G (BSPP) drain port thread depth 13 mm [0.511 in]
- ⑤ N° 2 M10 thread depth 15 mm [0.59 in]

S Version

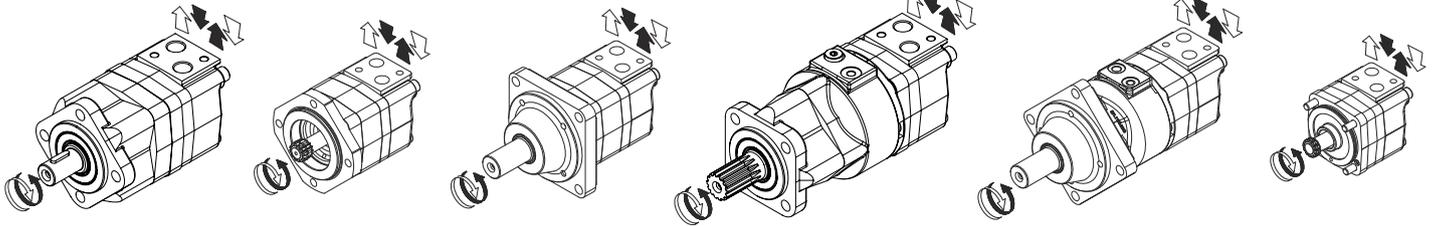
C Version

W Version

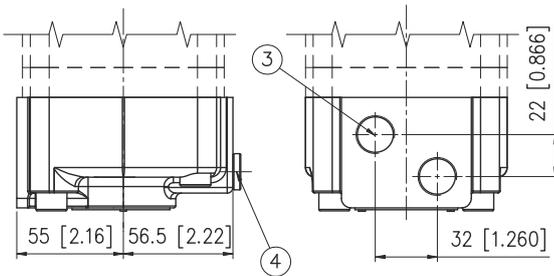
F Version

L Version

M Version



S09 7/8" - 14 UNF (32x22)



- ③ N° 2 Bolts 7/8" - 14 UNF main ports thread depth 17 mm [0.66 in]
- ④ 7/16" - 20 UNF drain port thread depth 13 mm [0.511 in]

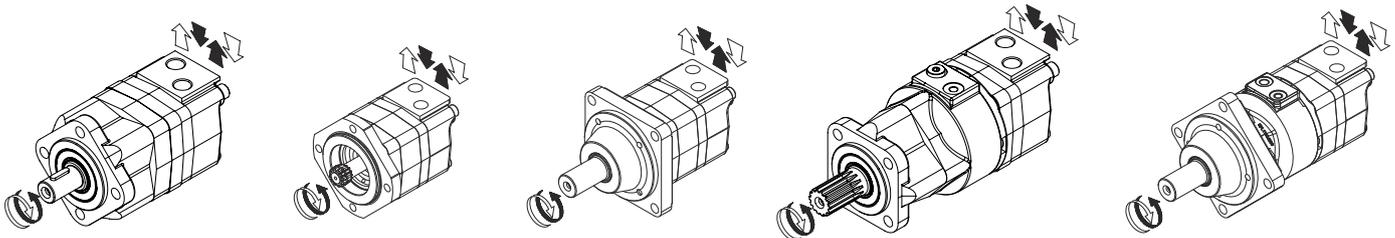
S Version

C Version

W Version

F Version

L Version



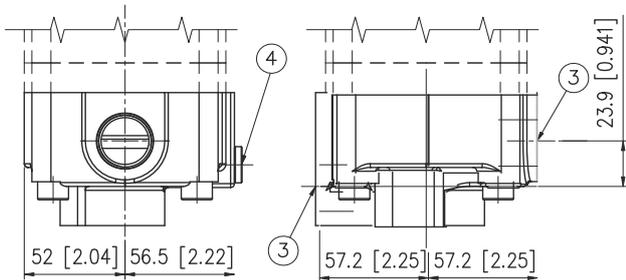
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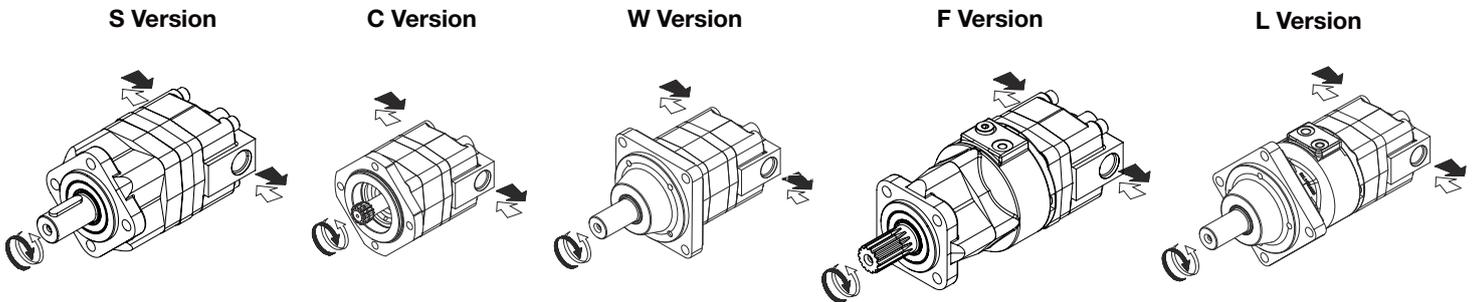
Main ports dimensions and direction of rotation

1	2	3	4	5	6	7	8	9	10	11	12	13
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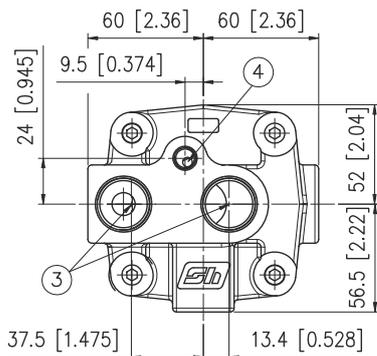
L09 1" 1/16 - 12 UN (Main Ports Positioned 180° apart)



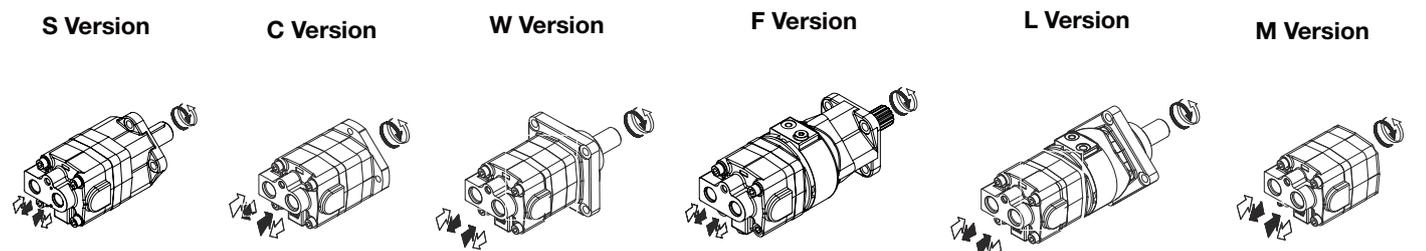
- ③ N° 2 Bolts 1" 1/16 - 12 UN main ports thread depth 20 mm [0.78 in]
- ④ 7/16" - 20 UNF drain port thread depth 13 mm [0.511 in]



S09 1" 1/16 - 12 UN (End Main Ports)



- ③ N° 2 Bolts 1" 1/16 - 12 UN main ports thread depth 17 mm [0.66 in]
- ④ 7/16" - 20 UNF drain port thread depth 13 mm [0.511 in]



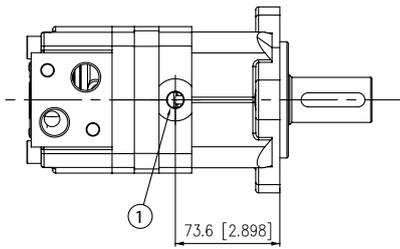
Click **i** button to return to main index

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

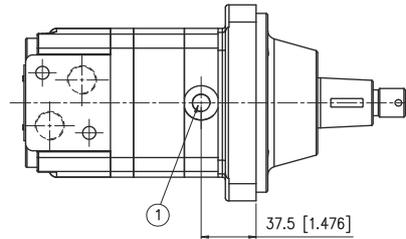


SECONDARY DRAIN PORT (AT DELIVERY SIDE)

For the motor with S-W version, it is possible to put a secondary drain port (at delivery side).
 If it is necessary on the motor a secondary drain port, to specify in the purchase order the value "OKK" for metric version or "SKK" for SAE version (See position 12 of ordering code)



S Version



W Version

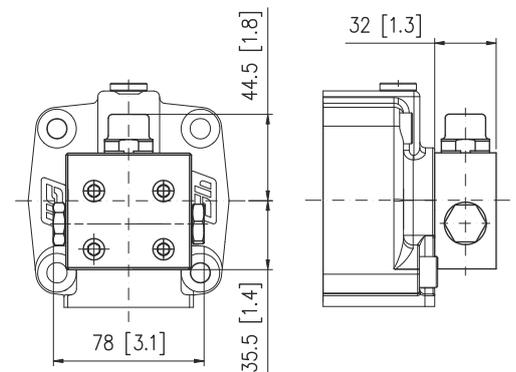
- ① 1/4 G (BSPP) drain port (OK)
- 7/16" - 20 UNF drain port (SK)

LOW LEAKAGE

For applications with low flow and high working pressure, it is recommended the Low Leakage version. The Low Leakage version differs from the standard version for the different internal components.

SPECIAL COVER FOR FLUSHING VALVE

The mount the flushing valve on motors, it is necessary to use a special cover. This is only possible with the "M09 - S09" main ports.
 If it is necessary to assembly the flushing valve on motors, to specify in the purchase order the valves type 06-09-15-21 (See position 10 of ordering code)



For more informations on the Flushing valve, see the Valves and Accessories section or Service Bulletin - 05-0082-A04

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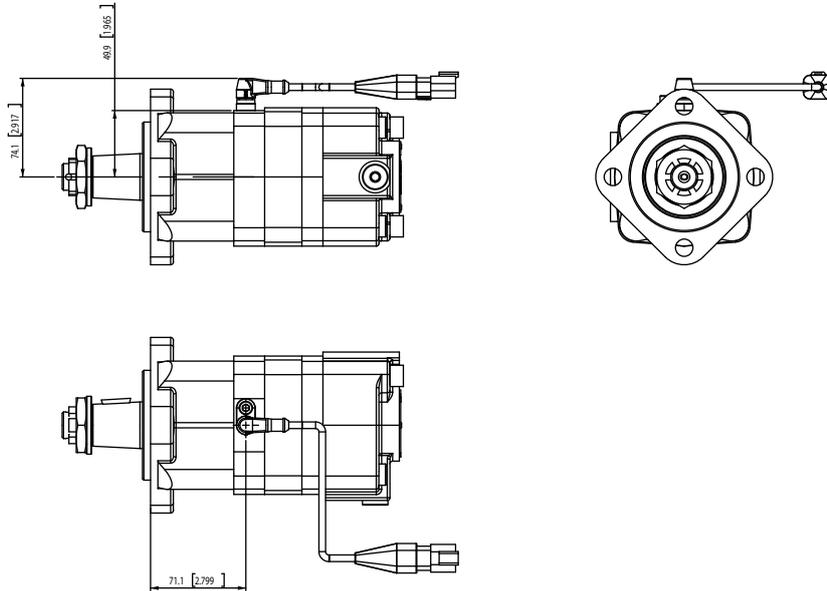
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TZ Tachometer + sensor 2-channel-Hall effect (55 pulse)**Main features:**

2-channel differential-hall effect operating principle sensor

Output: dual-channel (90°)

Power supply: 8-32 VDC

Frequency : 0-20000 Hz

Operating temperature: -40°C / +125°C

Number of pulses per revolution: 55



BREVINI[®]

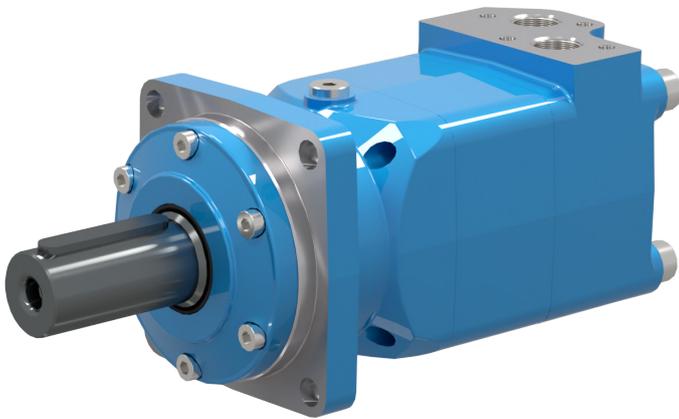
Motion Systems





BREVINI®

Motion Systems



HT Orbital Motors



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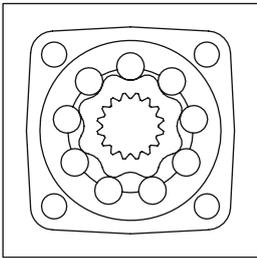
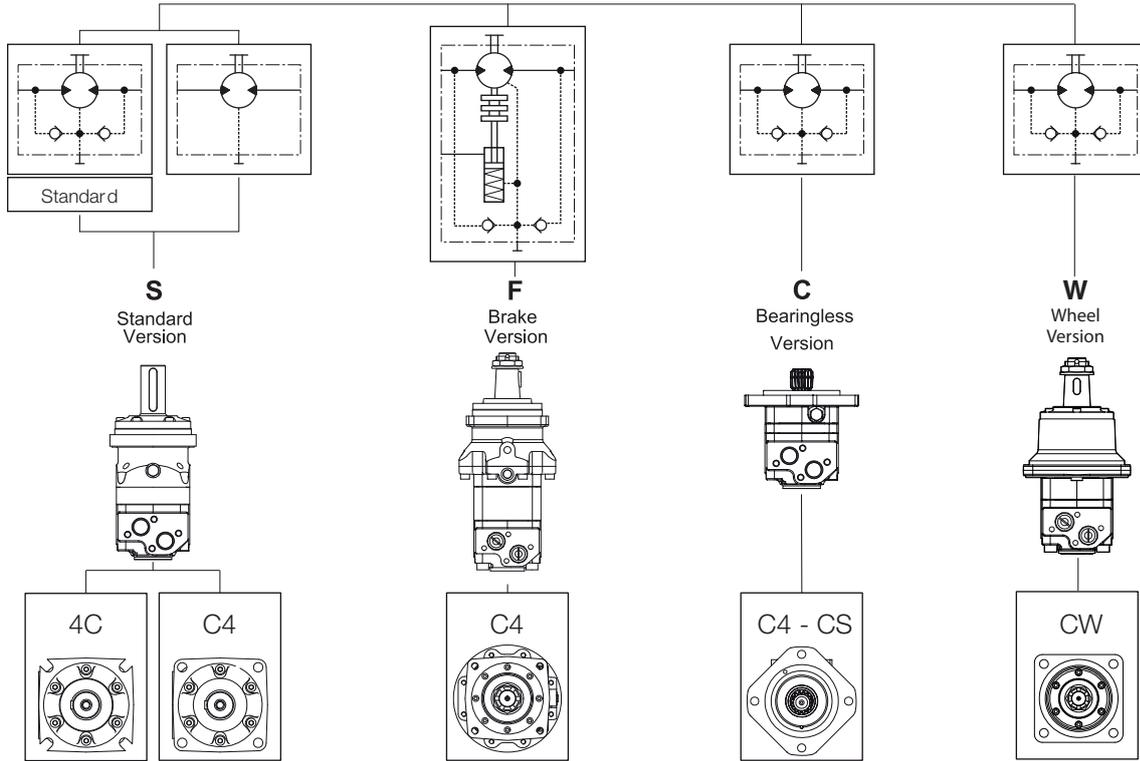


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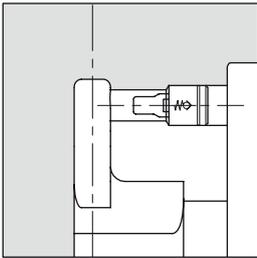
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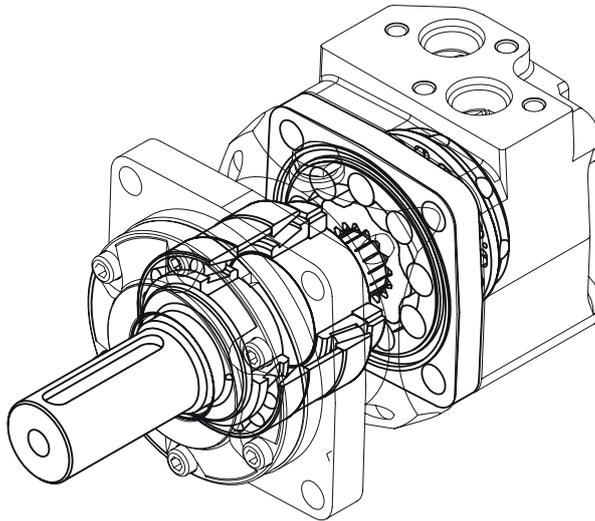
HT



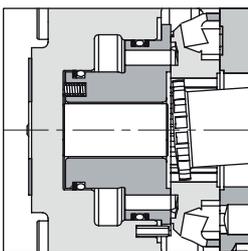
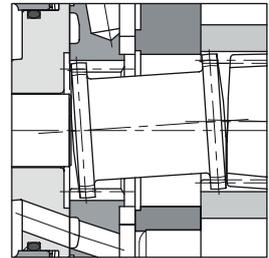
Heavy duty, roller type stator meant to work at high pressure ant to guarantee extra long lasting.



Built-in check valves to recirculate internally drained fluid through return line (standard version).

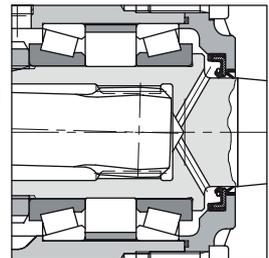


Separate disc valves drive to guarantee sharp phase.



Disc valve distribution with automatic compensation of backlash done by fluid under pressure: lower drain figures are then guaranteed together with high efficiency. The presence of seals with back-up ring guarantee greater reliability.

Shaft supported by two heavy duty tapered roller bearings that ensure outstanding radial load capacity.



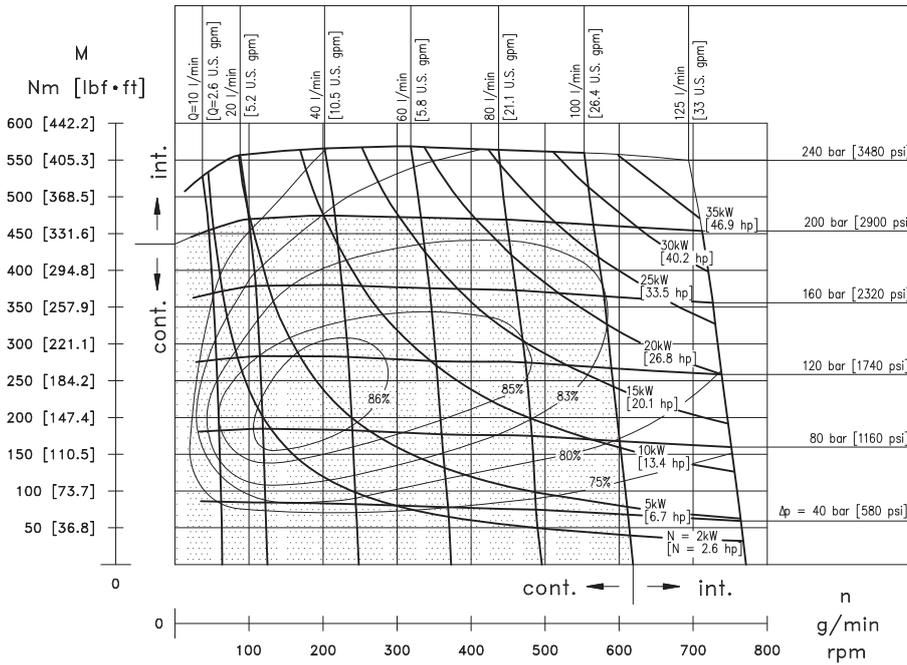
Motor	Displacement cm ³ /rev [in ³ /rev]	Max. input pressure bar [psi]		Max. differential pressure bar [psi]		Max. torque Nm [lbf·ft]		Max. flow l/min [U.S. gpm]		Max. speed rpm		Max. power kW [hp]	
		Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	200 [2900] 240 [3480] 280 [4060]	Cont Int ¹⁾ Peak ²⁾	470 [346.3] 560 [412.7] 660 [486.4]	Cont Int ¹⁾	100 [26.4] 125 [33]	Cont Int ¹⁾	625 780	Cont Int ¹⁾	27.5 [36.8] 32 [42.8]
HT 160	161.1 [9.8]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	200 [2900] 240 [3480] 280 [4060]	Cont Int ¹⁾ Peak ²⁾	470 [346.3] 560 [412.7] 660 [486.4]	Cont Int ¹⁾	100 [26.4] 125 [33]	Cont Int ¹⁾	625 780	Cont Int ¹⁾	27.5 [36.8] 32 [42.8]
HT 200	201.4 [12.2]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	200 [2900] 240 [3480] 280 [4060]	Cont Int ¹⁾ Peak ²⁾	590 [434.8] 710 [523.2] 820 [604.3]	Cont Int ¹⁾	125 [33] 150 [39.6]	Cont Int ¹⁾	625 750	Cont Int ¹⁾	33.5 [44.8] 40 [53.6]
HT 250	251.8 [15.3]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	200 [2900] 240 [3480] 280 [4060]	Cont Int ¹⁾ Peak ²⁾	730 [538] 880 [648.5] 1020 [751.7]	Cont Int ¹⁾	125 [33] 150 [39.6]	Cont Int ¹⁾	500 600	Cont Int ¹⁾	33.5 [44.8] 40 [53.6]
HT 315	326.3 [19.9]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	200 [2900] 240 [3480] 280 [4060]	Cont Int ¹⁾ Peak ²⁾	950 [700.1] 1140 [840.1] 1330 [980.2]	Cont Int ¹⁾	125 [33] 150 [39.6]	Cont Int ¹⁾	380 460	Cont Int ¹⁾	33.5 [44.8] 40 [53.6]
HT 400	410.9 [25.06]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	180 [2610] 210 [3045] 240 [3480]	Cont Int ¹⁾ Peak ²⁾	1080 [795.9] 1260 [928.6] 1440 [1061.2]	Cont Int ¹⁾	125 [33] 150 [39.6]	Cont Int ¹⁾	305 365	Cont Int ¹⁾	30 [40.2] 35 [46.9]
HT 500	523.6 [31.9]	Cont Int ¹⁾ Peak ²⁾	210 [3045] 250 [3625] 300 [4350]	Cont Int ¹⁾ Peak ²⁾	160 [2320] 180 [2610] 210 [3045]	Cont Int ¹⁾ Peak ²⁾	1220 [899.1] 1370 [1009.6] 1600 [1179.2]	Cont Int ¹⁾	125 [33] 150 [39.6]	Cont Int ¹⁾	240 285	Cont Int ¹⁾	26.5 [35.5] 30 [40.2]

¹⁾ Intermittent duty must not exceed 10% each minute.

²⁾ Peak duty must not exceed 1% each minute.

³⁾ Oil viscosity 35 cSt.

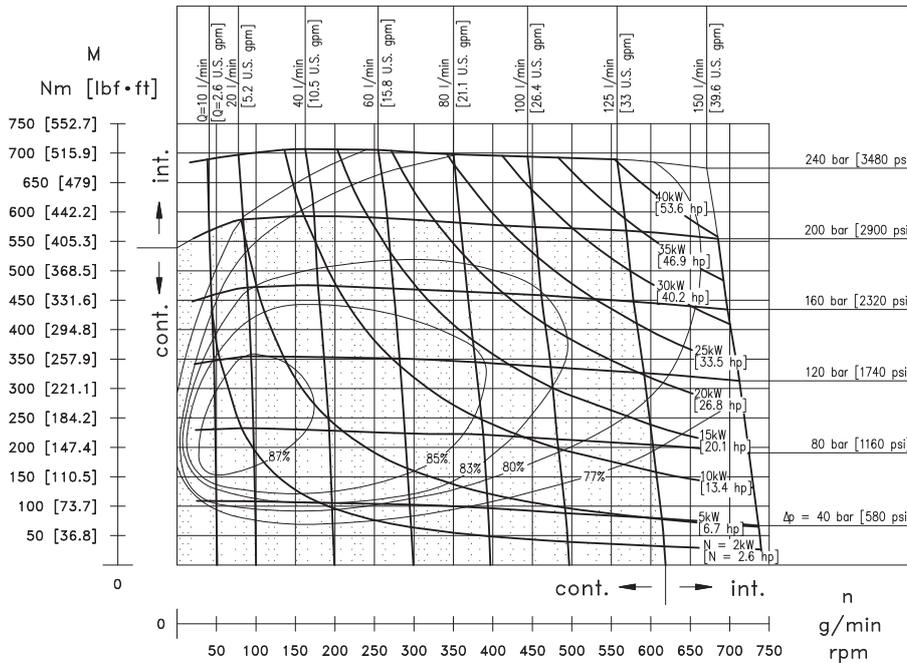
HT 160



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note:
Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 C° temperature.

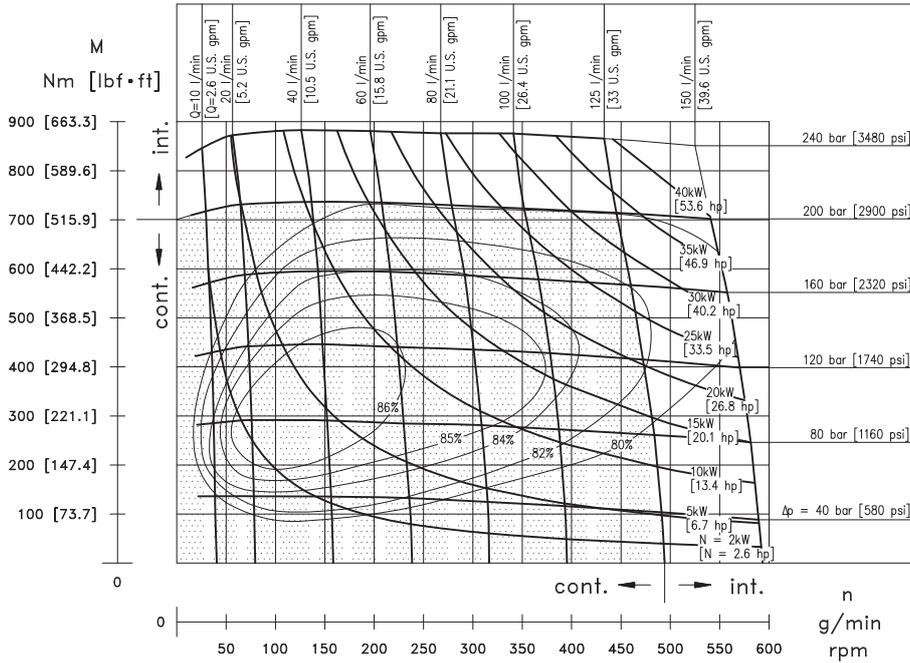
HT 200



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note:
Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 C° temperature.

HT 250

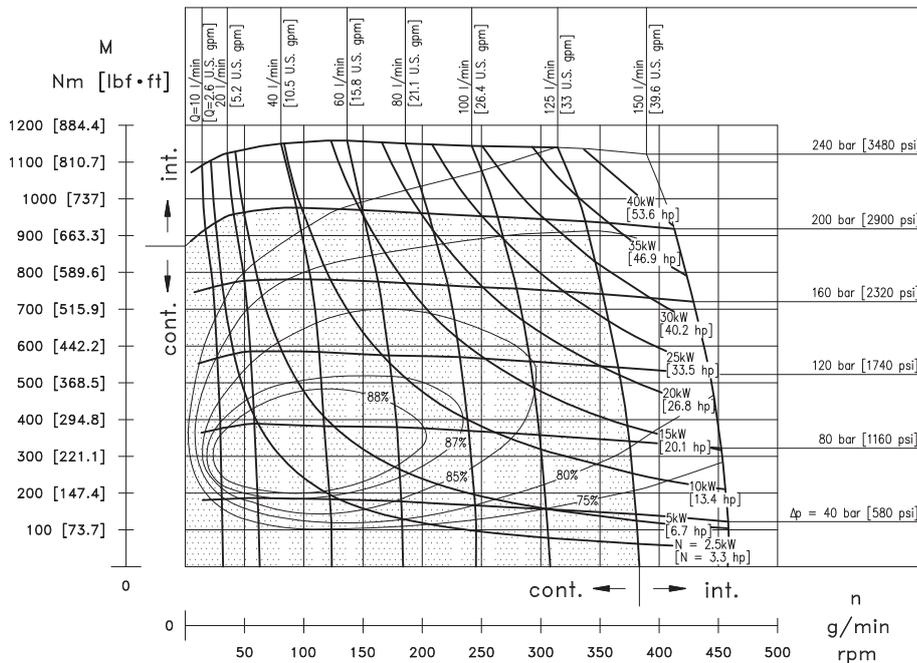


Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note:

Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 °C temperature.

HT 315



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note:

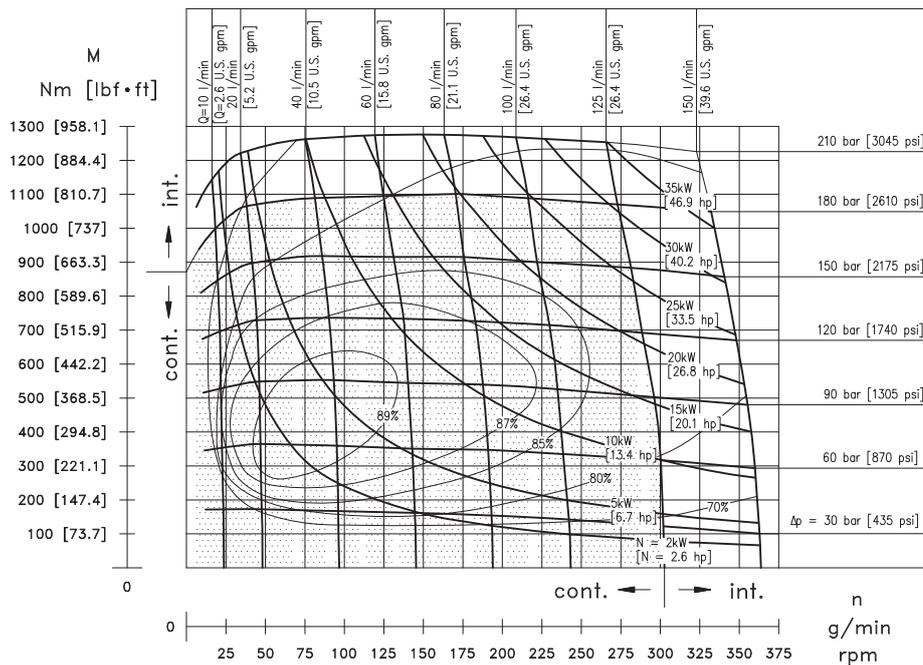
Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 °C temperature.

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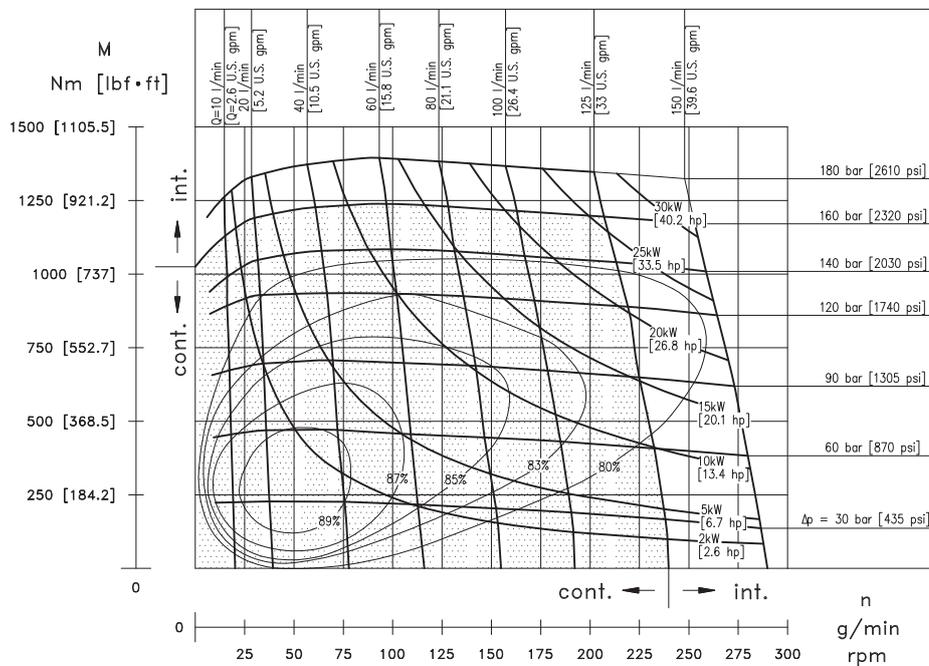
HT 400



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note:
Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 C° temperature.

HT 500



Exceeding continuous pressure values or exceeding flow values indicated, must not occur simultaneously.

Note:
Diagram according to tests done with a relevant number of motors and using hydraulic oil with kinematic viscosity of 37 cSt at 45 C° temperature.

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Motor	Max. Outlet pressure whit Drain line (cont.) bar [psi]		Max. starting pressure with no load bar [psi]	Min. starting torque Nm [lbf-ft]			Min. speed rpm
	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]		A Δp max. At max. Δp	Cont Int ¹⁾	340 [250.5] 410 [302.1]	
HT 160	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	340 [250.5] 410 [302.1]	10
HT 200	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	430 [316.9] 520 [383.2]	9
HT 250	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	530 [390.6] 630 [464.3]	8
HT 315	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	740 [545.3] 890 [655.9]	7
HT 400	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	840 [619] 970 [714.8]	6
HT 500	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2537] 210 [3045]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	950 [700.1] 1060 [781.2]	5

¹⁾ Intermittent duty must not exceed 10% each minute.

²⁾ Peak duty must not exceed 1% each minute.

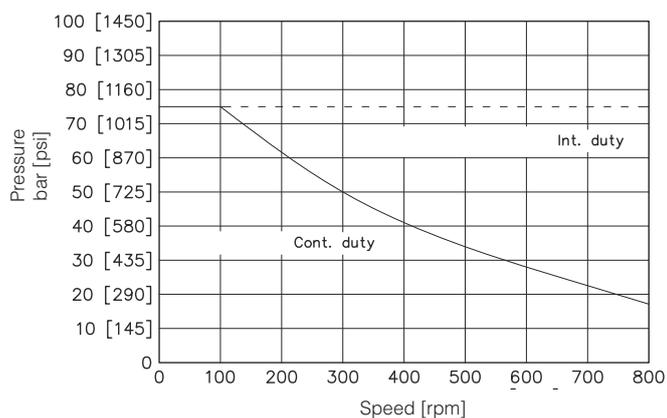
³⁾ Oil viscosity 35 cSt.

Max. Permissible Shaft Seal Pressure

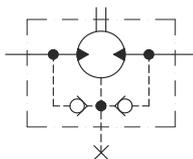
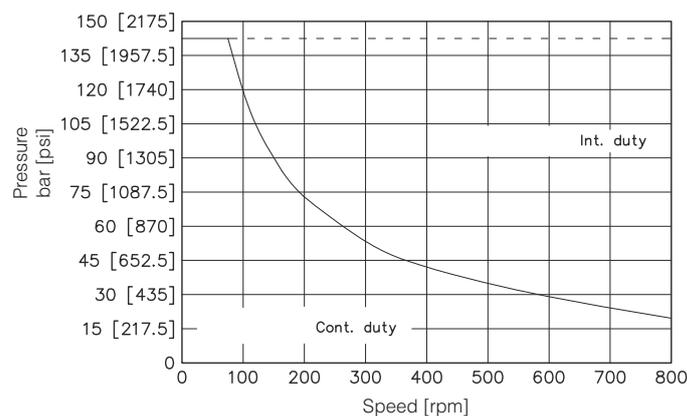
Max. return pressure without drain line or max. pressure in the drain line. Motor are supplied in standard seal version (Standard chart) or in HPS seal version (HPS chart).

For pressure and speeds not showed in the curve below, please contact Dana Brevini.

STANDARD



HPS



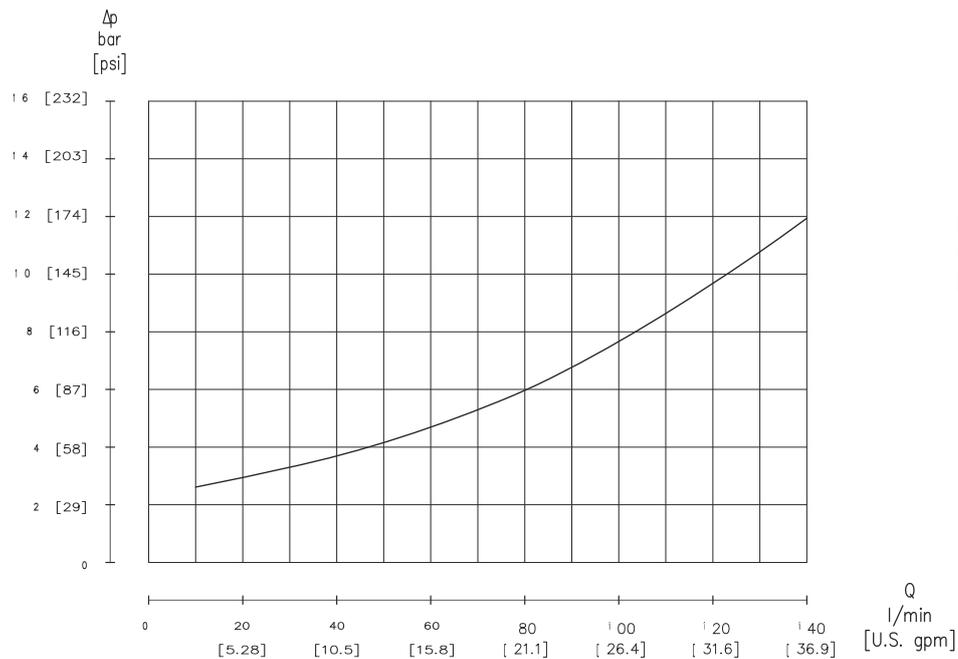
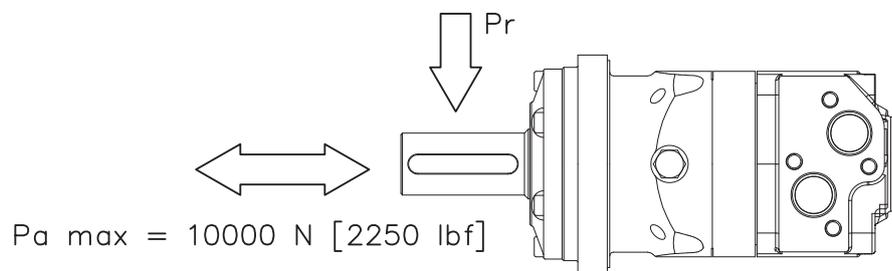
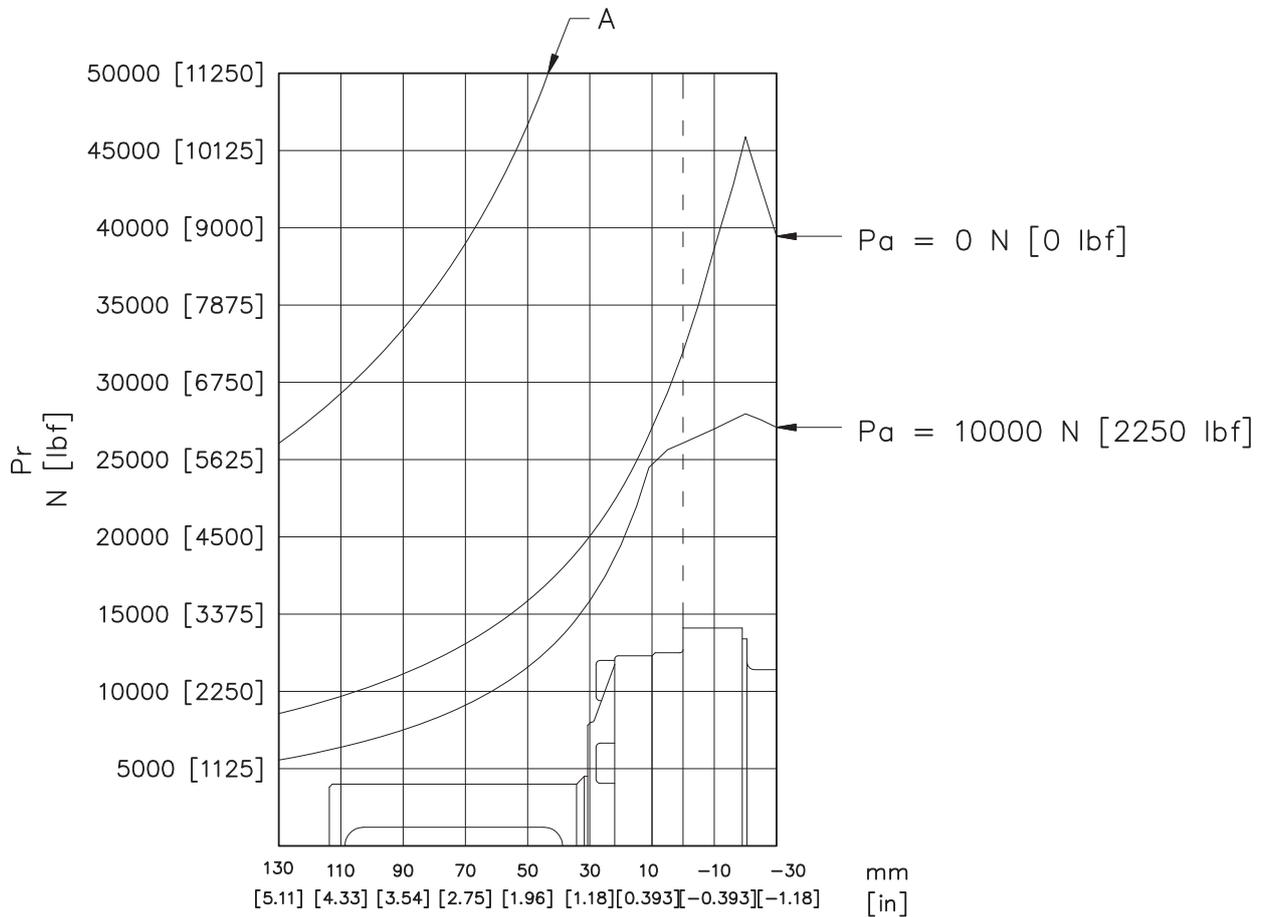


Diagram according to tests done with a relevant number of motors and using hydraulics oil with kinematic viscosity of 37 cSt at 45 °C temperature.

Shaft loads diagram is for a bearings life L10h of 3000 hours at 200 rpm when mineral base hydraulic oil with a sufficient content of anti-wear additives is used. Bearing life calculation refers to a 90% degree of reliability. Curve "A" shows the maximum radial load that can be taken by the bearings under maximum static load duty.



The following alphanumeric digits system has been developed to identify all of the configuration options for the HT motors. Use the model code below to specify the desired features. **All alphanumeric digits system of the code must be present when ordering.** We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12	13
Series	Displacement	Version	Mount flange	Shaft end	Main port	Seal	Valve	Valve feature	Flushing Valve	Option	Version feature	Painting
HT	315	S	4C	CL400	M10	N	M101	020	XX	XX	XXXX	XX

1	Series	
HT	Orbital motor	

2	Displacement	
160	160 cm ³ /giro [9.76 in ³ /rev]	
200	200 cm ³ /giro [12.2 in ³ /rev]	
250	250 cm ³ /giro [15.25 in ³ /rev]	
315	315 cm ³ /giro [19.215 in ³ /rev]	
400	400 cm ³ /giro [24.4 in ³ /rev]	
500	500 cm ³ /giro [30.5 in ³ /rev]	

3	Version	
S	Standard Version	
C	Bearingless Version	
F	Brake Version	
W	Wheel Version	

4	Mounting Flange	Version			
		S	C	F	W
4C	SAE C 4 Bolt	●	-	-	-
C4	ISO 4 Bolt Ø 125 mm [Ø 4.9 in] - Drain port 1/4 G (BSPP)	●	●	●	-
CS	ISO 4 Bolt Ø 125 mm [Ø 4.921 in] - Drain port 9/16" - 18 UNF	-	●	-	-
CW	ISO 4 Bolt Ø 160 mm [Ø 6.299 in] - Drain port 1/4 G (BSPP)	-	-	-	●

● Available
- Not Available

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Shaft End		Version			
		S	C	F	W
DB002	Dog Bone T=16 12/24 DP	-	●	-	-
CL400	Ø40 mm [1.56 in] Parallel keyed	●	-	●	●
C3800	Ø38 mm [1.48 in] Parallel keyed	●	-	-	-
CN400	Tapered Shaft (Available only with mount flange C4 and M10 Main Ports)	●	-	●	●
SC380	Splined Shaft (ANS B 92.1 / 1970 12/24 DP Z=17 spline)	●	-	●	●

6

Main Port		Version			
		S	C	F	W
M10	3/4 G BSPP (23x40) Main Ports (Standard)	●	●	●	●
M1Z	3/4 G BSPP (23x40) Main Ports, Without M10 threads	-	-	●	-
S10	1" 1/16 - 12 UN Main Ports	●	●	-	●

7

Seals	
N	NBR (Standard)
V	FKM

8

Valve		Main Port		
		M10	M1Z	S10
XXXX	Not Required	●	●	●
M101	Pressure relief valve VAF 10 - D	●	-	-
M102	Double-acting overcentre valve with shuttle valve VCR1 10 - D/AF	●	-	-
M103	Overcentre Valve with VCD2 10 - S/AF	●	-	-



9

Valve Features		Valve			
		XXXX	M101	M102	M103
000	Feature not necessary	●	-	-	-
023	Not Set 100÷350 bar [1450 to 5075 psi] - Direction of rotation CW	-	-	-	●
024	Not Set 100÷350 bar [1450 to 5075 psi] - Direction of rotation CCW	-	-	-	●
026	Not Set 30÷210 bar [435 to 3045 psi] - Direction of rotation CW	-	-	-	●
027	Not Set 30÷210 bar [435 to 3045 psi] - Direction of rotation CCW	-	-	-	●
020	Not Set 100÷200 bar [1450 to 2900 psi]	-	●	-	-
025	Not Set 210÷300 bar [3045 to 4350 psi]	-	●	-	-
700	Pilot Ratio 7:1	-	-	●	-
100	Pilot Ratio 10:1	-	-	●	-

● Available
- Not Available

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Flushing Valve ⁽¹⁾

XX	Not Required
06	VSC/F Flushing valve - 6 l/min [1.58 U.S. gpm]
09	VSC/F Flushing valve - 10.5 l/min [2.77 U.S. gpm]
15	VSC/F Flushing valve - 15 l/min [3.96 U.S. gpm]

11

Option

XX	None
-----------	------

12

Version Feature

	Version Feature	Version			
		S	C	F	W
XXXX	Standard version	●	●	●	●
HPS	High Pressure Sea	●	-	-	-
HD0	Heavy duty (available only with M10 Main ports, CL400-CN400-SC380 shats and without internal check valves)	●	-	-	-
DH0	Heavy duty (available only with M10 Main ports, CL400-CN400-SC380 shats and without internal check valves) + High Pressure Seal	●	-	-	-
TC7	Tachometer with sensor arrangement (available only with C4 flange and M10 main ports and C4 flange and M10 main ports)	●	-	-	-
TC8	Tachometer with sensor with 2 metres cable (available only with C4 flange and M10 main ports and C4 flange and M10 main ports)	●	-	-	-
FD0	Brake and Drain Ports 1/8 G	-	-	●	-

13

Painting

XX	Not painted
01	Black Painted RAL 9005
21	Blue Painted RAL 5021

⁽¹⁾ It is possible to combine the flushing valves only with VAF 10 - D valve.

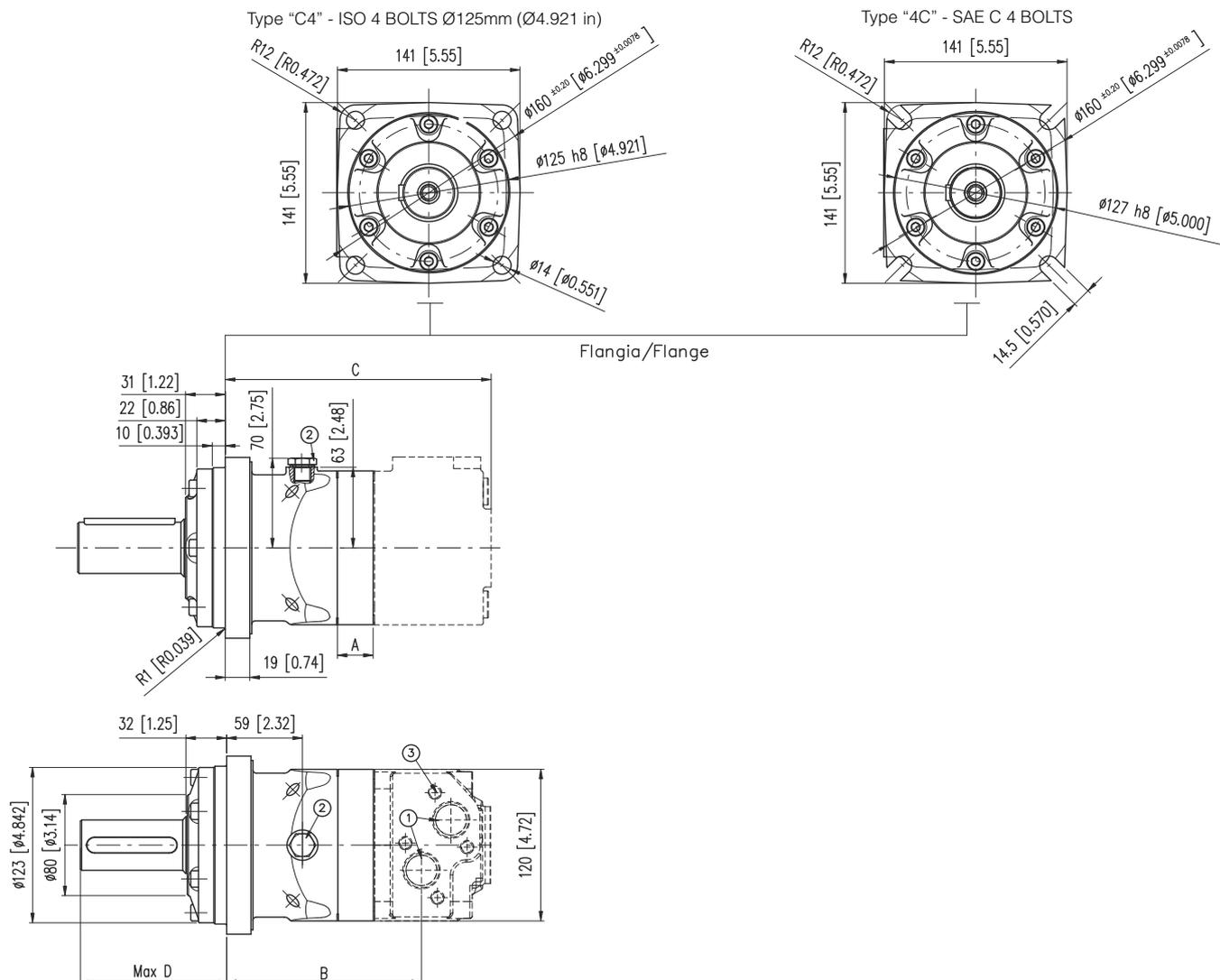
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HT S C4/4C M10



- ① Main ports
- ② 1/4 G (BSPP) drain port thread depth 12 mm [0.472 in] (With C4 flange version)
9/16 - 18 UNF drain port thread depth 13 mm [0.511 in] (With 4C flange version)
- ③ M10 hole (With M10 main ports version)

Displ. cm ³ /giro [in ³ /rev]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]	500 [30.5]
A mm [in]	17 [0.67]	22 [0.87]	28.2 [1.11]	37.5 [1.48]	48 [1.89]	62 [2.44]
B mm [in]	140 [5.51]	145 [5.71]	153.2 [6.03]	160.5 [6.32]	171 [6.73]	185 [7.28]
C mm [in]	193.6 [7.62]	198.6 [7.82]	206.8 [8.14]	214.1 [8.43]	224.6 [8.84]	238.6 [9.39]
Weight kg [lb]	20 [44]	20.5 [45.1]	21 [46.2]	22 [48.4]	23 [50.6]	24 [52.8]

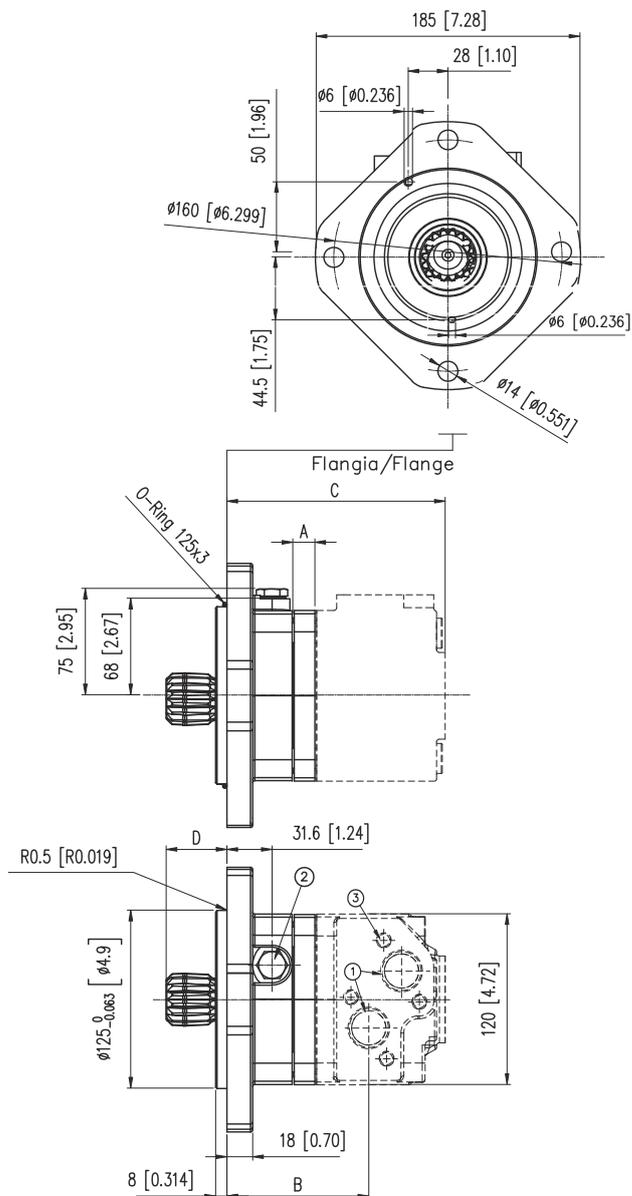
SHAFT	CL400	C3800	CN400	SC380
D mm [in]	113.8 [4.48]	91.2 [3.59]	113.6 [4.47]	113.7 [4.47]

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HT C C4/CS M10



Type "C4-CS" - ISO 4 BOLTS Ø125mm (Ø4.921 in)

- ① Main ports
- ② 1/4 G (BSPP) drain port thread depth 14 mm [0.551 in] (With C4 flange version)
9/16 - 18 UNF drain port thread depth 14 mm [0.551 in] (With CS flange version)
- ③ M10 hole (With M10 main ports version)

Displ. cm ³ /giro [in ³ /rev]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]	500 [30.5]
A mm [in]	17 [0.67]	22 [0.87]	28.2 [1.11]	37.5 [1.48]	48 [1.89]	62 [2.44]
B mm [in]	99.5 [3.92]	104.5 [4.11]	110.7 [4.36]	120 [4.72]	130.5 [5.14]	144.5 [5.69]
C mm [in]	154 [6.06]	159 [6.26]	165.2 [6.50]	174.5 [6.87]	185 [7.28]	199 [7.83]
D mm [in]	45 [1.77]	45 [1.77]	45 [1.77]	45 [1.77]	45 [1.77]	45 [1.77]
Weight kg [lb]	14.5 [31.9]	14.75 [32.5]	15 [33]	15.3 [33.8]	15.78 [34.8]	16.3 [36]

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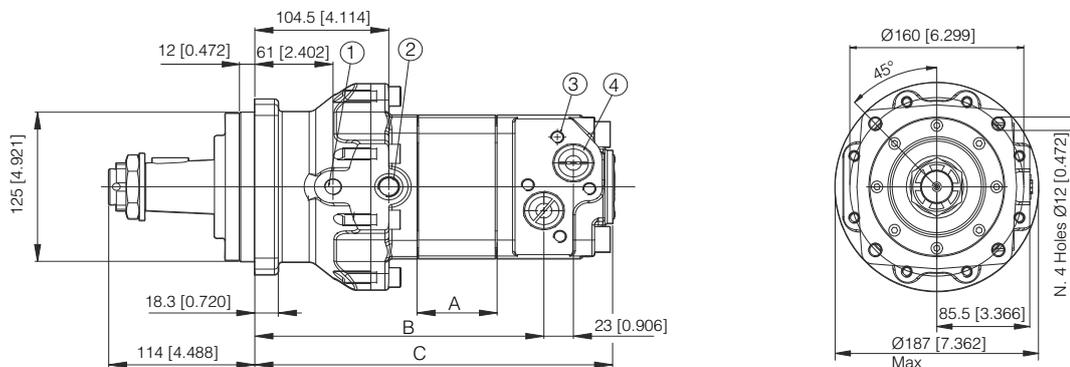
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HT F C4 M10



- ① Brake release port G 1/4 - 12 mm [0.47] deep
- ② Drain connection G 3/8 - 14 mm [0.55] deep
- ③ M10 - 10 mm [0.39] deep
- ④ G 3/4 - 17 mm [0.67] deep

Displ. cm ³ /giro [in ³ /rev]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]	500 [30.5]
A mm [in]	17 [0.67]	22 [0.87]	28.2 [1.11]	37.5 [1.48]	48 [1.89]	62 [2.44]
B mm [in]	180 [7.09]	185 [7.28]	191.2 [7.53]	200.5 [7.89]	211 [8.31]	225 [8.86]
C mm [in]	233.6 [9.20]	225.6 [8.88]	244.8 [9.64]	254.1 [10]	264.6 [10.42]	278.6 [10.97]
Weight kg [lb]	25,5 [56,22]	25,8 [56,88]	26,1 [57,54]	26,3 [57,98]	27,3 [60,19]	28,2 [62,17]

SHAFT	CL400	C3800	CN400	SC380
D (mm) [in]	113.8 [4.48]	91.2 [3.59]	113.6 [4.47]	113.7 [4.47]

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

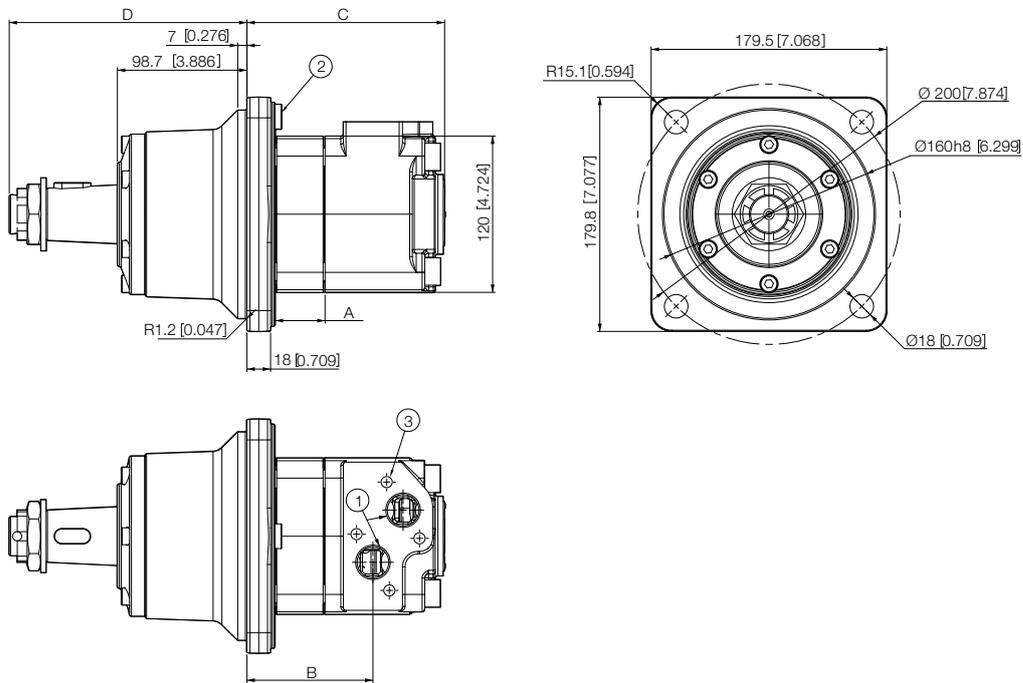
Click **DANA** button to return to section index



Dimensions and weight

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

HT W CW CN400



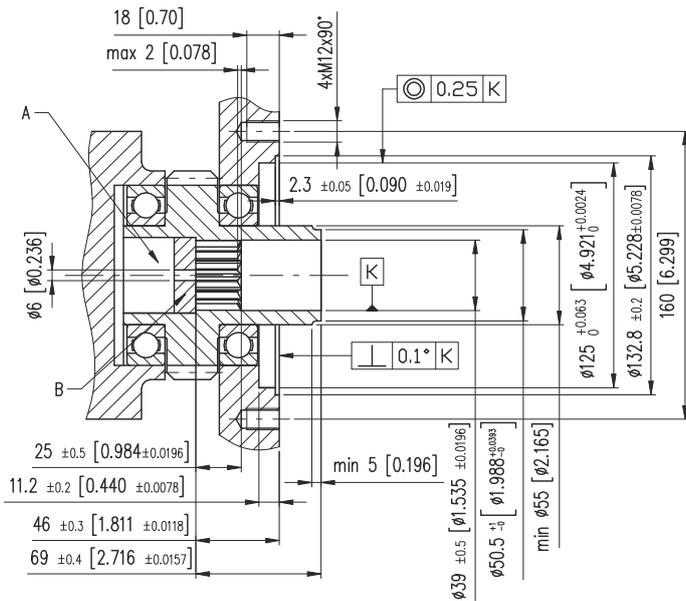
- ① Brake release port G 3/4 -17 mm [0.67] deep
- ② Drain connection G 1/4 -12 mm [0.47] deep
- ③ M10 - 10 mm [0.39] deep

Displ. cm ³ /giro [in ³ /rev]	160 [9.7]	200 [12.2]	250 [15.2]	315 [19.2]	400 [24.4]	500 [30.5]
A mm [in]	17 [0.67]	22 [0.87]	28.2 [1.11]	37.5 [1.48]	48 [1.89]	62 [2.44]
B mm [in]	75.5 [2.97]	80.5 [3.17]	88.7 [3.49]	96 [3.78]	106.5 [4.19]	120.5 [4.74]
C mm [in]	129.1 [5.08]	134.1 [5.28]	142.3 [5.60]	149.6 [5.89]	160.1 [6.30]	174.1 [6.80]
Weight kg [lb]	21.2 [46.6]	21.7 [47.8]	22.2 [48.9]	23.2 [51.0]	24.2 [53.2]	25.2 [55.4]

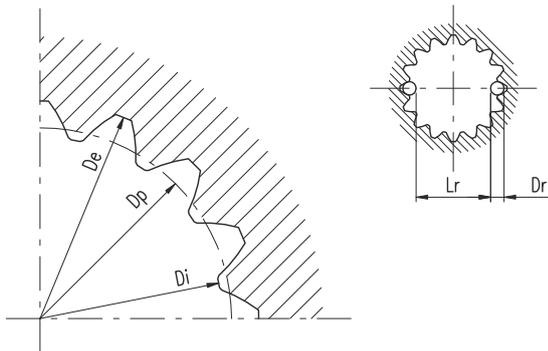
SHAFT	CN400
D (mm) [in]	178.1 [7.012]

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

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A: Oil circulation hole
B: Hardened stop plate



Internal involute spline Standard ANS B92.1 - 1970 classe 5 (corrected $m \cdot x = 1$)		
Diametral Pich		12/24
Number of theeth	Z	16
Pich diameter	Dp	33.866
Pressure angle		30°
Module	m	2.1166
Minor diameter	Di	32.15 ₀ ^{+0.25}
Major diameter	De	38.4 ₀ ^{+0.25}
Max measurment between pins*	Lr	26.9 ₀ ^{+0.15}
Pins diameter	Dr	4.834 h5
* Finished dimensions (when hardened)		

Material:

NiCr steel with case hardening, induction hardening and tempering treatment or with hardness of 58 HRC.

Drain line:

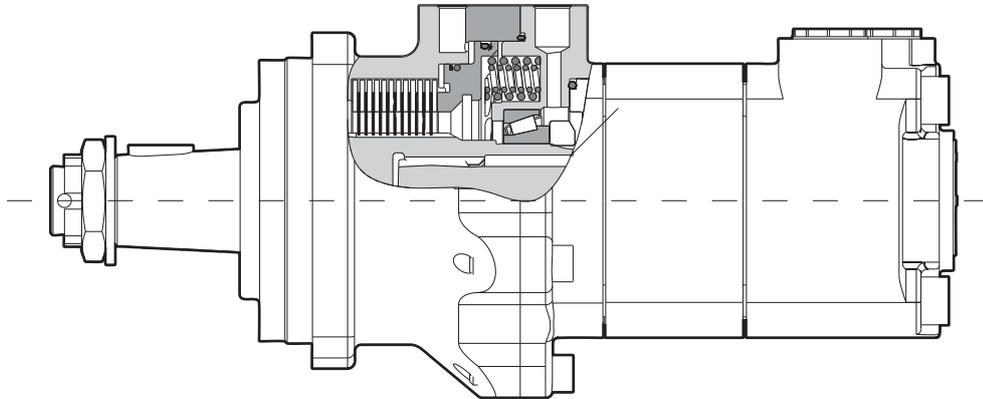
A drain line must be used when the return line pressure exceed the permissible pressure in the attached component. The drain line can be connected at two different points:

- 1) At the motor drain connection.
- 2) At the drain connection of the attached component.

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Minimum brake static torque	142 daNm [1047 lb.ft]
Starting release pressure	30 bar [435 psi]
Full release pressure	35 bar [508 psi]
Max pressure drain line	5 bar [73 psi]
Max pressure in brake line	280 bar [4060 psi]

The brakes built into F version motors are multidisc pressure released ones for static operation. With no pressure from the pump to the motor, a set of springs will push the discs one against the other, hence the motor shaft will not be allowed to rotate unless the shaft itself is driven with a torque widely exceeding the max. static torque of the brake.

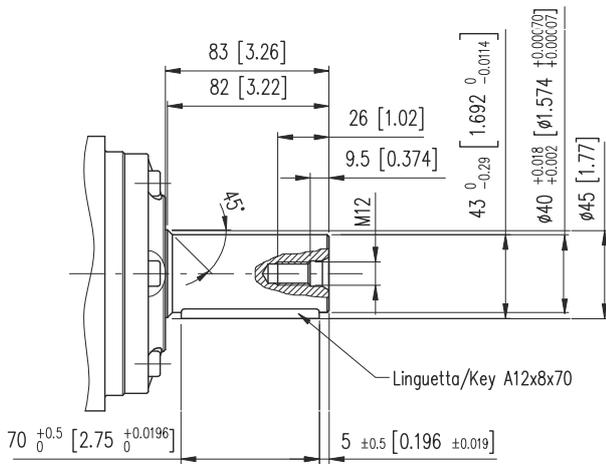
By sending pressure to the motor a shuttle valve (to be included in the system) will send pressure to the brake, overcome the resistance of the springs and release the brake hence allowing the start of the motor. Wheel motors require some care in the engineering of the machine.

The major aspects to consider are:

- Hub and motor shaft tapers must be perfectly matching, in order to avoid excessive key stress, which can occur in case of bottoming of shaft tip washer and nut at the end of the thread.
- A proper service factor should be considered in case of shocks to the shaft (eg. With the machine travelling on very uneven soil) stop has been reached.

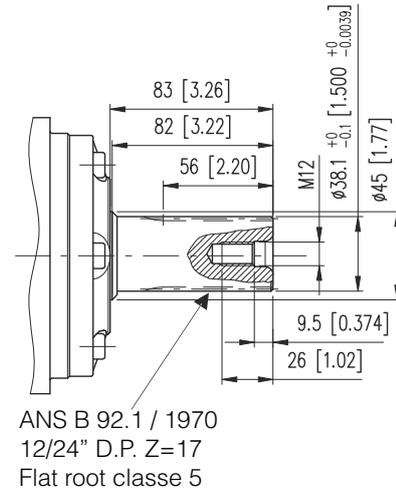
1	2	3	4	5	6	7	8	9	10	11	12
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CL400 Cylindrical Shaft



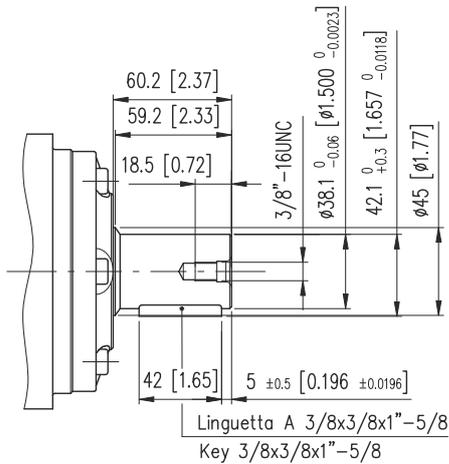
Max. admissible Torque
Cont. 1220 Nm [899.14 lbf-ft]

SC380 Splined Shaft



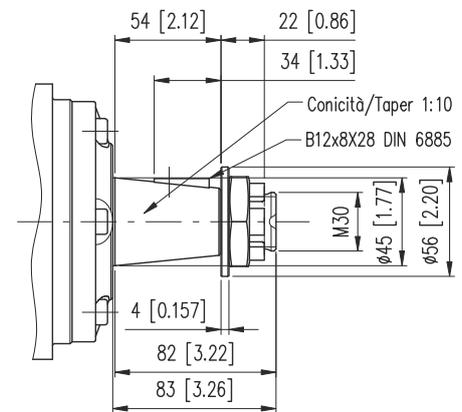
Max. admissible Torque
Cont. 1220 Nm [899.14 lbf-ft]

C3800 Cylindrical Shaft



Max. admissible Torque
Cont. 1220 Nm [899.14 lbf-ft]

CN400 Tapered Shaft

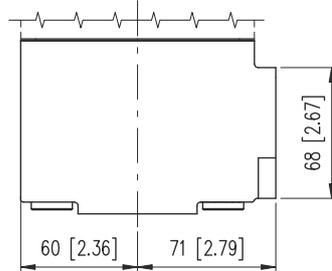
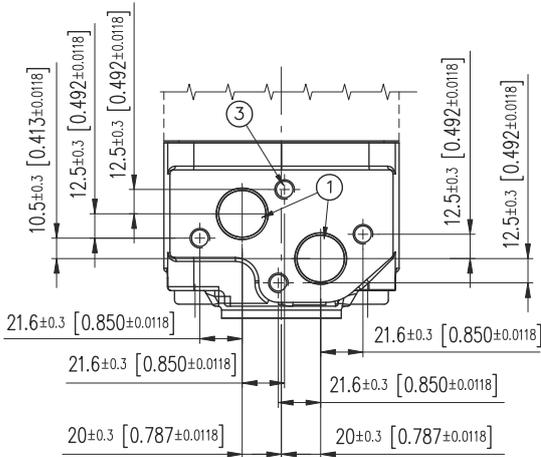


Max. admissible Torque
Cont. 1220 Nm [899.14 lbf-ft]

Main ports dimensions and direction of rotation

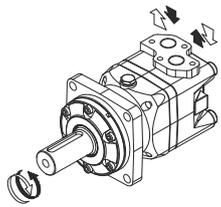
1	2	3	4	5	6	7	8	9	10	11	12
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M10 3/4 G BSPP (23x40)

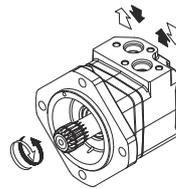


- 1) N.2 3/4 G (BSPP) main ports thread depth 17 mm [0.66 in]
- 3) N.4 M10 hole thread depth 12 mm [0.472 in]

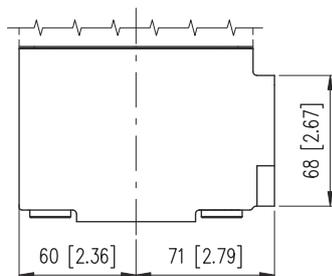
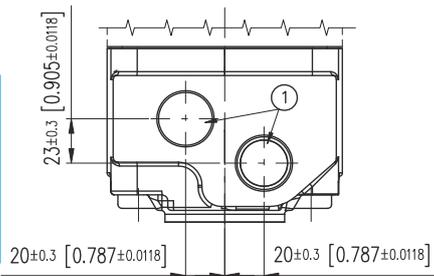
S Version



C Version

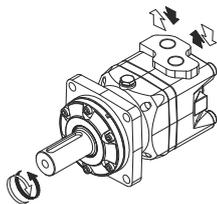


S10 1" 1/16 - 12 UN

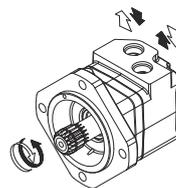


- 1) N.2 1" 1/16 - 12 UN main ports thread depth 20 mm [0.78 in]

S Version



C Version



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

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HD0

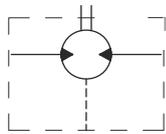
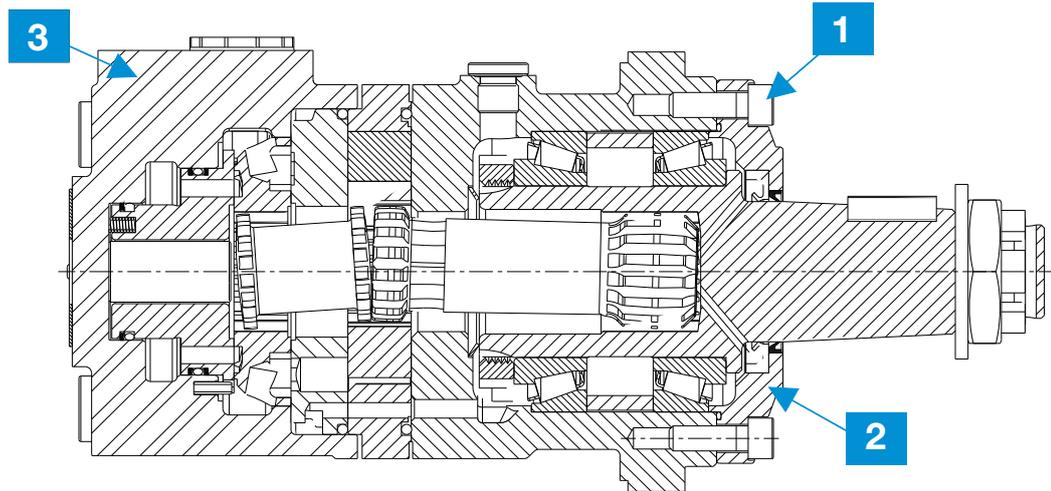
Heavy Duty

DH0

Heavy Duty + High Pressure Seal

Compared to the standard version, the heavy duty has the following differences:

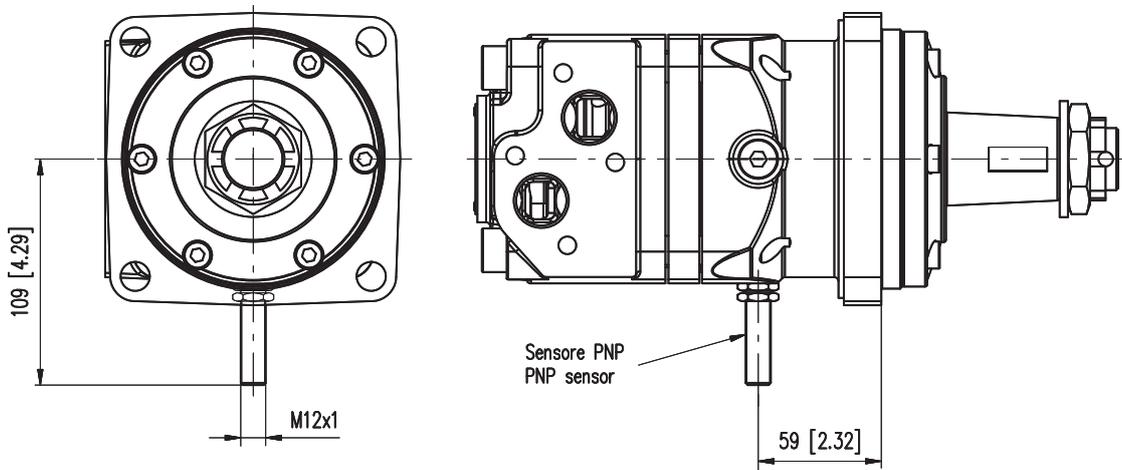
- 1) The screw in the seal cover are fitted with thread locker to prevent the screws being loosened by vibration.
- 2) Seal cover with reinforced material.
- 3) The check valves have been omitted because a drain line is always used in applications where operating conditions are severe.



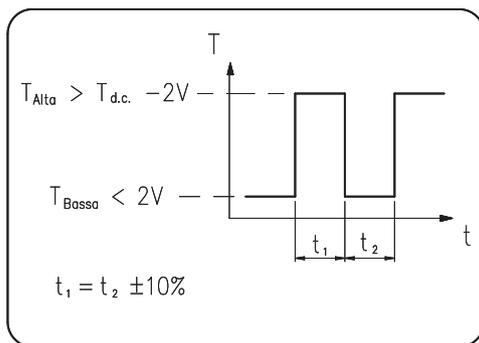
Note: A drain line must always be used because the motors have no built-in check valves

TC7

Tachometer



Output signal



Number of pulses per revolution = 42

Inductive principle

Output current PNP

Voltage 10-65 V d.c.

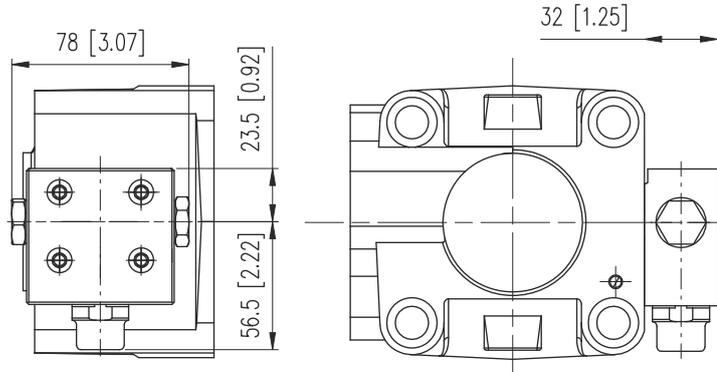
Max load 300 mA

Max frequency 1200 Hz

Temperature range -25C +85C Enclosure IP 67

SPECIAL COVER FOR FLUSHING VALVE

To mount the flushing valve on motors, it is necessary to use a special cover. This is only possible with the "M10-S10" main ports. If it is necessary to assembly the flushing valve on motors, to specify in the purchase order the valves type 06 - 09 - 15 - 21 (See position 10 of ordering code).



For more informations on the Flushing valve, see the Valves and Accessories section or Service Bulletin - 05-0082-A04



BREVINI[®]

Motion Systems





BREVINI[®]

Motion Systems

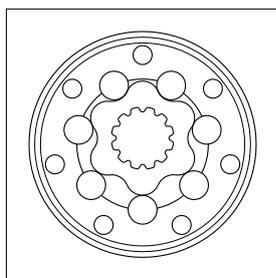
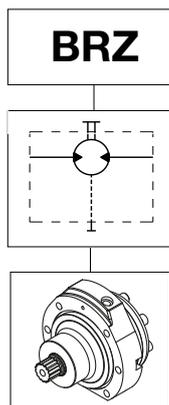


BRZ
Orbital Motors

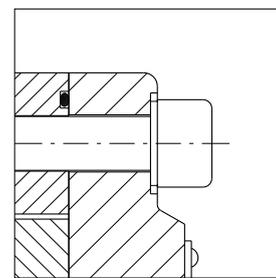


Motor Features	H2
Technical Specifications	H3
Ordering Code	H4
Pressure Data	H5
Max. Permissible Shaft Pression	H5
Dimensions and Weight	H6
Options	H7
Valve - Dimensions and Weight	H8
Manifold - Dimensions and Weight	H9

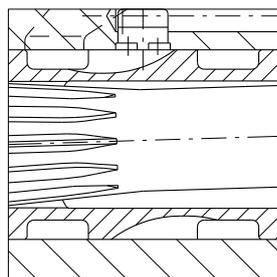




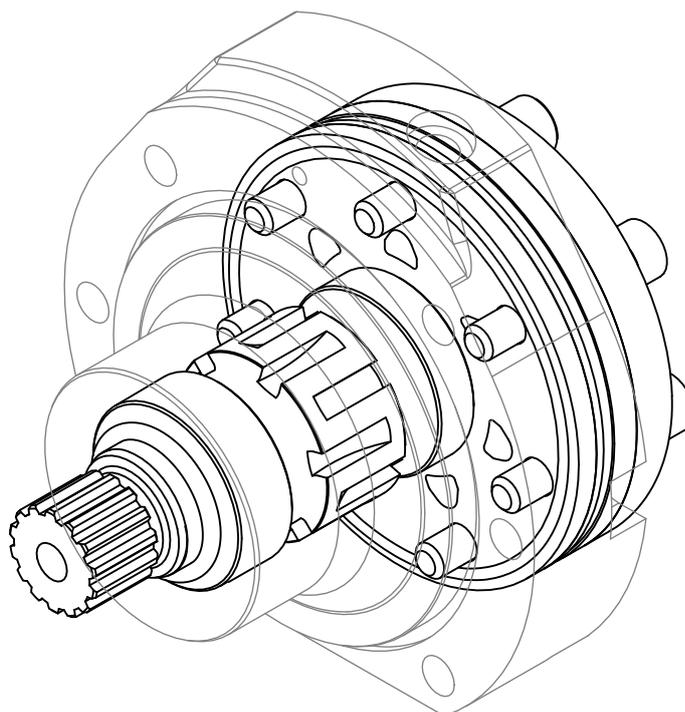
High-performance roller for improved efficiency and life.



High resistance stainless steel screws capable of withstanding the stress induced by high pressure.



Spool valve integral to the output shaft of new design features optimizing clearance geometry and so minimizing the oil slippage.



SHORT MOTOR FOR GEAR BOXES

BRZ - Orbital motor with roller design and spool valve distributor. Motion control valve and disengagement brake port as optional. Available with displacement from 50 up to 400 cm³/giro [from 3.05 up to 24.4 in³/rev and power up to 13 kW [17.4 hp].

– Versions:

BRZV: Valves version motor.

– Optional valves and accessories:

VCT11-SF: Standard motion control valve.

VCT11-AF: Motion control valve with disengagement brake port.

CMZ: Flangeable manifold.

Motor	Displacement cm ³ /rev [in ³ /rev]	Max. input pressure bar [psi]		Max. differential pressure bar [psi]		Max. torque Nm [lbf-ft]		Max. flow l/min [U.S. gpm]		Max. speed rpm		Max. power kW [hp]	
		Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	103 [75.9] 126 [92.8]	Cont Int ¹⁾	40 [10.6] 50 [13.2]	Cont Int ¹⁾	775 969	Cont Int ¹⁾	6.8 [9.1] 8.4 [11.2]
BRZ 50	51.6 [3.14]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	103 [75.9] 126 [92.8]	Cont Int ¹⁾	40 [10.6] 50 [13.2]	Cont Int ¹⁾	775 969	Cont Int ¹⁾	6.8 [9.1] 8.4 [11.2]
BRZ 65	64.9 [3.95]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	150 [2175] 185 [2682] 225 [3262]	Cont Int ¹⁾	140 [103.1] 166 [122.3]	Cont Int ¹⁾	50 [13.2] 60 [15.9]	Cont Int ¹⁾	770 924	Cont Int ¹⁾	9.2 [12.3] 10.6 [14.2]
BRZ 80	80.4 [4.9]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾	197 [145.1] 218 [160.6]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	746 933	Cont Int ¹⁾	13 [17.4] 15 [20.1]
BRZ 100	100 [6.1]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾	237 [174.6] 277 [204.1]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	600 750	Cont Int ¹⁾	13 [17.4] 15 [20.1]
BRZ 130	125.7 [7.66]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾	300 [221.1] 340 [250.5]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	477 597	Cont Int ¹⁾	12.5 [16.8] 14.5 [19.4]
BRZ 160	160 [9.76]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	140 [2030] 175 [2540] 225 [3262]	Cont Int ¹⁾	296 [218.1] 375 [276.3]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	375 469	Cont Int ¹⁾	10 [13.4] 12.5 [16.8]
BRZ 200	200 [12.2]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	115 [1667] 140 [2030] 225 [3262]	Cont Int ¹⁾	297 [218.8] 380 [280]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	300 375	Cont Int ¹⁾	8.5 [11] 10 [13.4]
BRZ 250	250 [15.2]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	90 [1305] 120 [1740] 225 [3262]	Cont Int ¹⁾	297 [218.8] 377 [277.8]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	240 300	Cont Int ¹⁾	7.1 [9.5] 8.5 [11]
BRZ 315	314.5 [19.1]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	70 [1020] 100 [1450] 210 [3045]	Cont Int ¹⁾	300 [221.1] 420 [309.5]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	191 238	Cont Int ¹⁾	5 [6.7] 6.6 [8.8]
BRZ 400	393 [23.9]	Cont Int ¹⁾ Peak ²⁾	175 [2537] 200 [2900] 225 [3262]	Cont Int ¹⁾ Peak ²⁾	55 [800] 85 [1230] 175 [2537]	Cont Int ¹⁾	292 [215.2] 425 [313.2]	Cont Int ¹⁾	60 [15.9] 75 [19.8]	Cont Int ¹⁾	153 191	Cont Int ¹⁾	4.1 [5.4] 6.1 [8.1]

¹⁾ Intermittent duty must not exceed 10% each minute.

²⁾ Peak duty must not exceed 1% each minute.

As regards not specified technical features, please refer to the section of the catalogue that concerns BR motors..

The following alphanumeric digits system has been developed to identify all of the configuration options for the BRZ motors. Use the model code below to specify the desired features. **All alphanumeric digits system of the code must be present when ordering.** We recommend to carefully read the catalogue before filling the ordering code.

1	2	3	4
Series	Displacement	Shaft end	Options
BRZV	50	S14	HPS

1	Series
BRZV	Orbital motor

2	Displacement
50	51.6 cm ³ /giro [3.14 in ³ /rev]
65	64.9 cm ³ /giro [3.95 in ³ /rev]
80	80.4 cm ³ /giro [4.9 in ³ /rev]
100	100 cm ³ /giro[6.1 in ³ /rev]"
130	125.7 cm ³ /giro [7.66 in ³ /rev]
160	160 cm ³ /giro[9.76 in ³ /rev]"
200	200 cm ³ /giro[12.2 in ³ /rev]
250	250 cm ³ /giro[15.2 in ³ /rev]
315	314.5 cm ³ /giro [19.1 in ³ /rev]
400	393 cm ³ /giro[23.9 in ³ /rev]

3	Shaft End
S14	Standard B25x22 DIN 5482 Splined Version

4	Options
HPS	High pressure seal
TAC-U	Tachometer + high pressure seal

Valves and manifold ordering code ¹⁾

CODE	VALVE / MANIFOLD
VCT 11 SF	Motion control valve without disengagement brake port - Metric version
VCT11 AF	Motion control valve with disengagement brake port - Metric version
VCT 11 SF SAE	Motion control valve without disengagement brake port - SAE version
VCT11 AF SAE	Motion control valve with disengagement brake port - SAE version
CMZ SF	Flangeable manifold without disengagement brake
CMZ AF	Flangeable manifold with disengagement brake



¹⁾ To be ordered separately to the motor.

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

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

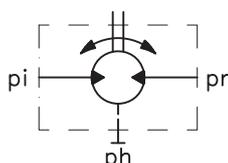
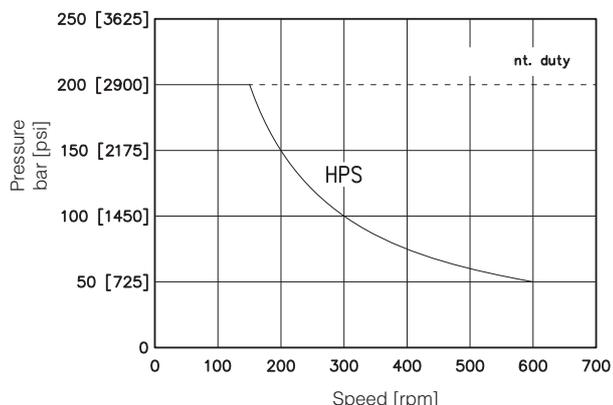
Motor	Max back pressure with drain line bar [psi]		Max starting pressure in unloaded conditions bar [psi]	Min starting torque Nm [lbf-ft]		
	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]		A Δp max. At max. Δp	Cont Int ¹⁾	75[55.3] 95[70.0]
BRZ 50	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	75[55.3] 95[70.0]
BRZ 65	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	120[88.4] 140[103.1]
BRZ 80	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	160[118] 180[133]
BRZ 100	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	10 [145]	A Δp max. At max. Δp	Cont Int ¹⁾	200[147] 225[166]
BRZ 130	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	9 [131]	A Δp max. At max. Δp	Cont Int ¹⁾	255[188] 290[214]
BRZ 160	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	7 [102]	A Δp max. At max. Δp	Cont Int ¹⁾	250[184] 300[221]
BRZ 200	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	5 [72.5]	A Δp max. At max. Δp	Cont Int ¹⁾	250[184] 320[236]
BRZ 250	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	5 [72.5]	A Δp max. At max. Δp	Cont Int ¹⁾	250[184] 310[228]
BRZ 315	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	5 [72.5]	A Δp max. At max. Δp	Cont Int ¹⁾	250[184] 300[221]
BRZ 400	Cont Int ¹⁾ Peak ²⁾	175 [2538] 200 [2900] 225 [3263]	5 [72.5]	A Δp max. At max. Δp	Cont Int ¹⁾	250[184] 320[236]

¹⁾ Intermittent duty must not exceed 10% each minute.

²⁾ Peak duty must not exceed 1% each minute.

As regards not specified technical features, please refer to the section of the catalogue that concerns BR motors..

Max. Permissible Shaft Pression



Motors are supplied in HPS seal version (HPS) BRZ motors don't feature build-in check valves.

The (ph) pressure on the seal is the average between inlet and outlet pressure. If ph exceeds rated figures (see graph on side), the drain line must be connected.

$$Ph = \frac{pi + pr}{2} \text{ [bar]}$$

ph = housing pressure
pi = inlet. pressure
pr = outlet pressure

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

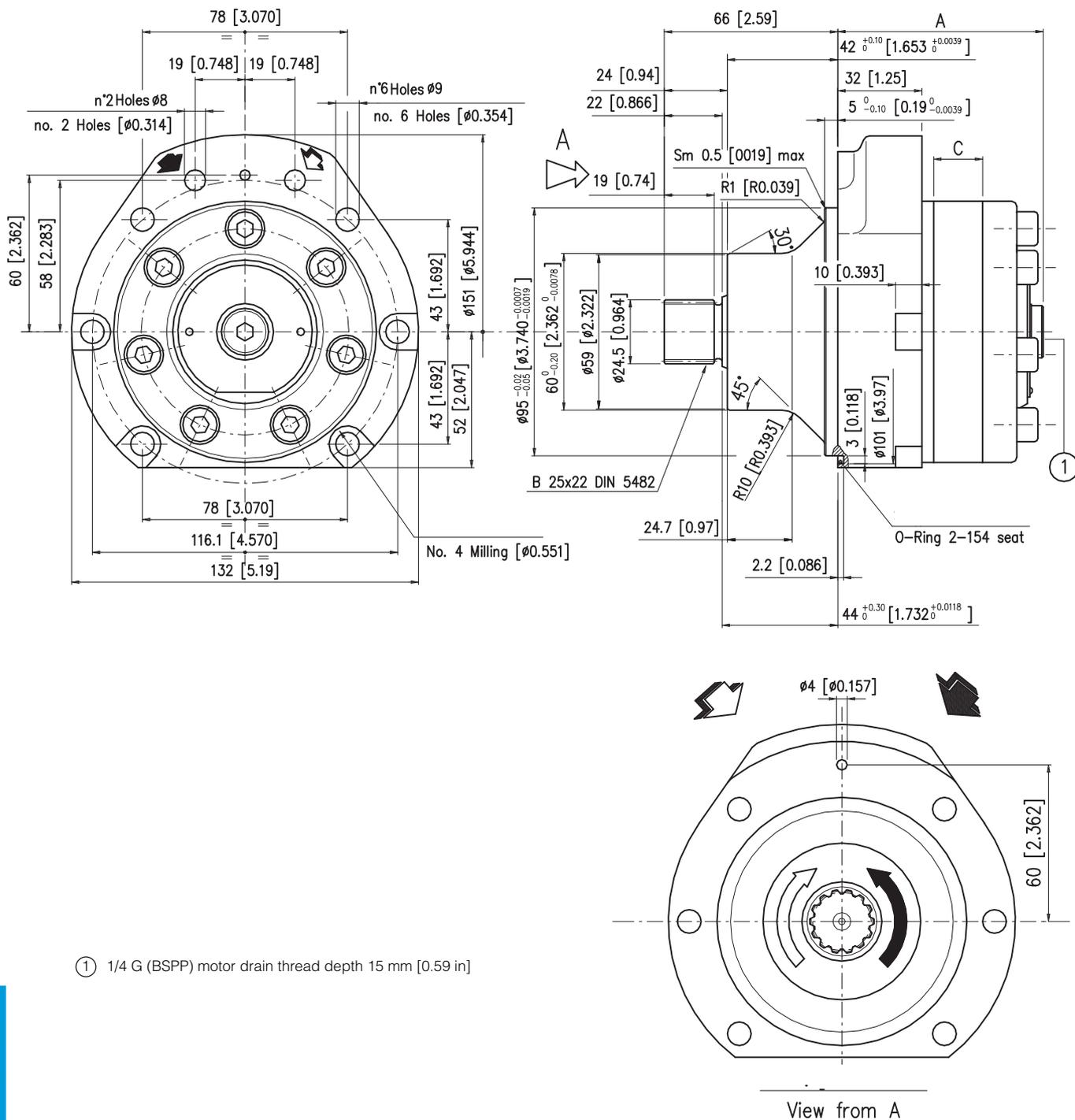
Click **DANA** button to return to section index



Dimensions and weight

1 2 3 4

BRZV S14 HPS



View from A

		BRZV 50	BRZV 65	BRZV 80	BRZV 100	BRZV 130	BRZV 160	BRZV 200	BRZV 250	BRZV 315	BRZV 400
A	mm	67.5	69.8	72.5	75.9	80.3	86.3	93.3	102	113.3	126.9
	[in]	[2.65]	[2.74]	[2.85]	[2.98]	[3.16]	[3.39]	[3.67]	[4.01]	[4.46]	[4.99]
C	mm	9	11.3	14	17.4	21.8	27.8	34.8	43.5	54.8	68.38
	[in]	[0.354]	[0.444]	[0.551]	[0.68]	[0.85]	[1.09]	[1.37]	[1.71]	[2.15]	[2.69]
Weight	kg	5.6	5.8	5.9	6.2	6.5	6.8	7.1	7.6	8.3	9.5
	[lb]	[12.3]	[12.7]	[13.0]	[13.7]	[14.3]	[15.0]	[15.6]	[16.8]	[18.3]	[20.9]

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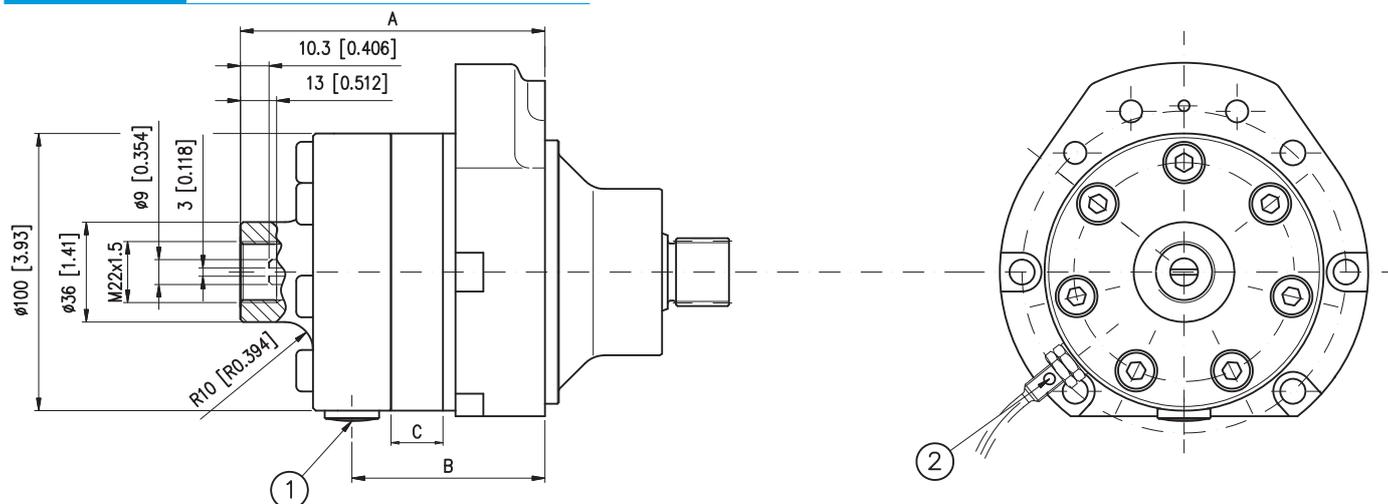


1

2

3

4

TAC - U Tachometer + high pressure seal

- ① 1/4 G (BSPP) motor drain port thread depth 12 mm [0.472 in]
 ② Sensor connection M8x1

WARNING:

Tacho shaft has a 6 times higher revolution speed than the motor shaft and opposite direction of rotation.

NOTE:

Axial or radial load on tacho shaft must be avoided. Max torque on tacho 1 Nm [0.737 lbf·ft].

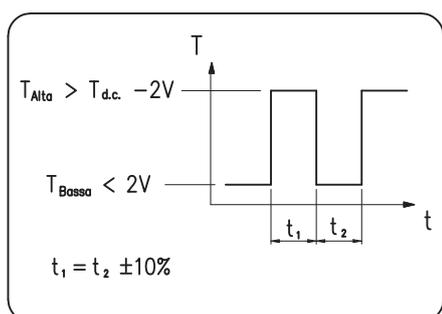
The electronic sensor is not supplied: if required, please state it clearly on order form.

Max pressure admissible on the shaft seal with closed drain port 25 bar [362 psi].

		BRZV 50	BRZV 65	BRZV 80	BRZV 100	BRZV 130	BRZV 160	BRZV 200	BRZV 250	BRZV 315	BRZV 400
A	mm	100	102.3	105	108.4	112.8	118.8	125.8	134.5	145.8	159.4
	[in]	[3.93]	[4.02]	[4.13]	[4.26]	[4.44]	[4.67]	[4.95]	[5.29]	[5.74]	[6.27]
B	mm	60.4	62.7	65.4	68.8	73.2	79.2	86.2	94.9	106.2	119.8
	[in]	[2.37]	[2.46]	[2.57]	[2.70]	[2.88]	[3.11]	[3.39]	[3.73]	[4.18]	[4.71]
C	mm	9	11.3	14	17.4	21.8	27.8	34.8	43.5	54.8	68.38
	[in]	[0.354]	[0.444]	[0.551]	[0.68]	[0.85]	[1.09]	[1.37]	[1.71]	[2.15]	[2.69]
Weight	kg	6.1	6.3	6.4	6.7	7.0	7.3	7.6	8.1	8.8	9.5
	[lb]	[13.4]	[13.8]	[14.1]	[14.8]	[15.4]	[16.1]	[16.8]	[17.9]	[19.4]	[20.9]

Electronic sensor technical features

Output signal electronic tacho



Number of pulses per revolution = 90 Inductive principle

Output current PNP

Voltage 10-65 V d.c.

Max load 300 mA

Max frequency 10000 Hz

Temperature range -25C +85C

Enclosure IP 67

Available versions:

Sensor with 2 metres three wires cable (cod.424.0050.0000)

Sensor with binder plug connection (cod.424.0060.0000) + binder connecting

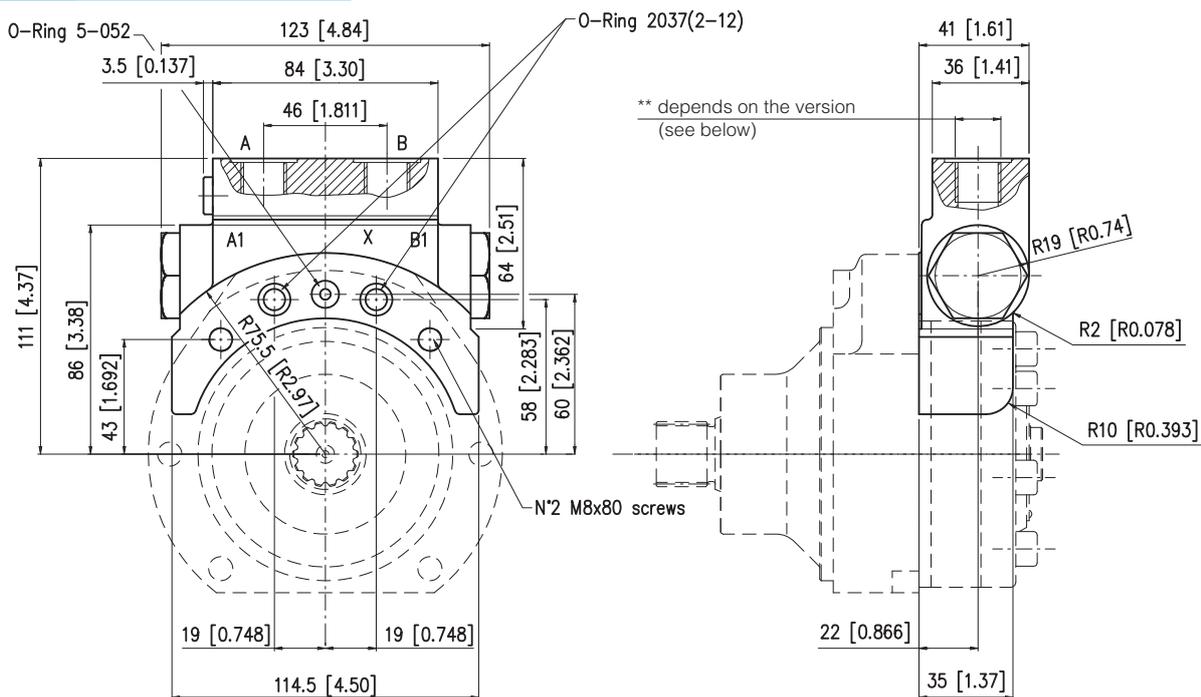
plug with 5 metres three wires cable (cod.424.0080.0000)

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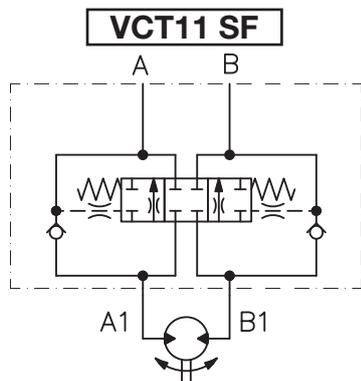


VCT11 Motion Control Valve

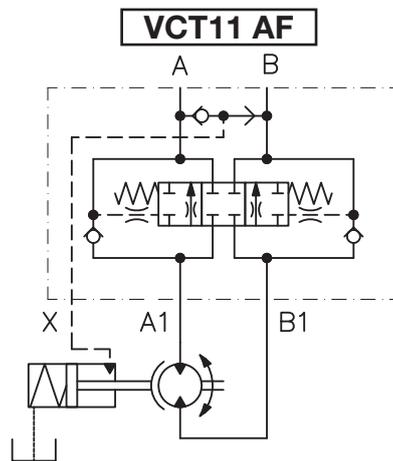


**** METRIC VERSION** 3/8 G (BSPP) thread depth 15 mm [0.59 in]
SAE VERSION 3/4-16 UNF thread depth 15 mm [0.59 in]

Valve without disengagement brake port



Valve with disengagement brake port



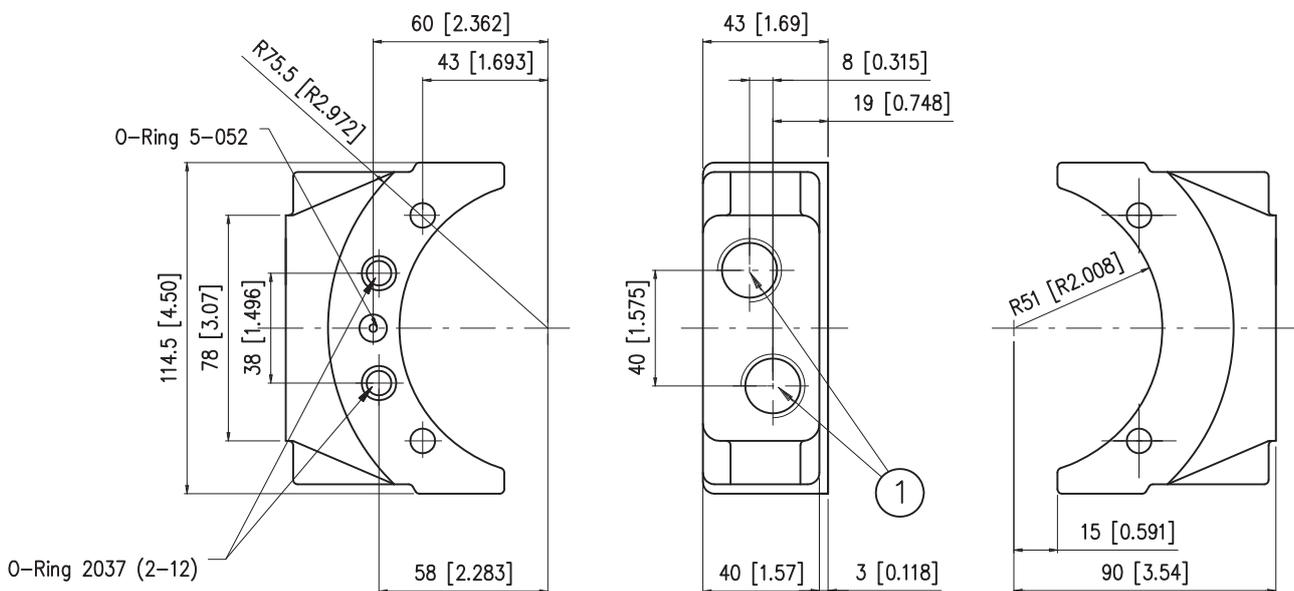
Weight	kg	1.8
	[lb]	[3.97]

Spool opening min pressure: 11 bar
 Full spool opening pressure: 15 bar

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

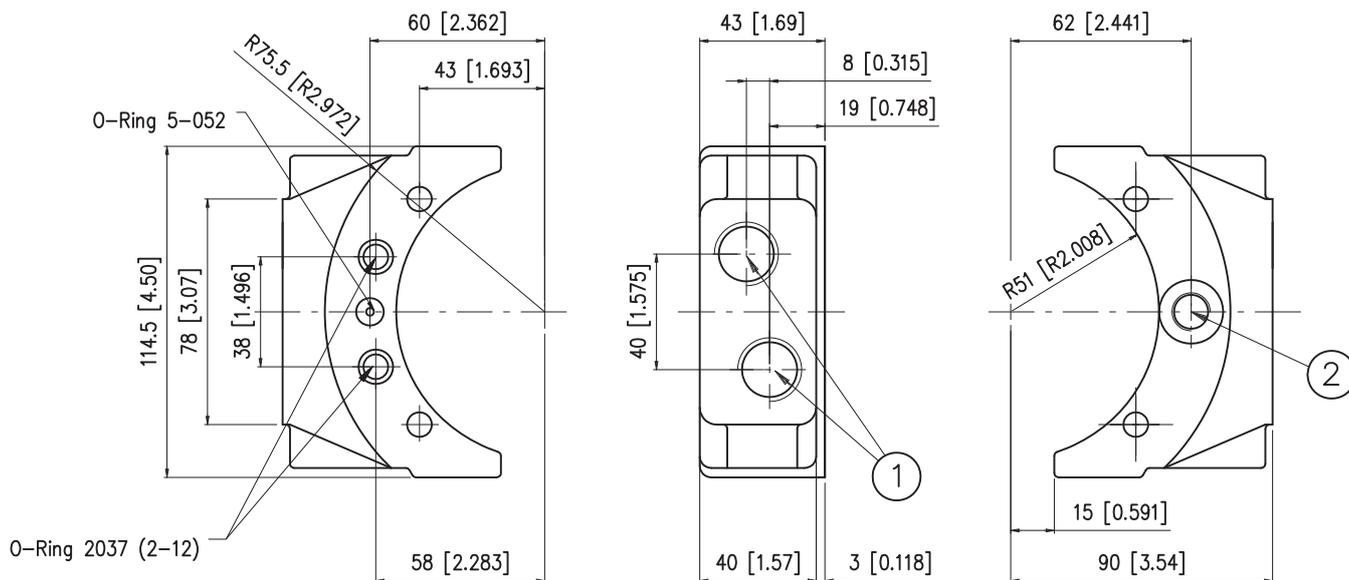
Click **i** button to return to main index

CMZ SF Manifold without brake opening



① N° 2 1/2 G (BSPP) main ports thread depth 19 mm [0.74 in]

CMZ AF Manifold with brake opening



① N° 2 1/2 G (BSPP) main ports thread depth 19 mm [0.74 in]

② 1/4 G (BSPP) drain port thread depth 13 mm [0.511 in]



BREVINI[®]

Motion Systems





BREVINI[®]

Motion Systems

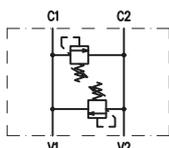
VALVES & ACCESSORIES

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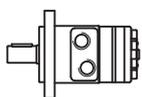




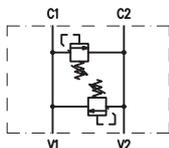
VAF 06-D



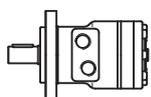
BG



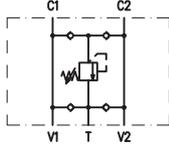
VAF 08-D
VAF E8-D



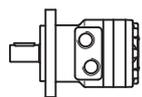
BR



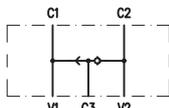
VAAF 31



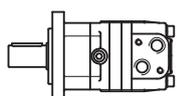
AR



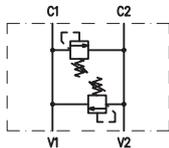
VAF 08-D/AF



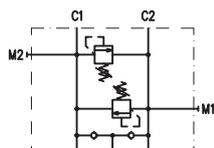
HR



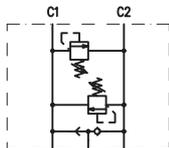
VAF 09-D



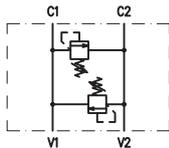
VAAF 09/40



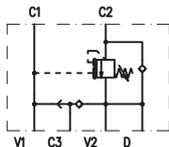
VAF 09-D/AF



VAF 10-D

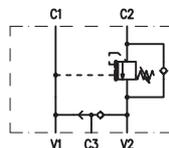


VCD2 10-S/AF

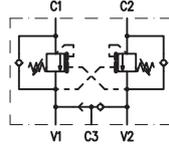


The valves showed on this catalogue, are in metric version.
For SAE version, please contact us

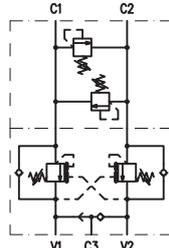
VCD 08-S/AF
VCD E8-S/AF



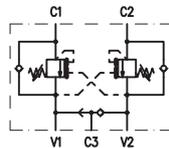
VCR1 08-D/AF
VCR1 E8-D/AF



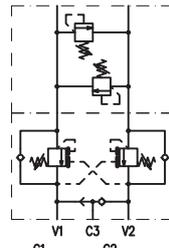
VCR1 08-D/AF-LDP
VCR1 E8-D/AF-LDP



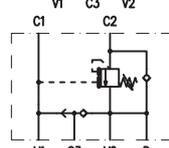
VCR1 09-D/AF



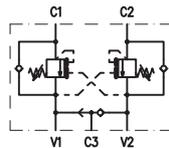
VCR1 09-D/AF-LDP



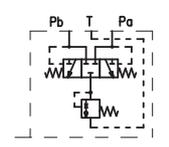
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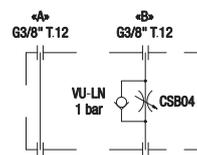
VCR1 10-D/AF



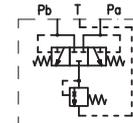
VSC



VRP 09



VSC



Valves & Accessories

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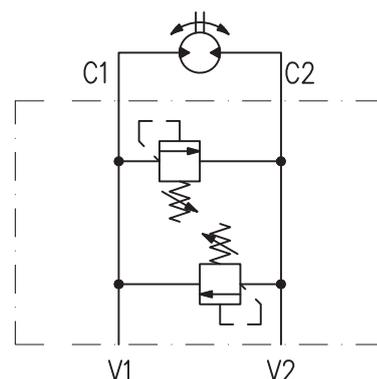
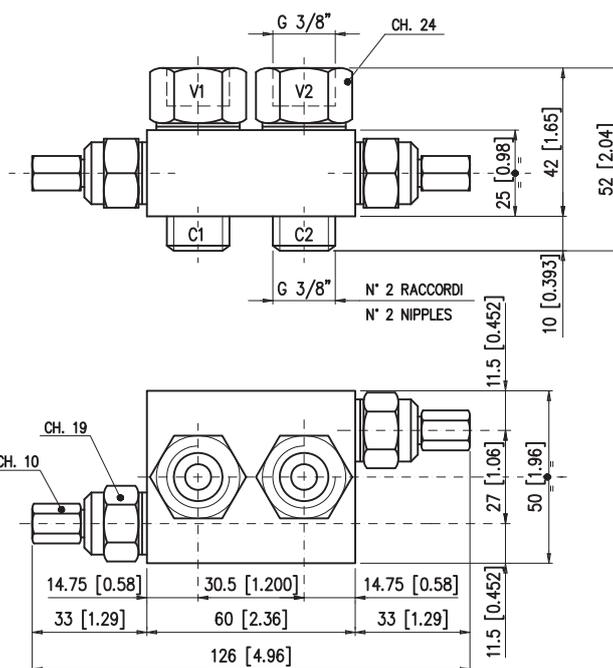
VAF 06-D

Pressure relief valve, flangeable on **BGM** series hydraulic motors which protects the motor from excessive peak pressure, especially at start, stop and inversion.

Double cartridge (VAF 06-D) as standard.

For shaft rotation in one direction only, a single cartridge version (VAF 06-S) is available as well. If not requested, valves are supplied not set.

Any setting requirement must be specified at ordering by stating pressure and flow. Setting range between 50 and 150 bar [725 and 2175 psi].



Max working pressure	250 bar [3625 psi]
Max flow	20 l/min [5.28 U.S. gpm]
Weight	0.2 kg [0.4 lb]

VAF 06 - S (50÷150 bar / 725÷2175 psi) Code: 521.3025.0111

VAF 06 - D (50÷150 bar / 725÷2175 psi) Code: 521.3025.0121

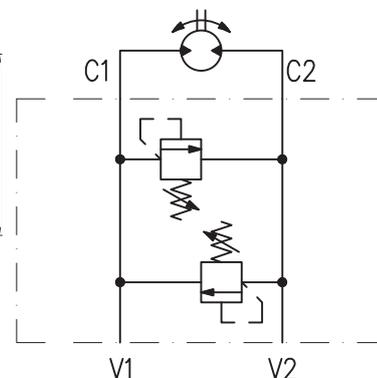
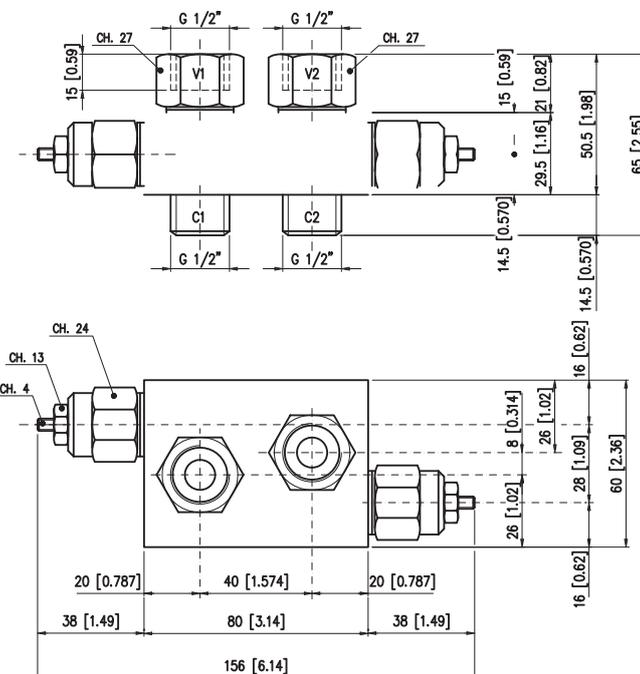
VAF 08 - D

Pressure relief valve, flangeable on **AR, BR, BG** series motors which protects the motor from excessive peak pressure, particularly at start, stop and inversion.

Double cartridge (VAF 08-D) as standard.

For shaft rotation in one direction only, a single cartridge version (VAF 08-S) is available as well. If not requested, valves are supplied not set.

Any setting requirement must be specified at ordering by stating pressure and flow. Two setting ranges are available: 70 to 200 bar [1015 to 2900 psi] as standard and 30 to 70 bar [435 to 1015 psi] as optional.



Max working pressure	250 bar [3625 psi]
Max flow	50 l/min [13.2 U.S. gpm]
Weight	0.8 kg [1.76 lb]

VAF 08 - S (30÷70 bar / 435÷1015 psi) Code: 521.3030.1111

VAF 08 - D (30÷70 bar / 435÷1015 psi) Code: 521.3030.1121

VAF 08 - S (70÷200 bar / 1015÷2900 psi) Code: 521.3030.0111

VAF 08 - D (70÷200 bar / 1015÷2900 psi) Code: 521.3030.0121

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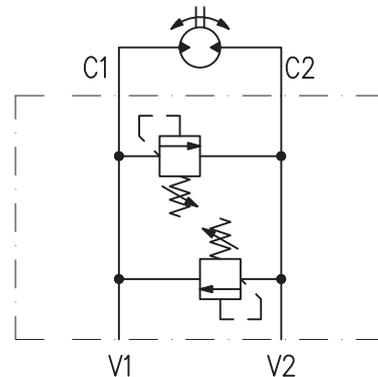
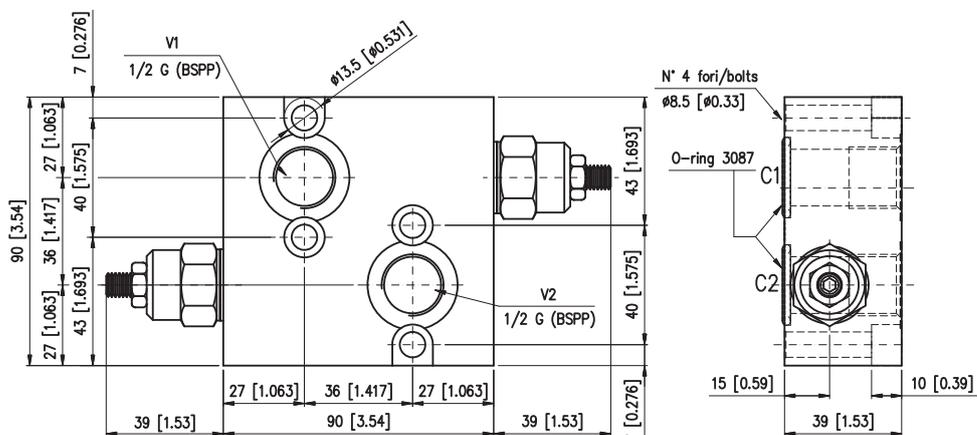
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VAF E8 - D

Pressure relief valve, flangeable on **BR E, BG E** series motors which protects the motor from excessive peak pressure, particularly at start, stop and inversion. If not requested, valves are supplied not set. Any setting requirement must be specified at ordering by stating pressure and flow.

Two setting ranges are available: 50 to 130 bar [725 to 1885 psi] as standard and 100 to 200 bar [1450 to 2900 psi] as optional.



Warning: minimum quantity for order 20 pieces

VAF E8 - D (100÷200 bar / 1450÷2900 psi) Code: SPO00000206

VAF E8 - D (50÷130 bar / 725÷1885 psi) Code: SPO00000207

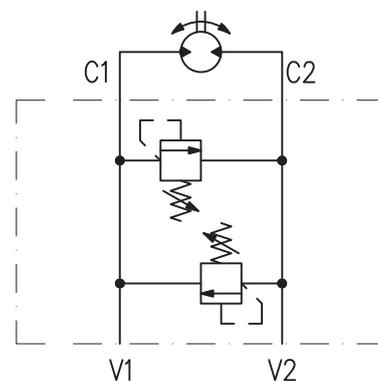
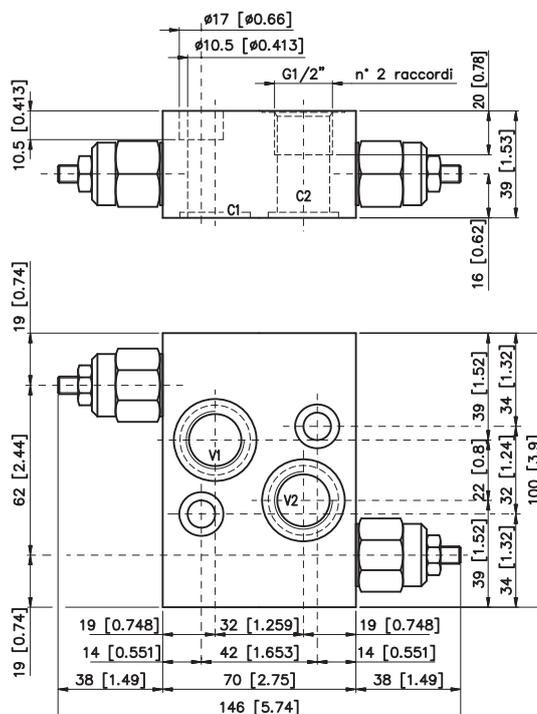
Max working pressure	250 bar [3625 psi]
Max flow	50 l/min [13.2 U.S. gpm]
Weight	0.8 kg [1.76 lb]

VAF 09 - D

Pressure relief valve flangeable on **HR** series motors which protects the motor from excessive peak pressure build-up particularly at start, stop and inversion. If not requested, valves are supplied not set.

Any setting requirement must be specified at ordering by stating pressure and flow.

Two setting ranges are available: 100 to 200 bar [1450 to 2900 psi] as standard and 50 to 100 bar [725 to 1450 psi] as optional.



Max working pressure	250 bar [3625 psi]
Max flow	50 l/min [13.2 U.S. gpm]
Weight	0.8 kg [1.76 lb]

VAF 09 - D (100÷200 bar / 1450÷2900 psi) Code: SPO00000209

VAF 09 - D (50÷100 bar / 725÷1450 psi) Code: SPO00000210

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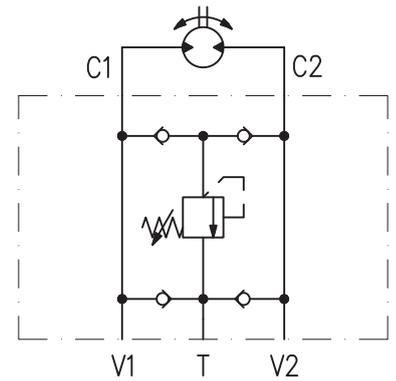
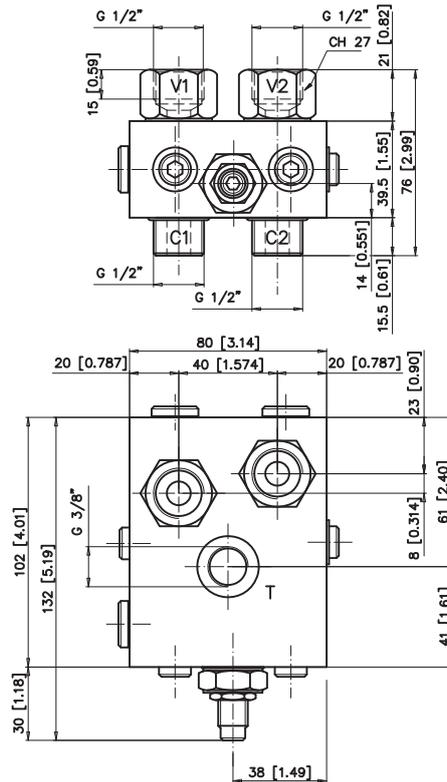
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VAAF - 31

Anticavitation and antishock valve, flangeable on **AR, BR, BG** motors, which protects from excessive peak pressure when driving a high inertia mass, as well as protects from cavitation at stop and inversion.

If not requested, valves are supplied not set.

The standard setting range is 50÷130 bar [725÷1885 psi] (100÷250 bar [1450÷3625 psi] on option).



Max working pressure	250 bar [3625 psi]
Max flow	45 l/min [11.88 U.S. gpm]
Weight	1.2 kg [2.64 lb]

VAAF 31 (50÷130 bar / 725÷1885 psi) Code: 521.2030.0114

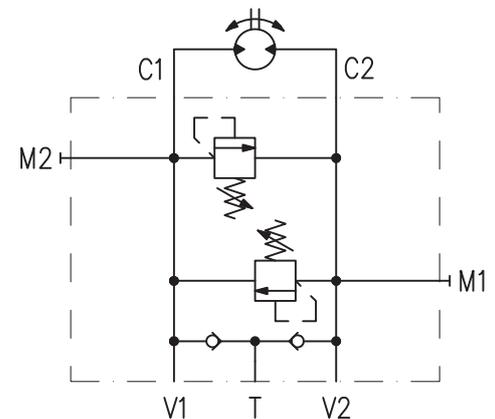
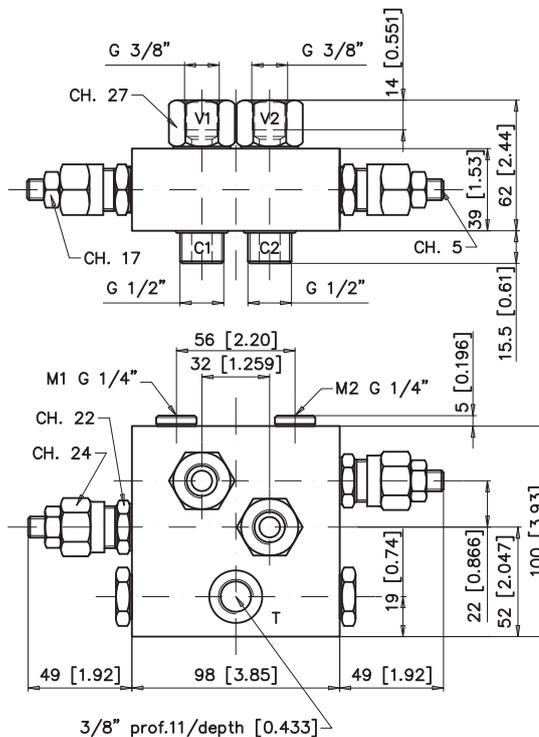
VAAF 31 (100÷250 bar / 1450÷3625 psi) Code: 521.2030.0115

VAAF 09/40

Anticavitation and antishock valve, flangeable on **HR** motors, that protects from excessive pressure buildup when driving a high inertial mass, as well as protect from cavitation at stop and inversion.

Unless otherwise requested, valves are supplied not set.

The setting range is 50÷210 bar [725÷3045 psi] (pressure increase: 47 bar [681 psi] screw turn).



Max working pressure	210 bar [3045 psi]
Max flow	40 l/min [10.5 U.S. gpm]
Weight	1.7 kg [3.74 lb]

VAAF 09/40 Code: 521.2040.0123

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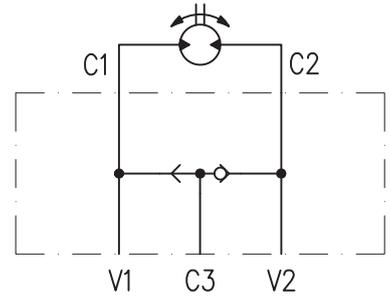
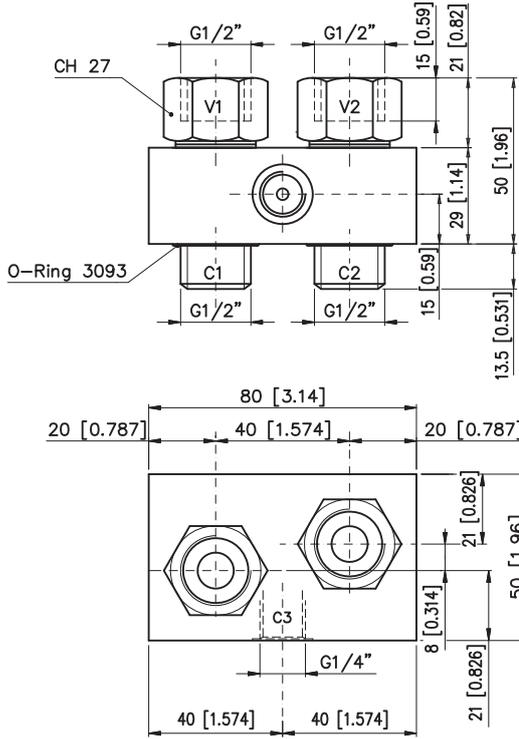
AF

Shuttle-valve flangeable on **AR, BR, BG** motors, which diverts oil under pressure to negative brakes in order to disengage them.

Suitable for ARF brake motors as well as for FP brake.

The brakes featured by the ARF are, like the FP brakes, for static use. Hence the AF shuttle valve can be used only for those applications where the brake will not be used as dynamic.

An open centre control valve bank is recommended.



Max working pressure	250 bar [3625 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	0.5 kg [1.10 lb]

AF Code: 521.9010.0000

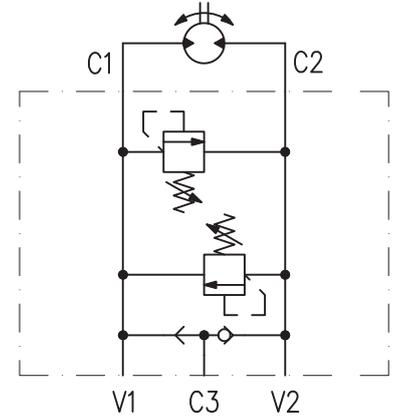
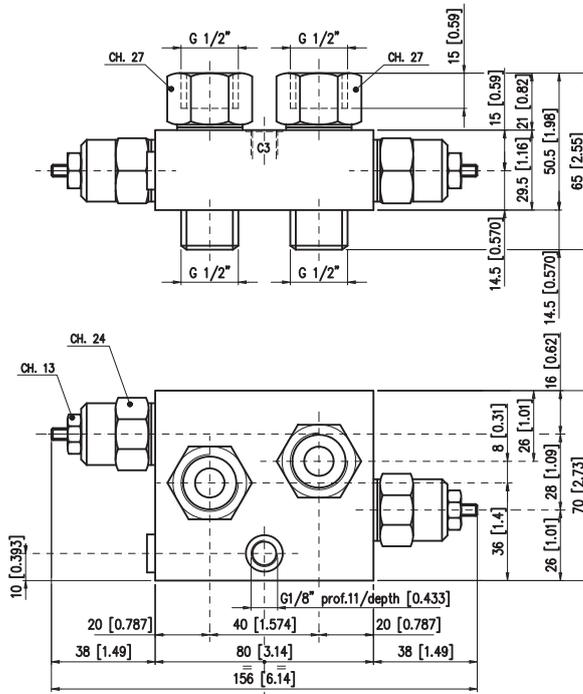
VAF 08 - D/AF

Pressure relief valve with shuttle valve, flangeable on **AR, BR, BG** series motors which protects the motor from excessive peak pressure particularly at start, stop and inversion.

If not requested, valves are supplied not set.

Any setting requirement must be specified at ordering by stating pressure and flow.

Two setting ranges are available: 70 to 200 bar [1015 to 2900 psi] as standard and 30 to 70 bar [435 to 1015 psi] as optional.



Max working pressure	250 bar [3625 psi]
Max flow	50 l/min [13.2 U.S. gpm]
Weight	0.9 kg [1.98 lb]

VAF 08 - D/AF (30÷70 bar / 435÷1015 psi) Code: 521.3070.1121

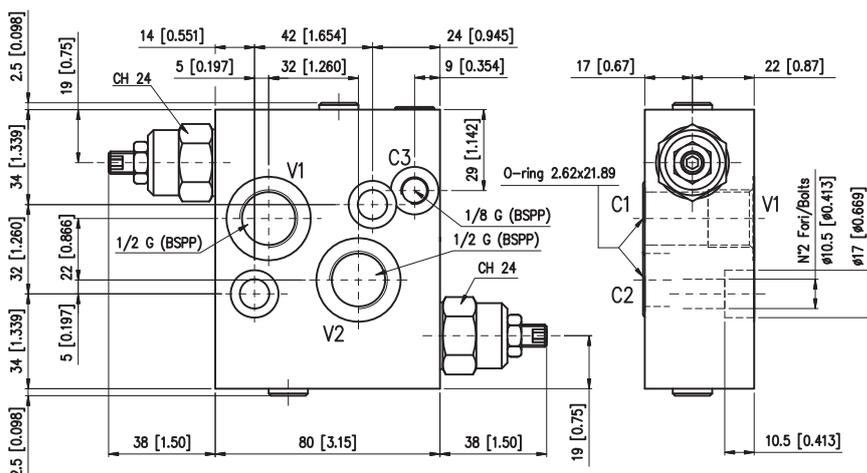
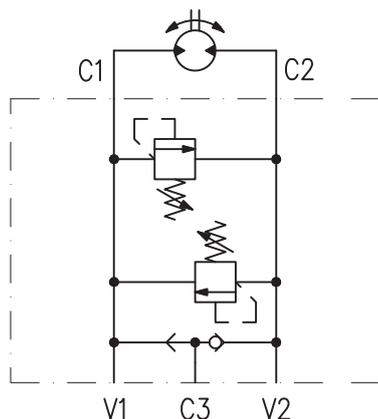
VAF 08 - D/AF (70÷200 bar / 1015÷2900 psi) Code: 521.3070.0121

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

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VAF 09 - D/AF

Pressure relief valve with shuttle valve, flangeable on **HR** series motors which protects the motor from excessive peak pressure particularly at start, stop and inversion. If not requested, valves are supplied not set. Any setting requirement must be specified at ordering by stating pressure and flow. Setting ranges between 100 to 280 bar [1450 to 4060 psi].

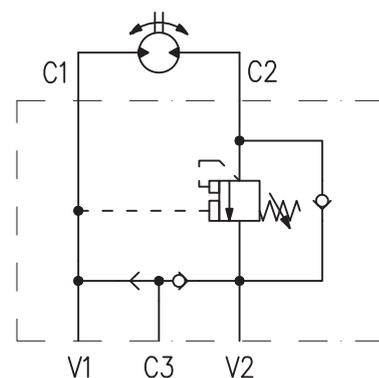
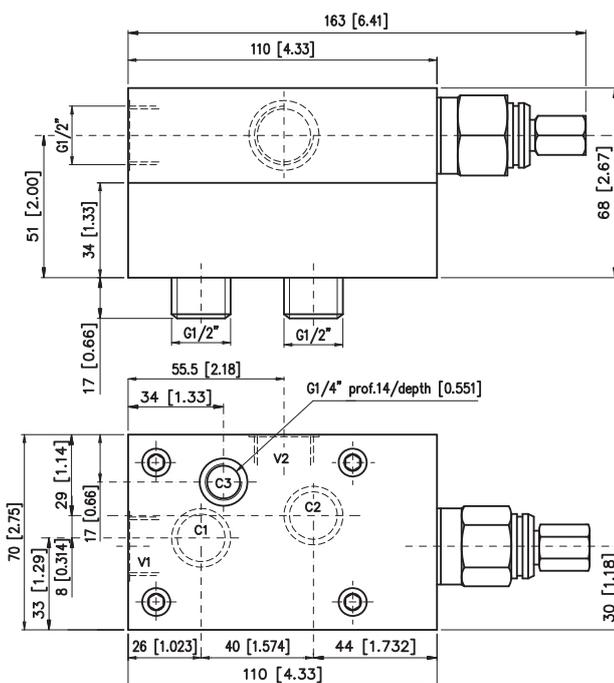


Max working pressure	250 bar [3625 psi]
Max flow	50 l/min [13.2 U.S. gpm]
Weight	0.9 kg [1.98 lb]

VAF 09 - D/AF (100÷280 bar / 1450÷4060 psi) Code: SPO00000211

VCD 08 - S/AF

Single-acting overcentre valve with shuttle valve, flangeable on **AR, BR, BG** motors. Usually flanged on winch driving brake motors with pressure released brake to control load lowering and avoid unwanted acceleration. For such application ARF brake motors, as well as FP brakes, are widely employed. If not specified the valve is supplied not set. Setting range between 100 and 210 bar [1450 and 3045 psi]. The standard pilot ratio is 7:1 (3,5:1 on option).



Pilot ratio	7:1 3.5:1
Max working pressure	250 bar [3625 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	1.7 kg [3.74 lb]

VCD 08 - S/AF (7:1) Code: 521.1060.0114
VCD 08 - S/AF (3.5:1) Code: 521.1060.4114

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VCR1 08 - D/AF

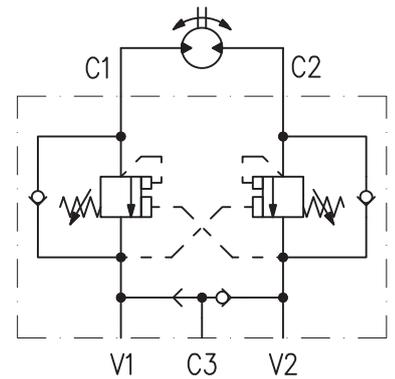
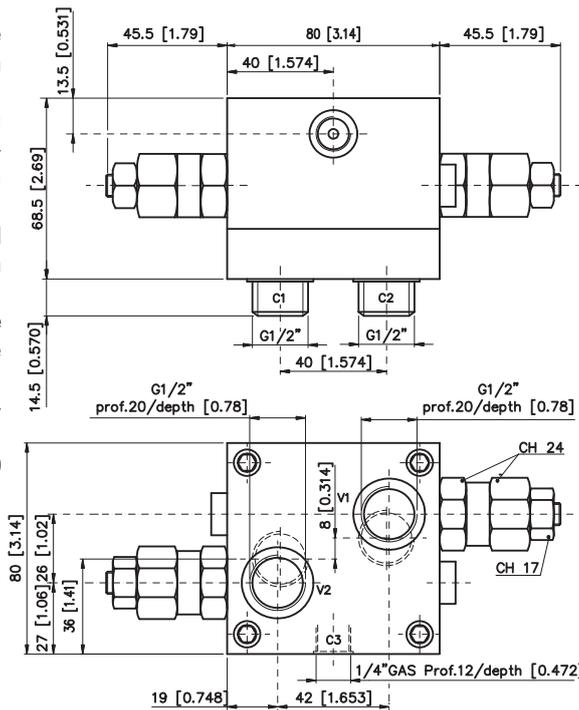
Double-acting overcentre valve with shuttle valve, flangeable on **AR, BR, BG** motors.

Usually flanged on winch driving brake motors with pressure released brake, to control load lowering and avoid unwanted acceleration. Slew drive control of cranes, aerial platforms, etcetera are common applications too.

For such applications ARF brake motors, as well as FP brakes, are widely employed.

If not specified the valve is supplied not set.

Setting range between 30 and 220 bar [435 and 3190 psi].



Pilot ratio	8:1 4.25:1
Max working pressure	350 bar [5075 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	1.8 kg [3.96 lb]

VCR1 08 - D/AF (4.25:1) Code: 521.2060.1007

VCR1 08 - D/AF (8:1) Code: 521.2061.1007

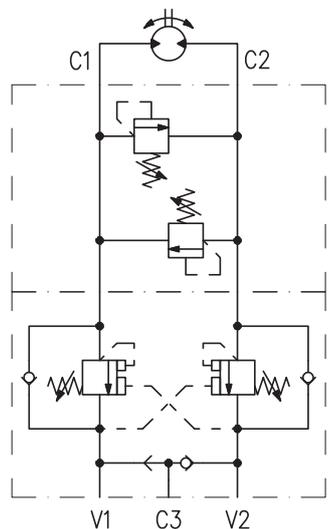
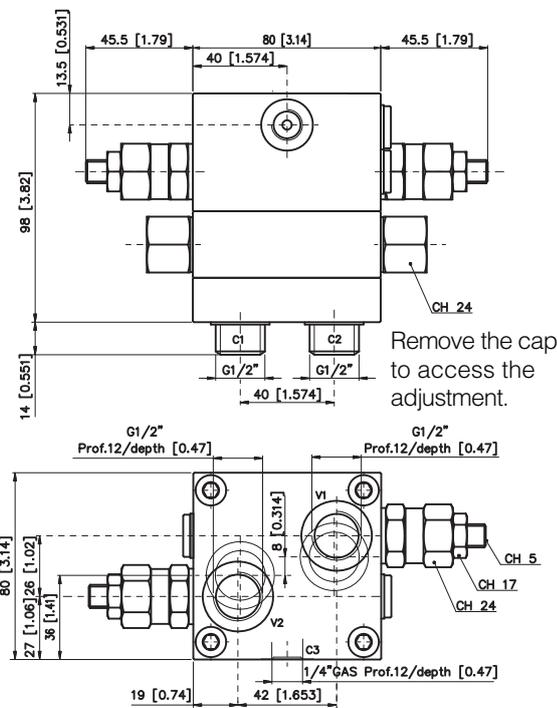
VCR1 08 - D/AF - LDP

Double-acting overcentre valve with shuttle valve, flangeable on **AR, BR, BG** motors.

Usually flanged on winch driving brake motors with pressure released brake, to control load lowering and avoid unwanted acceleration. Slew drive control of cranes, aerial platforms, etcetera are common applications too.

When it is employed in hoisting equipment the main relief valve or any anti-shock valve fitted on the hydraulic motor control valve section shall be set at pressure values higher than the VCR1 08 - D/AF - LDP relief valve. If not required the valve is supplied not set.

Setting range between 30 and 220 bar [435 and 3190 psi].



Pilot ratio	8:1 4.25:1
Max working pressure	350 bar [5075 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	2.5 kg [5.51 lb]

VCR1 08 - D/AF - LDP (8:1) Code: 521.2062.1017

VCR1 08 - D/AF - LDP (4.25:1) Code: 521.2060.1017

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

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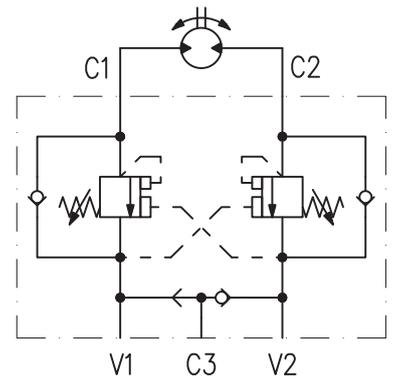
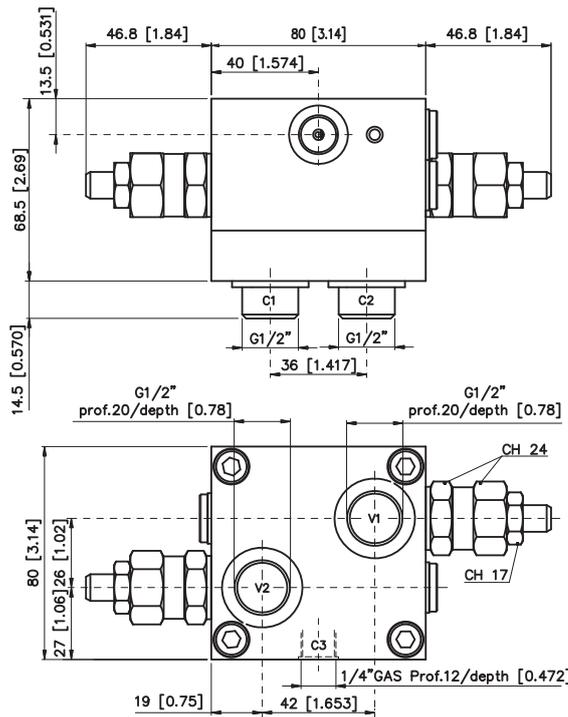


VCR1 E8 - D/AF

Double-acting overcentre valve with shuttle valve, flangeable on **BR E**, **BG E** motors.

Usually flanged on winch driving brake motors with pressure released brake, to control load lowering and avoid unwanted acceleration. Slew drive control of cranes, aerial platforms, etcetera are common applications too.

If not specified the valve is supplied not set. Setting range between 30 and 220 bar [435 and 3190 psi].



Pilot ratio	4.25:1
Max working pressure	350 bar [5075 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	1.8 kg [3.96 lb]

Warning: minimum quantity for order 20 pieces
VCR1 E8 - D/AF (4.25:1) Codice/Code: 521.3185.0000

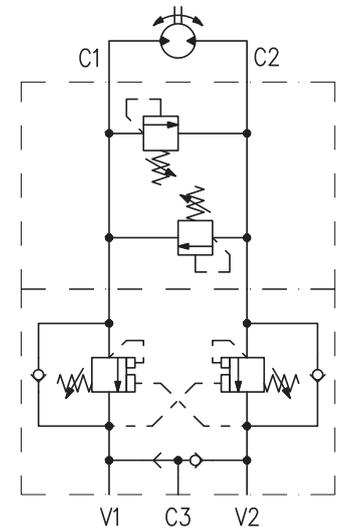
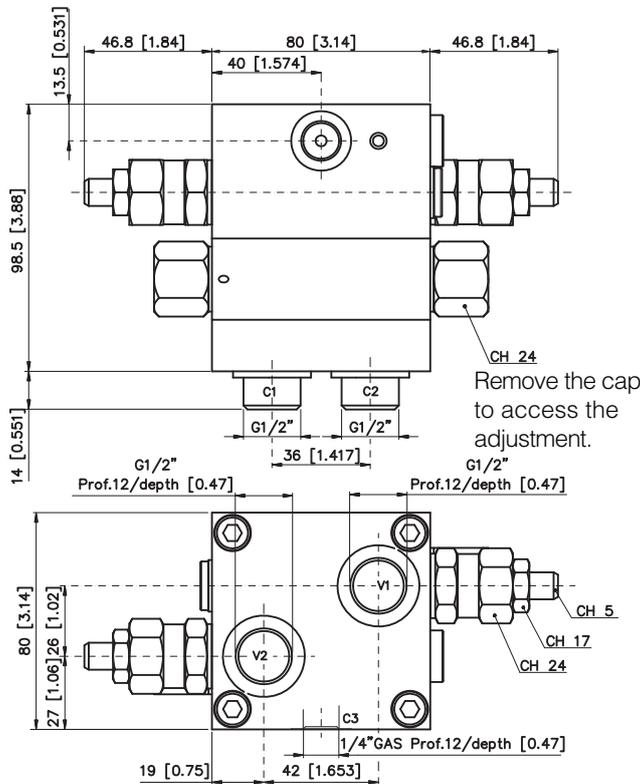
VCR1 E8 - D/AF - LDP

Double-acting overcentre valve with shuttle valve, flangeable on **BR E**, **BG E** motors.

Usually flanged on winch driving brake motors with pressure released brake, to control load lowering and avoid unwanted acceleration. Slew drive control of cranes, aerial platforms, etcetera are common applications too.

When it is employed in hoisting equipment the main relief valve or any anti-shock valve fitted on the hydraulic motor control valve section shall be set at pressure values higher than the VCR1 E8 - D/AF - LDP relief valve.

If not required the valve is supplied not set. Setting range between 30 and 220 bar [435 and 3190 psi].



Pilot ratio	4.25:1
Max working pressure	350 bar [5075 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	2.5 kg [5.51 lb]

Warning: minimum quantity for order 20 pieces
VCR1 E8 - D/AF - LDP (4.25:1) Code: 521.3190.0000

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VCR1 09 - D/AF

Double-acting overcentre valve with shuttle valve, flangeable on **HR** motors.

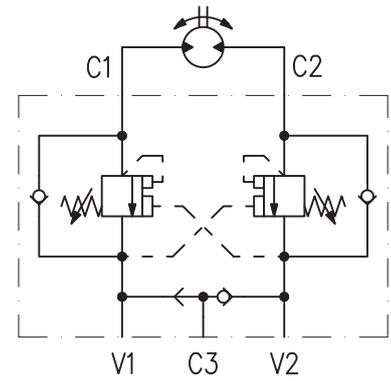
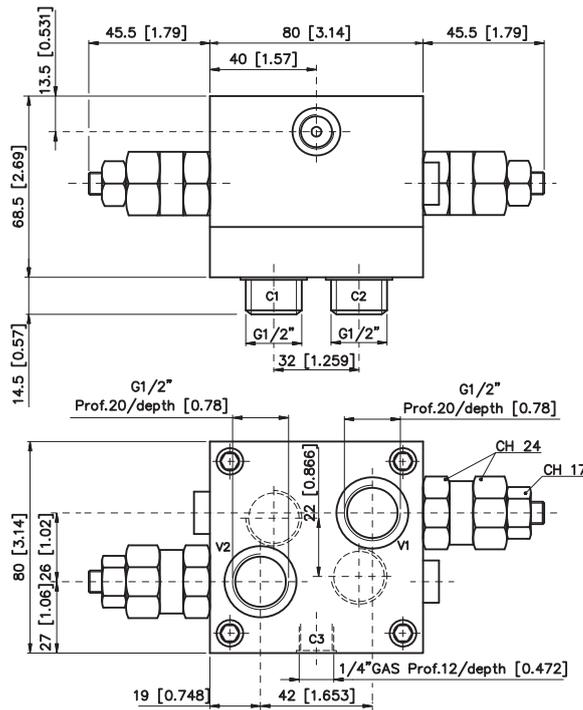
Usually flanged on winch driving brake motors with pressure released brake, to control load lowering and avoid unwanted acceleration.

Slew drive control of cranes, aerial platforms, etcetera are common applications too.

For such applications versions F and L brake motors, are widely employed.

If not specified the valve is supplied not set.

Setting range between 30 and 220 bar [435 and 3190 psi].



Pilot ratio	4.25:1
Max working pressure	250 bar [3626 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	1.8 kg [3.96 lb]

VCR1 09 - D/AF (4.25:1) Code: 521.2060.1037

VCR1 09 - D/AF - LDP

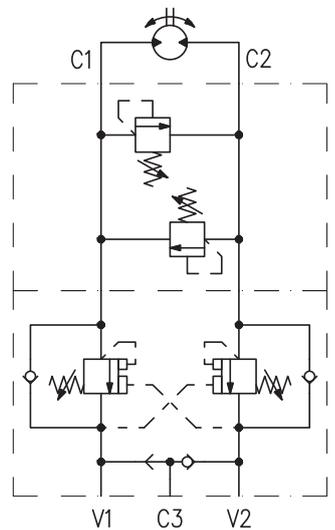
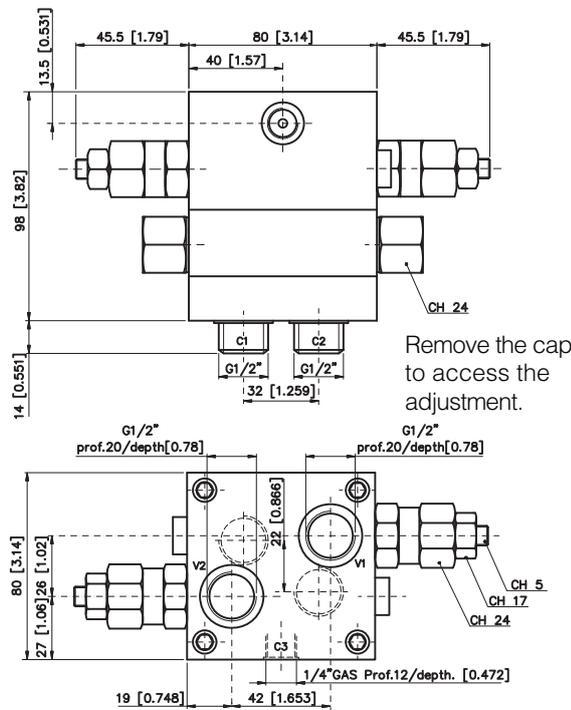
Double-acting overcentre valve with shuttle valve, flangeable on **HR** motors.

Usually flanged on winch driving brake motors with pressure released brake, to control load lowering and avoid unwanted acceleration

Slew drive control of cranes, aerial platforms, etcetera are common applications too. When it is employed in hoisting equipment, the main relief valve or any anti-shock valve fitted on the hydraulic-motor control valve section shall be set at pressure values higher than the VCR1 09-D/AF-LDP relief valve.

If not required the valve is supplied not set.

Setting range between 30 and 220 bar [435 and 3190 psi].



Pilot ratio	4.25:1
Max working pressure	250 bar [3626 psi]
Max flow	60 l/min [15.8 U.S. gpm]
Weight	2.5 kg [5.51 lb]

VCR1 09 - D/AF - LDP (4.25:1) Code: 521.2060.1047

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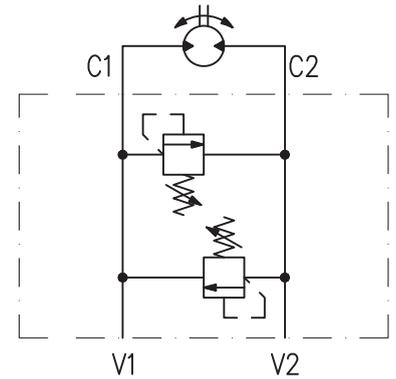
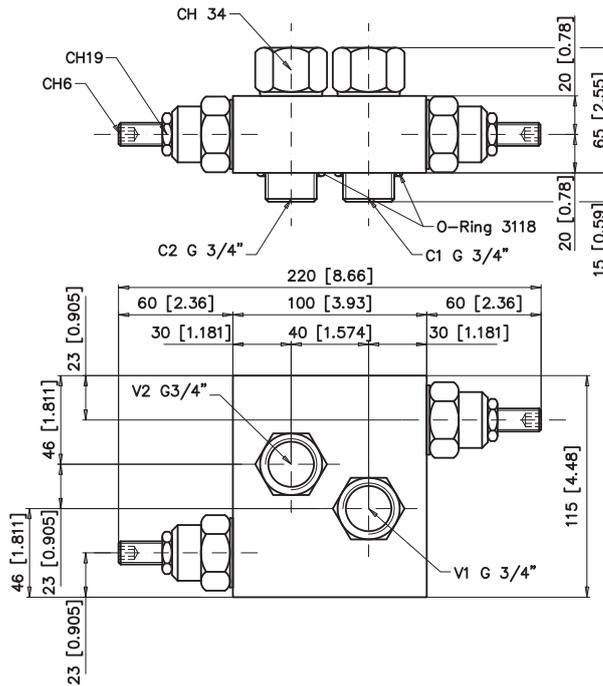
VAF 10 - D

Pressure relief valve flangeable on HT and HTC series motors which protects the motor from excessive peak of pressure particularly at start, stop and inversion.

If not requested, valves are supplied not set.

Any setting requirement must be specified at ordering by stating pressure and flow.

Two setting ranges are available: 100 to 200 bar [1450 to 2900 psi] as standard and 210 to 300 bar [3045 to 4350 psi] as optional.



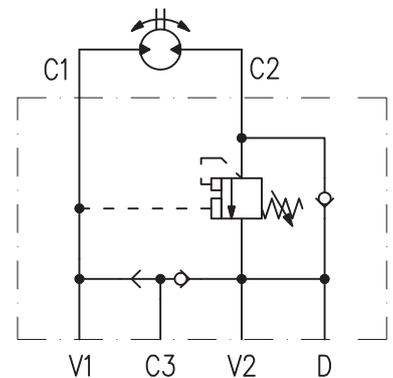
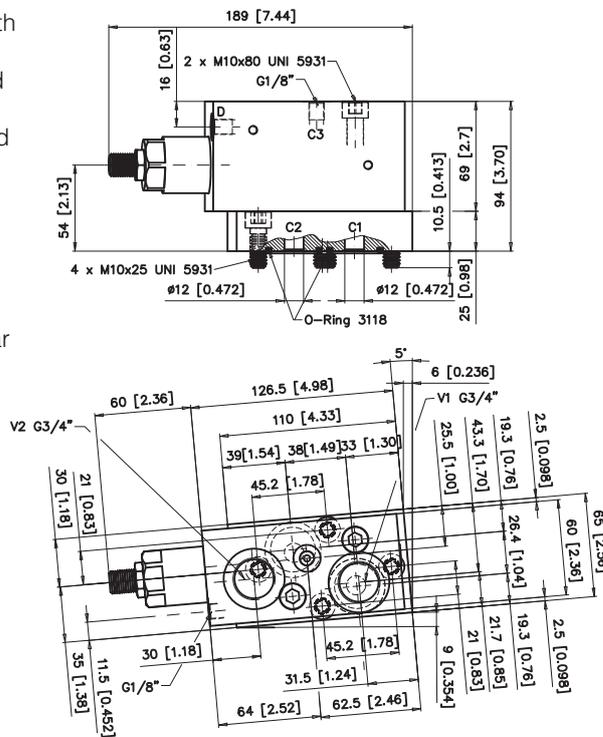
Max working pressure	250 bar [3625 psi]
Max flow	100 l/min [26.4 U.S. gpm]
Weight	1.5 kg [3.30 lb]

VAF 10 - D (100÷200 bar / 1450÷2900 psi) Code: 521.2080.0100 (Standard)
 VAF 10 - D (210÷300 bar / 3045÷4350 psi) Code: 521.2080.0101

VCD2 10 - S/AF

Single acting overcentre valve with shuttle valve flangeable on HT and HTC motors, usually flanged on winch with pressure released brake to control load lowering and avoid unwanted acceleration.

If not specified the valve is supplied not set.
 Available setting range: standard between 100 and 350 bar [1450 and 5075 psi]
 Optional: between 30 and 210 bar [435 and 3045 psi].



Pilot ratio	7:1
Max working pressure	350 bar [5075 psi]
Max flow	100 l/min [26.4 U.S. gpm]
Weight	2.05 kg [4.51 lb]

VACD2 10 - S/AF (100÷350 bar / 1450÷5075 psi) Code: SP00000192 (Standard)
 VACD2 10 - S/AF (30÷210 bar / 435÷3045 psi) Code: SP00000193

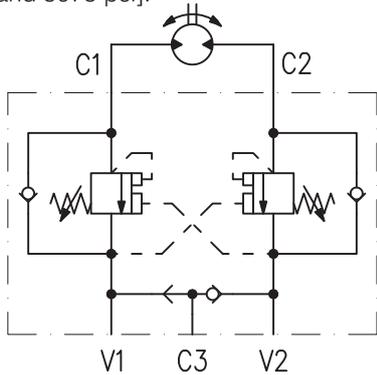
Click **DANA** button to return to section index

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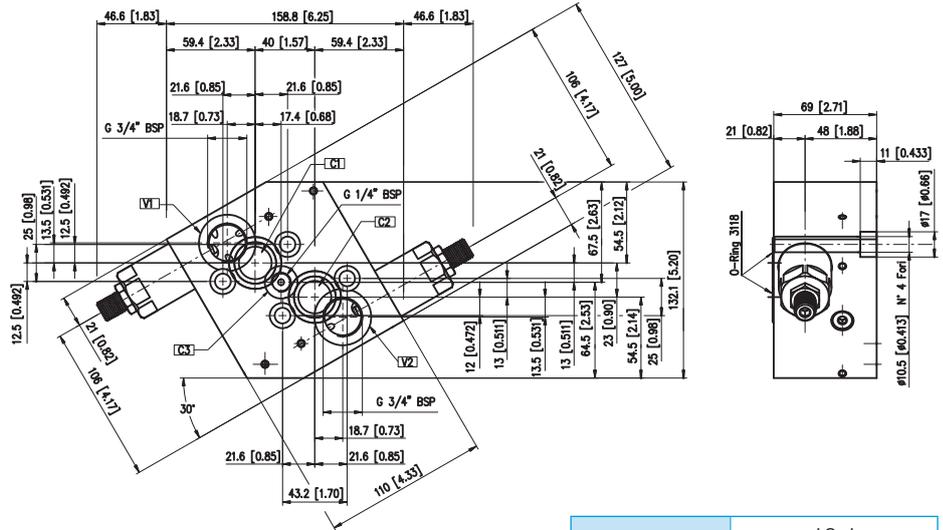
VCR1 10 - D/AF

Double-acting overcentre valve with shuttle valve, flangeable on **HT** and **HTC** motors.

Usually flanged on winch with pressure released brake, to control load lowering and avoid unwanted acceleration. Slew drive control of cranes, aerial platforms, etcetera are common applications too. If not specified the valve is supplied not set. Setting range between 100 and 350 bar [1450 and 5075 psi].



VCR1 - 10 D/AF (7:1) Code: SPO00000212
 VCR1 - 10 D/AF (10:1) Code: SPO00000189

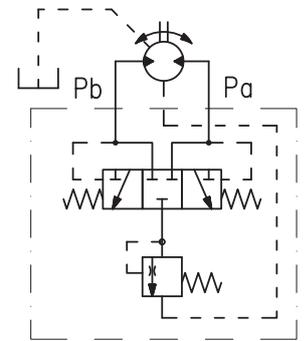
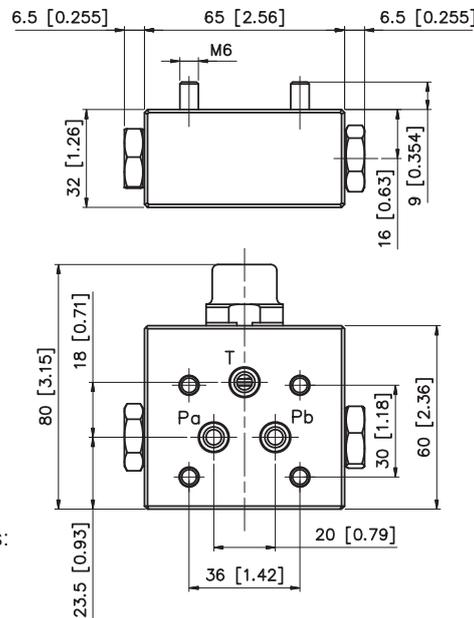


Pilot ratio	10:1 7:1
Max working pressure	250 bar [3626 psi]
Max flow	100 l/min [26.4 U.S. gpm]
Weight	2.0 kg [4.40 lb]

VSC

Flushing valve for **HR** and **HT** motors used in closed circuit hydrostatic transmissions. Allows an oil cooling action, which is recommended when operating at high speed and power.

The unit is made by a three positions - three way spool valve that allows a small oil flow from the low pressure line of the circuit into the motor casing, then into the tank. For a correct operation it is necessary to connect the drain port of the motor with the tank. The valve can be mounted only with a dedicated cover on the motor (see motor catalogue).



The shuttle valve can be fitted in following versions:

Code	Description	Theoretical flow [319 psi]	Orifice Diameter
521.5200.0000	VSC 06F VALVE	6 l/min [1.5 U.S. gpm]	1.5 mm [0.05 in]
521.5210.0000	VSC 09F VALVE	10.5 l/min [2.7 U.S. gpm]	2 mm [0.07 in]
"521.5220.0000	VSC 15F VALVE	15 l/min [3.9 U.S. gpm]	2.5 mm [0.09 in]
521.5230.0000	VSC 21F VALVE	20 l/min [5.2 U.S. gpm]	3.3 mm [0.12 in]

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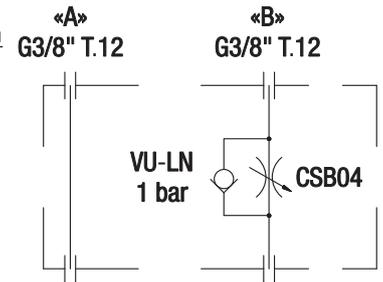
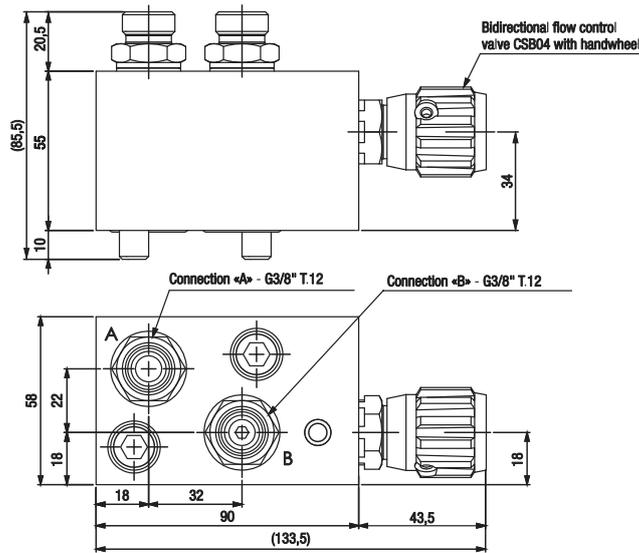


VRP 09

The valve flangeable on **HR** motor series permit the flow control by the means of a non-compensated throttle valve.

The control is possible in one direction only and the regulation is obtained by turning to the left or right the screw or the hand wheel. The valves are made completely in steel and are protected on surface by tropicalized zinc plating. A high degree of mechanical sealing is ensured along with negligible leakage.

VRP 09 Code: P15111618



Max working pressure	315 bar [3626 psi]
Max flow	40 l/min [26.4 U.S. gpm]
Weight	2.1 kg [4.62 lb]

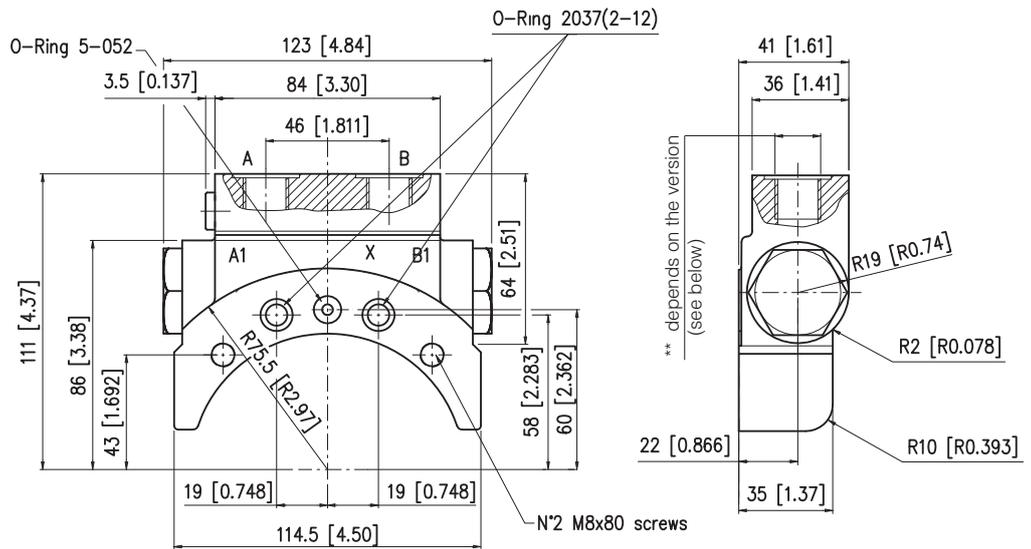
VCT 11

VCT11 is a standard motion control valve flangeable to **BRZV** orbital motors.

It is used to control the rotation of the motor and of the connected gearbox.

It is available in the standard version (VCT11 SF) or with brake disengagement port (VCT11 AF)

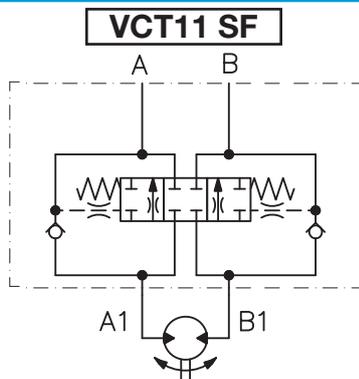
Spool opening min pressure: 11 bar
Full spool opening pressure: 15 bar



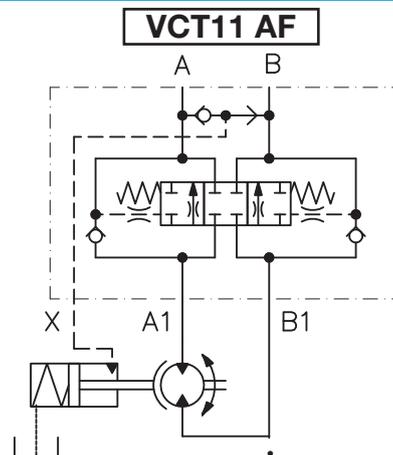
Weight	1.8 kg [3.97 lb]
---------------	---------------------

** METRIC VERSION 3/8 G (BSPP) thread depth 15 mm [0.59 in]
SAE VERSION 3/4-16 UNF thread depth 15 mm [0.59 in]

Valve without disengagement brake port



Valve with disengagement brake port



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How to select the best pilot ratio for overcentre valves

High pilot ratios ensure small energy losses during load lowering (or any time the motor is driven by load), while low pilot ratios ensure a better control of variable intensity loads, but with a higher energy loss during lowering.

For brake motors we recommend low pilot ratios: they ensure a higher brake disengagement pressure when the motor is driven by the load, in order to have the brake completely disengaged during load lowering.

The minimum pilot pressure must be higher (even during load lowering) than the full disengagement pressure, to avoid interferences between brake and valve.

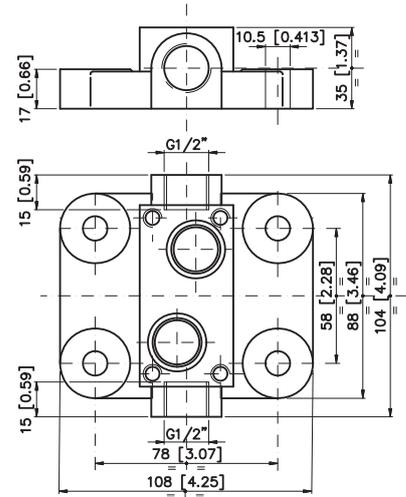
The overcentre and slewing control valves (VCR1 - VCD) have to be set at pressure values 30% higher (at least) than the nominal pressure induced by the load and must be used with open centre directional valves.

Manifold (base block)

BFL 1

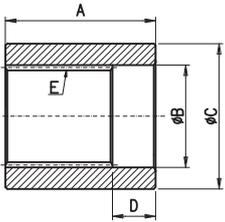
Base Block fo AR, BR, BG motors with BFL1 configuration

Code: 109.0100.9000



Bushings

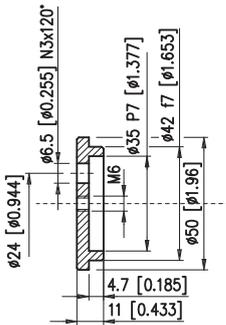
SERIES BS - BSD



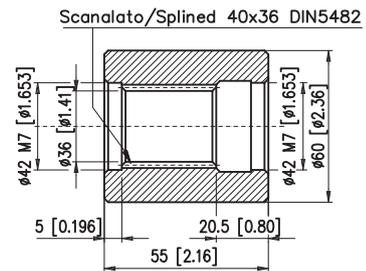
Type	Dimensions						COD.
		A	B	C	D	E	
BS 16/P	mm [in]	27 [1.06]	-	24 [0.94]	-	17x14 DIN 5482	320.0070.0000
BS 25/P	mm [in]	43 [1.69]	25,3 [0.99]	40 [1.57]	9 [0.354]	25X22 DIN 5482	320.0130.0000
BSD 25/P	mm [in]	37 [1.45]	25,7 [1.01]	40 [1.57]	9 [0.354]	SAE 1"6 B	320.0210.0000
BS 32/P	mm [in]	48 [1.88]	32 [1.25]	50 [1.96]	10 [0.393]	ANSI B92.1a 1976	320.0090.0000

Bushings

SERIES BS - FBS



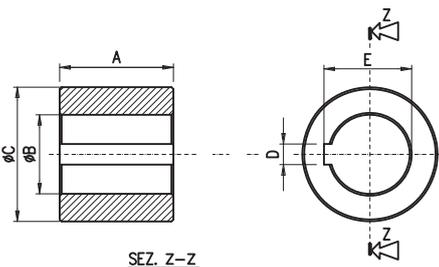
FBS 12 Code: 319.0050.0000



BS 12 Code: 320.0150.0000

Bushings

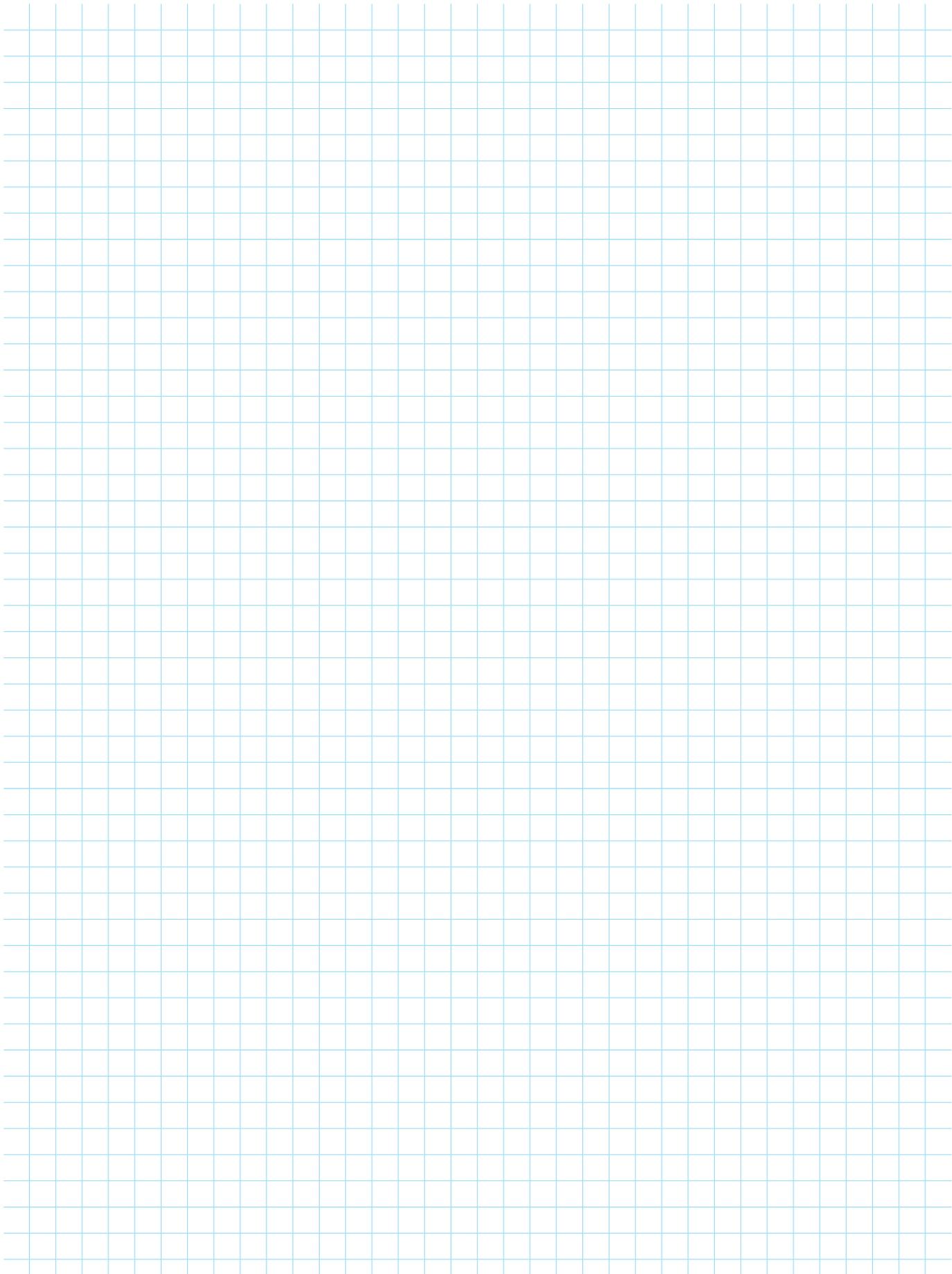
SERIES BC



Type	Dimensions						COD.
		A	B	C	D	E	
BC 25/P	mm [in]	43 [1.69]	25 [0.98]	40 [1.57]	8 [0.314]	28.3 [1.11]	320.0110.0000
BC 25.4/P	mm [in]	43 [1.69]	25.4 [1.00]	40 [1.57]	6.35 [0.25]	28,3 [1.11]	320.0050.0000
BC 32/P	mm [in]	50.5 [1.98]	32 [1.25]	50 [1.96]	10 [0.393]	35.3 [1.38]	320.0280.0000

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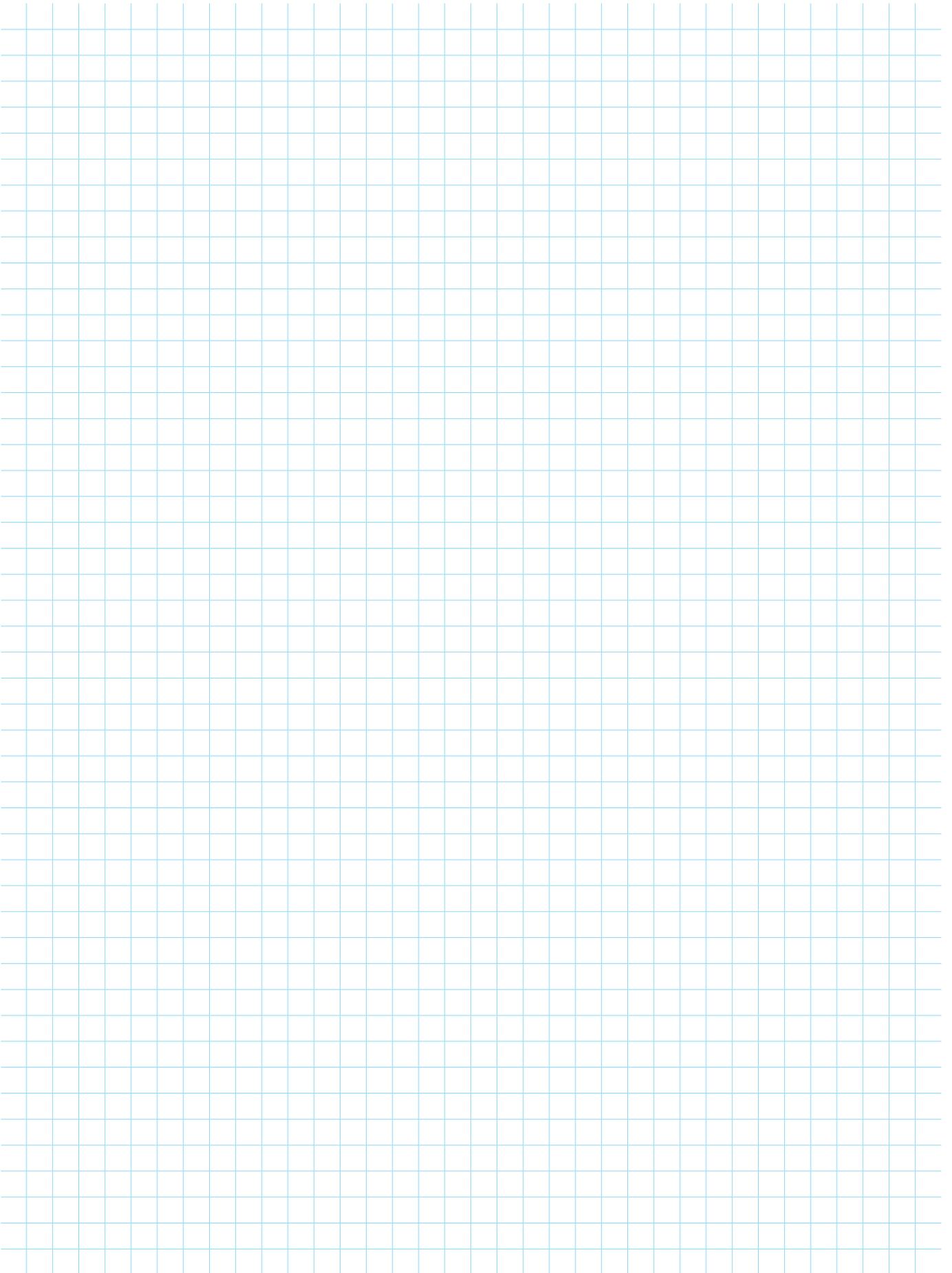
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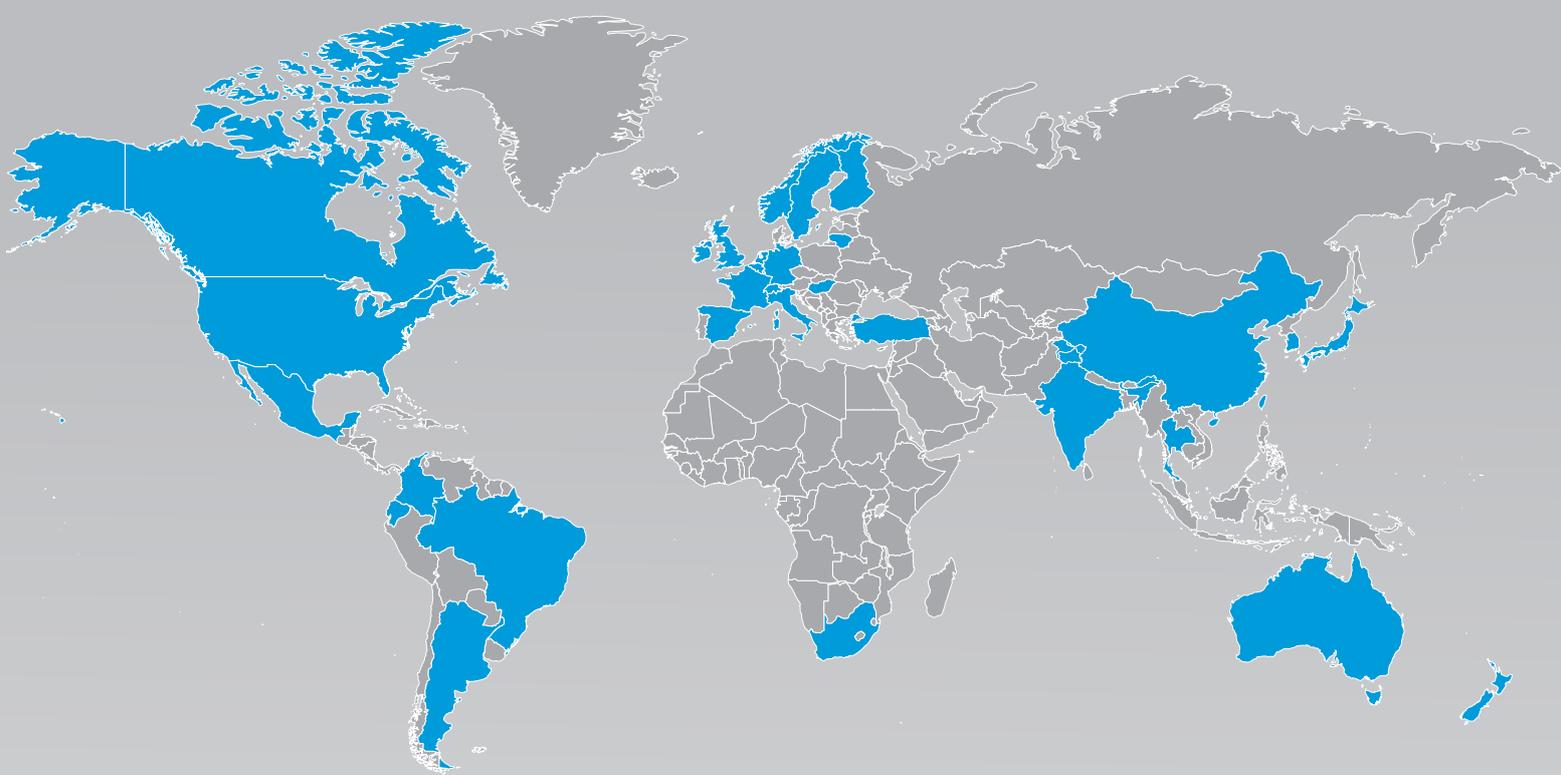
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Technologies Customized to Every Part of the Globe

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