

Displacement from 0.18 to 3.2 ccm
Pressure up to 230 bar
Speed from 800 to 8000 RPM

GEAR PUMPS



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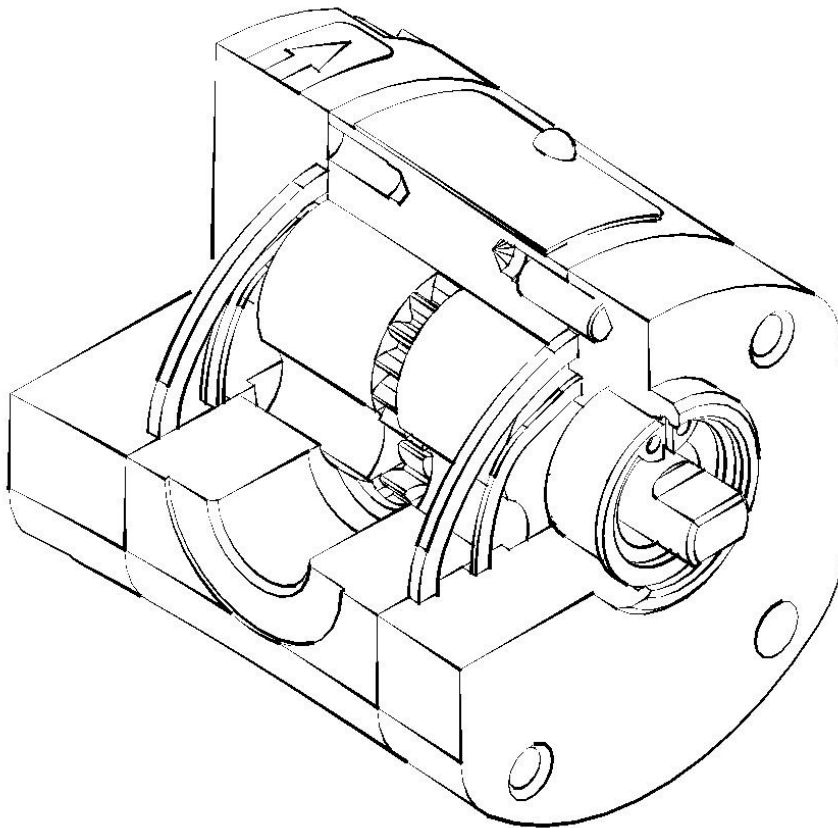
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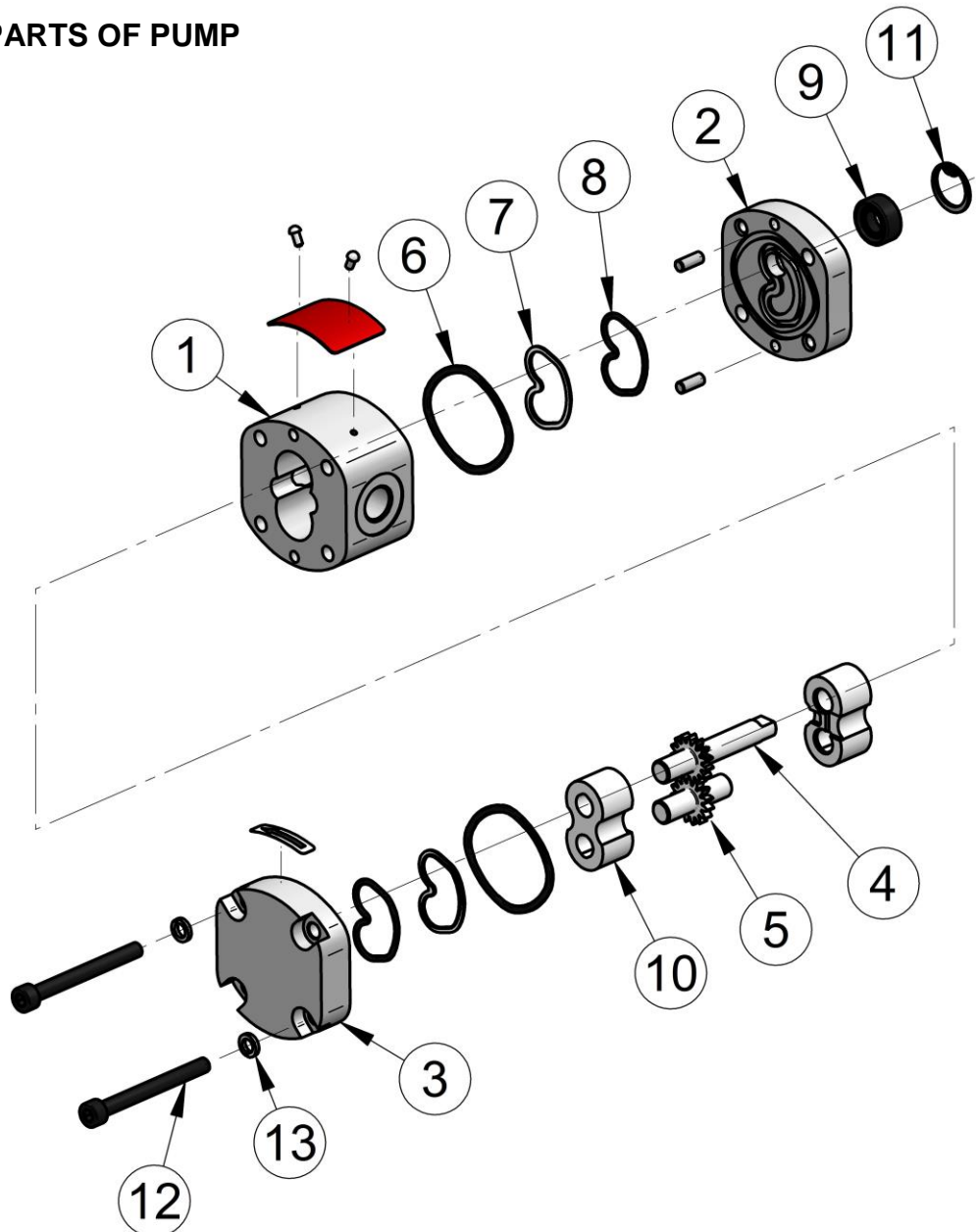
DESCRIPTION

Pumps and motors of X series are designed for use in hydraulic systems with very low performance (up to 2.3 kW). They are produced in unidirectional and bi-directional design.

A wide range of shafts, flanges, inlets and outlets working liquid allows their use in hydraulic circuits stationary and mobile machines and devices of smaller dimensions. The used types of connections and flanges conform to world standards.

The X series have a wide spectrum of usable rotational speed from 800 to 8000 min⁻¹, enabling connection to high-speed motors. Pumps and motors have a very favourable efficiency and noise throughout the rev range and pressure.

BASIC PARTS OF PUMP



- | | |
|-----------------------------|----------------------|
| 1. Body | 8. Balancing sealing |
| 2. Flange | 9. Shaft seal |
| 3. Cover | 10. Bearing sleeves |
| 4. Driving gear | 11. Safety ring |
| 5. Driven gear | 12. Connection bolts |
| 6. Peripheral sealing | 13. Spring washers |
| 7. Sealing protective plate | |

PARAMETER TABLE

Nominal Size Parameters		Sym.	Unit	X 0.18	X 0.25	X 0.32	X 0.36	X 0.40	X 0.50	X 0.63	X 0.70
Actual displacement		V_g	[cm ³]	0.175	0.256	0.327	0.361	0.408	0.501	0.630	0.711
Rotation speed	nominal	n_n	[min ⁻¹]	1500							
	minimum	n_{min}	[min ⁻¹]	1000							
	maximum	n_{max}	[min ⁻¹]	8000	7000				6000		
Pressure at inlet *	minimum	p_{1min}	[bar]	-0.3							
	maximum	p_{1max}	[bar]	0.5							
Pressure at outlet **	max. continuous	p_{2n}	[bar]	200	230				220		
	maximum	p_{2max}	[bar]	250							
	peak	p_3	[bar]	260							
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	0.19	0.30	0.40	0.44	0.50	0.65	0.85	0.95
Maximum flow rate at n_{max} and p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	1.39	1.77	2.27	2.50	2.83	2.98	3.74	4.22
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	0.10	0.17	0.22	0.24	0.28	0.34	0.41	0.46
Maximum input power at n_{max} and p_{2max}		P_{max}	[kW]	0.69	0.88	1.12	1.24	1.40	1.4	1.78	2.01
Weight		m	[kg]	0.37	0.38	0.38	0.38	0.39	0.39	0.40	0.40

Nominal Size Parameters		Sym.	Unit	X 0.80	X 1.00	X 1.25	X 1.50	X 2.00	X 2.50	X 3.20	
Actual displacement		V_g	[cm ³]	0.804	1.001	1.258	1.514	2.004	2.505	3.192	
Rotation speed	nominal	n_n	[min ⁻¹]	1500							
	minimum	n_{min}	[min ⁻¹]	1000	800				600	500	
	maximum	n_{max}	[min ⁻¹]	6000	5000	4000	3000	2800	2500	1800	
Pressure at inlet *	minimum	p_{1min}	[bar]	-0.3							
	maximum	p_{1max}	[bar]	0.5							
Pressure at outlet **	max. continuous	p_{2n}	[bar]	220	200		160	120	90	60	
	maximum	p_{2max}	[bar]	240	220		180	150	100	70	
	peak	p_3	[bar]	250	230		190	160	110	80	
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	1.05	1.35	1.70	2.00	2.70	3.40	4.45	
Maximum flow rate at n_{max} and p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	4.78	4.95	4.98	4.50	5.56	6.20	5.69	
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	0.52	0.59	0.74	0.71	0.71	0.66	0.56	
Maximum input power at n_{max} and p_{2max}		P_{max}	[kW]	2.27	2.16	2.17	1.60	1.65	1.23	0.79	
Weight		m	[kg]	0.40	0.41	0.41	0.43	0.45	0.48	0.53	

* Inlet pressure in the reversible design can be up to $p_1 = p_{2n} - 70$ bar max. External drainage must be used in case of the reversible design.

** Outlet pressure in the reversible design is **10% lower** than shown in the table (depending on operating conditions - it is necessary to consult with the manufacturer).

FORMULAS USED FOR CALCULATION

Flow rate

$$Q = \frac{V_g \cdot n}{1000} \cdot \eta_v \quad [\text{dm}^3 \text{ min}^{-1}]$$

V_g [cm³] pump displacement
 n [min⁻¹] rotation speed
 η_v [-] volumetric efficiency

Displacement

$$V_g = \frac{Q \cdot 1000}{n \cdot \eta_v} \quad [\text{cm}^3]$$

Torque

$$M_k = \frac{V_g \cdot p}{20 \cdot \pi \cdot \eta_m} \quad [\text{Nm}]$$

p [bar] required pressure at outlet
 η_m [-] mechanical efficiency

Input power

$$P = \frac{V_g \cdot n \cdot p}{600 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$

η_t [-] total efficiency

PUMP EFFICIENCIES

Volumetric efficiency η_v

It determines the amount of flow losses. Its value is $\eta_v = 0.92 \div 0.98$ (depending on rotation speed, viscosity of working liquid and outlet pressure). It can be expressed as follows:

$$\eta_v = \frac{Q_{act.}}{Q_{theor.}} \quad [-]$$

$Q_{act.}$ [dm³ min⁻¹] actual flow rate
 $Q_{theor.}$ [dm³ min⁻¹] theoretical flow rate

Mechanical efficiency η_m

It determines mechanical losses. Its value is about $\eta_m = 0.85$. It can be expressed as follows:

$$\eta_m = \frac{M_{theor.}}{M_{act.}} \quad [-]$$

$M_{act.}$ [Nm] actual torque
 $M_{theor.}$ [Nm] theoretical torque

Total efficiency η_t

It is defined as product of η_v and η_m and determines difference between theoretical and actual required input power:

$$\eta_t = \eta_v \cdot \eta_m = \frac{P_{theor.}}{P_{act.}} \quad [-]$$

$P_{act.}$ [kW] actual input power
 $P_{theor.}$ [kW] theoretical input power

WORKING LIQUID

- Mineral oils for hydraulic drives
- Hydraulic liquids based on plant oils suitable for hydraulic drives

Liquid temperature

$$t = -20 \div +80 \text{ [}^\circ\text{C]} \quad \text{when used with FKM (Viton) seal up to } 120 \text{ [}^\circ\text{C]}$$

Cinematic viscosity

Recommended (during continuous operation): $v = 20 \div 80 \cdot 10^{-6} \text{ [m}^2 \cdot \text{s}^{-1}\text{]}$

Maximum (cold starting, at viscosity >1000 , operating pressure <10 bar is permissible, speed $<1500 \cdot \text{min}^{-1}$): $v = 1200 \cdot 10^{-6} \text{ [m}^2 \cdot \text{s}^{-1}\text{]}$

Minimum (operating mode at $10 \cdot 10^{-6}$ up to $20 \cdot 10^{-6}$ should be consulted with manufacturer): $v = 10 \cdot 10^{-6} \text{ [m}^2 \cdot \text{s}^{-1}\text{]}$

Filtration coefficient β_α

$$\beta_{25} 75 \geq \text{(for pressure } p_2 < 200 \text{ bar)}$$

$$\beta_{10} 75 \geq \text{(for pressure } p_2 > 200 \text{ bar)}$$

Liquid contamination class according to ISO 4406

$$21/18/15 \quad \text{(for pressure } p_2 < 200 \text{ bar)}$$

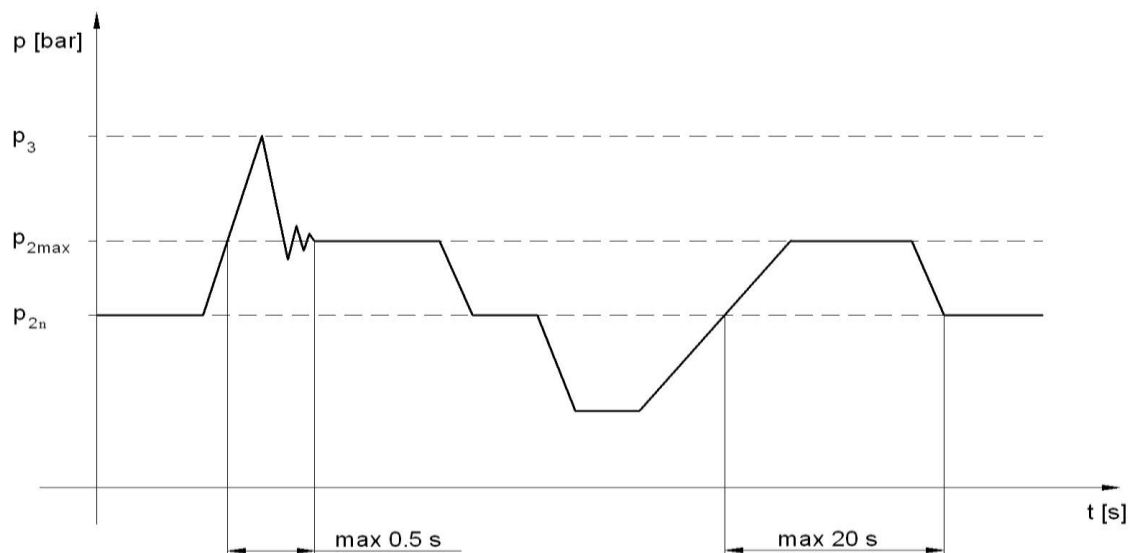
$$20/17/14 \quad \text{(for pressure } p_2 > 200 \text{ bar)}$$

Liquid contamination class according to NAS 1638

$$10 \quad \text{(for pressure } p_2 < 200 \text{ bar)}$$

$$8 \quad \text{(for pressure } p_2 > 200 \text{ bar)}$$

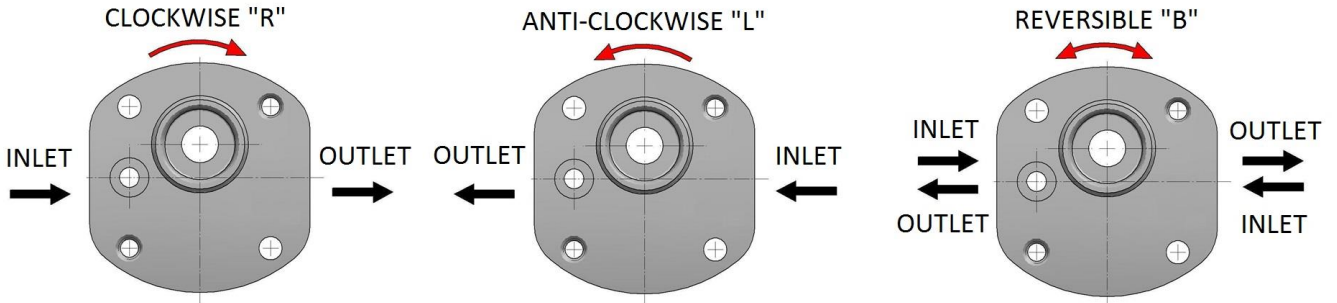
PRESSURE LOAD



- p_{2n} max. contin. pressure** max. working pressure, at which the pump can be operated without time limitation.
- p_{2max} max. pressure** maximum pressure permissible for a short time, max. 20s.
- p_3 peak pressure** short-time pressure (fractions of a second) arising in case of a sudden change of the operating mode; any excess of this pressure during operation is impermissible.

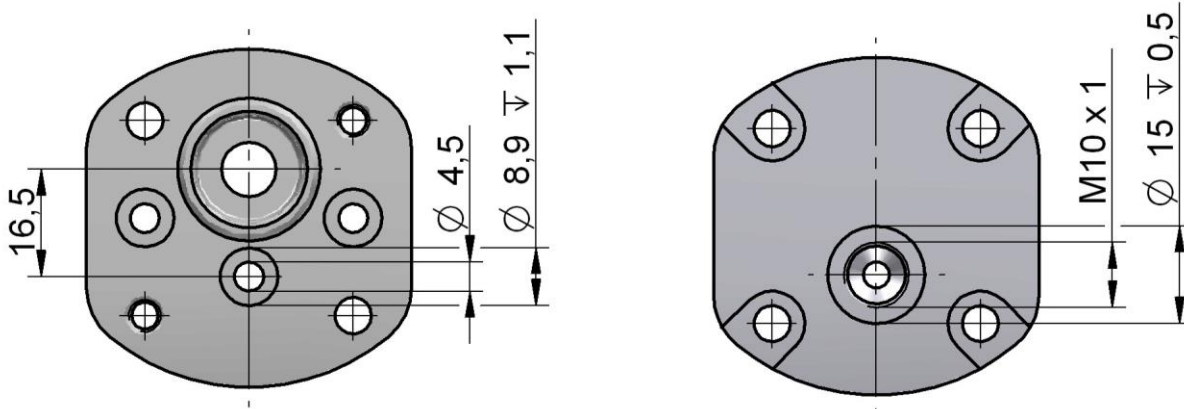
DIRECTION OF ROTATION

Determine direction of rotation by looking at the drive shaft. The pump can only be used in the specified direction of rotation.

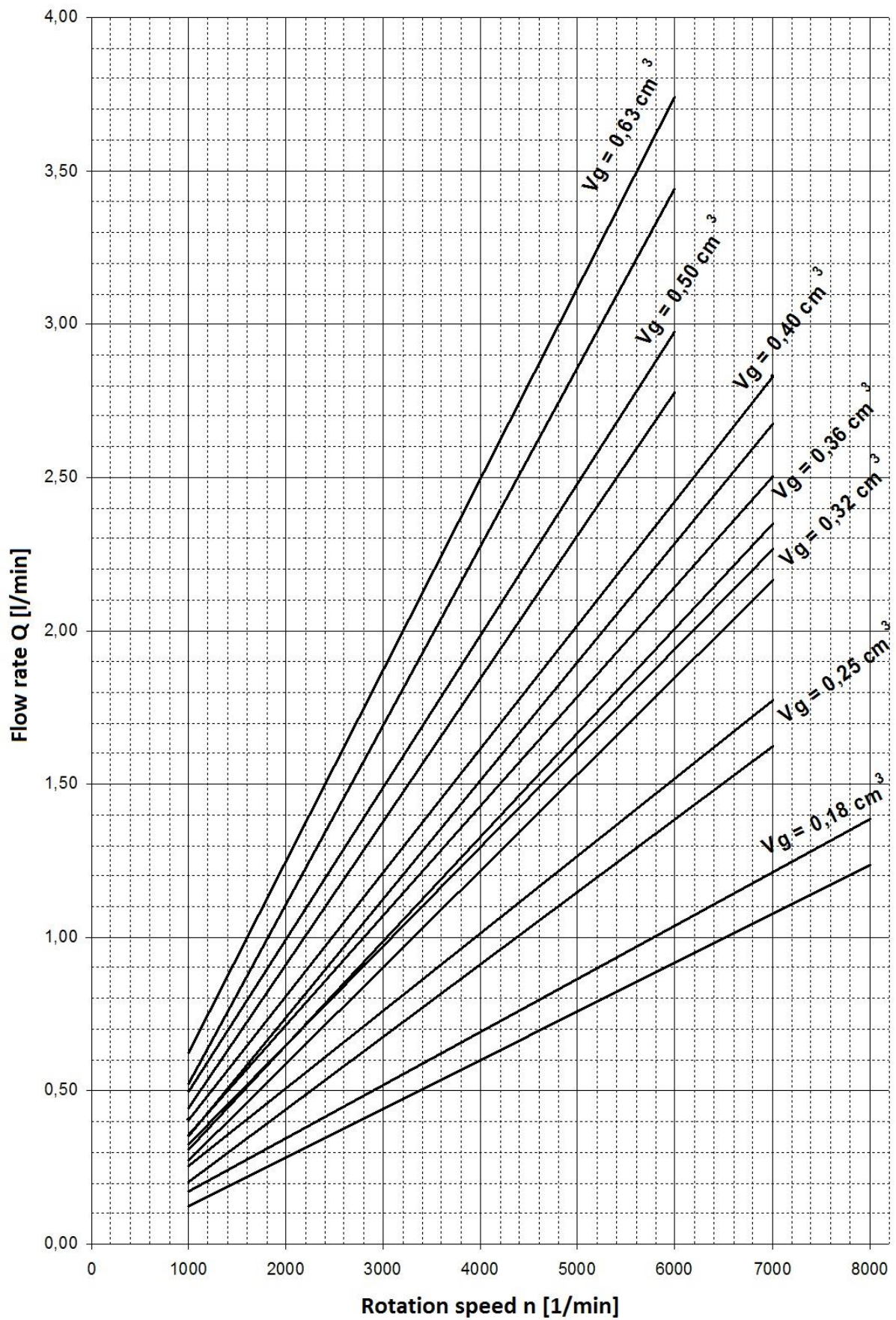


REVERSIBLE DESIGN

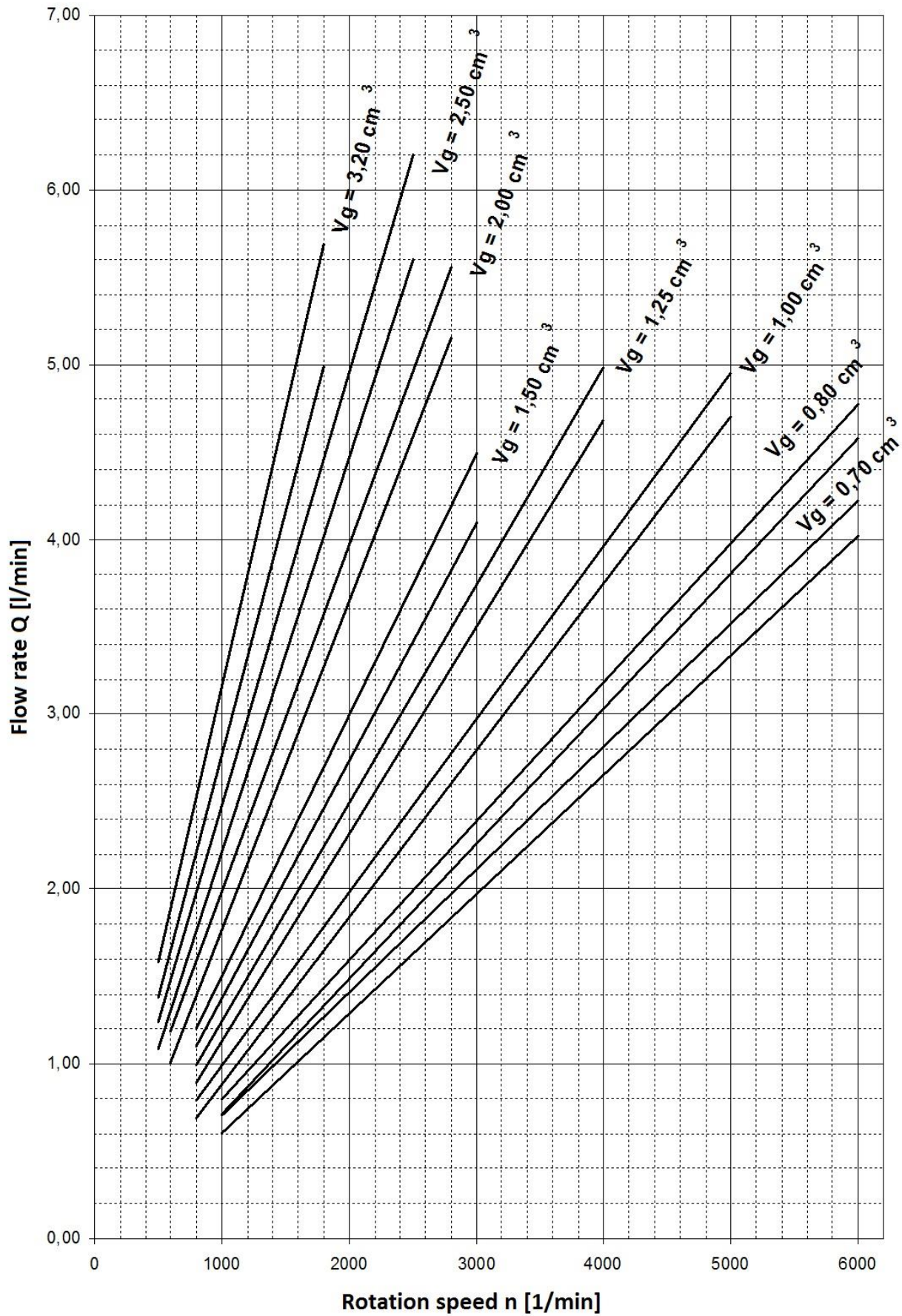
The pumps with the possibility of bidirectional rotation have a different internal arrangement requiring drainage. External drainage is solved by an orifice located in the cover or the flange against the driven gear (see. picture below).



FLOW RATE AND POWER CURVES

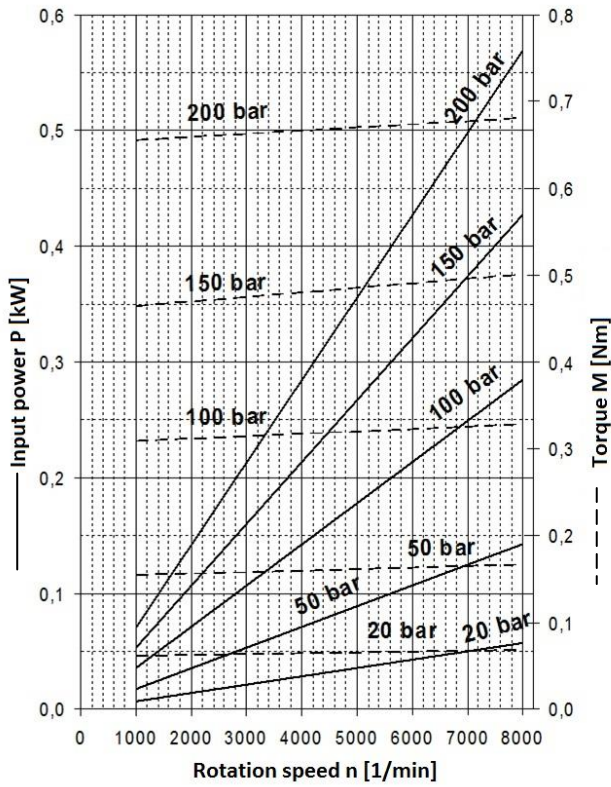


Above curves apply to ISO Vg 46 oil at temperature $t = 45^\circ\text{C}$.

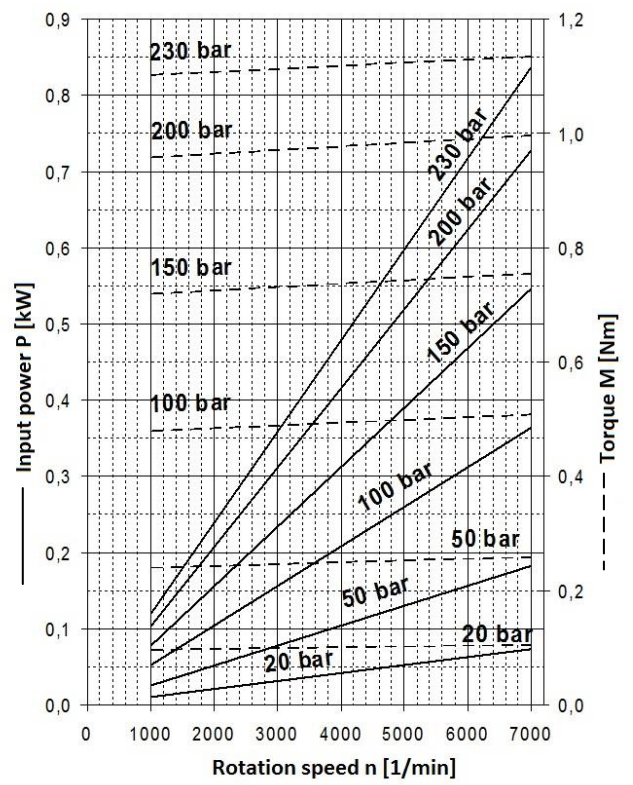


Above curves apply to ISO Vg 46 oil at temperature $t = 45^{\circ}\text{C}$.

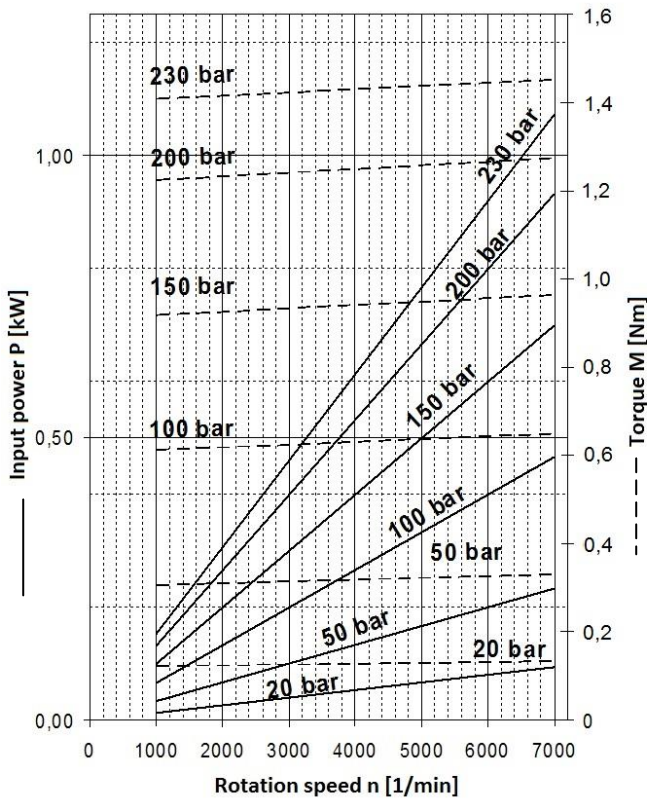
0,18 cm³



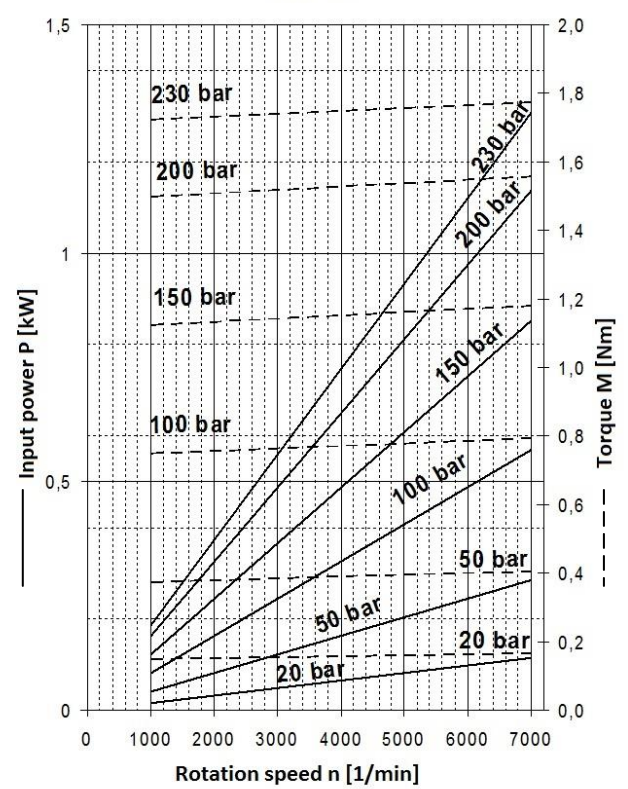
0,25 cm³



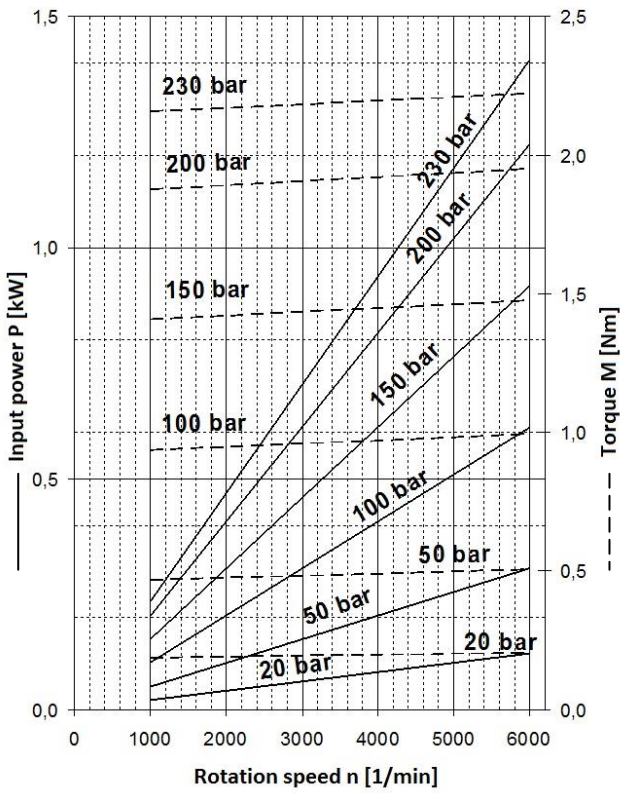
0,32 cm³



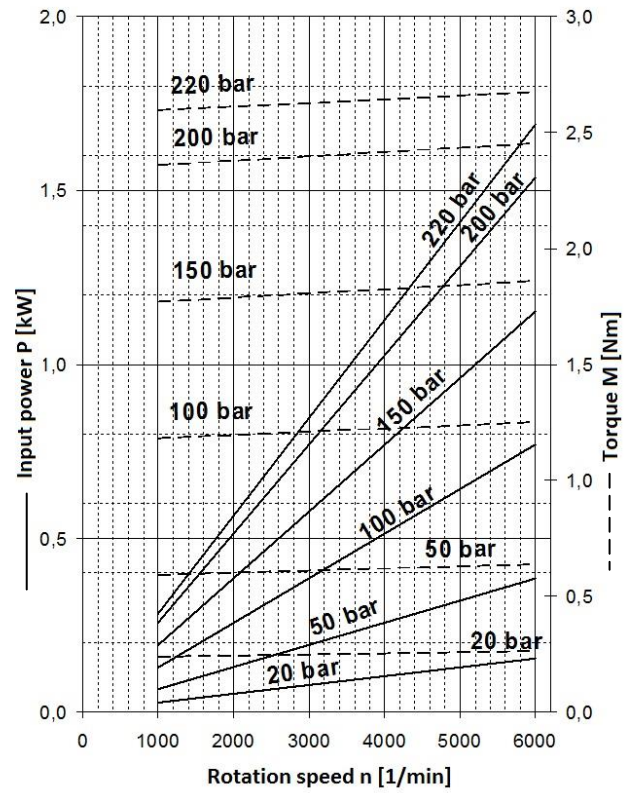
0,4 cm³



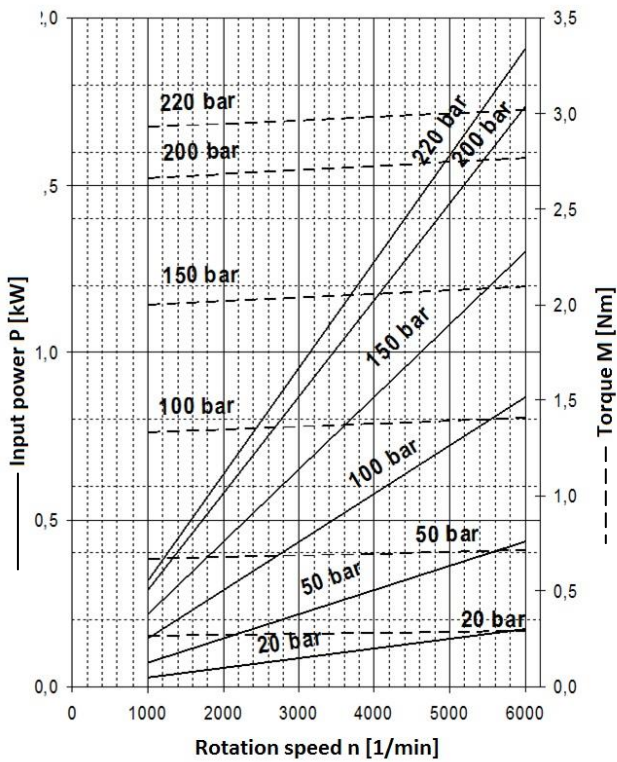
0,5 cm³



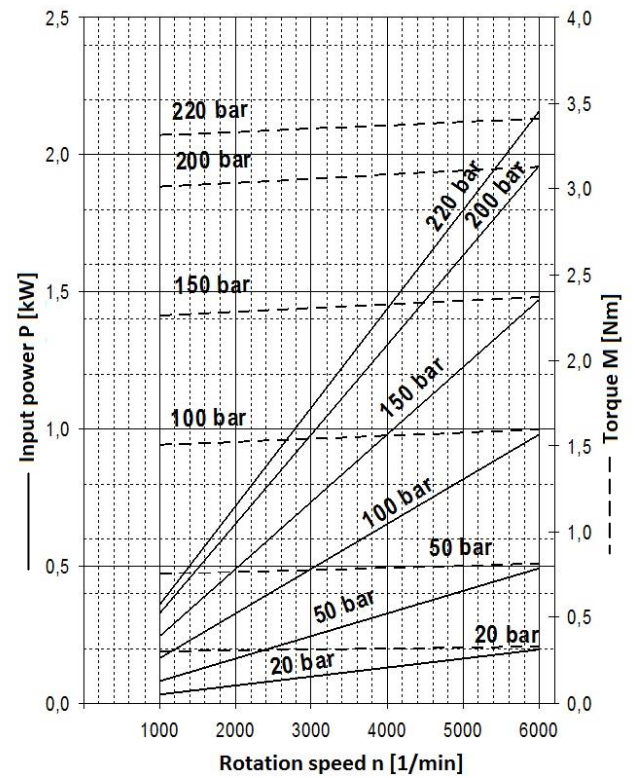
0,63 cm³

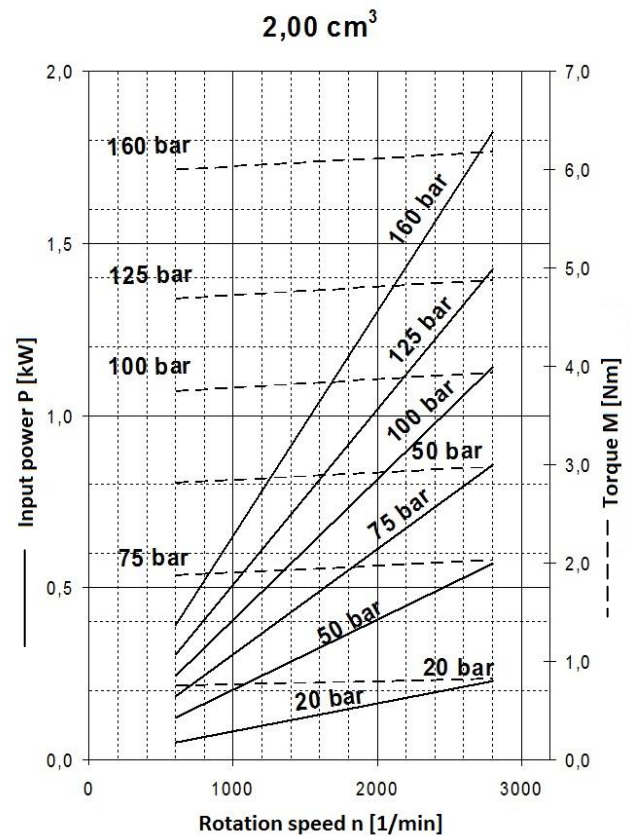
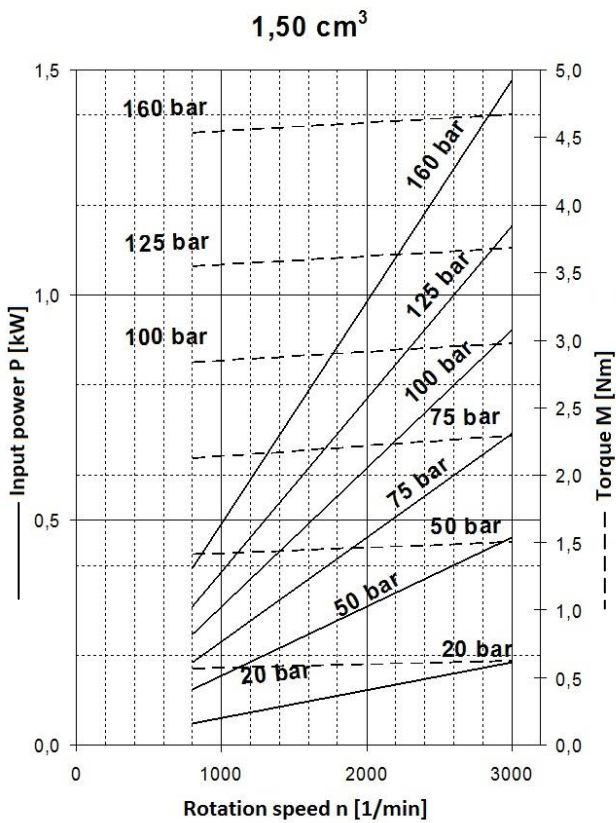
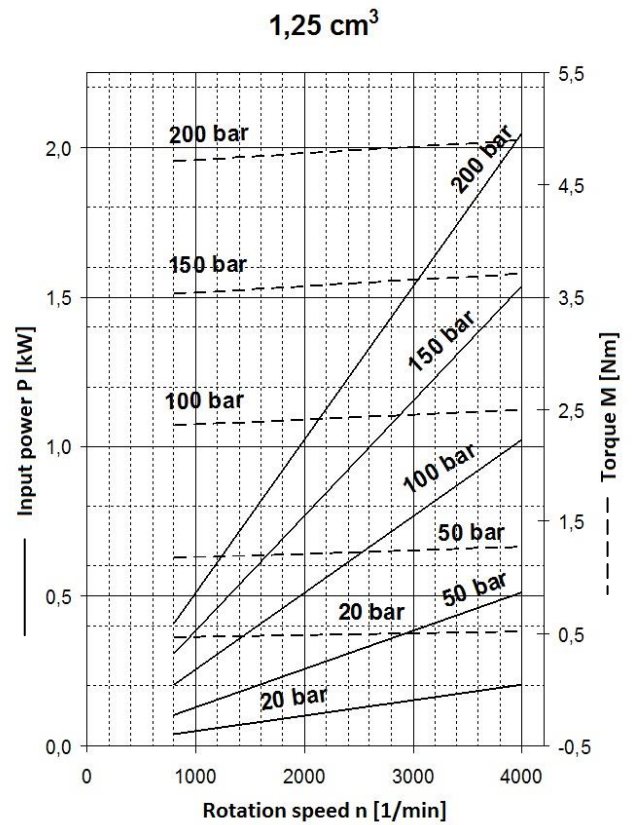
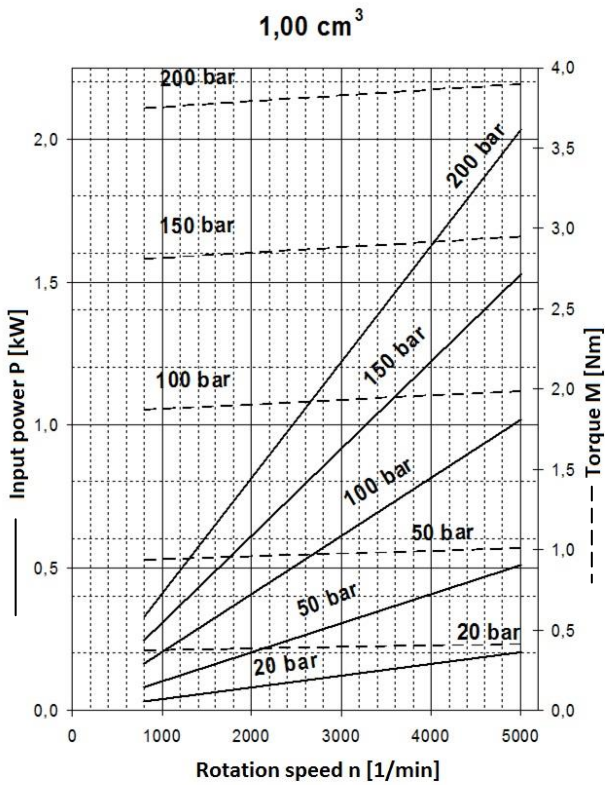


0,70 cm³



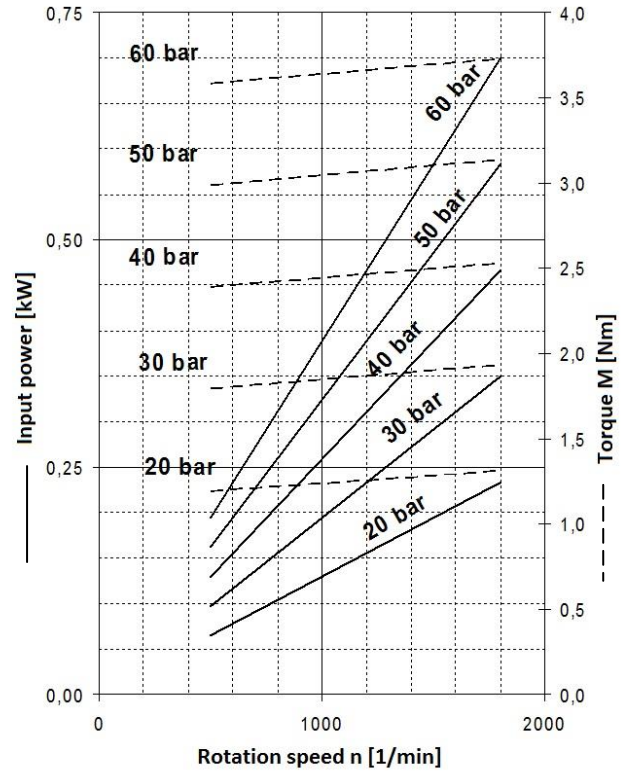
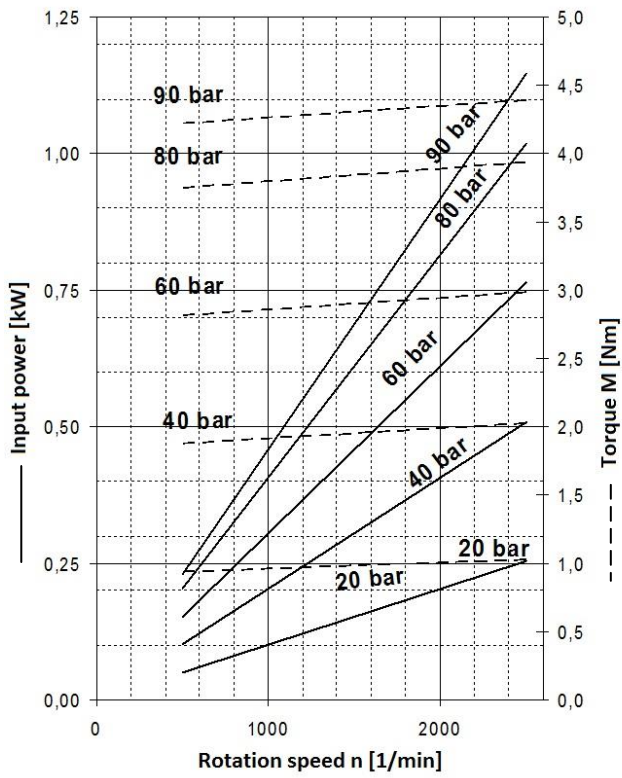
0,80 cm³





2,50 cm³

3,20 cm³






ORDER KEY






X - 1,00 R - A01 C01 - S G01 G01 - N . 004





Code	Displacement [cm ³]
0,18	0,175
0,25	0,256
0,32	0,327
0,36	0,361
0,40	0,408
0,50	0,501
0,63	0,630
0,70	0,711
0,80	0,804
1,00	1,001
1,25	1,258
1,50	1,514
2,00	2,004
2,50	2,505
3,20	3,192
XX	Other displacements on request

Code	Rotation
R	Clockwise rotation
L	Anti-clockwise rotation
B	Bi-directional rotation


Code	Type
X	X Series Gear Pump







Code	Flange design	
R01		Flange with two bolts M6 centre ring Ø 22
A01		Flange with two bolts M5 centre ring Ø 22 spacing 32x32
A02		Flange with two bolts M5 centre ring Ø 22 spacing 30x32
Z		Special design

Code	Location of suction and pressure port	
S		Side (in the body)
F		Front (in the Flange)
A		Axial
C		Combination
D		Combination

Code	Drive shaft design	
C01		Taper 1:8 Woodruff key 2x2,6
V01		Cylindric Woodruff key 2x2,6
K01		Cross coupling
K02		Cross coupling
Z		Special design

Code	Special arrangements
-	No special arrangements
001	With front end bearing
004	Without shaft seal
005	drainage in the flange

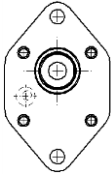
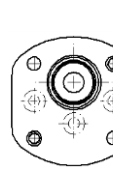
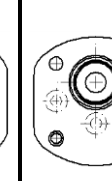
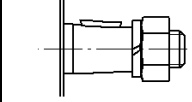
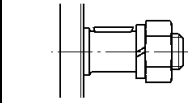
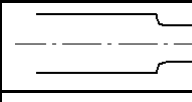
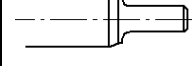
Code	Sealing material	
N		NBR

Code	Design of suction and pressure port	
D01		Inlet / Outlet in the Flange
D02		Inlet / Outlet in the Flange
P01		Inlet / Outlet in the cover
M01		Thread M 10x1
G01		Thread BSP G 1/4
G02		Thread BSP G 3/8
Z		Special design

An example of designation for the X clockwise pump with displacement 1.00 cm³, flange with two bolt about spacing 32x32, taper 1:8 with key 2x26, BSP inlet and outlet in body and without shaft sealing:

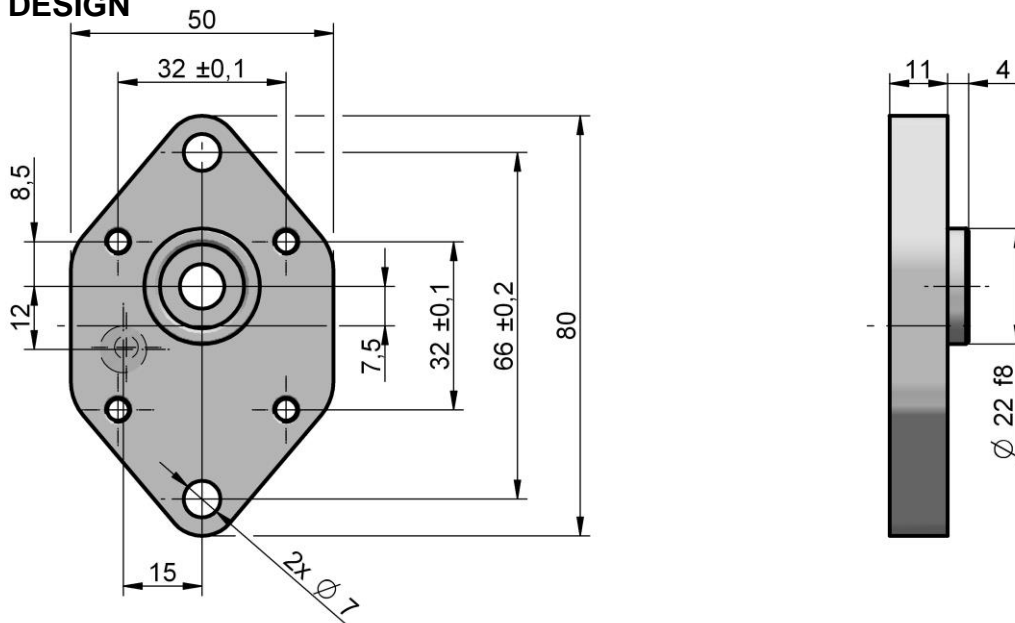
X-1.00R-A01C01-SG01/G01-N . 004

COMBINATIONS OF FLANGES AND SHAFTS

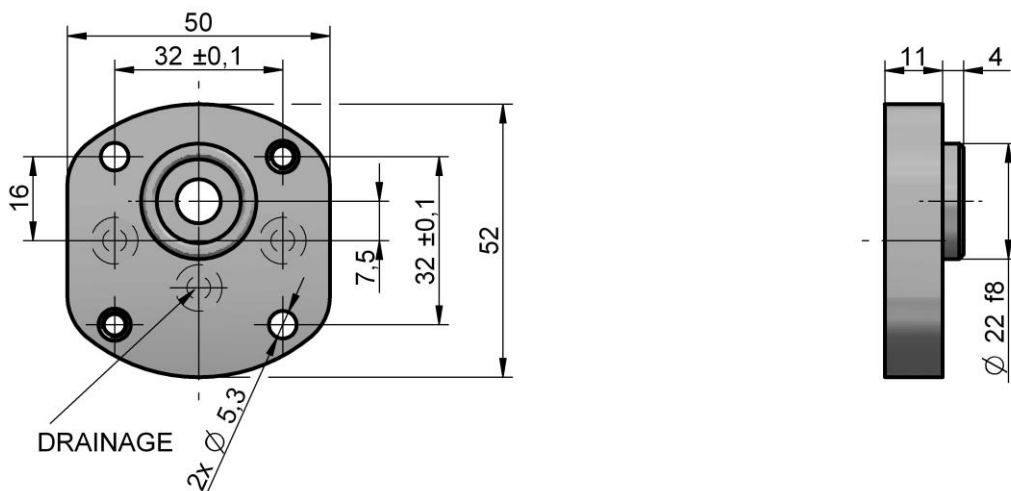
		FLANGE DESIGN		
		R01	A01	A02
DRIVE SHAFT				
C01			●	●
V01		●	●	●
K01			●	●
K02		●	●	●

FLANGE DESIGN

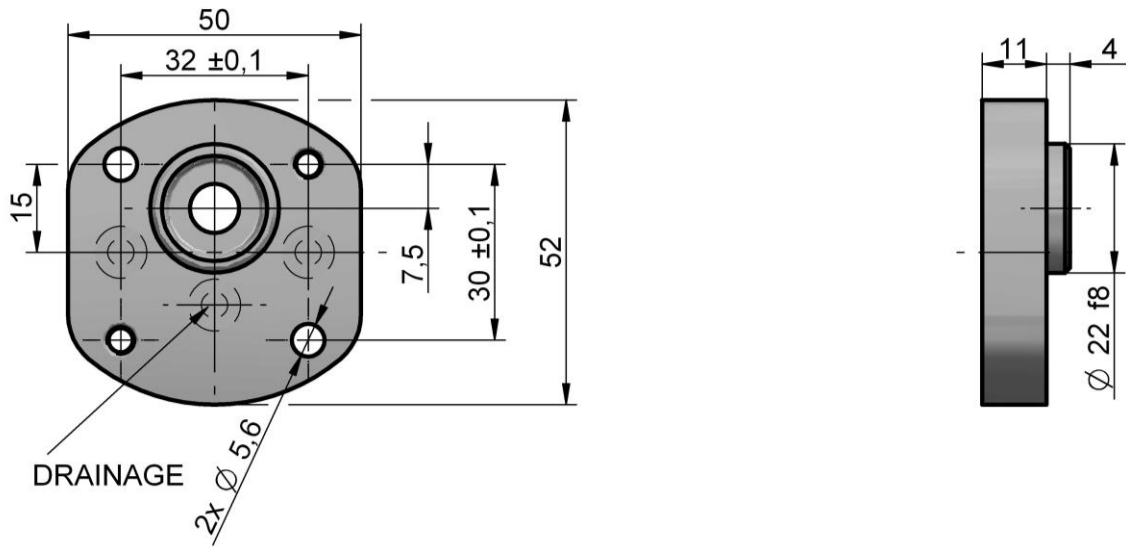
R01:



A01:

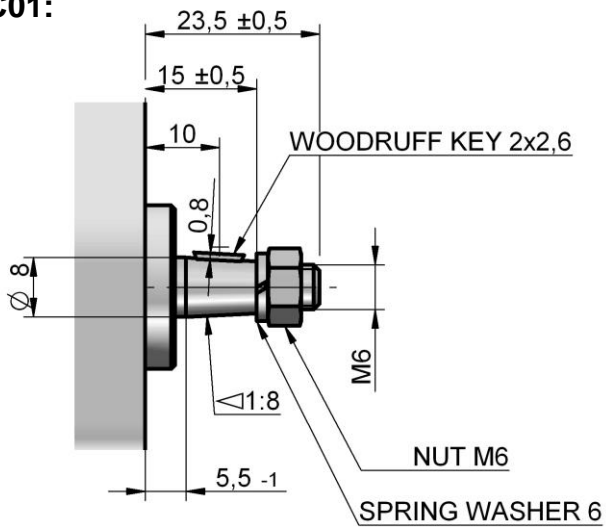


A02:

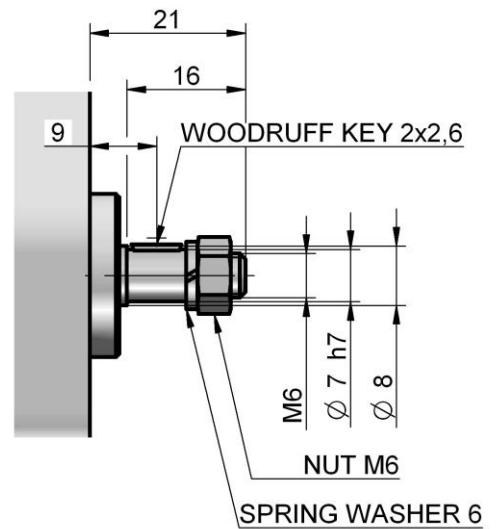


DRIVE SHAFTS

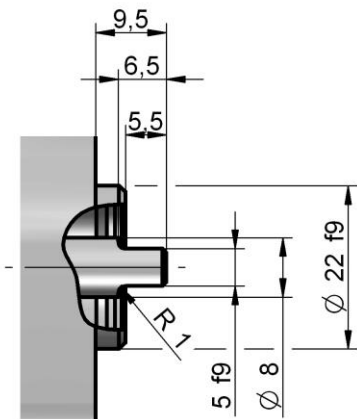
C01:



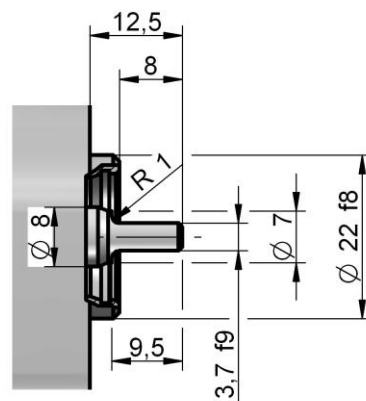
V01:



K01:

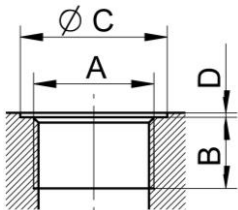


K02:



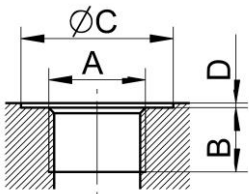
LIQUID INLET AND OUTLET CONNECTION

Metric thread according to ISO 6149



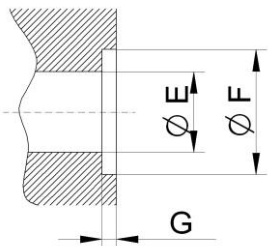
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
0.18-0.5	M01	M 10x1	8	15	1	M01	M 10x1	8	15	1
0.5-3.2	Other types of inputs									

BSPP pipe thread ISO 228-1



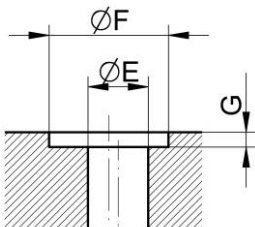
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
all	G01	G 1/4	13	26	1	G01	G 1/4	13	26	1
	G02	G 3/8		24			G 3/8		24	

Inlet / outlet in the flange



Displacement [cm ³]	Code	Inlet			Code	Outlet		
		E	F	G		E	F	G
all	D01	4.5	8.9	1.1	D01	4.5	8.9	1.1
	D02		9.5	1.3			D02	9.5

Inlet / outlet in the flange

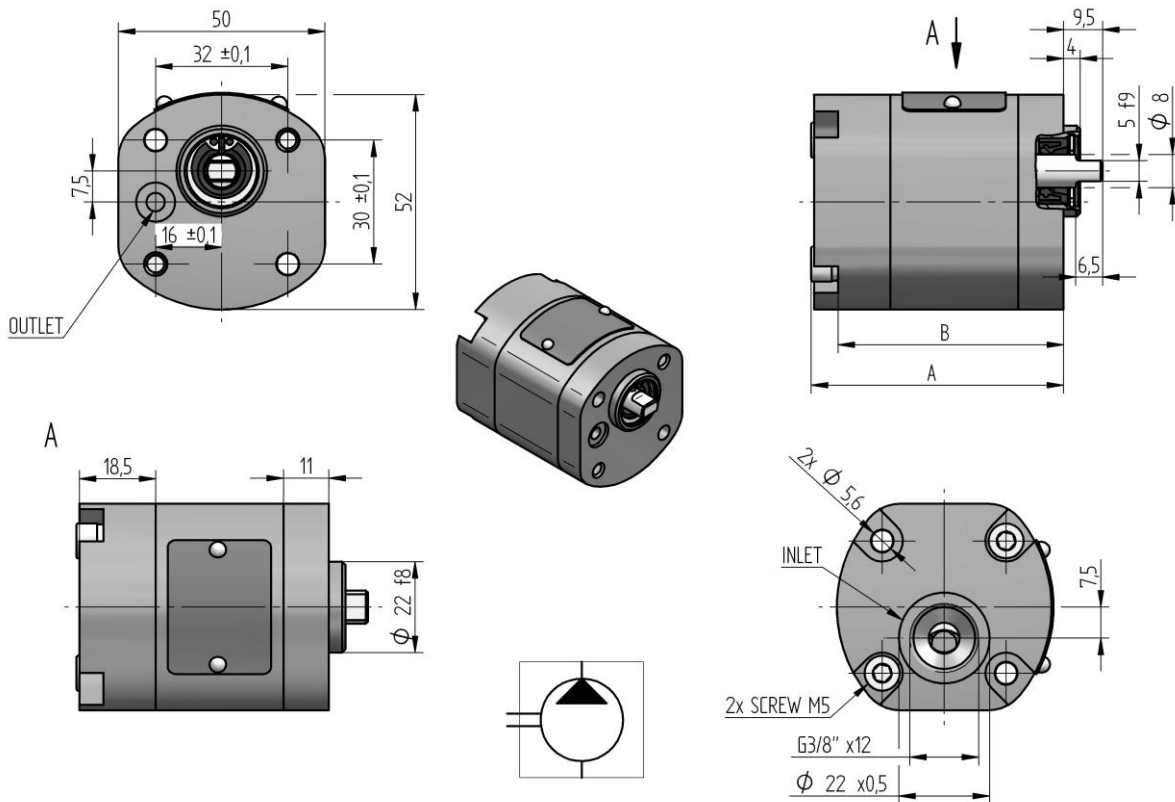


Displacement [cm ³]	Code	Inlet			Code	Outlet		
		E	F	G		E	F	G
all	P01	4.5	8.9	1.1	P01	4.5	8.9	1.1

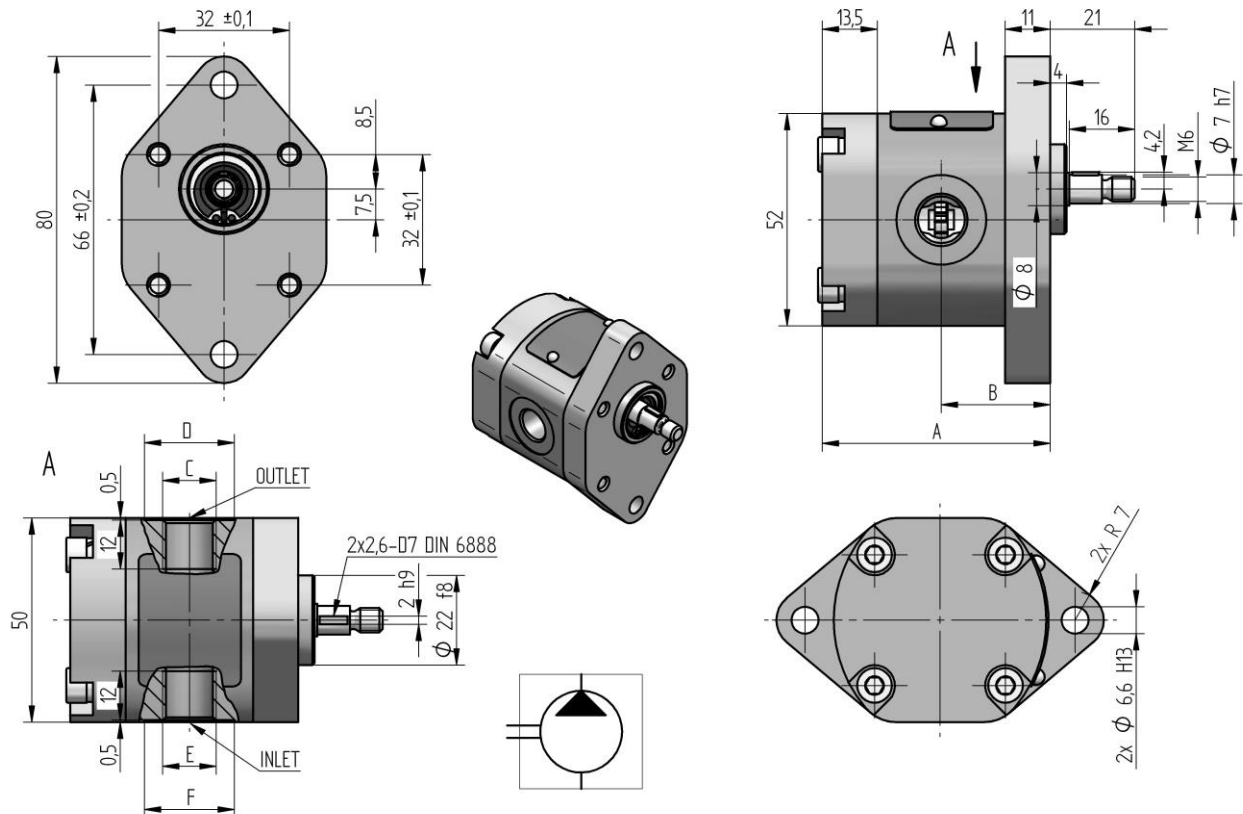
Drain:

Displacement [cm ³]	Code	Outlet			Code	Outlet			
		E	F	G		A	B	C	D
all	D01	4,5	8,9	1,1	M01	M10x1	8	15	1

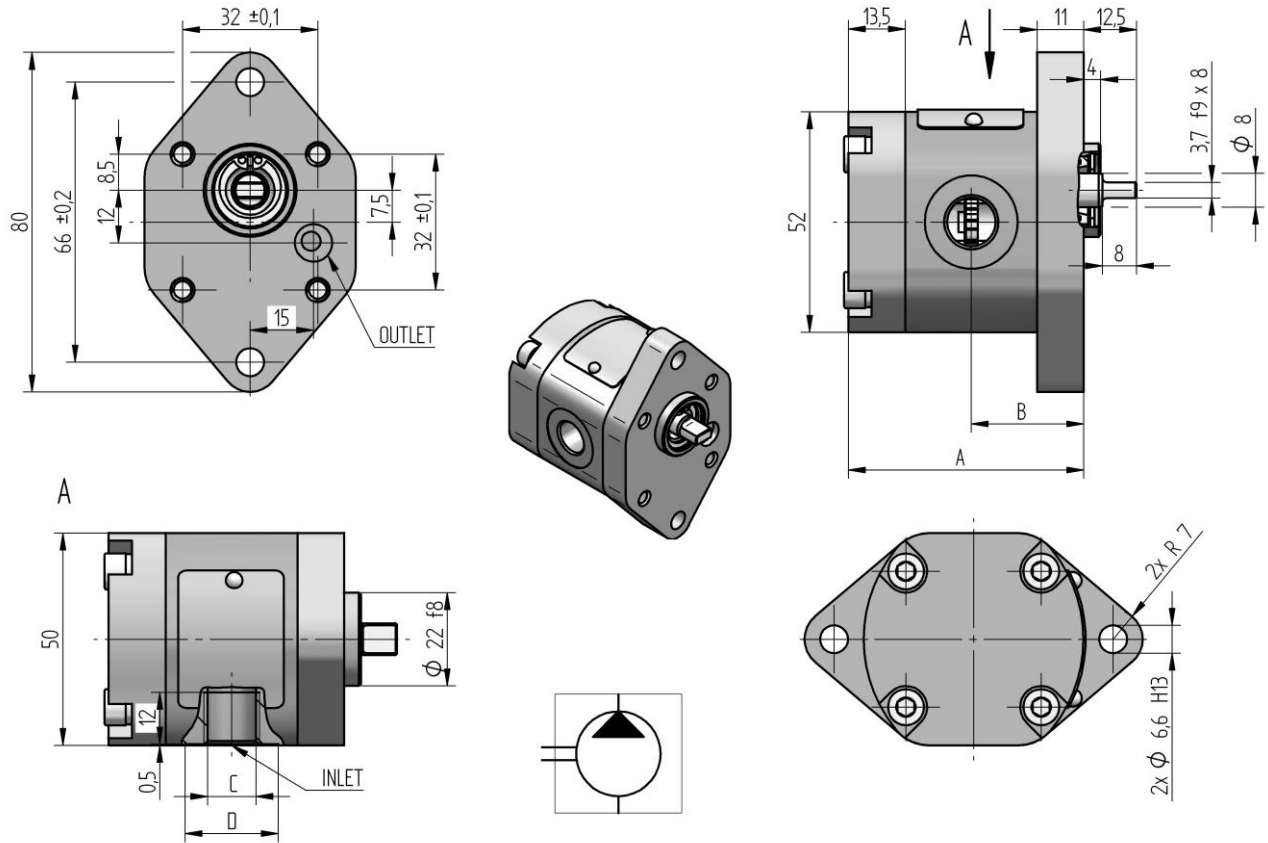
CATALOGUE SHETS OF X SERIES BASIC DESIGNS



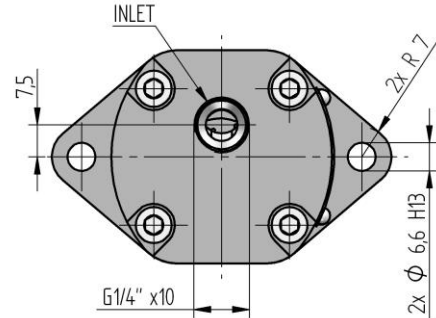
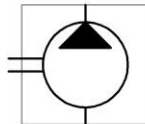
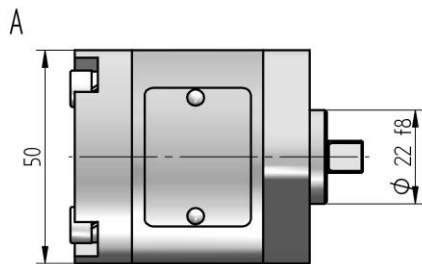
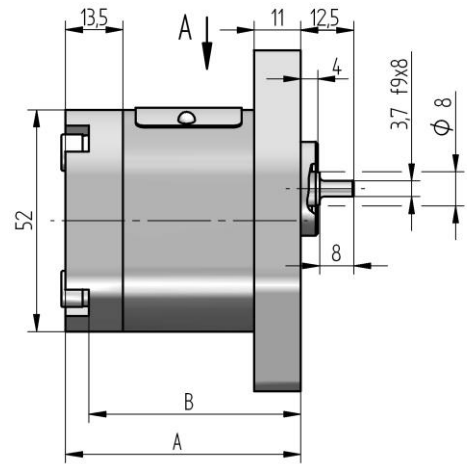
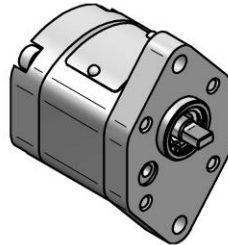
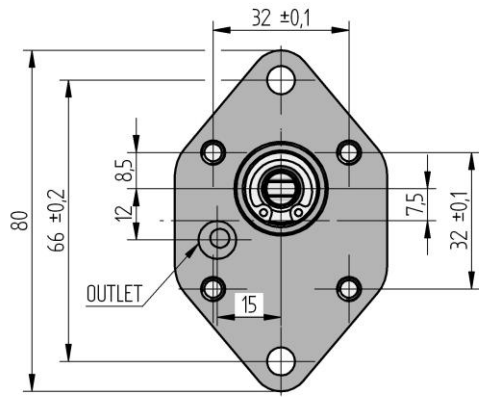
X-3.20R-A02K01-AG02D02-N		R	3.2	60	500	1 800	85	79.2					
X-3.20L- A02K01-AG02D02-N		L											
X-2.50R- A02K01-AG02D02-N		R	2.5	90	500	2 500	79.1	73.3					
X-2.50L- A02K01-AG02D02-N		L											
X-2.00R- A02K01-AG02D02-N		R	2	120	600	2 800	74.8	69					
X-2.00L- A02K01-AG02D02-N		L											
X-1.50R- A02K01-AG02D02-N		R	1.5	160	800	3 000	70.6	64.8					
X-1.50L- A02K01-AG02D02-N		L											
X-1.25R- A02K01-AG02D02-N		R	1.25	200	800	4 000	68.4	62.6					
X-1.25L- A02K01-AG02D02-N		L											
X-1.00R- A02K01-AG02D02-N		R	1	200	800	5 000	66.2	60.4					
X-1.00L- A02K01-AG02D02-N		L											
X-0.80R- A02K01-AG02D02-N		R	0.8	220	1 000	6 000	64.5	58.7					
X-0.80L- A02K01-AG02D02-N	180 9946	L											
X-0.70R- A02K01-AG02D02-N		R	0.7	220	1 000	6 000	63.7	57.9					
X-0.70L- A02K01-AG02D02-N		L											
X-0.63R- A02K01-AG02D02-N		R	0.63	220	1 000	6 000	63	57.2					
X-0.63L- A02K01-AG02D02-N		L											
X-0.50R- A02K01-AG02D02-N		R	0.5	230	1 000	6 000	61.9	56.1					
X-0.50L- A02K01-AG02D02-N	180 9947	L											
X-0.40R- A02K01-AG02D02-N		R	0.4	230	1 000	7 000	61.1	55.3					
X-0.40L- A02K01-AG02D02-N		L											
X-0.36R- A02K01-AG02D02-N		R	0.36	230	1 000	7 000	60.7	54.9					
X-0.36L- A02K01-AG02D02-N		L											
X-0.32R- A02K01-AG02D02-N		R	0.32	230	1 000	7 000	60.4	54.6					
X-0.32L- A02K01-AG02D02-N	180 9954	L											
X-0.25R- A02K01-AG02D02-N		R	0.25	230	1 000	7 000	59.8	54					
X-0.25L- A02K01-AG02D02-N	180 9956	L											
X-0.18R- A02K01-AG02D02-N		R	0.18	200	1 000	8 000	59.1	53.3					
X-0.18L- A02K01-AG02D02-N	180 9953	L											
ORDER KEY	PURCH. CODE	DIRECT OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRESS. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	D	E	F	
DIMENSION [mm]													



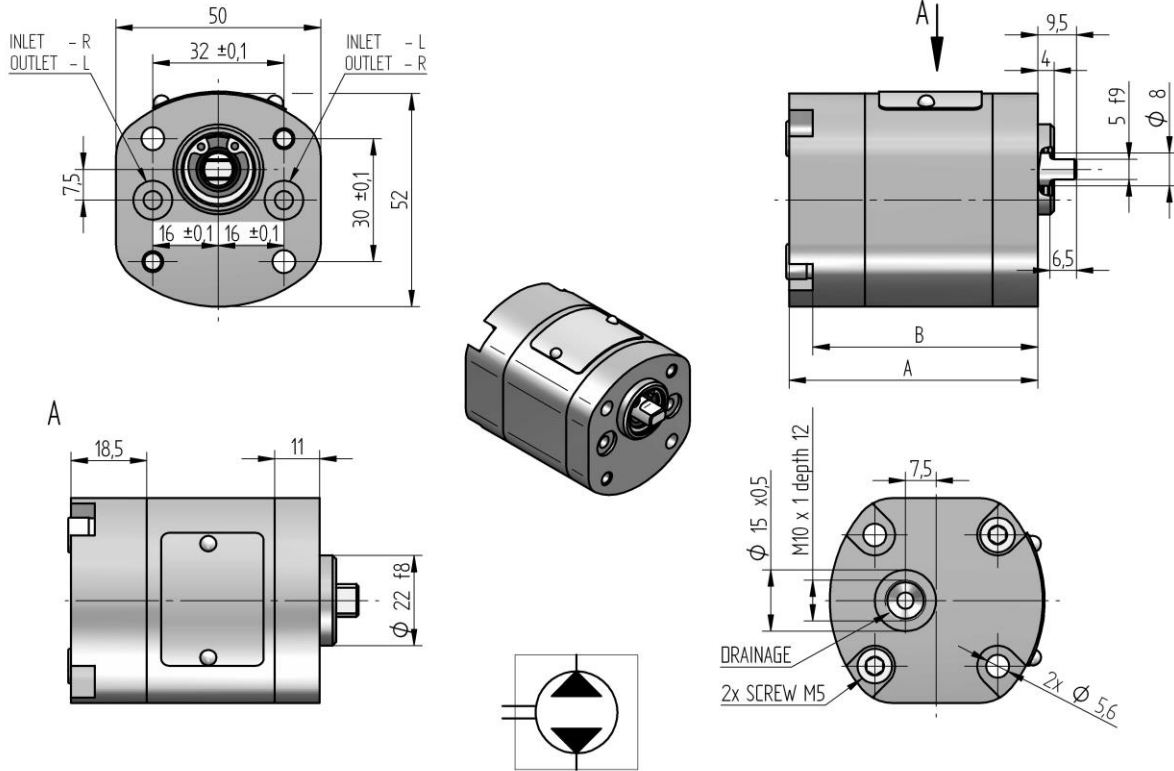
X-3.20R- R01V01-SG01G01-N		R	3.2	60	500	1 800	80	38.8	G 1/4	Ø 22	G 1/4	Ø 22
X-3.20L- R01V01-SG01G01-N		L										
X-2.50R- R01V01-SG01G01-N		R	2.5	90	500	2 500	74.1	35.8	G 1/4	Ø 22	G 1/4	Ø 22
X-2.50L- R01V01-SG01G01-N		L										
X-2.00R- R01V01-SG01G01-N		R	2	120	600	2 800	69.8	33.7	G 1/4	Ø 22	G 1/4	Ø 22
X-2.00L- R01V01-SG01G01-N		L										
X-1.50R- R01V01-SG01G01-N		R	1.5	160	800	3 000	65.6	31.6	G 1/4	Ø 22	G 1/4	Ø 22
X-1.50L- R01V01-SG01G01-N		L										
X-1.25R- R01V01-SG01G01-N	180 9952	R	1.25	200	800	4 000	63.4	30.5	G 1/4	Ø 22	G 1/4	Ø 22
X-1.25L- R01V01-SG01G01-N	180 9961	L										
X-1.00R- R01V01-SG01G01-N		R	1	200	800	5 000	61.2	29.4	G 1/4	Ø 22	G 1/4	Ø 22
X-1.00L- R01V01-SG01G01-N		L										
X-0.80R- R01V01-SG01G01-N	180 9951	R	0.8	220	1 000	6 000	59.5	28.5	G 1/4	Ø 22	G 1/4	Ø 22
X-0.80L- R01V01-SG01G01-N	180 9960	L										
X-0.70R- R01V01-SG01G01-N		R	0.7	220	1 000	6 000	58.7	28.1	G 1/4	Ø 22	G 1/4	Ø 22
X-0.70L- R01V01-SG01G01-N		L										
X-0.63R- R01V01-SG01G01-N		R	0.63	220	1 000	6 000	58	27.8	G 1/4	Ø 22	G 1/4	Ø 22
X-0.63L- R01V01-SG01G01-N		L										
X-0.50R- R01V01-SG01G01-N		R	0.5	230	1 000	6 000	56.9	27.2	G 1/4	Ø 22	G 1/4	Ø 22
X-0.50L- R01V01-SG01G01-N		L										
X-0.40R- R01V01-SG01G01-N		R	0.4	230	1 000	7 000	56.1	26.8	G 1/4	Ø 22	G 1/4	Ø 22
X-0.40L- R01V01-SG01G01-N		L										
X-0.36R- R01V01-SG01G01-N		R	0.36	230	1 000	7 000	55.7	26.6	G 1/4	Ø 22	G 1/4	Ø 22
X-0.36L- R01V01-SG01G01-N		L										
X-0.32R- R01V01-SG01G01-N		R	0.32	230	1 000	7 000	55.4	26.5	G 1/4	Ø 22	G 1/4	Ø 22
X-0.32L- R01V01-SG01G01-N	180 9964	L										
X-0.25R- R01V01-SG01G01-N		R	0.25	230	1 000	7 000	54.8	26.2	G 1/4	Ø 22	G 1/4	Ø 22
X-0.25L- R01V01-SG01G01-N	180 9963	L										
X-0.18R- R01V01-SG01G01-N		R	0.18	200	1 000	8 000	54.1	25.8	G 1/4	Ø 22	G 1/4	Ø 22
X-0.18L- R01V01-SG01G01-N		L										
ORDER KEY	PURCH. CODE	DIRECT OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRESS. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	D	E	F
DIMENSION [mm]												



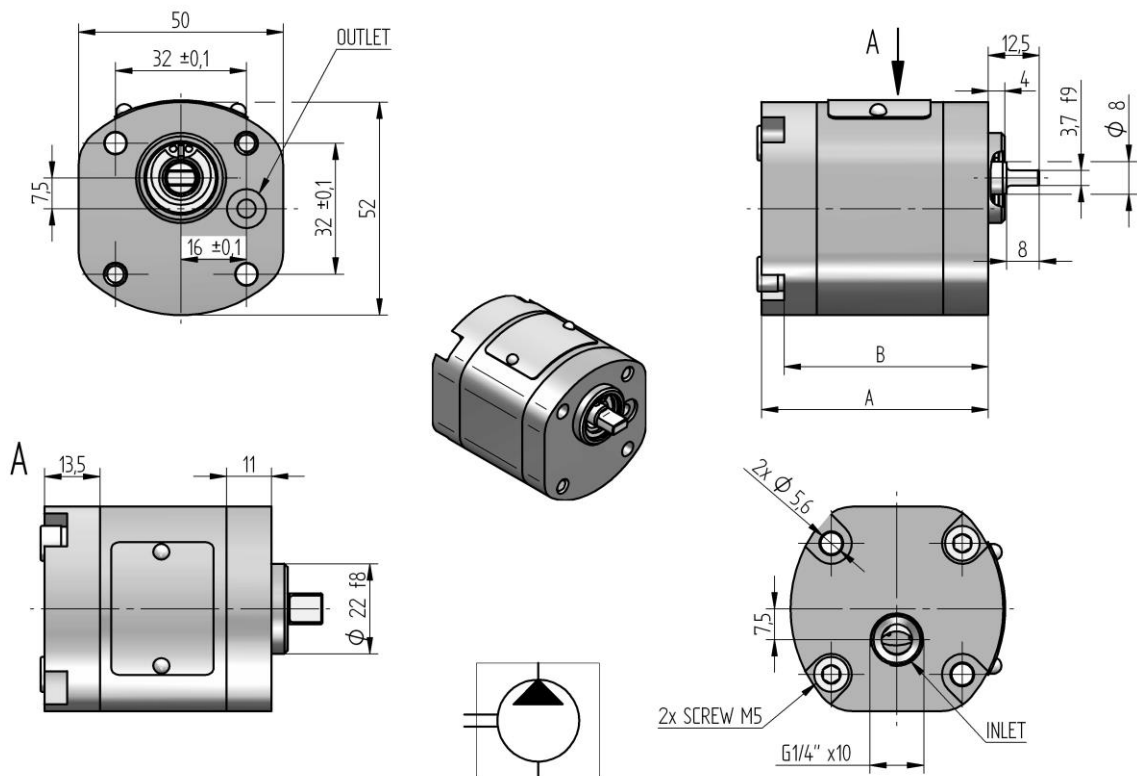
X-3.20R- R01K02-CG01P01-N		R	3.2	60	500	1 800	80	38.8	G 1/4	Ø 22			
X-3.20L- R01K02-CG01P01-N		L	3.2	60	500	1 800	80	38.8	G 1/4	Ø 22			
X-2.50R- R01K02-CG01P01-N		R	2.5	90	500	2 500	74.1	35.8	G 1/4	Ø 22			
X-2.50L- R01K02-CG01P01-N		L	2.5	90	500	2 500	74.1	35.8	G 1/4	Ø 22			
X-2.00R- R01K02-CG01P01-N		R	2	120	600	2 800	69.8	33.7	G 1/4	Ø 22			
X-2.00L- R01K02-CG01P01-N		L	2	120	600	2 800	69.8	33.7	G 1/4	Ø 22			
X-1.50R- R01K02-CG01P01-N		R	1.5	160	800	3 000	65.6	31.6	G 1/4	Ø 22			
X-1.50L- R01K02-CG01P01-N		L	1.5	160	800	3 000	65.6	31.6	G 1/4	Ø 22			
X-1.25R- R01K02-CG01P01-N		R	1.25	200	800	4 000	63.4	30.5	G 1/4	Ø 22			
X-1.25L- R01K02-CG01P01-N		L	1.25	200	800	4 000	63.4	30.5	G 1/4	Ø 22			
X-1.00R- R01K02-CG01P01-N		R	1	200	800	5 000	61.2	29.4	G 1/4	Ø 22			
X-1.00L- R01K02-CG01P01-N		L	1	200	800	5 000	61.2	29.4	G 1/4	Ø 22			
X-0.80R- R01K02-CG01P01-N	180 9950	R	0.8	220	1 000	6 000	59.5	28.5	G 1/4	Ø 22			
X-0.80L- R01K02-CG01P01-N		L	0.8	220	1 000	6 000	59.5	28.5	G 1/4	Ø 22			
X-0.70R- R01K02-CG01P01-N		R	0.7	220	1 000	6 000	58.7	28.1	G 1/4	Ø 22			
X-0.70L- R01K02-CG01P01-N		L	0.7	220	1 000	6 000	58.7	28.1	G 1/4	Ø 22			
X-0.63R- R01K02-CG01P01-N		R	0.63	220	1 000	6 000	58	27.8	G 1/4	Ø 22			
X-0.63L- R01K02-CG01P01-N		L	0.63	220	1 000	6 000	58	27.8	G 1/4	Ø 22			
X-0.50R- R01K02-CG01P01-N		R	0.5	230	1 000	6 000	56.9	27.2	G 1/4	Ø 22			
X-0.50L- R01K02-CG01P01-N		L	0.5	230	1 000	6 000	56.9	27.2	G 1/4	Ø 22			
X-0.40R- R01K02-CG01P01-N		R	0.4	230	1 000	7 000	56.1	26.8	G 1/4	Ø 22			
X-0.40L- R01K02-CG01P01-N		L	0.4	230	1 000	7 000	56.1	26.8	G 1/4	Ø 22			
X-0.36R- R01K02-CG01P01-N		R	0.36	230	1 000	7 000	55.7	26.6	G 1/4	Ø 22			
X-0.36L- R01K02-CG01P01-N		L	0.36	230	1 000	7 000	55.7	26.6	G 1/4	Ø 22			
X-0.32R- R01K02-CG01P01-N	180 9949	R	0.32	230	1 000	7 000	55.4	26.5	G 1/4	Ø 22			
X-0.32L- R01K02-CG01P01-N		L	0.32	230	1 000	7 000	55.4	26.5	G 1/4	Ø 22			
X-0.25R- R01K02-CG01P01-N		R	0.25	230	1 000	7 000	54.8	26.2	G 1/4	Ø 22			
X-0.25L- R01K02-CG01P01-N		L	0.25	230	1 000	7 000	54.8	26.2	G 1/4	Ø 22			
X-0.18R- R01K02-CG01P01-N		R	0.18	200	1 000	8 000	54.1	25.8	G 1/4	Ø 22			
X-0.18L- R01K02-CG01P01-N		L	0.18	200	1 000	8 000	54.1	25.8	G 1/4	Ø 22			
ORDER KEY	PURCH. CODE	DIRECT OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRESS. [bar]	MIN. SPEED [min ⁻¹]		MAX. SPEED [min ⁻¹]		A	B	DIMENSION [mm]		



X-3.20R- R01K02-AG01P01-N		R	3.2	60	500	1 800	80	74.5					
X-3.20L- R01K02-AG01P01-N		L											
X-2.50R- R01K02-AG01P01-N		R	2.5	90	500	2 500	74.1	68.6					
X-2.50L- R01K02-AG01P01-N		L											
X-2.00R- R01K02-AG01P01-N		R	2	120	600	2 800	69.8	64.3					
X-2.00L- R01K02-AG01P01-N		L											
X-1.50R- R01K02-AG01P01-N		R	1.5	160	800	3 000	65.6	60.1					
X-1.50L- R01K02-AG01P01-N	180 9793	L											
X-1.25R- R01K02-AG01P01-N	180 9910	R	1.25	200	800	4 000	63.4	57.9					
X-1.25L- R01K02-AG01P01-N	180 9798	L											
X-1.00R- R01K02-AG01P01-N		R	1	200	800	5 000	61.2	55.7					
X-1.00L- R01K02-AG01P01-N	180 9794	L											
X-0.80R- R01K02-AG01P01-N	180 9909	R	0.8	220	1 000	6 000	59.5	54					
X-0.80L- R01K02-AG01P01-N	180 9797	L											
X-0.70R- R01K02-AG01P01-N		R	0.7	220	1 000	6 000	58.7	53.2					
X-0.70L- R01K02-AG01P01-N		L											
X-0.63R- R01K02-AG01P01-N		R	0.63	220	1 000	6 000	58	52.5					
X-0.63L- R01K02-AG01P01-N	180 9799	L											
X-0.50R- R01K02-AG01P01-N		R	0.5	230	1 000	6 000	56.9	51.4					
X-0.50L- R01K02-AG01P01-N	180 9796	L											
X-0.40R- R01K02-AG01P01-N		R	0.4	230	1 000	7 000	56.1	50.6					
X-0.40L- R01K02-AG01P01-N	180 9795	L											
X-0.36R- R01K02-AG01P01-N		R	0.36	230	1 000	7 000	55.7	50.2					
X-0.36L- R01K02-AG01P01-N		L											
X-0.32R- R01K02-AG01P01-N		R	0.32	230	1 000	7 000	55.4	49.9					
X-0.32L- R01K02-AG01P01-N	180 9792	L											
X-0.25R- R01K02-AG01P01-N		R	0.25	230	1 000	7 000	54.8	49.3					
X-0.25L- R01K02-AG01P01-N		L											
X-0.18R- R01K02-AG01P01-N		R	0.18	200	1 000	8 000	54.1	48.6					
X-0.18L- R01K02-AG01P01-N		L											
ORDER KEY	PURCH. CODE	DIRECT OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRESS. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	D	E	F	
												DIMENSION [mm]	



X-3.20B-A02K01-FD02D02-N		B	3.2	60	500	1 800	85	79.2				
X-2.50B- A02K01-FD02D02-N		B	2.5	90	500	2 500	79.1	73.3				
X-2.00B- A02K01-FD02D02-N		B	2	120	600	2 800	74.8	69				
X-1.50B- A02K01-FD02D02-N		B	1.5	160	800	3 000	70.6	64.8				
X-1.25B- A02K01-FD02D02-N		B	1.25	200	800	4 000	68.4	62.6				
X-1.00B- A02K01-FD02D02-N		B	1	200	800	5 000	66.2	60.4				
X-0.80B- A02K01-FD02D02-N		B	0.8	220	1 000	6 000	64.5	58.7				
X-0.70B- A02K01-FD02D02-N		B	0.7	220	1 000	6 000	63.7	57.9				
X-0.63B- A02K01-FD02D02-N		B	0.63	220	1 000	6 000	63	57.2				
X-0.50B- A02K01-FD02D02-N		B	0.5	230	1 000	6 000	61.9	56.1				
X-0.40B- A02K01-FD02D02-N		B	0.4	230	1 000	7 000	61.1	55.3				
X-0.36B- A02K01-FD02D02-N		B	0.36	230	1 000	7 000	60.7	54.9				
X-0.32B- A02K01-FD02D02-N		B	0.32	230	1 000	7 000	60.4	54.6				
X-0.25B- A02K01-FD02D02-N		B	0.25	230	1 000	7 000	59.8	54				
X-0.18B- A02K01-FD02D02-N	180 9944	B	0.18	200	1 000	8 000	59.1	53.3				
ORDER KEY	PURCH. CODE	DIRECT OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRESS. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	D	E	F
DIMENSION [mm]												



X-3.20R- A01K02-AG01D01-N		R	3.2	60	500	1 800	80	74.5				
X-3.20L- A01K02-AG01D01-N		L										
X-2.50R- A01K02-AG01D01-N		R	2.5	90	500	2 500	74.1	68.6				
X-2.50L- A01K02-AG01D01-N		L										
X-2.00R- A01K02-AG01D01-N		R	2	120	600	2 800	69.8	64.3				
X-2.00L- A01K02-AG01D01-N		L										
X-1.50R- A01K02-AG01D01-N	180 9875	R	1.5	160	800	3 000	65.6	60.1				
X-1.50L- A01K02-AG01D01-N	180 9807	L										
X-1.25R- A01K02-AG01D01-N	180 9902	R	1.25	200	800	4 000	63.4	57.9				
X-1.25L- A01K02-AG01D01-N	180 9806	L										
X-1.00R- A01K02-AG01D01-N	180 9874	R	1	200	800	5 000	61.2	55.7				
X-1.00L- A01K02-AG01D01-N	180 9805	L										
X-0.80R- A01K02-AG01D01-N	180 9867	R	0.8	220	1 000	6 000	59.5	54				
X-0.80L- A01K02-AG01D01-N	180 9804	L										
X-0.70R- A01K02-AG01D01-N		R	0.7	220	1 000	6 000	58.7	53.2				
X-0.70L- A01K02-AG01D01-N		L										
X-0.63R- A01K02-AG01D01-N		R	0.63	220	1 000	6 000	58	52.5				
X-0.63L- A01K02-AG01D01-N	180 9803	L										
X-0.50R- A01K02-AG01D01-N	180 9873	R	0.5	230	1 000	6 000	56.9	51.4				
X-0.50L- A01K02-AG01D01-N	180 9802	L										
X-0.40R- A01K02-AG01D01-N		R	0.4	230	1 000	7 000	56.1	50.6				
X-0.40L- A01K02-AG01D01-N	180 9801	L										
X-0.36R- A01K02-AG01D01-N		R	0.36	230	1 000	7 000	55.7	50.2				
X-0.36L- A01K02-AG01D01-N		L										
X-0.32R- A01K02-AG01D01-N	180 9872	R	0.32	230	1 000	7 000	55.4	49.9				
X-0.32L- A01K02-AG01D01-N	180 9800	L										
X-0.25R- A01K02-AG01D01-N		R	0.25	230	1 000	7 000	54.8	49.3				
X-0.25L- A01K02-AG01D01-N		L										
X-0.18R- A01K02-AG01D01-N		R	0.18	200	1 000	8 000	54.1	48.6				
X-0.18L- A01K02-AG01D01-N		L										
ORDER KEY	PURCH. CODE	DIRECT OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRESS [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	D	E	F
			DIMENSION [mm]									



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