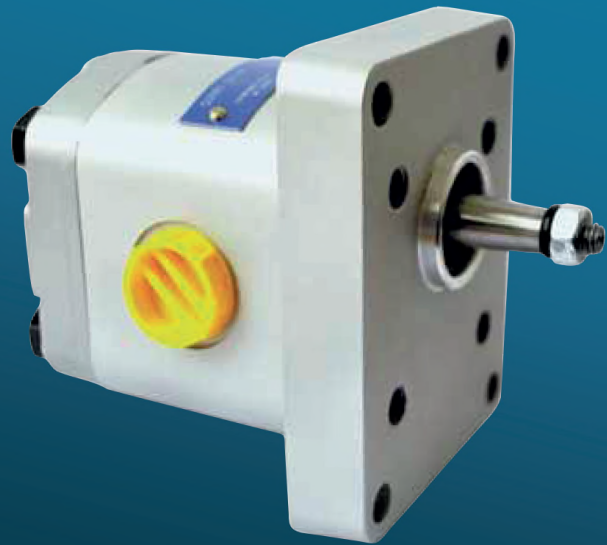
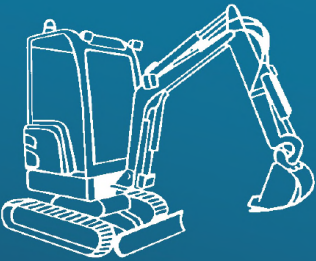


juhstroj
AERO TECHNOLOGY & HYDRAULICS



Displacement from 0.8 to 11.8 ccm
Pressure up to 280 bar
Speed from 500 to 5000 RPM

GEAR MOTORS
PM23

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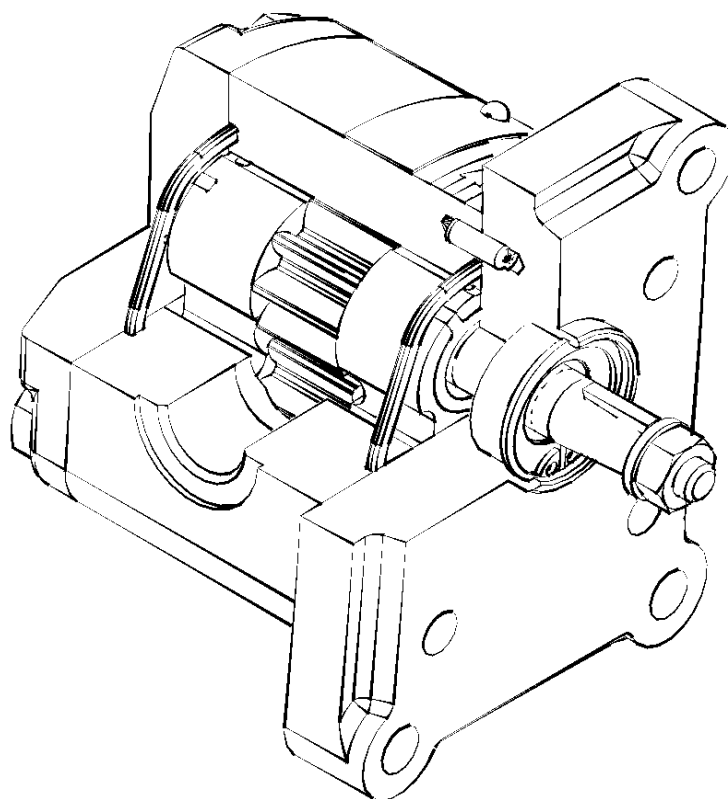
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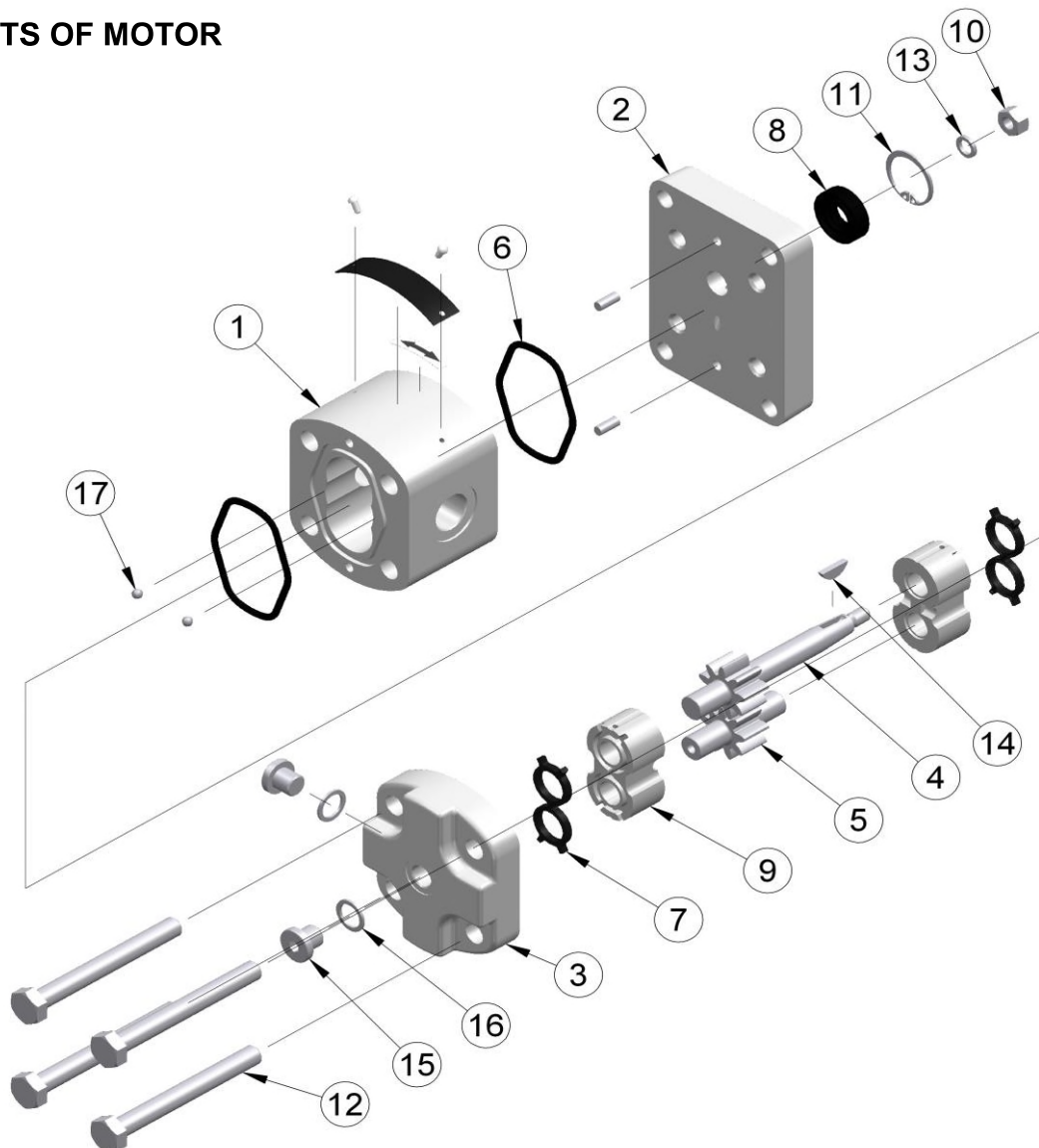


DESCRIPTION

Gear motors are used for transformation of liquid pressure head in mechanical energy. PM23 series motors are designed for advanced hydraulic systems with lower capacity (approximately up to 8 kW) with high operational reliability and long service life. They have been produced in both one-way and reversible version with internal or external drainage. A wide variety of designs with diverse drives, connecting flanges, fluid inlets and outlets enable the motors to be used in hydraulic systems of both fixed and mobile machines and equipment. Types of connections and flanges as well as the other connecting dimensions correspond to all worldwide standards.

The motors are made of high-quality aluminium alloys with steel gear-wheels and they are equipped with hydraulic axial play compensation of new generation ensuring stable performance and torsion moment within the entire range of speeds and temperatures. As for their dimensions, PM23 motors are fully interchangeable with PM and PM2 motors.

BASIC PARTS OF MOTOR



- | | |
|-----------------------|-------------------|
| 1. Body | 10. Nut |
| 2. Flange | 11. Safety ring |
| 3. Cover | 12. Bolts |
| 4. Driving gear | 13. Spring washer |
| 5. Driven gear | 14. Woodruff key |
| 6. Peripheral sealing | 15. Plug |
| 7. Balancing sealing | 16. Seal ring AL |
| 8. Shaft seal | 17. Steel marble |
| 9. Bearing sleeves | |

PARAMETER TABLE

One direction motors

Nominal Size Parameters		Sym	Unit	PM23 0.8	PM23 1.2	PM23 1.6	PM23 2.1	PM23 2.5	PM23 3.3	PM23 3.6
Actual displacement		V_g	[cm ³]	0.85	1.25	1.68	2.08	2.51	3.32	3.61
Rotation speed	nominal	n_n	[min ⁻¹]	1500						
	minimum	n_{max}	[min ⁻¹]	5000	5000	4500	4500	4000	4000	4000
	maximum	n_{min}	[min ⁻¹]	800	800	600	600	500	500	500
Pressure at outlet	minimum	p_{1max}	[bar]	0.5						
	maximum	p_{1min}	[bar]	-0.3						
Pressure at inlet	max. continuous	p_{2n}	[bar]	280	280	280	280	280	280	260
	maximum	p_{2max}	[bar]	300	300	300	300	300	300	280
	peak	p_3	[bar]	310	310	310	310	310	310	290
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	1.41	2.12	2.73	3.58	4.17	5.50	6.00
Maximum flow rate at n_{max} and p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	4.26	6.38	7.66	10.05	10.64	14.04	15.32
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	0.45	0.68	0.93	1.22	1.48	1.95	1.98
Maximum input power at n_{max} and p_{2max}		P_{max}	[kW]	1.76	2.65	3.18	4.17	4.41	5.82	5.93
Nominal Torque at n_n a p_{2n}		M	[Nm]	3.21	4.81	6.42	8.42	10.03	13.24	13.41
Weight		m	[kg]	0.82	0.84	0.85	0.87	0.89	0.92	0.93

One direction motors

Nominal Size Parameters		Sym	Unit	PM23 4.4	PM23 4.8	PM23 5.8	PM23 6.2	PM23 7.9	PM23 11.8	
Actual displacement		V_g	[cm ³]	4.39	4.79	5.80	6.21	7.89	11.79	
Rotation speed	nominal	n_n	[min ⁻¹]	1500						
	minimum	n_{max}	[min ⁻¹]	4000	3800	3800	3500	3000	1800	
	maximum	n_{min}	[min ⁻¹]	500	500	500	500	500	500	
Pressure at outlet	minimum	p_{1max}	[bar]	0.5						
	maximum	p_{1min}	[bar]	-0.3						
Pressure at inlet	max. continuous	p_{2n}	[bar]	250	230	200	180	160	100	
	maximum	p_{2max}	[bar]	270	250	220	200	180	150	
	peak	p_3	[bar]	280	260	230	210	190	160	
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	7.33	8.00	9.67	10.33	13.17	19.67	
Maximum flow rate at n_{max} and p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	18.72	19.40	23.45	23.09	25.21	22.60	
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	2.33	2.33	2.45	2.36	2.67	2.50	
Maximum input power at n_{max} and p_{2max}		P_{max}	[kW]	6.99	6.70	7.13	6.38	6.27	4.68	
Nominal Torque at n_n a p_{2n}		M	[Nm]	15.76	15.81	16.62	15.99	18.11	16.90	
Weight		m	[kg]	0.96	0.98	1.02	1.04	1.10	1.25	

One direction motors

Nominal Size Parameters		Sym	Unit	PM23 1.0	PM23 2.3	PM23 2.65	PM23 6.4	PM23 7.0	PM23 10.0	
Actual displacement		V_g	[cm ³]	1.02	2.30	2.67	6.42	7.0	10.0	
Rotation speed	nominal	n_n	[min ⁻¹]	1500						
	minimum	n_{max}	[min ⁻¹]	5000	4500	4500	3500	3000	1800	
	maximum	n_{min}	[min ⁻¹]	800	500	500	500	500	500	
Pressure at outlet	minimum	p_{1max}	[bar]	0.5						
	maximum	p_{1min}	[bar]	-0.3						
Pressure at inlet	max. continuous	p_{2n}	[bar]	280	280	280	180	170	100	
	maximum	p_{2max}	[bar]	300	300	300	200	190	150	
	peak	p_3	[bar]	310	310	310	210	200	160	
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	1.76	4.06	4.52	10.67	11.67	16.67	
Maximum flow rate at n_{max} and p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	5.32	11.01	12.69	23.83	22.34	19.15	
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	0.57	1.30	1.57	2.44	2.52	2.12	
Maximum input power at n_{max} and p_{2max}		P_{max}	[kW]	2.21	4.56	5.26	6.59	5.87	3.97	
Nominal Torque at n_n a p_{2n}		M	[Nm]	4.01	9.22	10.63	16.50	17.05	14.32	
Weight		m	[kg]	0.83	0.88	0.90	1.05	1.08	1.20	

Reversible motors

Nominal Size Parameters		Sym	Unit	PM23 0.8	PM23 1.2	PM23 1.6	PM23 2.1	PM23 2.5	PM23 3.3	PM23 3.6
Actual displacement		V _g	[cm ³]	0.85	1.25	1.68	2.08	2.51	3.32	3.61
Rotation speed	nominal	n _n	[min ⁻¹]	1500						
	minimum	n _{max}	[min ⁻¹]	5000	5000	4500	4500	4000	4000	4000
	maximum	n _{min}	[min ⁻¹]	800	800	600	600	500	500	500
Pressure at outlet	minimum	p _{1max}	[bar]	210	210	210	210	210	210	190
	maximum	p _{1min}	[bar]	-0.3						
Pressure at inlet	max. continuous	p _{2n}	[bar]	280	280	280	280	280	280	260
	maximum	p _{2max}	[bar]	300	300	300	300	300	300	280
	peak	p ₃	[bar]	310	310	310	310	310	310	290
Nominal flow rate (min.) at n _n and p _{2n}		Q _n	[dm ³ .min ⁻¹]	1.41	2.12	2.73	3.58	4.17	5.50	6.00
Maximum flow rate at n _{max} and p _{2max}		Q _{max}	[dm ³ .min ⁻¹]	4.26	6.38	7.66	10.05	10.64	14.04	15.32
Nominal input power (max.) at n _n and p _{2n}		P _n	[kW]	0.45	0.68	0.93	1.22	1.48	1.95	1.98
Maximum input power at n _{max} and p _{2max}		P _{max}	[kW]	1.76	2.65	3.18	4.17	4.41	5.82	5.93
Nominal Torque at n _n a p _{2n}		M	[Nm]	3.21	4.81	6.42	8.42	10.03	13.24	13.41
Weight		m	[kg]	0.82	0.84	0.85	0.87	0.89	0.92	0.93

Reversible motors

Nominal Size Parameters		Sym	Unit	PM23 4.4	PM23 4.8	PM23 5.8	PM23 6.2	PM23 7.9	PM23 11.8	
Actual displacement		V _g	[cm ³]	4.39	4.79	5.80	6.21	7.89	11.79	
Rotation speed	nominal	n _n	[min ⁻¹]	1500						
	minimum	n _{max}	[min ⁻¹]	4000	3800	3800	3500	3000	1800	
	maximum	n _{min}	[min ⁻¹]	500	500	500	500	500	500	
Pressure at outlet	minimum	p _{1max}	[bar]	180	160	130	110	90	30	
	maximum	p _{1min}	[bar]	-0.3						
Pressure at inlet	max. continuous	p _{2n}	[bar]	250	230	200	180	160	100	
	maximum	p _{2max}	[bar]	270	250	220	200	180	150	
	peak	p ₃	[bar]	280	260	230	210	190	160	
Nominal flow rate (min.) at n _n and p _{2n}		Q _n	[dm ³ .min ⁻¹]	7.33	8.00	9.67	10.33	13.17	19.67	
Maximum flow rate at n _{max} and p _{2max}		Q _{max}	[dm ³ .min ⁻¹]	18.72	19.40	23.45	23.09	25.21	22.60	
Nominal input power (max.) at n _n and p _{2n}		P _n	[kW]	2.33	2.33	2.45	2.36	2.67	2.50	
Maximum input power at n _{max} and p _{2max}		P _{max}	[kW]	6.99	6.70	7.13	6.38	6.27	4.68	
Nominal Torque at n _n a p _{2n}		M	[Nm]	15.76	15.81	16.62	15.99	18.11	16.90	
Weight		m	[kg]	0.96	0.98	1.02	1.04	1.10	1.25	

Reversible motors

Nominal Size Parameters		Sym	Unit	PM23 1.0	PM23 2.3	PM23 2.65	PM23 6.4	PM23 7.0	PM23 10.0	
Actual displacement		V _g	[cm ³]	1.02	2.30	2.67	6.42	7.0	10.0	
Rotation speed	nominal	n _n	[min ⁻¹]	1500						
	minimum	n _{max}	[min ⁻¹]	5000	4500	4500	3500	3000	1800	
	maximum	n _{min}	[min ⁻¹]	800	500	500	500	500	500	
Pressure at outlet	minimum	p _{1max}	[bar]	210	210	210	110	100	30	
	maximum	p _{1min}	[bar]	-0.3						
Pressure at inlet	max. continuous	p _{2n}	[bar]	280	280	280	180	170	100	
	maximum	p _{2max}	[bar]	300	300	300	200	190	150	
	peak	p ₃	[bar]	310	310	310	210	200	160	
Nominal flow rate (min.) at n _n and p _{2n}		Q _n	[dm ³ .min ⁻¹]	1.76	4.06	4.52	10.67	11.67	16.67	
Maximum flow rate at n _{max} and p _{2max}		Q _{max}	[dm ³ .min ⁻¹]	5.32	11.01	12.69	23.83	22.34	19.15	
Nominal input power (max.) at n _n and p _{2n}		P _n	[kW]	0.57	1.30	1.57	2.44	2.52	2.12	
Maximum input power at n _{max} and p _{2max}		P _{max}	[kW]	2.21	4.56	5.26	6.59	5.87	3.97	
Nominal Torque at n _n a p _{2n}		M	[Nm]	4.01	9.22	10.63	16.50	17.05	14.32	
Weight		m	[kg]	0.83	0.88	0.90	1.05	1.08	1.20	

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

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

Torque

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

p [bar] required pressure at outlet

η_m [-] mechanical efficiency

Input power

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

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:

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

$Q_{act.}$ [dm³min⁻¹] actual flow rate

Q_{theor} [dm³min⁻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:

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

$M_{act.}$ [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:

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

$P_{act.}$ [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): $\nu = 20 \div 80 \cdot 10^{-6} \text{ [m}^2 \cdot \text{s}^{-1}\text{]}$

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

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

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

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

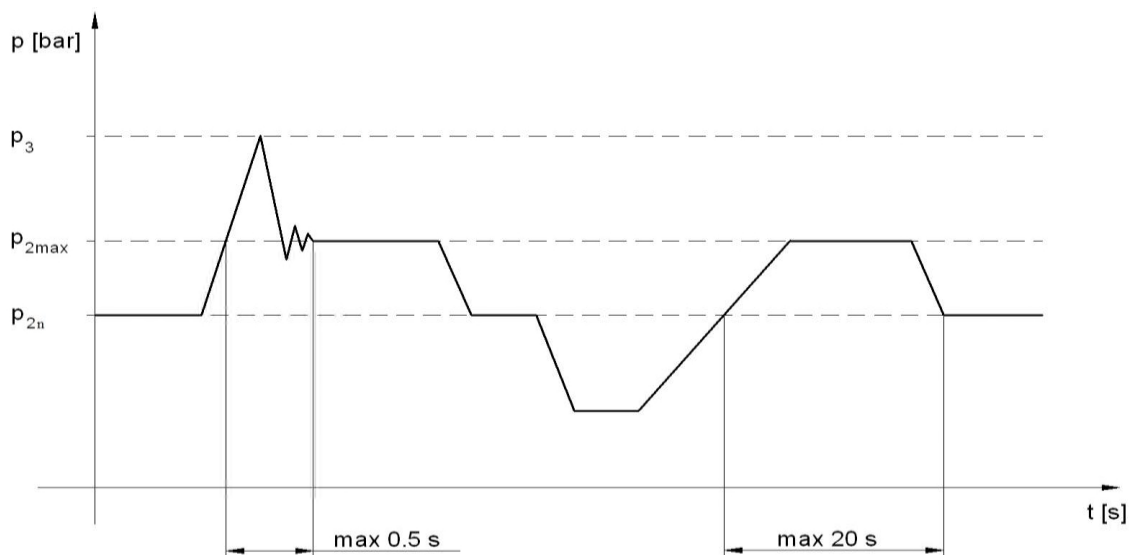
$$20/17/14 \quad \text{(for pressure } p_2 > 200 \text{ bar)}$$

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



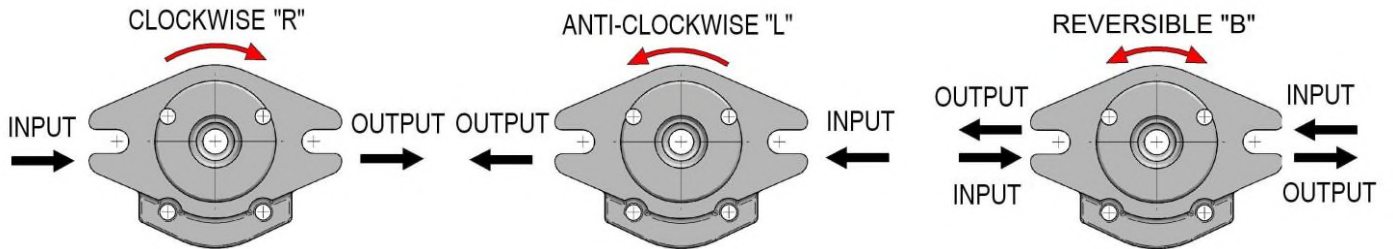
- p_{2n} max. contin. pressure** max. working pressure, at which the pump can be operated without time limitation.
- p_{2max} max. pressure** maximum pressure permissible for a short time, max. 20s.
- p_3 peak pressure** short-time pressure (fractions of a second) arising in case of a sudden change of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

OTHER REQUIREMENTS

All the matters affecting technical parameters and properties of the motor are given in respective operating manuals, technical specifications and test specifications of the manufacturer.

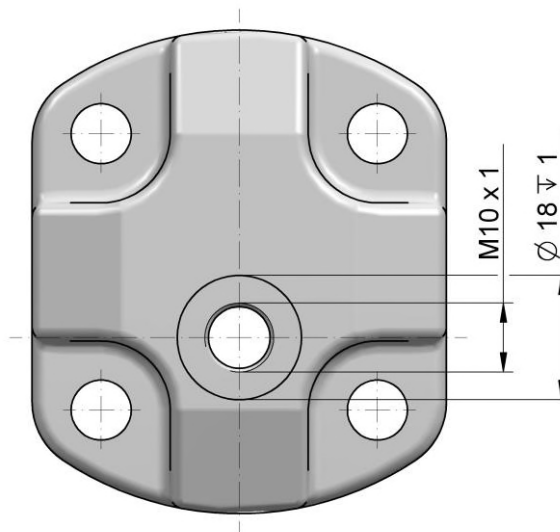
DIRECTION OF ROTATION

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

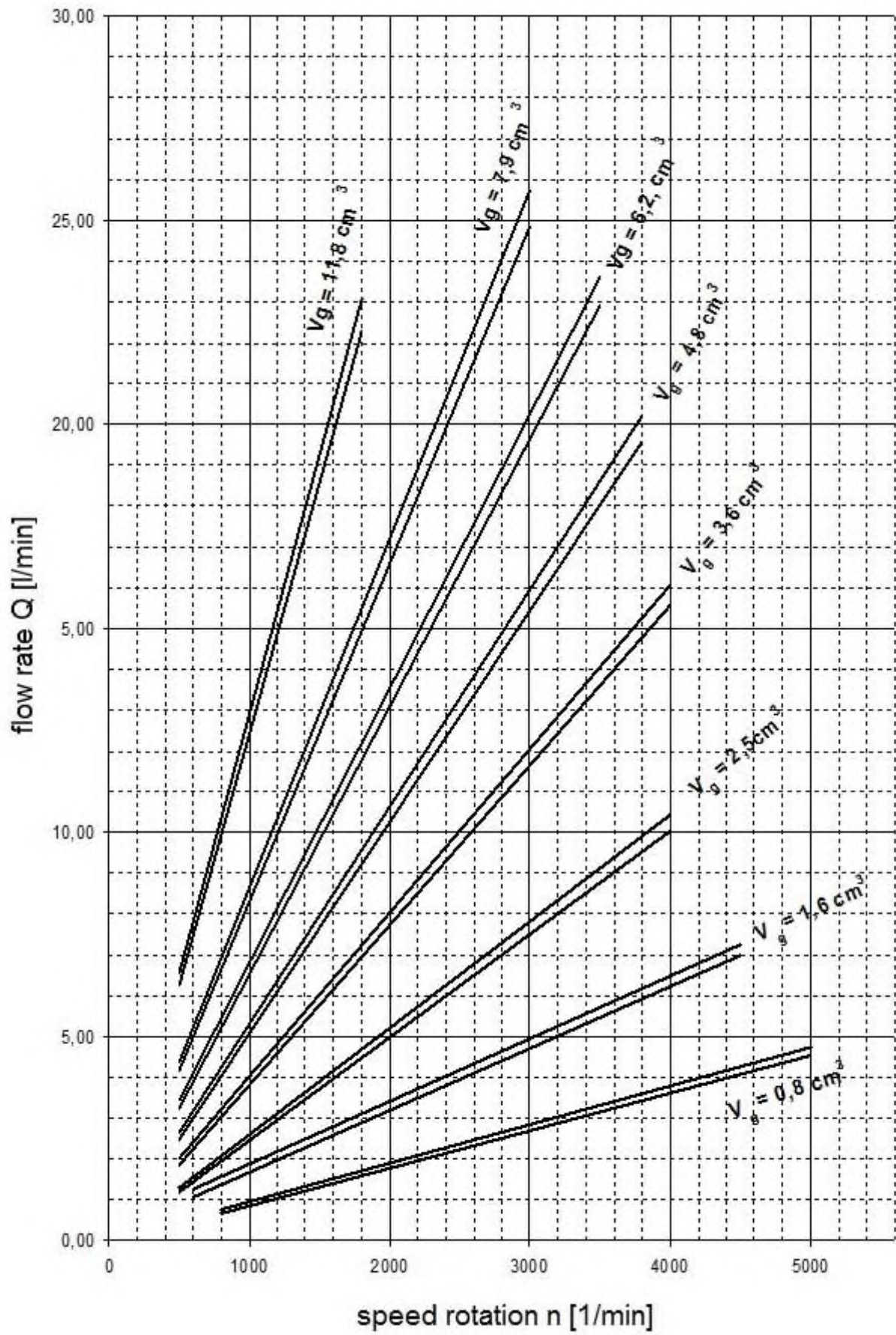


REVERSIBLE DESIGN

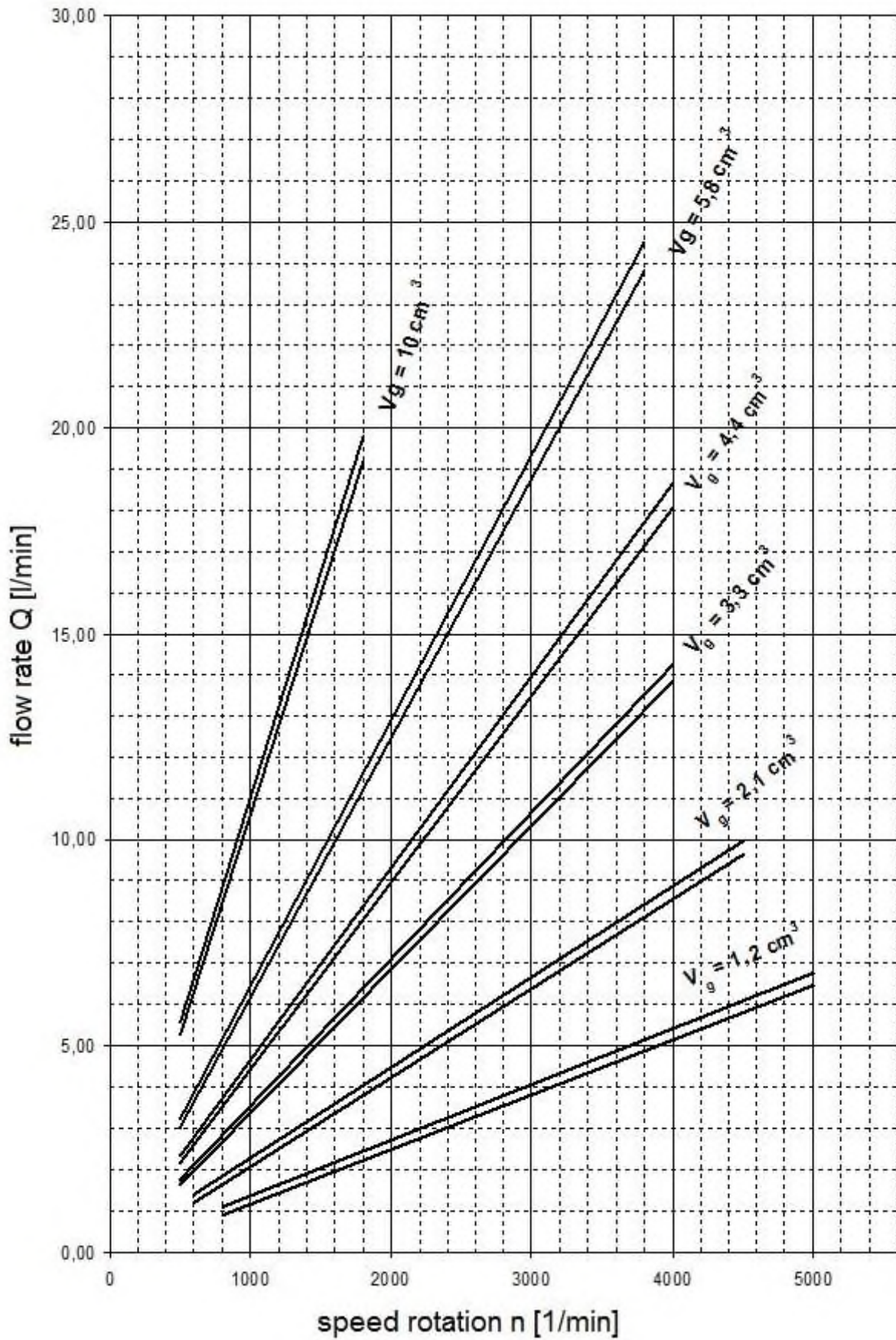
The motors with the possibility of bidirectional rotation have a different internal arrangement requiring drainage. Two types are used - internal and external. The internal drainage is always interconnected with the outlet by means of valves. The external drainage is solved by an orifice located in the cover opposite the driven gear.



PM23 FLOW RATE AND POWER CURVES

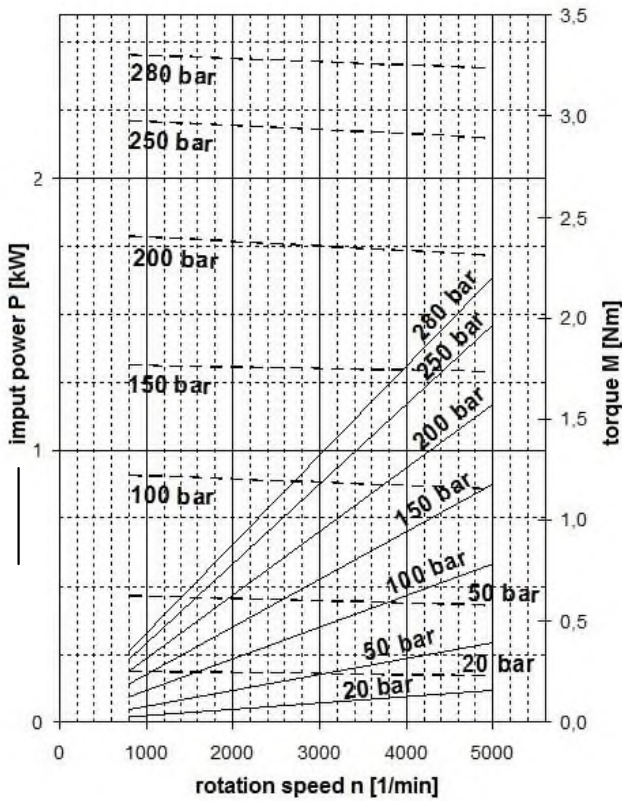


Above curves apply to ISO Vg 46 oil at temperature $t = 45^{\circ}\text{C}$.

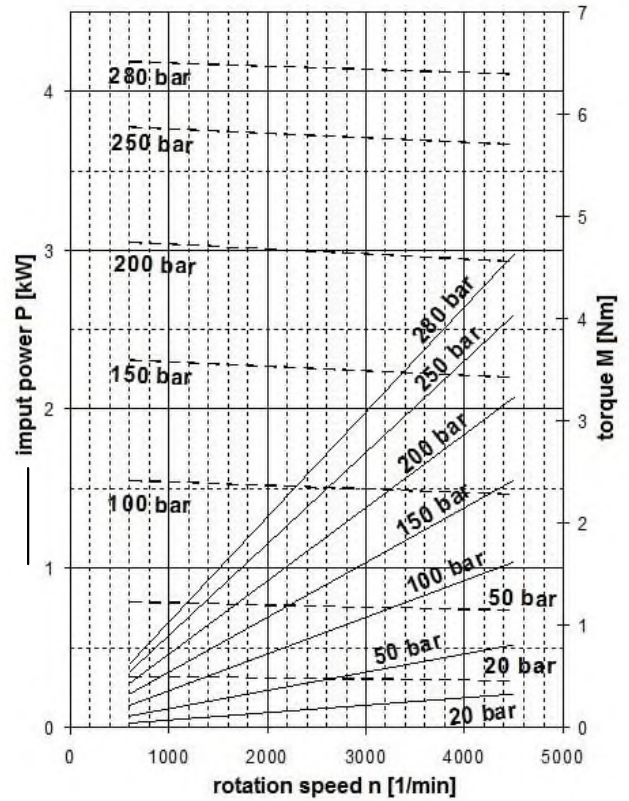


Above curves apply to ISO Vg 46 oil at temperature $t = 45^\circ\text{C}$.

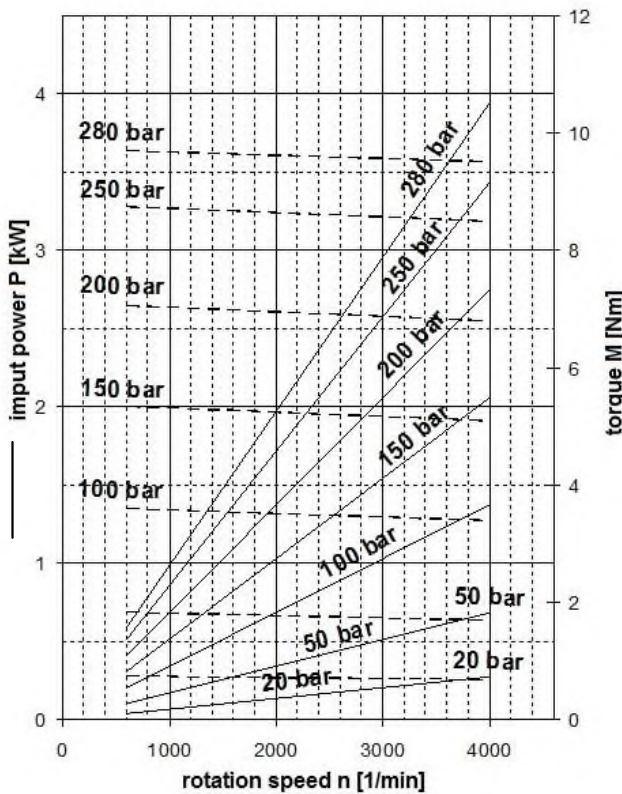
0,8 cm³



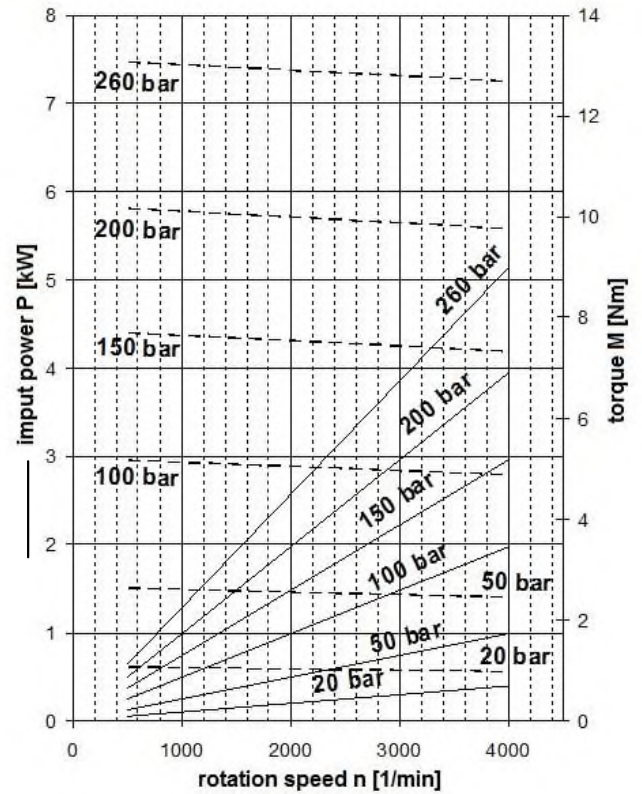
1,6 cm³



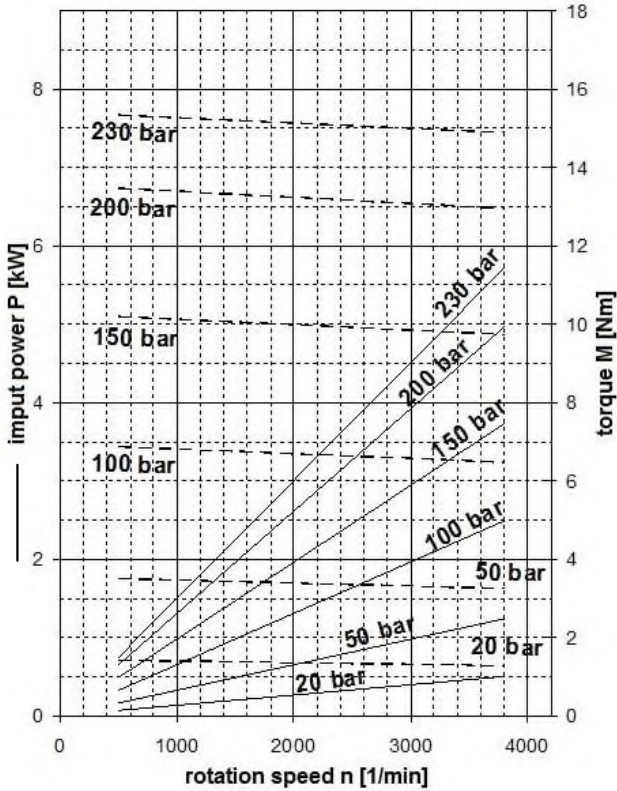
2,5 cm³



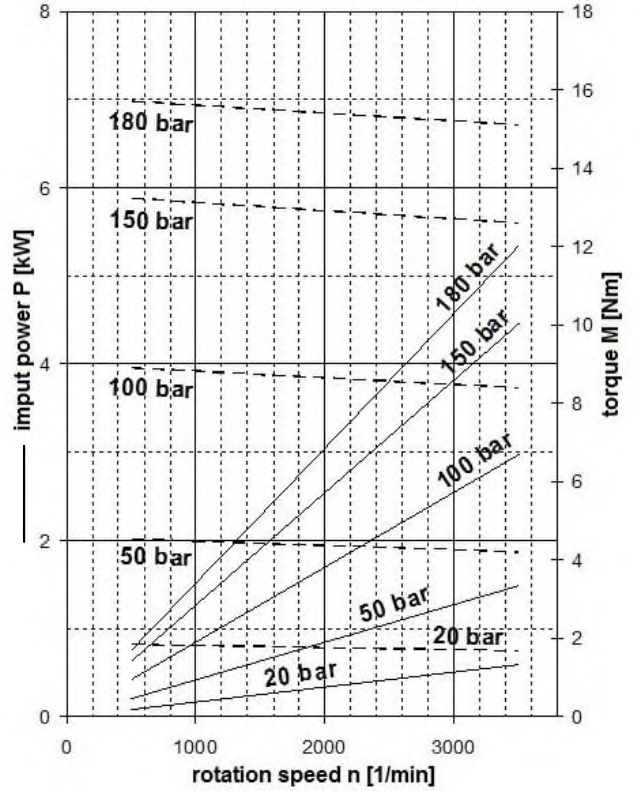
3,6 cm³



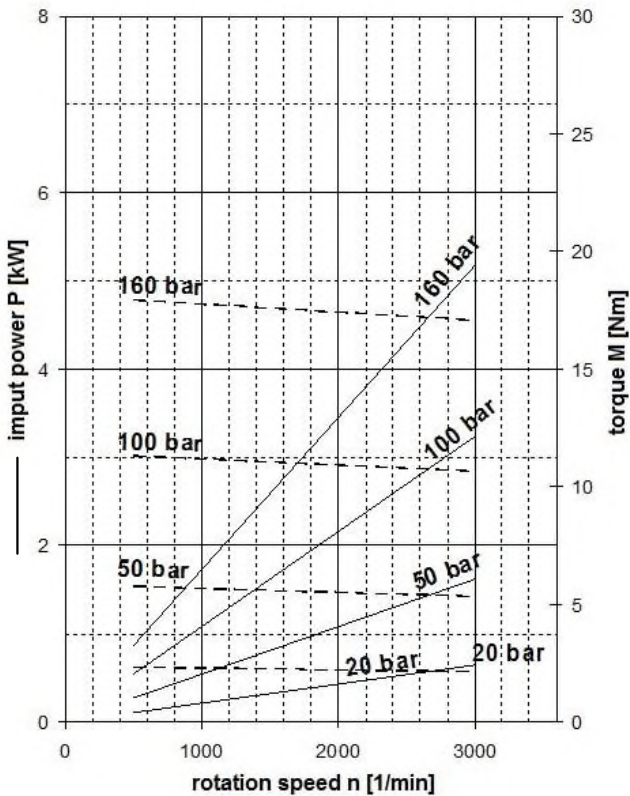
4,8 cm³



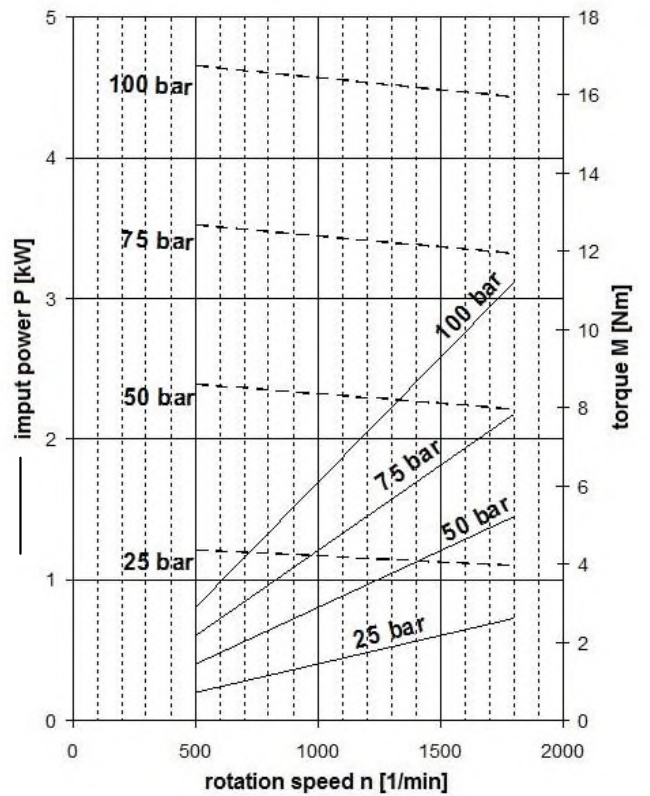
6,2 cm³



7,9 cm³



11,8 cm³









ORDER KEY







PM23 - 3,3 R - S01 D01 - S G02 G01 - V . 004











Code	Displacement [cm ³]
0,8	0,855
1,0	1,016
1,2	1,257
1,6	1,686
2,1	2,086
2,3	2,301
2,5	2,514
2,65	2,674
3,3	3,316
3,6	3,611
4,4	4,386
4,8	4,787
5,8	5,804
6,2	6,205
6,4	6,419
7,0	7,007
7,9	7,890
10,0	10,003
11,8	11,795
XX	Other displacement on request

Code	Direction of rotation
R	Clockwise
L	Anti-clockwise
B	Bi-directional

Code	Type
PM23	PM23 series motor












Code	Flange design
R02	 Rectangular flange, centre ring Ø 25,4 Spacing screw 52,4x71,9
S01	 SAE A - A
A03	 Flange with through bolts centre ring Ø 32 with O-ring (deep center ring 7)
A04	 Flange with through bolts centre ring Ø 32 s O-ring (deep center ring 8)
A05	 Flange with through bolts centre ring Ø 32 s O-ring (narrow desing)
A06	 Flange with through bolts centre ring Ø 32 (narrow desing)
Z	Special design

Code	Location of inlets and outlets
S	 Side (in body)
R	 Axial (in cover)
F	 Axial (in flange)
A	 Axial (inlet in cover, outlet in flange)
C	 Combination (inlet in body outlet in flange)
D	 Combination (inlet in cover outlet in body)

Code	Drive shaft design
C02	 Traper 1:8 Key 2,5x3,7
C03	 Traper 1:8 Key 2,4x5 Ø13
C04	 Traper 1:5 Key 2x2,6-D7
K03	 Cross coupling
K04	 Cross coupling
V02	 Cylindric Key 3h9x3x22
V03	 Cylindric Key 3,2x3,2x19,4
V04	 Cylindric Key 3m6x14
V05	 Cylindric Key 3h9x3x10
D01	 Involute spline
Z	Special design

Code	Special arrangements
-	No special arrangements
001	With front end bearing
002	With relief valve
004	Without shaft seal

Code	Sealing material
N	NBR
V	FKM (VITON)
C	CR (CHLOROPREN)

Code	Liquid inlet and outlet connection shape
M02	 Thread M12x1,5
M03	 Thread M14x1,5
M05	 Thread M18x1,5
M06	 Thread M20x1,5
M07	 Thread M22x1,5
G01	 Thread BSP G1/4
G02	 Thread BSP G3/8
G03	 Thread BSP G1/2
U02	 Thread 9/16-18 UNF-2B
U03	 Thread 3/4-16 UNF-2B
U04	 Thread 7/8-14 UNF-2B
H01	Flanged fitting Ø 8 Square 4xM5 Ø26
H02	Flanged fitting Ø 10 Square 4xM5 Ø26
H03	Flanged fitting Ø 8 Square 4xM6 Ø30
H04	Flanged fitting Ø 12 Square 4xM6 Ø30
P01	Inlet / outlet in flange
Z	Special design

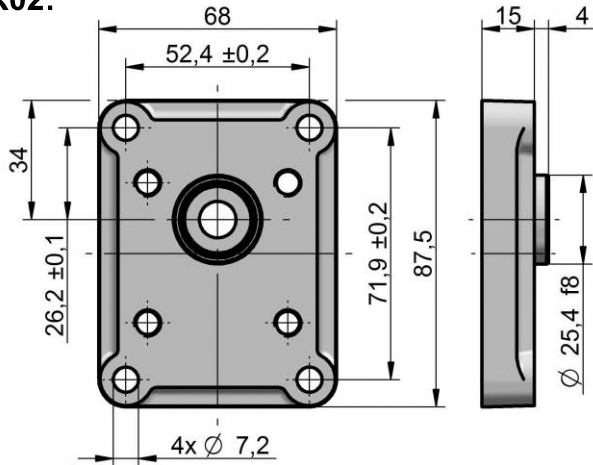
An example of designation for the PM23 clockwise motor with displacement of 4.4 cm³, SAE A-A flange; involute spline; BSP side inlets in the body and FKM sealing, with front-end bearing **P23-3.3R-S01D01-SG02G01-V.001**

COMBINATION OF FLANGES AND SHAFTS

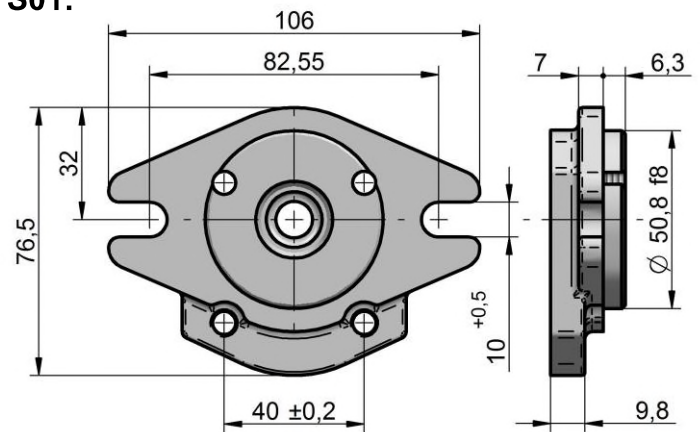
DRIVE SHAFTS		FLANGES DESIGN					
		R02	S01	A03	A04	A05	A06
C02		●		●			
C03		●		●	●		
C04		●		●			
K03				●		●	●
K04		○			●	●	●
V02		○	●				
V03			●				
V04				●			
V05		●					
D01				●			
		● - SUGGESTED ○ - POSSIBLE					

FLANGES DESIGN

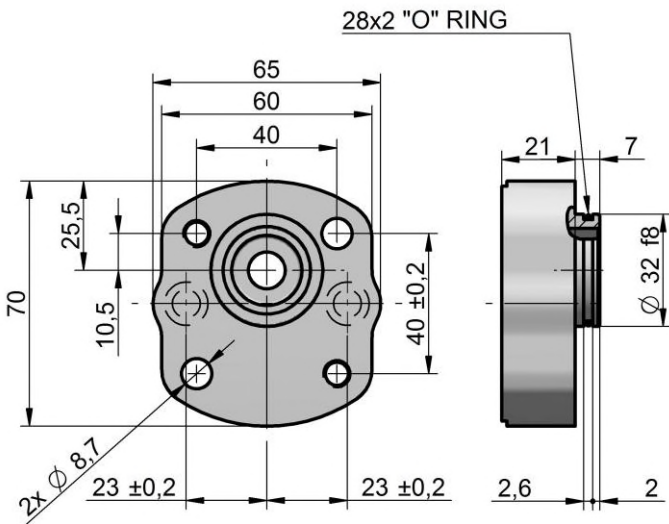
R02:



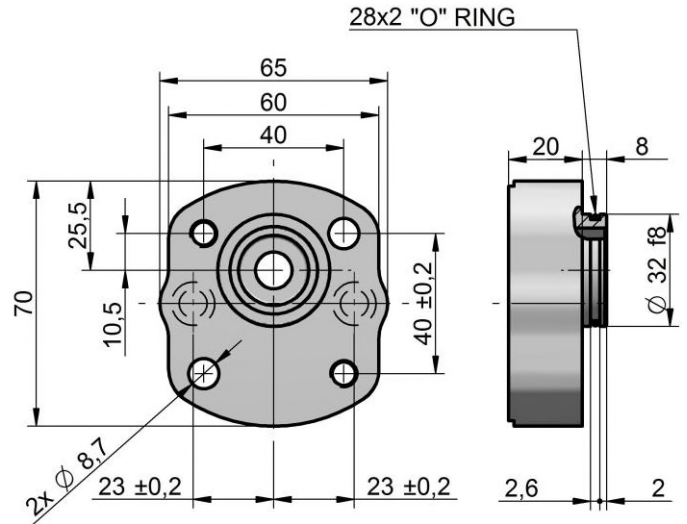
S01:



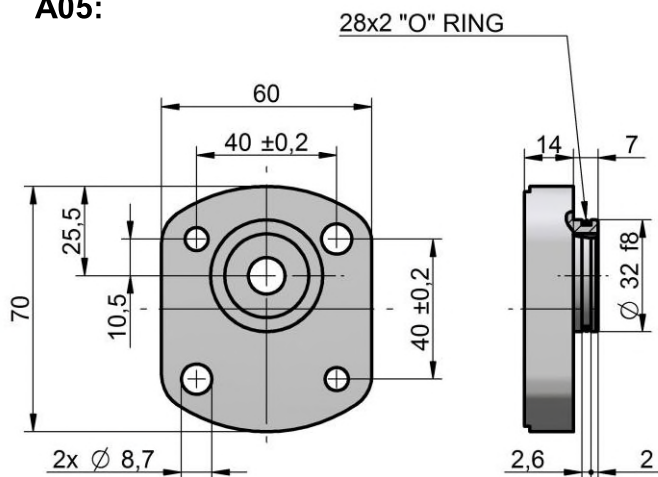
A03:



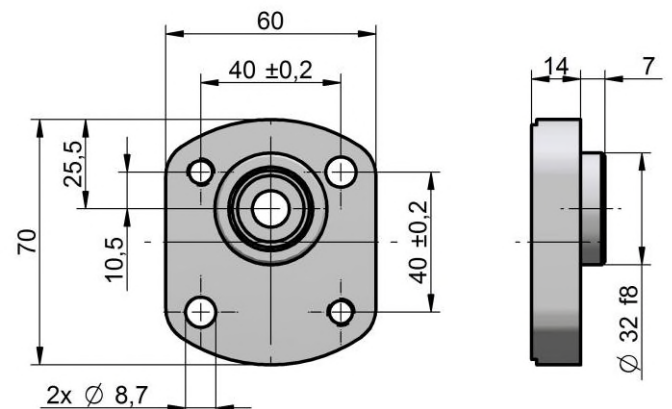
A04:



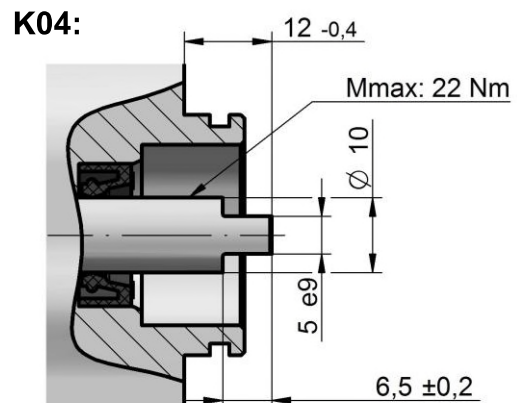
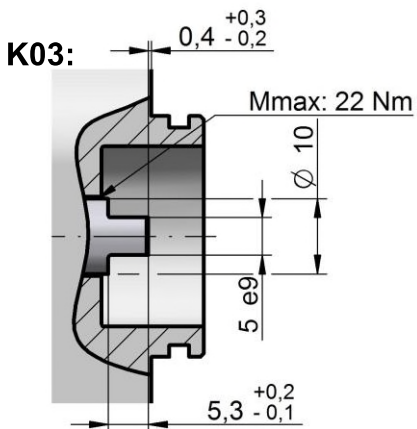
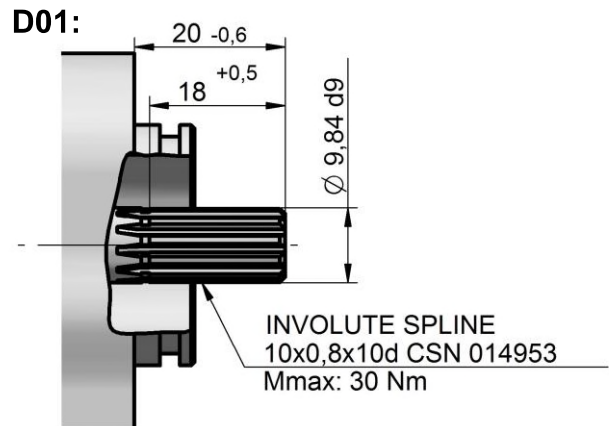
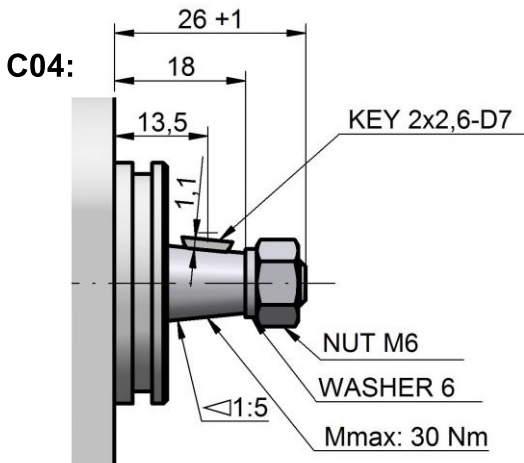
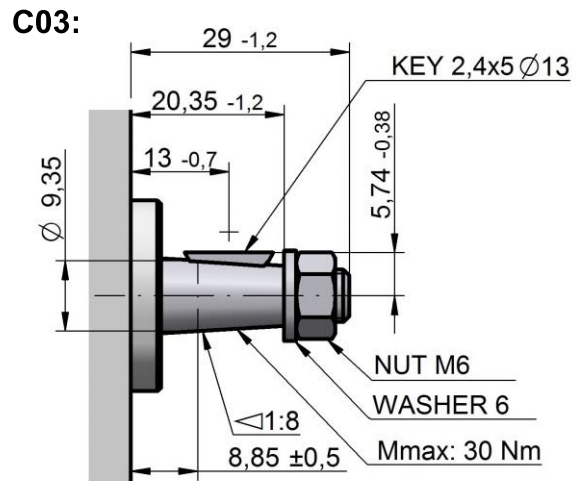
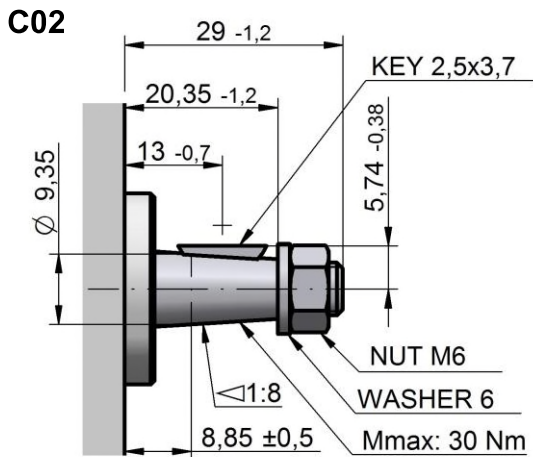
A05:



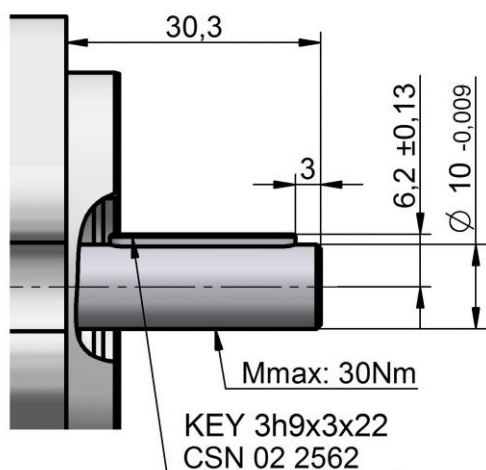
A06:



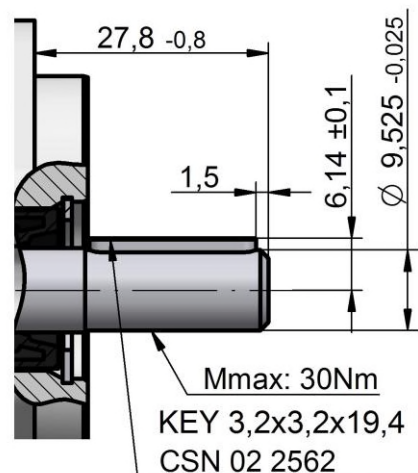
DRIVE SHAFTS



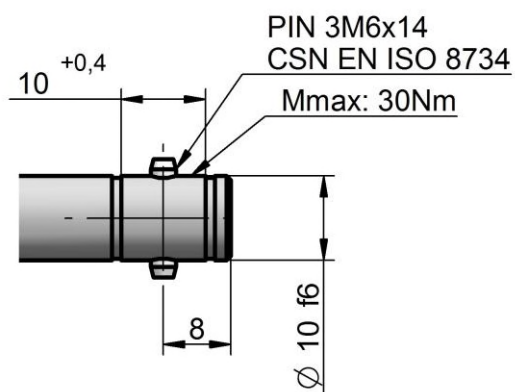
V02:



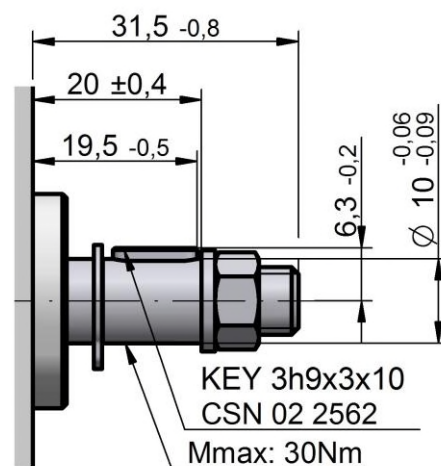
V03:



V04:

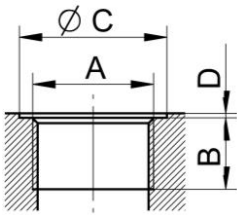


V05:



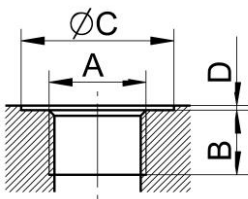
COMBINATION OF LIQUID INLETS AND OUTLETS

Metric thread according to ISO 6149



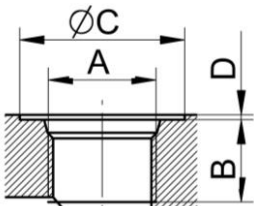
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
all	M03	M 14x1.5	13	26	1	M02	M 12x1.5	12	20	1
0.8 - 3.3						M03	M 14x1.5	13	26	
all	M04	M 16x1.5	14	22						
all	M05	M 18x1.5	13	30						
all	M06	M 20x1.5	14	26						
3.3 - 11.8	M07	M 22x1.5	13	35						
M02 – M05										

BSP pipe thread according to 228-1



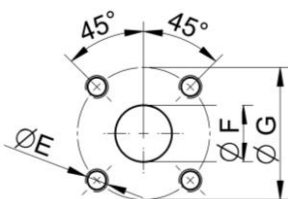
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
all	G02	G 3/8	13	24	1	G01	G 1/4	13	26	1
	G03	G 1/2		34		G02	G 3/8		24	
	G03	G 1/2	34	G03		G 1/2	34			

UNF thread according to SAE



Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
all	U03	3/4-16 UNF	13	24.6	1	U02	9/16 - 18 UNF	13	24.6	1
	U04	7/8-14 UNF	16	34		U03	3/4-16 UNF		30	

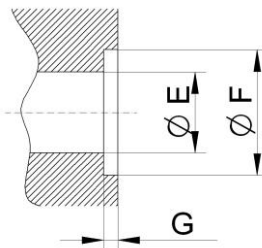
Flanged fittings according to DIN 8901/8902



Displacement [cm ³]	Code	Inlet			Code	Outlet		
		E	F	G		E	F	G
all	H01	M5, depth 12	8	26	H01	M5, depth 12	8	26
	H02		10		H02		10	
	H03	M6, depth 12	8	30	H03	M6, depth 12	8	30
	H04		12		H04		12	

NOTE: All inlets and outlets can be combination

Inlet / Outlet in flange

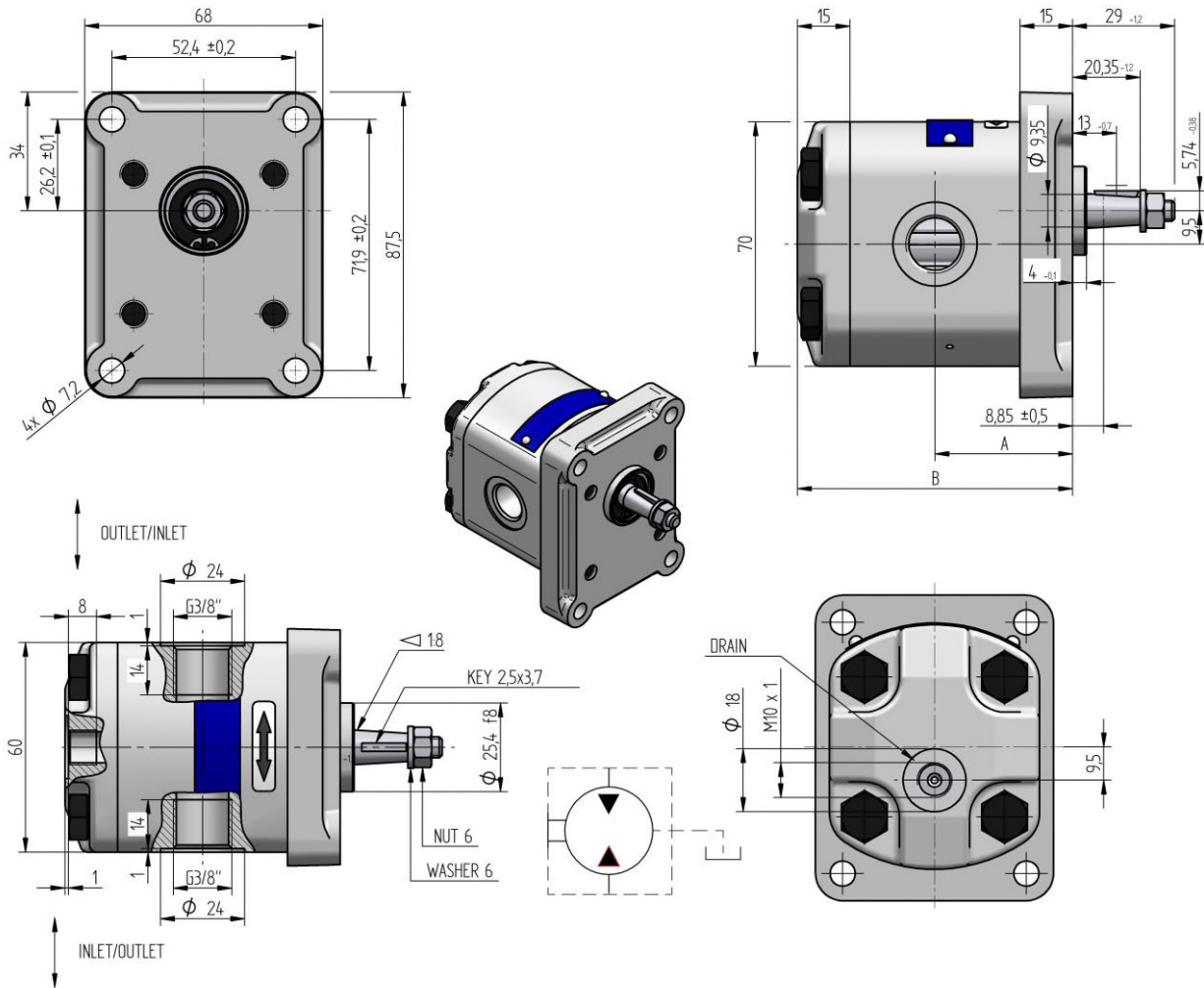


Code	E	F	G
P01	8	12.4	1.4

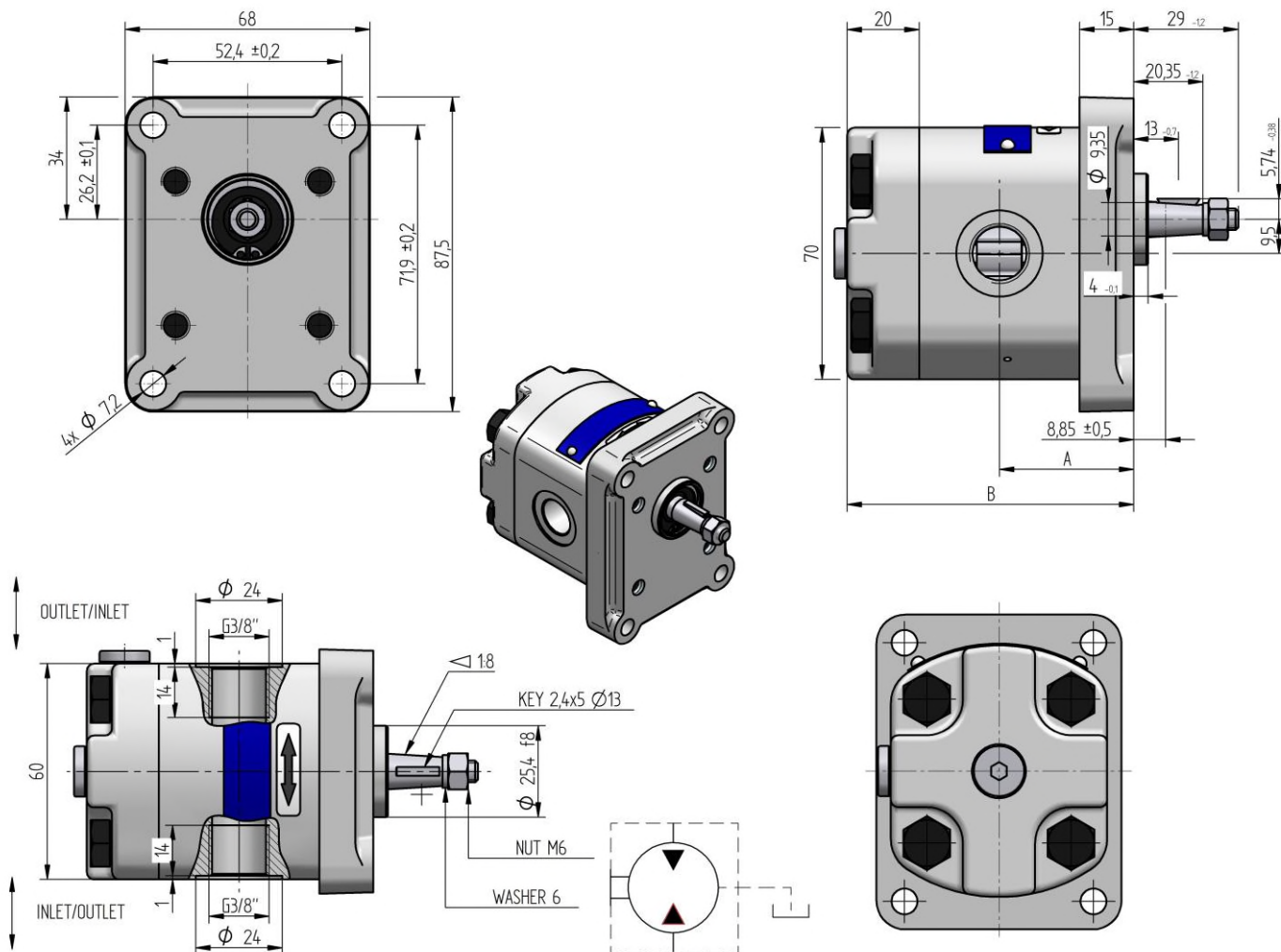
Drains:

Displacement [cm ³]	Code	Outlet			
		A	B	C	D
all	M01	M10x1	8	15	1

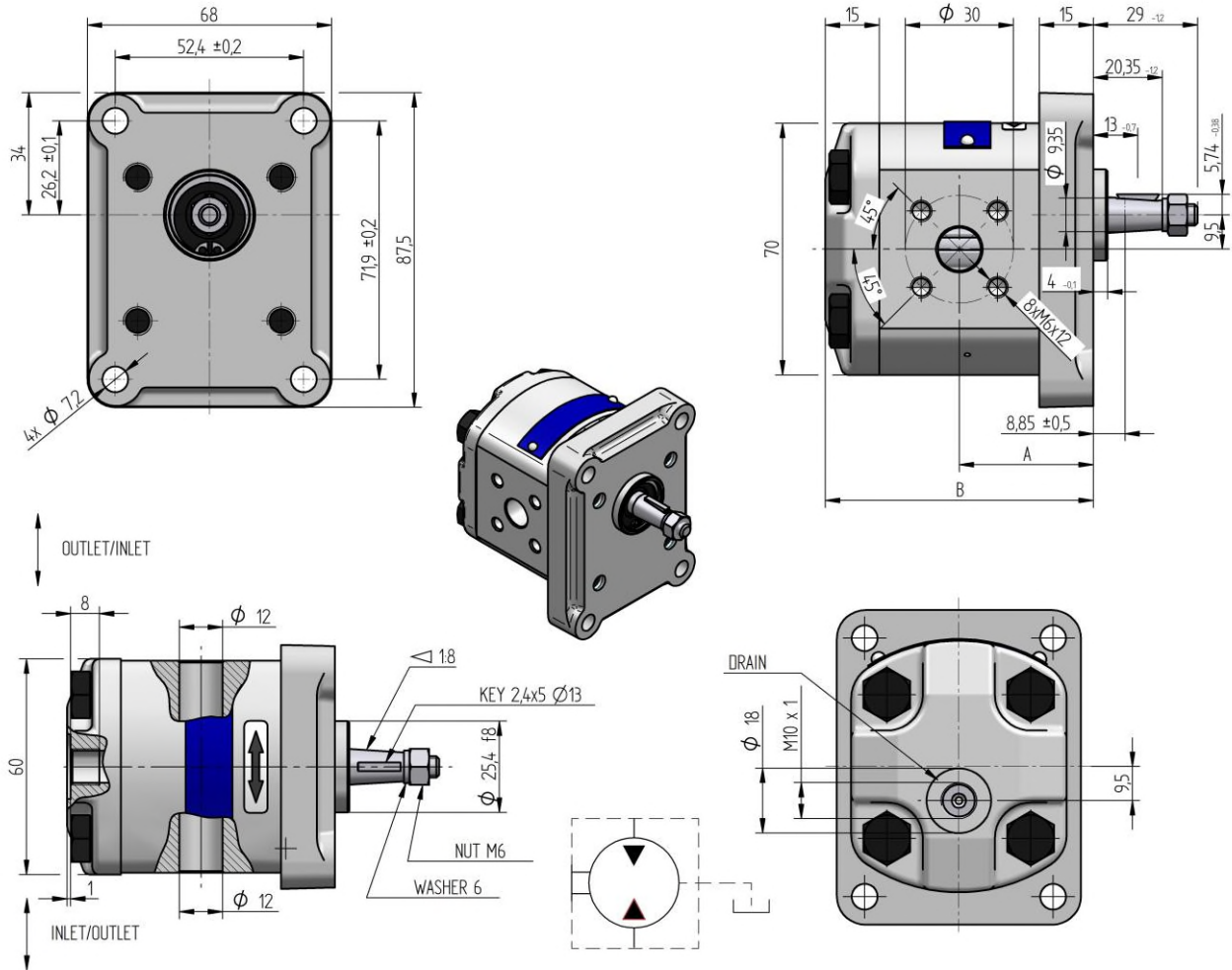
CATALOGUE SHEETS OF PM23 SERIES BASIC DESIGNS



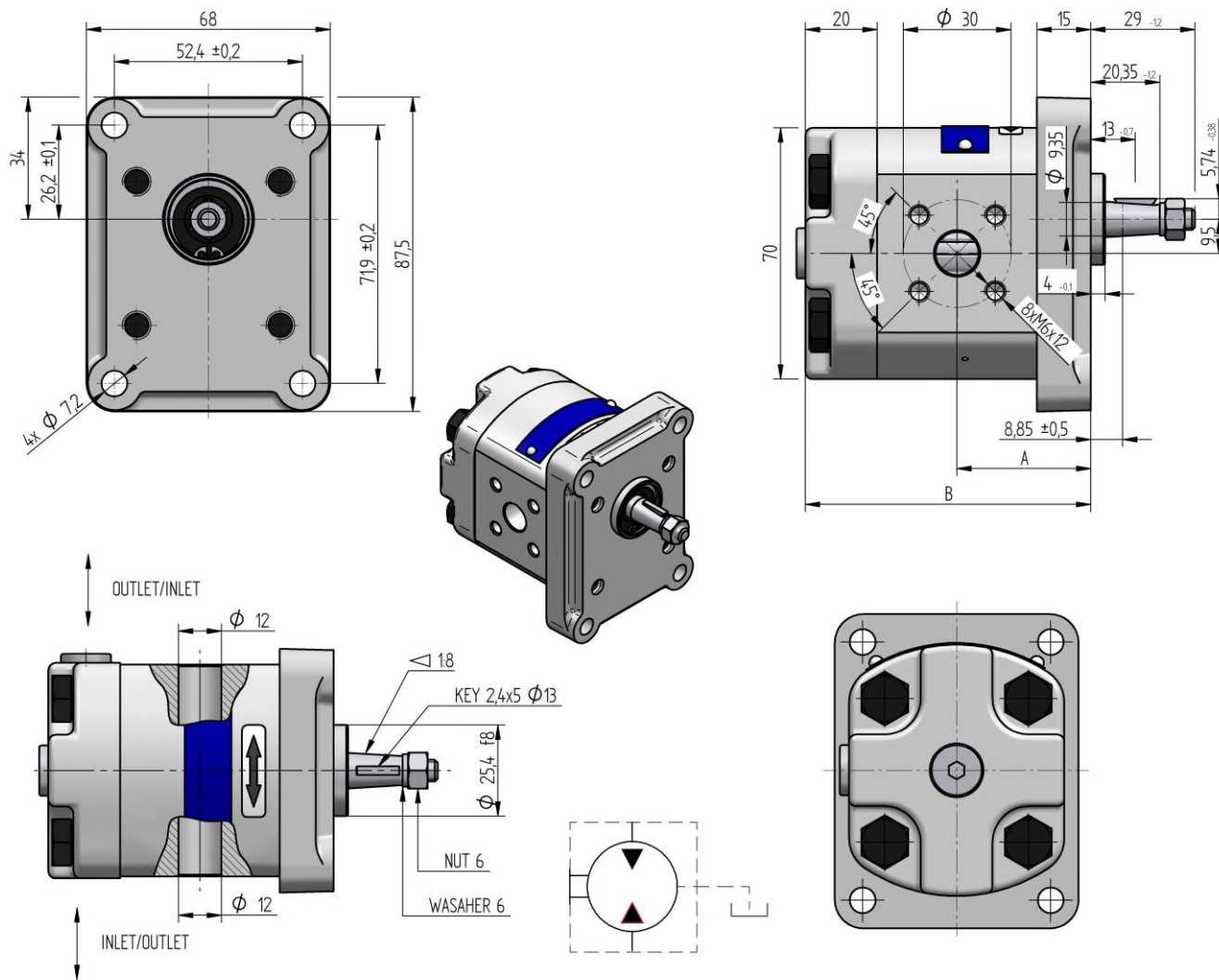
PM23-7.9B-R02C03-SG02G02-N		B	7.9	160	500	3 000	45.8	91.6						
PM23-6.2B- R02C03-SG02G02-N		B	6.2	180	500	3 500	42.6	85.3						
PM23-5.8B- R02C03-SG02G02-N		B	5.8	200	500	3 800	41.9	83.8						
PM23-4.8B- R02C03-SG02G02-N		B	4.8	230	500	3 800	40.0	80.0						
PM23-4.4B- R02C03-SG02G02-N	187 9401	B	4.4	250	500	4 000	39.2	78.5						
PM23-3.6B- R02C03-SG02G02-N		B	3.6	260	500	4 000	37.8	75.6						
PM23-3.3B- R02C03-SG02G02-N		B	3.3	280	500	4 000	37.2	74.5						
PM23-2.5B- R02C03-SG02G02-N		B	2.5	280	500	4 000	35.7	71.5						
PM23-2.1B- R02C03-SG02G02-N		B	2.1	280	600	4 500	34.9	69.9						
PM23-1.6B- R02C03-SG02G02-N		B	1.6	280	600	4 500	34.1	68.3						
PM23-1.2B- R02C03-SG02G02-N		B	1.2	280	800	5 000	33.4	66.8						
PM23-0.8B- R02C03-SG02G02-N		B	0.8	280	800	5 000	32.6	65.3						
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]				



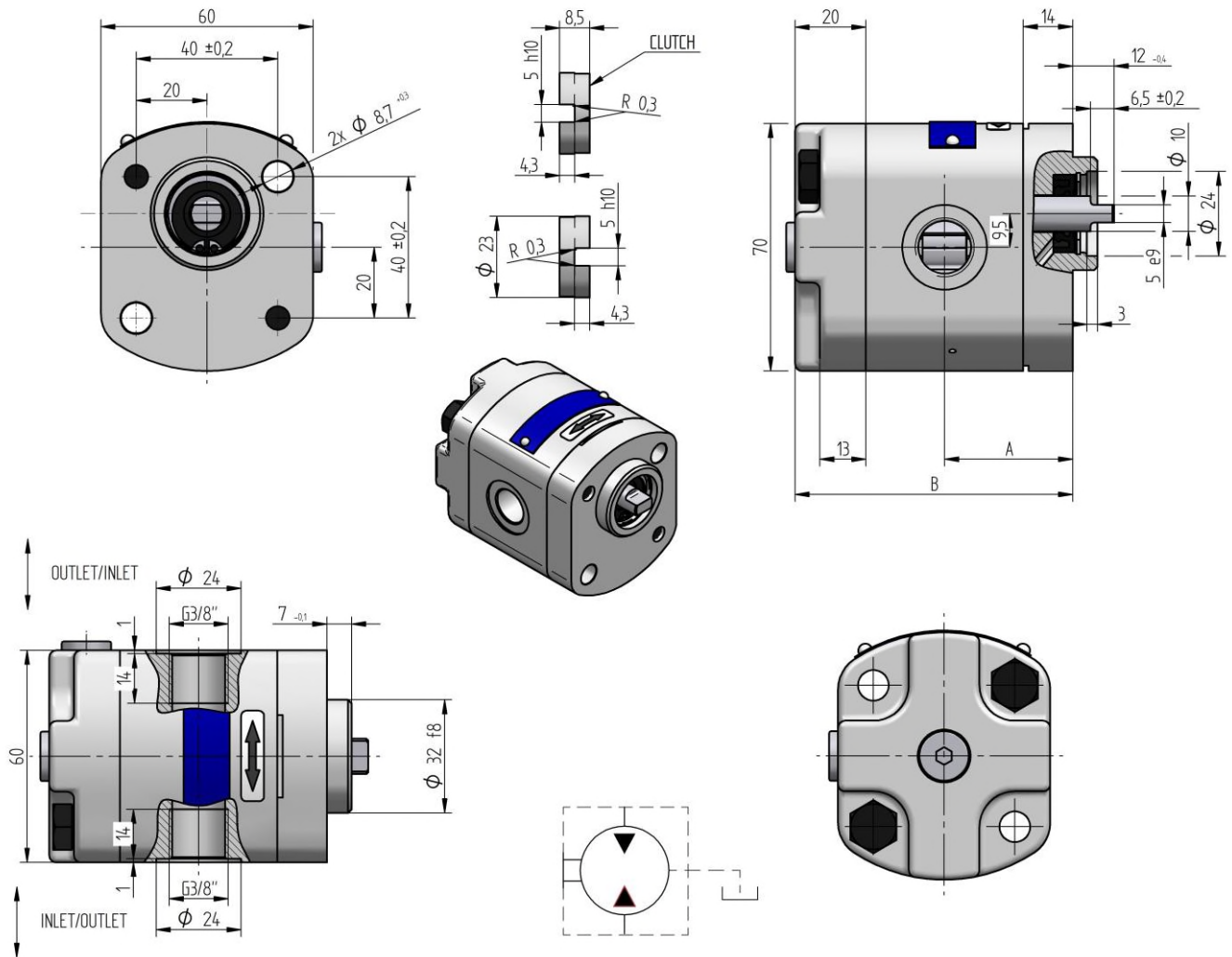
PM23-7.9B- R02C03-SG03G03-N.009		B	7.9	160	500	3 000	45.8	96.6			
PM23-6.2B- R02C03-SG03G03-N.009		B	6.2	180	500	3 500	42.6	90.3			
PM23-5.8B- R02C03-SG03G03-N.009		B	5.8	200	500	3 800	41.9	88.8			
PM23-4.8B- R02C03-SG03G03-N.009		B	4.8	230	500	3 800	40.0	85.0			
PM23-4.4B- R02C03-SG03G03-N.009		B	4.4	250	500	4 000	39.2	83.5			
PM23-3.6B- R02C03-SG03G03-N.009		B	3.6	260	500	4 000	37.8	80.6			
PM23-3.3B- R02C03-SG03G03-N.009		B	3.3	280	500	4 000	37.2	79.5			
PM23-2.5B- R02C03-SG03G03-N.009		B	2.5	280	500	4 000	35.7	76.5			
PM23-2.1B- R02C03-SG03G03-N.009		B	2.1	280	600	4 500	34.9	74.9			
PM23-1.6B- R02C03-SG03G03-N.009		B	1.6	280	600	4 500	34.1	73.3			
PM23-1.2B- R02C03-SG03G03-N.009		B	1.2	280	800	5 000	33.4	71.8			
PM23-0.8B- R02C03-SG03G03-N.009		B	0.8	280	800	5 000	32.6	70.3			
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]	



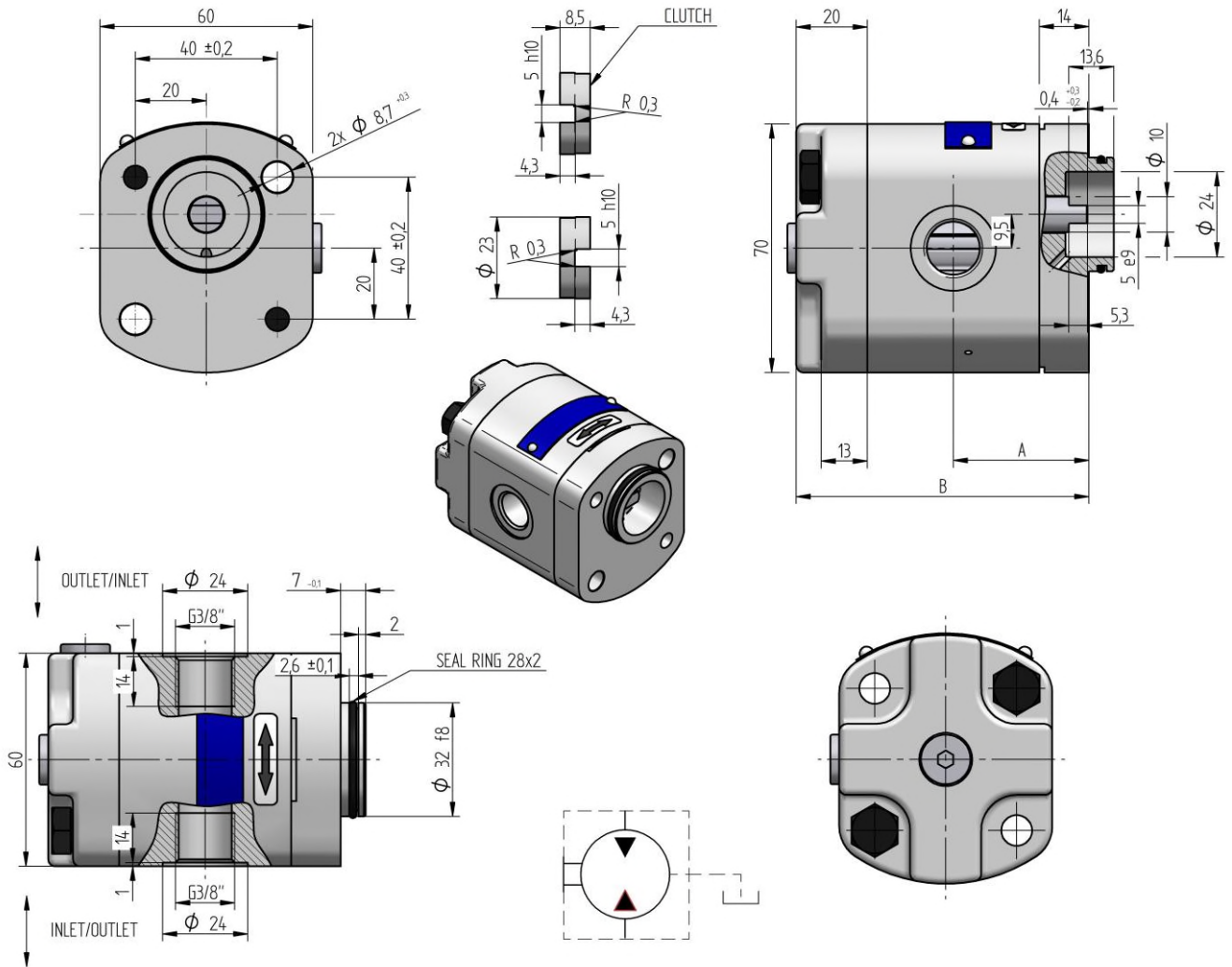
PM23-7.9B- R02C03-SH04H04-N		B	7.9	160	500	3 000	45.8	91.6					
PM23-6.2B- R02C03-SH04H04-N		B	6.2	180	500	3 500	42.6	85.3					
PM23-5.8B- R02C03-SH04H04-N		B	5.8	200	500	3 800	41.9	83.8					
PM23-4.8B- R02C03-SH04H04-N		B	4.8	230	500	3 800	40.0	80.0					
PM23-4.4B- R02C03-SH04H04-N		B	4.4	250	500	4 000	39.2	78.5					
PM23-3.6B- R02C03-SH04H04-N		B	3.6	260	500	4 000	37.8	75.6					
PM23-3.3B- R02C03-SH04H04-N		B	3.3	280	500	4 000	37.2	74.5					
PM23-2.5B- R02C03-SH04H04-N		B	2.5	280	500	4 000	35.7	71.5					
PM23-2.1B- R02C03-SH04H04-N		B	2.1	280	600	4 500	34.9	69.9					
PM23-1.6B- R02C03-SH04H04-N		B	1.6	280	600	4 500	34.1	68.3					
PM23-1.2B- R02C03-SH04H04-N		B	1.2	280	800	5 000	33.4	66.8					
PM23-0.8B- R02C03-SH04H04-N		B	0.8	280	800	5 000	32.6	65.3					
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]			



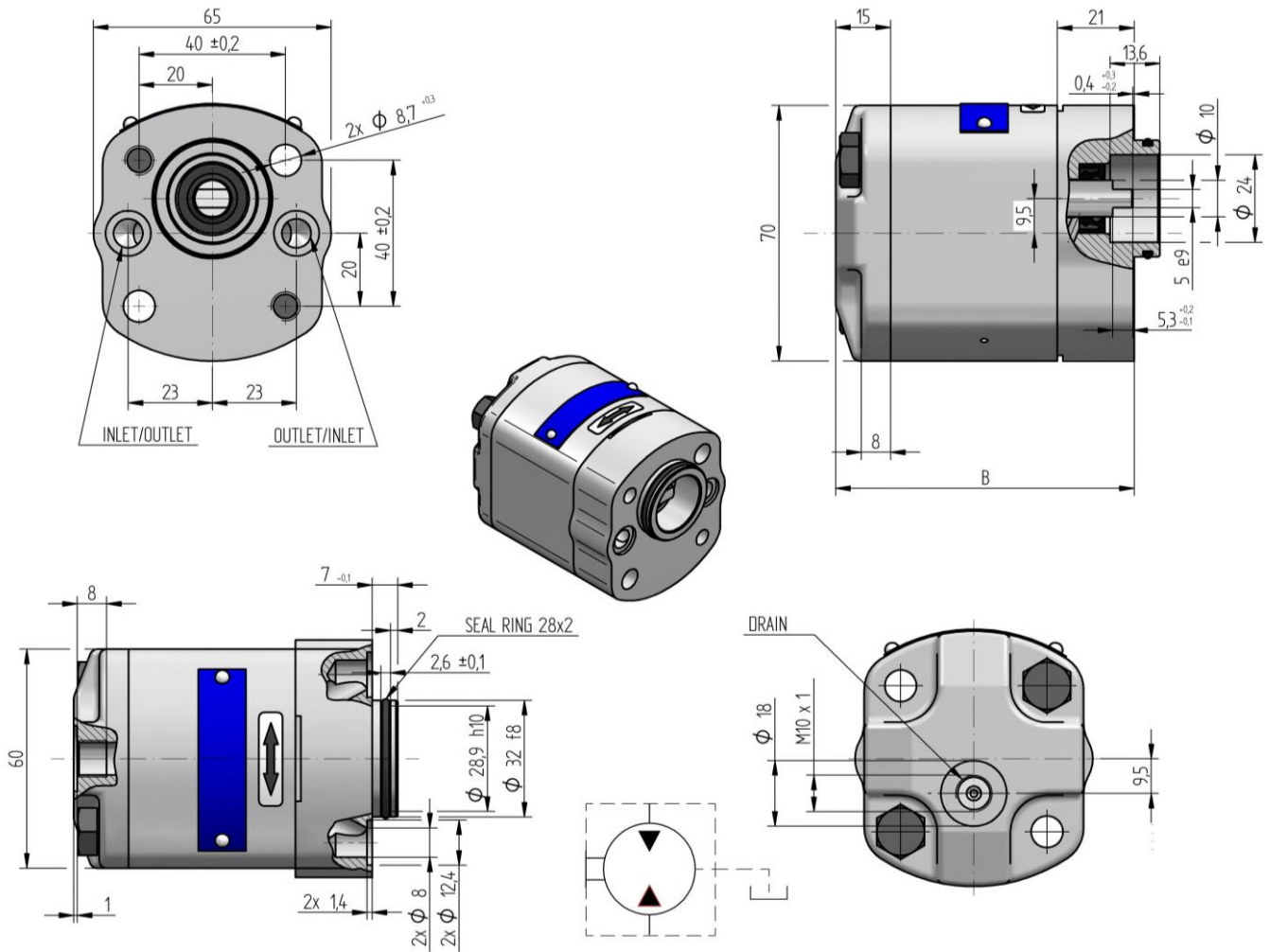
PM23-7.9B- R02C03-SH04H04-N.009		B	7.9	160	500	3 000	45.8	96.6			
PM23-6.2B- R02C03-SH04H04-N.009		B	6.2	180	500	3 500	42.6	90.3			
PM23-5.8B- R02C03-SH04H04-N.009		B	5.8	200	500	3 800	41.9	88.8			
PM23-4.8B- R02C03-SH04H04-N.009		B	4.8	230	500	3 800	40.0	85.0			
PM23-4.4B- R02C03-SH04H04-N.009		B	4.4	250	500	4 000	39.2	83.5			
PM23-3.6B- R02C03-SH04H04-N.009		B	3.6	260	500	4 000	37.8	80.6			
PM23-3.3B- R02C03-SH04H04-N.009		B	3.3	280	500	4 000	37.2	79.5			
PM23-2.5B- R02C03-SH04H04-N.009		B	2.5	280	500	4 000	35.7	76.5			
PM23-2.1B- R02C03-SH04H04-N.009		B	2.1	280	600	4 500	34.9	74.9			
PM23-1.6B- R02C03-SH04H04-N.009		B	1.6	280	600	4 500	34.1	73.3			
PM23-1.2B- R02C03-SH04H04-N.009		B	1.2	280	800	5 000	33.4	71.8			
PM23-0.8B- R02C03-SH04H04-N.009		B	0.8	280	800	5 000	32.6	70.3			
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]	



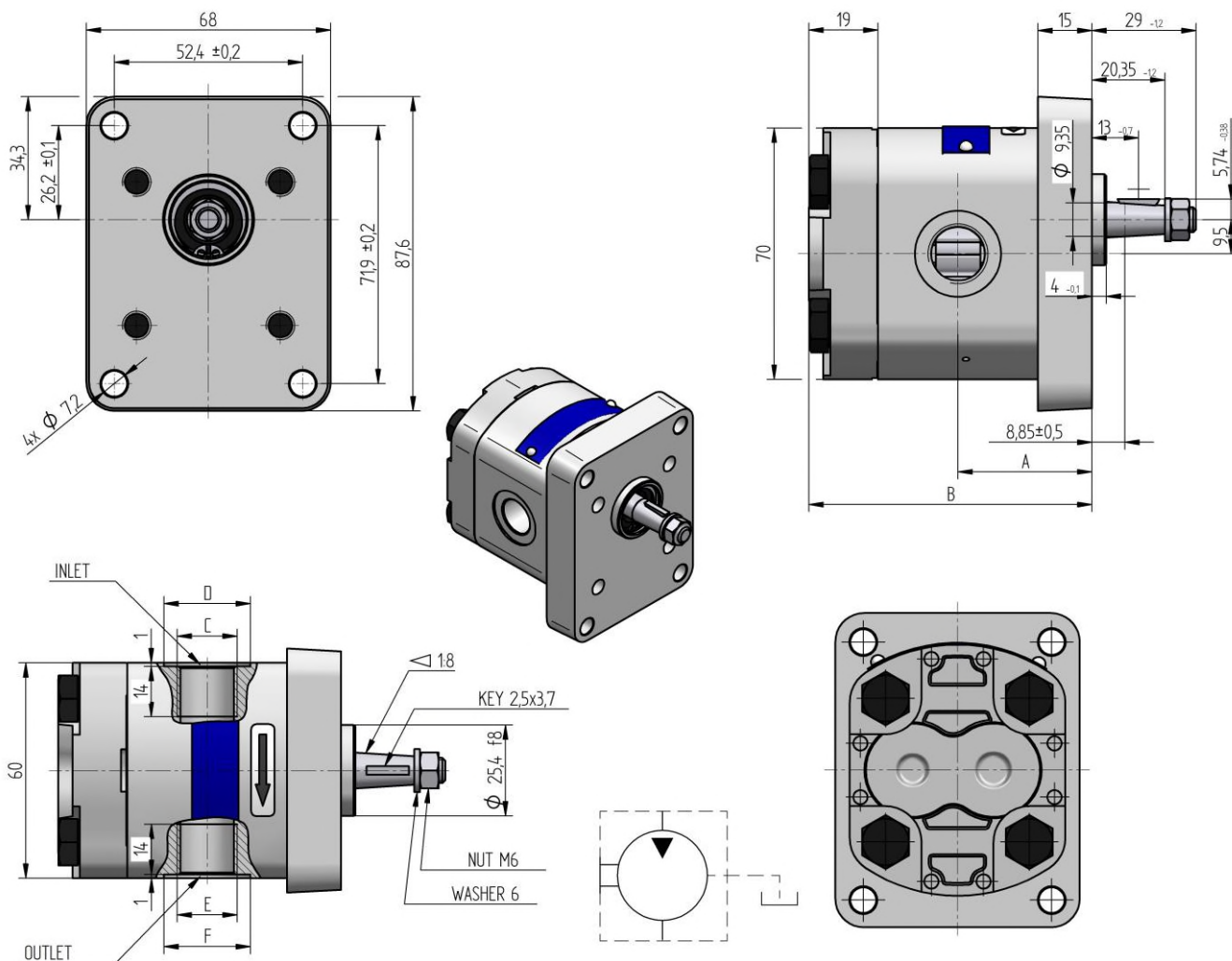
PM23-7.9B-A06K04-SG02G02-N.009		B	7.9	160	500	3 000	44.8	95.6				
PM23-6.2B- A06K04-SG02G02-N.009		B	6.2	180	500	3 500	41.6	89.3				
PM23-5.8B- A06K04-SG02G02-N.009		B	5.8	200	500	3 800	40.9	87.8				
PM23-4.8B- A06K04-SG02G02-N.009		B	4.8	230	500	3 800	39.0	84.0				
PM23-4.4B- A06K04-SG02G02-N.009		B	4.4	250	500	4 000	38.2	82.5				
PM23-3.6B- A06K04-SG02G02-N.009		B	3.6	260	500	4 000	36.8	79.6				
PM23-3.3B- A06K04-SG02G02-N.009		B	3.3	280	500	4 000	36.2	78.5				
PM23-2.5B- A06K04-SG02G02-N.009		B	2.5	280	500	4 000	34.7	75.5				
PM23-2.1B- A06K04-SG02G02-N.009		B	2.1	280	600	4 500	33.9	73.9				
PM23-1.6B- A06K04-SG02G02-N.009		B	1.6	280	600	4 500	33.1	72.3				
PM23-1.2B- A06K04-SG02G02-N.009		B	1.2	280	800	5 000	32.4	70.8				
PM23-0.8B- A06K04-SG02G02-N.009		B	0.8	280	800	5 000	31.6	69.3				
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]		



PM23-7.9B-A05K03-SG02G02-N.009		B	7.9	160	500	3 000	44.8	95.6				
PM23-6.2B- A05K03-SG02G02-N.009		B	6.2	180	500	3 500	41.6	89.3				
PM23-5.8B- A05K03-SG02G02-N.009		B	5.8	200	500	3 800	40.9	87.8				
PM23-4.8B- A05K03-SG02G02-N.009		B	4.8	230	500	3 800	39.0	84.0				
PM23-4.4B- A05K03-SG02G02-N.009	187 9400	B	4.4	250	500	4 000	38.2	82.5				
PM23-3.6B- A05K03-SG02G02-N.009		B	3.6	260	500	4 000	36.8	79.6				
PM23-3.3B- A05K03-SG02G02-N.009		B	3.3	280	500	4 000	36.2	78.5				
PM23-2.5B- A05K03-SG02G02-N.009		B	2.5	280	500	4 000	34.7	75.5				
PM23-2.1B- A05K03-SG02G02-N.009		B	2.1	280	600	4 500	33.9	73.9				
PM23-1.6B- A05K03-SG02G02-N.009		B	1.6	280	600	4 500	33.1	72.3				
PM23-1.2B- A05K03-SG02G02-N.009		B	1.2	280	800	5 000	32.4	70.8				
PM23-0.8B- A05K03-SG02G02-N.009		B	0.8	280	800	5 000	31.6	69.3				
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]		



PM23-7.9B-A03K03-FP01P01-N		B	7.9	160	500	3 000	97.6						
PM23-6.2B- A03K03-FP01P01-N	187 9893	B	6.2	180	500	3 500	91.3						
PM23-5.8B- A03K03-FP01P01-N	187 9892	B	5.8	200	500	3 800	89.8						
PM23-4.8B- A03K03-FP01P01-N		B	4.8	230	500	3 800	86.0						
PM23-4.4B- A03K03-FP01P01-N	187 9960	B	4.4	250	500	4 000	84.5						
PM23-3.6B- A03K03-FP01P01-N		B	3.6	260	500	4 000	81.6						
PM23-3.3B- A03K03-FP01P01-N		B	3.3	280	500	4 000	80.5						
PM23-2.5B- A03K03-FP01P01-N		B	2.5	280	500	4 000	77.5						
PM23-2.1B- A03K03-FP01P01-N		B	2.1	280	600	4 500	75.9						
PM23-1.6B- A03K03-FP01P01-N		B	1.6	280	600	4 500	74.3						
PM23-1.2B- A03K03-FP01P01-N		B	1.2	280	800	5 000	72.8						
PM23-0.8B- A03K03-FP01P01-N		B	0.8	280	800	5 000	71.3						
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ / 1]	NOM. PRES. [bar]	SPEED [min ⁻¹]		A	B	C	DIMENSIONS [mm]			



PM23-7.9L-R02C02-SG02G02-N	187 9987	L	7.9	160	500	3 000	45.8	95.6						
PM23-6.2L- R02C02-SG02G02-N	187 9804	L	6.2	180	500	3 500	42.6	89.3						
PM23-5.8L- R02C02-SG02G02-N	187 9986	L	5.8	200	500	3 800	41.9	87.8						
PM23-4.8L- R02C02-SG02G02-N	187 9985	L	4.8	230	500	3 800	40.0	84.0						
PM23-4.4L- R02C02-SG02G02-N	187 9954	L	4.4	250	500	4 000	39.2	82.5						
PM23-3.6L- R02C02-SG02G02-N	187 9951	L	3.6	260	500	4 000	37.8	79.6						
PM23-3.3L- R02C02-SG02G02-N	187 9984	L	3.3	280	500	4 000	37.2	78.5						
PM23-2.5L- R02C02-SG02G02-N	187 9950	L	2.5	280	500	4 000	35.7	75.5						
PM23-2.1L- R02C02-SG02G02-N	187 9983	L	2.1	280	600	4 500	34.9	73.9						
PM23-1.6L- R02C02-SG02G02-N	187 9890	L	1.6	280	600	4 500	34.1	72.3						
PM23-1.2L- R02C02-SG02G02-N	187 9903	L	1.2	280	800	5 000	33.4	70.8						
PM23-0.8L- R02C02-SG02G02-N	187 9982	L	0.8	280	800	5 000	32.6	69.3						
ORDER KEY	PURCH. CODE	DIRECT. OF ROT.	DISPLACEMENT [cm ³ /1]	NOM. PRES. [bar]	MIN. SPEED [min ⁻¹]	MAX. SPEED [min ⁻¹]	A	B	C	DIMENSIONS [mm]				



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