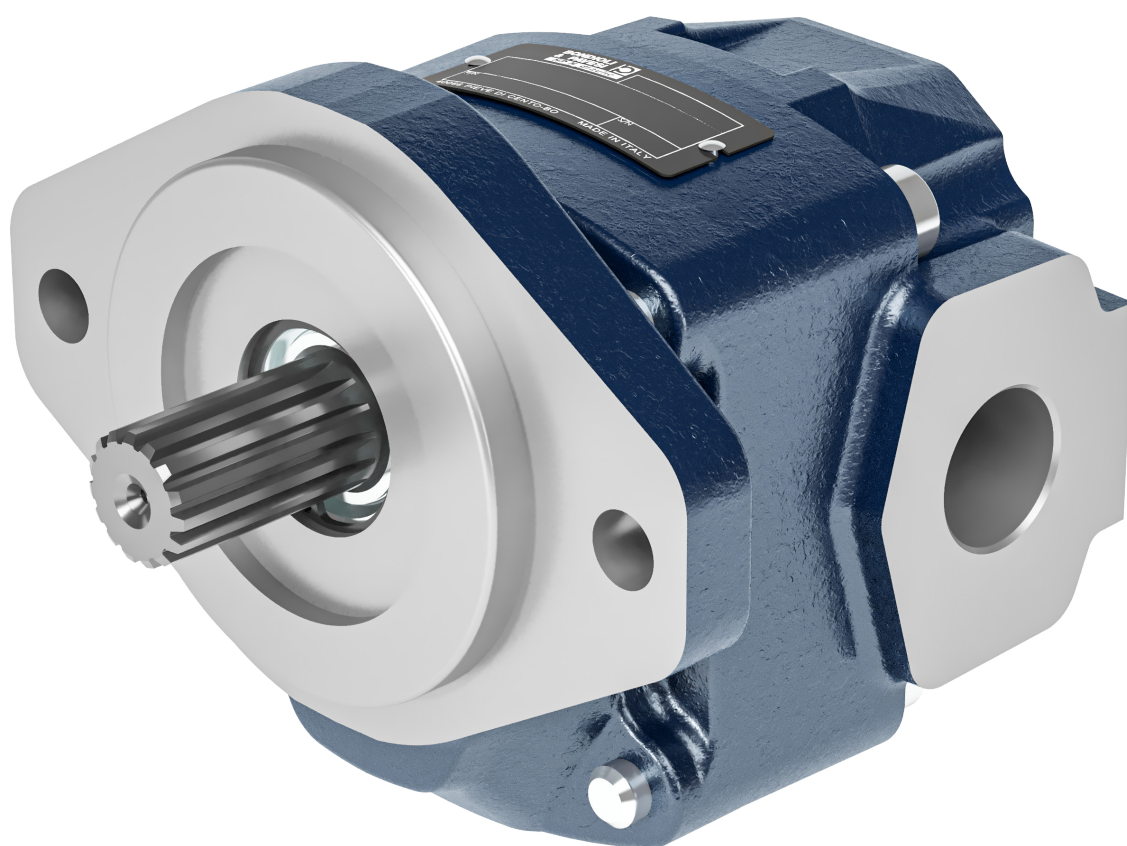


HPG Series



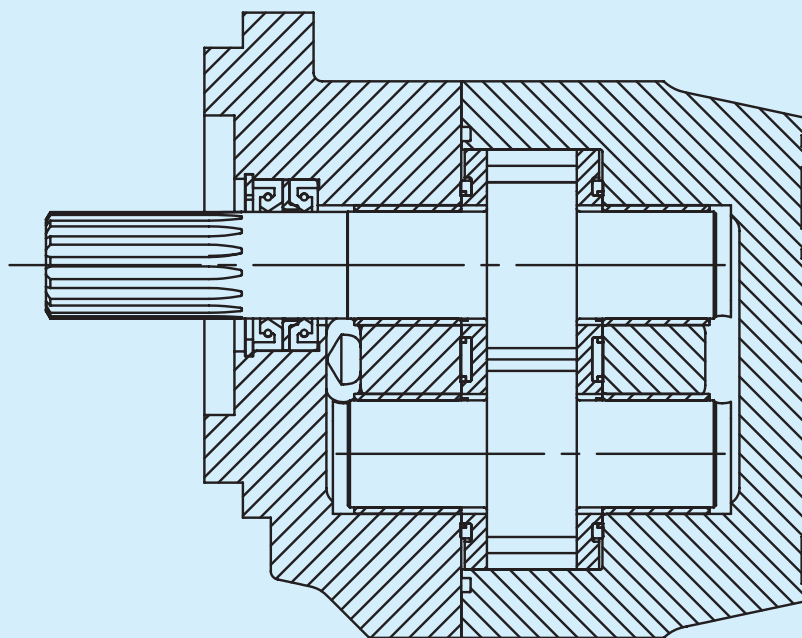
Introduction	4
HPG..2	5
HPG..3	21
HPG..4	37

Introduction Gear pumps and motors are among the most popularly produced and utilized hydrostatic units. Some of their many characteristics are: robust design, profitable price/performance ratio, easy installation, suitability for customized solutions, possible integration with control devices (valves). HP Hydraulic offers decades of well consolidated experience in the development and production of gear units with a constant approach towards innovation of design and of manufacturing process.

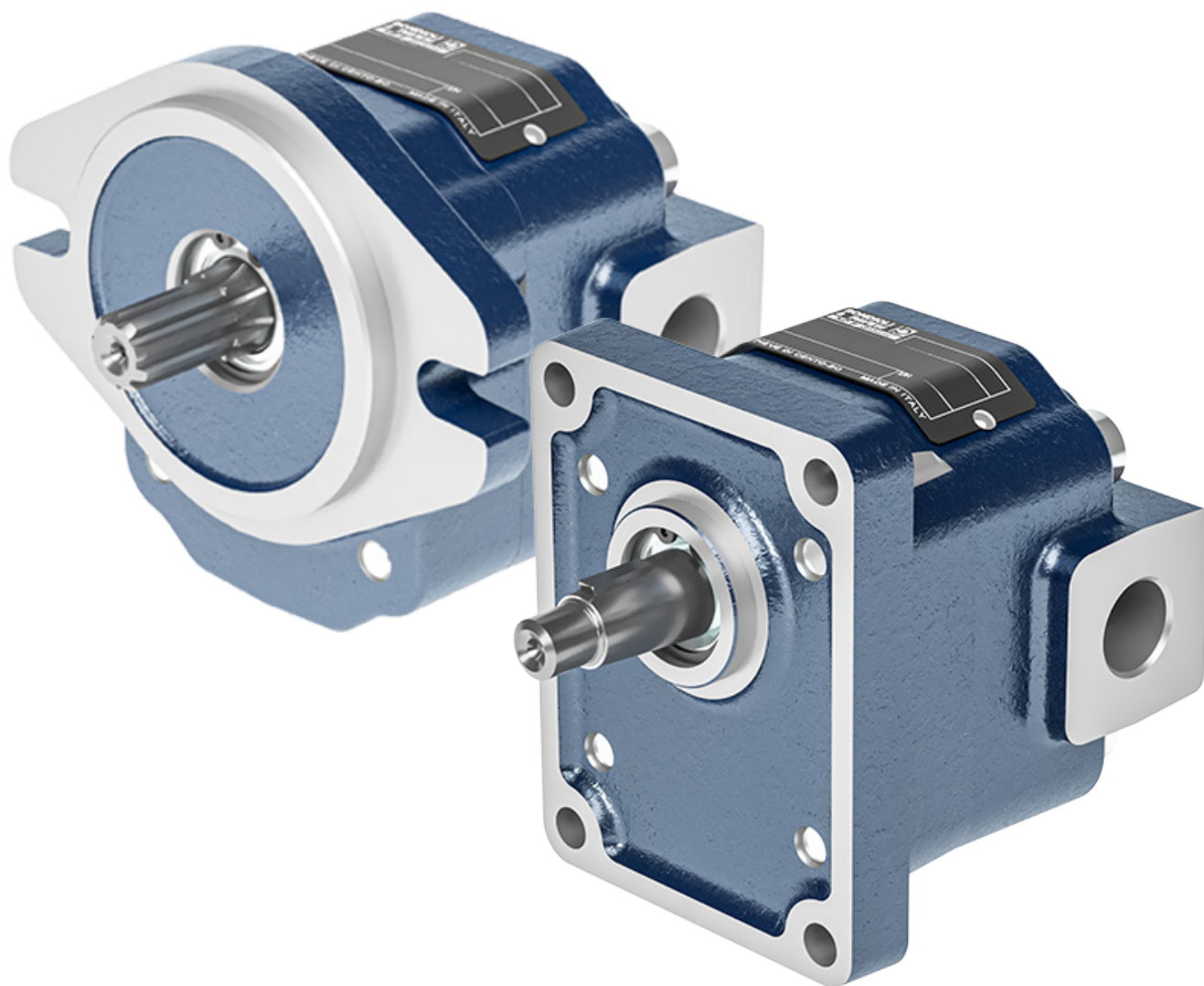
This same experience enables us today to offer a gear pumps range cast iron, grouped according to their capacity, whose main features can be devised and varied to best respond to customer's requirements and whose performance permits use in any kind of application.

HP Hydraulic series G pumps are supplied in size group 2, 3 and 4. Various capacities will be determined within this group.

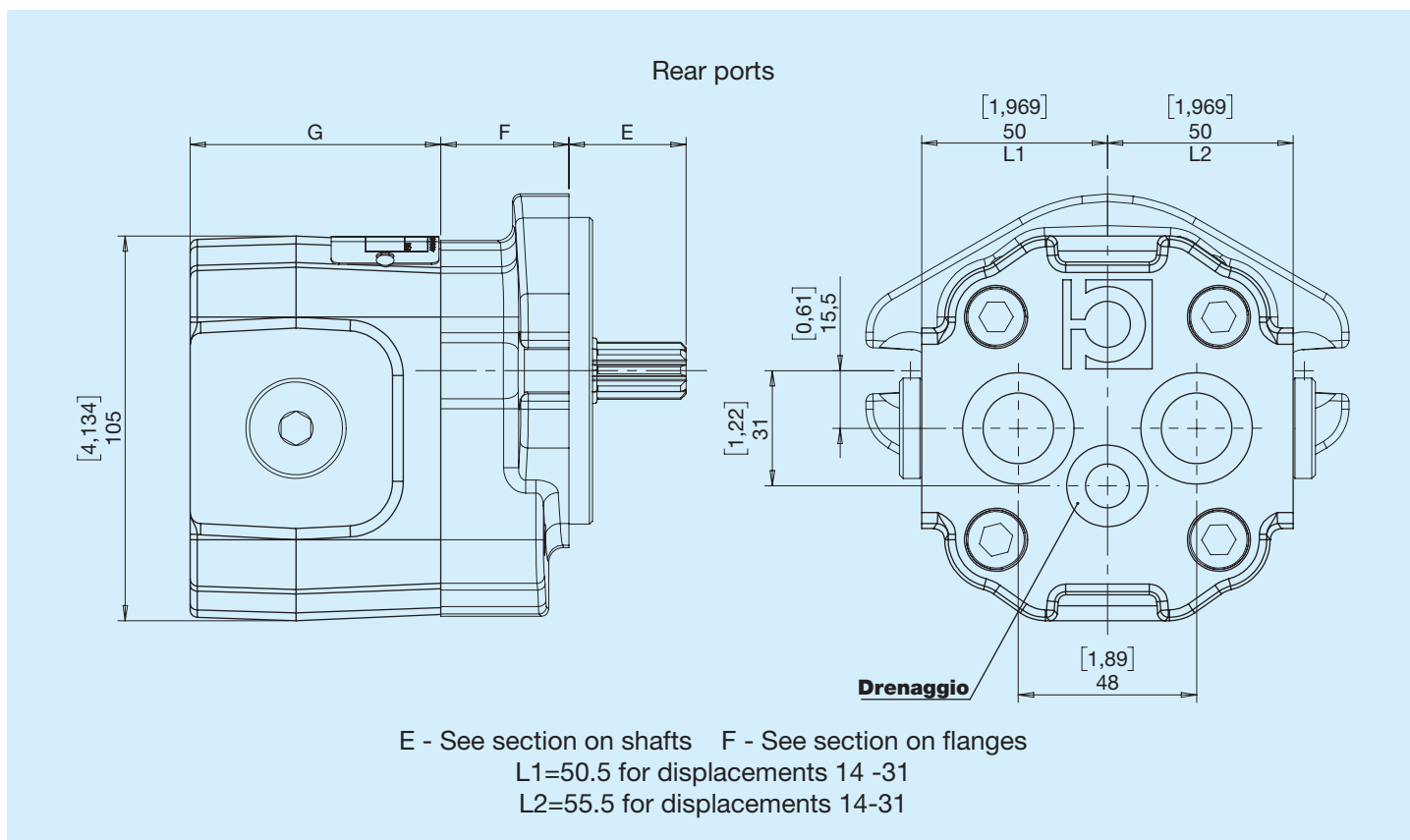
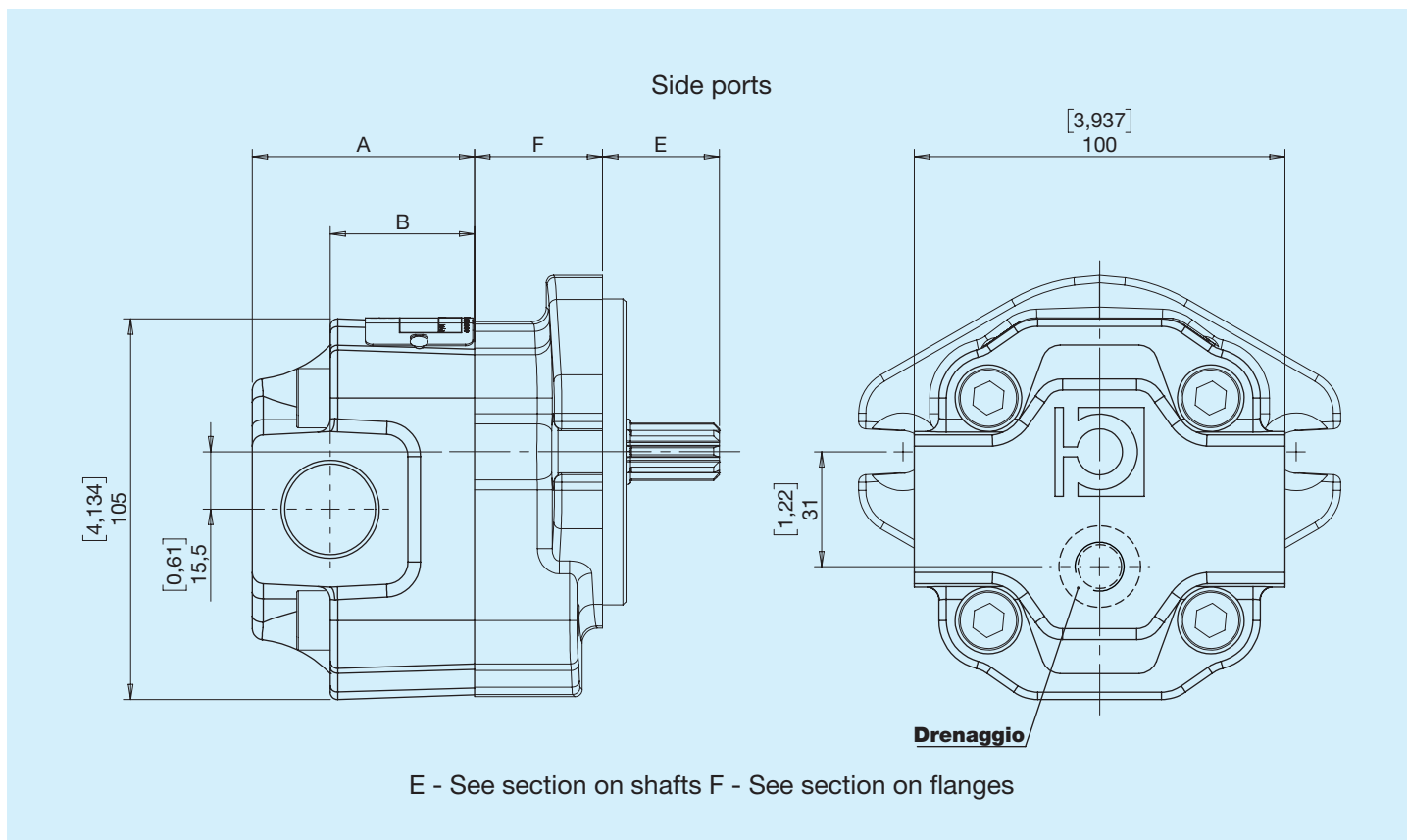
The series of products is even further completed with a full range of flanges, shaft ends, and available multiple pumps with or without valves integrated into the back cover.



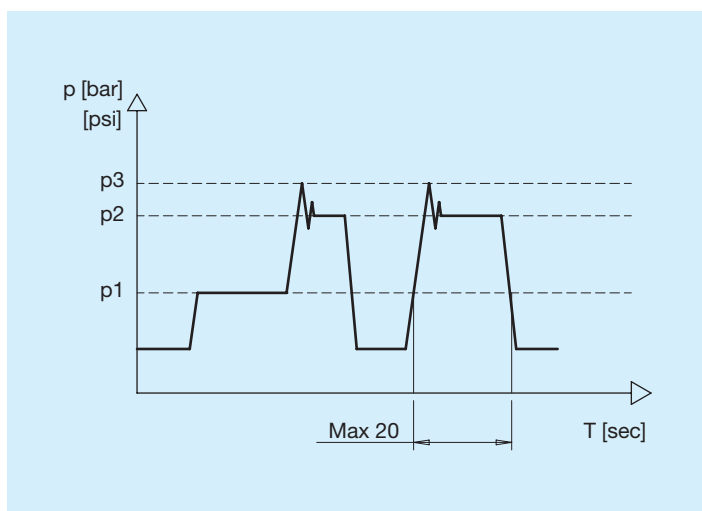
HPG Series Group 2



Before use, carefully read the GENERAL INSTRUCTIONS FOR USE OF GEAR PUMPS AND MOTORS.



Pressure definition



p1	Continuous pressure
A,B - Use	Intermittent pressure Maximum pressure permitted for short periods (max. 20 sec)
L1, L2 - Drain port	Peak pressure Maximum permitted pressure intended as peak pressure of Vmax

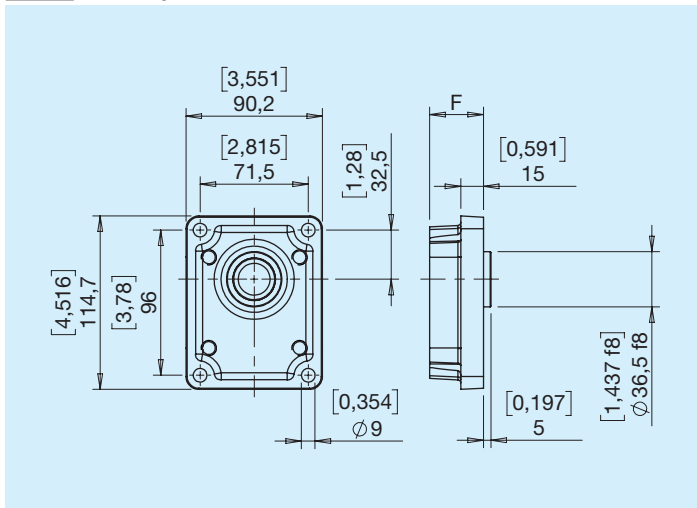
Pump dimensions and technical data

HPGPA2	Nominal displacement		Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight		A		B		G	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs	mm	in	mm	in	mm	in
05	4.50	0.27	270	3916	290	4206	320	4641	3500	500	4.37	9.64	48.3	1.90	27.3	1.07	55,8	2.20
06	6.00	0.37	270	3916	290	4206	320	4641	3500	500	4.46	9.84	51	2.01	30	1.18	58,5	2.30
08	8.50	0.52	270	3916	290	4206	320	4641	3500	500	4.65	10.24	55.5	2.19	34.5	1.36	63	2.48
11	11.00	0.67	250	3626	270	3916	300	4351	3000	500	4.86	10.72	60	2.36	39	1.54	67,5	2.66
14	14.50	0.88	250	3626	270	3916	300	4351	3000	500	5.41	11.93	69	2.72	37	1.46	74	2.91
17	17.00	1.04	250	3626	270	3916	280	4061	3000	500	5.64	12.44	73.5	2.89	41.5	1.63	78,5	3.09
20	19.50	1.19	210	3046	230	3336	250	3626	3000	500	5.84	12.87	77.7	3.06	44.7	1.76	96,7	3.81
26	26.00	1.59	190	2756	200	2901	210	3046	2500	500	6.29	13.87	90	3.54	57	2.24	109	4.29
31	31.00	1.89	160	2321	180	2611	190	2756	2000	500	6.71	14.79	98.5	3.87	65.5	2.58	117,5	4.62

Motor dimensions and technical data

HPGMA2	Nominal displacement		Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight		A		B		G	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs	mm	in	mm	in	mm	in
06	6.00	0.37	270	3916	290	4206	320	4641	3500	500	4.46	9.84	51	2.01	30	1.18	58,5	2.30
08	8.50	0.52	270	3916	290	4206	320	4641	3500	500	4.65	10.24	55.5	2.19	34.5	1.36	63	2.48
11	11.00	0.67	250	3626	270	3916	300	4351	3000	500	4.86	10.72	60	2.36	39	1.54	67,5	2.66
14	14.50	0.88	250	3626	270	3916	300	4351	3000	500	5.41	11.93	69	2.72	37	1.46	74	2.91
17	17.00	1.04	250	3626	270	3916	280	4061	3000	500	5.64	12.44	73.5	2.89	41.5	1.63	78,5	3.09
20	19.50	1.19	210	3046	230	3336	250	3626	3000	500	5.84	12.87	77.7	3.06	44.7	1.76	96,7	3.81
26	26.00	1.59	190	2756	200	2901	210	3046	2500	500	6.29	13.87	90	3.54	57	2.24	109	4.29

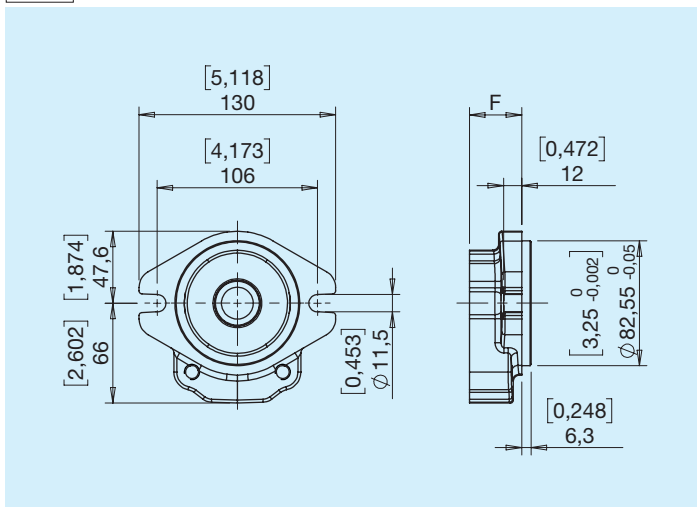
L European



L flange thickness table

	Displacement	
	mm	in
N6	19	0.75

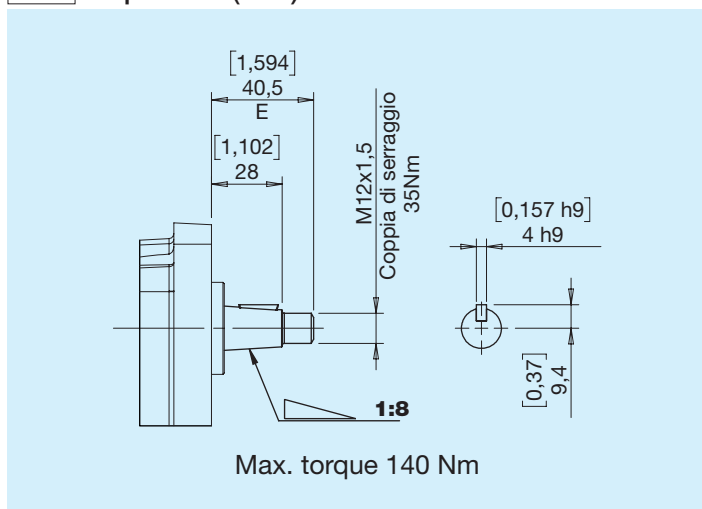
Q SAE A 2 holes



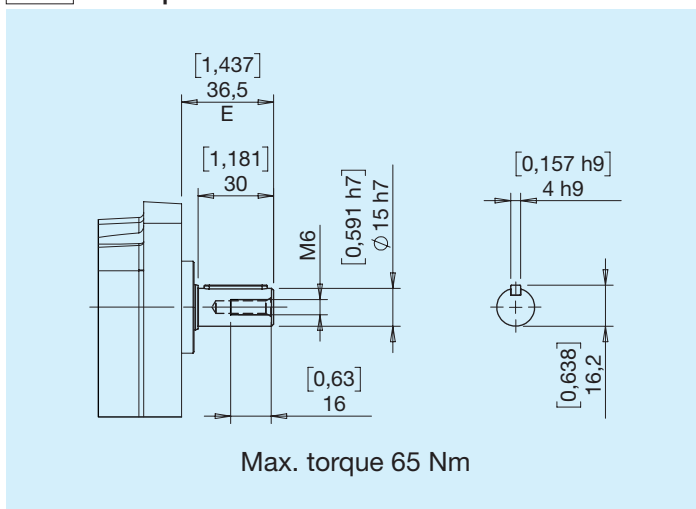
Q flange thickness table

	Displacement	
	mm	in
N6	19	0.75

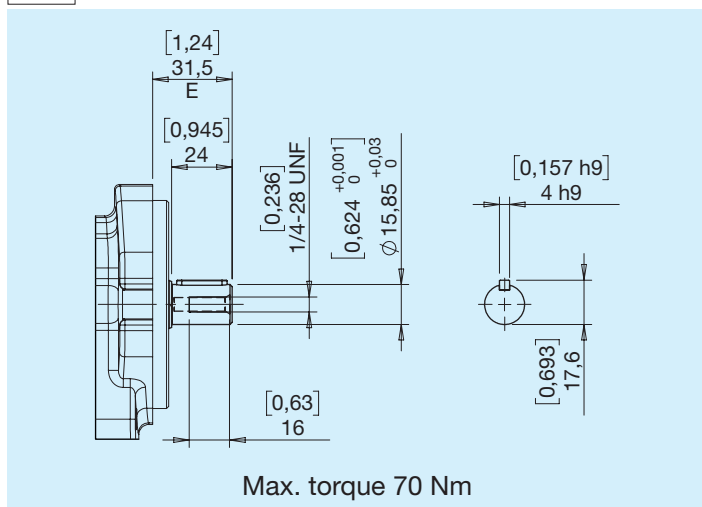
L Tapered (1:8)



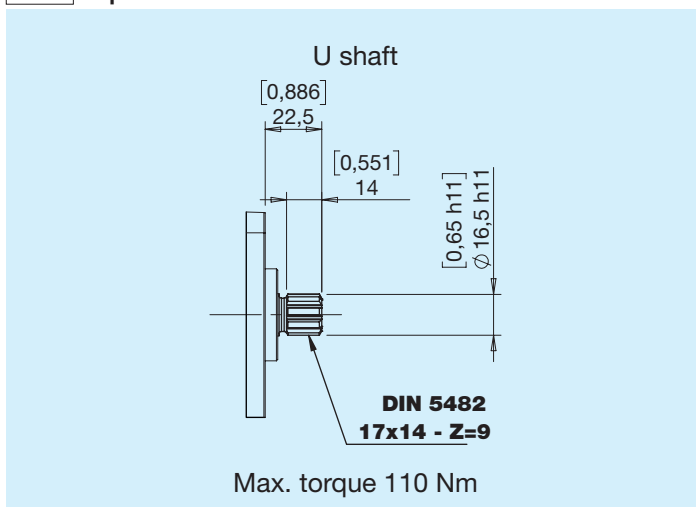
N European round D15



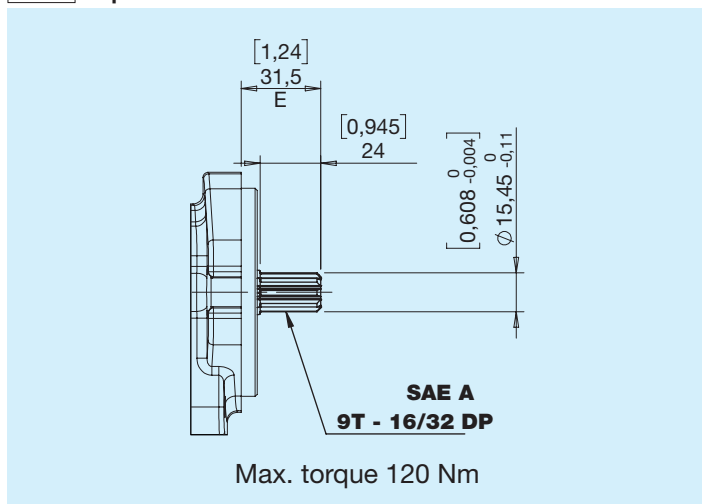
P Round SAE A



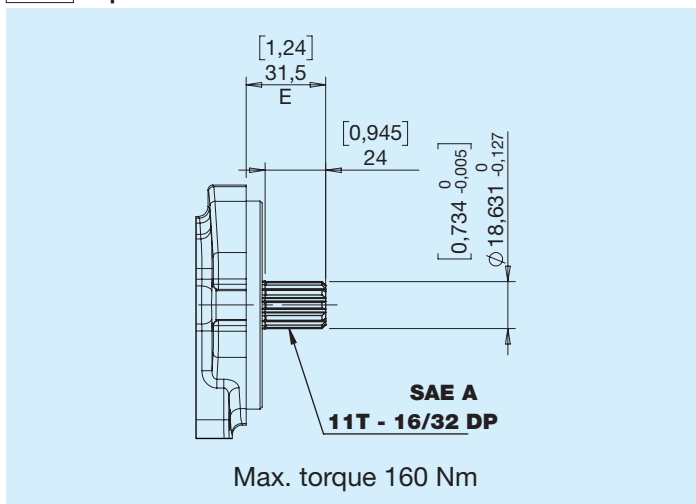
U Splined DIN 5482



V Splined SAE A 9T

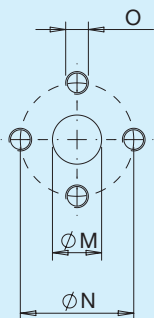


X Splined SAE A 11T



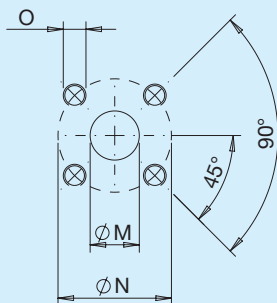
Shafts	Flanges	
	L	Q
L	•	
N	•	
P		•
U	•	
V		•
X		•

E Lateral



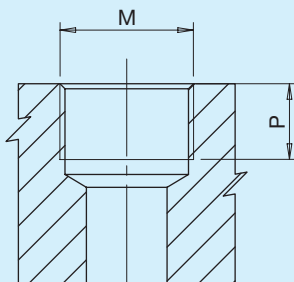
Type	M		N		O	
	mm	in	mm	mm		Nm
E3	13	0.51	30	1.18	M6	10
E5	20	0.79	40	1.57	M8	17
E7	27	1.06	51	2.01	M10	38

X Lateral



Type	M		N		O	
	mm	in	mm	mm		Nm
X4	15	0.59	35	1.38	M6	10
X5	15	0.59	40	1.57	M6	10
X6	20	0.79	40	1.57	M6	10
X8	27	1.06	55	2.17	M8	17

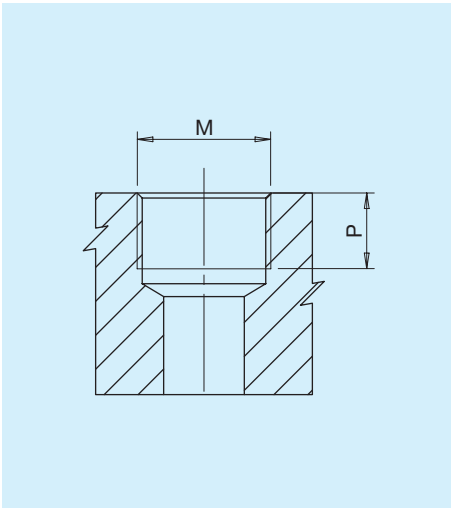
G Lateral / Drain



Type	M	Nm	P	
			mm	in
G2*	PORT ISO 1179-1-G 1/4	17	14	0.55
G4	PORT ISO 1179-1-G 1/2	70	16	0.63
G6	PORT ISO 1179-1-G3/4	90	19	0.75
G7	PORT ISO 1179-1-G 1	160	19	0.75

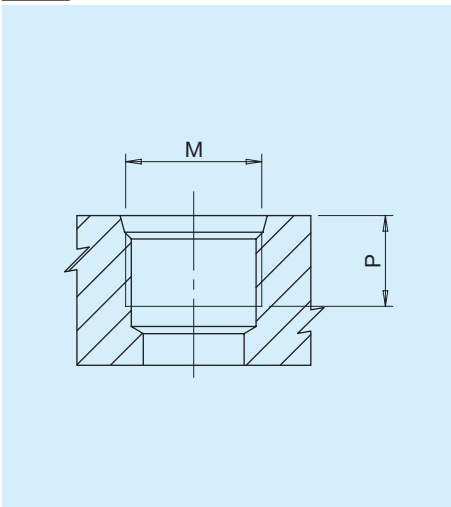
*Drain

T Rear



Type	M	Nm	P	
			mm	in
T4	PORT ISO 1179-1-G 1/2	70	16	0.63
T6	PORT ISO 1179-1-G3/4	90	19	0.75

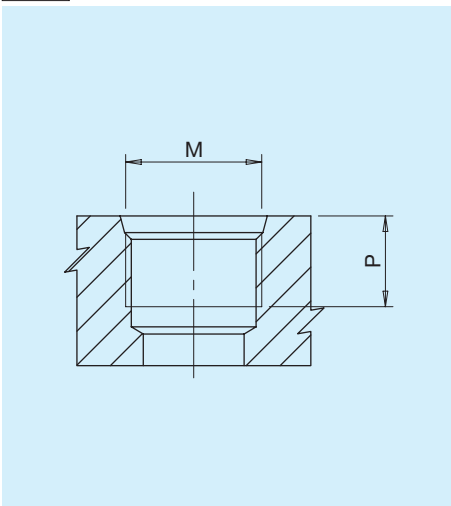
U Lateral / Drain



Type	Dim.	M	Nm	P	
				mm	in
U2*	1/4'	PORT ISO 11926-1 - 7/16-20	17	12	0.47
U5	5/8'	PORT ISO 11926-1 - 7/8-14	70	17	0.67
U6	3/4'	PORT ISO 11926-1 - 1 1/16-12	90	19	0.75
U7	1'	PORT ISO 11926-1 - 1 5/16-12	160	20	0.79

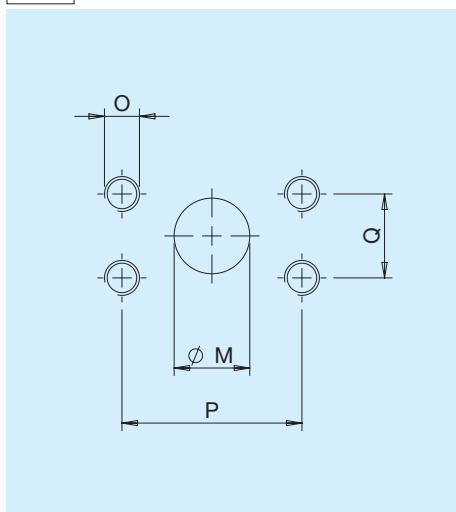
*Drain

C Rear



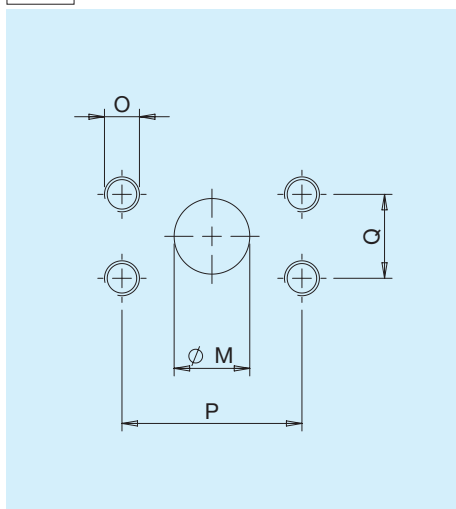
Type	Dim.	M	Nm	P	
				mm	in
C5	5/8'	PORT ISO 11926-1 - 7/8-14	70	17	0.67
C6	3/4'	PORT ISO 11926-1 - 1 1/16-12	90	19	0.75

N Lateral



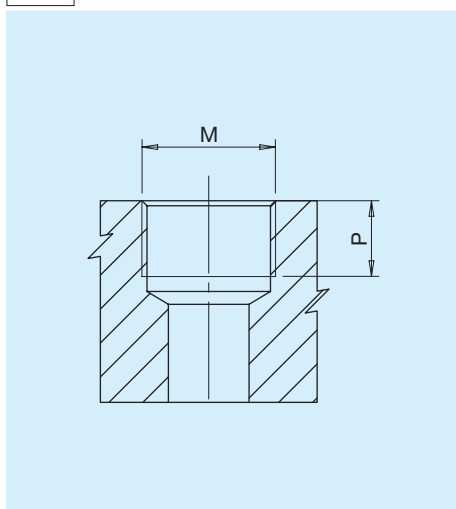
Type	Dim.	M		P		Q		O	Nm
		mm	in	mm	in	mm	in		
N4	1/2'	13	0.51	38.1	1.49	17.5	0.68	5/16-18 UNC-2B	17
N6	3/4'	20	0.79	47.6	1.87	22.2	0.87	3/8-16 UNC-2B	38
N7	1'	27	1.06	52.4	2.60	26.2	1.03	3/8-16 UNC-2B	38

F Lateral



Type	Dim.	M		P		Q		O	Nm
		mm	in	mm	in	mm	in		
F4	1/2'	13	0.51	38.1	1.49	17.5	0.68	M8	17
F6	3/4'	20	0.79	47.6	1.87	22.2	0.87	M10	38
F7	1'	25.4	1	52.4	2.60	26.2	1.03	M10	38

M Drain



Type	M		P	
	Nm		mm	in
M2*	PORT ISO 6149 - 1 - M14x1.5		12	0.47

*Drain

Combination of ports/flanges

Ports	Flanges	
	L	Q
E	•	
X	•	
G	•	•
T	•	•
U		•
C		•
N		•
F		•

Combination of round ports for one-way pumps/motors

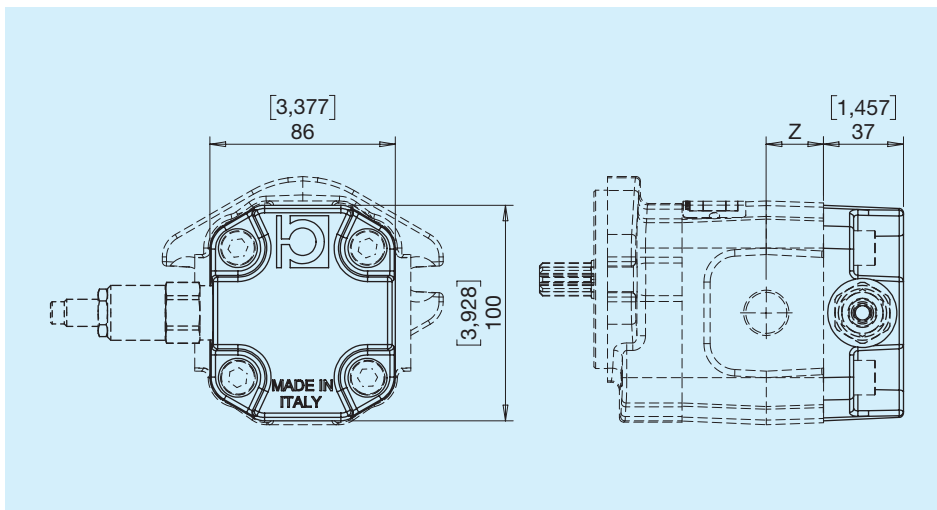
Ports	Round			
	5 6 8	11	14 17 20	26 31
	IN/OUT ports	IN/OUT ports	IN/OUT ports	IN/OUT ports
E	E3 E3	E3 E3	E5 E5	E7 E5
X	X5 X4	X6 X4	X6 X4	X8 X6
G	G4 G4	G4 G4	G6 G4	G7 G6
T	T4 T4	T4 T4	T6 T4	T6 T4
U	U6 U5	U6 U5	U6 U5	U7 U6
C	C5 C5	C5 C5	C6 C5	C6 C5
N	N4 N4	N4 N4	N6 N4	N7 N6
F	F4 F4	F4 F4	F6 F4	F7 F6

Combination of round ports for bidirectional pumps/motors

Ports	Round				
	5 6 8 11	14 17	20	26	
	IN/OUT ports	IN/OUT ports	IN/OUT ports	IN/OUT ports	Drain line
E	E3 E3	E5 E5	E5 E5	E5 E5	M2
X	X4 X4	X4 X4	X4 X4	X4 X4	M2
G	G4 G4	G4 G4	G6 G6	G6 G6	G2
T	T4 T4	T4 T4	T6 T6	T6 T6	G2
U	U5 U5	U5 U5	U5 U5	U6 U6	U2
C	C5 C5	C5 C5	C5 C5	C6 C6	U2
N	N4 N4	N6 N6	N6 N6	N6 N6	U2
F	F4 F4	F6 F6	F6 F6	F6 F6	M2

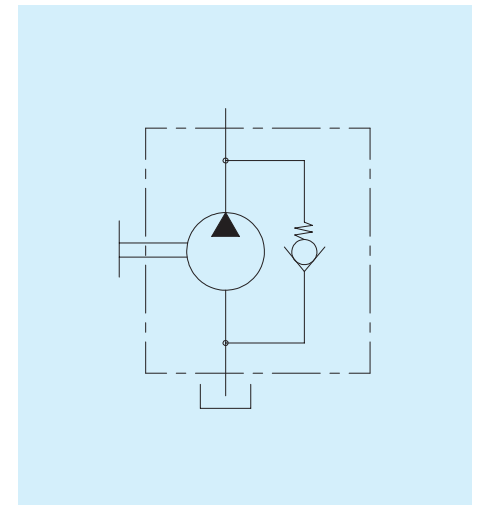
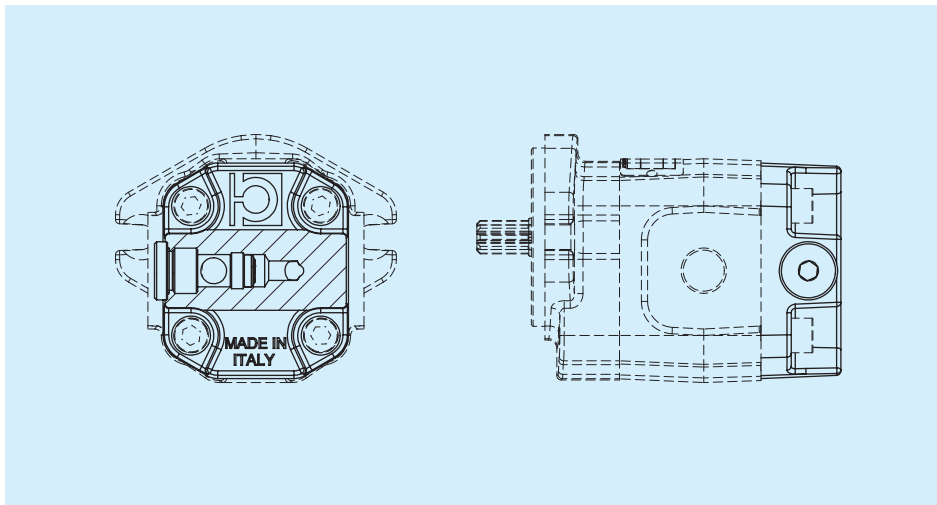
Other combinations of ports are available. For more information, please contact our technical sales department.

Pumps and motors with integrated valves

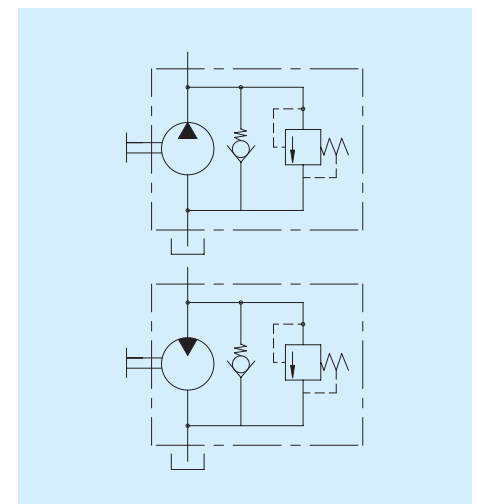
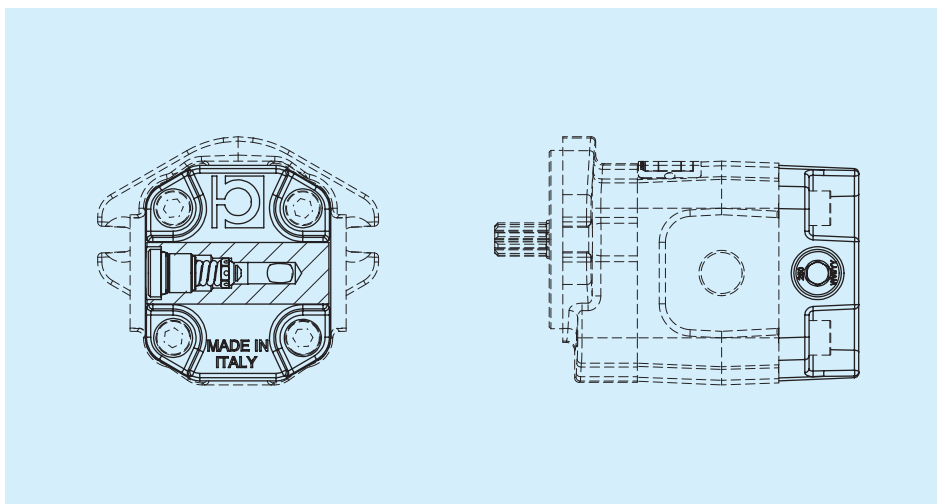


	Displacement		
	mm	in	20 ... 31
N6	19	0.75	49,50

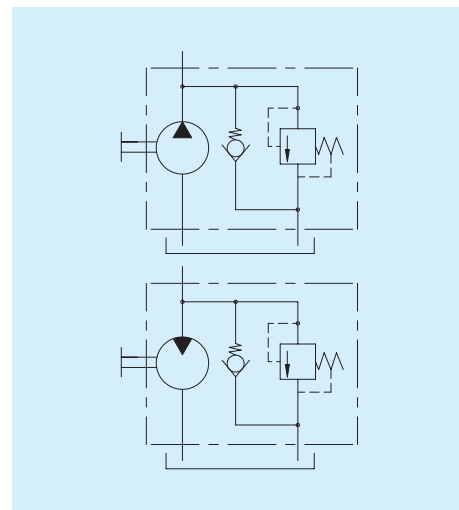
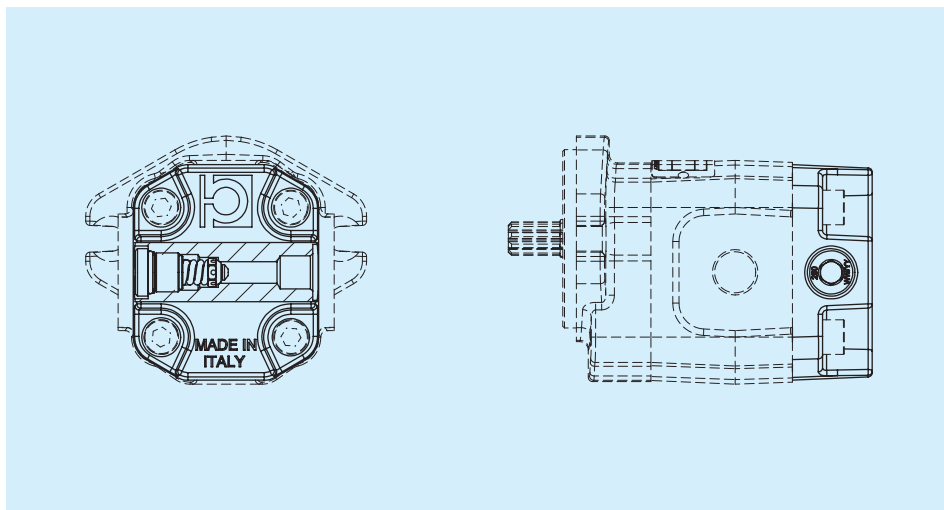
VA Check valve



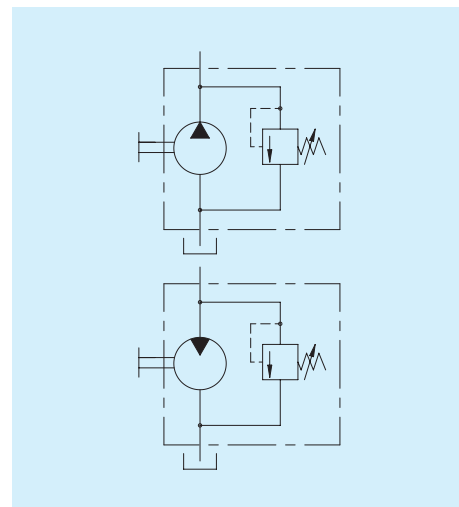
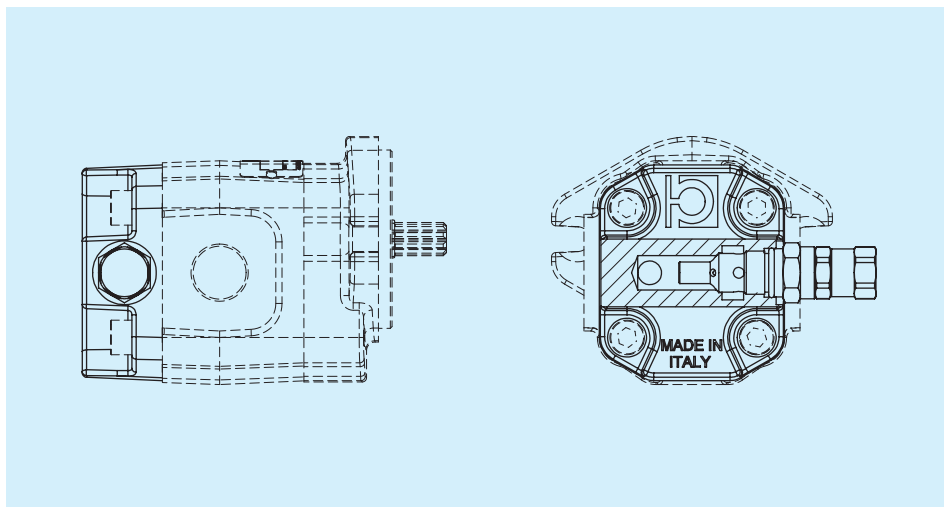
VB Fixed setting pressure relief valve with internal drain



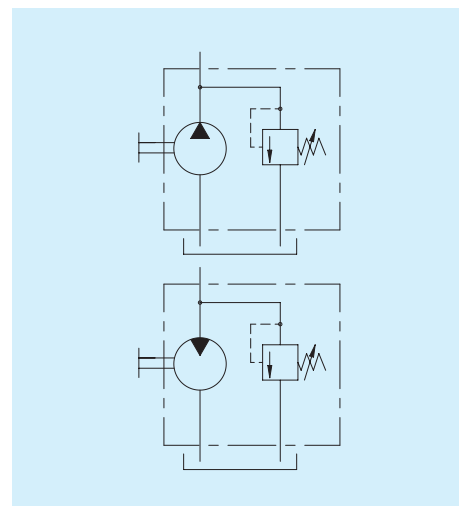
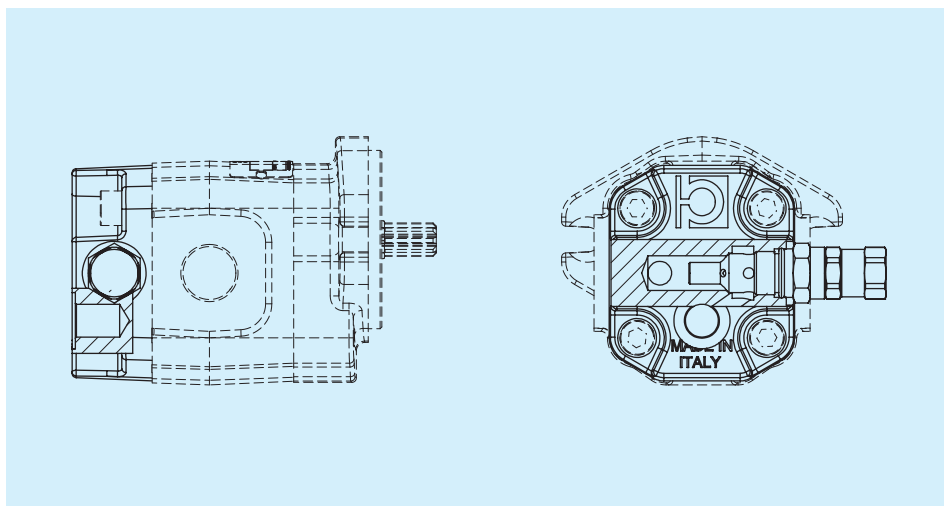
VC Fixed setting pressure relief valve with external drain



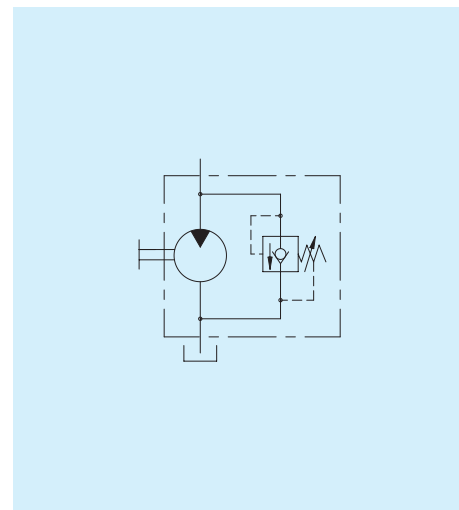
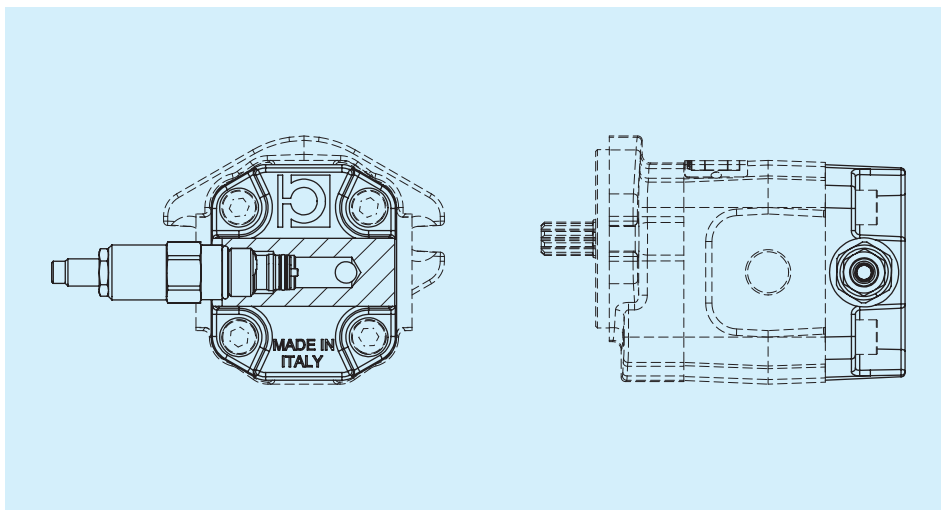
VD Adjustable pressure relief valve with internal drain



VE Adjustable pressure relief valve with external drain



VT Adjustable max. pressure valve with internal drain with anti-cavitation

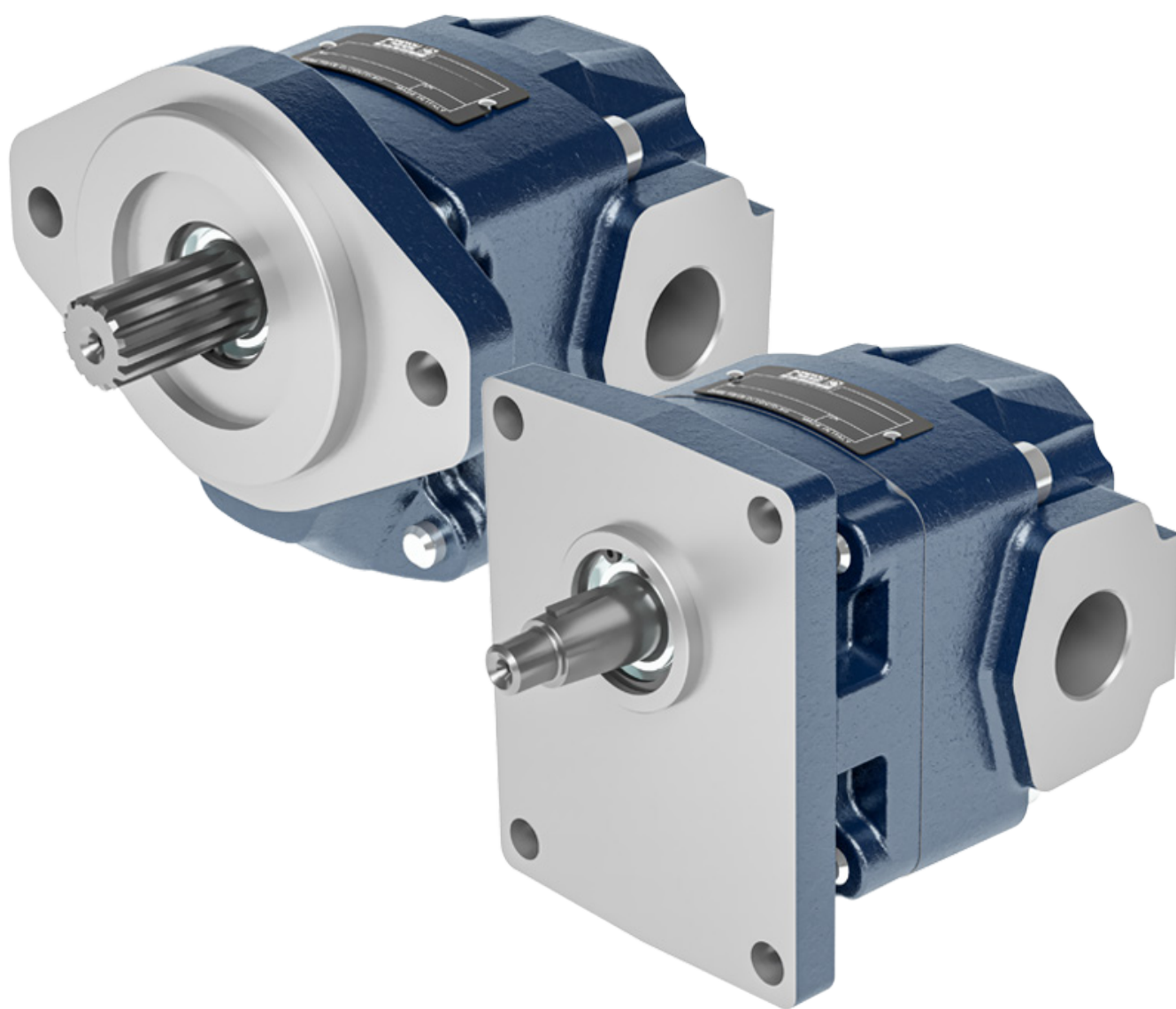


For more information, please contact the technical sales department

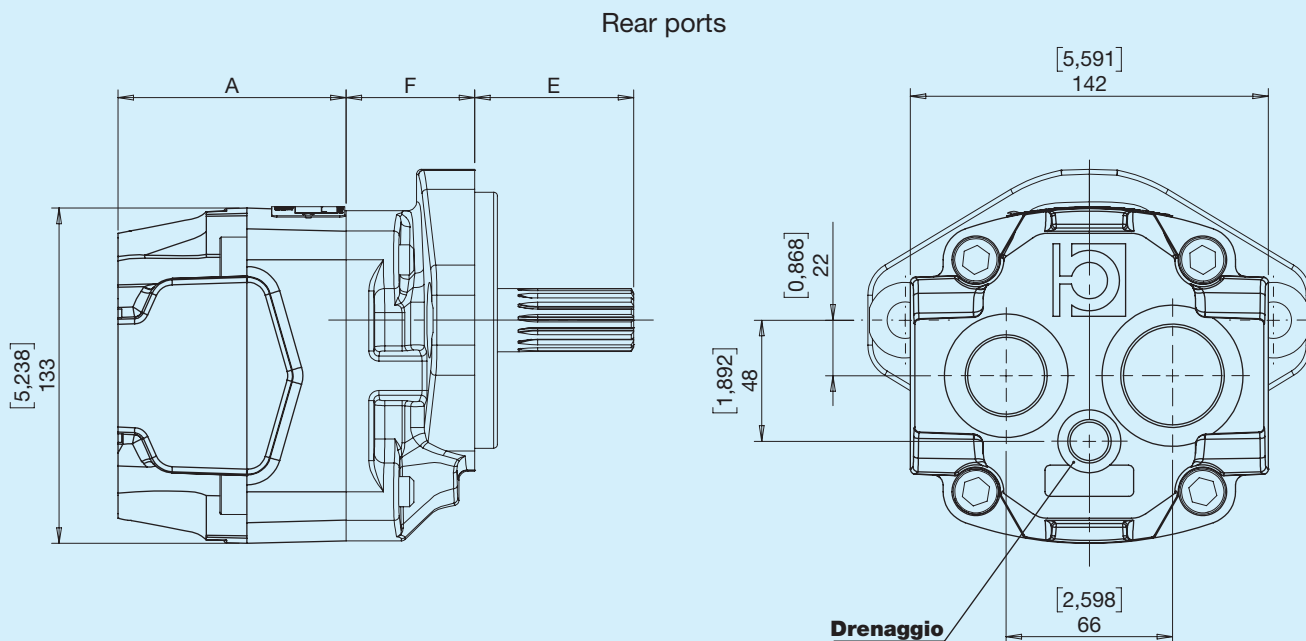
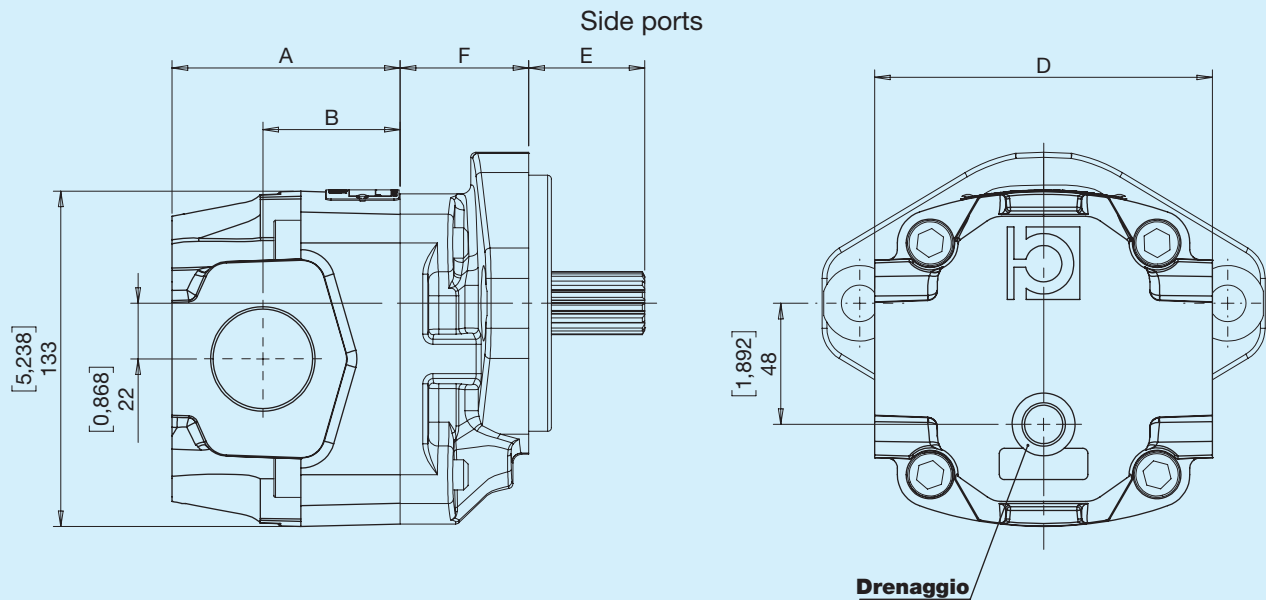
For pressure relief valves, please indicate the setting

1 2 3			4 5		6	7 8		9 10		11 12		13	14 15					
HPG																		
1 2 3			Series															
			PA2 Gear pump Group 2						MA2 Gear motor Group 2									
4 5			Displacement															
			05				11				20							
			06				14				26							
			08				17				31							
6			Direction of rotation															
			S Anti-clockwise/left				D Clockwise/right				B Bidirectional rear external drainage							
7 8			Front flanges - Shafts															
			LL European in cast iron - Tapered (1:8)				LU European in cast iron - Splined DIN 5482				QV SAE A 2 cast iron holes - Splined SAE A 9T							
			LN European in cast iron - European round D15				QP SAE A 2 cast iron holes - Round SAE A				QX SAE A 2 cast iron holes - Splined SAE B 11T							
9 10			IN - Inlet ports															
			... See tables on pages 11 and 12															
11 12			OUT - Output ports															
			... See tables on pages 11 and 12															
13			Seals															
			B NBR Pump				R NBR Motor / Bid. pump High pressure pump				V Viton Pump				W Viton Motor / Bid. pump High pressure pump			
14 15			Covers															
			ST Standard closed body				VB Fixed setting pressure relief valve with internal drain				VD Adjustable pressure relief valve with internal drain				VT Adjustable max. pressure valve with internal drain with anti-cavitation			
			VA Check valve				VC Fixed setting pressure relief valve with external drain				VE Adjustable pressure relief valve with external drain							

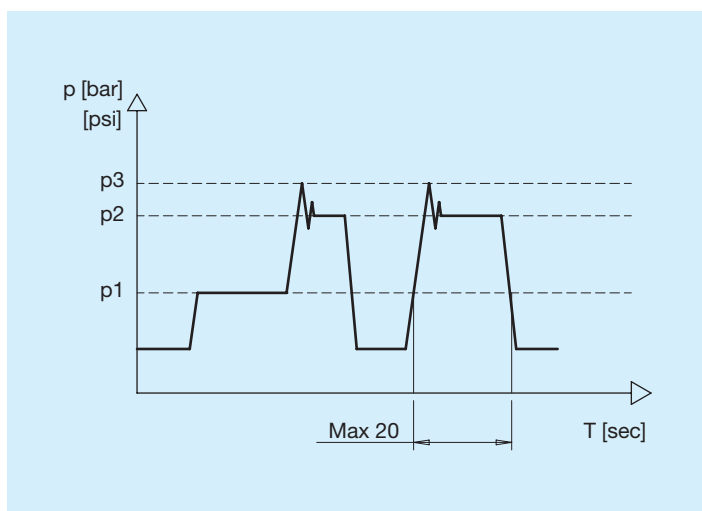
HPG Series Group 3



Before use, carefully read the GENERAL INSTRUCTIONS FOR USE OF GEAR PUMPS AND MOTORS.



Pressure definition



p1	Continuous pressure
A,B - Use	Intermittent pressure Maximum pressure permitted for short periods (max. 20 sec)
L1, L2 - Drain port	Peak pressure Maximum permitted pressure intended as peak pressure of V_{max}

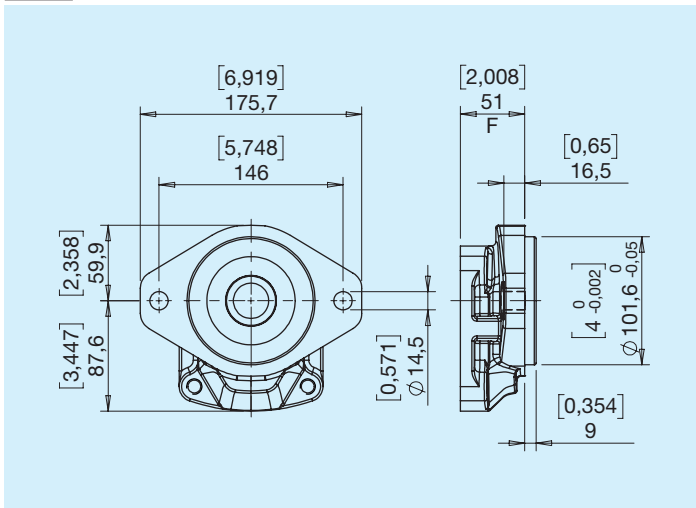
Pump dimensions and technical data

HPGPA3	Nominal displacement		Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight		A		B		D	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs	mm	in	mm	in	mm	in
22	21.50	1.31	280	4061	300	4351	310	4496	3000	500	12.00	26.46	76.0	2.99	40.0	1.57	134	5.28
26	26.00	1.59	280	4061	300	4351	310	4496	3000	500	12.25	27.00	79.0	3.11	43.0	1.69	134	5.28
31	30.50	1.86	260	3771	280	4061	300	4351	3000	500	12.50	21.56	82.0	3.23	46.0	1.81	134	5.28
36	36.00	2.20	260	3771	280	4061	300	4351	3000	500	12.80	28.22	86.0	3.39	50.0	1.97	134	5.28
41	41.50	2.53	260	3771	270	3916	280	4061	3000	500	13.20	29.10	90.5	3.56	54.5	2.15	134	5.28
47	46.50	2.84	250	3626	270	3916	280	4061	3000	500	13.50	29.76	93.5	3.68	57.5	2.26	134	5.28
51	50.50	3.08	240	3481	250	3626	270	3916	2750	500	13.90	30.64	96.5	3.80	60.5	2.38	134	5.28
56	55.50	3.39	220	3191	230	3336	250	3626	2750	500	14.30	31.52	100.0	3.94	64.0	2.52	134	5.28
61	61.00	3.72	200	2901	210	3046	220	3191	2500	500	14.50	31.97	117.5	4.63	64.5	2.54	148	5.83
73	72.00	4.39	190	2756	210	3046	220	3191	2500	500	16.50	36.38	125.0	4.92	72.0	2.83	148	5.83
90	88.00	5.37	180	2611	190	2756	200	2901	2500	500	17.20	37.92	136.0	5.35	83.0	3.27	148	5.83

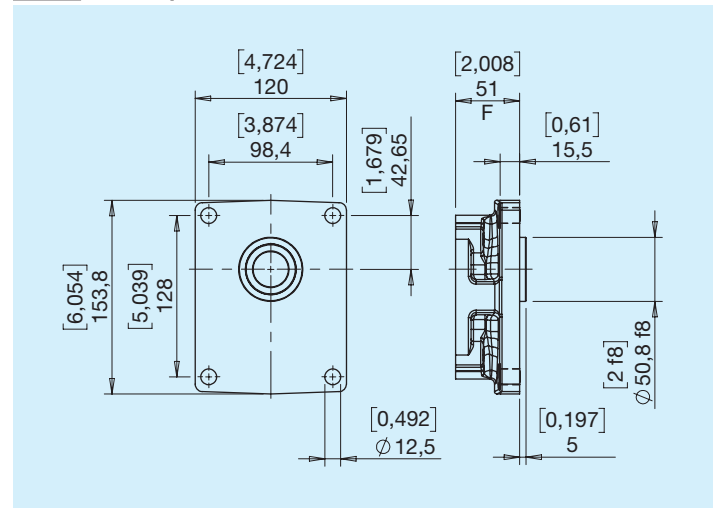
Motor dimensions and technical data

HPGMA3	Nominal displacement		Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight		A		B		D	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs	mm	in	mm	in	mm	in
22	21.50	1.31	280	4061	300	4351	310	4496	3000	500	12.00	26.46	76.0	2.99	40.0	1.57	134	5.28
26	26.00	1.59	280	4061	300	4351	310	4496	3000	500	12.25	27.00	79.0	3.11	43.0	1.69	134	5.28
31	30.50	1.86	260	3771	280	4061	300	4351	3000	500	12.50	21.56	82.0	3.23	46.0	1.81	134	5.28
36	36.00	2.20	260	3771	280	4061	300	4351	3000	500	12.80	28.22	86.0	3.39	50.0	1.97	134	5.28
41	41.50	2.53	260	3771	270	3916	280	4061	3000	500	13.20	29.10	90.5	3.56	54.5	2.15	134	5.28
47	46.50	2.84	250	3626	270	3916	280	4061	3000	500	13.50	29.76	93.5	3.68	57.5	2.26	134	5.28
51	50.50	3.08	240	3481	250	3626	270	3916	2750	500	13.90	30.64	96.5	3.80	60.5	2.38	134	5.28
56	55.50	3.39	220	3191	230	3336	250	3626	2750	500	14.30	31.52	100.0	3.94	64.0	2.52	134	5.28
61	61.00	3.72	200	2901	210	3046	220	3191	2500	500	14.50	31.97	117.5	4.63	64.5	2.54	148	5.83
73	72.00	4.39	190	2756	210	3046	220	3191	2500	500	16.50	36.38	125.0	4.92	72.0	2.83	148	5.83

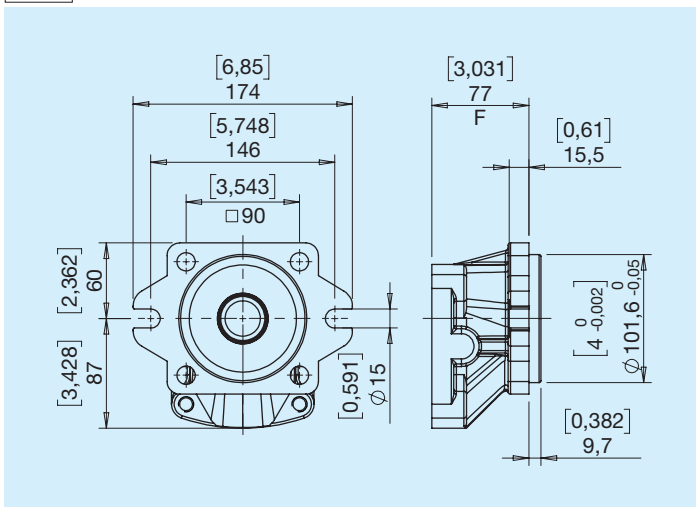
2 SAE B 2 holes



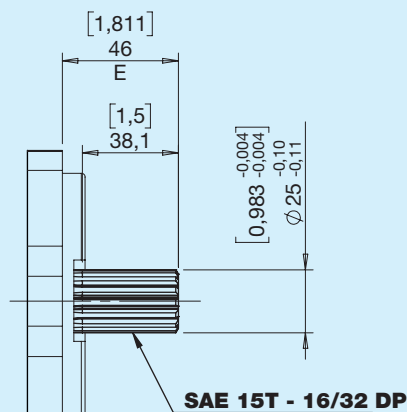
3 European D50.8



4 SAE B 2+4 holes

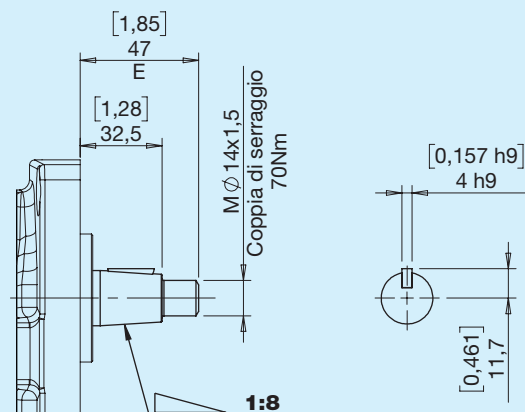


1 Splined SAE BB 15T



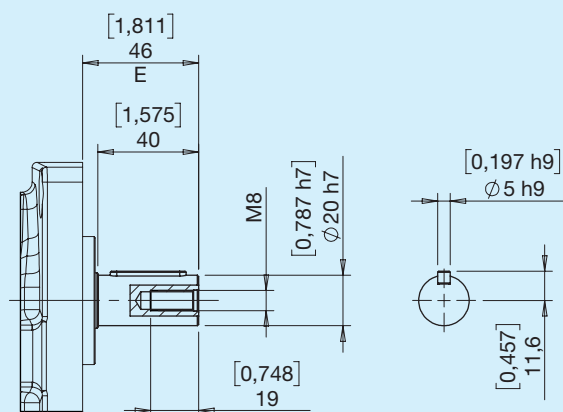
Max. torque 460 Nm

2 Tapered (1:8)



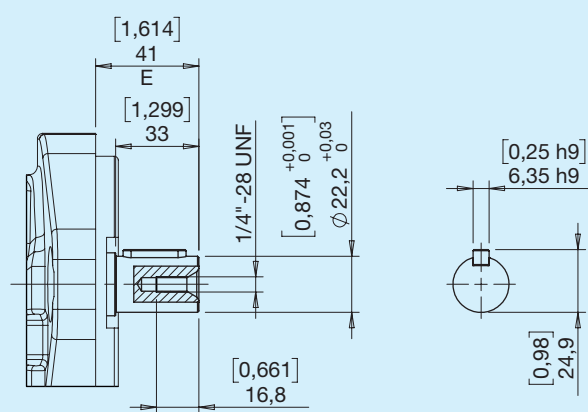
Max. torque 240 Nm

4 European round



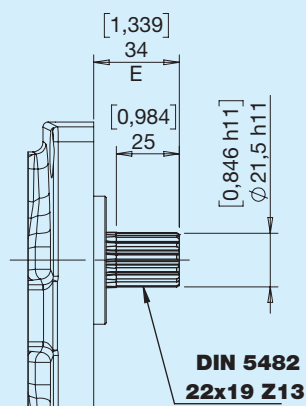
Max. torque 190 Nm

6 Round SAE B



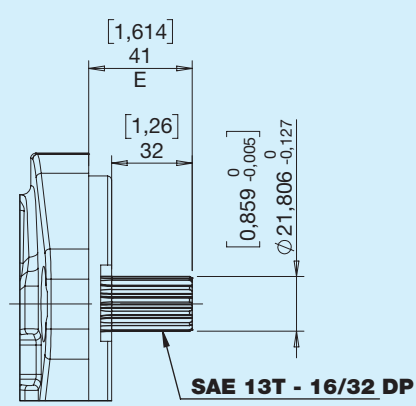
Max. torque 210 Nm

7 Splined DIN 5482



Max. torque 250 Nm

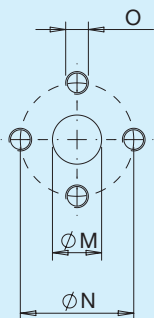
9 Splined SAE B 13T



Max. torque 310 Nm

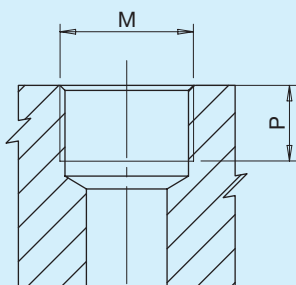
Shafts	Flanges		
	2	3	4
1	•		•
2		•	
4		•	
6	•		•
7		•	
9	•		•

E Lateral



Type	M		N		O	
	mm	in	mm	mm		Nm
E5	20	0.79	40	1.57	M8	17
E7	27	1.06	51	2.01	M10	38
E8	34	1.34	62	2.44	M10	38
E9	34	1.34	62	2.44	M12	70

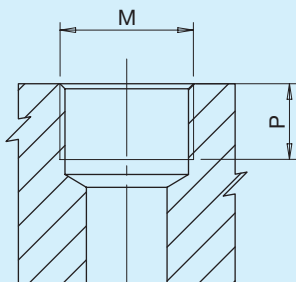
G Lateral / Drain



Type	M	Nm	P	
			mm	in
G3*	PORT ISO 1179-1-G 3/8	38	12	0.47
G6	PORT ISO 1179-1-G3/4	90	20	0.79
G7	PORT ISO 1179-1-G 1	160	21	0.83
G8	PORT ISO 1179-1-G 1 1/4	200	21	0.83
G9	PORT ISO 1179-1-G 1 1/2	210	25	0.98
G0	PORT ISO 1179-1-G 2	210	32	1.26

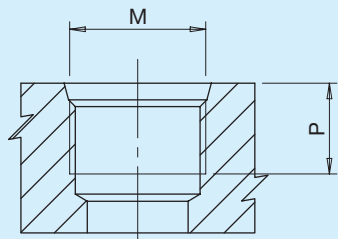
*Drain

T Rear



Type	M	Nm	P	
			mm	in
T6	PORT ISO 1179-1-G3/4	90	19	0.75
T7	PORT ISO 1179-1-G 1	160	21	0.83
T8	PORT ISO 1179-1-G 1 1/4	200	24	0.94

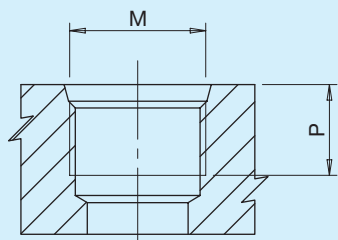
U Lateral / Drain



Type	Dim.	M	Nm	P	
				mm	in
U3*	3/8'	PORT ISO 11926-1 - 9/16-18	25	13	0.51
U6	3/4'	PORT ISO 11926-1 - 1 1/16-12	90	20	0.79
U7	1'	PORT ISO 11926-1 - 1 5/16-12	160	20	0.79
U8	1 1/4'	PORT ISO 11926-1 - 1 5/8-12	200	20	0.79
U9	1 1/2'	PORT ISO 11926-1 - 1 7/8-12	200	20	0.79

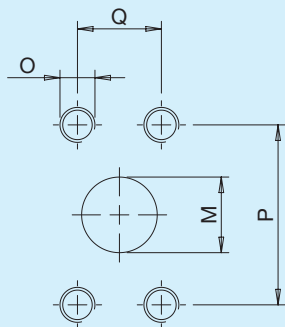
*Drain

C Rear



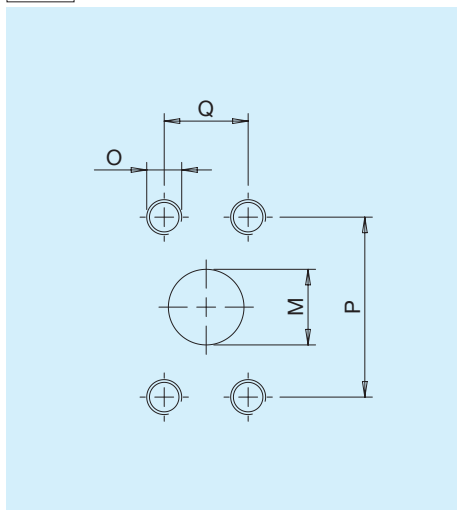
Type	Dim.	M	Nm	P	
				mm	in
C6	3/4'	PORT ISO 11926-1 - 1 1/16-12	90	20	0.79
C7	1'	PORT ISO 11926-1 - 1 5/16-12	160	20	0.79
C8	1 1/4'	PORT ISO 11926-1 - 1 5/8-12	200	20	0.79

N Lateral



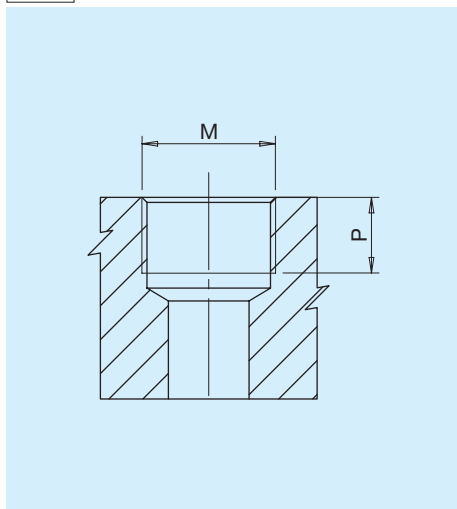
Type	Dim.	M		P		Q		O	Nm
		mm	in	mm	in	mm	in		
N6	3/4'	20	0.79	47.6	1.87	22.2	0.87	3/8-16 UNC-2B	38
N7	1'	27	1.06	52.4	2.60	26.2	1.03	3/8-16 UNC-2B	38
N8	1 1/4'	34	1.34	58.7	2.31	30.2	1.19	7/16-14 UNC-2B	45
N9	1 1/2'	39	1.54	69.9	2.74	35.7	1.41	1/2-13 UNC-2B	70
N0	2'	51	2.00	77.8	3.06	42.9	1.69	1/2-13 UNC-2B	70

F Lateral



Type	Dim.	M		P		Q		O	Nm
		mm	in	mm	in	mm	in		
F6	3/4'	20	0.79	47.6	1.87	22.2	0.87	M10	38
F7	1'	25.4	1	52.4	2.60	26.2	1.03	M10	38
F8	1 1/4'	30.5	1.2	58.7	2.31	30.2	1.19	M10	38
F9	1 1/2'	39	1.54	69.9	2.75	35.7	1.41	M12	70
F0	2'	51	2.01	77.8	3.06	42.9	1.69	M12	70

M Drain



Type	M	Nm	P	
			mm	in
M3*	PORT ISO 6149 - 1 - M16x1.5	35	14	0.55

*Drain

Combination of ports/flanges

Ports	Flanges		
	2	3	4
E		•	
G	•	•	•
T	•	•	•
U	•		•
C	•		•
N	•		•
F	•		•

Combination of round ports for one-way pumps/motors

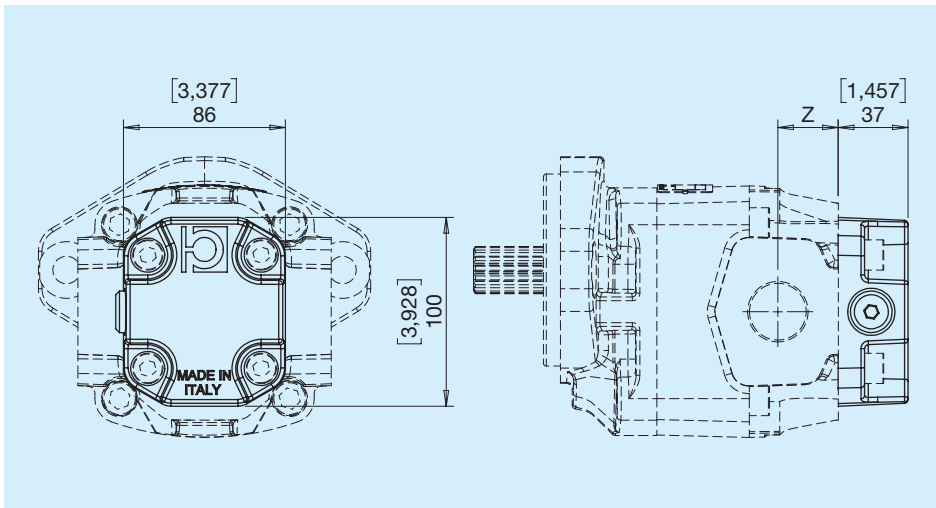
Ports	Round			
	22 26 31 36	41 47 51 56	61 73	90
	IN/OUT ports	IN/OUT ports	IN/OUT ports	IN/OUT ports
E	E7 E5	E7 E7	E8 E7	E9 E8
G	G7 G6	G8 G7	G9 G8	G0 G9
T	T7 T6	T8 T7	-	-
U	U7 U6	U8 U7	U9 U8	U9 U8
C	C7 C6	C8 C7	-	-
N	N7 N6	N8 N7	N9 N8	N0 N9
F	F7 F6	F8 F7	F9 F8	F0 F9

Combination of round ports for bidirectional pumps/motors

Ports	Round			
	22 26 31	36 41 47 51 56 61	73	
	IN/OUT ports	IN/OUT ports	IN/OUT ports	Drain line
E	E5 E5	E7 E7	E8 E8	M3
G	G6 G6	G7 G7	G8 G8	G3
T	T6 T6	-	-	G3
U	U6 U6	U7 U7	U8 U8	U3
N	N6 N6	N7 N7	N8 N8	U3
C	C6 C6			U3
F	F6 F6	F7 F7	F8 F8	U3

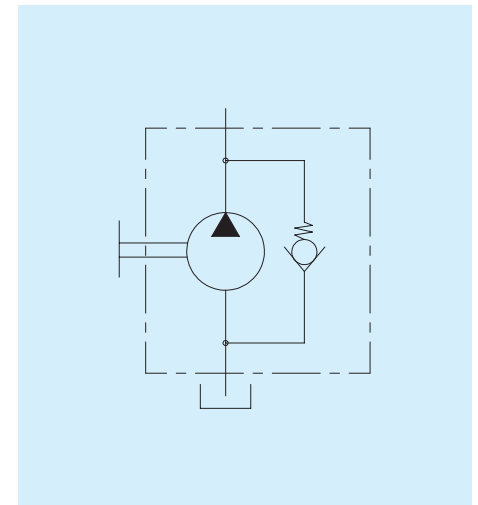
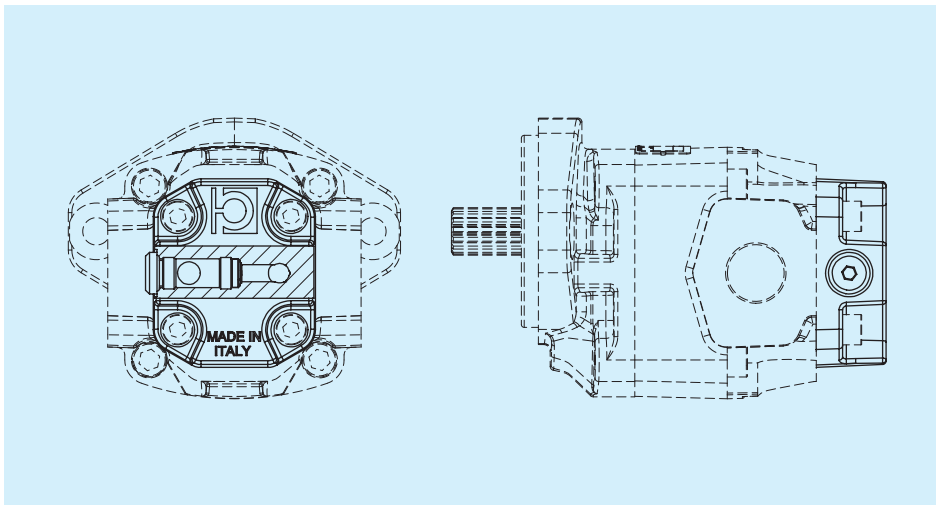
Other combinations of ports are available. For more information, please contact our technical sales department.

Pumps and motors with integrated valves

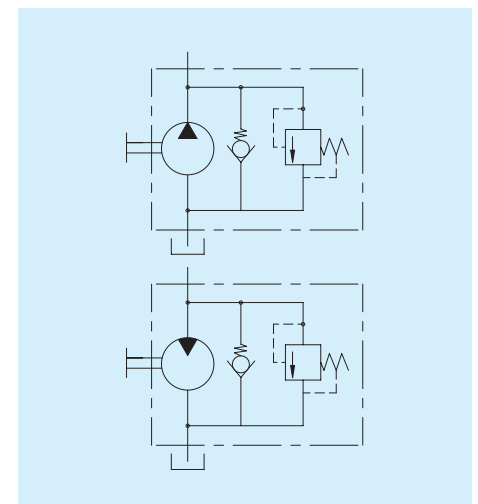
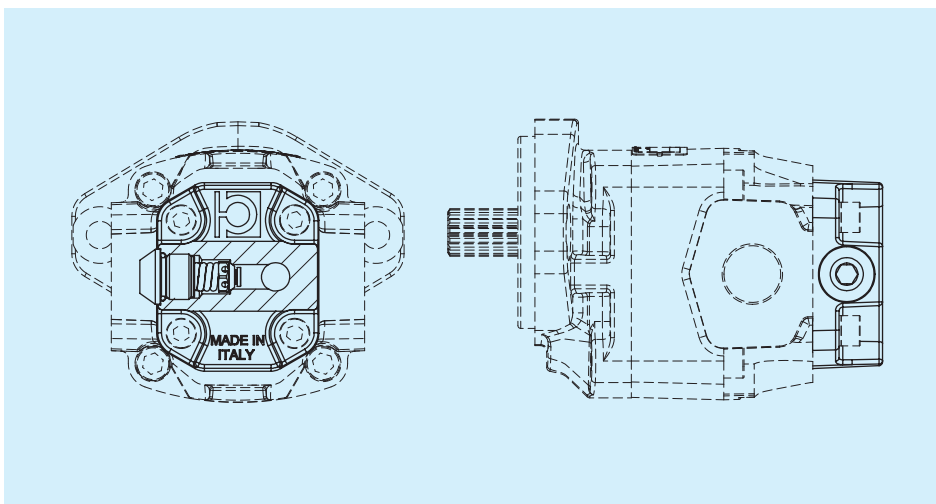


	Displacement	
	mm	in
N6	19	0.75

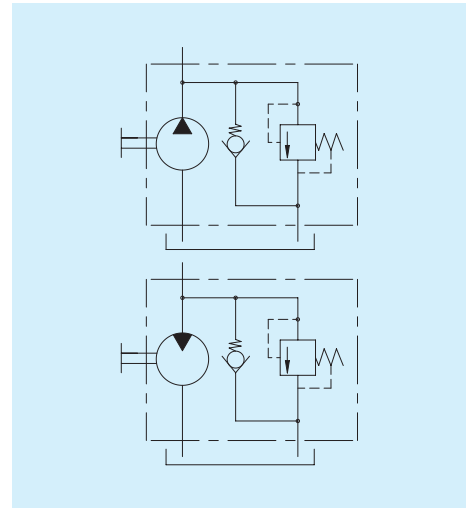
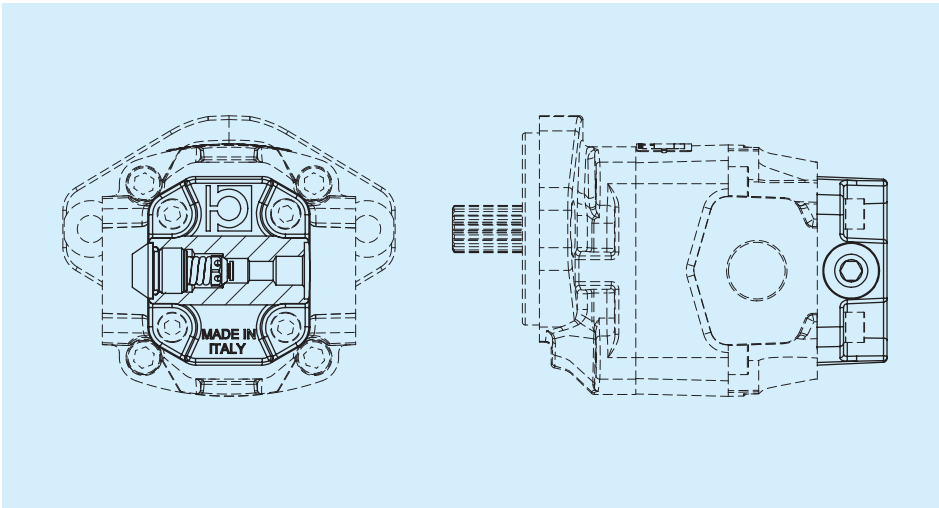
VA Check valve



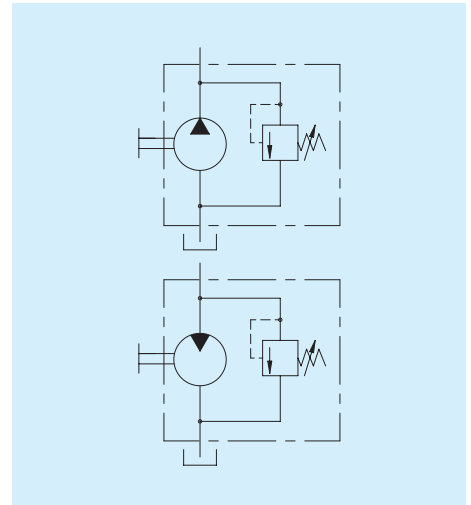
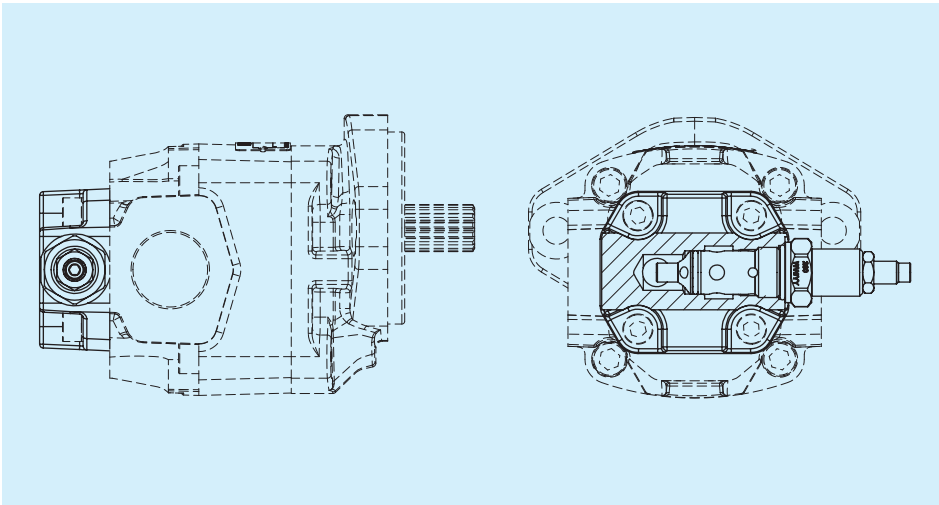
VB Fixed setting pressure relief valve with internal drain



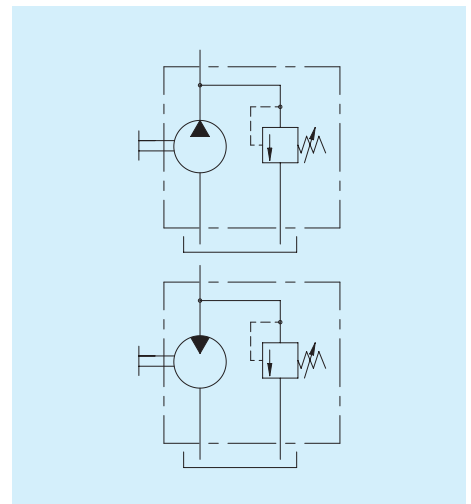
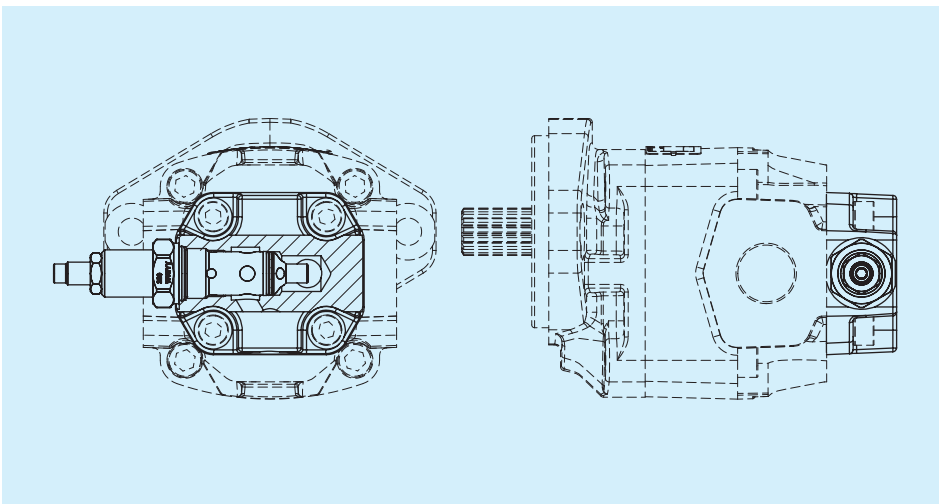
VC Fixed setting pressure relief valve with external drain



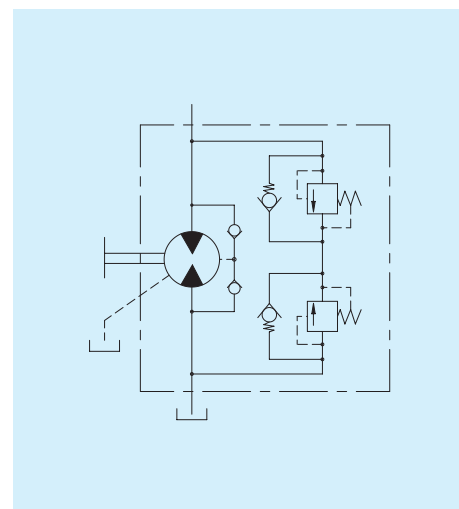
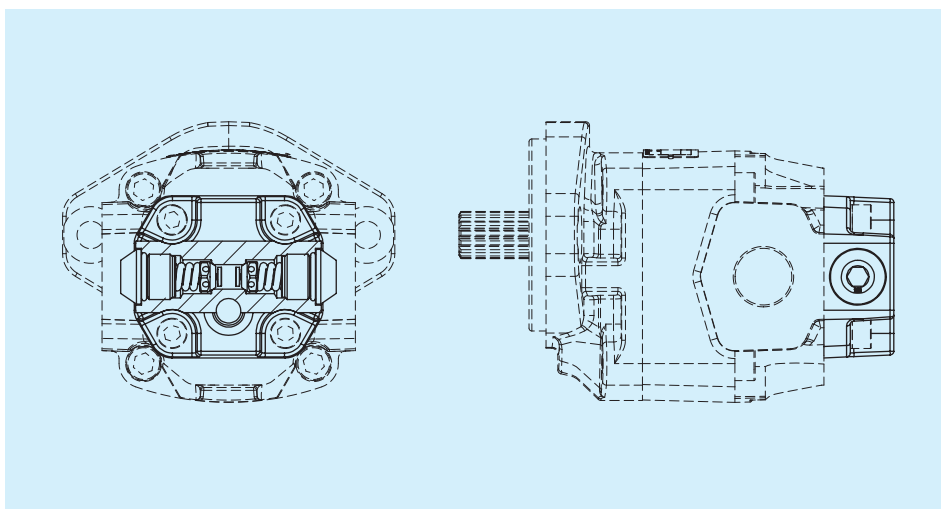
VD Adjustable pressure relief valve with internal drain



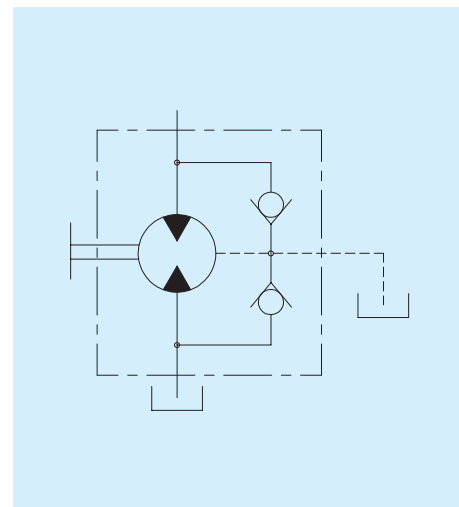
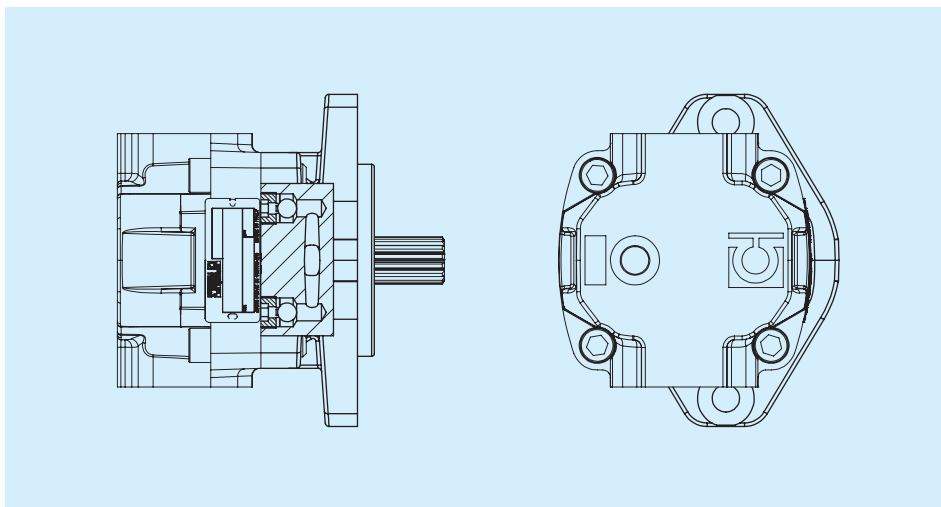
VE Adjustable pressure relief valve with external drain



VV Double fixed setting max. pressure valve with internal drain and anti-cavitation check valve with external drain



VW Double anti-cavitation check valve with external drain

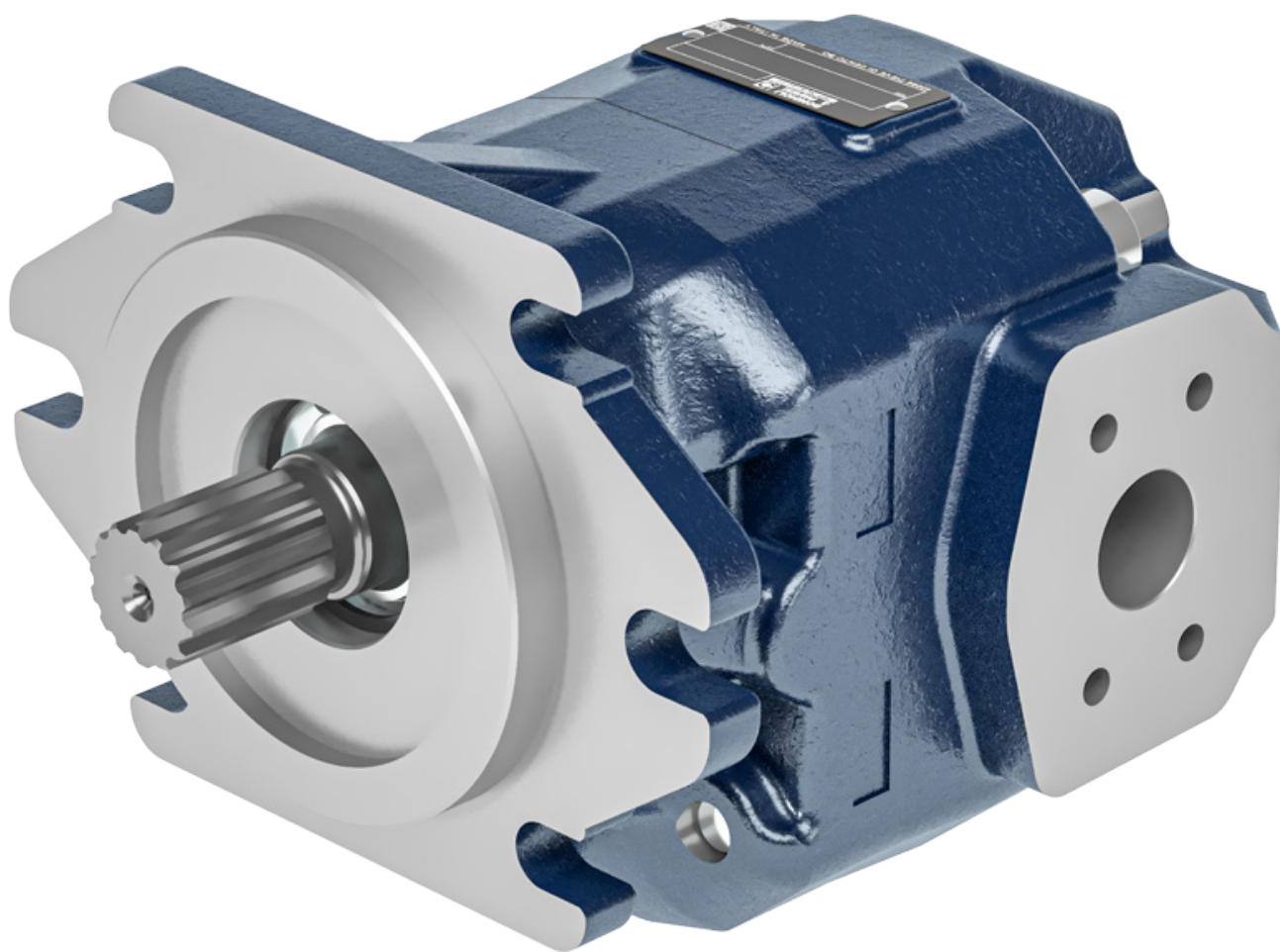


For more information, please contact the technical sales department

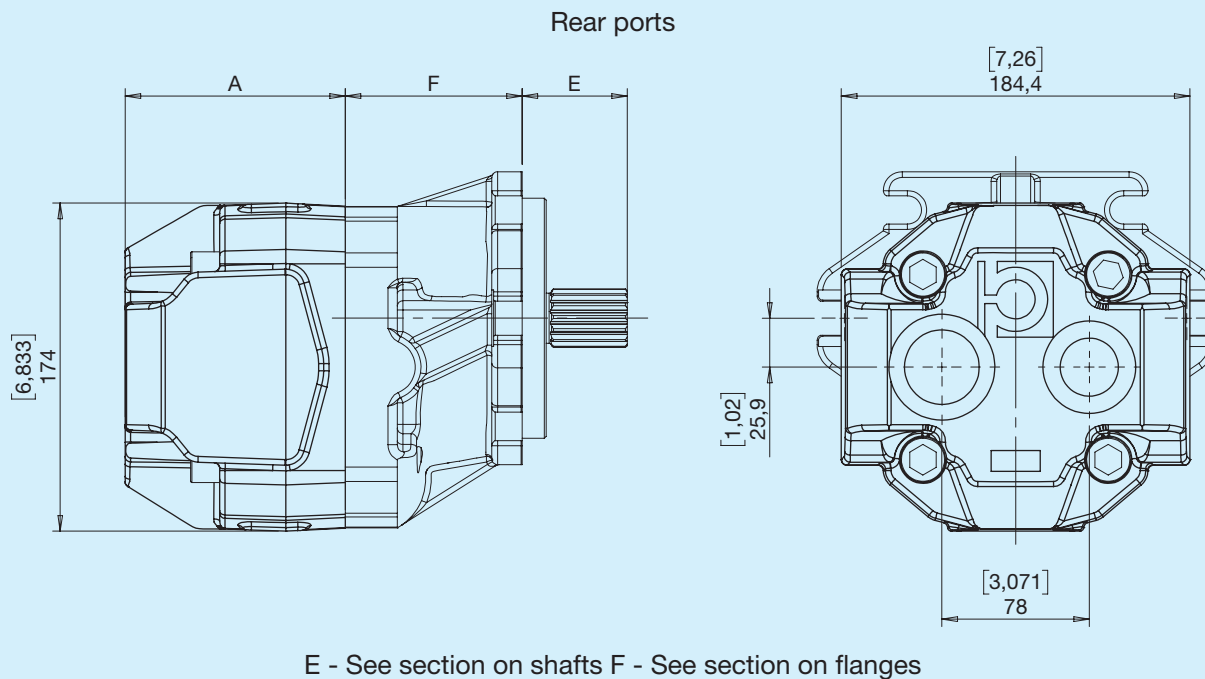
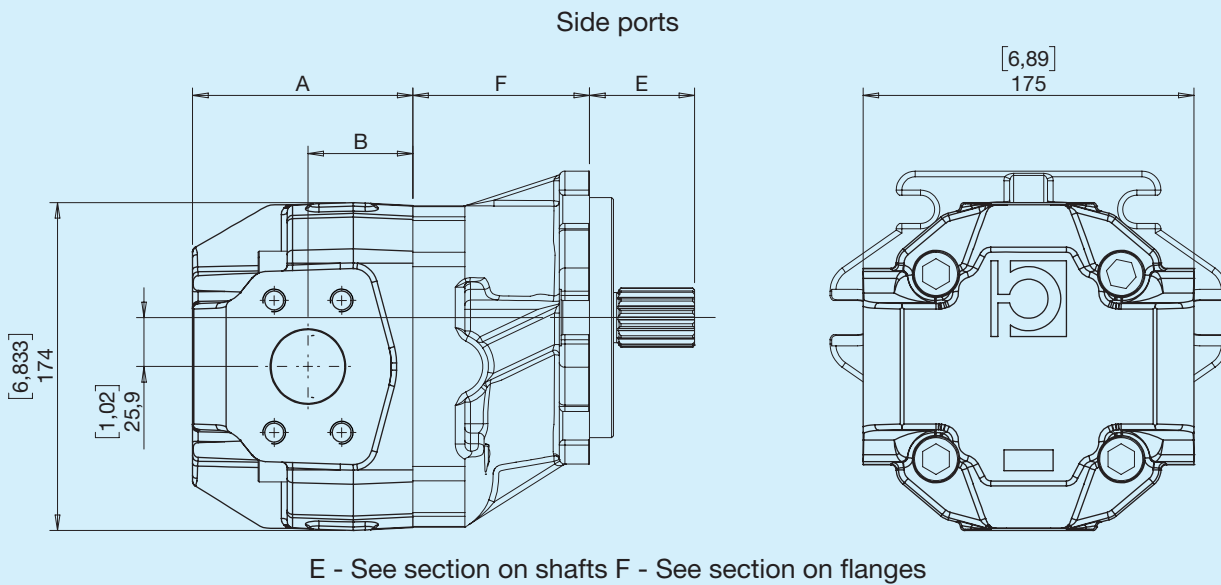
For pressure relief valves, please indicate the setting

1 2 3			4 5		6	7 8		9 10		11 12		13	14 15					
HPG																		
1 2 3			Series															
			PA3 Gear pump Group 3						MA3 Gear motor Group 3									
4 5			Displacement															
			22				36				51				73			
			26				41				56				90			
			31				47				61							
6			Direction of rotation															
			S Anti-clockwise/left				D Clockwise/right				H Bidirectional internal drainage				B Bidirectional rear external drainage			
7 8			Front flanges - Shafts															
			21 SAE B 2 holes - Splined SAE BB 15T				32 European D50.8 - Tapered (1:8)				41 SAE B 2+4 holes - Splined SAE BB 15T							
			26 SAE B 2 holes - Round SAE B				34 European D50.8 - European round				46 SAE B 2+4 holes - Round SAE B							
			29 SAE B 2 holes - Splined SAE B 13T				37 European D50.8 - Splined DIN 5482				46 SAE B 2+4 holes - Splined SAE B 13T							
9 10			IN - Inlet ports															
			... See tables on pages 11 and 12															
11 12			OUT - Output ports															
			... See tables on pages 11 and 12															
13			Seals															
			B NBR Pump				R NBR Motor / Bid. pump High pressure pump				V Viton Pump				W Viton Motor / Bid. pump High pressure pump			
14 15			Covers															
			ST Standard closed body				VB Fixed setting pressure relief valve with internal drain				VD Adjustable pressure relief valve with internal drain				VV Double valve max. pressure fixed setting with internal drain and anti-cavitation valve with external drain			
			VA Check valve				VC Fixed setting pressure relief valve with external drain				VE Adjustable pressure relief valve with external drain				VW Double anti-cavitation check valve with external drain			

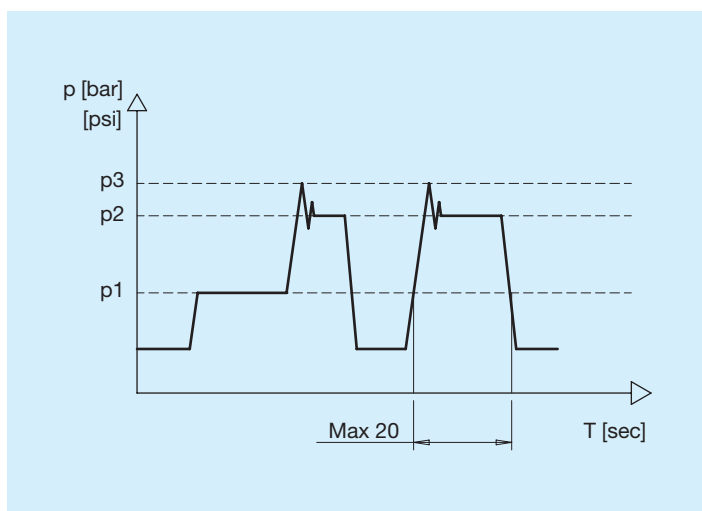
HPG Series Group 4



Before use, carefully read the GENERAL INSTRUCTIONS FOR USE OF GEAR PUMPS AND MOTORS.



Pressure definition



p1	Continuous pressure
A,B - Use	Intermittent pressure Maximum pressure permitted for short periods (max. 20 sec)
L1, L2 - Drain port	Peak pressure Maximum permitted pressure intended as peak pressure of Vmax

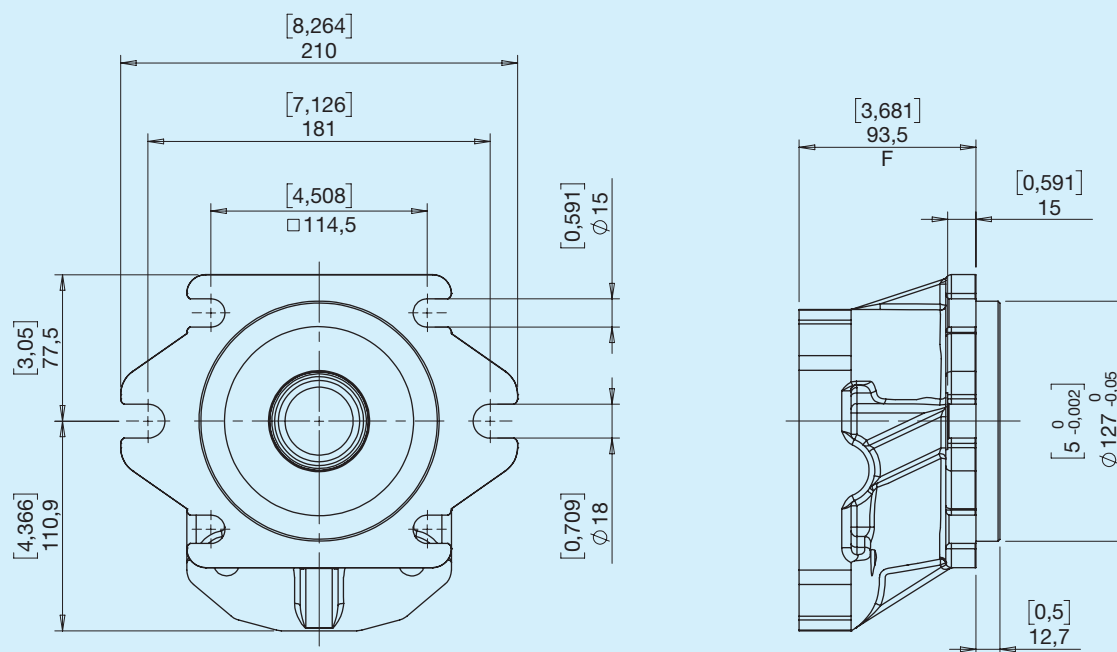
Pump dimensions and technical data

HPGPA4	Nominal displacement		Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight		A		B	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs	mm	in	mm	in
50	50.00	3.05	270	3916	280	4061	310	4496	3000	500	28.0	61.73	109.5	4.31	48.5	1.91
63	63.00	3.84	270	3916	280	4061	310	4496	3000	500	28.9	63.71	116.5	4.59	55.5	2.19
71	71.00	4.33	250	3626	280	4061	300	4351	3000	500	29.7	65.48	122.0	4.80	61.0	2.40
80	80.50	4.88	230	3336	280	4061	300	4351	3000	500	30.4	67.02	127.5	5.02	66.5	2.62
90	90.50	5.49	210	3046	260	3771	280	4061	2700	500	31.3	69.00	133.5	5.26	72.5	2.85

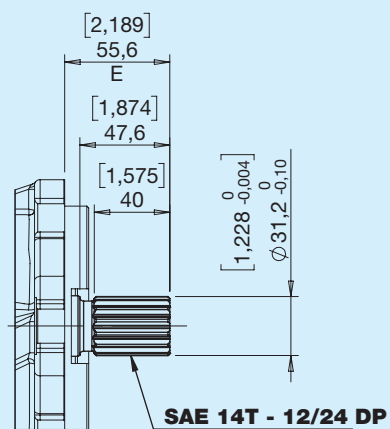
Motor dimensions and technical data

HPGMA4	Nominal displacement		Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight		A		B	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs	mm	in	mm	in
50	50.00	3.05	270	3916	280	4061	310	4496	3000	500	28.0	61.73	109.5	4.31	48.5	1.91
63	63.00	3.84	270	3916	280	4061	310	4496	3000	500	28.9	63.71	116.5	4.59	55.5	2.19
71	71.00	4.33	250	3626	280	4061	300	4351	3000	500	29.7	65.48	122.0	4.80	61.0	2.40
80	80.50	4.88	230	3336	280	4061	300	4351	3000	500	30.4	67.02	127.5	5.02	66.5	2.62
90	90.50	5.49	210	3046	260	3771	280	4061	2700	500	31.3	69.00	133.5	5.26	72.5	2.85

5 SAE C 2+4 holes



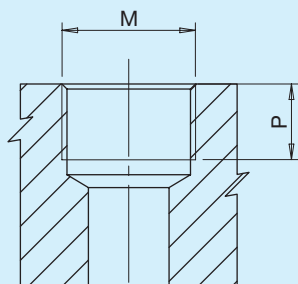
S Splined SAE C 14T



Max. torque 900 Nm

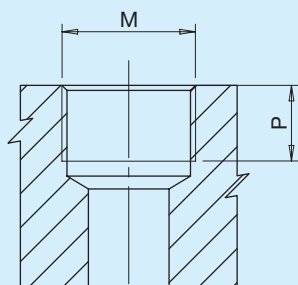
Shafts	Flanges
	5
S	•

G Lateral



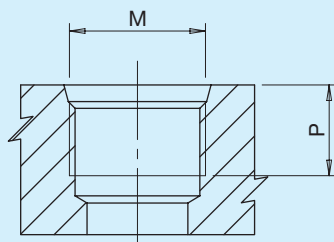
Type	M	Nm	P	
			mm	in
G8	PORT ISO 1179-1-G 1 1/4	200	21	0.83
G9	PORT ISO 1179-1-G 1 1/2	210	25	0.98
G0	PORT ISO 1179-1-G 2	210	32	1.26

T Rear



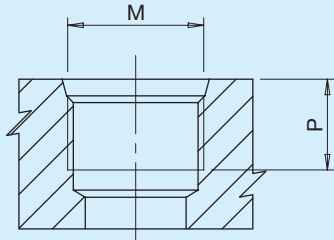
Type	M	Nm	P	
			mm	in
T7	PORT ISO 1179-1-G 1	160	21	0.83
T8	PORT ISO 1179-1-G 1 1/4	200	21	0.83

U Lateral



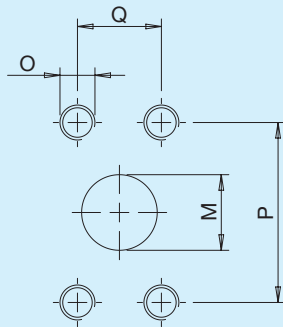
Type	Dim.	M	Nm	P	
				mm	in
U7	1'	PORT ISO 11926-1 - 1 5/16-12	160	20	0.79
U8	1 1/4'	PORT ISO 11926-1 - 1 5/8-12	200	20	0.79
U9	1 1/2'	PORT ISO 11926-1 - 1 7/8-12	200	20	0.79

C Rear



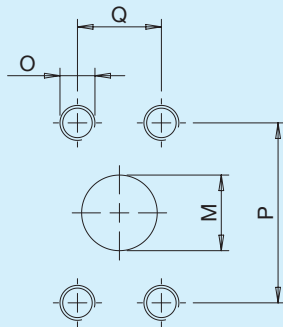
Type	Dim.	M	P		
			Nm	mm	in
C7	1'	PORT ISO 11926-1 - 1 5/16-12	160	20	0.79
C8	1 1/4'	PORT ISO 11926-1 - 1 5/8-12	200	20	0.79

N Lateral



Type	Dim.	M		P		Q		O	Nm
		mm	in	mm	in	mm	in		
N8	1 1/4'	34	1.34	58.7	2.31	30.2	1.19	7/16-14 UNC-2B	45
N9	1 1/2'	39	1.54	69.9	2.74	35.7	1.41	1/2-13 UNC-2B	70
N0	2'	51	2.00	77.8	3.06	42.9	1.69	1/2-13 UNC-2B	70

F Lateral



Type	Dim.	M		P		Q		O	Nm
		mm	in	mm	in	mm	in		
F8	1 1/4'	30.5	1.2	58.7	2.31	30.2	1.19	M10	38
F9	1 1/2'	39	1.54	69.9	2.75	35.7	1.41	M12	70
F0	2'	51	2.01	77.8	3.06	42.9	1.69	M12	70

Combination of ports/flanges

Ports	Flanges
	5
G	•
T	•
U	•
C	•
N	•
F	•

Combination of round ports for one-way pumps/motors

Ports	Round 50 63 71 80 IN/OUT ports	90 IN/OUT ports
G	G9 G8	G0 G9
T	T8 T7*	-
U	U8 U7	U9 U8
C	C8 C7*	-
N	N9 N8	N0 N9
F	F9 F8	F0 F9

*Only valid for 50 displacement

Other combinations of ports are available. For more information, please contact our technical sales department.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HPG														
Series														
1 2 3			PA4 Gear pump Group 4 MA4 Gear motor Group 4											
Displacement														
4 5			50 63 71 80 90											
Direction of rotation														
6			S Anti-clockwise/left D Clockwise/right											
Front flanges - Shafts														
7 8			5S SAE C 2+4 holes - Splined SAE C 14T											
IN - Inlet ports														
9 10			... See tables on page 10											
OUT - Output ports														
11 12			... See tables on page 10											
Seals														
13			B NBR Pump R NBR High pressure pump/ Motor V Viton Pump W Viton High pressure pump/ Motor											
Covers														
14 15			ST Standard closed body											