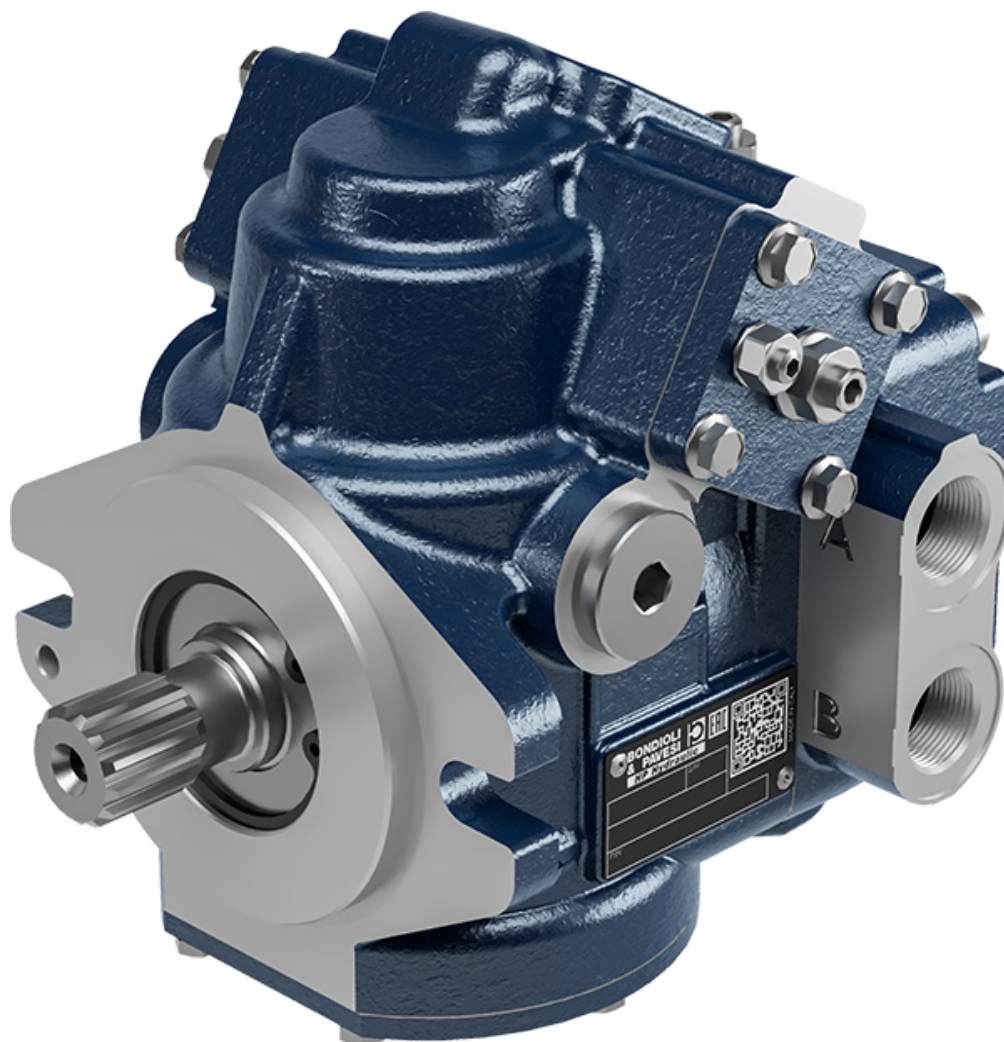
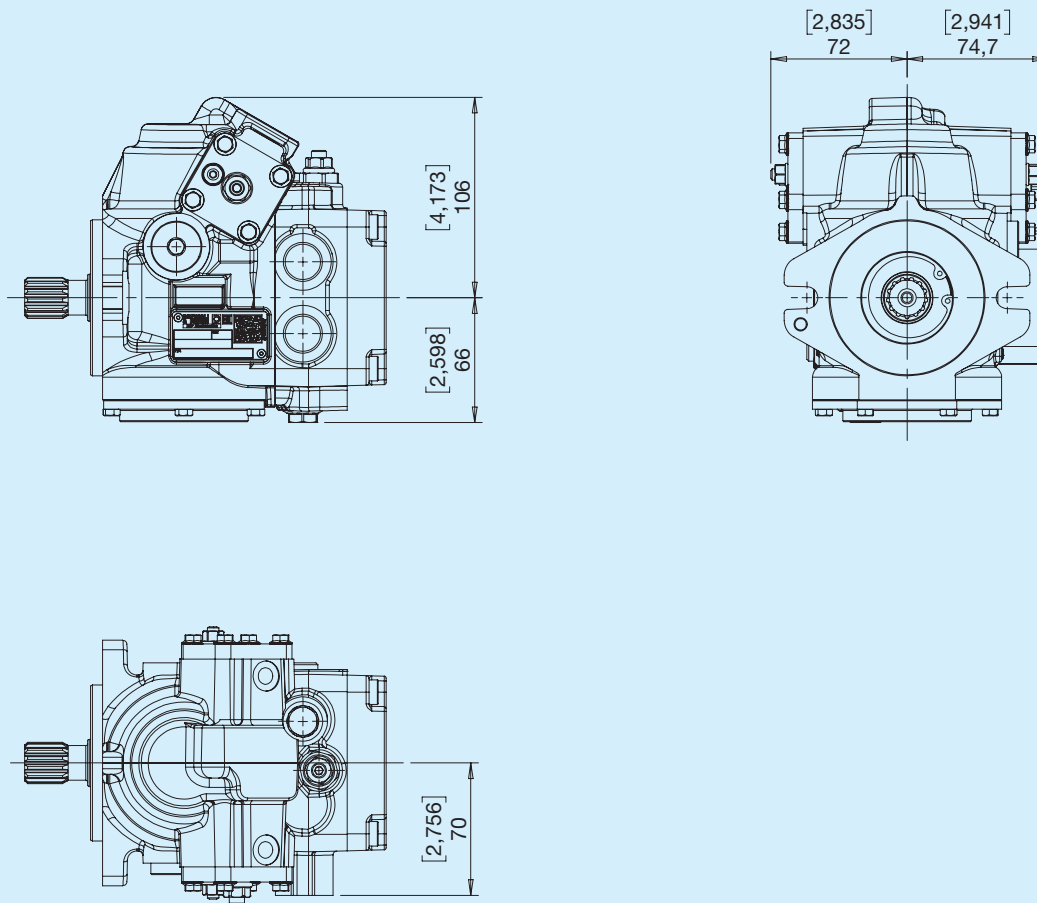


Variable-displacement pumps HMPZA 07-16



Before use, carefully read the GENERAL INSTRUCTIONS FOR USE OF CLOSED CIRCUIT AXIAL PISTON PUMPS AND MOTORS.



HMPZA	Theoretical displacement		Continuous Pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	MAX min ⁻¹	MIN min ⁻¹	kg	lbs
07	7	0.43	250	3625	280	4060	300	4350	3600	500	8.5	18,7
08	8	0.49	250	3625	280	4060	300	4350	3600	500	8.5	18,7
09	9	0.55	250	3625	280	4060	300	4350	3600	500	8.5	18,7
10	10	0.61	250	3625	280	4060	300	4350	3600	500	8.5	18,7
11	11	0.67	250	3625	280	4060	300	4350	3600	500	8.5	18,7
12	12	0.73	250	3625	280	4060	300	4350	3600	500	8.5	18,7
13	13	0.80	250	3625	280	4060	300	4350	3600	500	8.5	18,7
14	14	0.85	250	3625	280	4060	300	4350	3600	500	8.5	18,7
16	16	0.98	250	3625	280	4060	300	4350	3600	500	8.5	18,7

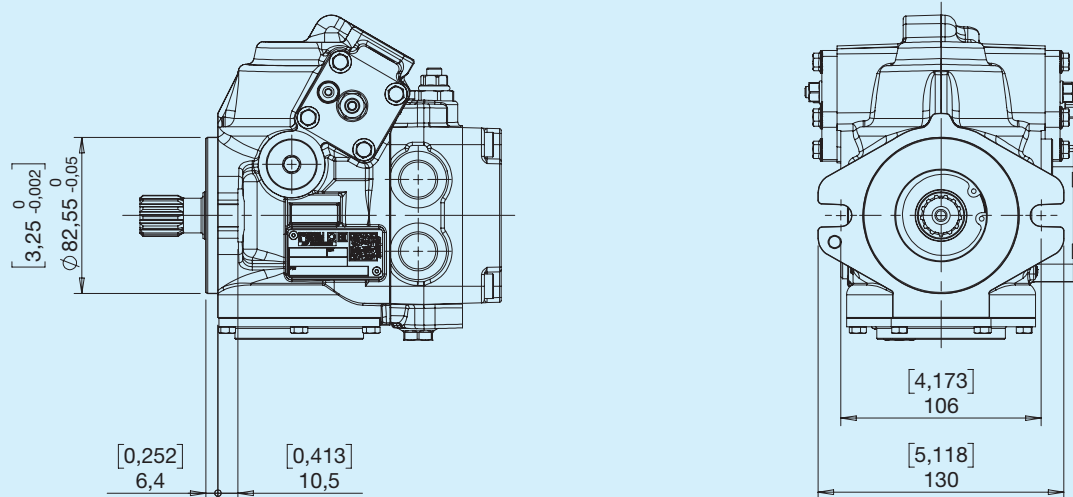
Feed pump

Type	Feed pump displacement		Pressure	
	cm ³	in ³	bar	psi
Single pump	5	0.30	20	290
Tandem pump (one boost pump)	8	0.48	20	290
Tandem pump (two boost pumps)	5+5	0.30+0.30	20	290

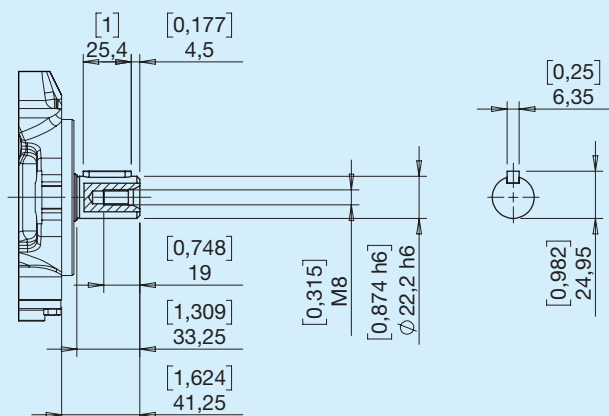
Polar moment of inertia

approx.. 42x10⁻⁴ Nm²

A SAE A

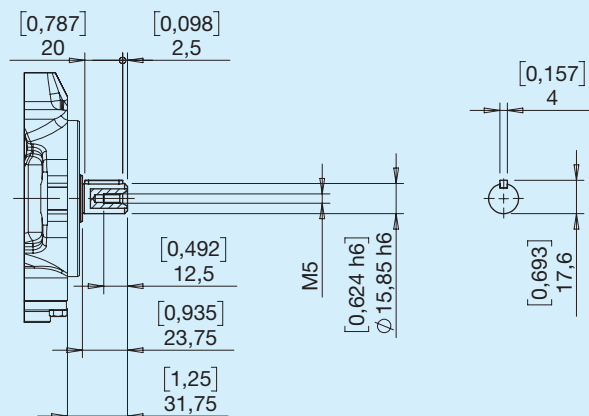


J Cylindrical Ø22.22



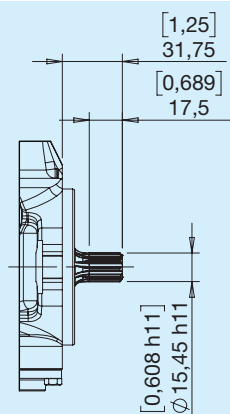
Max. torque 220 Nm

P Cylindrical Ø15.85



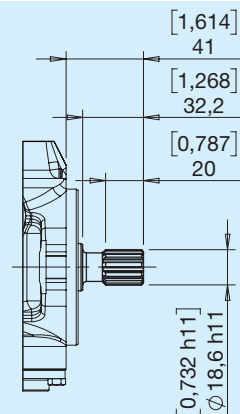
Max. torque 80 Nm

V SAE 9T 16/32 DP



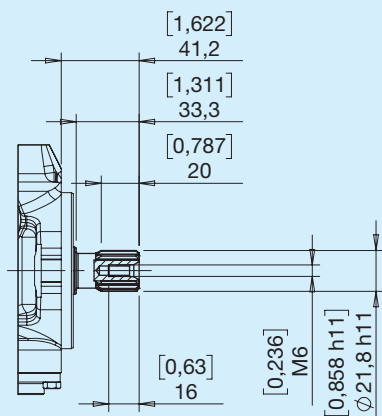
Max. torque 120 Nm

X SAE 11T 16/32 DP

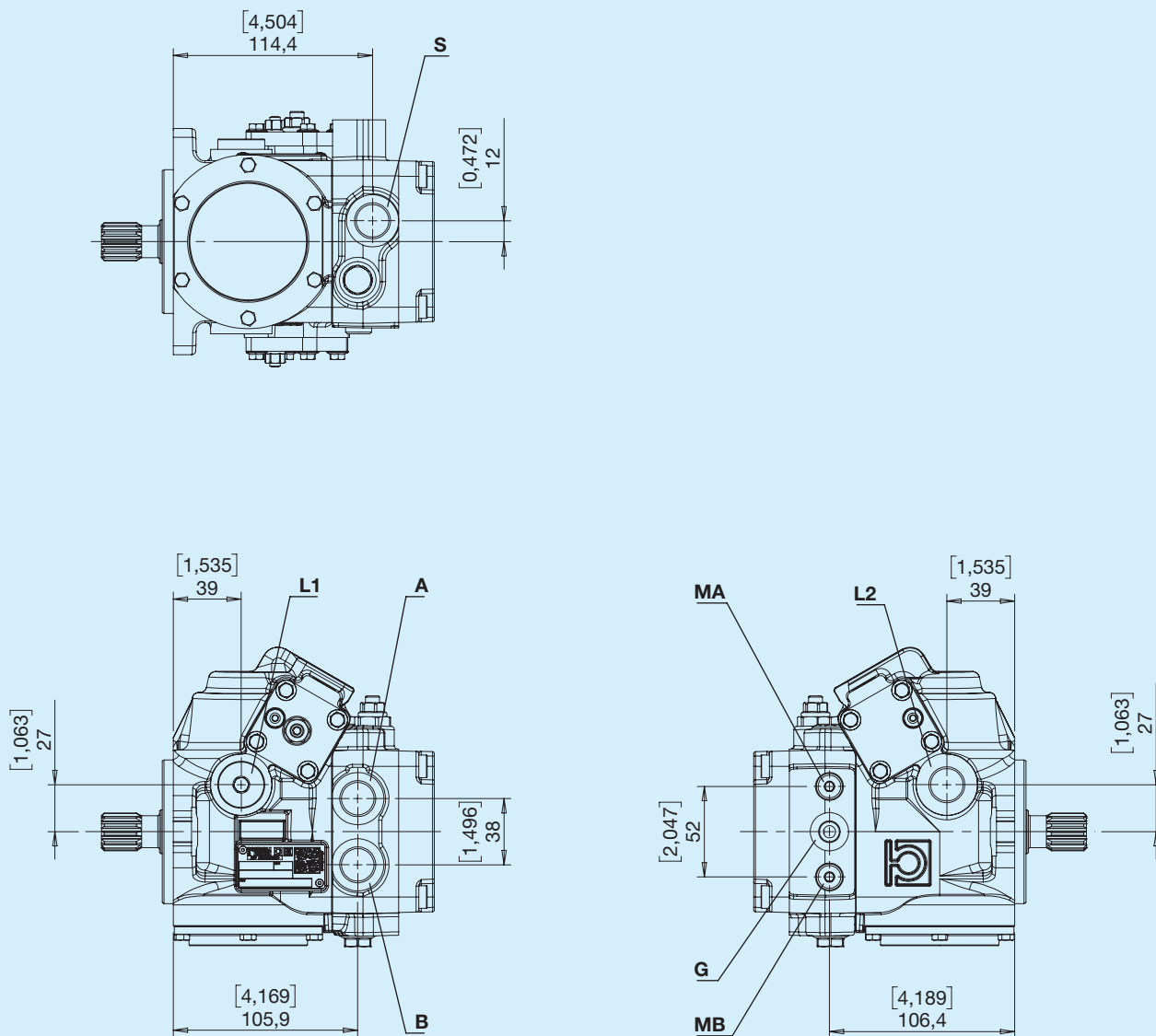


Max. torque 170 Nm

9 SAE 13T 16/32 DP



Max. torque 220 Nm



A,B - Use

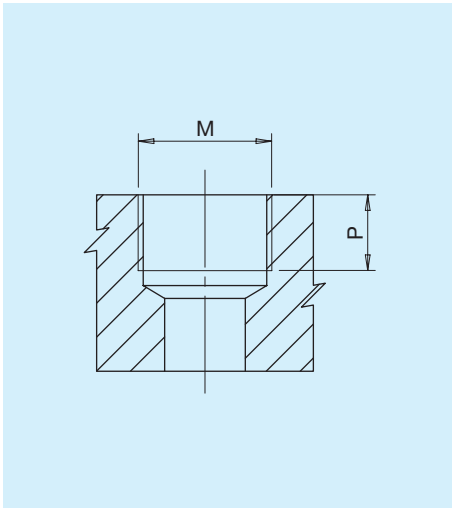
L1, L2 - Drain port

S - Inlet

P - Pressure intake

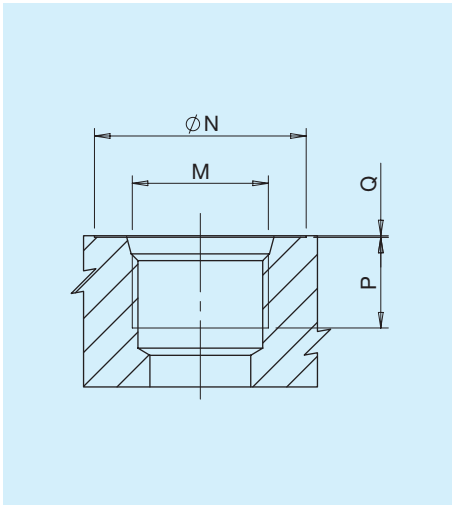
M1, M2 - Manometer intake

Type G



Type	M	Nm	P	
			mm	in
G1	Port ISO 1179-1 - G 1/8	8	8	0.31
G2	Port ISO 1179-1 - G 1/4	17	9	0.35
G4	Port ISO 1179-1 - G 1/2	70	14.5	0.57

Type U

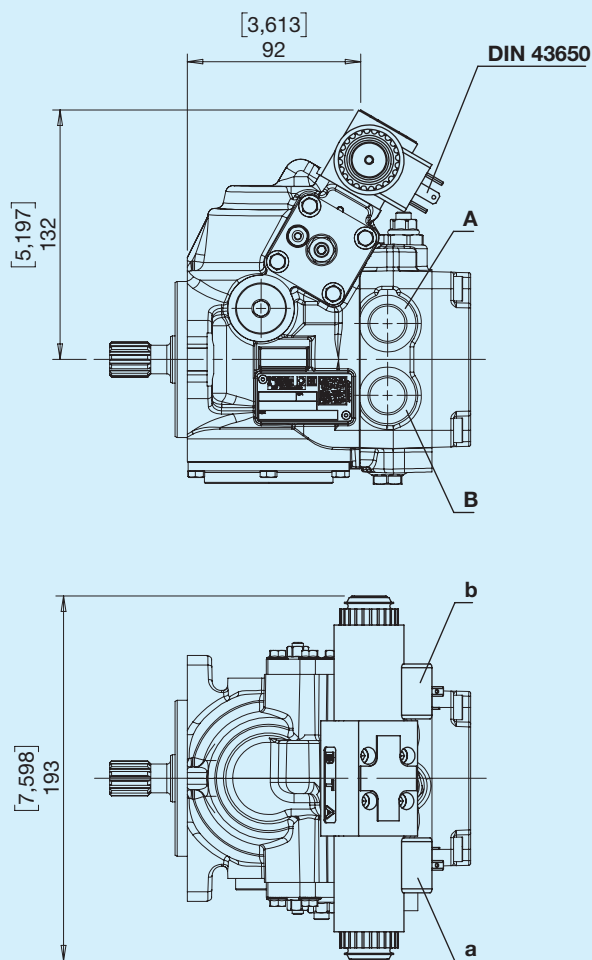


Type	Dim.	N		P		Q		M	Nm
		mm	in	mm	in	mm	in		
U2	1/4"	20	0.79	12	0.47	0.3	0.01	Port ISO 11926-1-7/16-20	17
U5	5/8"	34	1.34	18	0.71	0.3	0.01	Port ISO 11926-1-3/4-16	70

Combinations

Type	Inlet S	Outlet A-B	Drain port L1-L2	Pilot pressure a-b	Low pressure intake G	High pressure intake MA - MB
G	G4	G4	G4	G2	G2	G2
U	U5	U5	U5	G2	G2	U2

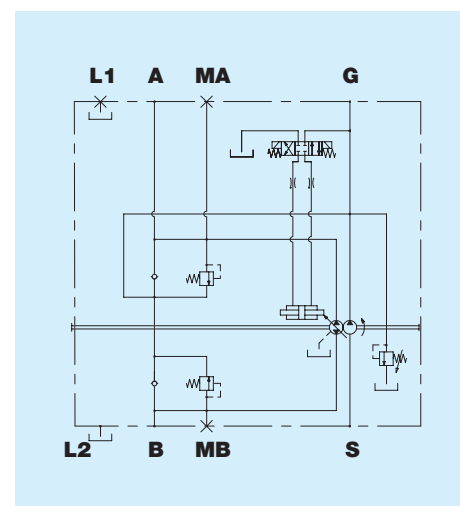
E Electrical ON/OFF, closed centre 12V



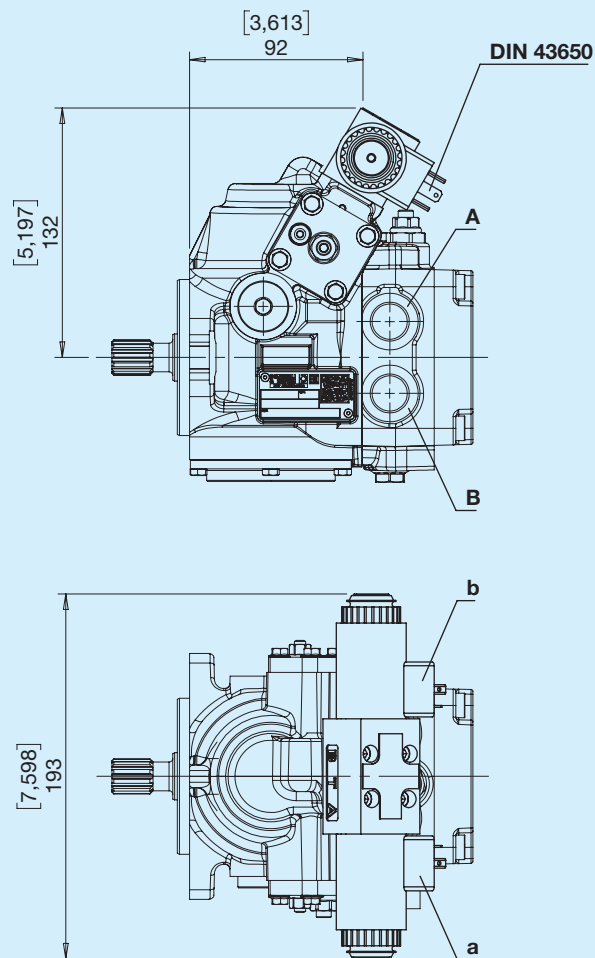
Outlet

Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

Hydraulic diagram



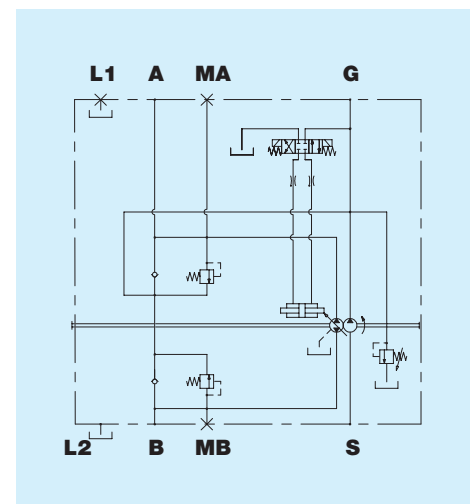
F Electrical ON/OFF, closed centre 24V



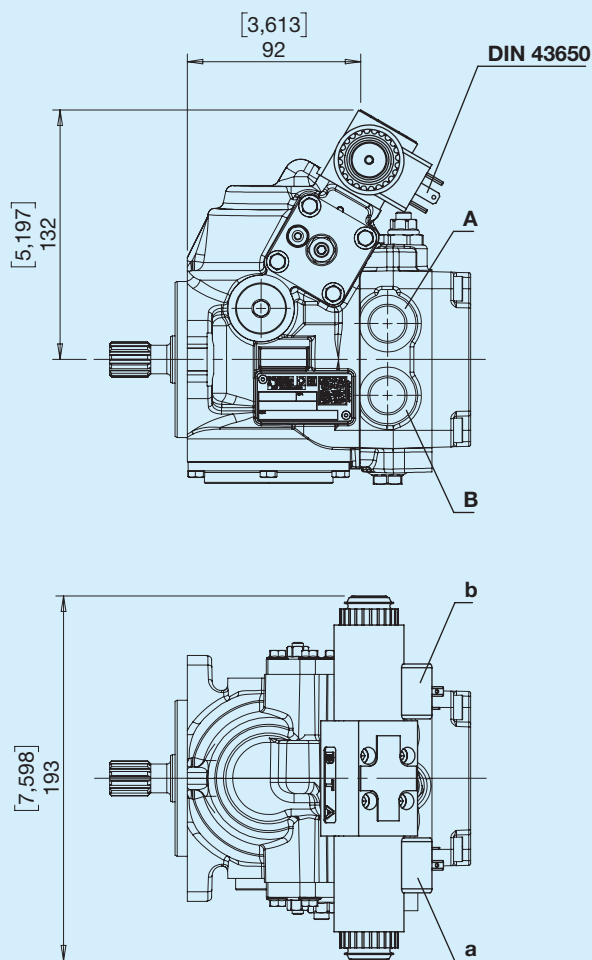
Outlet

Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

Hydraulic diagram



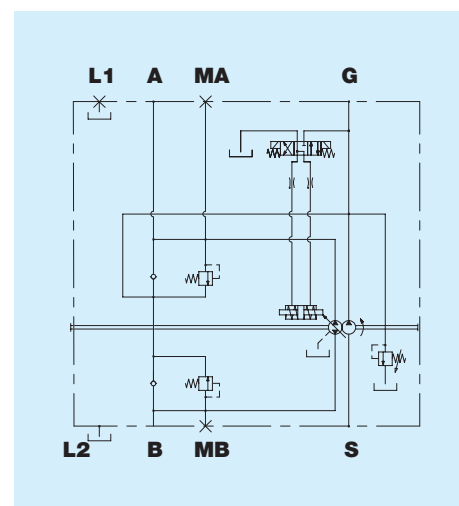
N Electrical ON/OFF, open centre 12V



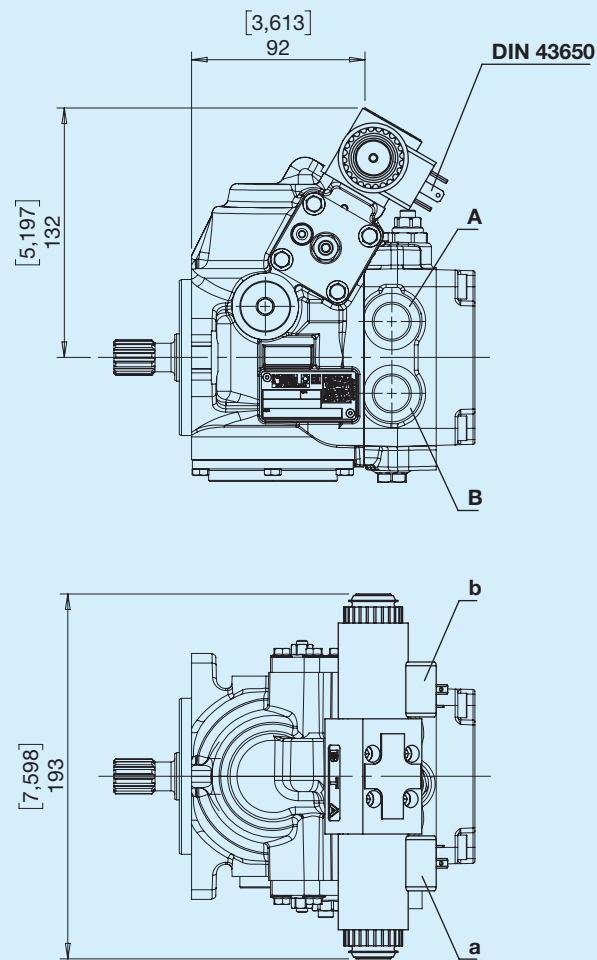
Outlet

Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

Hydraulic diagram



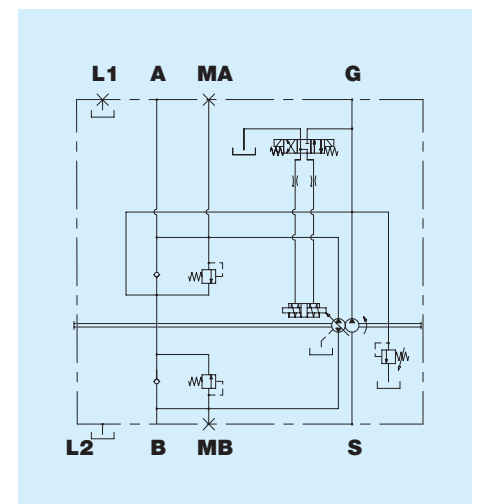
Q Electrical ON/OFF, open centre 24V



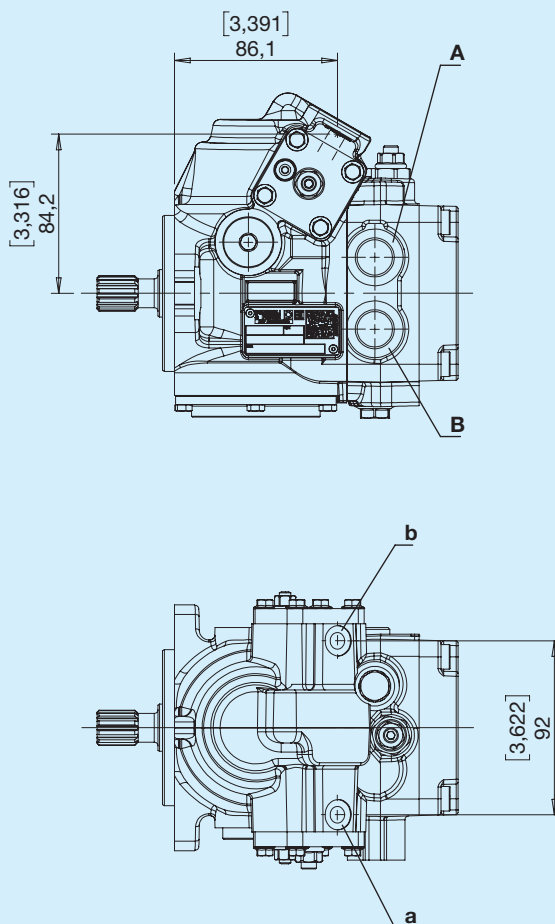
Outlet

Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

Hydraulic diagram



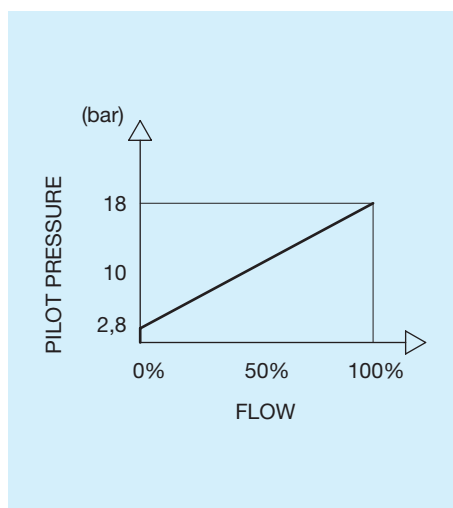
K Direct hydraulic



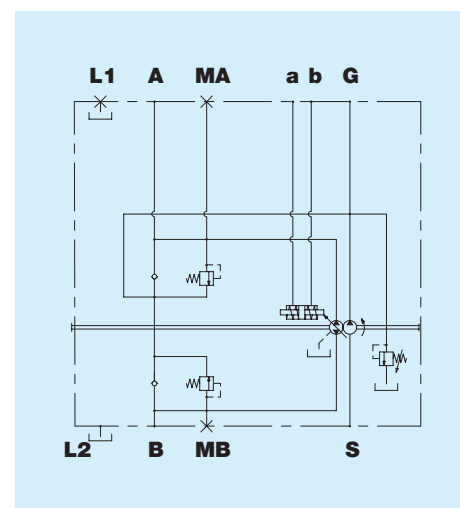
Outlet

Rotation	Pilot pressure	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

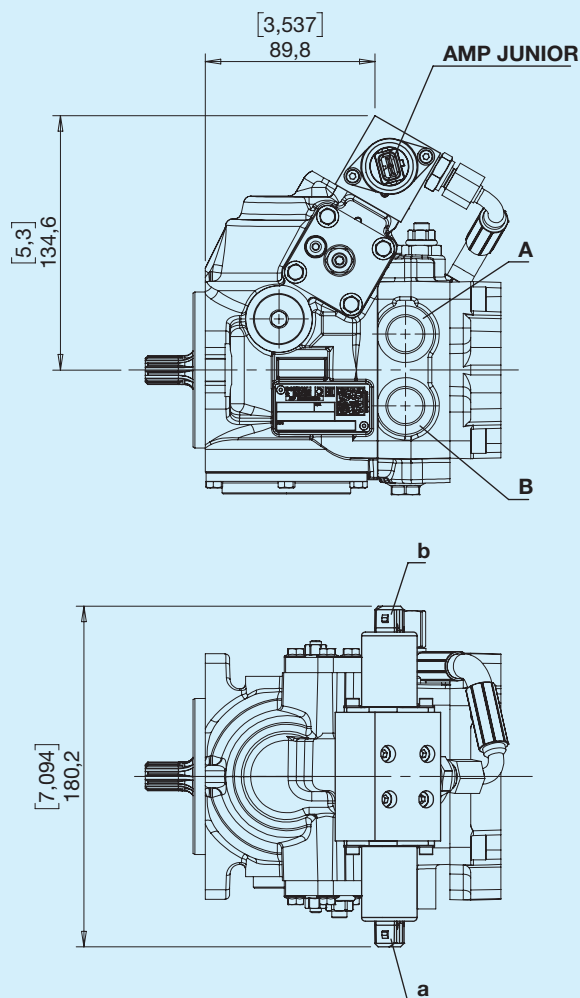
Pilot pressure



Hydraulic diagram



S Electronic proportional control 12V



Available on request with DEUTSCH DT04-2P connectors

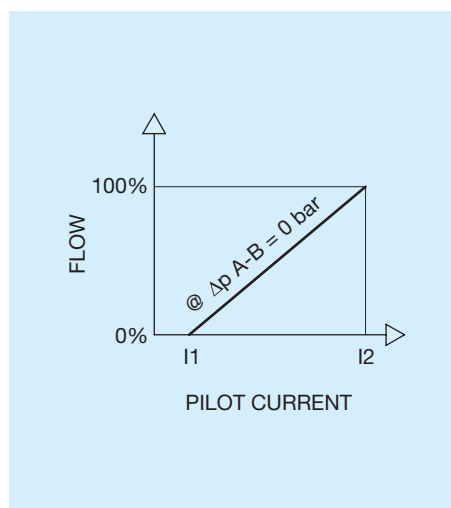
Outlet

Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

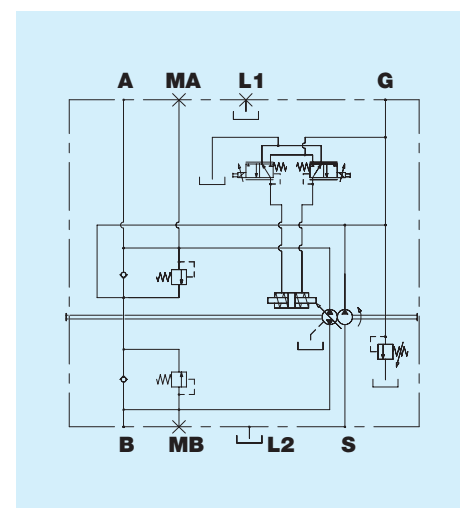
Control

Rated voltage	12	V
Min. current (I1)	450	mA
Max. current (I2)	1100	mA
PWM frequency	100	Hz

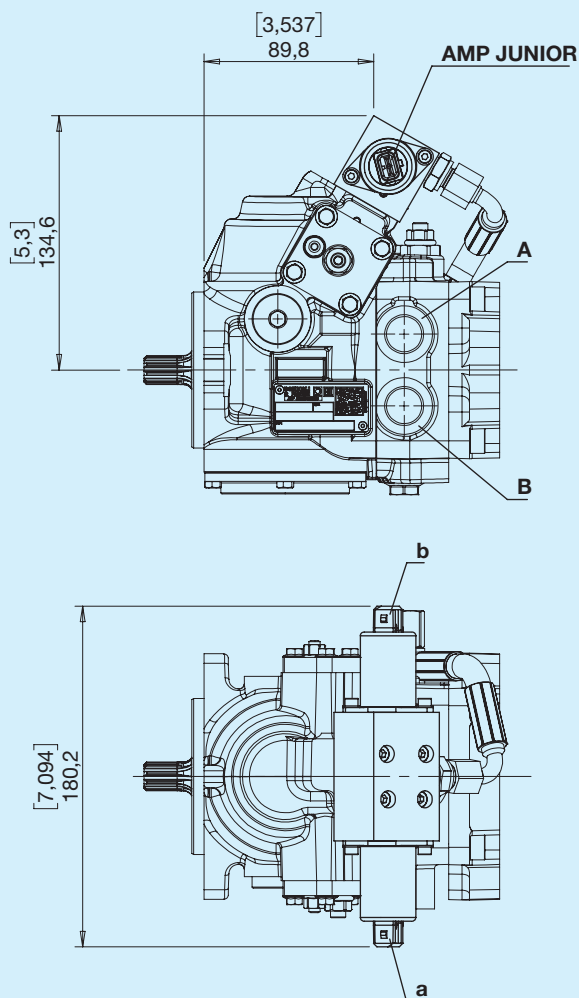
Pilot pressure



Hydraulic diagram



W Electronic proportional control 24V



Available on request with DEUTSCH DT04-2P connectors

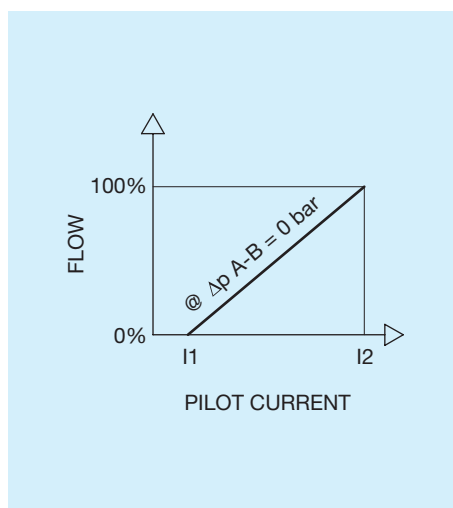
Outlet

Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

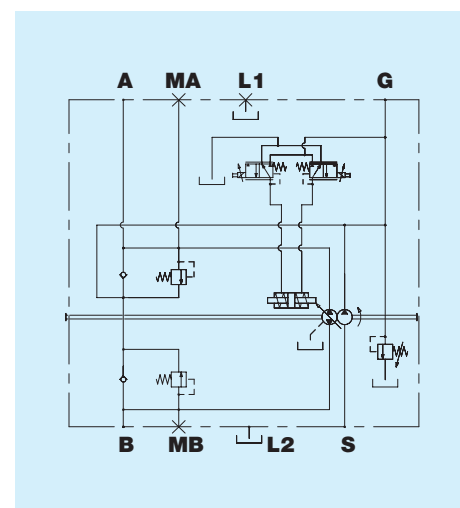
Control

Rated voltage	24	V
Min. current (I1)	250	mA
Max. current (I2)	540	mA
PWM frequency	100	Hz

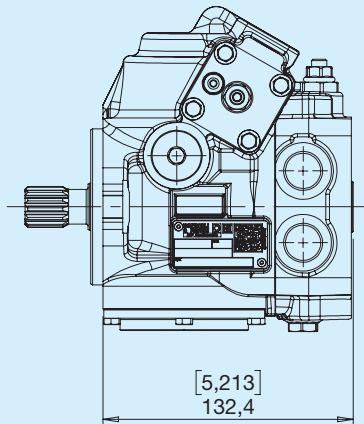
Pilot pressure



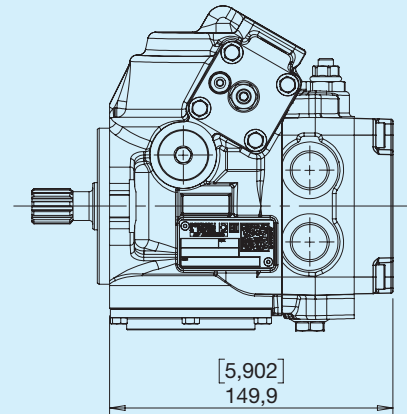
Hydraulic diagram



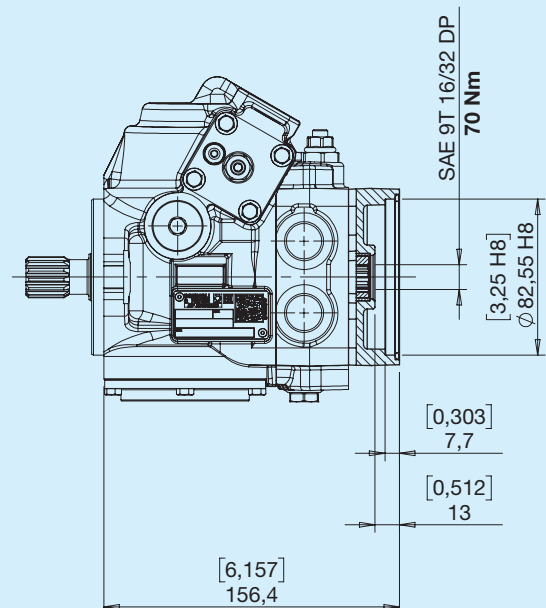
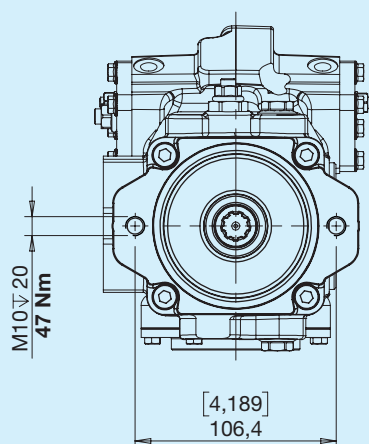
0 No special fittings, without feed



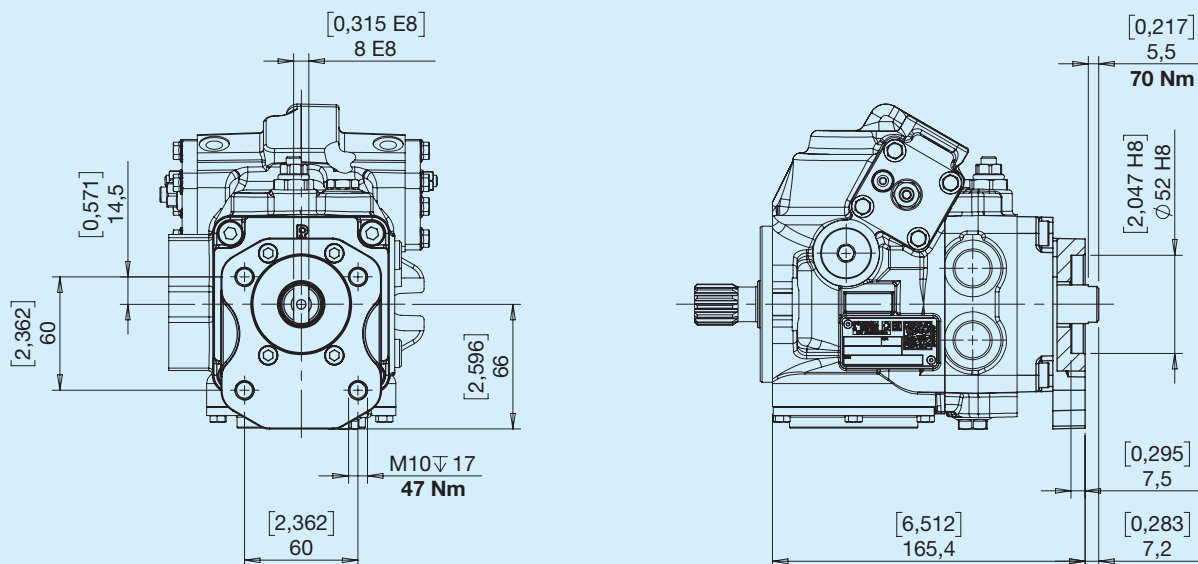
1 No special fittings, with feed pump



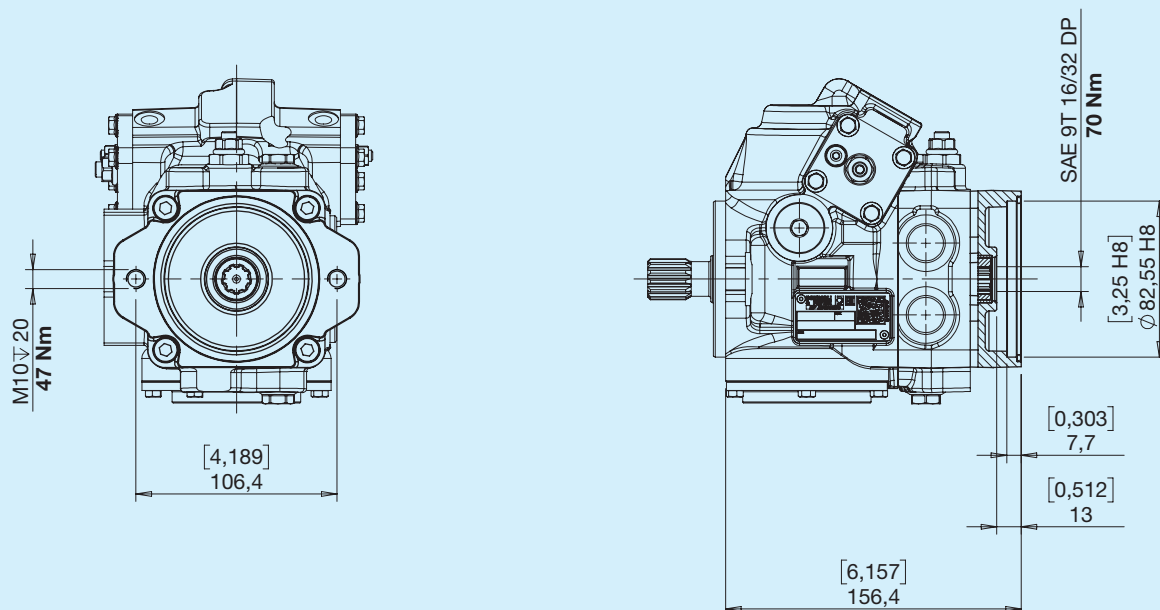
2 SAE A with feed pump



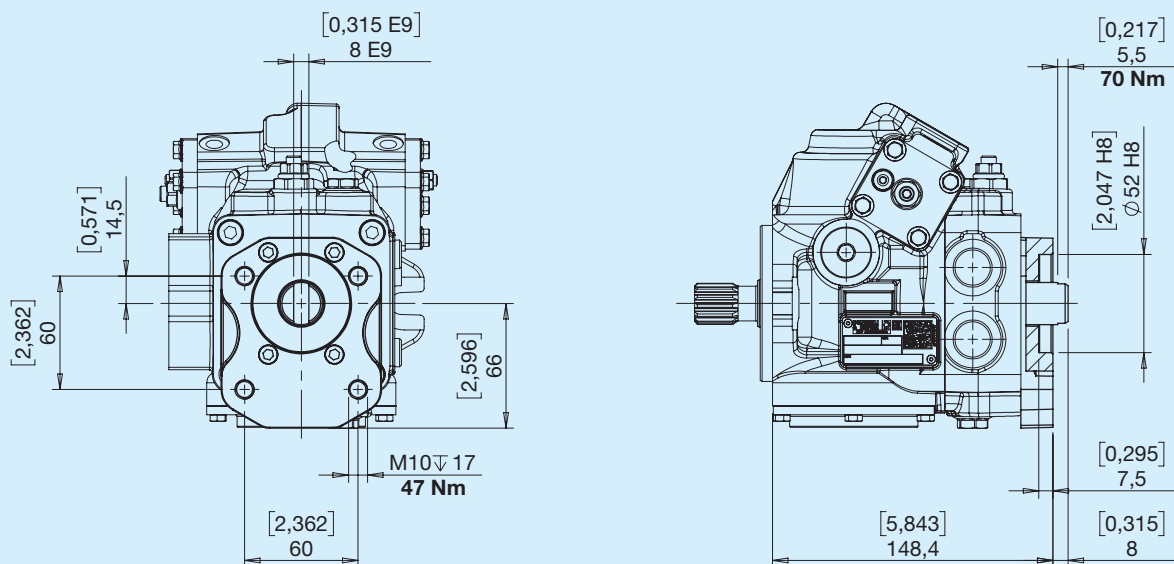
4 German GR2 Ø52 with feed pump



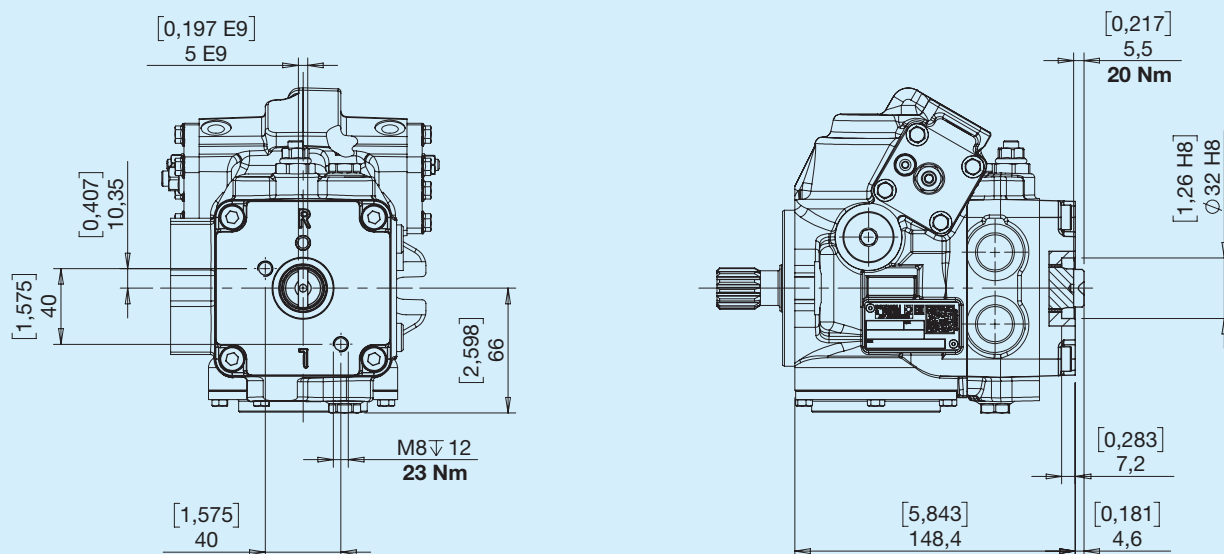
5 SAE A without feed pump



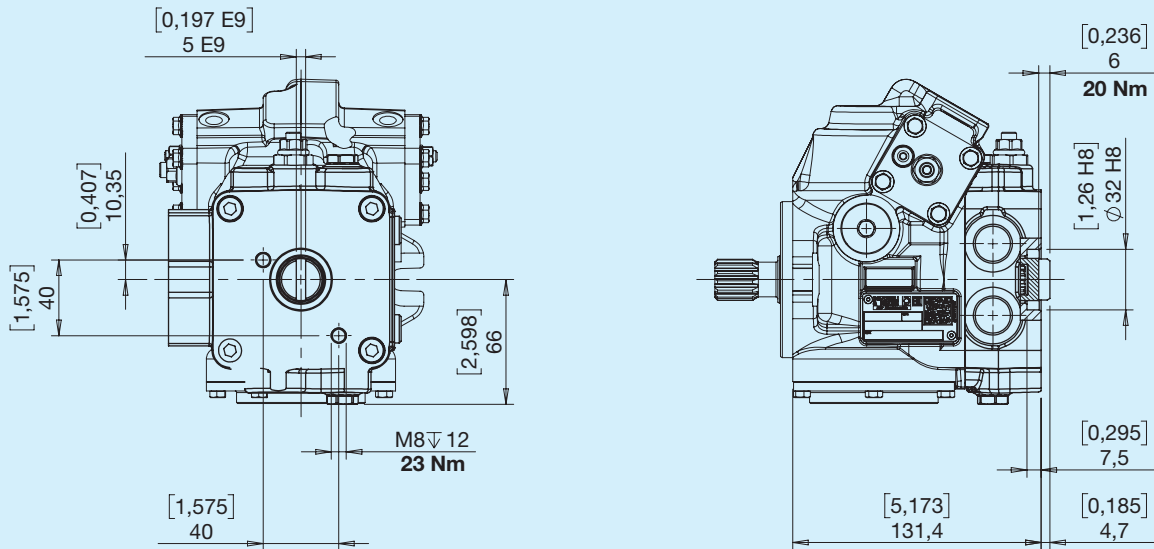
7 German GR2 Ø52 without feed pump



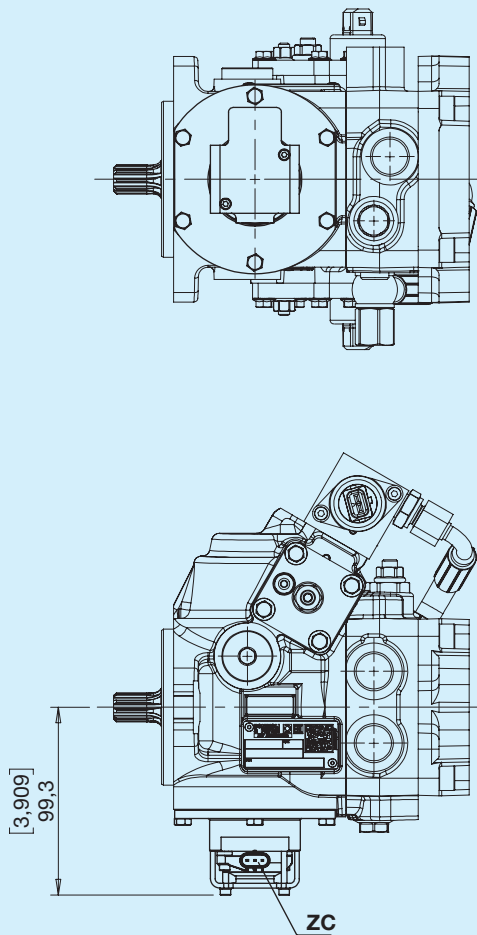
8 GR1 with feed pump



9 GR1 without feed pump

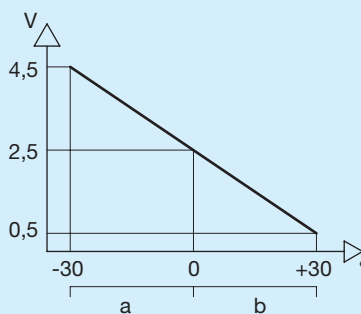


A Angle sensor

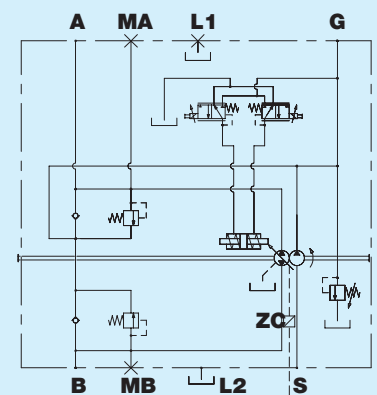


ZC=HIRSCHMANN 3 Way
872-858-541
pin 1 +5 Vdd
pin 2 Signal
pin 3 GND

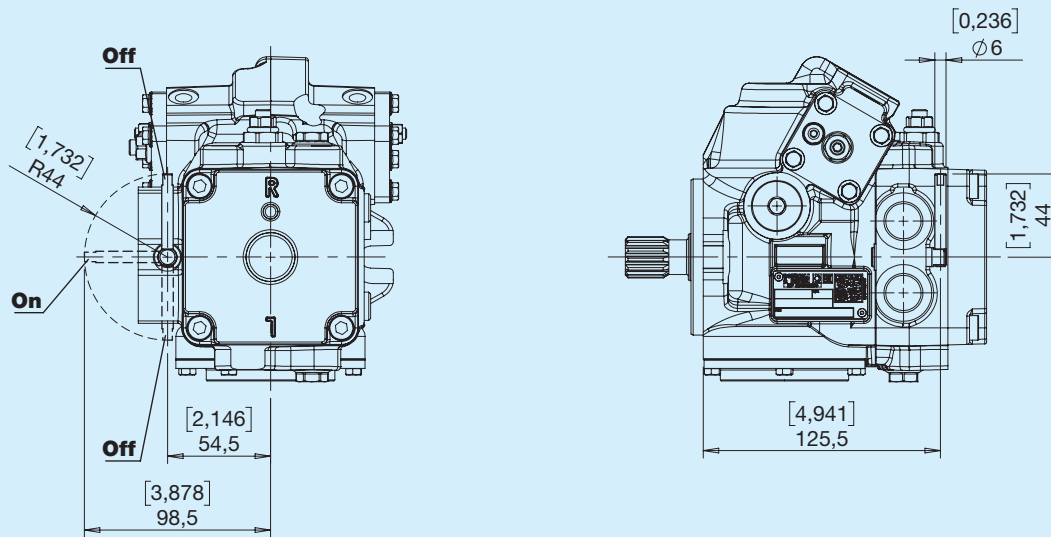
Pilot pressure



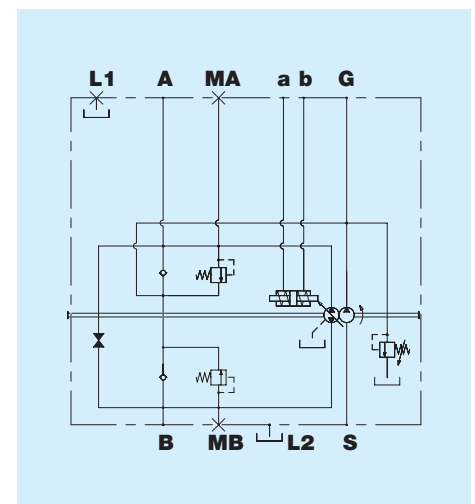
Hydraulic diagram

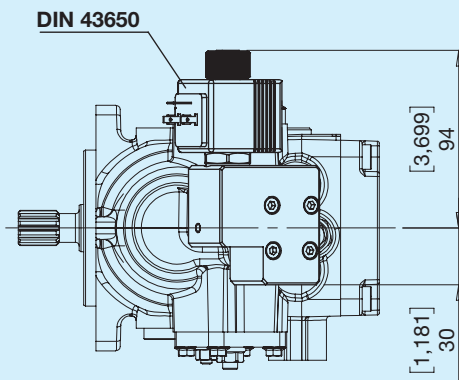
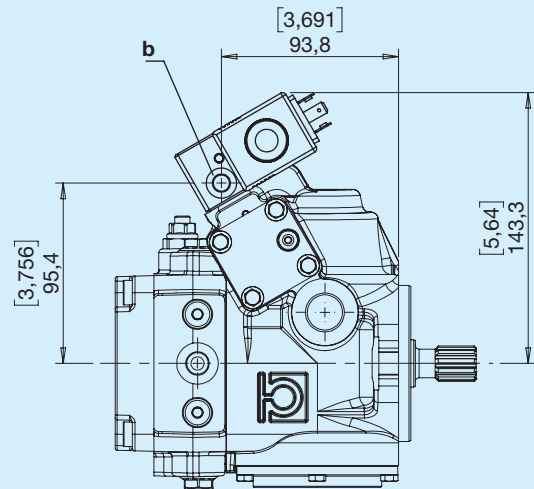
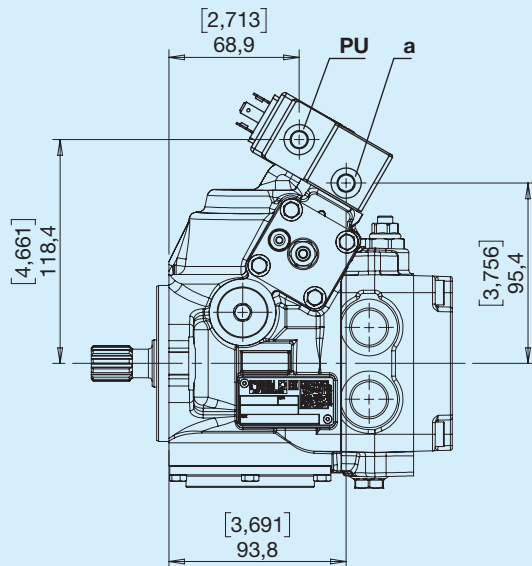


B By-pass



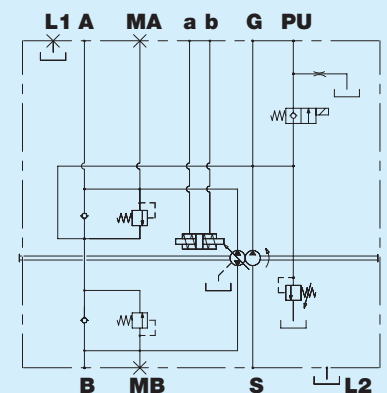
Hydraulic diagram



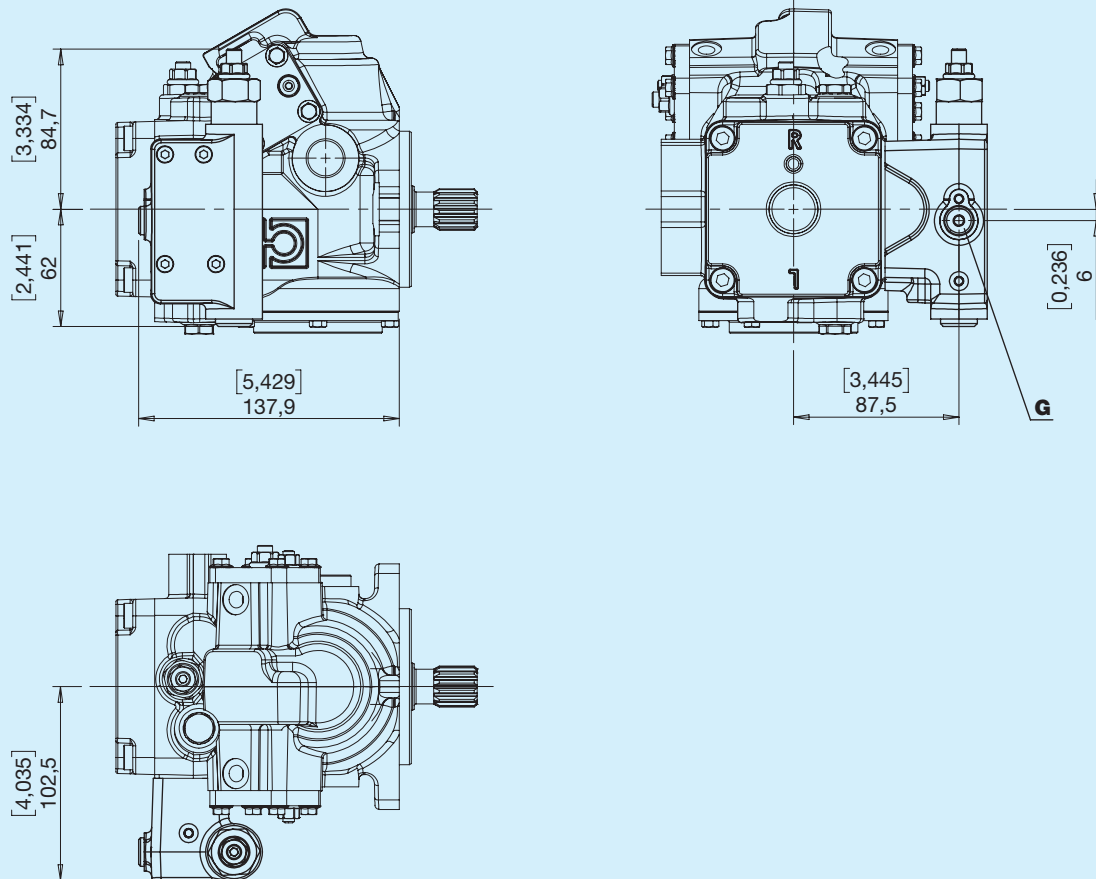


PU - Brake opening pressure G2 (GAS) or U2 (UNF)

Hydraulic diagram

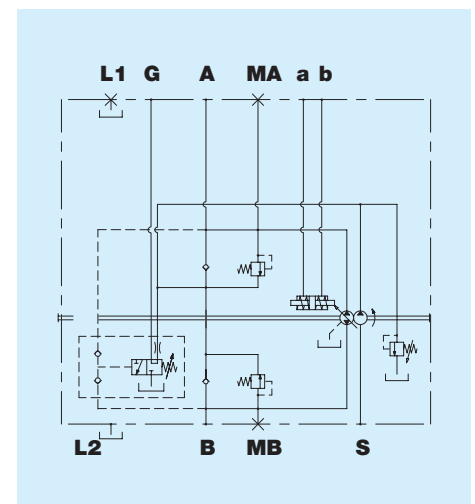


J Cut-off

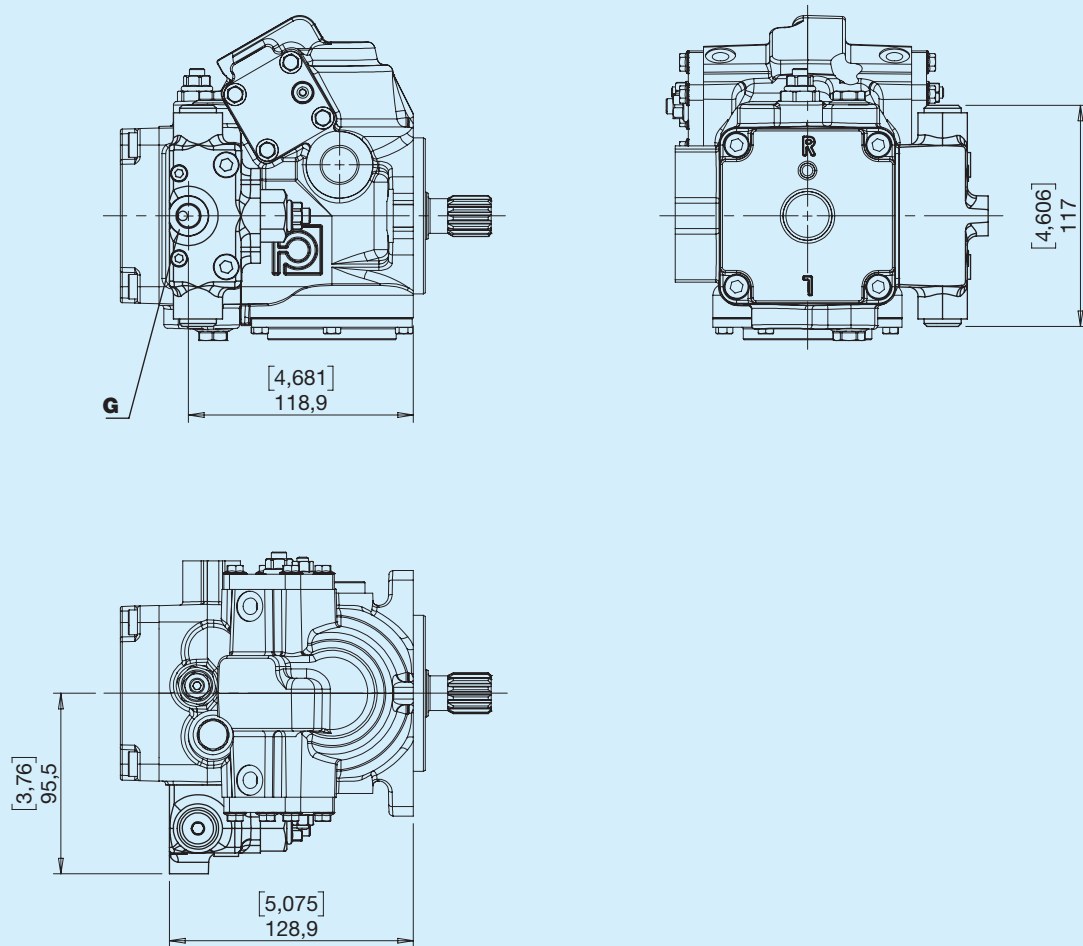


G - Low pressure intake G1

Hydraulic diagram

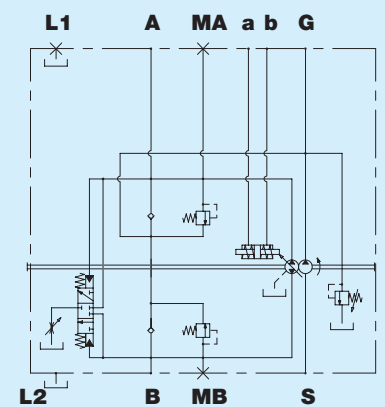


M Adjustable flushing valve

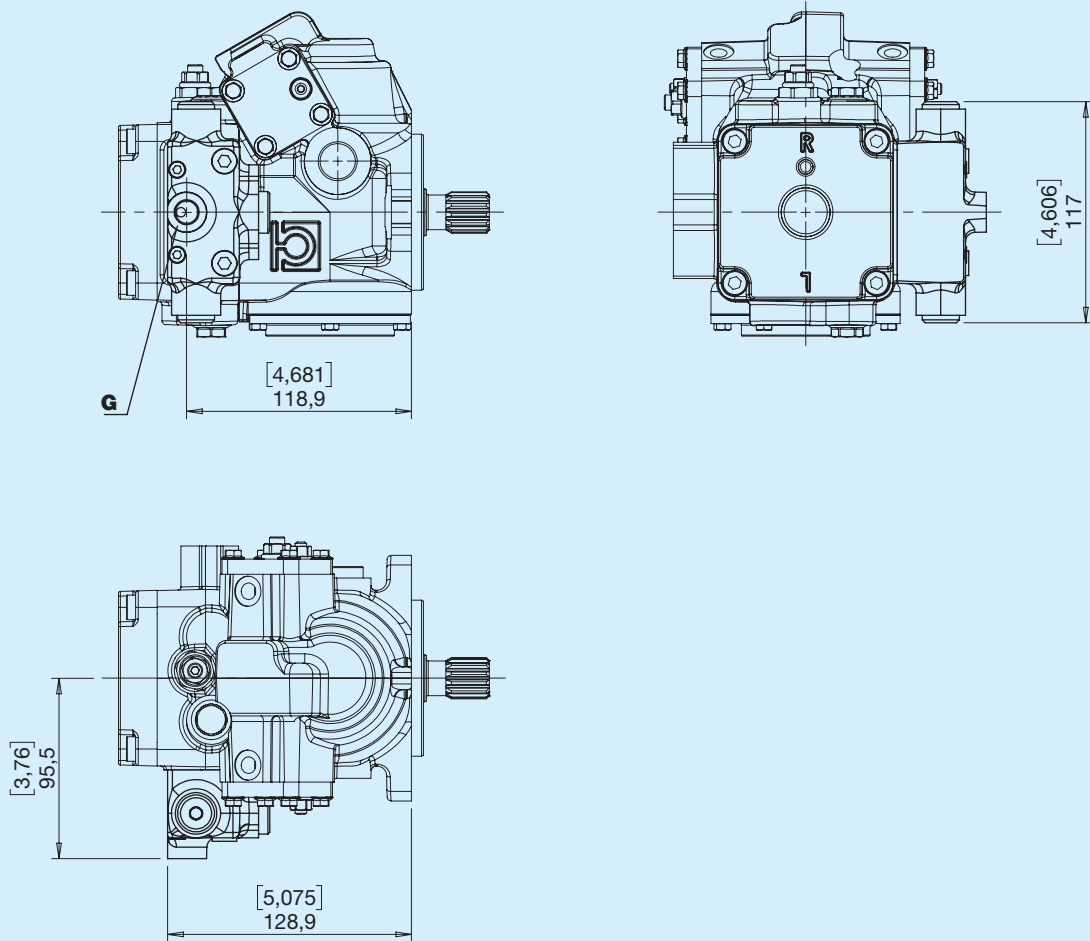


G - Low pressure intake G2 (GAS) or U2 (UNF)

Hydraulic diagram

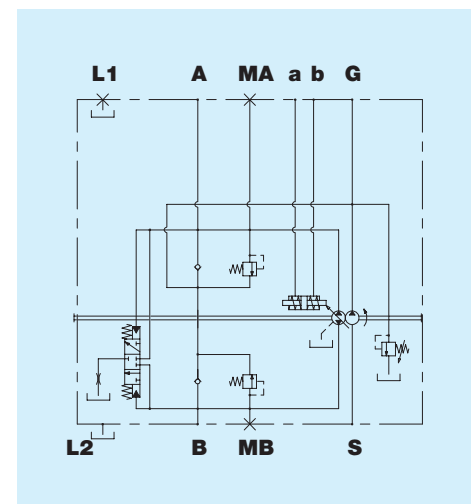


U Fixed flushing valve



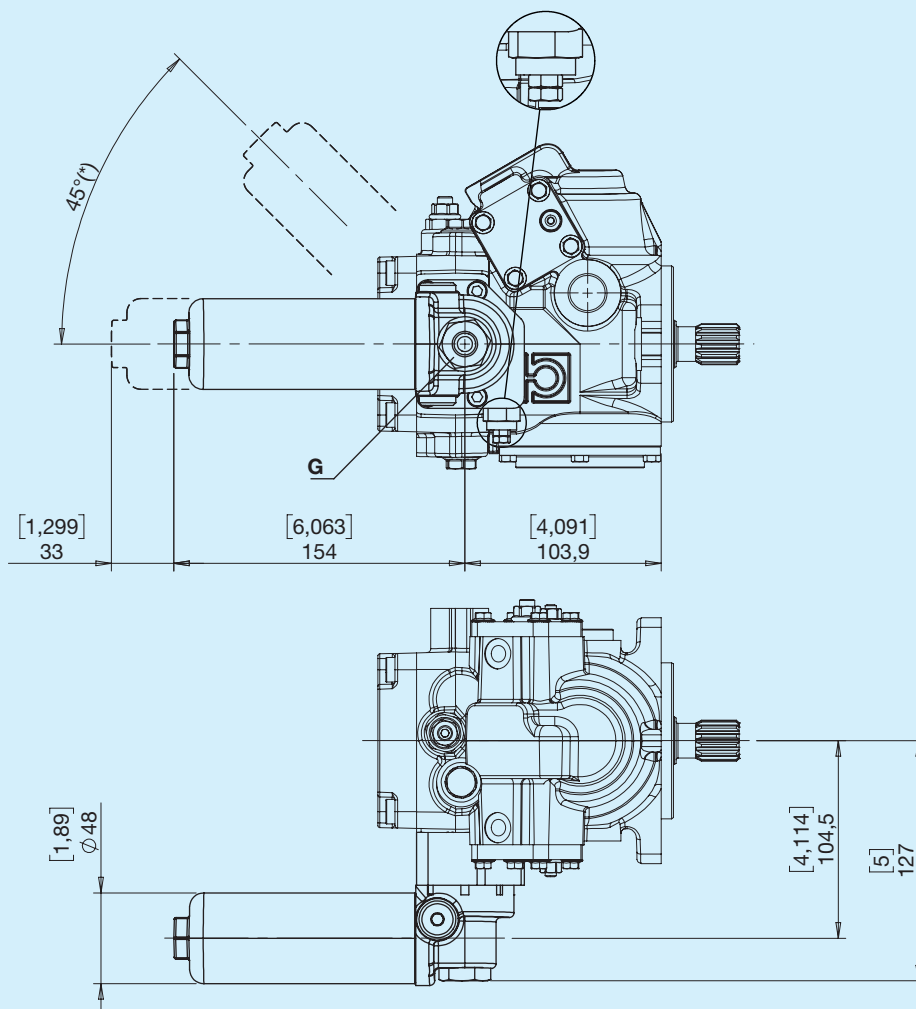
G - Low pressure intake G2 (GAS) or U2 (UNF)

Hydraulic diagram



X Filter with clogging indicator

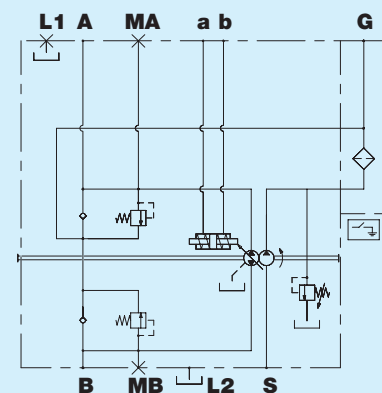
Electric differential indicator - 30 VDC - 0.2 A max



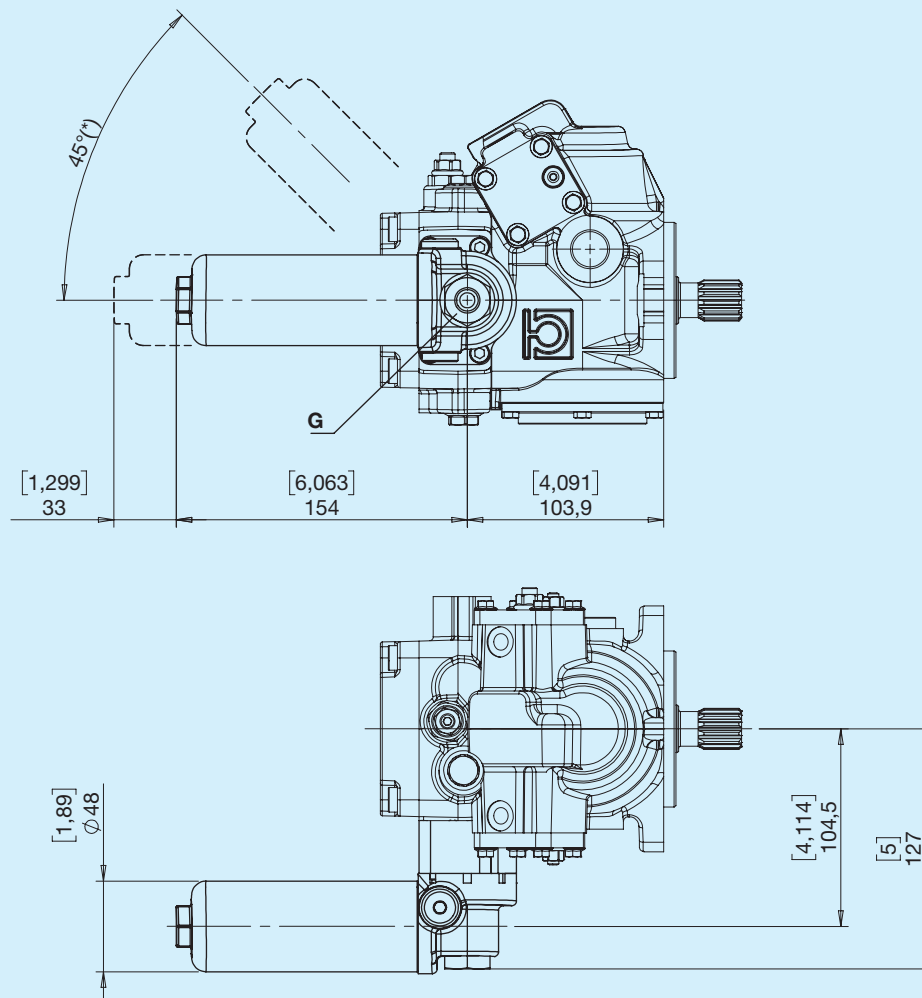
G - Filtered oil intake G1/4 or 7/16-20 UNF

It is possible to request the filter rotated at intervals of 45°

Hydraulic diagram



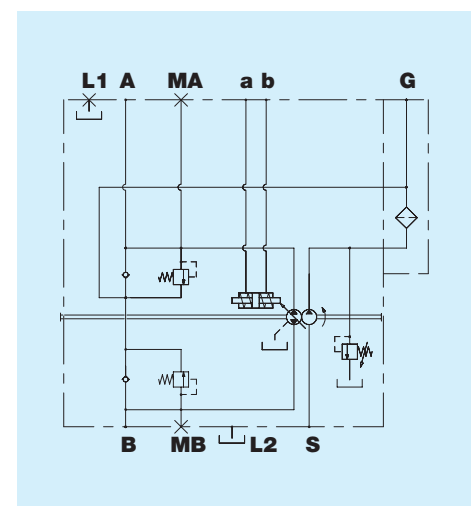
Y Filter without clogging indicator



G - Filtered oil intake G1/4 or 7/16-20 UNF

It is possible to request the filter rotated at intervals of 45°

Hydraulic diagram



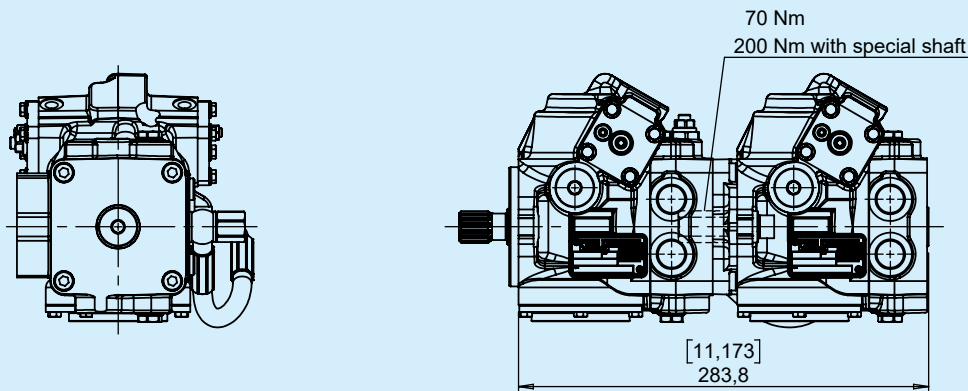
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
HMPZA														
1 2	Displacement													
	07				10				13					
	08				11				14					
	09				12				16					
3	Direction of rotation													
	R Right				L Left									
4	Direction of rotation													
	S Single pump				T Tandem primary pump				C Tandem secondary pump					
5	Shaft profile													
	J Cylindrical Ø22.22				V SAE 9T 16/32 DP				9 SAE 13T 16/32 DP					
	P Cylindrical Ø15.85				X SAE 11T 16/32 DP				R SAE 13T 16/32 DP special for high torque primary pump					
6	Direction of rotation													
	G Gas				U UNF									
7	Controls													
	E Electrical ON/OFF, closed centre 12V				N Electrical ON/OFF, open centre 12V				K Remote hydraulic				W Electronic proportional control 24V	
	F Electrical ON/OFF, closed centre 24V				Q Electrical ON/OFF, open centre 24V				S Electronic proportional control 12V					
8	Valve calibration													
	B 150 bar				E 210 bar				G 250 bar					
	D 180 bar				H 230 bar				I 280 bar					
9	Swashplate type													
	A Mounted on needle bearings													
10	Versions													
	0 No special fittings, without feed pump				5 SAE A without feed pump				A None with feed pump 8 cc				Z For tandem feed pump 5 cc	
	1 None with feed pump 5 cc				7 GR2 without feed pump				B SAE A with feed pump 8 cc					
	2 SAE A with feed pump 5 cc				8 GR1 No special fittings, with feed pump 5 cc				N For tandem without feed pump					
	4 GR2 with feed pump 5 cc				9 GR1 without feed pump				P For tandem with feed pump 8 cc					
11	Accessories													
	0 No option				J Cut-off				U Fixed flushing valve				S Multiple accessories	
	A Angle sensor				M Adjustable flushing valve				X Filter with electric clogging indicator					
	B By-pass				P Paint				Y Filter without electric clogging indicator					
12 13 14	Special versions													
	...													

Double pump with one boost pumps

The order code of a multiple pump is obtained by summing, as shown in the example, the codes of the individual pumps (stages) obtained by following the order instructions for the single pumps

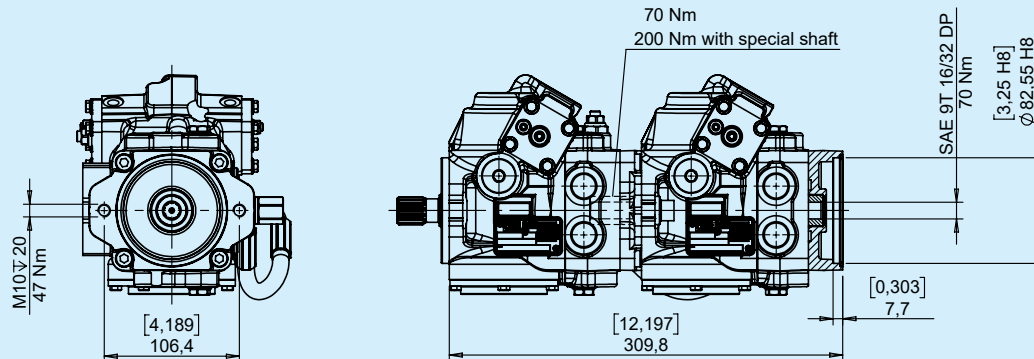
Stage 1		Stage 2
HM PZA 08 R T V G K E B P 0	+	HM PZA 08 R C V G K E B 0 0
HM PZA 08 R T V G K E B P 0	+	HM PZA 08 R C A G K E B 0 0

tandem pump



Stage 1		Stage 2
HM PZA 08 R T V G K E B P 0	+	HM PZA 08 R C V G K E B 5 0
HM PZA 08 R T V G K E B P 0	+	HM PZA 08 R C A G K E B B 0

tandem pump with SAE A fitting

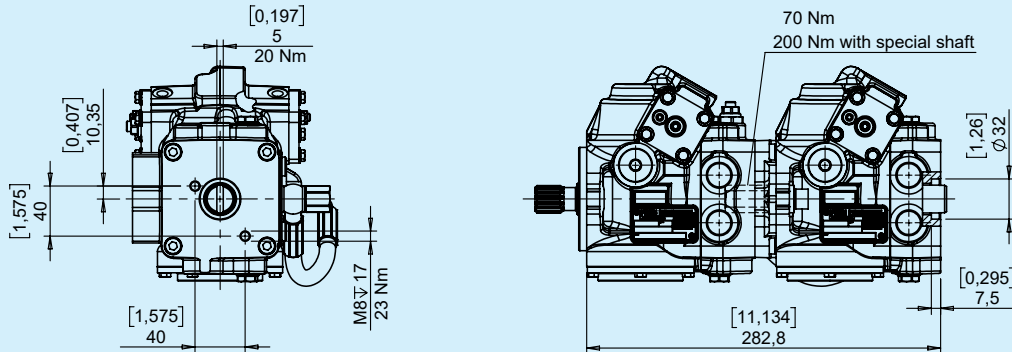


In tandem pumps with a boost pump it is mandatory to install a connecting pipe (not supplied) between a drain port of the first stage and a drain port of the second stage.

- The standard tandem configuration is with 8 cc pump in the first stage.
- With reinforced shaft, only one 8 cc configuration is available in the second stage.

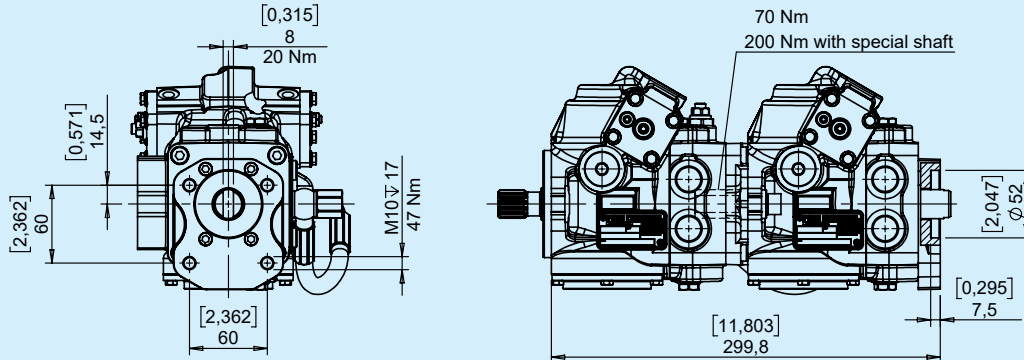
Stage 1 **HM PZA 08 R T V G K E B P 0** + Stage 2 **HM PZA 08 R C V G K E B 9 0**

tandem pump with GR1 fitting



Stage 1 **HM PZA 08 R T V G K E B P 0** + Stage 2 **HM PZA 08 R C V G K E B 7 0**

tandem pump with GR2 fitting



In tandem pumps with a boost pump it is mandatory to install a connecting pipe (not supplied) between a drain port of the first stage and a drain port of the second stage.

- The standard tandem configuration is with 8 cc pump in the first stage.
- With reinforced shaft, only one 8 cc configuration is available in the second stage.