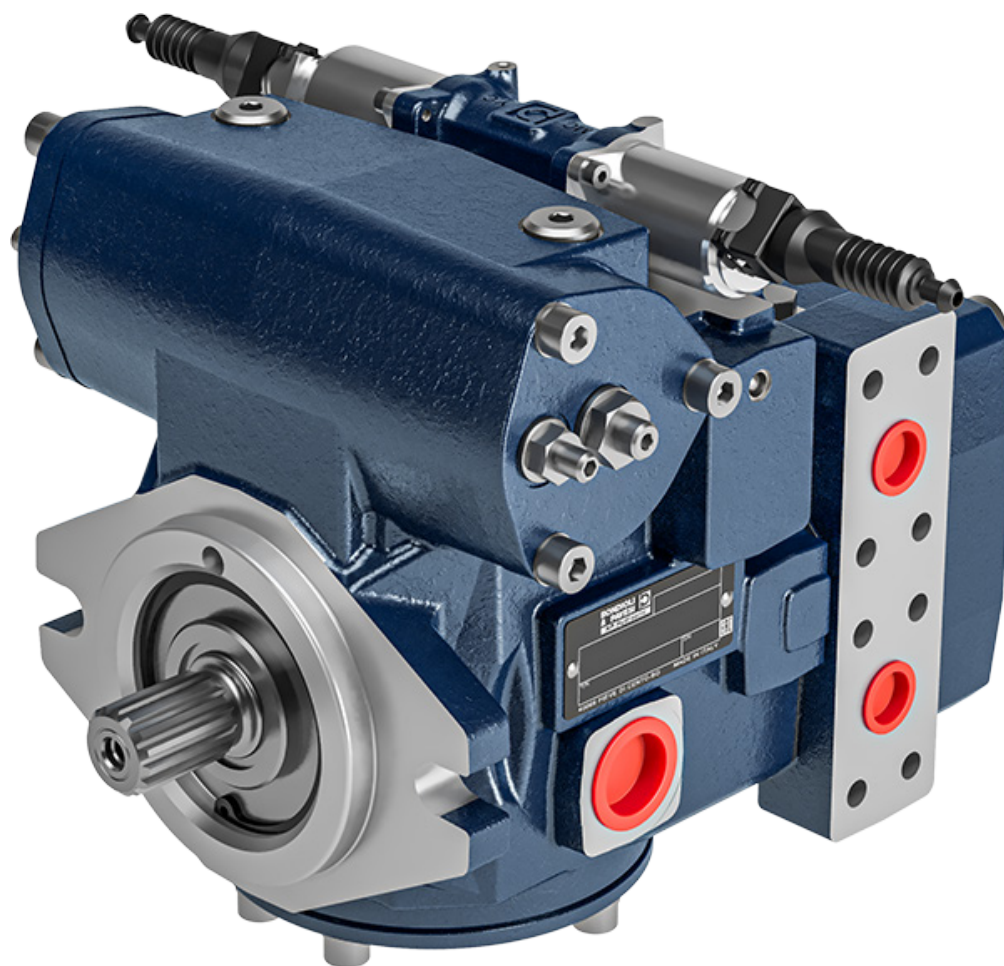
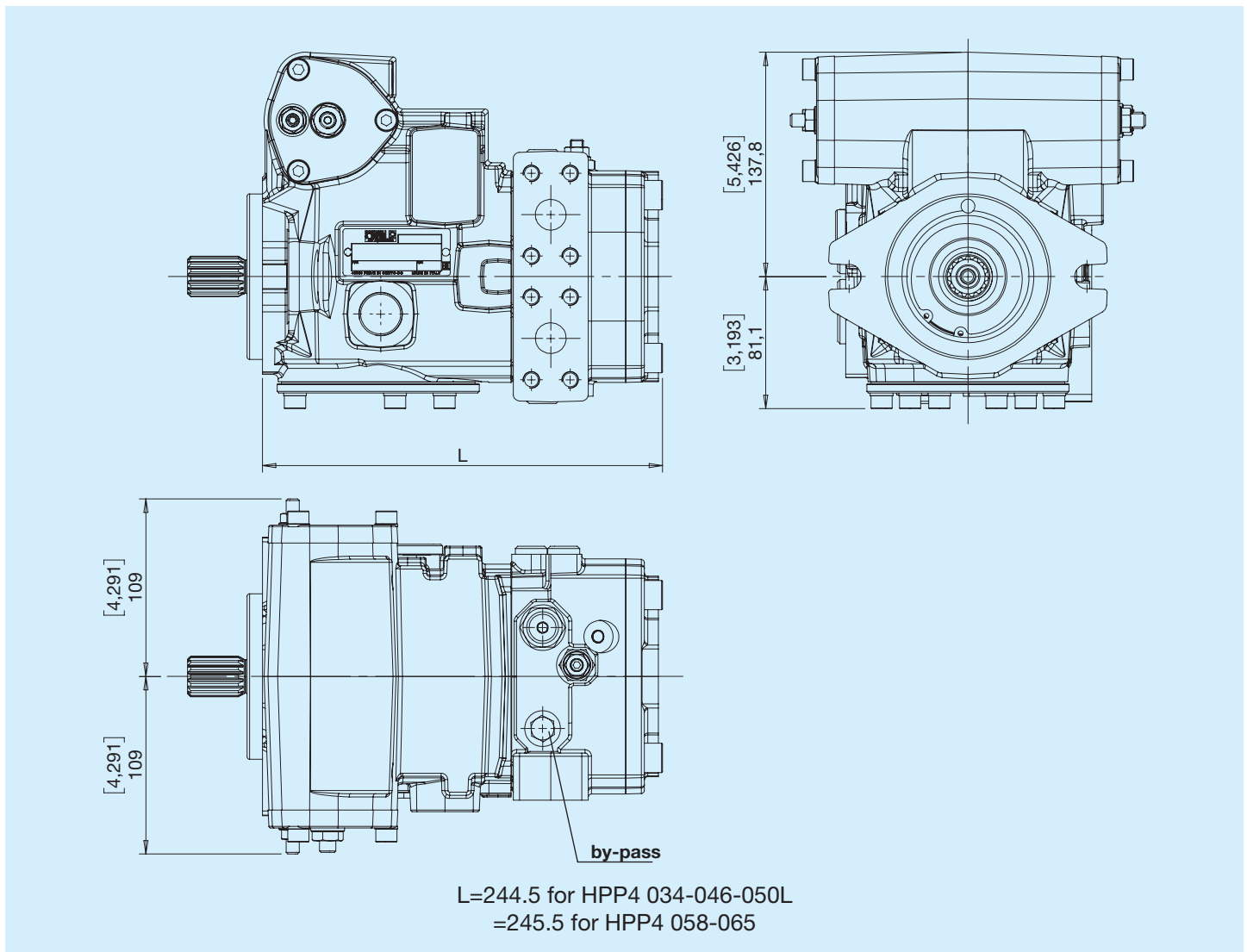


Variable-displacement pumps



Before using the axial piston pumps and motors, carefully read the GENERAL INSTRUCTIONS FOR USE OF CLOSED CIRCUIT AXIAL PISTON PUMPS AND MOTORS.

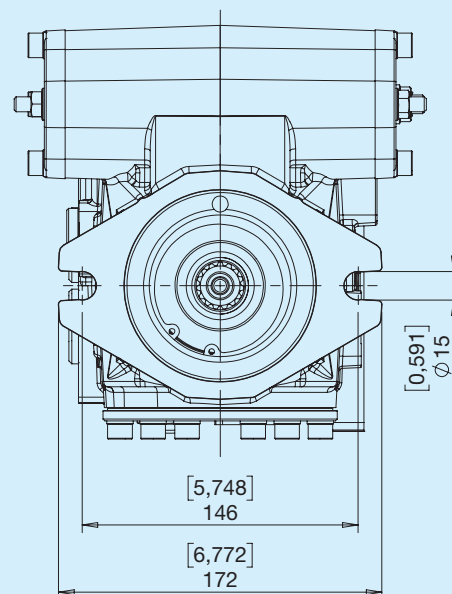
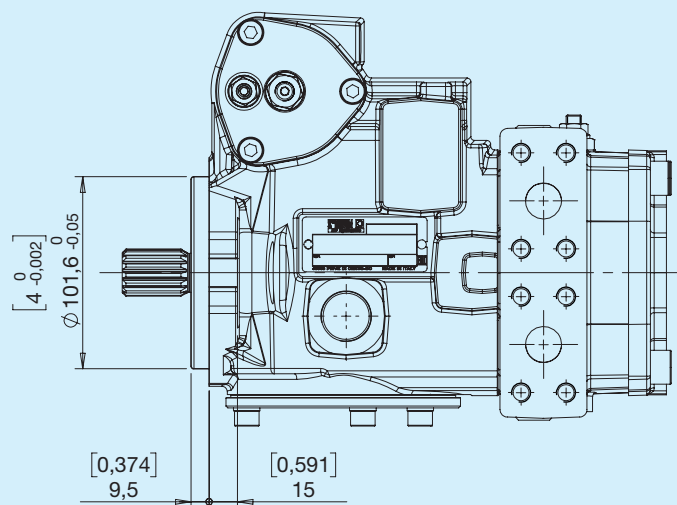


HPP4	Nominal displacement		Swash plate	Continuous pressure		Intermittent pressure		Peak pressure		Rotational speed		Weight	
	cm ³	in ³		bar	psi	bar	psi	bar	psi	MAX min ⁻¹	MIN min ⁻¹	kg	lbs
034	34	2.08	18	300	4350	380	5075	400	5800	3800	500	28.8	63.5
046	46	2.81	19	300	4350	380	5075	400	5800	3800	500	28.8	63.5
050	50	3.05	18	300	4350	380	5075	400	5800	3800	500	31.0	68.3
058	58	3.54	18	250	3625	320	4640	400	5800	3600	500	33.2	73.2
065	65	3.97	18	250	3625	320	4640	400	5800	3600	500	33.2	73.2

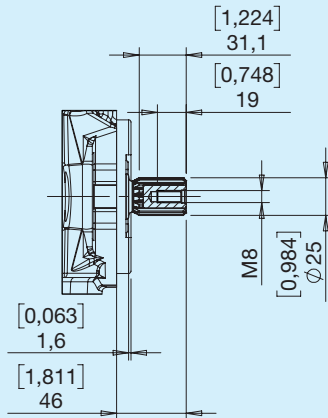
Feed pump

Type	Feed pump displacement		Pressure	
	cm ³	in ³	bar	psi
HPP4 034	14	0.85	22	319
HPP4 046	14	0.85	22	319
HPP4 050	14	0.85	22	319
HPP4 058	16	0.98	22	319
HPP4 065	16	0.98	22	319

B SAE B

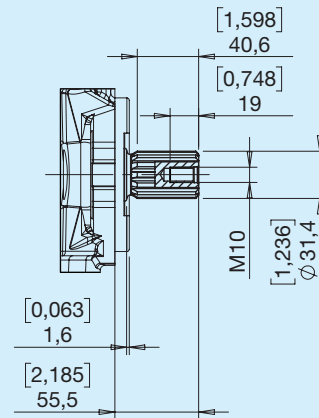


1 SAE 15T 16/32 DP



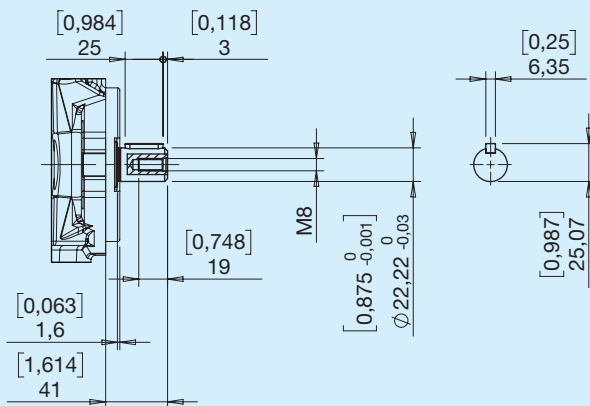
Max. torque 460 Nm

3 SAE 14T 12/24 DP



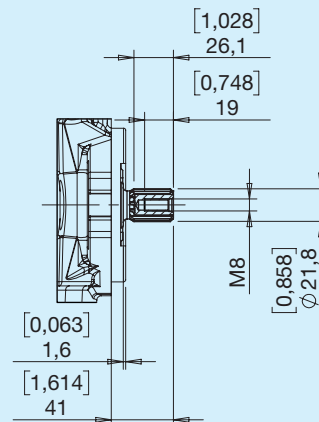
Max. torque 850 Nm

6 Cylindrical Ø22.22



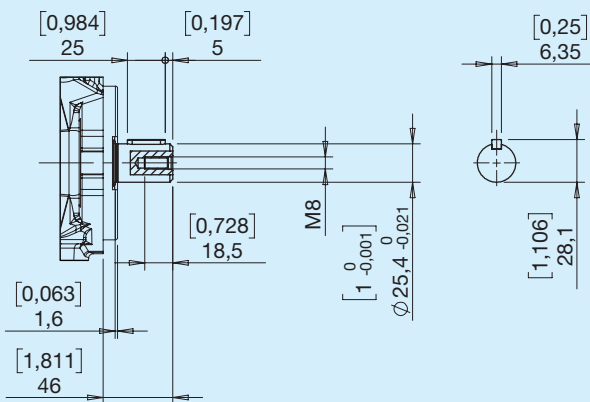
Max. torque 210 Nm

9 SAE 13T 16/32 DP

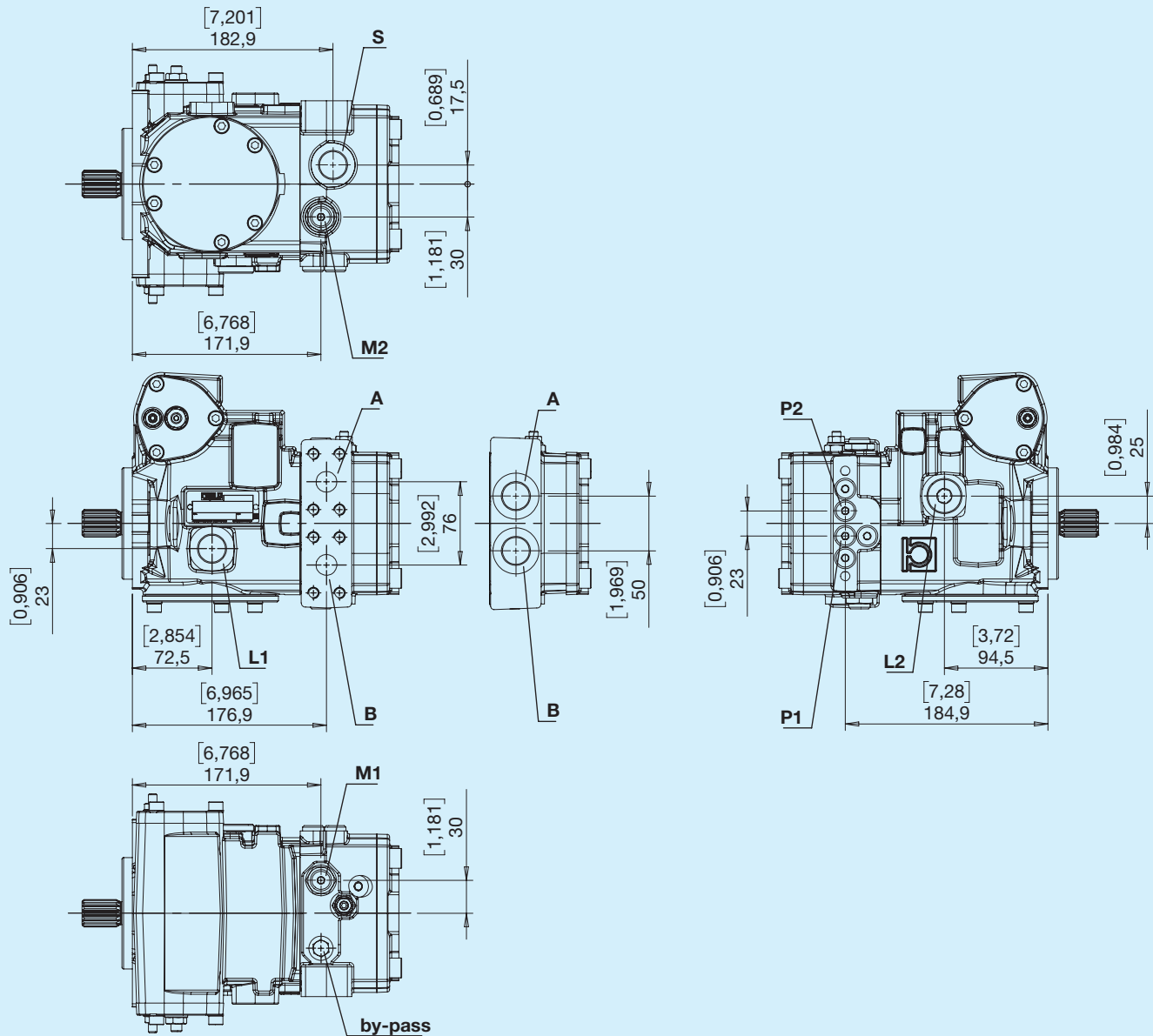


Max. torque 310 Nm

B Cylindrical Ø25.4

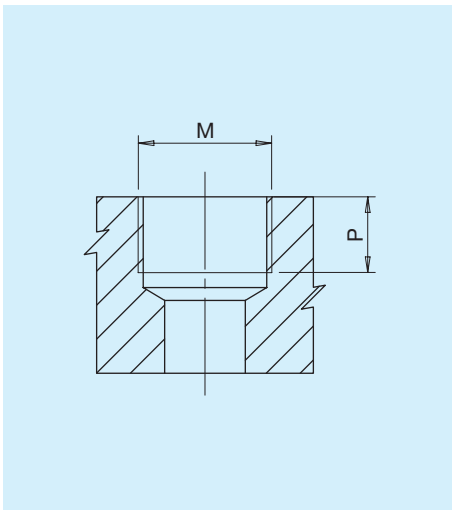


Max. torque 250 Nm



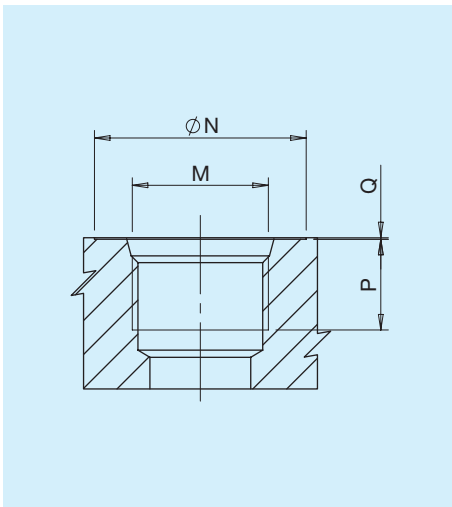
A,B - Use
L1, L2 - Drain port
S - Inlet
P - Pressure intake
M1, M2 - Manometer intake

Type G



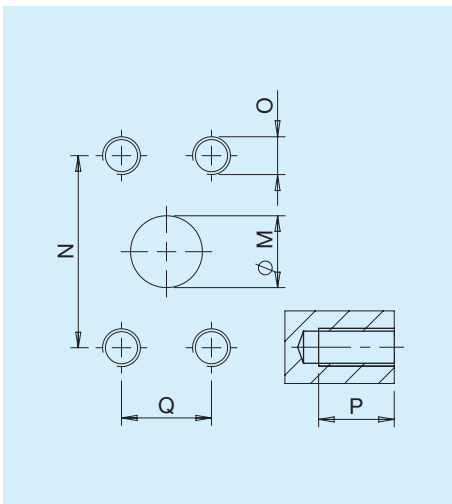
Type	M		P	
		Nm	mm	in
G2	Port ISO 1179-1 - G 1/4	17	12	0.47
G6	Port ISO 1179-1 - G 3/4	90	15	0.59

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
U6	3/4"	42	1.65	18	0.70	0.3	0.01	Port ISO 11926-1-1 1/16-12	90

Type N

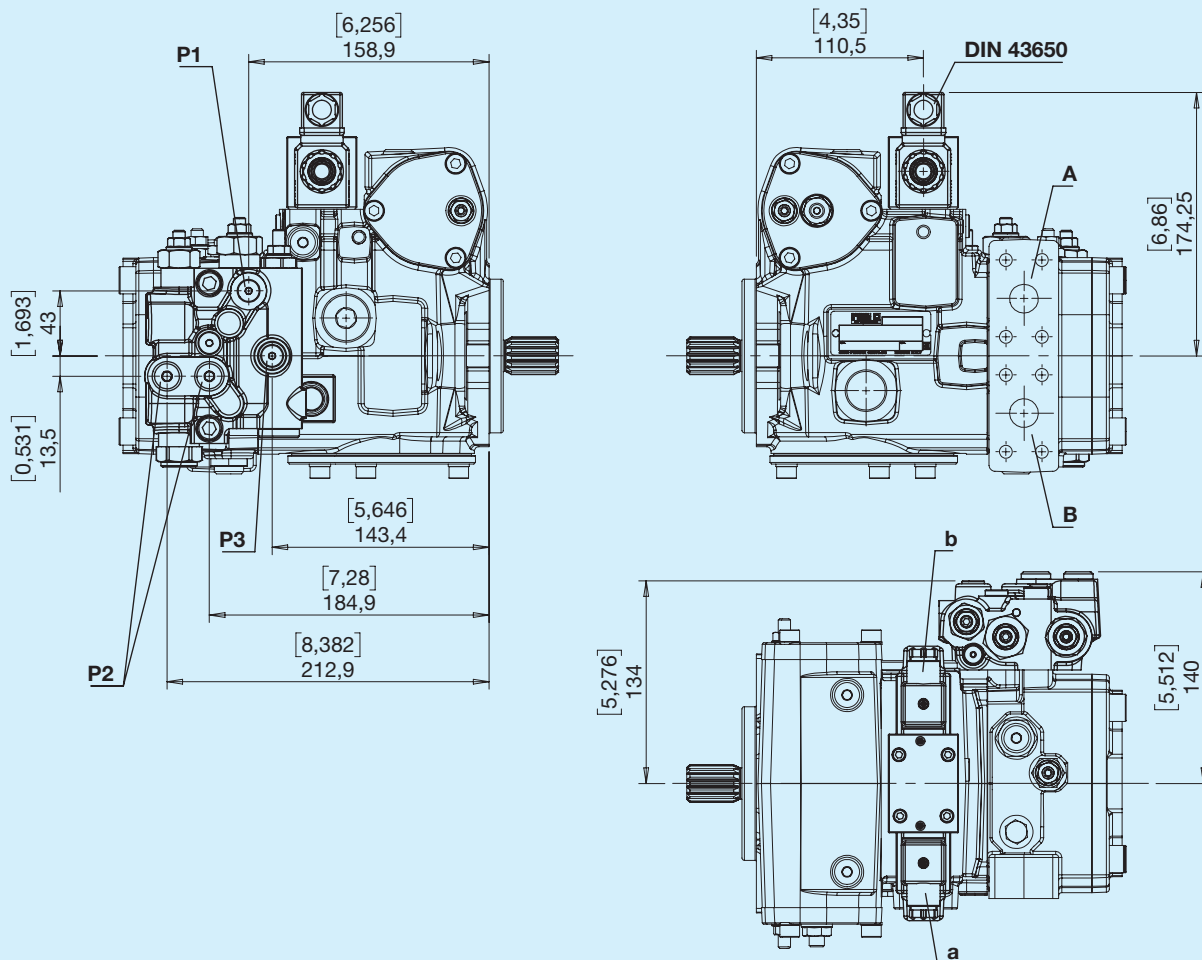


Type	M		N		Q		P		O	
	mm	in	mm	in	mm	in	mm	in		Nm
N6	19	0.75	50.8	2	23.8	0.94	20	0.79	M10	38

Combinations

Type	Inlet S	Outlet A-B	Drain port L1-L2	Pilot pressure a-b	Pressure intakes P1 - P2	Manometer intakes M1 - M2
G	G6	G6	G6	G2	G2	G2
U	U6	U6	U6	G2	G2	U2
N	G6	N6	G6	G2	G2	G2
M	U6	N6	U6	U2	G2	U2

A Automotive



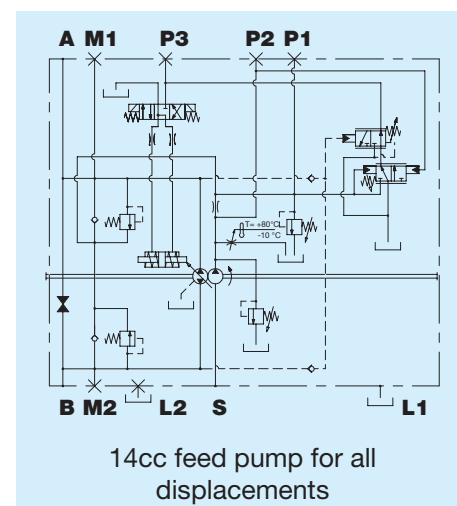
Available on request with DEUTSCH DT04-2P connectors

Outlet

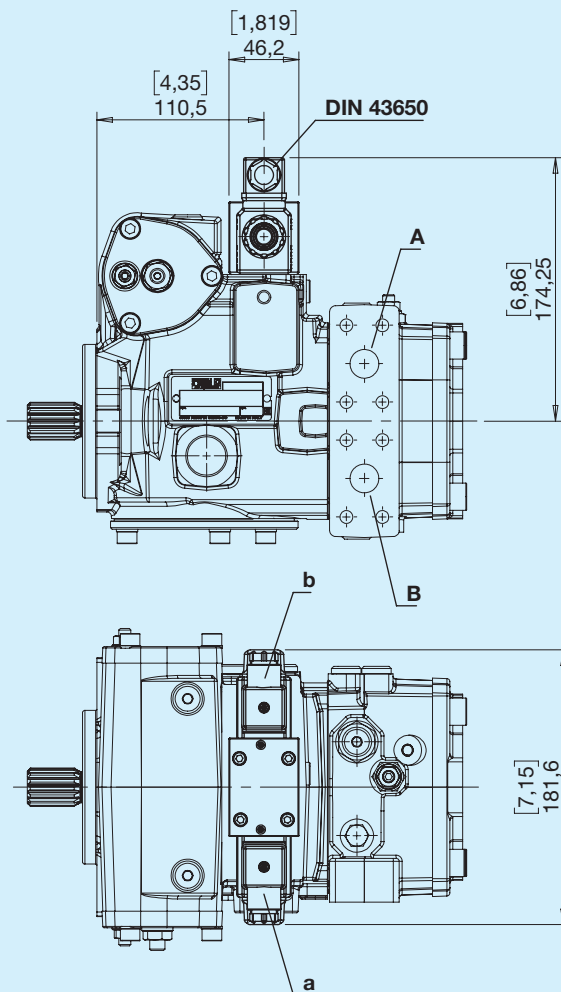
Rotation	Excited solenoid	Outlet
Right	a	A
Right	b	B
Left	a	B
Left	b	A

P1, P3 - Pressure intake G 1/8
P2 - Pressure intake G 1/4

Hydraulic diagram



E Electrical ON/OFF, closed centre 12V

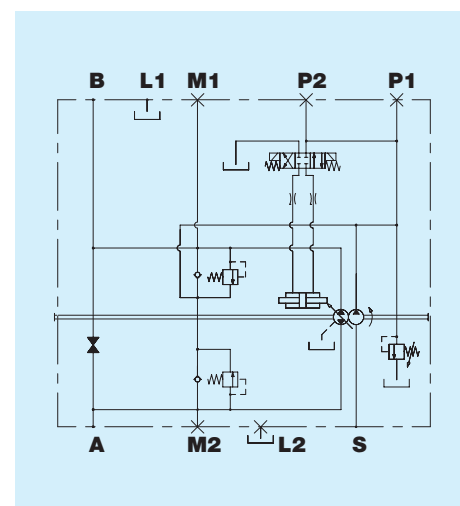


Available on request with DEUTSCH DT04-2P connectors

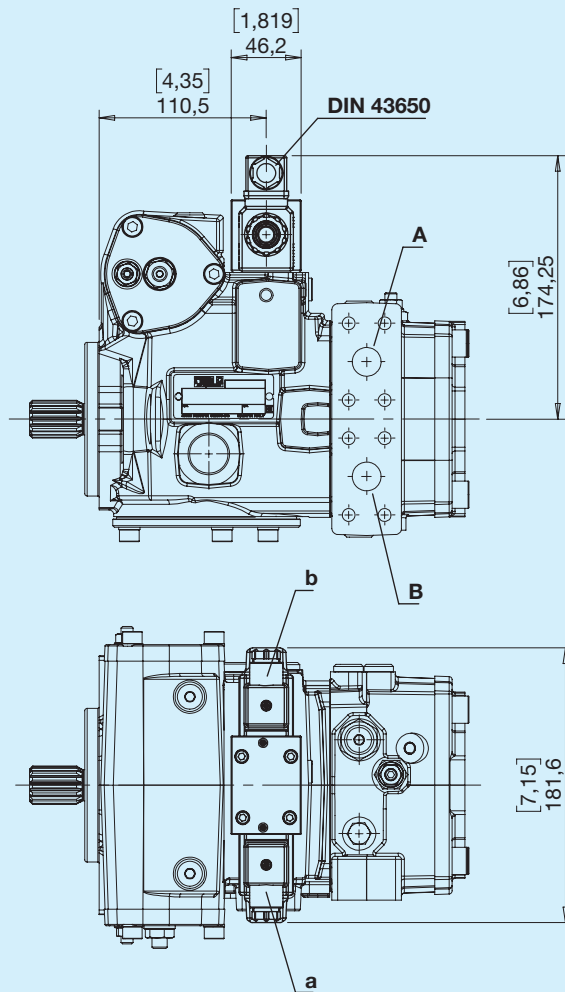
Outlet

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

Hydraulic diagram



F Electrical ON/OFF, closed centre 24V

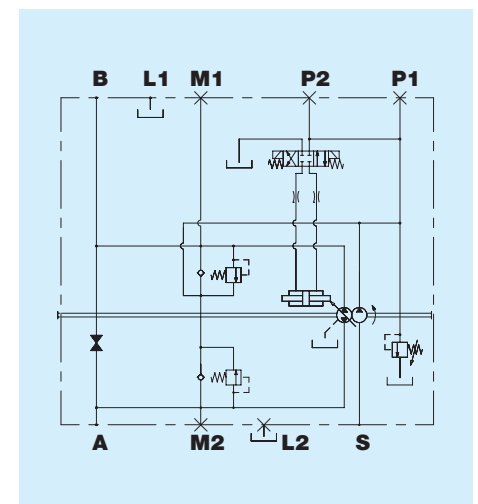


Available on request with DEUTSCH DT04-2P connectors

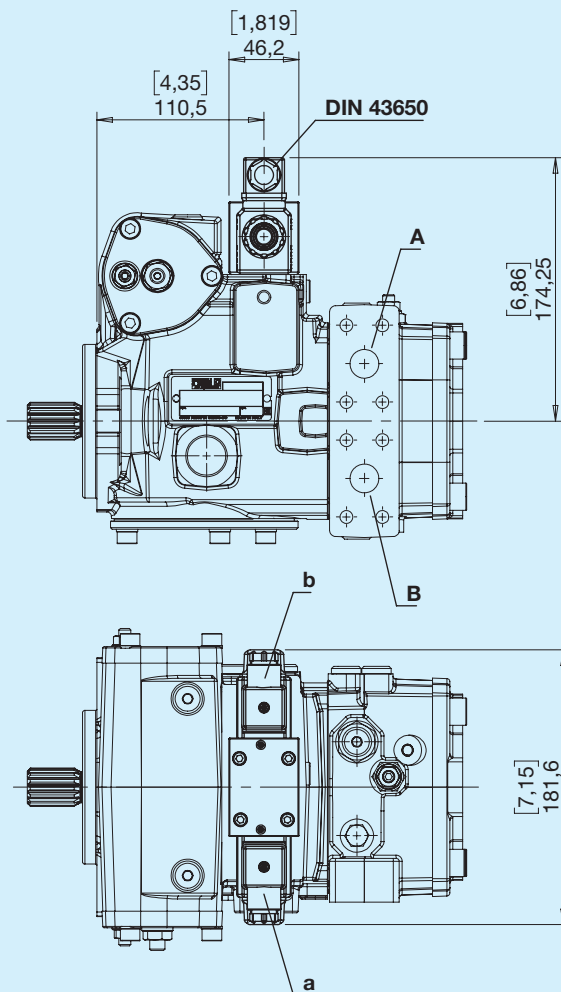
Outlet

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

Hydraulic diagram



N Electrical ON/OFF, open centre 12V

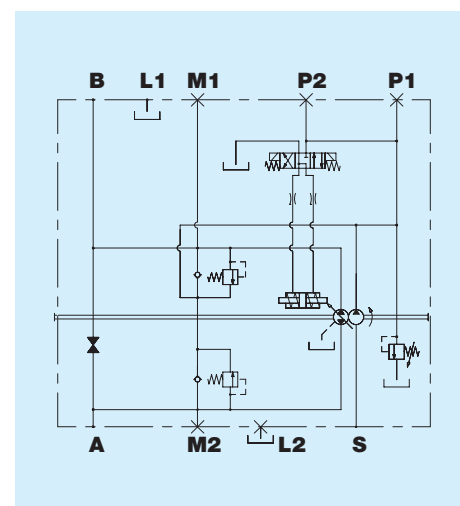


Available on request with DEUTSCH DT04-2P connectors

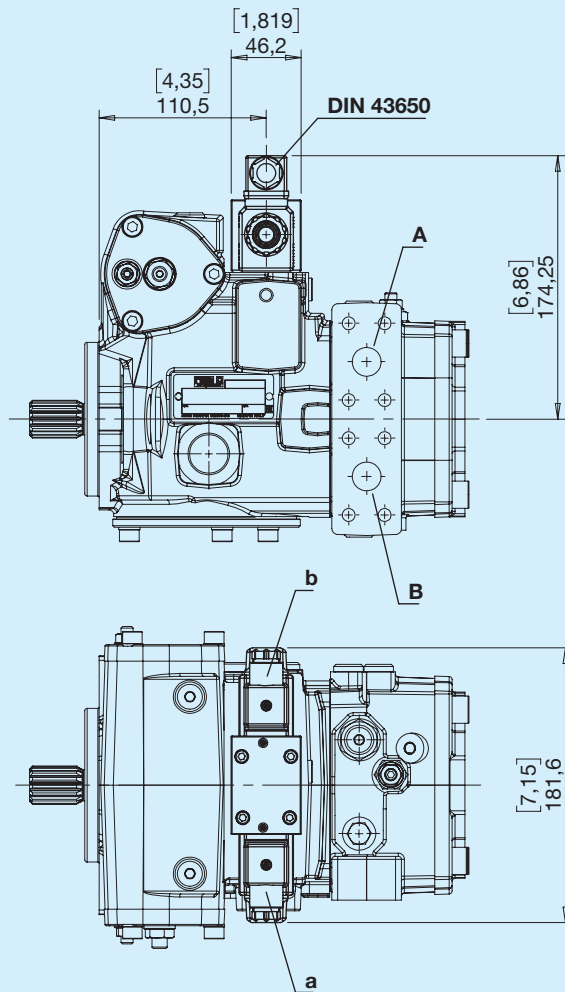
Outlet

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

Hydraulic diagram



Q Electrical ON/OFF, open centre 24V

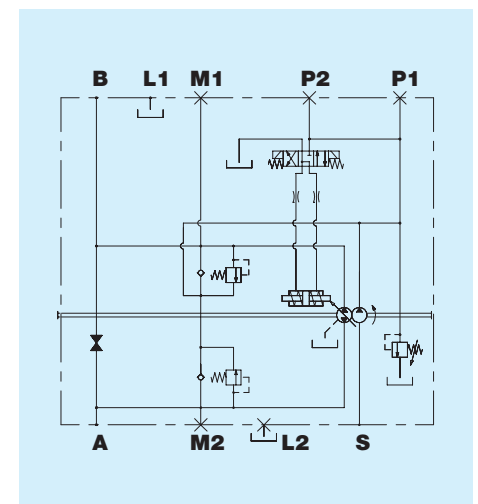


Available on request with DEUTSCH DT04-2P connectors

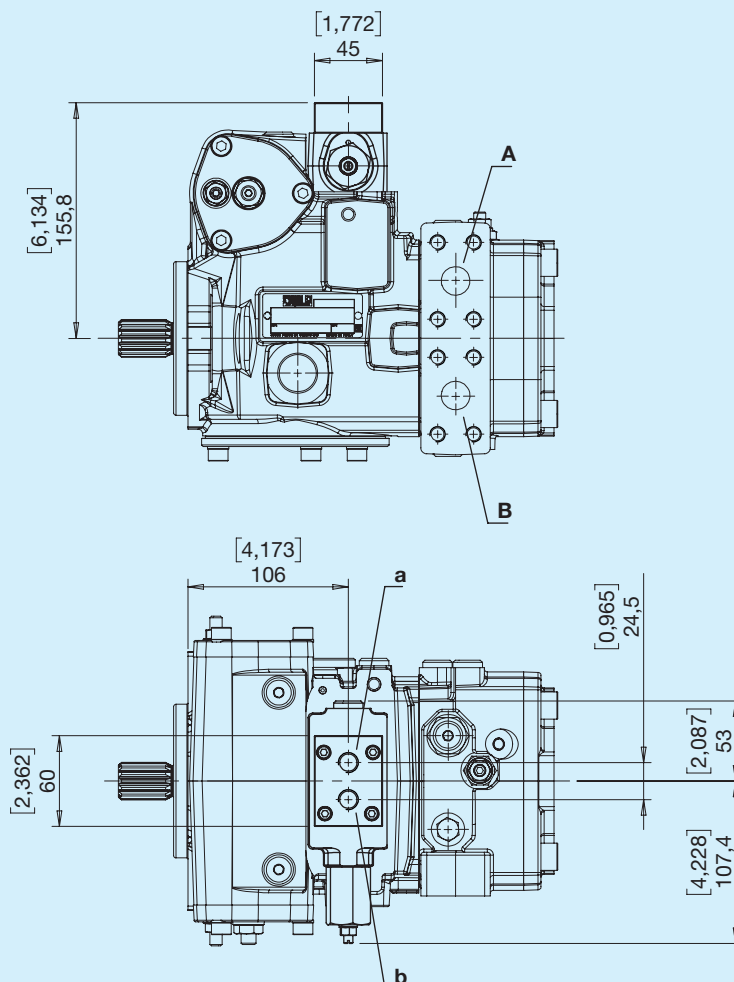
Outlet

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

Hydraulic diagram



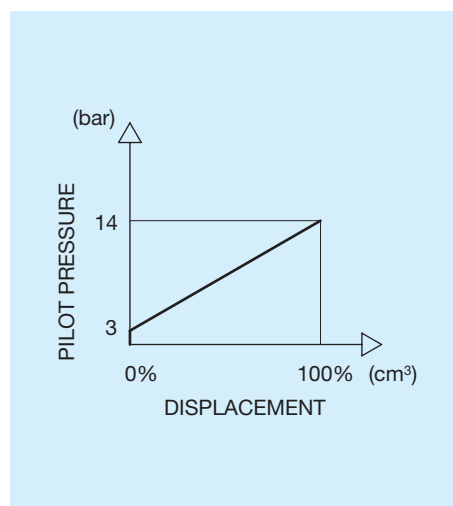
G Feedback hydraulic



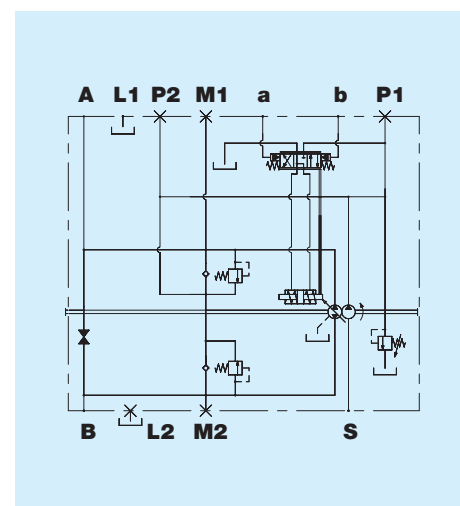
Outlet

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

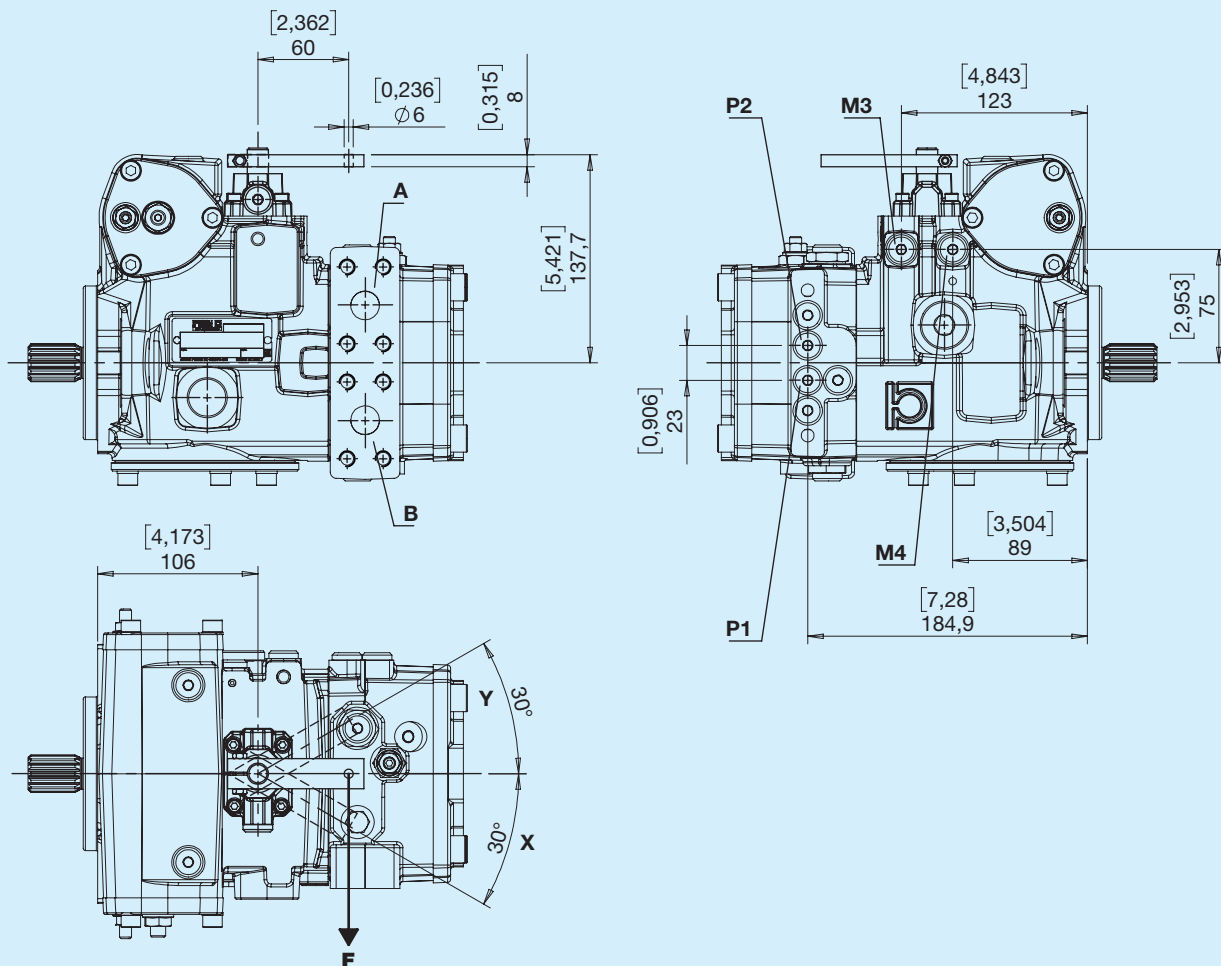
Pilot



Hydraulic diagram



I Lever-operated hydraulic

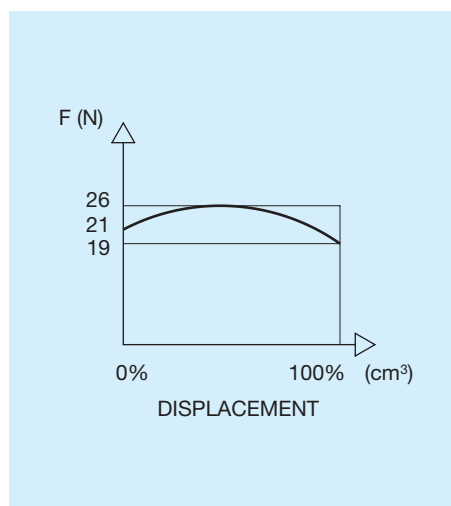


M3 - Intake restrictor
M4 - Outlet restrictor

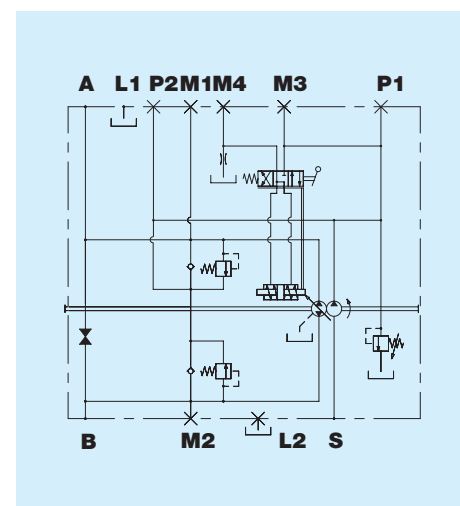
Outlet

Rotation	Control lever	Outlet
Right	Y	B
Right	X	A
Left	Y	A
Left	X	B

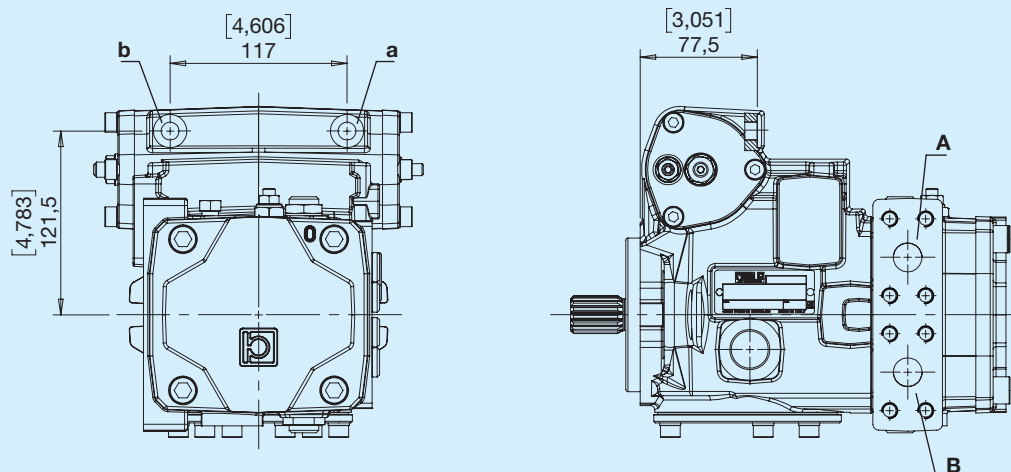
Pilot



Hydraulic diagram



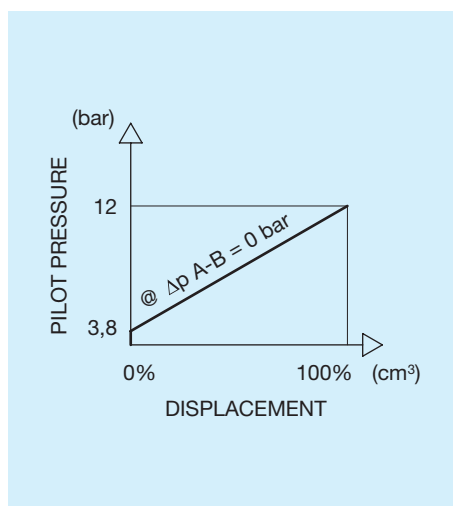
K Direct hydraulic



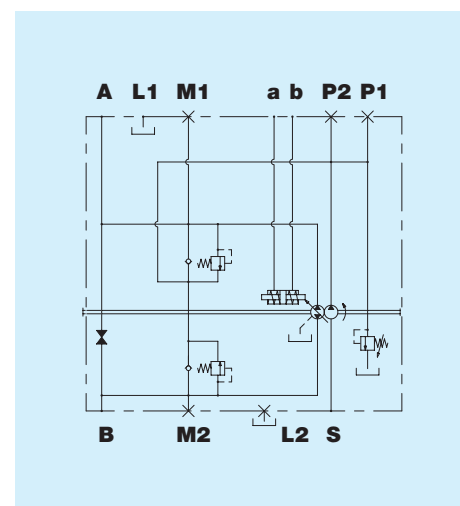
Outlet

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

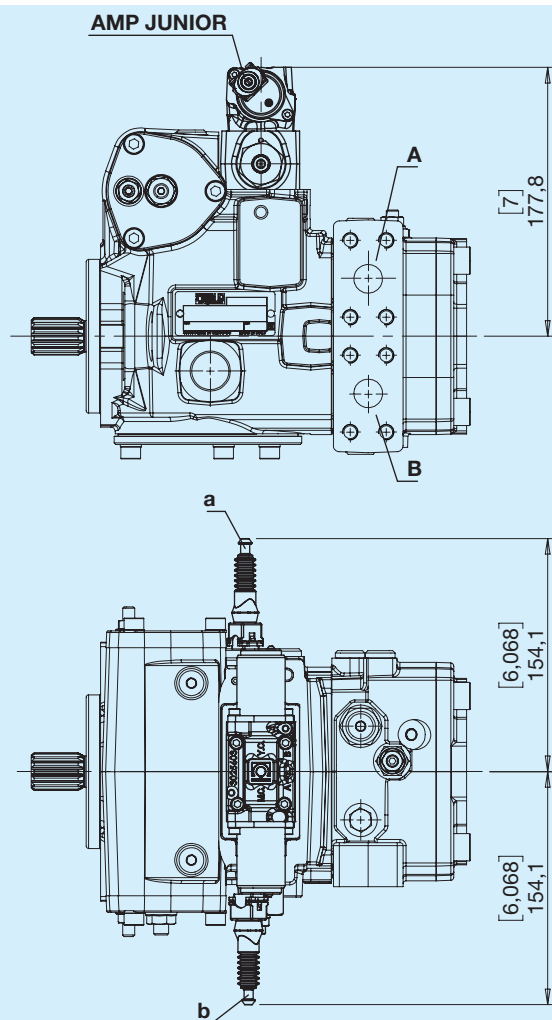
Pilot



Hydraulic diagram



O Electronic proportional feedback control 12V



Available on request with DEUTSCH DT04-2P connectors

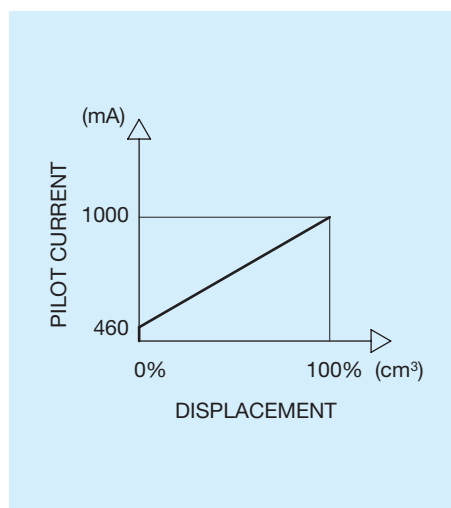
Outlet

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

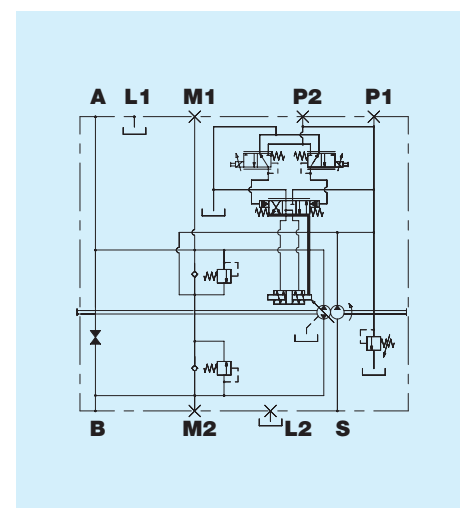
Control

Rated voltage	12	V
Min. current (I1)	300	mA
Max. current (I2)	1500	mA
PWM frequency	100	Hz

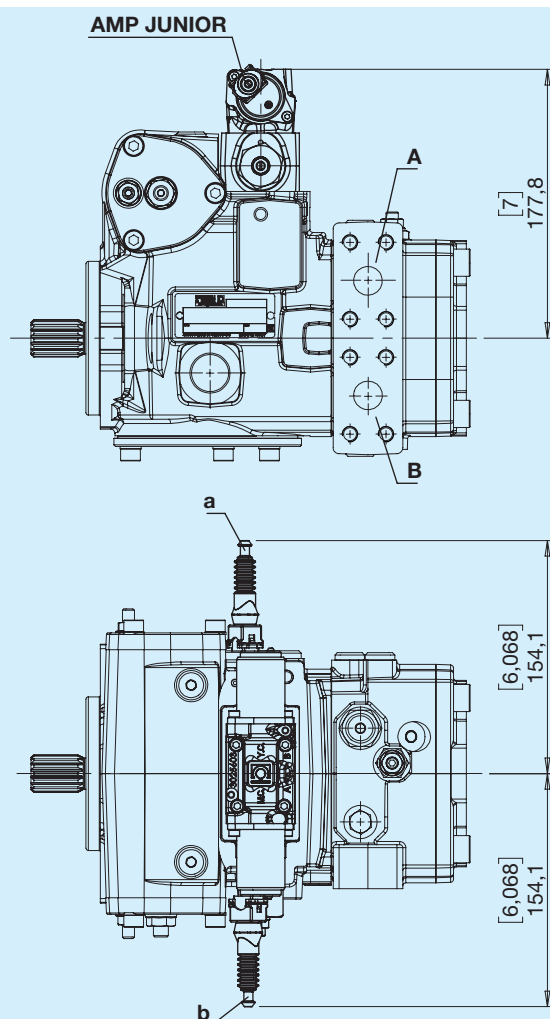
Pilot



Hydraulic diagram



V Electronic proportional feedback control 24V



Available on request with DEUTSCH DT04-2P connectors

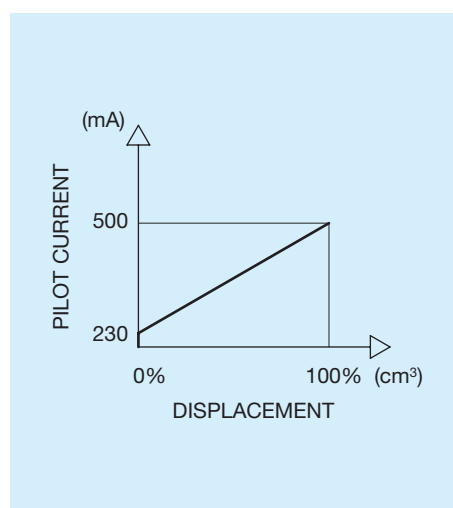
Outlet

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

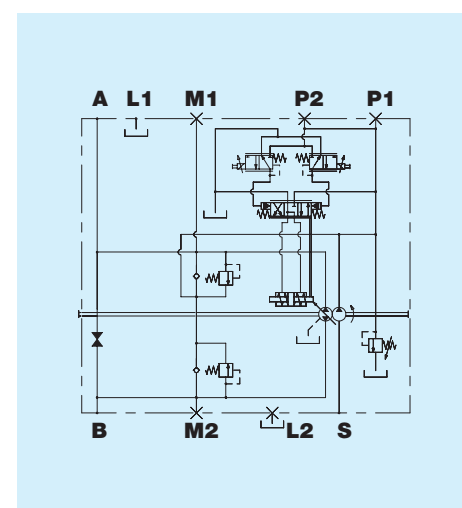
Control

Rated voltage	24	V
Min. current (I1)	180	mA
Max. current (I2)	850	mA
PWM frequency	100	Hz

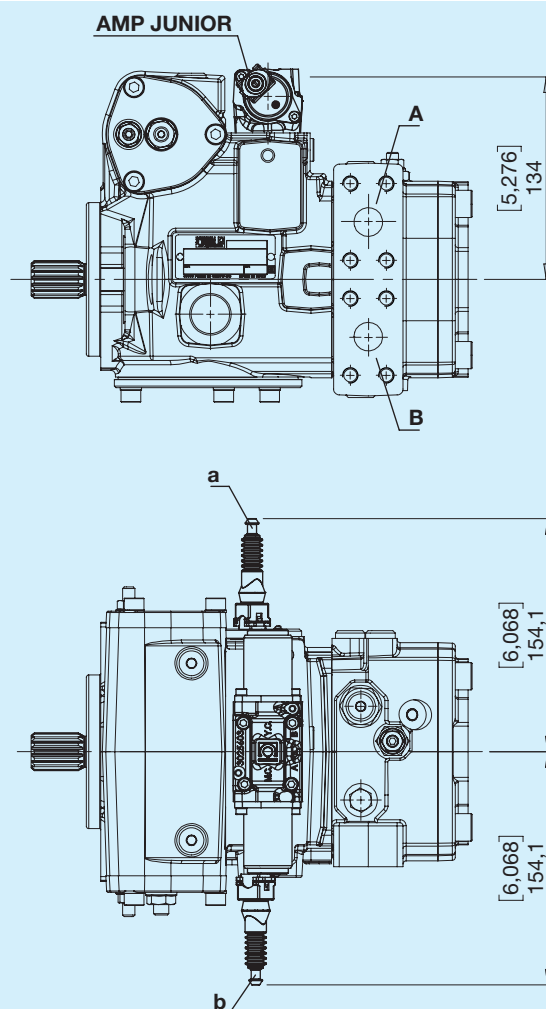
Pilot



Hydraulic diagram



S Electronic proportional control 12 V



Available on request with DEUTSCH DT04-2P connectors

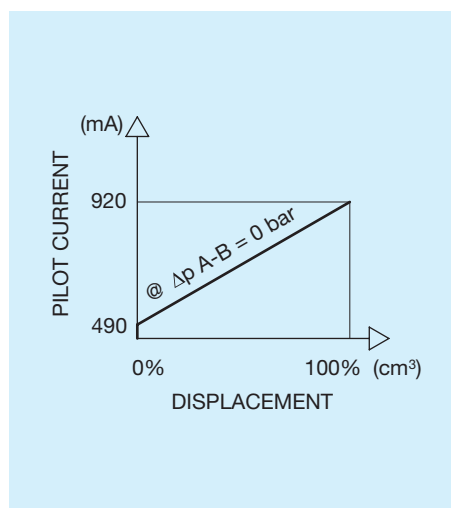
Outlet

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

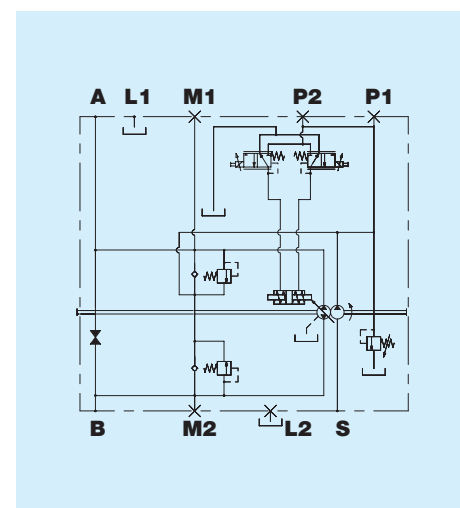
Control

Rated voltage	12	V
Min. current (I1)	300	mA
Max. current (I2)	1500	mA
PWM frequency	100	Hz

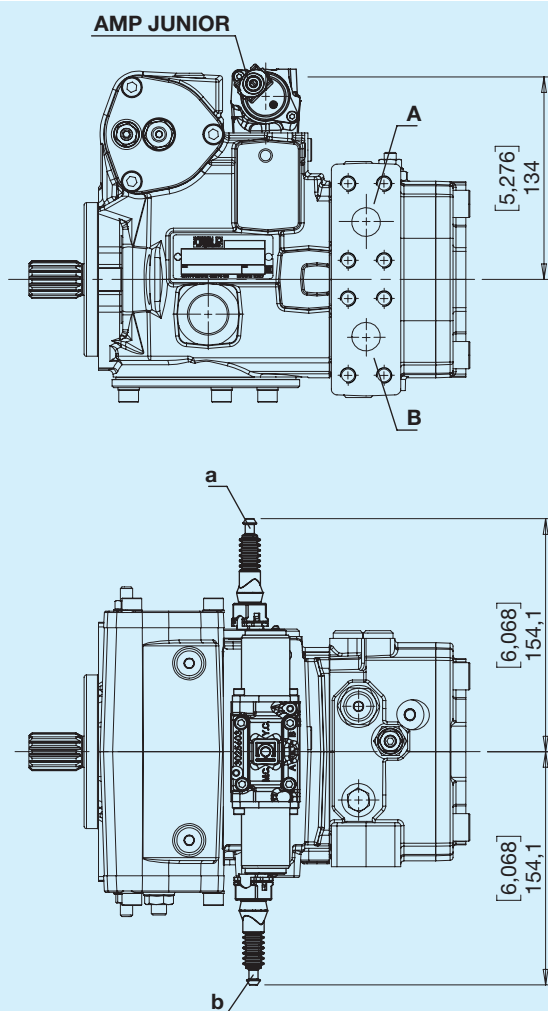
Pilot



Hydraulic diagram



W Electronic proportional control 24V



Available on request with DEUTSCH DT04-2P connectors

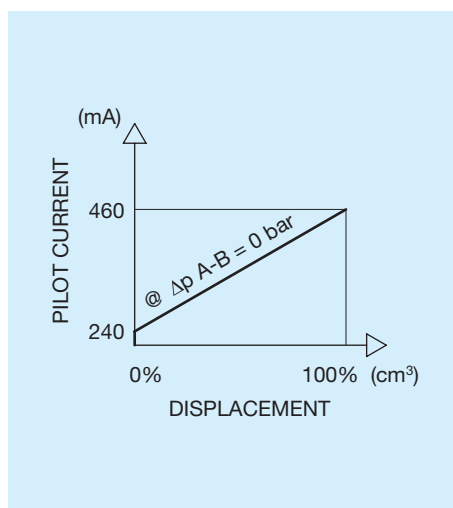
Outlet

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

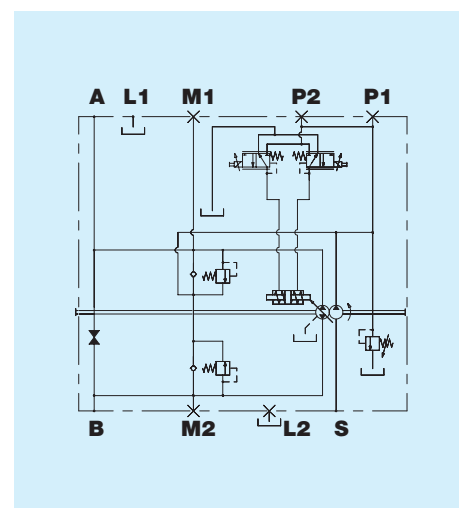
Control

Rated voltage	24	V
Min. current (I1)	180	mA
Max. current (I2)	850	mA
PWM frequency	100	Hz

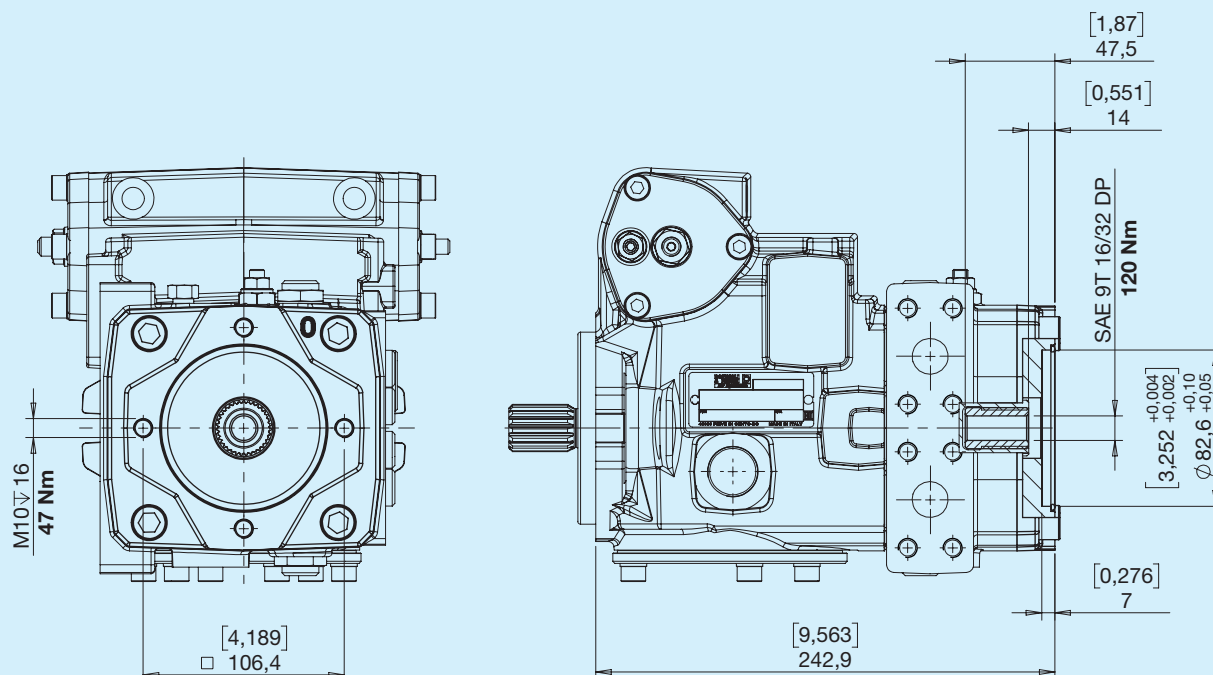
Pilot



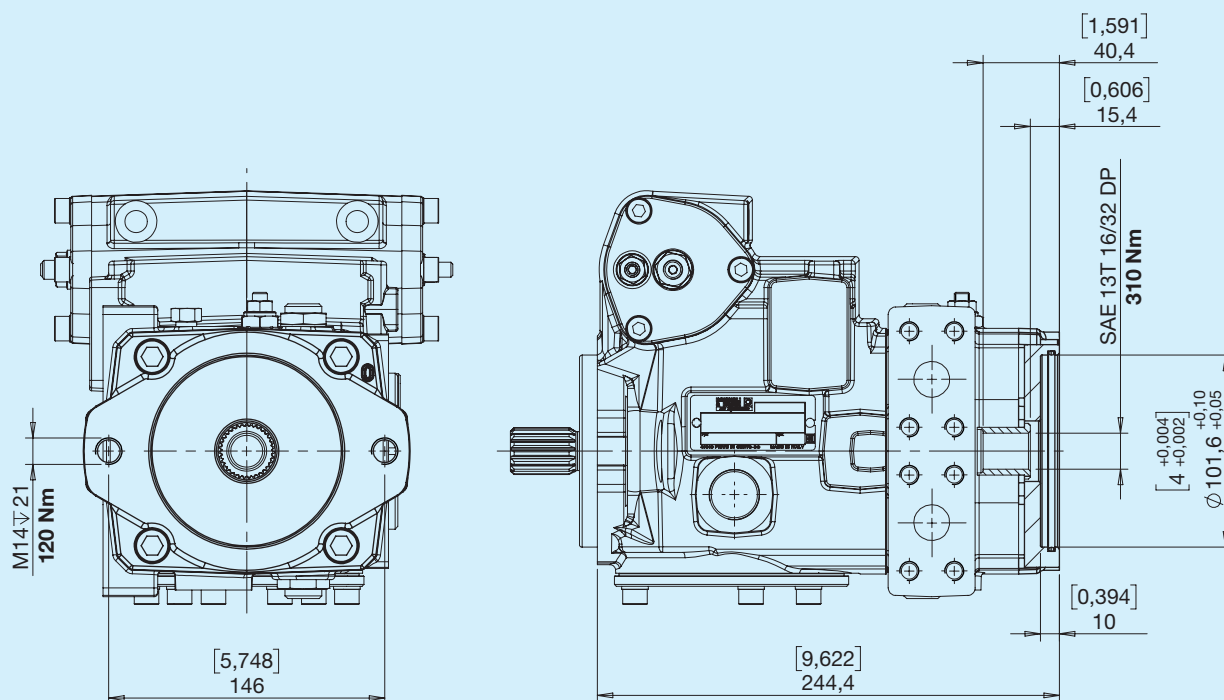
Hydraulic diagram



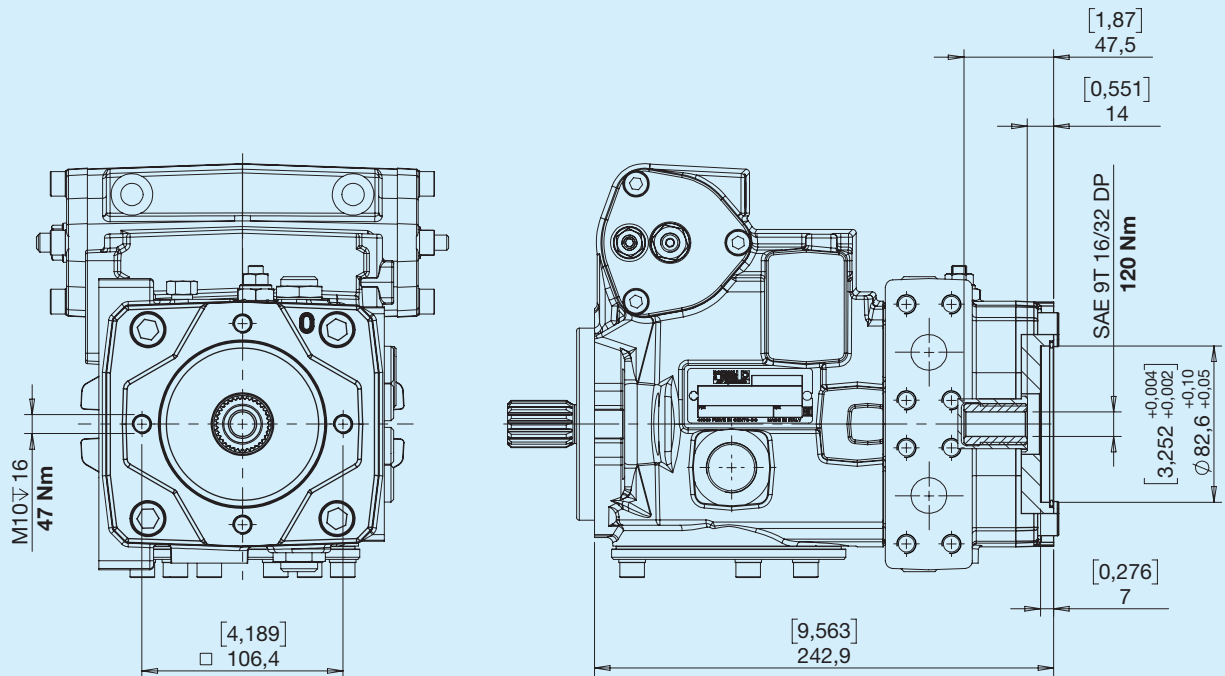
2 SAE A with boost pump



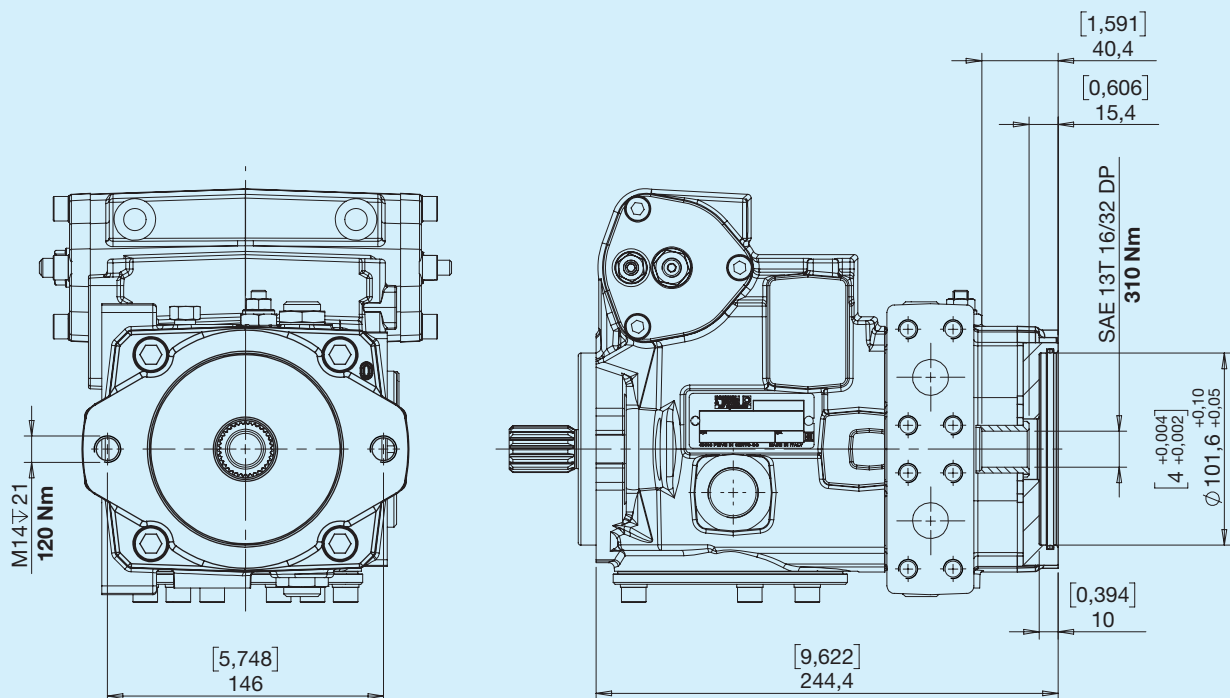
3 SAE B with boost pump



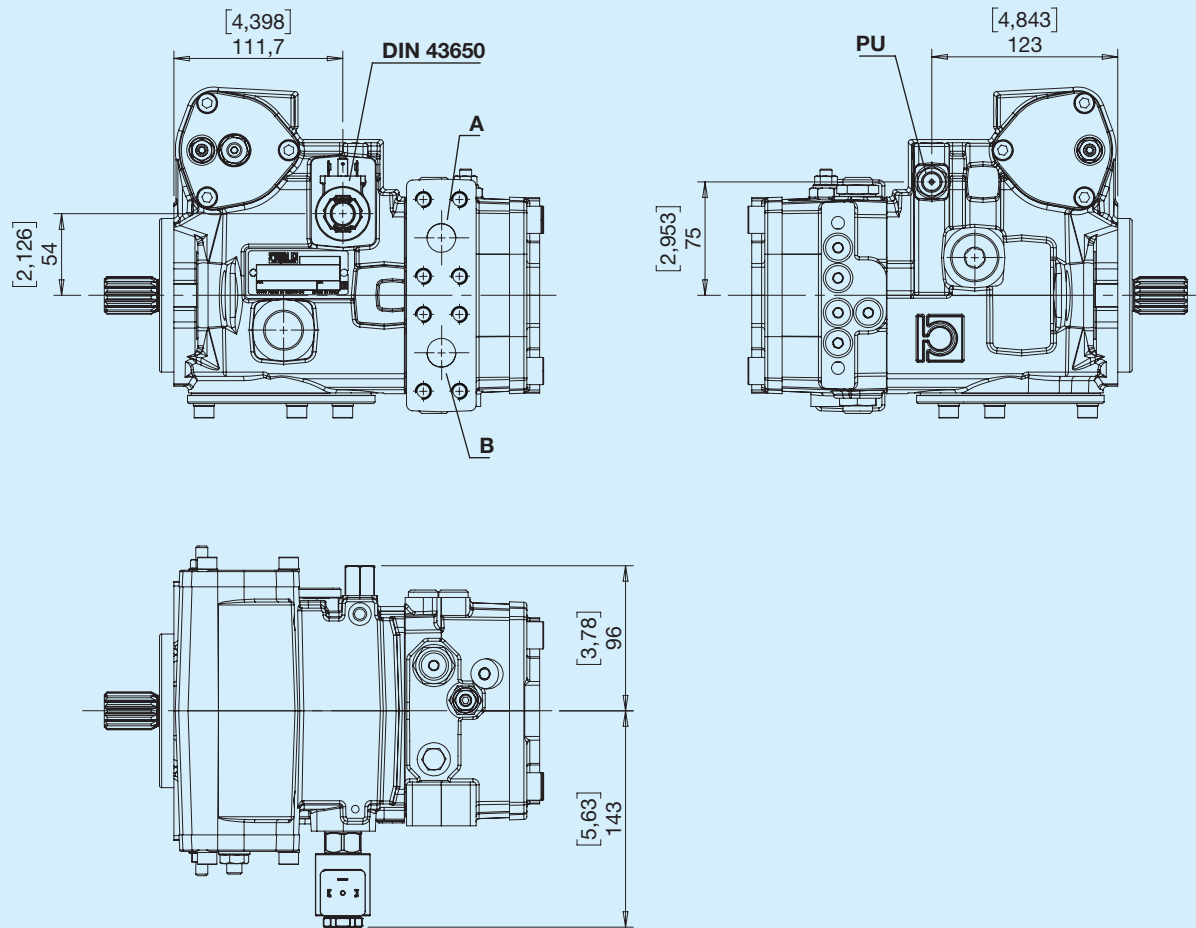
5 SAE A without boost pump



6 SAE B without boost pump

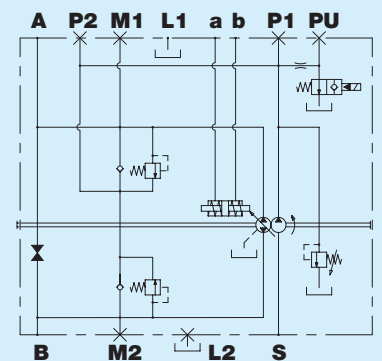


E 'no operator' safety

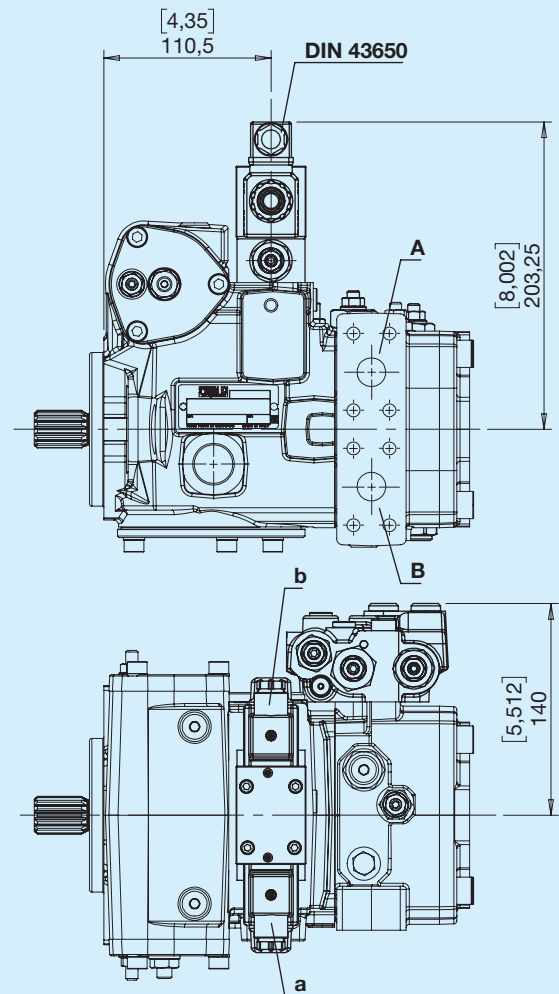
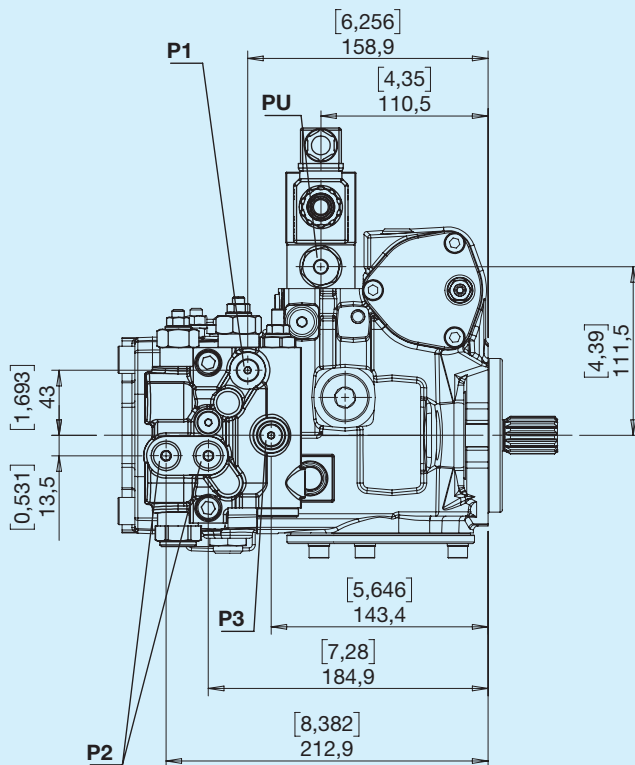


PU - Brake opening pressure G1/4

Hydraulic diagram



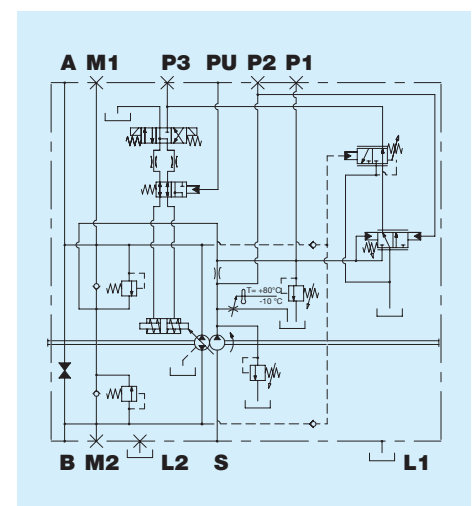
H Hydraulic inching (only A control)



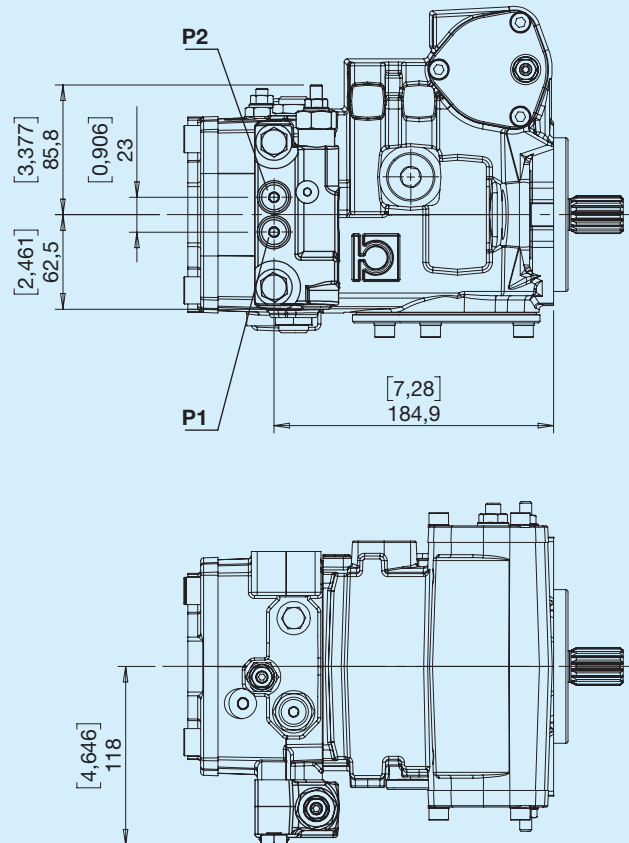
Available on request with DEUTSCH DT04-2P connectors

Hydraulic diagram

Right
Right
Left

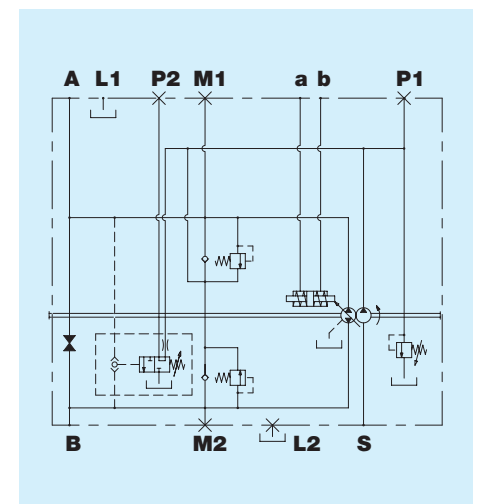


J Cut-off

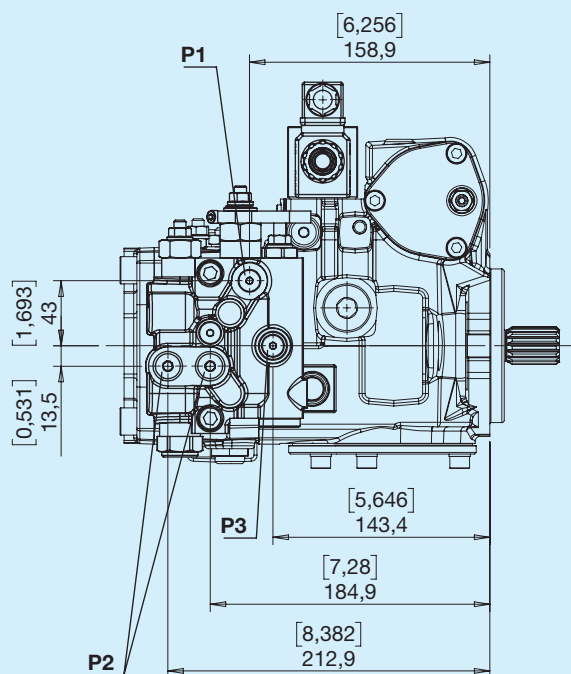


P1, P2 - Pressure intake G1/4

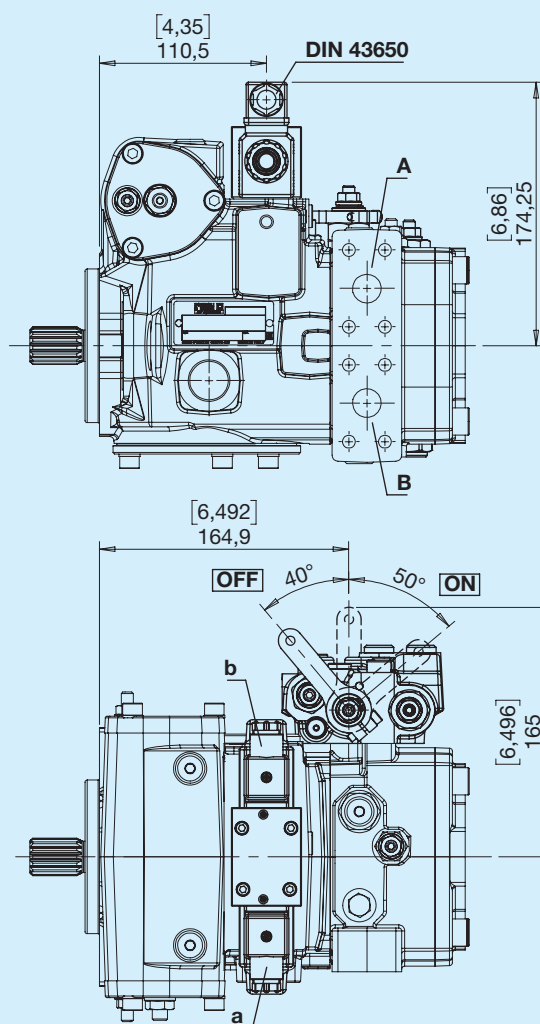
Hydraulic diagram



M Mechanical inching (only A control)



OFF = MAX DISPLACEMENT
ON = ZERO DISPLACEMENT

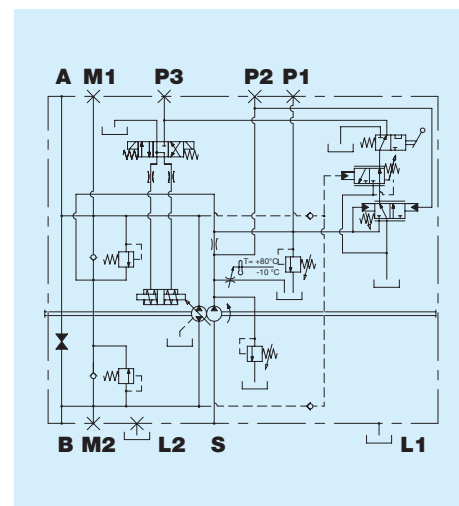


Available on request with DEUTSCH DT04-2P connectors

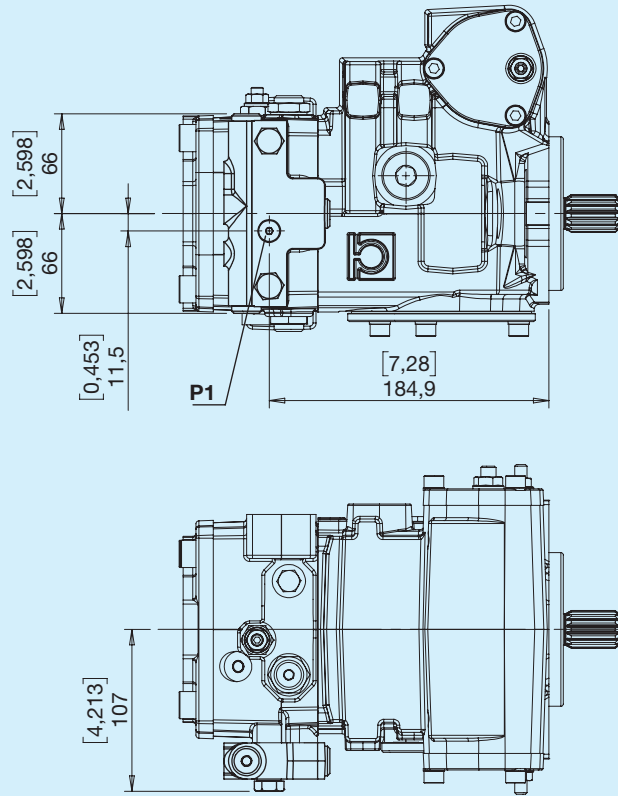
Hydraulic diagram

P1, P3 - Pressure intake G 1/8

P2 - Pressure intake G 1/4

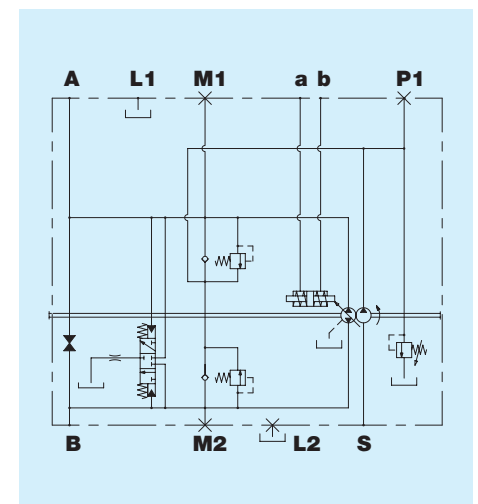


V Flushing valve (5-7 l/min)

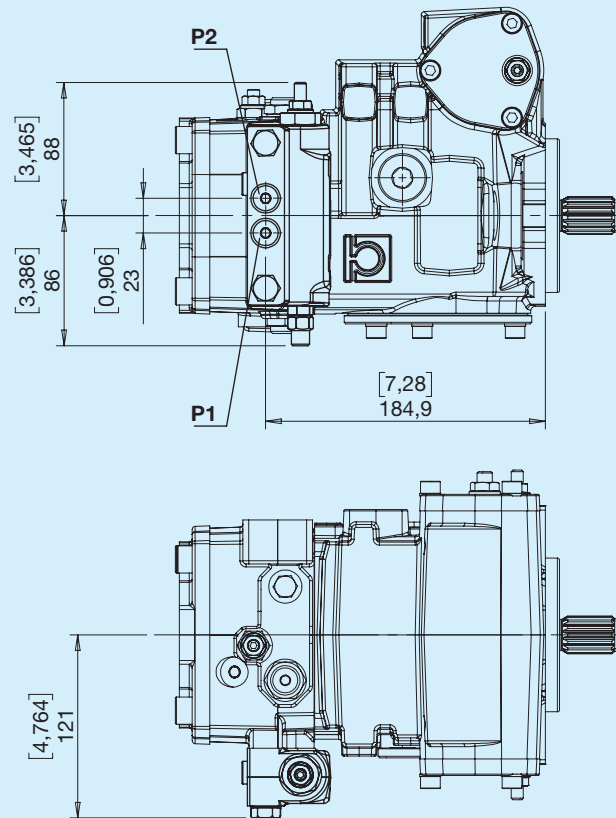


P1 - Pressure intake G1/8

Hydraulic diagram

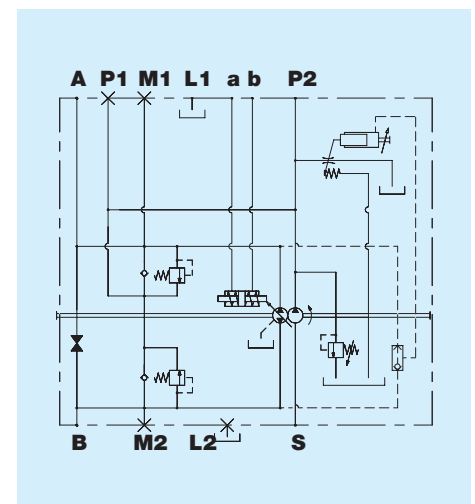


W Power limiter

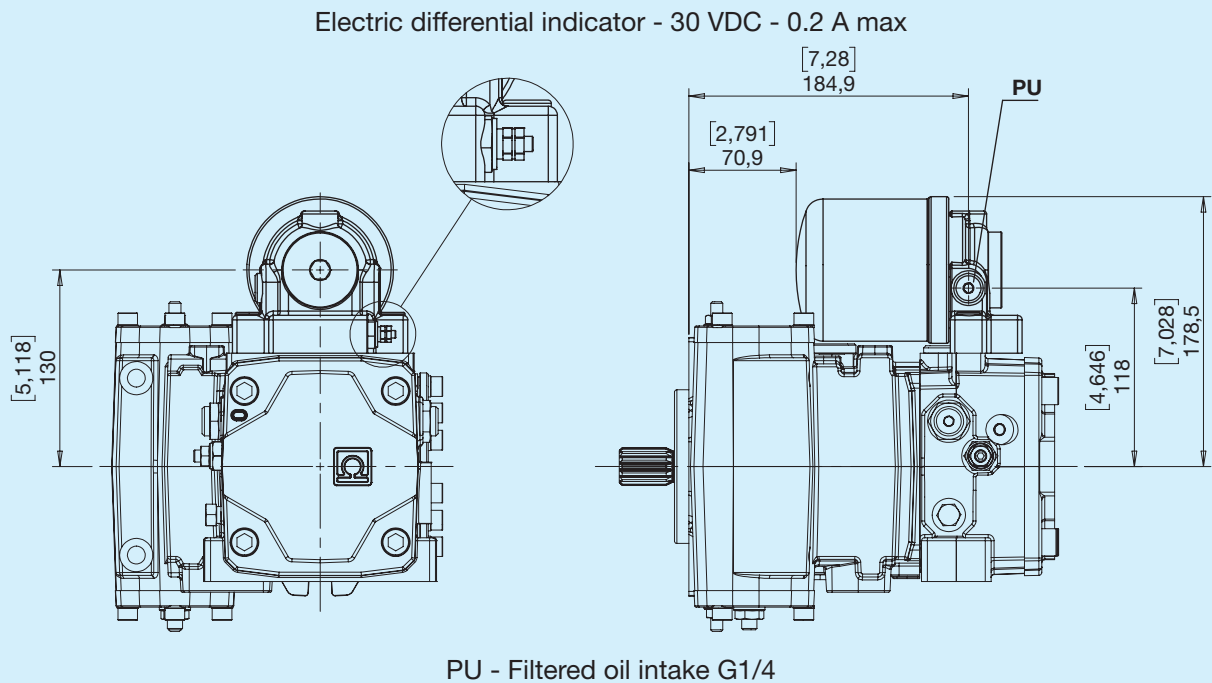


P1, P2 - Pressure intake G1/4

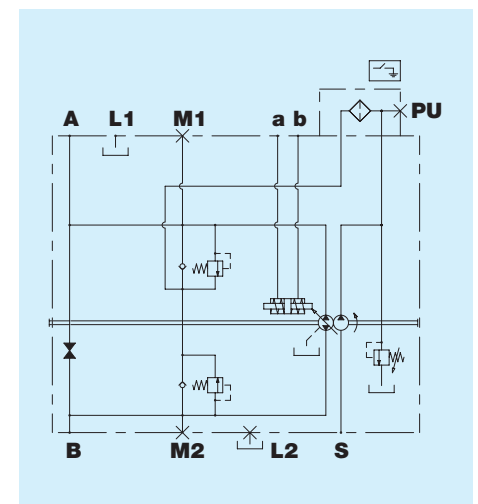
Hydraulic diagram



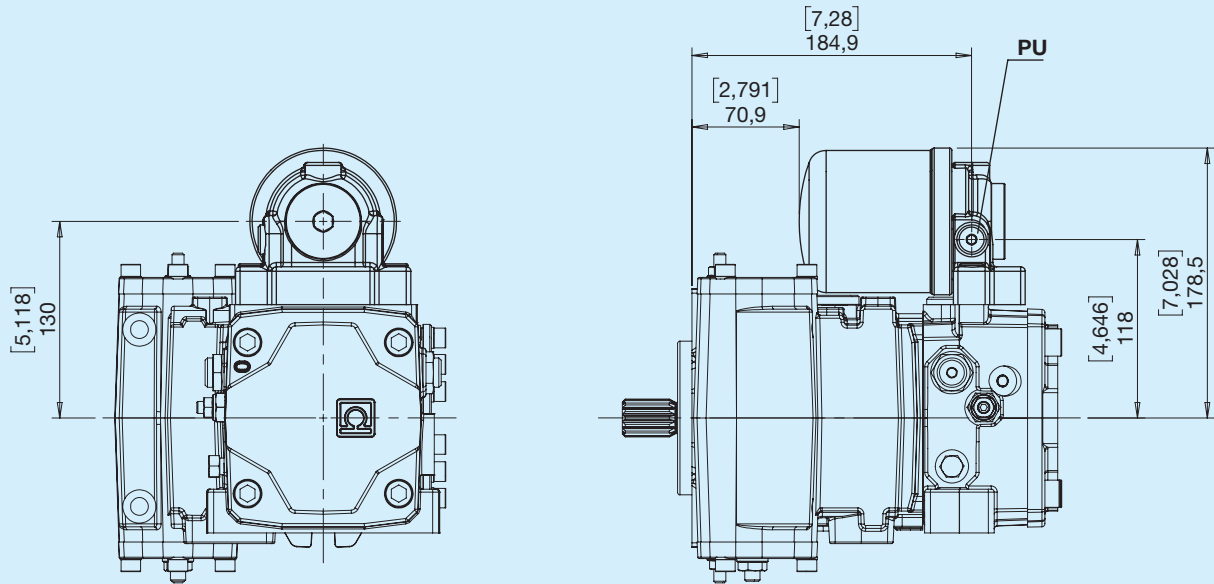
X Filter with clogging indicator



Hydraulic diagram

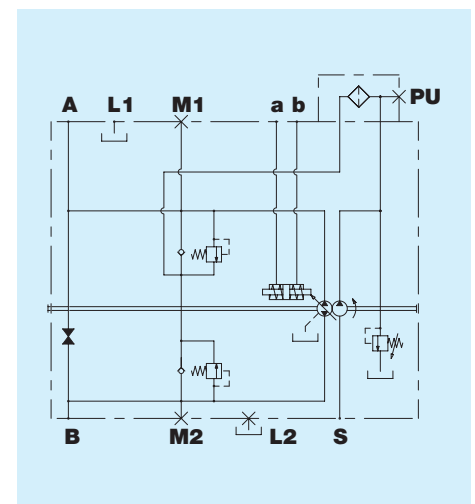


Y Filter without clogging indicator



PU - Filtered oil intake G1/4

Hydraulic diagram



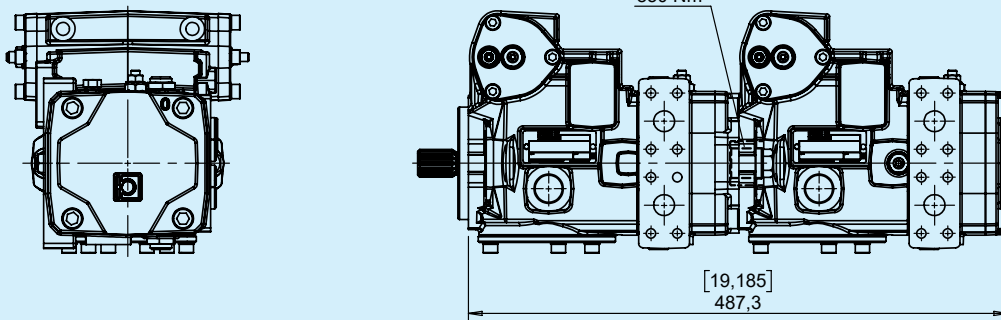
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
HPP4														
1 2 3	Displacement													
	034					050					065			
	046					058								
4	Direction of rotation													
	R Right					L Left								
5	Flanges													
	B SAE B													
6	Shaft profile													
	1 SAE 15T 16/32 DP					6 Cylindrical Ø22.22					B Cylindrical Ø25.4			
	3 SAE 14T 12/24 DP					9 SAE 13T 16/32 DP					0 For HPP4 secondary pump			
7	Type of ports													
	G Gas					U UNF					N Gas-Uses SAE			
											M UNF-Uses SAE			
8	Controls													
	A Automotive					N Electrical ON/OFF, open centre 12V					I Lever-operated hydraulic			
	E Electrical ON/OFF, closed centre 12V					Q Electrical ON/OFF, open centre 24V					K Remote hydraulic			
	F Electrical ON/OFF, closed centre 24V					G Feedback hydraulic					O Electronic proportional feedback control 12V			
											V Electronic proportional feedback control 24V			
											S Electronic proportional control 12V			
											W Electronic proportional control 24V			
9	Valve calibration													
	G 250 bar					L 300 bar					S 370 bar			
	I 280 bar					O 350 bar					P 400 bar			
											Q 420 bar			
											R 450 bar			
10	Versions													
	0 No special fittings, without boost pump					3 SAE B with boost pump					V For pump HPP4 with boost pump			
	1 No special fittings, with boost pump					5 SAE A without boost pump					T For pump HPP4 without boost pump			
	2 SAE A with boost pump					6 SAE B without boost pump					B Primary SHORT pump without boost pump			
											Y Secondary SHORT pump without fitting			
											U Secondary SHORT pump with SAE A fitting			
											W Secondary SHORT pump with SAE B fitting			
11	Accessories													
	0 No option					J Cut-off					V Flushing valve			
	E 'no operator' safety					M Mechanical inching (only A control)					W Power limiter			
	H Hydraulic inching (only A control)					S Multiple accessories (special version)					X Filter with electric clogging indicator			
											Y Filter without electric clogging indicator			
12 13 14	Special versions													
	...													

Double pump with two charge pumps

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

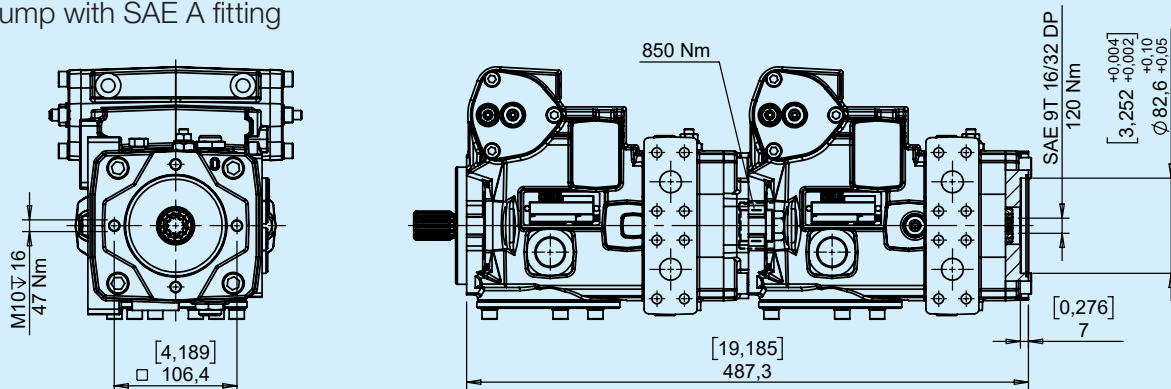
Stage 1 Stage 2
HPP4 058 R B 3 G K L V 0 000 + **HPP4 058 R B 0 G K L 1 0 000**

tandem pump



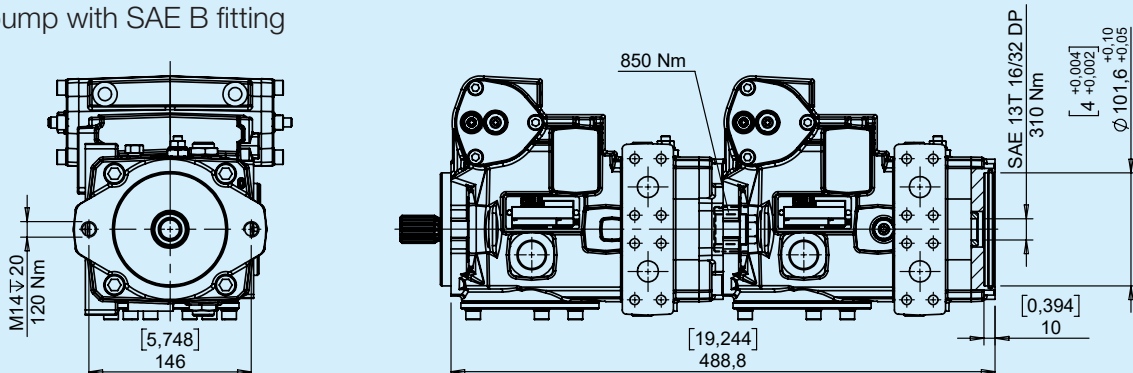
Stage 1 Stage 2
HPP4 058 R B 3 G K L V 0 000 + **HPP4 058 R B 0 G K L 2 0 000**

tandem pump with SAE A fitting



Stage 1 Stage 2
HPP4 058 R B 3 G K L V 0 000 + **HPP4 058 R B 0 G K L 2 0 000**

tandem pump with SAE B fitting



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

Technical drawing of a mechanical assembly, showing three views: front, top, and side. The drawing includes dimensions in millimeters and callouts for various components.

Front View (Top Left):

- Overall width: 222,4 [8,756]
- Distance from left edge to center of P1: 204,9 [8,067]
- Distance from left edge to center of M1: 187,4 [7,378]
- Distance from left edge to center of M3: 204,9 [8,067]
- Distance from left edge to center of P1: 204,9 [8,067]
- Distance from left edge to center of M1: 187,4 [7,378]
- Distance from left edge to center of M3: 204,9 [8,067]
- Distance from left edge to center of P1: 204,9 [8,067]
- Distance from left edge to center of M1: 187,4 [7,378]
- Distance from left edge to center of M3: 204,9 [8,067]

Top View (Bottom):

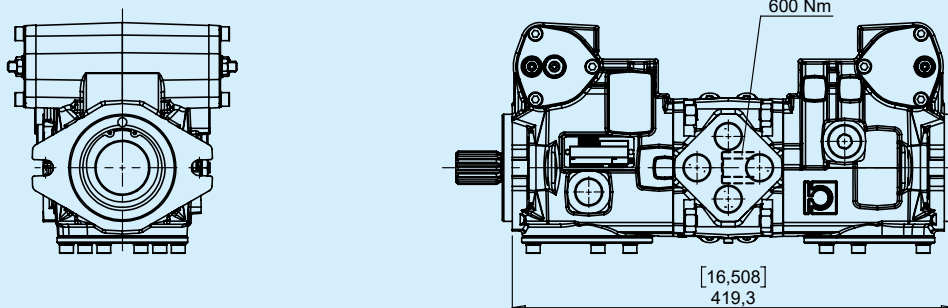
- Overall width: 315,3 [12,413]
- Distance from left edge to center of L1: 72,5 [2,854]
- Distance from left edge to center of A1: 175,2 [6,898]
- Distance from left edge to center of A2: 204,9 [8,067]
- Distance from left edge to center of B1: 234,6 [9,236]
- Distance from left edge to center of B2: 234,6 [9,236]
- Distance from left edge to center of L4: 315,3 [12,413]
- Distance from left edge to center of A1: 175,2 [6,898]
- Distance from left edge to center of A2: 204,9 [8,067]
- Distance from left edge to center of B1: 234,6 [9,236]
- Distance from left edge to center of B2: 234,6 [9,236]
- Distance from left edge to center of L4: 315,3 [12,413]

Side View (Right):

- Overall height: 25 [0,984]
- Distance from bottom edge to center of L3: 72,5 [2,854]
- Distance from bottom edge to center of S: 204,9 [8,067]
- Distance from bottom edge to center of L2: 315,3 [12,413]
- Distance from bottom edge to center of L4: 315,3 [12,413]
- Distance from bottom edge to center of A1: 175,2 [6,898]
- Distance from bottom edge to center of A2: 204,9 [8,067]
- Distance from bottom edge to center of B1: 234,6 [9,236]
- Distance from bottom edge to center of B2: 234,6 [9,236]
- Distance from bottom edge to center of L4: 315,3 [12,413]

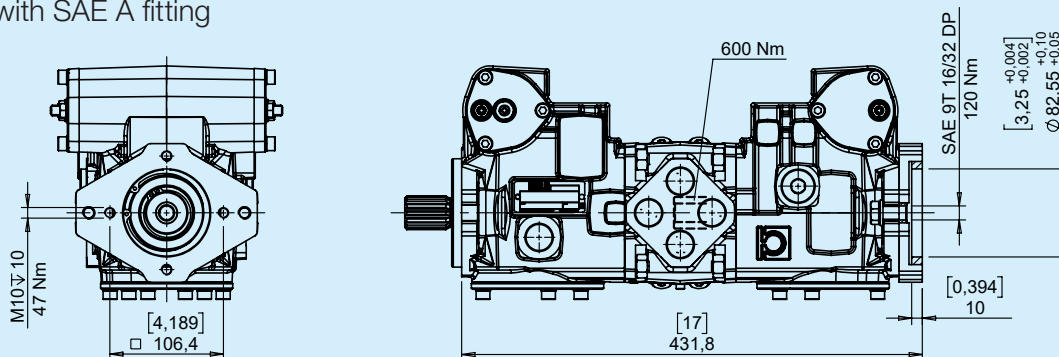
Stage 1 Stage 2
HPP4 058 R B 3 G K L B 0 000 + **HPP4 058 R B 3 G K L Y 0 000**

short pump



Stage 1 Stage 2
HPP4 058 R B 3 G K L B 0 000 + **HPP4 058 R B 3 G K L U 0 000**

short pump with SAE A fitting



Stage 1 Stage 2
HPP4 058 R B 3 G K L B 0 000 + **HPP4 058 R B 3 G K L W 0 000**

short pump with SAE B fitting

