

Hydraulic Press Control according to DIN EN 693

Series PPCC



ENGINEERING YOUR SUCCESS.



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Parker's PPCC series press control manifolds have passed the type examination and fulfill of the safety requirements of DIN EN 693: 2011-11, DIN EN ISO 16092-3, in terms of hydraulic control. This norm specifies the requirements placed on hydraulic presses, which result from the EC Machinery Directive 2006/42/EC. The PPCC control manifolds can also be used for presses in accordance with DIN EN 289: 2014-09.

PPCC press control manifolds allow manufacturers to design, build or rebuild almost all presses according to the general safety standards, while meeting the performance level necessary for safety functions in accordance with ISO 13849-1.

Thanks to its modular concept, an entire press control can be designed. The selection of the right components and auxiliary functions enables to tailor the control exactly to the functionality of the press. The clear design allows simple access to all devices. The supply ports are arranged both on the sides and on the rear, thereby allowing the optimal integration of the press control manifold into the hydraulic system of the press.

Basic functions

- Pressure relief function on the P-port
- Directional control valve with position control
- Safety valve with position control
- Pressure protection for the press cylinder on the rod side

Options

- Flow control via proportional throttle on the P-side (feed side)
- Load holding on the rod side of the press cylinder using a pressure valve or a counterbalance valve
- Gravity fall function
- Different locking functions on the piston side to activate and deactivate press cylinders
- Decompression valve or dump valve for the press cylinder
- Valve control for setup mode
- Additional module for auxiliary functions
- Connection for a double pump

Structure

Based on a modular, standardized concept for a press control in accordance with DIN EN 693 (in future DIN EN ISO 16092-3), various functions can be arranged for a very wide range of press designs. The safety of the control is not affected by the functions added.

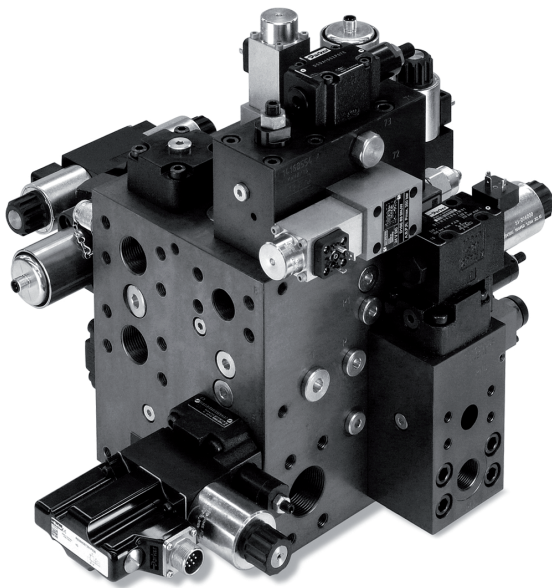
As standard, the base manifold contains all functions necessary for a press control in accordance with the stated norms.

- Pressure relief valve: limits the pressure at the P-port of the control block. The functionality can be adapted to the user's needs by changing the pilot control.
- Fail safe circuit to position control on the directional control valve as well as on the safety valve.
- Pressure relief valve to protect the rod side of the press cylinder

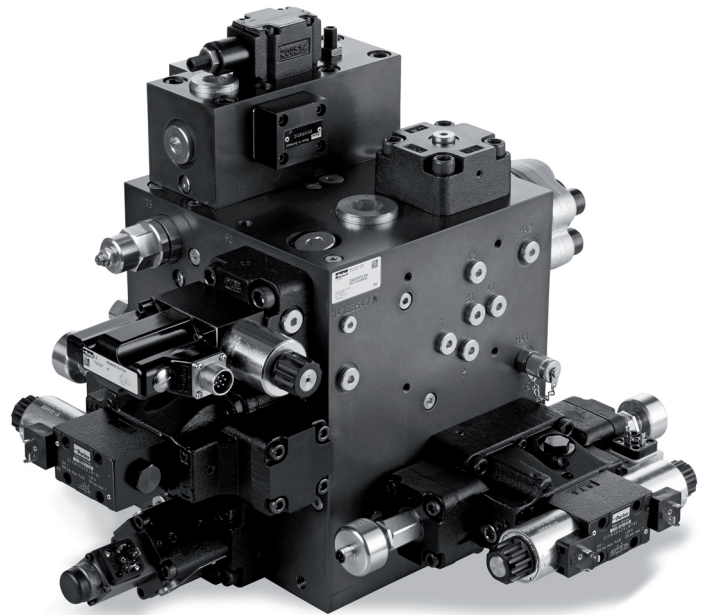
The functions added are implemented by auxiliary manifolds or additional valves in the base manifold.

Features

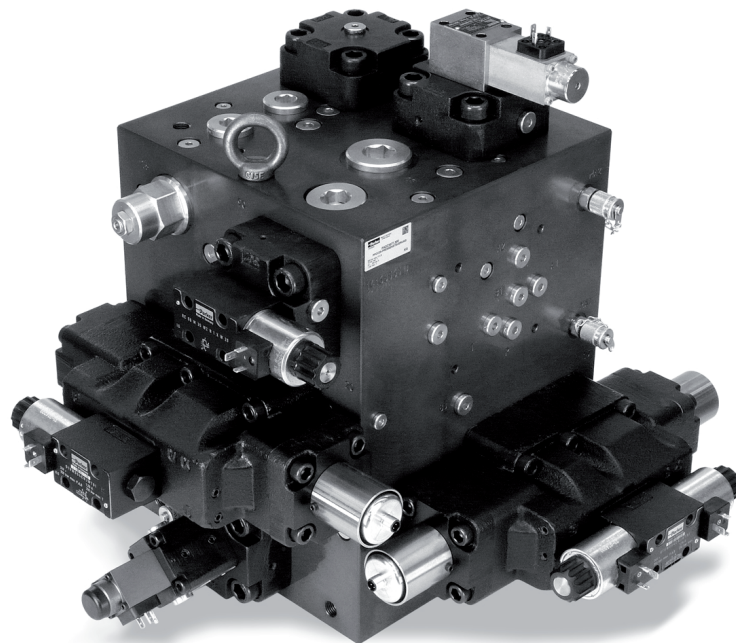
- Modular design
- The control is adapted to the press functions by selecting the valve configuration / auxiliary manifolds
- Compact dimensions
- The supply ports placed on the side and on the rear
- Low pressure losses
- Integration of auxiliary functions (up to two NG06 or NG10 directional valves) possible
- Load sensing integrated in the base control manifold
- Connections for pressure sensors
- Established safety concept:
- Type examination by the trade association (BG) in accordance with DIN EN 693: 2011-11 (in future DIN EN ISO 16092-3)
For use in presses designed according to DIN EN 289: 2014-09
- Identical manifold design for closed loop press control
- Regenerative control possible by using Parker hybrid valves
- Optional module for setup mode



PPCC10

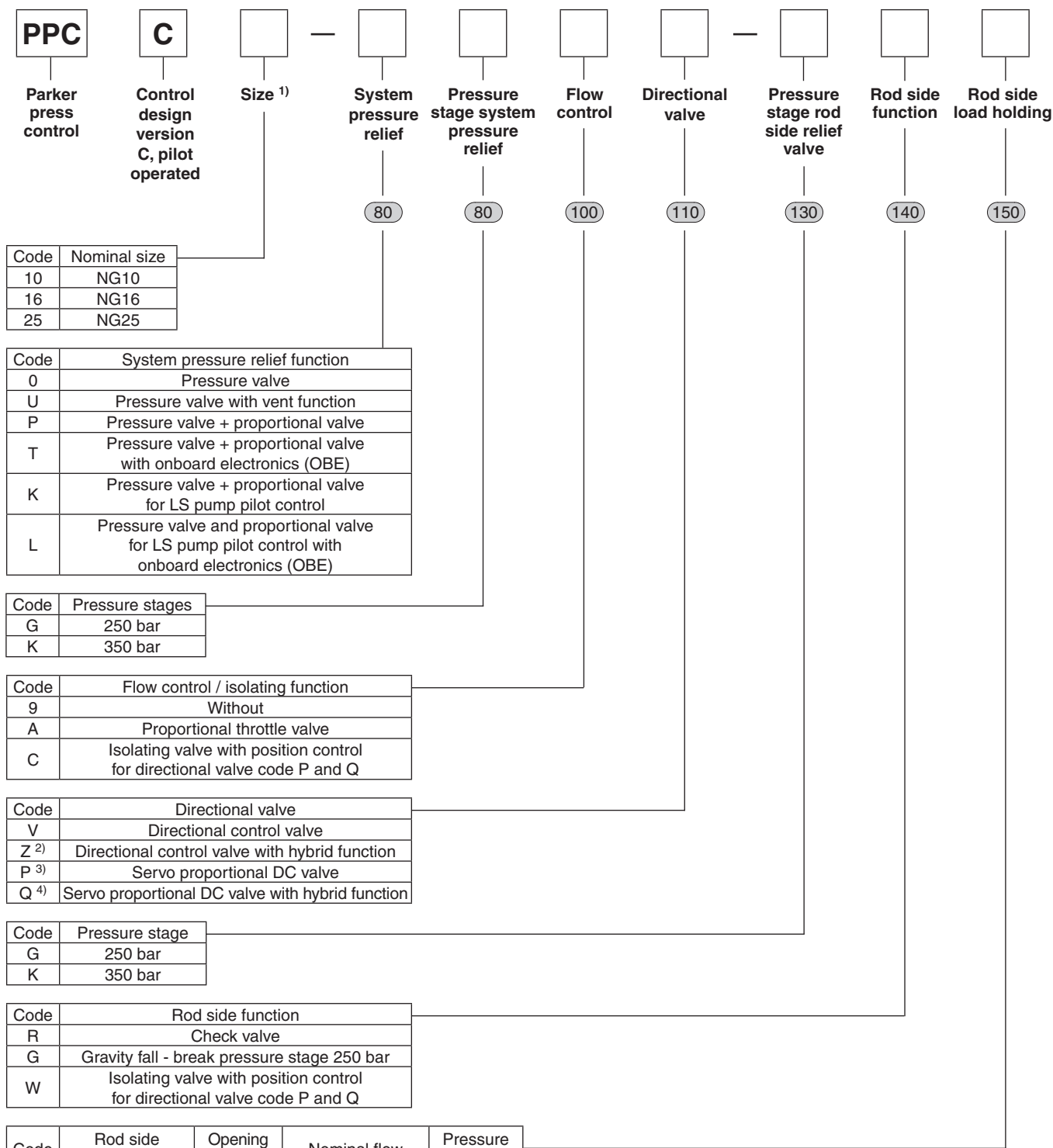


PPCC16

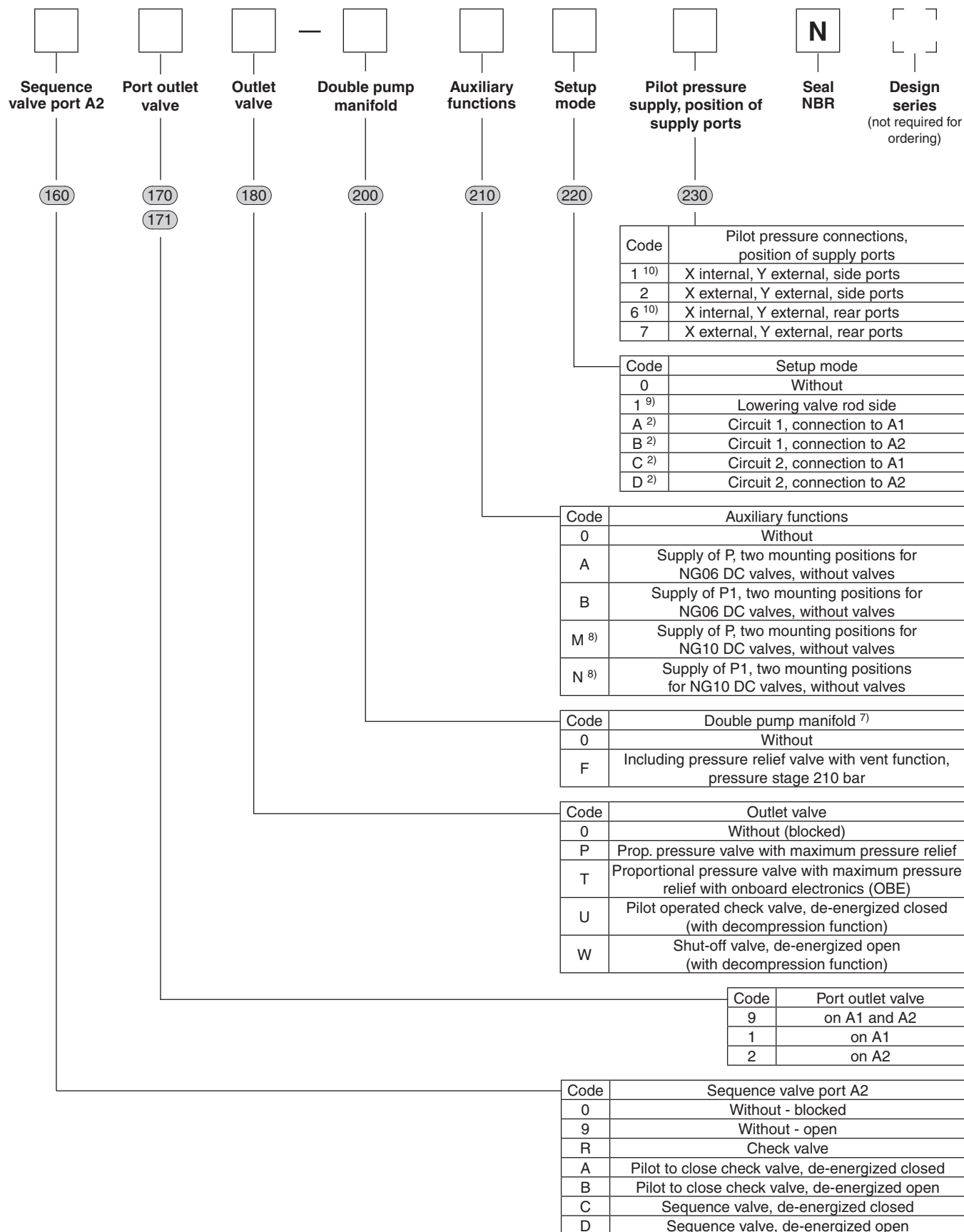


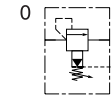
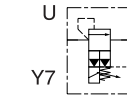
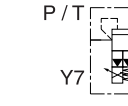
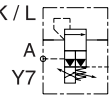
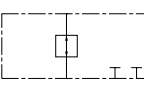
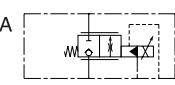
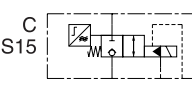

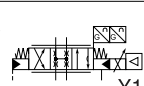
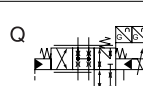
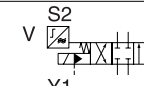
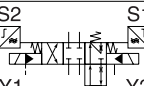
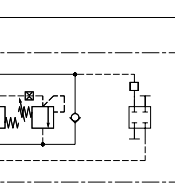
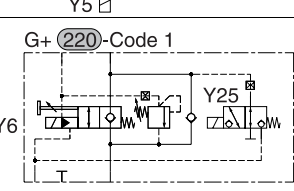
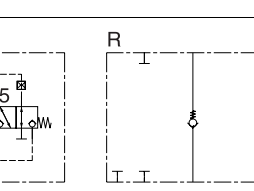
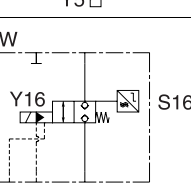
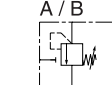
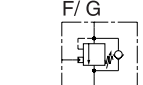




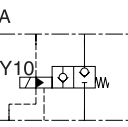
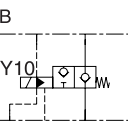
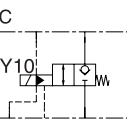
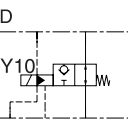
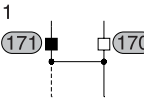
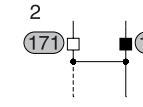
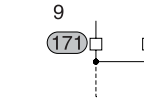
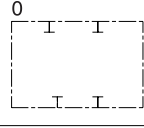
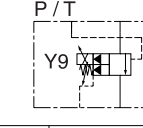
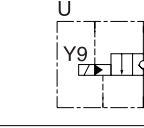
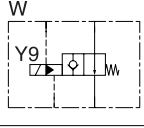
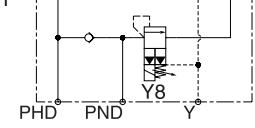
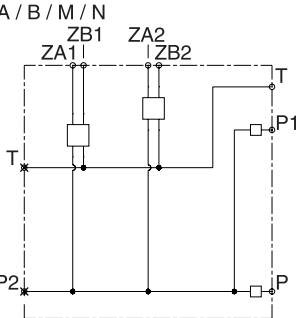


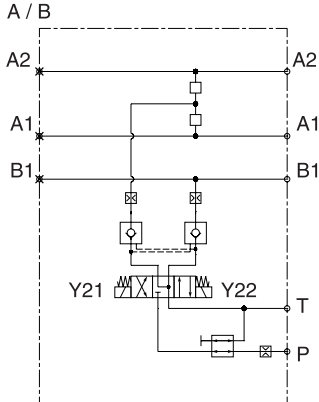
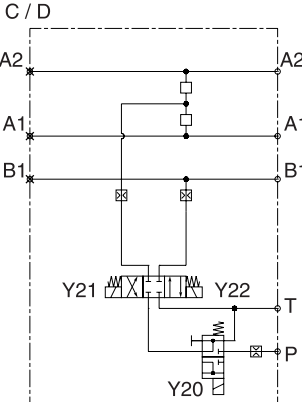
PPCC25

Ordering Code



1) Corresponds to the nominal size of the mounted directional control valves.
 2) Not for PPCC10.
 3) Only in conjunction with flow control code C and rod side function code W.
 4) Not for PPCC10, only in conjunction with flow control code C and rod side function code W.
 5) Only for rod side function code W.
 6) Setting > 1.3 x max. load induced pressure.
 7) PPCC10: only function "Auxiliary function" (210) or function "Double pump" (200) can be mounted.
 8) Not for PPCC10 and PPCC16.
 9) Only for rod side function code G.
 10) Not for rod side code G.



Description	Code						
<p>(80) System pressure relief function</p>	<p>0</p> 	<p>U</p> 	<p>P/T</p> 	<p>K/L</p> 			
<p>(100) Flow control / isolating function</p>	<p>9</p> 	<p>A</p> 	<p>C</p> 	<p>S15</p> 			
<p>(110) Directional valve</p>	<p>P</p> 	<p>Q</p> 	<p>V</p> 	<p>Z</p> 			
<p>(140) Rod side function</p>	<p>G</p> 	<p>G+ (220)-Code 1</p> 	<p>R</p> 	<p>W</p> 			
<p>(150) Rod side load holding</p>	<p>A/B</p> 	<p>F/G</p> 	<p>0</p> 				
<p>(160) Sequence valve port A2</p>	<p>0</p> 	<p>9</p> 	<p>R</p> 	<p>A</p> 	<p>B</p> 	<p>C</p> 	<p>D</p> 
<p>(170) (171) Port outlet valve</p>	<p>1</p> 	<p>2</p> 	<p>9</p> 				
<p>(180) Outlet valve</p>	<p>0</p> 	<p>P/T</p> 	<p>U</p> 	<p>W</p> 			
<p>(200) Double pump manifold</p>	<p>F</p> 						
<p>(210) Auxiliary functions</p>	<p>A/B/M/N</p> 						
<p>(230) Pilot pressure connections</p>	<p>1 / 6</p> 	<p>2 / 7</p> 	<p>(220) Code 1 drain valve rod side (Y25) see (140) rod side function</p> <p>A/B</p>  <p>C/D</p> 				

Base manifold

In addition to the options to integrate and add functions in accordance with the ordering code, the base manifold also includes the safety control with valves 110 (directional valve), 50 (safety valve) and 130 (pressure valve on the rod side). See the safety information for more details.

System pressure relief function - 80

Required in accordance with the norm, available in 2 pressure stages and multiple versions.

Code 0

Should generally be selected for variable displacement pumps as a pure maximum pressure relief valve. The pump pressure is adjusted by the pump pressure compensator.

Code U

Enables a pressure-free circulation of the pump.

Code P / T

Enables the proportional adjustment of the pump pressure for constant pumps and Drive Controlled Pumps. This option should not be selected for variable displacement pumps as this may hinder the function of the pump's pressure compensator.

Code K / L

For load-sensing (LS) applications in combination with an MT3 pump compensator of the Parker PVplus axial piston pump. Please contact your sales representative for more details.

Flow control - 100**Code 9**

For all applications with or without an external adjustment of the pump flow (e.g. Drive Controlled Pumps).

Code A

For LS applications. The throttle valve is attuned to the LS compensator on the Parker PVplus pump and when fully open results in a pressure drop of only approximately 3 bar.

Code C

In connection with a DFplus as a directional valve 110 (code P and Q). In this version the safety against pressurization is moved from the directional valve to an isolating valve with position control.

Direction valve - 110**Code P**

For applications, in which speed, position, and pressure are controlled. In this version the safety is moved from the directional valve into the upstream and downstream

shut-off valves (100 and 140) as a directional control valve without spool overlap can not be used for safety function.

Code V

For all applications without (100 – code 9), with external or internal (100 – code A) flow control.

Code Q / Z

Like code P/V, but with an integrated, switchable regenerative valve (Parker hybrid valve), in which the flow from the rod side is fed to the piston side. It should be noted here that the flow on port A of the valve must not exceed the nominal flow of the directional control valve.

Rod side relief valve – 130**Code G / K**

Defines the pressure stage of the pressure relief valve. The valve is part of the press control design required by the norm. See the safety information for more details.

Rod side function – 140**Code G**

For presses with gravity fall functionality. The lowering speed is adjusted by the stroke limiter of the cartridge valve. The brake pressure for the transition to the press function is adjusted at the pilot relief valve. The check valve enables free flow during the backward movement.

In connection with option 220 – code 1, the ram can be lowered using the 3/2-way poppet valve in setup mode. For the gravity fall function, the customer must provide a prefill valve.

Code R

For all applications with a counterbalance valve or pressure valve (150 – code A/B and F/G).

Code W

In connection with a DFplus control valve as a directional valve (110 code P or Q). In this version, the safety is moved from the directional valve to the shut-off valve.

Rod side load holding – 150**Code A/B**

Pressure valve without activating the counterbalance function for applications with gravity fall (140 – code G) and with cylinder surface area ratios > 2:1.

Code F/G

For applications in which the back pressure is to be reduced during a downward movement by activating the counterbalance valve. The actual flow and the area ratio of the cylinder are to be considered.

Code 0

Only with 140 – code W.

Sequence valve port A2 – 160

The piston side port A is available in duplicate for the most universal use of the control manifold possible. Port A1 is directly connected to port A of directional valve 110 and generally used for the side press cylinders (used to raise and lower the press platen) in multi-level presses. Port A2 is used for the side press cylinder with a sequence valve or for presses, in which piston-side pressure is maintenance necessary.

Code 0

If port A2 is not used.

Code 9

If no sequence function of port A2 is necessary the cylinder can be connected to both ports (A1 and A2).

Code A/B/C/D

Different switching functions for rapid traverse cylinders or press cylinders and switchable pressure maintenance functions, in a normally closed (NC) and normally open (NO) version.

Code R

For piston-side pressure maintenance functions. The check valve prevents a sudden pressure drop on the piston side when valve 50 is de-energized.

Outlet valve connections – 170/171

When selecting the plugs, it is defined whether the outlet valve 180 works on port A1, A2, or both.

Outlet valve – 180

The second to tank path when using the outlet valve can be used to increase the maximum possible flow that is discharged via A1 / A2. During the decompression phase, the rod side must generally be actively supplied to prevent cavitation. For more information, see function example 1.

Code P / T

Proportional pressure relief valves with a mechanical maximum pressure stage, which are used to adjust the pressure on the piston side and perform a controlled decompression.

Code U / W

NC and NO shut-off valves, which can be used to perform a decompression based on their opening characteristics (soft shift).

Double pump connection block – 200**Code F**

Generally used with fixed displacement pumps or variable speed pumps to implement a high/low pressure combination. When the cut-off pressure measured by a pressure switch or a pressure sensor (installed by the customer) is reached, the vent valve is de-energized

and the low-pressure pump is switched to pressure-free circulation. The maximum pressure of the low-pressure pump is adjusted on the pressure valve.

Auxiliary functions – 210

An additional manifold can be attached to the base manifold for auxiliary functions. The connections can also be used for externally fitted valves, using the P1 port located behind the throttle valve 100. This makes it possible to also use the flow control for auxiliary functions.

Code A / B / M / N

Additional manifold for 2-directional control valves NG06 or NG10 (NG10 for PPCC25 only), which can be connected to either P or P1. They also contain ports for more external functions, with P2 connected to P or P1 according to the auxiliary function block selected. The directional control valves are not included in the scope of delivery.

Setup mode – 220

An additional manifold can be added to the base manifold for setup mode. The connection ports can also be used to fit pressure sensors (not included in the scope of delivery). The setup manifold is also equipped with measuring ports A1, A2 and B1. When selecting functions 140 to 180, the interaction with the setup mode is to be checked. See the safety information for more details, in particular regarding the orifice dimensioning.

Code A / B

Control of the setup via a 4/3-way directional valve NG06 with pilot operated check valves. Piston-side connection to A1 (code A) or A2 (code B).

Code C / D

In addition to the 4/3-way directional control valve NG06, an enabling valve is installed. Piston-side connection to A1 (code C) or A2 (code D).

Code 1

See the description of free fall (140 – code G).

Pilot oil supply and location of the ports – 230

For internal **pilot oil supply**, it must be ensured that the necessary minimum pilot pressure of 20 bar is maintained in all operating situations as otherwise valves 50 and 110 may reset to the powerdown position. For this reason, no internal supply is possible for the gravity fall function (140, code G) as the pump pressure may fall below 20 bar during this phase.

The **ports** of the base manifold (P, T, X, Y, and LS) are located on both the sides and the rear for flexible use. The coding defines which ports are to be used. The other ports are sealed with plugs.

General					
Mounting position		unrestricted, port B as close as possible to the cylinder			
Standards fulfilled		Conformity for installation in hydraulic presses according to DIN EN 693: 2011-11. Can also be used for presses according to DIN EN 289:2014-09. ¹⁾ For the corresponding application the stop-function of performance level "e" according to DIN EN ISO 13849-1 can be achieved.			
Size		NG10	NG16	NG25	
Weight [kg]		92	165	291	
Dimensions		depending on the assembling			
Ports basic manifold	P	350 bar (2x) SAE62	SAE 1" (G 3/4)	SAE 1 1/4" (G 1)	SAE 1 1/2" (G 1 1/4)
	T	10 bar (2x) SAE61	SAE 1 1/2" (G 1 1/4)	SAE 2" (G 1 1/2)	SAE 2 1/2" (G 2)
	A1; A2	350 bar SAE62	SAE 1" (G 3/4)	SAE 1 1/2" (G 1 1/4)	SAE 2" (G 1 1/2)
	B	350 bar ²⁾ SAE62	SAE 1" (G 3/4)	SAE 1 1/2" (G 1 1/4)	SAE 1 1/2" (G 1 1/4)
	X	20...350 bar (2x)	G 1/4	G 3/8	G 3/8
	Y	1 bar (2x)	G 3/8	G 3/8	G 1/2
	LS	0...350 bar (2x)	G 1/4	G 3/8	G 3/8
	A (LS)	0...350 bar (2x)	G 1/4	G 1/4	G 1/4
	P; P1 (auxiliary function)	350 bar	G 3/8	G 1/2	G 1/2
	T (auxiliary function)	10 bar	G 1/2	G 1/2	G 1/2
M ³⁾	350 bar	G 1/4	G 1/4	G 1/4	
Additional manifold auxiliary function	P2	350 bar	G 3/8	G 3/8	G 3/8 (Code A; B) G 1/2 (Code M; N)
	T	10 bar	G 1/2	G 1/2	G 1/2
	ZA; ZB	350 bar	G 3/8	G 3/8	G 3/8 (Code A; B) G 1/2 (Code M; N)
Additional manifold setup mode (pressure sensors)	P; A1; A2; B1	350 bar	–	G 1/4	G 1/4
	T	10 bar	–	G 1/4	G 1/4
Additional manifold double pump	PHD	350 bar	G 1/4	G 1	G 1 1/4
	PND	350 bar SAE62	SAE 3/4"	SAE 1"	SAE 1 1/4"
Valve types used	Flow control (100)	Code A	TDA016	TDA025	TDA032
	Isolating function (100)	Code C	C10C3E016	C10C3E025	C10C3E032
	Directional valve (110)	Code V	D31NW	D41VW	D91VW
		Code Z ⁴⁾	nicht möglich	D41VWZ	D91VWZ
		Code P	D31FP	D41FP	D91FP
Code Q ⁴⁾	nicht möglich	D41FPZ	D91FPZ		
System pressure relief (80)	Code P; K Code T; L	RE06M*W RE06M*T	RE06M*W RE06M*T	RE06M*W RE06M*T	
Outlet valve (180)	Code P Code T Code U; W	RE06M*W RE06M*T CE025C08	RE06M*W RE06M*T CE025C08	RE06M*W RE06M*T CE025C08	
Hydraulic					
Ambient temperature		[°C]	-20...+50 °C		
Fluid		Hydraulic oil according to DIN 51524			
Fluid temperature		[°C]	-20...+60 °C		
Viscosity	permitted	[cSt] / [mm ² /s]	30...80		
	recommended	[cSt] / [mm ² /s]	20...400		
Filtration		ISO 4406 (1999); 18/16/13			
Flow maximum	port P, directional valve (110)	[l/min]	120	270	470
	port PHD ⁵⁾	[l/min]	60	120	220
	port PND ⁵⁾	[l/min]	90	200	400
	port A1; A2	[l/min]	240	540	940
Max. operating pressure		[bar]	350		

SAE61 = 3000 psi - Series
 SAE62 = 6000 psi - Series

Scope of delivery includes valves without plugs, monitor switch with protective cover.

HY11-3362 Press Control PPCC UK.indd 02.02.2016

¹⁾ Follow the safety instructions

²⁾ Max. pressure protection (130) 385 bar, max. pressure increase (130) to 420 bar.

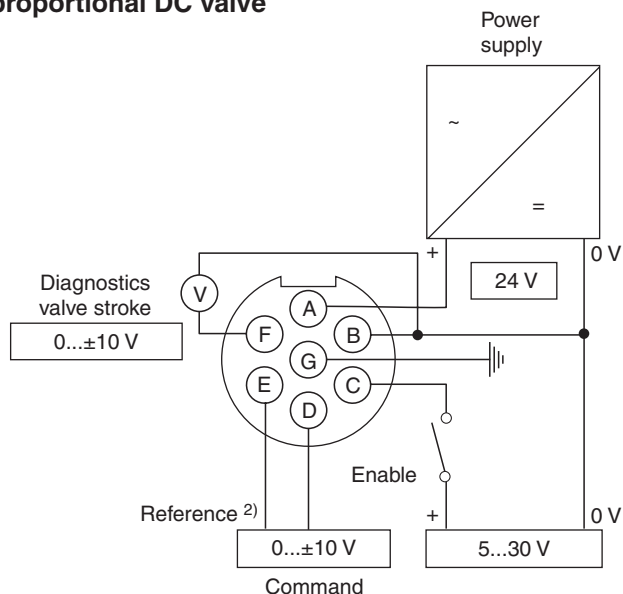
³⁾ Provided with screw coupling M16x2.

⁴⁾ For performance data please see catalogue D*1VWZ respectively D*1FP.

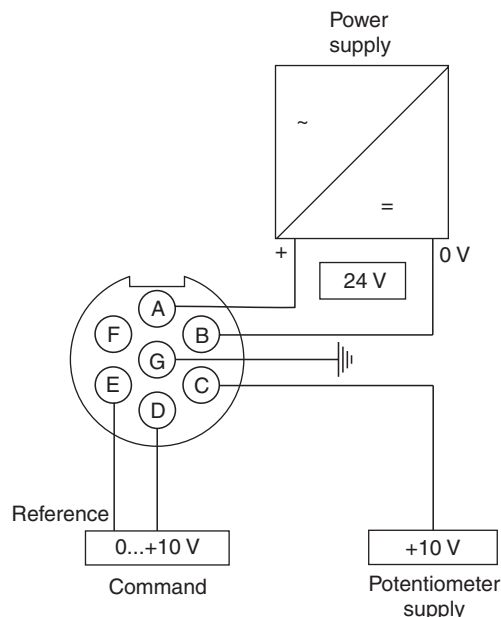
⁵⁾ In total not more than port P.

Duty ratio				
On/off DC valve	[%]	100		
DC valves	Supply voltage	24 VDC / 1.39 A / 31 W		
Proportional valves		RE06M*T (OBE) ¹⁾	D*1FP ¹⁾	TDA ¹⁾ controlled by PCD
	Supply voltage	[V]	18 ... 30	22 ... 30
	Current consumption hold	[A]	2	3.5
	Command signal	[V]	0 ... +10	+10 ... 0 ... -10
	Function		-	P→A P→B
				RE06 ¹⁾ controlled by PCD
				18 ... 30
				5 (two valve solenoids controllable)
				0 ... +10
				-

Wiring for D*1FP pilot operated servo proportional DC valve



Wiring for RE06M*T (OBE) pressure valve

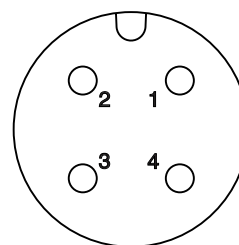


Electrical characteristics of position control as per IEC 61076-2-101 (M12x1), NG10

Supply voltage	[VDC]	24
Tolerance supply voltage	[%]	±20
Ripple supply voltage	[%]	≤10
Polarity protection	[V]	300
Current consumption without load	[mA]	≤20
Switching hysteresis	[mm]	<0.06
Max. output current per channel, ohmic	[mA]	250
Protection		IP65 acc. EN 60529
CE conform		EN 61000-4-2/EN 61000-4-4/ EN 61000-4-6 ³⁾ /ENV 50140/ ENV 50204
Min. distance to next AC solenoid	[m]	0.1
Interface		M12x1 to IEC 61076-2-101

- ¹⁾ For further information please refer to the relevant valve data sheets.
- ²⁾ Do not connect with the supply voltage zero.
- ³⁾ Only guaranteed with screened cable and female connector.
- ⁴⁾ Only ensured with shielded cable and plug.

Pin assignment plug M12x1



- 1 + U_S 19.2...28.8 V
- 2 Out B: normally open
- 3 0V
- 4 **Out A: normally open to be used in pressure controls**

0: Voltage max. 1.8 V
 1: Voltage min. U_B-2.5 V

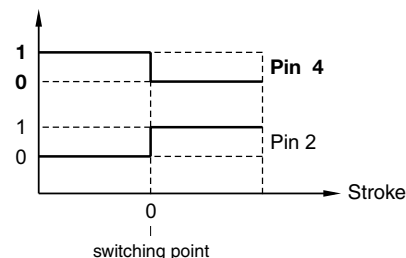


Diagram 1

Curve	Way	Equipping
1	P->B	100-9, 110-V, 50, 140-R
2	P->A1	100-9, 110-V
3	A1->T	50 (safe home position)
4	A1->A2	160-R
5	P->P1	100-A

Diagram 2

Curve	Way	Equipping
1	B->T	140-G, 50 110-V
2	A1->T	110-V, 170 and 171 closed
3	A2->A1	180-C, 170 and 171 closed

PPCC10

Diagram 1

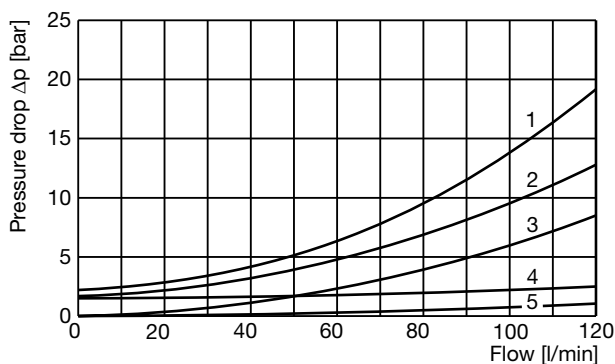
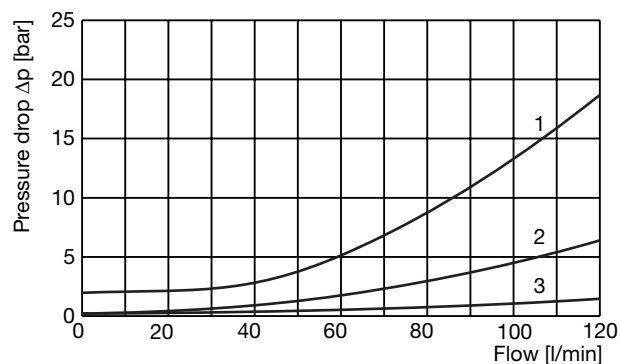


Diagram 2



PPCC16

Diagram 1

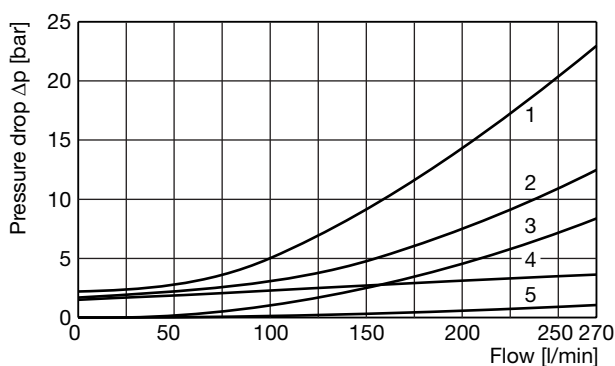
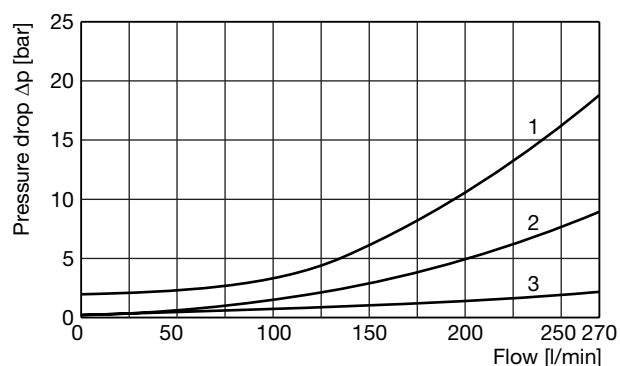


Diagram 2



All characteristic curves measured with HLP46 at 50 °C.

PPCC25
Diagram 1

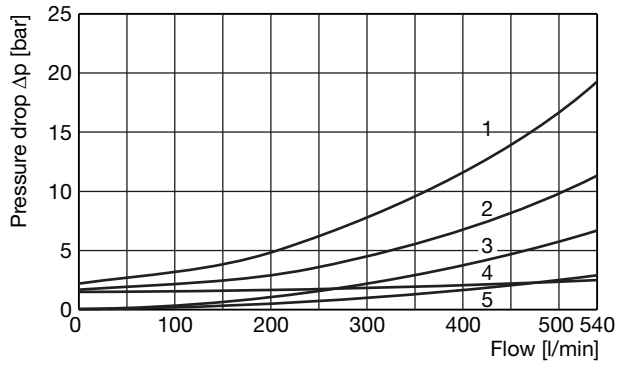
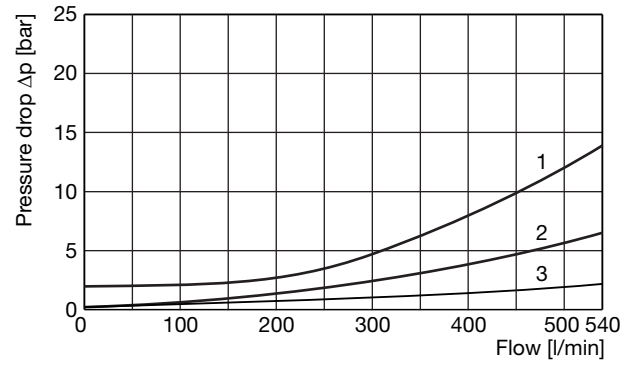
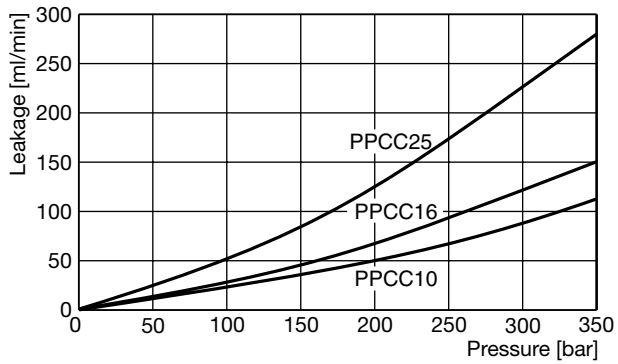


Diagram 2

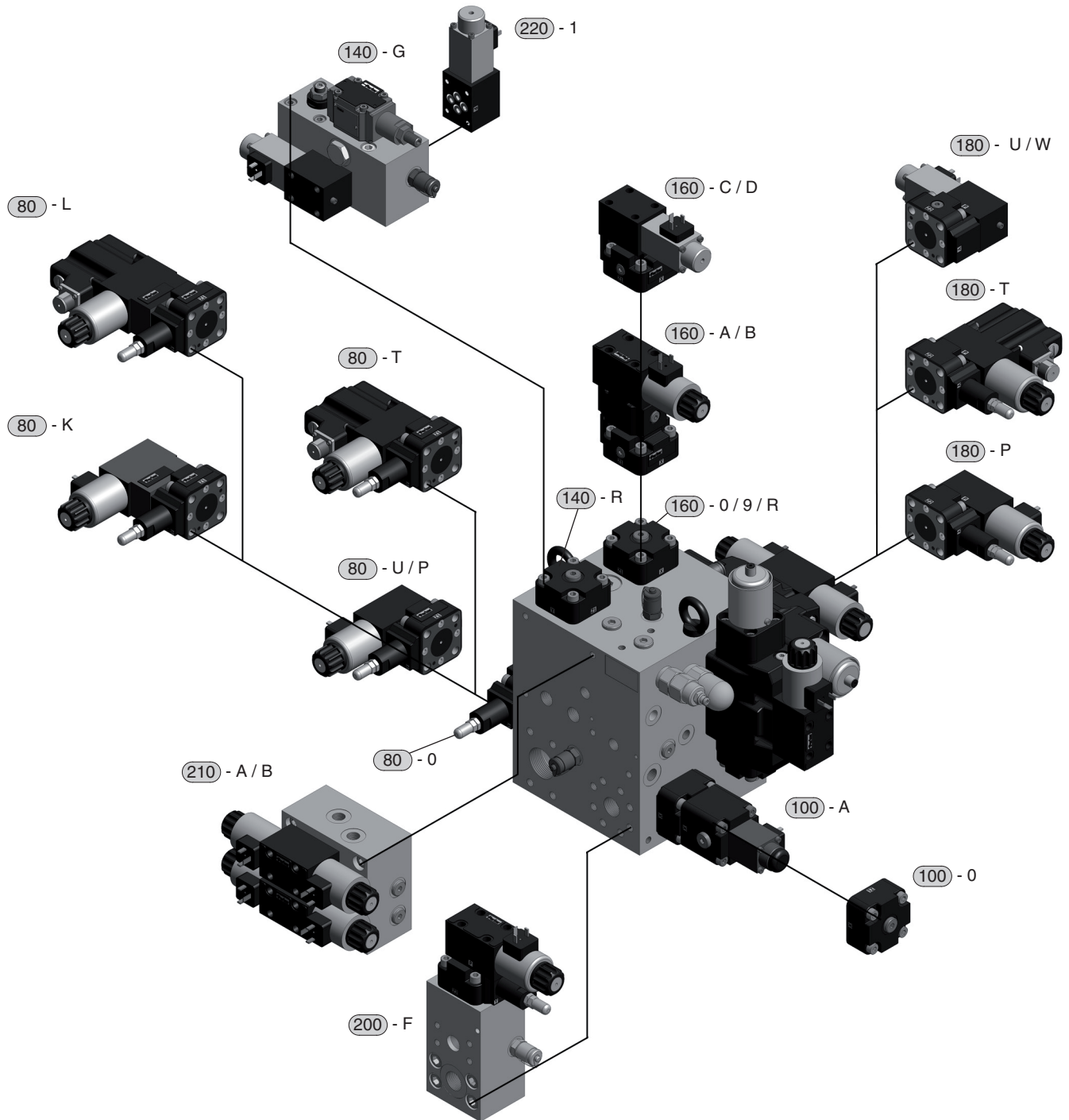


Leakage



All characteristic curves measured with HLP46 at 50 °C.

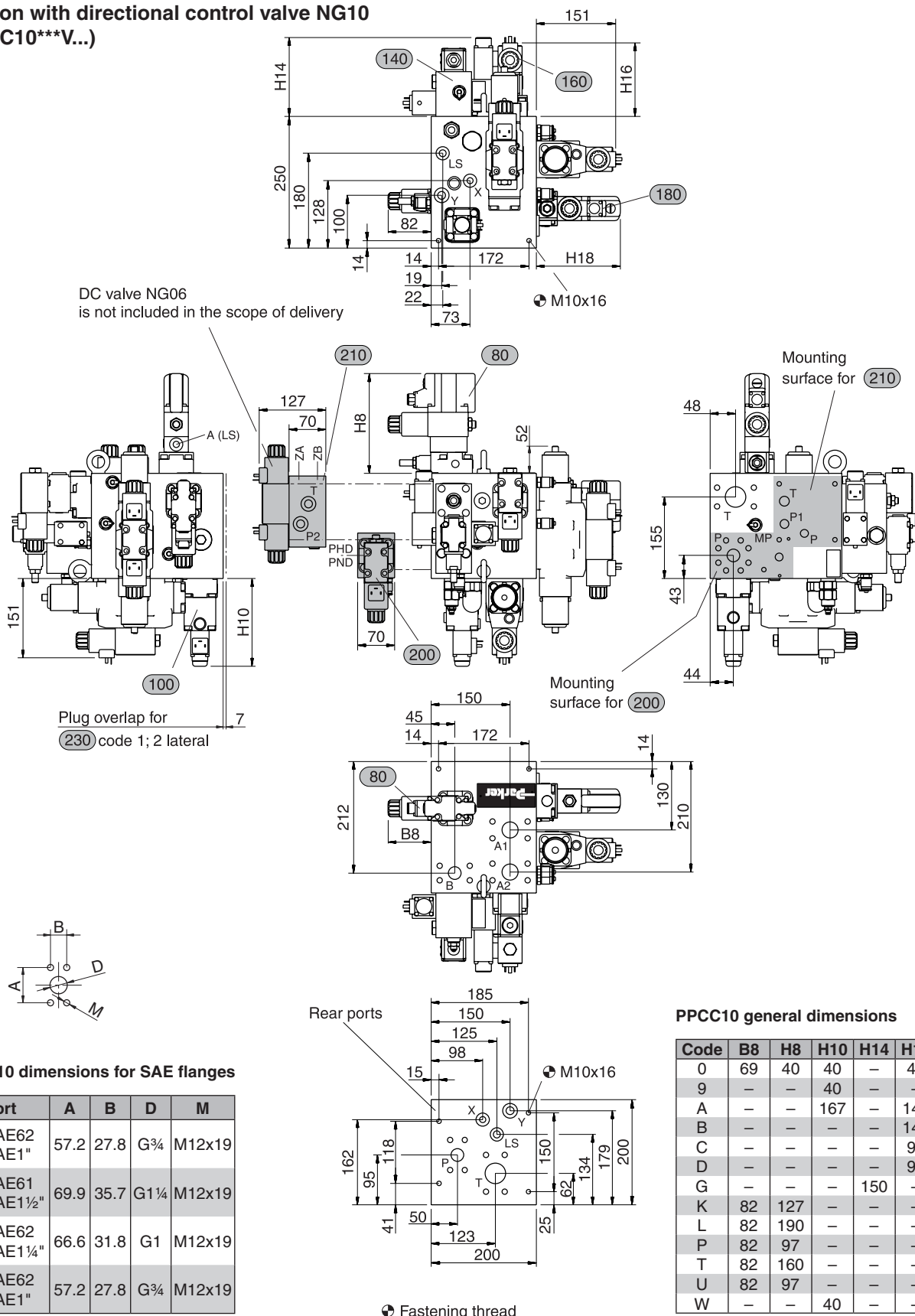
Version with directional control valve NG10 (PPCC10*V...)**



- (80) = System pressure relief
- (100) = Flow control
- (140) = Rod side function
- (160) = Sequence valve port A2

- (180) = Outlet valve
- (200) = Double pump connection manifold
- (210) = Auxiliary functions
- (220) = Setup mode

**Version with directional control valve NG10
 (PPCC10***V...)**



PPCC10 dimensions for SAE flanges

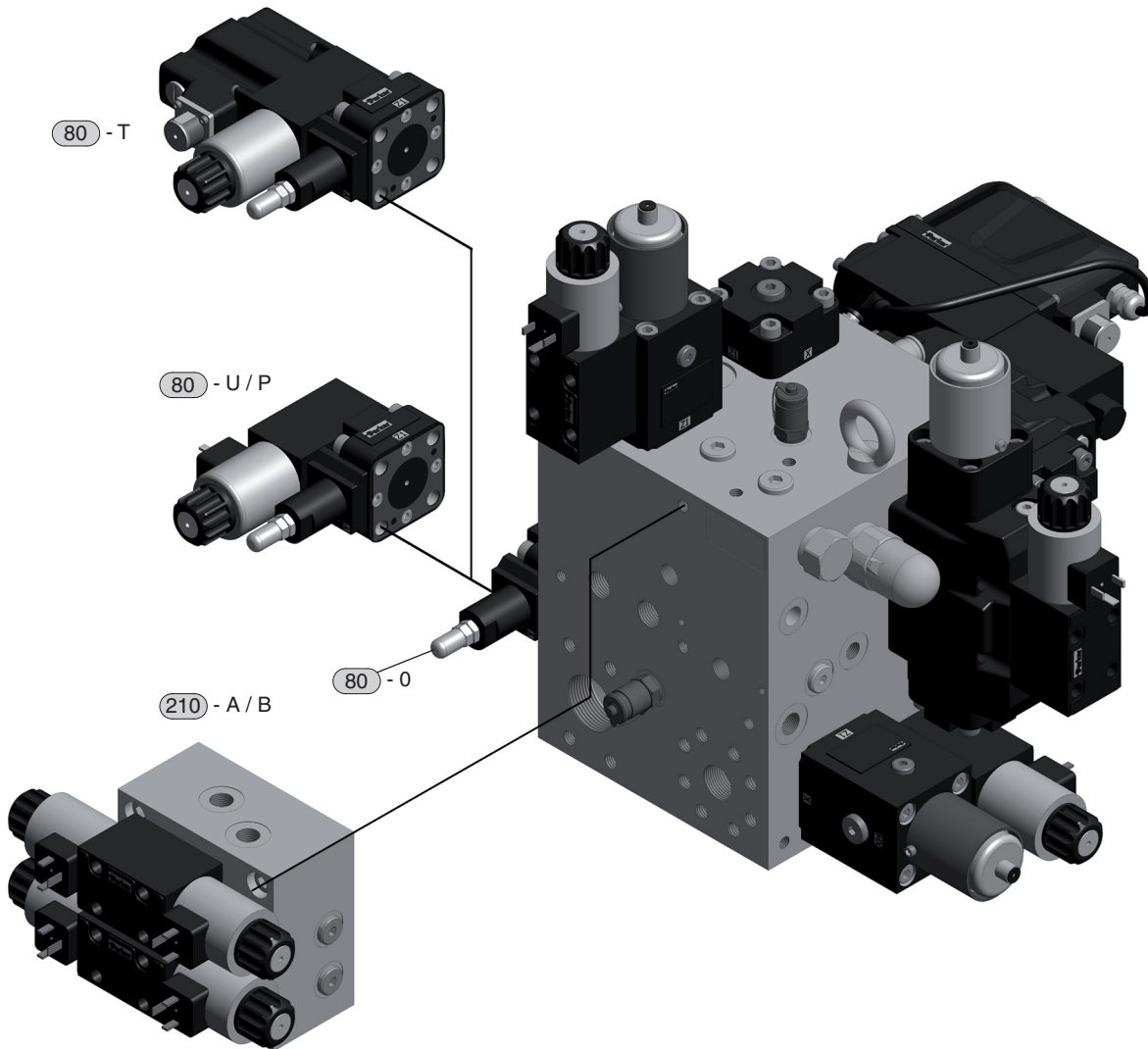
Port	A	B	D	M
P ¹⁾ SAE62 SAE1"	57.2	27.8	G ³ / ₄	M12x19
T SAE61 SAE1½"	69.9	35.7	G1¼	M12x19
A1 SAE62 A2 SAE1¼"	66.6	31.8	G1	M12x19
B SAE62 SAE1"	57.2	27.8	G ³ / ₄	M12x19

¹⁾ SAE flange can be aligned horizontally and vertically.

PPCC10 general dimensions

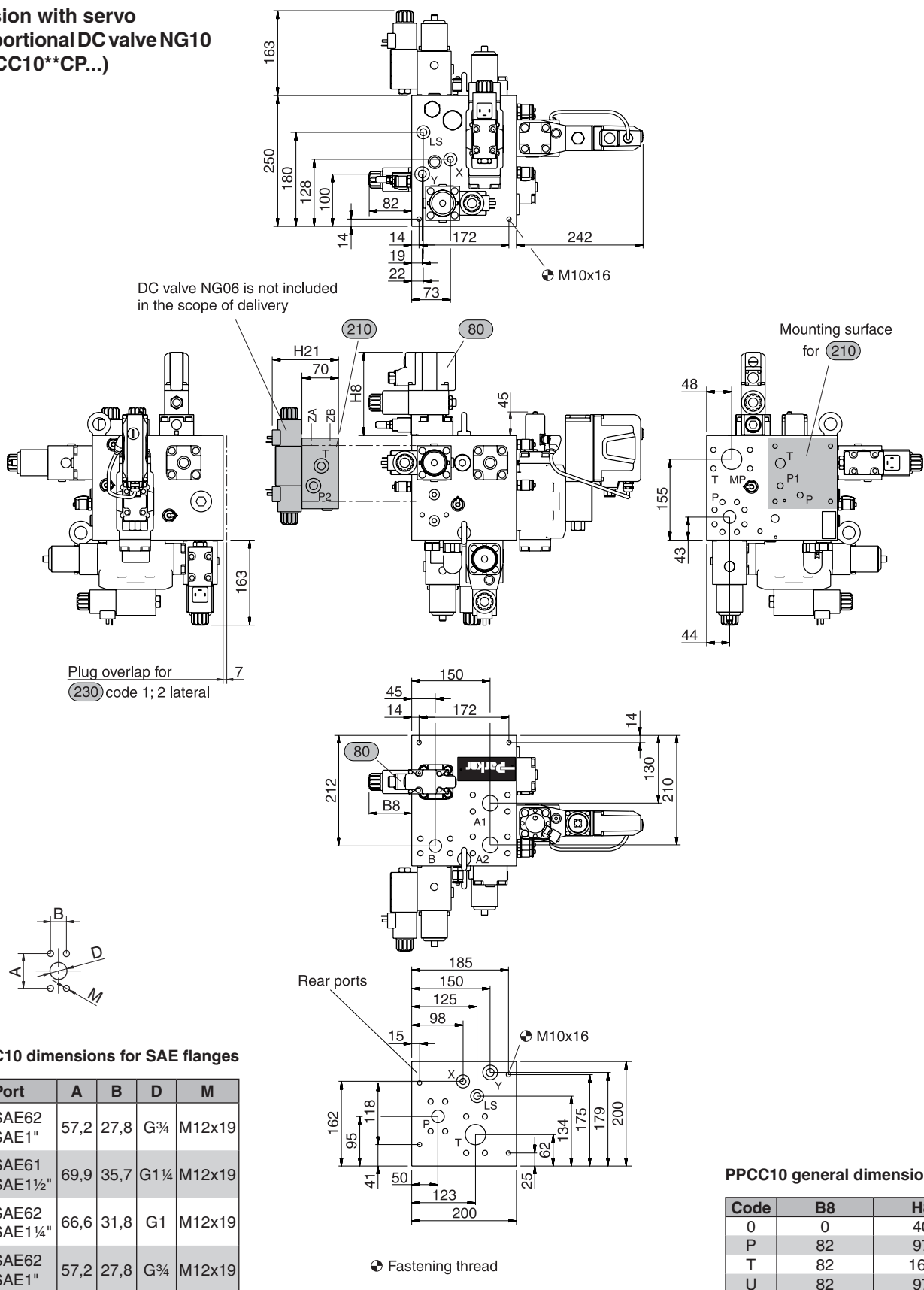
Code	B8	H8	H10	H14	H16	H18
0	69	40	40	—	40	40
9	—	—	40	—	—	—
A	—	—	167	—	140	—
B	—	—	—	—	140	—
C	—	—	—	—	97	—
D	—	—	—	—	97	—
G	—	—	—	150	—	—
K	82	127	—	—	—	—
L	82	190	—	—	—	—
P	82	97	—	—	—	97
T	82	160	—	—	—	160
U	82	97	—	—	—	90
W	—	—	40	—	—	90

Version with servo proportional DC valve NG10 (PPCC10**CP...)



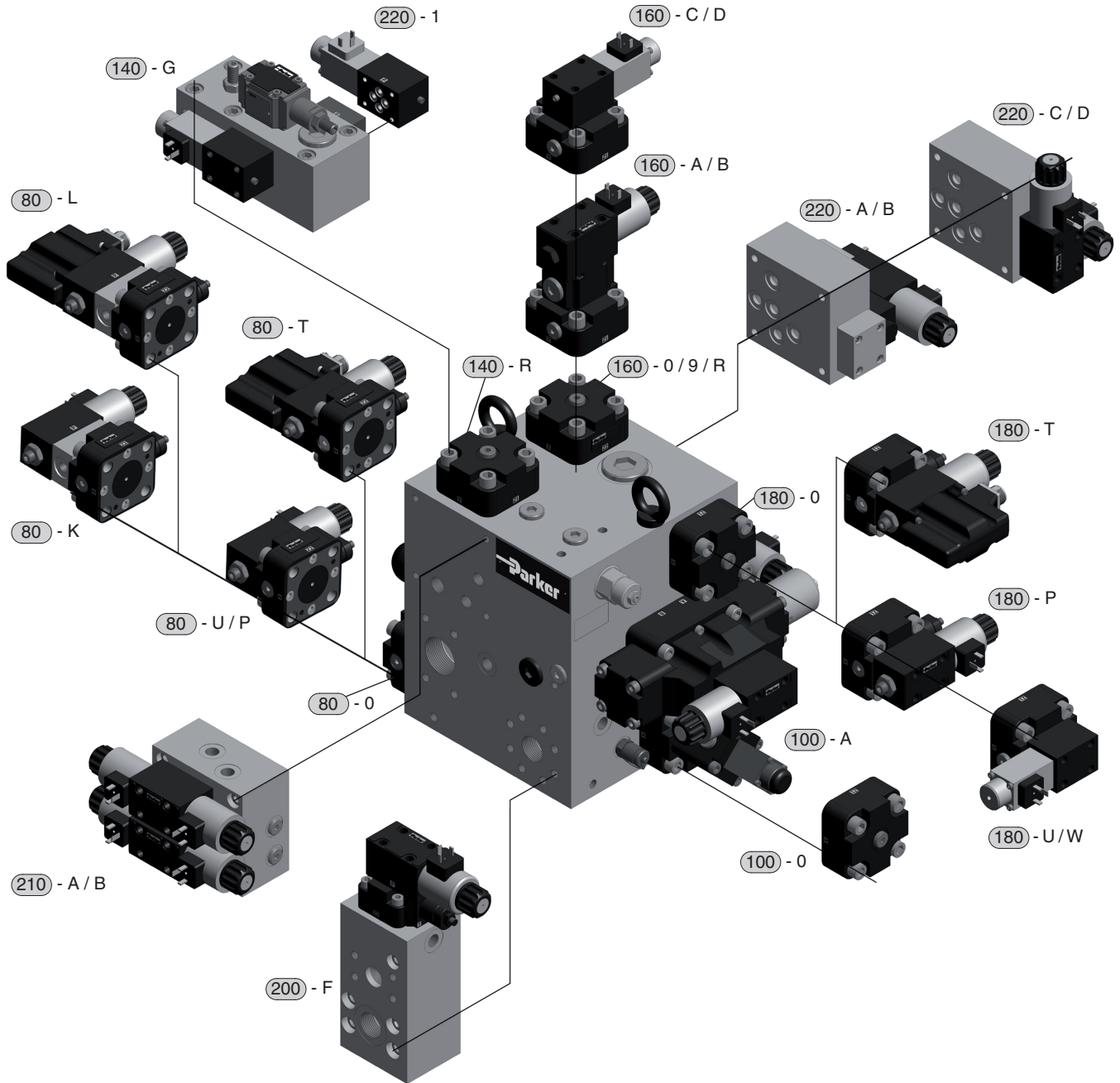
80 = System pressure relief
210 = Auxiliary functions

**Version with servo
 proportional DC valve NG10
 (PPCC10**CP...)**



¹⁾ SAE flange can be aligned horizontally and vertically.

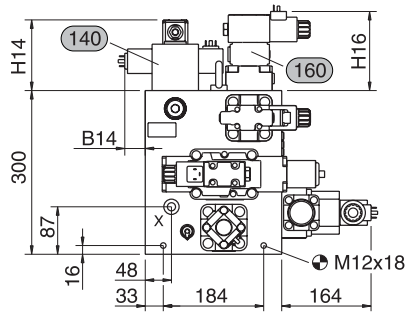
Version with directional control valve NG16 (PPCC16*V...)**



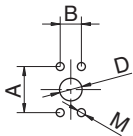
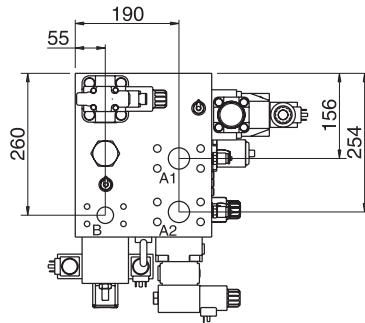
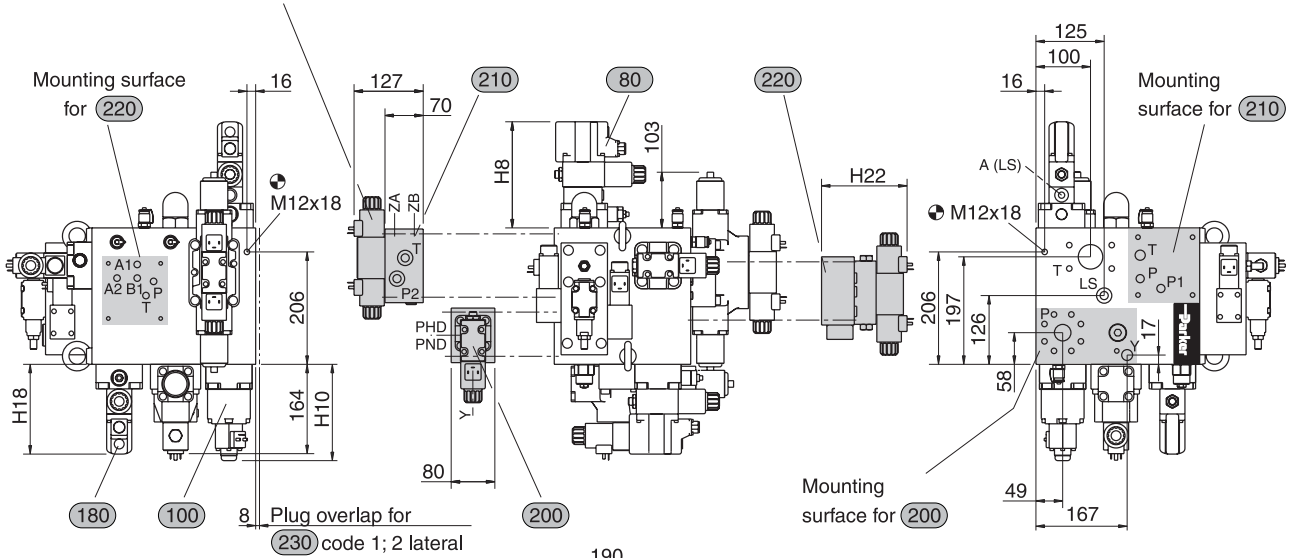
- 80 = System pressure relief
- 100 = Flow control
- 140 = Rod side function
- 160 = Sequence valve port A2

- 180 = Outlet valve
- 200 = Double pump connection manifold
- 210 = Auxiliary functions
- 220 = Setup mode

**Version with directional control
 valve NG16 (PPCC16***V...)**



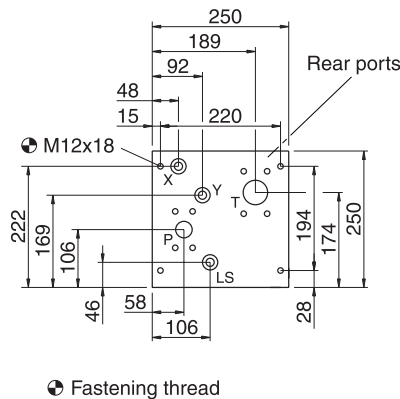
DC valve NG06 is not included
 in the scope of delivery



PPCC16 dimensions for SAE flanges

Port	A	B	D	M
P ¹⁾ SAE62 SAE1 1/4"	66.7	31.8	G1	M12x20
T SAE61 SAE2"	77.8	42.8	G1 1/2	M12x24
A1 SAE62 A2 SAE1 1/2"	79.4	36.5	G1 1/4	M16x30
B SAE62 SAE1 1/4"	66.7	31.8	G1	M12x20

¹⁾ SAE flange can be aligned horizontally and vertically.

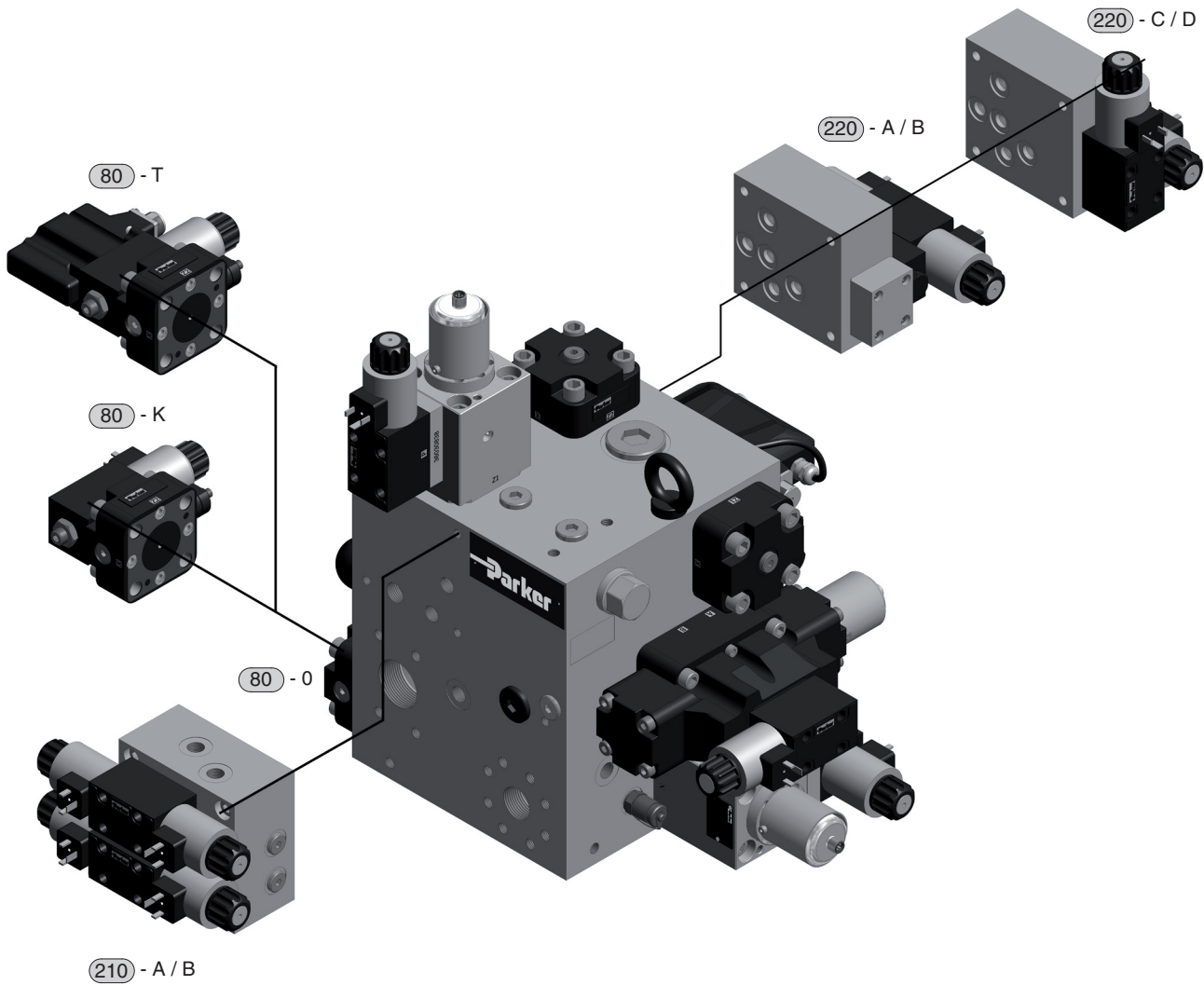


Fastening thread

PPCC16 general dimensions

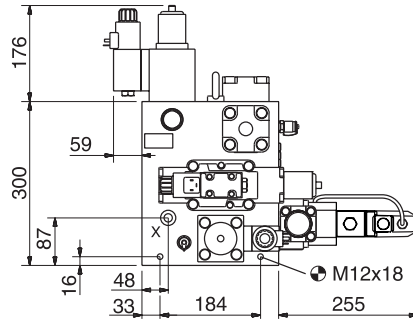
Code	B14	H8	H10	H14	H16	H18	H22
0	-	45	45	-	45	45	0
9	-	-	-	-	45	-	-
A	-	-	177	-	145	-	157
B	-	-	-	-	145	-	117
C	-	-	-	-	102	-	-
D	-	-	-	-	102	-	-
G	38	-	-	130	-	-	-
K	-	132	-	-	-	-	-
L	-	195	-	-	-	-	-
P	-	102	-	-	-	102	-
R	0	-	-	45	45	-	-
T	-	165	-	-	-	165	-
U	-	102	-	-	-	95	-
W	-	-	-	-	-	95	-

Version with servo proportional DC valve NG16 (PPCC16**CP... / PPCC16**CQ...)

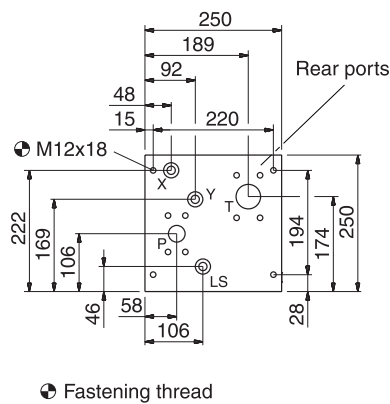
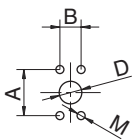
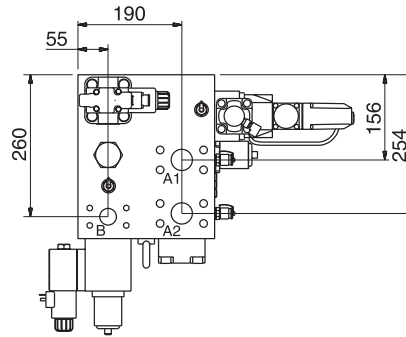
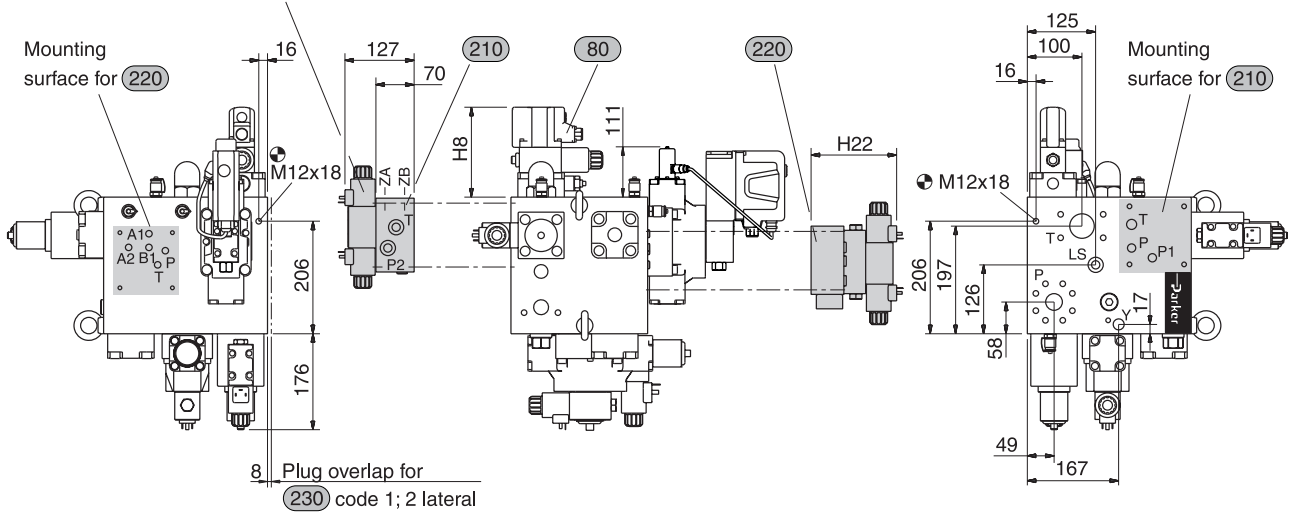


- 80 = System pressure relief
- 210 = Auxiliary functions
- 220 = Setup mode

**Version with servo proportional
 DC valve NG16 (PPCC16**CP... /
 PPCC16**CQ...)**



DC valve NG06 is not included in the scope of delivery



PPCC16 dimensions for SAE flanges

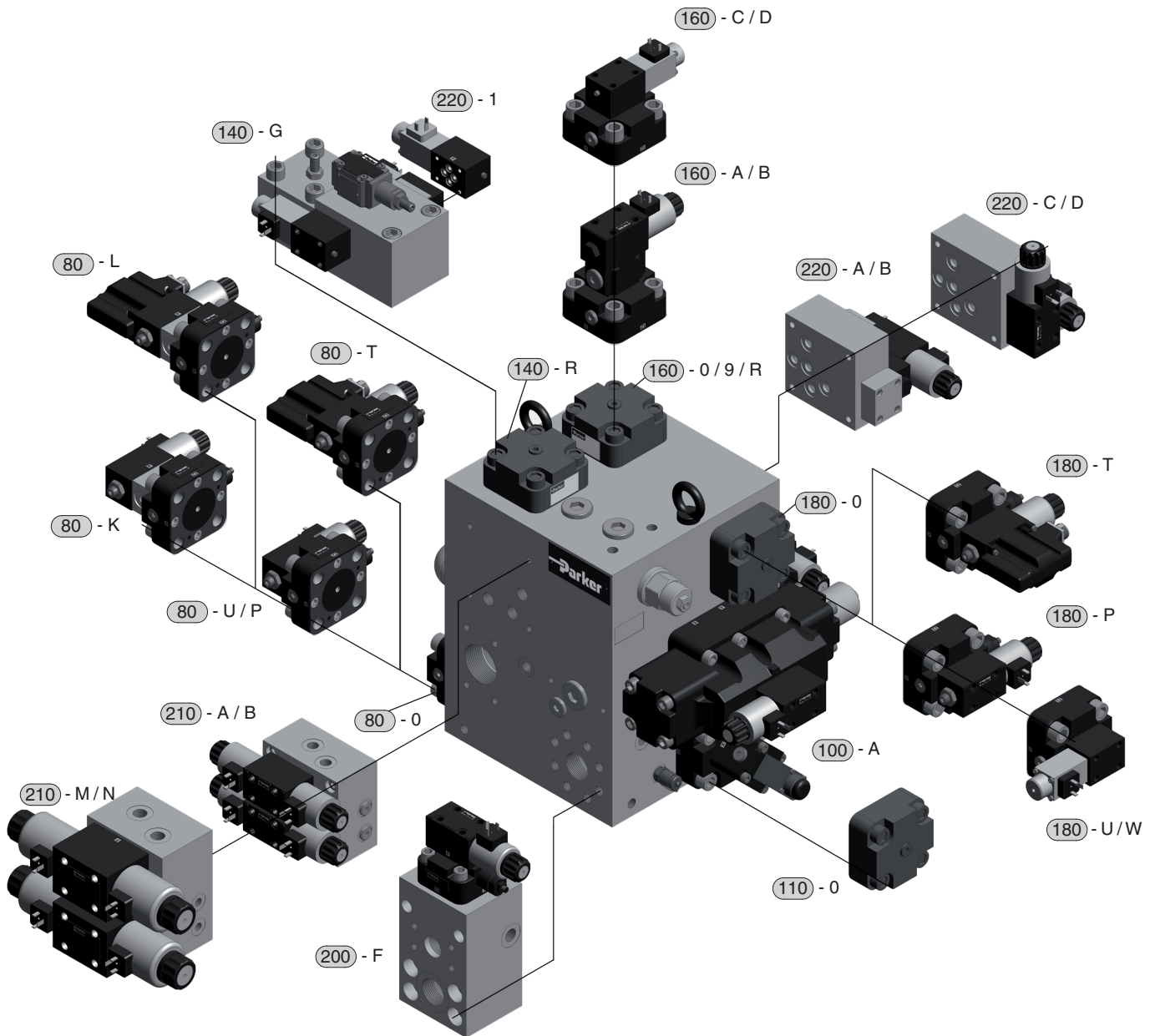
Port	A	B	D	M
P ¹⁾ SAE62 SAE1 1/4"	66.7	31.8	G1	M12x20
T SAE61 SAE2"	77.8	42.9	G1 1/2	M12x24
A1 SAE62 A2 SAE1 1/2"	79.4	36.5	G1 1/4	M16x30
B SAE62 SAE1 1/4"	66.7	31.8	G1	M12x20

¹⁾ SAE flange can be aligned horizontally and vertically.

PPCC16 general dimensions

Code	H8	H22
0	45	0
A	-	157
B	-	117
P	102	-
T	165	-
U	102	-

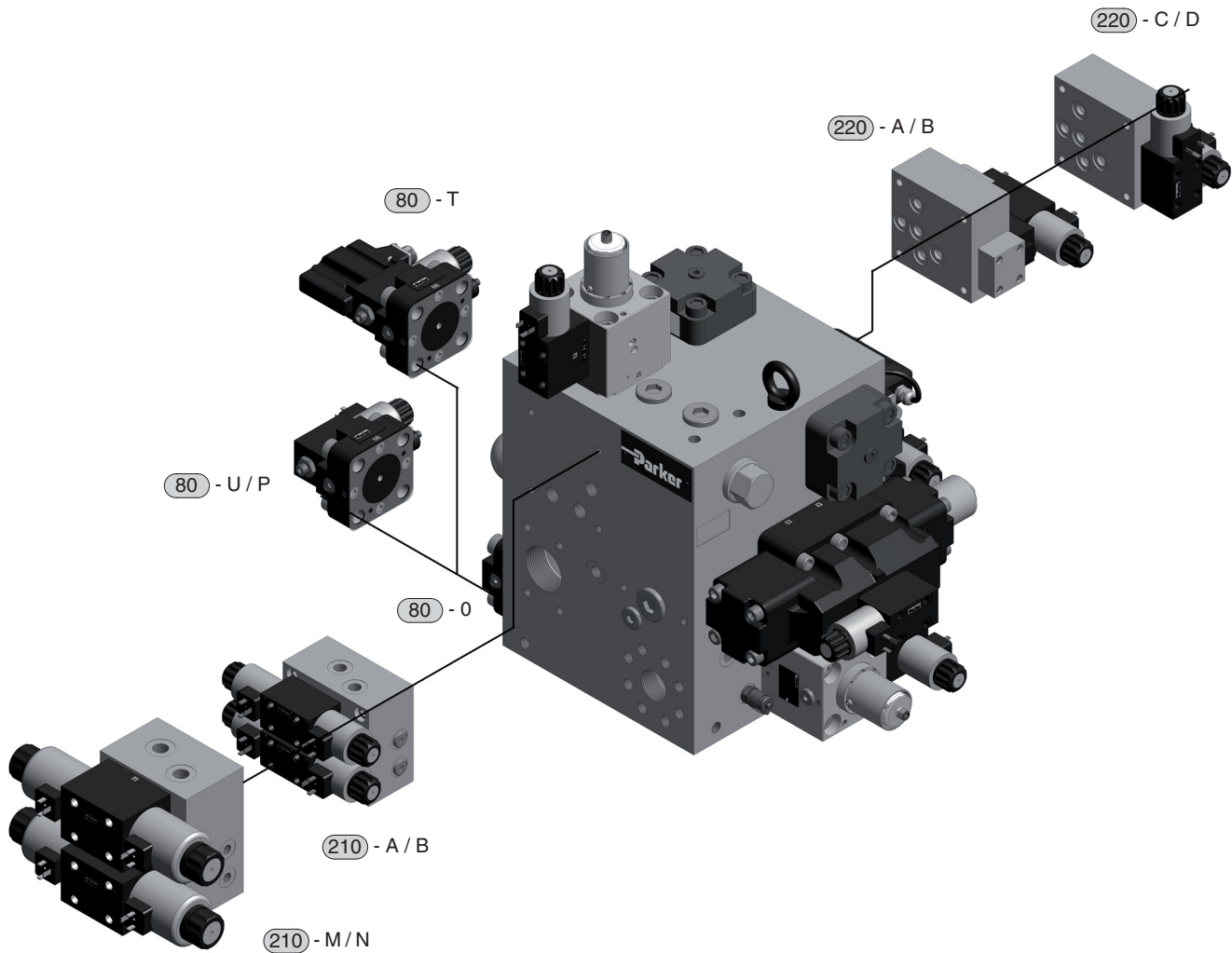
Version with directional control valve NG25 (PPCC25*V...)**



- (80) = System pressure relief
- (100) = Flow control
- (140) = Rod side function
- (160) = Sequence valve port A2

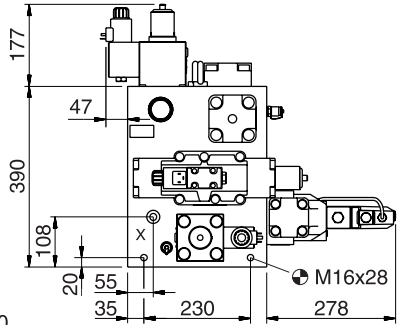
- (180) = Outlet valve
- (200) = Double pump connection manifold
- (210) = Auxiliary functions
- (220) = Setup mode

Version with servo proportional DC valve NG25 (PPCC25**CP... / PPCC25**CQ...)

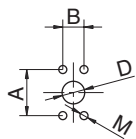
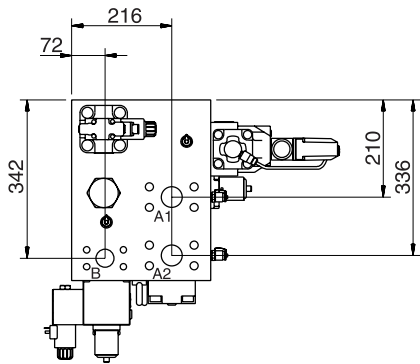
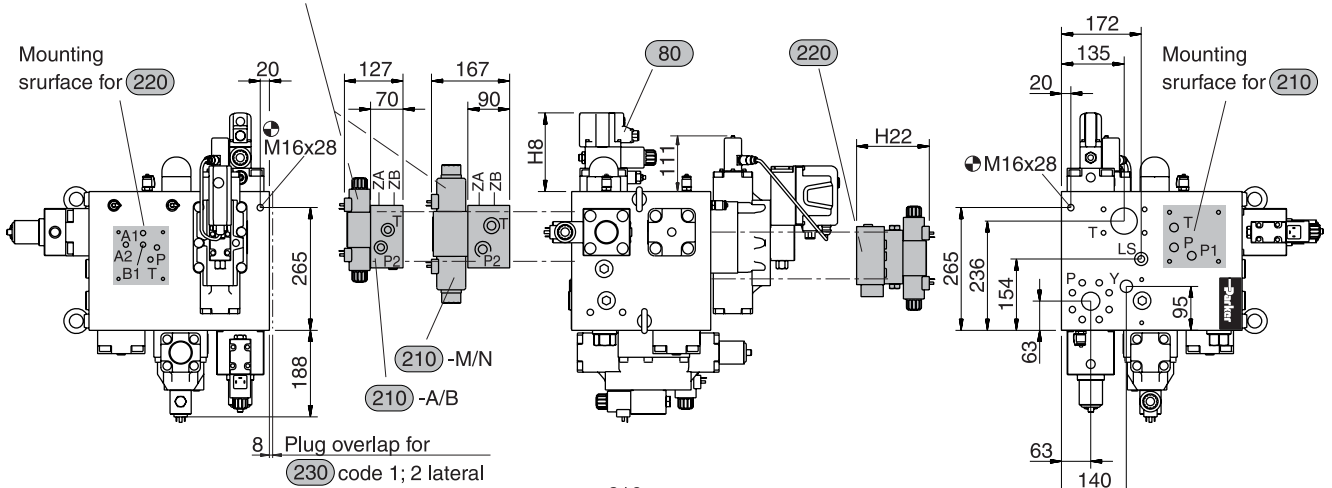


- 80 = System pressure relief
- 210 = Auxiliary functions
- 220 = Setup mode

**Version with servo proportional
 DC valve NG25 (PPCC25**CP... /
 PPCC25**CQ...)**



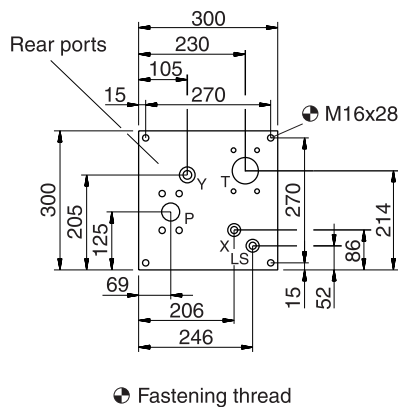
DC valve NG06 respectively NG10 are not included in the scope of delivery



PPCC25 dimensions for SAE flanges

Port		A	B	D	M
P ¹⁾	SAE62 SAE1½"	79.4	36.5	G1¼	M16x28
T	SAE61 SAE2½"	88.9	50.8	G2	M12x24
A1	SAE62	96.8	44.4	G1½	M20x38
A2	SAE2"	96.8	44.4	G1½	M20x38
B	SAE62 SAE1½"	79.4	36.5	G1¼	M16x28

¹⁾ SAE flange can be aligned horizontally and vertically.



Fastening thread

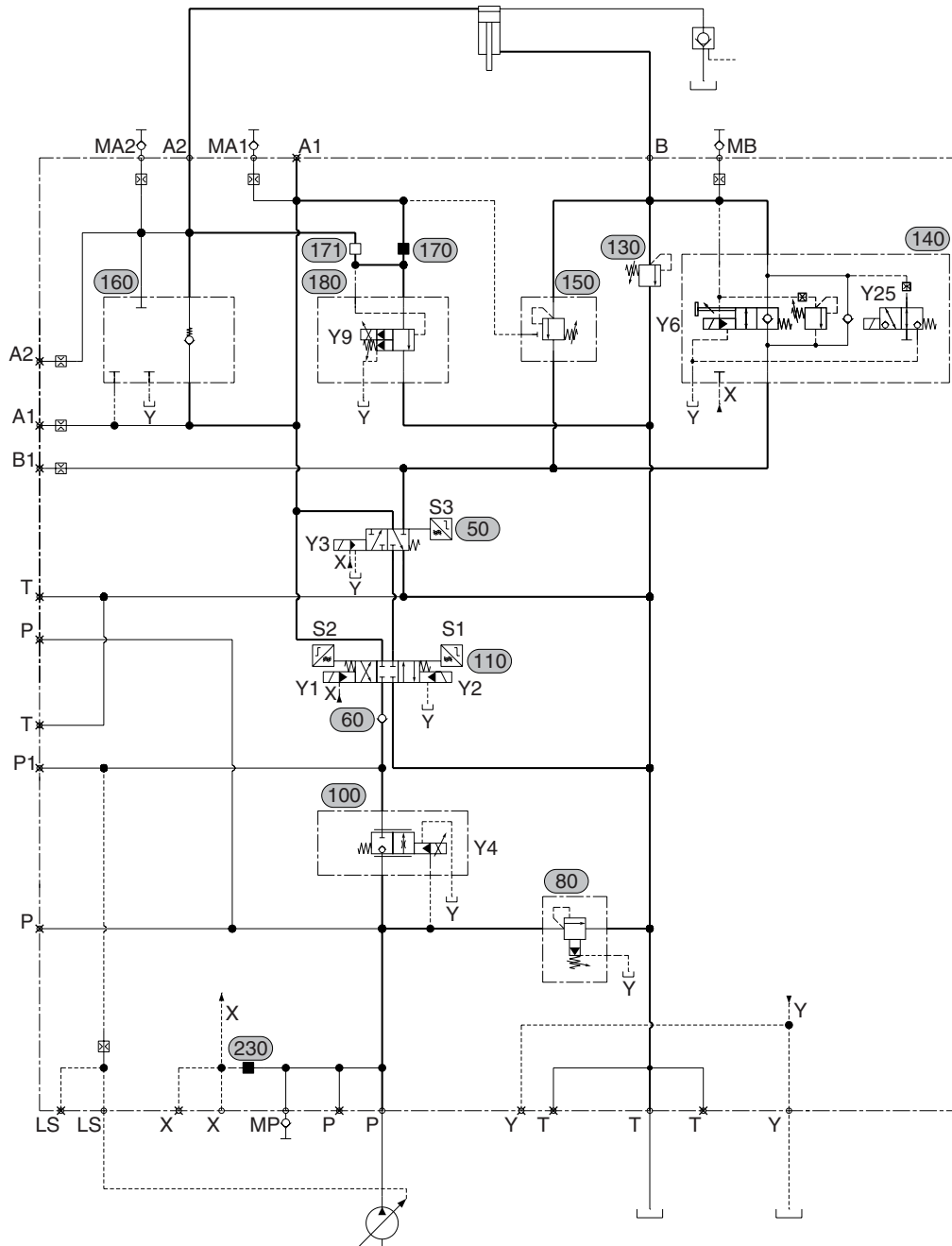
PPCC25 general dimensions

Code	H8	H22
0	50	0
A	-	157
B	-	117
P	107	-
T	170	-
U	107	-

Example 1

Press design

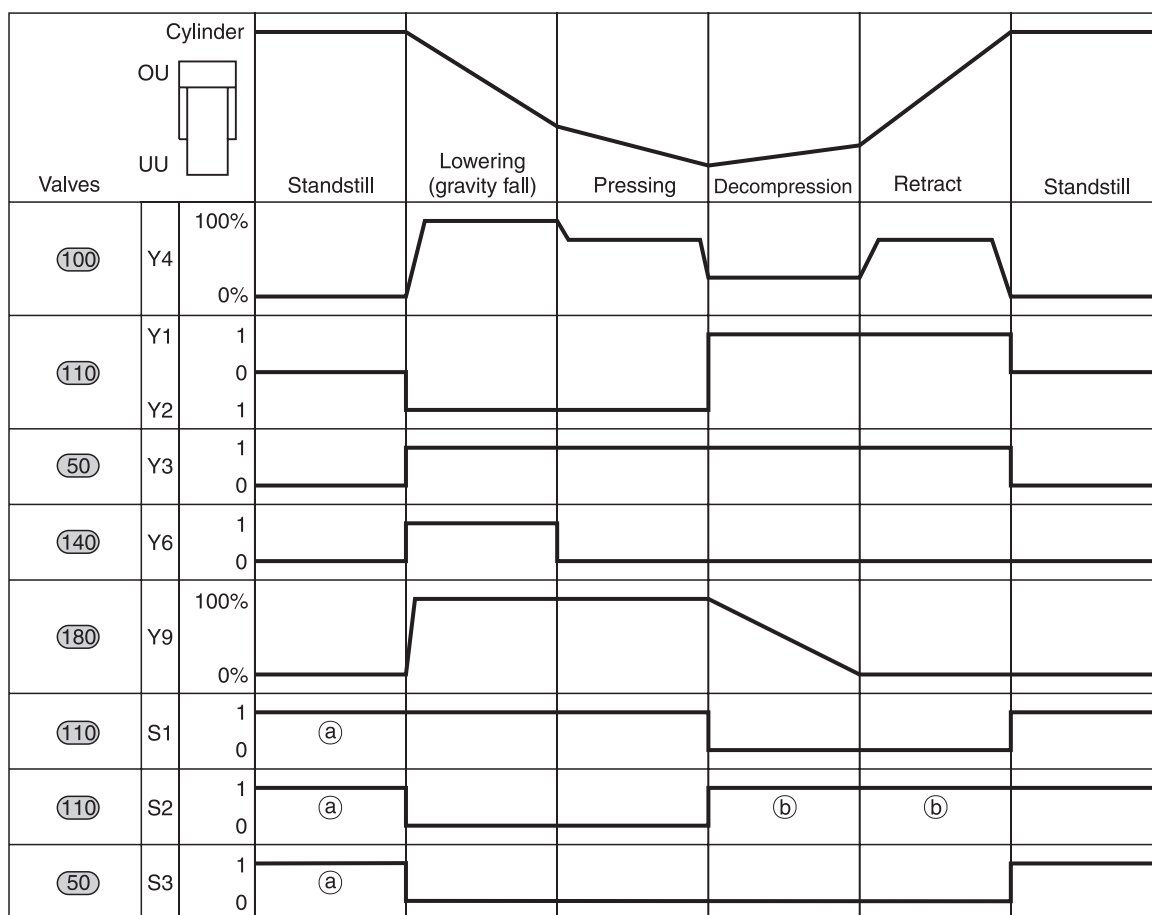
- Press with high-speed gravity fall
- Speed control with proportional throttle in load-sensing operation
- System pressure relief fixed, pressure is controlled by the pump
- Spring-loaded tools move the ram upwards during the decompression phase
- In setup mode it is only necessary to lower the ram



Ordering code
 PPCC16-0KAV-KGAR2P-0017N

Notes on the control

During the decompression phase, the rod side must be actively supplied to prevent cavitation. To that end, the valves are switched to the retract function, with the pressure valve of the pump set to a low pressure, which facilitates supply but does not result in an active retraction.



(a) Before starting the closing respectively retraction movement, the save home position of valve (50) and (110) must be monitored.

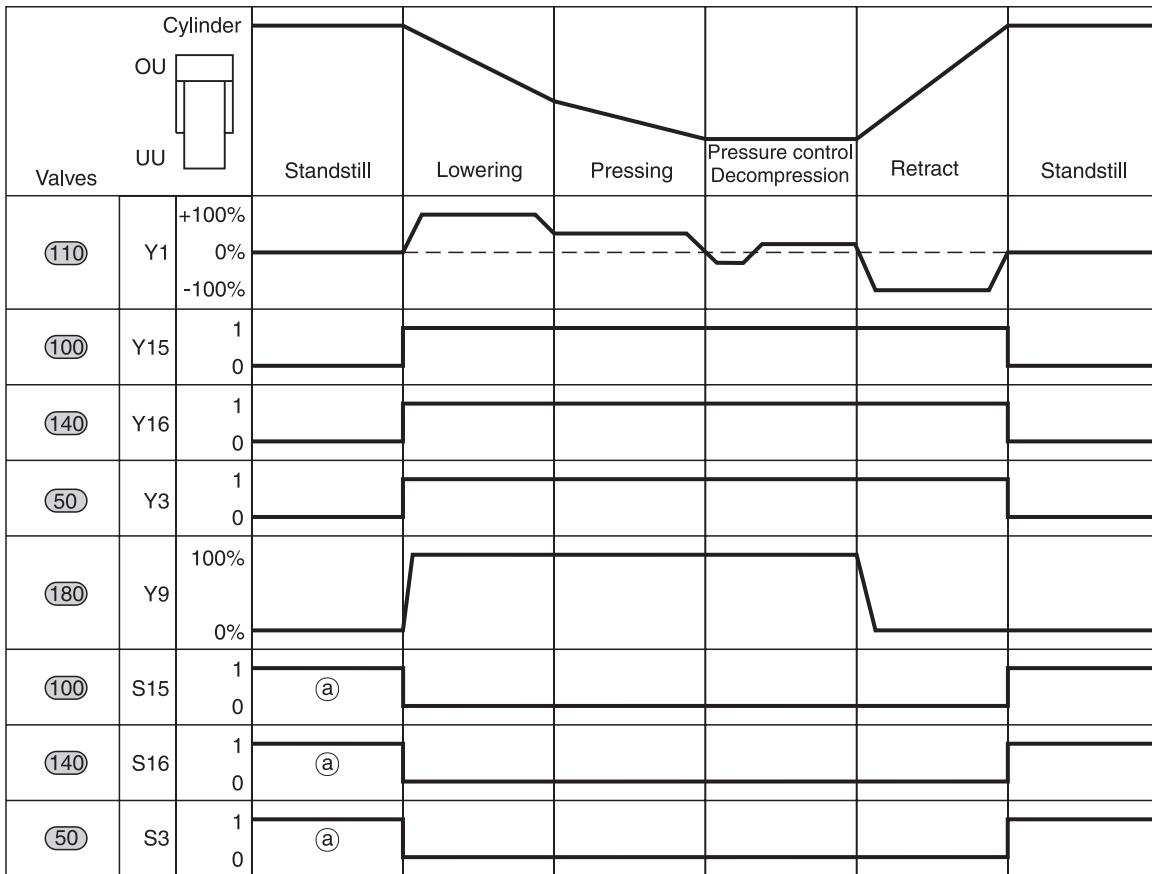
(b) If the safety functions are neutralized during the retraction movement, the switching position of valve (110) must be constantly monitored.

Notes on the control

Given the safe basic settings, valves 100 and 50 prevent pressurization and valves 140 and 50 prevent the lowering of the ram. External pilot oil supply to achieve the same controlling behavior of the DFplus control valve in all operating situations.

actual pressure requirements, with the pressure drop kept constant by the control valve and therefore minimized in phases with low pressure requirements. The retraction must not be activated when the safety device is turned off as there is no secure direction recognition when using control valve 110.

For energy-efficient operations, the pump pressure can be subsequently controlled according to the cylinder's



(a) Before starting the closing respectively retraction movement, the save home position of valve (50) and (110) must be monitored.

When used as instructed, PPCC series press controls meet all of the requirements of DIN EN 693: 2011-11 placed on the hydraulic section of a press control. The following instructions must be followed during configuration in order to use the control manifold in accordance with the norm. For presses designed according to DIN EN 289:2014-09, additional safety measures must be taken according to this norm for a stroke > 500 mm or if the depth of the mounting plate is > 800 mm.

- PPCC press controls must only be used as instructed.
- Alternative uses of the press control are not permitted; all exceptions are listed below.
- The press control must only be used in presses with an active protective device and an electrical safety controller. Information on safety devices and the electrical controller can be found in DIN EN 693.
- Valves 50 and 110 form the established redundant and self-monitoring Parker safety controller. The self-monitoring of the system requires the integration of position control of the directional valves in the electrical part of the controller in accordance with the norm. The activation of the directional valves must also be designed in accordance with the norm.
- This valve switching ensures that even in the case of an error in one of the two valves dangerous motion can be stopped at any time.
- If the safety functions are neutralized during the opening stroke, the switching position of valve 110 must be constantly monitored to rule out the reversal of the direction.
- In the case of a fault on valve 110, the entire flow of the pump will flow to the tank via valve 50. It must be ensured that the pressure on the rod side does not exceed the permissible value due to the surface area ratio of the cylinder, the flow-through resistance of valve 50 and the resistance in the tank line. This means that the press could move backwards via pressure valve 130 although valve 50 is in the starting position.
- The system pressure relief valve 80 is to be set to the maximum permitted pressure of the hydraulic system on the user's side.
- The pressure relief valve 130 on the rod side prescribed by the norm is to be set to at least 10 % above the maximum operating pressure of the hydraulic system and sealed. The valve must only open in the case of an incorrect increase of pressure in the cylinder. The PPCC press controls are delivered from the factory with sealed settings of 250 bar or 350 bar.
- All other pressure valves are reset to the minimum set pressure after the factory test run.
- No hose lines and cutting ring connections can be used on the rod side of the cylinder (port B of the control block); only form-fitted or welded connections are permitted. When designing the pipeline, the pressure of valve 130 must be taken into account.
- The test ports on the rod side are equipped with orifices with a diameter of 0.6 mm to limit the lowering speed when the connections are accidentally opened to < 5 mm/s. This design is to be checked by the user by measuring the cylinder diameter and holding pressures of the system. Where necessary, orifices with smaller diameters are to be used. The replacement of orifices is excluded from the aforementioned prohibition of changes.
- By default, the directional control valve 50 must not exceed the maximum lowering speed of the press ram of 1 mm/s. The user is to check the leakage values and the cylinder diameter and holding pressures of the plant stated in the catalogue to see whether this value is met.
- The user must take measures to prevent common cause failures (CCF) as outlined in DIN EN 13849-1 in order to reach the performance level (PL) 'e'.
- During setup operations without a safety device, the press speed must be restricted to 10 mm/s. This is possible by taking the following steps, amongst others:
 - Separate pump with limited capacity.
 - Additional manifolds in accordance with the type code. When placing the orifices, the user should ensure that the permitted speed cannot be exceeded even in unfavorable operating circumstances. The replacement of orifices is excluded from the aforementioned prohibition of changes.
 - The use of normal direction controls together with a secure monitoring of the setup speed is possible in the case of presses with position feedback.



certificate
no. **HSM 99022**
dated 2012-02-23

Translation

DGUV Test Certificate

Name and address of the holder of the certificate: (customer) Parker Hannifin GmbH Hydraulic Controls Division
Gutenbergstraße 38
41564 Kaarst

Product designation: **Press control system**

Type: NG 06, NG 10, NG 16, NG 25, NG 50

Testing based on: GS-HSM-01 "Principles for the testing and certification of presses", version 01.2012

Test report: 102/2008 from 15.02.2012

Further details: Intended use: Installation into hydraulic presses
in acc. with DIN EN 693

Remarks:

- With the appropriate application, Performance Level „e“ of DIN EN ISO 13849-1 is achieved for the stopping function.
- Installation in compliance with manufacturer's instructions and requirements specified in DIN EN 693.
- Admitted only for hydraulic presses in compliance with DIN EN 693, where setup movements are carried out using two-hand control devices or where the identical safety level is ensured by other means.

Follow-up certificate of MHHW 99 022 from 15.04.2009.

The type tested meets the requirements specified in article 3 para. 1 of the German Product Safety Act. Thus, the type tested also complies with the provisions laid down in the directive 2006/42/EC (**Machinery**). The holder of the certificate is entitled to affix the DGUV Test mark shown overleaf to the products complying with the type tested.

The present certificate including the right to affix the DGUV Test mark is valid until: **2017-02-22**

Further provisions concerning the validity, the extension of the validity and other conditions are laid down in the Rules of Procedure for Testing and Certification of August 2012.



Dipl.-Ing. Berthold Heintke



In any case, the German original shall prevail.

PZB09E_ Postal address: Kreuzstraße 45 / 40210 Düsseldorf
MA Phone / Fax: +49 (0) 211 8224-16910 / +49 (0) 211 8224-26910
02.13 Internet: http://www.dguv.de/fb-holzundmetall/pz_pz_mf/

E-Mail: pz-hsm.fbhm@bghm.de

Deutsche Gesetzliche Unfallversicherung (DGUV) e.V.
Spitzenverband der gewerblichen Berufsgenossenschaften
und der Unfallversicherungsträger der öffentlichen Hand
Vereinsregister-Nr. VR 751 B, Amtsgericht Charlottenburg

DGUV Test Prüf- und Zertifizierungsstelle Hebezeuge, Sicherheitskomponenten
und Maschinen • Fachbereich Holz und Metall
Kreuzstraße 45 • 40210 Düsseldorf • Deutschland
Telefon: +49 (0) 211 8224-16910 • Fax: +49 (0) 211 8224-26910



Accessories				
Electrics	Description	Type	Order no.	
			black (B)	grey (A)
Plugs	Directional control valves	PG 9	5001710	5001711
		PG11	5001716	5001717
		PG11 with LED	5001571	5001572
		PG 11 with LED and suppressing circuit	5001708	5001709
	Proportional valves without onboard electronics	PG 9 PG11	5001710 5001716	5001711 5001717
	Proportional valves with onboard electronics	6 + PE EN 175201-804	5004072	
	Position control	M12 / 4 + PE IEC 61076-2-101	5004109	
Parametrizing cable		OBE RS232	40982923	
Interface for PCD module		RS232C, DSub 9P, male for null modem cable		
Electronic module for proportional valves			PCD00A-400	
Hydraulic connections				
Fittings		ISO 1179-1	Parker catalogue CAT 4100-8	
Flanges		ISO 6162-1/2 SAE 518	Parker catalogue CAT 4100-8	
There are a number of components available to connect the pipes and hoses from which the suitable for the respective installation circumstances can be selected. It should be noted here that only form-fitting pipe connections and no hoses are used to maintain the press (port B, see safety information).				
Hydraulic pumps				
Axial piston pumps	Series PV Series PD		Parker catalogue HY30-3245 Parker catalogue HY28-2665	
Vane pumps			Parker catalogue HY29-0001	
Drive Controlled Pump			Parker catalogue HY11-3352	
Sensors				
Pressure sensors	Series SCP		Parker catalogue CAT4083-3	

Seal kits

Seal kits	PPCC10	PPCC16	PPCC25
Version with directional control valve	SK-PPCC10-VZ	SK-PPCC16-VZ	SK-PPCC25-VZ
Version with servo proportional DC valve	SK-PPCC10-PQ	SK-PPCC16-PQ	SK-PPCC25-PQ

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