FLOW CONTROL VALVES

POCLAIN HYDRAULICS

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FDB25. VALVES.

Methodology :
This document is intended for manufacturers of machines that incorporate Poclain Hydraulics products. It describes the technical characteristics of Poclain Hydraulics products and specifies installation conditions that will ensure optimum operation.
This document includes important comments concerning safety. They are indicated in the following way:

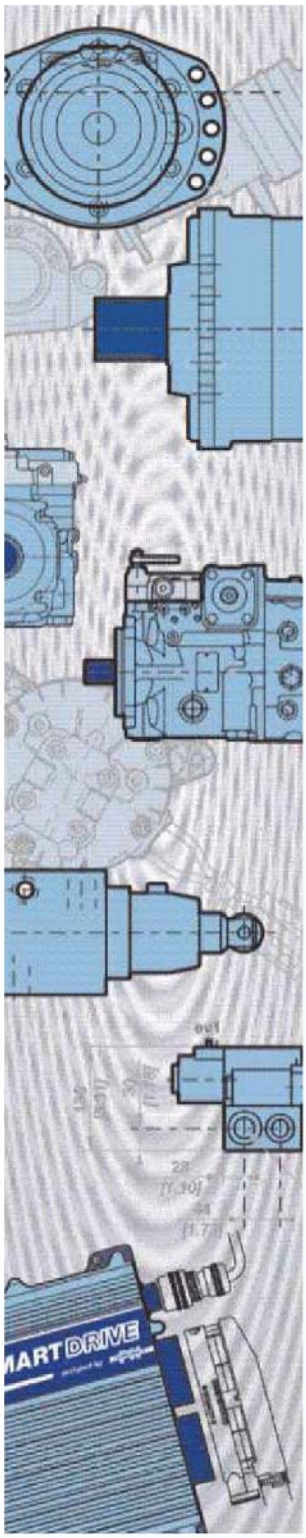
	**Safety comment.**

This document also includes essential operating instructions for the product and general information. These are indicated in the following way:

	**Essential instructions.**
	**General information .**
	**Information on the model number.Information on the model code.**
	**Weight of component without oil.**
	**Volume of oil.**
	**Units.**
	**Tightening torque.**
	**Screws.**
	**Information intended for Poclain-Hydraulics personnel.**

The views in this document are created using metric standards.
The dimensional data is given in mm and in inches (inches are between brackets and italic)

CONTENT



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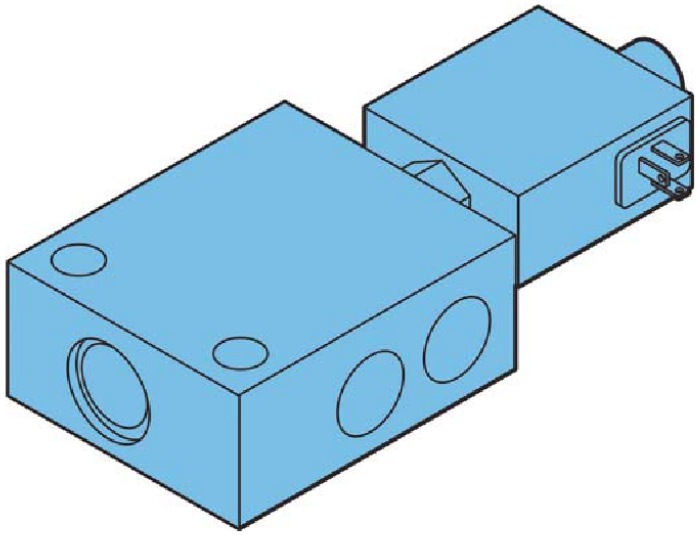
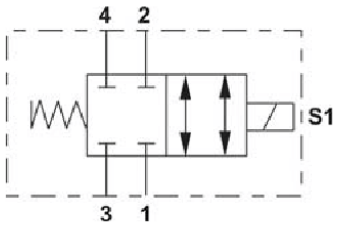
BYPASS ELECTRO-VALVE BLOCK

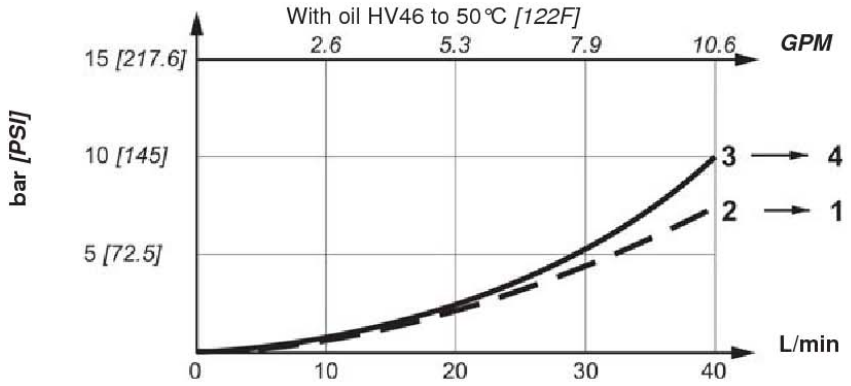
Function: **Control cylinder bypass for a pump or tandem pump swash plate.**



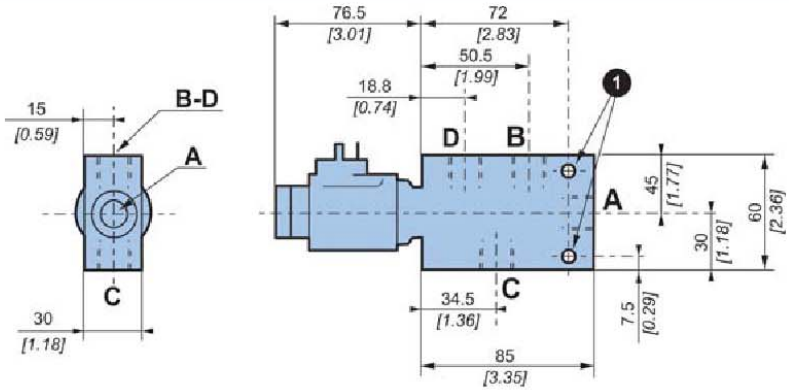
Commercial Description	EV-CED10D51A20NG2 BLOCK
Part number	004843318B
Compatibility	Transmissions with combined integrated braking systems.
Hydraulic symbol	

Caracteristics	
Maximum flow rate	40 L/min *[10.57 GPM]*
Response time	Time to energize: 40/80 ms Time to de-energize: 30/70 ms
Internal leakage at 200 bars *[2900 PSI]*	80 cm³ / min max. *[max. 4.88 cu in/min]*
Operating temperature range	- 40 °C to + 100 °C *[- 40 °F to 212 °F]*
Voltage	12 V DC
Electrical interface	ISO 4 400 / DIN 43 650 (IP 65) See CDE SA CONNECTOR KIT (brochure A01889D)
Power	26 W *[0.035 HP]*
Mass	0.3 kg *[0.6 lb]*

Pressure drop



Dimensions



Installation

Block mounting position: Indifferent.

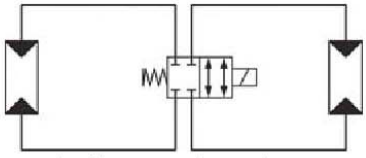
Chassis mounting:

Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M 6	2	8.8	10 *[7.37]*

Hydraulic connections (for a tandem pump) :

Electrical control by the brake valve when actuated

Pump 1 plate cylinder control



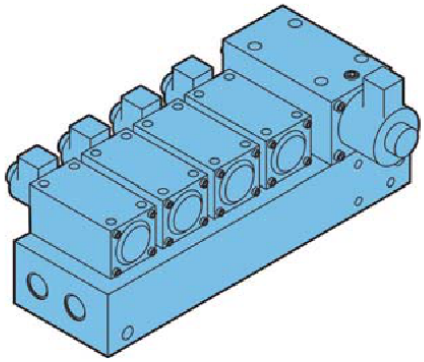
Pump 2 plate cylinder control*

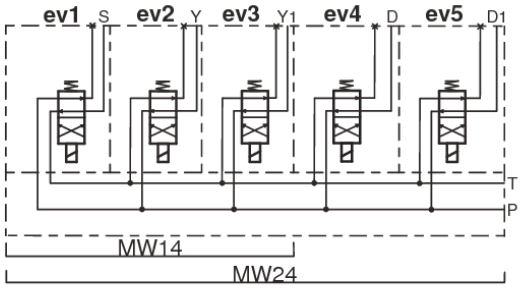
* When only one pump is used, the two unused orifices are plugged.

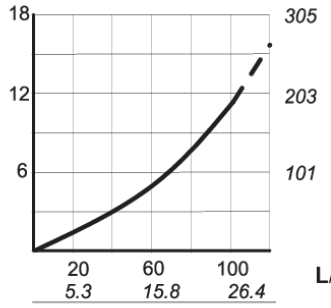
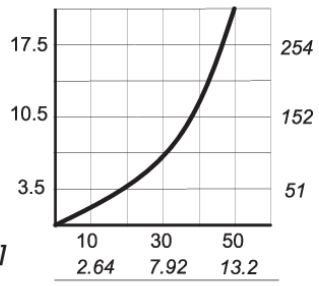
Port	Function	Connection	Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
1-2	Pump displacement control	Ø 17 Gaz Cyl *[G 3/8"]* (UNF: Please contact us)	300 *[4 351]*	55 *[41]*
3-4	Displacement control of other pump		100 *[1 450]* in use	

DISPLACEMENT SHIFT VALVE BLOCK

Function: **Controls displacement shift for MW motors and release of parking brakes.**



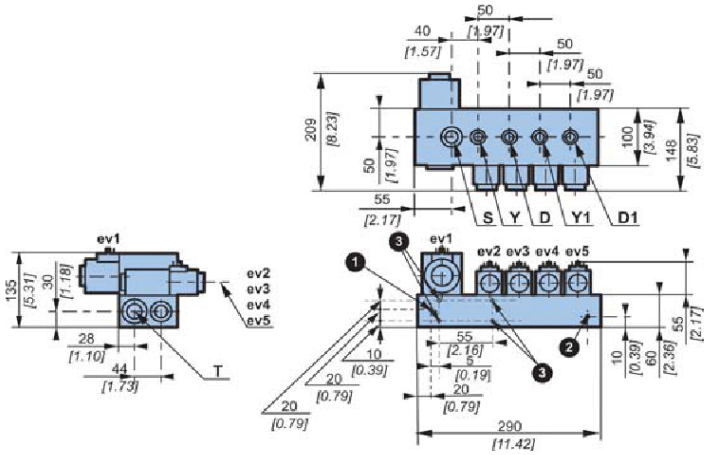
Commercial Description	**BLOC VALVE AVEC REPARTITION**	
Designed for motors:	MW24	MW14
Part number	003643609U	R00270015U
Compatibility	SPEED +™ Transmission systems.	
Hydraulic symbol		

Features		
Voltage	12 V DC	
Electrical interface	ISO 4400 / DIN 43650 (IP 65).See CDE SA CONNECTOR KIT.	
Power	52 W *[0.07 HP]*	
MassMass	20 kg *[44.1 lb]*	
ElectrovalveSolenoid valve	**ev1**	**ev2 - ev3 - ev4 - ev5**
Pressure drop bar *[PSI]*		

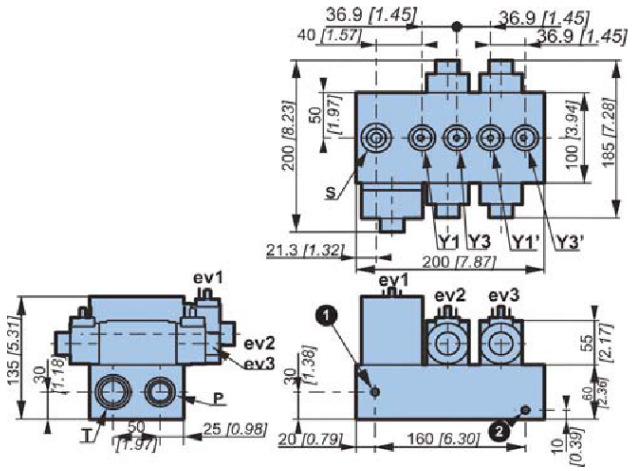
Function	Parking brake control	Motor displacement control
Power	52 W *[0.07 HP]*	33 W *[0.044 HP]*

Never drive the vehicle when the parking brake is engaged.

Dimensions of valve bloc for 4 displacements motor MW24



Dimensions of valve bloc for 3 displacements motor MW



Installation

Valve mounting position: Indifferent.

This block must be protected from water spray, or its solenoids will be affected.

Chassis mounting:

Ref.		Quantity	Class	Thread depth mm *[in]*	N.m *[lb.ft]* ± 10 %
1	2	M 8	2	8.8	13 *[0.51]*	25 *[18.4]*
3		M 6	4	8.8	15 *[0.59]*	10 *[7.4]*

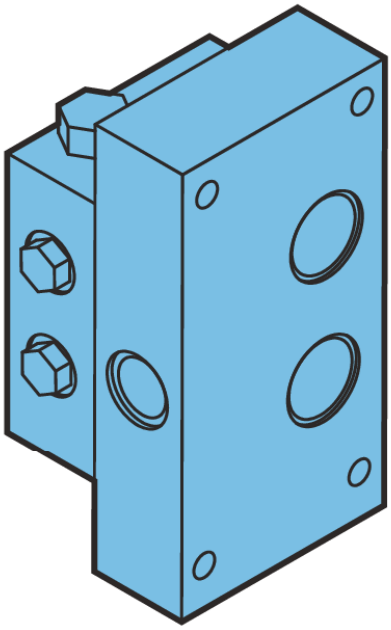
Hydraulic connections:

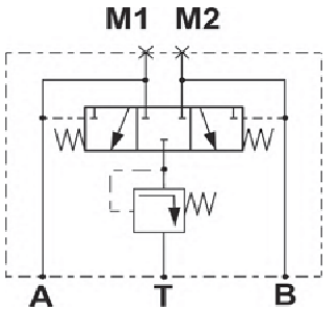
Port	Function	Connection		Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
		Metric	SAE		
P	Supply	M 22 x 1.5	Contact us	30 *[435]*	100 *[74]*
S	Parking brake				
T	Tank	M 27 x 2	Contact us	1 *[14]*	200 *[148]*
Y - Y1 D - D1	Motor displacement control	M 18 x 1.5	Contact us	30 *[435]*	70 *[52]*

Recommended :
- **A mechanical locking of the electric control in order not to change displacement by mistake.**
- **A LED indicating activation/deactivation of the parking brake.**

EXCHANGE VALVE

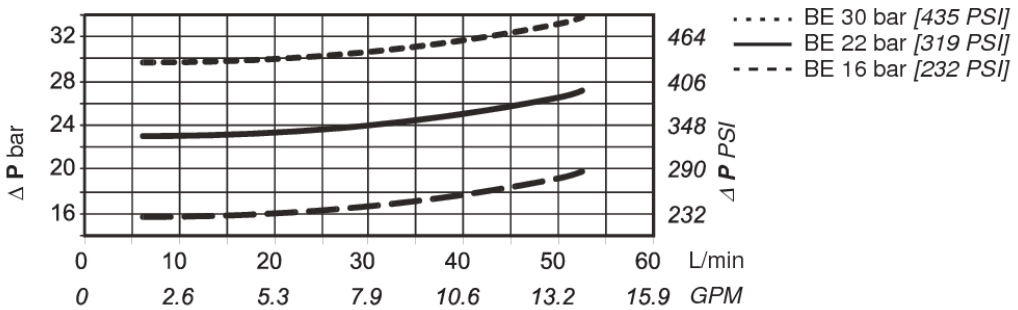
Function: **In a closed circuit, takes oil from the low pressure side and routes it to the coolant.**



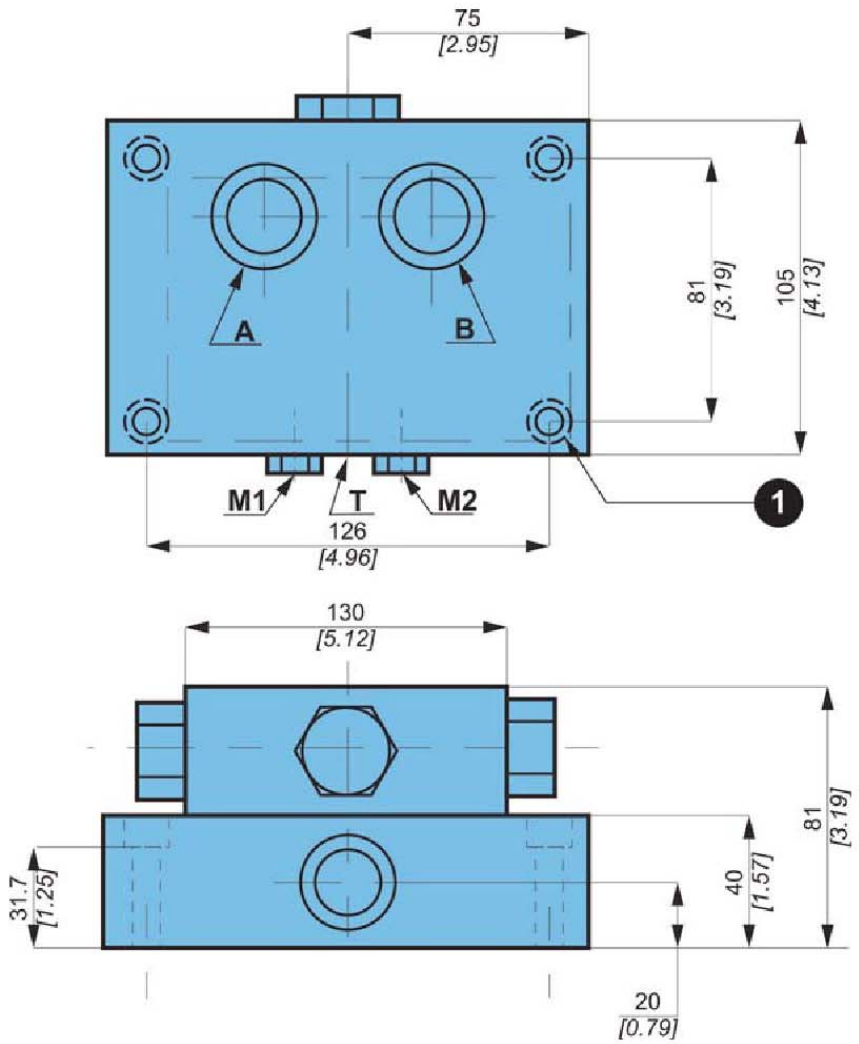
Commercial Description	EXCHANGE VALVE
Part number depends on relief valve setting	16 bar *[232 PSI]* : 004843372K 22 bar *[319 PSI]* : 004343332N 30 bar *[435 PSI]* : 004343321B
Compatibility	All types of transmission
Hydraulic symbol	

Caracteristics	
Mass	7.8 kg *[17.19 lb]*

Opening range



Dimensions



Installation

Valve mounting position: Indifferent.

Chassis mounting :

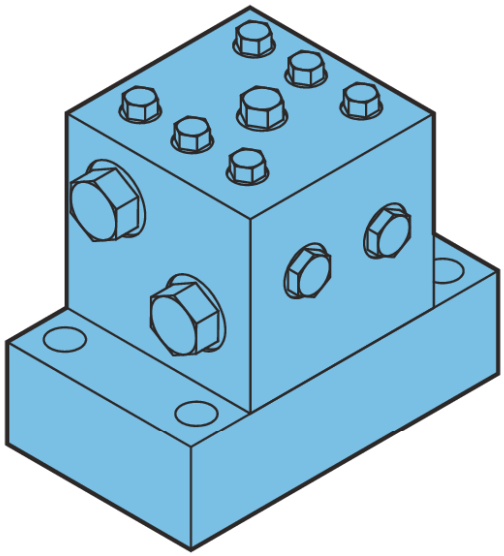
Ref.		Quantity	Class	Thread depth mm *[in]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M 8	4	8.8	13 *[0.51]*	25 *[18.4]*

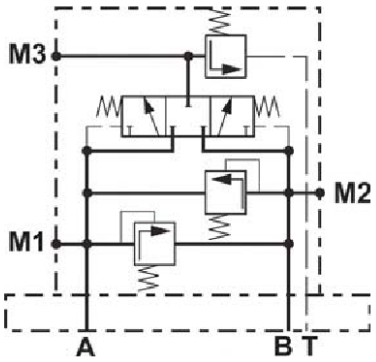
Hydraulic connections :

Port	Function	Connection	Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
A	HP connection	M 27 x 2	420 *[6 100]*	200 *[148]*
B	HP connection			
T	Tank connection	M 22 x 1.5	-	100 *[74]*
M1	Pressure measurement (A)	7/16 - 20 UNF 2B	420 *[6 100]*	20 *[15]*
M2	Pressure measurement (B)			

EXCHANGE BLOCK SAFETY WITH RELIEF VALVE

Function: **In a closed circuit, takes oil from the low pressure side of the circuit where the exchange valve keeps a minimum pressure of 22 bars, and routes it to the cooler.**

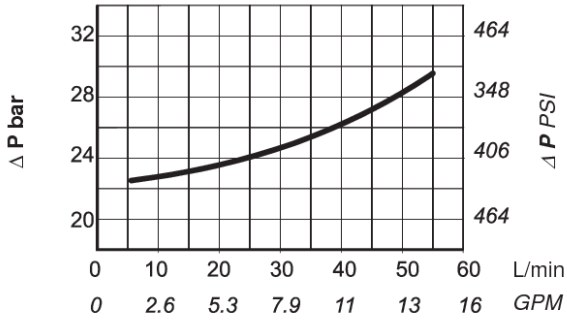


Commercial description	**BLOC BEHS + E**
Part number depends on relief valve setting	22 bar *[319 PSI]* : 004343331M
Compatibility	All types of transmission
Hydraulic symbol	

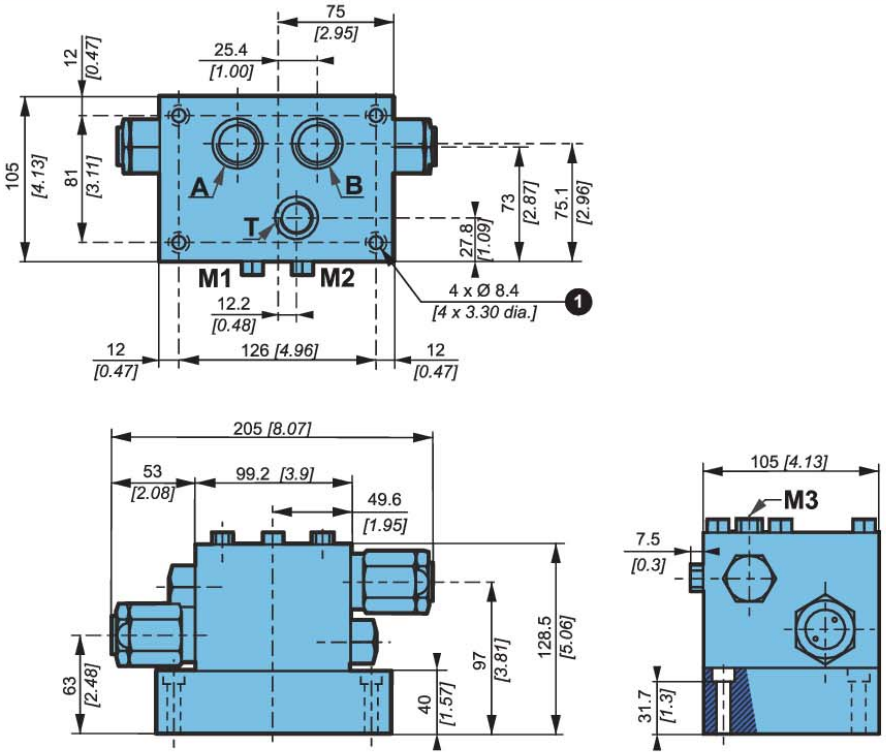
For others setting values, consult your Poclain Hydraulics sales engineer.

Caracteristics	
Mass	11.5 kg *[22.35 lb]*

Opening range



Dimensions



Installation

Valve mounting position: Indifferent.

Chassis mounting :

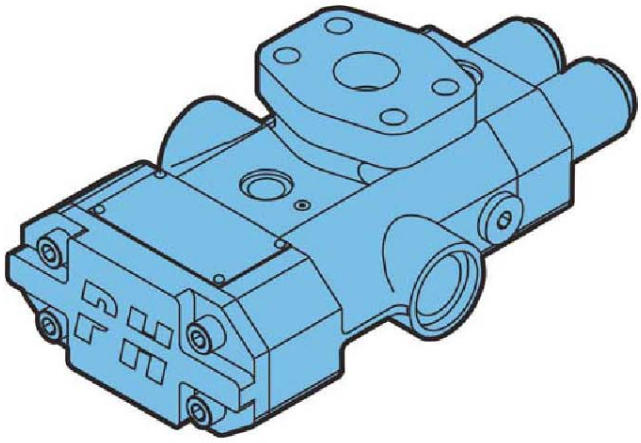
Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M 8	4	8.8	25 *[18.4]*

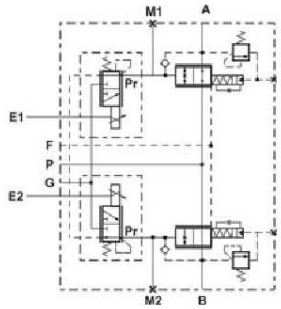
Hydraulic connections:

Port	Function	Connection	Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
A	HP connection	M 27 x 2	420 *[6 100]*	200 *[148]*
B	HP connection			
T	Tank connection	M 22 x 1.5	-	100 *[74]*
M1	Pressure measurement (A)	7/16'' - 20 UNF 2B	420 *[6 100]*	20 *[15]*
M2	Pressure measurement (B)			
M3	LP Pressure measurement		22 *[320]*	

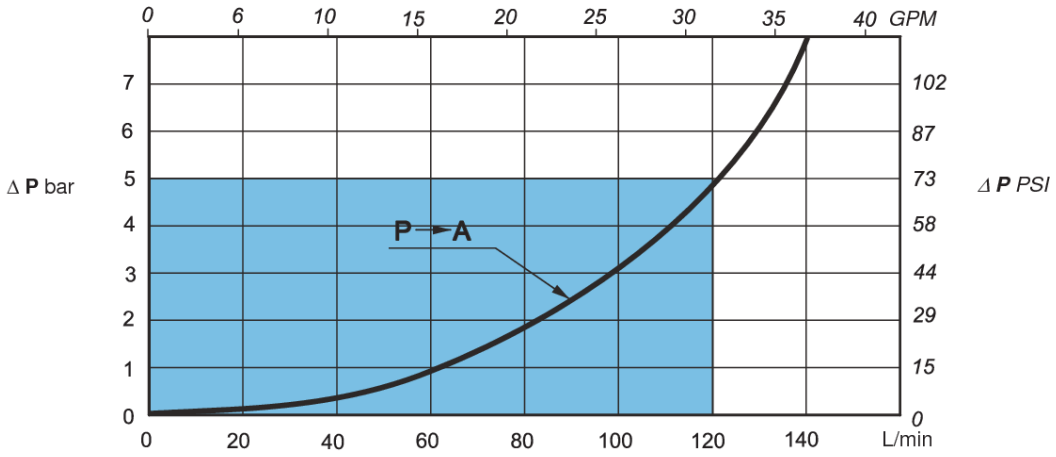
TRACTION CONTROL (IN-LINE) VALVE

Function: **Proportional Flow Control Valve used to regulate a control wheel slip.**



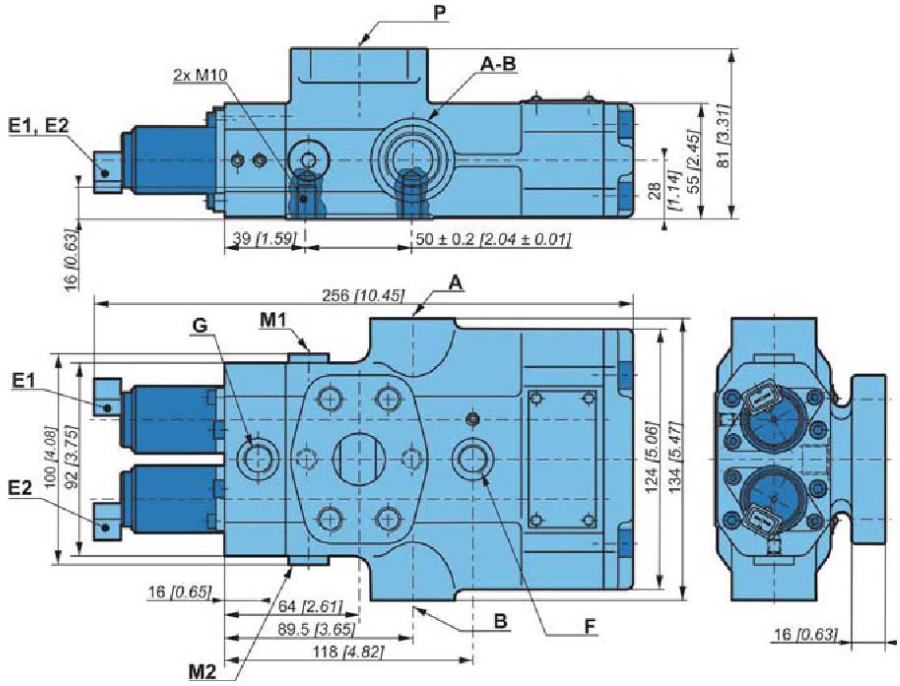
Flow / voltage	Q < 20 L/min *[5.2 GPM]*		20 *[5.2 GPM]* < Q < 50 L/min *[13.2 GPM]*	
	12 V	24 V	12 V	24 V
Commercial Description	**VMA-020-T1-12-00**	**VMA-020-T1-24-00**	**VMA-050-T1-12-00**	**VMA-050-T1-24-00**
Part number	004843325J	004843348J	004843326K	004843347H
Compatibility	Electronic transmission management			
Hydraulic symbol				

Pressure drop



The valves must be supplied in G with a pressure between 15 and 30 bar *[217 PSI and 435 PSI]*.
Maximum flow, from P to A or B, for a fully open valve, is 120 l/min *[31.7 GPM]* per wheel with a pressure difference (△P) of 5 bar *[72 PSI]* (96 cSt mineral oil at 25 °C *[77 °F]*).

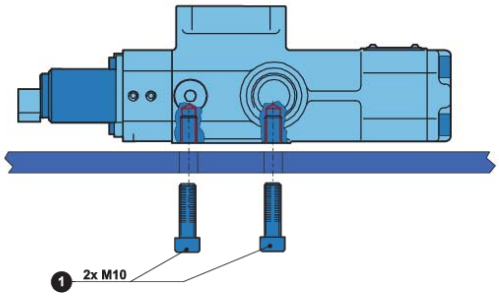
Dimensions



Installation

Valve mounting position	Horizontal.
Chassis mounting	

Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M 10	2	8.8	49 *[36]*



Motor and valve drain piping must be connected directly to the tank.

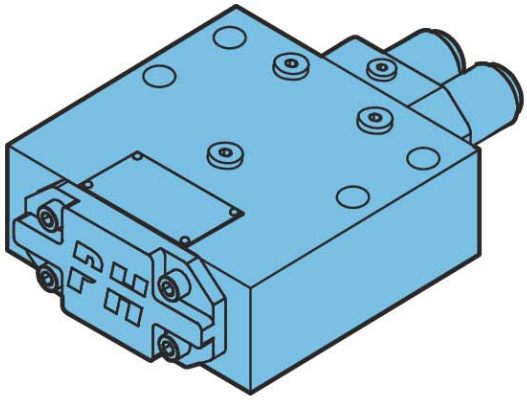
Hydraulic connections

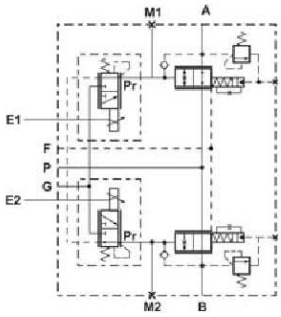
Port	Function	Connection	Standards	Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
P	HP connection	Bride DN 25 PN 400	ISO 6 162 ISO 9 974-1	450 *[6 526]*	90 *[66]*
A-B	HP connection	M 27 x 2	ISO 9 974-1	450 *[6 526]*	200 *[148]*
F	Drain	M 14 x 1.5		1 *[14]*	45 *[33]*
G	LP supply	M 14 x 1.5		15 *[217]* ≤ P < 30 *[435]*	45 *[33]*
M1-M2	Pressure measurement	M 14 x 1.5		0 ≤ P < 20 bar *[290]*	45 *[33]*

Electrical connections on E1 and E2: KIT CONNECT VMA VALVE.
(See Technical Catalog Mobile Electronic A01889D)

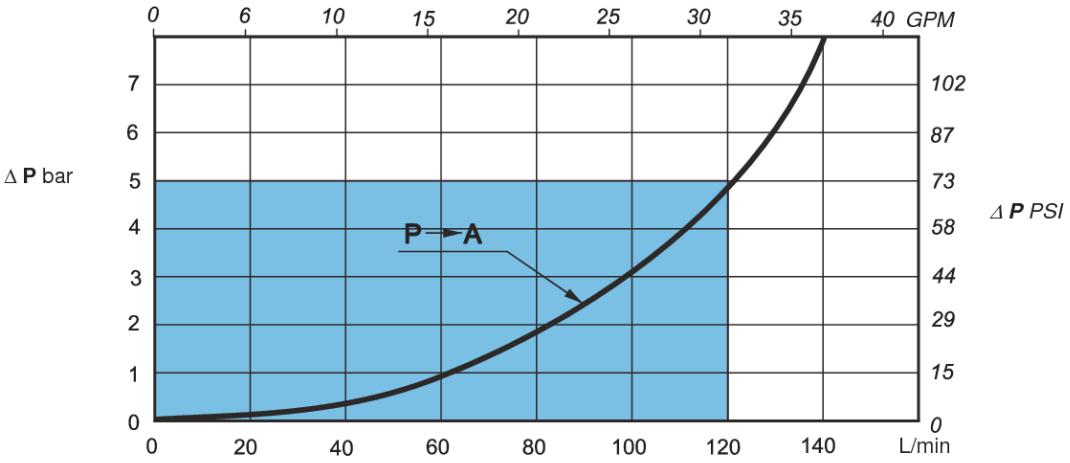
TRACTION CONTROL (FLANGED) VALVE

Function: **Proportional Flow Control Valve used to regulate a control wheel slip.**



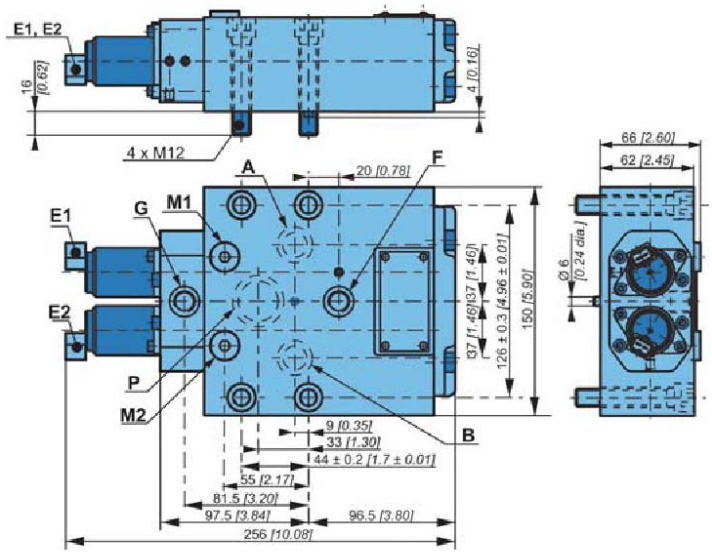
Flow / voltage	Q < 20 L/min *[5.2 GPM]*		20 *[5.2 GPM]* < Q < 50 L/min *[13.2 GPM]*	
	12 V	24 V	12 V	24 V
Commercial Description	**VMA-020-F0-12-00**	**VMA-020-F0-24-00**	**VMA-050-F0-12-00**	**VMA-050-F0-24-00**
Part number	004843327L	004843350L	004843328M	004843349K
Compatibility	Electronic transmission management			
Hydraulic symbol				

Pressure drop



The valves must be supplied at G with a pressure of between 15 and 30 bar *[217 PSI and 435 PSI]*.
Maximum flow, from P to A or B, for a fully open valve, is 120 l/min *[31.7 GPM]* per wheel with a pressure difference (△P) of 5 bar *[72 PSI]* (96 cSt mineral oil at 25 °C *[77 °F]*).

Dimensions



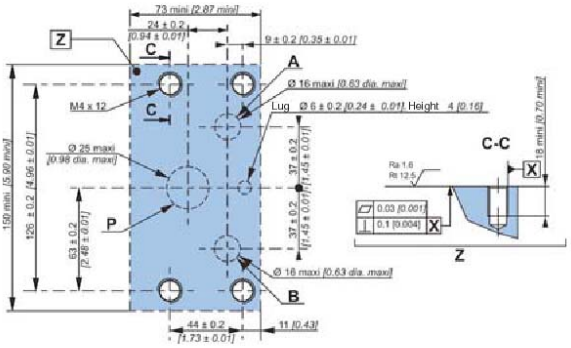
Installation

Valve mounting position Horizontal.

Remove the protection plate.

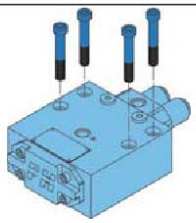
Make sure that the O-rings are correctly positioned.

Install the valve on the mounting face with help from the lug.



Chassis mounting

	Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
M12	4	8.8	86 *[63.5]*



Hydraulic connections

Port	Function	Connection	Standards	Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
P	HP connection	DN 25 PN 400	ISO 6 162 ISO 9 974-1	450 *[6 526]*	90 *[66]*
A-B	HP connection	M 27 x 2	ISO 9 974-1	450 *[6 526]*	200 *[148]*
F	Drain	M 14 x 1.5		1 *[14]*	45 *[33]*
G	LP supply	M 14 x 1.5		15 *[217]* ≤ P < 30 *[435]*	45 *[33]*
M1-M2	Pressure measurement	M 14 x 1.5		0 ≤ P < 20 bar *[290]*	45 *[33]*

Electrical connections on E1 and E2: KIT CONNECT VMA VALVE.
(See Technical Catalog Mobile Electronic A01889D)

Motor and valve drain piping must be connected directly to the tank.

FLOW DIVIDER FDB 20

- Up to 450 Bar *[6527 PSI]*
- Up to 150 l/min *[39,6 GPM]*

- Direct in-line mounting.
- Threaded connections to ISO 1179 (BSPP/Gas), ISO 11926 (UNF).

FDB 20-2

Operation

The bidirectionnal flow divider controls the speed between wheels of the same axle or between different axles by dividing or combining the flow.
The flow divider is equipped with an electric or hydraulic controlled by-pass and can be used in open or closed loop circuits.

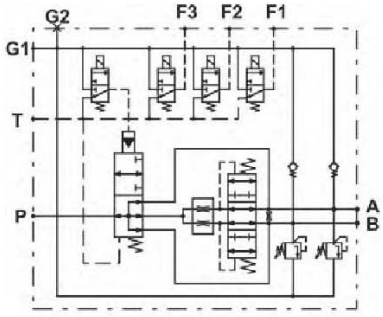
If you have to add a flushing valve in a closed loop circuit equipped with a flow divider, you have to install the flushing valve between the pump and the flow divider.

Features

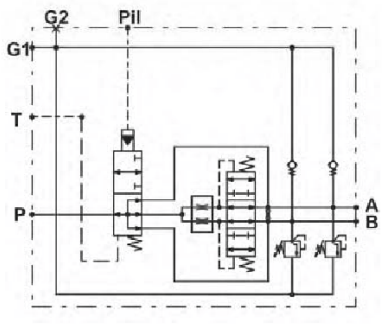
Max. pressure	Bar *[PSI]*		450 *[6527]*
By-pass mini. piloting pressure	Bar *[PSI]*		8 *[116]*
Max. flow in by-pass mode	l/min *[GPM]*	Ratio 50/50	150 *[39,62]*
		Ratio 60/40	125 *[33,02]*
		Ratio 70/30	110 *[29,05]*
		Ratio 75/25	100 *[26,41]*
		Ratio 80/20	95 *[25,09]*
Mass	kg *[lbs]*	without valves	8,50 *[18,74]*
		with HP valve	9,00 *[19,84]*
		with HP valve and 3 solenoid valves	11,2 *[24,70]*
Surface treatment			Zinc Chromate

Hydraulic symbol

HP valve, 3 solenoid valves and electric by-pass



HP valve and hydraulic by-pass

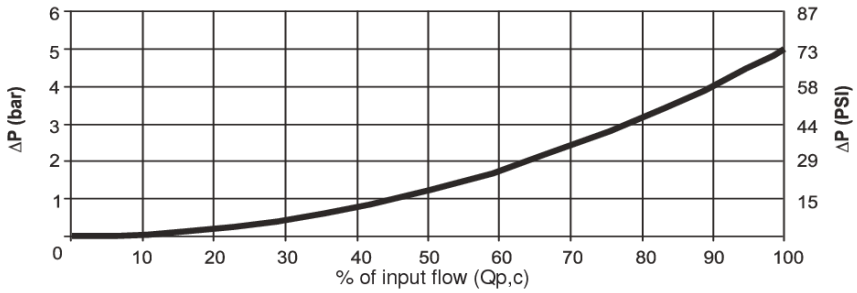


P: High pressure
A and B: Outlet
T: Drain
G1: Preferential charge pressure
G2: Plugged charge pressure
Pil: Hydraulic control
F1, F2 and F3: Solenoid valves

Hydraulics connections: See Model Code

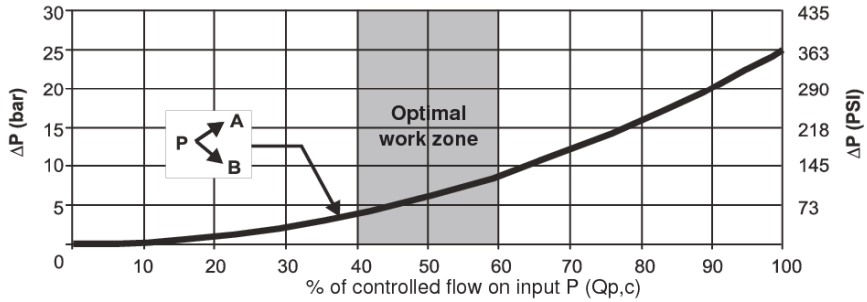
Pressure drop in by-pass mode

Test conditions :
• HV 46 hydraulic fluid at 40°C *[104°F]*



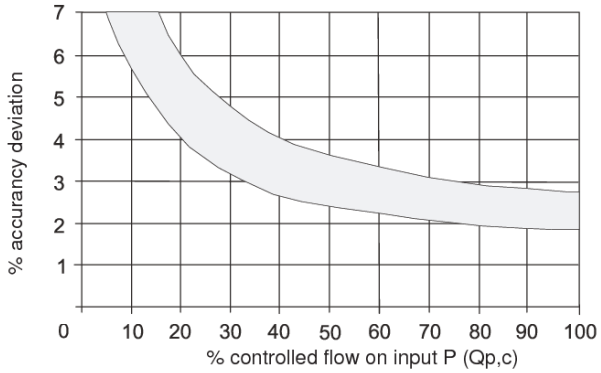
Pressure drop in divider mode

• Test conditions :
• HV 46 hydraulic fluid at 40°C *[104°F]*



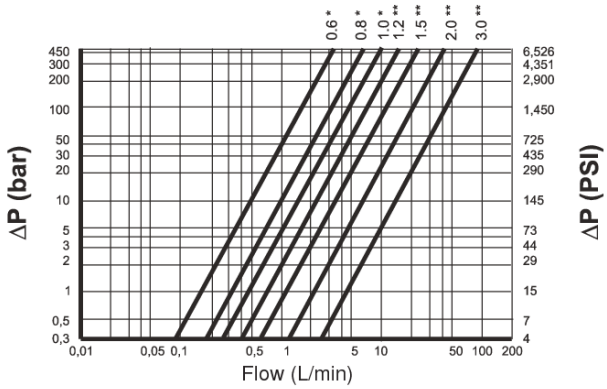
Division accuracy

Test conditions :
• ΔP of 150 bar *[2 175 PSI]* betwen outlets.
• No transfer restrictor.
• HV 46 hydraulic fluid at 40°C *[104°F]*.



Transfer restrictor

Transfer restrictor is located between the outlets A and B.



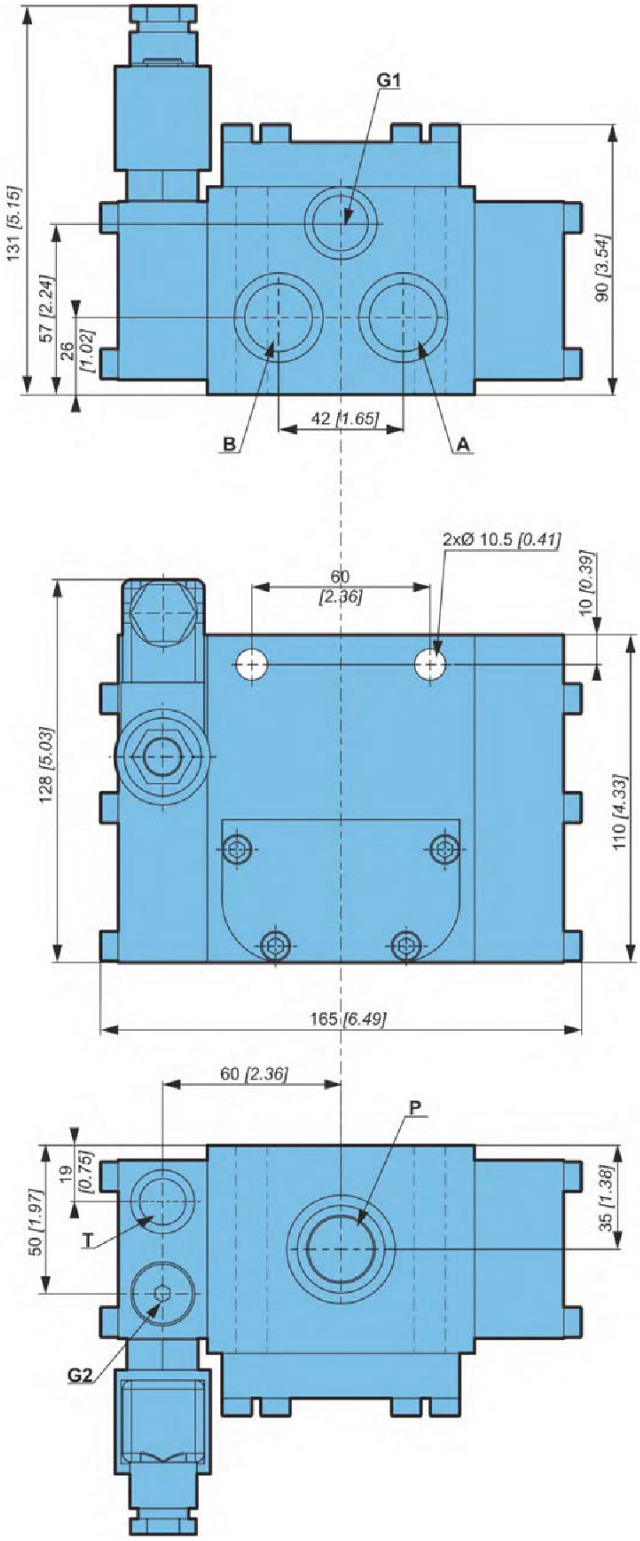
* Standard values
** On request, after validation of your application

Pressure drop in charge check valve

ΔP = 5 bar *[72.52 PSI]* for a flow of 20 L/min (between A or B and G1)
ΔP= up to 30 bar *[435 PSI]* for a flow of 20 L/min (between A or B and G2)

Dimensions without valves and with electric by-pass

T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	0	2	-	-	-	E	0	-	-	0	0	B	-	-	-	-	-	-

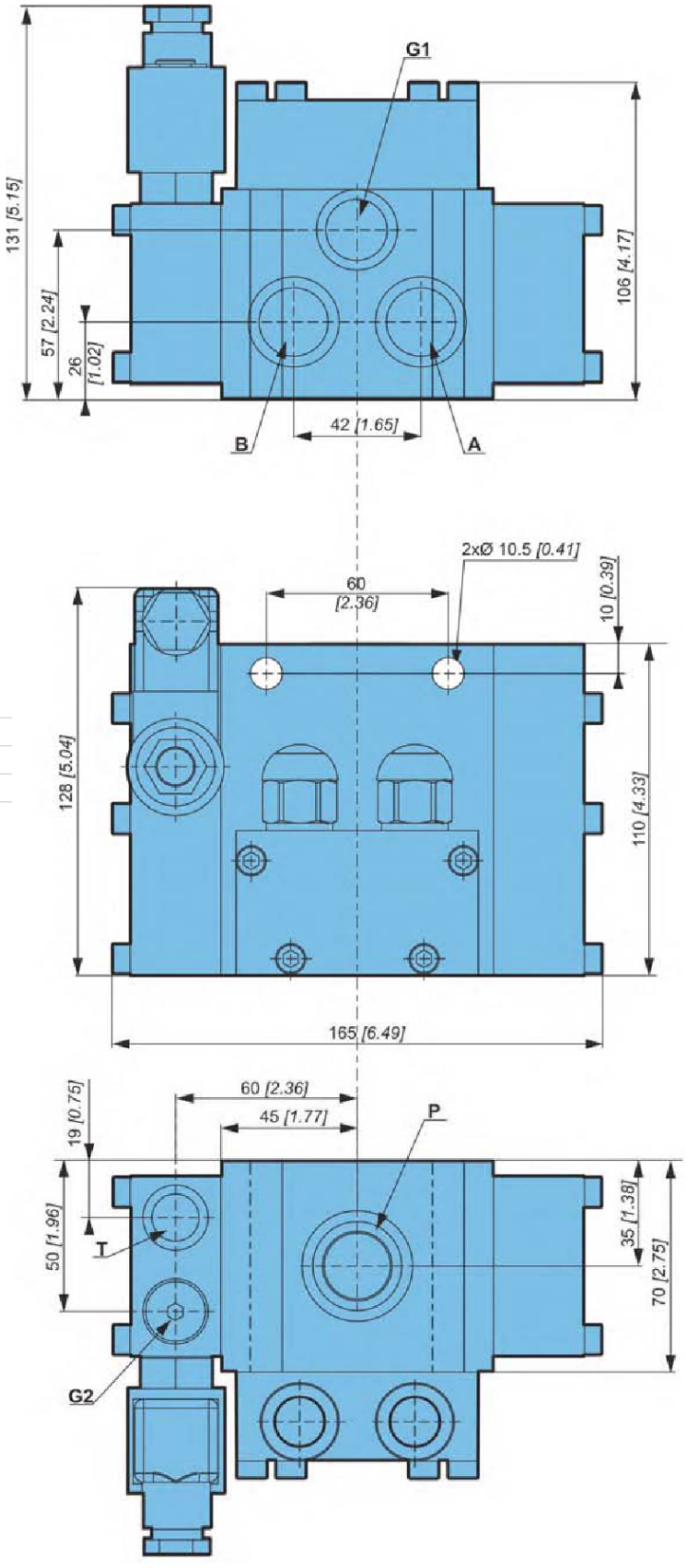


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6526]*	-
A-B		-
T	1 *[14,5]*	-
G1	30 *[435]*	8 *[116]*

Hydraulic connections: See Model Code

Dimensions with HP valve and electric by-pass

T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	0	2	-	-	-	E	0	-	-	4	5	B	-	-	-	-	-	-

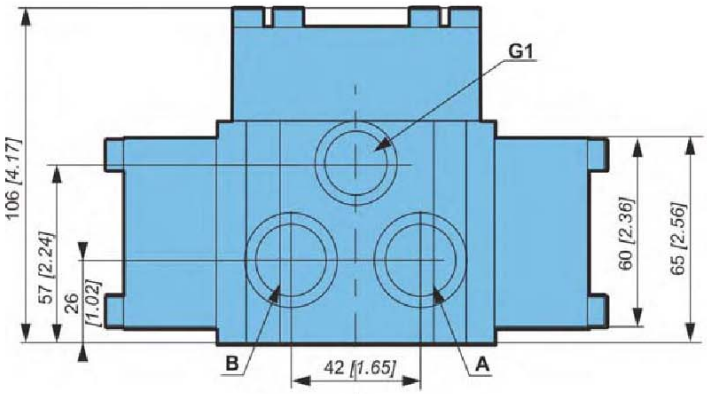


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6,526]*	-
A-B		-
T	1 *[14,5]*	-
G1	30 *[435]*	8 *[116]*

Hydraulic connections: See Model Code

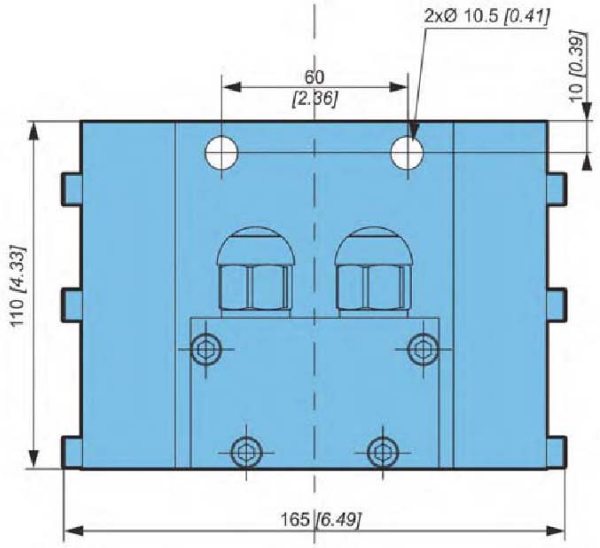
Dimensions with HP valve and hydraulic by-pass

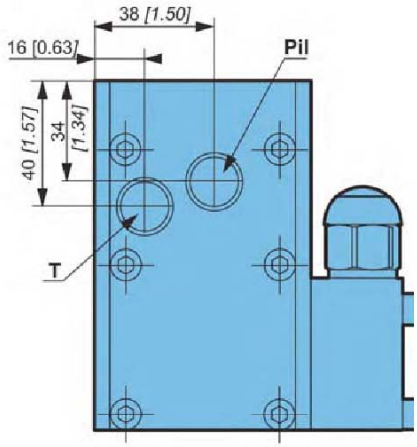
T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	0	2	-	-	-	H	0	-	-	4	5	B	-	-	-	-	-	-

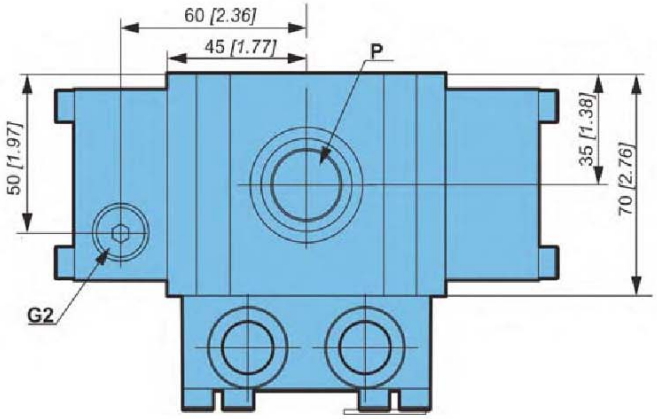


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6,526]*	-
A-B		-
T	1 *[14,5]*	-
G1	30 *[435]*	8 *[116]*
Pil		

Hydraulic connections: See Model Code

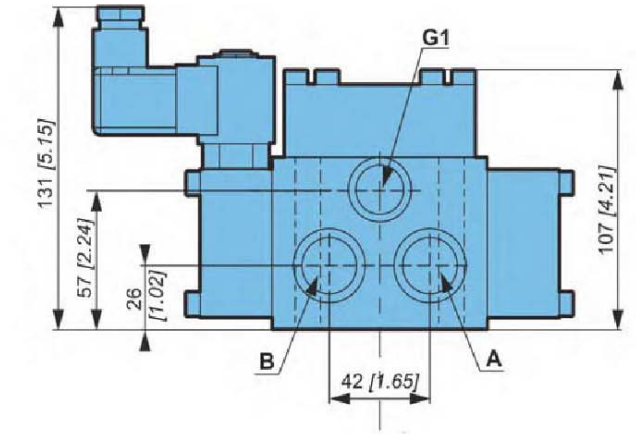






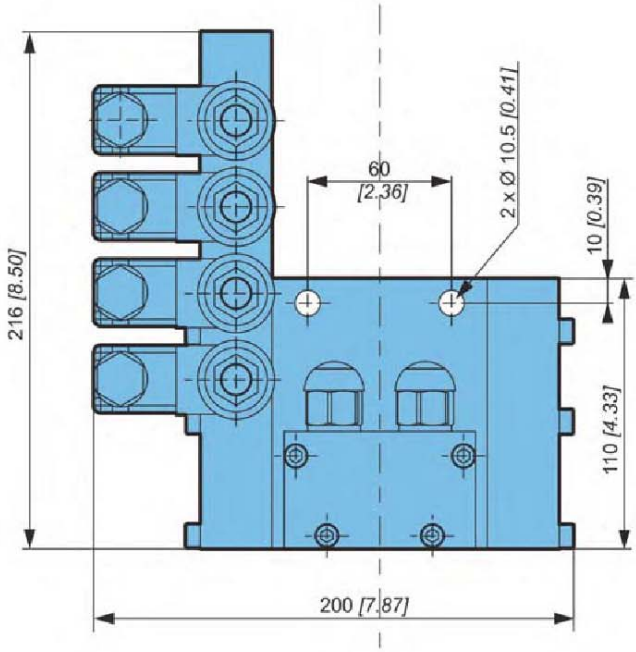
Dimensions with HP valve, 3 solenoid valves and electric by-pass

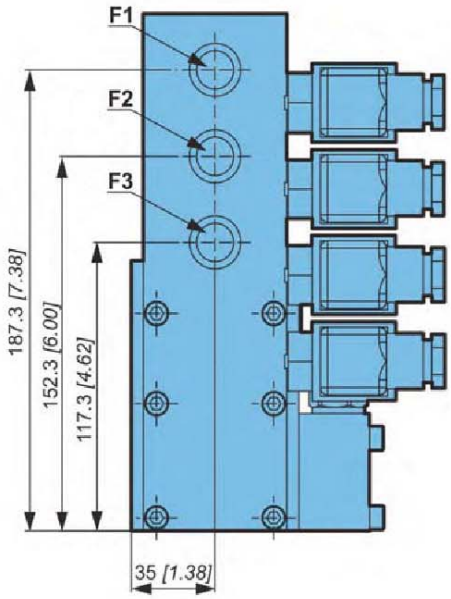
T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	0	2	-	-	-	E	3	-	-	4	5	B	-	-	-	-	-	-

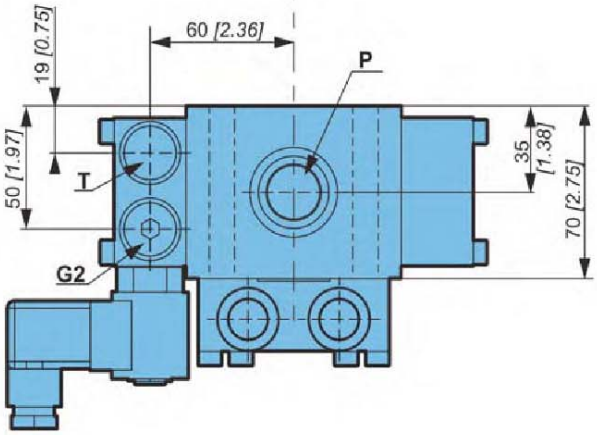


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6,526]*	-
A-B		-
T	1 *[14,5]*	-
F1	30 *[435]*	-
F2		
F3		
G1		8 *[116]*

Hydraulic connections: See Model Code

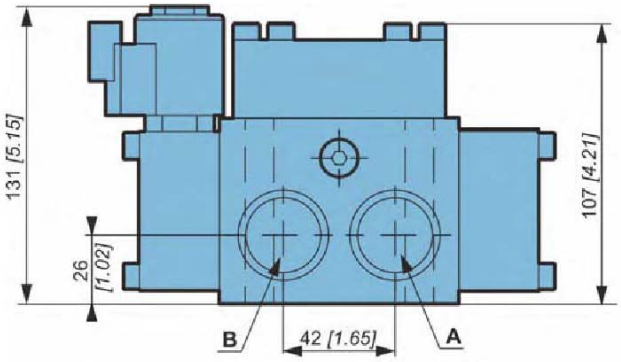






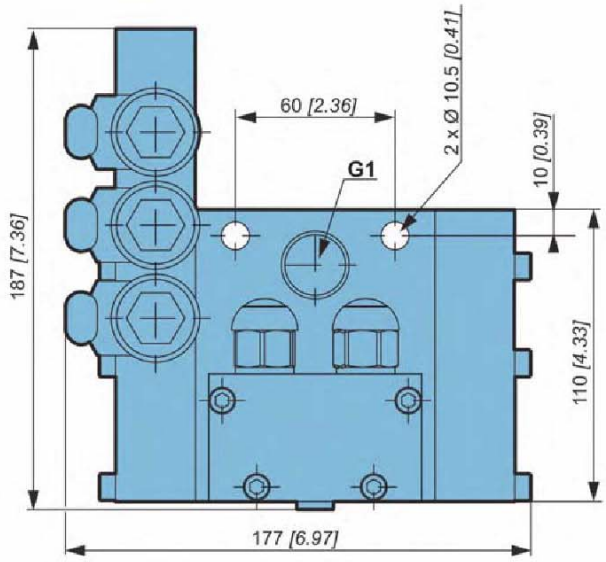
Dimensions with HP valve, 3 solenoid valves and electric by-pass

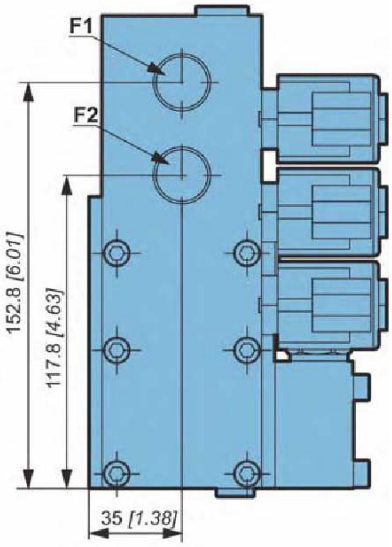
T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	0	2	-	-	-	E	3	-	-	4	5	B	A	-	-	-	-	-

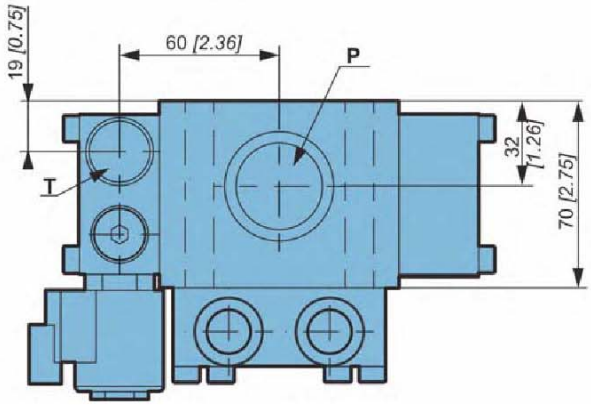


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6,526]*	-
A-B		-
T	1 *[14,5]*	-
F1	30 *[435]*	-
F2		
G1		8 *[116]*

Hydraulic connections: See Model Code







Auxiliaries

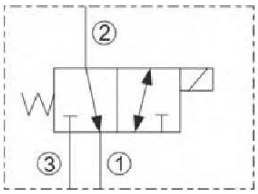
Description

A solenoid-operated, 3 way, direct-acting, spool-type, screw-in hydraulic directional valve.

Features

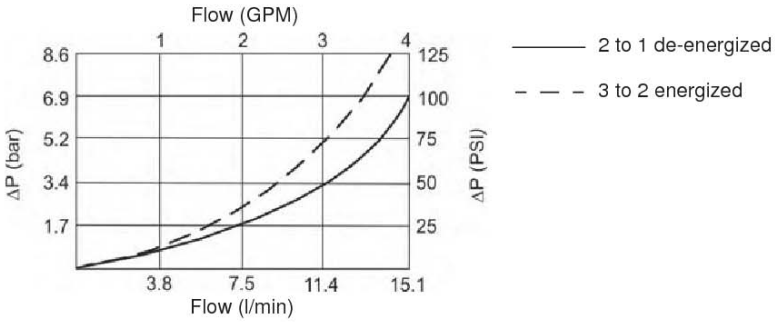
Operating pressure Bar *[PSI]*	30 *[435]*
Initial coil current draw at 20 °C *[68 °F]*	Standard coil: 1.2 amps at 12 V

Hydraulic symbol

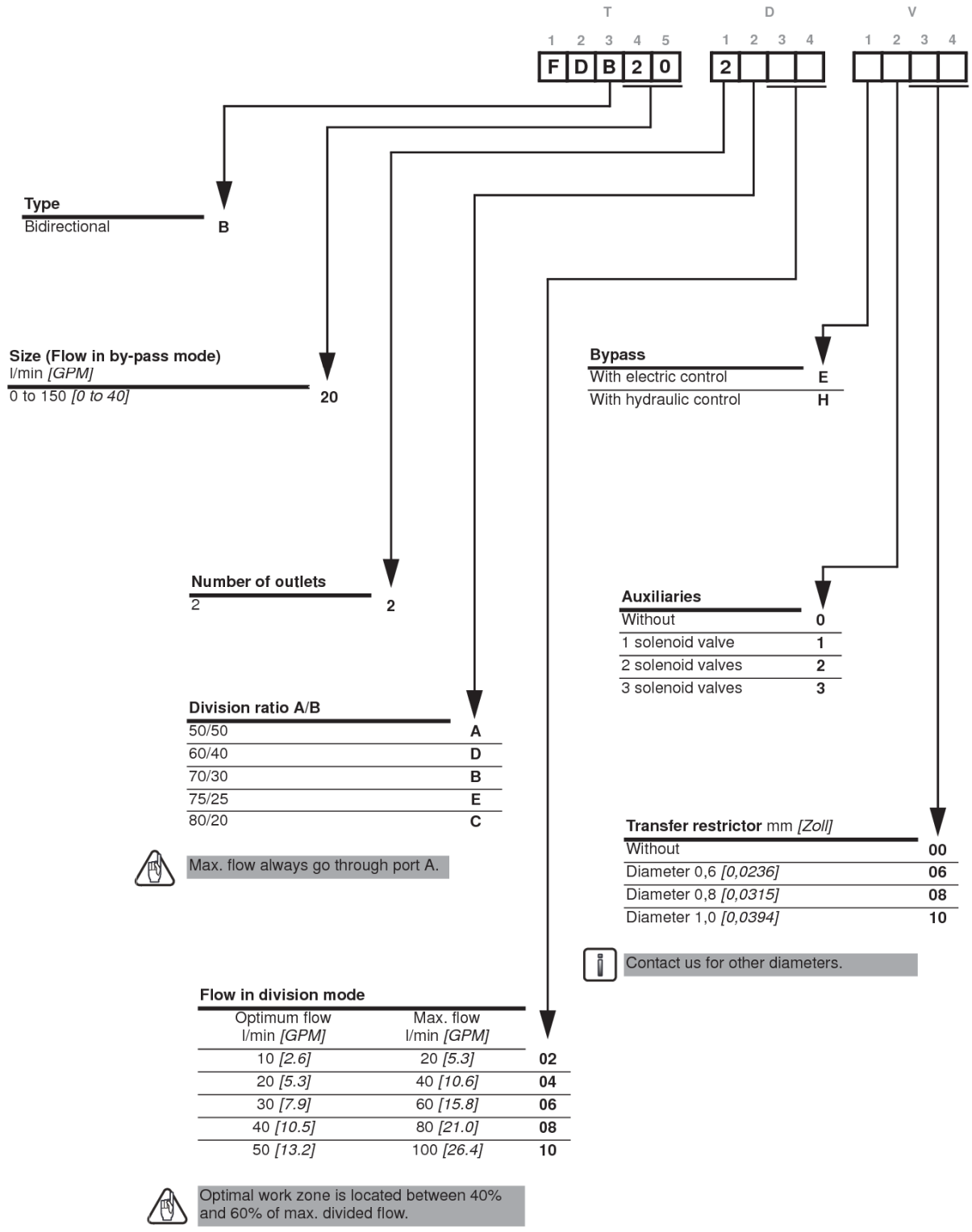


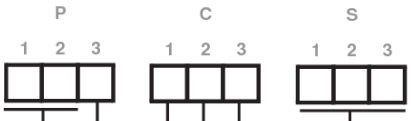
Pressure drop

Test conditions :
• 32 cSt/150 SUS oil at 40°C *[104 °F]*



Model code


T
D
V
1 2 3 4 5
1 2 3 4
1 2 3 4
F D B 2 0
2
Type
Bidirectional
B
Size (Flow in by-pass mode)
l/min [GPM]
0 to 150 [0 to 40]
20
Number of outlets
2
2
Bypass
With electric control
E
With hydraulic control
H
Auxiliaries
Without
0
1 solenoid valve
1
2 solenoid valves
2
3 solenoid valves
3
Division ratio A/B
50/50
A
60/40
D
70/30
B
75/25
E
80/20
C
Max. flow always go through port A.
Transfer restrictor mm [Zoll]
Without
00
Diameter 0,6 [0,0236]
06
Diameter 0,8 [0,0315]
08
Diameter 1,0 [0,0394]
10
Contact us for other diameters.
Flow in division mode
Optimum flow l/min [GPM]
Max. flow l/min [GPM]
10 [2.6]
20 [5.3]
02
20 [5.3]
40 [10.6]
04
30 [7.9]
60 [15.8]
06
40 [10.5]
80 [21.0]
08
50 [13.2]
100 [26.4]
10
Optimal work zone is located between 40% and 60% of max. divided flow.



Options

Without	0
Number plate specific to the customer	P

Charge valves

Without	A
With	B

Electric connections

Without	0
Wires	1
Packard	2
Deutsch	3
DIN 43 650 (Hirschmann)	4
AMP (6,3 x 0,8)	5

HP valves *

Without	00
380 Bar *[5511 PSI]*	38
420 Bar *[6091 PSI]*	42
450 Bar *[6526 PSI]*	45

* Pressure of valve P = absolute pressure - charge pressure (ΔP between A or B and G)

Voltage

Without	A
12 V	1
24 V	2

Hydraulic connections

Standard	P	A-B	T	G	G1	G2	Pil	F1-F2-F3	
ISO 1179-1	3/4'' BSP	1/2'' BSP	1/4'' BSP*	-	3/8'' BSP	1/4'' BSP*	1/4'' BSPP	1/4'' BSP	3
ISO 11926-1	1'' 1/16-12 UNF	7/8''-14 UNF	3/4''-16 UNF	-	3/4''-16 UNF	3/4''-16 UNF	9/16''-18 UNF	9/16''-18 UNF	A

* 3/8'' BSP from 2 solenoid valves (including by-pass)

FLOW DIVIDER FDB 25

- Up to 450 Bar *[6527 PSI]*
- Up to 300 l/min *[79,2 GPM]*

- Direct in-line mounting.
- Direct mounting on the pump.
- Threaded connections to ISO 1179 (BSPP/Gas), ISO 11926 (UNF).

FDB 25-2

Operation

The bidirectionnal flow divider controls the speed between wheels of the same axle or between different axles by dividing or combining the flow.
The flow divider is equipped with an electric or hydraulic controlled by-pass and can be used in open or closed loop circuits.

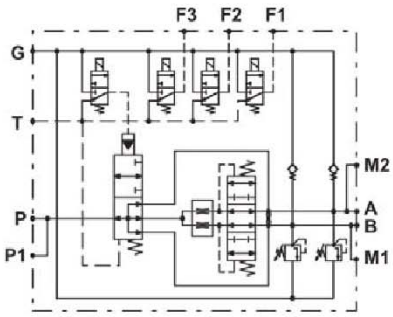
If you have to add a flushing valve in a closed loop circuit equipped with a flow divider, you have to install the flushing valve between the pump and the flow divider.

Features

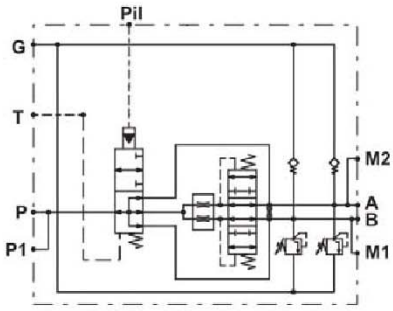
Max. pressure	Bar *[PSI]*		450 *[6527]*
By-pass mini. piloting pressure	Bar *[PSI]*		8 *[116]*
Max. flow in by-pass mode	l/min *[GPM]*	Ratio 50/50	300 *[79,25]*
		Ratio 70/30	215 *[56,79]*
		Ratio 80/20	190 *[50,19]*
Mass	kg *[lbs]*	without valves	14,0 *[30,86]*
		with HP valve	15,0 *[33,06]*
		with HP valve and 3 solenoid valves	18,2 *[40,12]*
Surface treatment			Zinc Chromate

Hydraulic symbol

HP valve, 3 solenoid valves and electric by-pass



HP valve and hydraulic by-pass

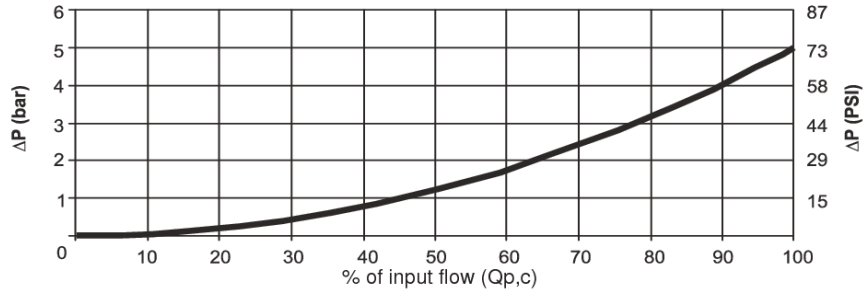


P: High pressure
A and B: Outlet
G: charge pressure
T: Drain
Pil: Hydraulic control
F1, F2 and F3: Solenoid valves
P1, M1 and M2: pressure measurements

Hydraulics connections: See Model Code

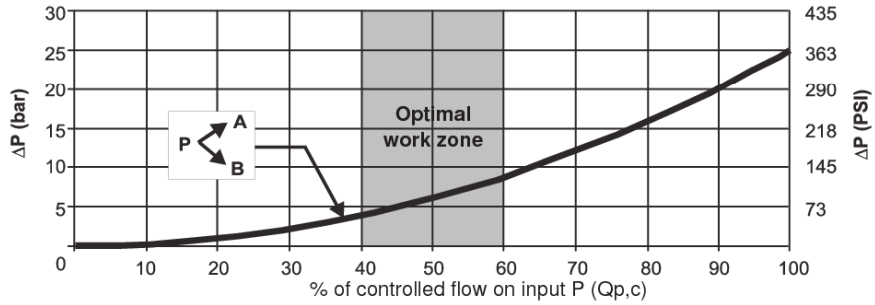
Pressure drop in by-pass mode

Test conditions :
• HV 46 hydraulic fluid at 40°C *[104°F]*



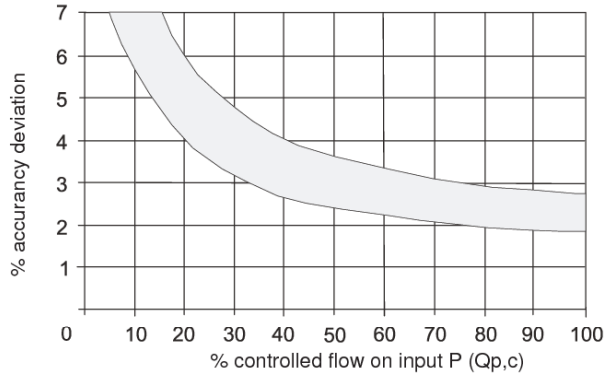
Pressure drop in divider mode

• Test conditions :
• HV 46 hydraulic fluid at 40°C *[104°F]*



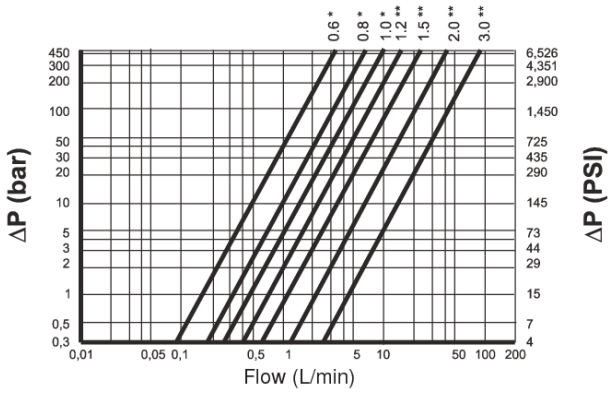
Division accuracy

Test conditions :
• ΔP of 150 bar *[2 175 PSI]* betwen outlets.
• No transfer restrictor.
• HV 46 hydraulic fluid at 40°C *[104°F]*.



Transfer restrictor

Transfer restrictor is located between the outlets A and B.



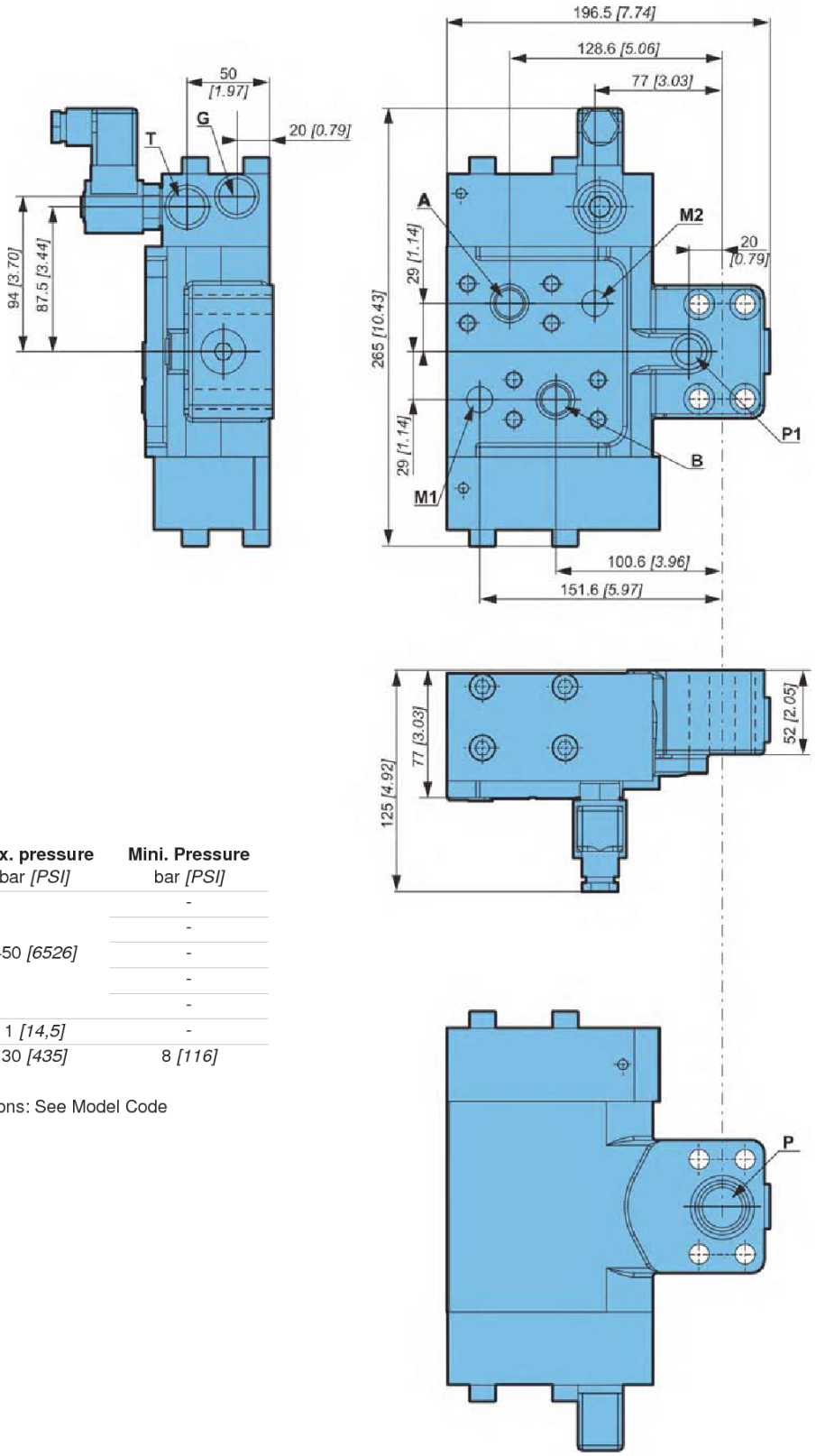
* Standard values
** On request, after validation of your application

Pressure drop in charge check valve

ΔP = 5 bar *[72.52 PSI]* for a flow of 20 L/min (between A or B and G1)
ΔP= up to 30 bar *[435 PSI]* for a flow of 20 L/min (between A or B and G2)

Dimensions without valves and with electric by-pass

T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	5	2	-	-	-	E	0	-	-	0	0	B	-	-	-	0	0	0

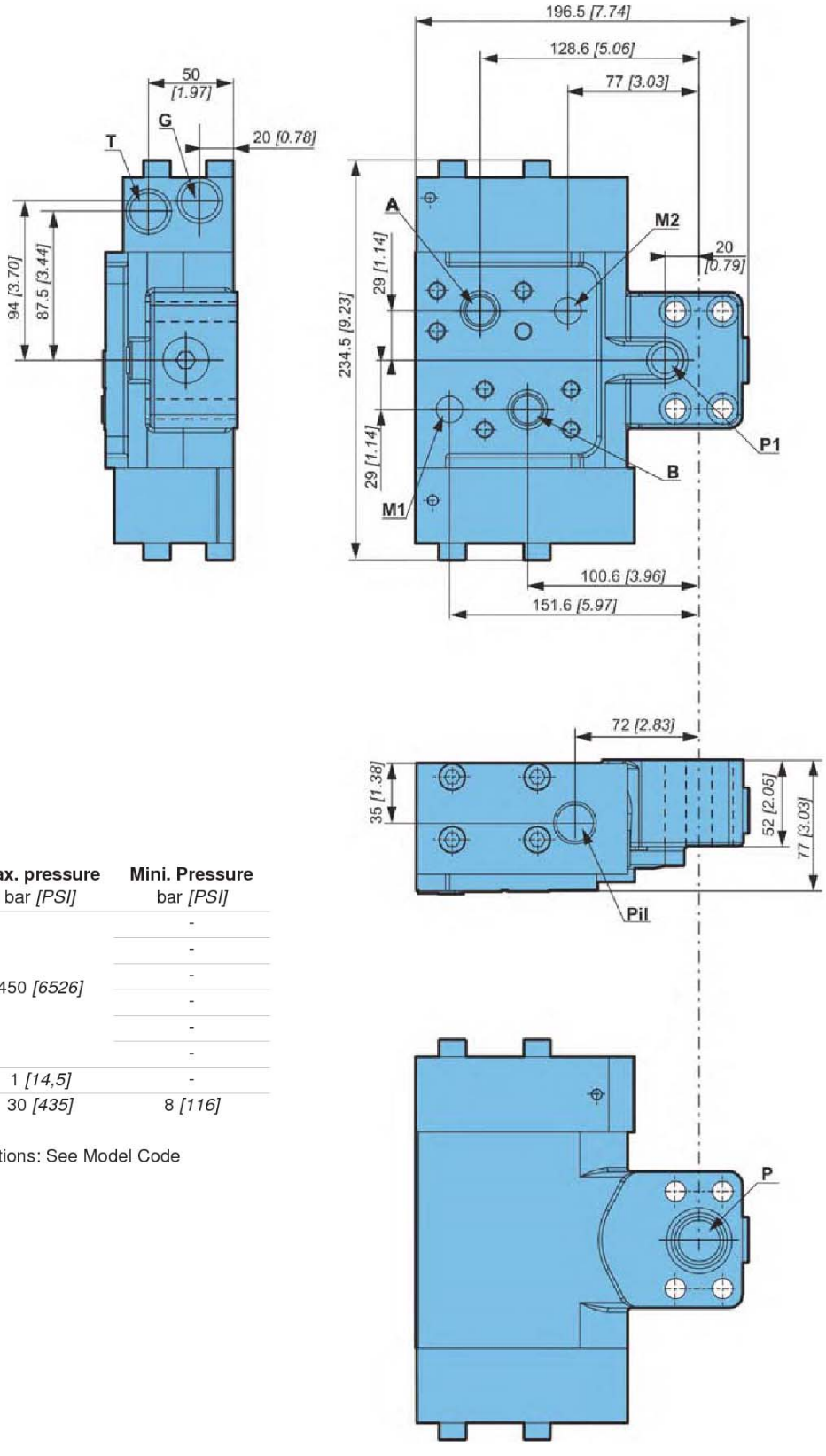


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6526]*	-
A-B		-
M1		-
M2		-
P1		-
T	1 *[14,5]*	-
G	30 *[435]*	8 *[116]*

Hydraulic connections: See Model Code

Dimensions without valves and with hydraulic by-pass

T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	5	2	-	-	-	H	0	-	-	0	0	B	-	-	-	0	0	0

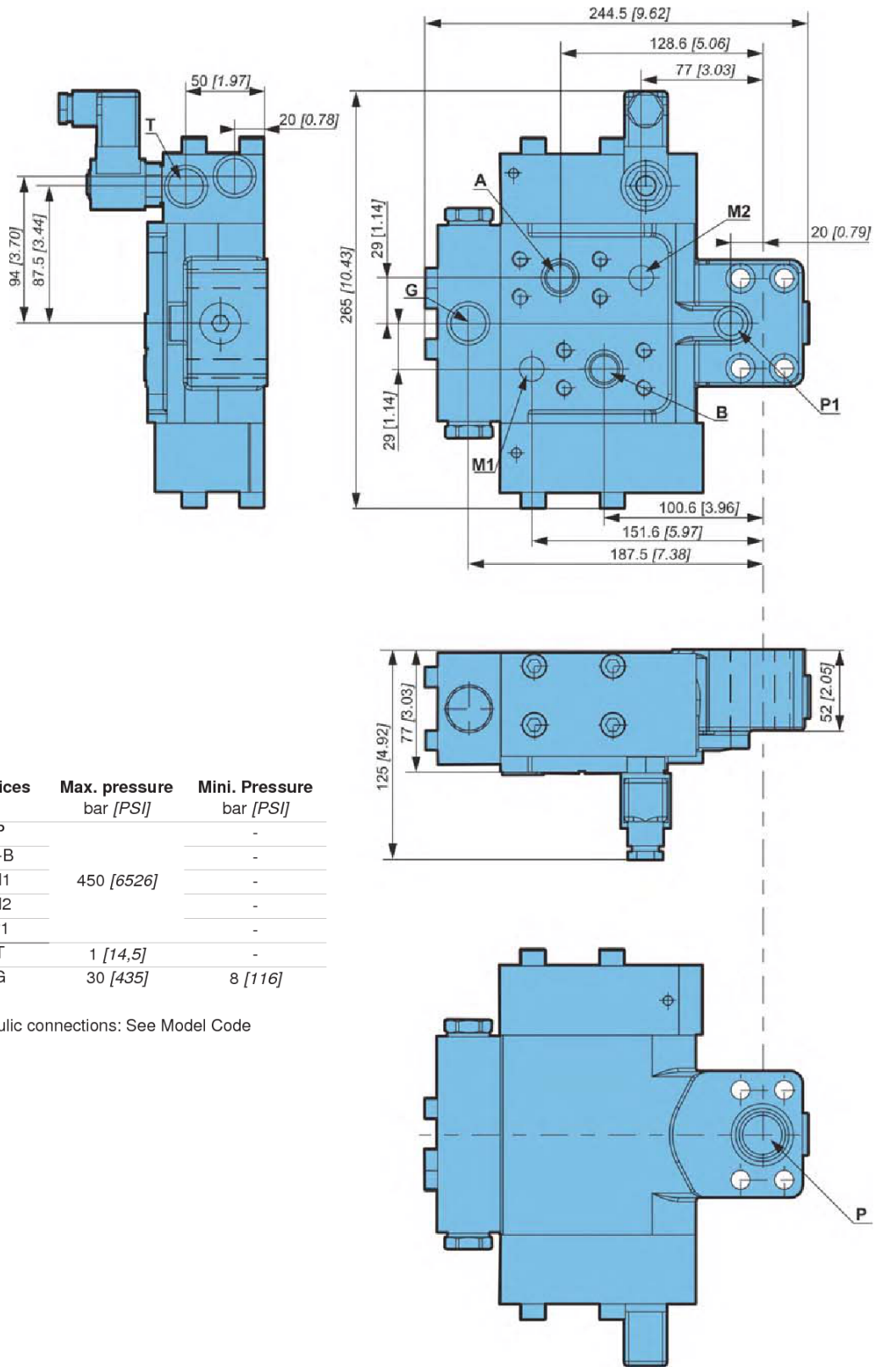


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6526]*	-
A-B		-
Pil		-
M1		-
M2		-
P1		-
T	1 *[14,5]*	-
G	30 *[435]*	8 *[116]*

Hydraulic connections: See Model Code

Dimensions with HP valve and electric by-pas

T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	5	2	-	-	-	E	0	-	-	4	5	B	-	-	-	0	0	0

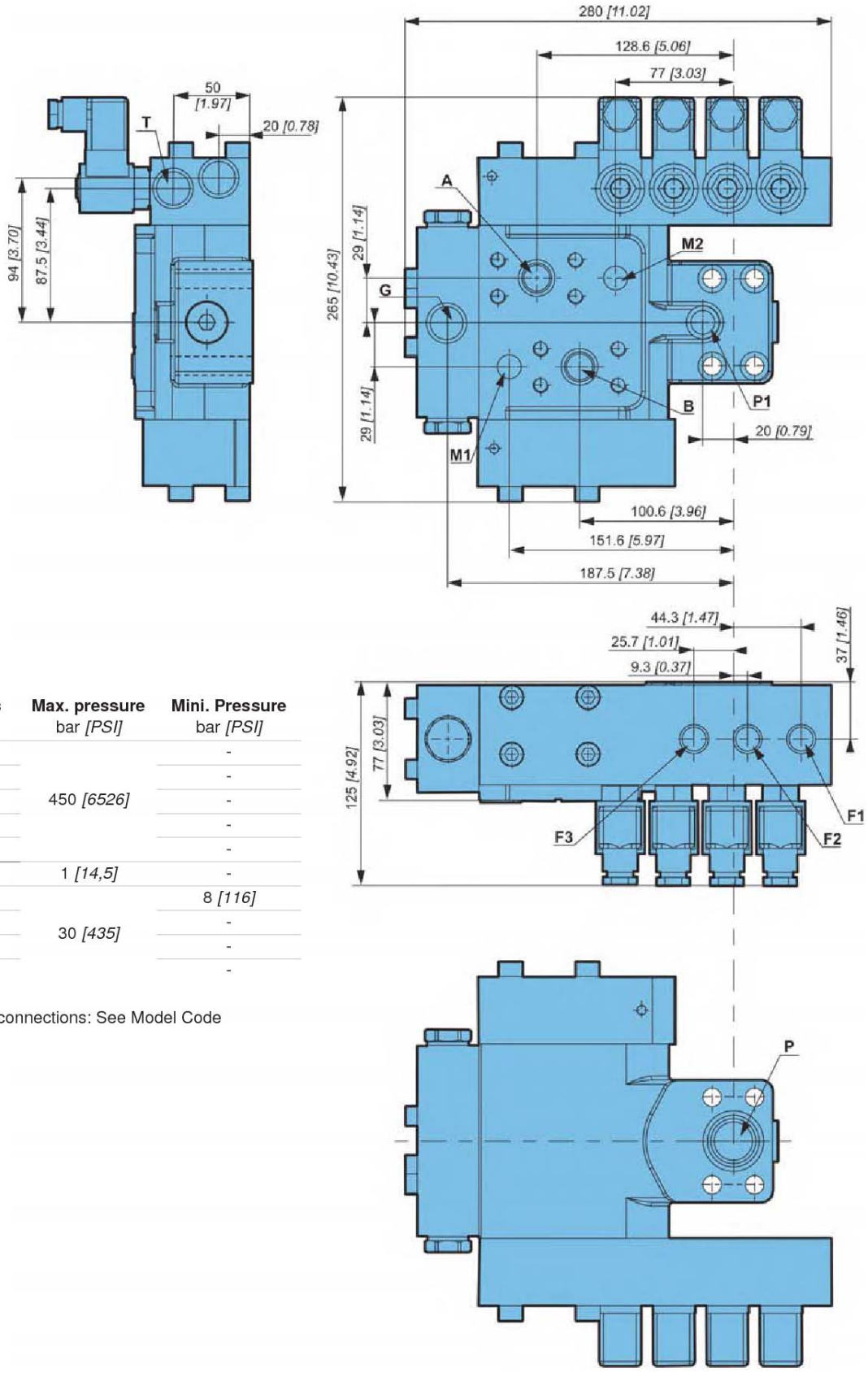


Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6526]*	-
A-B		-
M1		-
M2		-
P1		-
T	1 *[14,5]*	-
G	30 *[435]*	8 *[116]*

Hydraulic connections: See Model Code

Dimensions with HP valve, 3 solenoid valves and electric by-pass

T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	5	2	-	-	-	E	3	-	-	4	5	B	-	-	-	0	0	0



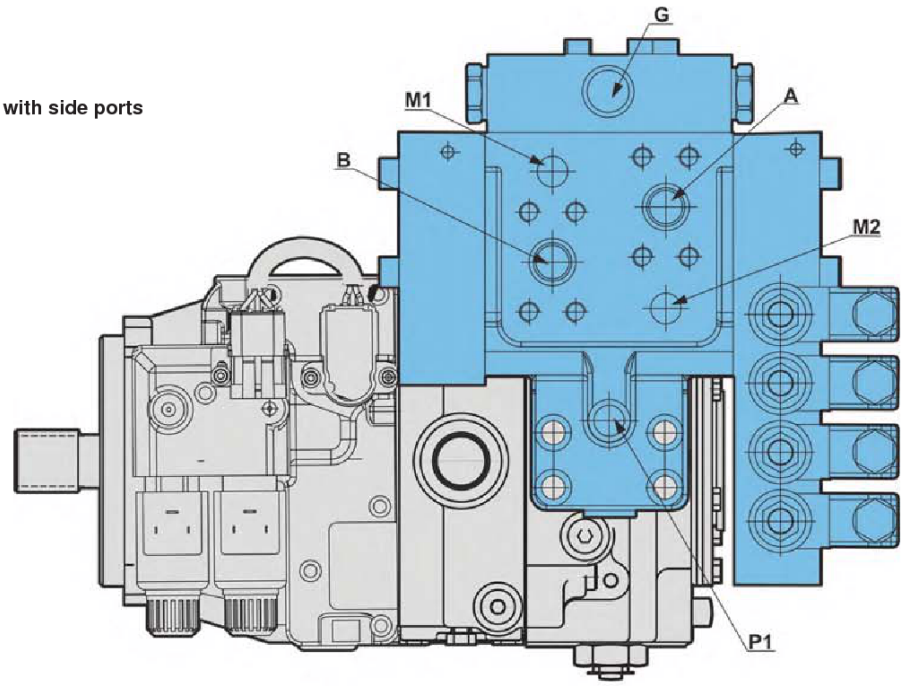
Orifices	Max. pressure bar *[PSI]*	Mini. Pressure bar *[PSI]*
P	450 *[6526]*	-
A-B		-
M1		-
M2		-
P1		-
T	1 *[14,5]*	-
G	30 *[435]*	8 *[116]*
F1		-
F2		-
F3		-

Hydraulic connections: See Model Code

Direct mounting on the pump

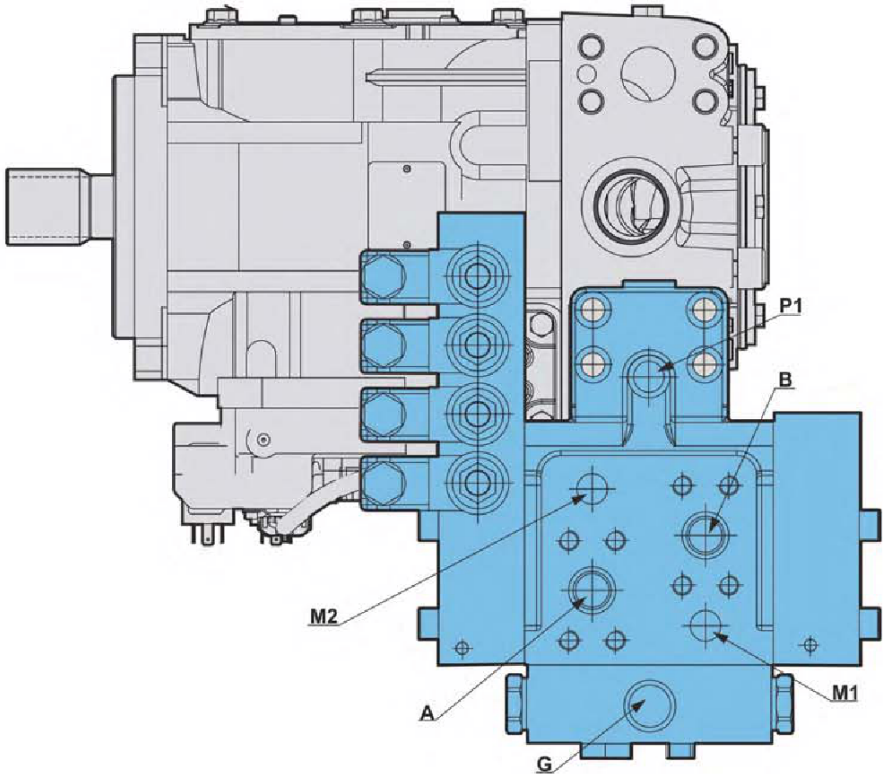
T					D				V				P			C			S		
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
F	D	B	2	5	2	-	-	-	E	3	-	-	4	5	B	-	-	-	A	0	0

Pump with side ports



Pump with twin ports

Orifices description: page page 35



Auxiliaries

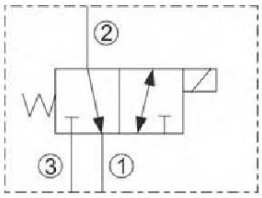
Description

A solenoid-operated, 3 way, direct-acting, spool-type, screw-in hydraulic directional valve.

Features

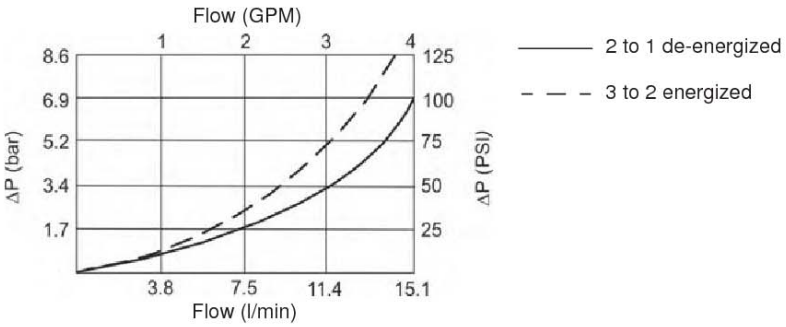
Operating pressure Bar *[PSI]*	30 *[435]*
Initial coil current draw at 20 °C *[68 °F]*	Standard coil: 1.2 amps at 12 V

Hydraulic symbol

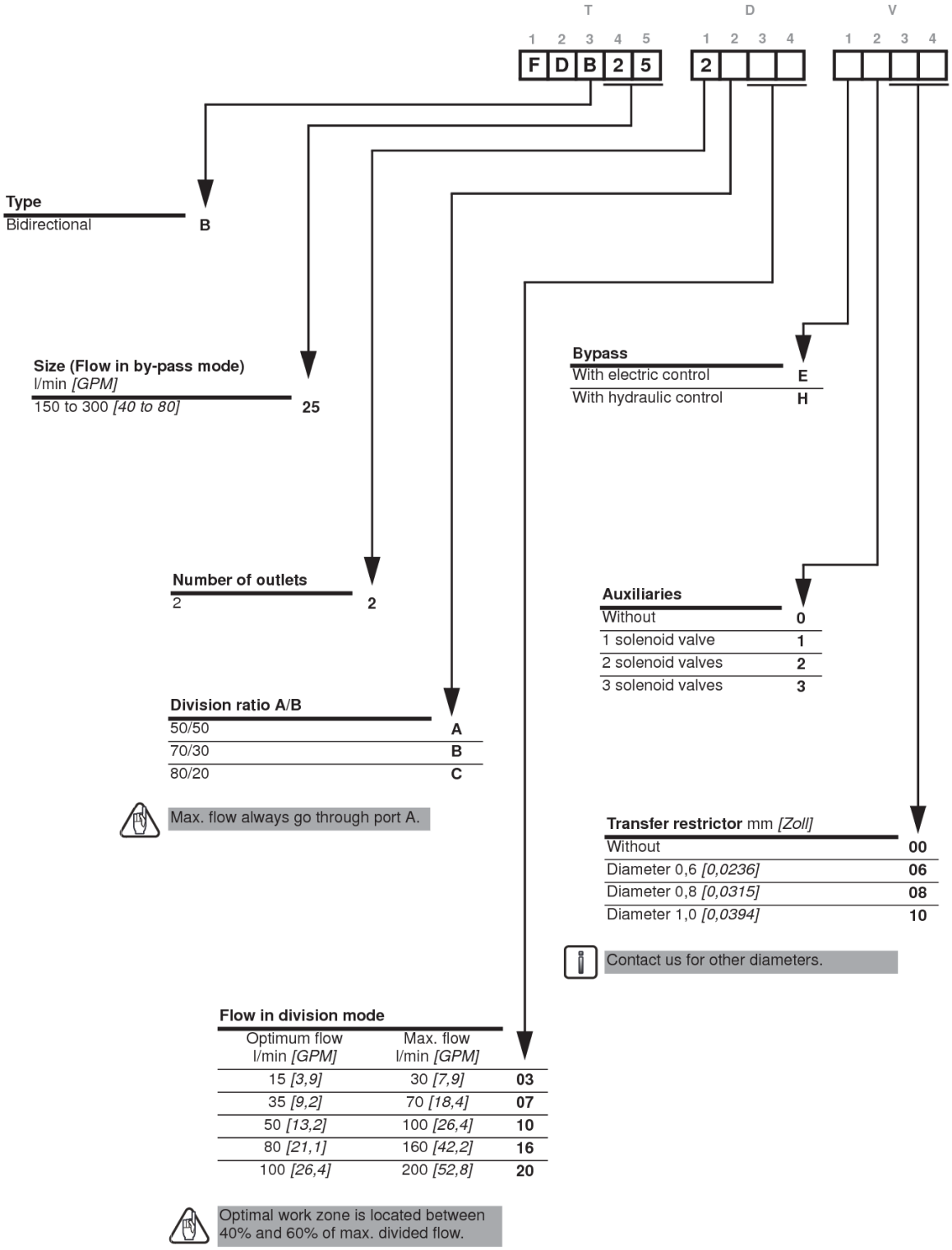


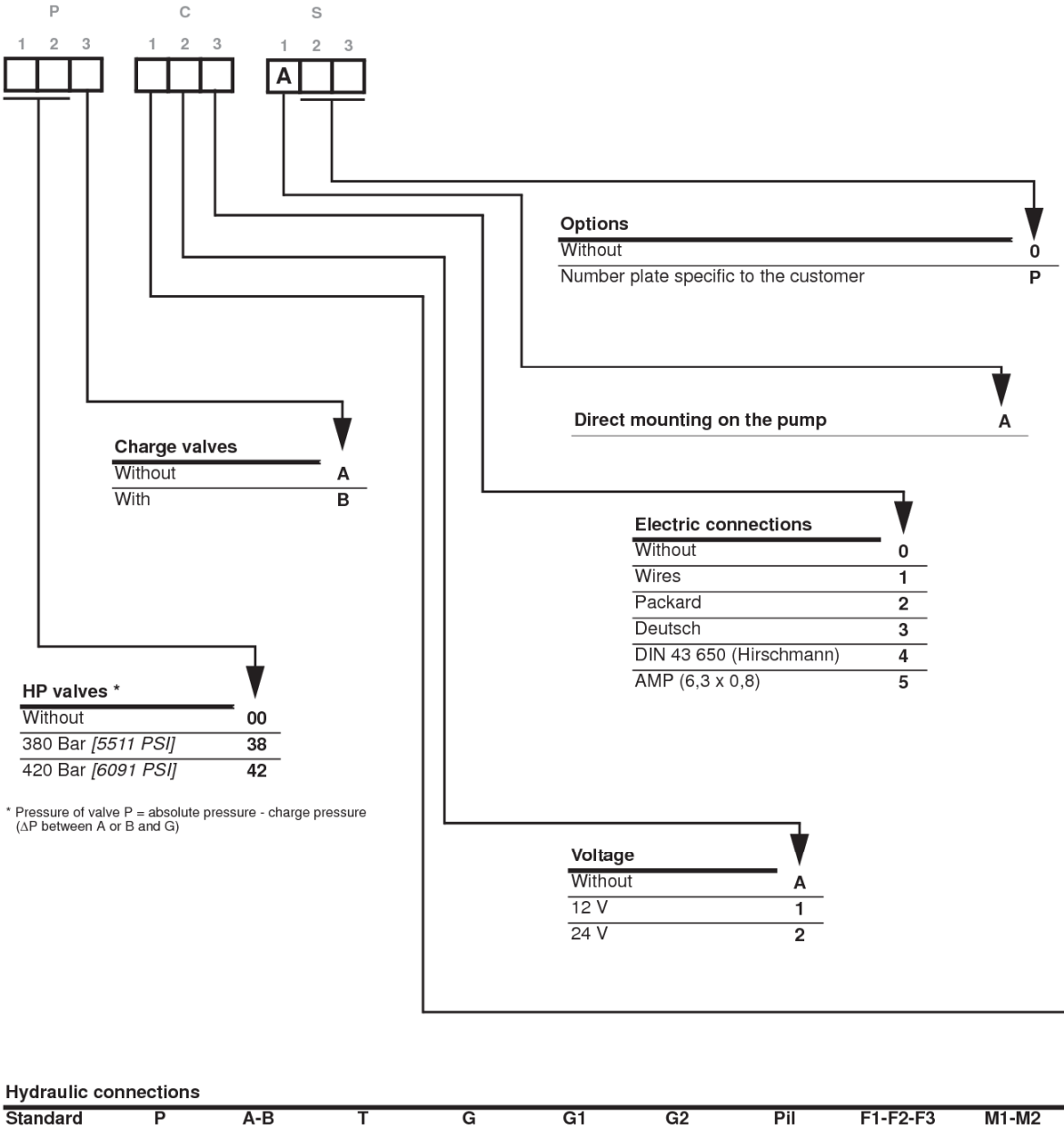
Pressure drop

Test conditions :
• 32 cSt/150 SUS oil at 40°C *[104 °F]*



Model code


T
D
V
1 2 3 4 5
F D B 2 5
1 2 3 4
2
1 2 3 4
Type
Bidirectional
B
Size (Flow in by-pass mode)
l/min [GPM]
150 to 300 [40 to 80]
25
Bypass
With electric control
E
With hydraulic control
H
Number of outlets
2
2
Auxiliaries
Without
0
1 solenoid valve
1
2 solenoid valves
2
3 solenoid valves
3
Division ratio A/B
50/50
A
70/30
B
80/20
C
Max. flow always go through port A.
Transfer restrictor mm [Zoll]
Without
00
Diameter 0,6 [0,0236]
06
Diameter 0,8 [0,0315]
08
Diameter 1,0 [0,0394]
10
Contact us for other diameters.
Flow in division mode
Optimum flow l/min [GPM]
Max. flow l/min [GPM]
15 [3,9]
30 [7,9]
03
35 [9,2]
70 [18,4]
07
50 [13,2]
100 [26,4]
10
80 [21,1]
160 [42,2]
16
100 [26,4]
200 [52,8]
20
Optimal work zone is located between 40% and 60% of max. divided flow.



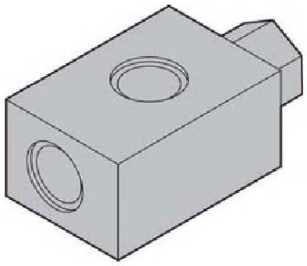
Hydraulic connections

Standard	P	A-B	T	G	G1	G2	Pil	F1-F2-F3	M1-M2	
ISO 1179-1	-	-	3/8" BSP	3/8" BSP	-	-	3/8" BSP	1/4" BSPP	1/4" BSP	2
ISO 6162-2 M screws	Flange 1"	Flange 3/4"	-	-	-	-	-	-	-	
ISO 11926-1	-	-	3/4"-16 UNF	3/4"-16 UNF	-	-	3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF	E
ISO 6162-2 UNF screws	Flange 1"	Flange 3/4"	-	-	-	-	-	-	-	
ISO 1179-1	-	-	3/8" BSP	3/8" BSP	-	-	3/8" BSP	1/4" BSPP	1/4" BSP	F
ISO 6162-2 UNF screws	Flange 1"	Flange 3/4"	-	-	-	-	-	-	-	

PRESSURE RELIEF VALVE VPLB15

- Up to 15 bar *[3,045 PSI]*
- Up to 60 L/min *[18.5 GPM]*

- Limit creates back pressure in open loop.
- Limit case pressure in case of free-wheeling.



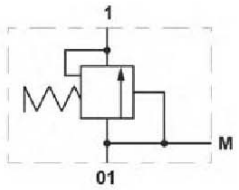
VPLB15

Features

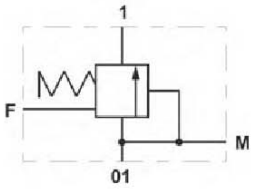
Flow rate	70 L/min *[20 GPM]*
Mass	3 kg *[7 lb]*

Hydraulic symbol

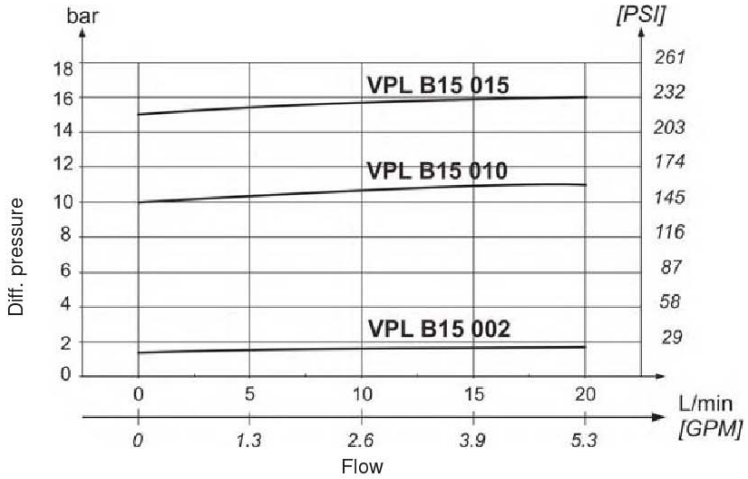
Without external drain



With external drain

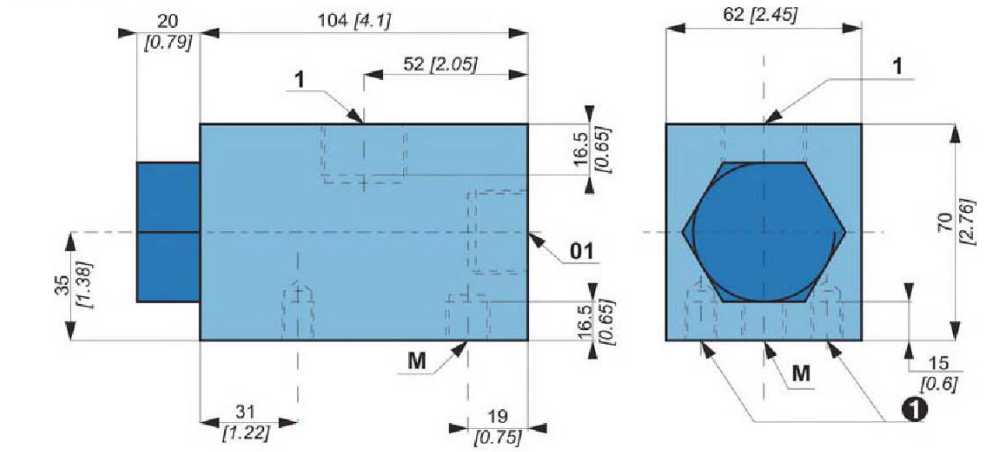


ΔP-Q Performance curves

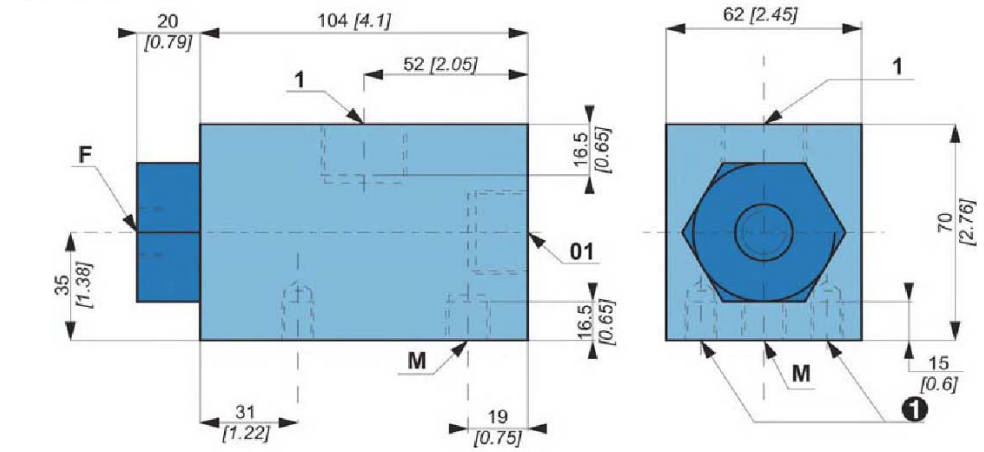


Dimensions

Without external drain



With external drain



Installation

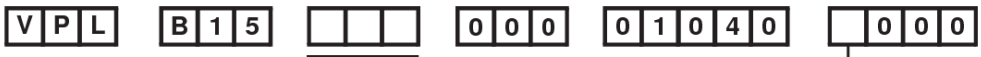
Valve mounting position	Indifferent
Chassis mounting	

Ref.		Quantity	Class	Nm *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M10	2	8.8	50 [37]

Hydraulic connections

Port	Function	Connection	Pressure bar *[PSI]*	Nm *[lb.ft]* ± 10 % (as per standard DIN 912)
01	Input	M 27 x 2 (DIN 3852)	max. 50 *[max. 725]*	200 *[148]*
1	Output			
M	Pressure measurement	M14 x 1,5 (DIN 3852)		45 *[33]*
F	Drain	M16 x 1.5 (DIN 3852)	0 *[0]*	60 *[44]*

Model code

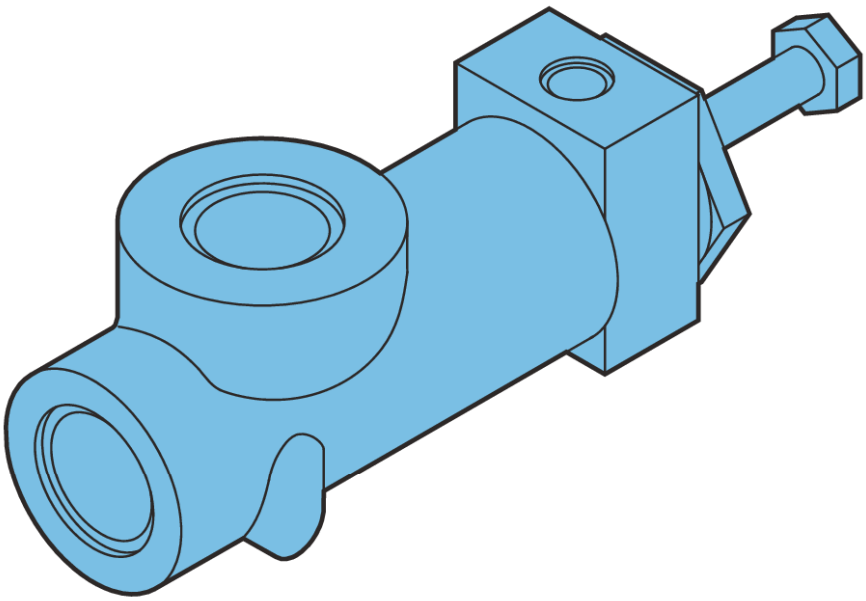


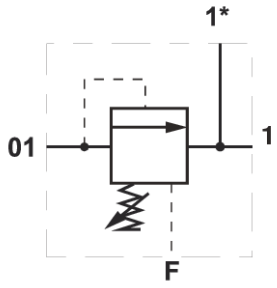
High pressure relief valve bar *[PSI]*	
1.5 *[21.7]*	**002**
10 *[145]*	**010**
15 *[217]*	**015**

External drain	
Without	**0**
With	**E**

ADJUSTABLE PRESSURE LIMITER VPB25

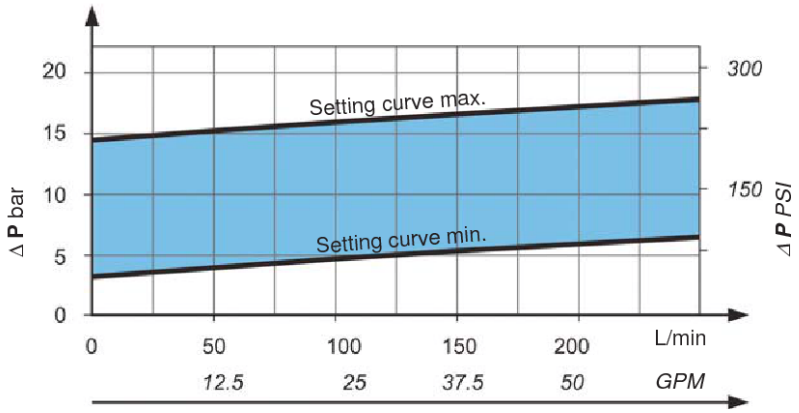
Function: **Create back pressure in open loop circuit.**



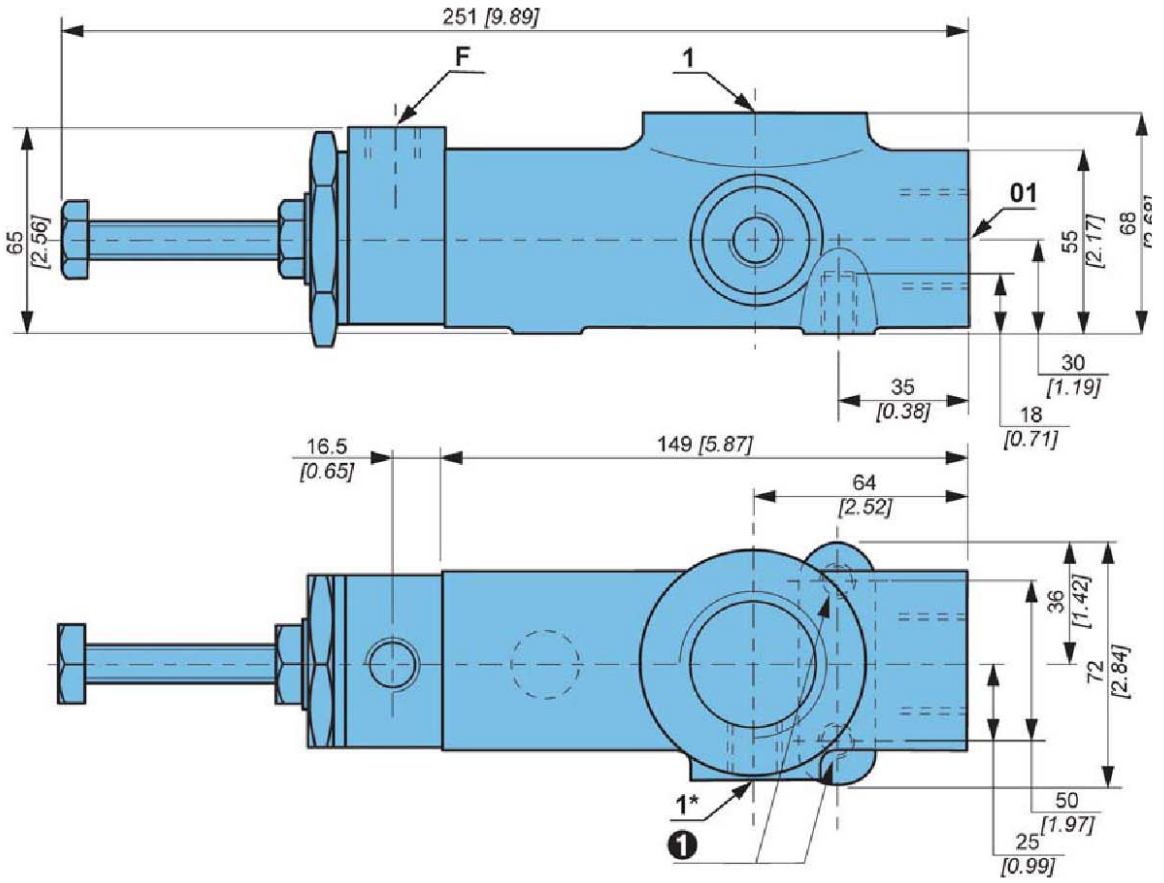
Commercial Description	BLOC RB25 F5/15
Part number	001443329L
Compatibility	All types of circuit
Hydraulic symbol	

Caracteristics	
Mass	3.5 kg *[7.7 lb]*
Flow	260 L/min *[70 GPM]*

Pressure drop



Dimensions



Installation

Valve mounting position : Indifferent.

Chassis mounting :

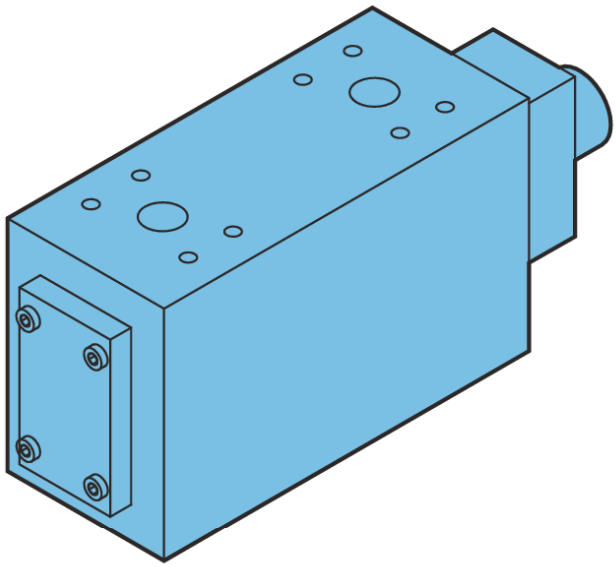
Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M10	2	8.8	50 *[37]*

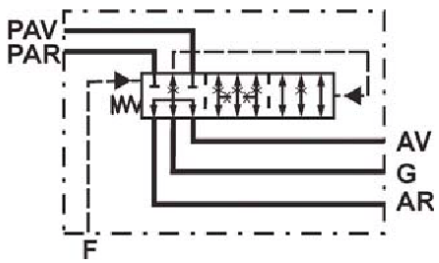
Hydraulic connections:

Port	Function	Connection	Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
01	Input	42 gaz cyl. *[1" 1/4 BSPP]*	15 max. *[max. 220]*	632 *[466]*
1	Output			
1*	Output	21 gaz cyl. *[1/2" BSPP]*		160 *[118]*
F	Drain	13 gaz cyl. *[1/2" BSPP]*	0 *[0]*	30 *[22]*

FREE-WHEELING VALVE H25

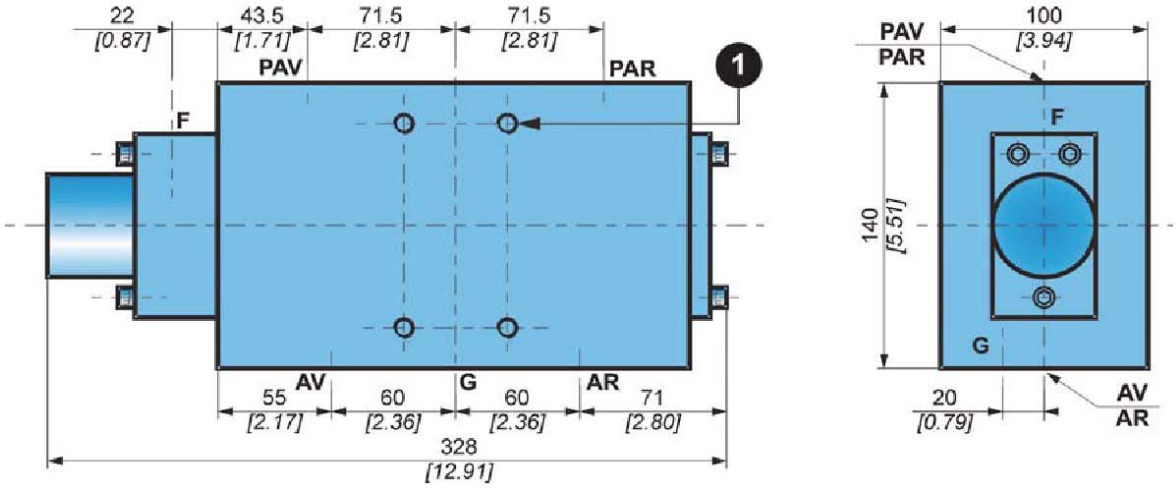
Function:	On motor, connects the ports A and R (or L and R on motor 1C) to tank and allows the pistons to return in cylinder-blocks and the motor to turn in free-wheeling. Protect the motor from pressure spikes in the casing.



Commercial Description	BLOC DE DECRABOTAGE H25 BLOC DE DECRABOTAGE H25 U
Part number	002443681A (metric connections) 003643608T (UNF connections)
Compatibility	All types of circuit
Hydraulic symbol	

Caracteristics	
Mass	22 kg *[48.5 lb]*
Flow	260 L/min *[70 GPM]*
Pilot pressure	7 to 10 bar *[100 to 145 PSI]*

Dimensions



Installation

Valve mounting position :	Indifferent.
Chassis mounting :	

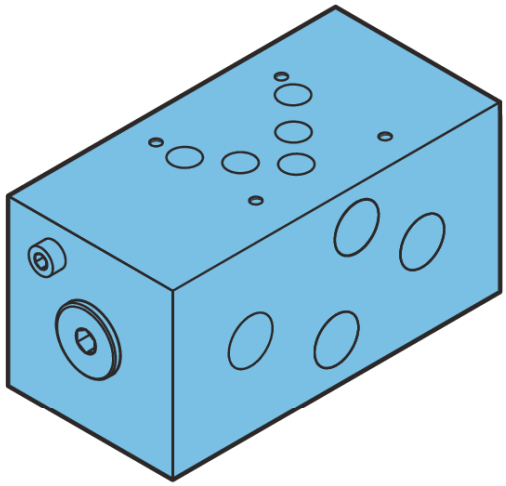
Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M10	4	8.8	50 *[37]*

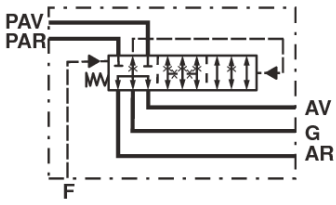
Hydraulic connections:

Port	Function	Connection		Max pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
PAV	Input forward	DN 25 PN 400 (ISO 9 974-1)		450 *[6 526]*	55 *[41]*
PAR	Input reverse forward				
AV	Output forward				
AR	Output reverse forward				
G	Pilot	M27 x 2 (ISO 9 974-1)	1" 1/16 -12 UNF (ISO 11 926)	100 *[1 450]*	200 *[148]*
F	Drain	M16 x 1.5 (ISO 9 974-1)	9/16"-18 UNF (ISO 11 926)	0 *[0]*	60 *[44]*

FREE-WHEELING VALVE H15

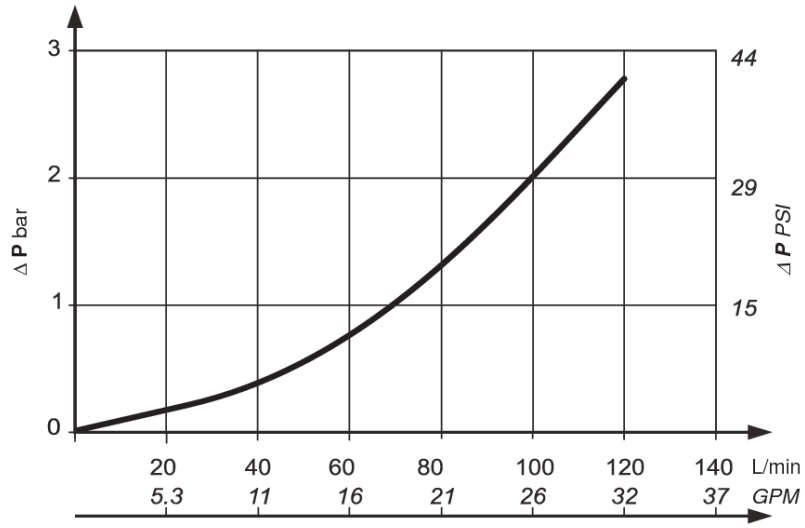
Function:	On motor, connects the ports A and R (or L and R on motor 1C) to tank and allows the pistons to return in cylinder-blocks and the motor to turn in free-wheeling. Protect the motor from pressure spikes in the casing.



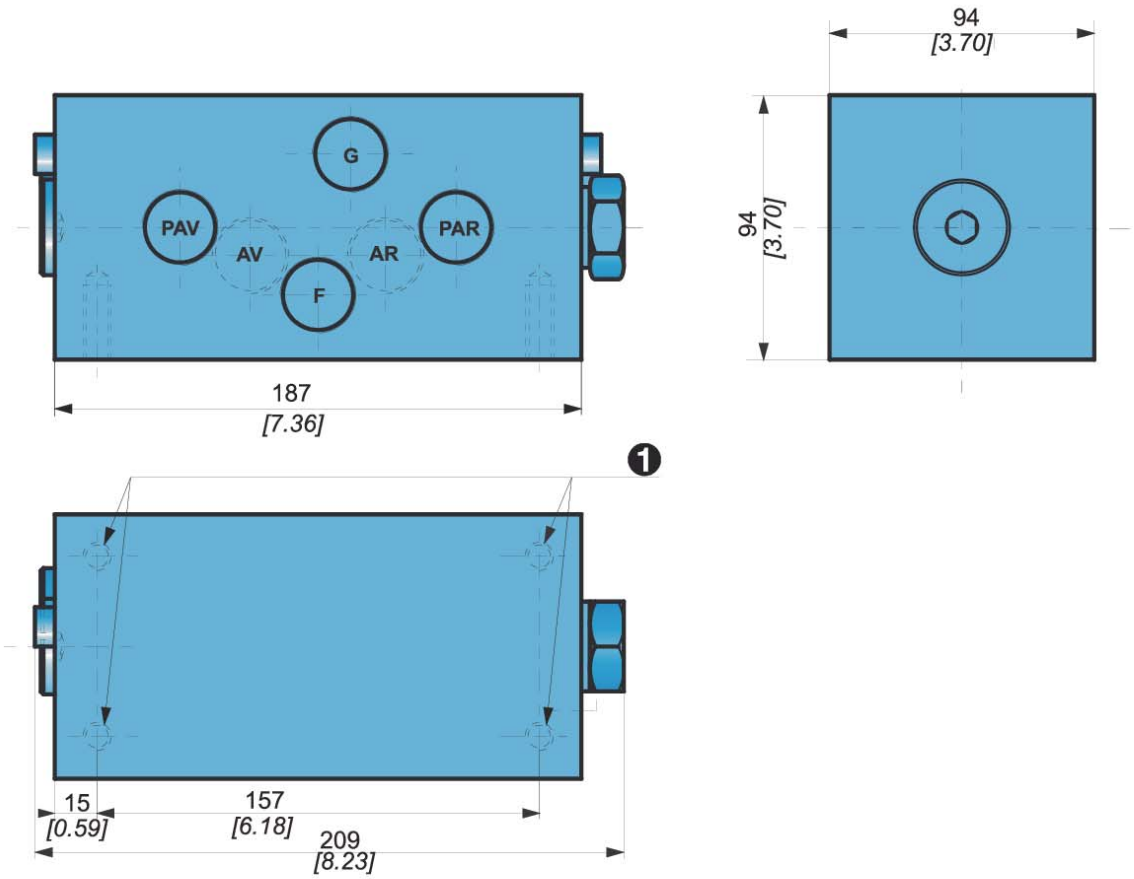
Commercial Description	BLOC DECRABOTAGE H15
Part number	002443688H
Compatibility	All types of circuit
Hydraulic symbol	

Caracteristics	
Mass	15 kg *[33.1 lb]*
Flow	65 L/min *[17 GPM]*
Control pressure	6 to 9 bar *[90 to 130 PSI]*

Pessure drop



Dimensions



Installation

Valve mounting position : Indifferent.

Chassis mounting :

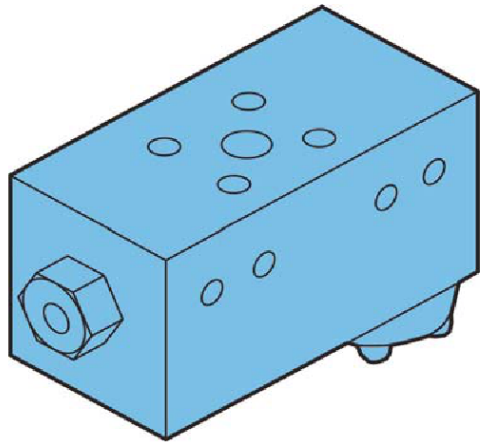
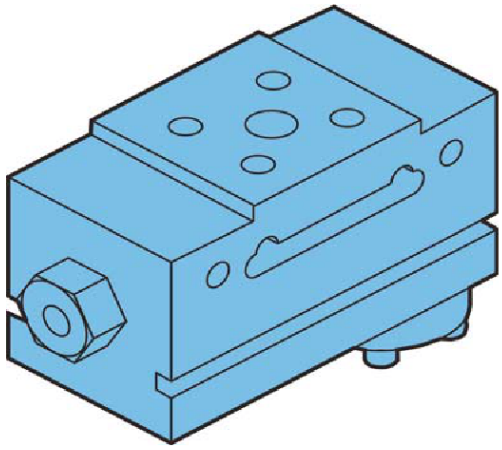
Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M12	4	8.8	86 *[63]*

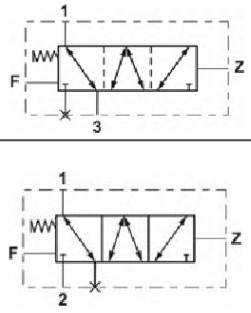
Hydraulic connections:

Port	Function	Connection	Max. pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
PAV	Input forward	M27 x 2	450 *[6 526]*	200 *[148]*
PAR	Input reverse forward			
AV	Output forward			
AR	Output reverse forward			
G	Pilot		100 *[1 450]*	
F	Drain		0 *[0]*	

DIRECTIONAL CONTROL VALVE VD 2V 2H20/H25

Function: **Two position flow directional control valve, opens or closes a circuit.**

Valve VD 2V 2H20	Valve VD 2V 2H25
	

Commercial Description	VD 2V 2H20 VD 2V 2H25
Part number	003943368U (VD 2V 2H20) 003943367T (VD 2V 2H25)
Compatibility	All types of circuit
Hydraulic symbol	

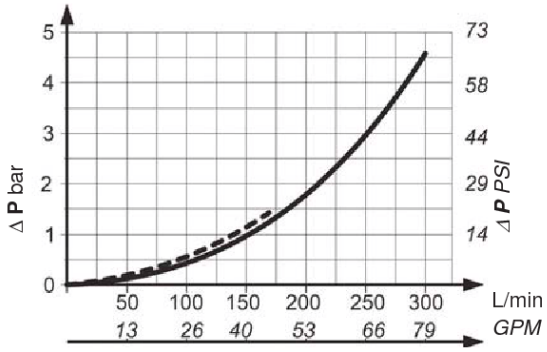
Caracteristics

Mass	8 kg *[18 lb]*

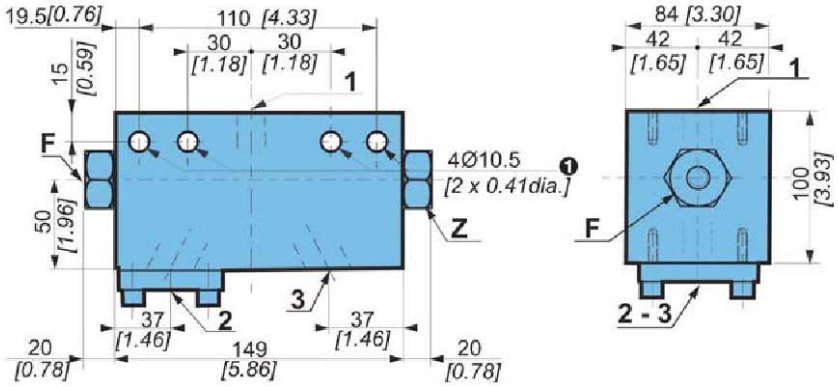
Commercial Description	Pressure bar *[PSI]*	Flow L/min *[GPM]*
VD 2V 2H20	450 *[6 526]*	92 to 170 *[25 to 45]*
VD 2V 2H25		170 to 300 *[45 to 80]*

Pressure drop (1 ⇨ 2 or 1 ⇨3)

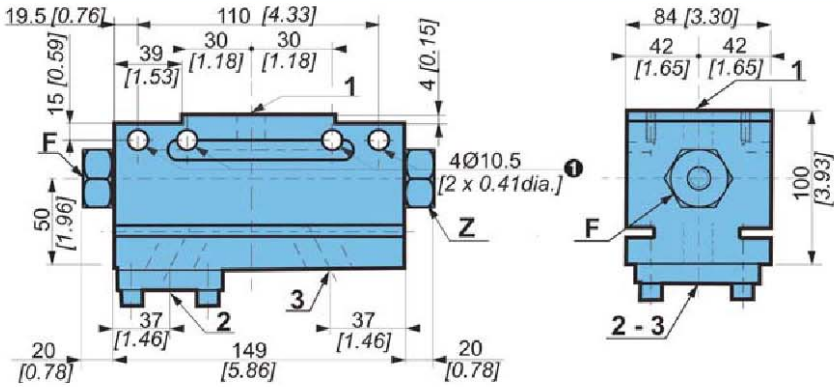
VD 2V 2H20 - - - -
VD 2V 2H25 ——



VD 2V 2H 20 Dimensions



VD 2V 2H 25 Dimensions



The plug can positionned in 3

Installation

Valve mounting position :	Indifferent.
Chassis mounting :	

Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
❶	M10	4	8.8	50 *[37]*

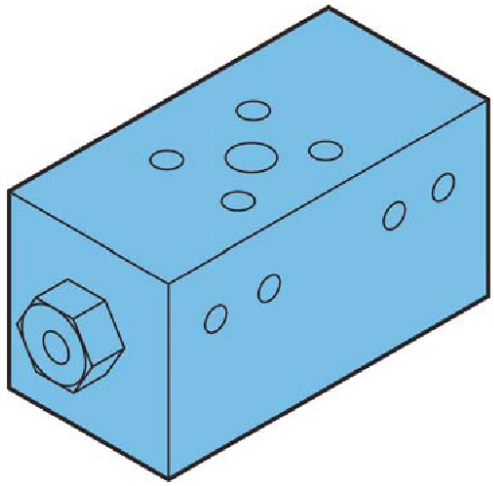
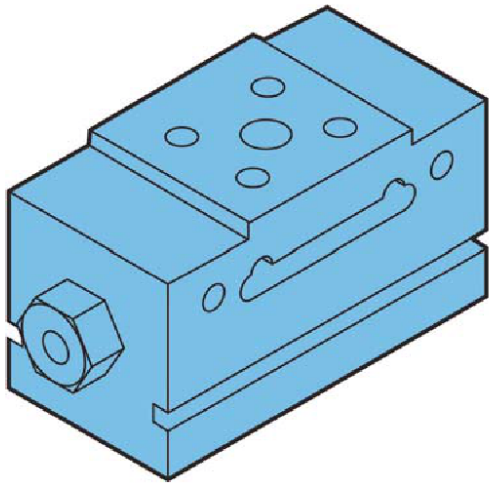
Hydraulic connections:

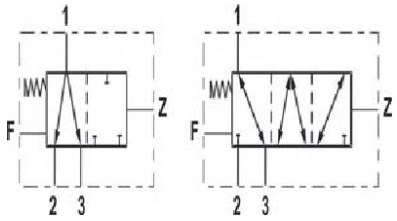
Port	Function	Connection H20	Connection H25	Max. pressurebar *[PSI]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912) H20	N.m *[lb.ft]* ± 10 % (as per standard DIN 912) H25
1-2-3	HP circuit	DN 19 (NF E 48 055) SAE 6000 PSI 3/4" (ISO DP 6162)	DN 25 (NF E 48 055) SAE 6000 PSI 1" (ISO DP 6162)	450 *[6 526]*	55 *[41]*	60 *[44]*
Z	Pilot	M16 x 1.5		5 *[75.2]* + F	60 *[44]*	
F	Drain			3 *[45]*		

The pressure in F port must be added to the pressure in Z port (control).

DIRECTIONAL CONTROL VALVES VC 3V 2H 20/25

Function: **Two position flow directional control valve, allowing to dired a circuit.**

Valve VD 3V 2H 20	Valve VD 3V 2H 25
	

Commercial Description	VD 3V 2H20 VD 3V 2H25
Part number	003943319R (VD 3V 2H20) 003943320S (VD 3V 2H25)
Compatibility	All types of circuit
Hydraulic symbol	

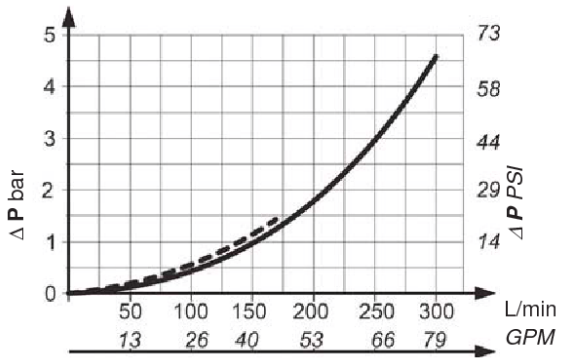
Caracteristics

Mass: 8 kg *[18 lb]*

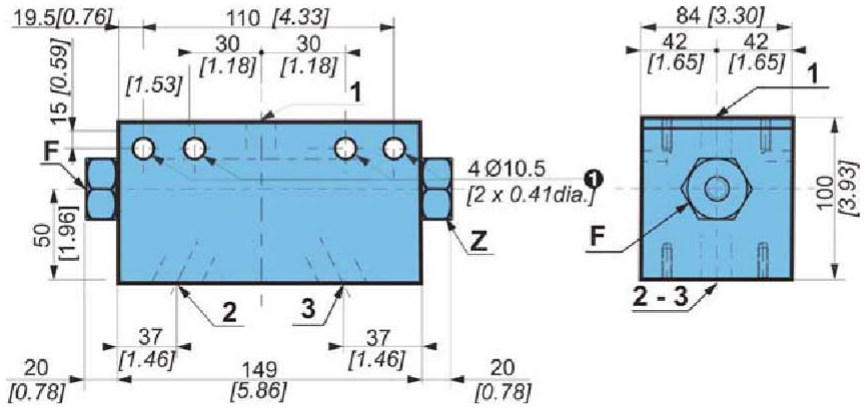
Commercial Description	Pressure bar *[PSI]*	Flow L/min *[GPM]*
VD 3V 2H20	450 *[6 526]*	92 to 170 *[25 to 45]*
VD 3V 2H25		170 to 300 *[45 to 80]*

Pressure drop

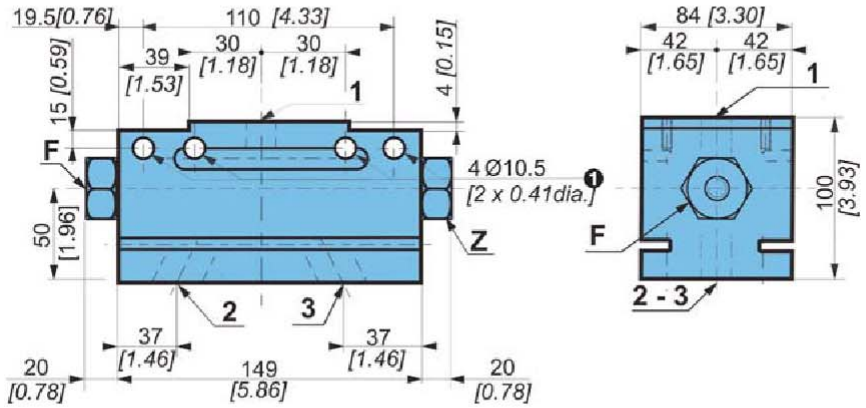
VD 3V 2H20 - - - -
VD 3V 2H25 ——



VD 3V 2H 20 Dimensions



VD 3V 2H 25 Dimensions



Installation

Valve mounting position :	Indifferent.
Chassis mounting :	

Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
❶	M10	4	8.8	50 *[37]*

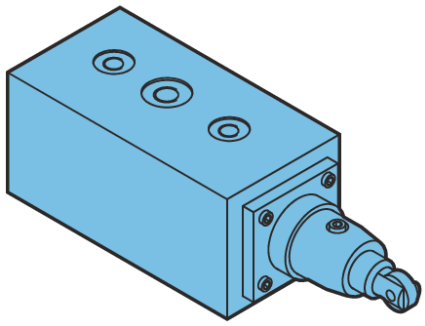
Hydraulic connections:

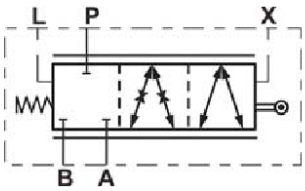
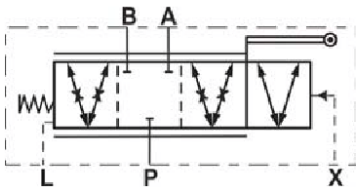
Port	Function	Connection H20	Connection H25	Max. pressurebar *[PSI]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912) H20	N.m *[lb.ft]* ± 10 % (as per standard DIN 912) H25
1-2-3	HP circuit	DN 19 (NF E 48 055) SAE 6000 PSI 3/4" (ISO DP 6162)	DN 25 (NF E 48 055) SAE 6000 PSI 1" (ISO DP 6162)	450 *[6 526]*	55 *[41]*	60 *[44]*
Z	Pilot	M16 x 1.5		5 *[75.2]* + F	60 *[44]*	
F	Drain			3 *[45]*		

The pressure in F port must be added to the pressure in Z port (control).

DIRECTIONAL CONTROL VALVES VDP

Function:	**Directional control valve on TwinLock™ circuit and mechanical or hydraulic proportional control.**

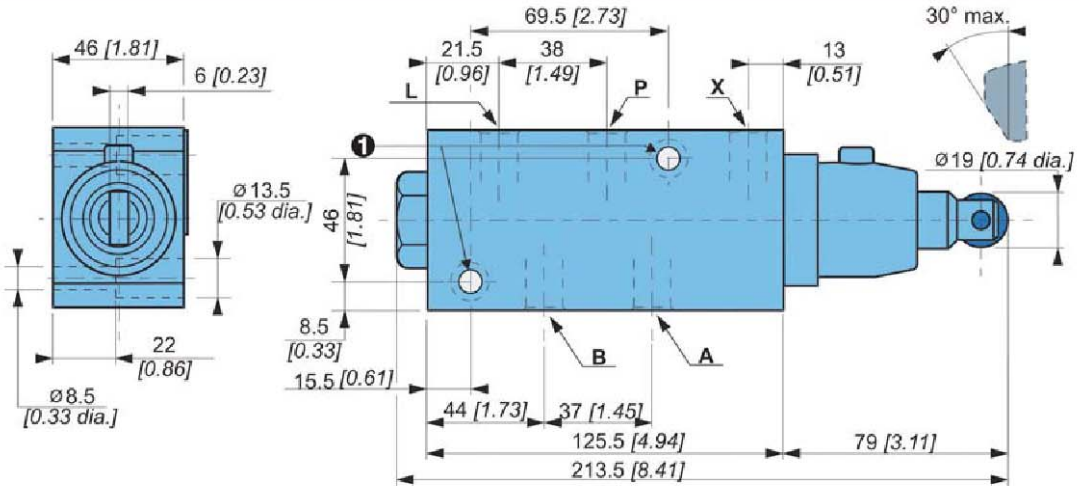


Commercial Description	**VDP H10 323 M1G30 100 0000** **VDP H10 332 M1G30 110 0000** **VDP H10 331 M1G30 110 0000** **VDP H10 331 M1G30 210 0000**
Part number	004643346Q (VDP H10 323 M1G30 100 0000) 004643387K (VDP H10 332 M1G30 110 0000) 004643382E (VDP H10 331 M1G30 110 0000) 005043313M (VDP H10 331 M1G30 210 0000)
Compatibility	TwinLock™ Circuit
Hydraulic symbol	004643346Q:  004643387K, 004643382E, 005043313M: 

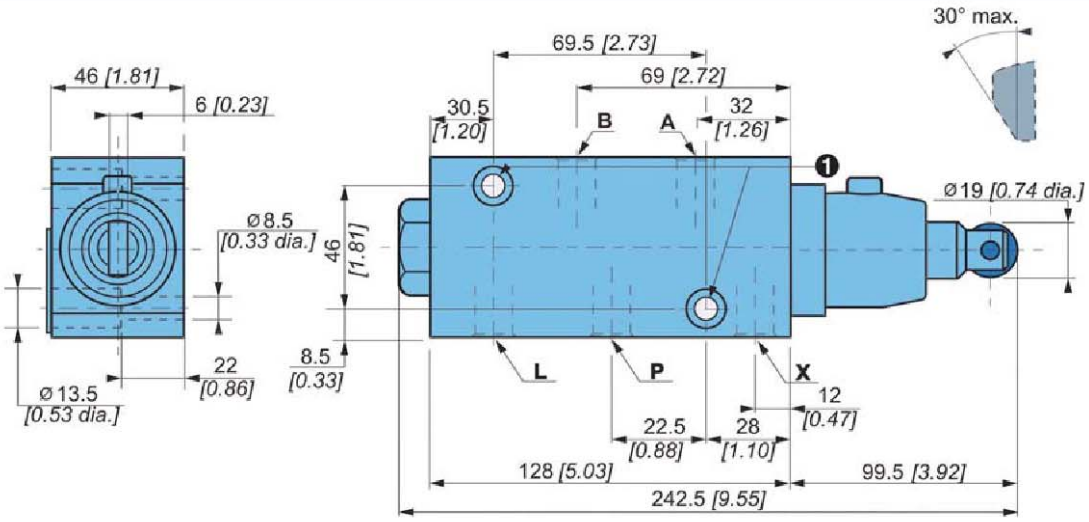
Caracteristics

	Max. pressure bar *[PSI]*	Flow L/min *[GPM]*	Mass kg *[lb]*
004643346Q	450 *[6 526]*	26 to 50 *[7 to 13]*	2.65 *[5.8]*
004643387K			3.33 *[7.3]*
004643382E			
005043313M			

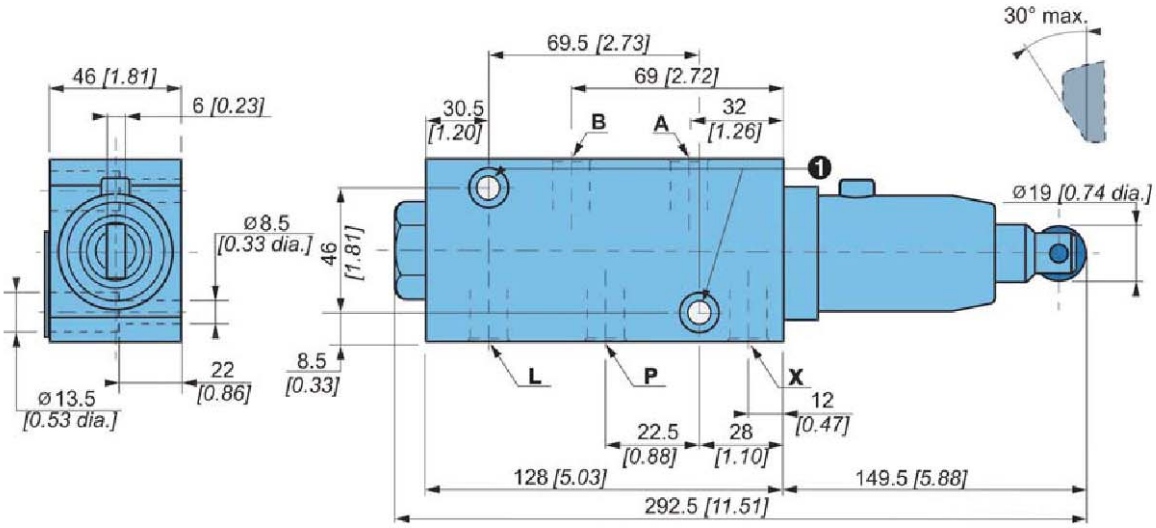
DimensionsVDP H10 323 M1G30 100 0000



Dimensions VDP H10 332 M1G30 110 0000 VDP H10 331 M1G30 110 0000



Dimensions VDP H10 331 M1G30 210 0000



The operation of the cam on the roller must be limited to ±30° to limit the parasite forces.

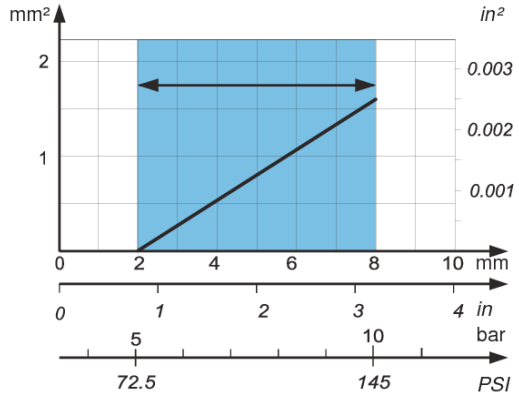
Mechanical control

	Beginning of opening N *[lbf]*	End of opening N *[lbf]*	Max. stroke mm *[in]*
004643346Q	25 *[5.62]*	55 *[12.36]*	10 *[0.39]*
004643387K	49 *[11.02]*	170 *[38.22]*	16 *[0.6]*
004643382E			
005043313M			

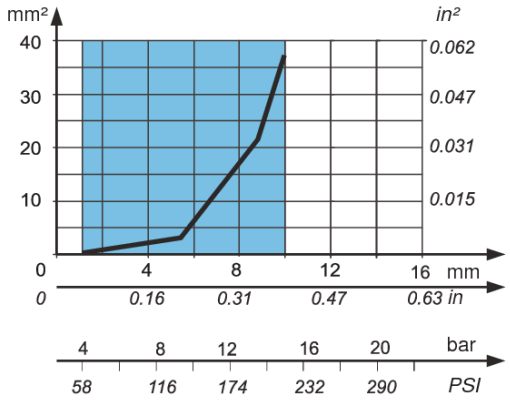
Hydraulic control

	Beginning of opening bar *[PSI]*	End of opening bar *[PSI]*	Max. pressure bar *[PSI]*
004643346Q	5 *[72.5]*	11 *[160]*	50 *[725]*
004643387K	4 *[58]*	15 *[218]*	
004643382E			
005043313M			

004643346Q:



004643387K
004643382E
004643313M



Installation

Valve mounting position:	Indifferent.
Chassis mounting:	

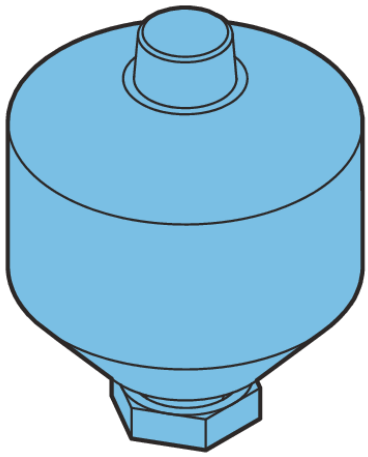
Ref.		Quantity	Class	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
1	M8	2	8.8	25 *[18]*

Hydraulic connections:

Port	Function	Connection	Max. pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 % (as per standard DIN 912)
P-A-B	HP circuit	M18 x 1.5	450 *[6 526]*	70 *[52]*
X	Pilot	M14 x 1.5	50 *[752]*	45 *[33]*
L	Drain		3 *[45]*	

HYDRO-PNEUMATIC BRAKING CIRCUIT ACCUMULATOR

Function: **Dedicated power reserve for dynamic brake safety circuits. Conforms to German standard STVZO-§41. The accumulated volume must provide for 9 braking operations.**

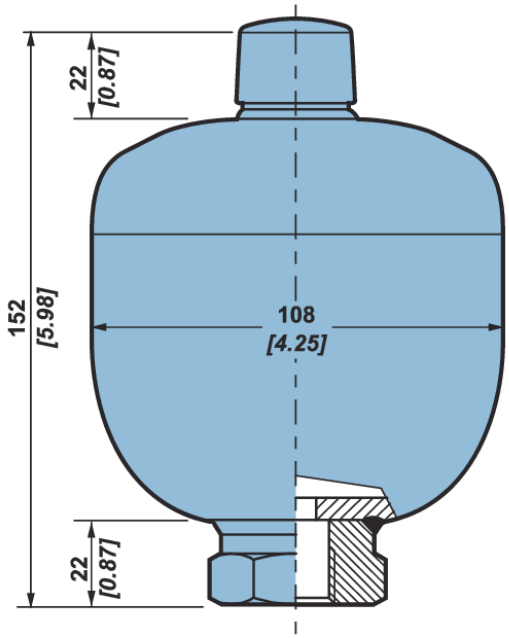


Commercial Description	ACCU. 0,5 L PG 65 B
Part number	00114020F
Technology	Membrane Accumulator
Compatibility	All types of transmission
Hydraulic symbol	

Features	
Nominal volume	0.5 L *[30.5 cu.in]*
Max permissible pressure	160 bar *[2 320 PSI]*
Inflation pressure	65 bar *[942 PSI]* (Please contact us for other possible pressures)
Mass	2 kg *[4.41 lb]*
Operating temperature range	-10 °C to 80 °C *[14 °F to 176 °F]*
Inflation gas	Nitrogen
Nitrile quality	NBR
Oil used	Mineral oil (group 2 fluid)

Definitions of volume, inflation pressure, and number of accumulators must be submitted for approval by Poclain Hydraulics application engineers.

Dimensions



Installation

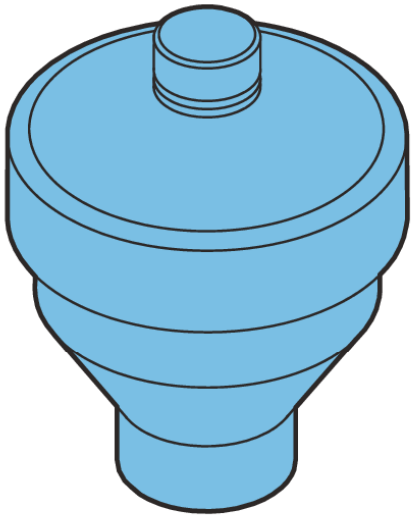
Position	Indifferent. Position the accumulator as close as possible to the user equipment. There must be 200 mm of space around the inflation valve to enable access to the accumulator for inflation checking equipment; this checking equipment to have a draining system fitted.
mounting	A collar needs to be fitted around the accumulator body. This collar must be able to prevent the accumulator from moving in the event of a broken connection.
Hydraulic connections:	Preferably with rigid tubing:

BSPP Standard connection	Thread depth mm *[in]*	Max. pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
Ø 21 *[G 1/2']*	14 *[0.55]*	160 *[2320]*	160 *[118]*

Always drain accumulators before disconnecting any tubing. Adjust the distribution and purge valves, referring to the hydraulic diagram for the whole installation.

HYDRO-PNEUMATIC BRAKING CIRCUIT ACCUMULATOR

Function: **Dedicated power reserve for dynamic brake safety circuits. Conforms to German standard STVZO-§41. The accumulated volume must provide for 9 braking operations.**



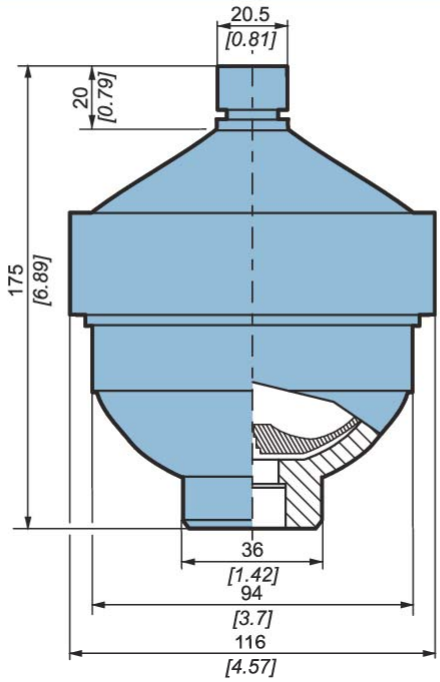
Commercial Description	ACCU.0,5L PG65B-P.MAXI=210
Part number	002440238H
Technology	Membrane Accumulator
Compatibility	All types of transmission

Hydraulic symbol

Features	
Nominal volume	0.5 L *[30.5 cu.in]*
Max permissible pressure	210 bar *[3 045 PSI]*
Inflation pressure	65 bar *[942 PSI]* (Please contact us for other possible pressures)
Mass	3.6 kg *[7.94 lb]*
Operating temperature range	-20°C to 80°C *[-4°F to 176°F]*
Inflation gas	Nitrogen
Nitrile quality	NBR
Oil used	Mineral oil (group 2 fluid)

Definitions of volume, inflation pressure, and number of accumulators must be submitted for approval by Poclain Hydraulics application engineers.

Dimensions



Installation

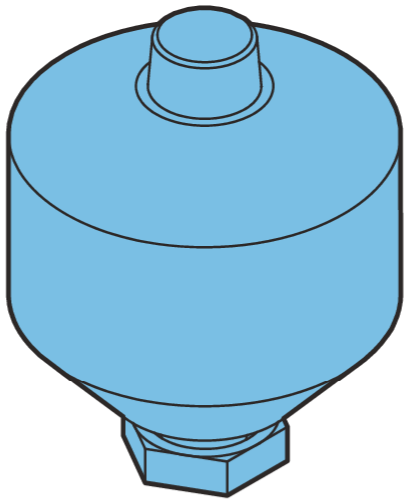
Position	Indifferent. Position the accumulator as close as possible to the user equipment. There must be 200 mm of space around the inflation valve to enable access to the accumulator for inflation checking equipment; this checking equipment to have a draining system fitted.
mounting	A collar needs to be fitted around the accumulator body. This collar must be able to prevent the accumulator from moving in the event of a broken connection.
Hydraulic connections:	Preferably with rigid tubing:

BSPP Standard connection	Thread depth mm *[in]*	Max. pressure bar *[PSI]*	N.m *[lb.ft]* ± 10 %
M 18 x 1.5	14 *[0.55]*	210 *[3 045]*	70 *[52]*

Always drain accumulators before disconnecting any tubing. Adjust the distribution and purge valves, referring to the hydraulic diagram for the whole installation.

HYDRO-PNEUMATIC RETURN AND BOOSTER CIRCUIT ACCUMULATOR (1.3L)

Function: **Pressure limiting in return circuit.**

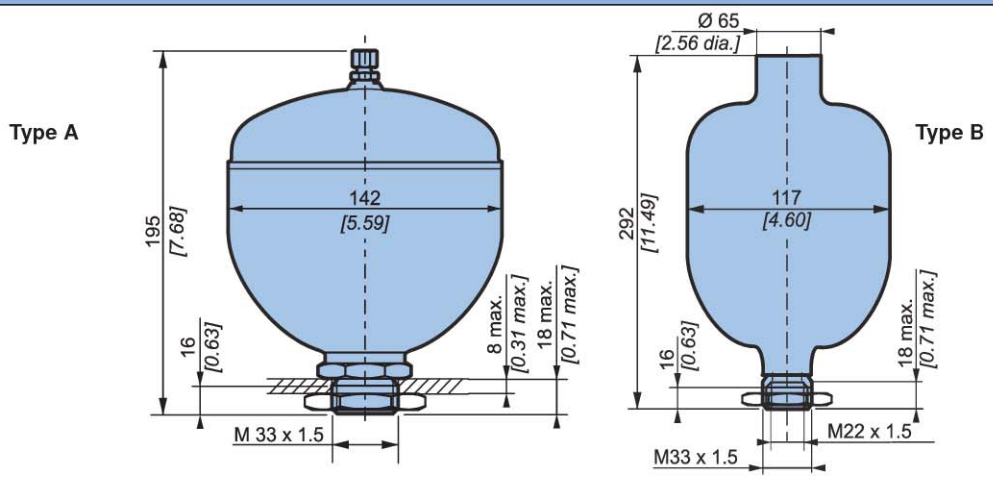


Commercial Description	ACCU 1,3 L 0,5 BAR EQ
Part number	0.5 bar *[7.25 PSI]* : 002440239J (Type B)
Function	
Part number	8 bar *[116 PSI]* : 005237731L *(Type A)* 12 bar *[174 PSI]* : 005237732M *(Type A)* 20 bar *[290 PSI]* : 005237733N *(Type A)* 30 bar *[435 PSI]* : 002440240K *(Type B)*
Compatibility	All types of transmission
Hydraulic symbol	

Features		
	Type A	Type B
Nominal volume	1.3 L *[79.33 cu.in]*	1.3 L *[79.33 cu.in]*
Max permissible pressure	50 bar *[725 PSI]*	210 bar *[3045 PSI]*
Inflation pressure	According to model	According to model
Mass	1.7 kg *[3.75 lb]*	3.6 kg *[7.94 lb]*
Operating temperature range	-10°C to 80°C *[14°F to 176°F]*	-20°C to 80°C *[-4°F to 176°F]*
Inflation gas	Nitrogen	-
Oil used	Mineral oil (group 2 fluid)	

Definitions of volume, inflation pressure, and number of accumulators must be submitted for approval by Poclain Hydraulics application engineers.

Dimensions



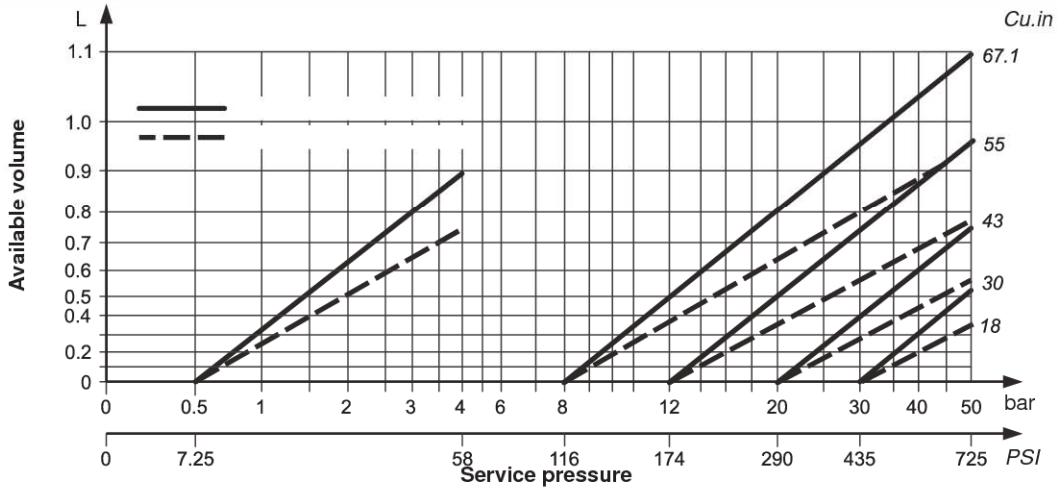
Installation

Position	Indifferent. Position the accumulator as close as possible to the user equipment. There must be 200 mm of space around the inflation valve to enable access to the accumulator for inflation checking equipment; this checking equipment to have a draining system fitted.
mounting	A collar needs to be fitted around the accumulator body. This collar must be able to prevent the accumulator from moving in the event of a broken connection.

Connection	N.m *[lb.ft]* ± 10 %
M22 x 1.5	100 *[74]*

These accumulators can be fitted with a male-female reducer M22x1.5 -G Ø27 [3/4"] (part number : 000637313G), and an O-ring 262002507NBR-80 (part number : 000030460J).

Use (Type A)



Maintenance

Accumulators greater than 1l must be regularly inspected. Refer to European Directive 97/23/CE.

Precautions in use

Always drain accumulators before disconnecting any tubing. Adjust the distribution and purge valves, referring to the hydraulic diagram for the whole installation.