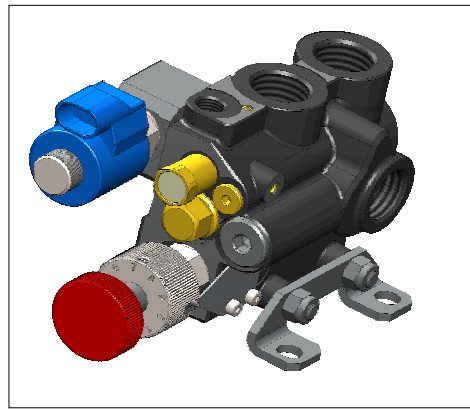
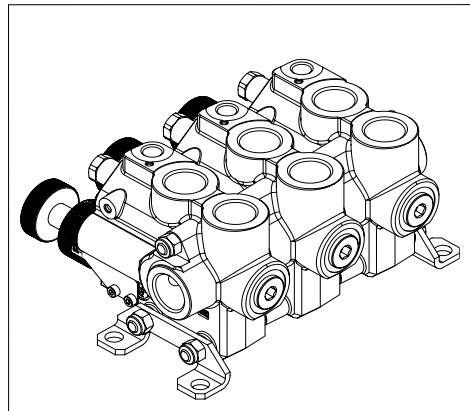


PFCV

PRIORITY FLOW CONTROL VALVE



Page 3	General Information
Page 4	Technical Data
Page 5	Performance Curves
Page 6-7	Valve Assembly Options
Page 8	Valve Overview
Page 9	Dimensions
Page 12	Bankable two Valves
Page 13	Bankable three Valves
Page 14	Accessory Valves
Page 16	System Options
Page 18	Bankable Options
Page 21	Ordering Code

The PFCV regulates the pump flow to a motor or a cylinder at a constant speed, regardless of the weight of the load, and diverts the remaining oil flow back to the tank.

The PFCV series models can be used either as a single valve or in multiple units that are assembled together as one block for multiple usage functions. When stacked together in one block or in series, they will divert both the regulated and bypassed flow into a second or third valve circuit. This flow can be reused and run subsequent functions. The pressure compensated flow allows set speeds to be maintained at all times.



The PFCV-2 body integrates a check valve between the regulated priority flow line and the bypass line. This check valve will protect a motor against cavitation, when the flow is suddenly reduced or cut off.

The PFCV has an integrated relief valve RV-03 to set the maximum pressure available to the motor or motors when the PFCV is connected in series. This will function as a torque limiter on the regulated circuit functions. With its linear pressure curve, the specially designed RV-03 relief valve allows optimal usage of motors up to its set level.

The PFCV can also offer the option to integrate a pressure limiter valve PL-03 in each section. This allows each motor, in a parallel system, to operate at its preset pressure level regardless of the inlet pressure.

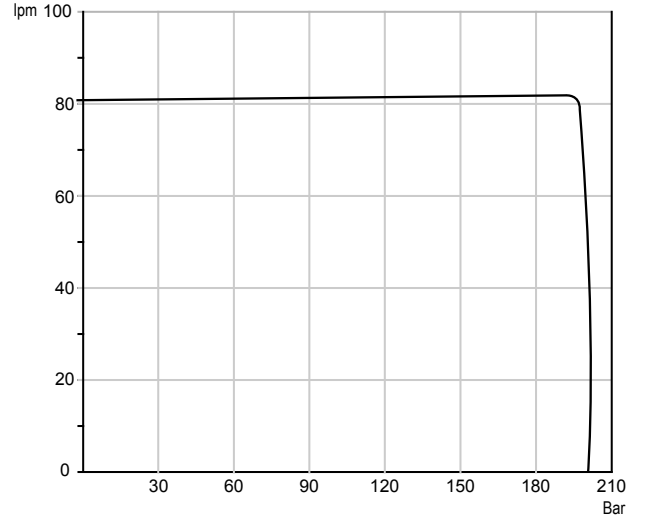
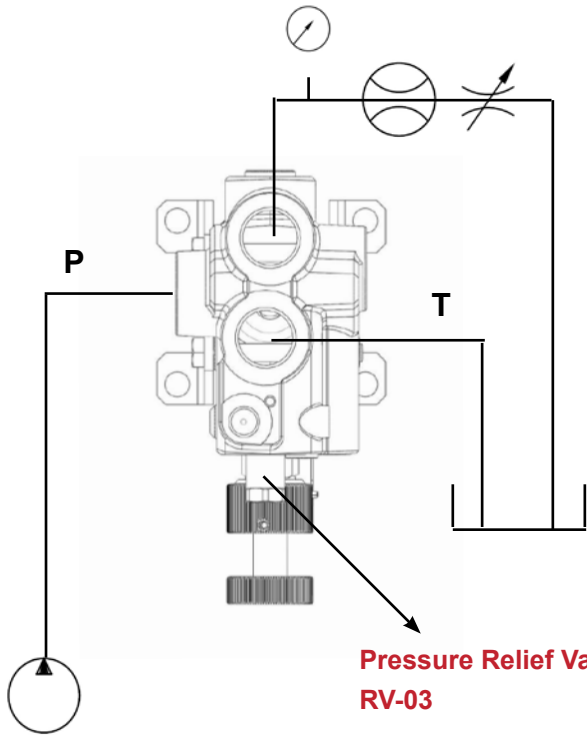
The PFCV can also be equipped with an electrical unloading valve UCV. When activated it stops the flow out to the regulated port and dump the full flow out on the bypass port, thereby stopping the rotation of the motor. This function can be used as a start or stop function and also as an emergency stop function.

The PFCV is manufactured using the highest quality alloy cast iron which in combination with Nimco's advanced machining and control methods assure the precise accuracy of every component. Each valve is tested and the results documented prior to shipment.

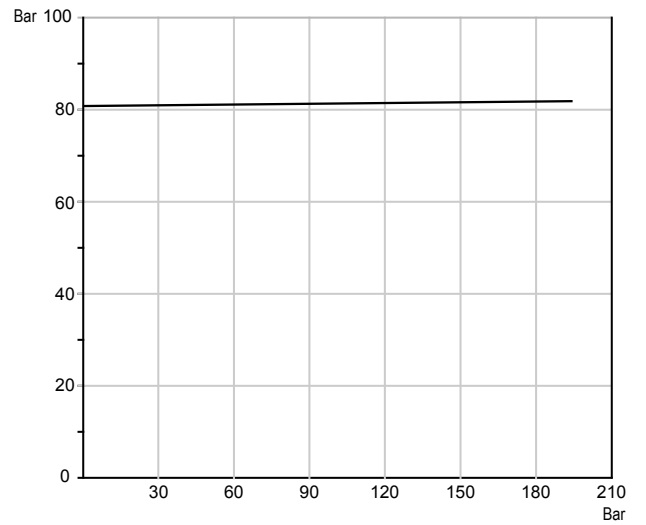
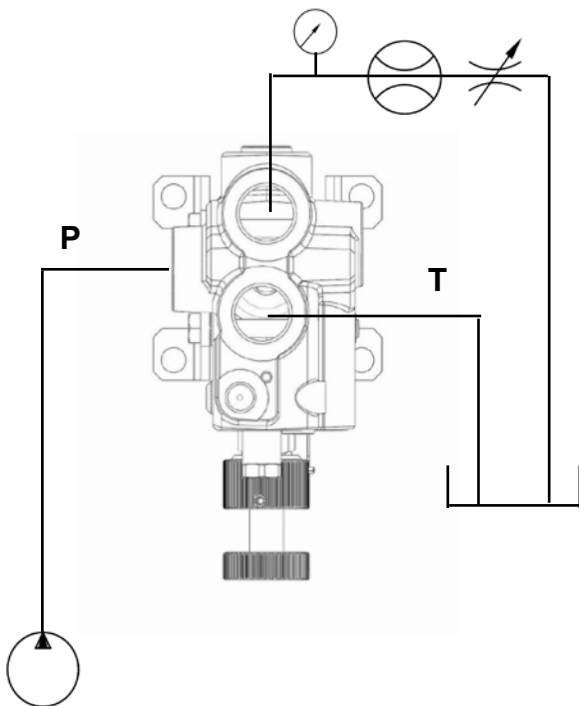
The **PFCV** is a priority flow control valve that splits a single input flow into a Priority flow and a By-Pass flow which can be returned directly to the tank or used to power a second or a third function and thereby eliminate the use of additional pumps to operate the additional functions.

Max pressure setting	bar	psi
Working pressure	350	5100
Flow rates	L/min	USGpm
Max inlet flow	0 to 130	0 to 34
Temperature range	°C	°F
Standard seals	-40 to +80	-40 to +176
Filtration		
Contamination level equal to or better then	18/14 according to ISO 4406	NAS 1638-class 10
Viscosity	mm²/s (cSt)	SSU
Recommended operating Viscosity range	10-400	47 - 1875
Start viscosity up to	1000	4687
Weight	kg	lbs
	3,3	7,27
Mounting		
Standard	2 bolts M8 or 5/16"	
Optional	2 x M11	
Options	Relief Valve for regulated flow Pressure limiter regulated flow Relief Valve for torque limitation Check Valve between priority and bypass flow Electrical Unloading valve 12 or 24 VDC Stackable up to 3 valves in one block	

PRESSURE RELIEF VALVE RV-03 CHARACTERISTIC

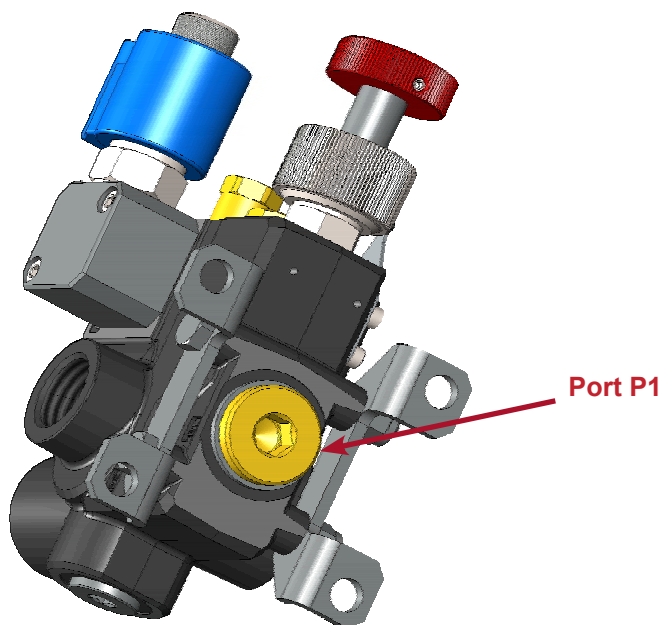
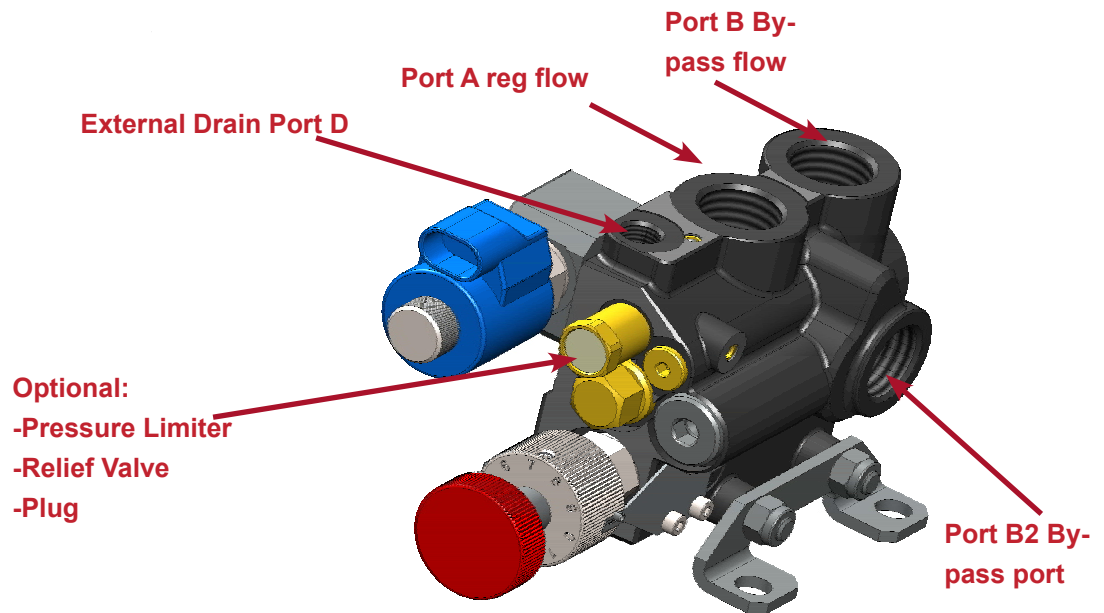
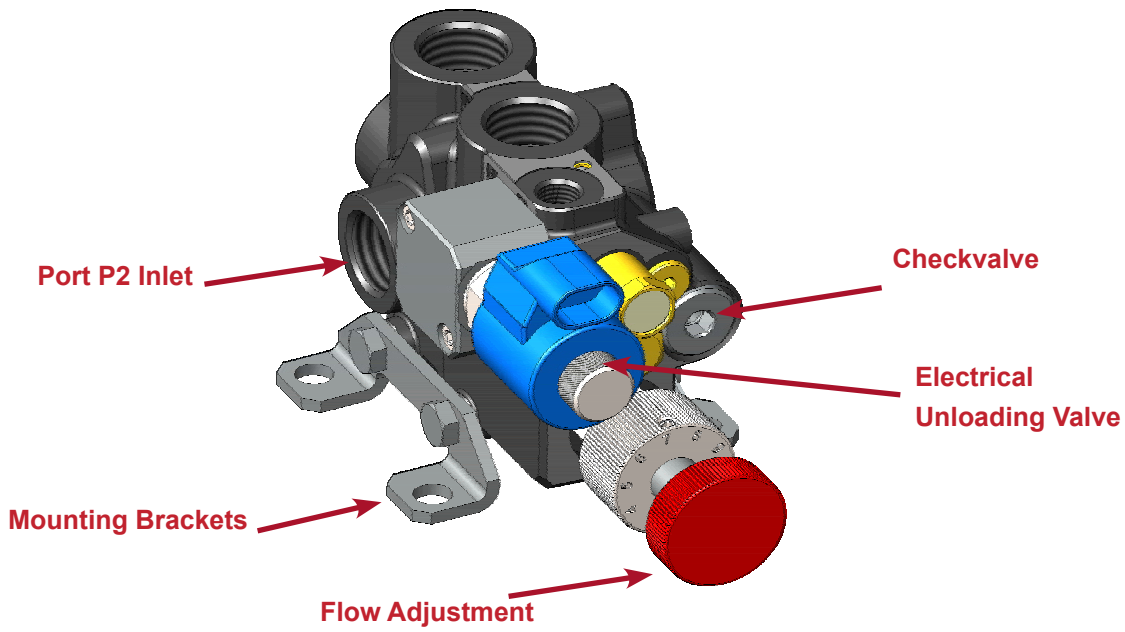


LOAD INDEPENDENT OIL/FLOW, PRESSURE COMPENSATED CHARACTERISTIC

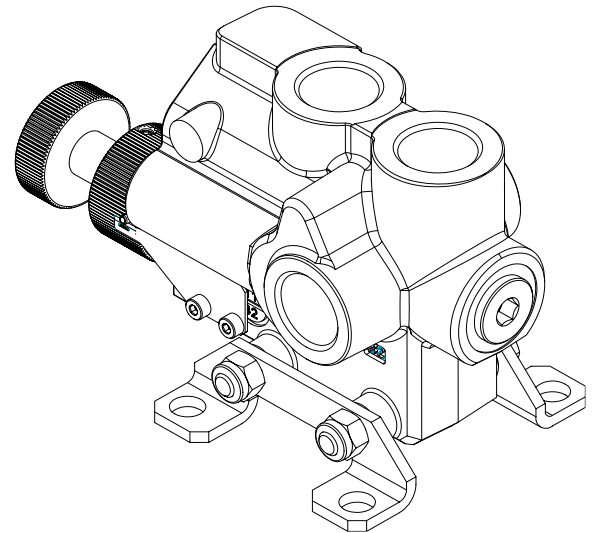
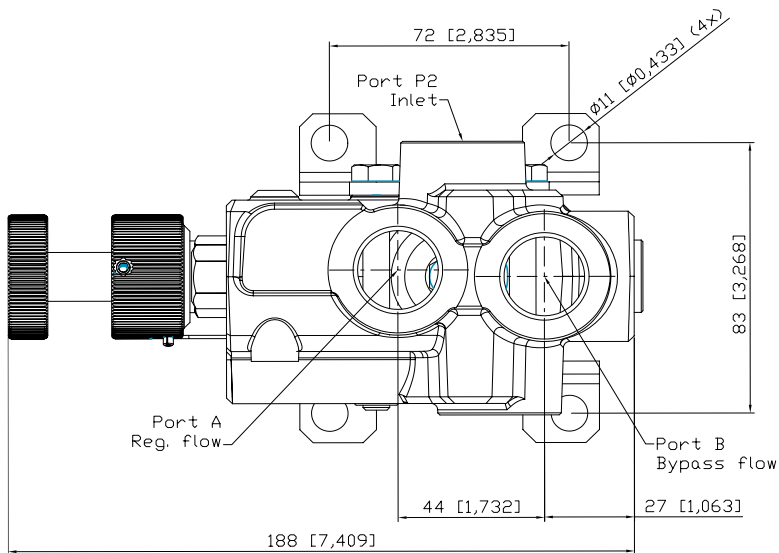
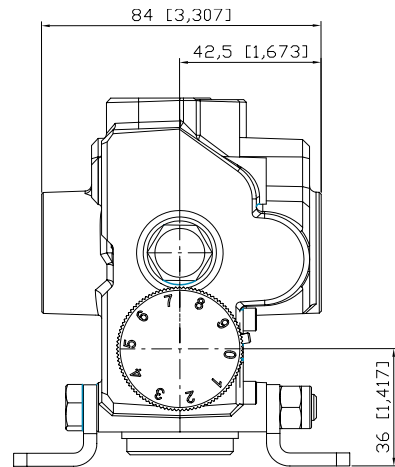
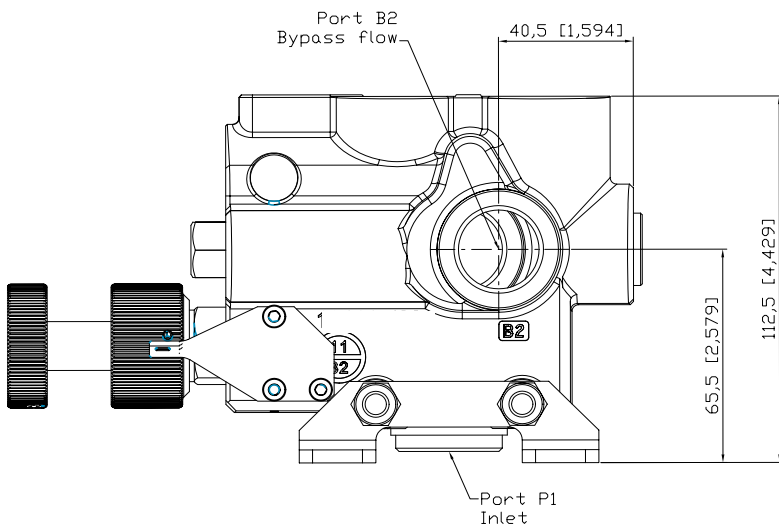


Schematics	Code	Part Number	Port Size	Mounting	Check Valve	Relief Valve	External Drain	Pressure Limiter	Unloading Valve 12 or 24 VDC	External Drain Unloading Valve
	PFCV-1	14040-2S	G 3/4	No Brackets	-	-	-	-	-	-
		14041-2S	SAE 12							
		14042-2S	G 3/4	Brackets						
		14043-2S	SAE 12							
	PFCV-1 Relief Valve	14044-2S	G 3/4	No Brackets	-		-	-	-	-
		14045-2S	SAE 12							
		14046-2S	G 3/4	Brackets						
		14047-2S	SAE 12							
	PFCV-1 Relief Valve Ext. drain	14048-2S	G 3/4	No Brackets	-			-	-	-
		14049-2S	SAE 12							
		14050-2S	G 3/4	Brackets						
		14051-2S	SAE 12							
	PFCV-1 Press. limiter	14052-2S	G 3/4	No Brackets	-	-		-	-	-
		14053-2S	SAE 12							
		14054-2S	G 3/4	Brackets						
		14055-2S	SAE 12							
	PFCV-1 Unload. valve	14056-2S	G 3/4	No Brackets	-	-	-		-	-
		14057-2S	SAE 12							
		14058-2S	G 3/4	Brackets						
		14059-2S	SAE 12							
	PFCV-1 Unload. valve Ext. drain unload valve	14060-2S	G 3/4	No Brackets	-	-	-			-
		14061-2S	SAE 12							
		14062-2S	G 3/4	Brackets						
		14063-2S	SAE 12							
	Relief valve Unload. valve	14064-2S	G 3/4	No Brackets	-		-		-	-
		14065-2S	SAE 12							
		14066-2S	G 3/4	Brackets						
		14067-2S	SAE 12							

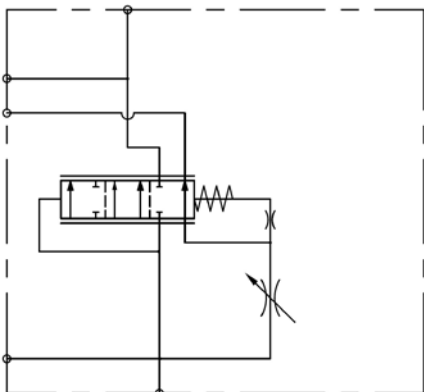
Schematics	Code	Part Number	Port Size	Mounting	Check Valve	Relief Valve	External Drain	Pressure Limiter	Unloading Valve 12 or 24 VDC	External Drain Unloading Valve							
	PFCV-1 Relief valve Unload. valve Ext. drain Unload. valve	14068-2S	G 3/4	No Brackets	-		-	-									
		14069-2S	SAE 12														
		14070-2S	G 3/4	Brackets							-		-	-		specify 12 or 24 VDC	
		14071-2S	SAE 12														
	PFCV-1 Relief valve Ext. drain Unload. valve Ext. drain unload valve	14072-2S	G 3/4	No Brackets	-			-									
		14073-2S	SAE 12														
		14074-2S	G 3/4	Brackets							-			-			specify 12 or 24 VDC
		14075-2S	SAE 12														
	PFCV-1 Press. limiter Unload. valve Ext. drain unload valve	14076-2S	G 3/4	No Brackets	-	-											
		14077-2S	SAE 12														
		14078-2S	G 3/4	Brackets							-			-			specify 12 or 24 VDC
		14079-2S	SAE 12														
	PFCV-2 check valve	14080-2S	G 3/4	No Brackets		-	-	-	-	-							
		14081-2S	SAE 12														
		14082-2S	G 3/4	Brackets							-		-	-	-	-	-
		14083-2S	SAE 12														
	PFCV-2 Check valve Relief valve	14084-2S	G 3/4	No Brackets			-	-	-	-							
		14085-2S	SAE 12														
		14086-2S	G 3/4	Brackets									-	-	-	-	-
		14087-2S	SAE 12														
	PFCV-2 Check valve Unload. valve	14088-2S	G 3/4	No Brackets		-	-	-		-							
		14089-2S	SAE 12														
		14090-2S	G 3/4	Brackets								-	-	-		specify 12 or 24 VDC	
		14091-2S	SAE 12														
	PFCV-2 Check valve Relief valve Unload. valve	14092-2S	G 3/4	No Brackets			-	-		-							
		14093-2S	SAE 12														
		14094-2S	G 3/4	Brackets									-	-		specify 12 or 24 VDC	
		14095-2S	SAE 12														



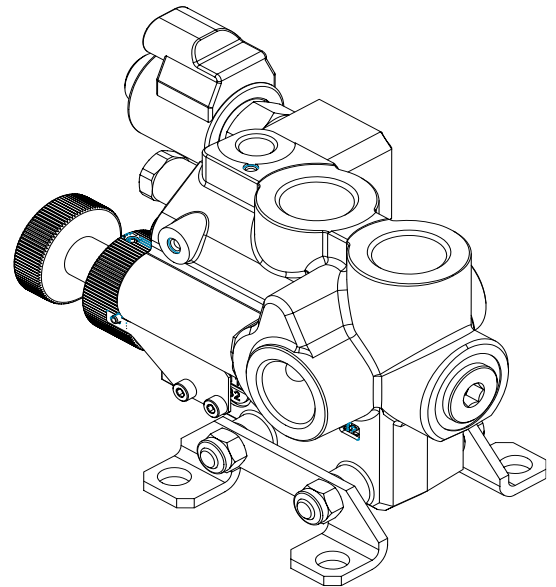
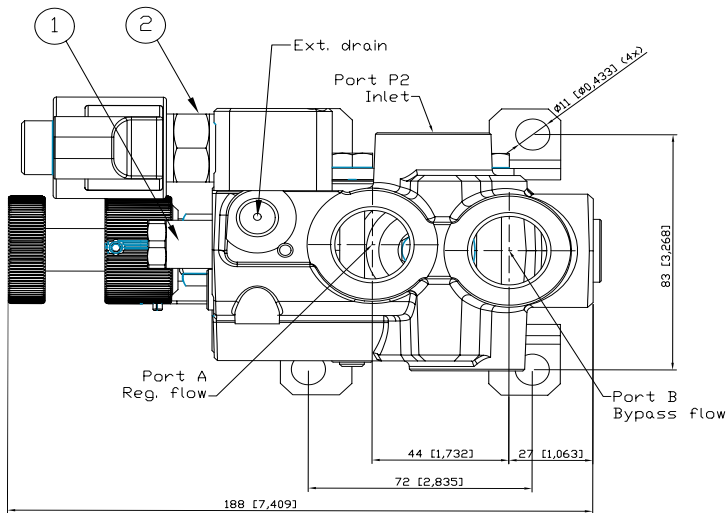
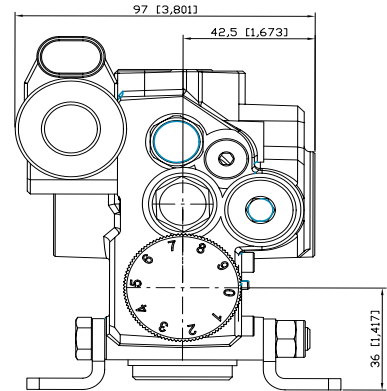
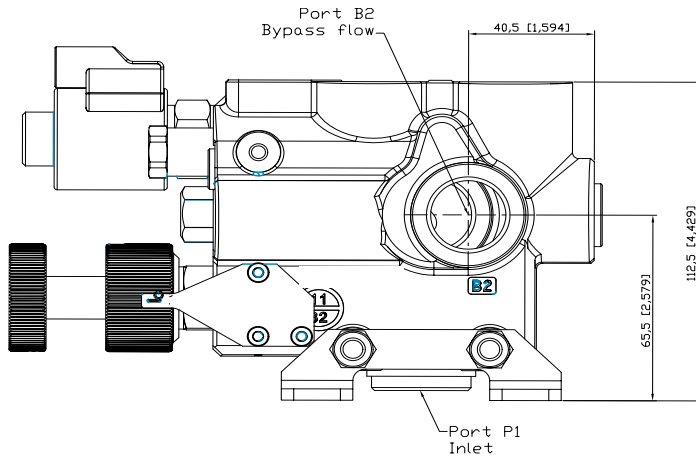
STAND ALONE VALVE WITH BRACKETS



EXAMPLE SCHEMATICS

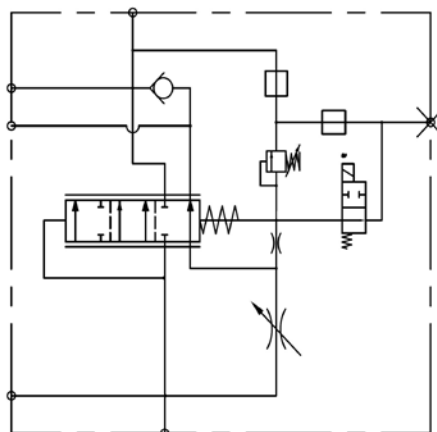


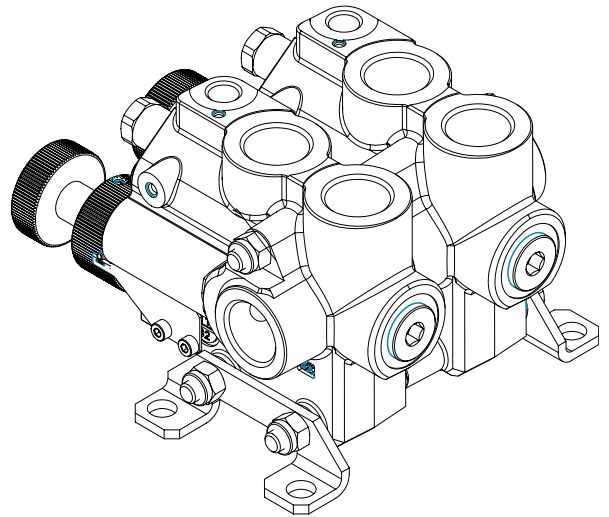
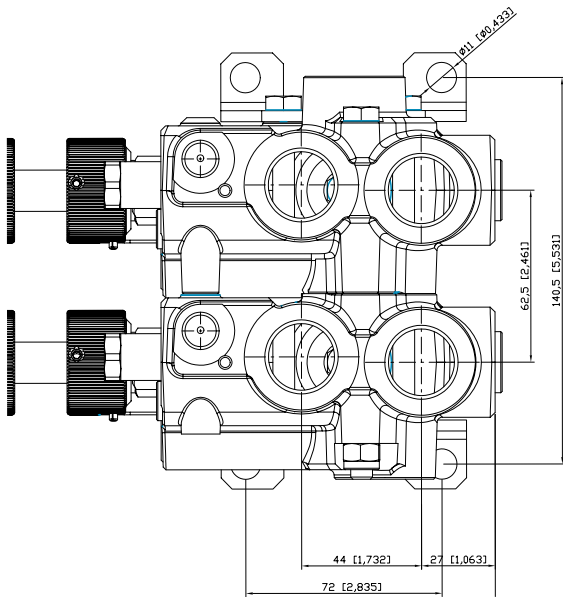
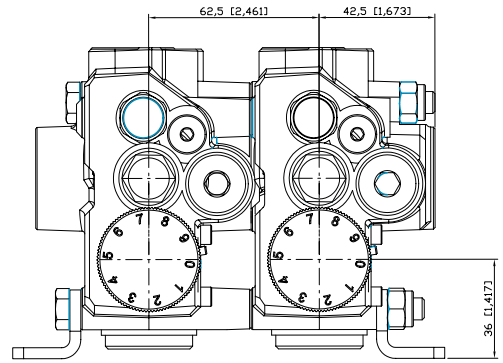
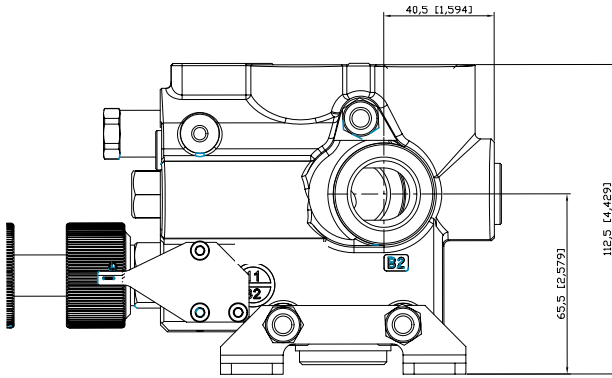
	Port	BSP	UNF
In Ports	P1	G 3/4	SAE 12
	P2	G 3/4	SAE 12
Regulated Port A		G 3/4	SAE 12
Bypass Ports	B	G 3/4	SAE 12
	B1	G 3/4	SAE 12
External Drain Port		G 1/4	SAE 6



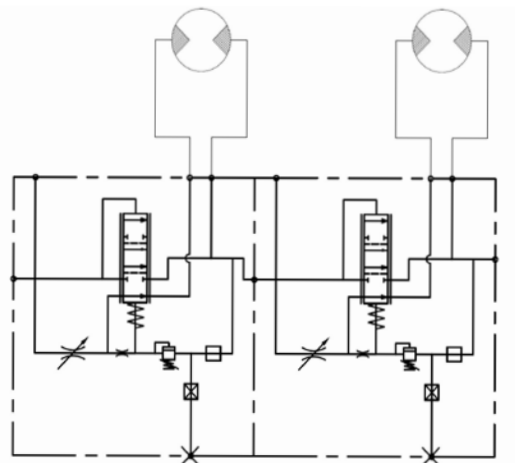
- ① Alternative choice:
1.1 Plug
1.2 Relief valve
1.3 Pressure limiter
- ② Electrical Unloading valve

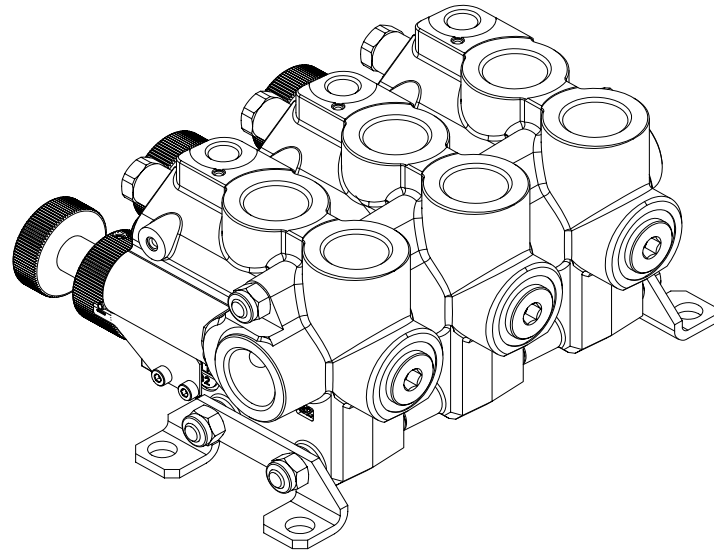
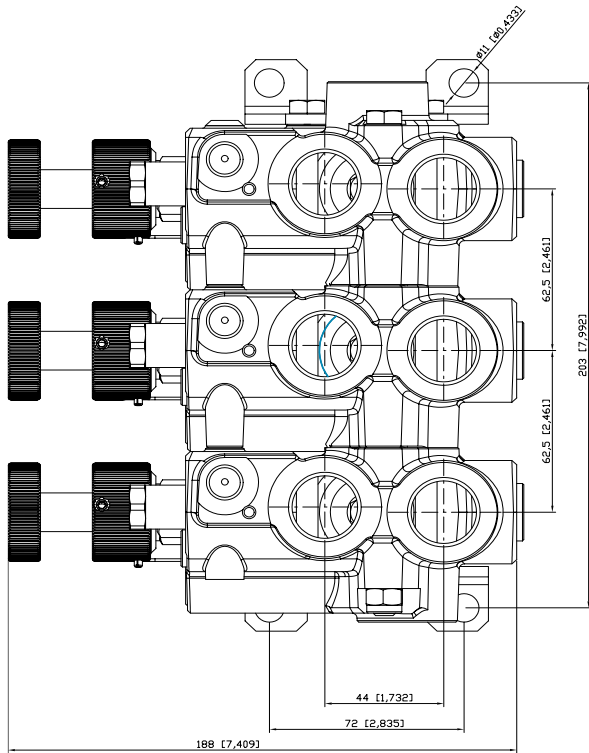
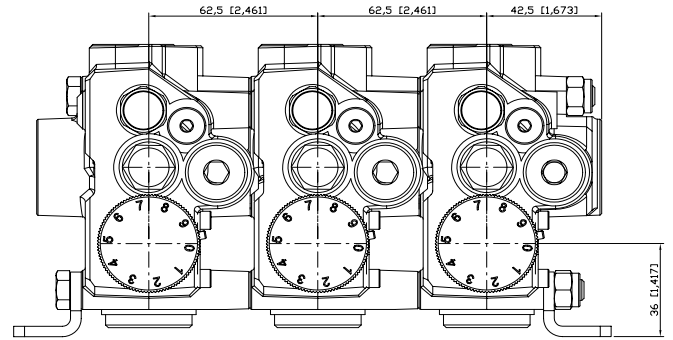
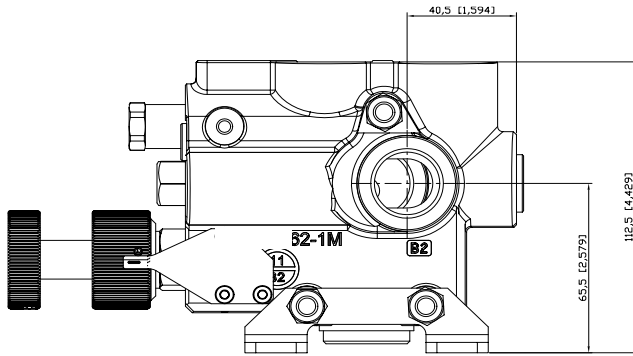
EXAMPLE SCHEMATICS



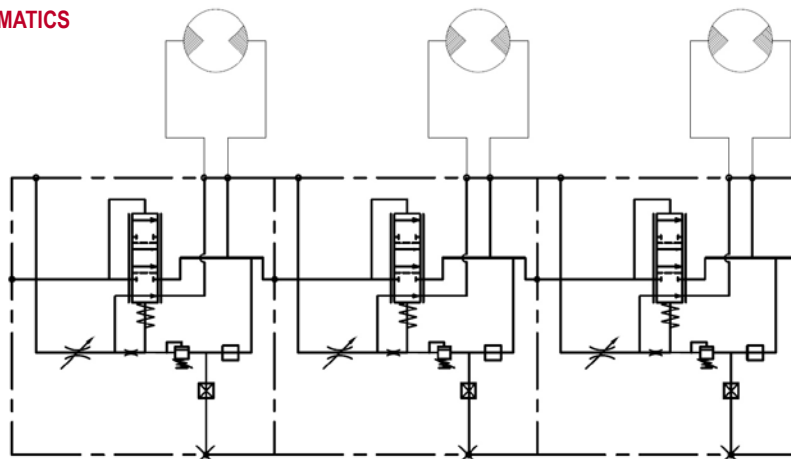


EXAMPLE SCHEMATICS





EXAMPLE SCHEMATICS



UCV - ELECTRICAL UNLOADING VALVES

The UCV series 12 or 24 VDC unloading valves will block the flow to the regulated flow port and thereby dump all flow to the Bypass port, stopping the function of the regulated flow. The UCV valve comes in four different open/closed configurations with or without manual override switch.

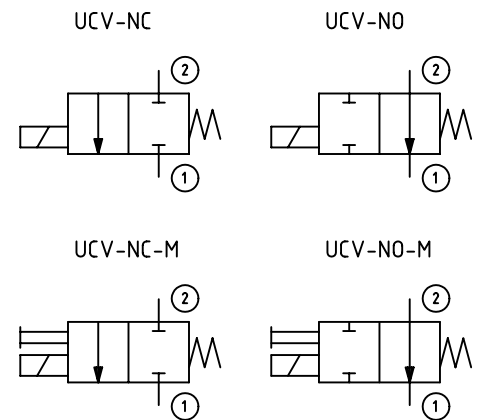


Hydraulic Data	
Maximum Operating Pressure	210 or 345 bar [3045 or 5000 psi]
Rated Flow	25 l/min or 6.5 USGpm
Internal Leakage Max.	0.15 ccm/min at 345 bar [5000 psi]
Contamination Level	20/18/15 acc. ISO 4406
Temperature Range	-40 to +120°C

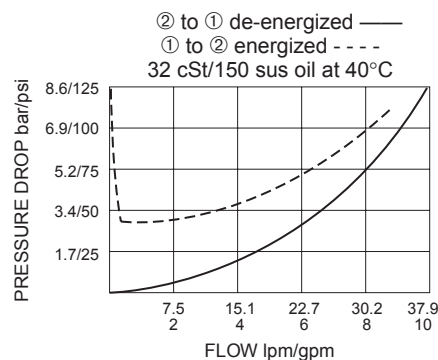
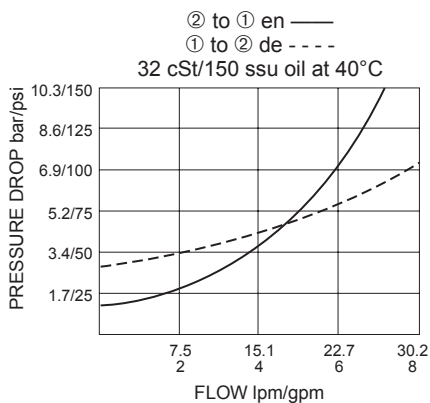
Electrical Data		
Voltage	12 V	24 V
Current	1.22 A	0.61 A
Resistance	9.8 Ω ±5%	39.3 Ω ±5%
Connector Type	DIN 43650	
Protection Class	IP65	

Ordering Code				
	12	O	DN	DNM
12 V	12			
24 V	24			
Normally Open	O			
Normally Closed	C			
Din 43650	DN			
Deutsch DT04-P	DT			
Manual override Din 43650	DN/M			
Manual override Deutsch DT04-P	DT/M			

OPTIONS



PERFORMANCE



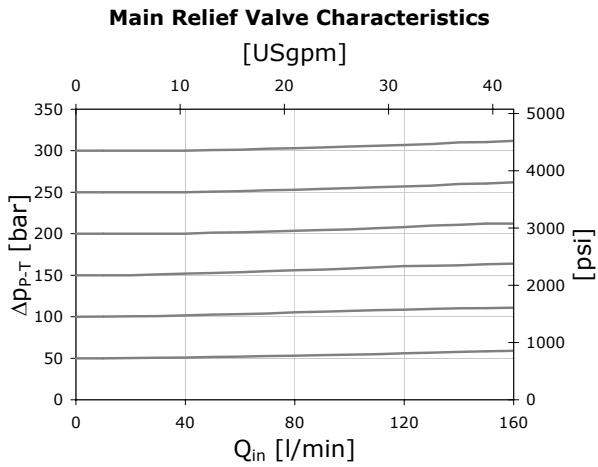
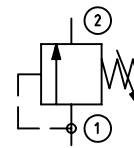
RV-03 - PRESSURE RELIEF VALVE

The RV-03 pressure relief valve controls the max pressure available on the regulated flow or can be used to control the maximum pressure drop (ΔP) over the motor and thereby limits the maximum torque in the motor, when used as a torque limiter instead of a relief valve function.



Hydraulic Data	
Maximum Operating Pressure port 1	320 bar [4640 psi]
Pressure Range	30-320 bar [435-4640 psi]

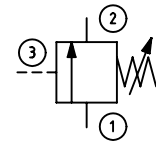
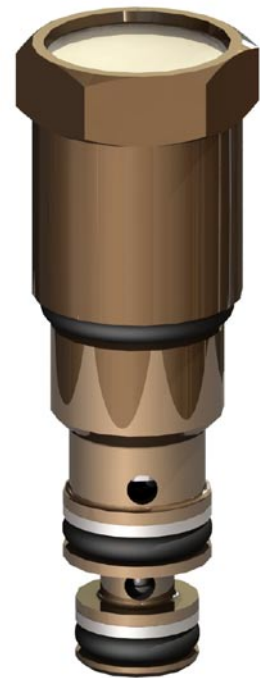
PERFORMANCE WITH RV-03



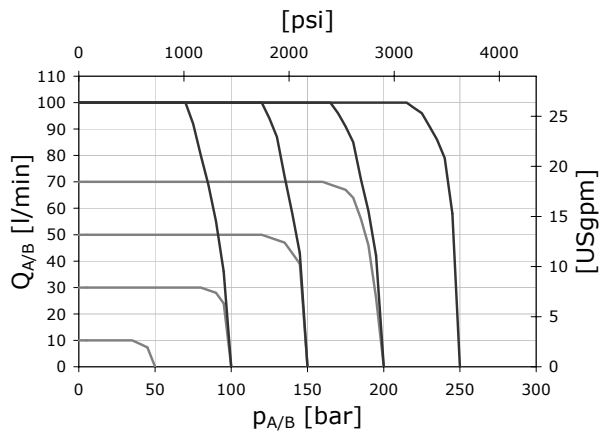
PL-03 PRESSURE LIMITER

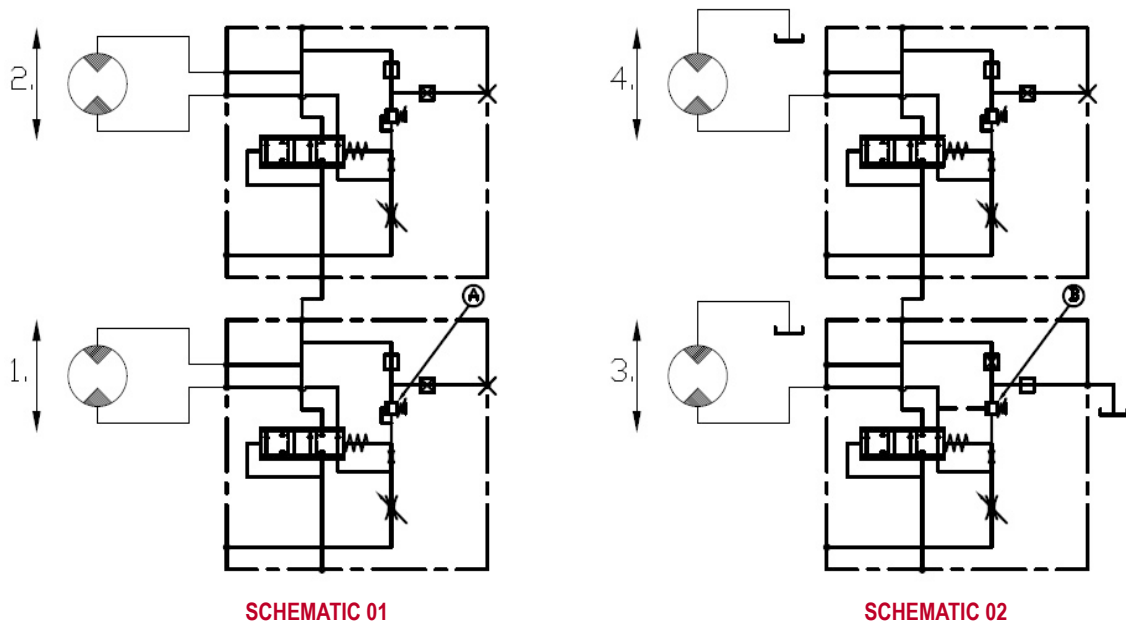
The PL-03 pressure limiting valve is used to control the regulated pressure to the regulated flow regardless of the inlet pressure in the valve.

Hydraulic Data	
Maximum Operating Pressure Port 1	320 bar [4640 psi]
Pressure Range	30-320 bar [435-4640 psi]



PL-03 PERFORMANCE
Pressure Limiter
Flow Characteristics





SCHEMATIC 01

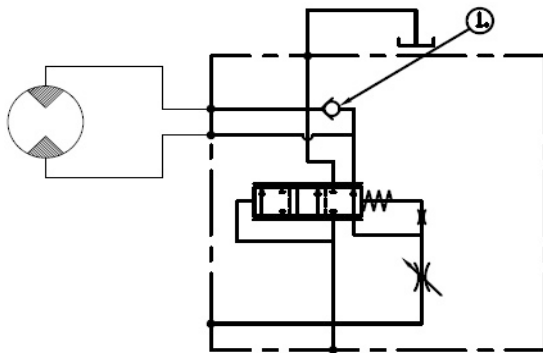
Two motors in series

Two motors (1) and (2) connected in series. Pressure relief valve (A) for motor (1) will work as a torque limiter controlling the max ΔP over the motor.

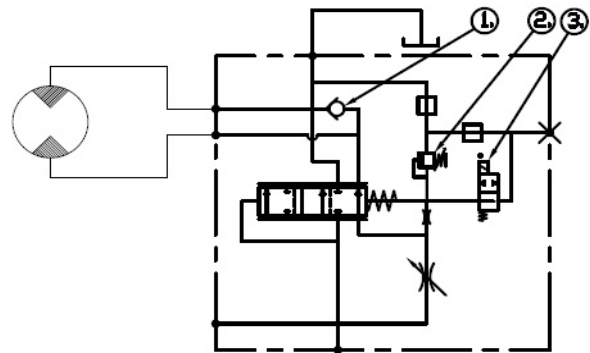
SCHEMATIC 02

Two motors parallel

Two motors connected in parallel (3) and (4). The second valve (4) use the bypass oil from valve (3). The pressure limiter valve (B) controls the max pressure of the motor (3) independently of the max pressure in the system. Motor (4) can run with a higher pressure than motor (3).



SCHEMATIC 03



SCHEMATIC 04

SCHEMATIC 03**Integrated check valve**

Integrated check valve (1) in the PFCV is incorporated between the regulated priority flow line and the bypass line. This check valve will protect the system against cavitation.

SCHEMATIC 04**Relief and Electrical Unloading valve**

The PFCV valve can also be equipped with a relief valve (2) to control the pressure and also with electrical Unloading valve (3) to stop the flow out from the regulated flow port and dump all flow out on the bypass port.

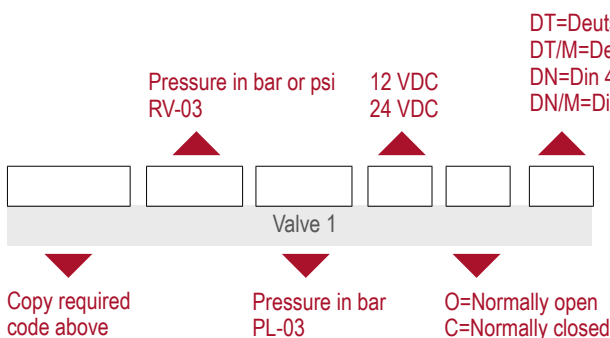
Please find below the code to order a single unit valve. Single unit valves can be ordered with or without brackets (see page 6). Please fill out all the information in white boxes. The grey boxes mean that the option is not available on this valve version.

Part Number	Rel. Valve Pressure setting in bar	Pressure limiter set. in bar	Unload. valve specify 12 or 24 VDC	Funct.	Connect.
14040-2S	-	-	-	-	-
14041-2S	-	-	-	-	-
12042-2S	-	-	-	-	-
12043-2S	-	-	-	-	-
14044-2S	-	-	-	-	-
14045-2S	-	-	-	-	-
14046-2S	-	-	-	-	-
14047-2S	-	-	-	-	-
14048-2S	-	-	-	-	-
14049-2S	-	-	-	-	-
14050-2S	-	-	-	-	-
14051-2S	-	-	-	-	-
14052-2S	-	-	-	-	-
14053-2S	-	-	-	-	-
14054-2S	-	-	-	-	-
14055-2S	-	-	-	-	-
14056-2S	-	-	-	-	-
14057-2S	-	-	-	-	-
14058-2S	-	-	-	-	-
14059-2S	-	-	-	-	-
14060-2S	-	-	-	-	-
14061-2S	-	-	-	-	-
14062-2S	-	-	-	-	-
14063-2S	-	-	-	-	-
14064-2S	-	-	-	-	-
14065-2S	-	-	-	-	-
14066-2S	-	-	-	-	-
14067-2S	-	-	-	-	-

Valve 1

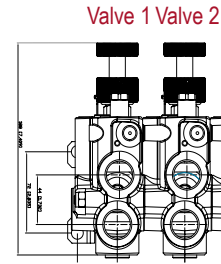
Part Number	Rel. Valve Pressure setting in bar	Pressure limiter set. in bar	Unload. valve specify 12 or 24 VDC	Funct.	Connect.
14068-2S	-	-	-	-	-
14069-2S	-	-	-	-	-
14070-2S	-	-	-	-	-
14071-2S	-	-	-	-	-
14072-2S	-	-	-	-	-
14073-2S	-	-	-	-	-
14074-2S	-	-	-	-	-
14075-2S	-	-	-	-	-
14076-2S	-	-	-	-	-
14077-2S	-	-	-	-	-
14078-2S	-	-	-	-	-
14079-2S	-	-	-	-	-
14080-2S	-	-	-	-	-
14081-2S	-	-	-	-	-
14082-2S	-	-	-	-	-
14083-2S	-	-	-	-	-
14084-2S	-	-	-	-	-
14085-2S	-	-	-	-	-
14086-2S	-	-	-	-	-
14087-2S	-	-	-	-	-
14088-2S	-	-	-	-	-
14089-2S	-	-	-	-	-
14090-2S	-	-	-	-	-
14091-2S	-	-	-	-	-
14092-2S	-	-	-	-	-
14093-2S	-	-	-	-	-
14094-2S	-	-	-	-	-
14095-2S	-	-	-	-	-

Valve 1



DT=Deutsch DT04-2P DTN
 DT/M=Deutsch DT04-2P DTN manual override
 DN=Din 43650
 DN/M=Din 43650 manual override (Push-Pull version as standard, Twist version on request)

Please find below the code to order two assembled valves. The valves must be ordered without brackets but the complete assembled bloc will be equipped with mounting brackets (see page 6). Please fill out all the information in white boxes. The grey boxes mean that the option is not available on this valve version.



Part Number	Rel. Valve		Unload. valve specify 12 or 24 VDC	Funct.	Connect.
	Pressure setting in bar	Pressure limiter set. in bar			
14040-2S/1	-	-	-	-	-
14041-2S/1	-	-	-	-	-
14044-2S/1	-	-	-	-	-
14045-2S/1	-	-	-	-	-
14048-2S/1		-	-	-	-
14049-2S/1		-	-	-	-
14052-2S/1		-	-	-	-
14053-2S/1		-	-	-	-
14060-2S/1		-	-	-	-
14061-2S/1		-	-	-	-
14068-2S/1	-		-	-	-
14069-2S/1	-		-	-	-
14072-2S/1	-	-			
14073-2S/1	-	-			
14076-2S/1	-	-			
14077-2S/1	-	-			
14080-2S/1	-	-			
14081-2S/1	-	-			
14084-2S/1	-	-			
14085-2S/1	-	-			

Valve 1

Part Number	Rel. Valve	
	Pressure setting in bar	Pressure limiter set. in bar
14040-2S/1	-	-
14041-2S/1	-	-
14044-2S/1	-	-
14045-2S/1	-	-
14048-2S/1		-
14049-2S/1		-
14052-2S/1		-
14053-2S/1		-
14080-2S/1	-	-
14081-2S/1	-	-
14084-2S/1	-	-
14085-2S/1	-	-

Valve 2

DT=Deutsch DT04-2P DTN
DT/M=Deutsch DT04-2P DTN man. override
DN=Din 43650
DN/M=Din 43650 manual override

Pressure in bar or psi RV-03

12 VDC
24 VDC

DT DT/M DN DN/M

Copy required code above

Pressure in bar PL-03

O=Normally open
C=Normally closed

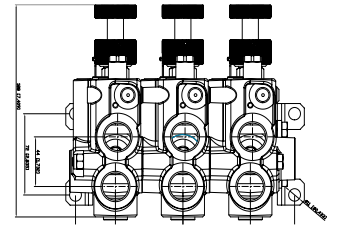
Pressure in bar or psi RV-03

Copy required code above

Pressure in bar PL-03

Please find below the code to order three assembled valves. The valves must be ordered without brackets but the complete assembled bloc will be equipped with mounting brackets (see page 6). Please fill out all the information in white boxes. The grey boxes mean that the option is not available on this valve version.

Valve 1 Valve 2 Valve 3



Part Number	Rel. Valve Pressure setting in bar	Pressure limiter set. in bar	Unload. valve specify 12 or 24 VDC	Connect.
14040-2S/1	-	-	-	-
14041-2S/1	-	-	-	-
14044-2S/1	-	-	-	-
14045-2S/1	-	-	-	-
14048-2S/1		-	-	-
14049-2S/1		-	-	-
14052-2S/1		-	-	-
14053-2S/1		-	-	-
14060-2S/1		-	-	-
14061-2S/1		-	-	-
14068-2S/1	-		-	-
14069-2S/1	-		-	-
14072-2S/1	-	-		
14073-2S/1	-	-		
14076-2S/1	-	-		
14077-2S/1	-	-		
14080-2S/1	-	-		
14081-2S/1	-	-		
14084-2S/1	-	-		
14085-2S/1	-	-		

Valve 1

Part Number	Rel. Valve Pressure setting in bar	Pressure limiter set. in bar
14040-2S/2	-	-
14041-2S/2	-	-
14044-2S/2	-	-
14045-2S/2	-	-
14048-2S/2		-
14049-2S/2		-
14052-2S/2		-
14053-2S/2		-
14080-2S/2	-	-
14081-2S/2	-	-
14084-2S/2	-	-
14085-2S/2	-	-

Valve 2

Part Number	Rel. Valve Pressure setting in bar	Pressure limiter set. in bar
14040-2S/3	-	-
14041-2S/3	-	-
14044-2S/3	-	-
14045-2S/3	-	-
14048-2S/3		-
14049-2S/3		-
14052-2S/3		-
14053-2S/3		-
14080-2S/3	-	-
14081-2S/3	-	-
14084-2S/3	-	-
14085-2S/3	-	-

Valve 3

DT=Deutsch
DT/M=Deutsch man. override
DN=Din 43650
DN/M=Din 43650 man. override

Pressure in bar or psi
RV-03

12 VDC
24 VDC

Valve 1

Copy required code above

Pressure in bar
PL-03

O=Normally open
C=Normally closed

Pressure in bar or psi
RV-03

Valve 2

Copy required code above

Pressure in bar
PL-03

Pressure in bar or psi
RV-03

Valve 3

Copy required code above

Pressure in bar
PL-03

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