



# DIRECTIONAL CONTROL VALVE SERIES CV 601



**NIMCO**  
**NIMCO**  
**NIMCO**  
**CONTROLS**



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## GENERAL INFORMATION

The **CV 601** is a robust single spool monoblock valve designed to offer its user very low pressure drops and with the option of additional spool functions by using a High Pressure Carry-Over Adaptor (Power Beyond). The valve is designed for a maximum working pressure of 320 bar (4600 psi.) with a flow from 25 to 180 l/min (6.6-48 US GPM).

The **CV 601** valve offers its user optimised characteristics with regard to function, capacity and quality. It is designed with the machine builders high demands of cost effectiveness, function and need of exceptionally good load maneuverability in mind. Suitable areas of use are dumpers, loaders and other equipment where precise load control is required.

Although the valves external dimensions are small, it does allow high internal flows and can be equipped with a large number of accessories as standard. The uniquely designed canal system results in exceptionally low pressure drops leading to improved performance and longer life not only of the control valve but also of the other components in the hydraulic system. It can be fitted with two main relief valves to allow for up to 180 l/min (48 US GPM) flow.

The **CV 601** is manufactured using the highest quality alloy cast iron which in combination with NIMCO's advanced machining and control methods assures the precise accuracy of every component. Each valve is tested and the results documented prior to despatch.

### **Minimised spool leakage.**

Hard chromium plated spools, low friction and a specially developed honing method gives absolute minimum spool leakage of the valve.

### **Easy assembly.**

The valve has two pressure inlets and two tank outlets allowing pipes and hoses to be connected either from the side or top of the valve.

### **Excellent load control.**

The CV 601 has load check valves and can be fitted with both standard spools and with specially designed spools for specific metering needs which will provide optimum control characteristics.

### **Full utilisation of the spool stroke.**

The optimised soft maneuver grooves integrated in each spool and the precise machining of every component allows the entire stroke of the spool to be used. This allows full control of the load whether the operator is using very little or full flow capacity. In addition the movement of any spool in any direction will give the same speed of machine function, enhancing security and reliability.

### **Uniform and low lever forces.**

By combining the unique design features of the valve body and the spools, an excellent balance of the dynamic forces is achieved throughout the entire pressure and flow range. This keeps spring forces at a minimum and makes the valve very easy to operate by hand lever as well as when any of the NIMCO's remote control valves are used.

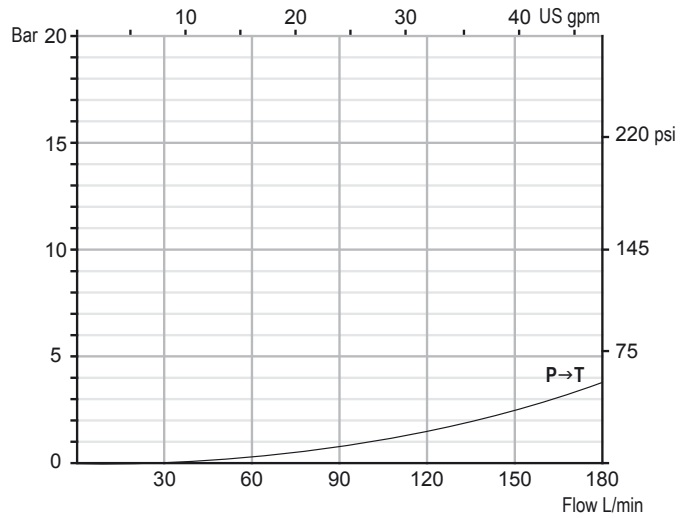
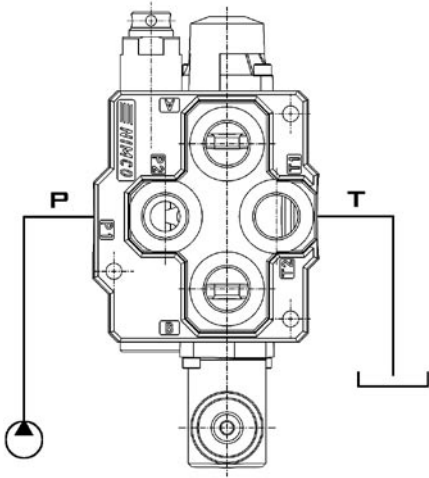
### **Wide range of accessories.**

The CV 601 offers a wide range spool and remote controls such as single wire controls, pneumatic and hydraulic proportional or on/off controls are available.

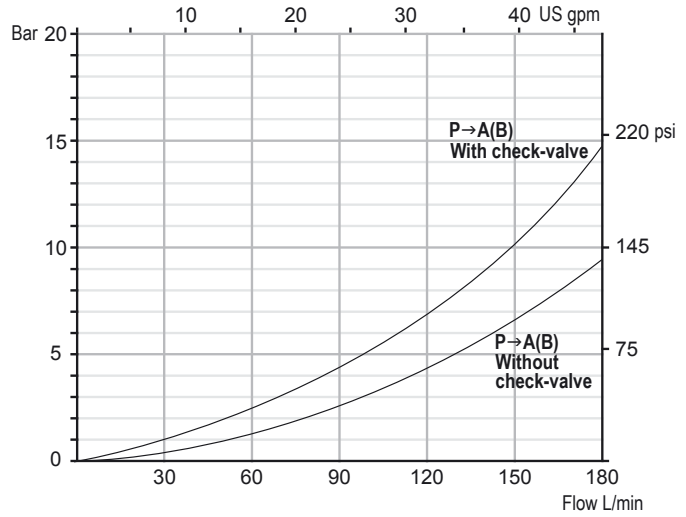
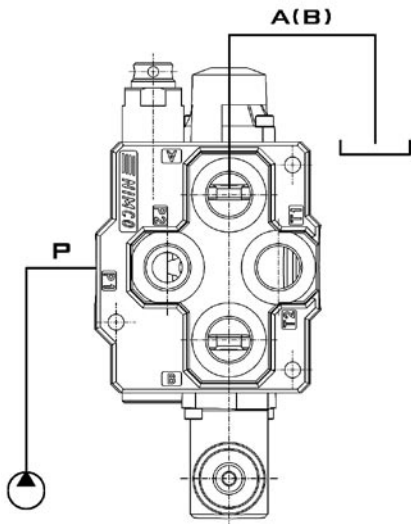
<b>Max Pressure Setting</b>	<b>bar</b>	<b>psi</b>
Main Relief Valve	320	4600
Tank line	10	145
<b>Flow rates</b>	<b>l/min</b>	<b>US GPM</b>
Maximum for the valve	180	48
<b>Temperature Range</b>	<b>° C</b>	<b>°F</b>
Standard seals NBR BUNA-N seals	-40 to +80	-40 to +176
<b>Internal Leakage A(B) to T</b>	<b>cm<sup>3</sup>/min</b>	<b>inch<sup>3</sup>/min</b>
100 bar (1450 psi) and 46 mm <sup>2</sup> /s (cSt) (117 SSU) viscosity A and B port	Max 10	0.6
<b>Filtration</b>		
Contamination level equal to or better than	18/14 according to ISO 4406	NAS 1638-class 10
<b>Viscosity</b>	<b>mm<sup>2</sup>/s</b>	<b>cSt</b>
Recommended operating Viscosity range	10-400	47 - 1875
Start viscosity up to	1000	4687
<b>Weight</b>	<b>Kg</b>	<b>lbs</b>
CV 601	7.3	16.1

**PERFORMANCE CURVES**

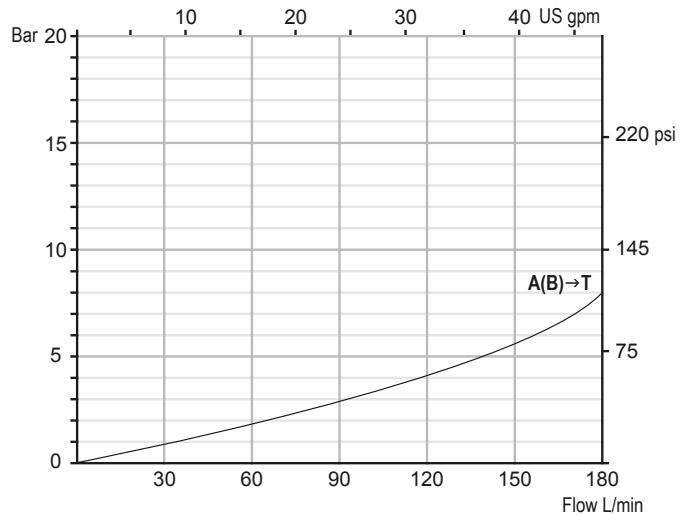
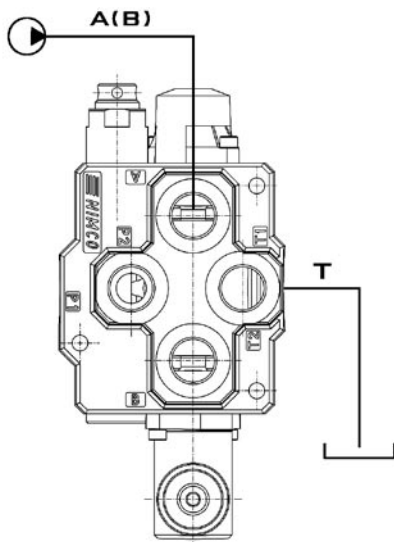
**PRESSURE DROP P→T**



**PRESSURE DROP P→A(B)**

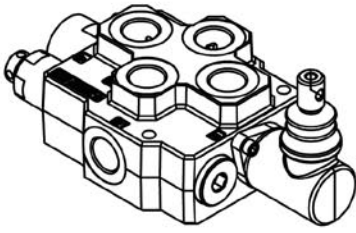


**PRESSURE DROP A(B)→T**

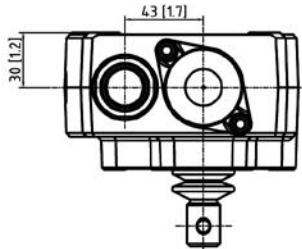


**DIMENSIONS**

US VIEW SETTING

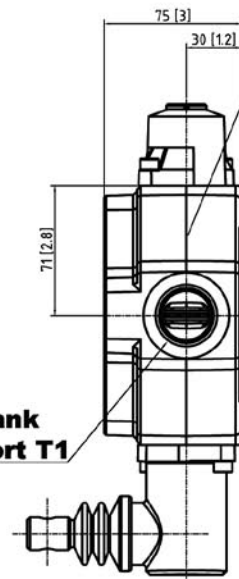
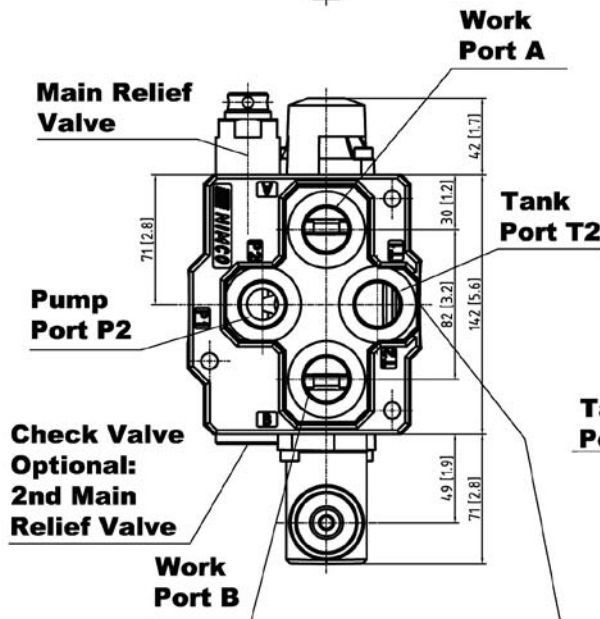
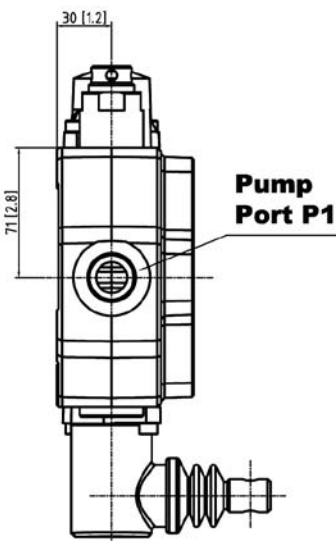


Isometric view



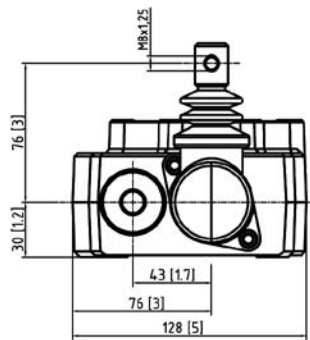
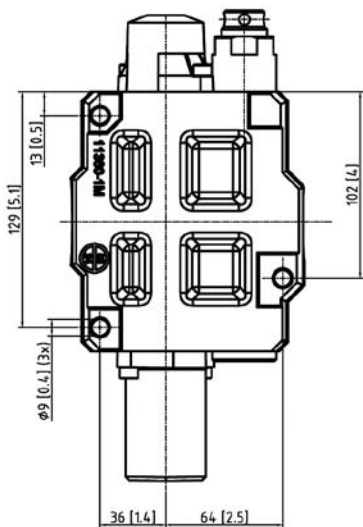
**Type Plate**

Part Number  
 Year - Week  
 Serial number



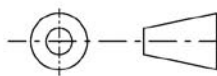
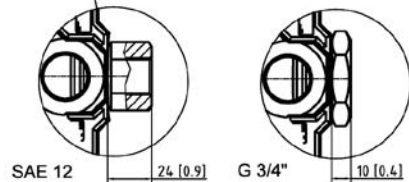
**Mounting Holes**

Through Holes  $\varnothing 9$  [0.35] (3x)



**OPTIONAL:**

**POWER BEYOND,  
 HIGH PRESSURE  
 CARRY OVER**



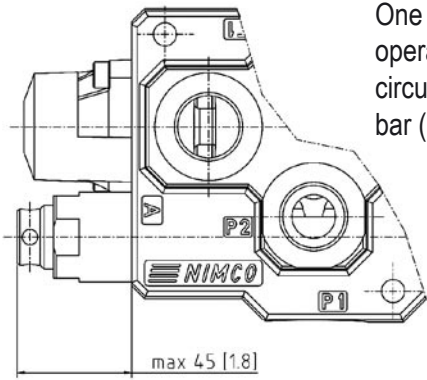
US view setting

**Standard threads**

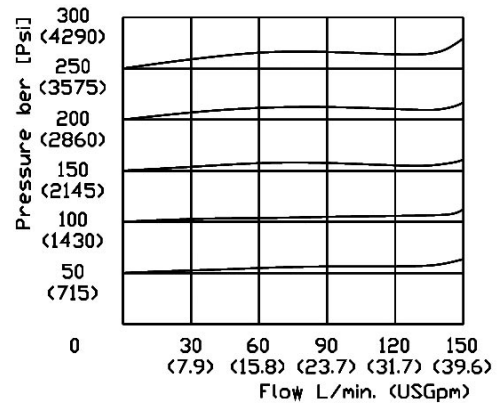
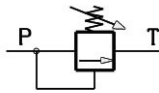
BSP (ISO 228/1), SAE (ISO 11926-1)

- Inlet ports P1 , P2 : BSP G 3/4" , SAE 12
- Work ports A and B: BSP G 3/4" , SAE 12
- Outlet port T2: BSP G 3/4" , SAE 12
- Outlet port T1: BSP G 1" , SAE 16
- HPCO in T1 port: BSP G 3/4" , SAE 12

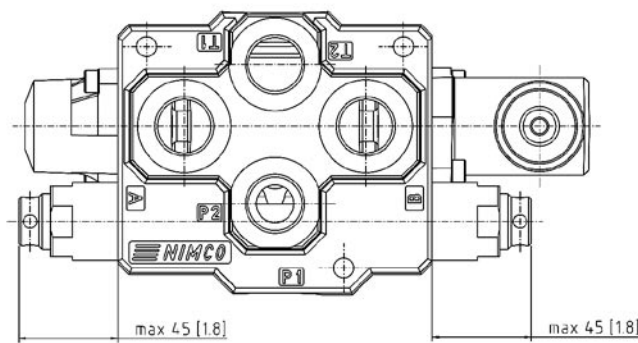
**RELIEF AND CHECK VALVES**



One main relief valve. Differential operated relief valve for the main circuit. Adjustable from 35 to 320 bar (500-4600 psi).

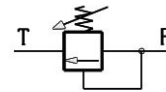
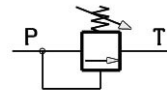


**Part No: 4S-6020**



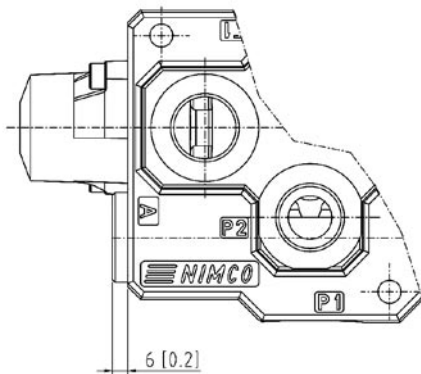
**High Flow Option**

Double Main Relief Valve Option  
 Recommended for high flow (over 120 l/min).

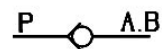


**Part No: 4S-6020**

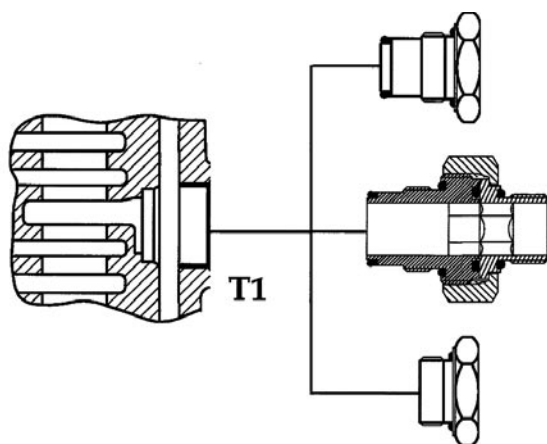
**Part No: 4S-6020**



**Check valve.** Can be used when two or more valves are connected in series and operates with the same pressure. The first valve should then be equipped with a main relief valve RV and the subsequent valves with CV.



**Part No: 4S-11362**



**High Pressure Carry-Over Adaptors (Power Beyond)** are available to serial connect the CV 601 with one or more control valves.

- Part No: 4S-1851** (BSP 1" → 3/4")
- Part No: 4S-65251** (UNF 16 → 12)

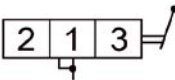
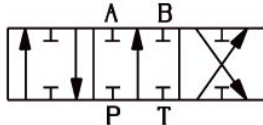
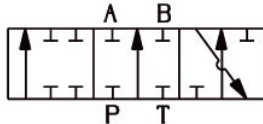
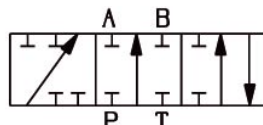
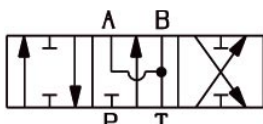
**Part No: 4S-1877** (BSP 1" → 3/4")

**Tank Port Reduction Adaptor** can be installed in the T1 port when the thread size is to be reduced.

- Part No: 4S-1891** (BSP 1" → 3/4")
- Part No: 4B-11599** (UNF 16 → 12)

## SPool - CONTROL CHARACTERISTICS

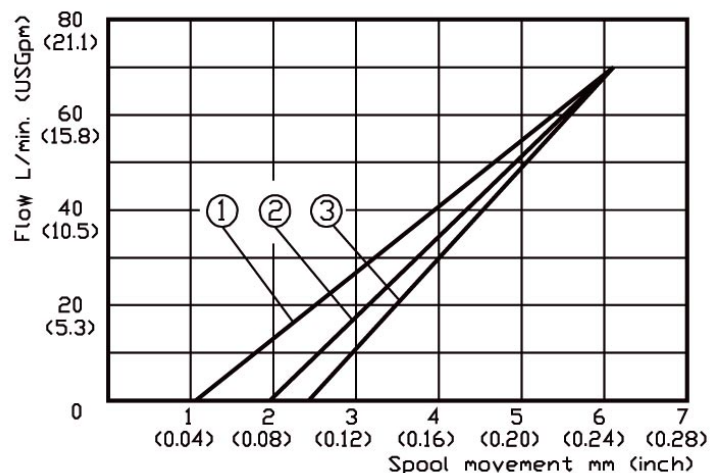
All of NIMCO's spools are designed for specific flow rates in order to achieve optimal load controls characteristics and to fully utilise the spools entire stroke. By optimising the balance between spools and valve housing, spring forces are minimized and exact maneuvering is achieved. Besides the standard spools listed designed for maximum flow and minimum pressure drop there are also special spools available. For further information concerning these type of spools please contact your NIMCO representative.

Spool type	Symbol 	Order code Standard spool	Part No.
Double acting		1X	3B-6037
Single acting A-port		2XA	3B-6111
Single acting B-port		2XB	3B-6050
Motor		4X	3B-6073

### Control Characteristics P-A(B), Spool S.

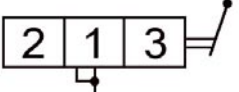
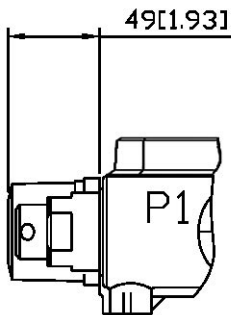
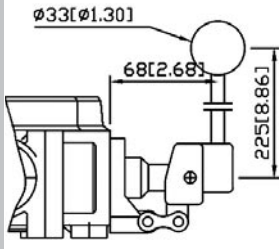
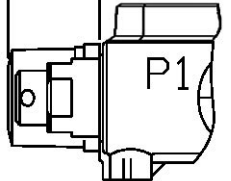
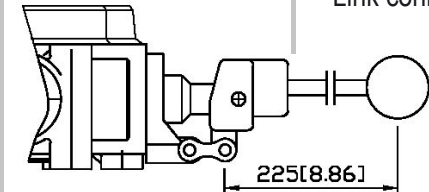
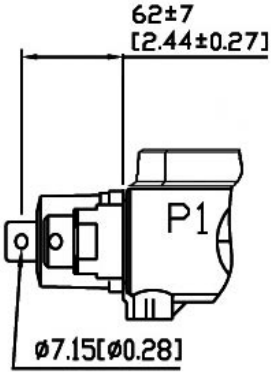
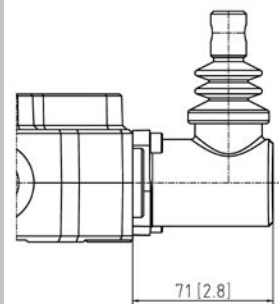
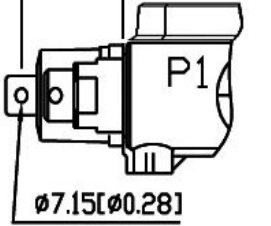
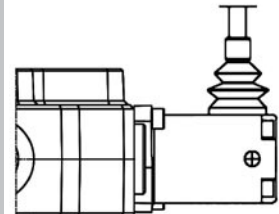
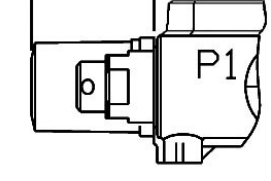
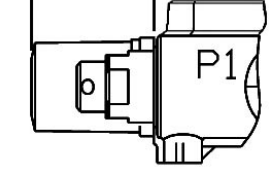
Pump flow 70 l/min (19 US Gpm).  
 Viscosity 25 mm<sup>2</sup>/s (cSt) (117 SSU)  
 Oil temp. 50° C (122° F).

1. Pressure in work port 50 bar (725 psi)
2. Pressure in work port 150 bar (2175 psi)
3. Pressure in work port 250 bar (3625 psi)

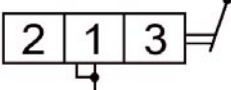
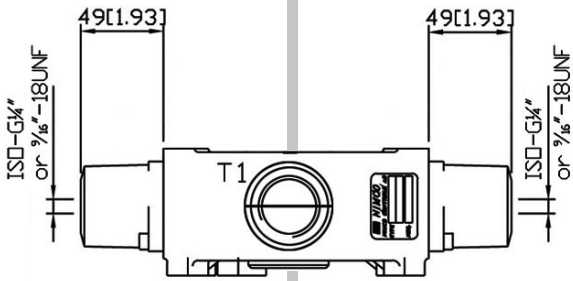


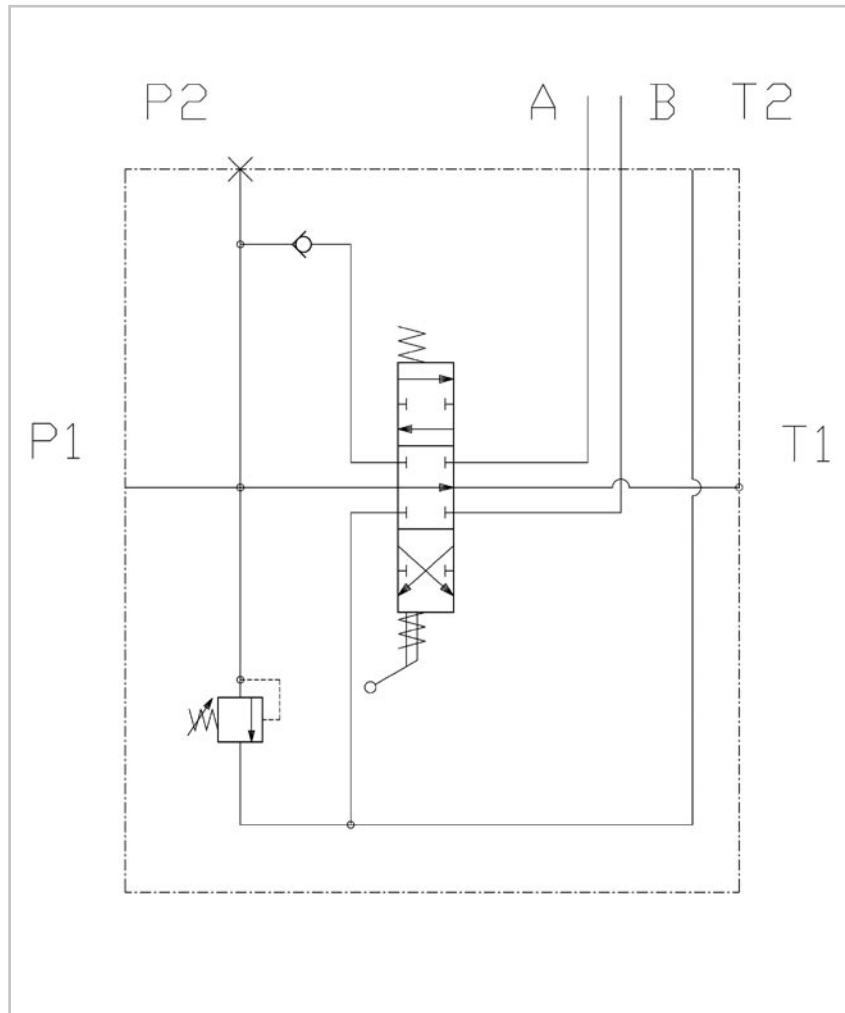


**SPOOL CONTROLS**

Code	Type	A-side		B-side	Type	Code
<b>9</b>	Spring centered. (Standard Spool Control)				Hand lever vertical. Link connection.	<b>S1</b>
<b>9M</b>	Marine version.				Hand lever vertical, opposite direction. Link connection. <i>Other length and hand knobs upon request.</i>	<b>S7</b>
<b>10</b>	Detent in position 1, 2 and 3				Hand lever horizontal. Link connection.	<b>S2</b>
<b>10M</b>	Marine version					
<b>9S</b>	Spring centered with straight through spool				Hand lever vertical. Encased. (Standard Spool Control)	<b>S5</b>
<b>10S</b>	Detent in position 1, 2, 3 and straight through spool.				Hand lever vertical enclosed. Marine version in combination with 9M and 10 M only.	<b>S5M</b>
<b>13</b>	Spring centered. Detent in position 2.					
<b>14</b>	Spring centered. Detent in position 3.					

**SPOOL CONTROLS**

Code	Type	A-side		B-side	Type	Code
P	Pneumatic on/off.					
PP	Pneumatic proportional.					
H	Hydraulic on/off. Pilot pressure 6-15 bar 87-217 psi.			<p>Wire control for 3-position spool.</p>		
HP	Hydraulic proportional. Pilot pressure 6-15 bar 87-217 psi.					<b>3W</b>
EP	Electro-pneumatic on/off. 12v/270mA alt. 24v/150mA. Hirschmann contact is standard. Others are available on request.					
HD	Hydraulic on/off. Pilot pressure 6-15 bar 87-217 psi.					<b>HD</b>
HPD	Hydraulic proportional. Pilot pressure 6-15 bar 87-217 psi.				<p>HD and HPD cannot be combined with any other spool controls.</p>	<b>HPD</b>



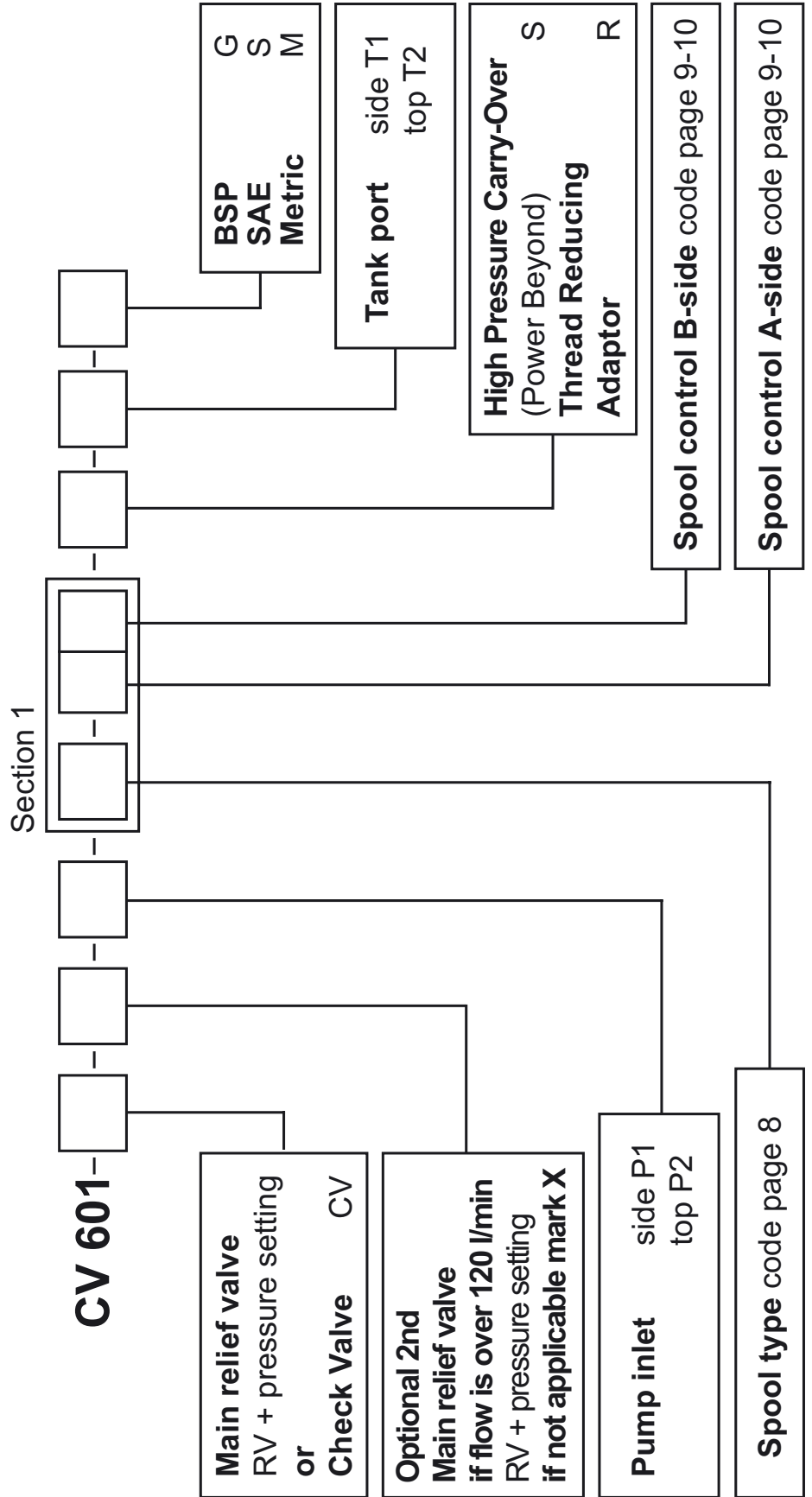
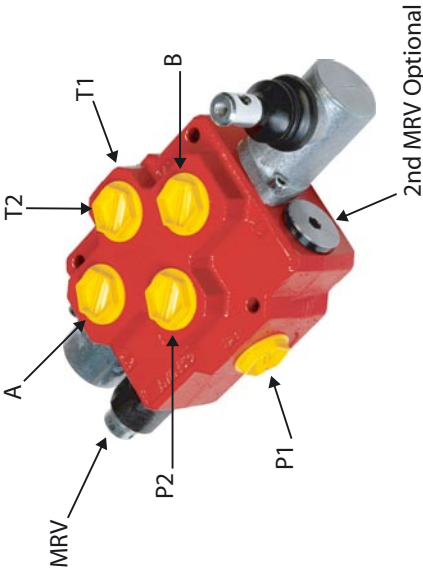
**Example 1**

This Directional Control Valve is equipped with one Main Relief Valve (code RV 150), a double acting spool (code 1X) with a spring centered spool control (code 9) and an enclosed type hand lever control (code S5)

High Pressure Carry-Over Adaptor installed in the T1 port.

Copy this page and use as your technical order form.

Standard Main Pressure Setting is done at 70 lpm (16 US GPM). Please clearly indicate if you want the MRV pressure to be set at another flow.



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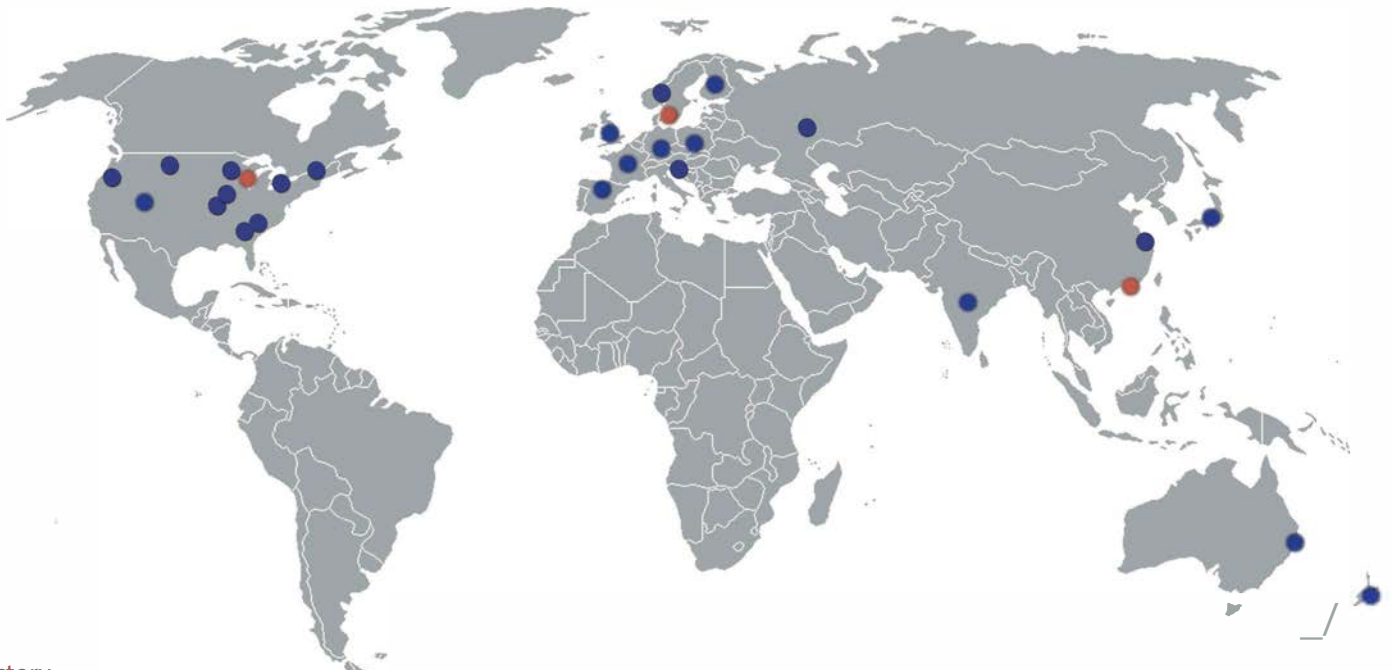
hydraulic systems

## Nimco Controls

North America & Asia  
Corporate Headquarters  
1500 S. Sylvania Avenue (USA)  
Sturtevant, WI 53177  
Phone: 262-884-0950  
salesusa@nimcous.com

## Nimco Controls

Europe  
71-75 Shelton Street  
Covent Garden, London  
WC2H 9JQ United Kingdom  
Phone: +44 20 3772 4540  
saleseurope@nimco.se



- Factory
- Distributor