Directional Control Valve
Series CV 691

nimco
hydraulic systems

Contents

The CV 691 valve is a very compact valve where the directional control valve is combined with a pressure compensated adjustable flow control valve in one body.
It thereby reduces both cost and size by reducing required the number of hoses and fittings and allows for a more compact installation.

The CV 691 has very good flow to pressure characteristic allowing a consistent flow to the motor independent of load pressure.

The CV691 maintains a constant flow output independent of inlet flow changes that are caused by speed changes of the diesel engine.

The CV 691's built-in pressure relief valve gives a very distinct pressure cut-off point allowing the motor to operate from low pressure up to the pressure relief valve setting at a very constant flow.

Easy installation
The valve has two pressure inlets and two tank outlets which allow the plumbing to be connected either from the side or top of the valve.

It is also possible to connect several CV 691 valves in series by using a HPCO adapter together with standard fittings.

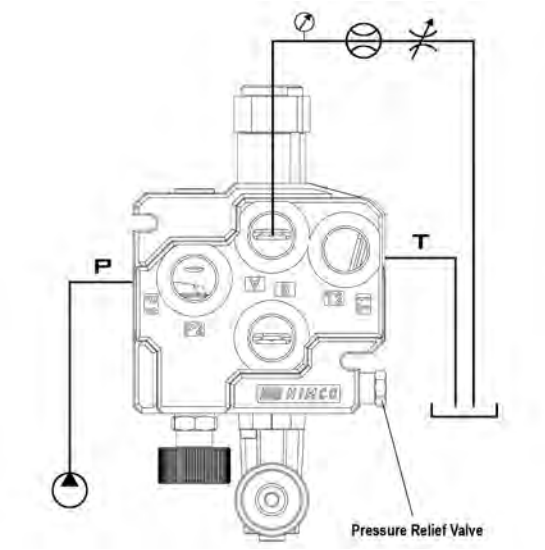
The CV 691 Relief Valves
The relief valve (1) for the ports A & B is connected to the compensator spool and when the pressure setting is reached, the oil dumps to the center gallery.
If a HPCO is installed for the use of downstream valves, a second pressure relief valve (2) is required to control the pressure out from the HPCO in the center gallery
These two relief valves are working independent of each other.

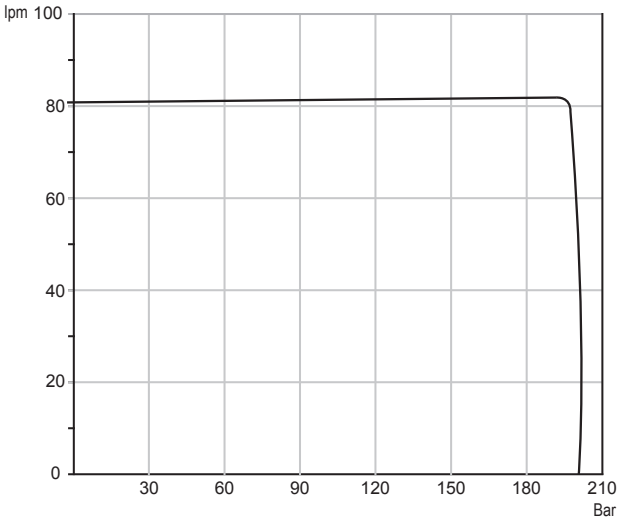
The CV 691 is manufactured using the highest quality alloy cast iron which in combination with Nimco's advanced machining and control methods assure the precise accuracy of every component. Each valve is tested and the results documented prior to shipment.

Wide range of accessories.
The CV 691 offers a wide range of spool and remote controls such as lever controls or cable controls. A hydraulic kick-out is also available.

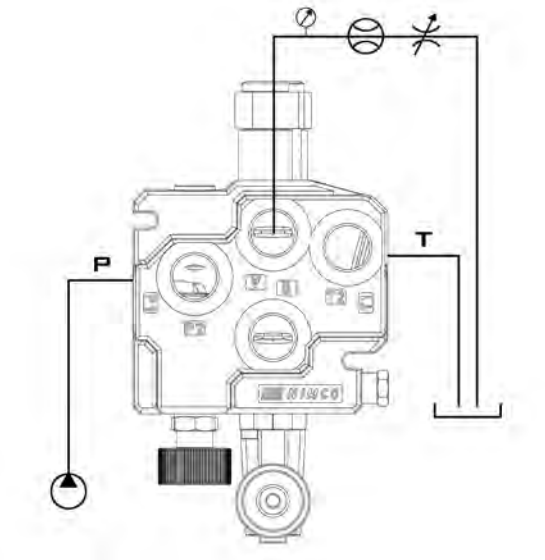
Max Pressure Setting	bar	psi
Main relief valve	320	4600
Tank line	10	145
Flow rates	**l/min**	**USgpm**
Maximum for the valve	110	29
Temperature Range	**°C**	**°F**
Standard seals NBR BUNA-N seals	-40 to +80	-40 to +176
Internal Leakage A(B) to T	**cm³/min**	**inch³/min**
100 bar (1450 psi) and 46 mm²/s (cSt) (216 SSU) viscosity A and B port	Max 10	0.6
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**
CV 691	7.5	16.5

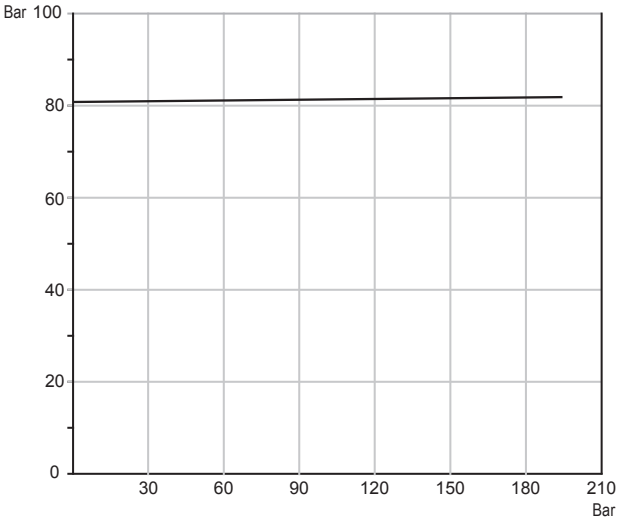
Pressure relief characteristic



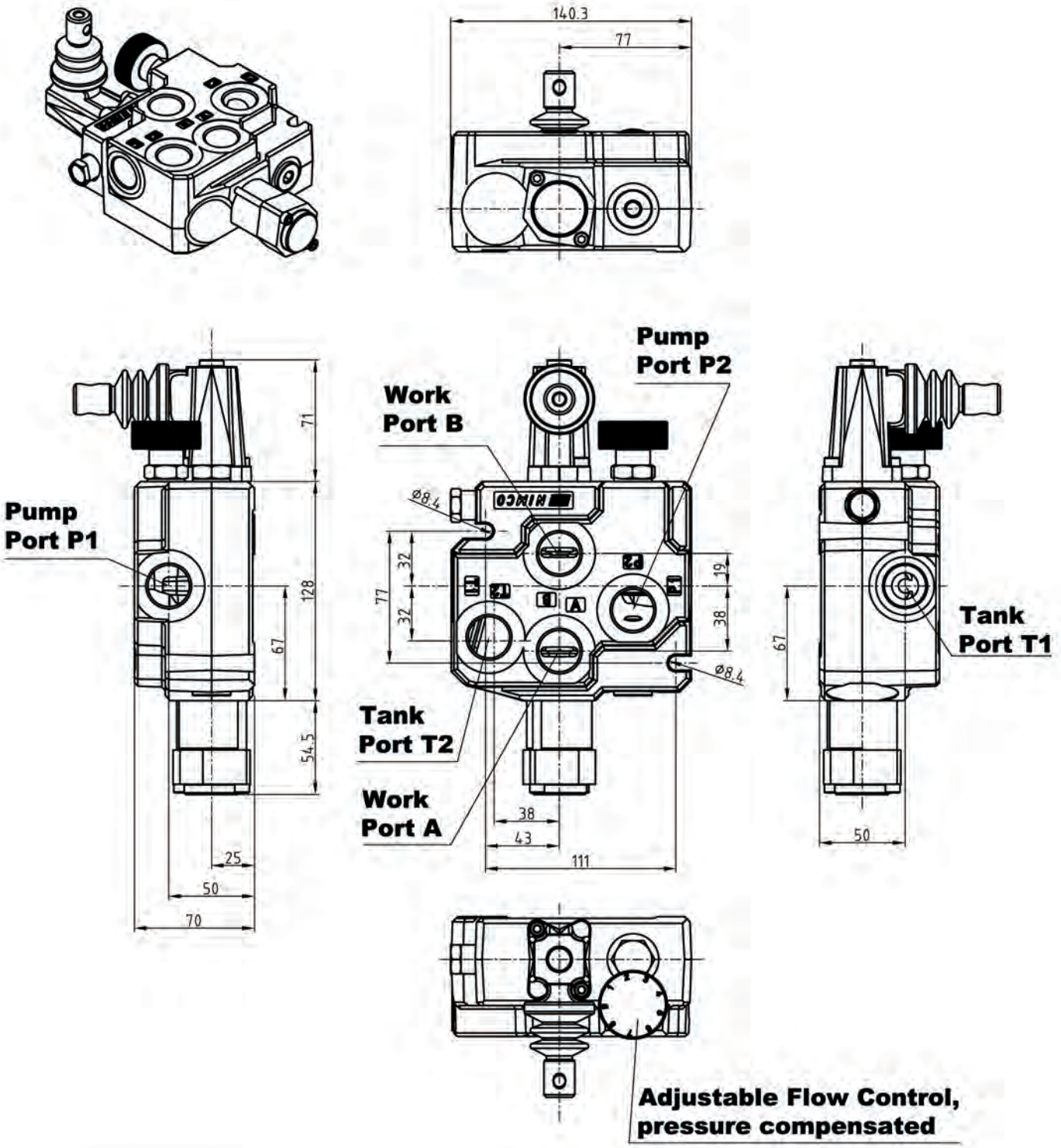


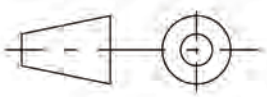
Load independent oil/flow, pressure compensated Spool Characteristic





EUROPEAN VIEW SETTING



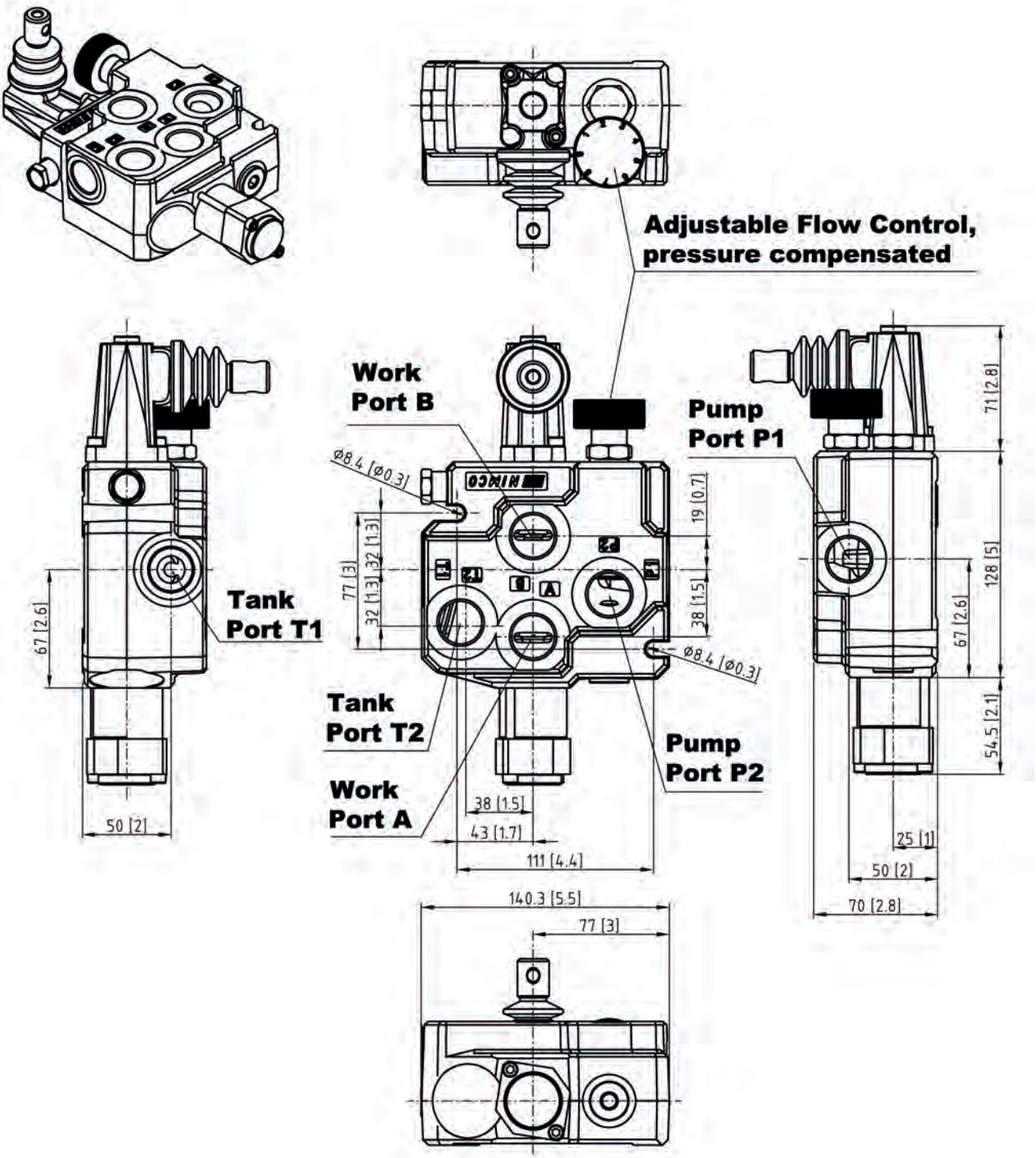


European view setting

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

Inlet ports P1 , P2 :	G 3/4" , SAE 12
Work ports A and B:	G 3/4" , SAE 12
Outlet ports T1 and T2:	G 3/4" , SAE 12

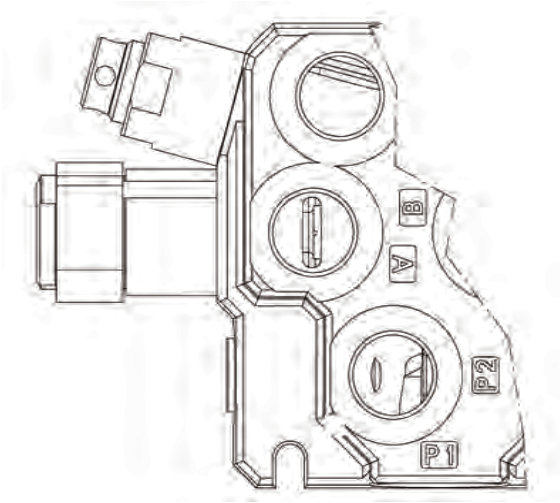
US VIEW SETTING



US view setting

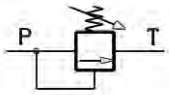
Standard threads
BSP (ISO 228/1), SAE (ISO 11926-1)

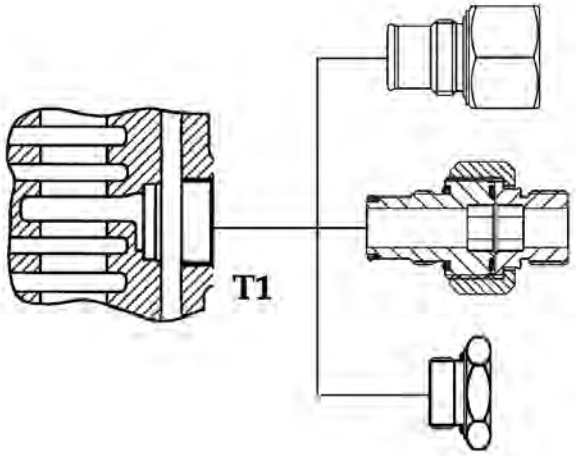
Inlet ports P1 , P2 :	G 3/4" , SAE 12
Work ports A and B:	G 3/4" , SAE 12
Outlet ports T1 and T2:	G 3/4" , SAE 12



Differential operated relief valve adjustable from 35 to 320 bar (500-4600 psi).
Controls the pressure out from the HPCO.

Part No: 4S-6020





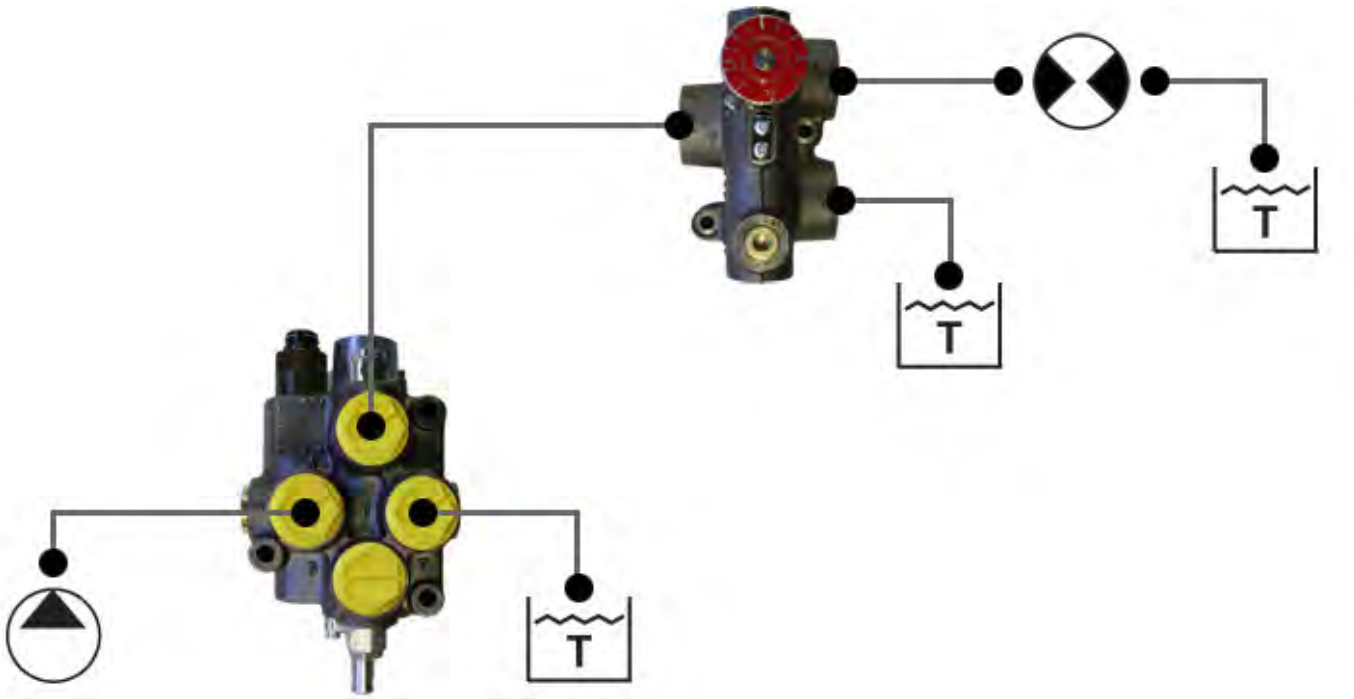
High Pressure Carry-Over Adaptors (Power Beyond) are available to serial connect the CV 601 with one or more control valves.

Part No: 11408-4S (BSP ¾"→ ¾")
(UNF 12 → 12)

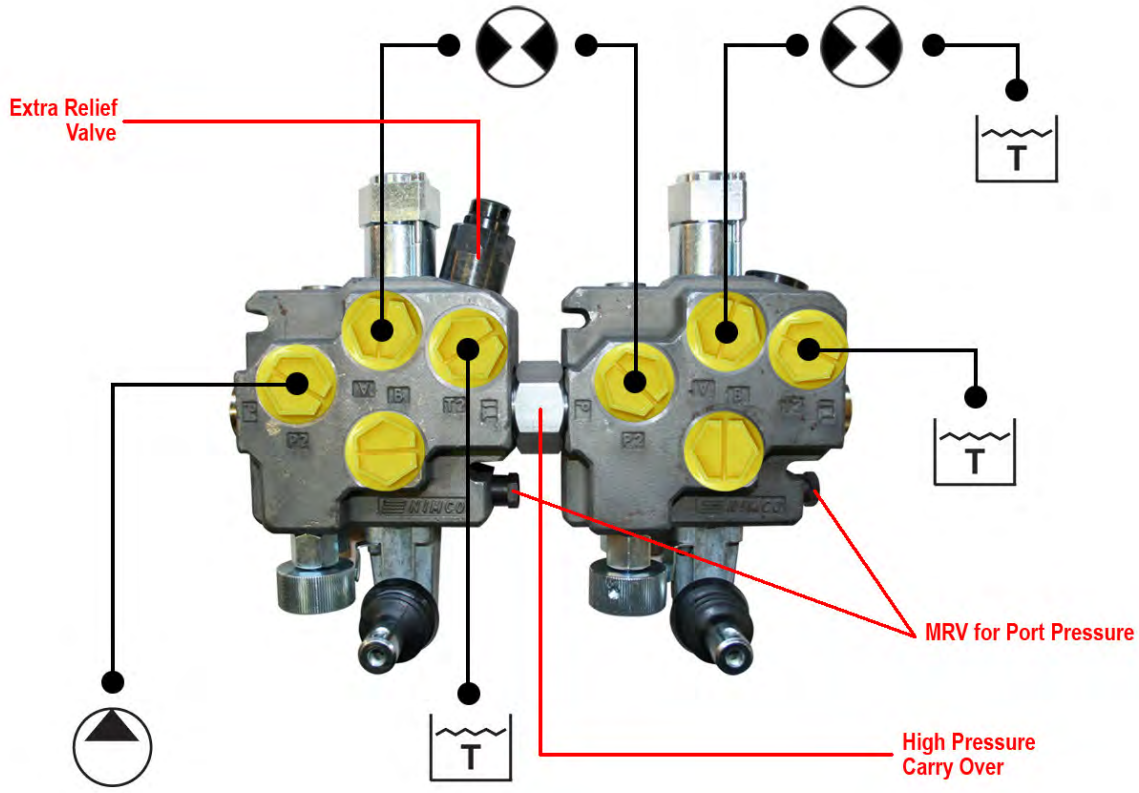
Part No: 11741-4S (BSP ¾"→ ¾")
(UNF 12 → 12)

Tank Port Reduction Adaptator can be installed in the T1 port when the thread size is to be reduced.
Part No: 4S-4384 (BSP ¾" → ½")
(UNF 12 → 10)

ADVANTAGES OF USING INTEGRATED FLOW CONTROL VALVES VS SEPERATE UNITS

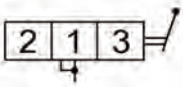
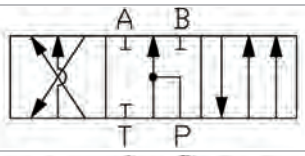
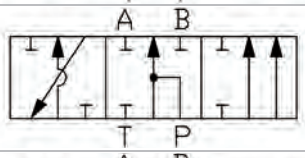
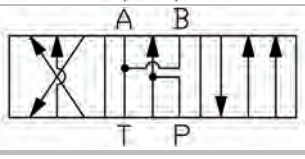


CV791 MOUNTED WITH CV691

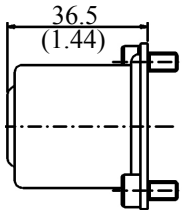
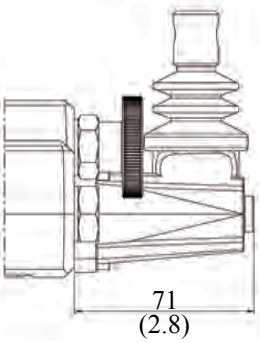
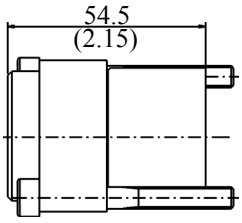
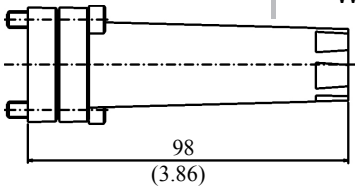


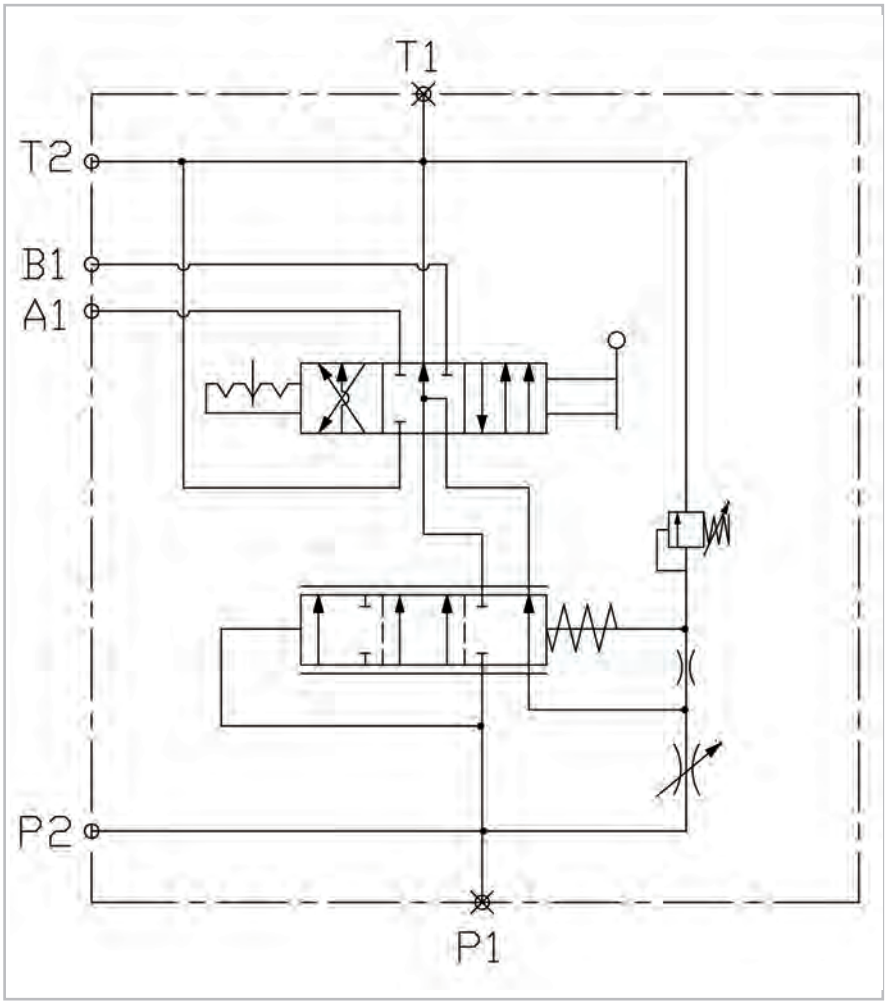
Spool - Control Characteristics

All of NIMCO's spools are designed for specific flow rates in order to achieve optimal load controls characteristics and to fully utilize the spool's entire stroke. By optimizing 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
Double acting		1S
Single acting A-port		2SA
Single acting B-port		2SB
Motor		4S

Spool Controls

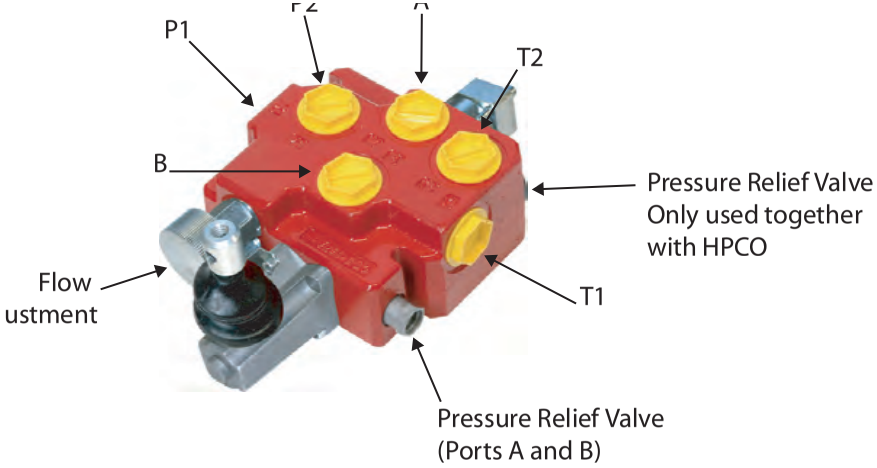
Code	Type	A-side	B-side	Type	Code
9	Spring centered.			Hand lever. Encased	S5
10	Spring centered. Detent in pos. 1, 2 and 3				
13	Spring centered. Detent in pos.2			Wire control	W
14	Spring centered. Detent in pos.3				



Example 1

CV691-RV150-X-P2-1X-10S5-T2-G
This CV691 is equipped with a pressure relief valve at 150 bar (RV150) on the compensated flow, double acting spool (Code 1S) with detent in three positions (code 10) and enclosed type hand lever control (S5).

Copy this page and use as your technical order form.



CV 691– □ – □ – □ – □ – □□ – □ – □ – □

Main relief valve
Port A and B
RV + pressure setting

Relief Valve
Only used together with HPCO and down stream valve operation
RV + pressure setting
if not applicable mark X

Pump inlet side P1
top P2

Spool type code page 9

BSP G
SAE S
Metric M

Tank port side T1
top T2

High Pressure Carry-Over
(Power Beyond) S
Thread Reducing
Adaptor R

Spool control B-side code page 9

Spool control A-side code page 9

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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