



DIRECTIONAL CONTROL VALVE  
SERIES CV 112



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

RELIABILITY FROM QUALITY

Page 3	General Information
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The CV 112 special loader valve has been designed to fit all loaders with a flow rate up to 50 l/min or 13 USgpm and a maximum pressure of 320 bar or 4600 psi.

The CV 112 can be operated both in loaders with either open center systems or LS systems depending on its build configuration.

The CV 112 special loader valve offers the loader builder a number of key features to enhance the loader performance such as :

- Exceptional low spool leakage rates (less than 2 cm<sup>3</sup>/min or 0.12 in<sup>3</sup>/min)
- Load check valves on each spool
- Direct acting main relief valve for fast response to system overpressure
- Float function for the lowering circuit
- Regen function for the tilt circuit
- Direct mounted joystick for both float and regen
- Cable control option
- Power Beyond option
- BSP and SAE threads are standard but also metric and NPTF can be offered upon request

<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>USgpm</b>
Max flow A/B	50	13
<b>Temperature range</b>	<b>°C</b>	<b>°F</b>
Standard seals	-40 to +80	-40 to +176
<b>Spool leakage at</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) viscosity A and B port	2	0.12
<b>Filtration</b>		
Contamination level equal to or better than	19/16 according to ISO 4406	NAS 1638-class 10
<b>Viscosity</b>	<b>mm<sup>2</sup>/s (cSt)</b>	<b>SSU</b>
Recommended operating viscosity range	10-400	47 - 1875
<b>Weight</b>	<b>kg</b>	<b>lbs</b>
CV 112	4,9	10,8
<b>Operating force required for spool movement</b>	<b>N</b>	<b>lbf</b>
Spring centered	130	29
Detent in	230	52
Detent out	200	45
<b>Number of work sections</b>	2	2

**SPOOL OPTIONS**

**STANDARD THREADS**

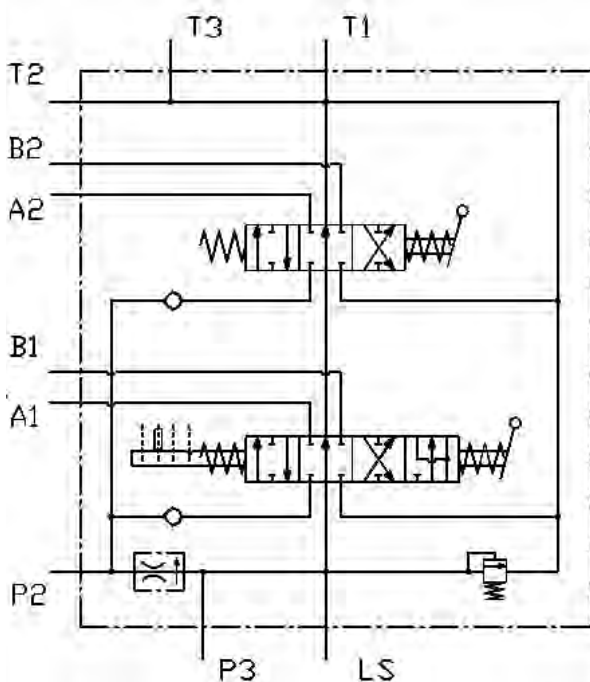
	Port sizes	BSP	UNF	Metric
Inlet	P1	G 3/8	3/4-16 (SAE 8)	M18x1.5
	P2	G 3/8	3/4-16 (SAE 8)	M18x1.5
	P3	G 3/8	3/4-16 (SAE 8)	M18x1.5
Cylinder ports	A-B	G 3/8	9/16-18 (SAE 6)	M16x1.5
Tank	T1	G 1/2	7/8-14 (SAE 10)	M22x1.5
	T2	G 3/8	3/4-16 (SAE 8)	M18x1.5
	T3	G 3/8	3/4-16 (SAE 8)	M18x1.5

**SPOOL FOR OPEN CENTERED VALVES**

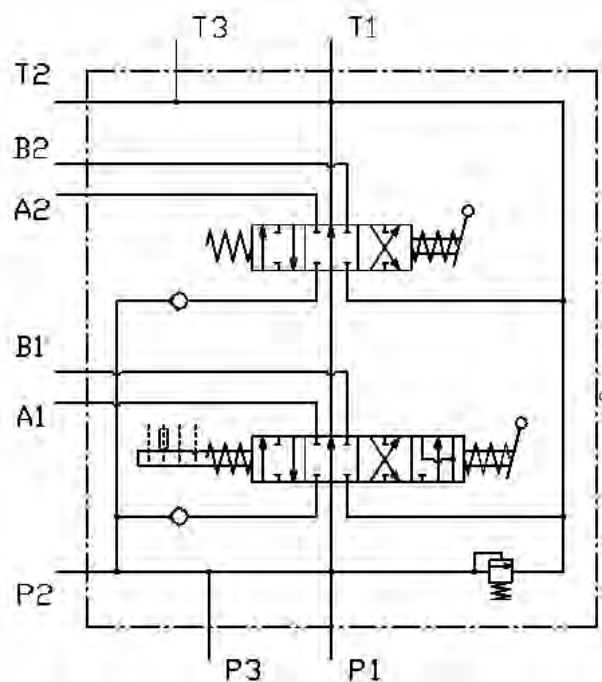
Part No.	Spool type	Type	Symbol	SP-No.
10573-3B	2SA	Single acting A port with metering		SP-10573-3B
10574-3B	2XA	Single acting A port		SP-10574-3B
10309-3B	3X	DA + float		SP-10309-3B
10308-3B	3S	DA + float with metering		SP-10308-3B
10307-3B	3R	DA + float with metering		SP-10307-3B
10575-3B	4X	Motor spool		SP-10575-3B
10576-3B	4S	Motor spool with metering		SP-10576-3B
10310-3B	8R	DA + regen with metering		SP-10310-3B
10311-3B	8S	DA + regen with metering		SP-10311-3B

**SPOOLS FOR LOAD SENSING OPTION**

Part No.	Spool type	Type	Symbol	SP-No.
10577-3B	2RALS	Single acting with metering		SP-10577-3B
10578-3B	2SALS	Single acting with metering		SP-10578-3B
10548-3B	3RLS	DA + float with metering		SP-10548-3B
10549-3B	3SLS	DA + float with metering		SP-10549-3B
10551-3B	8SLS	DA + float with metering		SP-10551-3B
10550-3B	8RLS	DA + float with metering		SP-10550-3B



Closed Center



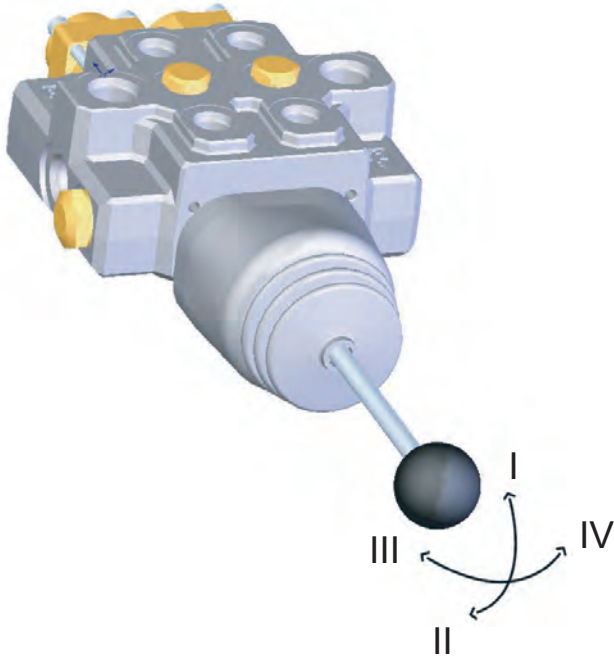
Open Center

Code	Type	A-side	B-side	Type	Code
9	Spring centered.			Hand lever. Encased	<b>S5</b>
10	Detent in pos.1,2 and 3				
11	Spring centered. Detent in pos.4 (FLOAT)			Mechanical joystick for dual-spool control.	<b>S6</b>
12	Spring centered. Detent in pos. 3 and 4				
14	Spring centered. Detent in pos.3				
13	Spring centered. Detent in pos.2			Wire control	<b>W</b>
18	Spring centered. Pressure point in pos.5 (REGEN)				
5	Spring centered. Detent in position 2 and 4		<p>For different joystick and mounting configurations including float and regen functions please see page 8 and 9.</p>		
P	Pneumatic on/off	<p>Cylinder ports facing up</p>			
PP	Pneumatic proportional				
EP	Electropneumatic on/off. 12V/270mA alt. 24V/150mA. Hirschmann connector is standard. Other connectors are available on request.				

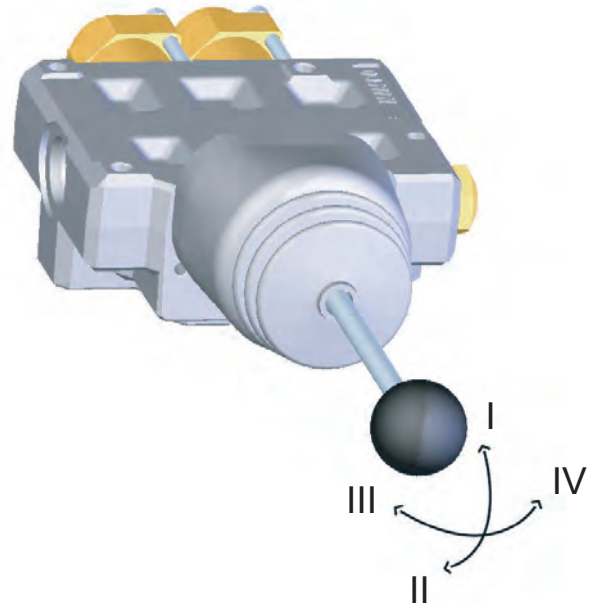
**SPOOL CONTROLS**

JOYSTICK SPECIFICATION - HORIZONTAL MOUNTING

PORTS UP



PORTS DOWN



1. Check port/hose orientation

- Ports up
- Ports down

2. Fill in functions (handwrite)

- Lift
- Lower
- Float
- Curl in
- Curl out
- Regen

3. Valve mounting holes

- Through casting holes
- Threaded bottom holes

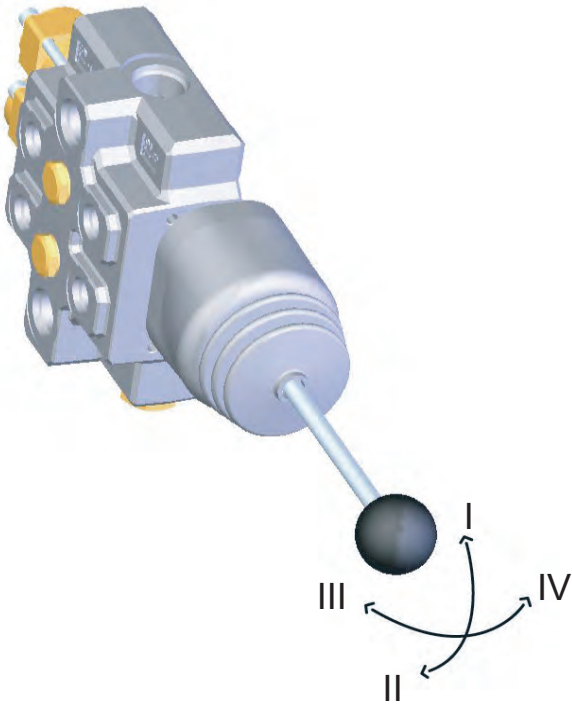
Please fill in corresponding Roman numerals



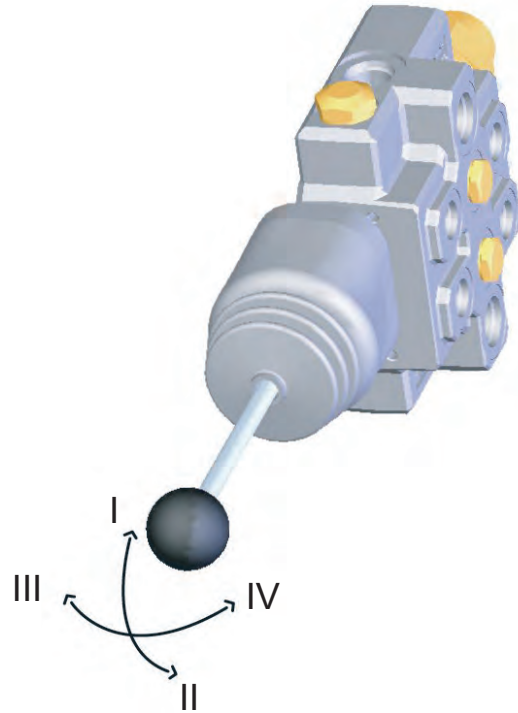
**SPOOL CONTROLS**

JOYSTICK SPECIFICATION - VERTICAL MOUNTING

PORTS LEFT



PORTS RIGHT



1. Check port/hose orientation

- Ports left
- Ports right

2. Fill in functions (handwrite)

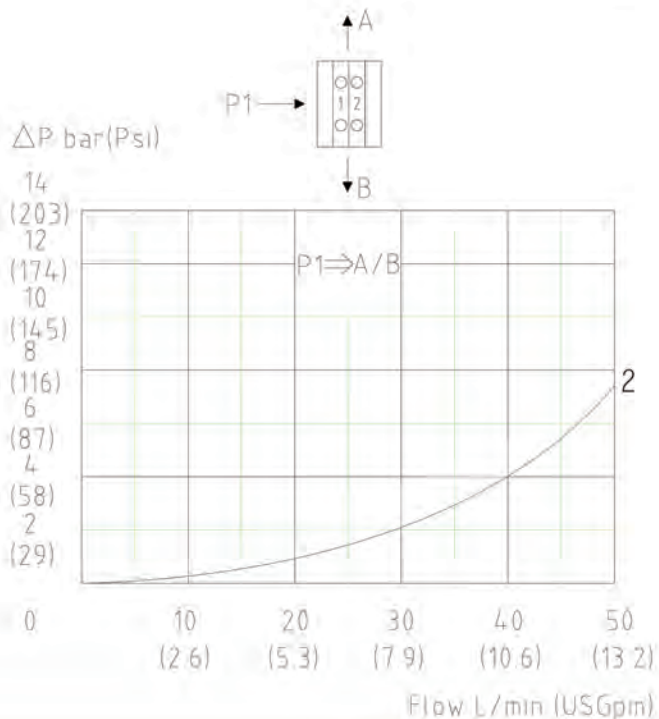
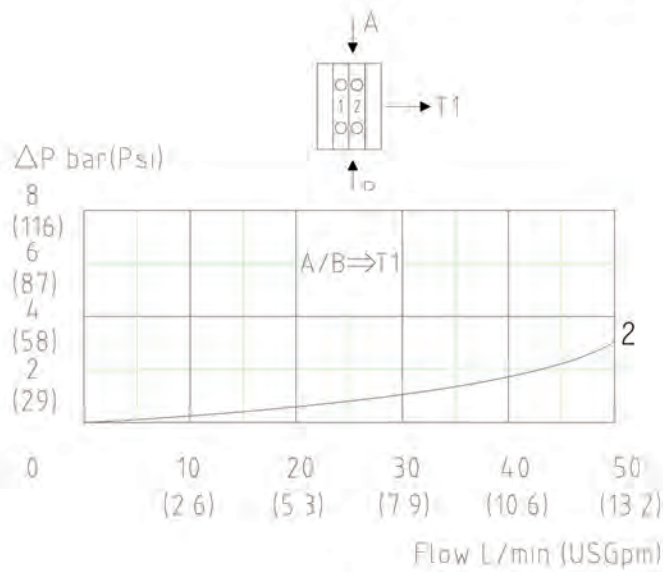
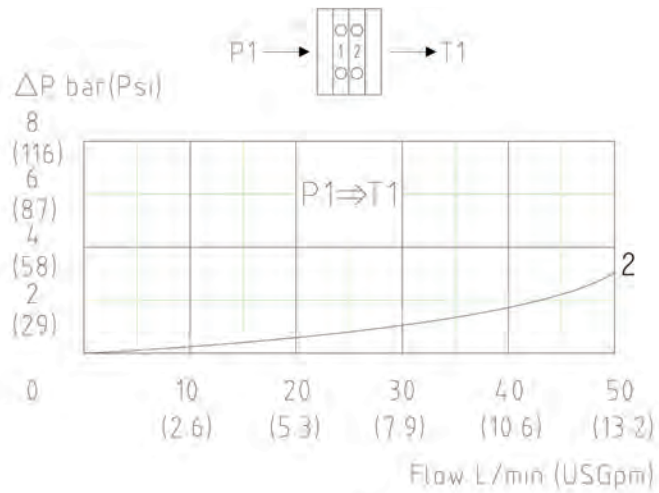
- Lift
- Lower
- Float
- Curl in
- Curl out
- Regen

3. Valve mounting holes

- Through casting holes
- Threaded bottom holes

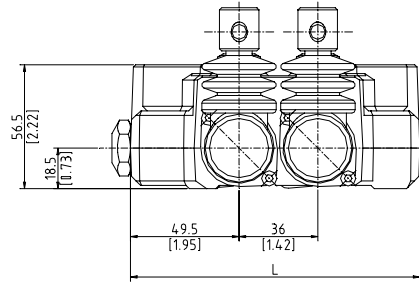
Please fill in corresponding Roman numerals

**PERFORMANCE CURVES**

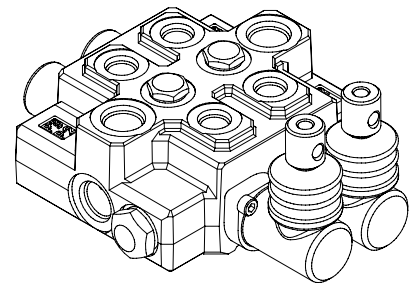
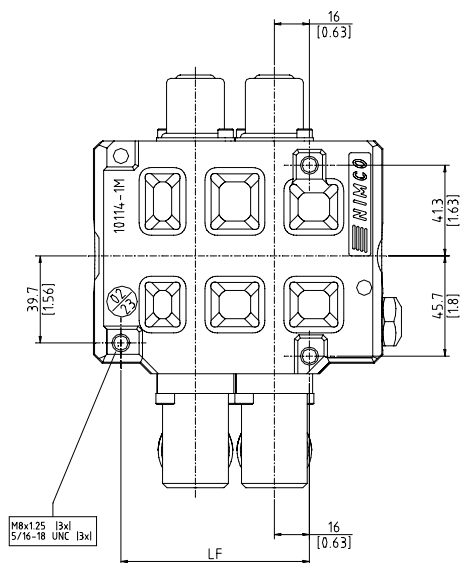
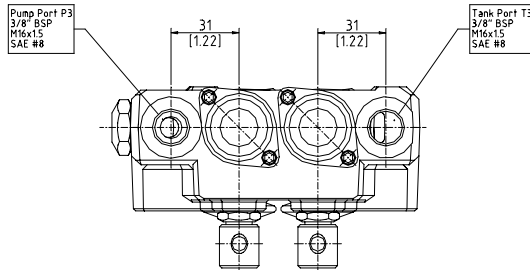
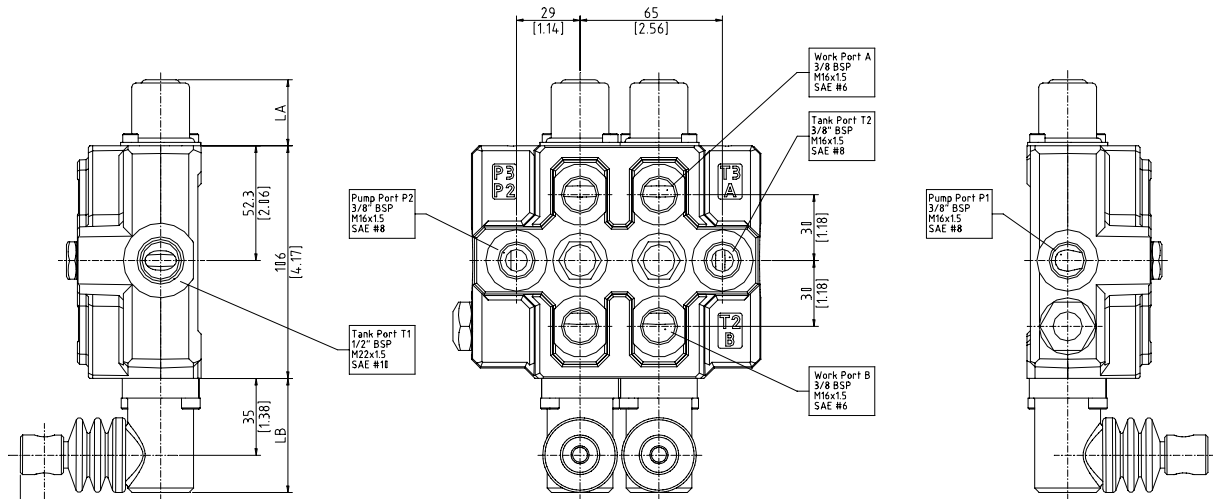


# ASSEMBLY DIMENSIONS

## VALVE WITH ENCASED HAND LEVER

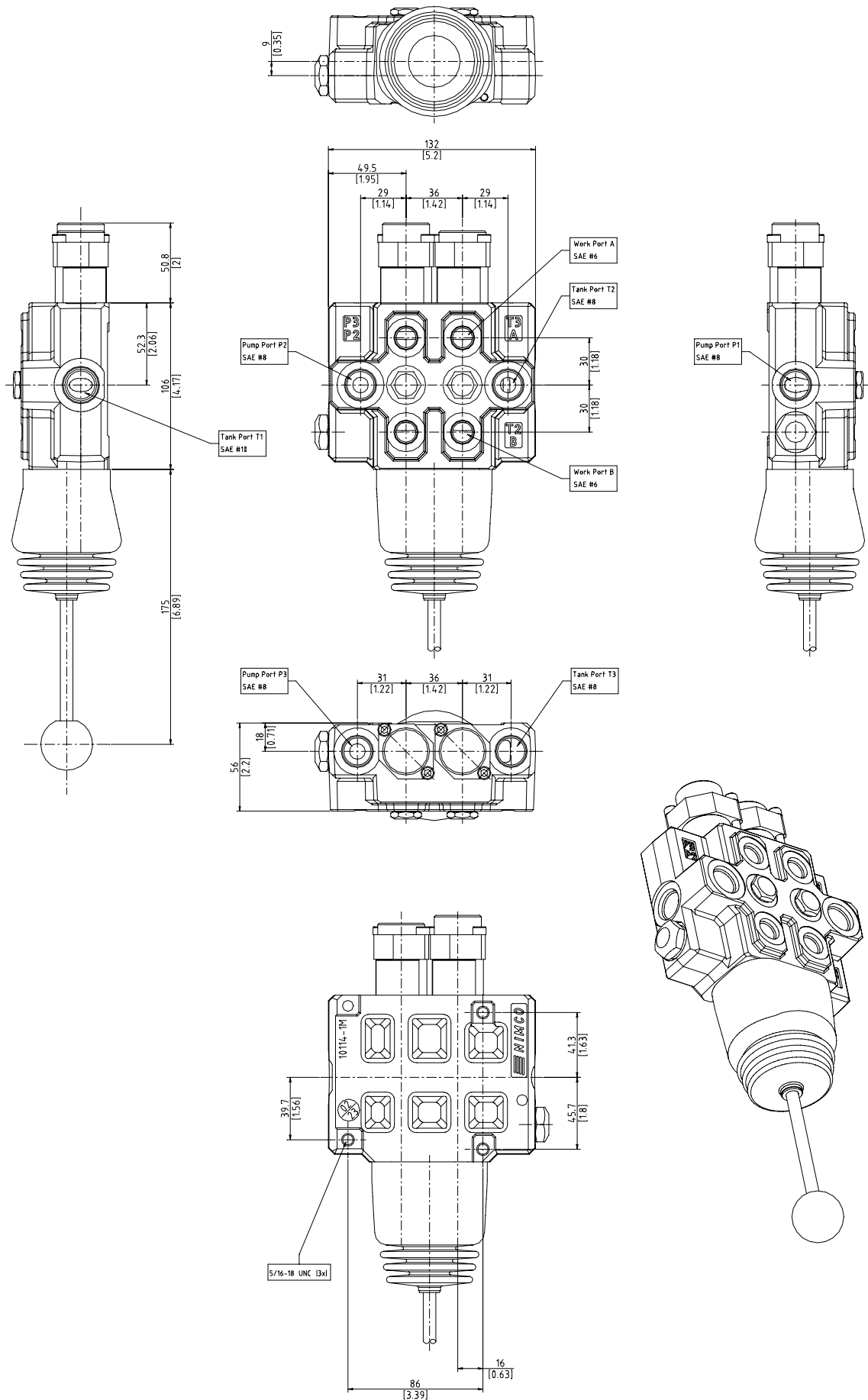


No of sect	L		LF	
	mm	inch	mm	inch
1	96	3.78	50	1.97
2	132	5.20	86	3.39
3	168	6.61	122	4.80
4	204	8.03	158	6.22
5	240	9.45	194	7.64



# ASSEMBLY DIMENSIONS

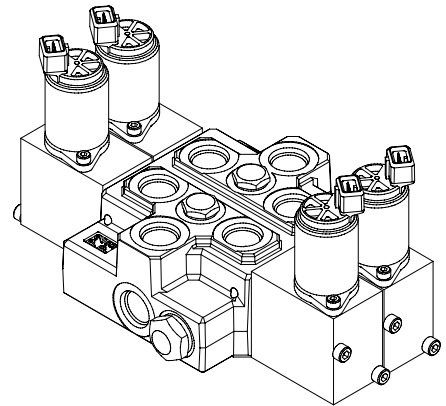
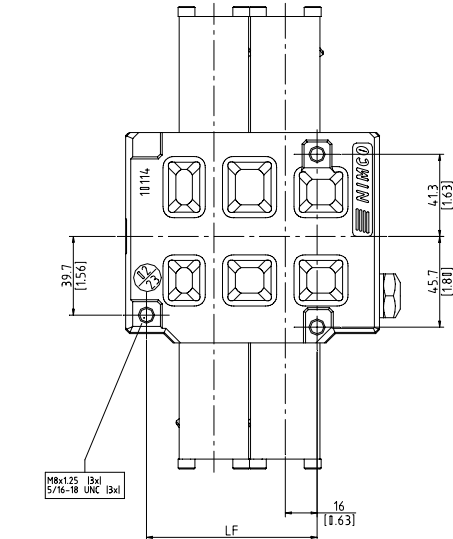
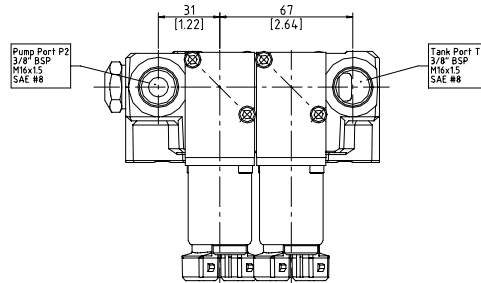
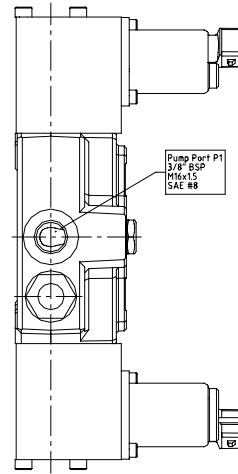
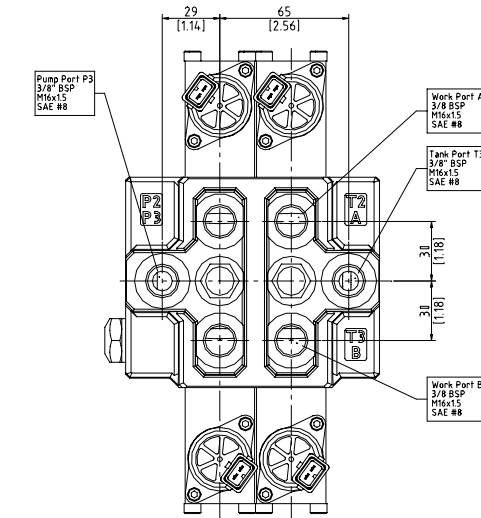
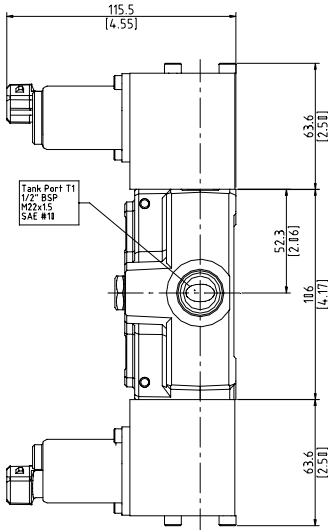
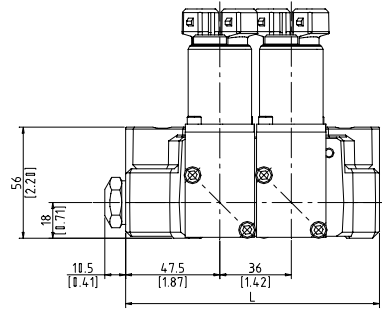
## VALVE WITH MECHANICAL JOYSTICK



# ASSEMBLY DIMENSIONS

## VALVE WITH ELECTRO-HYDRAULIC PROPORTIONAL SPOOL CONTROL

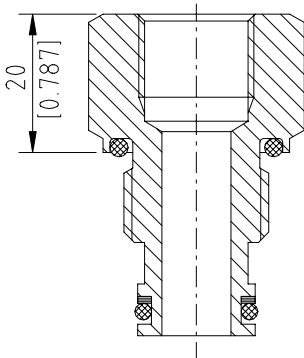
No of sect	L		LF	
	mm	inch	mm	inch
1	92	3.62	50	1.97
2	128	5.04	86	3.39
3	164	6.46	122	4.80
4	200	7.87	158	6.22
5	236	9.29	194	7.64
6	272	10.71	230	9.06



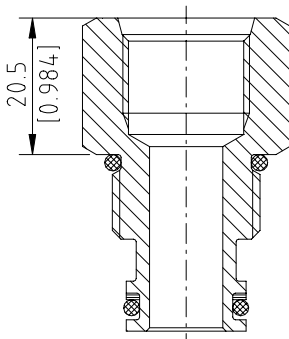
**ACCESSORIES**

High pressure carry-over adapter, should be installed in the T1-port when two or more valves are used in the same circuit. T2 must then be connected to tank.

Part No.10534-4S



Part No.10536-4S



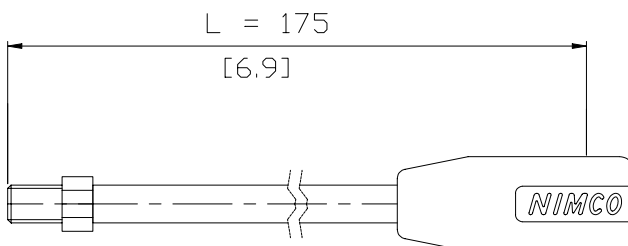
Tank port reduction adapter, can be installed in the T1-port when the thread size is to be reduced.

Type BSP 1/2" to BSP 3/8"  
 Part No.10348-4S

SAE # 10 to SAE # 8  
 Part No.10349-4S

**Lever**

Standard lever :

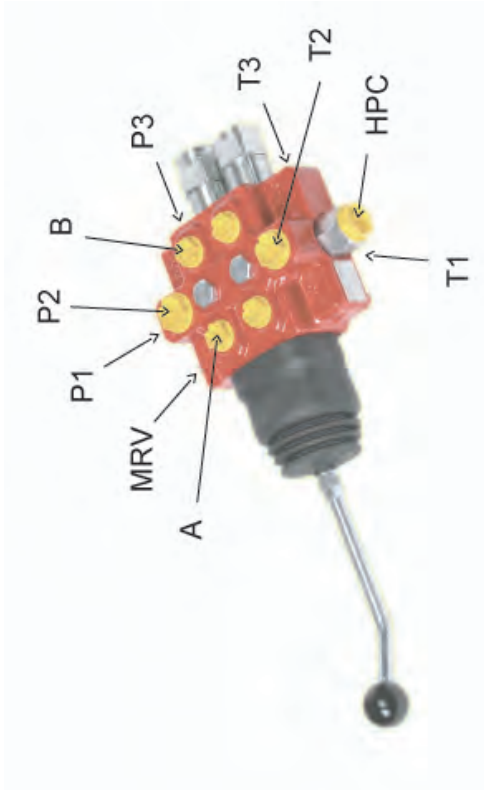


Part No. 10347-4S

Other lengths on request.

**ORDER CODE**

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No. of Sections: **CV11 2**

Section 1

Sec.2

**Open center**  
 B  
 Load Sensing  
 LS  
 Constant Pressure  
 CP

**Main relief valve,**  
 RV + pressure setting [bar/psi]

**Pump inlet**  
 Side P1  
 Top P2  
 Front (P3)

**Spool type** code page 5, 6

**Spool control A-side** code page 7

**Spool control B-side** code page 7

**HPC-fitting**  
 (Power Beyond)  
 S

**Tank port**  
 Side T1  
 Top T2  
 Front (T3)

**Thread type**  
 BSP  
 SAE  
 Metric  
 G  
 S  
 M

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# nimco

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
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