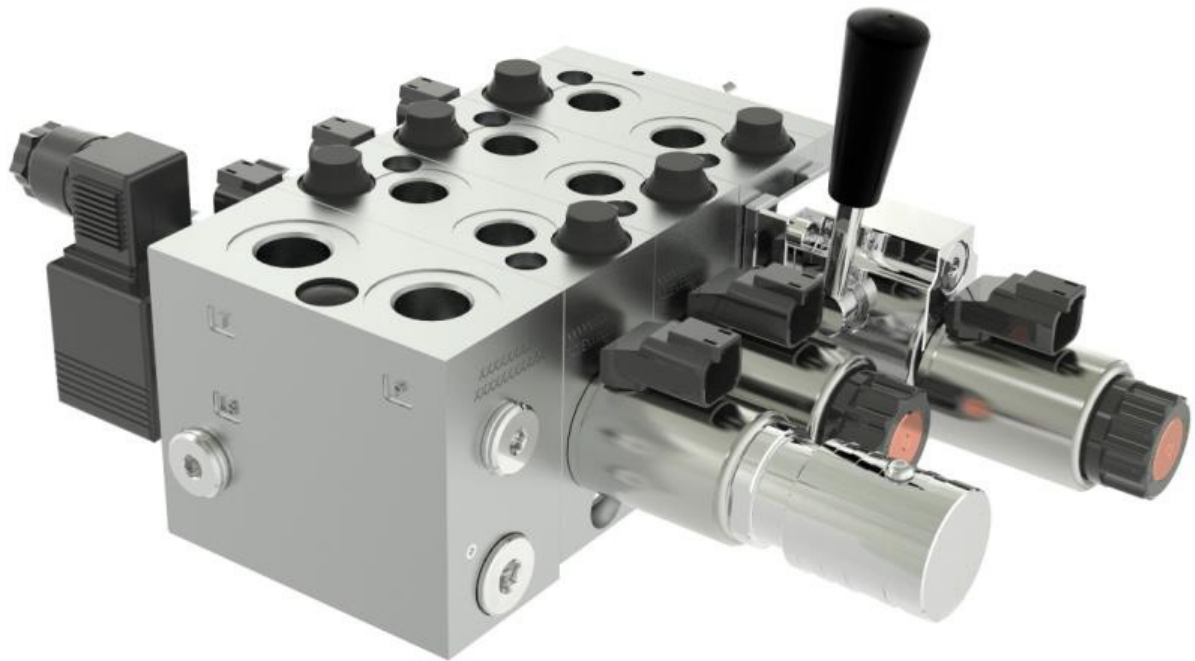


ENGINEERING  
TOMORROW



Technical Information

# CVG8 Proportional Valve Group



**Revision history**

Table of revisions

Date	Changed	Rev
May 2026	Change some contents and add new spool	0102
December 2024	New Edition	A

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## General Information

### General Description

CVG8 controls work port flow up to 40 l/min [10.6 US gal/min] and up to 350 bar [5076 psi]. The load independent proportional control valve, high performance eclectic direct actuator technology, pre-compensator and is designed specifically for small flow solutions.

The CVG valve design is based on a modular concept that enables machine designers to have PVG48/32/16 working together, intended to provide maximum flexibility, wide product coverage and high reliability.

### Features

- Load-independent flow control
- Good regulation characteristics
- Energy-saving
- Up to 8 basic modules per valve group
- Low weight
- Compact design, easy installation
- Manual option

### Module

#### Inlets include

- Built-in pressure relief valve
- Pressure gauge connection
- PVPX Unloading Valve
- Versions for different pump types:
  - Open center systems with fixed displacement pumps
  - Closed center systems with variable displacement pumps

#### Work section include

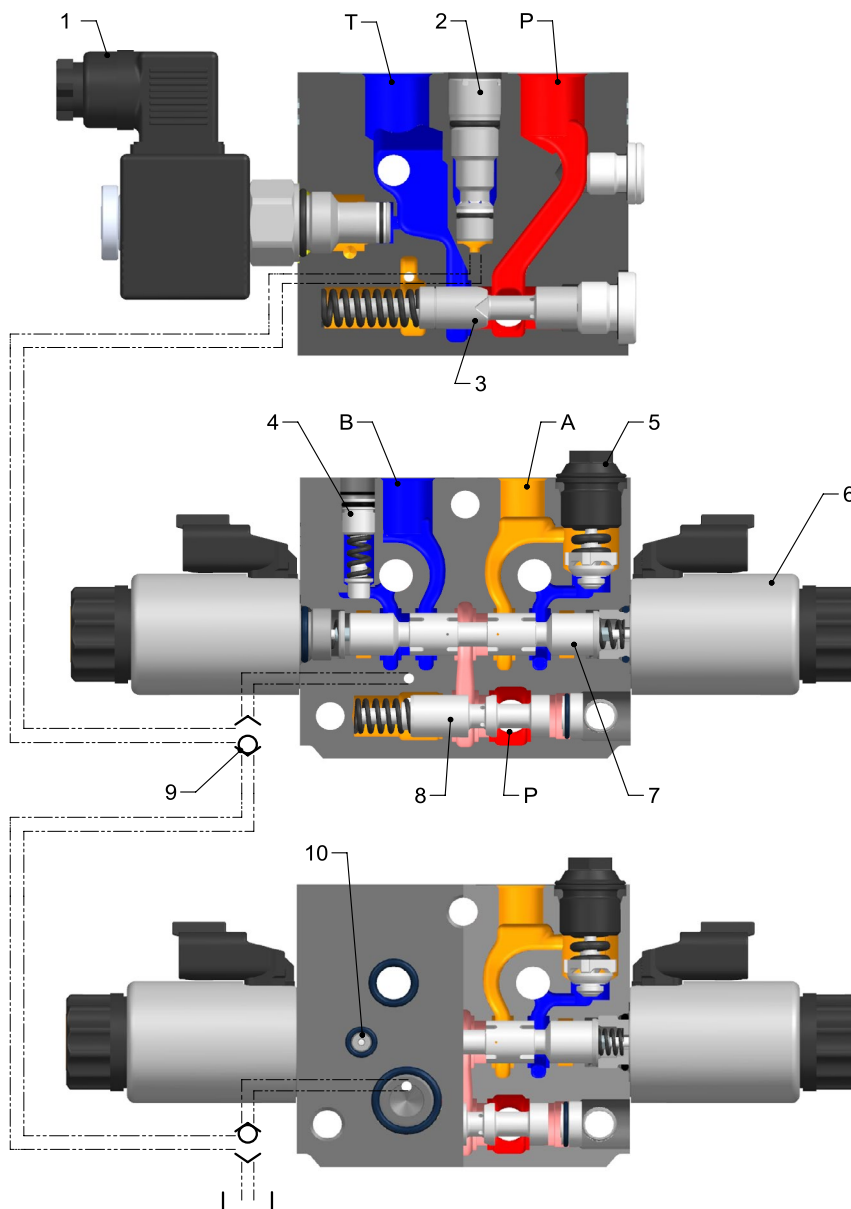
- Electromagnetic drive
- Interchangeable spools
- Built-in compensator for load independent flow
- CVB with option features:
  - Optional A/B shock/anti-cavitation valve facility (PVLP)
  - Integrated adjustable LSA/LSB pressure relief valves

#### Actuation modules include

- 12V Deutsch, prop. / On-off
- 24V Deutsch, prop. / On-off

**General Information**

**Sectional view**



- |   |  |    |                      |
|---|--|----|----------------------|
| 1 | PVPX unloading valve                   | 6  | CVE Eletro Actuation |
| 2 | Pressure relief valve                  | 7  | Main spool           |
| 3 | Pressure adjustment spool              | 8  | Pressure compensator |
| 4 | A/B pressure limiting valve (OSV)      | 9  | Shuttle valve        |
| 5 | Shock and Anti-Cavitation valve (PVLV) | 10 | A/B Shuttle valve    |

**General Information**

**Technical data**

The characteristics in this datasheet are typical measured values. During measuring a mineral based hydraulic oil with a viscosity of  $22 \pm 2$  cSt at approx. 50 °C.

<b>Technical data</b>			
Max. pressure	Port P/A/B(continuous)	350 bar	[5076 psi]
	Port P/A/B(intermittent)	400 bar	[5800 psi]
	Port T	100 bar	[1450 psi]
Max. rated flow	Port P	60 l/min	[15.8 gal]
	Port A/B	40 l/min	[10.6 gpm]
Spool travel	Proportional range	$\pm 2.2$ mm	[ $\pm 0.1$ in]
Dead band	Standard	$\pm 0.6$ mm	[ $\pm 0.03$ in]
Max. internal leakage at 100 bar [1450psi]	A/B $\rightarrow$ T (without shock valve)	45 cm <sup>3</sup> /min	[2.7 in <sup>3</sup> /min]
	A/B $\rightarrow$ T (with shock valve)	50 cm <sup>3</sup> /min	[3 in <sup>3</sup> /min]
Oil temperature (Inlet)	Maximum	90°C	[194°F]
	Minimum	-20°C	[-4°F]
Recommend Ambient Temperature		-20 to 50°C	[-4°F to 122°F]
Filtration	Fluid cleanliness (ISO 4406)	20/18/10	20/18/10
Oil Viscosity	Operating Range	12 - 75 mm <sup>2</sup> /s	[65 - 347 SUS]
	Minimum	4 mm <sup>2</sup> /s	[39 SUS]
	Maximum	460 mm <sup>2</sup> /s	[2128 SUS]

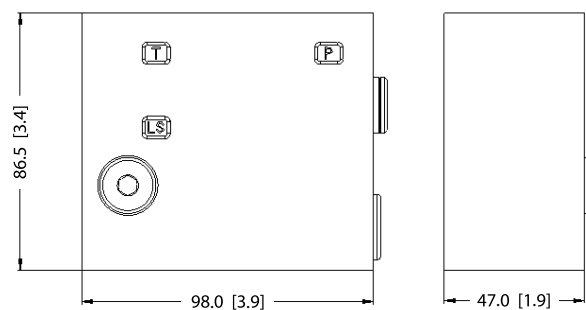
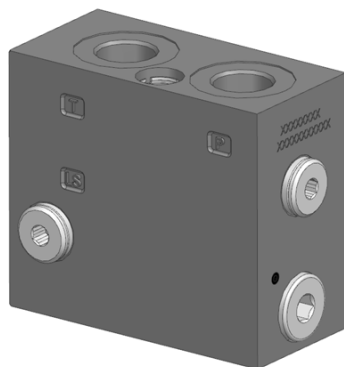
## CVP Inlet Modules

### Brief CVP

CVP act as an interface between the CVG 8 proportional valve group and the hydraulic pump and tank reservoir.

The main four types:

- Open Center CVP
- Open Center CVP with PVPX
- Closed Center CVP
- Closed Center CVP with PVPX



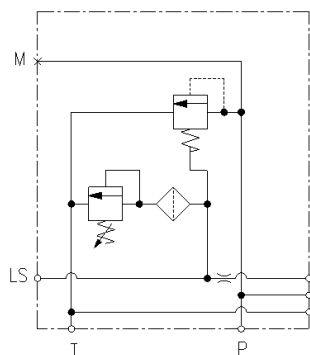
### Open Center CVP

Inlet module is intended for use with fixed displacement pumps.

The Open Center CVP features:

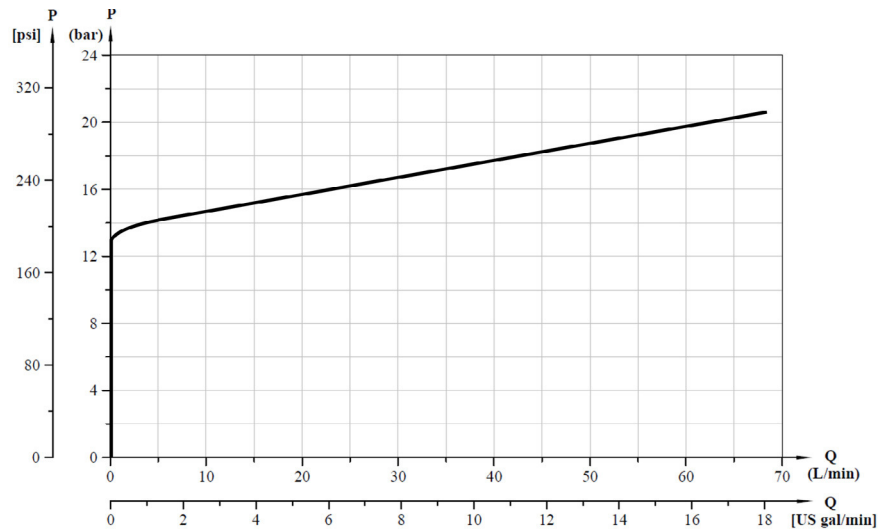
- Integrated LS pressure relief valve
- Threaded ports for P/LS and M measuring gauge
- Option LS unloading valve, PVPX

*Open center CVP schematic*



**CVP Inlet Modules**

Neutral by-pass pressure drop characteristics



Part numbers for Open Center CVP:

Part number	P port	T port	LS port	M port	PVPX
11329735	G1/2	G1/2	G1/4	G1/4	-
11329718	G1/2	G1/2	G1/4	G1/4	Yes

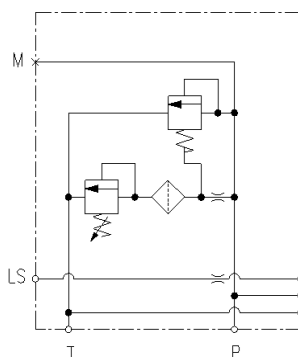
**Closed Center CVP**

Closed Center CVP inlet is intended for use with variable displacement pumps

The Closed Center CVP features:

- Integrated LS pressure relief valve
- Threaded ports M measuring gauge
- Optional LS unloading valve, PVPX

*Closed center CVP schematic*



**CVP Inlet Modules**

Part numbers for Closed Center CVP:

Part number	P port	T port	LS port	M port	PVPX
11329736	G1/2	G1/2	G1/4	G1/4	-
11329730	G1/2	G1/2	G1/4	G1/4	Yes

**PVPX Electrical LS Pressure Unloading Valve**

The electrical LS pressure unloading valve is an accessory available for CVP inlet modules with PVPX facility. The PVPX consist of a solenoid valve and a magnetic coil package, allowing the operator to relieve the LS pressure to tank electrically.

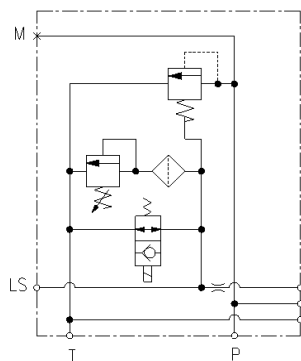
Configuration variants also feature a Manual Override functionality to activate the PVPX manually:

- Normally Open (NO)
- Normally Open with Manual Override (NOMO)
- Normally Closed (NC)

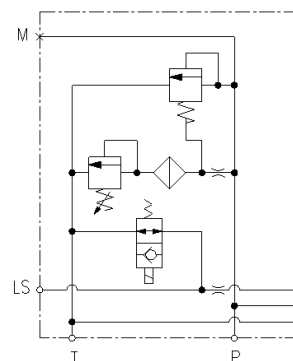
Configuration variants:

Normally Open (NO)	Normally Open with MOR (NOMO)	Normally Closed (NC)

*Open center with PVPX*



*Closed center with PVPX*



**CVP Inlet Modules**

PVPX technical data:

<b>Voltage supply</b>	12/24 VDC $\pm$ 10%
<b>Resistance @ 12 VDC</b>	7.2 $\Omega$ $\pm$ 7%
<b>Resistance @ 24 VDC</b>	28.2 $\Omega$ $\pm$ 7%
<b>Power consumption</b>	20 W
<b>Maximum LS response time</b>	300 ms
<b>Max. coil surface temperature</b>	155°C [311°F]
<b>Thread size</b>	3/4-16 UNF
<b>Fluid cleanliness</b>	23/19/16 (according to ISO 4406)
<b>Fluid temperature</b>	-30 to 90°C [-22 to 194°F]

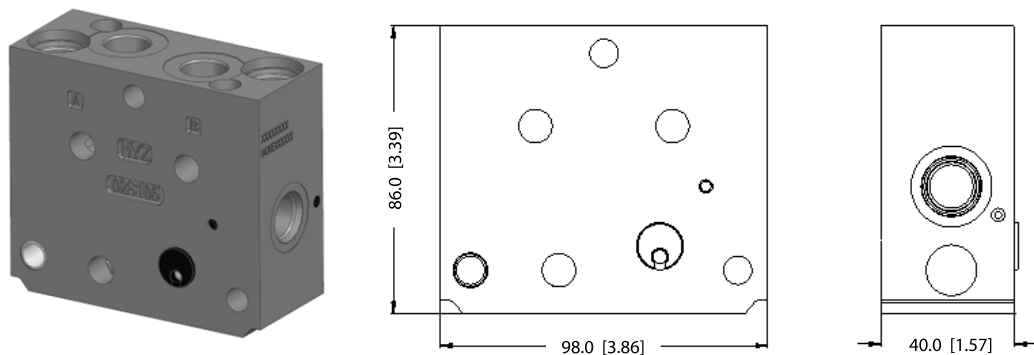
Part numbers for PVPX:

Part number	Configuration	Voltage Supply	Connector	IP Rating	Manual Override
157B4236	NO	12V	1x2 DIN	IP 65	-
157B4238	NO	24V			
157B4246	NC	12V			
157B4248	NC	24V			
157B4976	NC	26V			
157B4981	NO	12V	1x2 AMP	IP 66	-
157B4982	NO	24V			
157B4983	NC	12V			
157B4984	NC	24V			
11180766	NO	12V	1x2 DEUTSCH	IP 67	-
11180767	NO	24V			
11180768	NC	12V			
11180769	NC	24V			
11225108	NO	26V			
11225109	NC	26V	1x2 DIN	IP 65	PUSH
157B4256	NO	12V			PUSH & TURN
157B4257	NO	12V			PUSH
157B4258	NO	24V			PUSH & TURN
157B4259	NO	24V			PUSH
157B4260	NO	26V	1x2 AMP	IP 66	PUSH
157B4985	NO	12V			PUSH
157B4986	NO	24V	1x2 DEUTSCH	IP 67	PUSH
11193839	NO	12V			PUSH
11193836	NO	24V			PUSH
11225111	NO	26V			PUSH & TURN
11225110	NO	26V			

**CVB Basic Modules**

**Brief CVB**

The CVG8 CVB basic modules, also referred to as work sections, are the interface between the CVG8 proportional valve group and the work function such as a cylinder or a motor.



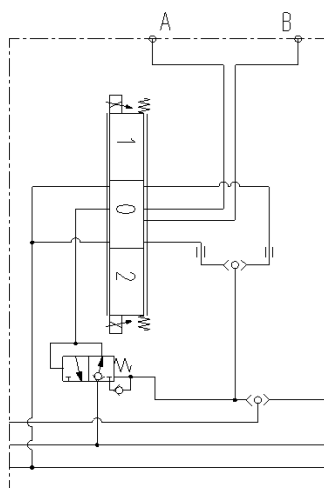
The CVB basic module variants are based on a generic platform with a selection of additional features.

The main types:

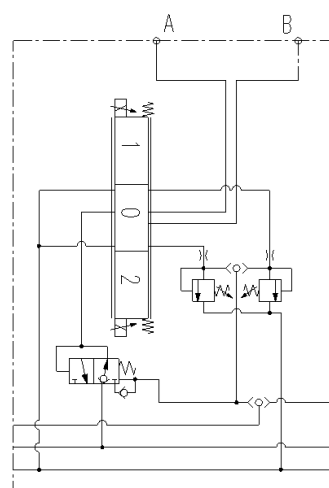
- Compensated CVB
- Compensated CVB with LS limiting valve
- Compensated CVB with LS limiting valve and PVLP
- Compensated CVB with PVLP
- Compensated CVB with manifold interface

**Compensated CVB**

Compensated CVB

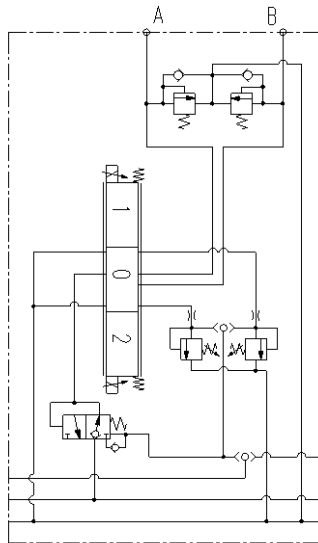


CVB with LS limiting valve

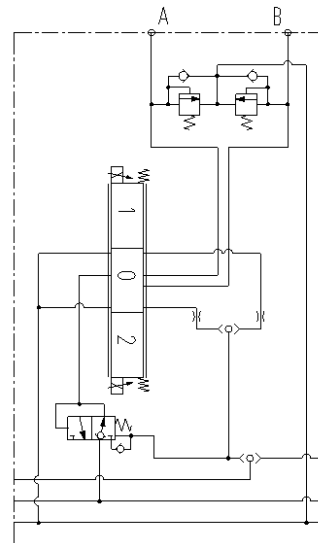


**CVB Basic Modules**

CVB with LS limiting valve and PVLP



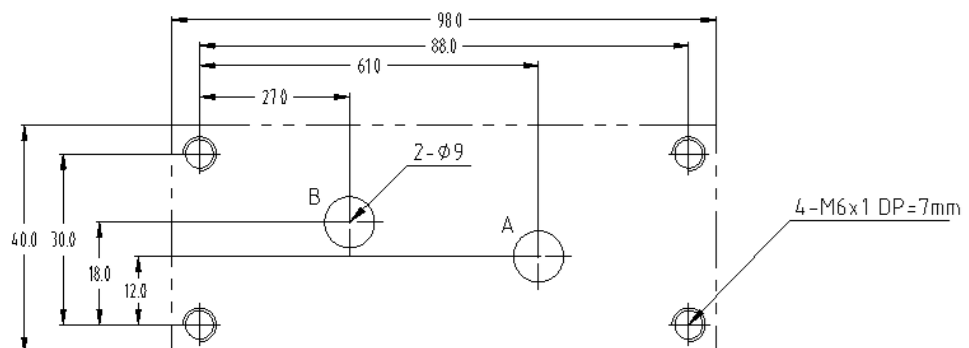
CVB with PVLP



Part numbers for CVB :

Part number	A/B port	PVLP/PVLA	Limiting valve
11329756	G3/8	-	-
11329745	G3/8	-	Yes
11329746	G3/8	Yes	-
11329755	G3/8	Yes	Yes
11422298	manifold interface	-	-

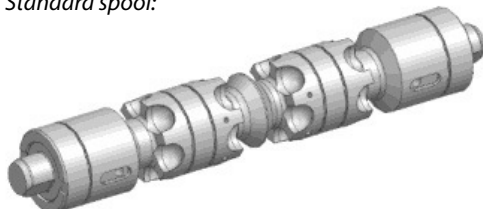
Manifold interface dimension :



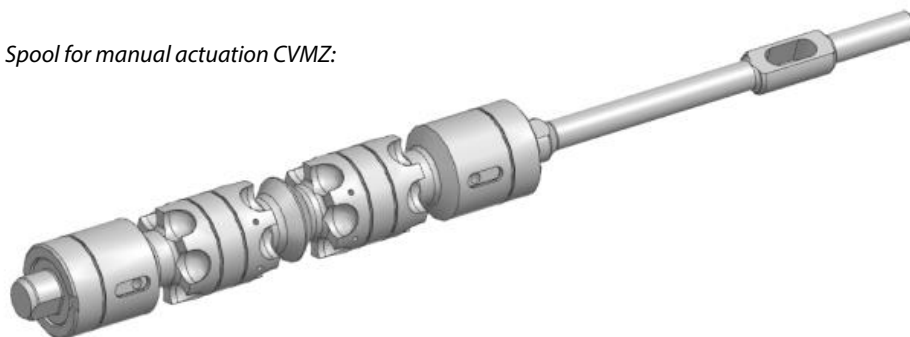
**CVBS Main Spools**

The main spools CVBS determine the flow out of the work section or the pressure build up, and are based on a generic platform with a wide selection of additional feature.

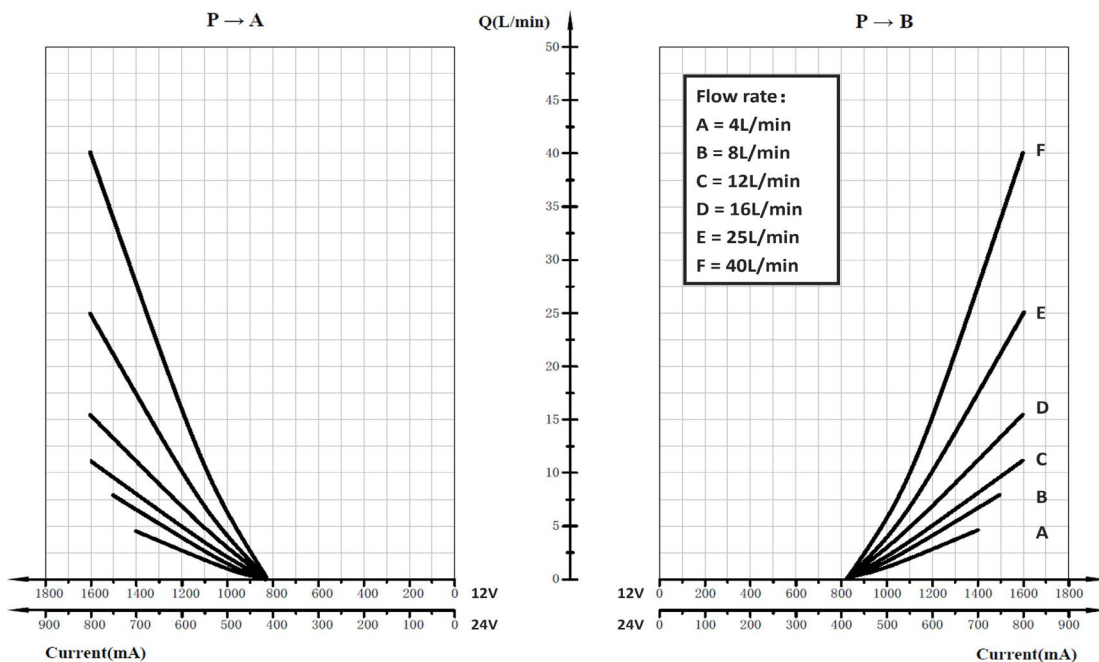
*Standard spool:*



*Spool for manual actuation CVMZ:*



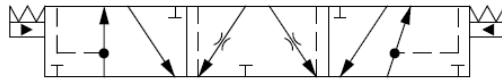
**Fluid flow characteristics**



**Main Spools CVBS**

**Main Spools CVBS**  
**Part Numbers**

*Throttled Open Neutral Position:*



Part numbers for standard spool:

Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11329772</b>	4 [1.06]	4 [1.06]	4 [1.06]	4 [1.06]
<b>11329771</b>	8 [2.11]	8 [2.11]	8 [2.11]	8 [2.11]
<b>11329770</b>	12 [3.17]	12 [3.17]	12 [3.17]	12 [3.17]
<b>11329769</b>	16 [4.23]	16 [4.23]	16 [4.23]	16 [4.23]
<b>11329768</b>	25 [6.60]	25 [6.60]	25 [6.60]	25 [6.60]
<b>11329767</b>	40 [10.57]	40 [10.57]	40 [10.57]	40 [10.57]

Part numbers for asymmetric spool:

Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11337783</b>	6 [1.6]	6 [1.6]	4 [1.06]	4 [1.06]
<b>11375795</b>	25 [6.6]	25 [6.6]	16 [4.2]	16 [4.2]

Part numbers spool for CVMZ:

Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11329778</b>	4 [1.06]	4 [1.06]	4 [1.06]	4 [1.06]
<b>11329777</b>	8 [2.11]	8 [2.11]	8 [2.11]	8 [2.11]
<b>11329751</b>	12 [3.17]	12 [3.17]	12 [3.17]	12 [3.17]
<b>11329750</b>	16 [4.23]	16 [4.23]	16 [4.23]	16 [4.23]
<b>11329749</b>	25 [6.60]	25 [6.60]	25 [6.60]	25 [6.60]
<b>11329748</b>	40 [10.57]	40 [10.57]	40 [10.57]	40 [10.57]

Part numbers asymmetric spools for CVMZ:

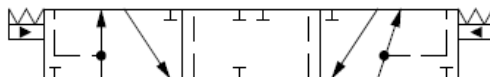
Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11363820</b>	25 [6.6]	25 [6.6]	16 [4.2]	16 [4.2]

**Technical Information**  
**CVG8 Proportional Valve Group**

**CVBS Main Spools**

**CVBS Main Spools**  
**Part Numbers**

*Closed Neutral Position:*



Part numbers for standard spool:

Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11329766</b>	4 [1.06]	4 [1.06]	4 [1.06]	4 [1.06]
<b>11329765</b>	8 [2.11]	8 [2.11]	8 [2.11]	8 [2.11]
<b>11329764</b>	12 [3.17]	12 [3.17]	12 [3.17]	12 [3.17]
<b>11329763</b>	16 [4.23]	16 [4.23]	16 [4.23]	16 [4.23]
<b>11329762</b>	25 [6.60]	25 [6.60]	25 [6.60]	25 [6.60]
<b>11329720</b>	40 [10.57]	40 [10.57]	40 [10.57]	40 [10.57]

Part numbers for asymmetric spools:

Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11375788</b>	25[6.6]	25[6.6]	16 [4.2]	16 [4.2]

Part numbers spools for CVMZ:

Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11329760</b>	4 [1.06]	4 [1.06]	4 [1.06]	4 [1.06]
<b>11329759</b>	8 [2.11]	8 [2.11]	8 [2.11]	8 [2.11]
<b>11329758</b>	12 [3.17]	12 [3.17]	12 [3.17]	12 [3.17]
<b>11329776</b>	16 [4.23]	16 [4.23]	16 [4.23]	16 [4.23]
<b>11329775</b>	25 [6.60]	25 [6.60]	25 [6.60]	25 [6.60]
<b>11329774</b>	40 [10.57]	40 [10.57]	40 [10.57]	40 [10.57]

Part numbers asymmetric spools for CVMZ:

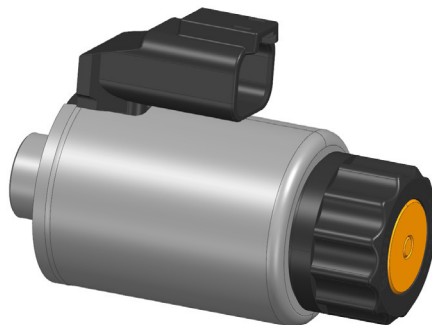
Part number	Flow L/min [US gal/min]			
	A → T	P → A	P → B	B → T
<b>11363819</b>	25[6.6]	25[6.6]	16 [4.2]	16 [4.2]

**Actuation**

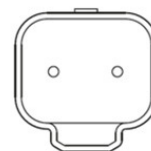
**CVE eletro actuation**

The CVE is an electrical actuator module for control main spool directly. The CVE control is done by dual Pulse Width Modulated, high current supply PWM control signals.

*Electro-Hydraulic Actuator:*



1x2 DEUTSCH



Technical data:

<b>Electrical (Proportional)</b>		
Recommended frequency	PWM 140Hz (optional 80Hz)	
Voltage Tolerance	Rated Voltage $\pm$ 10%	
Insulation Class	H	
Connector Type	Deu (IP67)	
Coil Wire Temperature- Max	150°C	
Rated Voltage	12V	24V
The Maximum Current Allowable for The Operating Current	1.76A	900mA
Current Control Range at rated voltage (20°C)	850mA ~ 1600mA	425mA ~ 800mA
Coil Resistance (20°C)	3.7 $\Omega$	14.2 $\Omega$
<b>Electrical (On/Off)</b>		
Rated voltage	12V	24V
Voltage Tolerance	Rated Voltage $\pm$ 10%	
Insulation class	H	
Connector type	Deu (IP67)	
Coil Wire Temperature- Max (Recommended)	150°C	
Ambient Temperature	-20°C ~ 90°C	
Coil Resistance (20°C)	7.2 $\Omega$	28.8 $\Omega$

**Actuation**

Part numbers for CVE Actuators:

Part number	Type	Connector type	IP Rating	Power supply
11340937	Proportional	1x2DEU	IP67	12V
11340938	Proportional	1x2DEU	IP67	24V
11341395	On/Off	1x2DEU	IP67	12V
11341396	On/Off	1x2DEU	IP67	24V
11268696	Plug	-	-	-

Note:1. Two pin Deu connector do not need distinguish positive and negative.  
 2. the Plug is used when no need CVE.

**Manual actuation**

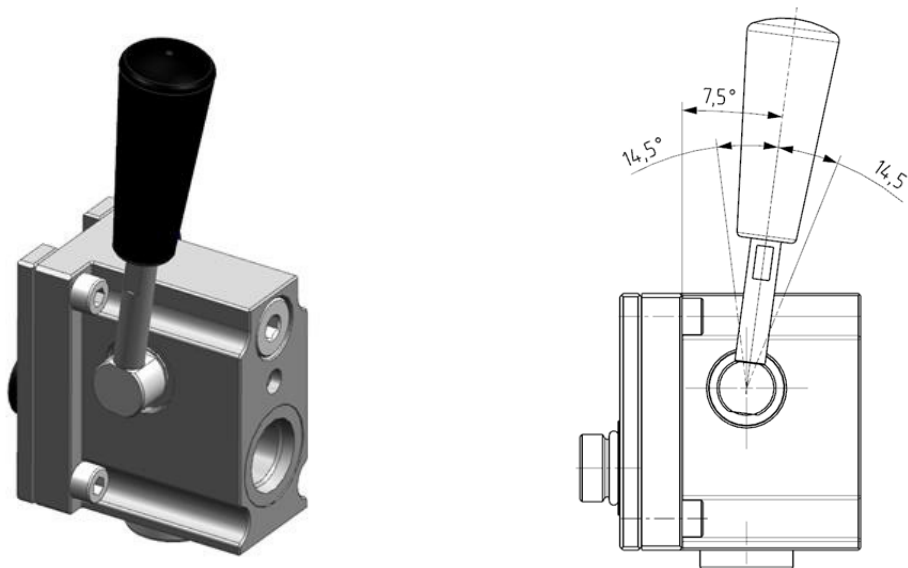
The manual actuation cover is intended for use on any work section where the operator has to have the ability to interact with the spool manually.

There are two option:

CVMZ is handle type ,control lever angle 14.5°, it can be installed either side

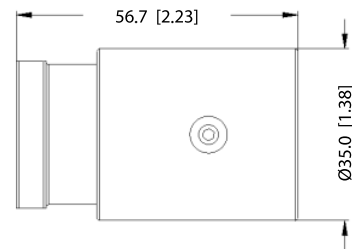
CVMK is knob type ,control rotation angle 200°,it can be installed either side or both side.

*Handle type CVMZ:*



**Actuation**

*Knob type CVMK:*



Part numbers for Manual Actuators:

Part number	Type	Material
11329690	CVMZ	Ductile iron
11335546	CVMK	Ductile iron

## CVS End Plates

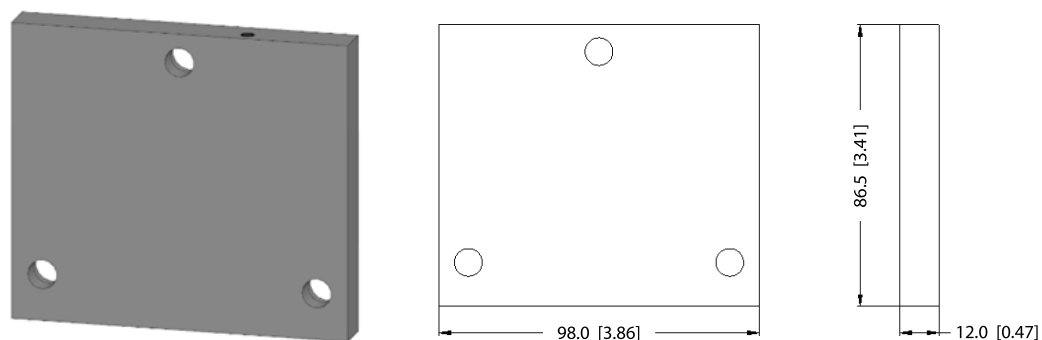
### End Plates

The end plates close off the valve stack section, the end plate is ensuring Load Sense is relieved to tank pressure when the valve is not operated.

The main types:

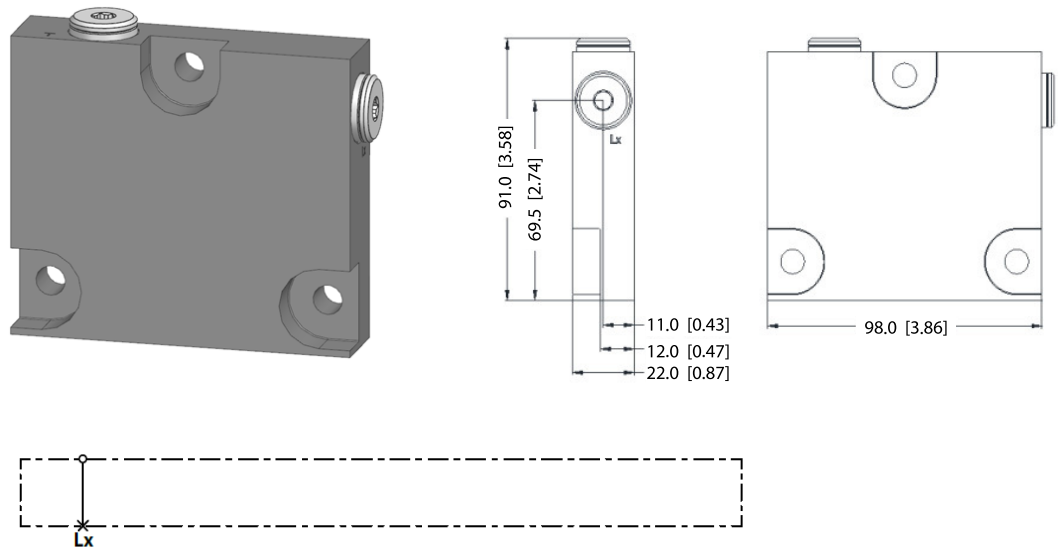
- Standard End Plate
- End Plate with LX
- End plate for PVG48/32/16 combination
- End plate with LX for PVG48/32/16 combination
- End plate for PVG48/32/16 combination without mounting thread

*Standard End Plate:*

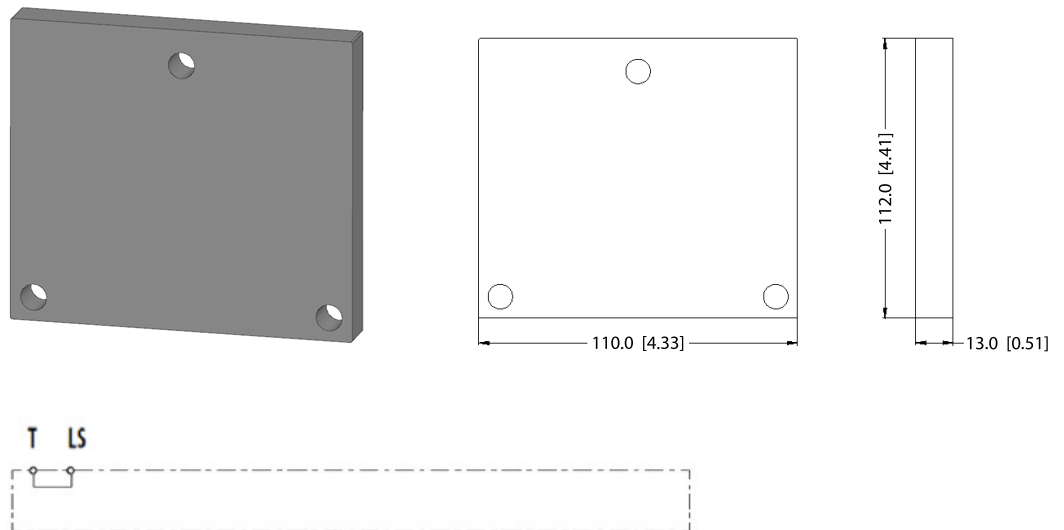


**CVS End Plates**

*End Plate with LX*

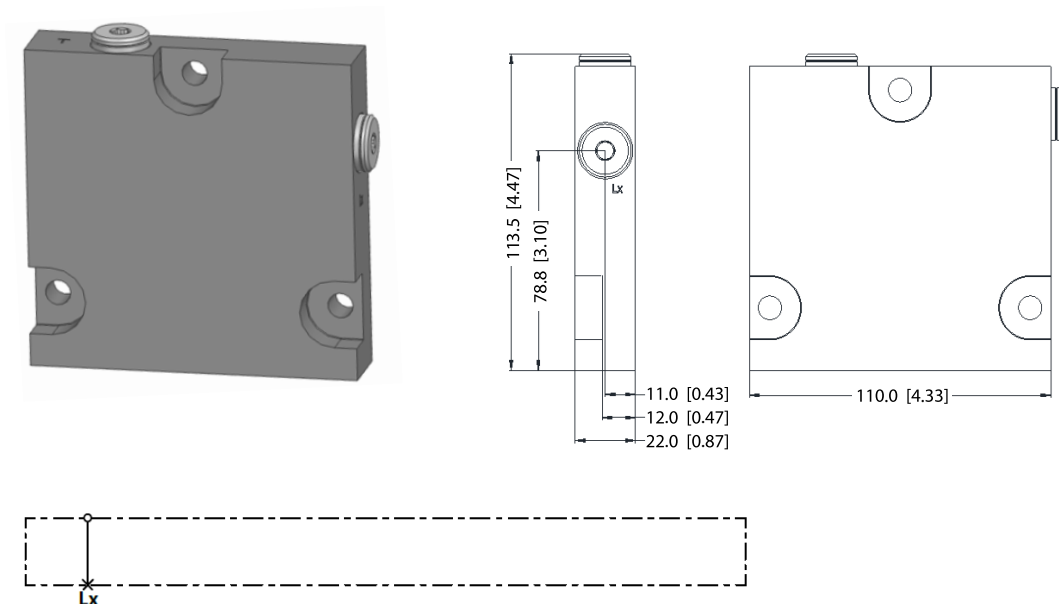


*End plate for PVG48/32/16 combination:*

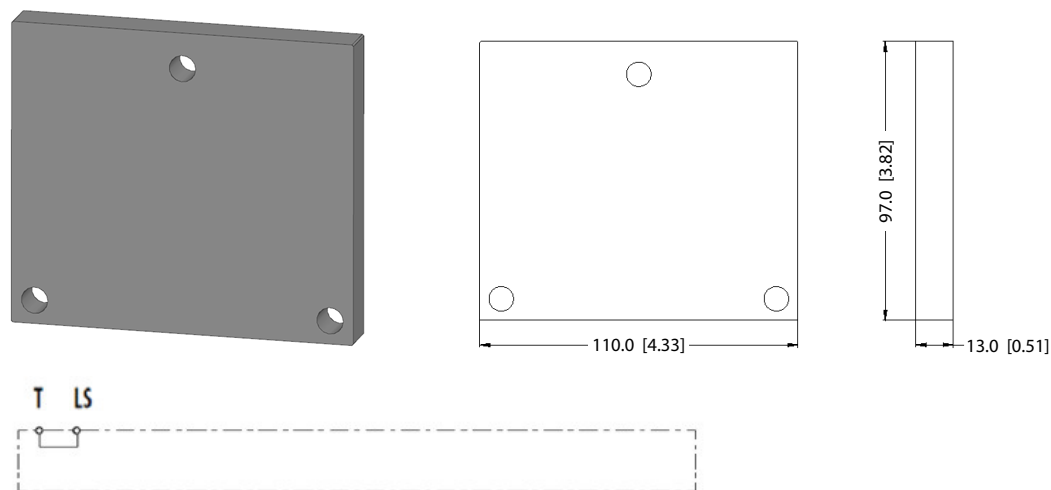


**CVS End Plates**

*End plate with LX for PVG48/32/16 combination:*



*End plate for PVG48/32/16 combination without mounting thread*



Part numbers for PVS end plates:

Part number	pressure	Material	Port LX	Mounting	PVG32 Combination
11329747	350 bar [5076 psi]	Cast iron	-	M8	-
11332463			G1/4		
11378013	-		M8	Yes	
11341333	G1/4				
11329740	-		-	-	

**CVGI Interface Plates**

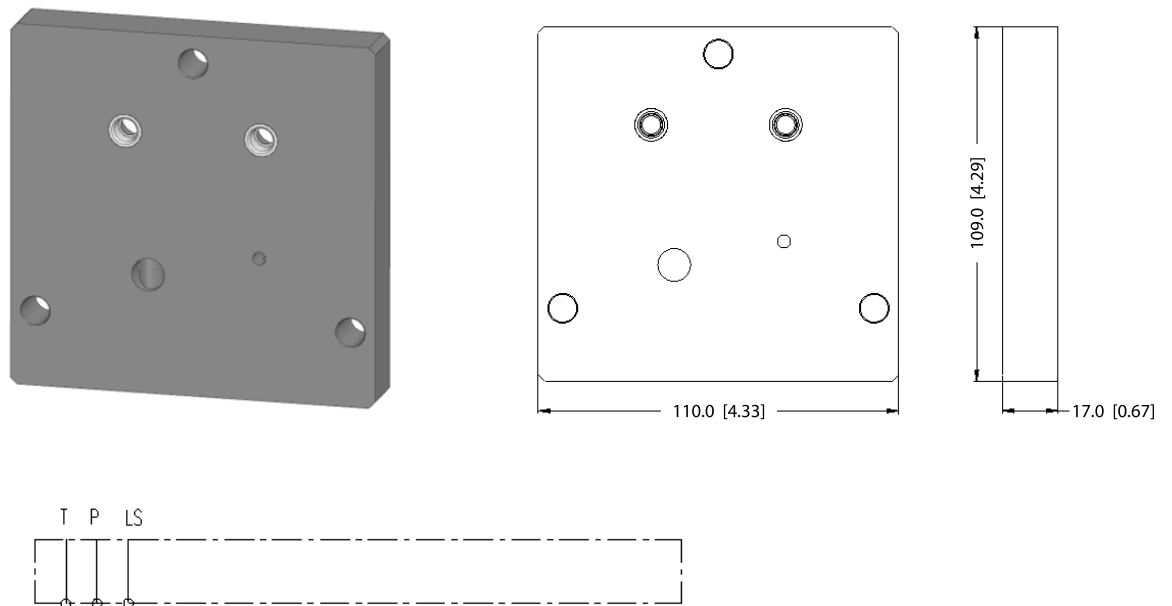
**Interface Plates**

The CVGI Interface Plate act as an interface between the PVG48/32/16 and CVG8 basic modules.

Current Interface Plate:

- Between PVG48/32/16 and CVG8

*CVGI Interface plate:*



Part numbers for PVS end plates:

Part number	Maximum pressure	Material	Mounting
11329741	350 bar [5076 psi]	Cast iron	M8

## **CVAS Stay Bolts**

### **Stay Bolts**

CVG8 combinations consist of three tie rods, three washers, three nuts.

For stay bolts for a PVG48/32/16 combination, see the PVAS part numbers in the PVG32 catalog.

CVAS part numbers:

<b>Part number</b>	<b>Description</b>
<b>11300298</b>	1 CVB module
<b>11300279</b>	2 CVB modules
<b>11300280</b>	3 CVB modules
<b>11300271</b>	4 CVB modules
<b>11300302</b>	5 CVB modules
<b>11300303</b>	6 CVB modules
<b>11300304</b>	7 CVB modules
<b>11300305</b>	8 CVB modules

## **PVLP Shock/anti-cavitation Valve**

### **Shock/anti-cavitation valve**

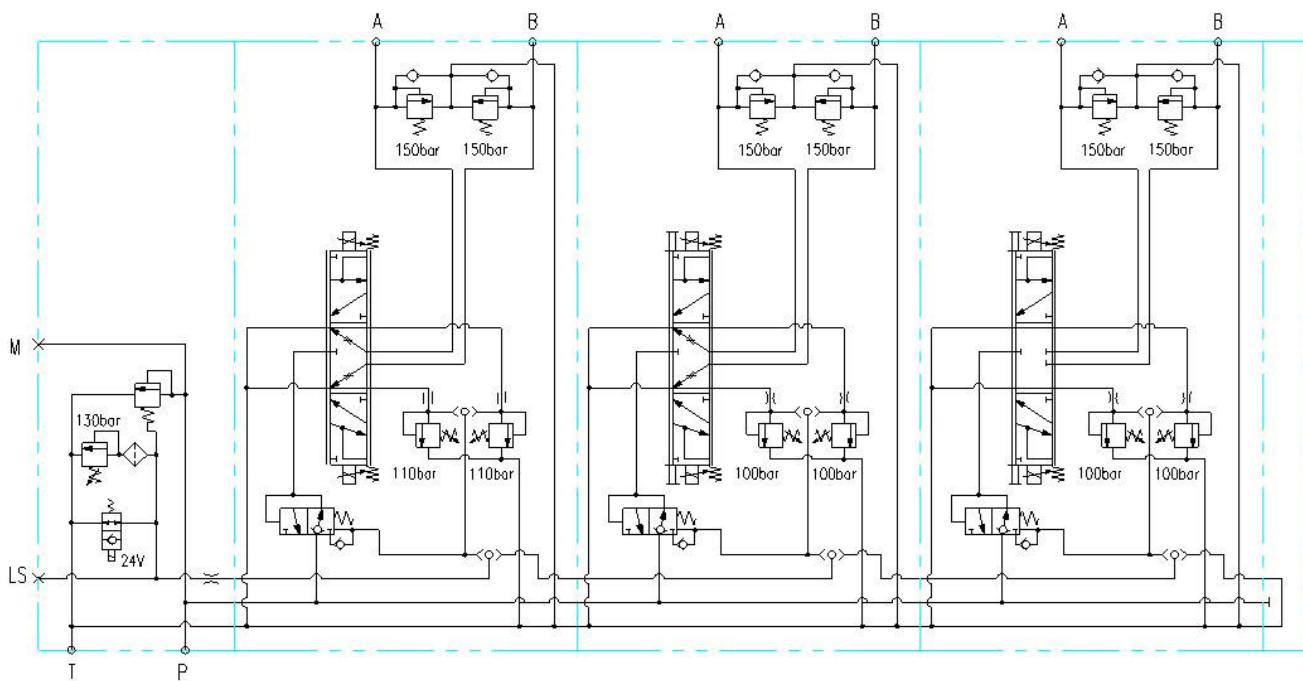
The PVLP shock and anti-cavitation valve will relieve a pressure peak to the internal tank galleries and will furthermore suck oil from the tank to the work port to prevent cavitation.

Part numbers for PVLP:

<b>Part number</b>	<b>Description</b>	<b>Pressure</b>
<b>11329782</b>	Shock/anti-cavitation valve	80 bar [1160 psi]
<b>11329761</b>	Shock/anti-cavitation valve	100 bar [1450 psi]
<b>11329792</b>	Shock/anti-cavitation valve	150 bar [2176 psi]
<b>11329793</b>	Shock/anti-cavitation valve	210 bar [3046 psi]
<b>11329794</b>	Shock/anti-cavitation valve	250 bar [3626 psi]
<b>11329795</b>	Shock/anti-cavitation valve	300 bar [4351 psi]
<b>11329796</b>	Shock/anti-cavitation valve	320 bar [4641 psi]
<b>11329783</b>	Shock/anti-cavitation valve	350 bar [5076 psi]
<b>11329784</b>	Anti-cavitation valve	-

### Schematic and Specification Example

#### Schematic



**Schematic and Specification Example**

**Specification example**

**Specification Sheet**  
**Valve type:**

**CVG8**



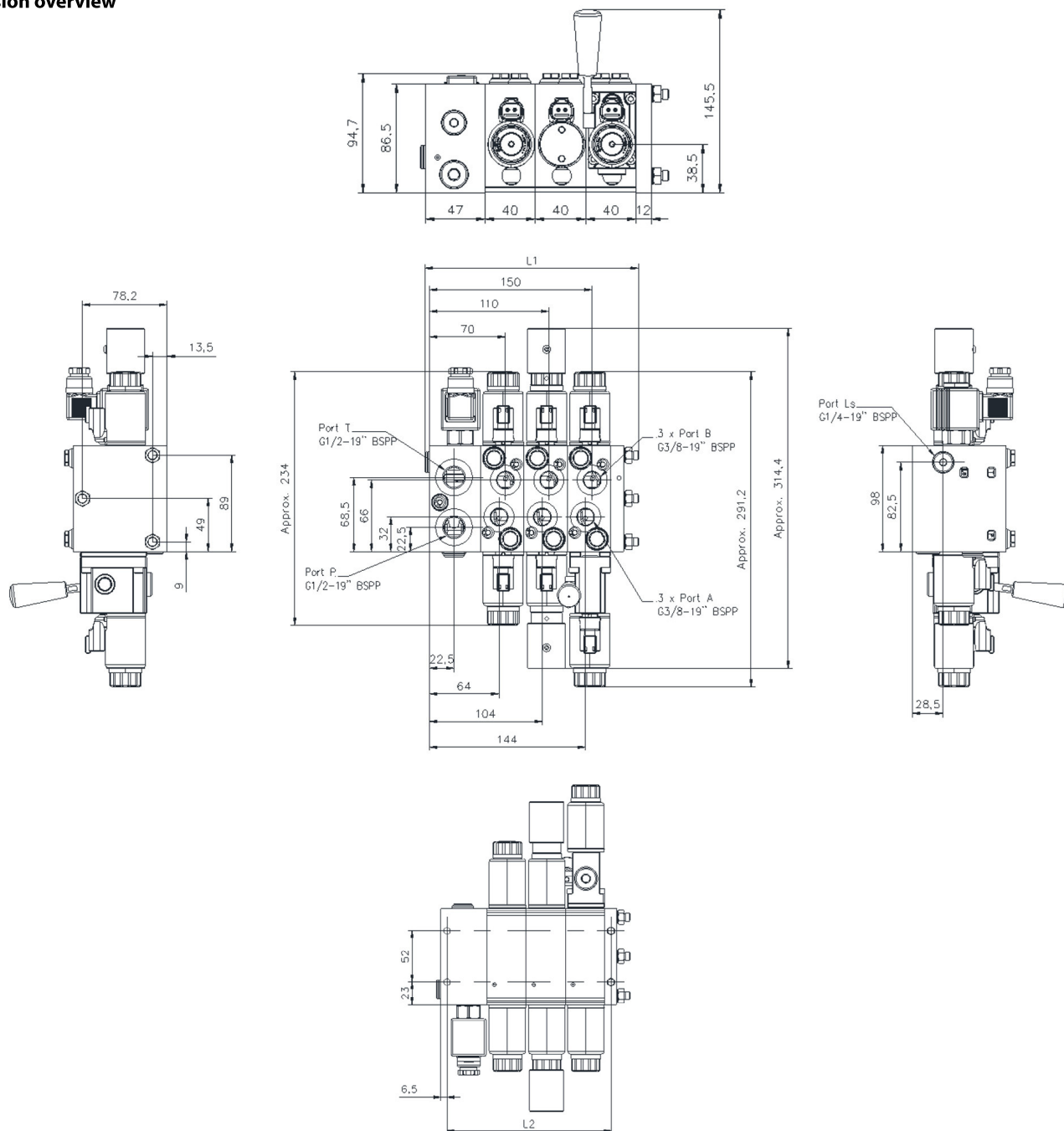
Subsidiary/Dealer		Danfoss Sold-To Part No.									
Valve No.		Customer Part No.									
Filled in by		Date		Revision No.		EAU					
<b>Function</b>		<b>A-Port</b>				<b>B-Port</b>					
1	OC inlet PVPX 24V			11329718	CVP		157B4238	PVPX			
				130	bar						
2	Work section 25L open neutral	CVE	11340938	11329755	CVB	11329768	CVBS	11340938	CVE		
		PVLP	11329792	LSA=	100	bar	LSB=	100	bar	11329792	PVLP
3	Work section 25L open neutral	CVE	11340938	11329755	CVB	11329768	CVBS	11340938	CVE		
		PVLP	11329792	LSA=	100	bar	LSB=	100	bar	11329792	PVLP
		CVMK	11335546						11335546	CVMK	
4	Work section 12L closed neutral	CVE	11340938	11329755	CVB	11329758	CVBS	11340938	CVE		
		PVLP	11329792	LSA=	110	bar	LSB=	110	bar	11329792	PVLP
		CVMZ	11329690								
5	End plate			11329747	CVSI						
6											
18	CVAS	1	11300280					Business Type:			
19	Painting (write no if paint not wanted)			11106942	black paint			PVE Programming:			
20	Customer Text on Group Label										
21	Customer Text on Packaging Label (Box)										
22	Comment:										

# Technical Information

## CVG8 Proportional Valve Group

### Dimension Overview

#### Dimension overview



CVB	1	2	3	4	5	6	7	8
L1 mm	134	158	206	255	279	328	376	400
[in]	[5.3]	[6.2]	[8.1]	[10.0]	[11.0]	[12.9]	[14.8]	[15.7]
L2 mm	87	127	167	207	247	287	327	367
[in]	[3.4]	[5.0]	[6.6]	[8.2]	[9.7]	[11.3]	[12.9]	[14.4]

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