

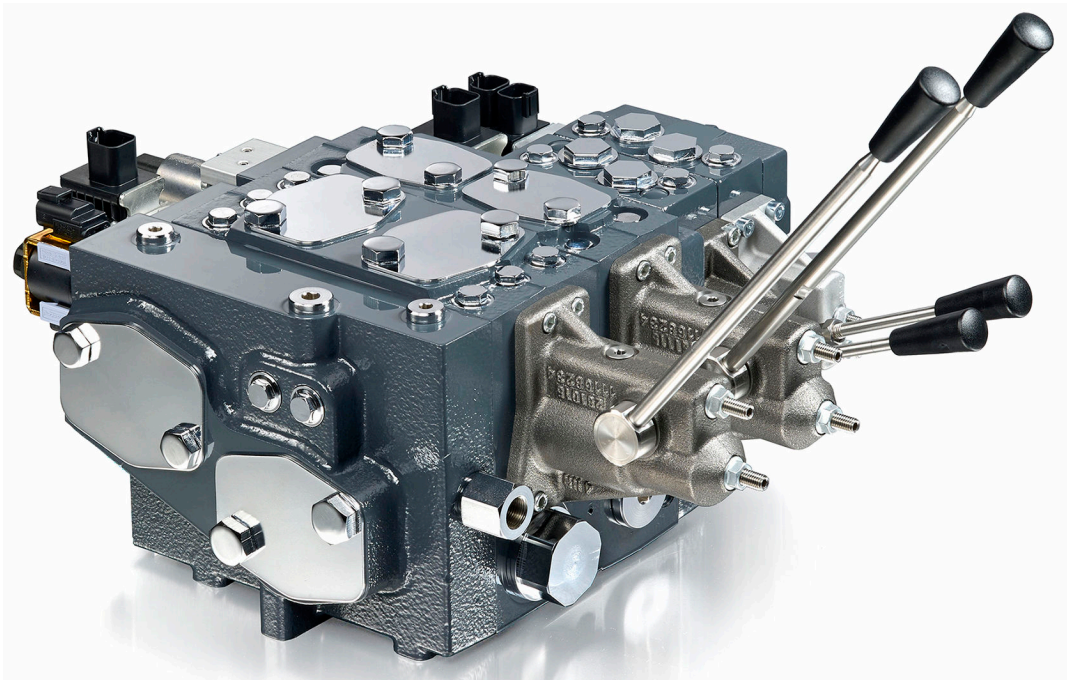
ENGINEERING  
TOMORROW



Service and Parts Manual

# Proportional Valve Group

## PVG 16/32/48/128/256



## Revision history

*Table of revisions*

<b>Date</b>	<b>Changed</b>	<b>Rev</b>
March 2024	Updated PVB48 table	0403
November 2023	Multiple images replaced, added PVG 128/256 service parts	0402
June 2023	Added PVG 48	0401
May 2023	Updated images	0303
July 2022	Aligned document version with digital asset management system	0302
July 2022	Updated graphics and added new table	0301
June 2022	Corrected PVG 16 seal kit PVPX Module Number from 157B5996 to 157B4996	0205
June 2022	Removed all references to part #155L6167	0204
June 2020	Corrected PVEA with AMP connector kit numbers	0203
June 2020	Corrected non-compensated PVB with LS kit numbers	0202
January 2020	Corrected seal kit part numbers and added PVPX solenoids and coils part numbers	0201
May 2019	Corrected PVG 32 PVHC seal kit part number	0102
October 2018	Combined PVG 16/32/128/256 installation guides, service and parts manuals	0101

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## Function

### Safety in Systems

All types and brands of control valves, including proportional valves, can fail. Therefore, the necessary protection against the serious consequences of a functional failure should always be built into the system.

#### General safety considerations

For each application an assessment should be made for the consequences of the system in case of pressure failure and uncontrolled or blocked movements.

#### **⚠ Warning**

Because the proportional valve is used in many different applications and under different operating conditions, it is the sole responsibility of the manufacturer to ensure that all performance, safety and warning requirements of the application is met in his selection of products and complies with relevant machine specific and generic standards.

#### Control system example

An example of a control system using an aerial lift is shown below:

*Aerial lift*

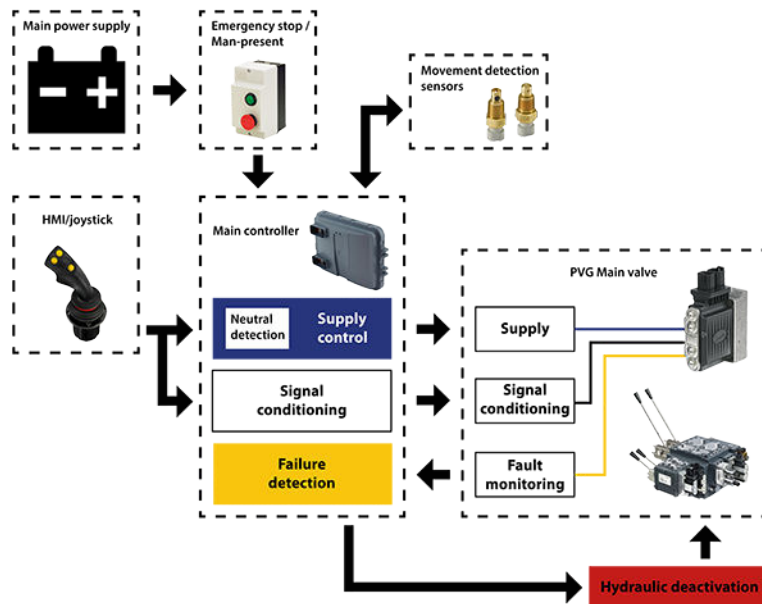


This example breaks down the control system into smaller bits explaining the architecture in depth. Even though many Danfoss components are used in the PVG control system.

The function of the control system is to use the output from the PVE together other external sensors to ensure the PLUS+1 main controllers correct function of the aerial lift.

**Function**

*Electrical block diagram*



**Warning**

It is the responsibility of the equipment manufacturer that the control system incorporated in the machine is declared as being in conformity with the relevant machine directives.

**Caution**

A mix of electrical actuation and hydraulic actuation on the same valve stack is not safe. PVE and PVH are designed for different pilot pressure.

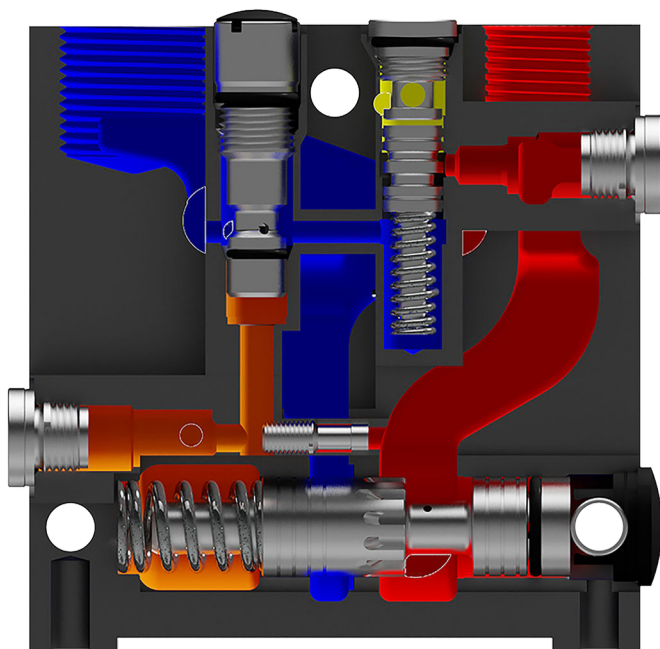
Cost-free repairs, as mentioned in Danfoss General Conditions of Sale, are carried out only at Danfoss or at service shops authorized by Danfoss.

**Function**

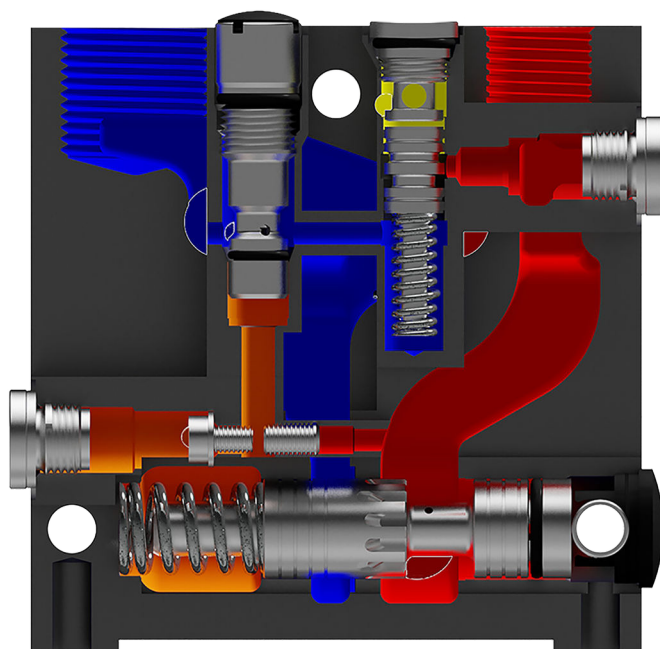
**PVG 16/32 sectional drawings**

Sectional views of the product help identify certain components for servicing.

*PVG 16/32 PVP open center*

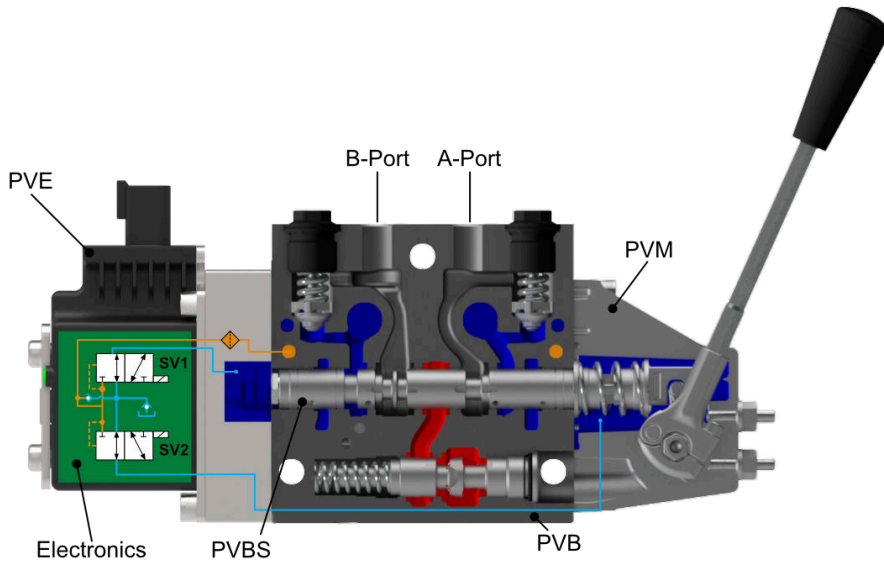


*PVG 16/32 closed center*

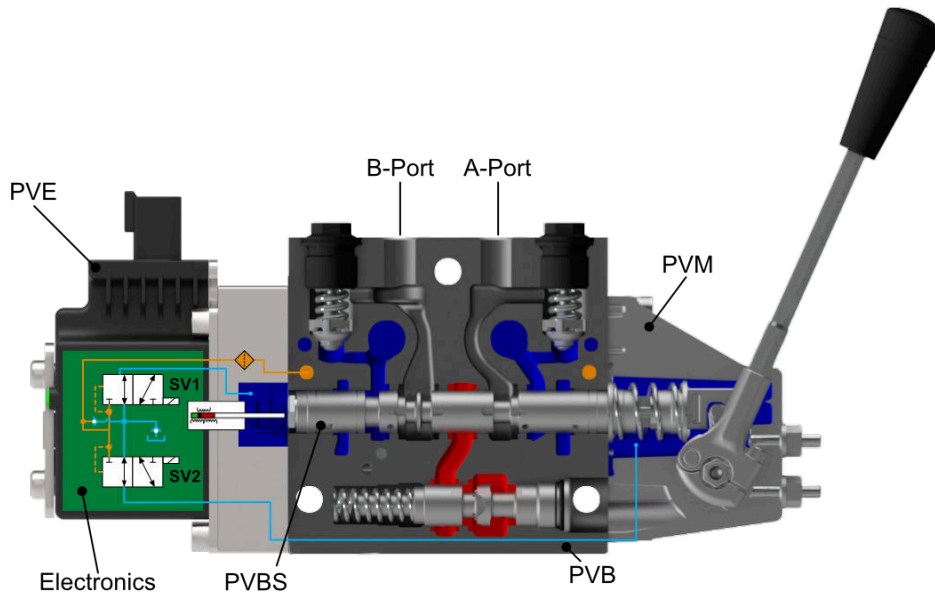


### Function

*PVG 16 with PVEO*



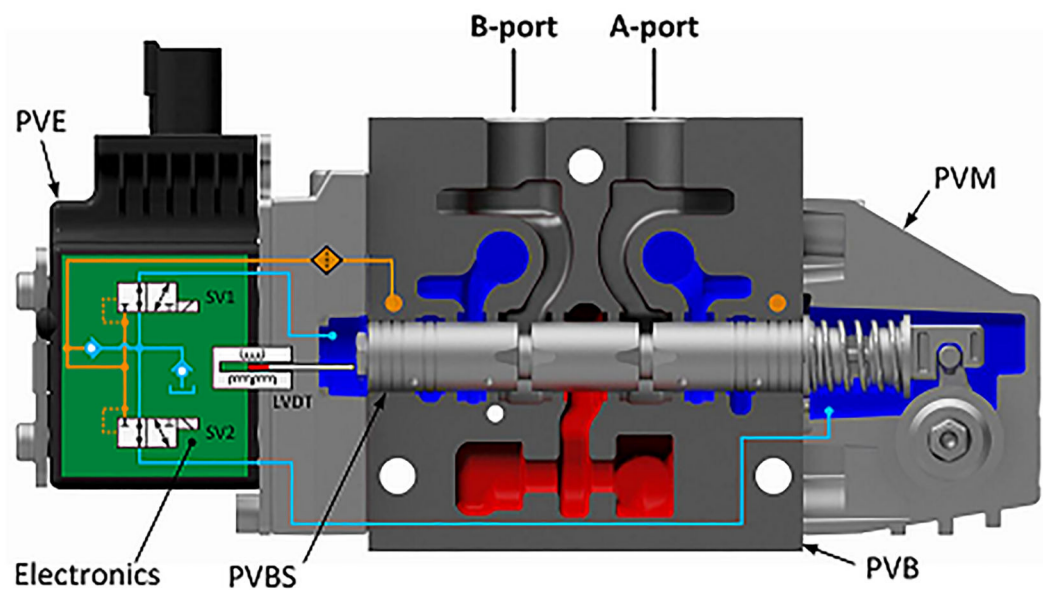
*PVG 16 with PVEA*



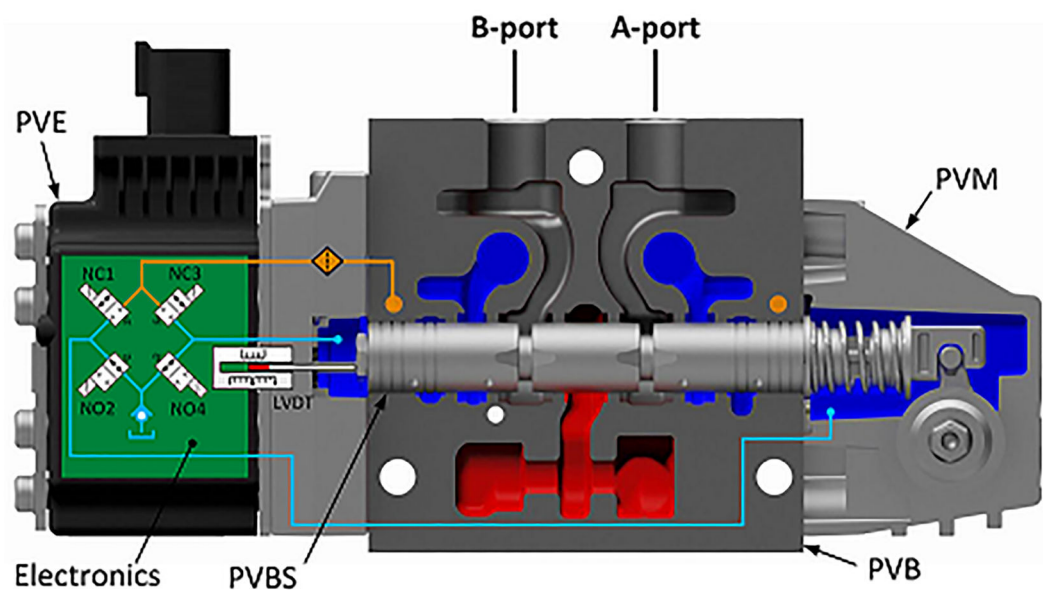


**Function**

*PVG 32 with PVEO*



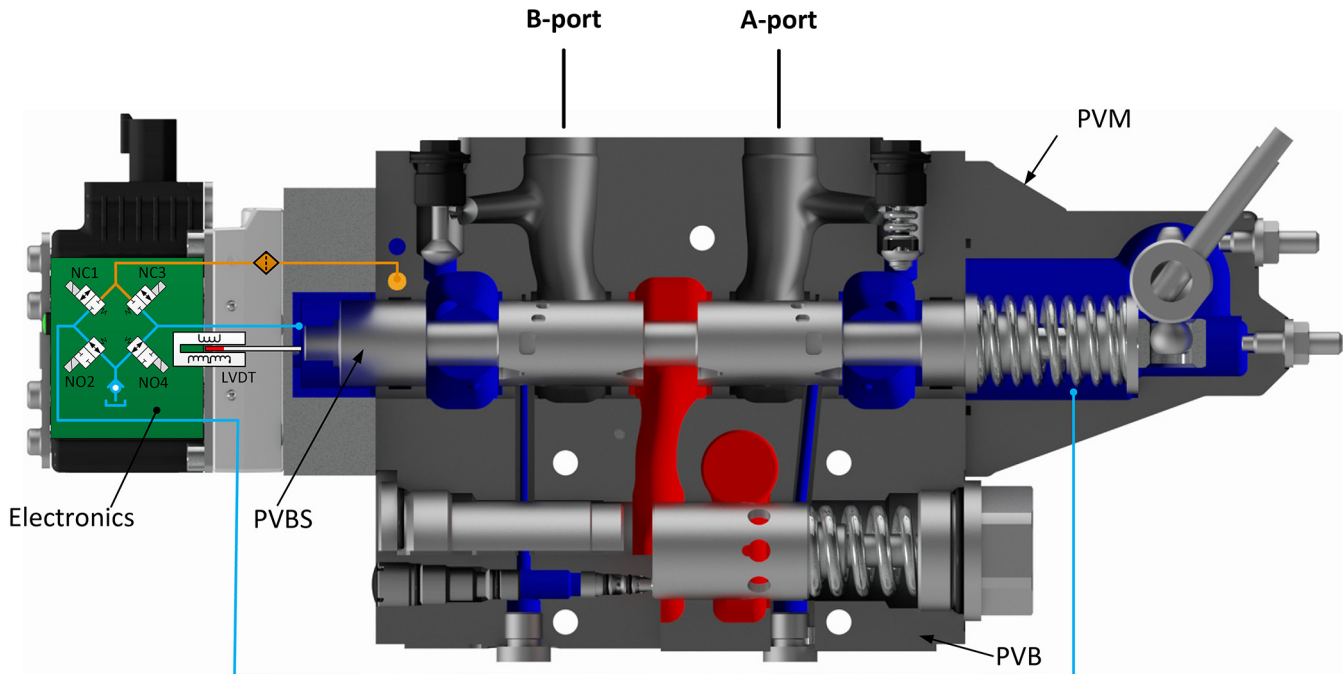
*PVG 32 with PVEH*



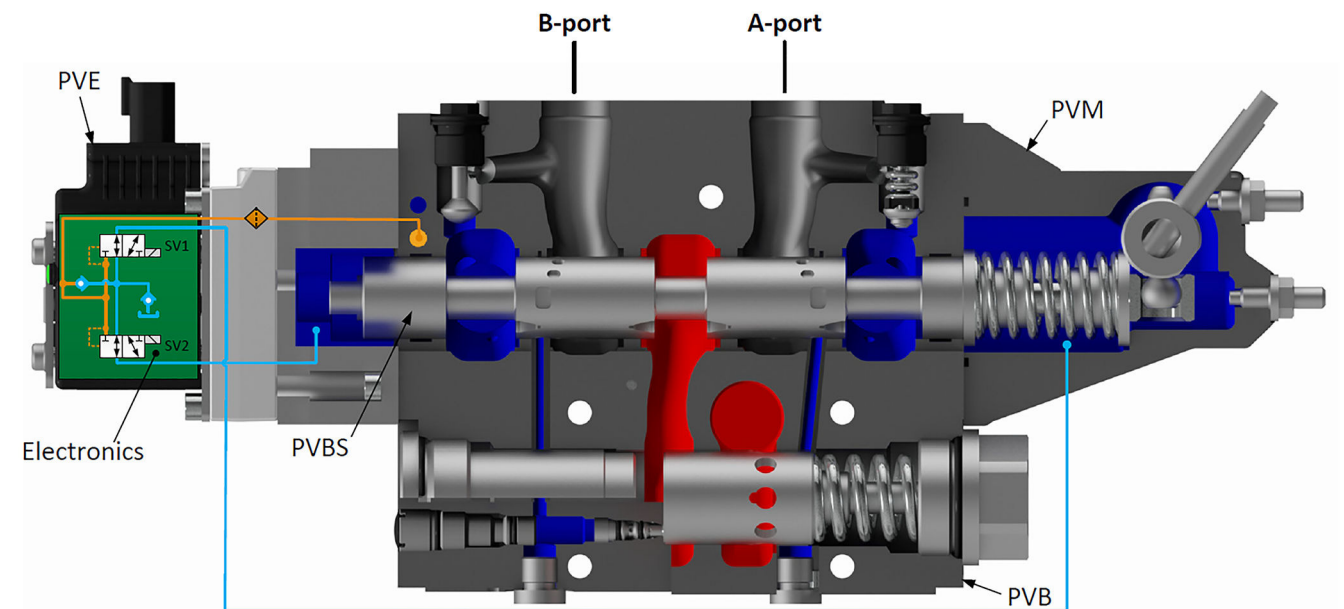
**Function**

**PVG 128/256 Sectional Drawing**

*PVG 256 with PVEH*



*PVG 256 with PVEO*



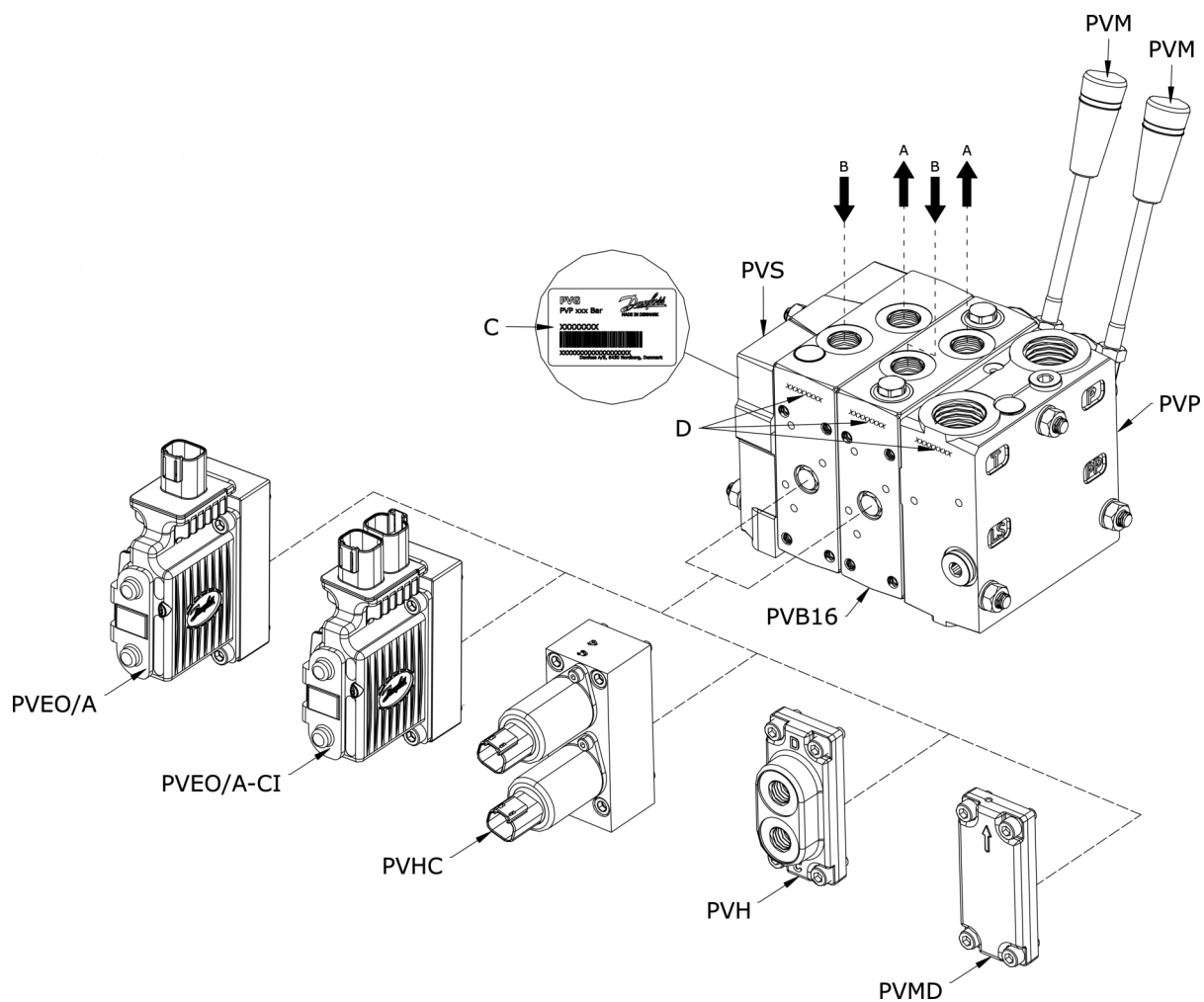
## Installation

### PVG 16 installation

#### Standard assembled PVG 16

The exploded view illustration helps identify PVG 16 components to assist in installation.

*Oil flow direction for standard assembled PVG 16*



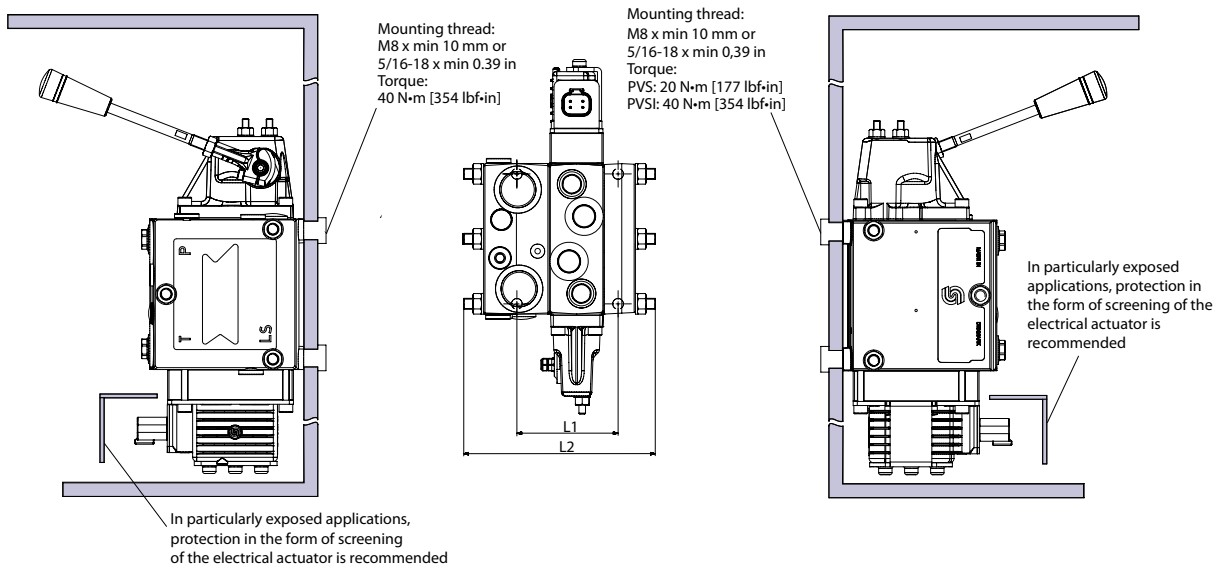
#### Identification

- C:** PVG number, week and year of installation and series number PVP- pressure setting
- D:** Engraved part number on PVP and PVB

## Installation

### PVG 16 Plug orientation

The plug/port orientation shows dimensions of assembled product based on number of PVB used and data on mounting threads.



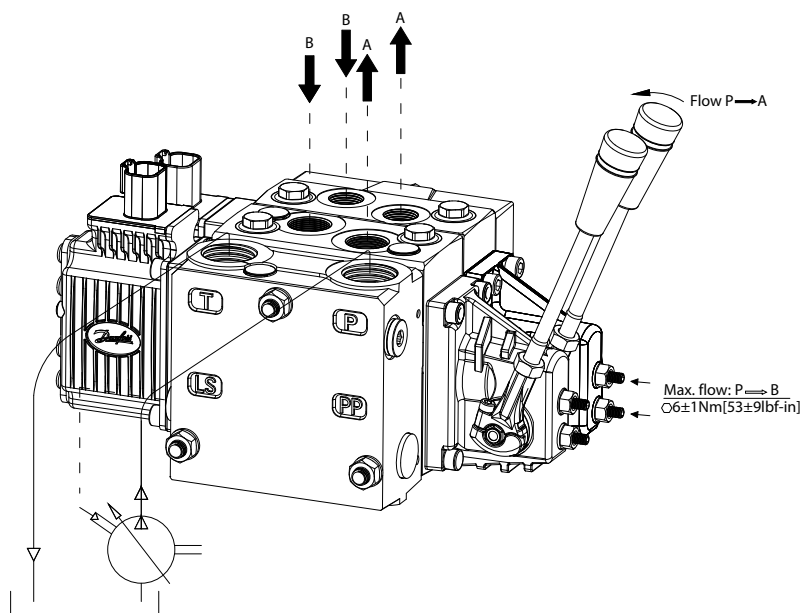
### Dimensions

No. of PVB 16		1	2	3	4	5	6	7	8	9	10	11	12
L1	mm	74	114	154	194	234	274	314	354	394	434	474	514
	[in]	[2.91]	[4.49]	[6.06]	[7.64]	[9.21]	[10.79]	[12.36]	[13.94]	[15.51]	[17.09]	[18.66]	[20.24]
L2	mm	140	189	213	262	311	336	385	434	458	507	551	576
	[in]	[5.51]	[7.44]	[8.39]	[10.31]	[12.24]	[13.23]	[15.16]	[17.09]	[18.03]	[19.96]	[21.69]	[22.68]

**Installation**

**PVG 16/32/48 pump side module, PVP**

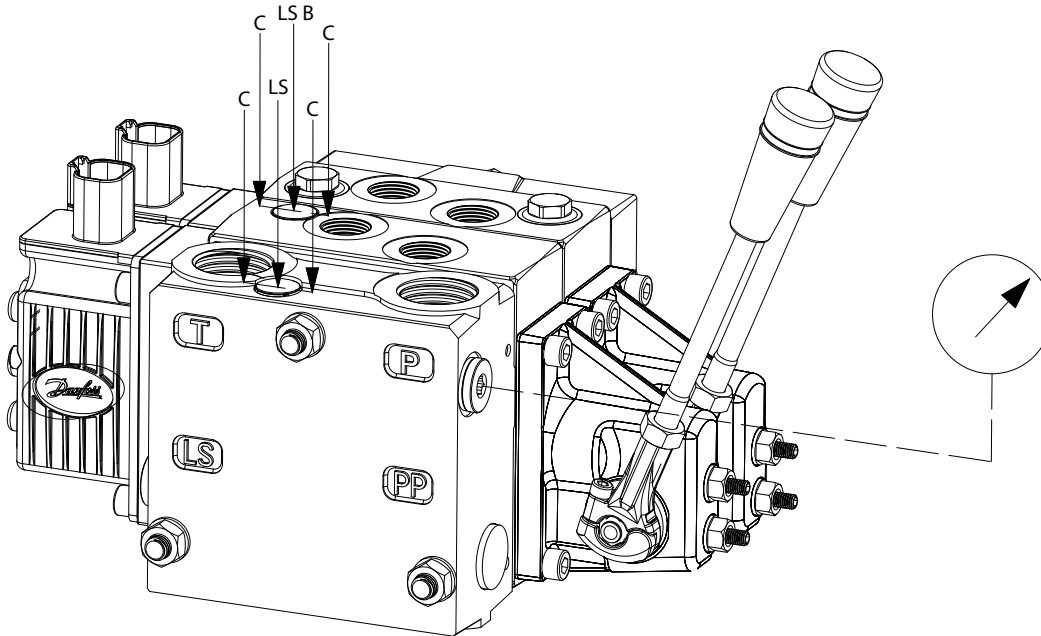
*Pump side and max flow setting*



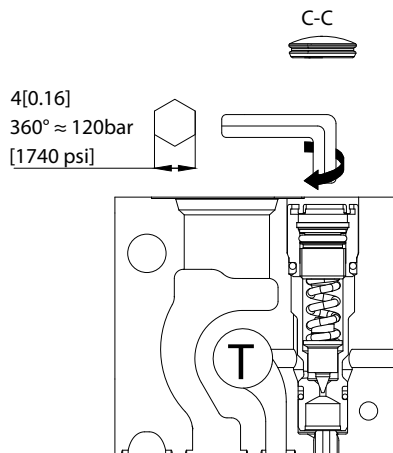
## Installation

### PVG 16 pressure setting, PVP/PVB

PVG 16 pressure setting (LS connection)



Relief valve adjustment



The table below determines which availability of relief valve based on date of PVP/PVB purchase.

#### Relief valve availability

Valve	Prior to week 40/2003	Between week 40/2003 and week 2/2012	After week 2/2012
Relief valve 1	X	X	
Relief valve 2		X	X

## Installation

### Rated pressure

Product	Rated pressure
PVG 16 with PVS	300 bar [4351 psi]
PVG 16 with PVSI	350 bar [5076 psi]

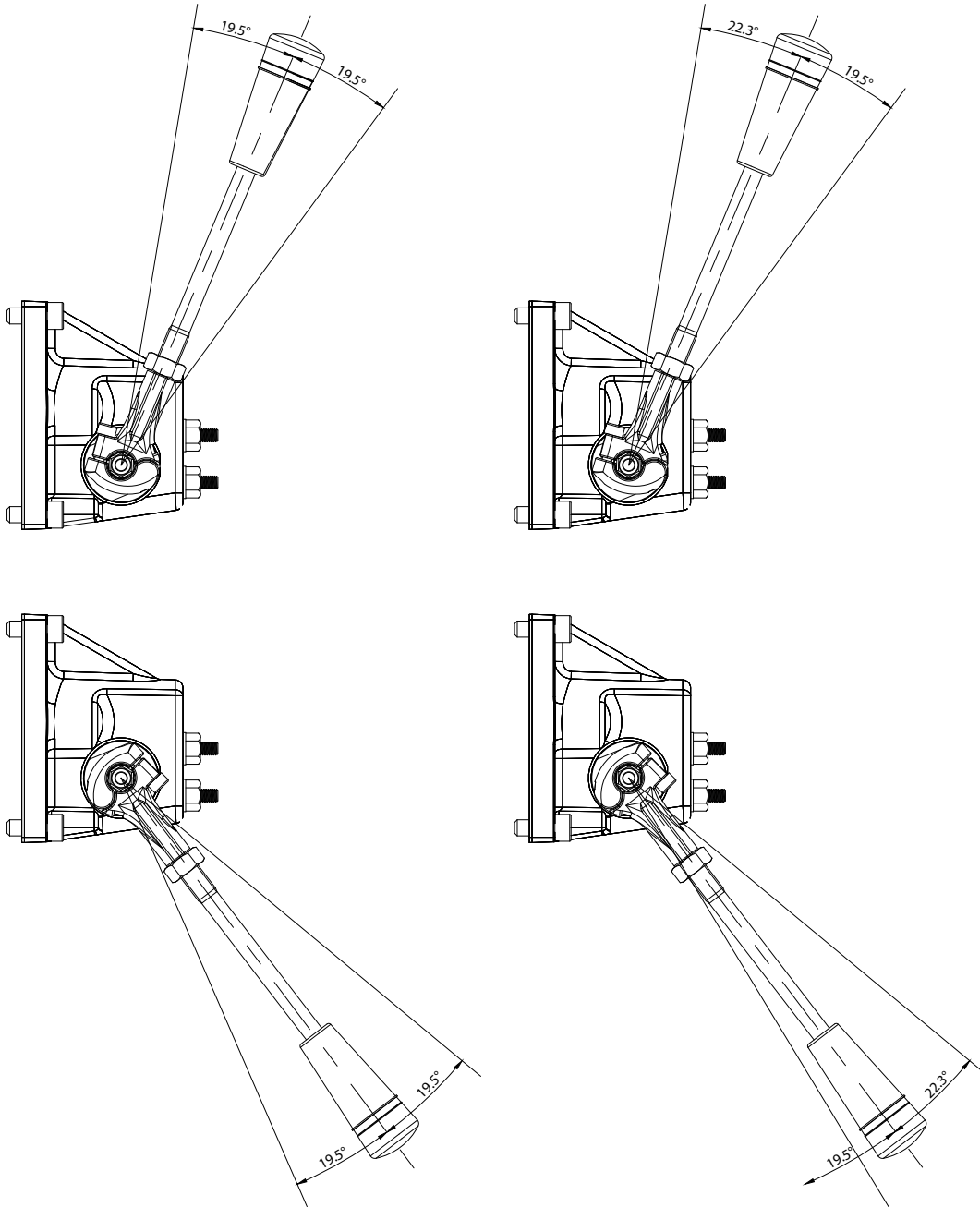
### Torque on connection/port based on seal used

Max. tightening torque		Connection/port						
		P		A/B	T	LS, M, LSA, LSB, PVH, Accu.	LX, PVS, PVSI	
Screwed connection	RG BSP. F, R, G	1/2 in	3/4 in	3/8 in	3/4 in	1/4 in	1/8 in	1/4 in
With steel washer		130 N•m [1150 lbf•in]	210 N•m [1850 lbf•in]	130 N•m [1150 lbf•in]	210 N•m [1850 lbf•in]	40 N•m [350 lbf•in]	17 N•m [150 lbf•in]	40 N•m [350 lbf•in]
With copper washer		30 N•m [270 lbf•in]	50 N•m [445 lbf•in]	30 N•m [270 lbf•in]	50 N•m [445 lbf•in]	20 N•m [180 lbf•in]	15 N•m [135 lbf•in]	20 N•m [180 lbf•in]
With aluminum washer		70 N•m [620 lbf•in]	110 N•m [970 lbf•in]	70 N•m [620 lbf•in]	110 N•m [970 lbf•in]	30 N•m [270 lbf•in]	15 N•m [135 lbf•in]	30 N•m [270 lbf•in]
With cutting edge		130 N•m [1150 lbf•in]	210 N•m [1850 lbf•in]	130 N•m [1150 lbf•in]	210 N•m [1850 lbf•in]	40 N•m [350 lbf•in]	17 N•m [150 lbf•in]	40 N•m [350 lbf•in]
Screwed connection	UNF	7/8 in - 14	1 1/16 in - 12	3/4 in - 16	1 1/16 in - 12	1/2 in - 20	3/8 in - 24	1/2 in - 20
O-ring		90 N•m [800 lbf•in]	120 N•m [1060 lbf•in]	90 N•m [800 lbf•in]	120 N•m [1060 lbf•in]	30 N•m [270 lbf•in]	10 N•m [90 lbf•in]	30 N•m [270 lbf•in]

## Installation

### PVG 16 installation of lever

PVM— lever installation positions and range



Standard installation is shown on the left, installation with float is shown on the right.



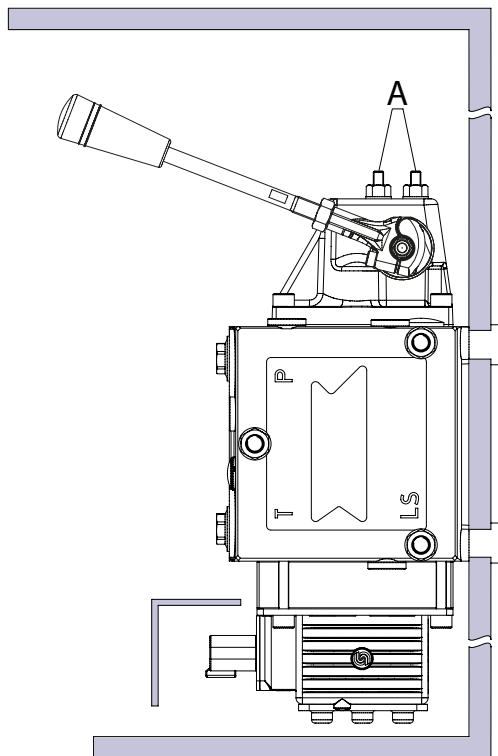
## Installation

### **PVG Bleeding**

If the group is installed vertically, it is recommended to bleed it at the adjusting screws (Pos. A).

It may be necessary to bleed the PVEK because of the hydraulic build-up of PVEA.

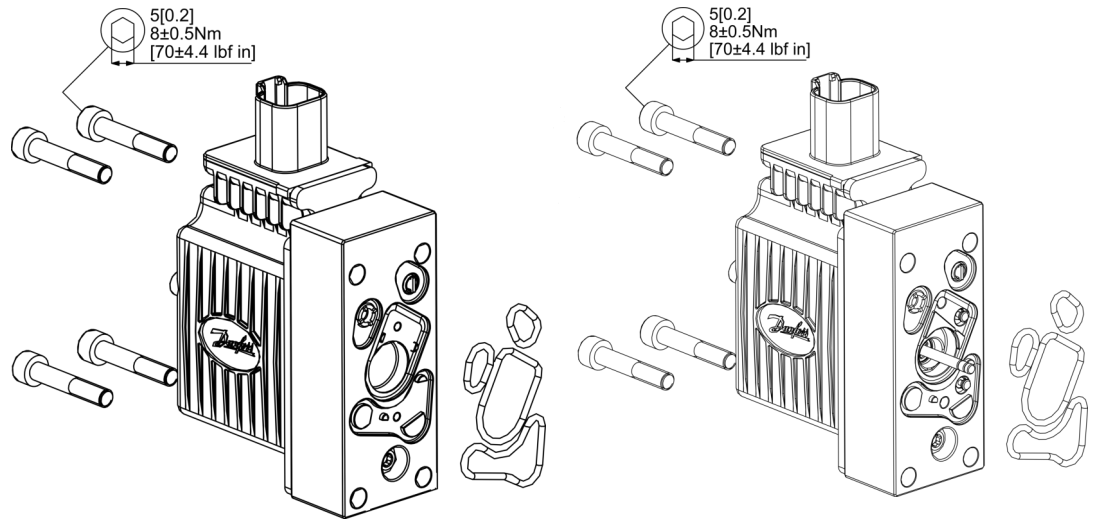
*PVG 16/32 bleeding*



## Installation

### PVG 16 with PVE series 7 installation

*PVE series 7 exploded view*



When installing, protect the LVDT pin (if present), ensure O-rings are in place and be sure to not over-torque.

## Installation

### ***PVG 16 technical data overview***

Only an overview of technical data is shown below; for comprehensive data, please see the Technical Information document for PVG 16.

#### *PVEO/PVEO-CI control specifications*

Description	Type	Value	
Supply Voltage (Udc)	Rated	12 Vdc	24 Vdc
	Range	11 to 15 Vdc	22 to 30 Vdc
	Max. ripple	5%	5%
Current consumption	Typical	320 mA	160 mA

#### *PVEA/PVEA-CI control specifications*

Supply voltage (Udc)	Rated	11 to 32 Vdc
	Range	11 to 32 Vdc
	Max. ripple	5%
Signal voltage (Us)	Neutral	0.5 Udc
	Q: P → A	0.25 Udc
	Q: P → B	0.75 Udc
Current consumption	@ 12 Vdc	320 mA
	@ 24 Vdc	170 mA
Input impedance	Rated	12 kΩ
Input capacitance	Rated	100 μF

#### *Operating conditions*

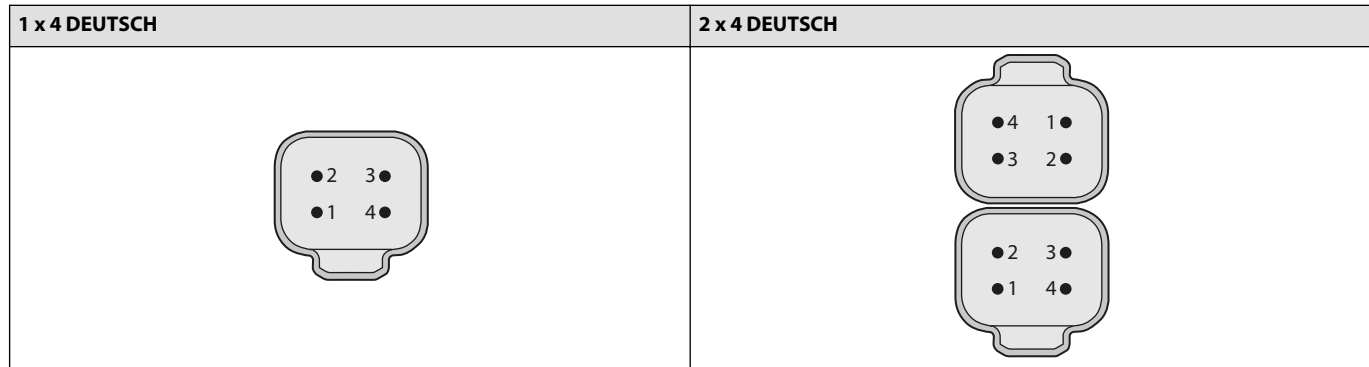
Pilot pressure	Nominal	13.5 bar [196 psi]
	Minimum	10.0 bar [145 psi]
	Maximum	15.0 bar [218 psi]
Oil consumption	Neutral	0.04 l/min [0.01 US gal/min]
	Locked position	0.04 l/min [0.01 US gal/min]
	Actuating	0.6 l/min [0.16 US gal/min]
Storage temperature	Ambient	-50 to +90°C [-58 to +194°F]
Operating temperature	Ambient	-40 to +90°C [-40 to +194°F]
Oil viscosity	Operating range	12 to 75 mm <sup>2</sup> /sec [65 to 347 SUS]
	Minimum	4 mm <sup>2</sup> /sec [39 SUS]
	Maximum	460 mm <sup>2</sup> /sec [2128 SUS]
Oil cleanliness	Minimum	18/16/13 (according to ISO 4406)

### ***PVG 16 connector variants***

PVG 16 connector variants for PVEO, PVEA, PVEO-CI, PVEA-CI with pin layout information.

## Installation

### Pin connector

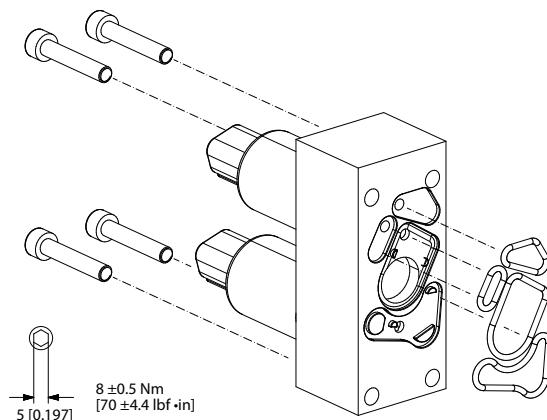


Pin layout for PVEO, PVEA, PVEO-CI, PVEA-CI

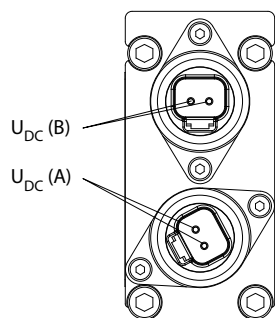
PVE Type	Connector	Pin 1	Pin 2	Pin 3	Pin 4
PVEO	1 x 4 DEUTSCH	U <sub>DC-A</sub>	GND	GND	U <sub>DC-B</sub>
PVEA	1 x 4 DEUTSCH	U <sub>S</sub>	Error	GND	U <sub>DC</sub>
PVEO-CI, PVEA-CI	2 x 4 DEUTSCH	CAN_H	CAN_L	Vbat	Vneg

## Installation

### PVHC for PVG 16



The seal in the PVHC connector and the seals for individual conductors are crucial for correctly sealing the conductor.



### Technical data

Controller output current range	12 V	0 – 1200 mA
	24 V	0 – 600 mA
Coil resistance	12 V	1.0 Ω ± 5%
	24 V	0.25 Ω ± 5%
Pilot pressure (over tank) <sup>1</sup>	Nominal	25 bar [363 psi]
	Minimum	21 bar [305 psi]
	Maximum	25 bar [363 psi]
Control pressure	Range	5 - 15 bar [72.5 - 217.5 psi]
Maximum tank pressure	Port T Static	25 bar [363 psi]
	Port T Dynamic	30 bar [435 psi]
Temperature range	Ambient	-30°C to 80°C [-22 to 176°F]
	Medium	-20°C to 80°C [-4 to 176°F]
Oil viscosity	Range	12 to 75 mm <sup>2</sup> /s [65 to 347 SUS]
	Minimum	4 mm <sup>2</sup> /s [39 SUS]
	Maximum	400 mm <sup>2</sup> /s [2130 SUS]
Enclosure – Protection class	DEUTSCH DT	IP 67
Filtering in the hydraulic system; Max. permissible degree of contamination	23/19/16 (ISO 4406, 1999 version)	


<sup>1</sup> Designed to be used with hydraulic activated spools

## Installation





### PVG 16 LED characteristics

For troubleshooting LED characteristics, please see the Technical Information document for PVG 16.

#### *PVEO LED characteristics*

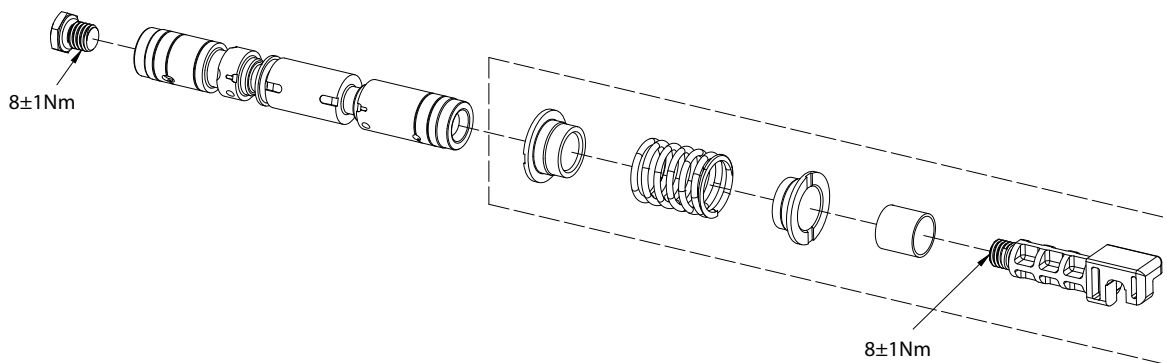
Color	LED view	Function
Green		Power ON

#### *PVEA LED characteristics*

Green		Operating
Green @ 1.5 Hz		Power Save mode
Red		Internal fault
Red @ 1.5 Hz		External or Float fault

### Installation

#### PVG 16 main spool assembly



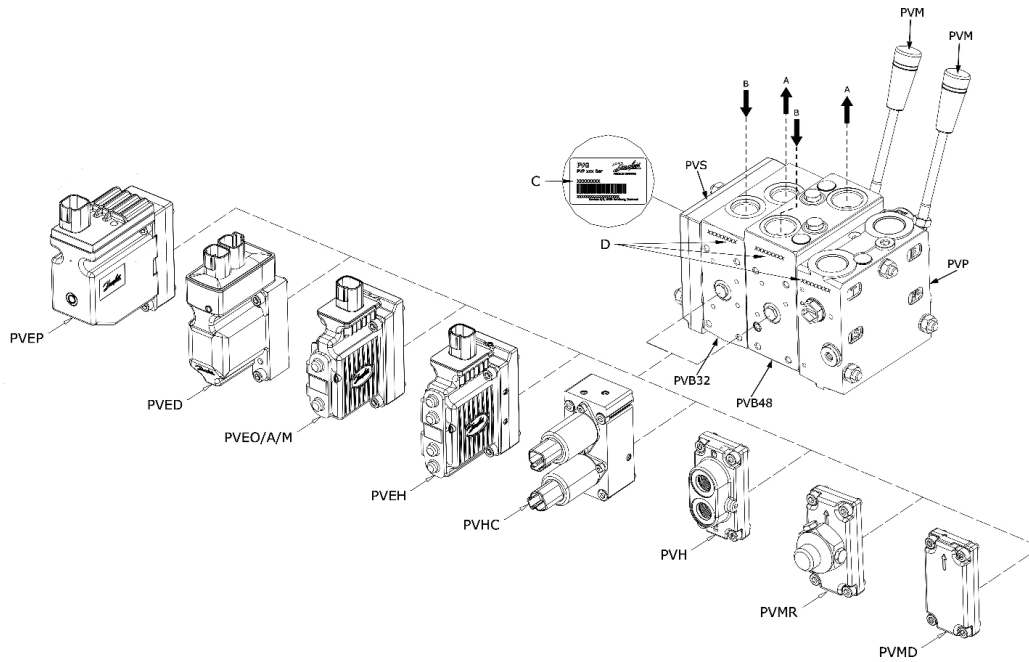
## Installation

### PVG 32/48 installation

#### Standard assembled PVG 32/48

The exploded view illustration helps identify PVG 32 components to assist in installation.

*Oil flow direction for standard assembled PVG 16*



#### Identification

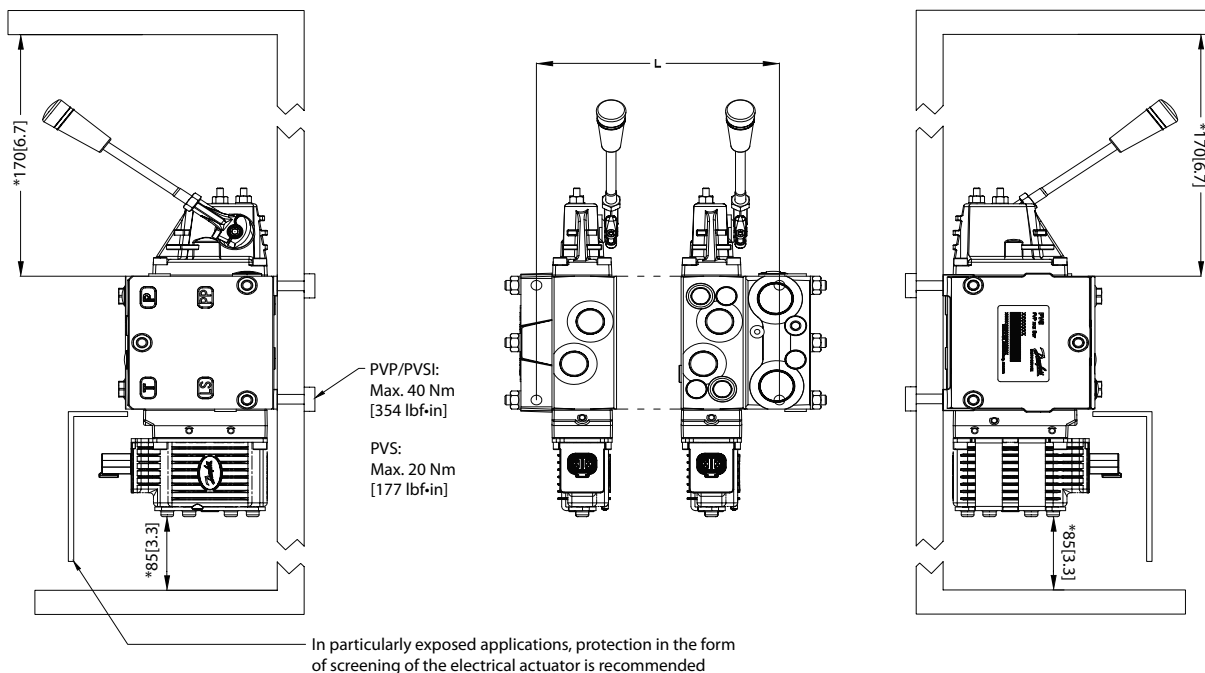
- C:** PVG number, week and year of installation and series number PVP- pressure setting
- D:** Engraved part number on PVP and PVB



## Installation

### PVG 32/48 plug orientation

The PVG 32 series has increasing L port sizes with higher PVB numbers.



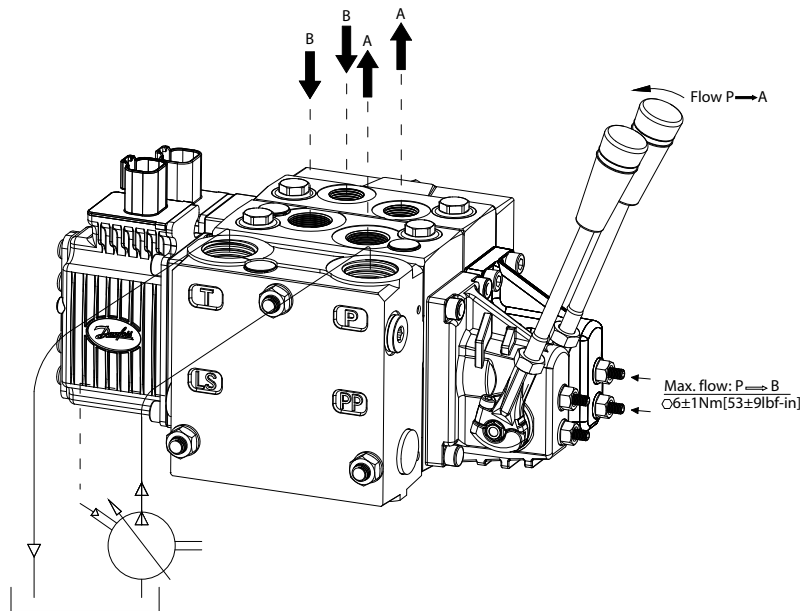
Number of PVB 32		1	2	3	4	5	6	7	8	9	10	11	12
L1	mm	82	130	178	226	274	322	370	418	466	514	562	610
	[in]	[3.23]	[5.12]	[7.01]	[8.90]	[10.79]	[12.68]	[14.57]	[16.46]	[18.35]	[20.24]	[22.13]	[24.02]
L2	mm	141	190	238	287	335	384	432	481	529	578	626	675
	[in]	[5.55]	[7.48]	[9.37]	[11.30]	[13.19]	[15.12]	[17.01]	[18.94]	[20.83]	[22.76]	[24.65]	[26.57]

Number of PVB 48		1	2	3	4	5	6	7	8	9	10
L1	mm	90	146	202	258	314	370	426	486	538	594
	[in]	[3.54]	[5.75]	[7.95]	[10.15]	[12.36]	[14.57]	[16.77]	[19.13]	[21.18]	[23.38]
L2	mm	132	192	240	300	360	408	468	528	576	636
	[in]	[5.19]	[7.56]	[9.45]	[11.81]	[14.17]	[16.06]	[18.43]	[20.79]	[22.68]	[25.04]

## Installation

### PVG 16/32/48 pump side module, PVP

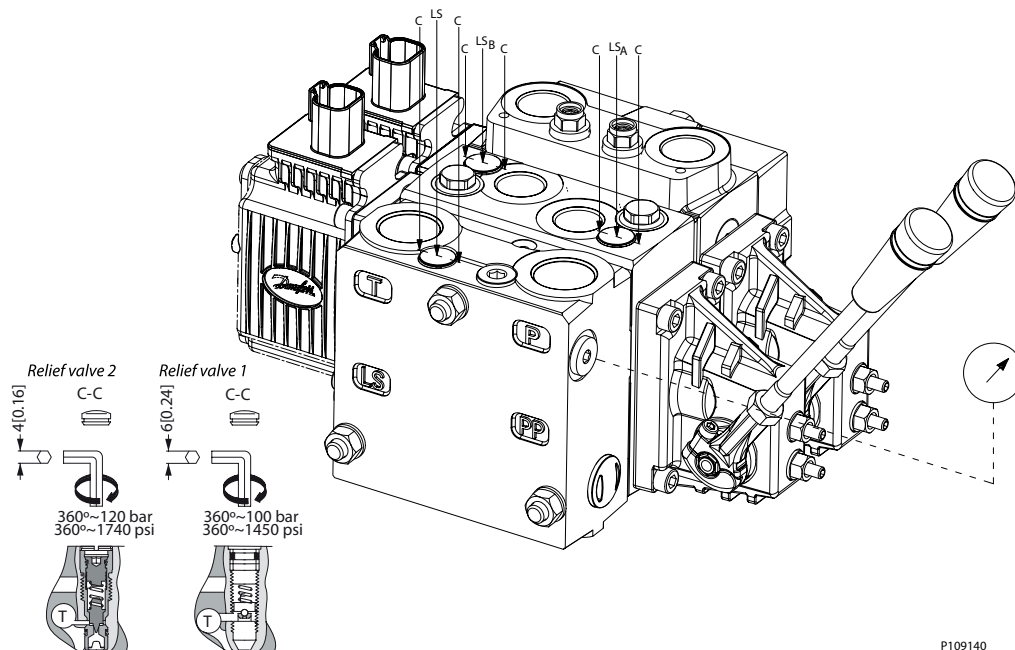
*Pump side and max flow setting*



## Installation

### PVG 32/48 pressure setting

PVG 32/48 pressure setting (LS connection)



P109140

### Relief valve availability

Valve	Prior to week 40/2003	Between week 40/2003 and week 2/2012	After week 2/2012
Relief valve 1	X	X	
Relief valve 2		X	X

"X" denotes availability.

### Rated pressure

Module	Rated pressure
PVG 32 with PVS	300 bar [4351 psi]
PVG 32 with PVS1	350 bar [5076 psi]
PVG 32 with PVBZ	210 bar [3046 psi]
PVG 32 with HIC aluminum	210 bar [3046 psi]
PVG 32/120 with PVS	300 bar [4351 psi]
PVG 32/120 with PVS1	350 bar [5076 psi]
PVG 32/100 with PVS	300 bar [4351 psi]
PVG 32/100 with PVS1	350 bar [5076 psi]

### Torque on connection/port based on seal used

Seal	Connection/port						
	P		A/B	T	LS, M, LSA, LSB, PVH, Accu.	LX, PVS, PVS1	
Sealing thread	G1/2	G3/4	G1/2	G3/4	G1/2	G1/8	G1/4
With steel washer	130 N·m [1150 lbf·in]	210 N·m [1850 lbf·in]	130 N·m [1150 lbf·in]	210 N·m [1850 lbf·in]	40 N·m [350 lbf·in]	17 N·m [150 lbf·in]	40 N·m [350 lbf·in]

## Installation

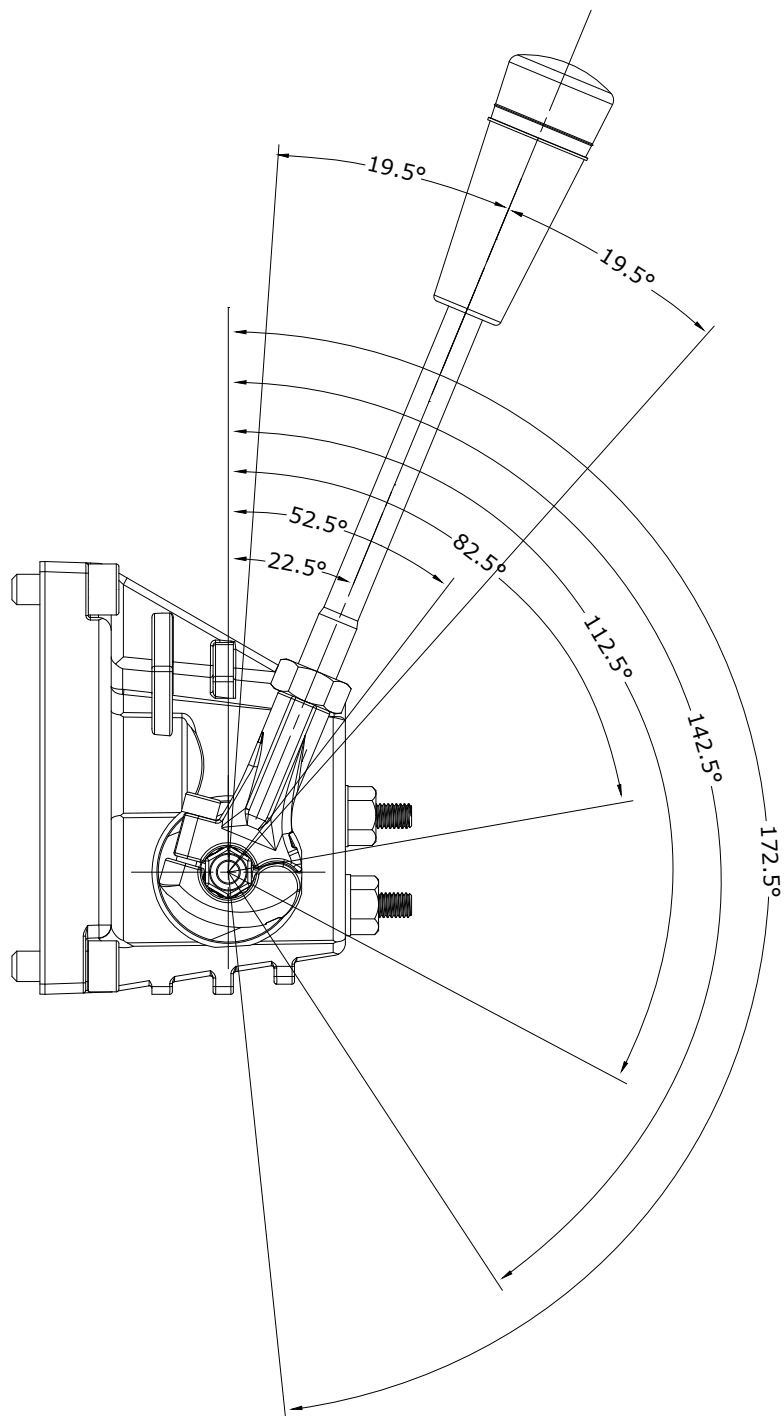
*Torque on connection/port based on seal used (continued)*

Seal	Connection/port						
	P		A/B	T	LS, M, LSA, LSB, PVH, Accu.	LX, PVS, PVS1	
With copper washer	30 N•m [270 lbf•in]	50 N•m [445 lbf•in]	30 N•m [270 lbf•in]	50 N•m [445 lbf•in]	20 N•m [180 lbf•in]	15 N•m [135 lbf•in]	20 N•m [180 lbf•in]
with aluminum washer	70 N•m [620 lbf•in]	110 N•m [970 lbf•in]	70 N•m [620 lbf•in]	110 N•m [970 lbf•in]	30 N•m [270 lbf•in]	15 N•m [135 lbf•in]	30 N•m [270 lbf•in]
With cutting edge	130 N•m [1150 lbf•in]	210 N•m [1850 lbf•in]	130 N•m [1150 lbf•in]	210 N•m [1850 lbf•in]	40 N•m [350 lbf•in]	17 N•m [150 lbf•in]	40 N•m [350 lbf•in]

## Installation

### PVG 32/48 installation of lever

The lever must be screwed in completely.



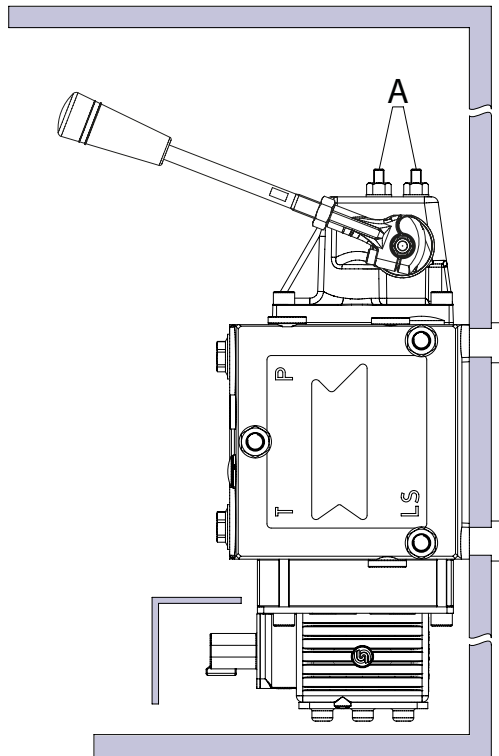
## Installation

### PVG Bleeding

If the group is installed vertically, it is recommended to bleed it at the adjusting screws (Pos. A).

It may be necessary to bleed the PVEK because of the hydraulic build-up of PVEA.

*PVG 16/32 bleeding*

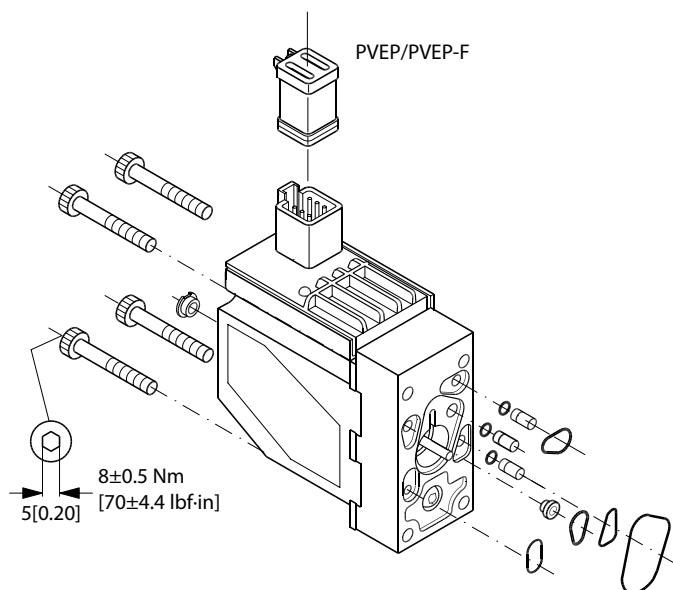


## Installation

### PVEP series 4 for PVG 32/48

Seals must be correctly set to successfully seal the connector.

PVEP/PVEP-F

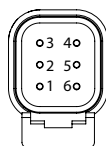


Be sure to protect the LVDT Pin and O-rings are in place during installation. Do not over torque.

The seal in the DEUTSCH connector and the use of 1.5 mm<sup>2</sup> lines in all connections are crucial for correctly sealing the connector.

### PVEP series 4 for PVG 32/48 pin layout

1x6 DEUTSCH



#### Pin layout

Type	Connector	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
PVEP	1x6 DEUTSCH	PWM_A	Error	PWM_B	No connection	Not used	Udc

### PVEP series 4 for PVG 32/48 technical data

#### PVEP control specification

Description	Type	Value
Supply Voltage (UDC)	Range	11 to 32 VDC
	Max. ripple	5%
	Max. 5 min	36 V

## Installation

### *PVEP control specification (continued)*




Description	Type	Value
PWM	Control range	10 – 80 %
	Float position control	PWM_A = PWM_B = 90 %
	Frequency	100 -1000 Hz
	Input voltage swing	0 UDC
	Trigger point	70 % of V bat
Input Impedance	Standard pull down	5 kW
Power consumption		7 W
Error voltage	Fault	V bat
	No fault	< 2 V

All connector terminals are short-circuit protected, and protected against reverse connection (and their combinations). Connecting error pins from two or more PVE's will cause the surveillance system to malfunction.

### *PVEP operating conditions*

Description	Type	Value
Pilot Pressure	Nominal	13.5 bar [196 psi]
	Minimum	10.0 bar [145 psi]
	Maximum	15.0 bar [218 psi]
Oil Consumption	Neutral	0.04 l/min [0.01 US gal/min]
	Locked Position	0.1 l/min [0.03 US gal/min]
	Actuating	0.6 l/min [0.16 US gal/min]
Storage Temperature	Ambient	-40 to +90°C [-40 to +194°F]
Operating Temperature	Ambient	-30 to +60°C [-22 to +140°F]
Oil Viscosity	Operating Range	12 – 75 cSt [65 – 347 SUS]
	Minimum	4 cSt [39 SUS]
	Maximum	460 cSt [2128 SUS]
Oil Cleanliness	Maximum	18/16/13 (according to ISO 4406)

### *PVEP LED characteristics*

Green		Operating
Red		Internal fault
Red @ 1.5 Hz		External or float fault

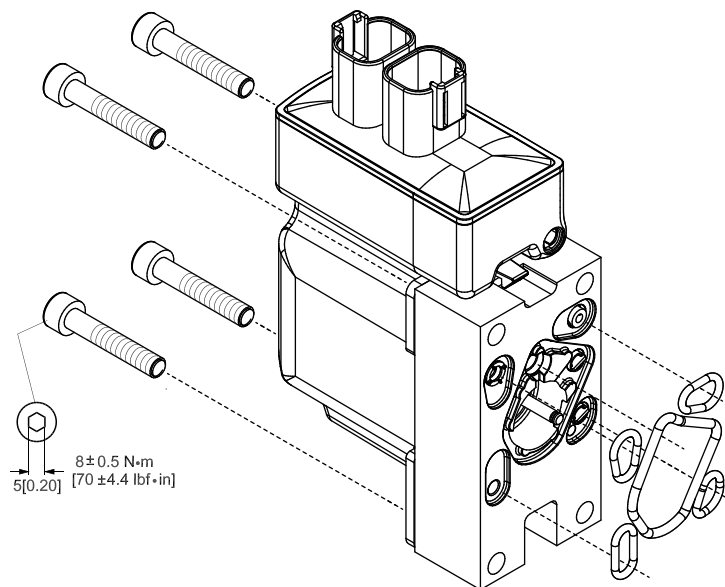


## Installation

### PVED-CC series 5 for PVG 32/48

Assembling the PVE requires close attention and completion of the information below.

#### PVED-CC series 5 installation

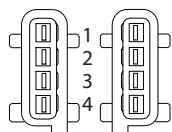


V310452.A

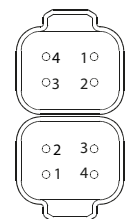
Be sure to protect LVDT pin and O-rings are in place. Do not over torque.

### PVED-CC series 5 for PVG 32/48 pin layout

#### 2x4 AMP



#### 2x4 DEUTSCH



#### Pin layout for PVEP

Type	Connector	Pin 1	Pin 2	Pin 3	Pin 4
PVEP	2x4 AMP	CAN-L	Vbat+	GND	CAN-H
	2x4 DEUTSCH	CAN-H	CAN-L	Vbat+	GND

All pins are internally connected.

<sup>1</sup> Internally connected

## Installation

### ***PVED-CC series 5 for PVG 32/48 technical data***

#### *PVED-CC control specification*

Description	Type	Value
Supply Voltage (UDC)	Nominal	11 to 32 VDC
	Minimum	9 V
	Maximum	36 V
Current consumption	@ 12 V	560 mA
	@ 24 V	300 mA
Power consumption	@ 12 V	6.2 W
	@ 24 V	7.2 W

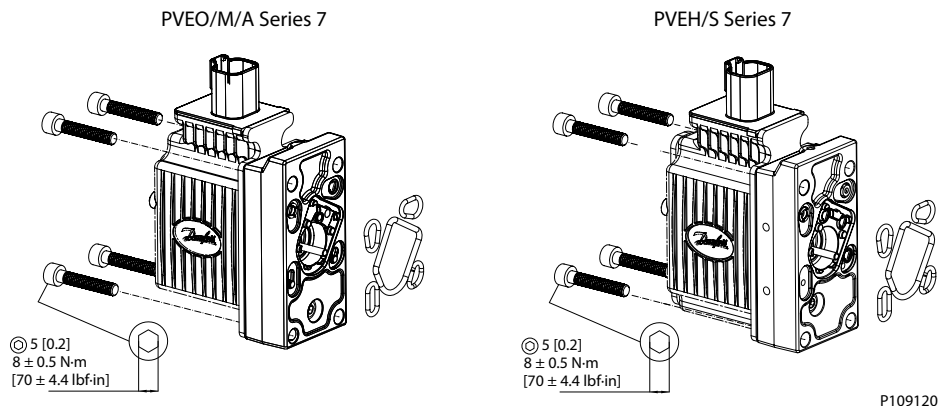
#### *PVED-CC operating conditions*

Description	Type	Value
Pilot Pressure	Nominal	13.5 bar [196 psi]
	Minimum	10.0 bar [145 psi]
	Maximum	15.0 bar [218 psi]
Oil Consumption	Neutral	0 l/min [0 US gal/min]
	Locked Position	0 l/min [0 US gal/min]
	Actuating	0.7 l/min [0.184 US gal/min]
Storage Temperature	Ambient	-40 to +90°C [-40 to +194°F]
Operating Temperature	Ambient	-30 to +60°C [-22 to +140°F]
Oil Viscosity	Operating Range	12 – 75 cSt [65 – 347 SUS]
	Minimum	4 cSt [39 SUS]
	Maximum	460 cSt [2128 SUS]
Oil Cleanliness	Maximum	18/16/13 (according to ISO 4406)
Grade of enclosure		IP 66

## Installation

### PVE series 7 for PVG 32/48

Assembling the PVE requires close attention.



Be sure to protect LVDT pin if present and ensure O-rings and gaskets are in place during installation. Do not over torque.

**PVEA is not compatible with PVG 100 High Flow.**

### PVE series 7 for PVG 32/48 connector overview

1 x 4 DEUTSCH	2 x 4 DEUTSCH	1 x 6 DEUTSCH	
1 x 4 AMP	2 x 4 AMP	1 x 6 AMP	1 x 4 DIN

### PVEO-DI 4-pin AMP Connector

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
2x4 AMP (A)	U <sub>DC_A</sub>	U <sub>DC_B</sub>	GND	GND
2x4 AMP (B)	DI-B	DI-A	GND	U <sub>DC2</sub>

## Installation

### *PVEM 4-pin DIN Connector*

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
1x4 DIN	U <sub>DC</sub>	U <sub>S</sub>	Error	GND

### *PVEO, PVEO-R and PVEO-HP 4-pin Connector*

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
1x4 AMP	U <sub>DC_A</sub>	U <sub>DC_B</sub>	GND	GND
1x4 DEUTSCH	U <sub>DC_A</sub>	GND	GND	U <sub>DC_B</sub>
1x4 DIN	U <sub>DC_A</sub>	U <sub>DC_B</sub>	-	GND

### *PVEA/PVEH/PVES*

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
1x4 AMP	U <sub>S</sub>	U <sub>DC</sub>	GND	Error
1x4 DEUTSCH	U <sub>S</sub>	Error	GND	U <sub>DC</sub>
1x4 DIN	U <sub>DC</sub>	U <sub>S</sub>	Error	GND

### *PVEA-DI and PVEH-DI 4-pin Connector*

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
2x4 AMP (A)	U <sub>S</sub>	U <sub>DC</sub>	GND	Error
2x4 AMP (B)	DI-A	DI-B	GND	U <sub>DC2</sub>
2x4 DEUTSCH (A)	U <sub>S</sub>	Error	GND	U <sub>DC</sub>
2x4 DEUTSCH (B)	U <sub>DC2</sub>	GND	DI-A	DI-B

### *PVEH-FLA 6-pin Connector*

Pinout	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
1x6 AMP	U <sub>S</sub>	U <sub>DC</sub>	GND	Error	Float	-

### *PVEH-SP and PVES-SP 6-pin Connector*

Pinout	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
1x6 DEUTSCH	U <sub>S</sub>	Error	-	SP	GND	U <sub>DC</sub>

### ***PVE series 7 for PVG 32/48 operating conditions***

The PVE products work under the specific conditions detailed in the table below.

Description	Type	Value
Pilot Pressure	Nominal	13.5 bar [196 psi]
	Minimum	10.0 bar [145 psi]
	Maximum	15.0 bar [218 psi]
Oil Consumption	Neutral	0.04 l/min [0.01 US gal/min]
	Locked Position	0.04 l/min [0.01 US gal/min]
	Actuating	0.6 l/min [0.16 US gal/min]
Storage Temperature	Ambient	-50 to +90°C [-58 to +194°F]
Operating Temperature	Ambient	-40 to +90°C [-40 to +194°F]

## Installation

Description	Type	Value
Oil Viscosity	Operating Range	12 – 75 cSt [65 – 347 SUS]
	Minimum	4 cSt [39 SUS]
	Maximum	460 cSt [2128 SUS]
Oil Cleanliness	Maximum	18/16/13 (according to ISO 4406)

### ***PVE series 7 for PVG 32/48 control specifications***

The tables below detail the control specifications for PVEO, PVEM, PVEA/PVEH/PVES.

#### *PVEO control specification*

Supply Voltage (UDC)	Rated	12 VDC	24 VDC
	Range	11→15 VDC	22→30 VDC
	Max. ripple	5 %	

#### *PVEM control specification*

Supply Voltage (UDC)	Rated/Range	11→32 VDC
	Max. ripple	5%
Signal Voltage (US)	Neutral	$US = 0.5 \cdot UDC$
	Q: P→A	$US = (0.5 \rightarrow 0.25) \cdot UDC$
	Q: P→B	$US = (0.5 \rightarrow 0.75) \cdot UDC$
Signal Voltage PWM (US)	neutral	US = 50% DUT
	Q: P→A	US = 50%→25% DUT
	Q: P→B	US = 50%→75% DUT
PWM Frequency (US)	Recommended	> 200 Hz
Input Impedance	Rated	12 kΩ
Input Capacitance	Rated	100 nF


#### *PVEA/PVEH/PVES control specification*

Supply Voltage (UDC)	Rated/Range	11→32 VDC
	Max. ripple	5%
Signal Voltage (US)	Neutral	$US = 0.5 \cdot UDC$
	Q: P→A	$US = (0.5 \rightarrow 0.25) \cdot UDC$
	Q: P→B	$US = (0.5 \rightarrow 0.75) \cdot UDC$
Signal Voltage PWM (US)	neutral	US = 50% DUT
	Q: P→A	US = 50%→25% DUT
	Q: P→B	US = 50%→75% DUT
PWM Frequency (U S)	Recommended	> 1000 Hz
Input Impedance	Rated	12 kΩ
Input Capacitance	Rated	100 nF

### ***PVE series 7 for PVG 32/48 LED characteristics***





The LED provided on the PVE products can tell the user if the product is operating correctly or not.

#### *PVEO LED characteristics*






Color	LED view	Function
Green		Power ON

## Installation

### *PVEM/PVEA/PVEH/PVES LED characteristics*

Green		Operating
Green @ 1.5 Hz		Neutral - Power Save
Red		Internal fault
Red @ 1.5 Hz		External or Float fault

### *PVEH-U/PVES-U LED characteristics*

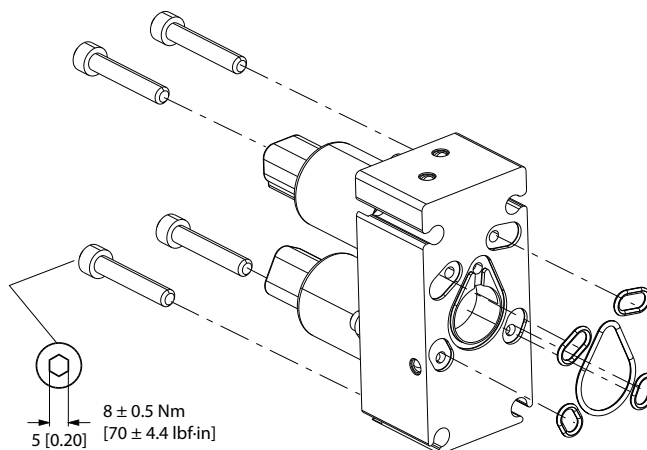
Green		Operating
Green @ 1.5 Hz		Neutral - Power Save
Red		Internal fault
Red @ 1.5 Hz		External or Float fault
Yellow		Disable Mode

## Installation

### PVHC for PVG 32/48 installation

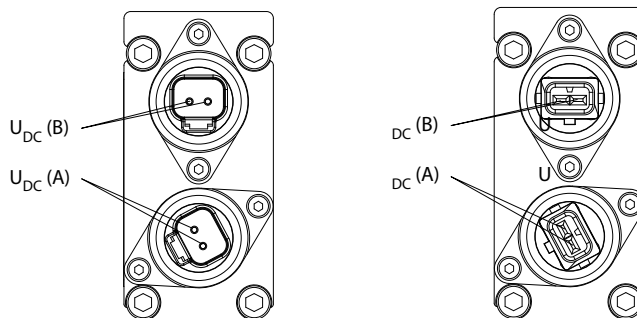
The seal in the PVHC connector and the seals for individual conductors are crucial for correctly sealing the connector.

*PVHC for PVG 32*



### PVHC for PVG 32/48 connector

*DEUTSCH (left) and AMP (right) connectors*



Parameter	Control range	
	12 V	24 V
Current	1 - 1500 mA	0 - 750 mA
Pressure control range	5 to 15 bar [72.5 to 217.5 psi]	

### PVHC for PVG 32/48 technical data

Description		Value
Controller output current range	12 V	0 – 1500 mA
	24 V	0 – 750 mA
Coil resistance	12 V	4.72 Ω ± 5%
	24 V	20.8 Ω ± 5%
Pilot pressure (over tank)*	Nominal	25 bar [363 psi]
	Minimum	21 bar [305 psi]
	Maximum	25 bar [363 psi]
Control pressure	Range	5 - 15 bar [72.5 - 217.5 psi]

## Installation

Description		Value
Maximum tank pressure	Port T Static	25 bar [363 psi]
	Port T Dynamic	30 bar [435 psi]
Temperature range	Ambient	-30°C to 80°C [-22 to 176°F]
	Medium	-20°C to 80°C [-4 to 176°F]
Oil viscosity	Range	12 to 75 mm <sup>2</sup> /s [65 to 347 SUS]
	Minimum	4 mm <sup>2</sup> /s [39 SUS]
	Maximum	400 mm <sup>2</sup> /s [2130 SUS]
Enclosure – Protection class	DEUTSCH DT	IP 67
	AMP JPT	IP 66
Filtering in the hydraulic system; Max. permissible degree of contamination	23/19/16 (ISO 4406, 1999 version)	

\* Designed to be used with hydraulic activated spools

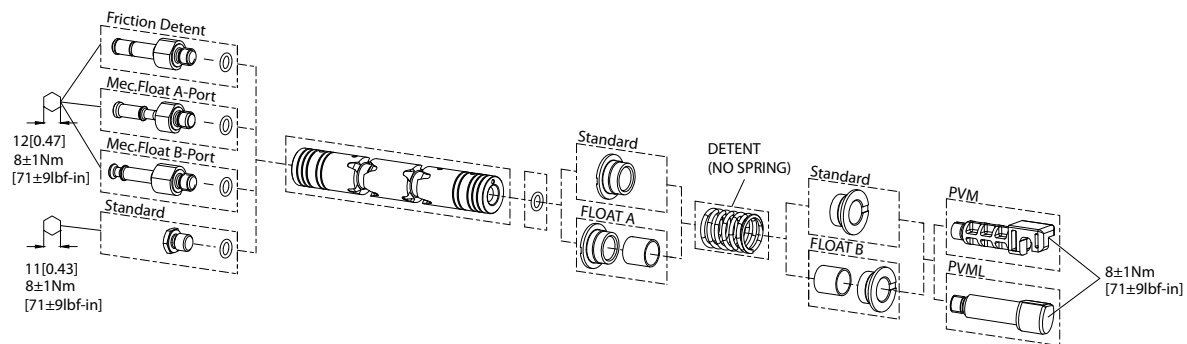
The PVHC is produced in an environment using mineral based hydraulic oil.



## Installation

### PVG 32/48 main spool assembly installation

#### Standard main spool assembly

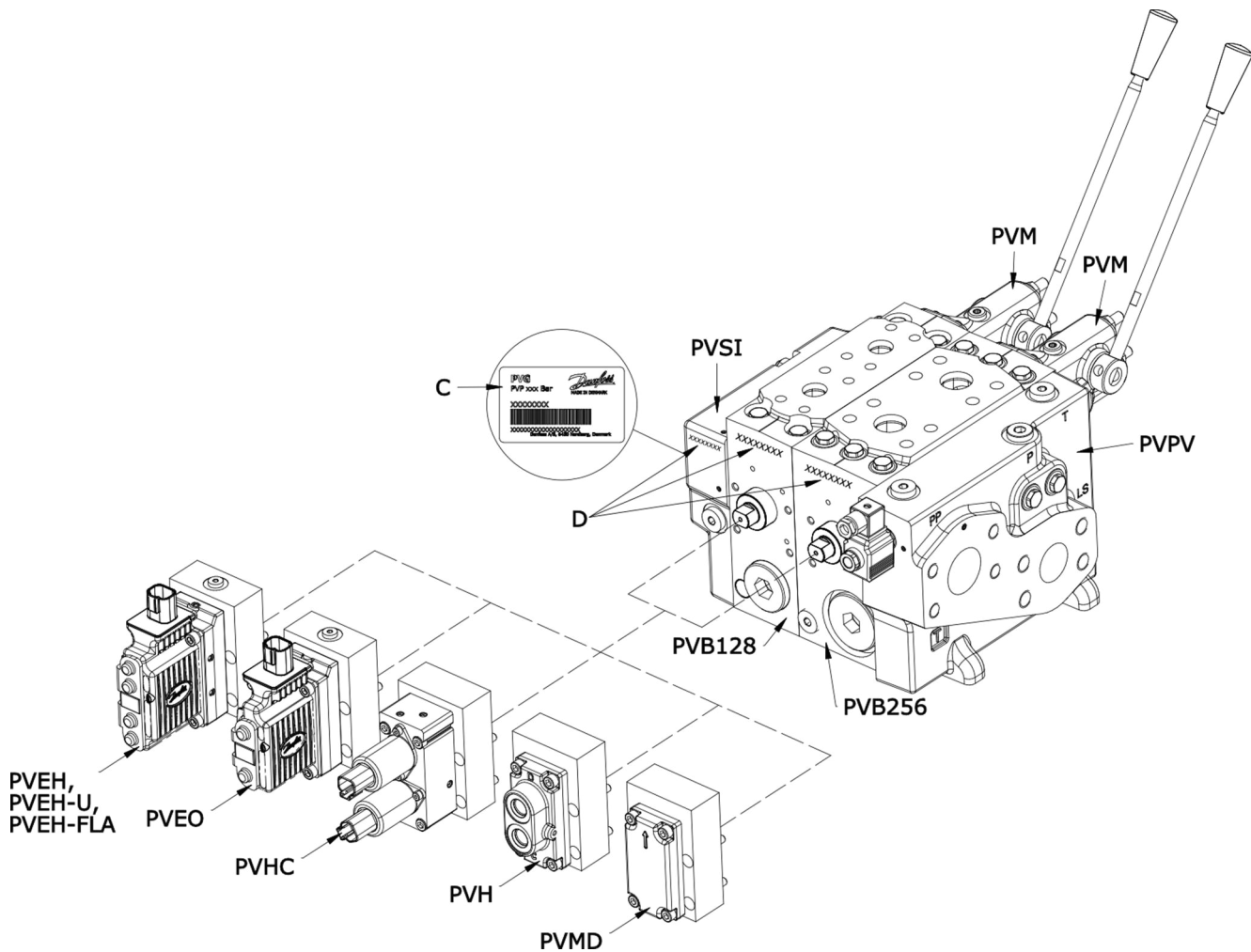


## Installation

### PVG 128/256 installation

#### Standard assembled PVG 128/256

#### Identification



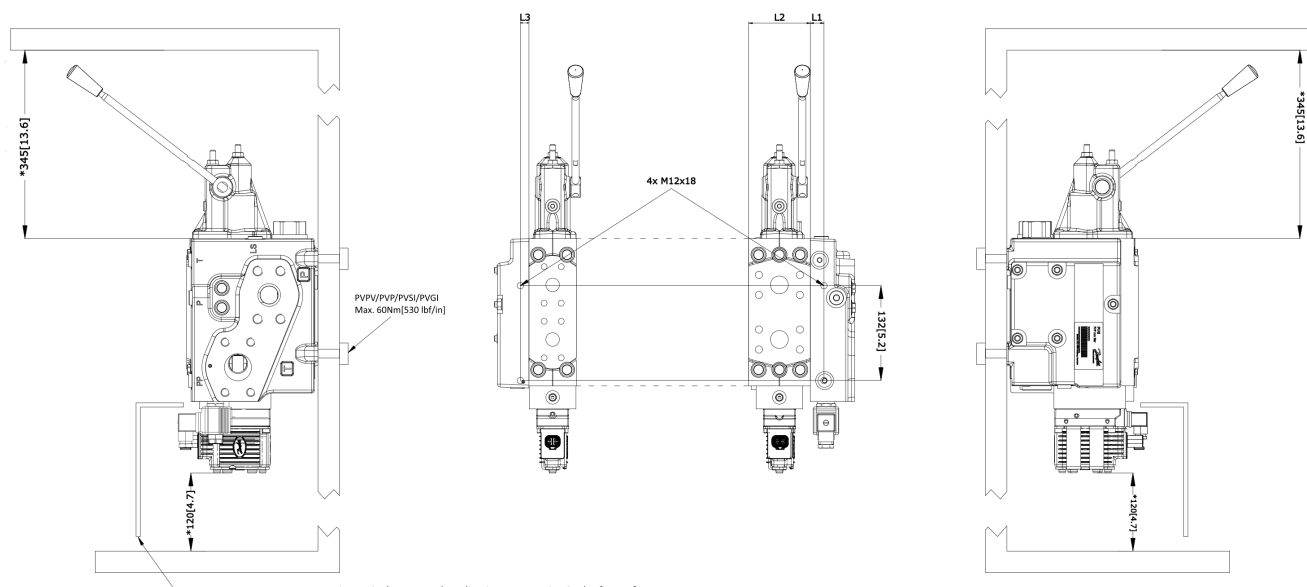
#### Identification

- C** PVG Series, Inlet Relief Setting (if applicable), Valve Material Number, Serial Number (including Valve Material Number and Week/Year/Day of Assembly)
- D** Module Material Number and Date Code (Week/Year/Day of Manufacture)

## Installation

### PVG 128/256 plug orientation

#### Installation and mounting



In particular exposed applications, protection in the form of screening of the electrical actuator is recommended.

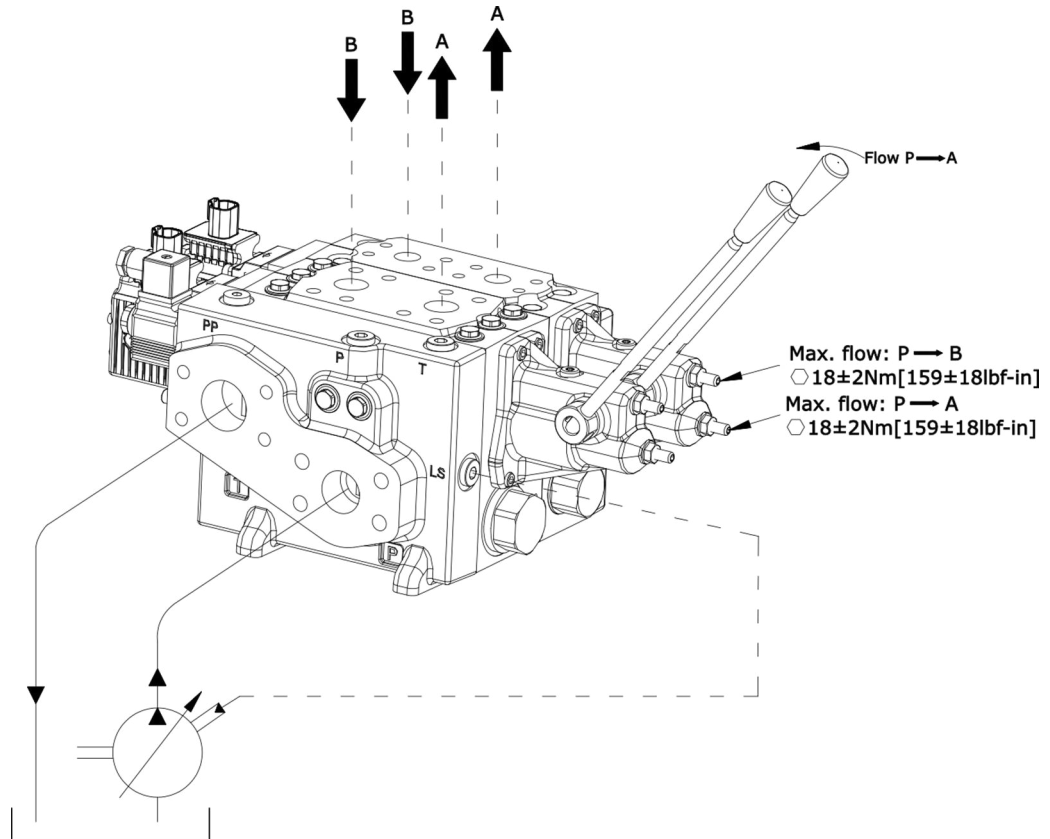
- Room for dismantling

L1	PVPV256	PVP128 OC/CC		
	19	12		
L2	PVB128	PVB256	OC256	PVSKM
	66	86	68	75
L3	PVSI/PVGI			
	13.5			

## Installation

### PVG 128/256 pump side module

*Inlet connections, flow direction, and maximum flow adjustment*



P, T and LS pump connections shown are for PVPV inlets (for variable displacement pumps only) without additional considerations for pump unloading. To enable use with fixed displacement pumps:

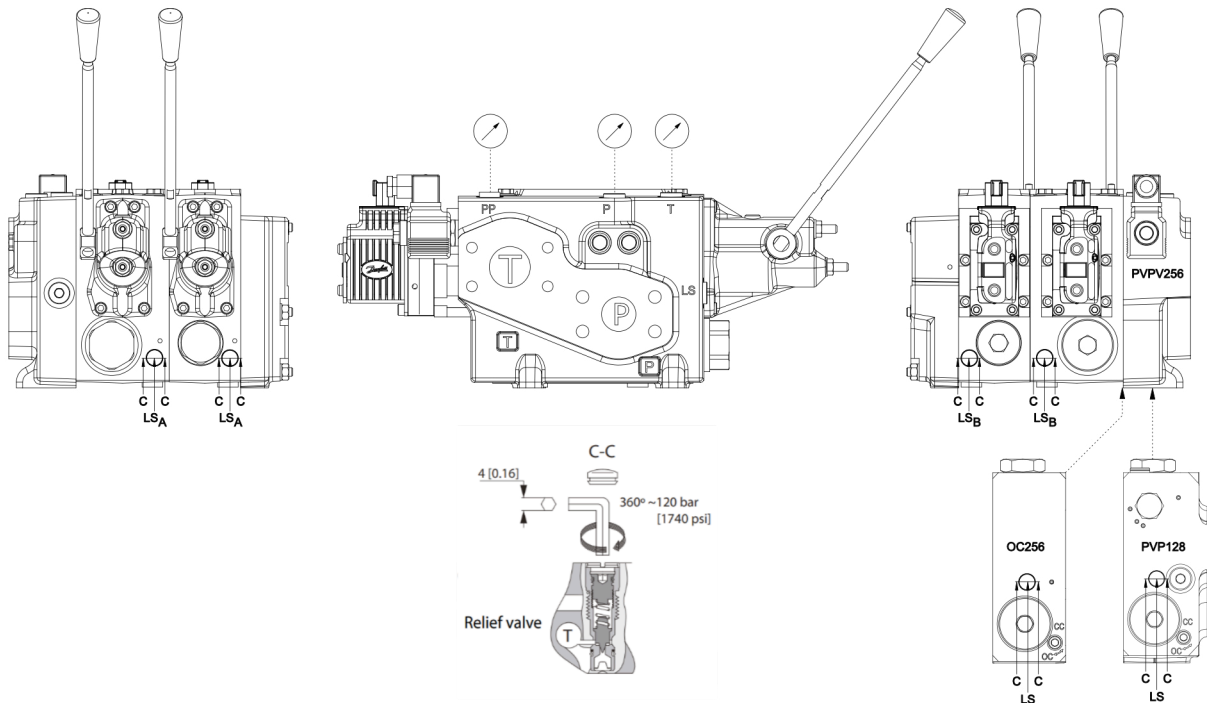
- Place an OC256 unloader module (in OC mode) between the PVPV inlet and PVB work sections.
- Use a PVP128 OC or OC/CC inlet (in OC mode) in place of the PVPV shown.

In these scenarios, the LS connection between the pump and inlet is neglected.

## Installation

### PVG 128/256 pressure setting

Pressure setting  $LS_A, LS_B$



### Rated pressure

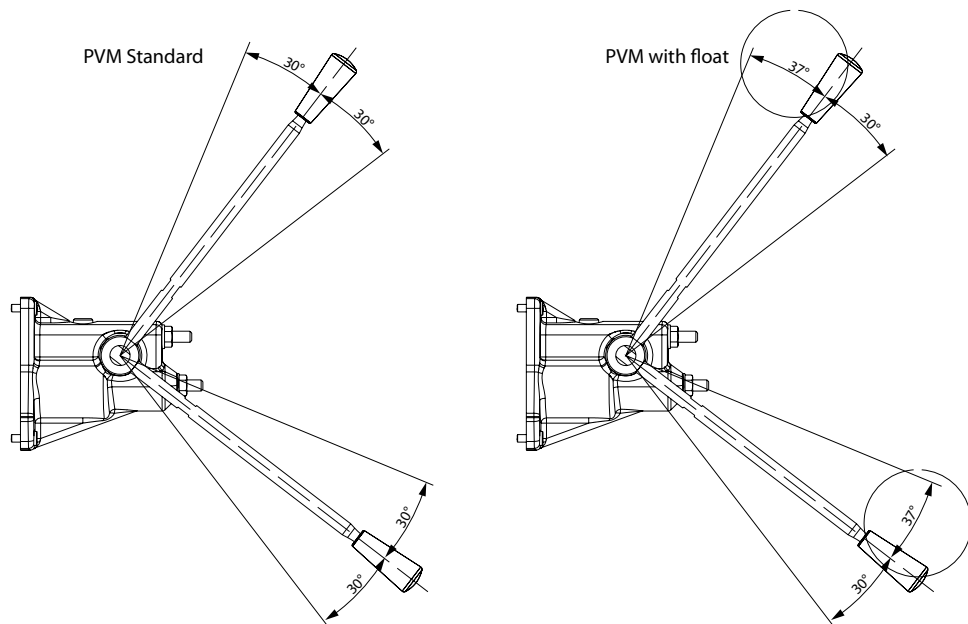
Product	Rated Pressure
PVG 128 with PVS1	350 bar [5076 psi]
PVG 256 w PVS1	350 bar [5076 psi]

## Installation

### PVG 128/256 installation of lever

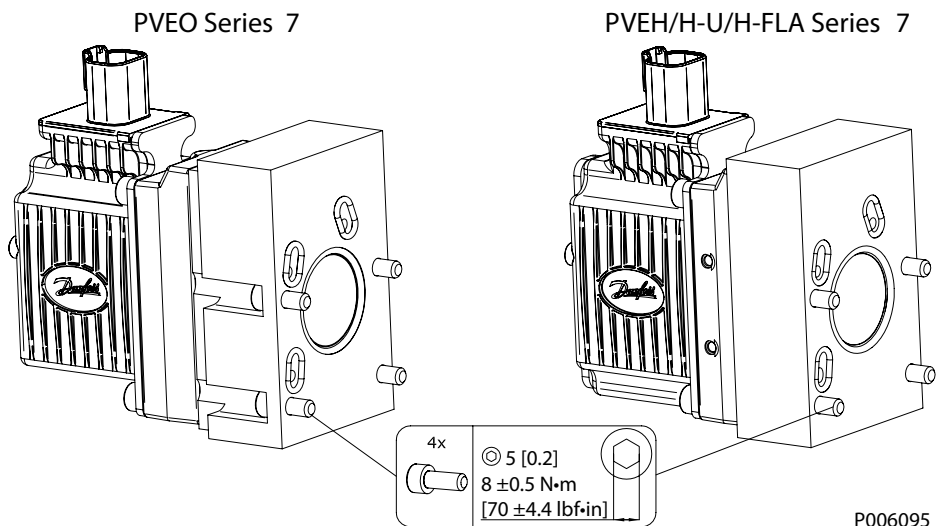
The lever must be screwed in completely.

*PVM lever*



## Installation

### PVE 128/256 PVE series 7 installation



**Warning**

For safety reasons, the PVE actuator and interface components must be considered as one unit. Do not try to disassemble under any circumstances.

### PVG 128/256 PVE connector variants

1x4 DEUTSCH	1x6 DEUTSCH	1x4 DIN

Pin		Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
PVEO	1x4 DEUTSCH	Udc_A	GND	GND	Udc_B		
	1x4 DIN	Udc_A	Udc_B		GND		
PVEH PVEH-U	1x4 DEUTSCH	Us	Error	GND	Udc		
	1x4 DIN	Udc	Us	Error	GND		
PVEH-FLA	1x6 DEUTSCH	Us	Error	Float		GND	Udc

### PVG 128/256 PVE control specifications

#### PVEO control specifications

Control specification	PVEO		
Supply Voltage (Udc)	Rated	12 Vdc	24 Vdc
	Range	11→15 Vdc	22→30 Vdc
	Max. ripple	5%	5%

## Installation

### *PVEH/H-FLA and PVEH-U control specifications*

Control specification		PVEH/H-FLA	PVEH-U
Supply Voltage (Udc)	Rated/Range	11→32 Vdc	11→32 Vdc
	Max. ripple	5%	5%
Signal Voltage (Us)	Neutral	$U_s = 0.5 \cdot U_{dc}$	$U_s = 5 \text{ V}$
	Q: P→A	$U_s = (0.5 \rightarrow 0.25) \cdot U_{dc}$	$U_s = 5 \text{ V} \rightarrow 2.5 \text{ V}$
	Q: P→B	$U_s = (0.5 \rightarrow 0.75) \cdot U_{dc}$	$U_s = 5 \text{ V} \rightarrow 7.5 \text{ V}$
Signal Voltage PWM (Us)	Neutral	$U_s = 50\% \text{ DUT}$	
	Q: P→A	$U_s = 50\% \rightarrow 25\% \text{ DUT}$	
	Q: P→B	$U_s = 50\% \rightarrow 75\% \text{ DUT}$	
PWM Frequency (Us)	Recommended	>1000 Hz	
Input Impedance	Rated	12 kΩ	
Input Capacitance	Rated	100 nF	

### **PVG 128/256 PVE operating conditions**

PVEO, PVEH/H-U/H-FLA Operating Conditions		
Pilot Pressure	Nominal	13.5 bar [196 psi]
	Minimum	10.0 bar [145 psi]
	Maximum	15.0 bar [220 psi]
Storage Temperature	Ambient	-50°C→90°C [-58°F→194°F]
Operating Temperature	Ambient	-40°C→90°C [-40°F→194°F]
Oil Viscosity	Operating range	12→75 cSt [65→347 SUS]
	Minimum	4 cSt [39 SUS]
	Maximum	460 cSt [2128 SUS]
Oil Cleanliness	Maximum	Maximum

### **PVG 128/256 PVE LED characteristics**

#### *PVEO LED characteristics*

Color	LED view	Function
Green		Power ON

#### *PVEH/H-FLA LED characteristics*

Color	LED view	Function
Green		Operating
Green @ 1.5 Hz		Neutral - Power Save
Red		Internal fault
Red @ 1.5 Hz		External or Float fault




#### *PVEH-U LED characteristics*

Color	LED view	Function
Green		Operating
Green @ 1.5 Hz		Neutral - Power Save



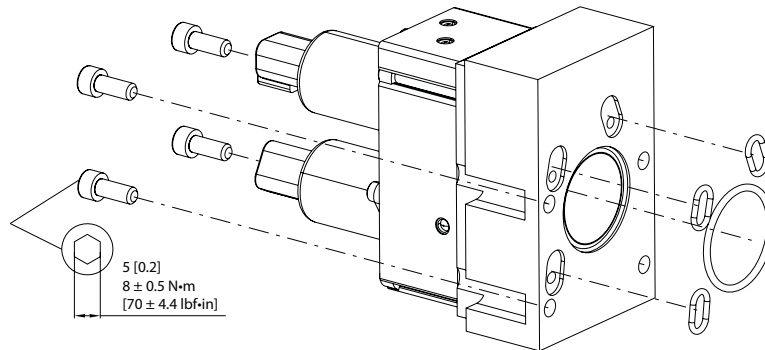
## Installation

*PVEH-U LED characteristics (continued)*

Color	LED view	Funtion
Red		Internal fault
Red @ 1.5 Hz		External or Float fault
Yellow		Disable mode

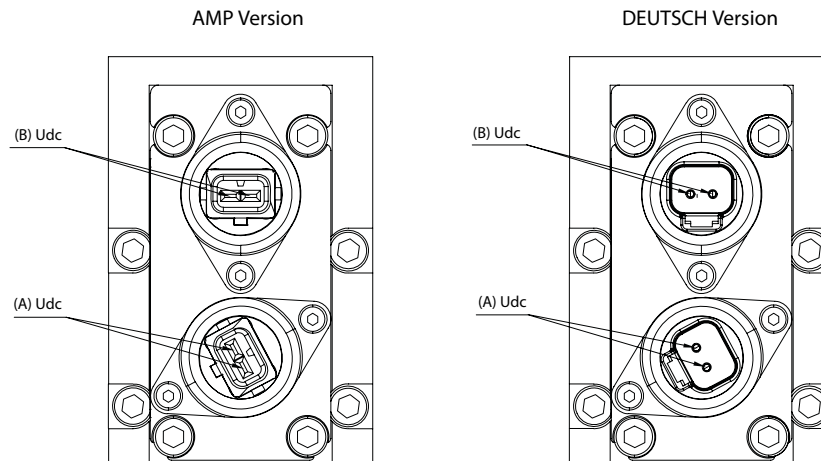
## Installation

### PVHC for PVG 128/256 installation



### PVHC for PVG 128/256 connector

The seal in the PVHC connector and the seals for individual conductors are crucial for correctly sealing the connector.



### PVHC for PVG 128/256 technical data

Controller output current range	12 V	1 - 1500 mA
	24 V	0 - 750 mA
Coil resistance	12 V	4.72 Ω ± 5%
	24 V	20.8 Ω ± 5%
Pilot pressure (over tank)*	Nominal	25 bar [363 psi]
	Minimum	21 bar [305 psi]
	Maximum	25 bar [363 psi]
Control pressure	Range	5 - 15 bar [72.5 - 217.5 psi]
Max. tank pressure	Port T Static	25 bar [363 psi]
	Port T Dynamic	30 bar [435 psi]
Temperature range	Ambient	-30°C → 80°C [-22°F → 176°F]
	Medium	-20°C → 80°C [-4°F → 176°F]
Oil viscosity	Operating range	12 → 75 mm <sup>2</sup> /s [65 → 347 SUS]
	Minimum	4 mm <sup>2</sup> /s [39 SUS]
	Maximum	400 mm <sup>2</sup> /s [2130 SUS]

## Installation

Enclosure - Protection class	DEUTSCH DT	IP 67
	AMP JPT 12/24 V	IP 66
Filtering in the hydraulic system; Max. permissible degree of contamination		23/19/16 (ISO 4406, 1999 version)

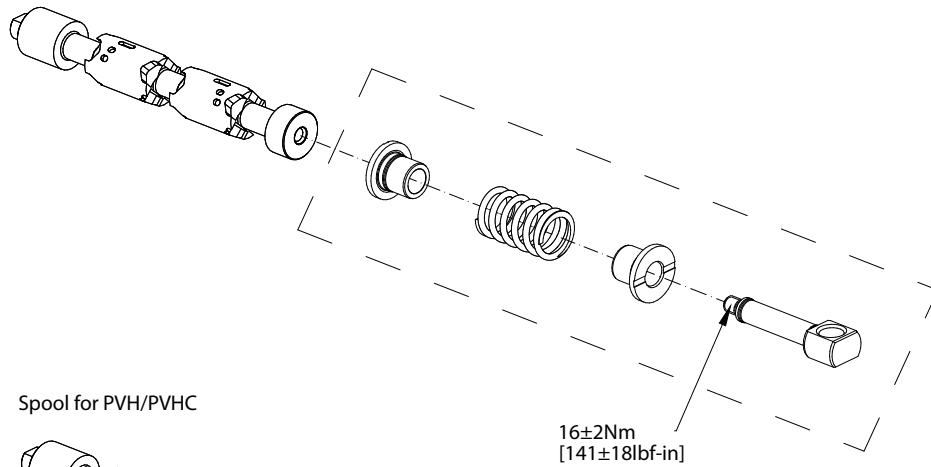
\* Designed to be used with hydraulic activated spools

## Installation

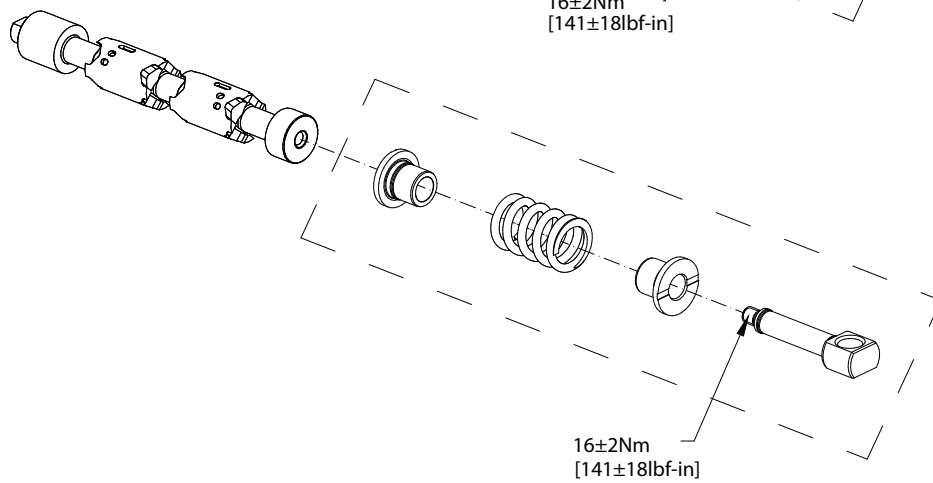
### PVG 128/256 main spool assembly installation

Standard spools for PVE and PVH/PVHC

Spool for PVE



Spool for PVH/PVHC



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Same tightening torque for PVE and PVH/PVHC spools

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## Service Parts

### PVG acronyms found in service parts

These acronyms appear in the service parts list.

#### *PVG (Proportional Valve Group) acronyms*

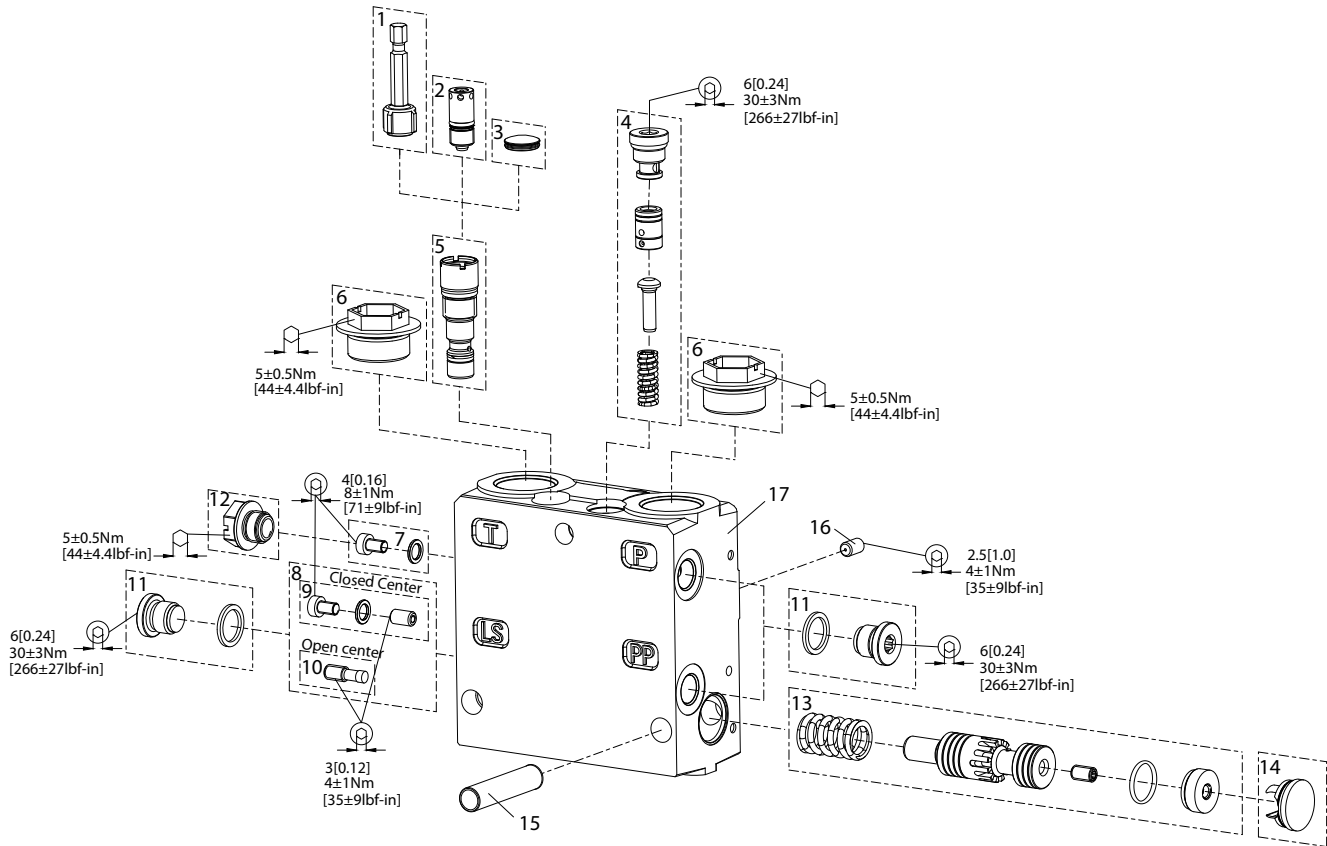
PPRV	Pilot Pressure Reduction Valve
PVAS	Assembly (Tie Rod) Kit
PVB	Basic Module (Body)
PVBD	Diverter Module for PVB/PVBZ
PVBE	Basic End Module (Body)
PVBO	Basic Open-Ended Module (Body)
PVBS	Main Spool for PVB
PVBSO	Main Spool for PVBO
PVBZ	Basic Module (Body) Zero Leak
PVDI	Directional Indicator
PVE	Electrical Actuator
PVEA	Electrical Actuator-Fine Proportional
PVED	Electrical Actuator-Digital
PVEH	Electrical Actuator-High Proportional
PVEO	Electrical Actuator-ON/OFF
PVES	Electrical Actuator-Super Proportional
PVGI	Interface Module
PVH	Cover for Hydraulic Actuation
PVHC	Electrical Actuator-High Current
PVLA	Anti-Cavitation Valve
PVLP	Shock Valve
PVM	Mechanical Actuator
PVMD	Cover for Mechanical Activation
PVMF	Cover for Mechanical Float
PVMR	Cover for Friction Detent
PVP	Pump Side Module (Inlet)
PVPC	Plug for external pilot oil supply
PVPD	Open Center PVPF Dummy Spool
PVPE	Electrical Unloading Valve for PVPF
PVPF	Open Center PVP
PVPH	Hydraulic Unloading Valve for PVPF
PVPP	Electrical Pilot Shut-Off Valve
PVPV	Closed Center PVP without Pressure Adjustment Spool
PVPV/M	Pump side module
PVPVP	Closed Center PVP with Priority
PVPX, LS	LS Unloading valve
PVS	End Plate (Aluminum)
PVSI	End Plate (Cast Iron)
PVSKM	Full Flow Cut-Off Module
PVSP/PVSPM	Priority Module
PVT	Tank Side Module
PVTI	Interface Module

**Service Parts**

**PVG 16 service parts**

**PVG 16 pump side module PVP**

*PVP exploded view*



*PVP kits*

Description	Code number	P-port	T-port/HPCO-port	Letter
Open center	157B5000	G1/2"	G3/4"	A
	157B5100	G3/4"		
	157B5200	7/8-14 UNF	1-1/16 UN	
	157B5300	1-1/16 UN		
Open center with PVPX facility	157B5102	G3/4"	G3/4"	B
Open center with PPRV for PVE	157B5010	G1/2"	G3/4"	C
	157B5110	G3/4"		
	11008849			
	157B5210	7/8-14 UNF	1-1/16 UN	
	157B5310	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVE and PVPX facility	157B5012	G1/2"	G3/4"	D
	11187356			
	157B5112	G3/4"	G3/4"	
	157B5212	7/8-14 UNF	1-1/16 UN	
	157B5312	1-1/16-12 UNF	1-1/16-12 UNF	

## Service Parts

### PVP kits (continued)

Description	Code number	P-port	T-port/HPCO-port	Letter
Open center with PPRV for PVE and pilot oil pressure take-off	157B5180	G3/4"	G3/4"	E
	157B5380	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVH/PVHC and pilot oil pressure take-off	157B5190	G3/4"	G3/4"	F
	157B5390	1-1/16-12 UNF	1-1/16-12 UNF	
	11008851	G3/4"	G3/4"	
Closed center	157B5001	G1/2"	G3/4"	G
	157B5101	G3/4"		
	157B5201	7/8-14 UNF	1-1/16 UN	
	157B5301	1-1/16 UN		
Closed center with PVPX facility	157B5103	G3/4"	G3/4"	H
Closed Center with PPRV for PVE	157B5011	G1/2"	G3/4"	I
	157B5111	G3/4"		
	157B5211	7/8-14 UNF	1-1/16 UN	
	157B5311	1-1/16 UN		
Closed center with PPRV for PVE and PVPX facility	157B5013	G1/2"	G3/4"	J
	157B5113	G3/4"		
	157B5213	7/8-14 UNF	1-1/16 UN	
	157B5313	1-1/16-12 UNF		
Closed center with PPRV for PVE and pilot oil pressure take-off	157B5181	G3/4"	G3/4"	K
	157B5381	1-1/16-12 UNF	1-1/16-12 UNF	
Closed center with PPRV for PVH/PVHC and pilot oil pressure take-off	157B5191	G3/4"	G3/4"	L
	157B5391	1-1/16-12 UNF	1-1/16-12 UNF	

### PVP parts list

Item	Description	Code number	Letter											
			A	B	C	D	E	F	G	H	I	J	K	L
1	Service tool for relief valve	155L6494	-	-	-	-	-	-	-	-	-	-	-	-
2	Sealed adjusting screw (for sealing with a wire)	155L6489	-	-	-	-	-	-	-	-	-	-	-	-
3	Sealed plastic plug, black (50 pcs.)	155L6168	1	1	1	1	1	1	1	1	1	1	1	1
4	Pilot supply for PVE 13.5 bar	155L5157	-	-	1	1	1	-	-	-	1	1	1	-
4	Pilot supply for PVH/PVHC 25 bar	11077272	-	-	-	-	-	1	-	-	-	-	-	1
5	Relief valve	155L6495	1	1	1	1	1	1	1	1	1	1	1	1
6	Plastic plug for G1/2"	-	2	2	2	2	2	2	2	2	2	2	2	2
	Plastic plug for 7/8-14 UNF	-												
	Plastic plug for G3/4"	-												
	Plastic plug for 1-1/16-12 UNF	-												
7	N/A (See PVP for PVG32)	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Conversion kit open to closed and closed to open center	155L5152	-	-	-	-	-	-	-	-	-	-	-	-
9	Orifice Ø1.0, bonded seal and plug for closed center	-	-	-	-	-	-	-	1	1	1	1	1	1
10	Plug M6 for open center	155L5153	1	1	1	1	1	1	-	-	-	-	-	-
11	Plug with O-ring	-	2	2	2	2	3	3	2	2	2	2	3	3

**Service Parts**

*PVP parts list (continued)*

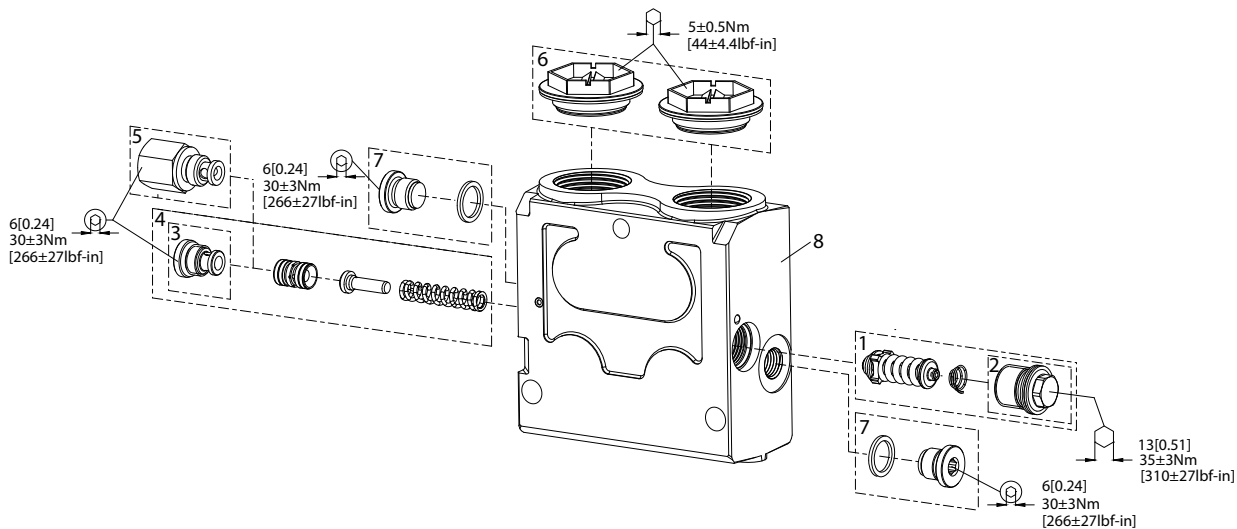
Item	Description	Code number	Letter											
			A	B	C	D	E	F	G	H	I	J	K	L
12	N/A (See PVP for PVG32)	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Inlet compensator assembly	-	1	1	1	1	1	1	1	1	1	1	1	1
14	Plastic plug	-	1	1	1	1	1	1	1	1	1	1	1	1
15	Locking pin	-	1	1	1	1	1	1	1	1	1	1	1	1
16	Orifice M6 Ø1.0	-	1	1	1	1	1	1	1	1	1	1	1	1
17	PVP inlet module	-	1	1	1	1	1	1	1	1	1	1	1	1



## Service Parts

### PVG 16 pump side module PVPV

PVPV exploded view



PVPV kits

Description	Code number	P-port	T-port	Letter
Closed center with PPRV for PVH/PVHC	157B5916	1 5/16-12 UN	1 5/16-12 UN	A
Closed center with PPRV for PVE	157B5911	1 5/16-12 UN	1 5/16-12 UN	B
	157B5938	G1"	G1"	
Closed center with PPRV for PVH/PVHC and PVLP	11008856	G1"	G1"	C
	11051803	1 5/16-12 UN	1 5/16-12 UN	
Closed center with PPRV for PVE and PVLP	157B5913	1 5/16-12 UN	1 5/16-12 UN	D
	157B5941	G1"	G1"	

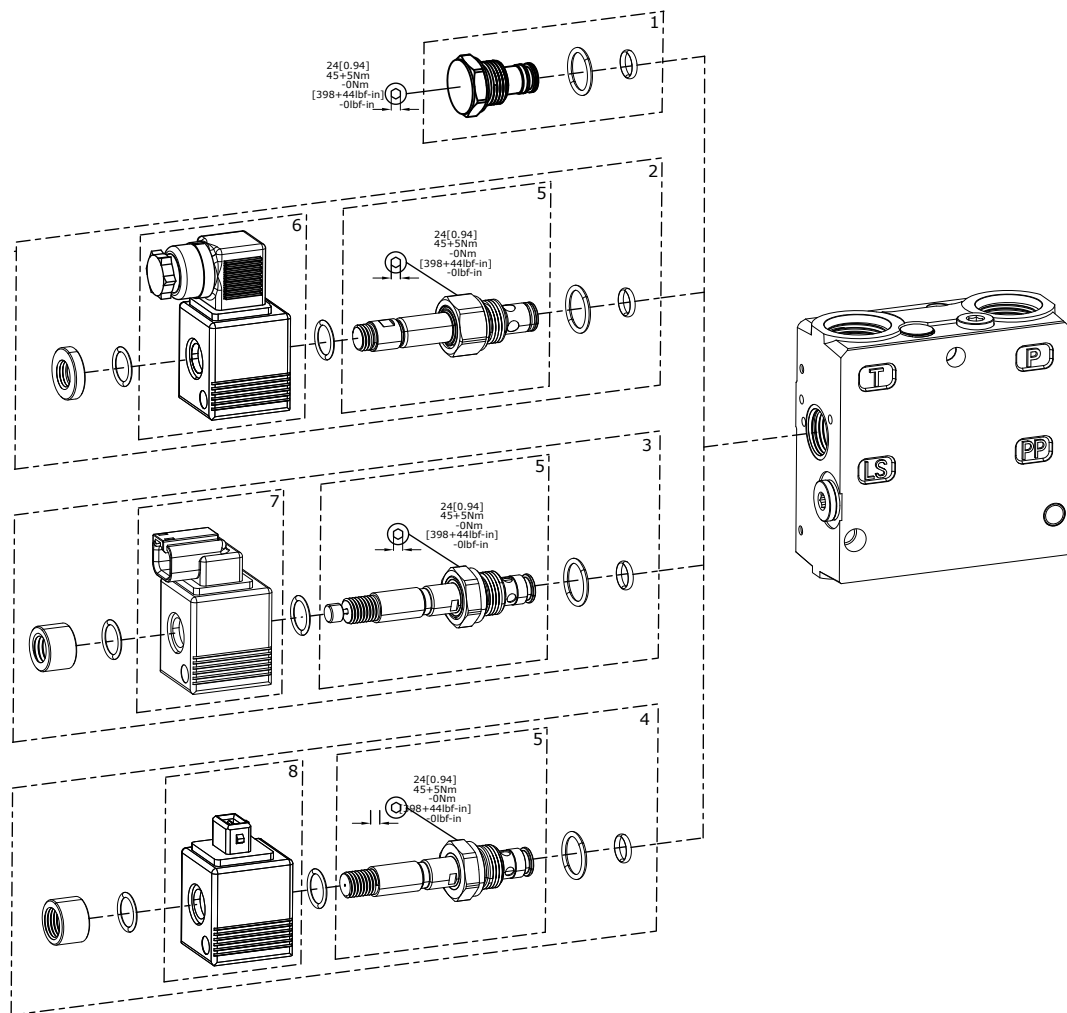
PVPV parts list

Item	Description	Code number	Letter			
			A	B	C	D
1	PVLP assembly	See PVLP section	-	-	1	1
2	Plug for PVLP	157B2002	-	-	1	1
3	Plug	-	1	1	1	1
4	Pilot supply for PVE 13.5 bar	155L5157	-	1	-	1
	Pilot supply for PVH/PVHC 25 bar	11077272	1	-	1	-
5	Plug for external Pp	11038675	-	-	-	-
6	Plastic plug	-	2	2	2	2
7	Plug	-	2	2	2	2
8	PVPV inlet module	-	1	1	1	1

**Service Parts**

**PVG 16/32 electrical LS pressure unloading valve, PVPX**

*PVPX exploded view*



*PVPX plug*

Description	Manual Override	Item	Code number
Plug for PVPX port	-	1	157B5601
Solenoid valve NO	-	5	11215753
Solenoid valve NC	-	5	11215752
Solenoid valve NO	PUSH	5	11215754
Solenoid valve NO	PUSH & TURN	5	11215756
Coil 1x2 DIN (12Vdc)	-	6	11215729
Coil 1x2 DIN (24Vdc)	-	6	11215740
Coil 1x2 DIN (26Vdc)	-	6	11215741
Coil 1x2 DEU (12Vdc)	-	7	11215748
Coil 1x2 DEU (24Vdc)	-	7	11215749
Coil 1x2 DEU (26Vdc)	-	7	11215750
Coil 1x2 AMP (12Vdc)	-	8	11215743

## Service Parts

### *PVPX plug (continued)*

Description	Manual Override	Item	Code number
Coil 1x2 AMP (24Vdc)	-	8	11215744
Coil 1x2 AMP (26Vdc)	-	8	11215746

### *PVPX, NO configuration*

1x2 DIN (12 Vdc)	-	2	157B4236
1x2 DIN (24 Vdc)	-		157B4238
1x2 AMP (12 Vdc)	-	4	157B4981
1x2 AMP (24 Vdc)	-		157B4982
1x2 DEUTSCH (12 Vdc)	-	3	11180766
1x2 DEUTSCH (24 Vdc)	-		11180767

### *PVPX, NC configuration*

1x2 DIN (12 Vdc)	-	2	157B4246
1x2 DIN (24 Vdc)	-		157B4248
1x2 DIN (26 Vdc)	-		157B4976
1x2 AMP (12 Vdc)	-	4	157B4983
1x2 AMP (24 Vdc)	-		157B4984
1x2 DEUTSCH (12 Vdc)	-	3	11180768
1x2 DEUTSCH	-		11180769

### *PVPX, NOMO configuration*

1x2 DIN (12 Vdc)	PUSH	2	157B4256
1x2 DIN (12 Vdc)	PUSH & TURN		157B4257
1x2 DIN (24 Vdc)	PUSH		157B4258
1x2 DIN (24 Vdc)	PUSH & TURN		157B4259
1x2 DIN (26 Vdc)	PUSH		157B4260
1x2 AMP (12 Vdc)	PUSH	4	157B4985
1x2 AMP (24 Vdc)	PUSH		157B4986

### *PVPX spare parts, solenoids*

Type	Manual Override	Part number
NC Solenoid valve	-	11215752
NO Solenoid valve	-	11215753
NOMO Solenoid valve	PUSH	11215754
NOMO Solenoid valve	PUSH & TURN	11215756

### *PVPX spare parts, coils*

Type	Connector	Part number
Coil 12V	1x2 DEUTSCH	11215748
Coil 24V	1x2 DEUTSCH	11215749
Coil 26V	1x2 DEUTSCH	11215750
Coil 12V	1x2 AMP	11215743
Coil 24V	1x2 AMP	11215744

## Service Parts

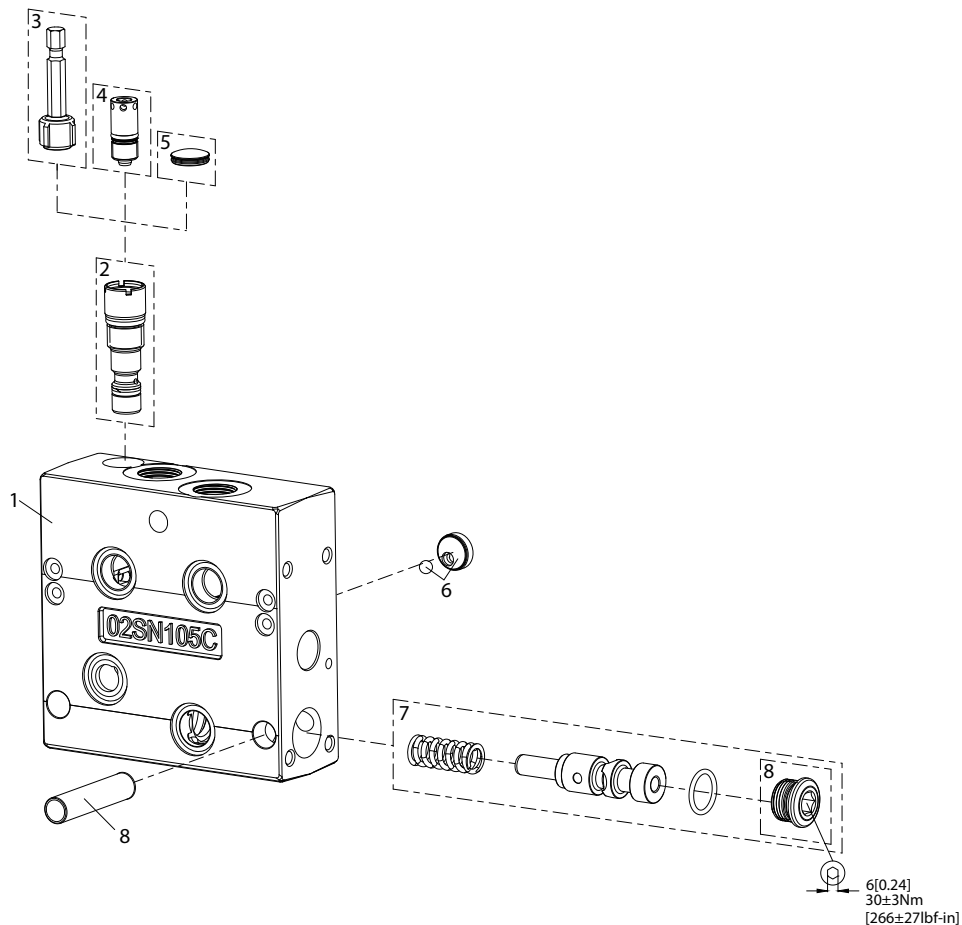
*PVPX spare parts, coils (continued)*

Type	Connector	Part number
Coil 26V	1x2 AMP	11215746
Coil 12V	1x2 DIN	11215729
Coil 24V	1x2 DIN	11215740
Coil 26V	1x2 DIN	11215741

**Service Parts**

**PVG 16 PVB with LS, basic module**

*PVB with LS exploded view*



*PVB with LS kits*

Description	Code number	A-port	B-port	Letter
Compensated PVB	11130976	3/8" BSP	3/8" BSP	A
	11130977	3/4"-16 UNF	3/4"-16 UNF	
Compensated PVB with LS	11130982	3/8" BSP	3/8" BSP	B
	11130983	3/4"-16 UNF	3/4"-16 UNF	
Non-Compensated PVB	11101421	3/8" BSP	3/8" BSP	C
	11101423	3/4"-16 UNF	3/4"-16 UNF	
Non-Compensated PVB with check valve	11106801	3/8" BSP	3/8" BSP	D
	11106797	3/4"-16 UNF	3/4"-16 UNF	

*PVB with LS parts list*

Item	Description	Code number	Letter			
			A	B	C	D
1	PVB Basic module	-	1	1	1	1
2	Relief valve	155L6495	-	1	-	-
3	Service tool for relief valve	155L6494	-	-	-	-

## Service Parts

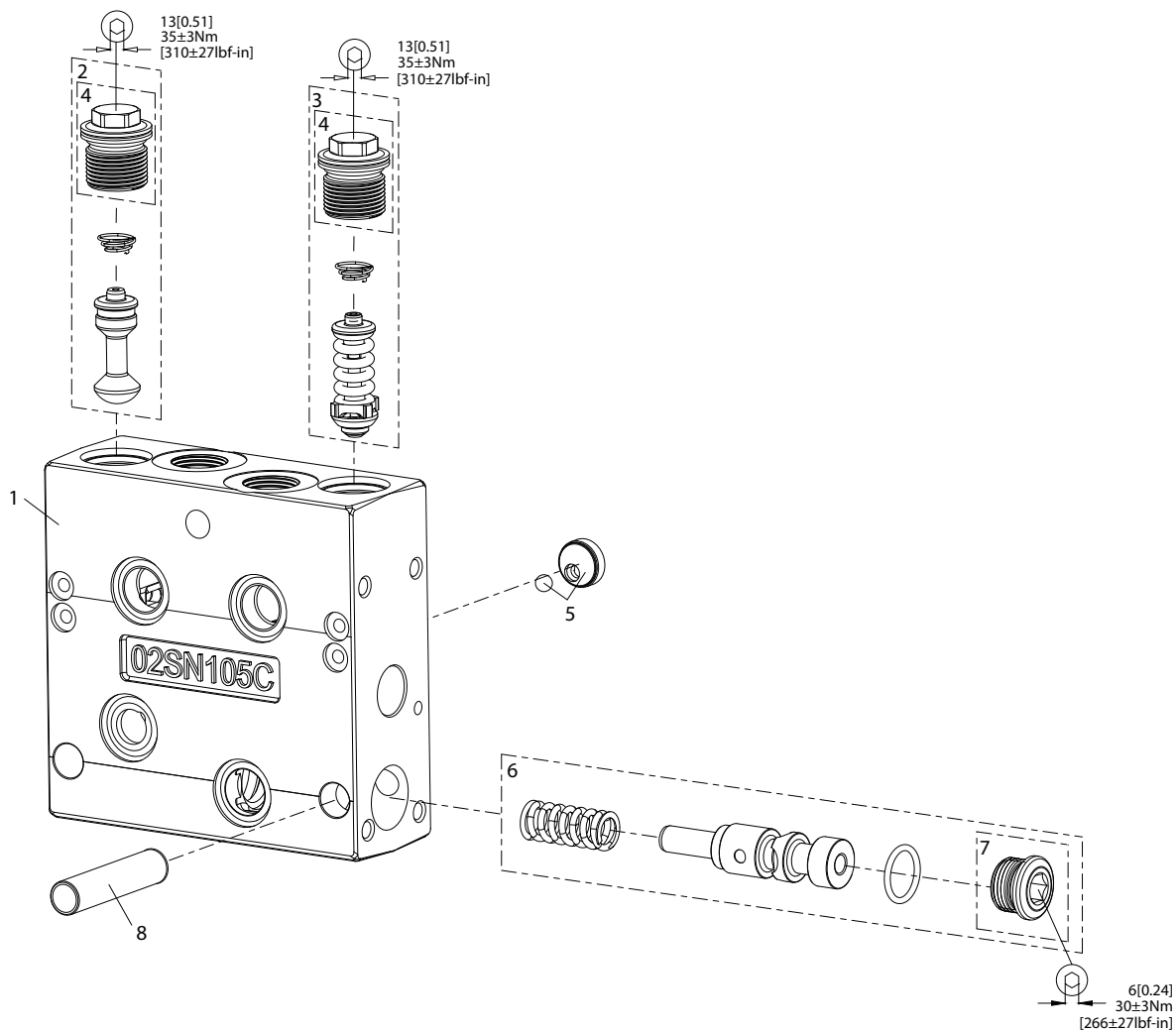
*PVB with LS parts list (continued)*

Item	Description	Code number	Letter			
			A	B	C	D
4	Sealed adjusting screw (for sealing with a wire)	155L6489	-	-	-	-
5	Sealed plastic plug, black (50 pcs.)	155L6168	1	1	1	1
6	Shuttle disc assembly	-	1	1	1	1
7	Compensator assembly	-	1	1	-	-
8	Locking pin	-	1	1	-	-

**Service Parts**

**PVG 16 PVB with PVLP/PVLA, basic module**

*PVB with PVLP/PVLA exploded view*



*PVB with PVLP/PVLA kits*

Description	Code number	A-port	B-port	Letter
Compensated PVB	11130976	3/8" BSP	3/8" BSP	A
	11130977	3/4"-16 UNF	3/4"-16 UNF	
Compensated PVB with PVLP/PVLA	11130978	3/8" BSP	3/8" BSP	B
	11130979	3/4"-16 UNF	3/4"-16 UNF	
Non-Compensated PVB	11101421	3/8" BSP	3/8" BSP	C
	11106797	3/4"-16 UNF	3/4"-16 UNF	
Non-Compensated PVB with check valve	11106801	3/8" BSP	3/8" BSP	D
	11101423	3/4"-16 UNF	3/4"-16 UNF	
Non-Compensated PVB with PVLP/PVLA	11106754	3/8" BSP	3/8" BSP	E
	11106755	3/4"-16 UNF	3/4"-16 UNF	

## Service Parts

### *PVB with PVLP/PVLA kits (continued)*

Description	Code number	A-port	B-port	Letter
Non-Compensated PVB with check valve and PVLP/PVLA	11101424	3/8" BSP	3/8" BSP	F
	11101425	3/4"-16 UNF	3/4"-16 UNF	

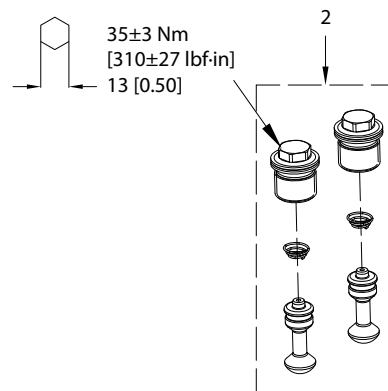
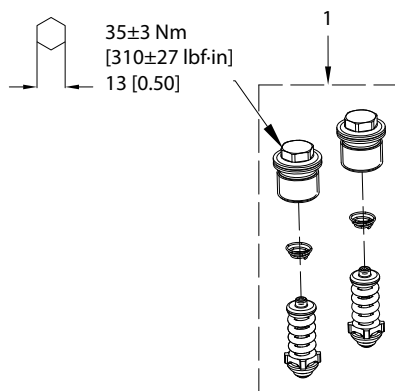
### *PVB with PVLP/PVLA parts list*

Item	Description	Code number	Letter					
			A	B	C	D	E	F
1	PVB basic module	-	1	1	1	1	1	1
2	PVLA	See PVLP/PVLA	-	2	-	-	2	2
3	PVLP	See PVLP/PVLA	-	2	-	-	2	2
4	Plug for PVLP/PVLA	157B2002	-	2	-	-	2	2
5	Shuttle disc assembly	-	1	1	1	1	1	1
6	Compensator assembly	-	1	1	-	-	-	-
7	Locking pin	-	1	1	-	-	-	-



**Service Parts**

**PVLP Shock and PVLA, Suction Valves**

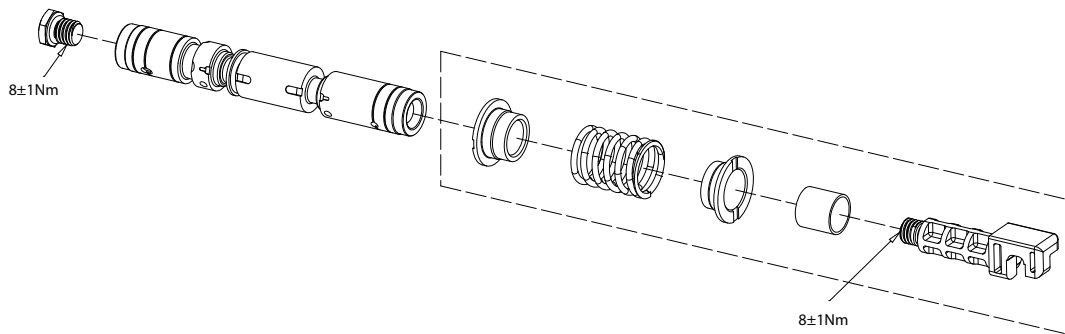


Type	Part number	PVLP/PVLA
PVLA	157B2001	<p>Date stamp</p> <p>2311</p> <p>230</p> <p>Pressure setting in bar</p> <p>Part number: 157B2230</p>
PVLP	157B2032	
	157B2050	
	157B2063	
	157B2080	
	157B2100	
	157B2125	
	157B2140	
	157B2150	
	157B2160	
	157B2175	
	157B2190	
	157B2210	
	157B2230	
	157B2240	
	157B2250	
	157B2265	
	157B2280	
	157B2300	
	157B2320	
	157B2350	
	157B2380	
Plug	157B2002	

**Service Parts**

**PVG 16 PVBS, main spool**

*PVBS exploded view*



**PVG 16 PVBS part numbers**

*PVBS – Symmetrical main spools code numbers*

Description	Code number according to flow – in l/min [US gal/min]				
	5 [1.32]	10 [2.64]	25 [6.60]	40 [10.57]	65 [17.17]
Open neutral, use with PVE	11105537	11105538	11105539	11105540	11105541
Open neutral, use with PVH	11109637	11109638	11109639	11109640	11109641
Closed neutral, use with PVE	11105532	11105533	11105534	11105535	11105536
Closed neutral, use with PVH	11109632	11109633	11109634	11109635	11109636

*PVBS – Asymmetrical main spools code numbers*

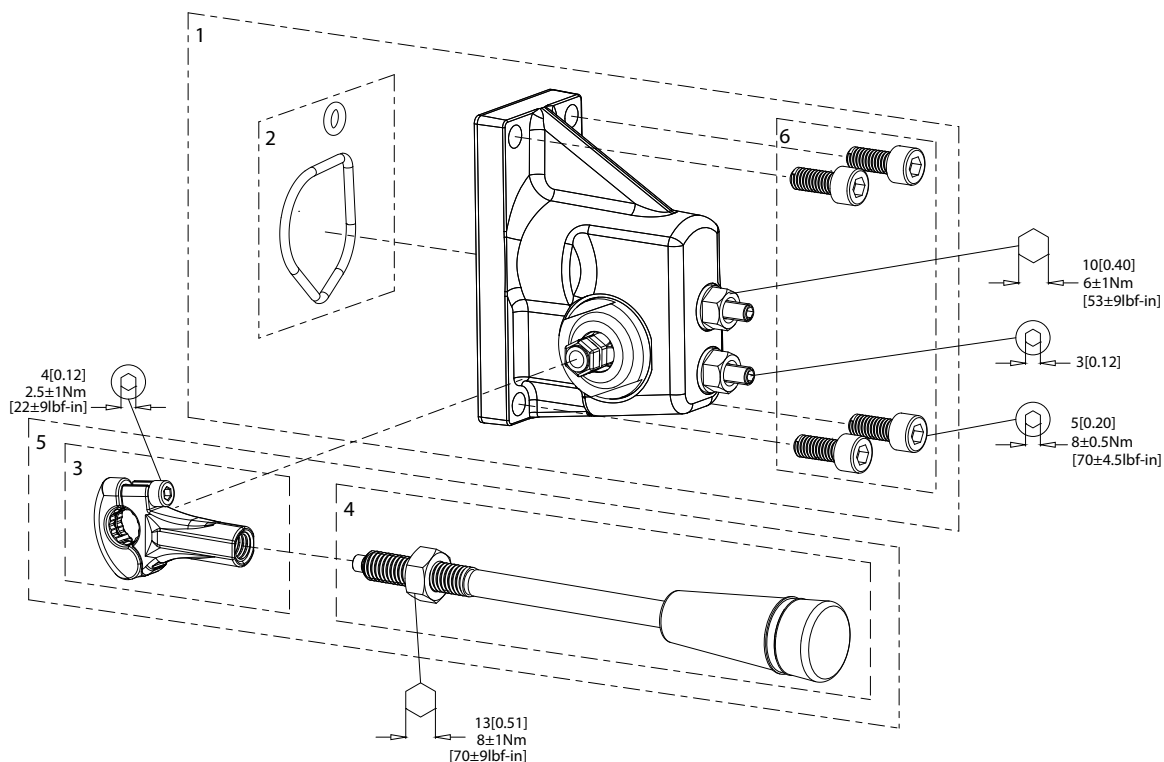
Description	Code number according to flow – in l/min [US gal/min]					
	5/2.5 [1.32/0.66]	10/5 [2.64/1.32]	25/10 [6.60/2.64]	25/15 [6.60/3.96]	40/15 [10.57/3.96]	40/25 [10.57/6.60]
<b>Cylinder ratio</b>	<b>2.0</b>	<b>2.0</b>	<b>2.5</b>	<b>1.6</b>	<b>2.7</b>	<b>1.6</b>
Closed neutral, use with PVE	11109642	11109643	11109644	11109645	11109646	11109647
Closed neutral, use with PVH	11146752	11146753	11146754	11146755	11146756	11146757

[For more PVG 16 PVBS part numbers, please see PVG 16 Technical Information.](#)

## Service Parts

### PVG 16 PVM mechanical activation

PVM exploded view



PVM kits

Description	Code number	Letter
Non-adjustable	11107505	A
Non-adjustable with float	11107506	B
Non-adjustable with lever base and lever	11107333	C
Non-adjustable with float, lever base and lever	11107335	D
Adjustable	11107507	E
Adjustable with lever base and lever	11107332	F

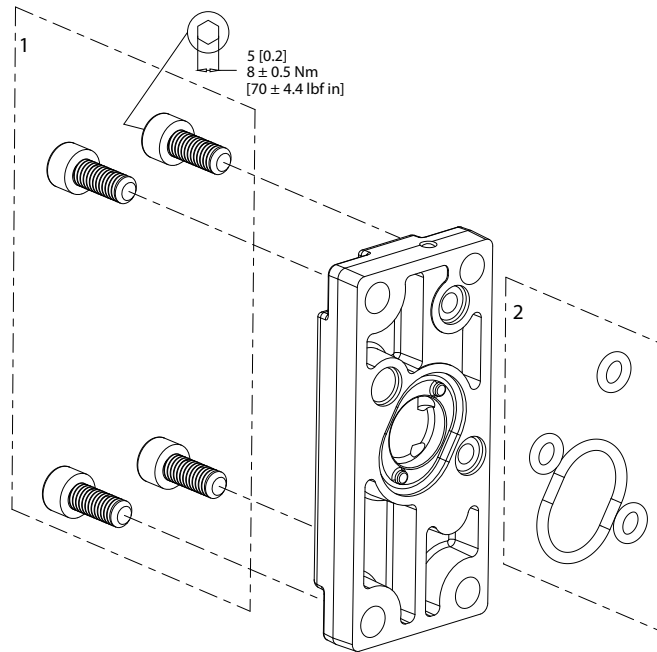
PVM parts list

Item	Description	Code number	Letter					
			A	B	C	D	E	F
1	PVM	-	1	1	1	1	1	1
2	Seal kit	157B3999	1	1	1	1	1	1
3	Lever base	11064641	-	-	1	1	-	1
4	Lever with black knob	11077262	-	-	1	1	-	1
5	Lever base and lever with black knob	11107587	-	-	1	1	-	1
	Lever base and lever with red knob	11134809	-	-	-	-	-	-
6	Screw M6x15	-	4	4	4	4	4	4

**Service Parts**

**PVG 16 PVMD cover**

*PVMD exploded view*



*PVMD kit*

Description	Code number
Cover for mechanical activation	11105518

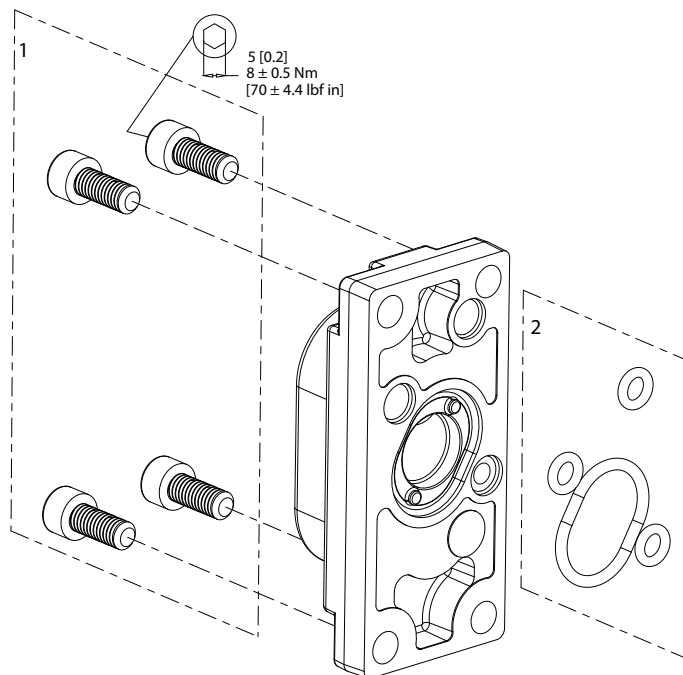
*PVMD parts list*

Item	Description
1	Screw M6x15 (4 pcs.)
2	Seal kit

**Service Parts**

**PVG 16 PVH hydraulic actuation**

*PVH exploded view*



*PVH kits*

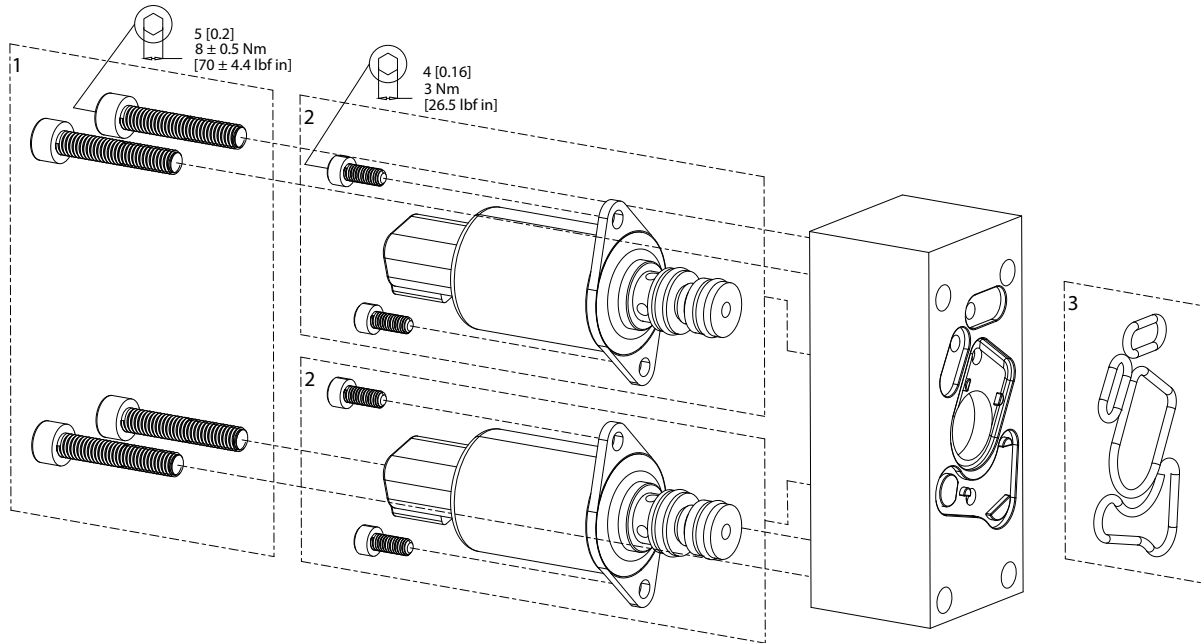
Description	Code number
G1/4" BSP	11108380
9/16-18 UNF	11108381

Item	Description
1	Screw M6x15 (4 pcs.)
2	Seal kit

**Service Parts**

**PVG 16 PVHC high current actuation**

*PVHC exploded view*



*PVHC kits*

Description	Code number	Letter
2x2 DEUTSCH (12 V)	11126941	A
2x2 DEUTSCH (24 V)	11127535	B

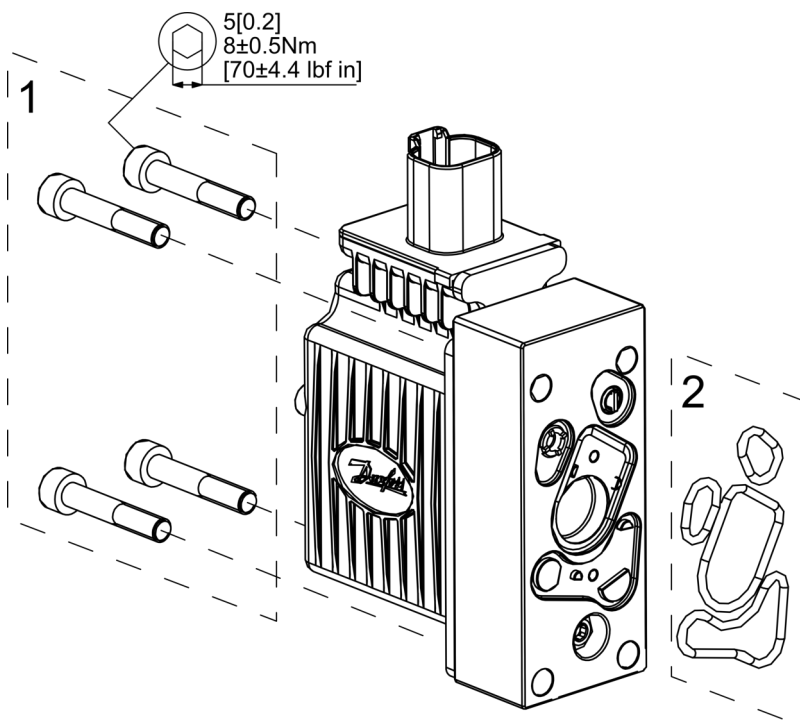
*PVHC parts list*

Item	Description	Code number	Letter	
			A	B
1	Screw	155L4199	4	4
2	Solenoid valve 12 V	-	2	-
	Solenoid valve 24 V	-	-	2
3	Seal kit	11133165	1	1

**Service Parts**

**PVG 16 PVE S7 PVEO on/off actuator**

PVEO



*PVEO kits*

Type	Description	Code number
PVEO	1x4 DEUTSCH (12 Vdc)	11313916
	1x4 DEUTSCH (24 Vdc)	11313926
PVEO-CI	1x4 DEUTSCH (J1939/ISObus)	11124002
	1x4 DEUTSCH (CANopen)	11149443

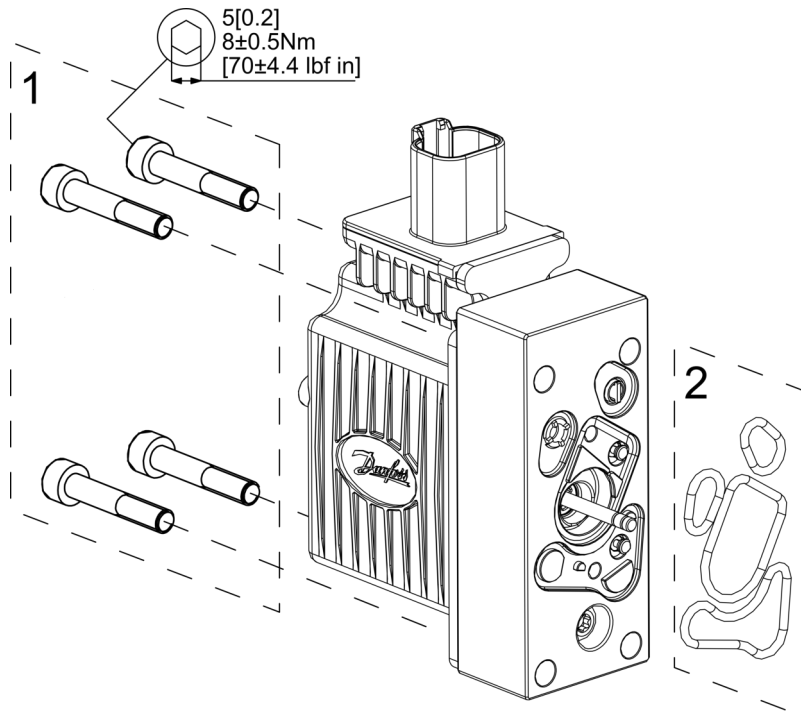
*PVEO parts list*

Item	Description	Code number	Amount
1	Screw kit	155L4199	1
2	Seal kit	11133165	1

**Service Parts**

**PVG 16 PVE S7 PVEA, proportional actuator**

PVEA



Type	Description	Code number
PVEA	1x4 DEUTSCH	11313922
PVEA-CI	1x4 DEUTSCH (J1939/ISObus)	11121945
	1x4 DEUTSCH (CANopen)	11149437

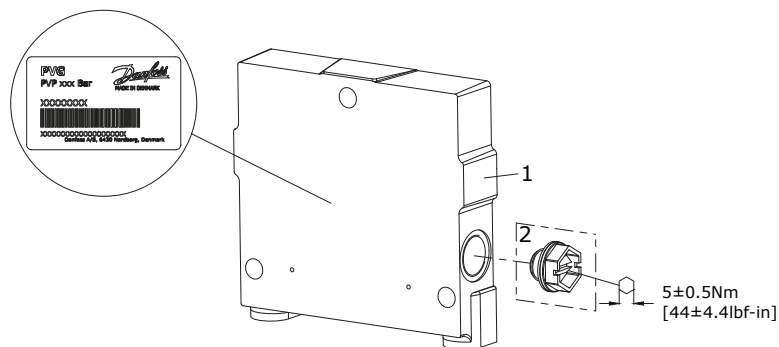
Item	Description	Code number	Amount
1	Screw kit	155L4199	1
2	Seal kit	11133165	1



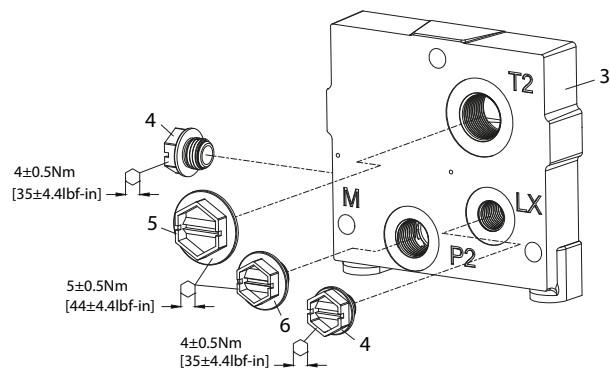
**Service Parts**

**PVG 16/32 PVS/PVSI end plates**

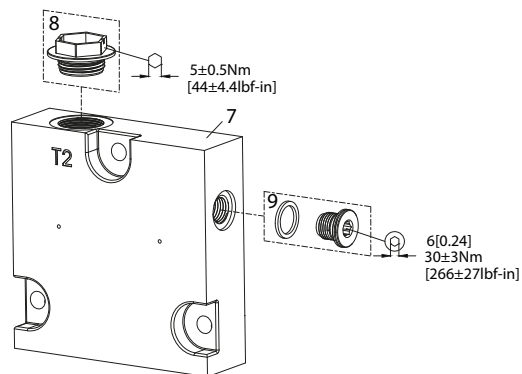
*PVS/PVSI exploded view*



*PVSI with P, T, LX, and M connection exploded view*



*PVST with T connection exploded view*



*PVS/PVSI kits*

Type	Description	Mounting	Code number	Letter
PVS (Aluminum)	End plate	M8	157B2000	A
		5/16-18 UNC	157B2020	
	End plate with LX-connection	M8	157B2011	B
		5/16-18 UNC	157B2021	

## Service Parts

*PVS/PVSI kits (continued)*

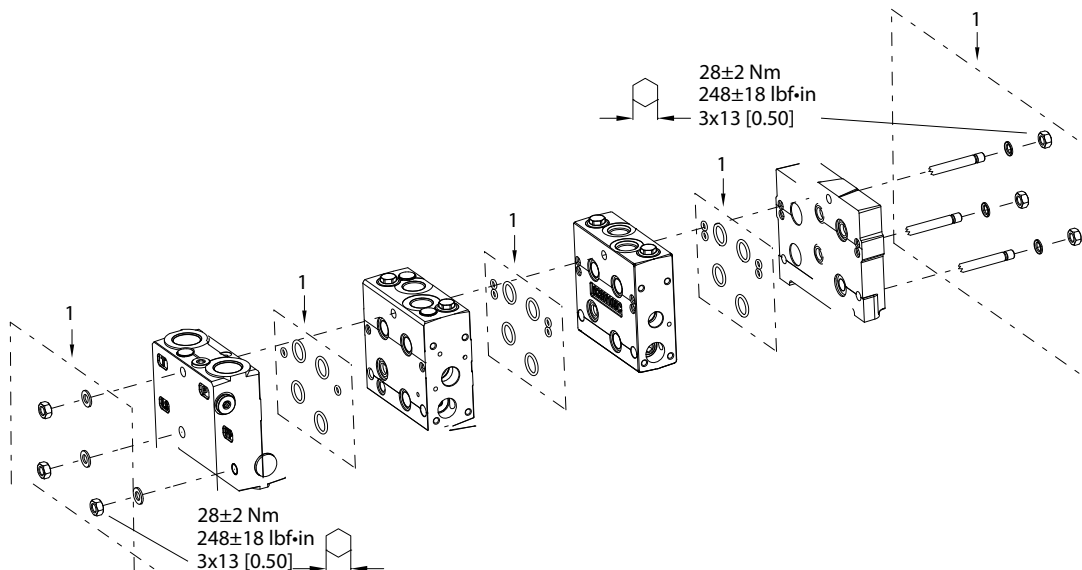
Type	Description	Mounting	Code number	Letter
PVSI (Cast iron)	End plate	5/16-18 UNC	157B2004	C
		M8	157B2014	
	End plate with LX-connection	5/16-18 UNC	157B2005	D
		M8	157B2015	
			157B2910	
End plate with P-, T-, LX- and M-connection	M8	157B2920	E	
PVST (Steel)	End plate with T-connection	M8	157B2500	F
		5/16-18 UNC	157B2520	

Item	Description	Code number	Letter					
			A	B	C	D	E	F
1	PVS/PVSI End plate with LX-connection	-	-	1	-	1	-	-
2	Plastic plug	-	-	1	-	1	-	-
3	PVSI with P-, T-, LX- and M-connection	-	-	-	-	-	1	-
4	Plastic plug	-	-	-	-	-	2	-
5	Plastic plug	-	-	-	-	-	1	-
6	Plastic plug	-	-	-	-	-	1	-
7	PVST with T-connection	-	-	-	-	-	-	1
8	Plastic plug	-	-	-	-	-	-	1
9	Plug with O-ring	-	-	-	-	-	-	1

**Service Parts**

**PVG 16/32 PVAS stay bolts**

*PVAS exploded view*



Item	Description	Code number
1	Set of seals for 7 work sections: PVB 16/32	11156335

For PVAS part numbers, refer to the relevant Technical Information document.

## Service Parts

### PVG 16 seal kits

#### Seal kits for PVG 16

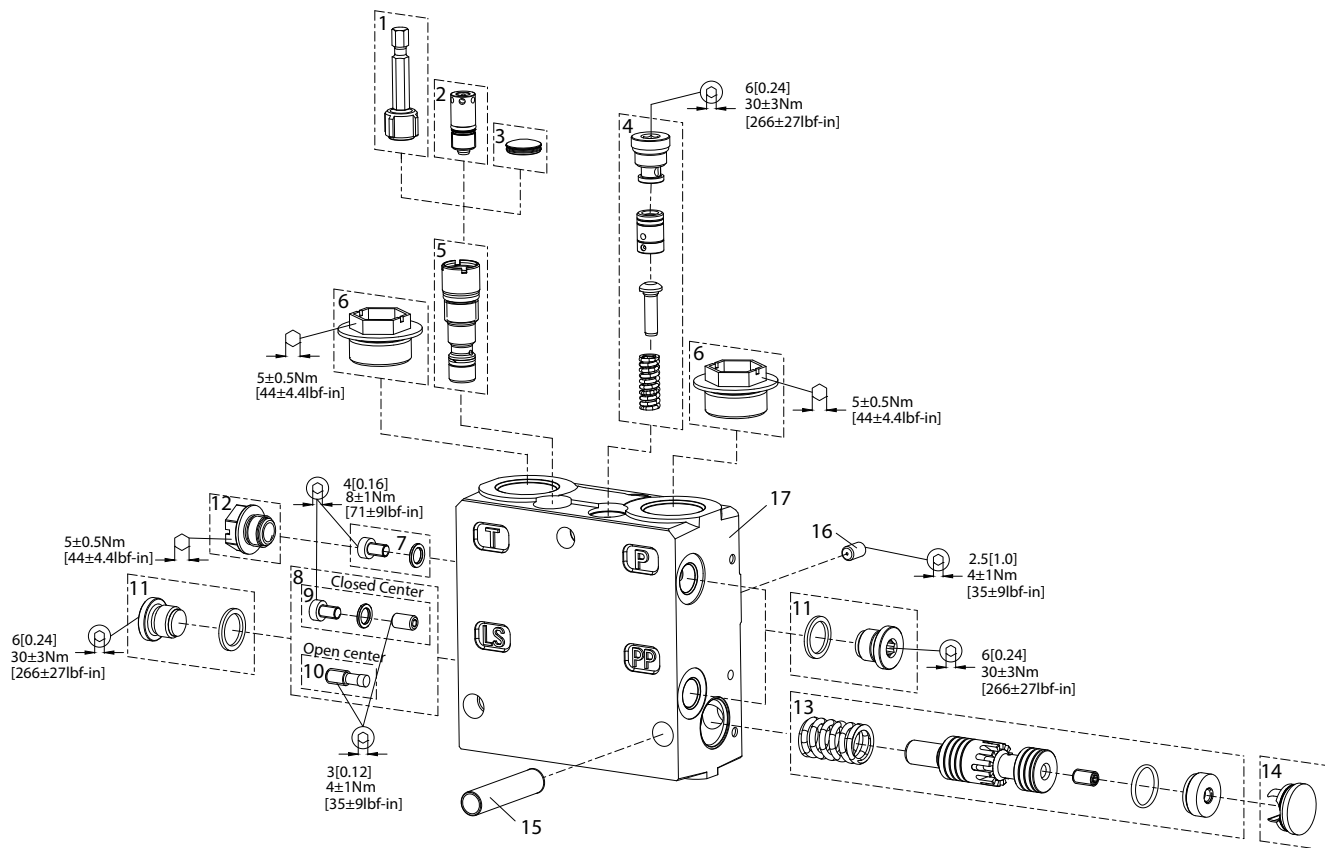
Type	Description	Code number
PVP/PVPV/PVPVM	Module	157B5999
PVB	Module	157B6999
PVM/PVH/PVMD	Module	157B3999
PVEO/PVEA/PVEO-CI/PVEA-CI/PVHC	Module	11133165
Seal kit for one work section	For a PVG 16 with 1 PVB-section	157B8999
Seal kit for seven work sections	For a PVG 16 with 7 PVB-section	11156335
PVPX	Module	157B4996
PVPX	Module before 1996	157B4998

**Service Parts**

**PVG 32 service parts**

**PVG 32 pump side module, PVP**

*PVP exploded view*



*PVP kits*

Description	Code number	P port	T/HPCO port	Letter
Open center	157B5000	G1/2"	G3/4"	A
	157B5100	G3/4"		
	157B5200	7/8-14 UNF	1-1/16 UN	
	157B5300	1-1/16 UN		
Open center with PVPX facility	157B5102	G3/4"	G3/4"	B
Open center with PPRV for PVE	157B5010	G1/2"	G3/4"	C
	157B5110	G3/4"		
	11008849			
	157B5210	7/8-14 UNF	1-1/16 UN	
	157B5310	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVE and T0 facility and pilot oil pressure take-off	11072195	M27x2.0	M27x2.0	D
	157B5130	G3/4"	G3/4"	
	157B5330	1-1/16-12 UNF	1-1/16-12 UNF	
	157B5964	M22x1.5	M22x1.5	

**Service Parts**

*PVP kits (continued)*

Description	Code number	P port	T/HPCO port	Letter
Open center with PPRV for PVE, T0 and HPCO facility	157B5140	G3/4"	G3/4"	E
	157B5340	1-1/16-12 UNF	1-1/16-12 UNF	
	157B5961	M27x2.0	M27x2.0	
	157B5965	M22x1.5	M22x1.5	
Open center with PPRV for PVE, T0, HPCO and PVPX facility and pilot oil pressure take-off	157B5142	G3/4"	G3/4"	F
	157B5342	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVE and PVPX facility	157B5012	G1/2"	G3/4"	G
	11187356			
	157B5112	G3/4"	G3/4"	
	157B5212	7/8-14 UNF	1-1/16 UN	
	157B5312	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVE and PVPX and T0 facility and pilot oil pressure take-off	157B5132	G3/4"	G3/4"	H
	157B5332	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVE and pilot oil pressure take-off	157B5180	G3/4"	G3/4"	I
	157B5380	1-1/16-12 UNF	1-1/16-12 UNF	
Open center with PPRV for PVH/PVHC and pilot oil pressure take-off	157B5190	G3/4"	G3/4"	J
	157B5390	1-1/16-12 UNF	1-1/16-12 UNF	
	11008851	G3/4"	G3/4"	
Open center with PPRV for PVH/PVHC and PVPX facility	11066027	G3/4"	G3/4"	K
Closed center	157B5001	G1/2"	G3/4"	L
	157B5101	G3/4"		
	157B5201	7/8-14 UNF	1-1/16 UN	
	157B5301	1-1/16 UN		
Closed center with PVPX facility	157B5103	G3/4"	G3/4"	M
Closed Center with PPRV for PVE	157B5011	G1/2"	G3/4"	N
	157B5111	G3/4"		
	157B5211	7/8-14 UNF	1-1/16 UN	
	157B5311	1-1/16 UN		
Closed Center with PPRV for PVE and T0 facility and pilot oil pressure take-off	157B5131	G3/4"	G3/4"	O
	157B5331	1-1/16-12 UNF	1-1/16-12 UNF	
Closed center with PPRV for PVE and PVPX facility	157B5013	G1/2"	G3/4"	P
	157B5113	G3/4"		
	157B5213	7/8-14 UNF	1-1/16 UN	
	157B5313	1-1/16-12 UNF	1-1/16-12 UNF	
Closed center with PPRV for PVE, T0 and PVPX facility and pilot oil pressure take-off	157B5133	G3/4"	G3/4"	Q
	157B5333	1-1/16-12 UNF	1-1/16-12 UNF	
Closed center with PPRV for PVE and pilot oil pressure take-off	157B5181	G3/4"	G3/4"	R
	157B5381	1-1/16-12 UNF	1-1/16-12 UNF	
Closed center with PPRV for PVH/PVHC and T0 facility	11051802	1-1/16-12 UNF	1-1/16-12 UNF	S
Closed center with PPRV for PVH/PVHC and pilot oil pressure take-off	157B5191	G3/4"	G3/4"	T
	157B5391	1-1/16-12 UNF	1-1/16-12 UNF	

## Service Parts

### PVP parts list

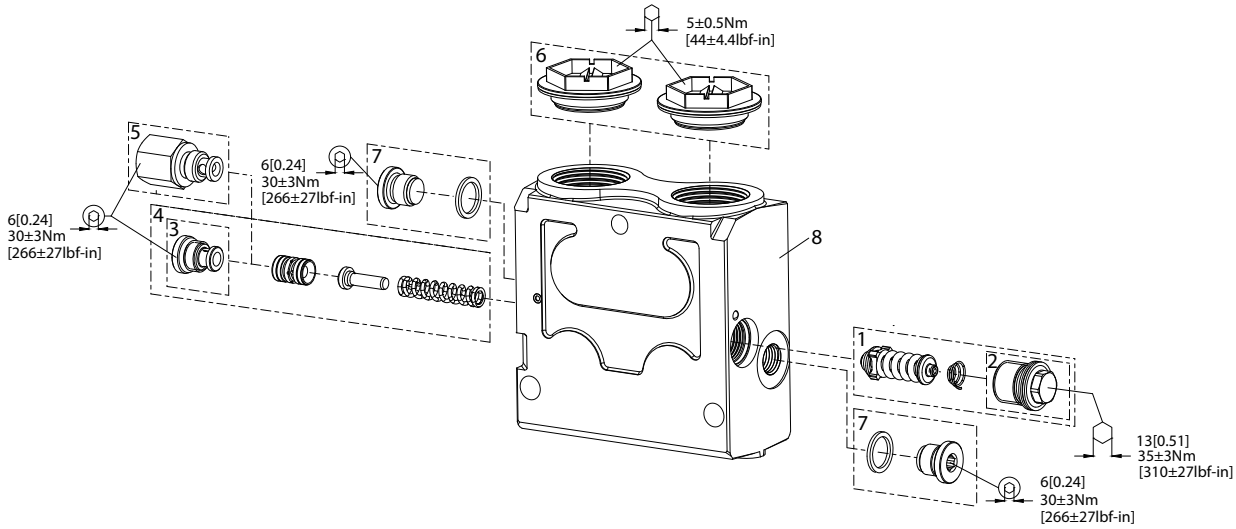
Item	Description	Code number	Letter									
			A	B	C	D	E	F	G	H	I	J
1	Relief valve service tool	155L6494	-	-	-	-	-	-	-	-	-	-
2	Sealed adjusting screw	155L6489	-	-	-	-	-	-	-	-	-	-
3	Plastic plug (black)	155L6168	50	50	50	50	50	50	50	50	50	50
4	Pilot supply for PVE (13.5 bar)	155L5157	-	-	1	1	1	1	1	1	1	-
4	Pilot supply for PVH/PVHC (25 bar)	11077272	-	-	-	-	-	-	-	-	-	1
5	Relief valve	155L6495	1	1	1	1	1	1	1	1	1	1
6	Plastic plug	-	2	2	2	2	2	2	2	2	2	2
7	T0 plug	-	-	-	-	1	-	-	-	-	-	-
8	Conversion kit (open→closed, closed→open)	155L5152	-	-	-	-	-	-	-	-	-	-
9	Orifice Ø1.0, bonded seal and plug for closed center	-	-	-	-	-	-	-	-	-	-	-
10	M6 plug for open center	155L5153	1	1	1	1	1	1	1	1	1	1
11	Plug with O-ring	-	2	2	2	3	2	3	2	3	3	3
12	Plastic plug	-	-	-	-	1	1	1	-	1	-	-
13	Inlet compensator assembly	-	1	1	1	1	1	1	1	1	1	1
14	Plastic plug	-	1	1	1	1	1	1	1	1	1	1
15	Locking pin	-	1	1	1	1	1	1	1	1	1	1
16	Orifice M6 Ø1.0	-	1	1	1	1	1	1	1	1	1	1
17	PVP inlet module	-	1	1	1	1	1	1	1	1	1	1

Item	Description	Code number	Letter									
			K	L	M	N	O	P	Q	R	S	T
1	Relief valve service tool	155L6494	-	-	-	-	-	-	-	-	-	-
2	Sealed adjusting screw	155L6489	-	-	-	-	-	-	-	-	-	-
3	Plastic plug (black)	155L6168	1	1	1	1	1	1	1	1	1	1
4	Pilot supply for PVE (13.5 bar)	155L5157	-	-	-	1	1	1	1	1	-	-
4	Pilot supply for PVH/PVHC (25 bar)	11077272	1	-	-	-	-	-	-	-	1	1
5	Relief valve	155L6495	50	50	50	50	50	50	50	50	50	50
6	Plastic plug	-	2	2	2	2	2	2	2	2	2	2
7	T0 plug	-	-	-	-	-	1	-	-	-	-	-
8	Conversion kit (open→closed, closed→open)	155L5152	-	-	-	-	-	-	-	-	-	-
9	Orifice Ø1.0, bonded seal and plug for closed center	-	-	1	1	1	1	1	1	1	1	1
10	M6 plug for open center	155L5153	1	-	-	-	-	-	-	-	-	-
11	Plug with O-ring	-	2	2	2	2	3	2	3	3	2	3
12	Plastic plug	-	-	-	-	-	1	-	1	-	-	-
13	Inlet compensator assembly	-	1	1	1	1	1	1	1	1	1	1
14	Plastic plug	-	1	1	1	1	1	1	1	1	1	1
15	Locking pin	-	1	1	1	1	1	1	1	1	1	1
16	Orifice M6 Ø1.0	-	1	1	1	1	1	1	1	1	1	1
17	PVP inlet module	-	1	1	1	1	1	1	1	1	1	1

**Service Parts**

**PVG 32 pump side module PVPV**

*PVPV exploded view*



*PVPV kits*

Description	Code number	P port	T port	Letter
Closed center	11067570	M27x2.0	M33x2.0	A
Closed center with T0 facility	11055758	M27x2.0	M27x2.0	B
Closed center with PPRV for PVH/PVHC	157B5916	1 5/16-12 UN	1 5/16-12 UN	C
Closed center with PPRV for PVE	157B5911	1 5/16-12 UN	1 5/16-12 UN	D
	157B5938	G1"	G1"	
	11012350	M27x2.0	M33x2.0	
	157B5978			
Closed center with PPRV for PVE and T0 facility	11003806	M27x2.0	M27x2.0	E
Closed center with PPRV for PVH/PVHC and PVLP	11008856	G1"	G1"	F
	11051803	1 5/16-12 UN	1 5/16-12 UN	
Closed center with PPRV for PVH/PVHC and T0 facility	157B5963	1-1/16-12 UNF	1-1/16-12 UNF	G
Closed center with PPRV for PVE and PVLP	157B5913	1 5/16-12 UN	1 5/16-12 UN	H
	157B5941	G1"	G1"	
	157B5948			
	157B5973*			
Closed center with PPRV for PVE and PVLP and T0 facility	11008854	G1"	G1"	I
	11124107	1-1/16-12 UNF	1-1/16-12 UNF	

\* This module includes the plug for external Pp (item 5)

*PVPV parts list*

Item	Description	Code number	Letter								
			A	B	C	D	E	F	G	H	I
1	PVLP assembly	See PVLP section	-	-	-	-	-	1	-	1	1
2	Plug for PVLP	157B2002	-	-	-	-	-	1	-	1	1



## Service Parts

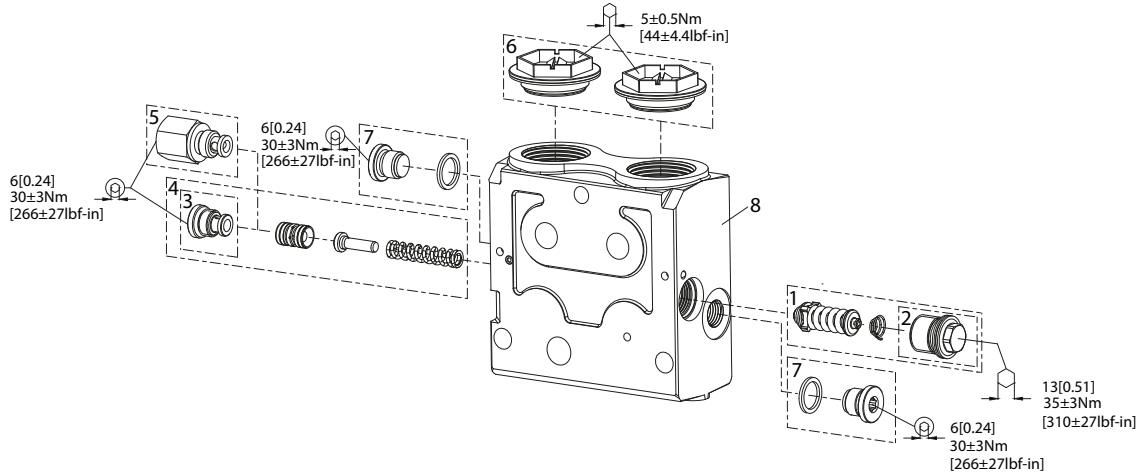
*PVPV parts list (continued)*

Item	Description	Code number	Letter								
			A	B	C	D	E	F	G	H	I
3	Plug	-	-	-	1	1	1	1	1	1	1
4	Pilot suply for PVE 13.5 bar	155L5157	-	-	-	1	1	-	-	1	1
	Pilot suply for PVH/PVHC 25 bar	11077272	-	-	1	-	-	1	1	-	-
5	Plug for external Pp	-	-	-	-	-	-	-	-	-	-
6	Plastic plug	-	2	2	2	2	2	2	2	2	2
7	Plug	-	2	2	2	2	2	2	2	2	2
8	PVPV inlet module		1	1	1	1	1	1	1	1	1

**Service Parts**

**PVG 32 pump side module PVPV/PVPVM**

*PVPV/PVPVM exploded view*



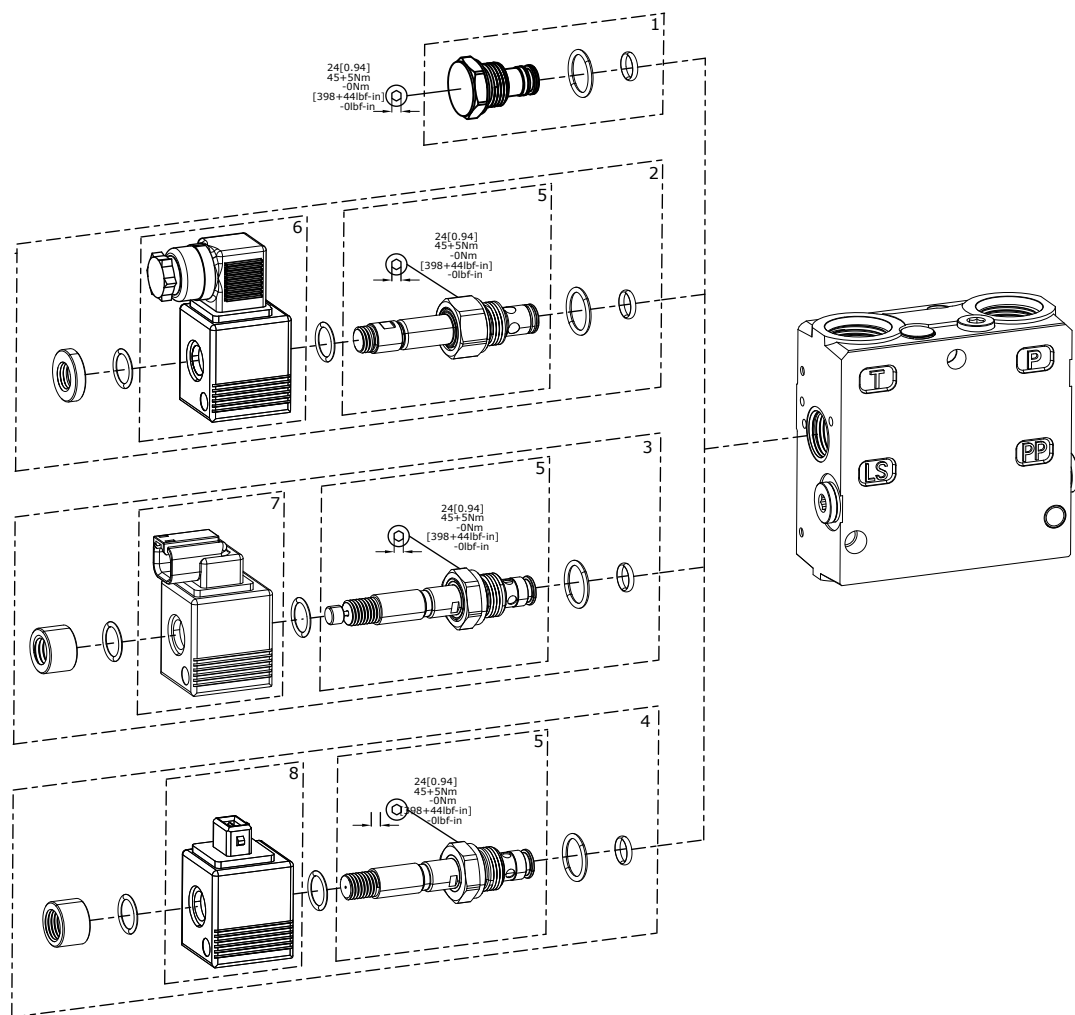
Type	Description	Code number	P-port	T-port	Letter
PVPVM	Closed center with PPRV for PVE	157B5912	1 5/16-12 UN	1 5/16-12 UN	A
		157B5937	G1"	G1"	
	Closed center with PPRV for PVH/PVHC and PVLP	11083156	1 5/16-12 UN	1 5/16-12 UN	B
		157B5986*	G1"	G1"	
Closed center with PPRV for PVE and PVLP	157B5914	1 5/16-12 UN	1 5/16-12 UN	C	
	157B5940	G1"	G1"		
PVPV	Open Center/Closed Center with PVLP and T0 facility	11093682	1 5/16-12 UN	1 5/16-12 UN	D
		11093684	G1"	G1"	

Item	Description	Code number	Letter			
			A	B	C	D
1	PVLV assembly	See PVLV section	-	1	1	1
2	Plug for PVLV	157B2002	-	1	1	1
3	Plug	-	1	1	1	-
4	Pilot supply for PVE 13.5 bar	155L5157	1	-	1	-
	Pilot supply for PVH/PVHC 25 bar	11077272	-	1	-	-
5	Plug for external Pp	-	-	-	-	-
6	Plastic plug	-	2	2	2	2
7	Plug	-	2	2	2	-
8	PVPV inlet module	-	1	1	1	-

**Service Parts**

**PVG 16/32 electrical LS pressure unloading valve, PVPX**

*PVPX exploded view*



*PVPX plug*

Description	Manual Override	Item	Code number
Plug for PVPX port	-	1	157B5601
Solenoid valve NO	-	5	11215753
Solenoid valve NC	-	5	11215752
Solenoid valve NO	PUSH	5	11215754
Solenoid valve NO	PUSH & TURN	5	11215756
Coil 1x2 DIN (12Vdc)	-	6	11215729
Coil 1x2 DIN (24Vdc)	-	6	11215740
Coil 1x2 DIN (26Vdc)	-	6	11215741
Coil 1x2 DEU (12Vdc)	-	7	11215748
Coil 1x2 DEU (24Vdc)	-	7	11215749
Coil 1x2 DEU (26Vdc)	-	7	11215750
Coil 1x2 AMP (12Vdc)	-	8	11215743

## Service Parts

### *PVPX plug (continued)*

Description	Manual Override	Item	Code number
Coil 1x2 AMP (24Vdc)	-	8	11215744
Coil 1x2 AMP (26Vdc)	-	8	11215746

### *PVPX, NO configuration*

1x2 DIN (12 Vdc)	-	2	157B4236
1x2 DIN (24 Vdc)	-		157B4238
1x2 AMP (12 Vdc)	-	4	157B4981
1x2 AMP (24 Vdc)	-		157B4982
1x2 DEUTSCH (12 Vdc)	-	3	11180766
1x2 DEUTSCH (24 Vdc)	-		11180767

### *PVPX, NC configuration*

1x2 DIN (12 Vdc)	-	2	157B4246
1x2 DIN (24 Vdc)	-		157B4248
1x2 DIN (26 Vdc)	-		157B4976
1x2 AMP (12 Vdc)	-	4	157B4983
1x2 AMP (24 Vdc)	-		157B4984
1x2 DEUTSCH (12 Vdc)	-	3	11180768
1x2 DEUTSCH	-		11180769

### *PVPX, NOMO configuration*

1x2 DIN (12 Vdc)	PUSH	2	157B4256
1x2 DIN (12 Vdc)	PUSH & TURN		157B4257
1x2 DIN (24 Vdc)	PUSH		157B4258
1x2 DIN (24 Vdc)	PUSH & TURN		157B4259
1x2 DIN (26 Vdc)	PUSH		157B4260
1x2 AMP (12 Vdc)	PUSH	4	157B4985
1x2 AMP (24 Vdc)	PUSH		157B4986

### *PVPX spare parts, solenoids*

Type	Manual Override	Part number
NC Solenoid valve	-	11215752
NO Solenoid valve	-	11215753
NOMO Solenoid valve	PUSH	11215754
NOMO Solenoid valve	PUSH & TURN	11215756

### *PVPX spare parts, coils*

Type	Connector	Part number
Coil 12V	1x2 DEUTSCH	11215748
Coil 24V	1x2 DEUTSCH	11215749
Coil 26V	1x2 DEUTSCH	11215750
Coil 12V	1x2 AMP	11215743
Coil 24V	1x2 AMP	11215744

## Service Parts

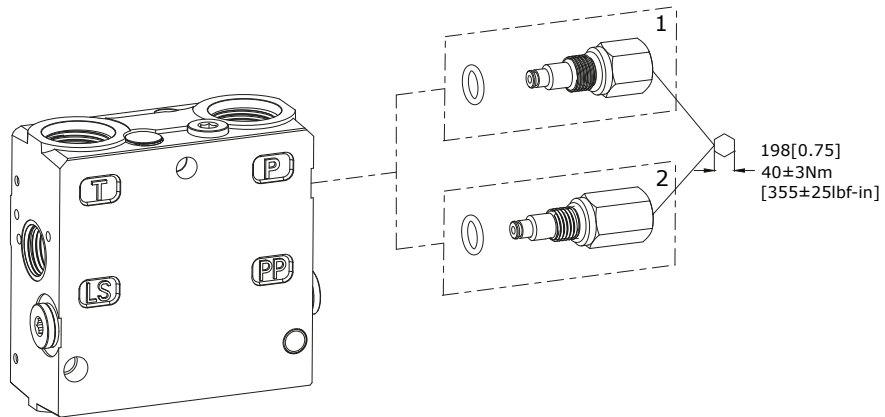
*PVPX spare parts, coils (continued)*

Type	Connector	Part number
Coil 26V	1x2 AMP	11215746
Coil 12V	1x2 DIN	11215729
Coil 24V	1x2 DIN	11215740
Coil 26V	1x2 DIN	11215741

**Service Parts**

**PVG 32 external pilot pressure adapter, PVPC**

*PVPC exploded view*

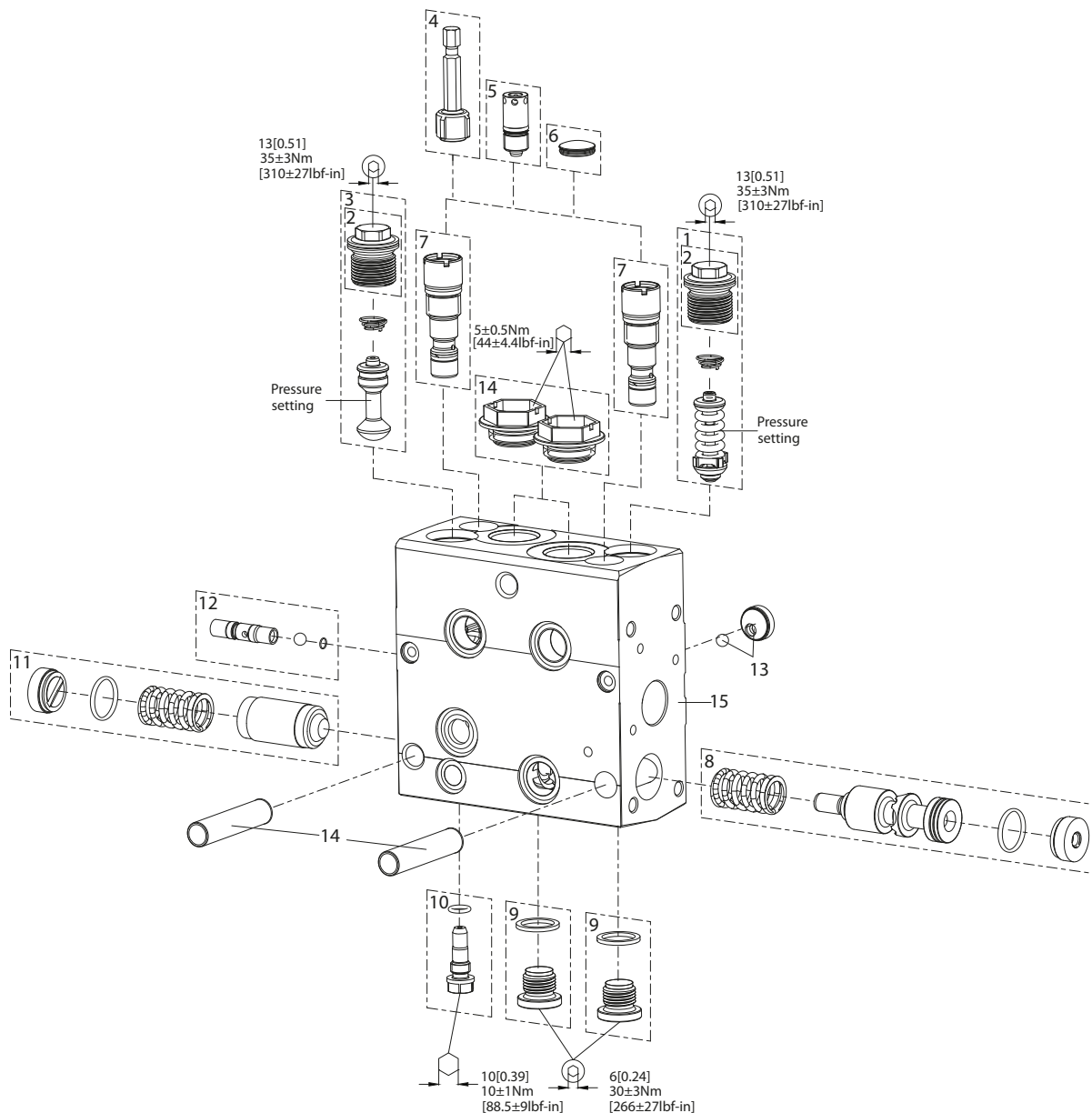


Type	Item	Thread	Code number
PVPC without check valve	1	G1/2"	157B5400
		1/2-20 UNF	158X1000
PVPC with check valve	2	G1/2"	157B5600
		1/2-20 UNF	157B5700

**Service Parts**

**PVG 32 basic module, PVB**

*PVB exploded view*



*PVB part kits*

Type	Description	Code number	A/B-port	LS A/B-port	Letter
Uncompensated PVB	Basic module	157B6000	G1/2"	-	A
		157B6400	7/8-14 UNF	-	
	Basic module with T0	157B6010	G1/2"	-	B
		157B6410	7/8-14 UNF	-	
Basic module with PVLP/PVLA	Basic module with PVLP/PVLA and LS A/B shuttle valve	157B6030	G1/2"	-	C
		157B6430	7/8-14 UNF	-	
		11071832	G1/2"	-	

## Service Parts

### PVB part kits (continued)

Type	Description	Code number	A/B-port	LS A/B-port	Letter
Uncompensated PVB with load drop check valve	Basic module	157B6100	G1/2"	-	D
		157B6500	7/8-14 UNF	-	
	Basic module with T0	157B6110	G1/2"	-	E
		157B6909	7/8-14 UNF	-	
	Basic module with PVLP/PVLA	157B6130	G1/2"	-	E
		157B6530	7/8-14 UNF	-	
	Basic module with PVLP/PVLA and T0	157B6140	G1/2"	-	F
		157B6904	7/8-14 UNF	-	
Basic module with PVLP/PVLA and LS A/B shuttle valve	157B6136	G1/2"	-	F	
	157B6536	7/8-14 UNF	-		
Compensated PVB	Basic module	157B6200	G1/2"	-	G
		157B6600	7/8-14 UNF	-	
		157B6849	Machined top	-	
	Basic module with T0	157B6210	G1/2"	-	H
		157B6922	7/8-14 UNF	-	
	Basic module with PVLP/PVLA	157B6230	G1/2"	-	H
		157B6630	7/8-14 UNF	-	
	Basic module with PVLP/PVLA and T0	157B6240	G1/2"	-	H
157B6906		7/8-14 UNF	-		
157B6850		M22x1.5	-		
Dampened compensated PVB	Basic module	157B6206	G1/2"	-	I
		11036629	7/8-14 UNF	-	
	Basic module with PVLP/PVLA	157B6236	G1/2"	-	J
11036630		7/8-14 UNF	-		
Compensated PVB with LS A/B	Basic module	157B6203	G1/2"	G1/4"	K
		157B6603	7/8-14 UNF	1/2-20 UNF	
	Basic module with T0	157B6213	G1/2"	G1/4"	L
		157B6613	7/8-14 UNF	1/2-20 UNF	
	Basic module with PVLP/PVLA	157B6233	G1/2"	G1/4"	L
		157B6633	7/8-14 UNF	1/2-20 UNF	
	Basic module with PVLP/PVLA and T0	157B6243	G1/2"	G1/4"	L
		157B6643	7/8-14 UNF	1/2-20 UNF	
Compensated high flow PVB	Basic module with T0	11119463	7/8-14 UNF	-	M
		11126962	G1/2"	-	
	Basic module with PVLP/PVLA	157B6852	G1/2"	-	N
		157B6938	7/8-14 UNF	-	
	Basic module with PVLP/PVLA, T0 and LS A/B shuttle	11091947	7/8-14 UNF	-	O
Compensated high flow PVB with LS A/B	Basic module	157B6855	G1/2"	G1/4"	P
		11059838	G1/2"	G1/4"	
	Basic module with T0	11126963	7/8-14 UNF	1/2-20 UNF	Q
		157B6854	G1/2"	G1/4"	
	Basic module with PVLP/PVLA	11127277	7/8-14 UNF	1/2-20 UNF	Q
		11126964	7/8-14 UNF	1/2-20 UNF	



## Service Parts

### PVB parts list

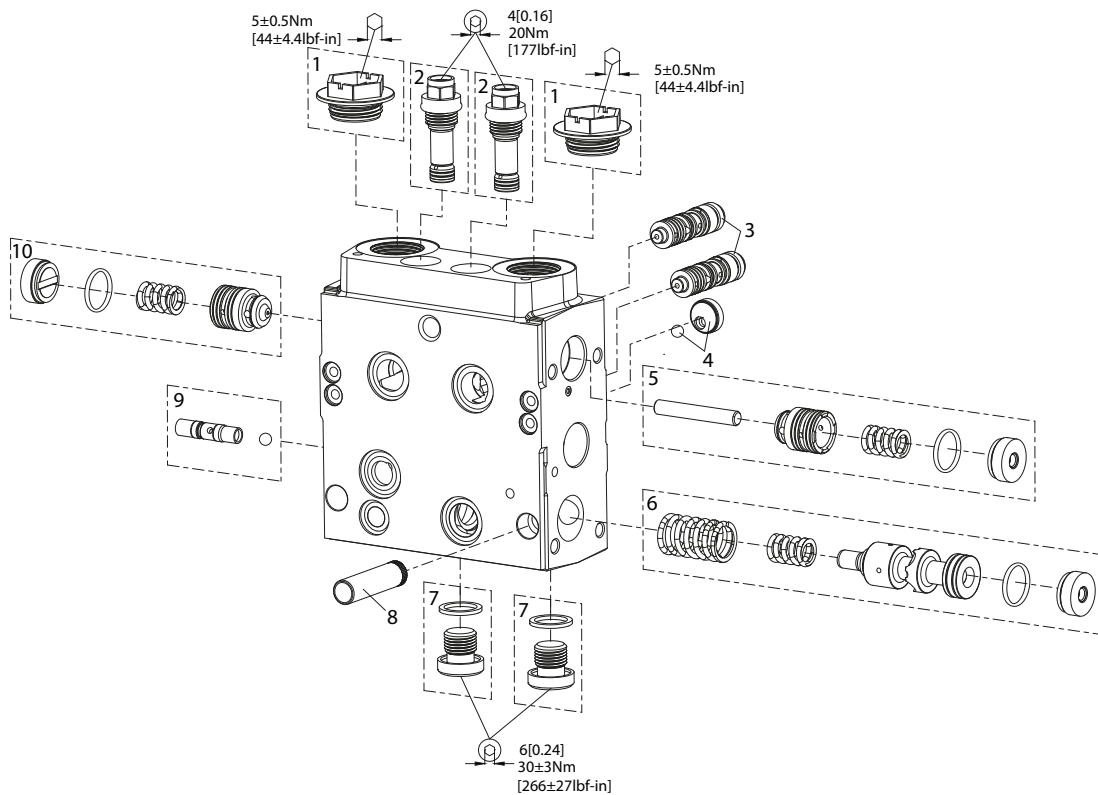
Item	Description	Code number	Letter								
			A	B	C	D	E	F	G	H	I
1	PVLP assembly	See PVLP section	-	2	2	-	2	2	-	2	-
2	Plug for PVLP/PVLA	157B2002	-	2	2	-	2	2	-	2	-
3	PVLA assembly	See PVLP section	-	2	2	-	2	2	-	2	-
4	Service tool for relief valve	155L6494	-	-	-	-	-	-	-	-	-
5	Sealed adjusting screw (for sealing with a wire)	155L6489	-	-	-	-	-	-	-	-	-
6	Sealed plastic plug, black (50 pcs.)	155L6168	-	-	-	-	-	-	-	-	-
7	Relief valve	155L6495	-	-	-	-	-	-	-	-	-
8	Compensator assembly	-	-	-	-	-	-	-	1	1	1
9	Plug	-	-	-	-	-	-	-	-	-	-
10	Damping screw	-	-	-	-	-	-	-	-	-	1
11	Load drop check valve assembly	-	-	-	1	1	1	1	-	-	-
12	LS shuttle valve assembly	-	-	-	1	-	-	1	-	-	-
13	Shuttle disc	-	1	1	1	1	1	1	1	1	1
14	Plastic plug	-	2	2	2	2	2	2	2	2	2
15	PVB basic module	-	1	1	1	1	1	1	1	1	1

Item	Description	Code number	Letter								
			J	K	L	M	N	O	P	Q	
1	PVLP assembly	See PVLP section	2	-	2	-	2	2	-	2	
2	Plug for PVLP/PVLA	157B2002	2	-	2	-	2	2	-	2	
3	PVLA assembly	See PVLP section	2	-	2	-	2	2	-	2	
4	Service tool for relief valve	155L6494	-	-	-	-	-	-	-	-	
5	Sealed adjusting screw (for sealing with a wire)	155L6489	-	-	-	-	-	-	-	-	
6	Sealed plastic plug, black (50 pcs.)	155L6168	-	2	2	-	-	-	2	-	
7	Relief valve	155L6495	-	2	2	-	-	-	2	-	
8	Compensator assembly	-	1	1	1	1	1	1	1	1	
9	Plug	-	-	2	2	-	-	-	2	-	
10	Damping screw	-	1	-	-	-	-	-	-	-	
11	Load drop check valve assembly	-	-	-	-	-	-	-	-	-	
12	LS shuttle valve assembly	-	-	1	1	-	-	1	1	-	
13	Shuttle disc	-	1	1	1	1	1	1	1	1	
14	Plastic plug	-	2	2	2	2	2	2	2	2	
15	PVB basic module	-	1	1	1	1	1	1	1	1	

**Service Parts**

**PVG 32 basic module, PVBZ**

Standard PVBZ exploded view



Type	Description	Code number	A/B-port	POC	Letter	
Uncompensated PVBZ with POC	Basic module	157B6051	G1/2"	B-port	A	
		157B6451	7/8-14 UNF	B-port		
		157B6969	Machined top	A-port		
	Basic module with LS A/B shuttle valve	157B6452	7/8-14 UNF	A/B-port	B	
		157B6052	G1/2"	A/B-port		
Compensated PVBZ with POC	Basic module	157B6251	G1/2"	B-port	C	
		157B6960	7/8-14 UNF	A-port		
		157B6651	7/8-14 UNF	B-port		
		11157082	Machined top	A-port		
		157B6252	G1/2"	A/B-port		D
		157B6652	7/8-14 UNF	A/B-port		
	Basic module with thermo relief	157B6261	G1/2"	B-port	E	
		157B6661	7/8-14 UNF	B-port		
		157B6262	G1/2"	A/B-port		F
		157B6662	7/8-14 UNF	A/B-port		
	Basic module with thermo relief and LS A/B shuttle valve	157B6266	G1/2"	A/B-port	G	
		157B6666	7/8-14 UNF	A/B-port		
		157B6954	m22x1.5	A/B-port		
		157B6952	Machined top	A/B-port		
157B6958		Machined top	A/B-port			

## Service Parts

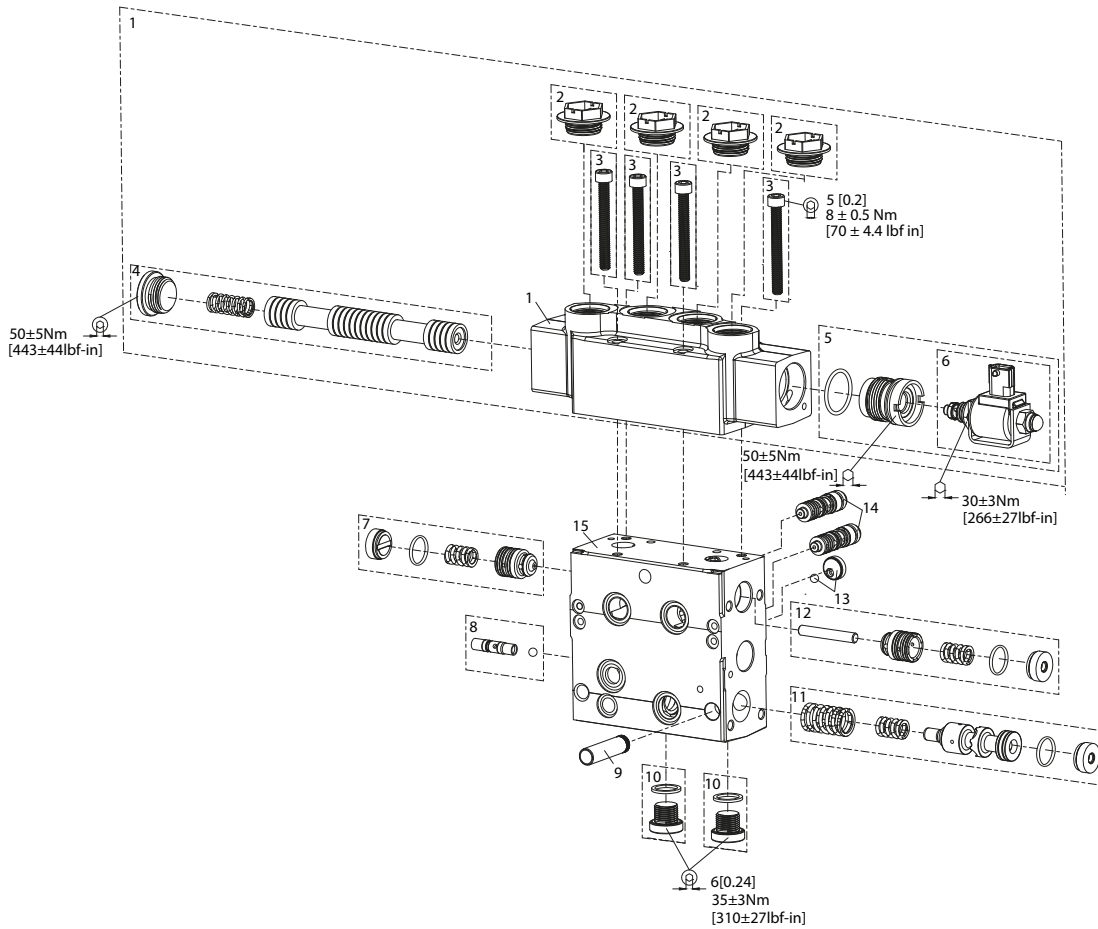
Type	Description	Code number	A/B-port	POC	Letter
Compensated high flow PVBZ with POC	Basic module with LS A/B shuttle valve	157B6957	M22x1.5	A/B-port	H
		11024817	M22x1.5	A/B-port	
	Basic module with PVLP/PVLA and LS A/B shuttle valve	11018390	G1/2"	A/B-port	
		11018391	7/8-14 UNF	A/B-port	
	Basic module with PVLP/PVLA on B-port	157B6968	M22x1.5	B-port	I

Item	Description	Code number	Letter									
			A	B	C	D	E	F	G	H	I	
1	Plastic plug	-	2	2	2	2	2	2	2	2	2	2
2	Thermo relief valve	-	-	-	-	-	2	2	2	-	-	-
3	Pilot valve	-	1	2	1	2	1	2	2	2	2	1
4	Shuttle disc	-	1	1	1	1	1	1	1	1	1	1
5	Pilot operated check valve (POC)	-	1	2	1	2	1	2	2	2	2	1
6	Compensator assembly	-	-	-	1	1	1	1	1	1	1	1
7	Plug	-	-	-	-	-	-	-	-	-	-	-
8	Locking pin	-	-	-	1	1	1	1	1	1	1	1
9	LS shuttle valve assembly	-	-	1	-	-	-	-	1	1	-	-
10	Pilot operated check valve (POC)	-	1	2	1	2	1	2	2	2	2	1

**Service Parts**

**PVG 32 basic module PVBZ with PVBD diverter**

*PVBZ with PVBD diverter exploded view*



*PVBZ with PVBD kits*

Type	Description	Code number	A/B-port	POC	Letter
Compensated high flow PVBZ with POC	Basic module with manifold interface	157B6958	Machined top	A/B-port	A
		11005475	Machined top	A/B-port	
		11032961	Machined top	A/B-port	
PVBD	PVBD diverter 6/2 shift valve	157B1501	M22 x 1.5	-	B
		157B1503	7/8-14 UNF	-	
	Multi-valve for PVBZ	11027604	M22 x 1.5	-	C

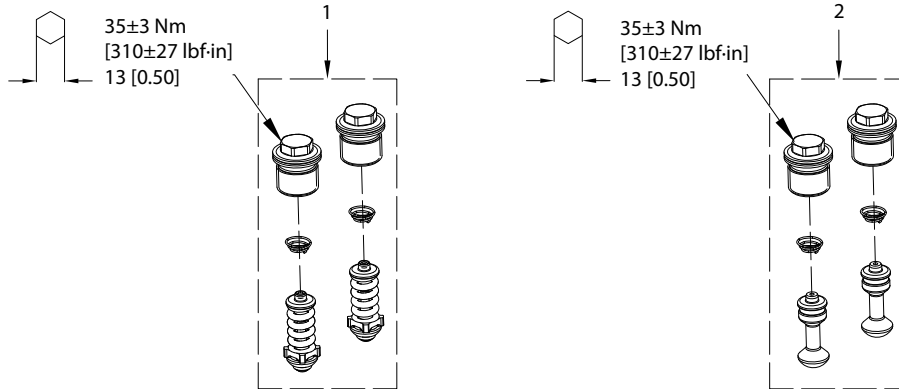
Item	Description	Code number	Letter		
			A	B	C
1	PVBD Diverter	-	-	1	1
2	Plastic plugs	-	-	4	2
3	Screw	-	-	4	4
4	PVBD spool	-	-	1	1
5	PVC assembly	-	-	1	1
6	PVC Solenoid	-	-	1	1

### Service Parts

Item	Description	Code number	Letter		
			A	B	C
7	Pilot operated check valve (POC)	-	2	-	-
8	LS shuttle valve assembly	-	1	-	-
9	Locking pin	-	1	-	-
10	Plug	-	-	-	-
11	Compensator assembly	-	1	-	-
12	Pilot operated check valve (POC)	-	2	-	-
13	Shuttle disc	-	1	-	-
14	Pilot valve	-	2	-	-
15	PVBZ basic module with manifold interface	-	1	-	-

**Service Parts**

**PVLP Shock and PVLA, Suction Valves**

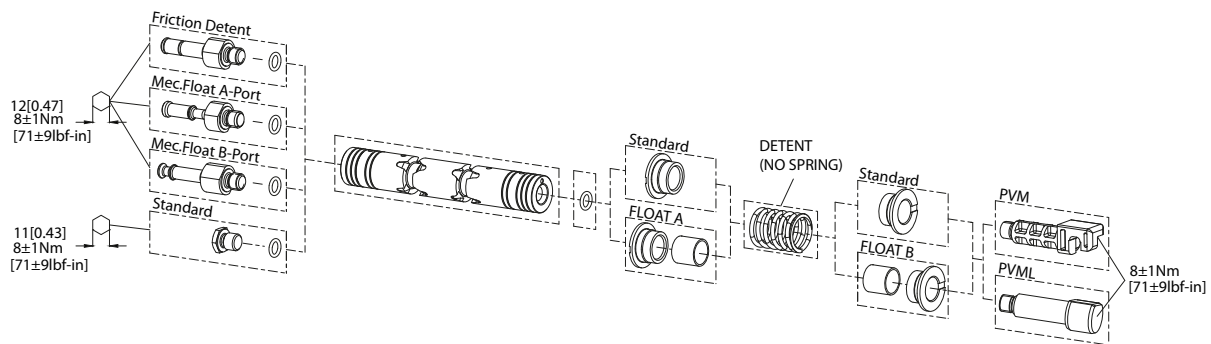


Type	Part number	PVLP/PVLA
PVLA	157B2001	<p>Date stamp</p> <p>2311</p> <p>230</p> <p>Pressure setting in bar</p> <p>Part number: 157B2230</p>
PVLP	157B2032	
	157B2050	
	157B2063	
	157B2080	
	157B2100	
	157B2125	
	157B2140	
	157B2150	
	157B2160	
	157B2175	
	157B2190	
	157B2210	
	157B2230	
	157B2240	
	157B2250	
	157B2265	
	157B2280	
	157B2300	
	157B2320	
	157B2350	
	157B2380	
Plug	157B2002	

**Service Parts**

**PVG 32 PVBS main spool**

*PVBS exploded view*

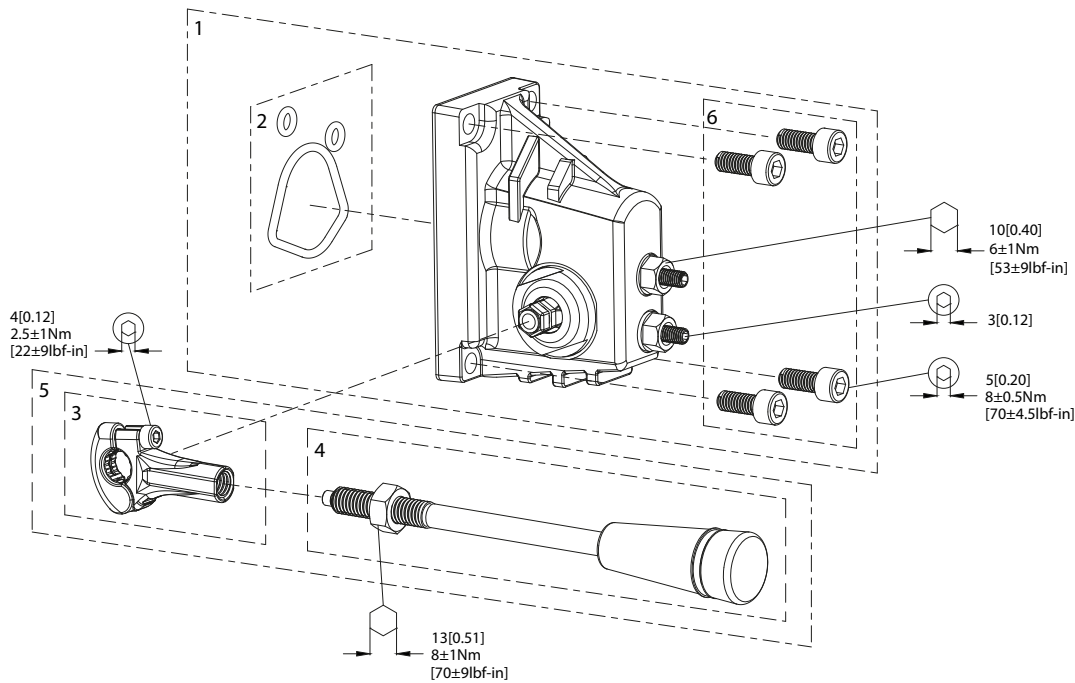


For spool part numbers, see PVG 32 Technical Information.

**Service Parts**

**PVG 32 PVM, mechanical activation**

*PVM exploded view*



*PVM kits*

Type	Description	Code number	Letter
PVM (Aluminum)	Non-adjustable	157B3193	A
	Non-adjustable with lever base	157B3194	B
	Non-adjustable with lever base and lever	157B3191	C
	Adjustable	157B3173	D
	Adjustable with lever base	157B3174	E
	Adjustable with lever base and lever	157B3171	F
PVM (Anodized aluminum)	Adjustable	157B3186	D
	Adjustable with lever base and lever	157B3184	F
PVM (Cast iron)	Adjustable with lever base and lever	157B3161	

*PVM parts list*

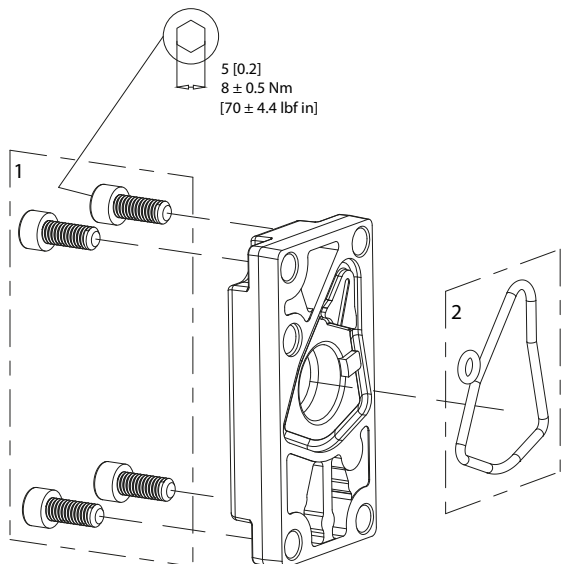
Item	Description	Code number	Letter					
			A	B	C	D	E	F
1	PVM	-	1	1	1	1	1	1
2	Seal kit	157B3999	1	1	1	1	1	1
3	Lever base	11064641	-	1	1	-	1	1
4	Lever with black knob	11077262	-	-	1	-	-	1
	Lever base and lever with black knob	11107587	-	-	1	-	-	1
5	Lever base and lever with red knob	11134809	-	-	-	-	-	-
	Lever base and lever with black knob	11107587	-	-	1	-	-	1
6	Screw M6x15	-	4	4	4	4	4	4



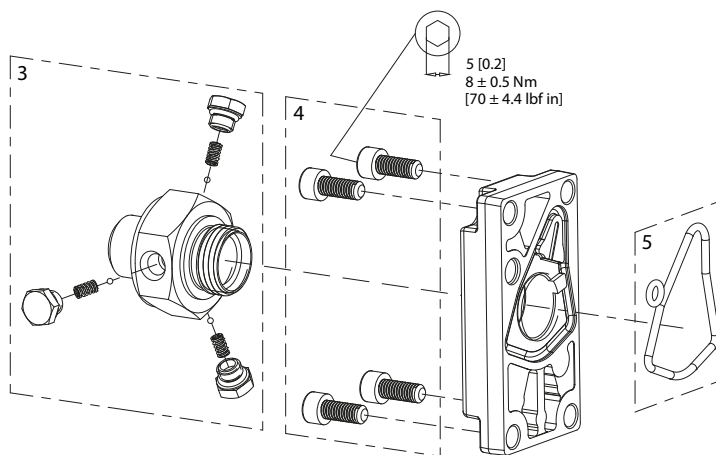
**Service Parts**

**PVG 32 PVMD, PVMR and PVMF covers**

*PVMD exploded view*



*PVMR/PVMF exploded view*



*Cover kits*

Type	Description	Code number	Letter
PVMD	Cover in aluminum	157B0001	A
	Cover in anodized aluminum	157B0009	
	Cover in cast iron	157B0021	
PVMF	Cover in aluminum	157B0005	B
PVMR	Cover in aluminum	157B0004	C
	Cover in anodized aluminum	157B0012	
	Cover in cast iron	157B0024	

## Service Parts

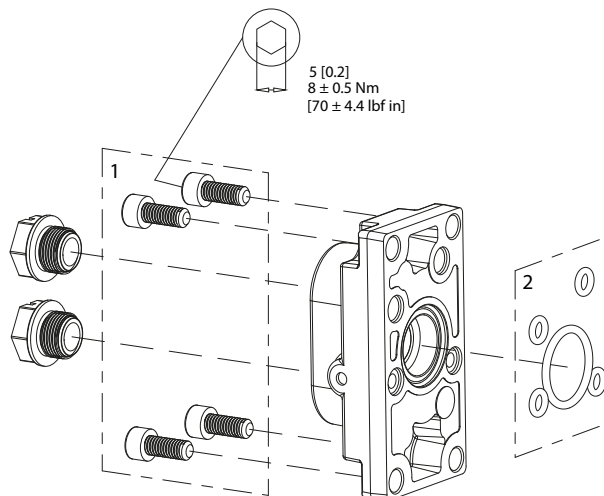
### Parts list

Item	Description	Code number	Letter		
			A	B	C
1	Screw	-	4	-	-
2	Seal kit	157B3999	1	-	-
3	Friction detent plug assembly	-	-	1	1
4	Screw	-	-	4	4
5	Seal kit	157B3999	-	1	1

**Service Parts**

**PVG 32 PVH hydraulic actuation**

*PVH exploded view*



*PVH kits*

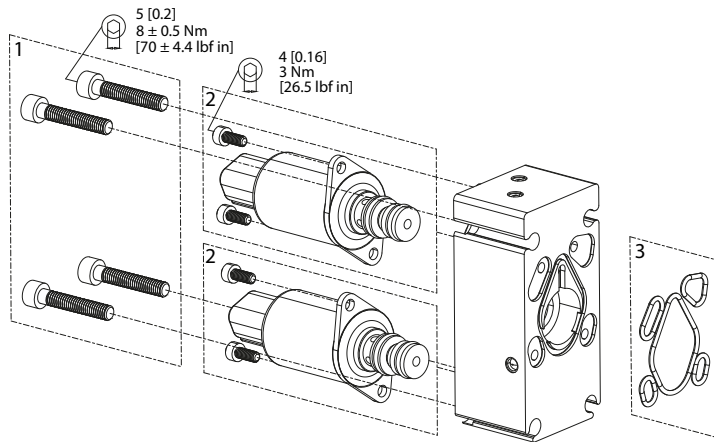
Description	Connection	Code number
Aluminum	9/16-18 UNF	157B0007
Anodized aluminum		157B0010
Cast iron		157B0014
Aluminum	G1/4"	157B0008
Anodized aluminum		157B0011
Cast iron		157B0016

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B3999	1

**Service Parts**

**PVG 32 PVHC electrical actuation**

*PVHC exploded view*



*PVHC kits*

Description	Code number
AMP connector - 12 V	11112037
AMP connector - 24 V	11112036
DEUTSCH connector – 12 V	11112038
DEUTSCH connector – 24 V	11112039

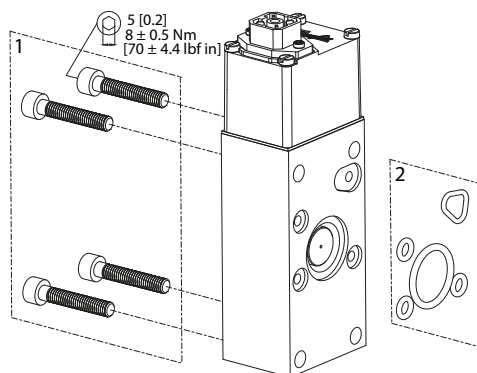
*Parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Solenoid valve	-	2
3	Seal kit	11061235	1

## Service Parts

### PVG 32 PVDI directional indicator

*PVDI exploded view*



#### *Direction indicator kits*

Type	Description	Code number
PVDI	Directional indicator - 1x4 DIN	157B0101
	Directional indicator - 1x4 DIN	157B0102
	Directional indicator - 1x4 DIN	157B0103
	Directional indicator with two NO switches - 1x4 DIN	157B0105
PVDI-H (For PVH)	Directional Indicator for hydraulic actuation – 1x4 DIN	157B0104

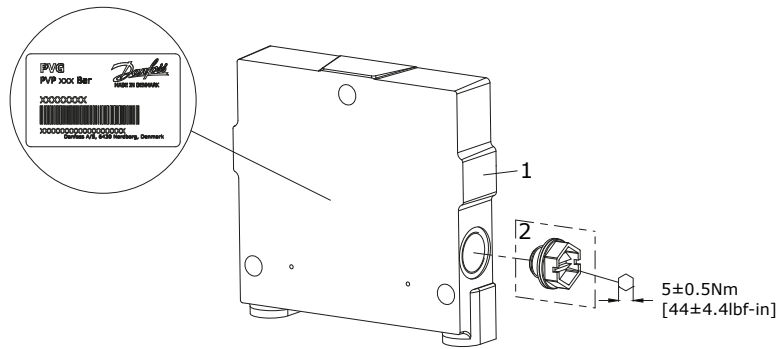
#### *Parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B0199	1

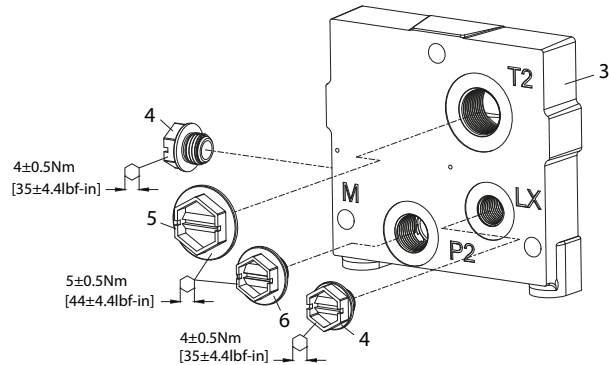
**Service Parts**

**PVG 16/32 PVS/PVSI end plates**

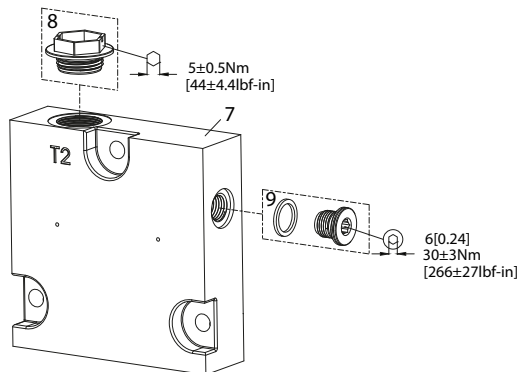
*PVS/PVSI exploded view*



*PVSI with P, T, LX, and M connection exploded view*



*PVST with T connection exploded view*



*PVS/PVSI kits*

Type	Description	Mounting	Code number	Letter
PVS (Aluminum)	End plate	M8	157B2000	A
		5/16-18 UNC	157B2020	
	End plate with LX-connection	M8	157B2011	B
		5/16-18 UNC	157B2021	

## Service Parts

*PVS/PVSI kits (continued)*

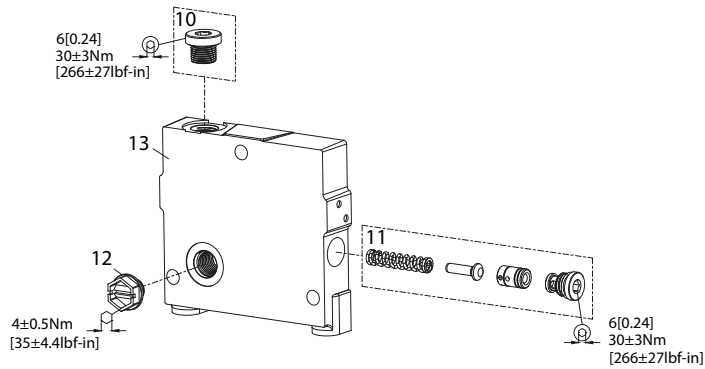
Type	Description	Mounting	Code number	Letter
PVSI (Cast iron)	End plate	5/16-18 UNC	157B2004	C
		M8	157B2014	
	End plate with LX-connection	5/16-18 UNC	157B2005	D
		M8	157B2015	
			157B2910	
	End plate with P-, T-, LX- and M-connection	M8	157B2920	E
PVST (Steel)	End plate with T-connection	M8	157B2500	F
		5/16-18 UNC	157B2520	

Item	Description	Code number	Letter					
			A	B	C	D	E	F
1	PVS/PVSI End plate with LX-connection	-	-	1	-	1	-	-
2	Plastic plug	-	-	1	-	1	-	-
3	PVSI with P-, T-, LX- and M-connection	-	-	-	-	-	1	-
4	Plastic plug	-	-	-	-	-	2	-
5	Plastic plug	-	-	-	-	-	1	-
6	Plastic plug	-	-	-	-	-	1	-
7	PVST with T-connection	-	-	-	-	-	-	1
8	Plastic plug	-	-	-	-	-	-	1
9	Plug with O-ring	-	-	-	-	-	-	1

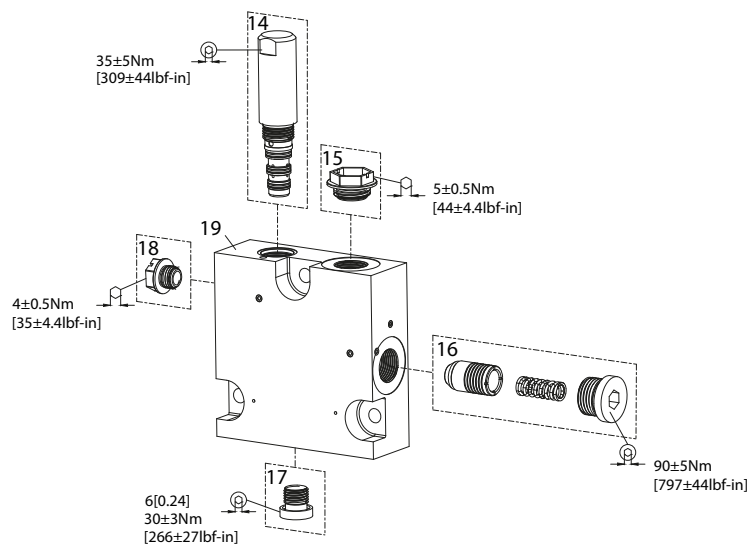
**Service Parts**

**PVG 32 PVSI, PVSD, PVST end plate**

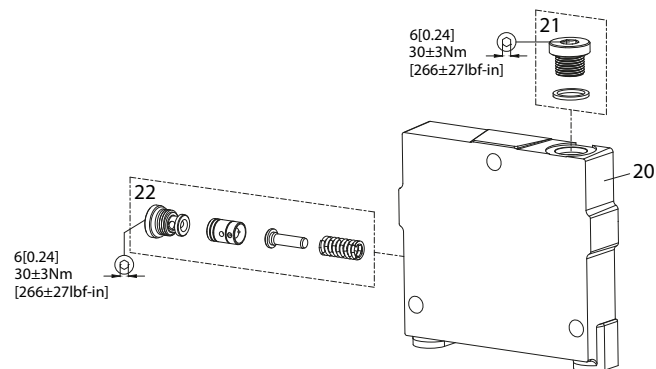
*PVSI start plate exploded view*



*PVSD end plate exploded view*



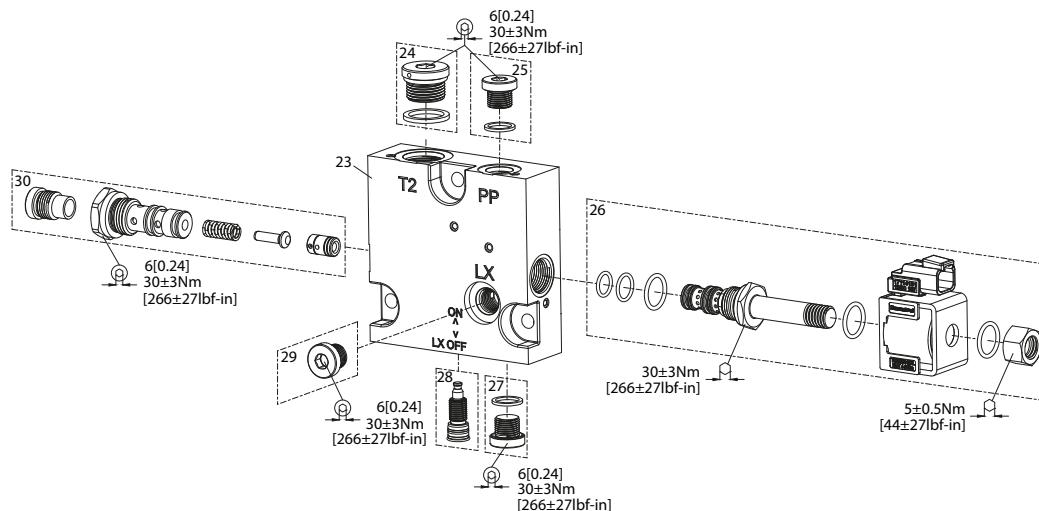
*PVSI with PVE PPRV exploded view*





**Service Parts**

*PVST with PVE PPRV and PP dump*



Type	Description	Mounting	Code number	Letter
PVSI	Start plate	M8	11091773	A
		5/16-18 UNC	11091772	
	End plate with PVE PPRV	M10	157b2017	B
PVST	End plate with PVE PPRV and PP dump (iron)	M8	11050065	C
PVSD	PVSD End plate	M8	157B2904	D

Item	Description	Code number	Letter			
			A	B	C	D
1	PVS/PVSI End plate with LX connection	-	1	-	-	-
2	Plastic plug	-	1	-	-	-
3	PVSI with P-, T-, LX- and M-connection	-	-	1	-	-
4	Plastic plug	-	-	2	-	-
5	Plastic plug	-	-	1	-	-
6	Plastic plug	-	-	1	-	-
7	PVST with T-connection	-	-	-	-	-
8	Plastic plug	-	-	-	-	-
9	Plug with O-ring	-	-	-	-	-
10	Plug	-	1	-	-	-
11	Pilot supply for PVE 13.5 bar	-	1	-	-	-
12	Plastic plug	-	1	-	-	-
13	PVSI Start plate	-	1	-	-	-
14	Pilot cartridge	-	-	-	-	1
15	Plastic plug	-	-	-	-	1
16	Check valve	-	-	-	-	1
17	Plug	-	-	-	-	1
18	Plastic plug	-	-	-	-	1
19	PVSD end plate	-	-	-	-	1
20	PVSI with PVE PPRV	-	-	1	-	-
21	Plug	-	-	1	-	-

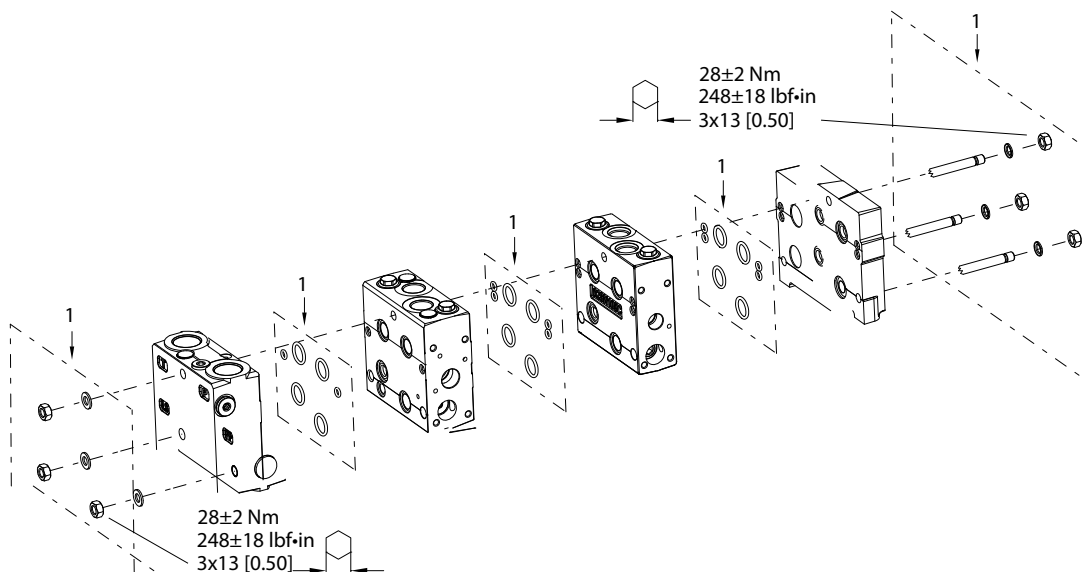
**Service Parts**

Item	Description	Code number	Letter			
			A	B	C	D
22	Pilot supply for PVE 13.5 bar	-	-	1	-	-
23	PVST with PVE PPRV and PP dump	-	-	-	1	-
24	Plug	-	-	-	1	-
25	Plug	-	-	-	1	-
26	PVPP Electrical Pilot Shut-Off valve	-	-	-	1	-
27	Plug	-	-	-	1	-
28	Selector for LX	-	-	-	1	-
29	Plug	-	-	-	1	-
30	Pilot supply for PVE 13.5 bar	-	-	-	1	-

**Service Parts**

**PVG 16/32 PVAS stay bolts**

*PVAS exploded view*



Item	Description	Code number
1	Set of seals for 7 work sections: PVB 16/32	11156335

For PVAS part numbers, refer to the relevant Technical Information document.

## Service Parts

### PVG 32 seal kits

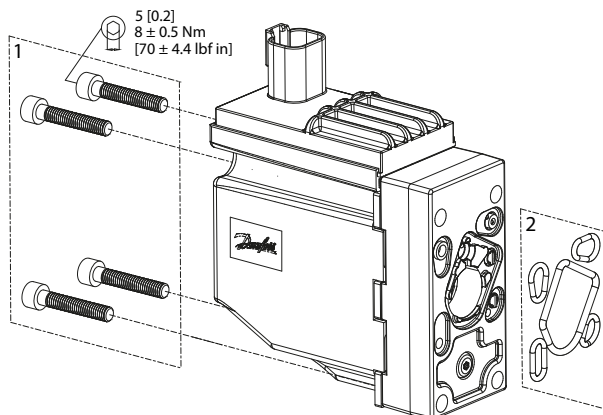
#### Seal kits for PVG 32

Type	Description	Code number
PVP/PVPV/PVPVM	Module	157B5999
PVB	Module	157B6999
PVM/PVH/PVMD/PVMR/PVMF	Module	157B3999
PVEO/PVEM/PVEP/PVEA/PVEH/PVES	Module	157B4997
PVDI	Module	157B0199
Seal kit for one work section	For a PVG 32 with 1 PVB section	157B8999
Seal kit for seven work sections	For a PVG 32 with 7 PVB section	11156335
PVPX	Module	157B5996
PVHC	Module	11061235
PVEO/PVEM/PVEH	Module before middle 1993	157B4999
PVPX	Module before 1996	157B4998
PVBZ	PVBZ with POC	157B6989
PVSP	Priority module	157B5999

## Service Parts

### PVG 32 PVE series 4 PVEO

PVEO exploded view



#### PVEO part kits

Type	Description	Code number
PVEO	1x4 DEUTSCH – 12 V	157B4291
	1x4 DEUTSCH – 24 V	157B4292
	1x4 AMP – 12 V	157B4901
	1x4 AMP – 24 V	157B4902
	1x4 AMP – 24 V (anodized)	157B4272
	1x4 DIN – 12 V	157B4216
	1x4 DIN – 24 V	157B4228
	1x4 DIN – 12 V (anodized)	157B4266
	1x4 DIN – 24 V (anodized)	157B4268
PVEO-R	1x4 DEUTSCH – 12 V	11109080
	1x4 DEUTSCH – 24 V	11109092
	1x4 AMP – 12 V	157B4903
	1x4 AMP – 24 V	157B4904
	1x4 AMP – 24 V (anodized)	157B4274
	1x4 DIN – 12 V	157B4217
	1x4 DIN – 24 V	157B4229
PVEO-DI	1x4 AMP – 12 V	11157283
	1x4 AMP – 24 V	11157282

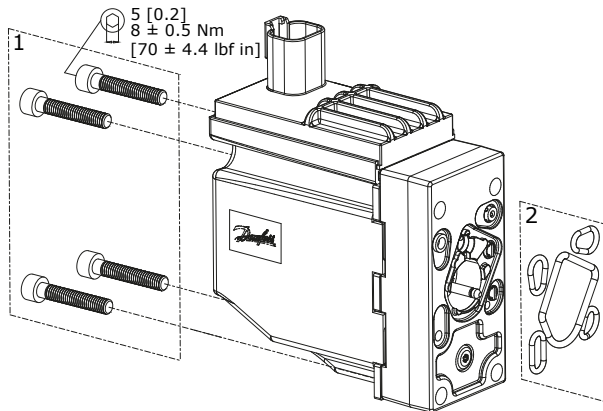
#### PVEO parts list

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 4 PVEA**

*PVEA exploded view*



*PVEA part kits*

Type	Description	Code number
PVEA	1x4 DEUTSCH – active	157B4792
	1x4 DEUTSCH - passive	11107365
	1x4 AMP - active	157B4734
	1x4 AMP - passive	157B4735
	1x4 AMP (anodized)	157B4775
PVEA-DI	2x4 DEUTSCH – active	157B4796
	2x4 AMP – active	157B4736
	2x4 AMP – passive	157B4737
PVEA-NP	1x6 DEUTSCH - active	11105542

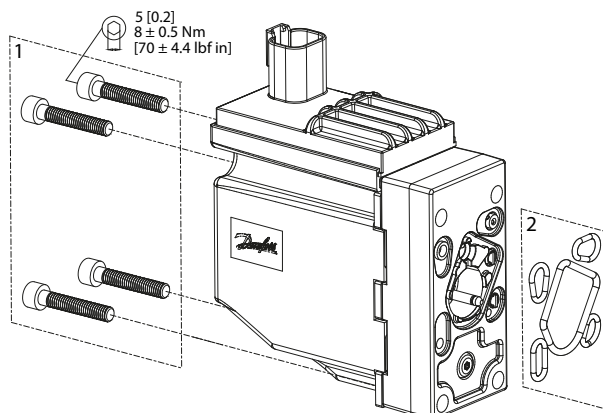
*PVEA parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 4 PVEM**

*PVEM exploded view*



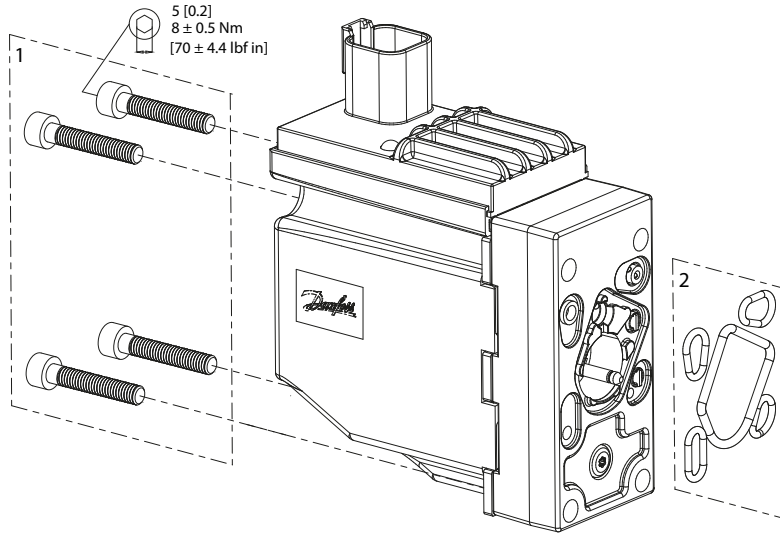
Type	Description	Code number
PVEM	1x4 DIN – 12 V	157B4116
	1x4 DIN – 24 V	157B4128
PVEM-FLB	1x4 DIN – 12 V	157B4416
	1x4 DIN – 24 V	157B4428
PVEM-R	1x4 DIN – 12 V	157B4516
	1x4 DIN – 24 V	157B4528

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 4 PVEP**

*PVEP exploded view*



*PVEP kit*

Description	Code number
1x6 DEUTSCH - active	11034832

*PVEP parts list*

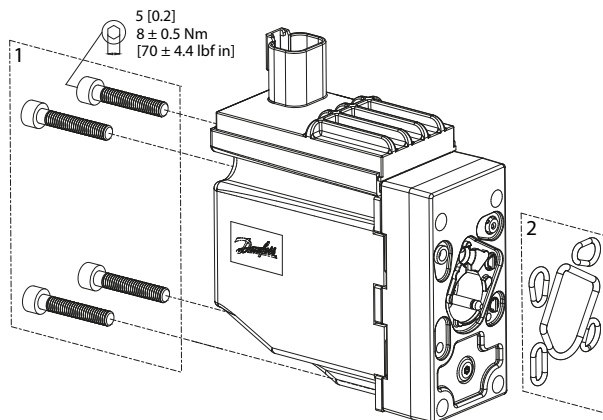
Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1



## Service Parts

### PVG 32 PVE series 4 PVEU

*PVEU exploded view*



#### *PVEU kits*

Description	Code number
1x4 DEUTSCH - passive	11089090
1x4 AMP - active	11089091
1x4 AMP – active	157B4044
1x4 AMP – passive	157B4045

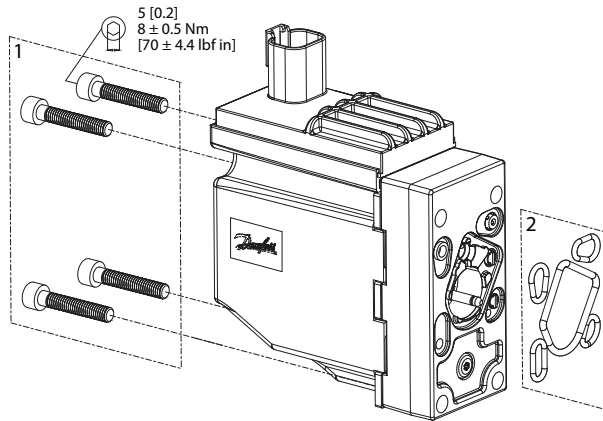
#### *PVEU parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 4 PVEH**

*PVEH exploded view*



*PVEH part kits*

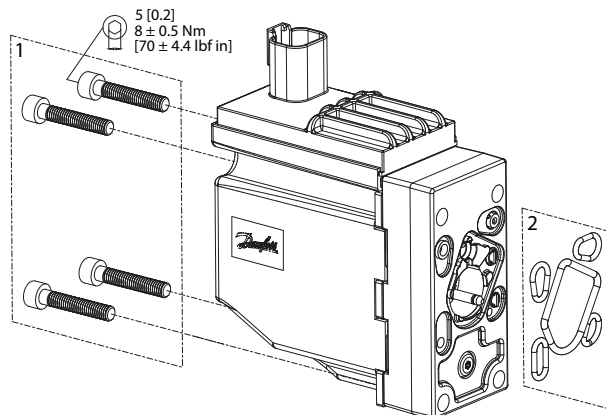
Type	Description	Code number
PVEH	1x4 DEUTSCH – active	157B4092
	1x4 DEUTSCH - passive	157B4093
	1x4 AMP – active	157B4034
	1x4 AMP – passive	157B4035
	1x4 AMP – active (anodized)	157B4074
	1x4 AMP – passive (anodized)	157B4075
	1x4 DIN – active	157B4032
	1x4 DIN – passive	157B4033
	1x4 DIN – active (anodized)	157B4073
PVEH-FLA	1x6 DEUTSCH - active	157B4398
	1x6 AMP - active	157B4338
PVEH-FLB	1x6 DEUTSCH - passive	157B4392
	1x6 DIN - active	157B4332
PVEH-DI	2x4 DEUTSCH – active	157B4096
	2x4 AMP - active	157B4036
	2x4 AMP - passive	157B4037
PVEH-NP	1x6 DEUTSCH - active	11105543

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

## Service Parts

### PVG 32 PVE series 4 PVES

*PVES exploded view*



#### *PVES kits*

Type	Description	Code number
PVES	1x4 DEUTSCH – active	157B4892
	1x4 DEUTSCH - passive	11089276
	1x4 DEUTSCH – active (Fast-no memory)	157B4894
	1x4 AMP – active	157B4834
	1x4 AMP – passive	157B4835
	1x4 AMP – passive (anodized)	157B4865
	1x4 DIN – active	157B4832
	1x4 DIN – passive	157B4833
PVES-SP	1x6 DEUTSCH - passive	11108994

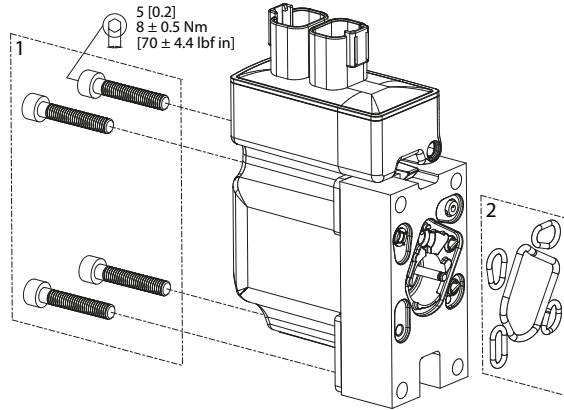
#### *PVES parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVED-CC series 5**

*PVED-CC exploded view*



*PVED-CC kits*

Type	Description	Code number
PVED-CC	2x4 DEUTSCH – ISObus	11107869
	2x4 AMP – ISObus	11107870
	2x4 DEUTSCH – CANopen	11172734
	2x4 AMP – CANopen	11169142
Spare parts for DEUTSCH-connector	4 m cable	11007498
	0.1 m loop cable	11007531
	0.3 m loop cable	11111916
	0.175 m loop cable	11095622
	CAN bus terminator	11007561
Spare parts for AMP-connector	4 m cable with gray connector	157B4994
	4 m cable with black connector	157B4995
	0.1 m loop cable	157B4987
	0.175 m loop cable	11095581
	CAN bus terminator with gray connector	11163647
	CAN bus terminator with black connector	157B4988

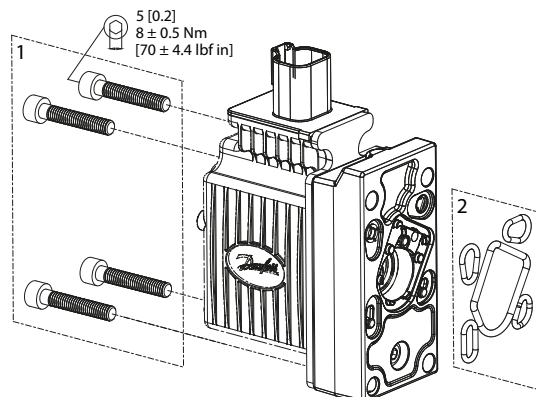
*PVED-CC parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

## Service Parts

### PVG 32 PVE series 7 PVEO

*PVEO exploded view*



*PVE 7 PVEO part kits*

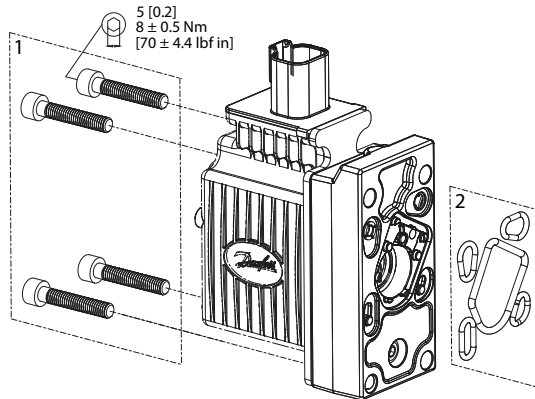
Type	Description	Code number
PVEO	1x4 DEUTSCH – 12 V	11166843
	1x4 DEUTSCH – 24 V	11166838
	1x4 AMP - 12 V	11166866
	1x4 AMP - 24 V	11166837
	1x4 DIN - 12 V	11166836
	1x4 DIN - 24 V	11166743
PVEO-R	1x4 DEUTSCH – 12 V	11166753
	1x4 DEUTSCH – 24 V	11166754
	1x4 AMP - 12 V	11166867
	1x4 AMP - 24 V	11166776
	1x4 DIN - 12 V	11166831
	1x4 DIN - 24 V	11166908
PVEO-DI	2x4 AMP – 12 V	11168740
	2x4 AMP – 24 V	11166869

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 7 PVEO-HP**

*PVE series 7 PVEO-HP exploded view*



*PVEO-HP kits*

Description	Code number
1x4 DEUTSCH - 12 V	11166765
1x4 DEUTSCH - 24 V	11166766
1x4 AMP - 12 V	11166763
1x4 AMP - 24 V	11187524
1x4 DIN - 12 V	11187551
1x4 DIN - 24 V	11187562

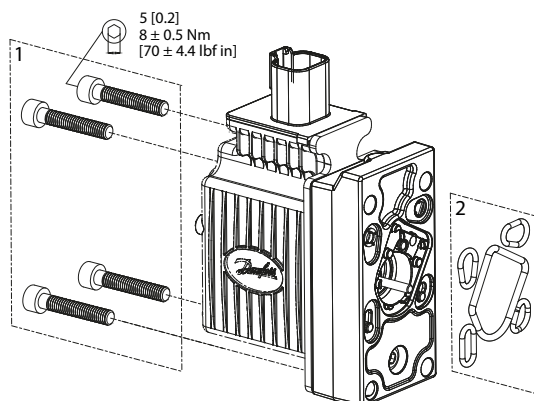
*Parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

## Service Parts

### PVG 32 PVE series 7 PVEM

*PVEM exploded view*



*PVE series 7 PVEM kits*

Type	Description	Code number
PVEM	1x4 DIN – passive	11166829
PVEM-FLB	1x4 DIN – passive	11166852
PVEM-R	1x4 DIN – passive	11166845
PVEM-Q	1x4 DIN – passive	11166853

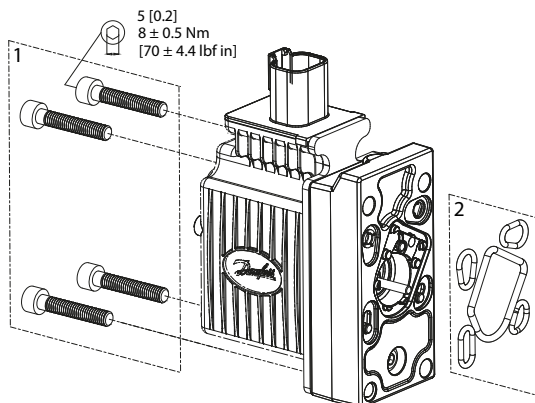
*Parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 7 PVEA**

*PVEA exploded view*



*PVEA kits*

Type	Description	Code number
PVEA	1x4 DEUTSCH - active	11177346
	1x4 DEUTSCH - passive	11177347
	1x4 AMP – active	11177348
	1x4 AMP – passive	11177353
PVEA-NP	1x6 DEUTSCH – active	11177345
PVEA-DI	2x4 DEUTSCH – passive	11177357
	2x4 AMP – active	11177356
	2x4 AMP – passive	11177355

*Parts list*

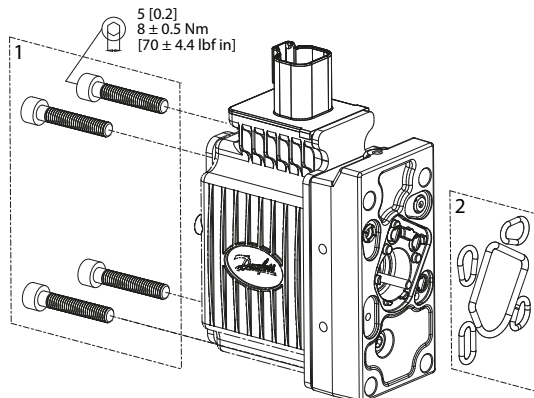
Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1



## Service Parts

### PVG 32 PVE series 7 PVEH

*PVEH exploded view*



#### *PVEH kits*

Type	Description	Code number
PVEH	1x4 DEUTSCH - passive	11166732
	1x4 DEUTSCH - active	11166775
	1x4 AMP - passive	11166825
	1x4 AMP - active	11166818
	1x4 DIN - passive	11166824
	1x4 DIN - active	11166817
PVEH-U	1x4 AMP - passive	11166832
	1x4 AMP - active	11166821
	1x4 DIN - passive	11166770
	1x4 DIN - active	11166772
PVEH-FLB	1x4 DEUTSCH - passive	11166840
	1x4 DEUTSCH - active	11166742
	1x4 DIN - active	11166839
PVEH-FLA	1x6 DIN - active	11166841
	1x6 AMP - passive	11168738
	1x6 AMP - active	11168739
PVEH-SP	1x6 DEUTSCH - active	11166773
PVEH-NP	1x6 DEUTSCH - fast active	11166750
PVEH-DI	2x4 DEUTSCH - active	11166835
	2x4 AMP - passive	11166820
	2x4 AMP - active	11166819

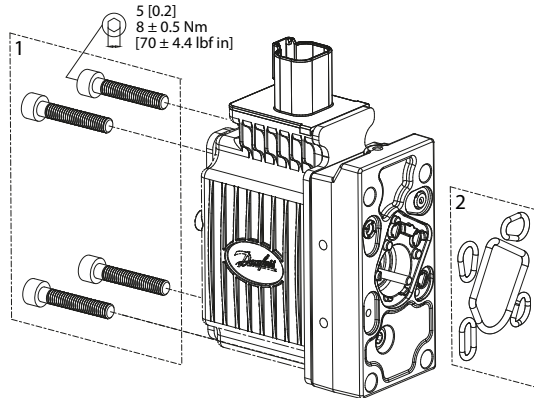
#### *Parts list*

Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 32 PVE series 7 PVES**

*PVES exploded view*



*PVES kits*

Type	Description	Code number
PVES	1x4 DEUTSCH - passive	11166748
	1x4 DEUTSCH - active	11166864
	1x4 AMP – passive	11166859
	1x4 AMP – active	11166858
	1x4 DIN – passive	11166849
	1x4 DIN – active	11166857
PVES-U	1x4 DEUTSCH – passive	11166745
	1x4 AMP – active	11166747
PVES-SP	1x6 DEUTSCH - passive	11166752

*Parts list*

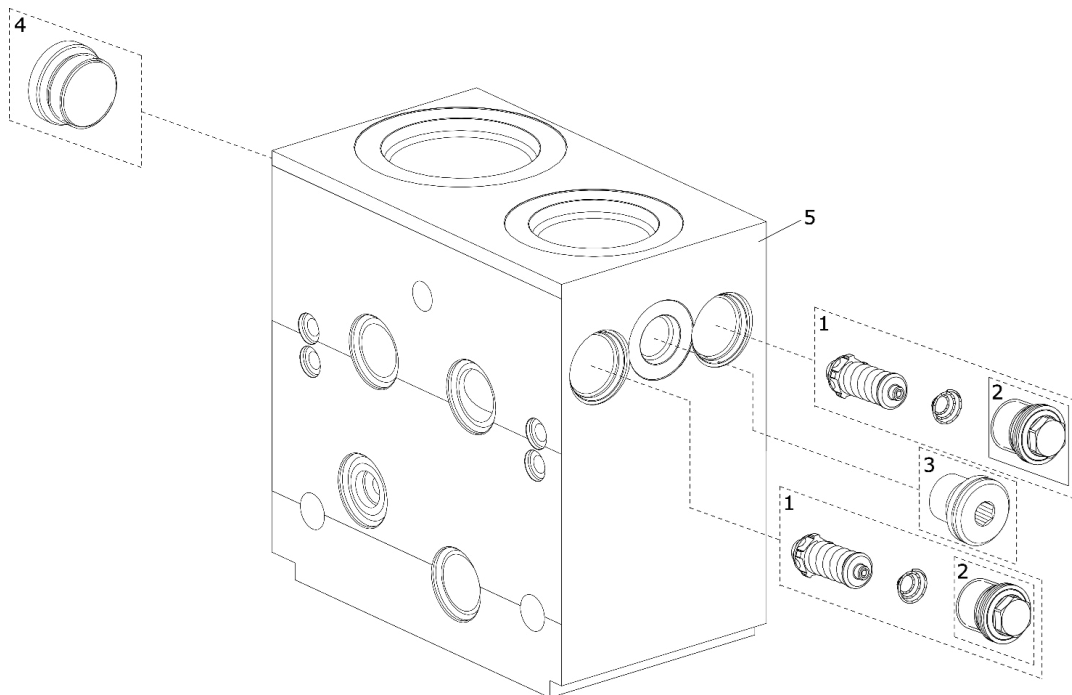
Item	Description	Code number	Amount
1	Screw	-	4
2	Seal kit	157B4997	1

**Service Parts**

**PVG 48 service parts**

**PVPM 48**

*PVPM 48 exploded view*



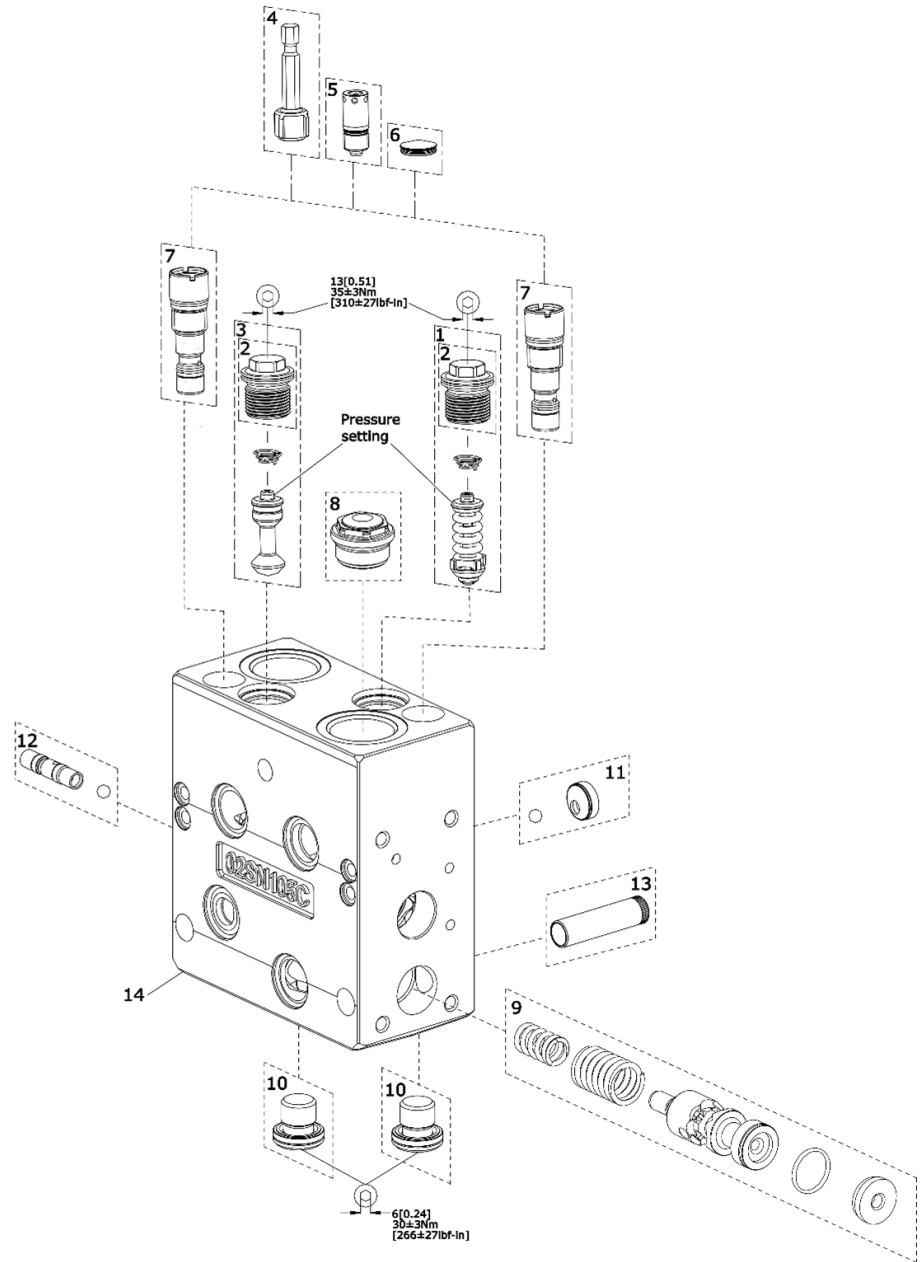
Type	Description	P-port	T-port	Gauge port	Code number	Letter
PVPM 48	Closed Center PVPM 48	G1"	G1"-1/4"	G1/4"	11295307	A
		1-5/16-12 UNF	1-5/8-12 UNF	1/2-20 UNF	11295286	B

Item	Description	Code Number	Letter	
			A	B
1	PVLP	See PVLP/PVLA section	1	1
2	PVLP Plug	-	1	1
3	Plug M port	-	1	1
4	Plug	-	1	1
5	PVPM	See table above	-	-

**PVB 48 basic module**

*PVB exploded view*

**Service Parts**



Type	Description	Code number	A/B-port	LS A/B-port	Letter
Compensated PVB	Basic module with T0	11268949	3/4" BSP	-	A
		11269039	1-1/16 UNF	-	
		11269011	3/4" BSP	G 1/4"	B
		11269065	1-1/16 UNF	1/2-20 UNF	
	Basic module with T0 and PVL/PVLA	11269018	3/4" BSP	-	C
		11269068	1-1/16 UNF	-	
		11253967	3/4" BSP	G 1/4"	D
		11269152	1-1/16 UNF	1/2-20 UNF	

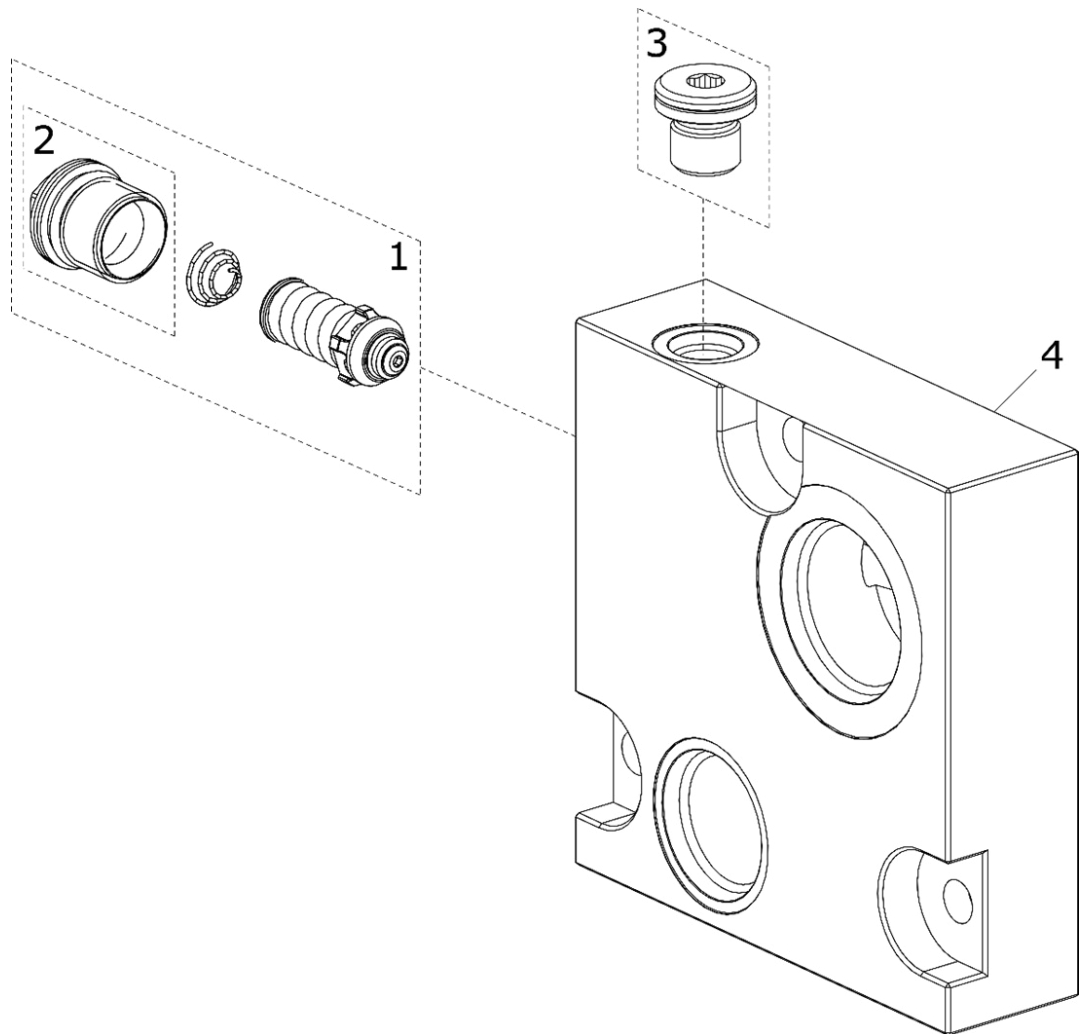
## Service Parts

Item	Description	Code number	Letter			
			A	B	C	D
1	PVLP assembly	See PVLP section	-	-	2	2
2	Plug for PVLP/PVLA	157B2002	-	-	2	2
3	PVLA assembly	See PVLP section	-	-	2	2
4	Service tool for relief valve	155L6494	-	1	-	1
5	Sealed adjusting screw (for sealing with a wire)	155L6489	-	2	-	2
6	Sealed plastic plug, black (50 pcs.)	155L6168	-	1	-	1
	Sealed plastic plug, yellow (50 pcs.)	155L6167	-	1	-	1
7	Relief valve	155L6495	-	2	-	2
8	Suction valve	-	-	-	1	1
10	Plug	-	2	2	2	2
11	Shuttle disc	-	1	1	1	1
12	LS shuttle valve assembly	-	1	1	1	1
13	Locking pin	-	1	1	1	1
14	PVB basic module	-	1	1	1	1

### PVSI 16/32/48 end plate

*PVSI exploded view*

**Service Parts**



Type	Description	Mounting	Code number	Letter
PVSI	End plate P, T, M port and PVLP	M8	11295287	A
		5/16-18 UNF	11295308	B

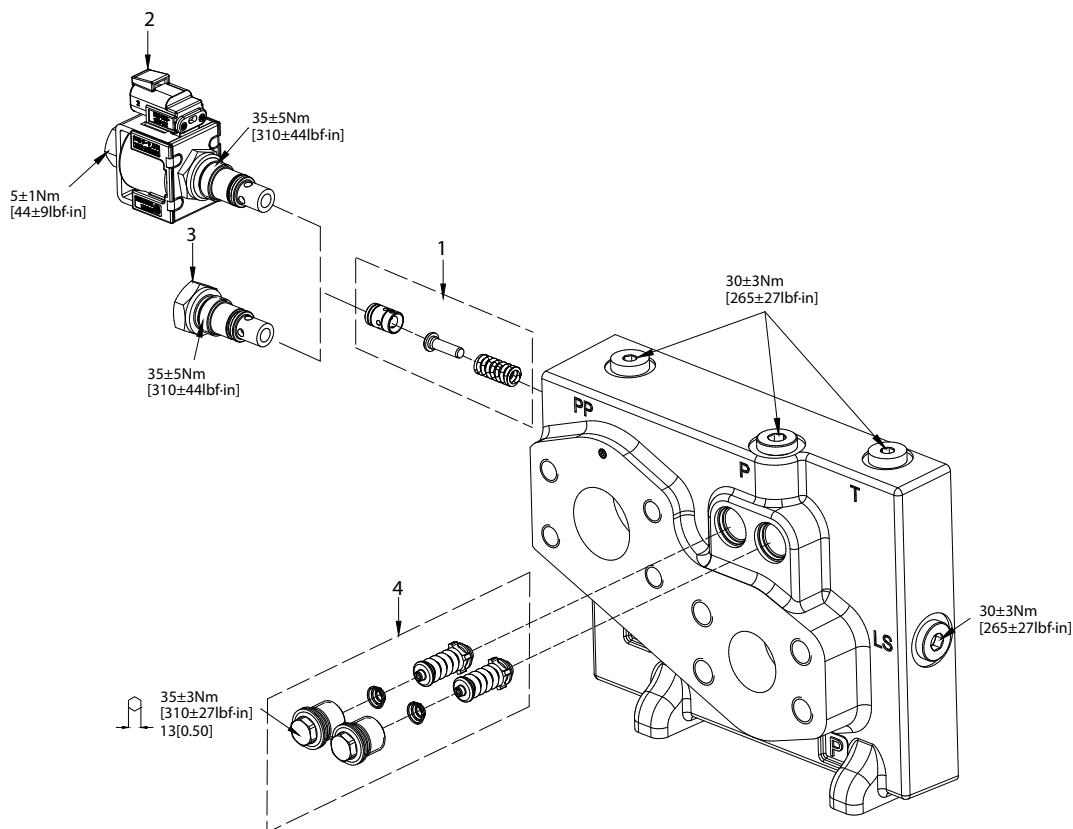
Item	Description	Code number	Letter	
			A	B
1	PVLP Assembly	See PVLP/PVLA	1	1
2	PVLP Plug	See PVLP/PVLA	1	1
3	Plug	-	1	1
4	PVSI End plate with P, T, M port and PVLP	-	-	-

## Service Parts

### PVG 128/256 service parts

#### PVG 128/256 pump side module, PVPV

PVPV exploded view



PVPV kits

Description	Measure	Code number	Letter
Closed center with pilot supply for electrical actuation, pilot gage port, and facility for pilot shut off	Metric flange	11173130	A
	G1-1/2" BSP	11176703	
	SAE flange	11176691	
	Thread ports 1-7/8 UNF	11176702	
Closed center with pilot supply for hydraulic actuation, pilot gage port, and facility for pilot shut off	Metric flange	11178095	B
	G1-1/2" BSP	11178098	
	SAE flange	11178117	
	Thread ports 1-7/8 UNF	11178119	

Parts list

Item	Description	Code numbers	Letter	
			A	B
1	Pilot pressure reducing valve	-		
2	PVPP 12V	11160318		
2	PVPP 24V	11160319		

## Service Parts

*Parts list (continued)*

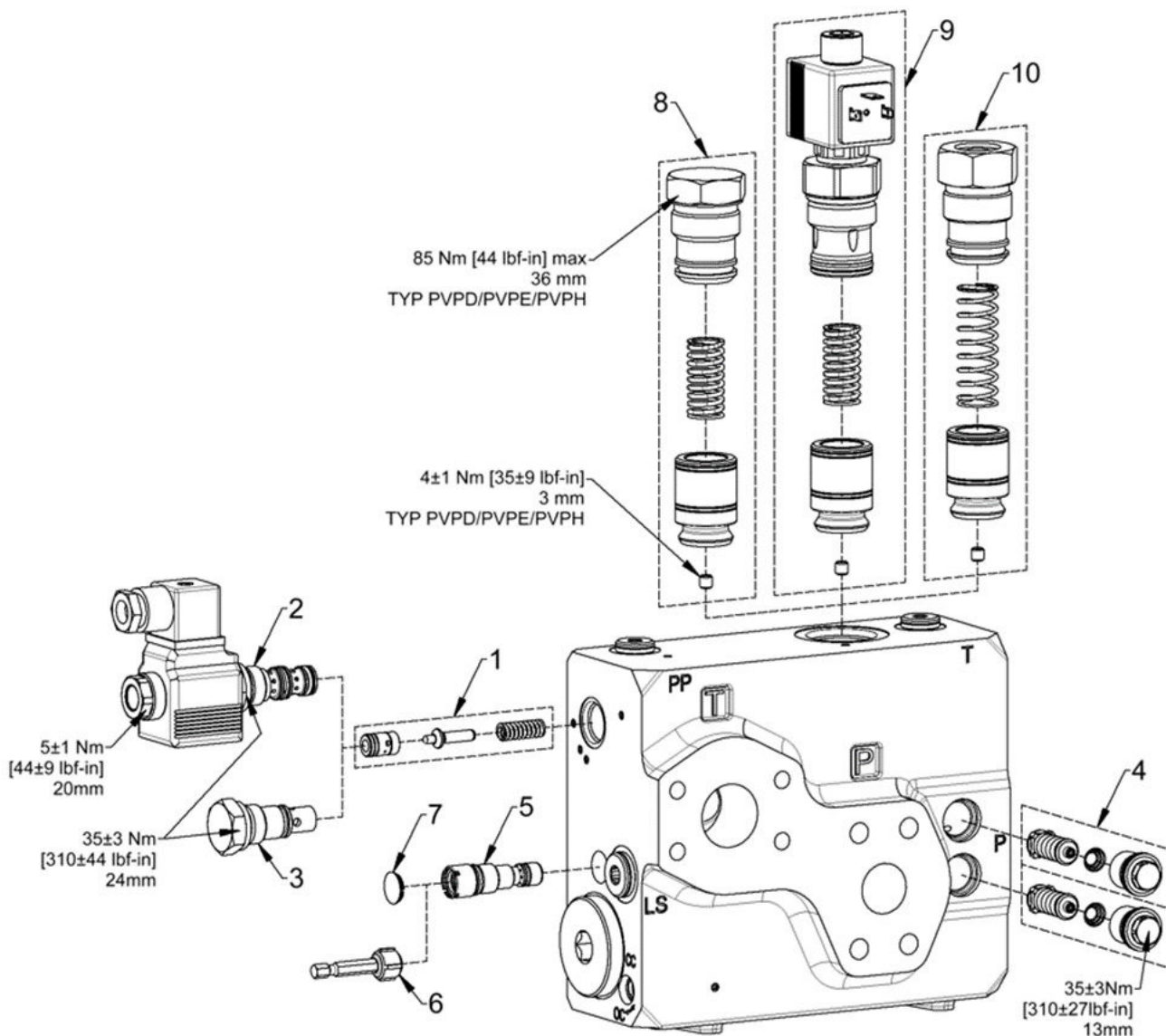
Item	Description	Code numbers	Letter	
			A	B
3	Plug if no PVPP is mounted	-		
4	Shock and anti-cavitation Valve	See <a href="#">PVL/PVLA</a>	2	2



**Service Parts**

**PVG 128/256 service parts**

***PVP128 OC, PVP128 OC/CC, & OC256***



Description	Ports	PPRV	Code Number	Type
PVP128 - Open center inlet (without OC/CC selector), without facility for electrical/hydraulic full flow bypass valve	Metric Flange P&T Ports / BSP Aux Ports	PVE	11244804	A
	UNC Flange P&T Ports / SAE Aux Ports	PVE	11244805	
	Metric Flange P&T Ports / BSP Aux Ports	PVH/PVHC	11244780	
	UNC Flange P&T Ports / SAE Aux Ports	PVH/PVHC	11244781	
PVP128 OC/CC - Open/closed center inlet (with OC/CC selector), with facility for electrical/hydraulic full flow bypass valve	Metric Flange P&T Ports / BSP Aux Ports	PVE	11215893	B
	UNC Flange P&T Ports / SAE Aux Ports	PVE	11215895	
	Metric Flange P&T Ports / BSP Aux Ports	PVH/PVHC	11243703	
	UNC Flange P&T Ports / SAE Aux Ports	PVH/PVHC	11243704	
OC256 - Open/closed center unloader module (with OC/CC selector), with facility for electrical/hydraulic full flow bypass valve	none	none	11217812	C

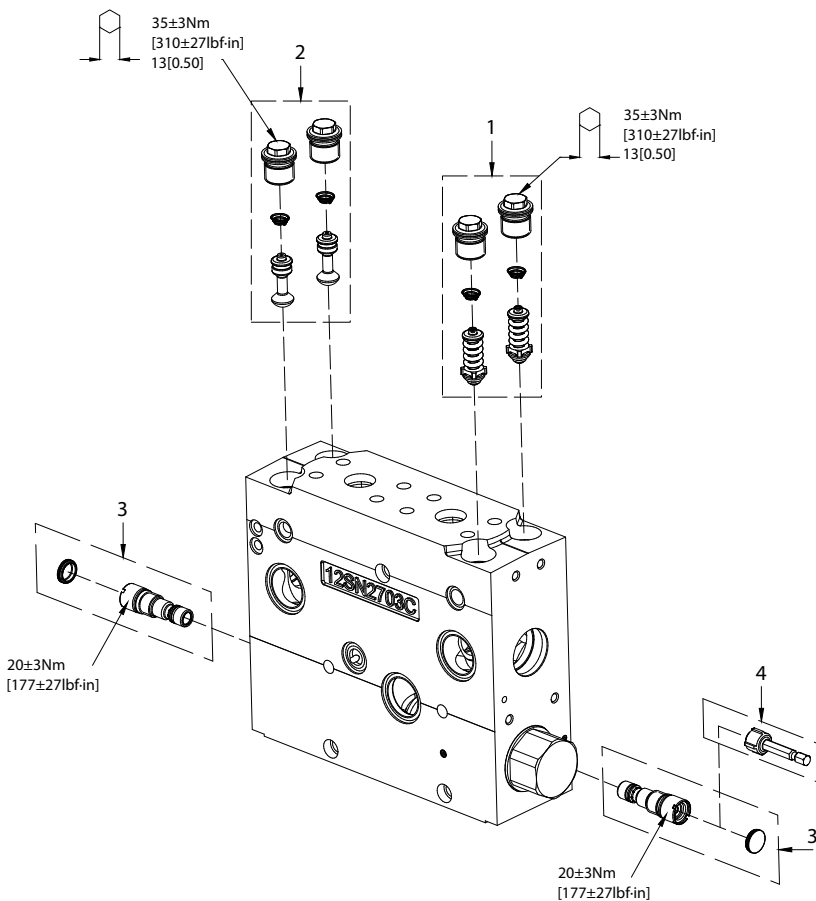
**Service Parts**

Item	Description	Code Numbers	Qty per Type		
			A	B	C
1	Pilot pressure reducing valve	-	1	1	-
2	PVPP (12V)	11160318	1	1	-
2	PVPP (24V)	11160319	1	1	-
3	Plug if no PVPP is mounted	-	1	1	-
4	Shock and anti-cavitation valve	See PVLP/PVLA	2	2	-
5	LS Relief Valve	155L6495	1	1	1
6	LS Relief Valve Service Tool	155L6494	-	-	-
7	Plastic Plug (pack of 50)	155L6168	1	1	1
8	PVPD (dummy)	11272239	-	1	1
9	PVPE (electrical activation, 12V DIN)	11271986	-	1	1
9	PVPE (electrical activation, 24V DIN)	11272287	-	1	1
9	PVPE (electrical activation, 12V Deutsch)	11272266	-	1	1
9	PVPE (electrical activation, 24V Deutsch)	11278656	-	1	1
10	PVPH (hydraulic activation)	11272294	-	1	1

**Service Parts**

**PVB 128, basic module**

*PVB exploded view*



E103 667

**⚠ Warning**

**Risk of leak**

The module will leak if the flange mount screws are not properly secured.  
 Flange mount screws according to ISO 6162-2.

*PVB 128 kits*

Description	Measure	Code number	Letter
Compensated basic module	Metric flange	11170522	A
	G1-1/2" BSP	11170528	
	SAE flange	11170524	
	Thread ports 1-7/8 UNF	11170526	
Compensated basic module with LSA/B relief valve for each work port	Metric flange	11176915	B
	G1-1/2" BSP	11176918	
	SAE flange	11176916	
	Thread ports 1-7/8 UNF	11176917	
Compensated basic module with LSA/B relief valve for each work port and 2xPVLPs for each work port	Metric flange	11165621	C
	G1-1/2" BSP	11170527	
	SAE flange	11170523	
	Thread ports 1-7/8 UNF	11170525	

## Service Parts

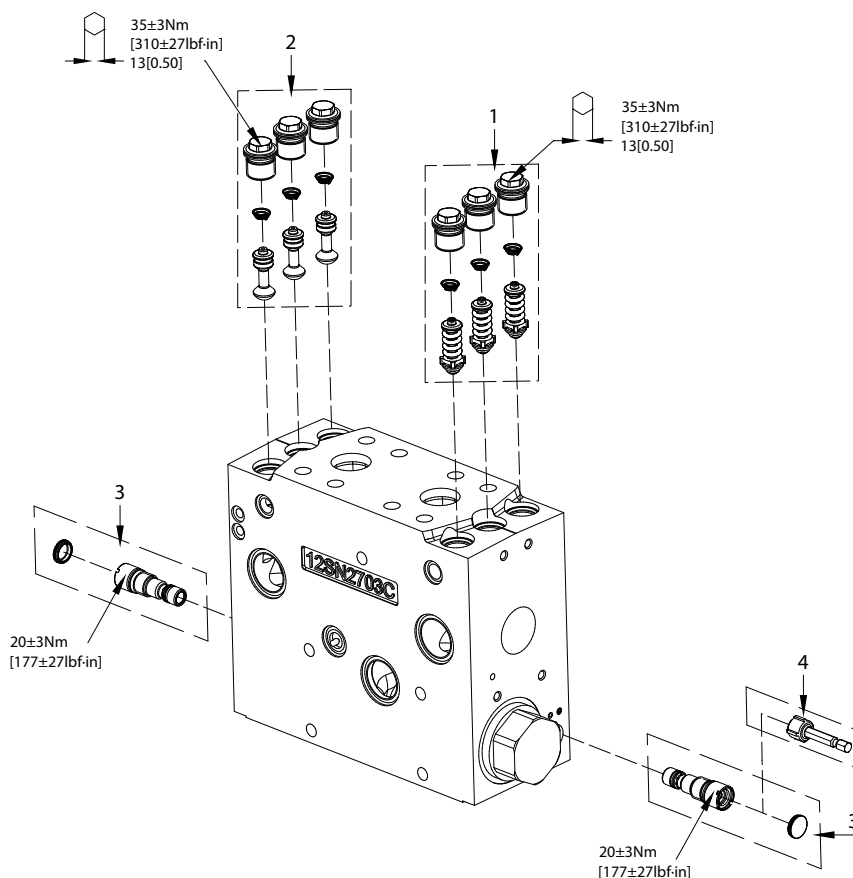
### Parts list

Item	Description	Code number	Letter		
			A	B	C
1 and 2	Shock and anti-cavitation Valve	See <a href="#">PVL/PVLA</a>	-	-	4
3	LS relief valve	155L6495	-	2	2
4	LS relief valve service tool	155L6494	-	-	-

**Service Parts**

**PVB 256, Basic Module**

*PVB 256 exploded view*



E103 668

*PVB 256 kits*

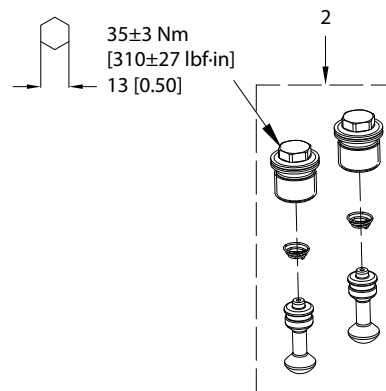
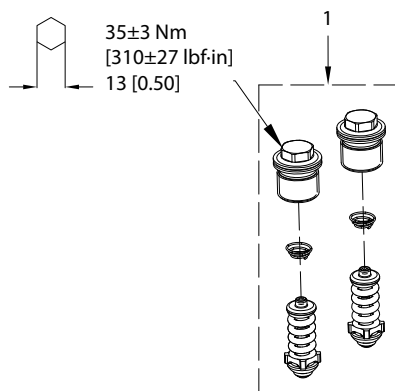
Description	Measure	Code number	Letter
Compensated basic module	Metric flange	11169244	A
	G1-1/2" BSP	11169252	
	SAE flange	11169248	
	Thread ports 1-7/8 UNF	11177020	
Compensated basic module with LSA/B relief valve for each work port	Metric flange	1117015	B
	G1-1/2" BSP	11177017	
	SAE flange	11177016	
	Thread ports 1-7/8 UNF	11177019	
Compensated basic module with LSA/B relief valve for each work port and 3xPVLs for each work port	Metric flange	11169243	C
	G1-1/2" BSP	11169251	
	SAE flange	11169247	
	Thread ports 1-7/8 UNF	11177018	
Turbo compensator feature basic module with LS A/B relief valve for each work port and 3xPVLs for each work port	Metric flange	11183379	D
	G1-1/2" BSP	11183406	
	SAE flange	11183404	
	Thread ports 1-7/8 UNF	11183402	

### Service Parts

Item	Description	Code number	Letter			
			A	B	C	D
1 and 2	Shock and anti-cavitation Valve	See <a href="#">PVL/PVLA</a>	-	-	4	4
3	LS relief valve	155L6495	-	2	2	2
4	LS relief valve service tool	155L6494	-	-	-	-

**Service Parts**

**PVLP Shock and PVLA, Suction Valves**



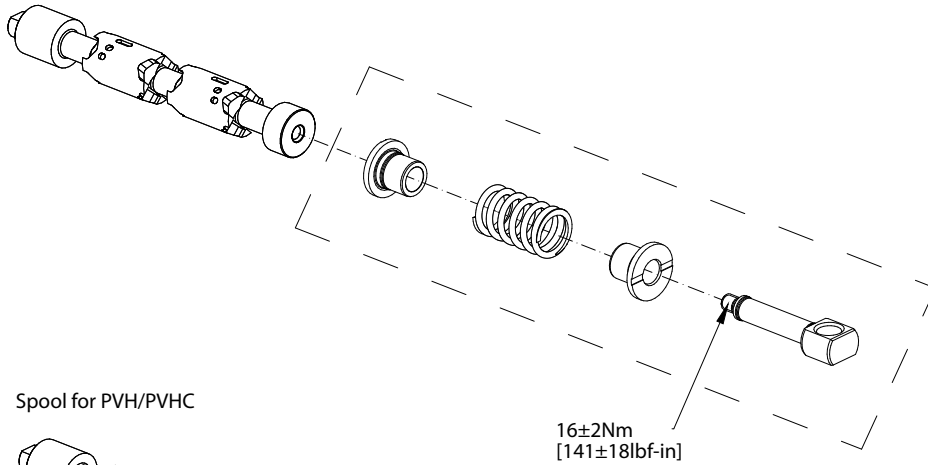
Type	Part number	PVLP/PVLA
PVLA	157B2001	<p>Date stamp</p> <p>2311</p> <p>230</p> <p>Pressure setting in bar</p> <p>Part number: 157B2230</p>
PVLP	157B2032	
	157B2050	
	157B2063	
	157B2080	
	157B2100	
	157B2125	
	157B2140	
	157B2150	
	157B2160	
	157B2175	
	157B2190	
	157B2210	
	157B2230	
	157B2240	
	157B2250	
	157B2265	
	157B2280	
	157B2300	
	157B2320	
	157B2350	
	157B2380	
Plug	157B2002	

**Service Parts**

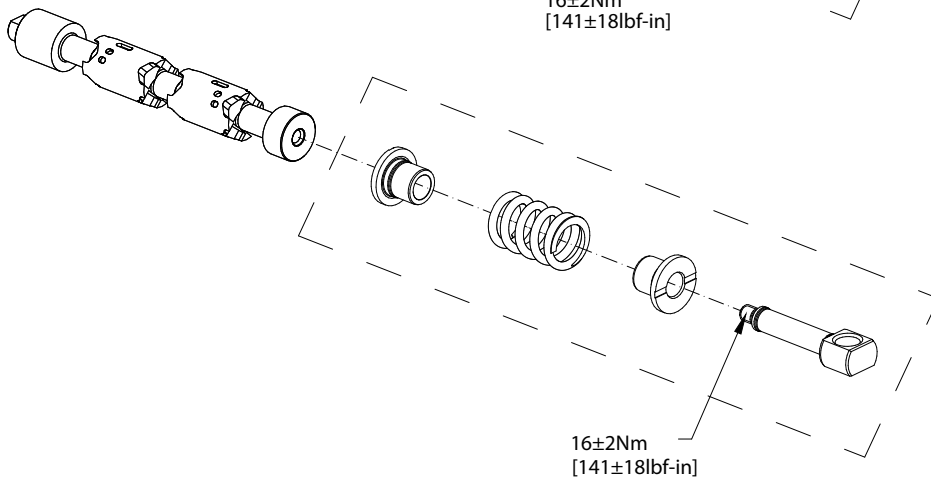
**PVG 128/256 PVBS main spool**

*PVBS exploded view*

Spool for PVE



Spool for PVH/PVHC




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Do not use hole in tension bar for tightening spool assembly. Use a 17 mm wrench instead.  
 For spool part numbers, see [PVG 128/256 Technical Information](#), pages 42-57.

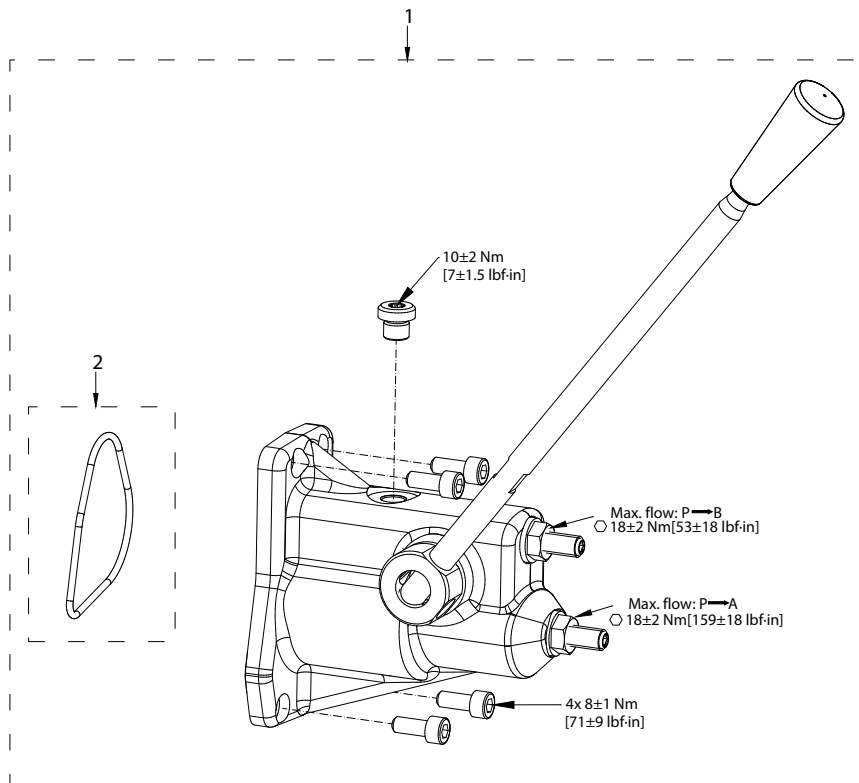
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**Service Parts**

**PVG 128/256 PVM mechanical activation**

*PVM exploded view*



P109628

*PVM 256 kits*

Description	Code number
Non-adjustable with base and lever	11176644
Adjustable with base and lever and BSP gauge plug	11175317
Adjustable with base and lever and BSP gauge plug	11176635

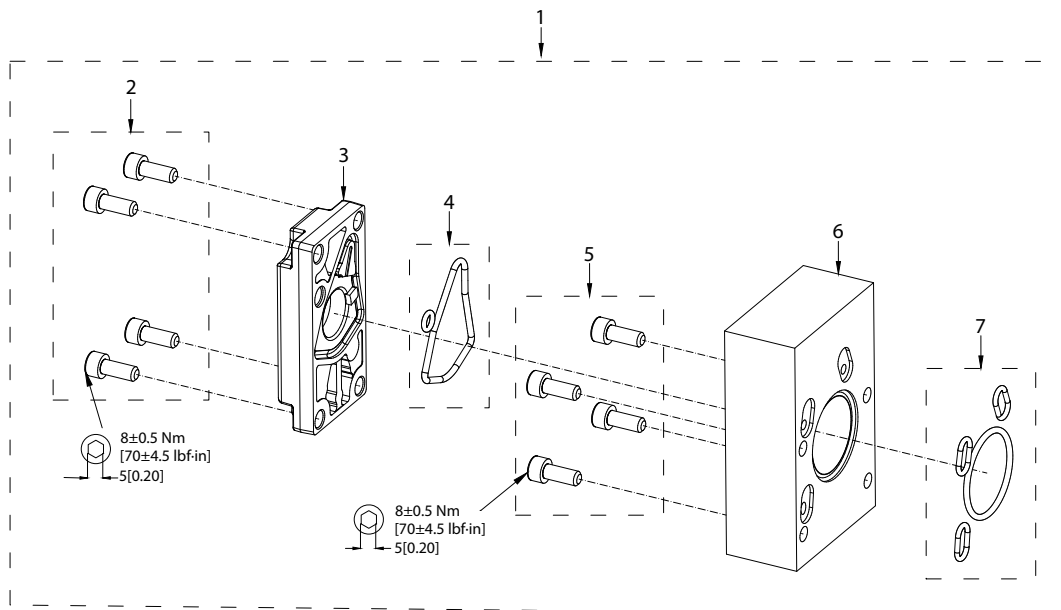
*Parts list*

Item	Description	Code number
2	O-ring 10 pcs	11201747

**Service Parts**

**PVG 128/256 PVMD cover**

*PVMD exploded view*



P109629

*PVMD kits*

Description	Code number
Cover manual actuation only	11187779

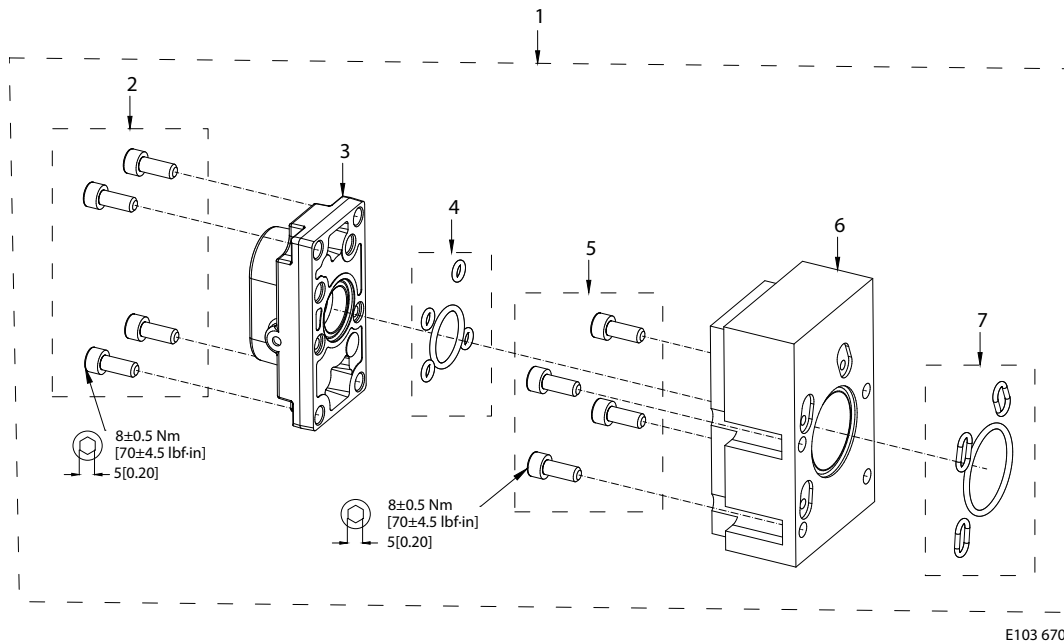
*Parts list*

Item	Description	Code number	Amount
1	Assembly	-	1
2	Screw kit	-	1
3	PVMD cover, including 2 and 4	157B0001	1
4	Seal kit	157B3999	1
5	Screw kit	-	1
6	Interface block - inverted	-	1
7	Seal kit for 10 pcs	11191632	1

**Service Parts**

**PVG 128/256 PVH hydraulic actuation**

*PVH exploded view*



*PVH kits*

Description	Code number
G1/4" BSP	11187777
9/16"-18 UNF	11187776

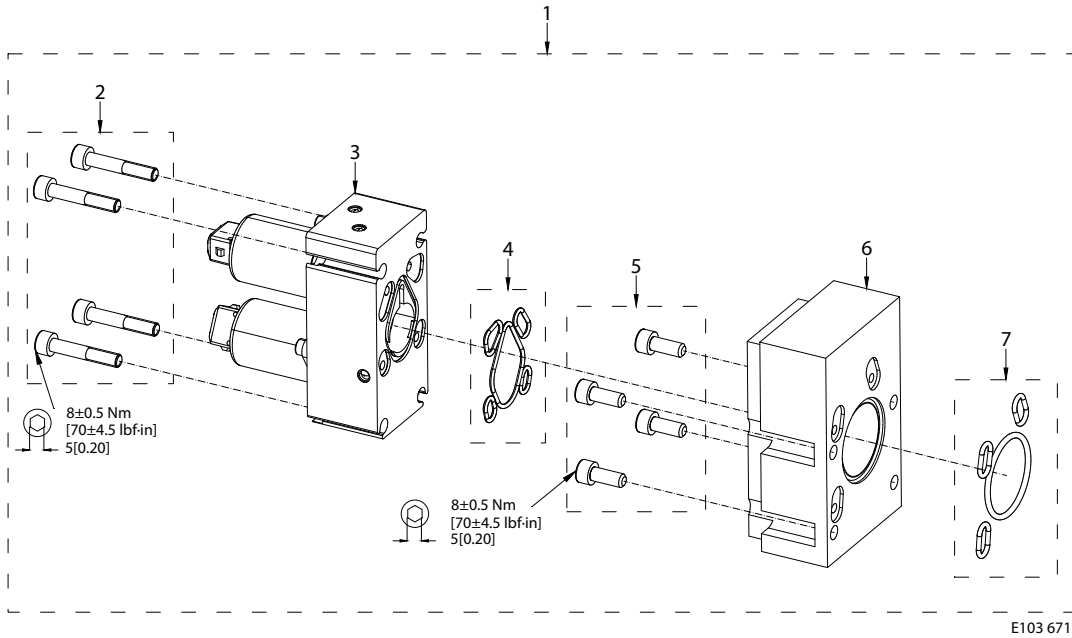
*Parts kits*

Item	Description	Code number	Amount
1	Assembly	-	1
2	Screw kit	-	1
3	PVH cover, including 2 and 4	157B0008	1
4	Seal kit	157B3999	1
5	Screw kit	-	1
6	Interface block - inverted	-	1
7	Seal kit	11191632	1

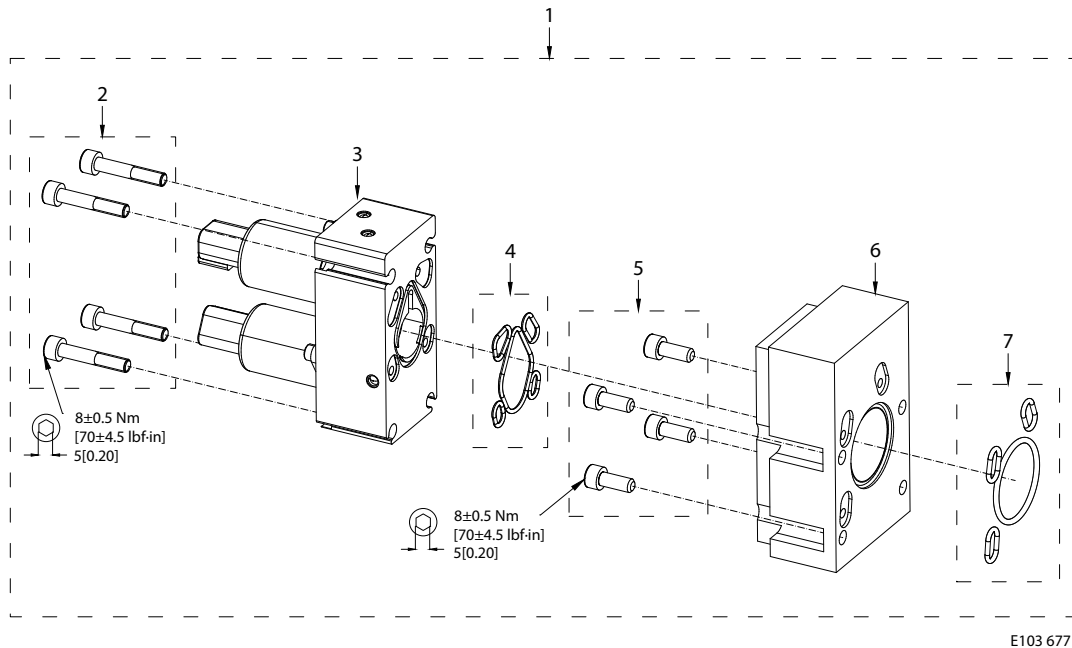
**Service Parts**

**PVG 128/256 PVHC, high current actuation**

*PVHC with AMP connector*



*PVHC with DEUTSCH connector*



*PVHC kits*

Description	Code number
12V AMP	11187757
12V DEUTSCH	11187772

## Service Parts

### *PVHC kits (continued)*

Description	Code number
24V AMP	11187774
24V DEUTSCH	11187775

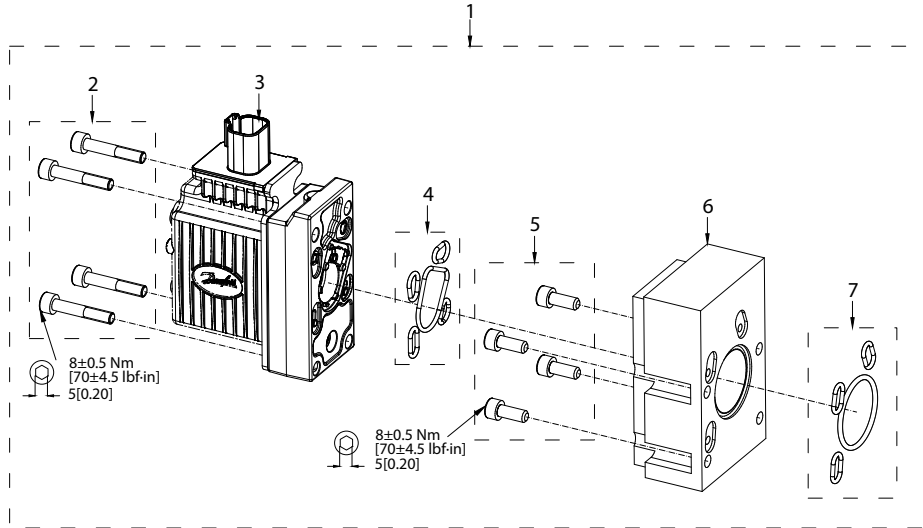
### *Parts list*

Item	Description	Code number	Amount
1	Assembly	-	1
2	Screw kit	155L4199	1
3	Actuator assembly	-	1
4	Seal kit	11061235	1
5	Screw kit	-	1
6	Interface block - inverted	-	1
7	Seal kit	11191632	1

**Service Parts**

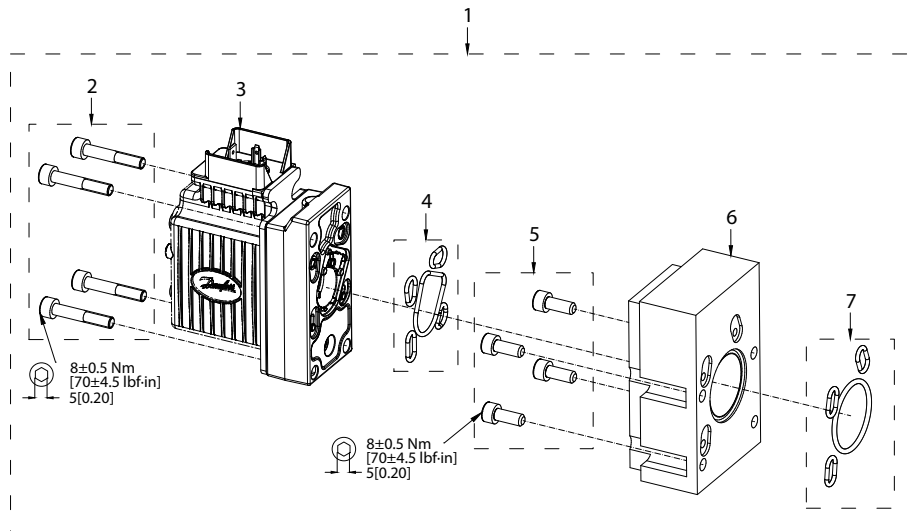
**PVG 128/256 PVEO, on/off actuator**

*PVEO with DEUTSCH connector*



E103 672

*PVEO with DIN connector*



E103 673

*PVEO kits*

Description	Code number
1x4 DEUTSCH (12 Vdc)	11186328
1x4 DEUTSCH (24 Vdc)	11186330
1x4 DIN (12 Vdc)	11186331
1x4 DIN (24 Vdc)	11186342

## Service Parts

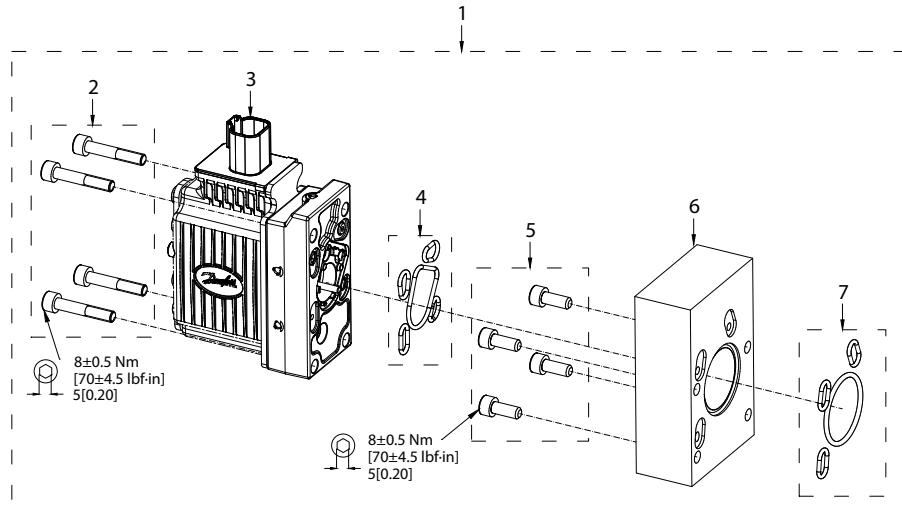
### Parts list

Item	Description	Code number	Amount
1	Assembly	-	1
2	Screw kit	155L4199	1
3	Actuator assembly	-	1
4	Seal kit	157B4997	1
5	Screw kit	-	1
6	Interface block	-	1
7	Seal kit	11191632	1

**Service Parts**

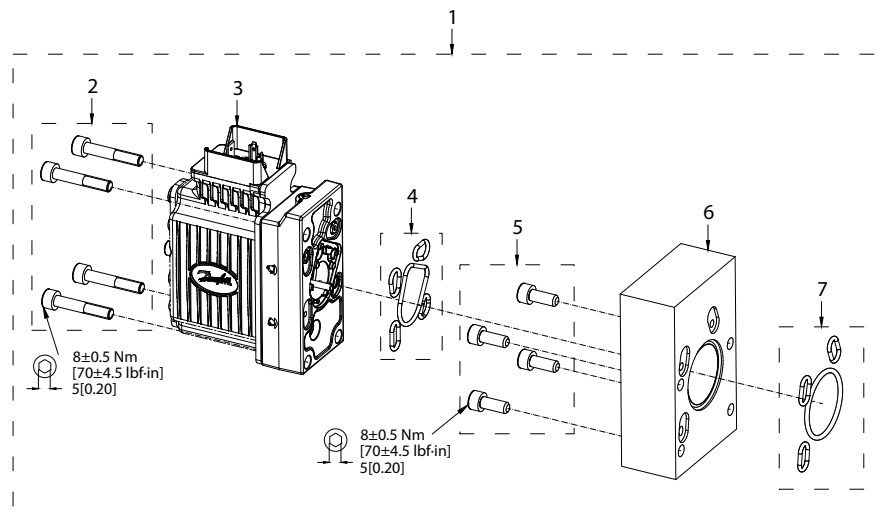
**PVG 128/256 PVEH, proportional actuator**

*PVEH with DEUTSCH connector*



E103 674

*PVEH-U with DIN connector*

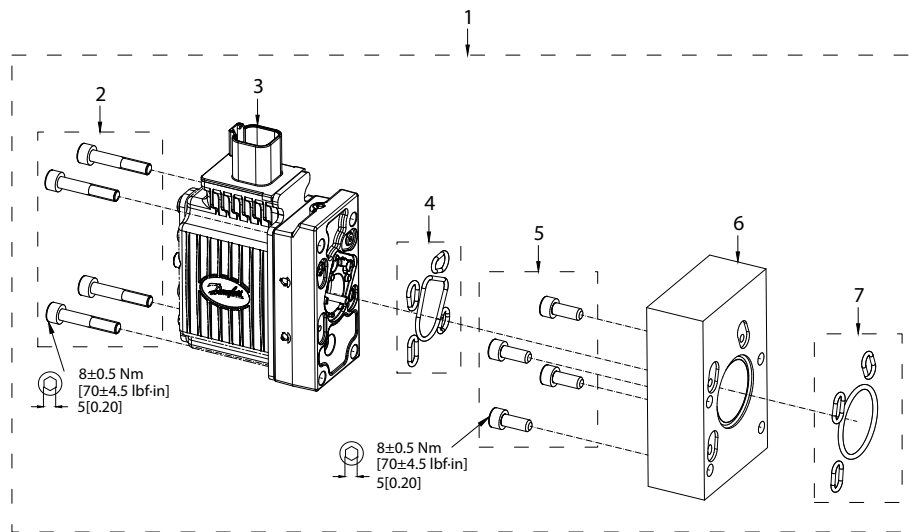


E103 675



**Service Parts**

*PVEH-FLA with DEUTSCH*



E103 676

*PVEH kits*

Type	Description	Code number
PVEH	1x4 DEUTSCH	11186325
	1x4 DEUTSCH	11186326
	1x4 DIN	11186321
	1x4 DIN	11186322
PVEH-U	1x4 DIN	11186323
	1x4 DIN	11186324
PVEH-FLA	1x6 DEUTSCH	11186327

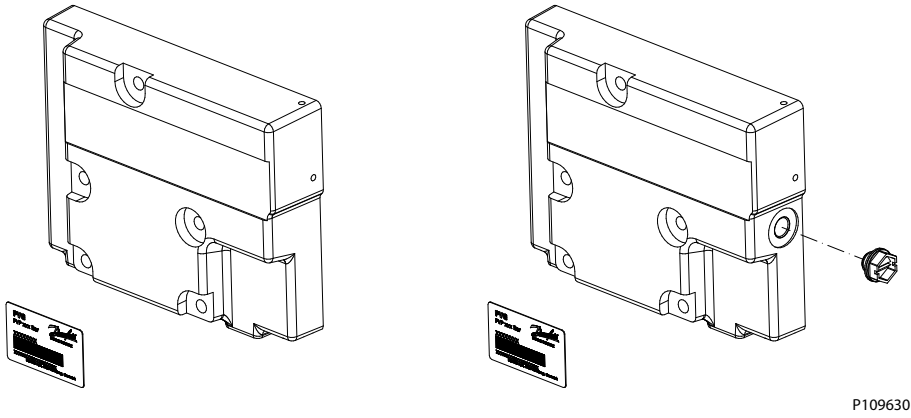
*Parts list*

Item	Description	Code number	
1	Assembly	-	1
2	Screw kit	155L4199	1
3	Actuator assembly	-	1
4	Seal kit	157B4997	1
5	Screw kit	-	1
6	Interface block	-	1
7	Seal kit with 10 pcs	11191632	1

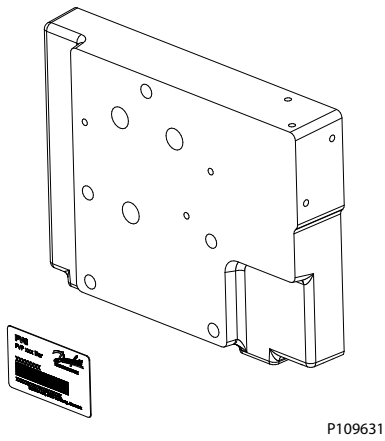
**Service Parts**

**PVG 128/256 PVS end plates**

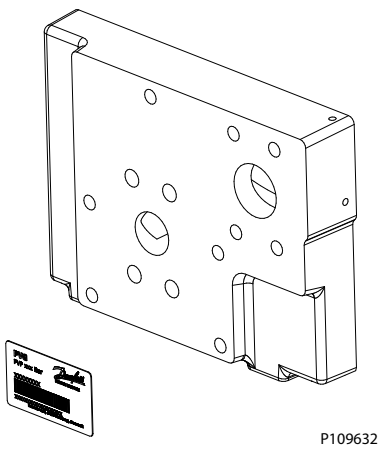
*PVSI end plate*



*PVGI interface plate*



*PVSI with P and T port*



## Service Parts

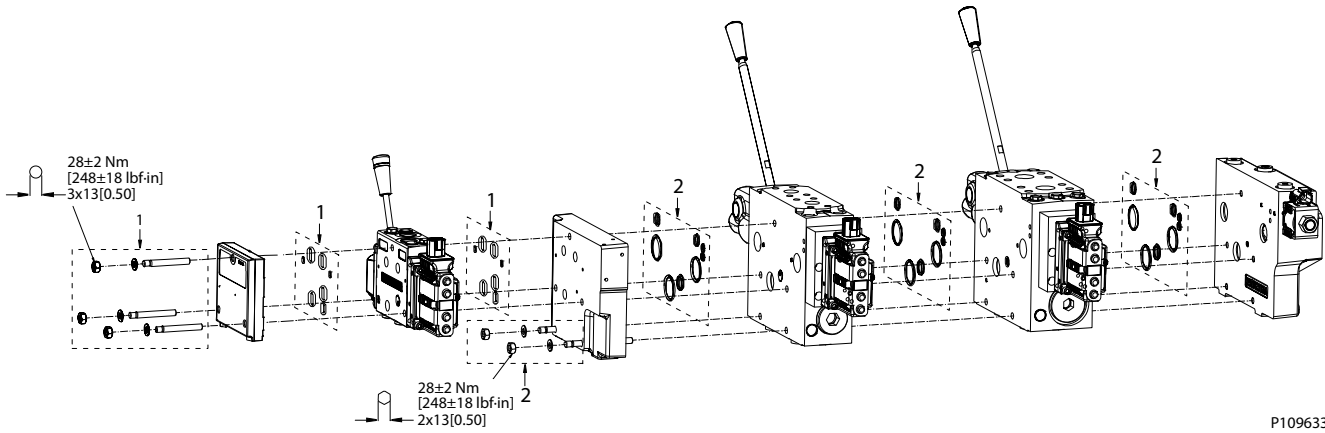
### *End plate kits*

<b>Type</b>	<b>Description</b>	<b>Code number</b>
PVG1	Interface plate	11171422
	Interface plate with T0	11171423
PVS1	End plate	11171419
	End plate with LX BSP	11179950
	End plate with LX UNF	11179949
	Metric Flange 1"	11171418
	Thread Ports G1" BSP	11179952
	SAE Flange 1" UNC screws	11171421
	Thread Ports 1-5/16 UNF	11171416

**Service Parts**

**PVG 128/256 PVAS stay bolts**

*PVAS and seal kits*



*PVAS kits*

Item	Description	Code number
1	Set of seals for 7 work sections: PVB 32	11156335
2	Seat of seals for 5 work sections: PVB 128/256	11180333

[For PVAS part numbers, see PVG 128/256 Technical Information.](#)

## Service Parts

### PVG 128/256 seal kits

*Seal kits for PVG 128/256*

Type	Description	Code number
PVH/PVMD	Seal kit between PVH/PVMD and actuator interface	157B3999
PVEO/PVEH/PVEH-U/PVEH-FLA	Seal kit between PVE and actuator interface	157B4997
PVEO/PVEH/PVEH-U/PVEH-FLA/PVH/PVHC	Seal kit for actuator interface	11191632
Seal kit for five work sections	For a PVG 128/256 with 5 PVB-section	11180333
PVHC	Seal kit between PVHC and actuator interface	11061235
PVM	Seal Kit for 10 PVM interfaces	11201747

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