Part number:

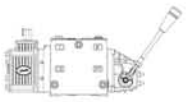
HYDROMA HYDRAULICKÉ SYSTÉMY

HIDROMA SISTEMS UKŁADY HYDRAULICZNE

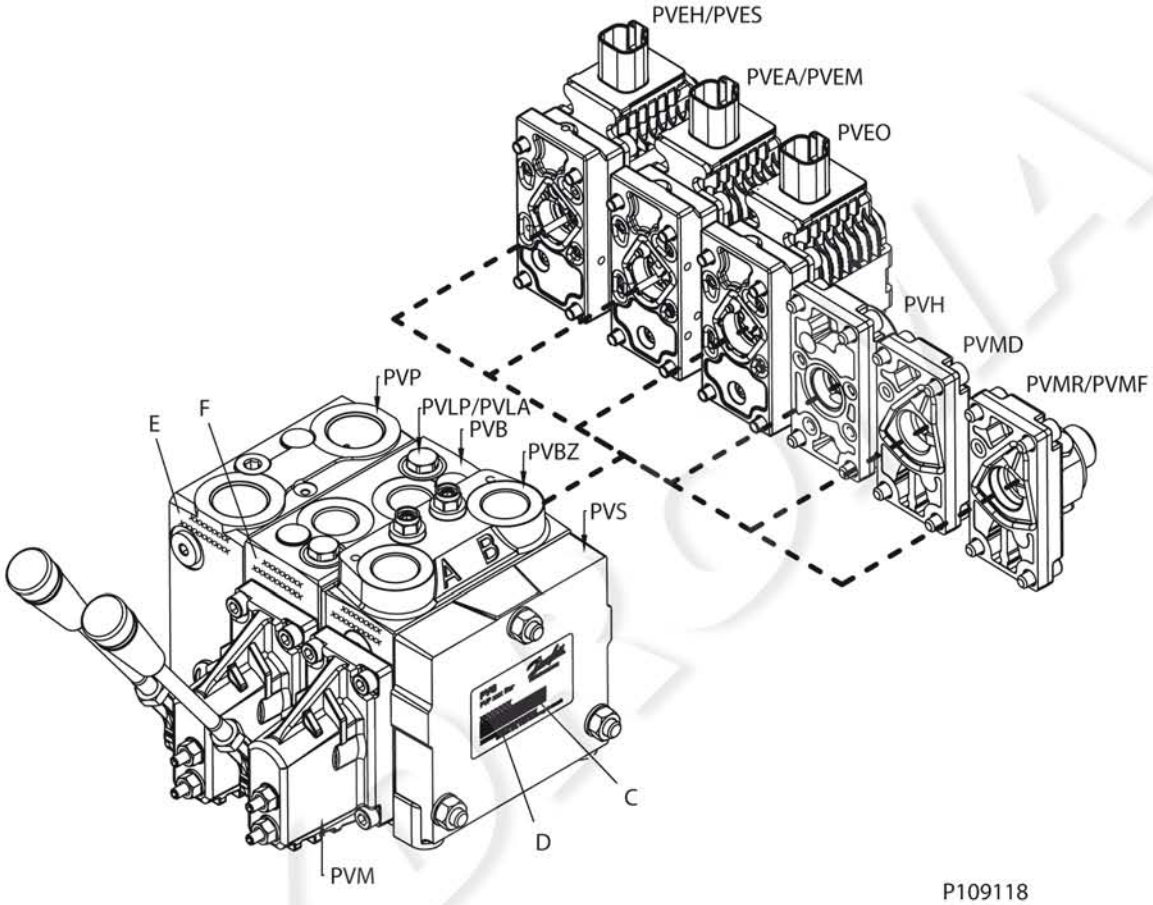
HYDROMA ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

Installation Guide

Proportional Valve Group PVG 32



Identification



P109118

C: PVG-nummer, uge og år for montage og serienummer
D: PVP-trykindstilling
E: PVP-nummer, uge og år for fremstilling og serienummer
F: PVB - A-port, nummer, uge og år for fremstilling og serienummer

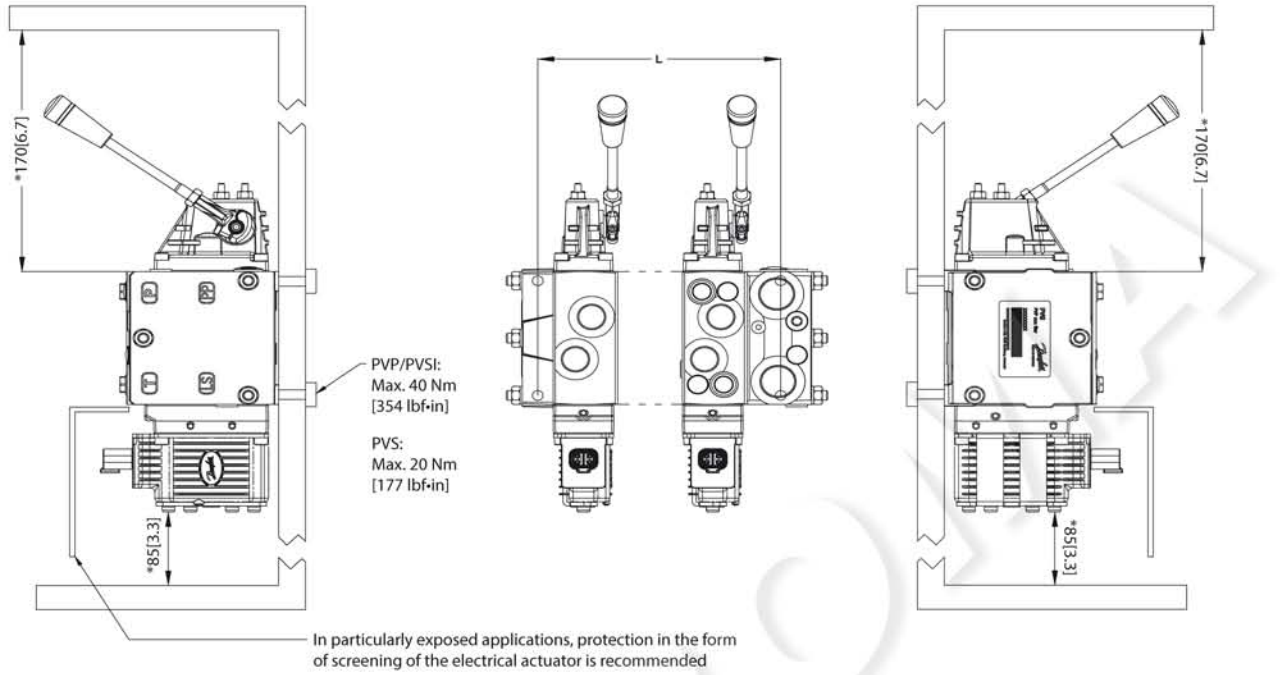
C: PVG-number, week and year of installation and series number
D: PVP - pressure setting
E: PVP-number, week and year of manufacturing and series number
F: PVB - A-port, number, week and year of manufacturing and series number

C: PVG-Nummer, Woche und Jahr der Montage und Seriennummer
D: PVP - Druckeinstellung
E: PVP-Nummer, Woche und Jahr der Herstellung und Seriennummer
F: PVB - A-Anschluß, Nummer, Woche und Jahr der Herstellung und Serien-nummer

C: PVG-numéro, semaine et année de montage et numéro sériel
D: PVP - réglage de pression
E: PVP-numéro, semaine et année de fabrication et numéro sériel
F: PVB - orifice-A, numéro, semaine et année de fabrication et numéro sériel

Montering og orientering af stik
Installation and plug orientation
Montage und Ausrichtung des Steckers
Montage et orientation de la prise

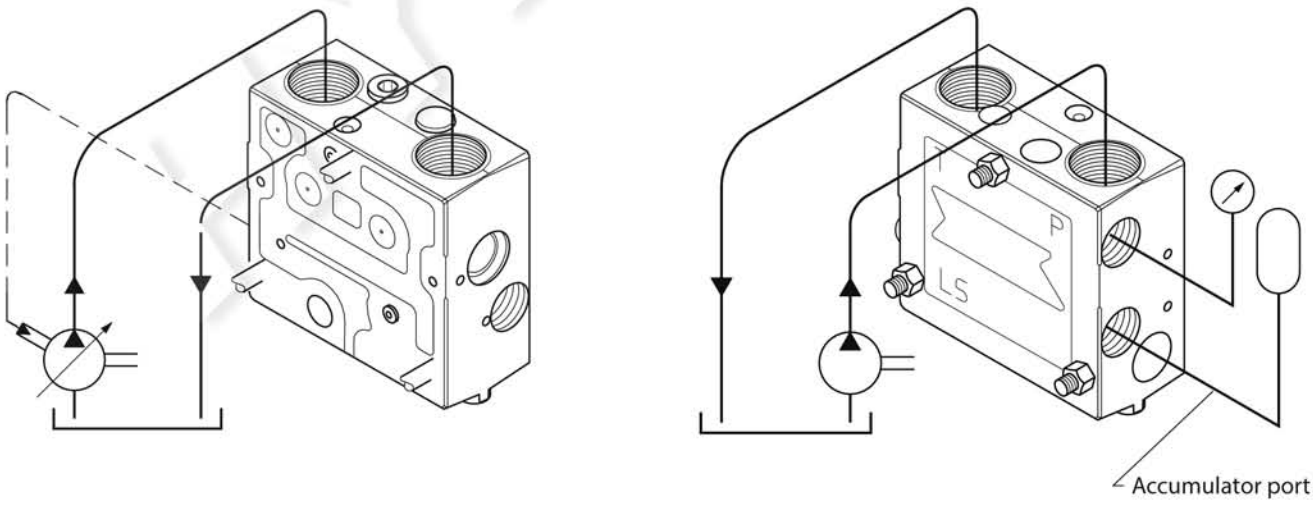
PVB	1	2	3	4	5	6	7	8	9	10
L (mm)	82	130	178	226	274	322	370	418	466	514
L (in)	3.23	5.12	7.01	8.90	10.79	12.68	14.57	16.46	18.35	20.24



P109192

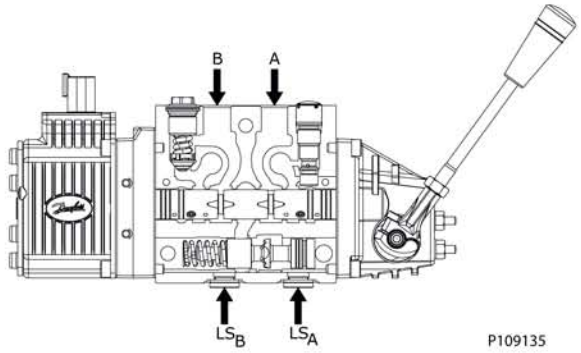
* Plads til demontage / * Room for dismantling / * Platz für Demontage / * Espace pour démontage

Tilslutning – PVP, pumpesidemodul
Connection – PVP, pump side module
Anschluss – PVP, pumpenseitiges Modul
Raccordement – PVP, plaque d'entrée



P109134

Tilslutning - PVB, basismodul
Connection - PVB, basic module
Anschluss - PVB, Grundmodul
Raccordement - PVB, module de base



Nominel tryk
Rated pressure
Nomineller Druck
Pression nominale

Product	Rated Pressure
PVG 32 w. PVS	300 bar [4351 psi]
PVG 32 w. PVSI	350 bar [5076 psi]
PVG 32 w. PVBZ	210 bar [3046 psi]
PVG 32 w. HIC steel	350 bar [5076 psi]
PVG 32 w. HIC aluminium	210 bar [3046 psi]
PVG 120/32 w. PVS	300 bar [4351 psi]
PVG 120/32 w. PVSI	350 bar [5076 psi]
PVG 100/32 w. PVS	300 bar [4351 psi]
PVG 100/32 w. PVSI	350 bar [5076 psi]

Tilslutningsgevind type G (ISO 228/1)
Connection threads type G (ISO 228/1)
Anschlussgewinde Typ G (ISO 228/1)
Filetage de raccordement type G (ISO 228/1)

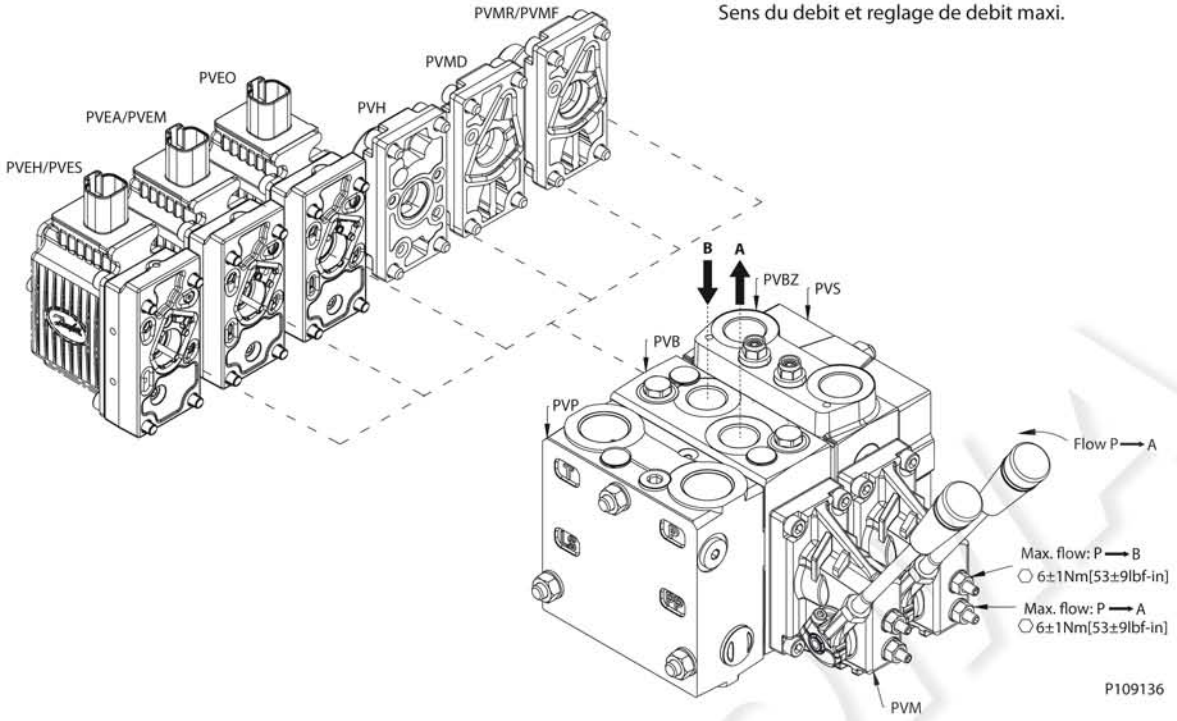
Maks. tilspændingsmoment / Max. tightening torques / Max. Anzugsmomente / Couples de serrage maxi							
Tilslutning / Connection Anschluss / Reccordment	P		A/B	T	LS, M, LSA, LSB, PVH, Accu	LX, PVS, PVSI	
Tætning / Sealing / Dichtung / Etanchéite — Gevind / Thread / Gewinde / Filetage	G 1/2	G 3/4	G 1/2	G 3/4	G 1/4	G 1/8	G 1/4
med stålskive with steel washer mit Stahlscheibe avec rondelle en acier	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]
med kobberskive With cooper washer mit Kupferscheibe avec rondelle en cuivre	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]
med aluminiumsskive with aluminium washer mit Aluminiumscheibe avec rondelle en aluminium	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]
med skærekant with cutting edge mit Dichtkante tranchant	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]

UN og UNF tilslutningsgevind med O-ringstætning
UN and UNF connection threads – O-ring boss port
UN und UNF Anschlussgewinde mit O-ringsdichtung
Filetage de raccordement UN et UNF avec cône pour joint torique

Maks. tilspændingsmoment / Max. tightening torques / Max. Anzugsmomente / Couples de serrage maxi							
Tilslutning / Connection Anschluss / Reccordment	P		A/B	T	LS, M, LSA, LSB, PVH, Accu	LX, PVS, PVSI	
Forskruning / Screwed connection / Verschraubung / Raccord — UNF	7/8 in - 14	1 1/16 in - 12	7/8 in - 14	1 1/16 in - 12	1/2 in - 20	3/8 in - 24	1/2 in - 20
O-ring Joint torique	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]

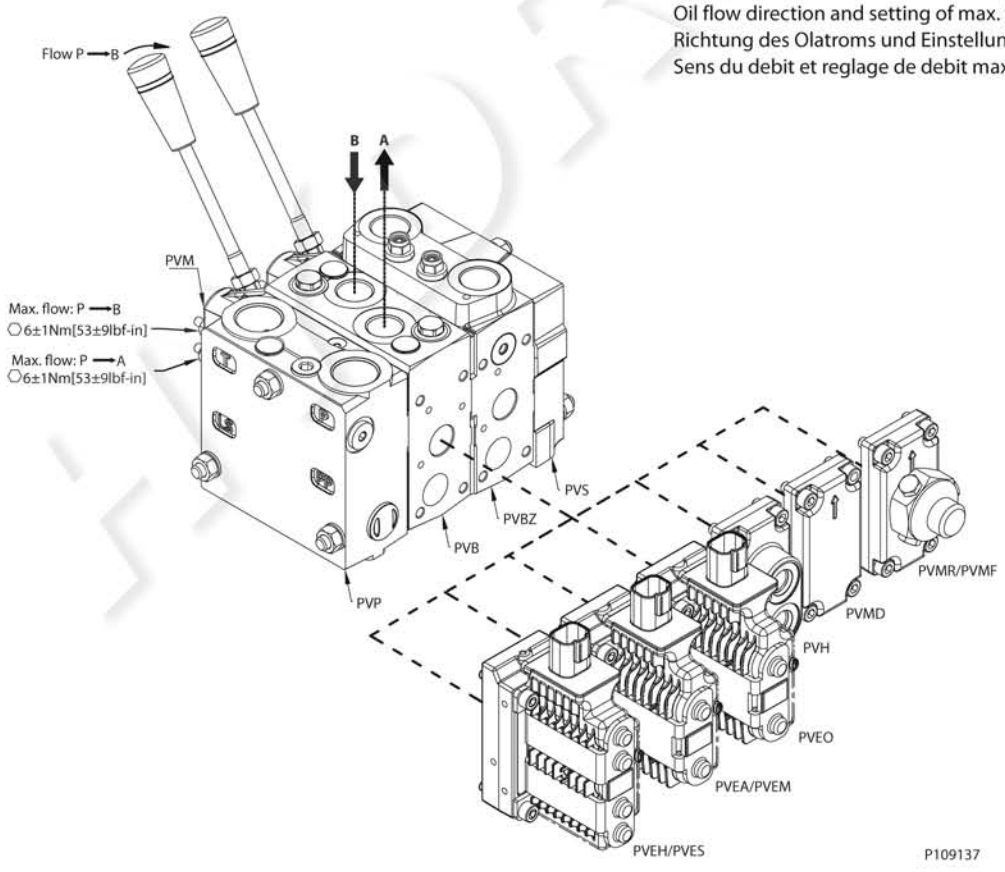
PVG - Standard mounting

Oliestrommens retning og indstilling af max. oliestrøm.
Oil flow direction and setting of max. flow.
Richtung des Olatroms und Einstellung des max. Olstroms.
Sens du debit et reglage de debit maxi.



PVG - Option mounting

Oliestrommens retning og indstilling af max. oliestrøm.
Oil flow direction and setting of max. flow.
Richtung des Olatroms und Einstellung des max. Olstroms.
Sens du debit et reglage de debit maxi.



PVG - Udluftning
Hvis gruppen er monteret vertikalt, anbefales det at udlufte ved justereskruer.

Bemærk: Ved PVEA kan det, pga.dens hydrauliske opbygning, være påkrævet at foretage udluftning.

PVG - Bleeding
If the group is installed vertically, it is recommended to bleed it at the adjusting screws.

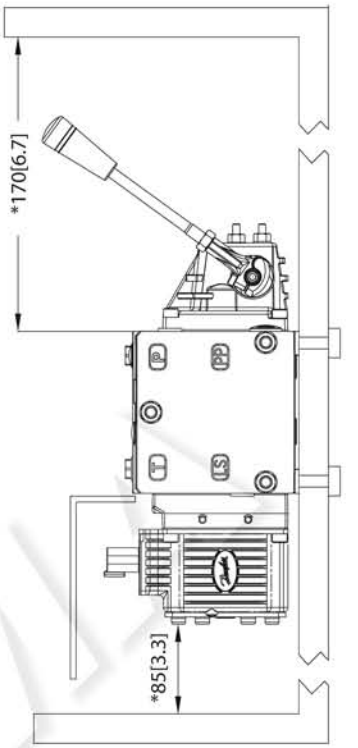
Note: Because of the hydraulic build-up of PVEA, it may be necessary to bleed it.

PVG - Entlüftung
Wenn die Gruppe vertikal montiert ist, empfehlen wir an den Justierschrauben zu entlüften.

Beachte: Wegen des hydraulischen Aufbaus von PVEA kann eine Entlüftung erforderlich sein.

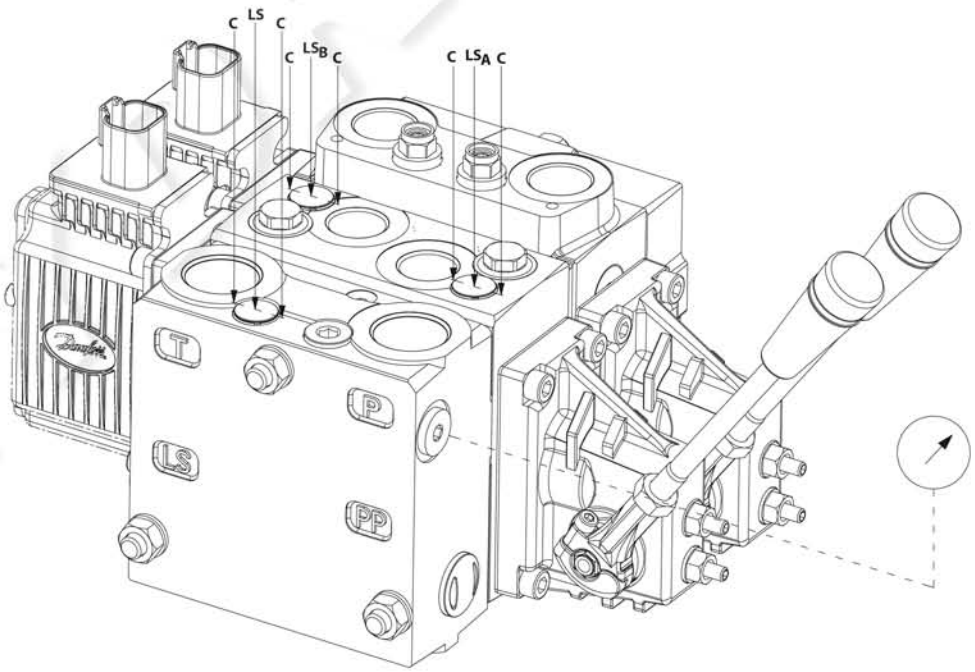
PVG - Purge
Si l'ensemble est monté verticalement, il est recommandé de le purger au moyen des vis d'ajustage.

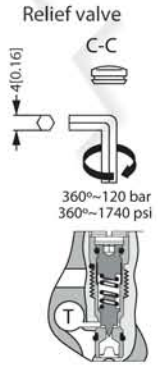
Nb! En raison du système hydraulique des PVEAs il peut s'avérer nécessaire de purger.



P109122

PVG - Trykindstilling PVP, LS_A, LS_B
PVG - Pressure setting PVP, LS_A, LS_B
PVG - Druckeinstellung PVP, LS_A, LS_B
PVG - Reglage de pression PVP, LS_A, LS_B

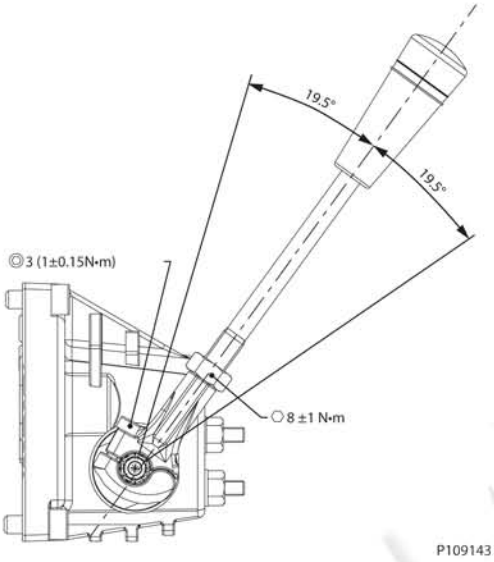




P109140

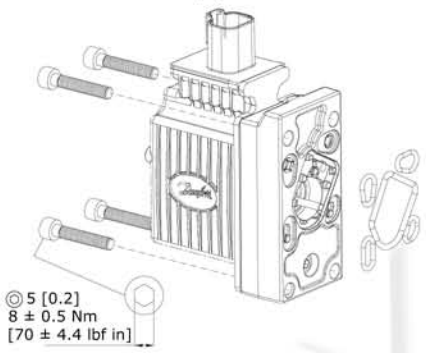
PVM - Montering af håndtag
PVM - Installation of lever
PVM - Montage von Hebel
PVM - Montage de manipulateur

Håndtaget skal skrues helt i bund
Screw the lever completely home
Den Hebel völlig einschrauben
Visser le manipulateur entierement au fond

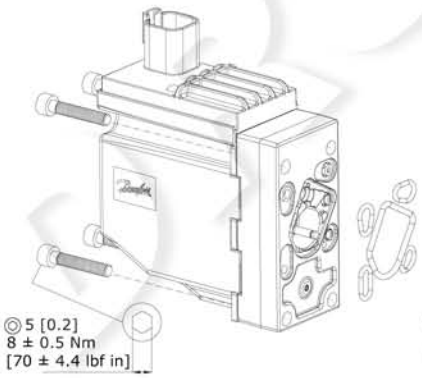


PVE - Montering
PVE - Installation
PVE - Montage
PVE - Installation de PVE

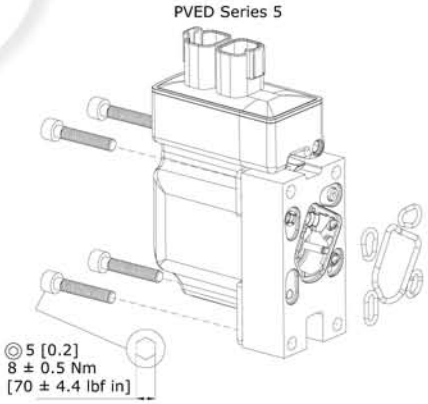
PVEO/M/A Series 7



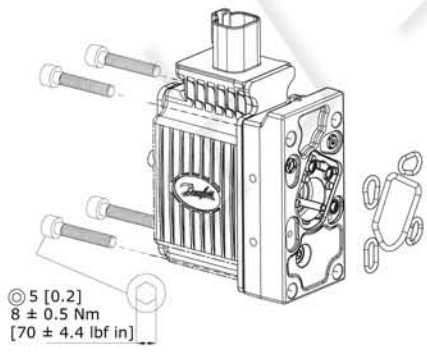
PVEP Series 4



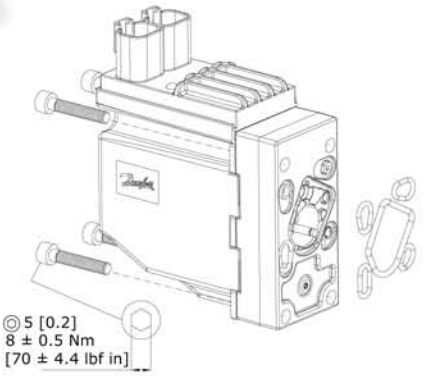
PVED Series 5



PVEH/S Series 7

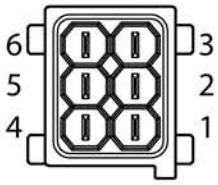


PVED-CC Series 4

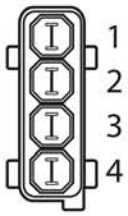
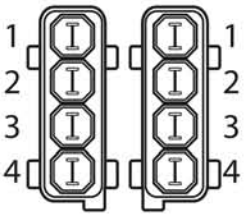
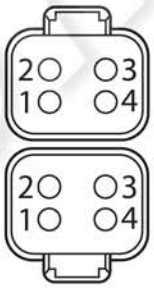
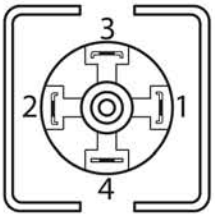


P109144

PVE stik varianter
PVE connector variants
PVE Stecker varianten
PVE variantes de connecteur

1x6 AMP	1x6 DEUTSCH
	

Pin		Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
PVEH-FLA	1x6 AMP	U_S	U_{DC}	GND	Error	Float	
	1x6 DEUTSCH	U_S	Error	Float		GND	U_{DC}
PVES-SP	1x6 DEUTSCH	U_S	Error		SP	GND	U_{DC}
PVEP	1x6 DEUTSCH	PWM_A	Error	PWM_B	U_{DC}	GND	

1x4 AMP	2x4 AMP	1x4 DEUTSCH	2x4 DEUTSCH	1x4 DIN
				

Pin			Pin 1	Pin 2	Pin 3	Pin 4
PVEO **PVEO-R**	1x4 AMP		U_{DC_A}	U_{DC_B}	GND	GND
	1x4 DEUTSCH		U_{DC_A}	GND	GND	U_{DC_B}
	1x4 DIN		U_{DC_A}	U_{DC_B}		GND
PVEM **PVEM-FLB**	1x4 DIN		U_{DC}	U_S	Error	GND
PVEA **PVEH** **PVEH-FLB** **PVEH-S** **PVEH-U**	1x4 AMP		U_S	U_{DC}	GND	Error
	1x4 DEUTSCH		U_S	Error	GND	U_{DC}
	1x4 DIN		U_{DC}	U_S	Error	GND
PVEO-DI	2x4 AMP	A	U_{DC_A}	U_{DC_B}	GND	GND
		B	DI-B	DI-A	GND	U_{DC2}
PVEA-DI **PVEH-DI**	2x4 AMP	A	U_S	U_{DC}	GND	Error
		B	DI-B	DI-A	GND	U_{DC2}
	2x4 DEUTSCH	A	U_S	Error	GND	U_{DC}
		B	U_{DC2}	GND	DI-A	DI-B
PVED-CC	2x4 AMP	A/B	CAN_L	U_{DC}	GND	CAN_H
	2x4 DEUTSCH	A/B	CAN_H	CAN_L	U_{DC}	GND

PVE driftsbetingelser
PVE operating conditions
PVE Betriebsbedingungen
PVE conditions de fonctionnement

PVEO/PVEH/PVES Operating Conditions		
Pilot Pressure	Nominal	13.5 bar [196 psi]
	Minimum	10.0 bar [145 psi]
	Maximum	15.0 bar [220 psi]
Storage Temp.	Ambient	-50°C → 90°C [-58°F → 194°F]
Operating Temp.	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	18/16/13 (acc. to ISO 4406)

PVE kontrol specifikationer
PVE control specifications
PVE Steuerungsspezifikationen
PVE spécifications de contrôle

PVEO Control Specification			
Supply Voltage (U_{DC})	Rated	12 V_{DC}	24 V_{DC}
	Range	11 → 15 V_{DC}	22 → 30 V_{DC}
	Max. ripple	5 %	

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

PVEA/PVEH/PVES Control Specification		
Supply Voltage (U_{DC})	Rated/Range	11 → 32 V_{DC}
	Max. ripple	5%
Signal Voltage (U_S)	Neutral	$U_S = 0.5 \cdot U_{DC}$
	Q: P → A	$U_S = (0.5 \rightarrow 0.25) \cdot U_{DC}$
	Q: P → B	$U_S = (0.5 \rightarrow 0.75) \cdot U_{DC}$
Signal Voltage PWM (U_S)	neutral	U_S = 50% DUT
	Q: P → A	U_S = 50% → 25% DUT
	Q: P → B	U_S = 50% → 75% DUT
PWM Frequency (U_S)	Recommended	> 1000 Hz
Input Impedance	Rated	12 kΩ
Input Capacitance	Rated	100 nF

PVE LED karakteristikker
PVE LED characteristics
PVE LED Eigenschaften
PVE LED caractéristiques

PVEO LED Characteristics		
Color	**LED view**	**Function**
Green		Power ON

PVEM/PVEA/PVEH/PVES 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/PVES-U 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
Yellow		Disable Mode

⚠ Warning
Alle mærker og typer af retningsventiler – også proportional ventiler – kan svigte og forårsage alvorlig skade.
Det er derfor vigtigt at analysere maskinen i alle enkeltheder.
Da proportionalventiler anvendes under mange forskellige driftsbetingelser og i mange forskellige maskiner, er det alene maskinproducentens ansvar at træffe det endelige produktvalg og sikre at samtlige maskinens krav til ydelse, sikkerhed og advarsler er opfyldt.
Ved valg af reguleringssystem – og sikkerhedsniveau – kan man f.eks. støtte sig til EN954-1 (sikkerhedsrelaterede bestanddele i reguleringssystemet).

⚠ Warning
All marks and all types of directional control valves – inclusive proportional valves – can fail and cause serious damage.
It is therefore important to analyse all aspects of the application.
Because the proportional valves are used in many different operation conditions and applications, the manufacturer of the application is alone responsible for making the final selection of the products – and assuring that all performance, safety and warning requirements of the application are met.
The process of choosing the control system – and safety level – could e.g. be governed by EN 954-1 (Safety related parts of control system). See also Technical information for PVE series 7.

⚠ Warnung
Alle Fabrikate und Typen von Wegeventilen – einschließlich Proportionalventile – können versagen und schlimme Unfälle verursachen. Es ist daher wichtig, die Anwendung in allen Details zu analysieren.
Weil Proportionalventile unter vielen unterschiedlichen Arbeitsbedingungen und in vielen verschiedenen Anwendungen benutzt werden, trägt allein der Maschinenhersteller die Verantwortung für seine endgültige Wahl von Produkt, und er ist ebenfalls dafür verantwortlich, dass alle Leistungs-, Sicherheits- und Warnungsanforderungen an seine Maschine erfüllt sind. Zur Wahl vom Reglersystem und Sicherheitsniveau kann man sich z.B. auf EN954-1 stützen.

⚠ Avertissement
Tous les distributeurs - y compris les distributeurs proportionnels - peuvent tomber en panne et entraîner de sérieux dommages. C'est la raison pour laquelle il est important d'analyser chaque aspect de l'application.
Les vannes proportionnelles étant utilisées dans de nombreuses conditions d'exploitation et applications différentes, le fabricant de l'application porte l'entière responsabilité de la sélection finale des produits et du respect des exigences en matière de rendement, de sécurité et d'avertissement.
Le choix du système de commande – et du niveau de sécurité – peut être fait par exemple sur la base de la norme EN 954-1 (parties du système de commande relatives à la sécurité). Se reporter également à Information technique pour PVE série 7.