

Ivan Pohanka

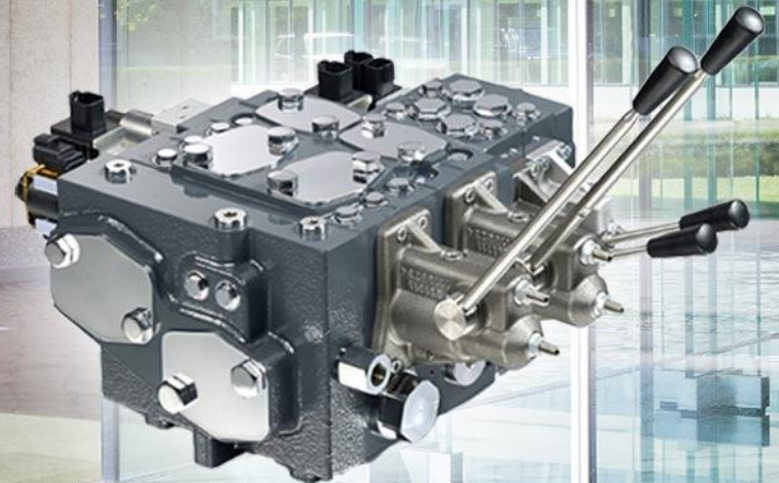
ENGINEERING
TOMORROW

Danfoss

Danfoss

PVG 128/256

Product info



Building the ultimate PVG Valve

Higher Pressure



- Pressures up to:
- 350 bar continuous (5076 psi)
 - 400 bar intermittent (5801 psi)

Simple Interface



A simple interface enables customized solution for your exact application control needs

Optimization



Easy to optimize the system using the whole valve range saving space and weight while optimizing performance

Wide Flow Range



Flow range 65–500 l/min (17–132 US Gal/min) valve sizes in one valve assembly

Compatibility

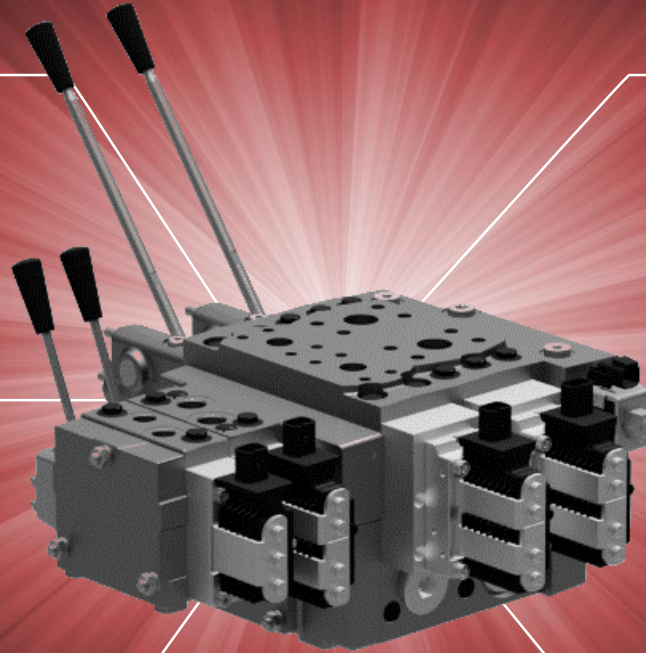


When you know one, you know them all → PVG 16 - 32 - 128 - 256

Consistency



PVG valve performance is consistent through the entire valve range





Specifications
& Features



Modules



PVBS Spools



Controls



Schematics
& Dimensions



Ordering etc.



Pilot Customer
Interaction



PVG 120
vs.
PVG 128

Features

PVP

- CC version (PVPV)
- Multiple feature options

PVB

- Pre-compensated PVG with LS A/B relief and shock valve options.
- Compensator with bleed off (No pressure build up in Neutral)
- Multiple actuator options:
 - Electric (current control/ratio-metric)
 - Mechanical
 - Hydraulic
 - PVE EX
 - PVED Series 5

Benefits

- Energy efficient (Very Low pressure drop)
- High return flows
- Low noise
- Compact design
- Load independent flow control (pre-compensated)
- Simple interface combination with PVG 32/16
- Internal T0



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



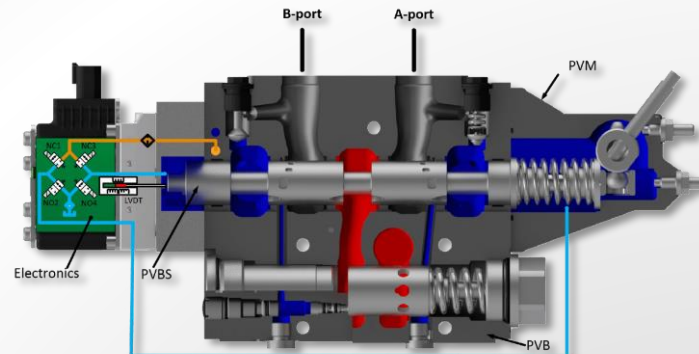
PVG 120 vs. PVG 128

PVG 128/256

Specifications

Maximum Pressure

Port P Continuous	350 Bar	(5000 psi)
Port P Intermittent	400 Bar	(5800 psi)
Port A/B Continuous	350 Bar	(5000 psi)
Port A/B Intermittent	420 Bar	(6000 psi)
Port T, Static/Dynamic	25/40 Bar	(360/580 psi)



Oil Flow Rated

Port P (PVPV)	800 l/min	(210 US gal/min)
Port P (PVPV + PVSI)	1400 l/min	(370 US gal/min)
Port A/B – 128	320 l/min	(85 US gal/min)
Port A/B – 256	400 l/min	(105 US gal/min)
Port A/B – 256 Turbo	500 l/min	(132 US gal/min)

Spool Travel

Dead band	+/- 1.7 mm	(+/- 0.067 in)
Proportional Control Range	+/- 10 mm	(+/- 0.39 in)
Float Position A	+ 12 mm	(+0.47 in)

PVG 128/256

Modules & Control Options



PVG 128 / 256

Initial option portfolio

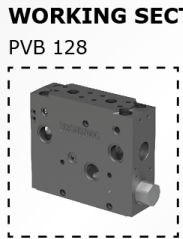
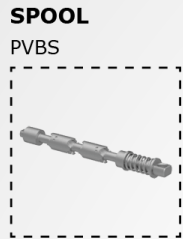
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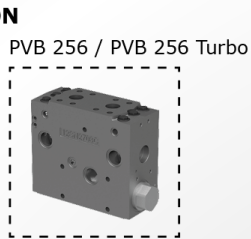
Products launched by January 16, 2017:



Ports: UNF & BSP
Flanges: SAE & Metrics



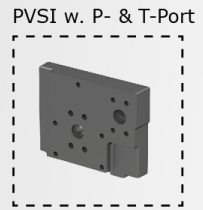
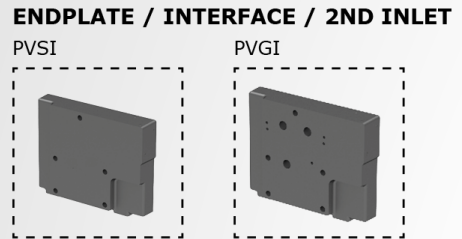
Ports: UNF & BSP
Flanges: SAE & Metrics



LATER RELEASES

Actuators

- PVED Series 5 (Prototypes available)

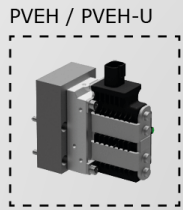
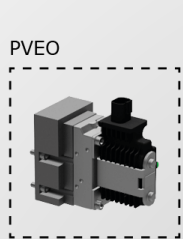
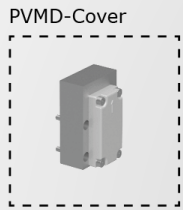
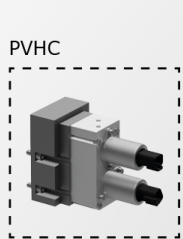


PVSI w. P- & T-Port

Ports: UNF & BSP
Flanges: SAE & Metrics



PVH



Click on any of the pictures to get technical information about the product



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128





Specifications & Features



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PVBS Spools



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Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128

PVG 128/256

PVPV CC (Variable Pumps)



PVP Inlet flow; 800 l/min (210 US gal/min)

PVLP x 2

Pilot shut off (12/24 Volt)

Flange ports:

UNC

P: 1-1/4" Flange Connection

T: 1-1/2" Flange Connection

Metric

P: 1-1/4" Flange Connection

T: 1-1/2" Flange Connection

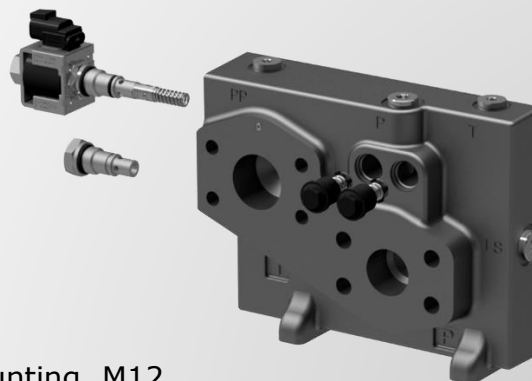
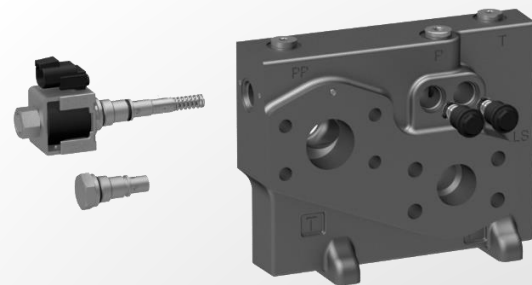
Threaded ports:

P: 1-7/8" UN

T: 1-7/8" UN

P: G1-1/2 BSP

T: G1-1/2 BSP



Mounting, M12



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



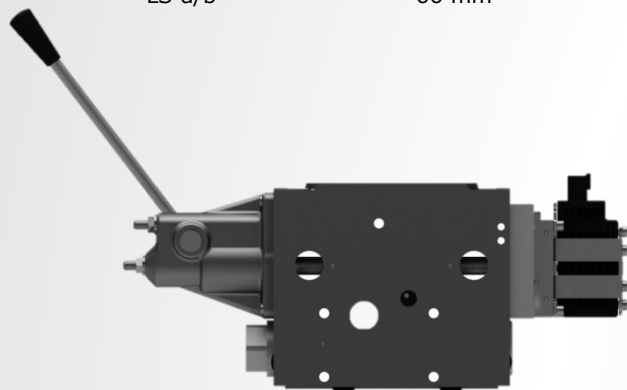
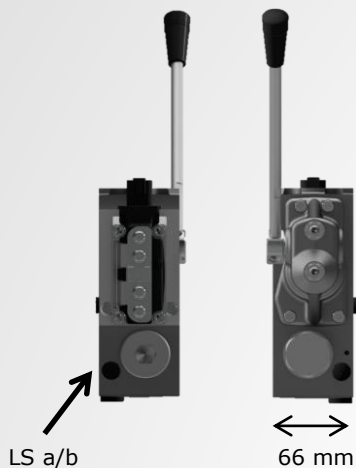
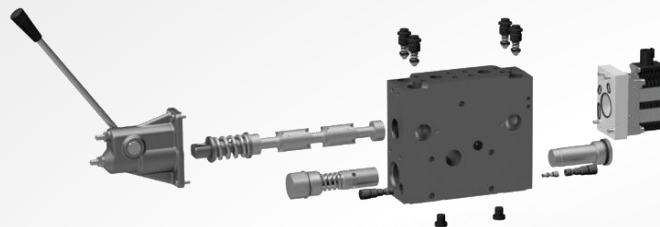
Pilot Customer Interaction



PVG 120 vs. PVG 128

PVG 128

PVB (Work Section)



Features;

- Adjustable LS A/B
(Same Relief valve as PVG 16 and 32)
- 2 x PVLP/A for each port
(Same PVLP/A as PVG 16 and 32)
- Compensator with bleed off and 8 Bar spring
- Control options - PVM, PVH, PVHC, Analog PVE, PVED

Port Types/Sizes;

- 1⁵/₁₆" UN Thread O-ring boss port
(Note; PVG 120 1¹/₁₆")
- G 1" BSP ports
- 3/4" SAE Flange with UNC LS a/b ports
- 3/4" Metric Flange with BSP LS a/b ports



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



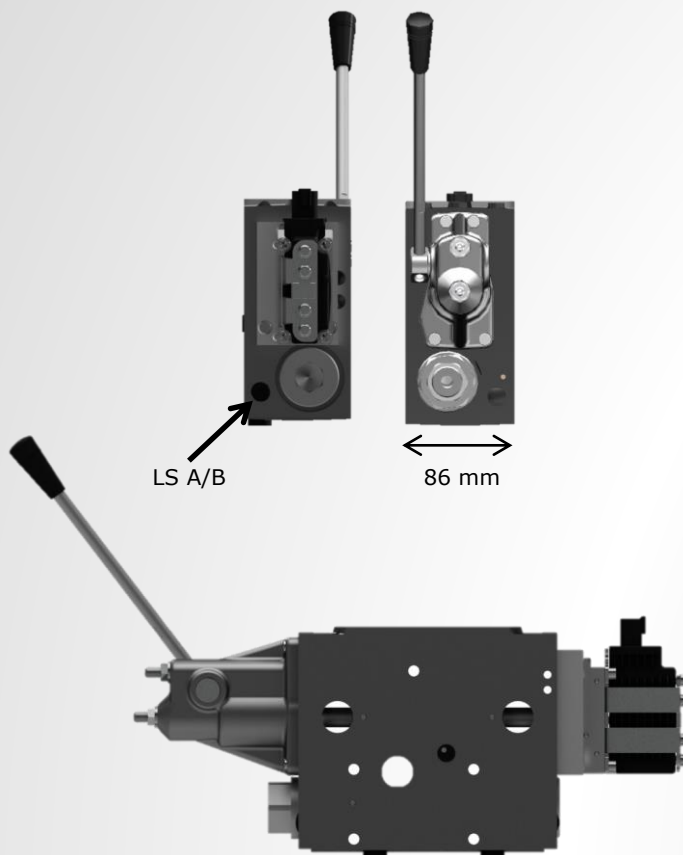
Pilot Customer Interaction



PVG 120 vs. PVG 128

PVG 256

PVB (Work Section)



Features;

- Adjustable LS A/B
(Same Relief valve as PVG 16 and 32)
- 3 x PVLP/A for each port
(Same PVLP/A as PVG 16 and 32)
- Compensator with bleed off and 8 Bar spring
- Control options - PVM, PVH, PVHC, Analog PVE, PVED

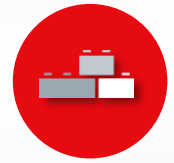
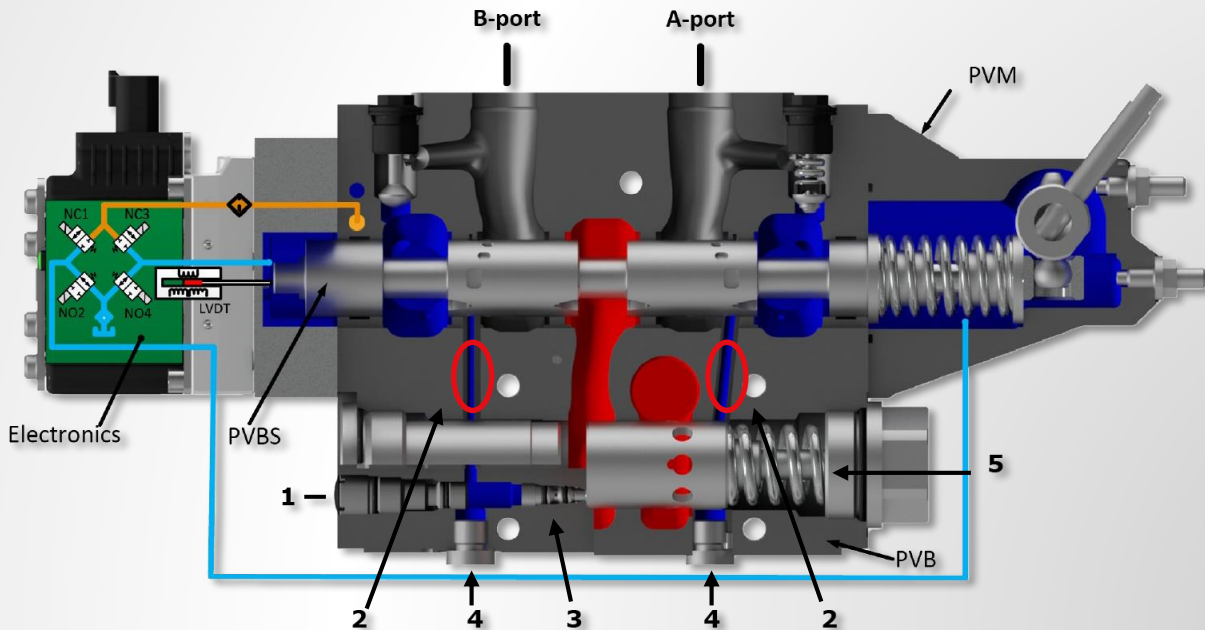
Port Types/Sizes;

- 1 1/4" UN Thread O-rings boss port
(Note; PVG 120 1 1/16")
- G 1 1/4" BSP ports
- 1 1/4" SAE Flange with UNC LS a/b ports
- 1 1/4" Metric Flange with BSP LS a/b ports

PVB 128/256

Cut-Through

- 1) LS A/B relief valve
- 2) LS A/B connection from spool to compensator - Default NO dampening orifice
- 3) LS A/B Shuttle valve
- 4) LS A/B connection ports
- 5) Compensator Ass





Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



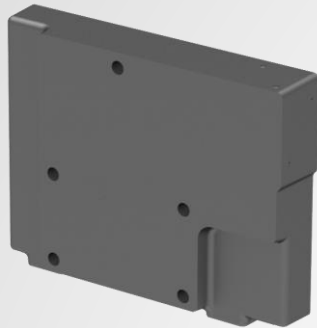
Pilot Customer Interaction



PVG 120 vs. PVG 128

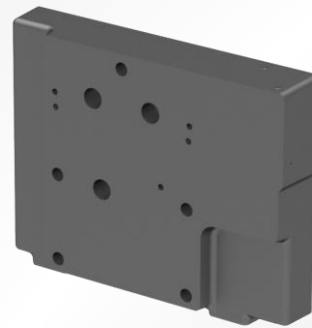
PVG 128/256

End Plates



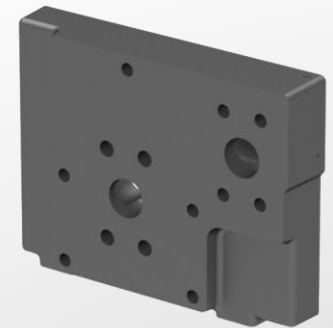
PVSI

With Internal T0
End Plate
Mounting: M12



PVGI

With or without T0
PVG 16 and PVG 32
Interface
Mounting: M12



PVSI-P-T

This option allows for 1400 l/min (370 US gal/min) pump flow into the valve assembly when combined with PVPV
Mounting: M12





Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



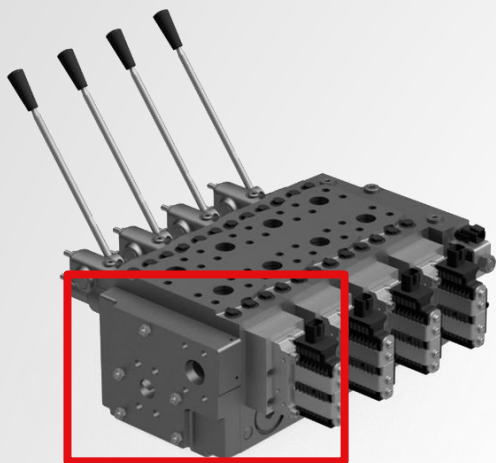
Pilot Customer Interaction



PVG 120 vs. PVG 128

PVG 128/256

PVSI End Plate with P- and T-connection



This option allows for a pump flow up to 1400 l/min (370 US gal/min) when combining PVSI with PVPV



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



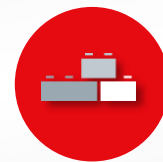
Pilot Customer Interaction



PVG 120 vs. PVG 128

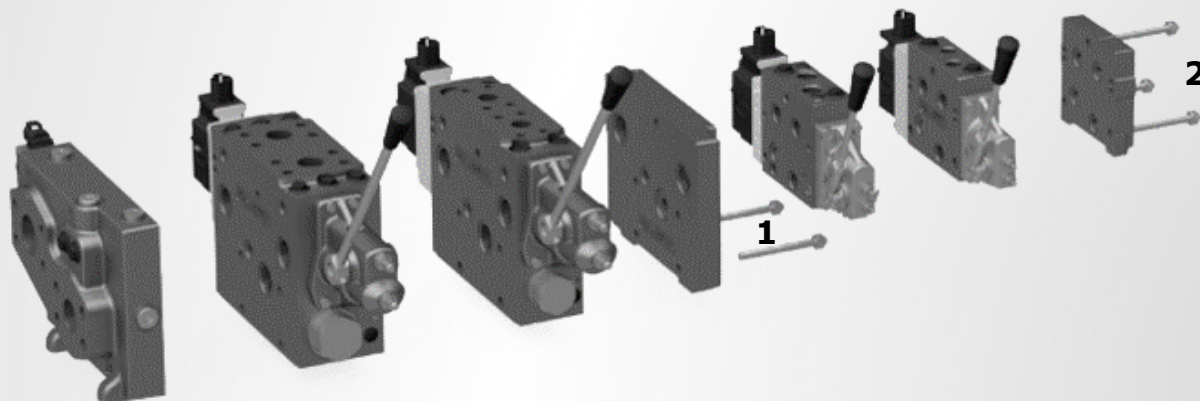
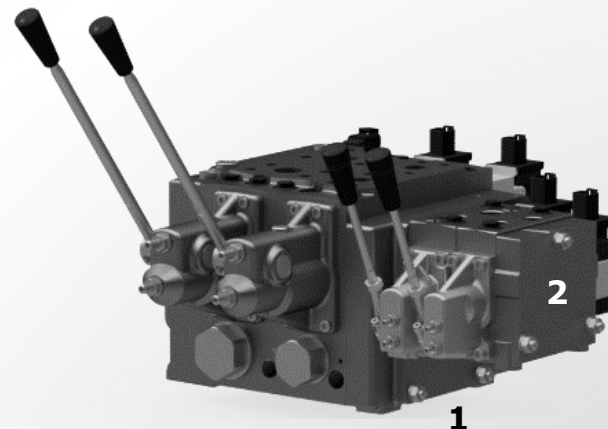
PVG 128/256

PVGI Interface to PVG 16 and 32



The PVG 256/128/32/16 uses two sets of stay bolts:

- 1) 2 stay bolts going through the PVG 256/128 and PVGI Interface
- 2) 3 Stay bolts going all the way through the PVG 256/128, the PVGI Interface and the PVG 32/16





Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



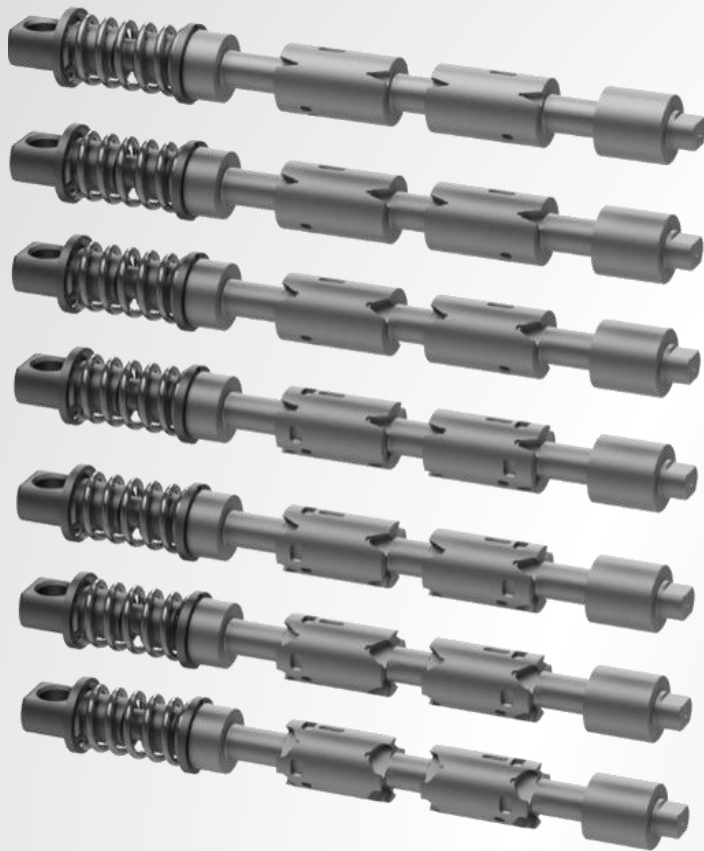
Pilot Customer Interaction



PVG 120 vs. PVG 128

PVG 128/256

Spool Design



65 l/min Closed in Neutral

95 l/min Closed in Neutral

130 l/min Closed in Neutral

180 l/min Open in Neutral

240 l/min Open in Neutral

320 l/min Open in Neutral

400* l/min Open in Neutral

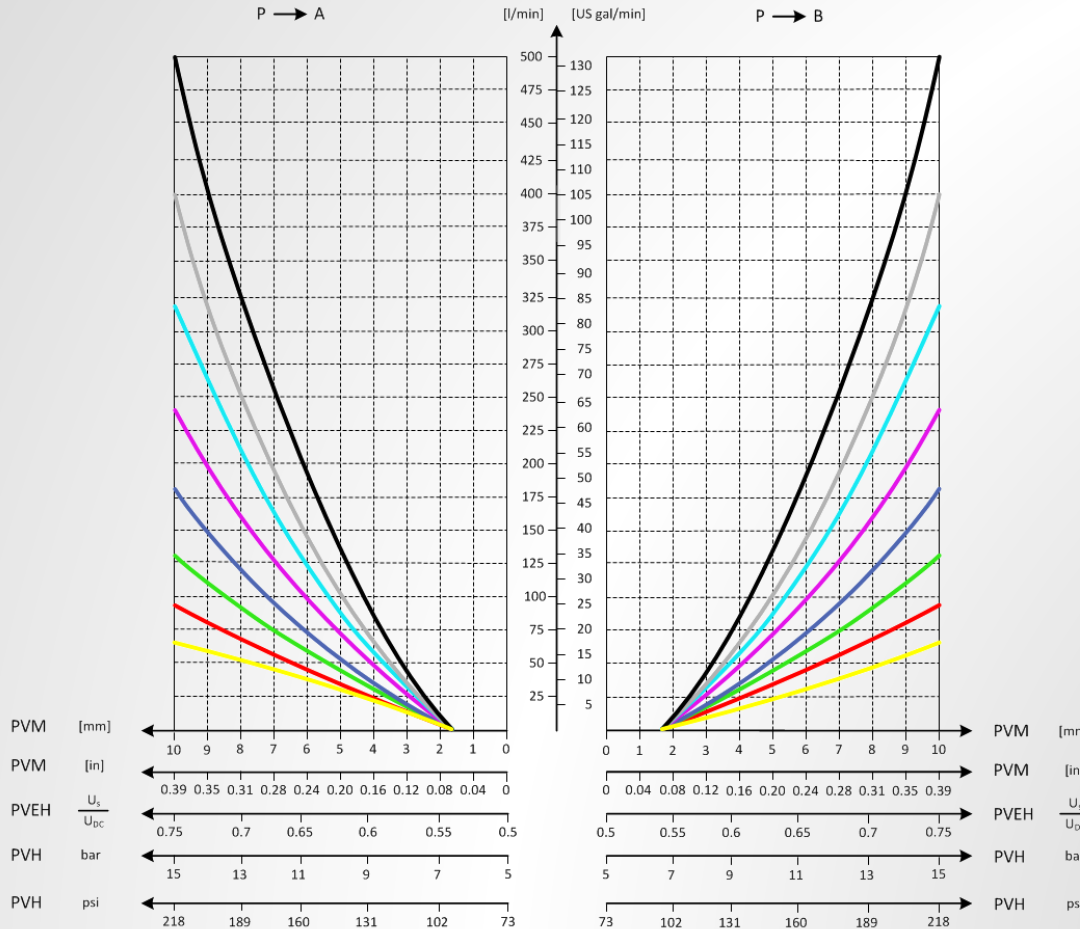
PVG 128

PVG 256

*500 l/min when used in PVB 256 with turbo

PVG 128/256

Oil flow as a function of spool travel



Spools are a combination of linear and progressive performance

To get the 500 l/min (132 US gal/min) flow you need the PVBS 400 l/min (105 US gal/min) + the PVB Turbo option

-  Specifications & Features
-  Modules
-  PVBS Spools
-  Controls
-  Schematics & Dimensions
-  Ordering etc.
-  Pilot Customer Interaction
-  VS.

PVG 120 vs. PVG 128



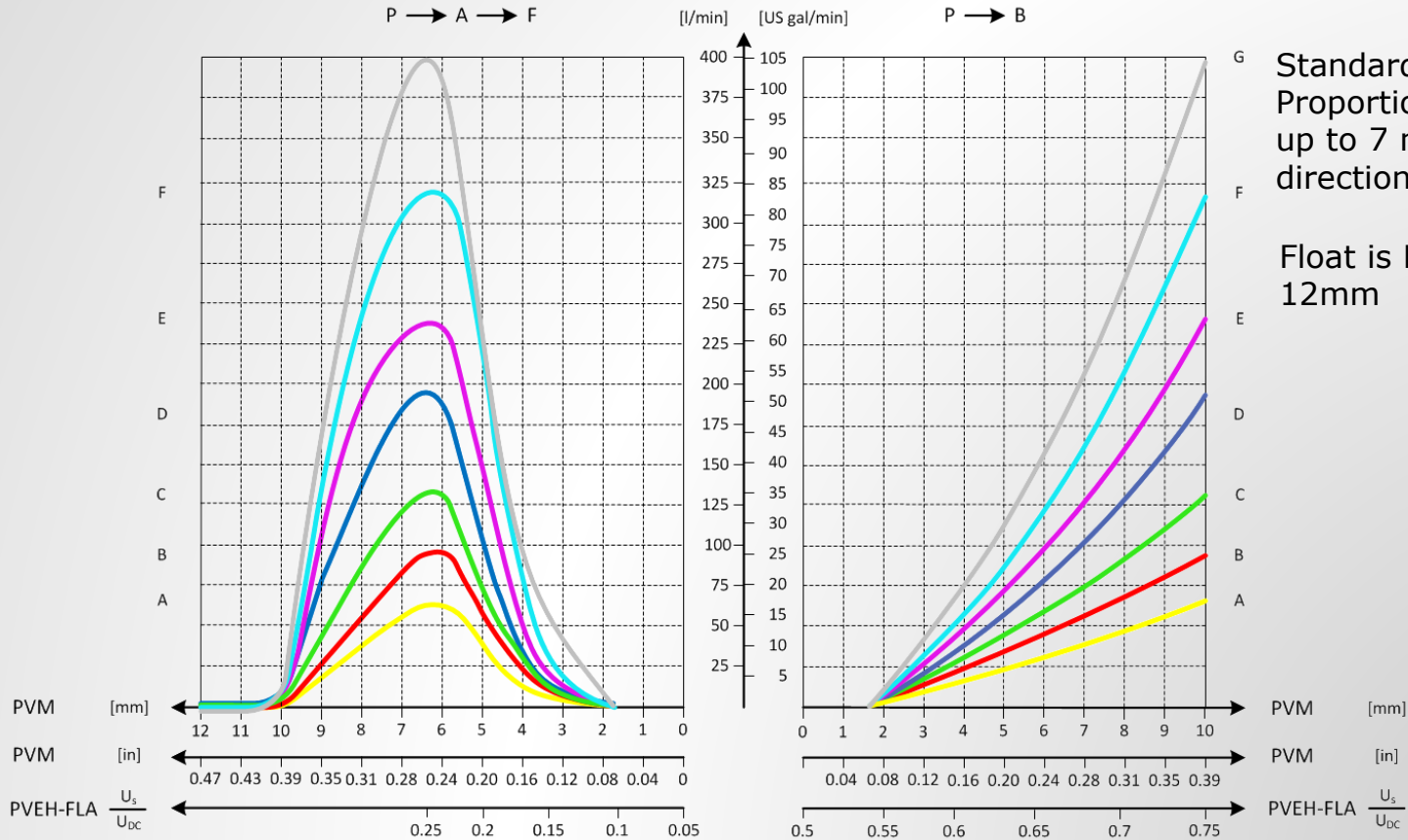
PVG 128/256

PVBS Float Spool

Standard FC spools float A closed neutral position



P109180



Standard Progressive Proportional Control up to 7 mm in A direction

Float is P → A → F @ 12mm

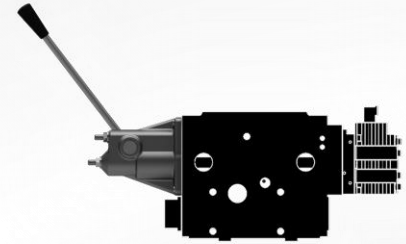
PVG 128/256

Control Options

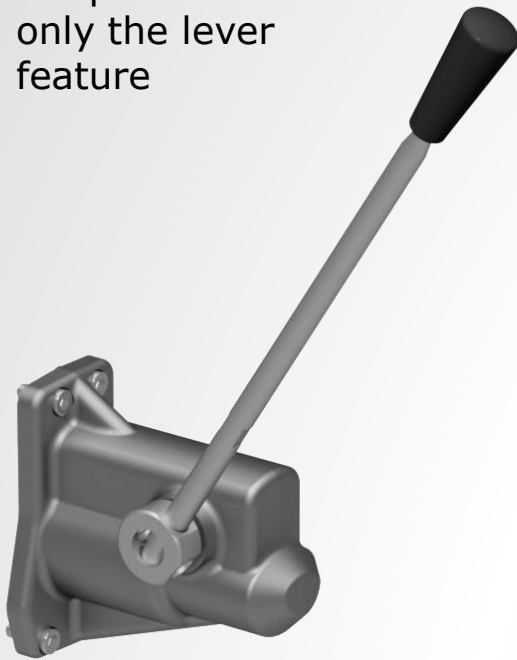


PVG 128/256

Control Options

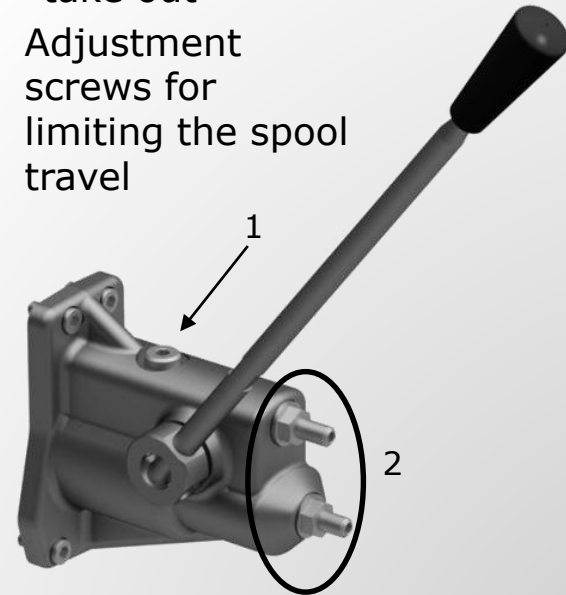


Simple PVM with only the lever feature



PVM with:

1. Pilot pressure "take out"
2. Adjustment screws for limiting the spool travel



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



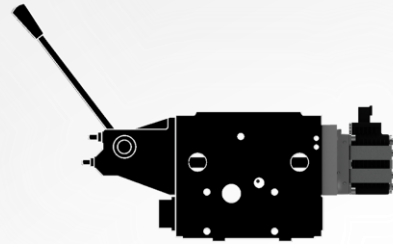
Pilot Customer Interaction



PVG 120
vs.
PVG 128

PVG 128/256

Control Options



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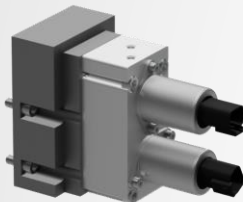
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Manual Control



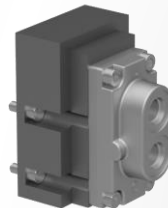
PVMD

Electro-Hydraulic Control



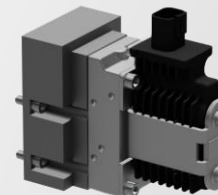
PVHC

Hydraulic Control

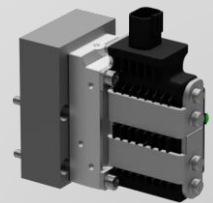


PVH

Electrical Control



PVEO



PVEH/
PVEH-U



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128

PVG 128/256

PVG 128/256 Pilot Customer Interaction



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128

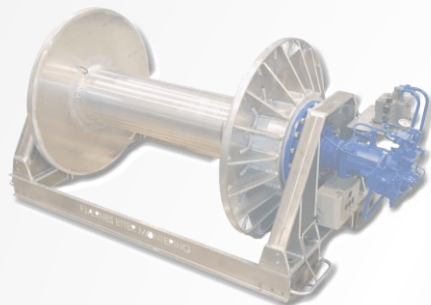
EMEA

Pilot customers



Marine winch

PVG with one section PVB 128



Vertical drill rig for blast holes

PVG with four sections PVB 256



MacGregor crane

- PVG with 3 sections PVB 128 (2 cranes)
- Very positive feedback from Macgregor



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128

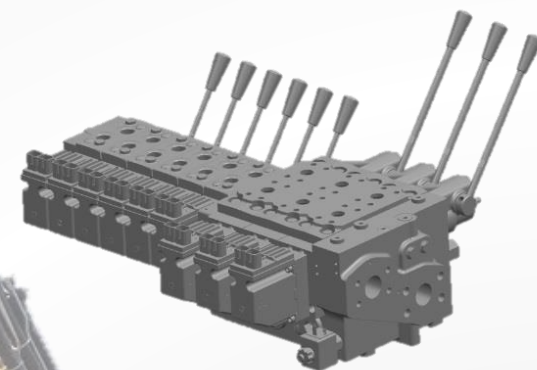
350T mobile crane

Pilot customer feedback

Replacing a competitors flow sharing valve which had unacceptable performance.

Feedback:

"PVG 128 and PVG 32 controlled with PVED performs perfectly. The crane has now been sold to end user."



"Next crane is on the way"



Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128

China

Pilot customer tests



China – Marine Crane
PVG with 4 sections PVB 256

Reach Stacker
PVG with 2 sections





Specifications & Features



Modules



PVBS Spools



Controls



Schematics & Dimensions



Ordering etc.



Pilot Customer Interaction



PVG 120 vs. PVG 128

China ADC Mobile Crane

PVG 128 and 256 Success findings and factors

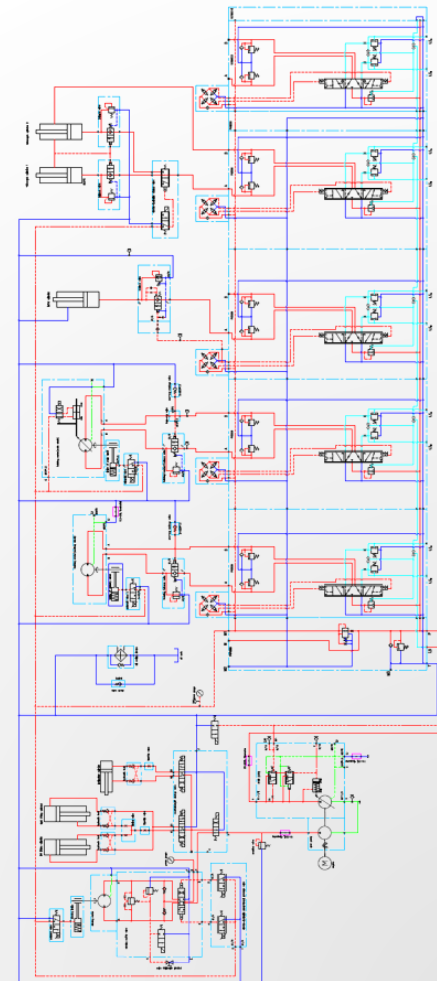
- Very impressive performance
- Simple and easy serviceability



Key tests

- PVG 128 and 256 together with O/C valves
- Test comparison to our competitors (Bucher)
- Closed loop PVE testing.

4 sections PVG 256 (PVHC and PVED)





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