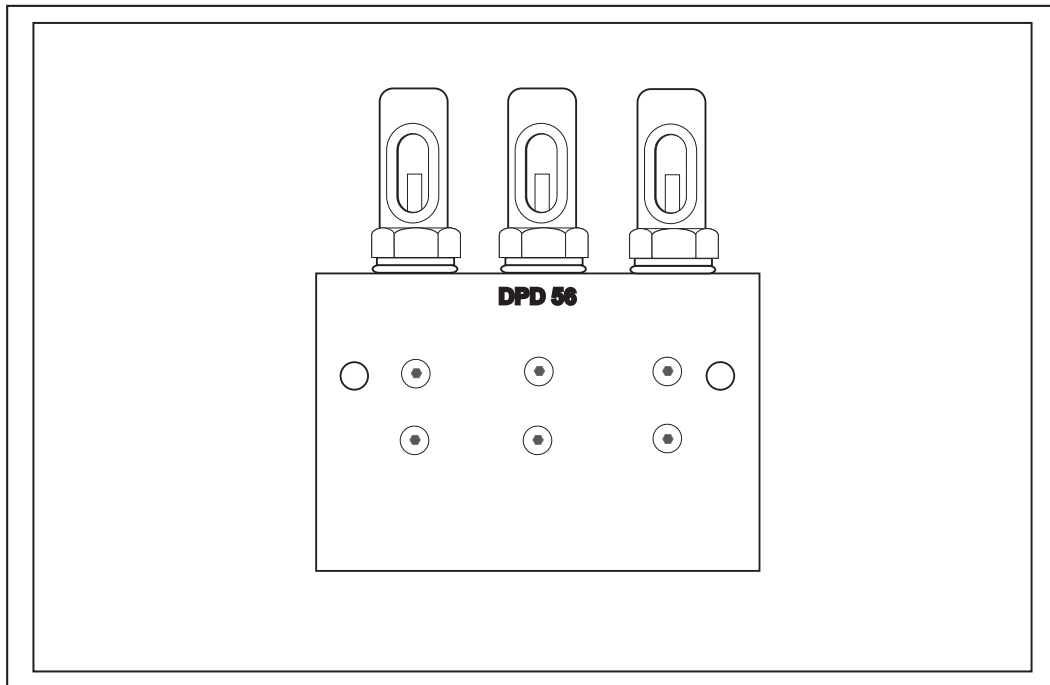


DYNA-POWER LUBRICATION

TECHNICAL BULLETIN D-01-03-2

UPDATED



DUAL LINE MEASURING VALVES



A division of
Dyna-Power Engineers, Inc.
PO Box 89 / 12809 S.Homan Ave.
Blue Island, IL 60406

January 2004

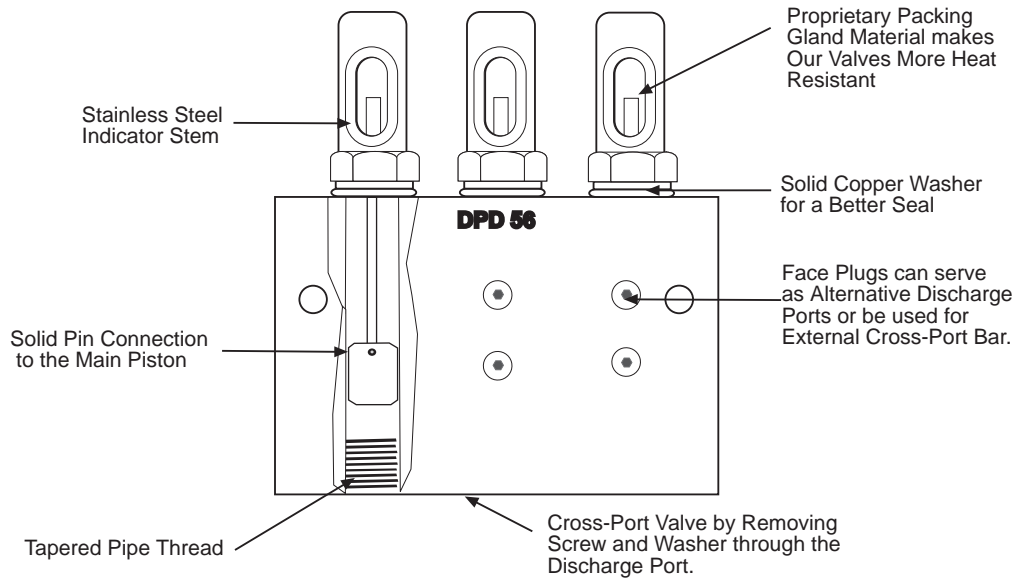
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FOR CUSTOMER SERVICE & APPLICATION HELP:

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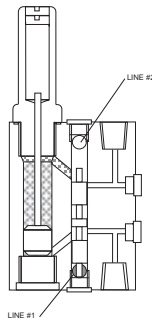


ADVANTAGES OVER THE COMPETITION

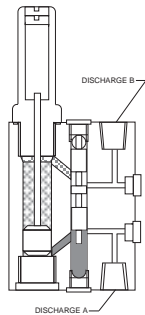
- Our dual discharge valves cross-port through the bottom of the discharge port by removing a screw and washer. No special cross-ports are required. *Special cross-port bars are available for external cross-porting in applications where the valve has been installed.*
- Because our valves are precisely manufactured, the pistons are interchangeable and replacements may be purchased for easy emergency repair. Can you replace the pistons for your current brand?
- Our valves have a tapered pipe thread. Any standard N.P.T. tapered thread will work in our valve -- leak free. The leading manufacturer uses straight pipe threads that do not provide a good seal.
- The proprietary material in the packing gland and the stainless steel indicator stem makes our **standard** valve more heat resistant. **In a recent trial at a large steel mill caster our valve was tested against the leading brand--our valves lasted significantly longer.**
- The washers in our valves are solid copper, unlike the leading brand which uses a composite compression washer. The solid copper construction makes for a better seal and ensures effective operation.
- Unlike the leading brand, the indicator stems in our valves are connected by a solid pin to the main piston -- **NOT** a roll pin. This, in addition to the precision boring of the ports and precise machining of the pistons, makes for a consistently reliable valve.

Principles of Operation

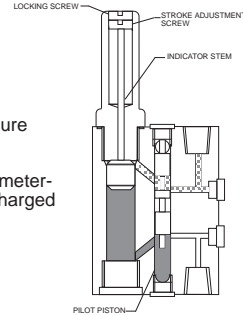
System is at a random starting position. Line#1 is selected for the next cycle.



As line #1 is pressurized, the pilot piston is pushed upwards until it seats against the plug.

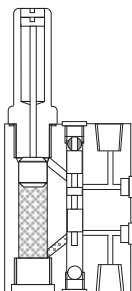


Continuing pressure pushes metering piston upwards. Lubricant above metering piston is discharged through Port B.

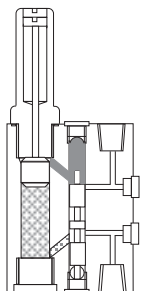


■ PRESSURIZED SUPPLY ■ DISCHARGED GREASE

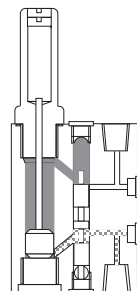
System energizes at the end of the interval time and Line#2 is now selected.



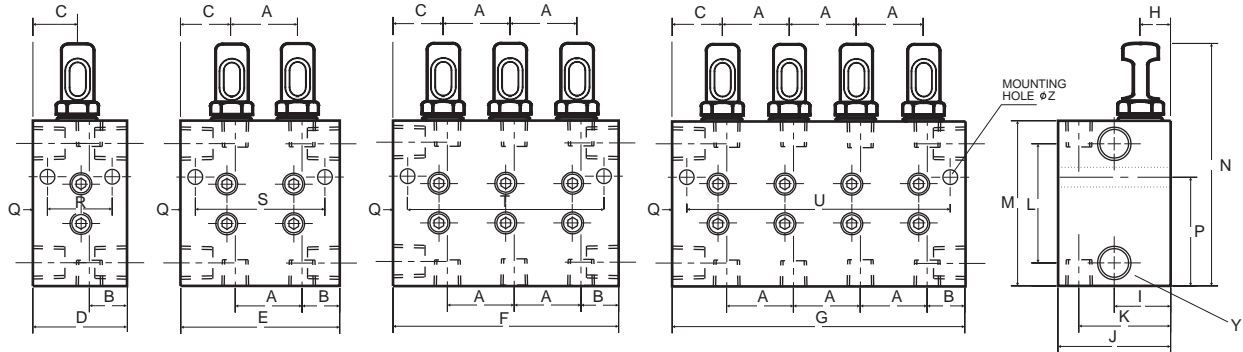
As Line#2 is pressurized, the pilot piston is pushed downwards until it seats against the bottom plug.



Continuing pressure pushes metering piston downwards. Lubricant below metering piston is discharged through Port A.



DPD SERIES



DIMENSIONS (inches)

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	X	Y	Z
DPD20	43/64	37/64	37/64	1 9/64	1 3/16	2 31/64	3 5/32	5/16	53/64	1 39/64	1 17/64	1 1/2	2 1/8	3 17/64	1 1/32	7/32	45/64	1 3/8	2 3/64	2 23/32	1/8	1/8	7/32
DPD30	1 1/4	45/64	15/16	1 49/64	3	4 1/4	5 33/64	15/32	1 1/16	2 1/8	1 47/64	2 1/4	3 7/64	4 9/16	2 3/16	9/32	1 7/32	2 7/16	3 45/64	4 31/32	1/4	3/8	23/64
DPD50	1 1/4	45/64	15/16	1 49/64	3	4 1/4	5 33/64	15/32	1 1/16	2 1/8	1 47/64	2 1/4	3 7/64	5 13/64	2 3/16	9/32	1 7/32	2 7/16	3 45/64	4 31/32	1/4	3/8	23/64

SPECIFICATIONS

MODEL	discharge PORTS	max. discharge (cu.in)	min. discharge (cu.in)	cu.in. per revolution adjustment	max. working pressure (psi) grease	max. working pressure (psi) oil	min. operating pressure (psi)	operating temp. range	weight (lbs)	operating vol.-pilots (cu.in.)
DPD 22	2	0.037	0.006	0.0024	3000	1420	140	-5 to 160°F	1.1	0.0085
DPD 24	4								1.8	0.017
DPD 26	6								2.4	0.026
DPD 28	8								3.1	0.034
DPD 32	2	0.073	0.012	0.0037	3000	1420	140	-5 to 160°F	3.3	0.024
DPD 34	4								5.5	0.049
DPD 36	6								7.7	0.073
DPD 38	8								9.9	0.098
DPD 52	2	0.305	0.073	0.0092	3000	1420	140	-5 to 160°F	3.3	0.024
DPD 54	4								5.5	0.049
DPD 56	6								7.7	0.073
DPD 58	8								9.9	0.098

CROSS-PORTING

INSTRUCTIONS:

CONVERSION FROM DUAL TO SINGLE DISCHARGE

To convert a DPD valve from dual to single discharge, perform the following for each discharge port:

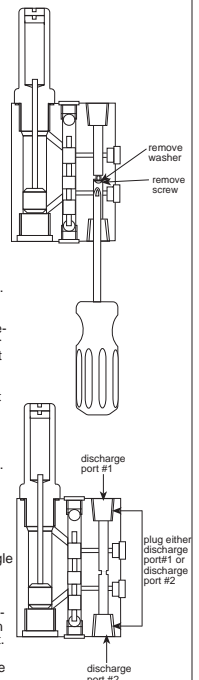
1. Turn the valve upside down and locate the phillips screw visible in the bottom of the discharge port.
2. Using an appropriately sized phillips head screw driver, remove the screw.

3. A copper washer under the screw should also be removed. Turn the valve right side up and gently tap the valve on a firm surface until it falls out. Degreaser and/or compressed air will help remove the washer. It is very important that you remove the copper washer from each discharge port. If left in, it may disrupt lubricant flow.

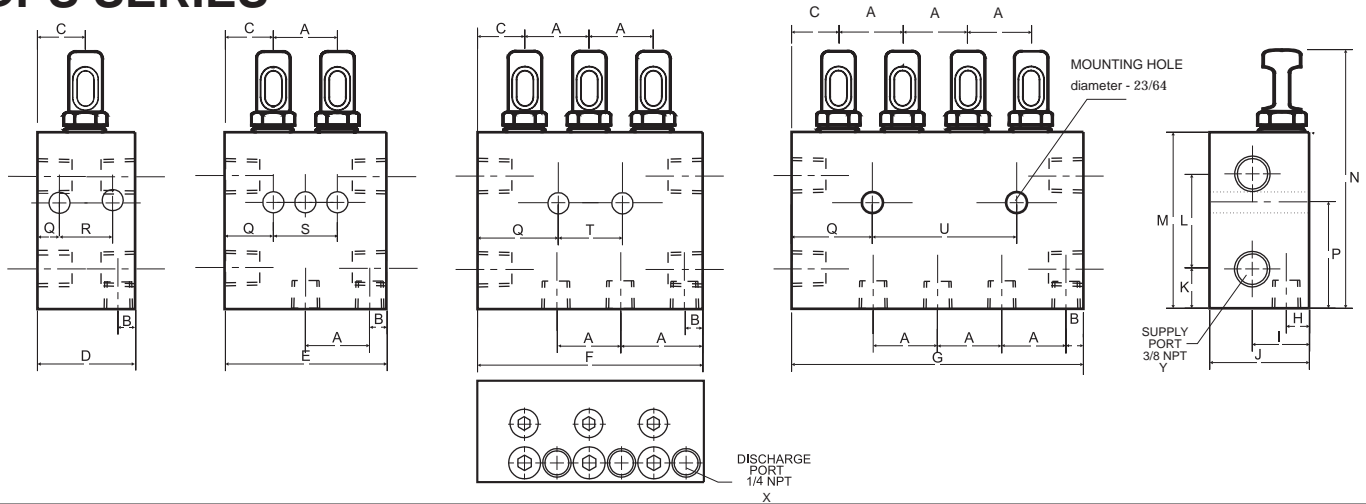
CONVERSION FROM SINGLE TO DUAL DISCHARGE

To convert a DPD valve from single to dual discharge, perform the following for each discharge port:

1. Simply place the copper washer on the screw and screw it in the appropriate discharge port.
2. Remove the pipe plug from the discharge port.



DPS SERIES



DIMENSIONS (inches)

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	X	Y
DPS31	NA	5/16	27/32	1 47/64	NA	NA	NA	13/32	1 1/64	1 25/32	45/64	1 21/32	3 7/64	4 9/16	1 13/16	25/64	15/16	NA	NA	NA	1/4	3/8
DPS 32,33,34	1 9/64	1 5/16	1 27/32	NA	2 7/8	4 1/64	5 5/32	13/32	1 1/64	1 25/32	45/64	1 21/32	3 7/64	4 9/16	1 57/64	1 7/16	NA	NA	1 9/64	2 9/32	1/4	3/8
DPS40	1 17/64	23/64	15/16	1 15/16	3 3/16	4 29/64	5 45/64	23/64	1 1/8	1 25/32	1/2	2 1/8	3 7/64	5 5/64	1 61/64	13/32	1 7/64	2 23/64	3 37/64	4 27/32	1/4	3/8
DPS50	1 29/64	3/8	1	2 3/32	3 35/64	5	6 29/64	33/64	1 19/64	1 25/32	7/16	2 1/4	3 7/64	5 13/64	2	25/64	1 19/64	2 3/4	4 7/32	5 43/64	1/4	3/8
DPS60	NA	13/32	1 9/64	2 29/64	4 1/4	NA	NA	25/32	3/8	2 1/4	5/8	2 1/4	3 1/2	5 31/32	2 13/16	25/64	1 21/32	3 7/16	NA	NA	1/4	3/8

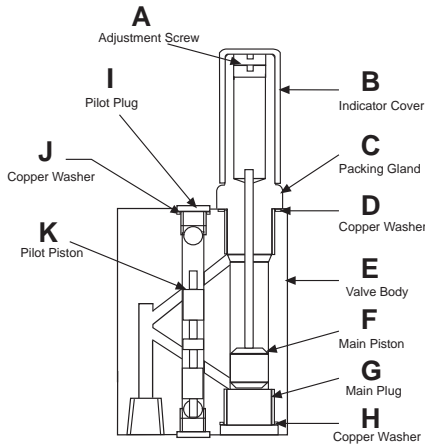
SPECIFICATIONS

MODEL	discharge PORTS	max. discharge (cu.in)	min. discharge (cu.in)	cu.in. per revolution adjustment	max. working pressure (psi) grease	max. working pressure (psi) oil	min. operating pressure (psi)	operating temp. range	weight (lbs)	operating vol.-pilots (cu.in.)
DPS 31	1	0.073	0.012	0.0037	3000	1420	140	-5 to 160°F	1.1	0.034
DPS 32	2								1.8	0.073
DPS 33	3								2.4	0.110
DPS 34	4								3.1	0.146
DPS 41	1	0.15	0.037	0.0061	3000	1420	140	-5 to 160°F	3.3	0.038
DPS 42	2								5.5	0.077
DPS 43	3								7.7	0.115
DPS 44	4								9.9	0.154
DPS 51	1	0.30	0.073	0.0092	3000	1420	140	-5 to 160°F	3.3	0.038
DPS 52	2								5.5	0.077
DPS 53	3								7.7	0.115
DPS 54	4								9.9	0.154
DPS 61	1	0.91	0.18	0.055	3000	1420	140	-5 to 160°F	4.6	0.038
DPS 62	2								8.3	0.077

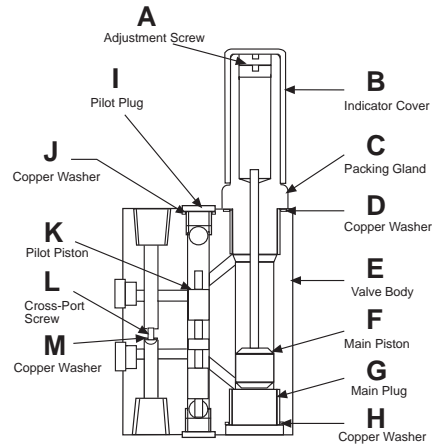
*** Please see page 8 for ordering assistance**

Parts Breakdown / Kits

DPS Series (Single Discharge)



DPD Series (Dual Discharge)



	DPS 30 Series	DPS 40 Series	DPS 50 Series	DPS 60 Series	Qty Req.
A	DPG20DS	DPG50DS	DPG50DS	DPG60DS	(2) per packing gland
B	D1732C	D1732D	D1732E	D1732F	(1) per packing gland
C	DPG30DG	DPG40DG	DPG50DG	DPG60DG	(1) per main piston
D	DPG30SW	DPG40SW	DPG50SW	DPG60SW	(1) per packing gland
E	DPV3xSB*	DPV4xSB*	DPV5xSB*	DPV6xSB*	(1)
F	DPV30DM	DPV40DM	DPV50DM	DPV60DM	(1) per packing gland
G	DPV30PP	DPV40PP	DPV50PP	DPV60PP	(1) per main piston
H	DPG30SW	DPG40SW	DPG50SW	DPG60SW	(1) per main plug
I	DPV50LP	DPV50LP	DPV50LP	DPV60LP	(1) per pilot piston
J	DPG50LW	DPG50LW	DPG50LW	DPG60LW	(1) per pilot piston
K	DPV30SP	DPV40SP	DPV50SP	DPV60SP	(1) per main piston

	DPD 20 Series	DPD 30 Series	DPD 50 Series	Qty Req.
A	DPG20DS	DPG50DS	DPG50DS	(2) per packing gland
B	D1732A	D1732C	D1732E	(1) per packing gland
C	DPG20DG	DPG30DG	DPG50DG	(1) per main piston
D	DPG20SW	DPG30SW	DPG50SW	(1) per packing gland
E	DPV2xDB*	DPV3xDB*	DPV5xDB*	(1)
F	DPV20DM	DPV30DM	DPV50DM	(1) per packing gland
G	DPV20PP	DPV30PP	DPV50PP	(1) per main piston
H	DPG20SW	DPG30SW	DPG50SW	(1) per main plug
I	DPV20LP	DPV50LP	DPV50LP	(1) per pilot piston
J	DPG20LW	DPG50LW	DPG50LW	(1) per pilot piston
K	DPV20DP	DPV50DP	DPV50DP	(1) per main piston
L	DPV50CS	DPV50CS	DPV50CS	(1) per pilot piston
M	DPG50CW	DPG50CW	DPG50CW	(1) per cross-port screw

KITS — Kits are packaged individually to replace only one indicator gland or piston. Therefore multiple kits may be necessary to repair one valve.

KIT DESCRIPTION	DPS 30 Series	DPS 40 Series	DPS 50 Series	DPS 60 Series	DPD 20 Series	DPD 30 Series	DPD 50 Series
Packing Gland Kit <i>(includes packing gland, (2) adjustment screws, and copper washer)</i>	DPG30DA	DPG40DA	DPG50DA	DPG60DA	DPG20DA	DPG30DA	DPG50DA
Pilot Piston Kit <i>(includes pilot piston, (2) pilot plugs and washers)</i>	DPV30SAK	DPV40SAK	DPV50SAK	DPV60SAK	DPV20DAK	DPV30DAK	DPV50DAK
Main Piston / Packing Gland Kit <i>(includes main piston, and complete Packing Gland Kit)</i>	DPV30SGK	DPV40SGK	DPV50SGK	DPV60SGK	DPV20DGK	DPV30DGK	DPV50DGK

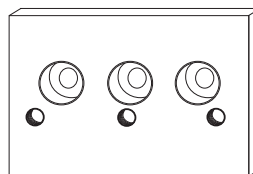
ACCESSORIES

Adapter Plates

All of our valves have been designed to fit the Farval[®] mounting dimensions with the exception of our DPD 20 series, which are slightly wider to accommodate ease of fitting installation. For the DPD 20 series, we do offer adapter plates to fit their Farval counterpart's mounting.

Ordering Information

Model	Adapter Plate
DPD22	AP224
DPD24	AP224
DPD26	AP268
DPD28	AP268

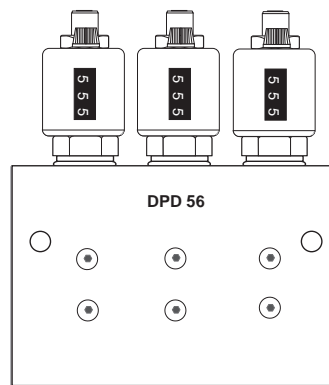


Cycle Counter

Our cycle monitor provides the user with an accurate recording of the number of complete cycles the measuring valve has performed. This allows for constant and reliable system monitoring--reducing troubleshooting time considerably.

Technical Information

Valve Series	Overall Height (in.)	Maximum Discharge (in ³)	Minimum Discharge (in ³)
DPS30CM	4.56	0.073	0.037
DPS40CM	5	0.150	0.076
DPS50CM	5.25	0.305	0.152
DPD30CM	4.56	0.073	0.048
DPD50CM	5.25	0.305	0.152



Ordering Information

The cycle monitor is sold as an assembly and comes pre-installed with a standard measuring valve. To order a measuring valve with cycle monitoring simply select the appropriate measuring valve and add the suffix **-CM**. For example, a DPD56 with cycle monitoring would be ordered as a DPD56CM.

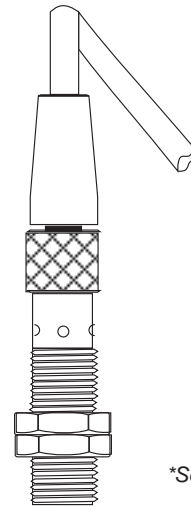
ACCESSORIES contd.

The PXS series (available in AC and DC) is an ideal choice for electronically checking lubricant delivery status for critical bearings, areas that cannot be checked by plant personnel (eg.hostile environments), and zone checking.

The PXS series has a simple, low-cost design that tolerates most environments.

Specifications:

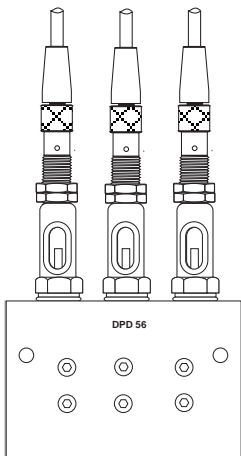
- Size: DC: 2.8" Long / AC: 2.7" Long
- Material: Nickel Plated Brass
- Connector: 4 pin
- LED Indicator: 360 degree visible
- Voltage: DC: 10-30 VDC / AC: 20-250 VAC
- Output: DC: PNP, 10-30VDC,200 mA max.,N.O.
AC:20-250 VAC, 400mA, N.O.
- Sensing Distance: 0.078"
- Temp. Rating: 13 F - 158 F
- Enclosure (including connector): IP67 (NEMA 4)



*Sensor and cable shown.

Ordering Information

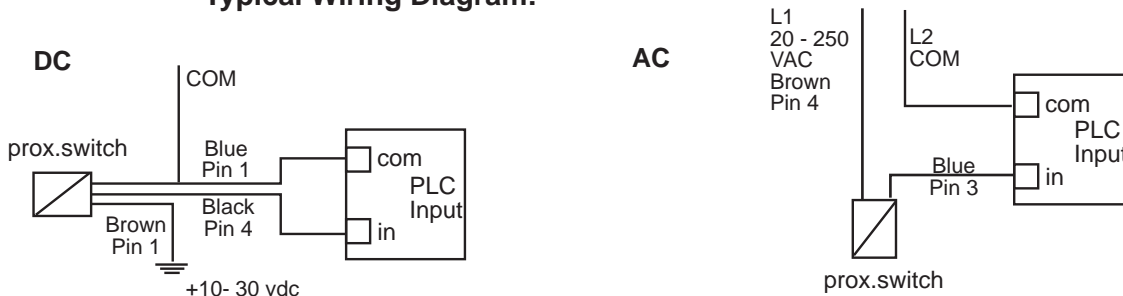
Valve Series	Prox. Switch Only		Prox. Switch ASM (includes 16' cable)		Cable Only
	(DC)	(AC)	(DC)	(AC)	
DPD 20	n/a	n/a	n/a	n/a	n/a
DPD 50 / DPS 30, 40 and 50	PXS50-1	PXS50-1AC	PXA50-1	PXA50-1AC	XSC-192
DPS 60	PXS60-1	PXS60-1AC	PXA60-1	PXA60-1AC	XSC-192



Installation:

1. The valve stems should be at full stroke. Check to make sure this is the case.
2. Using the proper screwdriver, remove both adjustment screws located on the top of the valve's packing gland.
3. Carefully screw in the PXS switch into the packing gland until it gently rests on top of the indicator stem.
4. Now turn the switch counterclockwise one half to one revolution and tighten the jam nuts provided.
5. The PXS is now ready to be wired into the proper PLC or multiplexer.

Typical Wiring Diagram:



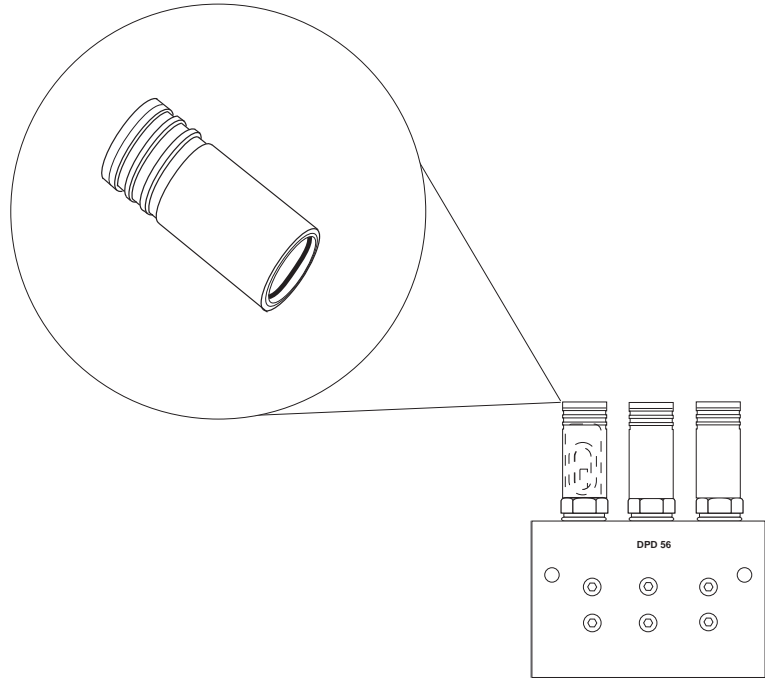
ACCESSORIES contd.

Brass Indicator Covers

The D1732E-B indicator cover is designed to protect the packing gland in areas where the standard vinyl indicator cover will not suffice.

It is constructed of solid brass and features a ridged top that enables easy removal.

To install, first remove the existing vinyl indicator cover. Place the brass indicator cover over the packing gland and press down until the brass indicator cover reaches the hex on the bottom of the packing gland.



Ordering Information

Currently, we only offer the brass indicator covers for the DPD 50 series.

Model Series	Indicator Cover
DPD 50	D1732E-B

Weld Plates

Dyna-Power offers weld plates for all of our dual line measuring valves. Valves can be mounted on these plates which then can be welded in their desired location. Custom plates can be manufactured for special applications. Please call Dyna-Power for assistance.

Ordering Information

Please refer to the table below for ordering the appropriate weld plate:

Model No.	Weld Plate	Model No.	Weld Plate
DPD22	DPV22DL	DPS31	DPV31SL
DPD24	DPV24DL	DPS32	DPV32SL
DPD26	DPV26DL	DPS33	DPV33SL
DPD28	DPV28DL	DPS34	DPV34SL
DPD32	DPV32DL	DPS41	DPV41SL
DPD34	DPV34DL	DPS42	DPV42SL
DPD36	DPV36DL	DPS43	DPV43SL
DPD38	DPV38DL	DPS44	DPV44SL
DPD52	DPV52DL	DPS51	DPV51SL
DPD54	DPV54DL	DPS52	DPV52SL
DPD56	DPV56DL	DPS53	DPV53SL
DPD58	DPV58DL	DPS54	DPV54SL



Part Number Conversion / Quick Order Guide

Discharge Range*	# Outlets	Dyna-Power Part No.	Farval® Part No.	Lincoln®/ Duomatic® Part No.	
0.006 - 0.037 cu.in.	2	DPD 22	DD22-250	NA	DUAL DISCHARGE
	4	DPD 24	DD24-250	NA	
	6	DPD 26	DD26-250	NA	
	8	DPD 28	DD28-250	NA	
0.012 - 0.073 cu.in.	2	DPD 32	NA	NA	
	4	DPD 34	NA	NA	
	6	DPD 36	NA	NA	
	8	DPD 38	NA	NA	
0.073 - 0.305 cu.in.	2	DPD 52	DD52-250	LD 52 (251317)	
	4	DPD 54	DD54-250	LD 54 (251318)	
	6	DPD 56	DD56-250	LD 56 (251319)	
	8	DPD 58	DD58-250	LD 58 (251320)	
0.012 - 0.073 cu.in.	1	DPS 31	DM31-100	NA	SINGLE DISCHARGE
	2	DPS 32	DM32-100	NA	
	3	DPS 33	DM33-100	NA	
	4	DPS 34	DM34-100	NA	
0.037 - 0.15 cu.in.	1	DPS 41	DM41-100	NA	
	2	DPS 42	DM42-100	NA	
	3	DPS 43	DM43-100	NA	
	4	DPS 44	DM44-100	NA	
0.073 - 0.30 cu.in.	1	DPS 51	DM51-100	NA	
	2	DPS 52	DM52-100	NA	
	3	DPS 53	DM53-100	NA	
	4	DPS 54	DM54-100	NA	
0.18 - 0.91 cu.in.	1	DPS 61	DM61-100	NA	
	2	DPS 62	DM62-100	NA	

* The discharge ranges are specific to Dyna-Power's measuring valves and may slightly vary from the published discharge rates of the other manufacturers listed.

Other Ordering Options:

Crossported Valves:

Dyna-Power will, for a minimal charge, ship our measuring valves already cross-ported. To prevent confusion, these valves will be clearly marked by both stamp and sticker.

To order, simply add an "X" after the valve model. For example, to order a DPD56 already cross-ported, order a DPD56X.

Indicatorless Valves:

Dyna-Power offers measuring valves less indicator guide. We currently only offer this option for the DPD 50 series and only for full discharge.

For ordering information, please contact Customer Service at (708) 389-7200.