

Application

Series D81 hydraulic directional control valves are high performance, solenoid controlled, pilot operated, 2-stage, 4-way valves. They are available in 2 or 3-position styles and are manifold mounted. These valves conform to NFPA's D08, CETOP 8 mounting pattern.

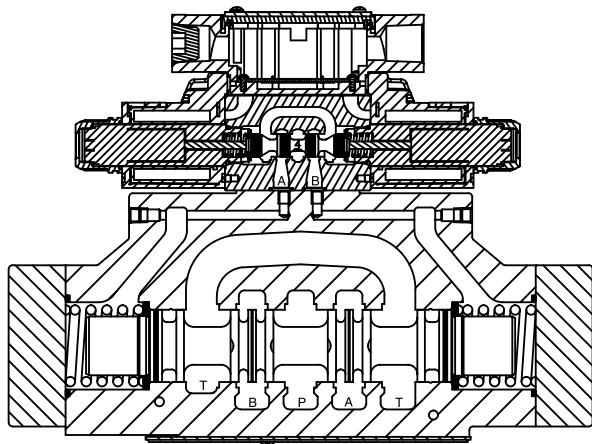
Operation

Series D81 directional valves consist of a 5-chamber style main body, a case hardened sliding spool, and a pilot valve or pilot operators (hydraulic or pneumatic).

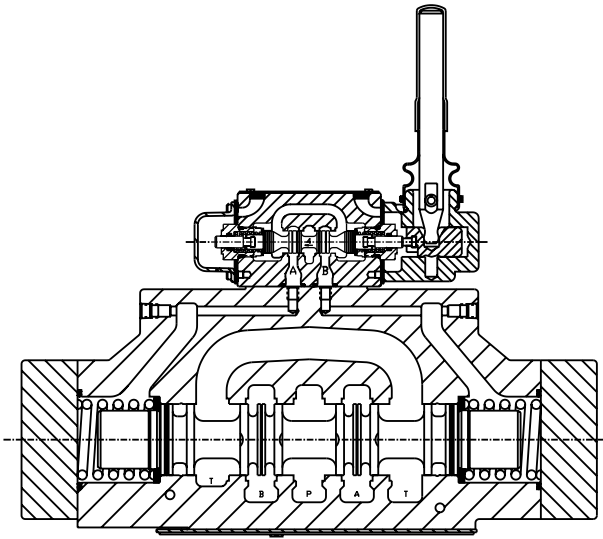
Features

- Easy access mounting bolts.
- 345 Bar (5000 PSI) pressure rating.
- Flows to 622 LPM (160 GPM) depending on spool.
- Choice of four operator styles.
- Rugged four land spools.
- Low pressure drop.
- Phosphate finish.

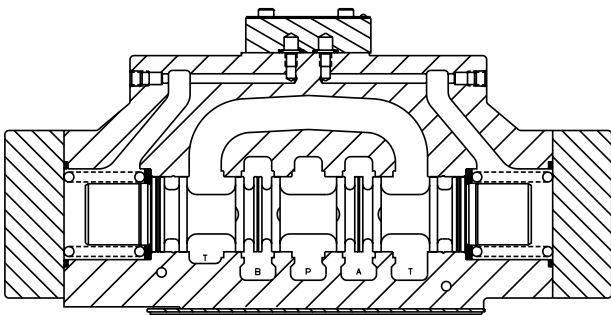
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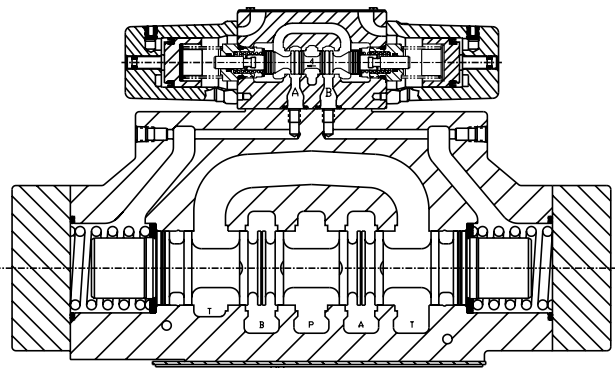
D81VW Solenoid Operated Plug-in Conduit Box



D81VL Lever Operated



D8P Oil Pilot Operated



D81VA Air Pilot Operated

General Description

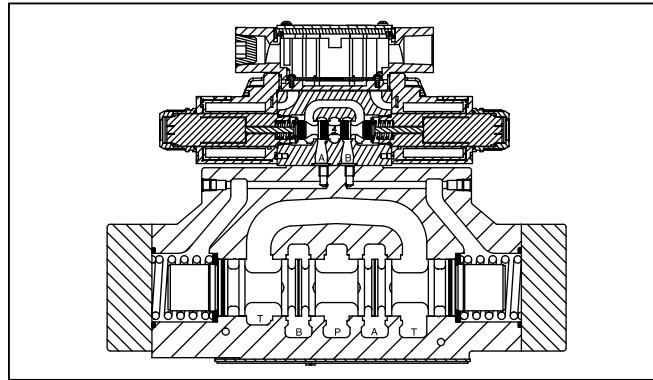
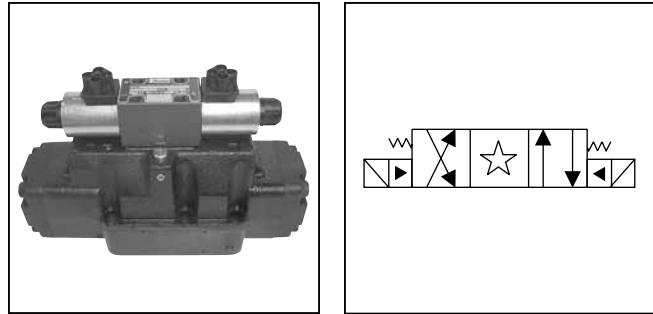
Series D81VW directional control valves are 5-chamber, pilot operated, solenoid controlled valves. They are available in 2 or 3-position styles. These valves are manifold or subplate mounted, and conform to NFPA's D08, CETOP 8 mounting pattern.

Operation





Series D81VW pilot operated valves are standard with low shock spools and pilot orifice. The orifice can be removed if a faster shift is required. It is recommended, however, that all systems operating above 138 Bar (2000 PSI) use the standard valve to avoid severe shock.

Features

- Low pressure drop design.
- Hardened spools provide long life.
- Fast response option available.
- Wide variety of voltages and electrical connection options.
- Explosion proof availability.
- No tools required for coil removal.



Specifications

| | |
|-----------------------------------|--|
| Mounting Pattern | NFPA D08, CETOP 8, NG25 |
| Maximum Operating Pressure | 345 Bar (5000 PSI) Standard 207 Bar (3000 PSI) 10 Watt CSA  207 Bar (3000 PSI) |
| Maximum Tank Line Pressure | Internal Drain Model: 103 Bar (1500 PSI) AC Only 207 Bar (3000 PSI) DC Std., AC Optional External Drain Model: 345 Bar (5000 PSI) CSA  103 Bar (1500 PSI) |
| Maximum Drain Pressure | 103 Bar (1500 PSI) AC Only 207 Bar (3000 PSI) DC Std., AC Optional CSA  103 Bar (1500 PSI) |
| Minimum Pilot Pressure | 5.1 Bar* (75 PSI) |
| Maximum Pilot Pressure | 345 Bar (5000 PSI) Standard CSA  207 Bar (3000 PSI) |
| Nominal Flow | 302 LPM (80 GPM) |

* 6.9 Bar (100 PSI) for spool configurations 002, 007, 008, 009 & 014.

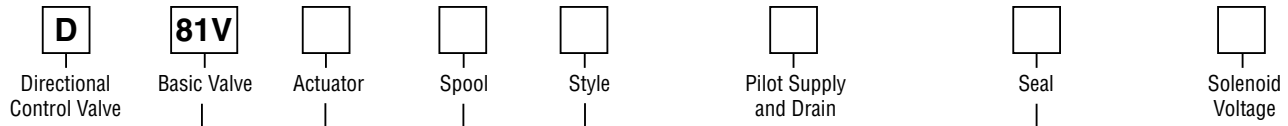
Response Time

Response times (milliseconds) are measured at 345 Bar (5000 PSI) and 300 LPM (80 GPM) with various pilot pressures as indicated.

| Solenoid Type | Pilot Pressure | Pull-In | | Drop-Out | |
|---------------|----------------|---------|------|----------|------|
| | | Std | Fast | Std | Fast |
| DC | 500 | 140 | 100 | 70 | 70 |
| | 1000 | 125 | 90 | 76 | 76 |
| | 2000 | 100 | 70 | 70 | 70 |
| AC | 500 | 100 | 60 | 60 | 60 |
| | 1000 | 85 | 50 | 60 | 60 |
| | 2000 | 60 | 30 | 60 | 60 |

Because of the high drain line pressure transients generated during shifting, use of the fast response option is not recommended for pilot pressures exceeding 138 Bar (2000 PSI).

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NFPA D08
 CETOP 8
 DIN NG25
 High Flow, D03 Pilot

| Code | Description |
|------|-----------------------------|
| W* | Solenoid, Wet Pin, Screw-in |
| HW* | Reversed Wiring |

| Code | Description |
|------|--------------|
| N | Nitrile |
| V | Fluorocarbon |

| Code | Description |
|------|--|
| 1 | Internal Pilot, External Drain |
| 2 | External Pilot, External Drain |
| 3 | Internal Pilot w/Check, External Drain |
| 4* | Internal Pilot, Internal Drain |
| 5 | External Pilot, Internal Drain |
| 6 | Internal Pilot w/Check, Internal Drain |

| Code | Description |
|------|--------------------------------|
| A* | 24/50 VAC |
| D | 120 VDC |
| G | 198 VDC |
| J | 24 VDC |
| K | 12 VDC |
| N** | 220/50 VAC |
| Q* | 100/60 VAC |
| QD† | 100 VAC/60 Hz 100 VAC/50 Hz |
| R | 24/60 VAC |
| T | 240/60 - 220/50 VAC |
| U | 98 VDC |
| Y | 120/60 - 110/50 VAC |
| Z | 250 VDC |

* Valve schematic symbols are per NFPA/ANSI standards, providing flow P to A when energizing solenoid A. Note operators reverse sides for #008 and #009 spools. See installation information for details. To configure per DIN standards (A coil over A port, B coil over B port) code valves as D81VHW***.

* Not available with 002, 007, 008, 009, 014 & 030 spools.

* High Watt Coil only.
 ** Explosion Proof only.
 † Available in DIN only.

| Code | Symbol | Code | Symbol |
|-------|--------|-------|--------|
| 001 | | 012 | |
| 002 | | 014 | |
| 003 | | 015 | |
| 004 | | 016 | |
| 005 | | 020* | |
| 006 | | 030** | |
| 007 | | 081 | |
| 008* | | 082 | |
| 009** | | | |
| 011 | | | |

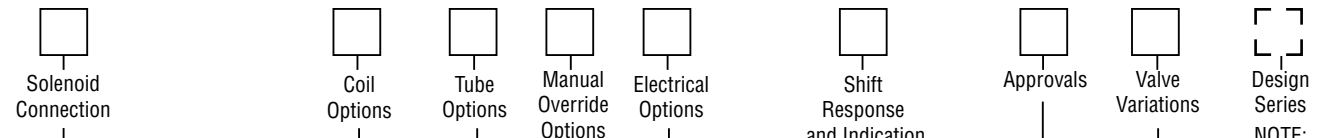
* 008 & 020 spool have closed crossover.
 ** 009 & 030 spool have open crossover.

| Code | Description | Symbol |
|------|--|--------|
| B* | Single solenoid, 2 position, spring offset. P to A and B to T in offset position. | |
| C | Double solenoid, 3 position, spring centered. | |
| D* | Double solenoid, 2 position, detent. | |
| E | Single solenoid, 2 position, spring centered. P to B and A to T when energized. | |
| F** | Single solenoid, 2 position, spring offset, energized to center. Position spool spacer on A side. P to A and B to T in spring offset position. | |
| H* | Single solenoid, 2 position, spring offset. P to B and A to T in offset position. | |
| K | Single solenoid, 2 position, spring centered. P to A and B to T when energized. | |
| M** | Single solenoid, 2 position, spring offset, energized to center position. Spool spacer on B side. P to B and A to T in spring offset position. | |

* Available with 020 and 030 spools only.
 ** High watt coil only.

Bold: Designates Tier I products and options.

Non-bold: Designates Tier II products and options. These products will have longer lead times.



| Code | Description |
|------------|-----------------------------|
| C* | Leadwire Conduit Box |
| D** | Metric Plug (M12X1), DESINA |
| E† | Explosion Proof |
| G†† | Plug-In Conduit Box |
| J# | Deutsch (DT06-2S) |
| M# | Metri-Pack (150) |
| P | DIN with Plug |
| S# | Dual Spade |
| W† | DIN w/o Plug |

* No variations – See Plug-in.
 ** DC only, lights, diode surge suppressor, not CSA approved.
 † Not available with lights.
 †† Required for variations on conduit box style. Must have lights.
 # DC only, no lights, not CSA approved.

| Code | Description |
|-------------|--------------------------------------|
| Omit | Standard Response, No Switch |
| I3 | Monitor Switch, 'A' & 'B' Port End |
| I6 | Monitor Switch, 'A' & 'B' Port Start |

Note: Not CE or CSA approved. Not available with 'F' or 'M' styles.

| Code | Description |
|-------------|------------------------|
| Omit | No Options |
| J* | Diode Surge Suppressor |
| Z† | Rectified Coil |

* DC only. DIN coil must include plug with lights.
 † DC tube standard.

| Code | Description |
|-------------|-----------------------|
| Omit | Standard Valve |
| 3*† | CSA US |
| 4*# | CSA Approved |

* Not available with AC high pressure tube.
 # Valve is derated with this option.
 † B, C, H styles only. J, K, Y, U voltages only with C, G, W solenoid connections only. Conforms to UL429.

| Code | Description |
|--------------|------------------------------------|
| Omit* | High Watt |
| D** | Explosion Proof, EEXD ATEX |
| E** | Explosion Proof, EEXME ATEX |
| F† | Low Watt |
| L†† | 10 Watt |
| O** | Explosion Proof, MSHA |
| T# | Explosion Proof, Ex d IIC ATEX/CSA |
| U** | Explosion Proof, UL/CSA |

* AC ambient temperature must not exceed 60°C (140°F).
 ** 60 Hz only on AC, no options.
 † AC only.
 †† DC and AC rectified only.
 # J, K and Y voltages only. Dual frequency on AC, no options.

| Code | Description |
|-------------|--------------------|
| Omit | Standard |
| P | Extended with Boot |
| T† | None |

† DC or AC Rectified only. Manual Override options not available with Explosion Proof.

| Code | Description |
|-------------|-------------------------------|
| Omit | Standard Pressure |
| | 103 Bar (1500 PSI) AC |
| | 207 Bar (3000 PSI) DC |
| H* | High Pressure, AC only |
| | 207 Bar (3000 PSI) |

* Not available with CSA.

Valve Weight:
 Double Solenoid 19.6 kg (43.2 lbs.)
Seal Kit:
 Nitrile SKD81VWN91
 Fluorocarbon SKD81VWV91

Mounting Bolt Kits

| UNC Bolt Kits for use with D6 and D8 Directional Control Valves & Sandwich Valves | | | | |
|---|--|----------------|----------------|------------------|
| | Number of Sandwich Valves @ 2.75" (70mm) thickness | | | |
| | 0 | 1 | 2 | 3 |
| D6 | BK227 2.50" | BK121 5.25" | BK122 8.00" | BK123 10.75" |
| D6 plus tapping plate | BK161 3.50" | BK170 6.25" | BK171 9.00" | BK172 11.75" |
| D8 | BK228 3.00" | BK131 5.75" | BK132 8.50" | BK133 11.25" |
| D8 plus tapping plate | BK173 4.00" | BK174 6.75" | BK175 9.50" | BK114 12.125" |

Note: All bolts are SAE grade 8, 1/2-13 UNC-3A thread, torque to 133 N.m. (100 ft.-lbs.)

Bold: Designates Tier I products and options.

Non-bold: Designates Tier II products and options. These products will have longer lead times.

Valve Variations

A

| Code | Description |
|------|---|
| 5* | Signal Lights – Standard Signal Lights – Hirsch. (DIN with Plug) |
| 7B** | Manaplug – Brad Harrison (12x1) Micro with Lights |
| 56** | Manaplug (Mini) with Lights |
| 20 | Fast Response |
| 1C** | Manaplug (Mini) Single Sol. 5-pin, with Lights |
| 1D** | Manaplug (Micro) Single Sol. 5-pin, with Lights |
| 1G** | Manaplug (Mini) Single Sol. 5-pin, with Stroke Adjust 'A' & 'B' End and Lights |
| 1H** | Manaplug (Micro) Single Sol. 5-pin, with Stroke Adjust 'A' & 'B' End and Lights |
| 1M** | Manaplug Opposite Normal |
| 1P | Painted Body |
| 1R | Stroke Adjust 'A' & 'B' End with Pilot Choke Meter In |
| 3A | Pilot Choke Meter Out |
| 3B | Pilot Choke Meter In |
| 3C | Pilot Pressure Reducer |
| 3D | Stroke Adjust 'B' End |
| 3E | Stroke Adjust 'A' End |
| 3F | Stroke Adjust 'A' & 'B' End |
| 3G* | Pilot Choke Meter Out with Lights |
| 3H* | Pilot Choke Meter In with Lights |
| 3J* | Pilot Pressure Reducer with Lights |
| 3K | Pilot Choke Meter Out with Stroke Adjust 'A' & 'B' End |
| 3L** | Pilot Choke Meter Out, Stroke Adjust 'A' & 'B' End with Lights and Manaplug — Brad Harrison Mini |
| 3M | Pilot Choke Meter Out, Pilot Pressure Reducer, Stroke Adjust 'A' & 'B' End |
| 3R | Pilot Choke Meter Out & Pilot Pressure Reducer |
| 3S** | Lights, Mini Manaplug, Pilot Choke Meter Out |
| 7Y** | M12x1 Manaplug (4-pin), Special Wiring, and Lights |

* DESINA, plug-in conduit box, and DIN with plug styles only.

** Must have plug-in style conduit box.

Reference Data

| Model | Spool Symbol | Maximum Flow, LPM (GPM) 345 Bar (5000 PSI) w/o Malfunction | Model | Spool Symbol | Maximum Flow, LPM (GPM) 345 Bar (5000 PSI) w/o Malfunction |
|----------|--------------|--|----------------------|--------------|--|
| D81V*001 | | 624 (160) | D81V*008 D81V*009 | | 312 (80) |
| D81V*002 | | 624 (160) | D81V*011 | | 624 (160) |
| D81V*003 | | 624 (160) | D81V*012 | | 312 (80) |
| D81V*004 | | 624 (160) | D81V*014 | | 312 (80) |
| D81V*005 | | 624 (160) | D81V*015 | | 624 (160) |
| D81V*006 | | 624 (160) | D81V*016 | | 624 (160) |
| D81V*007 | | 312 (80) | D81V*020 D81V*030 | | 624 (160) |

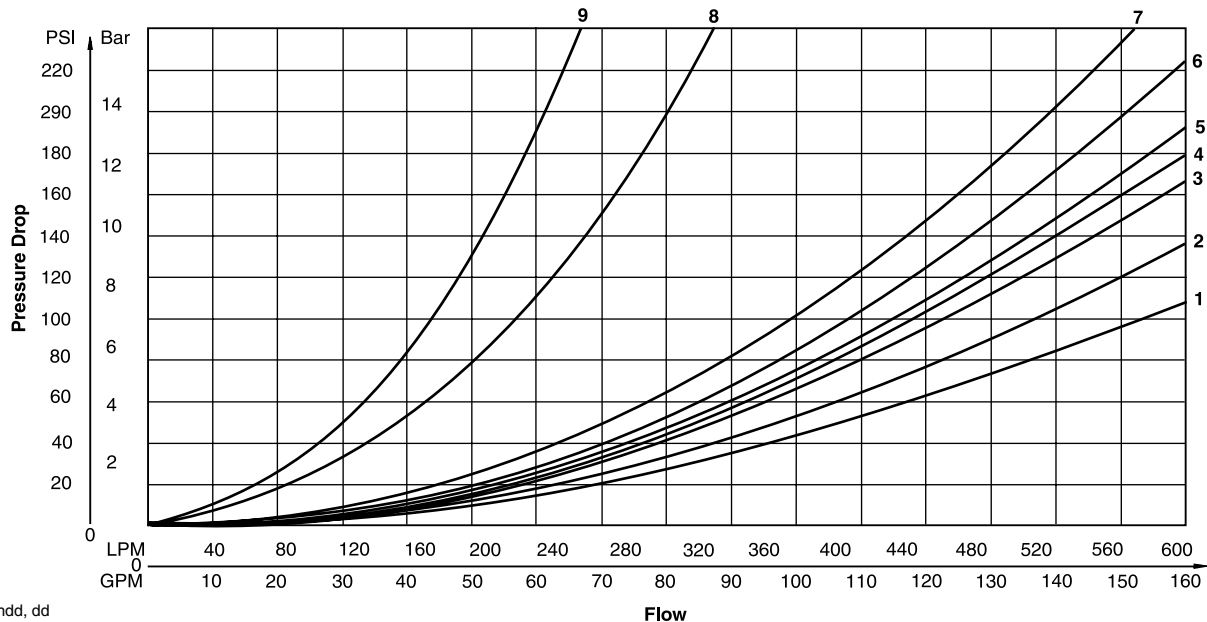
D81V* Series Pressure Drop Chart

The following chart provides the flow vs. pressure drop curve reference for the Series D81V* valve by spool type.

| VISCOSITY CORRECTION FACTOR | | | | | | | |
|---|----|-----|-----|-----|-----|-----|-----|
| Viscosity (SSU) | 75 | 150 | 200 | 250 | 300 | 350 | 400 |
| % of ΔP (Approx.) | 93 | 111 | 119 | 126 | 132 | 137 | 141 |
| Curves were generated using 100 SSU hydraulic oil. For any other viscosity, pressure drop will change as per chart. | | | | | | | |

| D81VW Pressure Drop Reference Chart – Curve Number | | | | | |
|--|-----|-----|-----|-----|-----|
| Spool No. | P-A | P-B | P-T | A-T | B-T |
| 001 | 1 | 1 | – | 3 | 4 |
| 002 | 2 | 2 | 5 | 4 | 6 |
| 003 | 1 | 1 | – | 4 | 4 |
| 004 | 1 | 1 | – | 4 | 6 |
| 005 | 2 | 2 | – | 3 | 4 |
| 006 | 2 | 2 | – | 3 | 4 |
| 007 | 1 | 2 | 8 | 3 | 6 |
| 009 | 2 | 2 | 7 | 3 | 4 |
| 011 | 1 | 1 | – | 3 | 4 |
| 012 | 1 | 1 | 9 | 3 | 4 |
| 014 | 2 | 1 | 8 | 6 | 3 |
| 015 | 2 | 2 | – | 5 | 5 |
| 016 | 2 | 2 | – | 4 | 3 |
| 020/030 | 2 | 2 | – | 3 | 4 |

Performance Curves



D81.indd, dd

Solenoid Ratings

| | |
|---|--|
| Insulation System | Class F |
| Allowable Deviation from rated voltage | -15% to +10% for DC and AC rectified coils -5% to +5% for AC Coils |
| Armature | Wet pin type |
| CSA File Number | LR60407 |
| Environmental Capability | DC Solenoids meet NEMA 4 and IP67 when properly wired and installed. Contact HVD for AC coil applications. |

Explosion Proof Solenoid Ratings*

| | |
|-------------------------------|---|
| U.L. & CSA (EU) | Class I, Div 1 & 2, Groups C & D Class II, Div 1 & 2, Groups E, F & G As defined by the N.E.C. |
| MSHA (EO) | Complies with 30CFR, Part 18 |
| ATEX (ED) | Complies with ATEX requirements for: Exd, Group IIB; EN50014: 1999+ Amds. 1 & 2, EN50018: 2000 |
| ATEX & CSA/US (ET) | Complies with ATEX EN60079-0, EN60079-1 Ex d IIC; CSA/US Ex d IIC, AEx d IIC for Class I, Zone 1, UL1203, UL1604, CSA E61241,1 Class II, Div 1 |

* Allowable Voltage Deviation ±10%.
 Note that Explosion Proof AC coils are single frequency only.

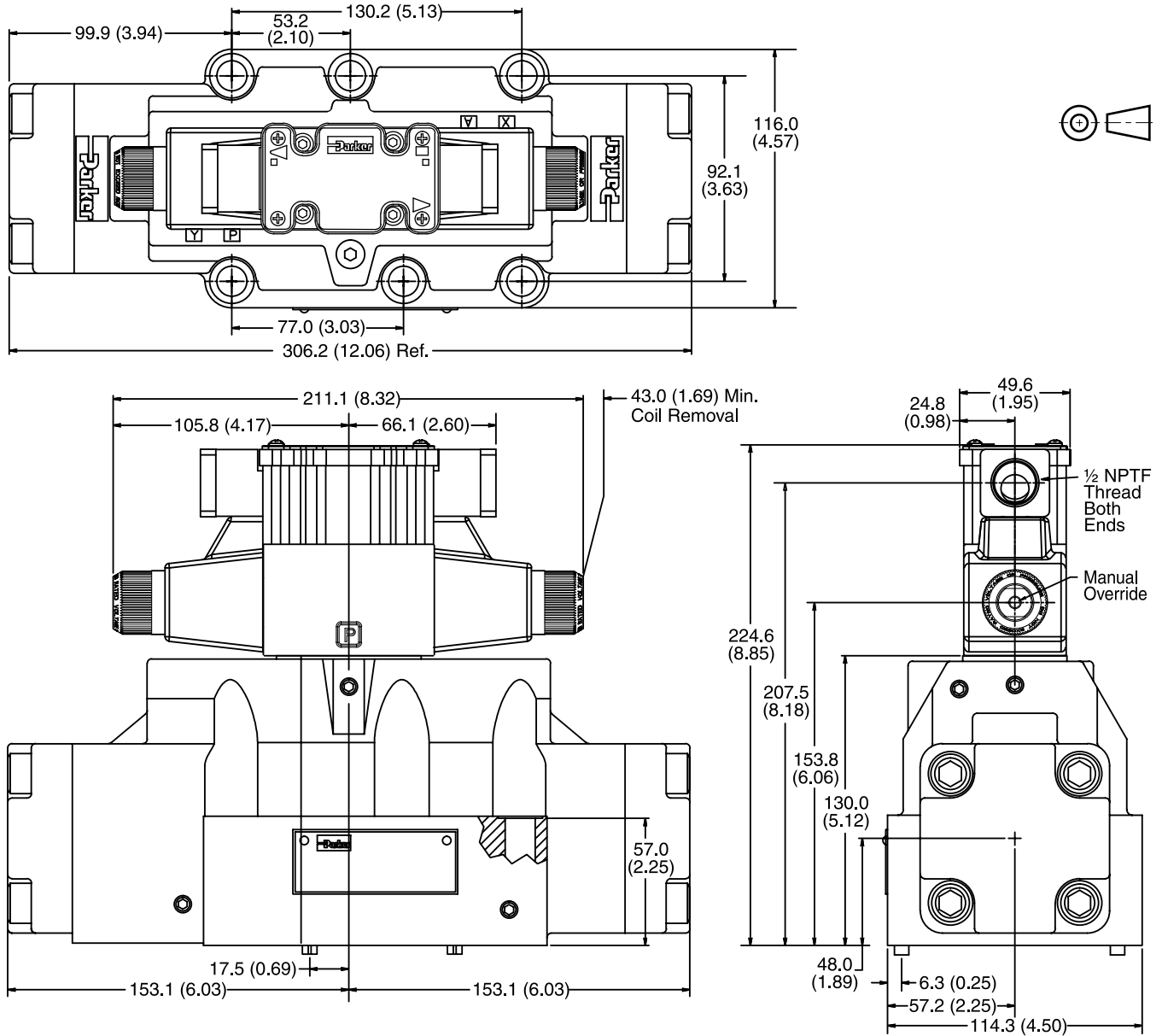
| Code | | Voltage | In Rush Amps Amperage | In Rush VA | Holding Amps @ 3MM | Watts | Resistance |
|---------------------------------------|------------|----------------------|-----------------------|------------|--------------------|-------|--------------|
| Voltage Code | Power Code | | | | | | |
| D | L | 120 VDC | N/A | N/A | 0.09 Amps | 10 W | 1584.00 ohms |
| D | Omit | 120 VDC | N/A | N/A | 0.26 Amps | 30 W | 528.00 ohms |
| G | Omit | 198 VDC | N/A | N/A | 0.15 Amps | 30 W | 1306.80 ohms |
| J | L | 24 VDC | N/A | N/A | 0.44 Amps | 10 W | 51.89 ohms |
| J | Omit | 24 VDC | N/A | N/A | 1.32 Amps | 30 W | 17.27 ohms |
| K | L | 12 VDC | N/A | N/A | 0.88 Amps | 10 W | 12.97 ohms |
| K | Omit | 12 VDC | N/A | N/A | 2.64 Amps | 30 W | 4.32 ohms |
| L | L | 6 VDC | N/A | N/A | 1.67 Amps | 10 W | 3.59 ohms |
| L | Omit | 6 VDC | N/A | N/A | 5.00 Amps | 30 W | 1.20 ohms |
| Q | Omit | 100 VAC / 60 Hz | 2.05 Amps | 170 VA | 0.77 Amps | 30 W | 19.24 ohms |
| QD | F | 100 VAC / 60 Hz | 1.35 Amps | 135 VA | 0.41 Amps | 18 W | 31.20 ohms |
| QD | F | 100 VAC / 50 Hz | 1.50 Amps | 150 VA | 0.57 Amps | 24 W | 31.20 ohms |
| R | F | 24/60 VAC, Low Watt | 6.67 Amps | 160 VA | 2.20 Amps | 23 W | 1.52 ohms |
| T | Omit | 240/60 VAC | 0.83 Amps | 199 VA | 0.30 Amps | 30 W | 120.40 ohms |
| T | Omit | 220/50 VAC | 0.87 Amps | 191 VA | 0.34 Amps | 30 W | 120.40 ohms |
| T | F | 240/60 VAC, Low Watt | 0.70 Amps | 168 VA | 0.22 Amps | 21 W | 145.00 ohms |
| T | F | 220/50 VAC, Low Watt | 0.75 Amps | 165 VA | 0.26 Amps | 23 W | 145.00 ohms |
| U | L | 98 VDC | N/A | N/A | 0.10 Amps | 10 W | 960.00 ohms |
| U | Omit | 98 VDC | N/A | N/A | 0.31 Amps | 30W | 288.00 ohms |
| Y | Omit | 120/60 VAC | 1.7 Amps | 204 VA | 0.60 Amps | 30 W | 28.20 ohms |
| Y | Omit | 110/50 VAC | 1.7 Amps | 187 VA | 0.68 Amps | 30 W | 28.20 ohms |
| Y | F | 120/60 VAC, Low Watt | 1.40 Amps | 168 VA | 0.42 Amps | 21 W | 36.50 ohms |
| Y | F | 110/50 VAC, Low Watt | 1.50 Amps | 165 VA | 0.50 Amps | 23 W | 36.50 ohms |
| Z | L | 250 VDC | N/A | N/A | 0.04 Amps | 10 W | 6875.00 ohms |
| Z | Omit | 250 VDC | N/A | N/A | 0.13 Amps | 30 W | 1889.64 ohms |
| Explosion Proof Solenoids | | | | | | | |
| R | | 24/60 VAC | 7.63 Amps | 183 VA | 2.85 Amps | 27 W | 1.99 ohms |
| T | | 240/60 VAC | 0.76 Amps | 183 VA | 0.29 Amps | 27 W | 1.34 ohms |
| N | | 220/50 VAC | 0.77 Amps | 169 VA | 0.31 Amps | 27 W | 1.38 ohms |
| Y | | 120/60 VAC | 1.60 Amps | 192 VA | 0.58 Amps | 27 W | 33.50 ohms |
| P | | 110/50 VAC | 1.47 Amps | 162 VA | 0.57 Amps | 27 W | 34.70 ohms |
| K | | 12 VDC | N/A | N/A | 2.75 Amps | 33 W | 4.36 ohms |
| J | | 24 VDC | N/A | N/A | 1.38 Amps | 33 W | 17.33 ohms |
| "ET" Explosion Proof Solenoids | | | | | | | |
| K | | 12 VDC | N/A | N/A | 1.00 Amps | 12 W | 12.00 ohms |
| J | | 24 VDC | N/A | N/A | 1.00 Amps | 13 W | 44.30 ohms |
| Y | | 120/60-50 VAC | N/A | N/A | 0.16 Amps | 17 W | 667.00 ohms |

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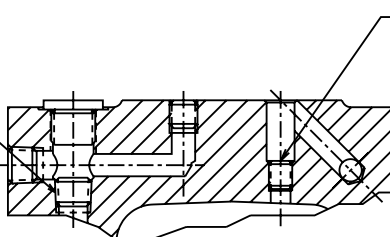
Inch equivalents for millimeter dimensions are shown in (**)

Plug-in Conduit Box, Double AC Solenoid

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1/16 Plug for Variations 2 & 5
Torque to:
11.67 ±1.67 Nm
(105 ±15 in-lbs)
Do Not Loctite



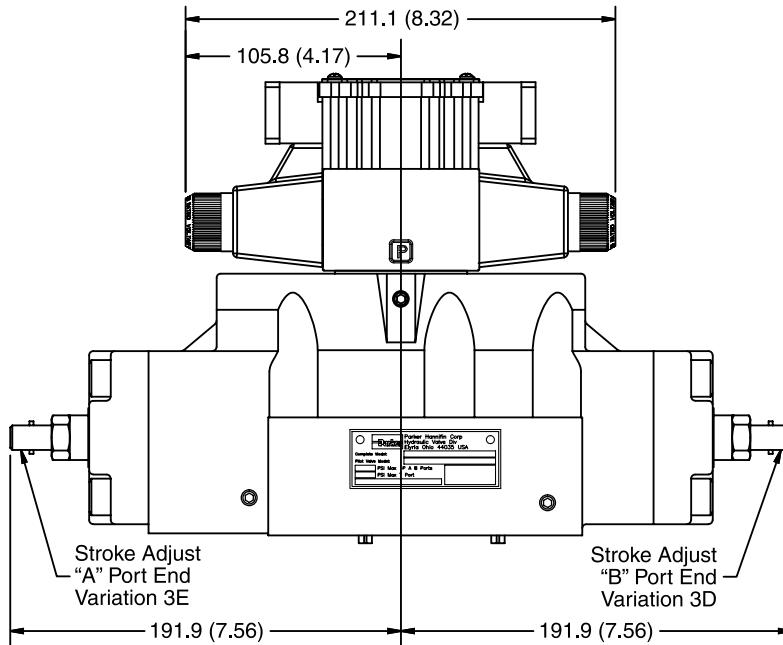
M6 x 1 Plug for Variations 1, 2 & 3
Torque to:
1.78 ±0.22 Nm
(16 ±2 in-lbs)
Do Not Loctite

Note: 57mm (2.24") from bottom of bolt hole counterbore to bottom of valve.

Inch equivalents for millimeter dimensions are shown in (**)

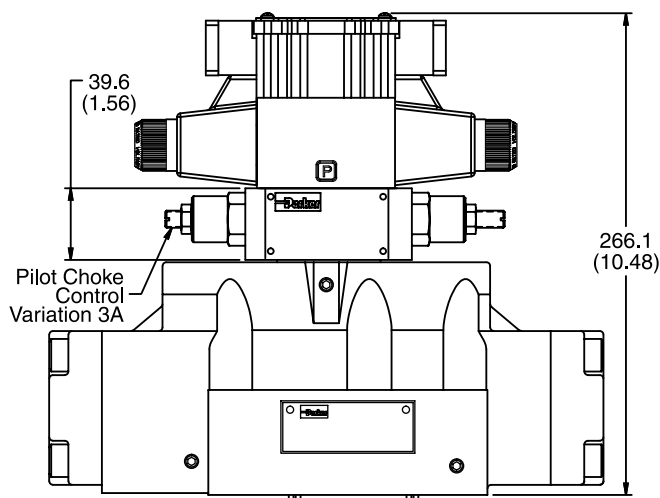
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Conduit Box and Stroke Adjust, Double AC Solenoid

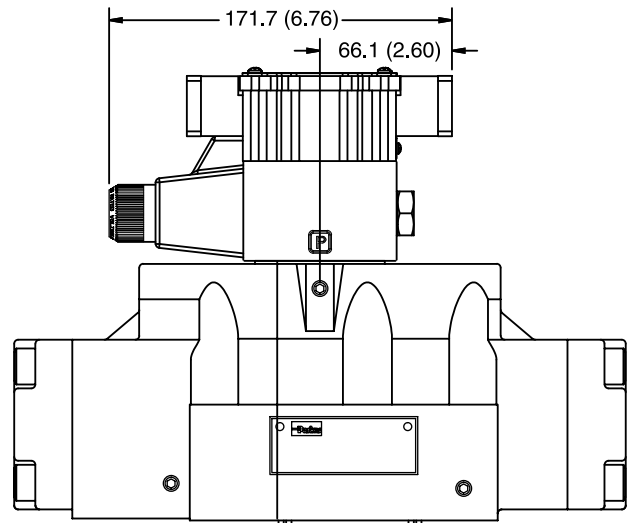


Note: 57mm (2.24") from bottom of bolt hole counterbore to bottom of valve.

**Conduit Box and Pilot Choke Control,
Double AC Solenoid**



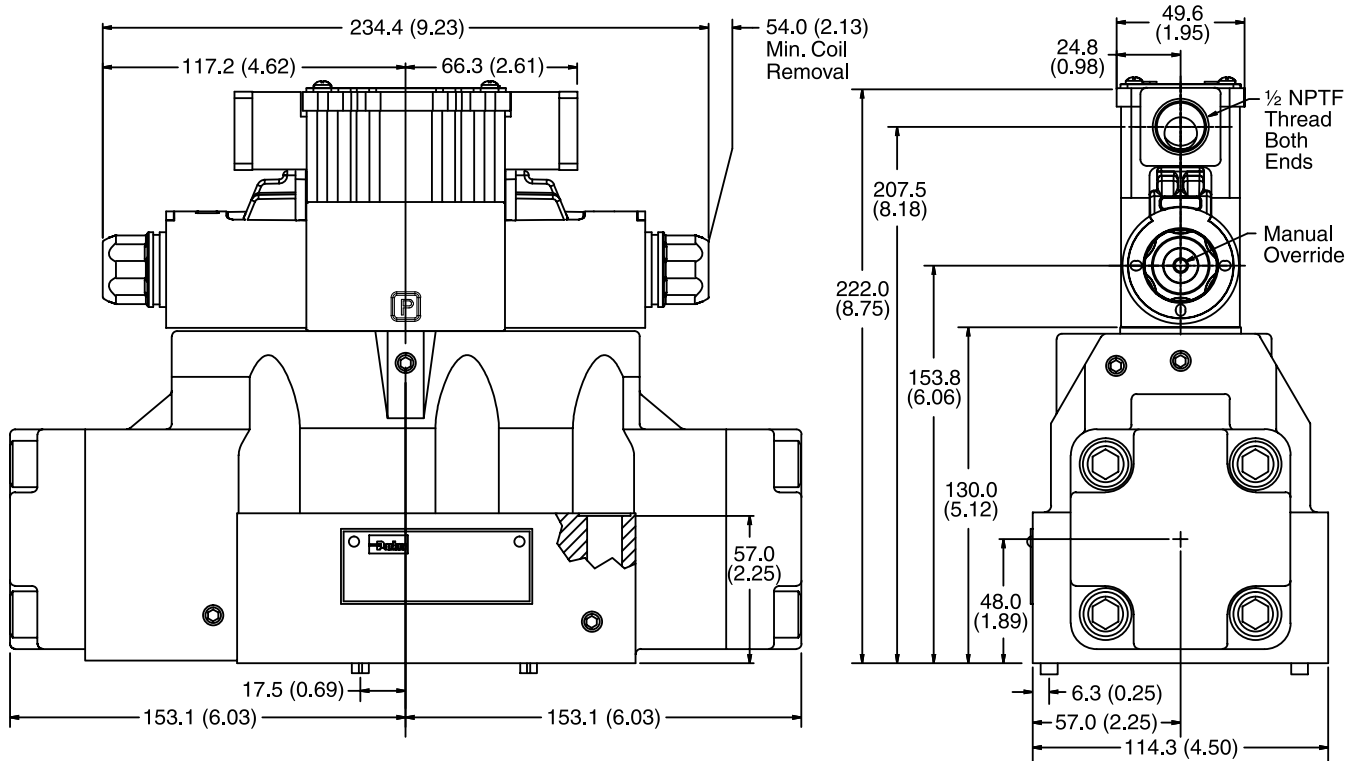
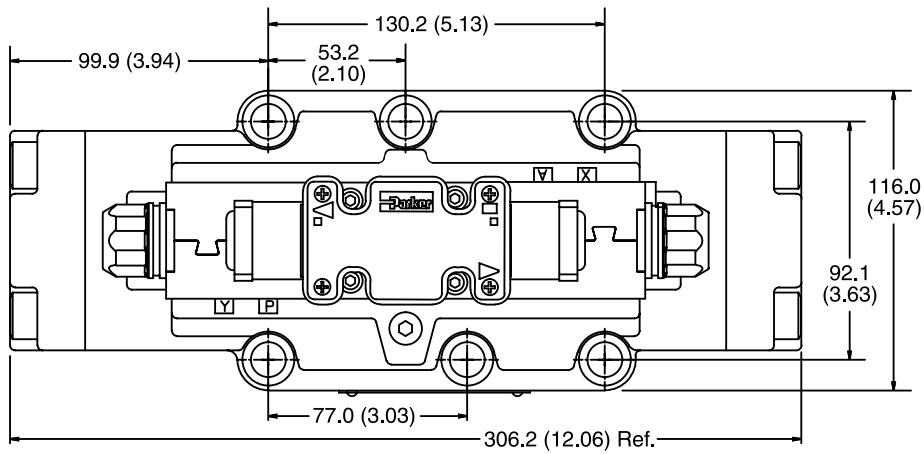
Conduit Box, Single AC Solenoid



Inch equivalents for millimeter dimensions are shown in (**)

Plug-In Conduit Box, Double DC Solenoid

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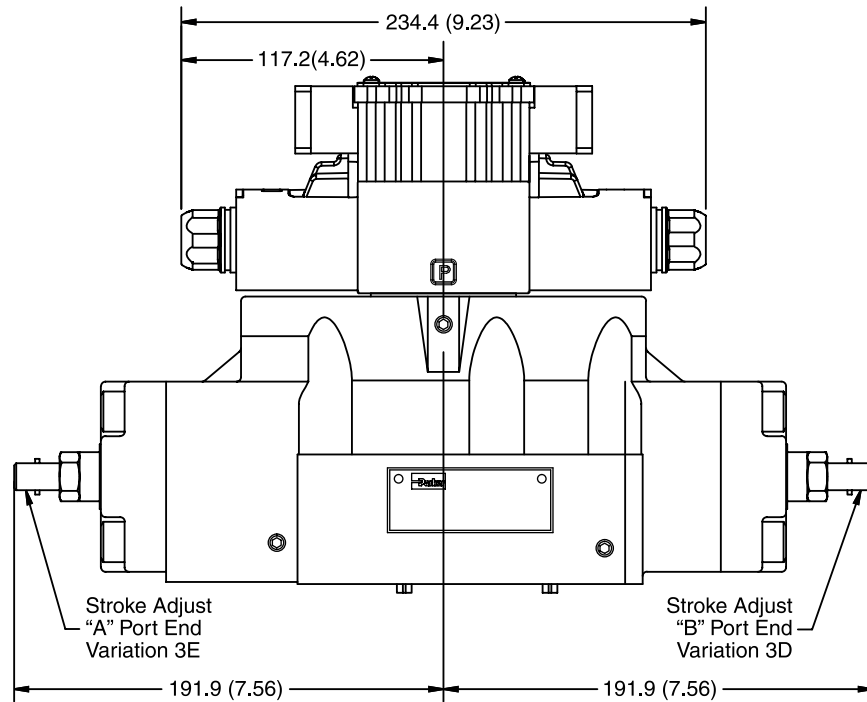
Note: 57mm (2.24") from bottom of bolt hole counterbore to bottom of valve.



Inch equivalents for millimeter dimensions are shown in (**)

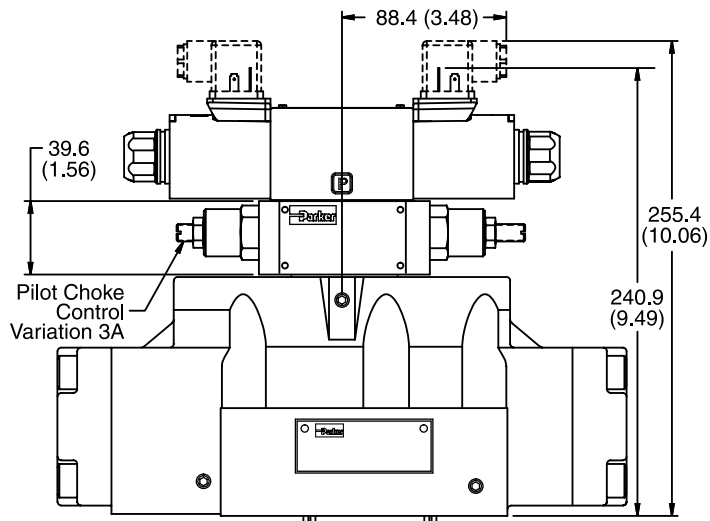
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Plug-In Conduit Box and Stroke Adjust, Double DC Solenoid

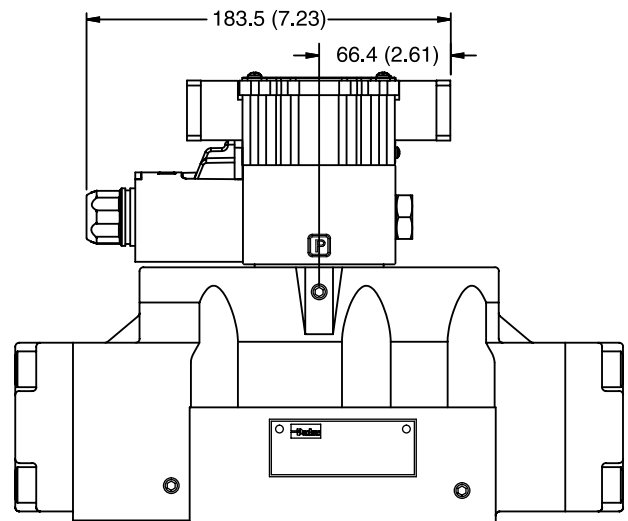


Note: 57mm (2.24") from bottom of bolt hole counterbore to bottom of valve.

**Hirschmann and Pilot Choke Control,
Double DC Solenoid**

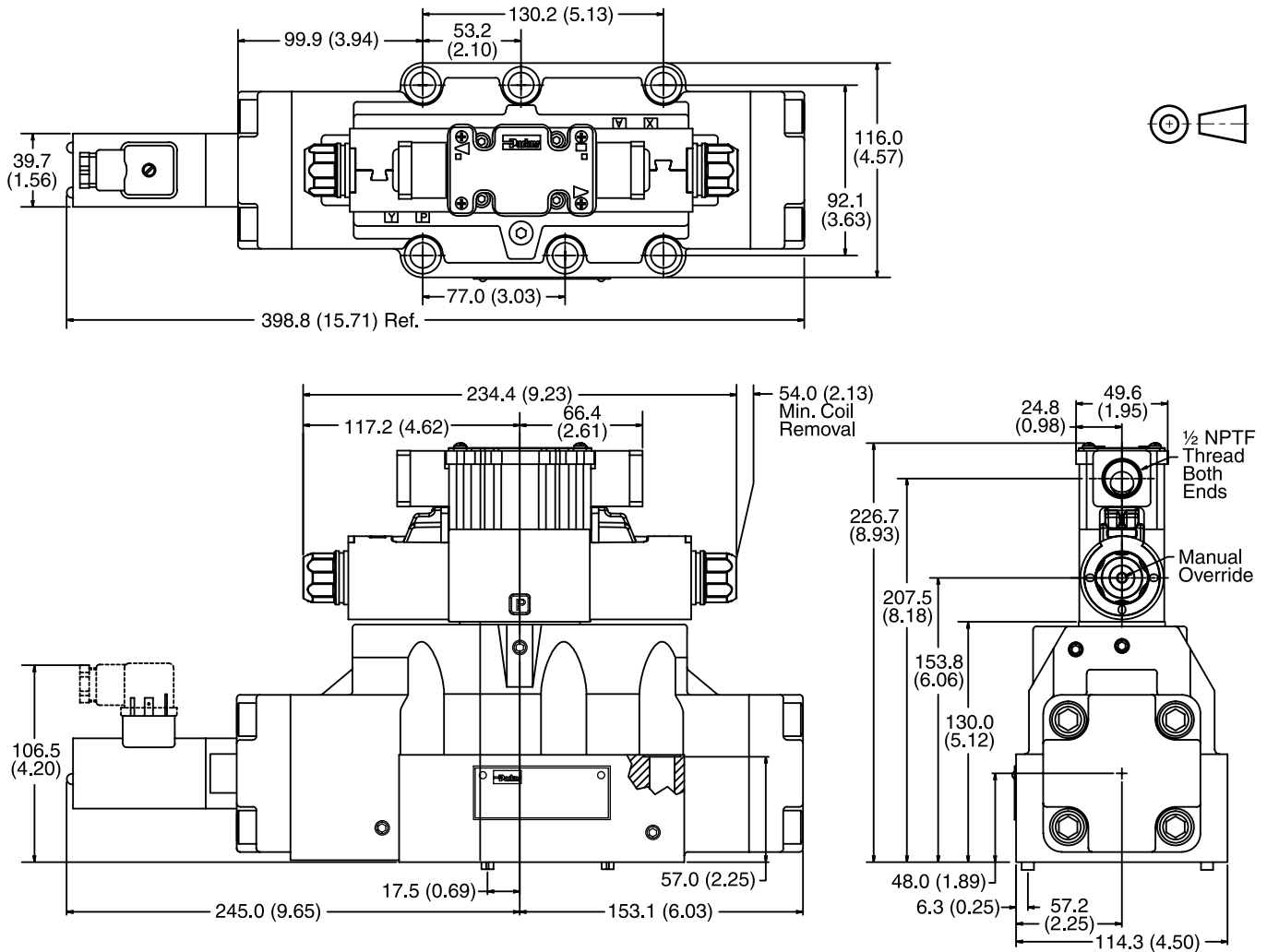


Plug-In Conduit Box, Single DC Solenoid



Inch equivalents for millimeter dimensions are shown in (**)

**Plug-In Conduit Box, Double AC Solenoid
with Variation I3 (Monitor Switch)**

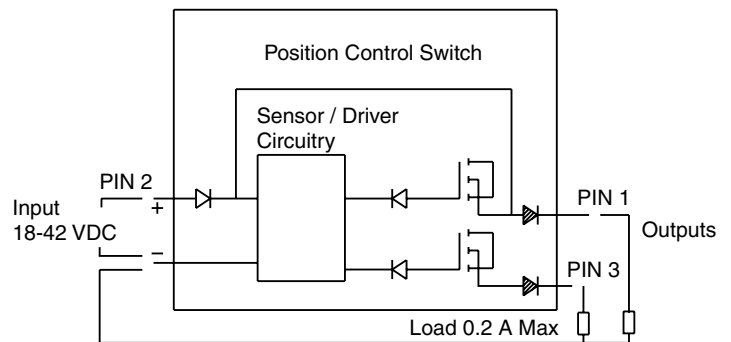


**Monitor Switch
(Variation I3 and I6)**

This feature provides for electrical confirmation of the spool shift. This can be used in safety circuits, to assure proper sequencing, etc.

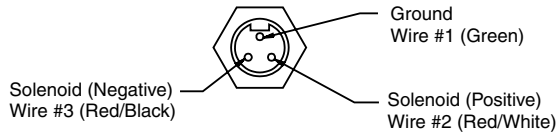
Switch Data

Pin 1 and Pin 3 have outputs equal to the input. When the monitor switch has the output to Pin 1, Pin 3 will have an output of zero, and vice-versa. When the valve is switched, Pin 1 and Pin 3 will switch outputs.



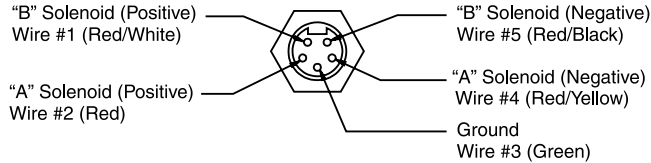
Manaplug (Options 56 & 1C)

- Interface – Brad Harrison Plug
- 3-Pin for Single Solenoid
 - 5-Pin for Double Solenoid



3-Pin Manaplug (Mini) with Lights

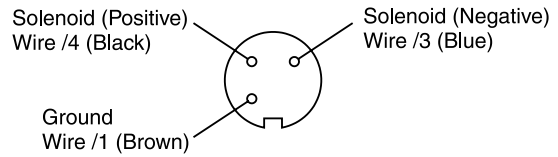
Single Solenoid Valves – Installed Opposite Side of Solenoid



5-Pin Manaplug (Mini) with Lights

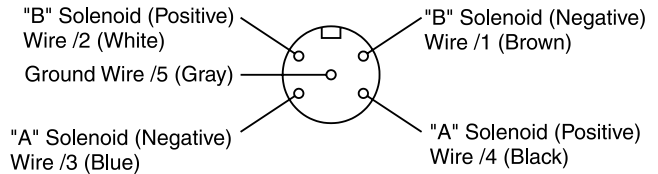
Single Solenoid Valves – Installed Opposite Side of Solenoid
 Double Solenoid Valves – Installed Over "A" Solenoid
 ("A" and "B" Solenoids Reversed for #8 and #9 Spools)

Micro Connector Options (7B & 1D)



3-Pin Manaplug (Micro) with Lights

Single Solenoid Valves – Installed Opposite Side of Solenoid



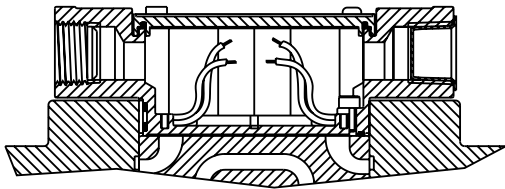
5-Pin Manaplug (Micro) with Lights

Single Solenoid Valves – Installed Opposite Side of Solenoid
 Double Solenoid Valves – Installed Over "A" Solenoid
 ("A" and "B" Solenoids Reversed for #8 and #9 Spools)

Pins are as seen on valve (male pin connectors)

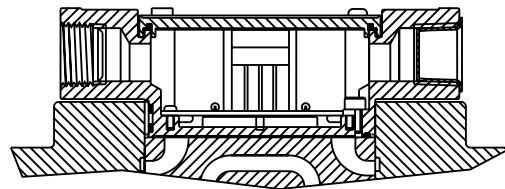
Conduit Box Option C

- No Wiring Options Available

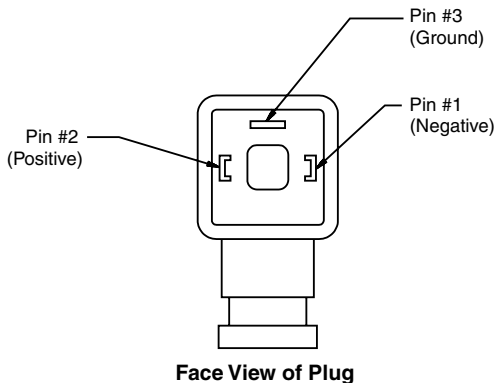


Signal Lights (Option 5) — Plug-in Only

- LED Interface
- Meets Nema 4/IP67

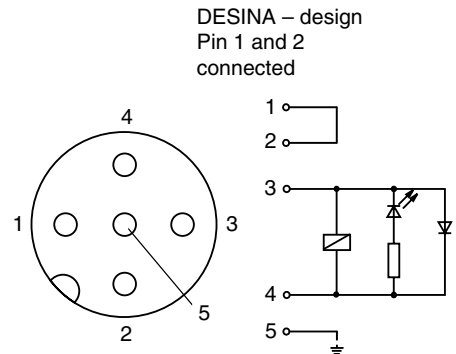


Hirschmann Plug with Lights (Option P5)
ISO 4400/DIN 43650 Form "A"



DESINA Connector (Option D)
M12 pin assignment
Standard

- 1 = Not used
- 2 = Not used
- 3 = 0V
- 4 = Signal (24 V)
- 5 = Earth Ground



Pins are as seen on valve (male pin connectors)