

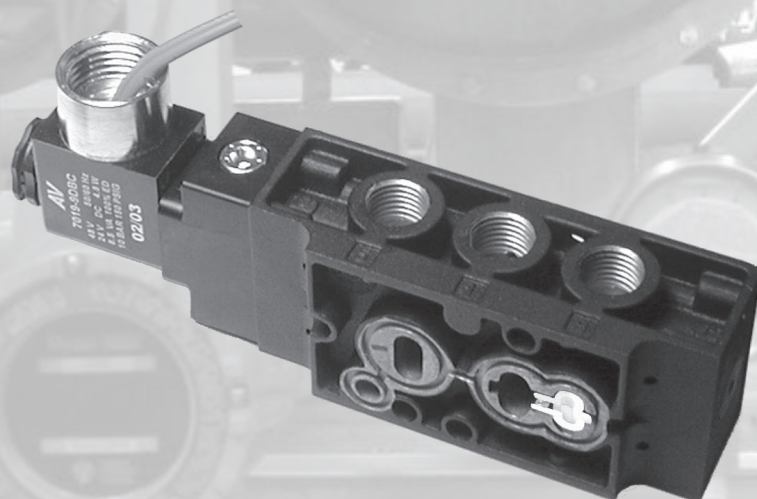


AV *AUTOMATIC VALVE*



World Class Pneumatic Solutions

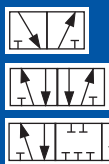
AV **AUTOMATIC VALVE**



NAMUR Actuator Solenoids

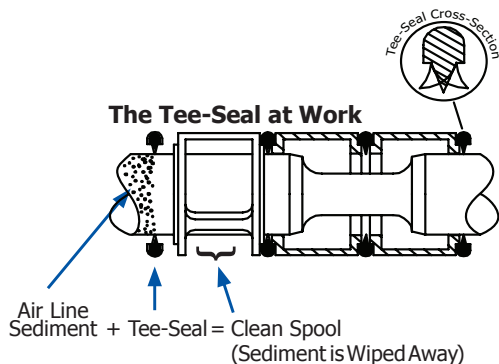
| | Page |
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| Design Features | D2 |
| Specifications | D3 |
| Model Numbers | D3 |
| Standard Solenoid | D4-D5 |
| Intrinsically-Safe Solenoid | D6-D7 |
| Bar Stock Solenoid | D8-D9 |
| Options | D10-D11 |
| Accessories | D11-D13 |
| Configuration Example | D14 |
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| 4 Way / 3 Way Conversion | D17 |

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NAMUR Actuator Solenoids

Design Features



Valves

- Proven design with over 20 years OEM experience.
- Many options available to meet your requirements including:
 - Explosion proof and intrinsically safe operators
 - Stainless Steel
 - Fluoroelastomer Seals
- Easily converted from 4 way to 3 way operation
- Specific application needs? Consult the factory.
We will build it for you.

Tapered Tee-Seal Eats Dirt

- Bidirectional tapered Tee-Seal eliminates sticking problems.
 - Flexes to clean spool
 - Mechanically Locked
 - No Spiral Twist
 - No Extrusion
 - Air Line Sediment is Wiped Away.
- Tested tough and proven reliable according to SAE specifications:
Rust and water injected every 864,000 cycles for 20 million cycles.



Solenoid ... Guaranteed Against Burnout

- Three-way pilot uses full air line pressure to shift the valve.
- Pilot is internally supplied when the pressure at port one is 35 to 150 PSIG (240 to 1030 kPa).
- Coil is hermetically sealed as an integral watertight molded unit.
- Intrinsically-safe and explosion-proof versions available.
- Push Non-Locking Override is standard. (Extended Turn and Turn-Locking available)



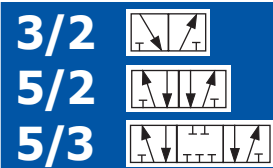
Products Certified To:

- CSA - (C22.2 and UL STD 429)
- Factory Mutual - Explosion Proof Environments
- ATEX - Explosion Proof Environments
- CE - EMF and Low Voltage Directives

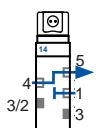
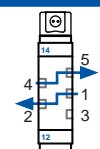
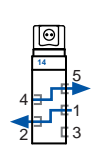
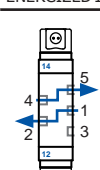
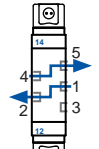
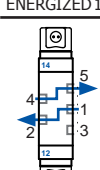





NAMUR Actuator Solenoids

Specs & Model Numbers



Specifications

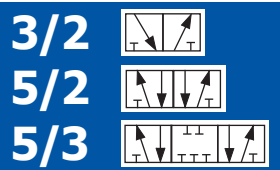
| Valve Operation | | Valve Operation | |
|---|---|--|--|
|  DE-ENERGIZED 10 ENERGIZED 14 | 3/2 NORMALLY CLOSED De-Energized: Exhausts Pressure Port 4 to Port 5 Energized: Applies Pressure Port 1 to Port 4 Vents through Ports 3/2 & 3 |  ENERGIZED 12 DE-ENERGIZED ENERGIZED 14 | 5/3 BLOCK Maintained Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 De-Energized: All ports Blocked Maintained Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3 |
|  DE-ENERGIZED 12 ENERGIZED 14 | 5/2 SINGLE De-Energized: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 Energized: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3 |  ENERGIZED 12 DE-ENERGIZED ENERGIZED 14 | 5/3 EXHAUST Maintained Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 De-Energized: Port 2 open to Port 3, Port 4 open to Port 5 Port 1 Blocked Maintained Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3 |
|  ENERGIZED 12 ENERGIZED 14 | 5/2 DOUBLE Momentarily Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 Momentarily Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3 |  ENERGIZED 12 DE-ENERGIZED ENERGIZED 14 | 5/3 PRESSURE Maintained Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 De-Energized: Port 1 open to Ports 2 & 4; Ports 3 & 5 Blocked Maintained Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3 |
| Operating Temperatures | | Media - Air Or Inert Gas | |
|  | | Solenoid Pilot Operated | Treated Buna-N Seals (Treated NBR, Standard) |
| | | Standard | -18°C to +50°C (0°F to +123°F) |
| | | High Temp Coil (Option C T) | -18°C to +82°C (0°F to +180°F) |
| Operating Pressures | | Fluoroelastomer Seals (FPM (FKM), Option A) | |
|  | | Solenoid Pilot Operated | Inlet Port |
| | | Standard 2 Position | 240 - 1030 kPa (35 - 150 PSIG) |
| | | Standard 3 Position | 345 - 1030 kPa (50 - 150 PSIG) |
| | | External Pilot (Option B) | Vacuum - 240 kPa (Vacuum - 35 PSIG) |
| Filtration & Lubrication | | External Pilot Port | |
|  | | - | 240 - 1030 kPa (35 - 150 PSIG) |
| | | Air Line Lubrication of Automatic Valve products is not required, but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 viscosity, and have an aniline range between 82°C (180°F) and 99°C (210°F). Filter to 50 microns or better. For temperatures below 40°F, air must be dry to prevent formation of ice. Refer to the Maintenance section of this catalog for recommended lubricants. | |

Model Numbers

| Series | Body Type | | Port Size | | Function | Body Design | | Operator 1 | | Center Oper | | Operator 2 | | Voltage ¹ | | Options* | | | |
|--------|--------------------|-------|-----------|-----|--------------------|-------------|---|-----------------------------|---|--|---|------------------------|------------------|------------------------|-----------------------------|---------------------------|-------|----|--|
| D06 | 0 | NAMUR | 3 | 1/4 | G 3 Way NC | A Right | V | Intrinsically-Safe Solenoid | W | Weather-Proof Solenoid | | R 2 Position Spring | -AA | 110/50, 120/60 | A | Fluoroelastomer Seals | | | |
| | | | | | | | | | | | | | -AB | 220/50, 240/60, 125VDC | B | External Pilot Connection | | | |
| | | | | | | | | | | | | | -DA | 22/50, 24/60, 12VDC | C | Conduit Coil | | | |
| D20 | 0 | NAMUR | 3 | 1/4 | A 4 Way 2 Position | A Right | A | Air Pilot | V | Intrinsically-Safe Solenoid (24VDC only) | W | Weather-Proof Solenoid | D 3 Pos'n Spring | A | Air Pilot 2 Position Spring | -DB | 24VDC | CT | Conduit Coil High Temperature |
| | | | | | | | | | | | | | | | | | | D | Dustproof |
| | | | | | | | | | | | | | | | | | | G | 18" Flying Leads |
| | | | | | | | | | | | | | | | | | | L | Low Watt Coil (2.5 Watts) |
| | | | | | | | | | | | | | | | | | | LL | Lowest Watt Coil (0.7 Watts) |
| | | | | | | | | | | | | | | | | | | P | Transition Plate (D20 only) |
| | | | | | | | | | | | | | | | | | | Q | Closed Loop (D20 only) |
| | | | | | | | | | | | | | | | | | | S | 303 Stainless Steel Body (D20 Bar Stock) |
| | | | | | | | | | | | | | | | | | | SS | 316 Stainless Steel Body (D20 Bar Stock) |
| | | | | | | | | | | | | | | | | | | W | G (BSPP) Threads |
| | | | | | | | | | | | | | | | | | | Y | Explosion-Proof Coil (CSA,FM) |
| | | | | | | | | | | | | | | | | | | Z | Explosion-Proof Coil (ATEX, PTB) |
| | | | | | | | | | | | | | | | | | | 1 | Push Turn-Locking Override |
| | | | | | | | | | | | | | | | | | | 2 | Extended Turn-Locking Override |
| | | | | | | | | | | | | | | | | | | 4 | No Override |
| 8 | 10-24 Mounting Kit | | | | | | | | | | | | | | | | | | |
| 9 | 10-32 Mounting Kit | | | | | | | | | | | | | | | | | | |

* Not all Options are available for all models. Refer to "Options" at the end of this Section for additional information.

¹ Consult the Factory for additional voltages.



NAMUR Actuator Standard Solenoids



D06



D0603GAWR

D20



LEFT: D2003ACWR



RIGHT: D2003AAWR

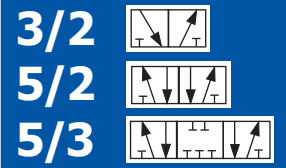


Model Numbers

| | Function | | Port Size | Flow l/min (Cv) | Model Number | Materials | | Weight kg (lb) |
|-----|------------------------------|-----------|-----------|--------------------|---------------|-----------|------|-------------------|
| | Description | Schematic | | | | Body | Seal | |
| 3/2 | Normally Closed Single | | 1/4 | 59 (0.06) | D0603GAWR-** | Aluminum | - | 0,26 (0.58) |
| | Normally Closed Single Left | | 1/4 | 1770 (1.8) | D2003GCWR-** | Aluminum | NBR | 0,32 (0.70) |
| | Normally Closed Single Right | | | | D2003GAWR-** | | | |
| 5/2 | Single Left | | 1/4 | 1770 (1.8) | D2003ACWR-** | Aluminum | NBR | 0,26 (0.57) |
| | Single Right | | | | D2003AAWR-** | | | |
| | Double | | | | D2003ABWW-** | | | 0,34 (0.75) |
| 5/3 | Block Double | | 1/4 | 1381 (1.4) | D2003CBWDW-** | Aluminum | NBR | 0,36 (0.80) |
| | Exhaust Double | | | | D2003DBWDW-** | | | |
| | Pressure Double | | | | D2003EBWDW-** | | | |

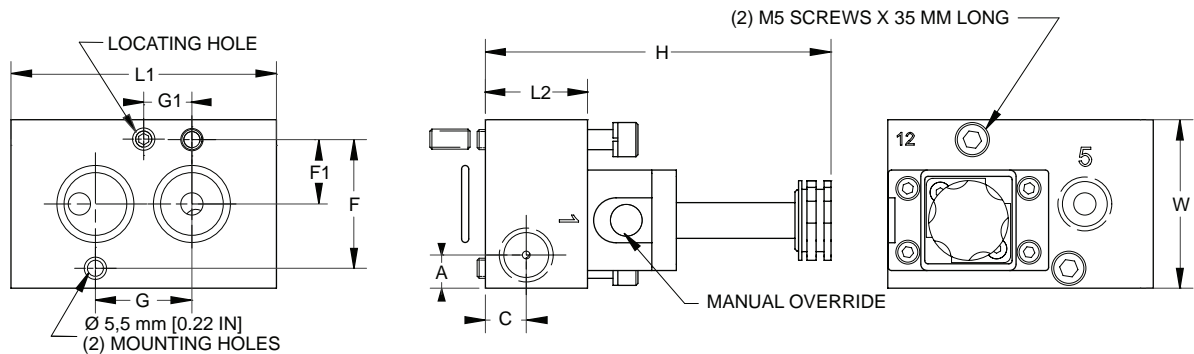
** = Coil Voltage Code. Coils also sold separately. Refer to "Electrical Information" at the end of this Section for additional information.

NAMUR Actuator Standard Solenoids

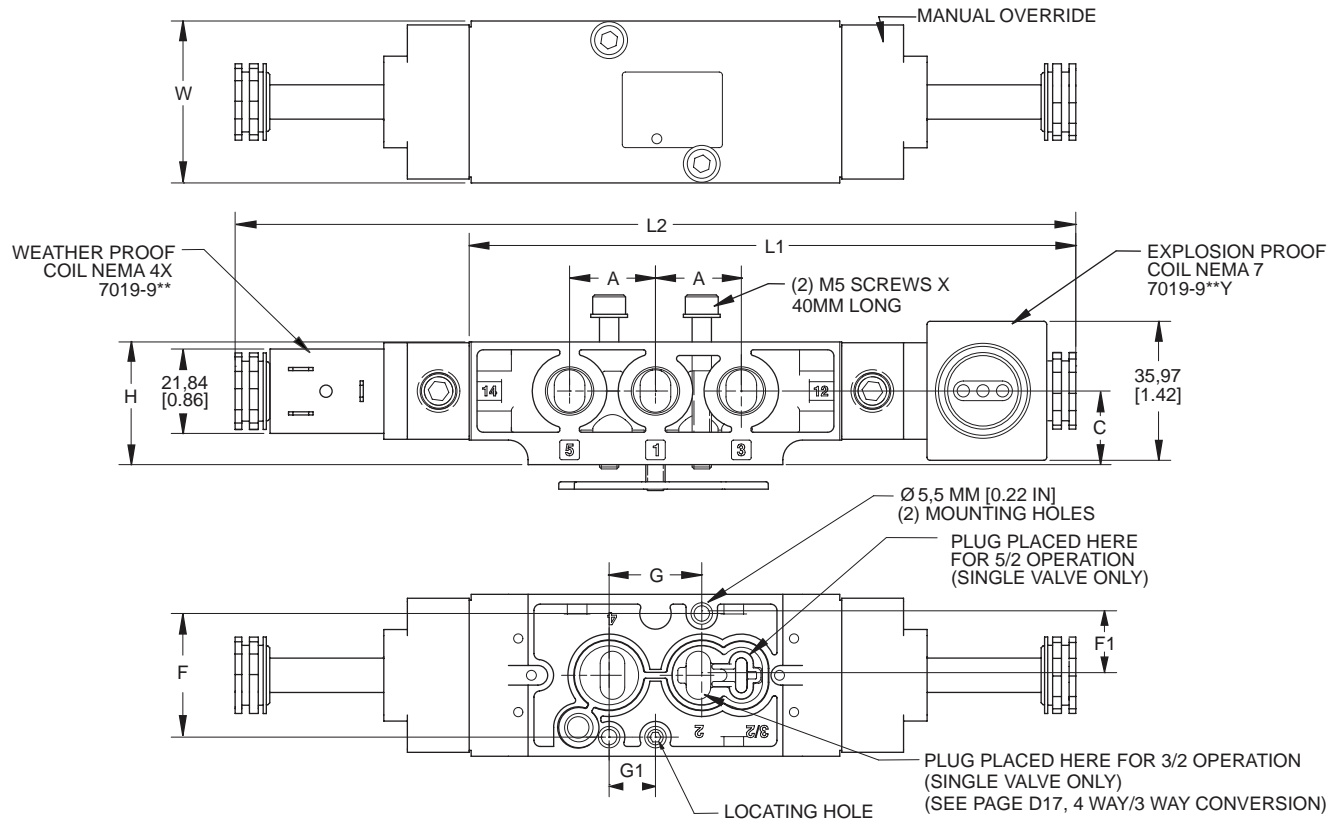


Dimensional Information

D06



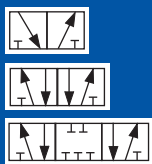
D20



| Series | Description | A | C | F | F1 | G | G1 | H | L1 | L2 | W |
|--------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| D06 | Single | 8,4 0.33 | 10,2 0.40 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 85,1 3.35 | 66,0 2.60 | 25,4 1.00 | 41,9 1.65 |
| D20 | Single | 22,2 0.88 | 19,1 0.75 | 32,0 1.25 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 31,7 1.25 | 157 6.15 | - | 41,9 1.65 |
| | Double | 22,2 0.88 | 19,1 0.75 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 31,7 1.25 | - | 217 8.55 | 41,9 1.65 |

Units of Measure: Top - mm, Bottom - inches

3/2
5/2
5/3



NAMUR Actuator Intrinsically-Safe Solenoids



D06



D0603GAVR-DB

D20



LEFT: D2003GCVR-DB



RIGHT: D2003GAVR-DB

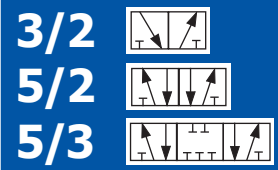


DOUBLE: D2003ABVV-DB

Model Numbers

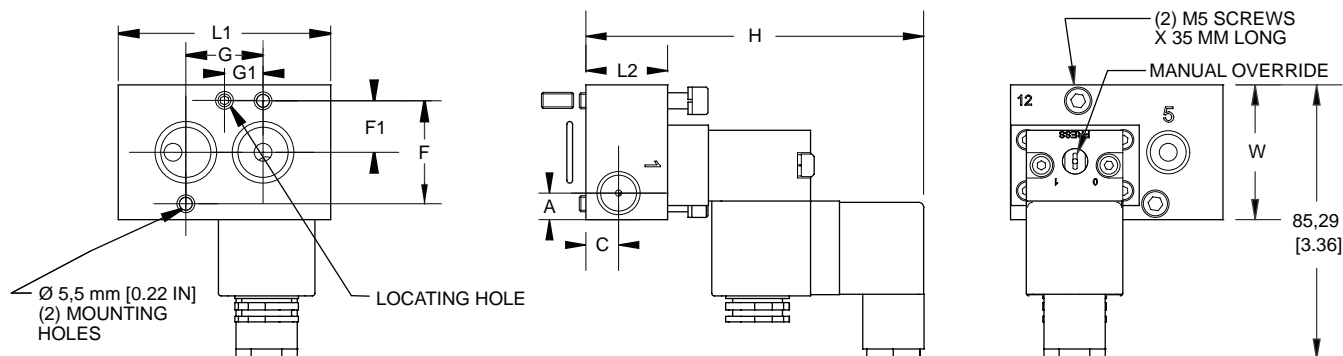
| | Function | | Port Size | Flow l/min (Cv) | Model Number | Materials | | Weight kg (lb) |
|-----|------------------------------|-----------|-----------|-----------------|----------------------|-----------|-------|----------------|
| | Description | Schematic | | | | Body | Seals | |
| 3/2 | Normally Closed Single | | 1/4 | 59 (0.06) | D0603GAVR-DB | Aluminum | - | 0,26 (0.58) |
| | Normally Closed Single Left | | 1/4 | 1770 (1.8) | D2003GCVR-DB | Aluminum | NBR | 0,32 (0.70) |
| | Normally Closed Single Right | | | | D2003GAVR-DB | | | |
| 5/2 | Single Left | | 1/4 | 1770 (1.8) | D2003ACVR-DB | Aluminum | NBR | 0,32 (0.70) |
| | Single Right | | | | D2003AAVR-DB | | | |
| | Double | | | | D2003ABVV-DB | | | 0,36 (0.80) |
| 5/3 | Block Double | | 1/4 | 1381 (1.4) | D2003CBVDV-DB | Aluminum | NBR | 0,36 (0.80) |
| | Exhaust Double | | | | D2003DBVDV-DB | | | |
| | Pressure Double | | | | D2003EBVDV-DB | | | |

NAMUR Actuator Intrinsically-Safe Solenoids

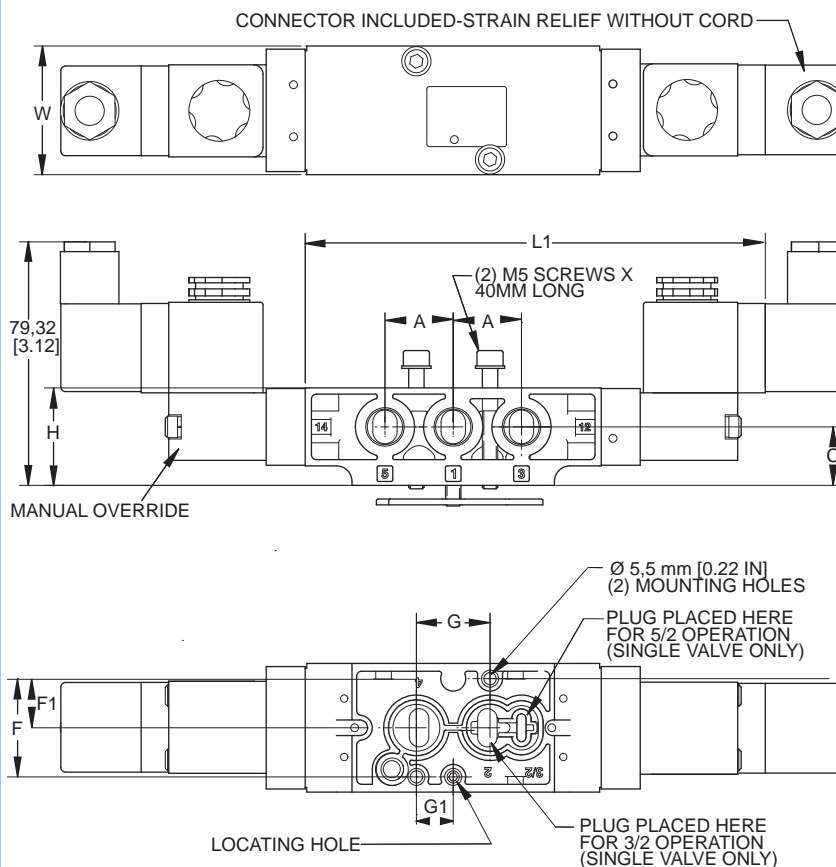


Dimensional Information

D06

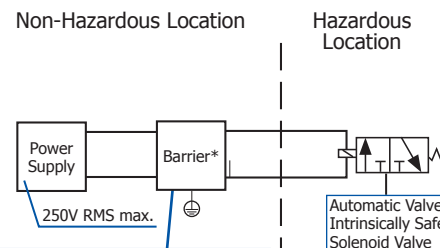


D20



Intrinsic Safety is a type of protection based on the restriction of electrical energy within an apparatus and of interconnecting wiring exposed to the potentially explosive atmosphere to a level below that which can cause ignition by either sparking or heating effects.

Basic Circuit and Application:



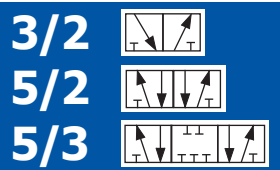
FM: Factory Mutual Entity Approved Barrier(s) used in an Approved configuration with:
"V" max. > ("Vt" or "Voc")
and "I" max. > ("It" or "Isc")

CSA: "CSA Barrier rated 28V max./300 Ohms min." or equivalent.
Connect with CSA approved: Cable diameter 6 mm to 8 mm.

*Automatic Valve Corp does not sell the safety barrier that is required for an intrinsically safe circuit.

| Series | Description | A | C | F | F1 | G | G1 | H | L1 | L2 | W |
|--------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|
| D06 | Single | 8,4 0.33 | 10,2 0.40 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 107,2 4.22 | 85,8 3.38 | 25,4 1.00 | 41,9 1.65 |
| D20 | Single | 22,2 0.88 | 19,1 0.75 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 68,3 2.69 | 149 5.86 | - | 41,9 1.65 |
| | Double | 22,2 0.88 | 19,1 0.75 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 68,3 2.69 | - | 214 8.42 | 41,9 1.65 |

Units of Measure: Top - mm, Bottom - inches



NAMUR Actuator Bar Stock Solenoids



D20 Double

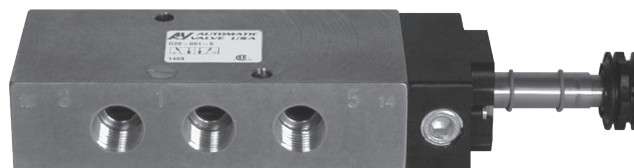


D20-009

D20 Single



D20-002



D20-001-S
(Shown: Stainless Steel¹)

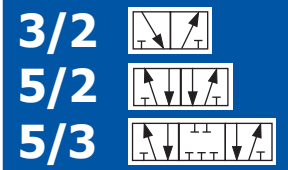
Model Numbers

| | Function | | Port Size | Flow l/min (Cv) | Model Number | Materials | | Weight kg (lb) |
|-----|-----------------|-----------|-----------|-----------------|--------------|-----------------------|------|----------------|
| | Description | Schematic | | | | Body | Seal | |
| 5/2 | Single Left | | 1/4 | 1770 (1.8) | D20-002-** | Aluminum ¹ | NBR | 0,34 (0.75) |
| | Single Right | | | | D20-001-** | | | |
| | Double | | | | D20-009-** | | | 0,37 (0.82) |
| 5/3 | Block Double | | 1/4 | 1381 (1.4) | D20-037-C-** | Aluminum ¹ | NBR | 0,37 (0.82) |
| | Exhaust Double | | | | D20-037-D-** | | | |
| | Pressure Double | | | | D20-037-E-** | | | |

** = Coil Voltage Code. Coils also sold separately. Refer to "Electrical Information" at the end of this Section for additional information.

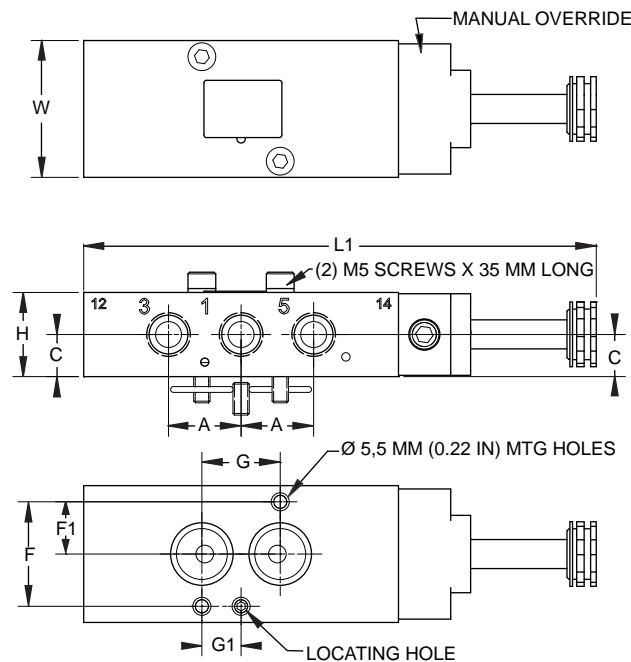
¹ Body Available in 303 or 316 Stainless Steel. Refer to "Options" at the end of this Section for additional information.

NAMUR Actuator Bar Stock Solenoids

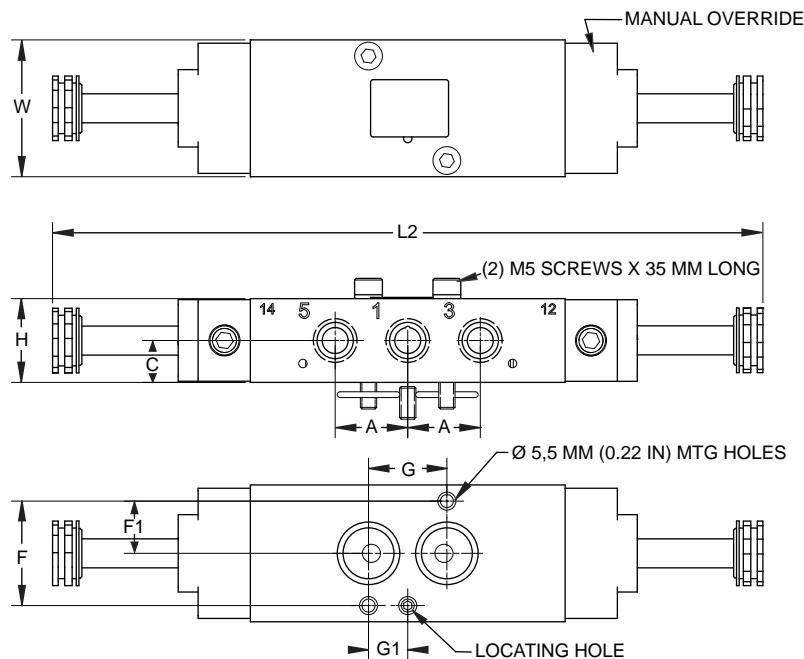


Dimensional Information

D20 Single



D20 Double



| Series | Description | A | C | F | F1 | G | G1 | H | L1 | L2 | W |
|--------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| D20 | Single | 22,2 0.88 | 12,7 0.50 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 25,4 6.12 | 15,5 6.12 | - | 41,9 1.65 |
| | Double | 22,2 0.88 | 12,7 0.50 | 32,0 1.26 | 16,0 0.63 | 23,9 0.94 | 11,9 0.47 | 25,4 1.00 | - | 214 8.42 | 41,9 1.65 |

Units of Measure: Top - mm, Bottom - inches

3/2



5/2



5/3



NAMUR Actuator Solenoids

Options

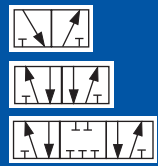


Options (Add the suffix to the end of the model number in alpha-numeric order.)

| Suffix | Option | Description |
|--------|----------------------------------|---|
| A | Fluoroelastomer Seals | For applications where fluid media or ambient conditions are not compatible with nitrile seals. (D20 only) <i>Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.</i> |
| B | External Pilot | <p>For solenoid applications where the pressure to port one is less than 2 BAR (35 PSIG). See example below for field conversion. (D20 only)</p> <p>Field Conversion</p> <ul style="list-style-type: none"> Remove solenoid and cap from the valve body. Rotate the gasket 180° so that the internal pilot hole in the valve body is covered by the gasket. Refasten the gasket, cap and solenoid to the valve body. Make sure the gasket completely covers the internal pilot hole before tightening the M3 screws. Torque to 1,02 N-m (9 in-lbs) ±10%. Remove the 1/8 NPTF pipe plug from the cap and make the external pilot connection. <p>INTERNAL PILOT HOLE EXTERNAL PILOT VALVES GASKET ROTATED 180° INTERNAL PILOT VALVES GASKET POSITION REMOVE 1/8 NPTF PIPE PLUG FOR EXTERNAL PILOT PORT</p> |
| C | Conduit Coil | Refer to the "Electrical Information" page in this section for details. |
| CT | Conduit Coil High Temperature | Refer to the "Electrical Information" page in this section for details. |
| D | Dustproof | For applications in extremely dusty and contaminated environments. Vent ports are plugged and spring pad breather vent is eliminated. (D20 only) |
| G | Coil With 18" Leads | Refer to the "Electrical Information" page in this section for details. |
| L | Low Watt Coil | Power Consumption = 2.5 Watts. Standard as Push Non-Locking Override. Also available with Option 2, Extended Turn-Locking Override. |
| LL | Lowest Watt Coil | Power Consumption = 0.7 Watts. Standard as Extended Turn-Locking Override. |
| P | Transition Plate | For mounting to surface pads smaller than 6,4 cm x 3,5 cm (2 1/2" x 1 3/8"). Refer to next page for Installation Instructions. (D20 only) |
| Q | Closed Loop | Exhaust feedback in closed loop position. (D20 only) |
| S | 303 Stainless Steel | 303 Stainless Steel body, all other external parts are corrosion resistant; for corrosive environment applications (D20 Bar Stock only). |
| SS | 316 Stainless Steel | 316 Stainless Steel body, all other external parts are corrosion resistant; for corrosive environment applications (D20 Bar Stock only). |
| W | G Threads | All ports tapped to metric "G" standard. |
| Y | Explosion-Proof Coil (CSA, FM) | Refer to the "Electrical Information" page in this section for details. |
| Z | Explosion-Proof Coil (Atex, PTB) | Refer to the "Electrical Information" page in this section for details. |
| 1 | Push Turn-Locking Override | Solenoid cap provides an override that is pushed in and turned to actuate & lock in the "on" position. |
| 2 | Extended Turn-Locking Override | Solenoid cap provides an extended override that is turned to lock in the "on" position. |
| 4 | No Override | Solenoid cap does not provide a manual override. |
| 8 | 10-24 Mounting Kit | Mounting kit contains #10-24 mounting screws and set screw |
| 9 | 10-32 Mounting Kit | Mounting kit contains #10-32 mounting screws and set screw |

NAMUR Actuator Solenoids Options & Accessories

3/2
5/2
5/3



Option P: Transition Plate

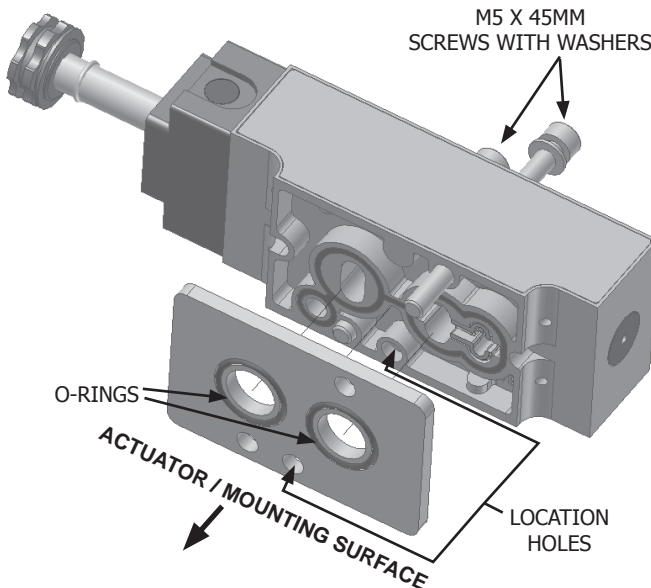
The Transition Plate is designed for use in situations where the sealing face of the solenoid valve extends beyond the mounting surface.

(The minimum required mounting area measures 6,4 cm x 3,5 cm (2 1/2" x 1 3/8"))

Part Number

Option **P**: when ordering the plate with a valve

A8021-339: when ordering the plate only



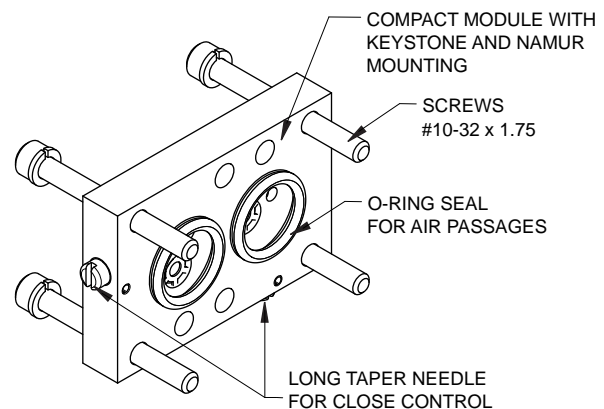
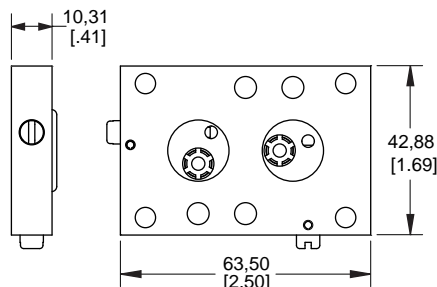
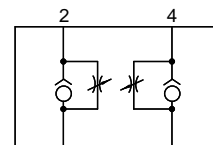
Installation Instructions: Transition Plate

1. Place the plate between the solenoid valve and the actuator with the o-rings facing the actuator.
2. Use the supplied **M5 x 45mm screws** to secure the solenoid valve/plate assembly to the mounting surface. These are the screws supplied in the plate kit, not those originally supplied with the valve. Do NOT use the shorter 40mm original screws; they will not engage properly.
3. Torque screws to 4,4-5,3 N-m (39-47 in-lbs) $\pm 10\%$ to effect a seal on the o-ring and gasket side of the transition plate.

Speed Control Valve

- For Bar Stock Models Only
- Mounts between the Directional Control Valve and the Actuator
- Mounts on the NAMUR pad
- Functions as a flow control for both cylinder ports
- Is easily adjustable, turn the needles clockwise to decrease speed and counterclockwise to increase speed
- Normal operating pressure: 2 to 10 BAR (35 to 150 PSIG)
- Normal operating temperature: -18°C to +52°C (0°F to +125°F)
- Approximate weight: 0,07 kg (0.16 lb)

Model Number
A7106-554



3/2



5/2






5/3



NAMUR Actuator Solenoids Accessories



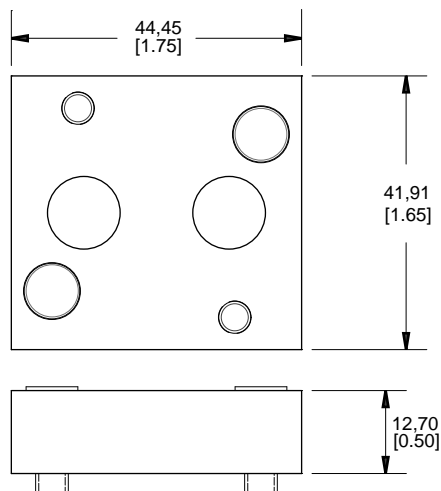
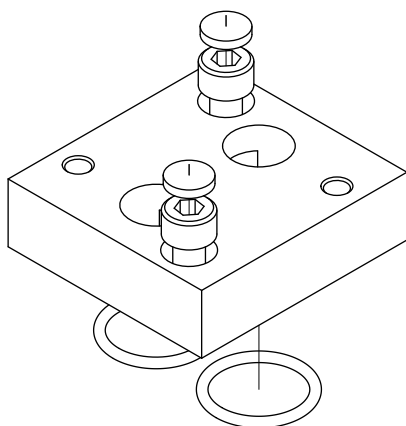
Mufflers

| Part Number | Description | | Pipe Size NPT | Flow l/min (Cv) | Length mm (in) | Hex Size mm (in) | Weight kg (lb) |
|-------------|--|---|------------------|-----------------------|----------------------|------------------------|----------------------|
| 84C-2 | Exhaust Muffler <ul style="list-style-type: none"> Reduces exhaust noise level in air systems. Maintains full volume air flow with minimum back pressure. Threads into exhaust port. |  | 1/4 | 2060 (2.3) | 44,5 (1.75) | 14,3 (9/16) | 0,020 (0.044) |
| 84D-2 | Sintered Exhaust Muffler <ul style="list-style-type: none"> Reduces exhaust noise level in air systems. Sintered bronze bonded to a copper plated male pipe fitting. Corrosion resistant. Cleanable 40 micron filter element. |  | 1/4 | 600 (0.7) | 33,3 (1.31) | 14,3 (9/16) | 0,017 (0.037) |
| 266B-2 | Exhaust Restrictor/Sintered Muffler <ul style="list-style-type: none"> Reduces exhaust noise level in air systems. Allows adjustment of exhaust air flow to accurately control cylinder speeds. Corrosion resistant. Cleanable 40 micron filter element. |  | 1/4 | 1160 (1.3) | 55,9 (2.2) | 14,3 (11/16) | 0,026 (0.057) |

90° Mounting Plate

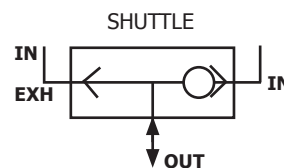
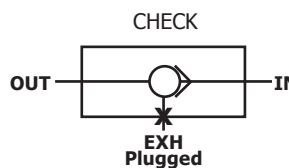
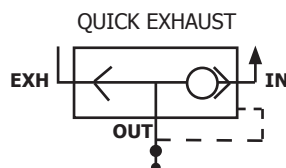
- For Bar Stock Models Only
- Allows horizontal installation of the directional control valve.
- Orientates the valve 90° to the actuator.

Part Number
A8022-438



Quick Exhaust, Check and Shuttle Valves: Series: MQ2

One model does all three functions



Features

- Rugged internal construction outlasts and out performs the competition.
- Quick Exhaust: When **IN** is pressurized, flow is from **IN** to **OUT** with **EXH** blocked. When **OUT** is pressurized, flow is from **OUT** to **EXH** with **IN** blocked
- Check Valve: Free flow from **IN** to **OUT** with **EXH** plugged. No flow from **OUT** to **IN** with **EXH** plugged.
- Shuttle Valve: When **IN** is pressurized, flow is from **IN** to **OUT** with **EXH** blocked. When **EXH** is pressurized, flow is from **EXH** to **OUT** with **IN** blocked.

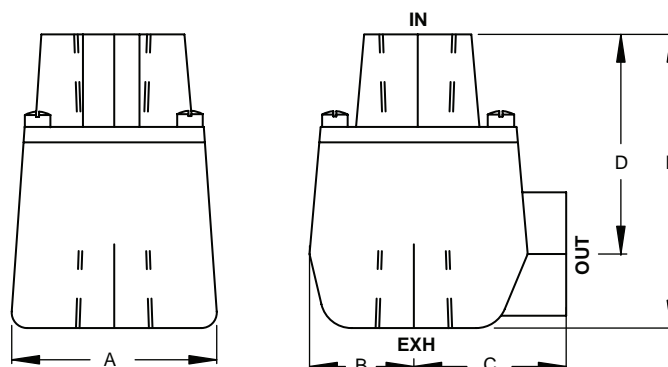


370A-22

Model Numbers

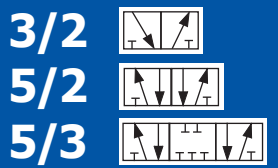
| Series | Model Number | Port Size NPTF | | Flow l/min (Cv) | Pressure BAR (PSIG) | | Weight Kg (lb) |
|--------|--------------|----------------|-----|-----------------|---------------------|------------|----------------|
| | | IN, OUT | EXH | | Min | Max | |
| MQ2 | 370A-22 | 1/4 | 1/4 | 890 (0.97) | 0.3 (4) | 10.7 (150) | 0,07 (0.16) |

Dimensional Information



| Series | Model Number | A | B | C | D | E |
|--------|--------------|--------------|--------------|--------------|------------|--------------|
| MQ2 | 370A-22 | 27,7 1.09 | 13,9 0.55 | 20,5 0.81 | 30 1.22 | 42,4 1.67 |

Units of Measure: Top-mm, Bottom-inches



NAMUR Actuator Solenoids Configuration Example



Valve With W-Solenoid Cap + Coil = Valve With Coil



D2003AAWR

+



NEMA 4x with DIN
43650 Form B
Connection
7019-9**

=



D2003AAWR-**



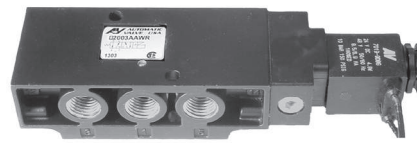
D2003AAWR

+



NEMA 4x with
18" Leads
7019-9**G

=



D2003AAWR-**G



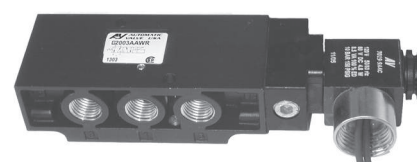
D2003AAWR

+



NEMA 4x 1/2" Conduit
with 30" Leads
7019-9**C

=



D2003AAWR-**C



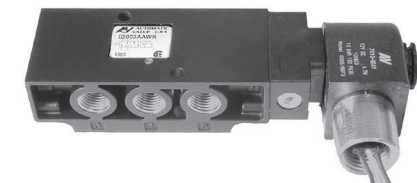
D2003AAWR

+



Explosion-Proof 1/2"
Conduit with 24" Leads

=



D2003AAWR-**Y



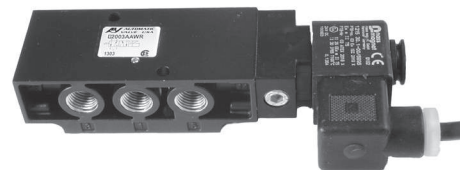
D2003AAWR

+



ATEX Explosion-Proof
with 39" Cable
7152-9**

=



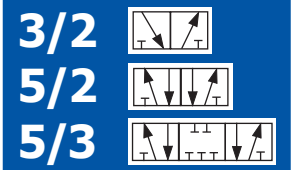
D2003AAWR-**Z

D



NAMUR Actuator Solenoids

Electrical Information



NAMUR Actuator Solenoids

Part Numbers

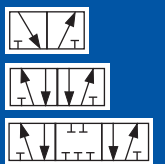
| Description | Operator Type | Instructions | Wt. Kg(lb) | Coil Part Number ** = Voltage |
|--|---------------|--|----------------|---|
| Weather-Proof DIN 43650 Industrial Form B Connection NEMA 4X | W | Order coil separately (specify voltage code from below) | 0,05 (0.12) | 7019-9** |
| Weather-Proof 18" Leads NEMA 4X | W | Order coil separately (specify voltage code from below) | 0,05 (0.12) | 7019-9**G |
| Weather-Proof 1/2" Conduit with 30" Leads NEMA 4X | W | Order coil separately (specify voltage code from below) | 0,05 (0.12) | 7019-9**C 7019-9**CT (high temp 82°C max) |
| Explosion-Proof 1/2" Conduit with 24" Leads CSA & FM Approved CL. I; Zone1 Exm IIT4; AExm II CL. I; Div.1; GR. A, B, C, D CL. II; GR. E, F, G CL. III T4 Ta=-20°C to +60°C NEMA 4, 4X, 7C, 7D, 9 | W | Order coil separately (specify voltage code from below) | 0,20 (0.44) | 7019-9**Y |
| Intrinsically-Safe Strain Relief Ex ia CL. I; GR. A, B, C, D CL. II; GR. E, F, G CL. III; Div.1; T5 | V | Coil and Connector included with valve (24VDC only) | 0,21 (0.46) | A7106-374-DB |
| A7106-374 Must be Used with an Intrinsically-Safe Barrier For more information refer to "Intrinsic Safety" insert on Page D7. | | | | |
| Explosion-Proof 3m Cable & Strain Relief Ex m II T5 PTB 03 ATEX2018 X Ex II 2 G EEx m II T5 Ex II 2 D IP65 T95°C | Z | Order coil separately (specify voltage code from below) | 0,36 (0.78) | 7152-9** |

Voltage Codes (Lower wattage options available, consult factory)

| ** Code | Voltage +/- 10% | | Current (Amps) | | | | | | | | Resistance (OHMS @ 25°C) | | | | Power (AC=VA, DC=Watts) | | | |
|-----------|--------------------|-----------------|----------------|------|------|------|---------|------|------|------|-----------------------------|------|------|------|----------------------------|------|------|------|
| | | | Inrush | | | | Holding | | | | | | | | | | | |
| | Operator Type: | | W | | V | | Z | | W | | V | | Z | | W | | V | |
| | NEMA 4 | NEMA 7,9 & ATEX | NEMA | ATEX | NEMA | ATEX | NEMA | ATEX | NEMA | ATEX | NEMA | ATEX | NEMA | ATEX | NEMA | ATEX | NEMA | ATEX |
| | | | 4, 4x | 7, 9 | Exia | Exm | 4, 4x | 7, 9 | Exia | Exm | 4, 4x | 7, 9 | Exia | Exm | 4, 4x | 7, 9 | Exia | Exm |
| DA | 24/50 24/60 | - | .36 | - | - | - | .24 | - | - | - | 32 | - | - | - | 6.9 | - | - | - |
| AA | 120/50 120/60 | 120/60 | .08 | .10 | - | .04 | .05 | .05 | - | .03 | 840 | 530 | - | 1664 | 6.9 | 6.5 | - | 3.4 |
| AB | 230/50 230/60 | 240/60 | .04 | .05 | - | .02 | .03 | .03 | - | .01 | 3310 | 2345 | - | 6730 | 6.4 | 6.8 | - | 3.3 |
| DA | 12 VDC | 12VDC | .38 | .38 | - | .27 | .38 | .38 | - | .27 | 32 | 32 | - | 45 | 4.8 | 4.5 | - | 3.5 |
| DB | 24 VDC | 24VDC | .20 | .19 | .05 | .14 | .20 | .19 | .05 | .14 | 121 | 128 | 275 | 177 | 4.8 | 4.5 | 1.6 | 3.5 |
| AB | 125 VDC | - | .04 | - | - | - | .04 | - | - | - | 3310 | - | - | - | 5.9 | - | - | - |

Connectors (Not polarity dependent)

| | | | | | |
|------------------------------------|-------------------------------------|--------------------------|----------------|---------------------------|-------------------------|
| DIN 43650 Industrial Form B | | | | | |
| | Maximum Cable Diameter: 9mm (0.35") | | | | |
| Type | Strain Relief without Cord | Strain Relief with Light | | 1/2" Conduit without Cord | Molded with 6' Cord |
| | | 100-240 AC 48-120 DC | 6-48 AC/DC | | 100-240 AC 48-120 DC |
| Part Number | 7020-001 | 7020-AA | 7020-DB | 7039-001 | 7020-006 |
| | | | | | 7094-006 |
| | | | | | 7094-007 |

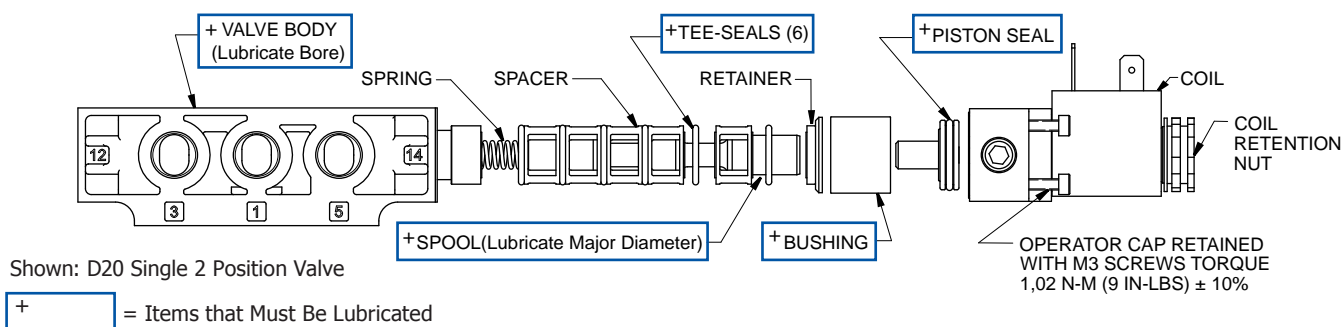
3/2
5/2
5/3

NAMUR Actuator Solenoids

Service Information



Valve must be disconnected from all air and electrical power sources before disassembly.



Service Kit Installation Instructions

- Follow appropriate lock-out/tag-out procedures. Do not attempt to service a valve, if you are not familiar with lock-out/tag-out procedures.
- Turn off electrical power to the valve.
- Remove valve from all electrical and air power sources.
- Ensure all stored air power is exhausted.
- Remove coil by first removing coil retention nut.
- Remove operator cap by first removing 4 socket head cap screws.
- Remove existing serviceable components by "pushing" internal components gently out of the valve body.
- Clean the spool with a clean cloth.
- Discard the spring (Single Spring Return Models Only).
- Lubricate the designated "+" items in the above assembly drawing with a thin film of lubricant - the item should look "WET" with no excess lubricant visible.
- Replace components as shown above.
 - Replace spring pad and spring (Single Spring Return Models Only).
 - Alternate Tee-seals and spacers.
 - Once all 6 Tee-seals are installed, replace the retainer, bushing and piston.
- Orientate the operator cap by aligning the open end of the gasket with the pilot hole in the valve body.
- Torque cap screws into body to 1,02 N-m (9 in-lbs) ±10%. Rotate tightening so that cap "squeezes" evenly onto body.

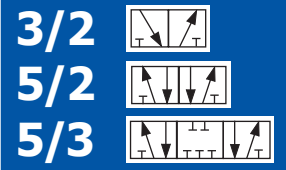
Air Line Lubrication of Automatic Valve products is not required, but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 or lighter viscosity, and have an aniline point between 82°C (180°F) and 99°C (210°F). Refer to the Maintenance Section of this catalog for recommended lubricants.

Model Numbers: Service Kits

| Series | Body Style | | |
|--------|------------------------|--|--|
| | Description | Model Number | Contents |
| D20 | Single | K-L20-SGL K-L20-SGL-A (Fluoroelastomer) | Tee-Seals (6), Piston Seal (1), Spring (1), Lubricant |
| | Double | K-L20-DBL K-L20-DBL-A (Fluoroelastomer) | Tee-Seals (6), Piston Seals (2), Lubricant |
| | Standard Mounting Kit | A8021-340 | Plug Assembly (1), Gasket (1), Screws (2), Set Screw (1), Washers (2), Lubricant |
| | Bar Stock Mounting Kit | A8022-618 | O-Rings (2), Screws (2), Set Screws (2), Washers (2) |

NAMUR Actuator Solenoids

4 Way/3 Way Conversion



Views

| 4 Way | 3 Way |
|--|---|
| | |
| The D20 works as a 4 way when the plug is in the outer cavity. | The D20 works as a 3 way when the plug is in the center cavity. |

Conversion Steps

4 Way to 3 Way Conversion

STEP 1: Using a 3 mm screwdriver loosen the plug retention screw.

STEP 2: Remove the plug. Lightly lubricate the plug and O-ring. Place plug in adjacent cavity.

STEP 3: Tighten the plug retention screw to 0,68 N-m (6 in-lbs) ±10%.

Model Numbers

| Series | Model Number | Contents |
|--------|--------------|--|
| D20 | A7216-081 | Plug Assemblies (Qty 10) (screws/seals/plugs) |