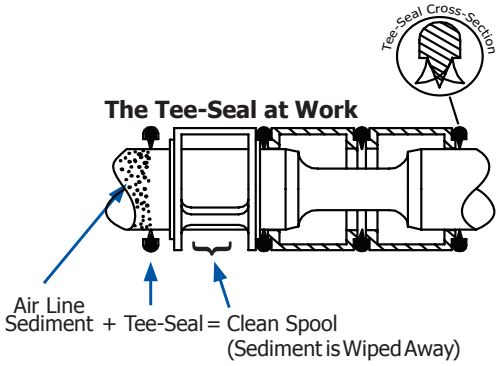
3/2 5/2 5/3

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 Certifie To:

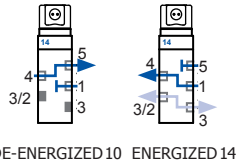
- CSA - (C22.2 and UL STD 429)
- Factory Mutual - Explosion Proof Environments
- ATEX - Explosion Proof Environments
- CE - EMF and Low Voltage Directives

3/2 5/2 5/3

NAMUR Actuator Solenoids - Specs & Model Numbers

Specifications

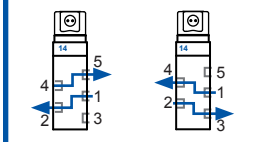
Valve Operation



3/2 NORMALLY CLOSED

De-Energized:
Exhausts Pressure Port 4 to Port 5

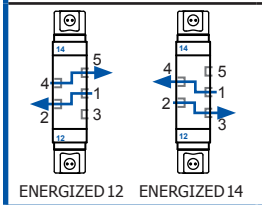
Energized:
Applies Pressure Port 1 to Port 4
Vents through Ports 3/2 & 3



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

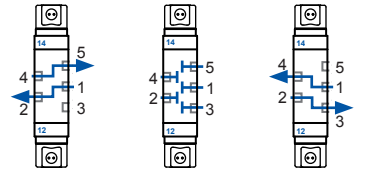


5/2 DOUBLE

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

Valve Operation

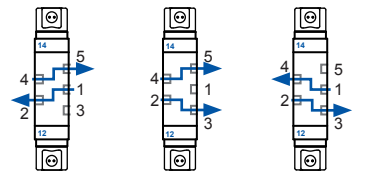


5/3 BLOCK

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

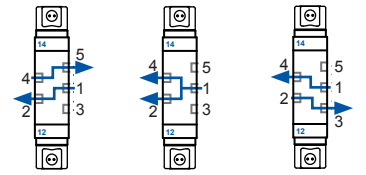


5/3 EXHAUST

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



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

Solenoid Pilot Operated	Treated Buna-N Seals (Treated NBR, Standard)	Fluoroelastomer Seals (FPM (FKM), Option A)
Standard	-18°C to +50°C (0°F to +123°F)	-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)	-18°C to +82°C (0°F to +180°F)

Operating Pressures

Solenoid Pilot Operated	Inlet Port	External Pilot 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)	240 - 1030 kPA (35 - 150 PSIG)

Filtration & Lubrication

Media - Air Or Inert Gas

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 -AB 220/50, 240/60, 125VDC -DA 22/50, 24/60, 12VDC -DB 24VDC	A Fluoroelastomer Seals B External Pilot Connection C Conduit Coil 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
D20	0 NAMUR	3 1/4	A 4 Way 2 Position C 4 Way 3 Position Block Ctr D 4 Way 3 Position Exhaust Center E 4 Way 3 Position Pressure Center G 3 Way NC (Die Cast only)	A Right B Double C Left	A Air Pilot V Intrinsically-Safe Solenoid (24VDC only) W Weather-Proof Solenoid	D 3 Pos'n Spring	A Air Pilot R 2 Position Spring V Intrinsically-Safe Solenoid (24VDC only) W Weather-Proof Solenoid		

* 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

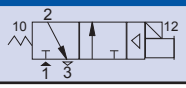
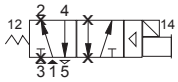
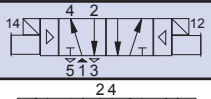
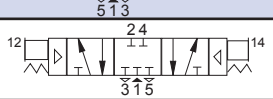
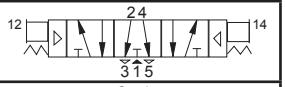
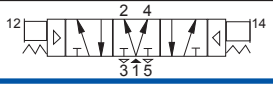
D0603GAWR

D20

LEFT: D2003ACWR

RIGHT: D2003AAWR

Model Numbers

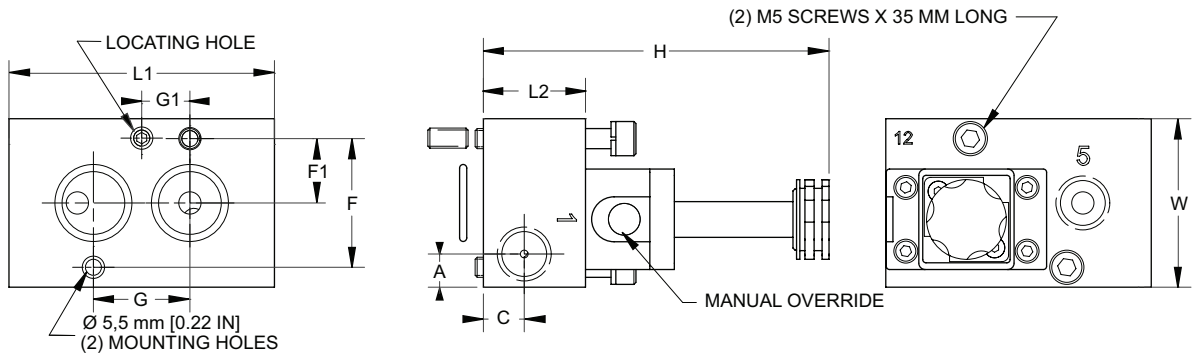
	Function		Port Size	Flow l/min (C_V)	Model Number	Materials		Weight kg (lb)
	Description	Schematic				Body	Seal	
3/2	Normally Closed Single		1/4	59 (0.06)	D0603GAWR-**	Aluminum	-	0,26 (0.58)
	Normally Closed Single Left		1/4	1770 (1.8)	D2003GCWR-**	Aluminum	NBR	0,32 (0.70)
	Normally Closed Single Right				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.

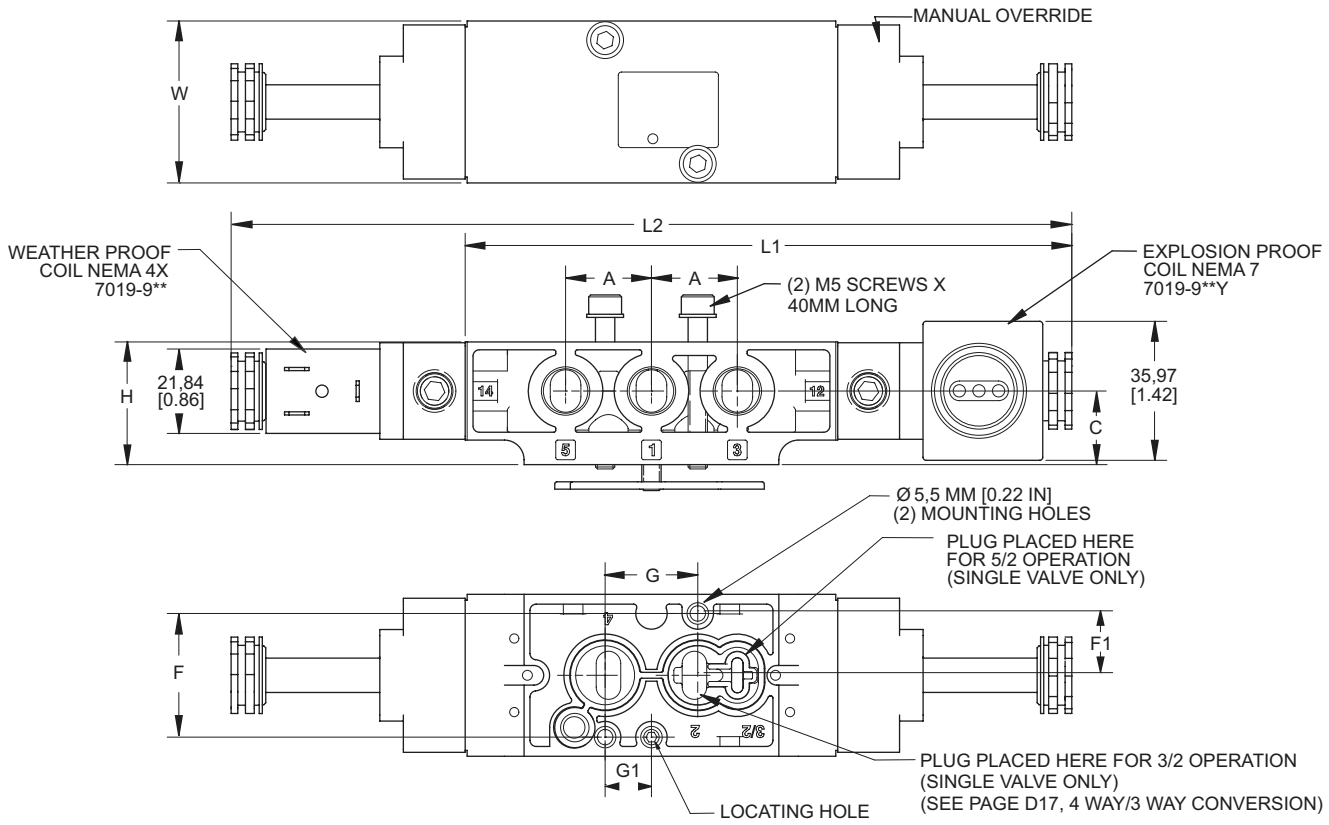
NAMUR Actuator - Standard Solenoids

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

NAMUR Actuator - Intrinsically-Safe Solenoids

D06

D0603GAVR-DB

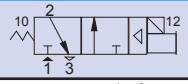
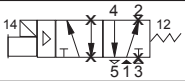
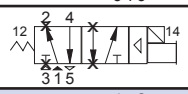
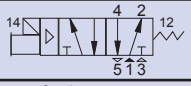
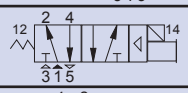
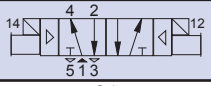
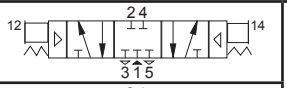
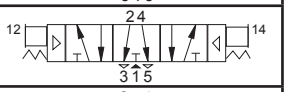
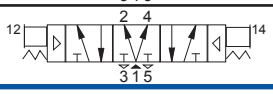
D20

LEFT: D2003GCVR-DB

RIGHT: D2003GAVR-DB

DOUBLE: D2003ABVV-DB

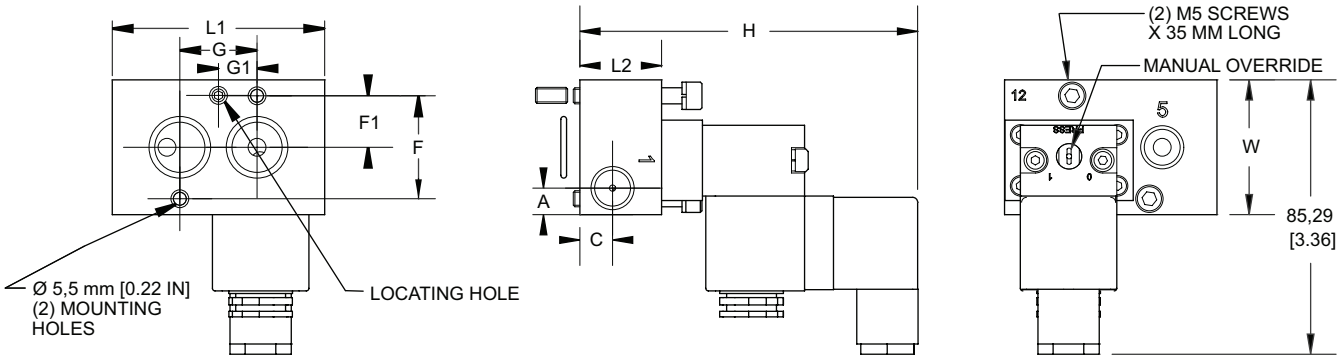
Model Numbers

	Function		Port Size	Flow l/min (C_V)	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			

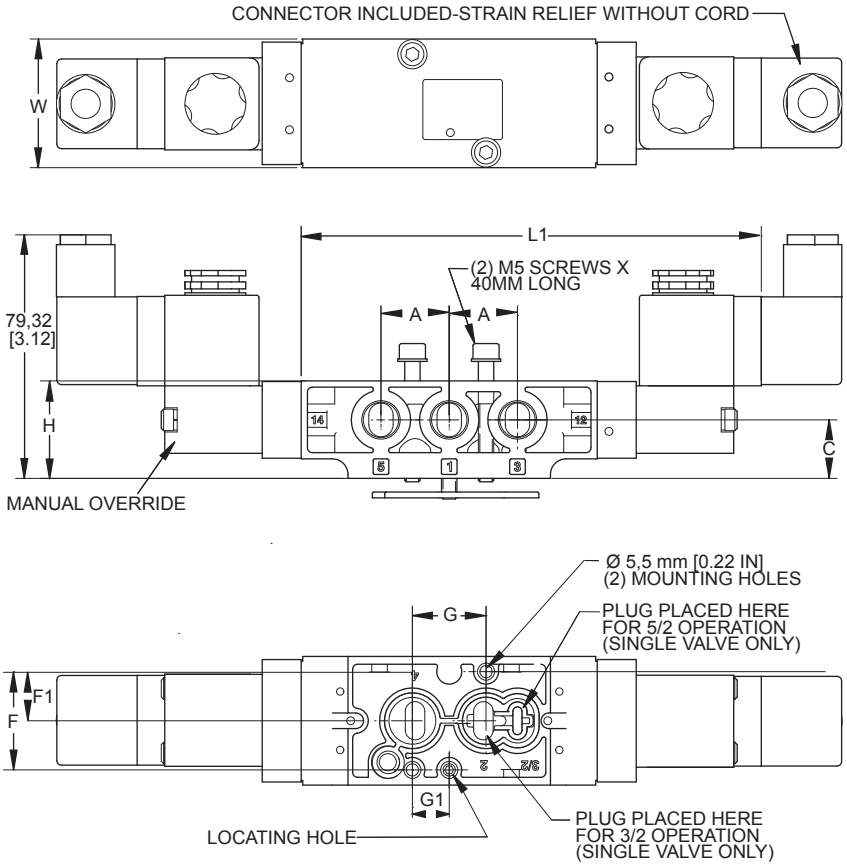
NAMUR Actuator - Intrinsically-Safe Solenoids

Dimensional Information

D06

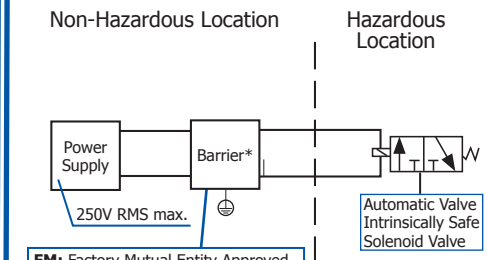


D20



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. > ("I t" or "I sc")

CSA: "CSA Barrier rated 28 V 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

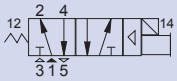
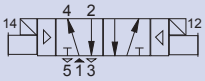
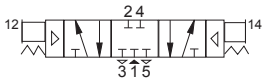
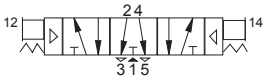
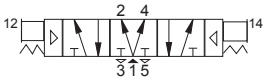
D20-009

D20 Single

D20-002

D20-001-S
(Shown: Stainless Steel[1])

Model Numbers

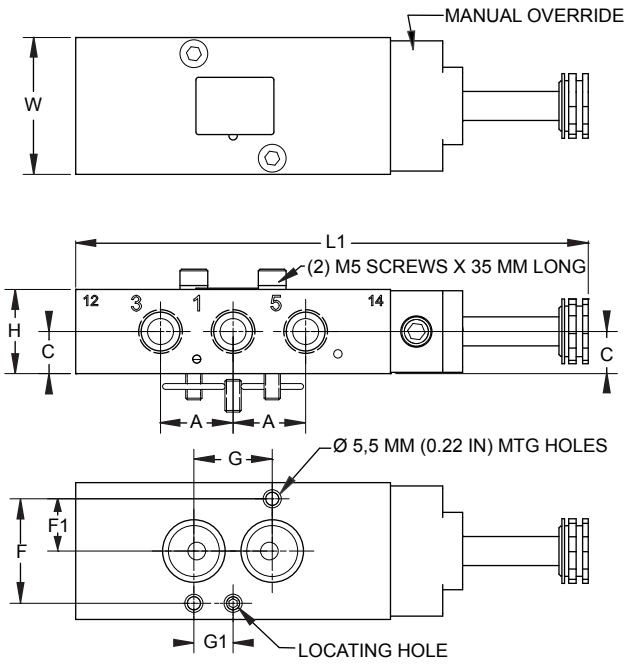
	Function		Port Size	Flow l/min (Cv)	Model Number	Materials		Weight kg (lb)
	Description	Schematic				Body	Seal	
5/2	Single Left		1/4	1770 (1.8)	D20-002-**	Aluminum[1]	NBR	0,34 (0.75)
	Single Right				D20-001-**			
	Double				D20-009-**			0,37 (0.82)
5/3	Block Double		1/4	1381 (1.4)	D20-037-C-**	Aluminum[1]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

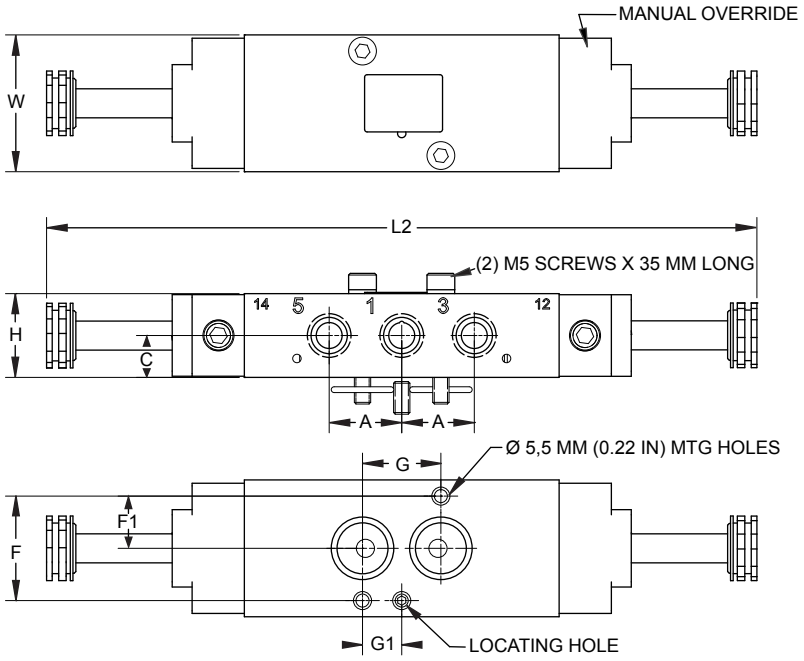
NAMUR Actuator - Bar Stock Solenoids

Dimensional Information

D20 Single



D20 Double

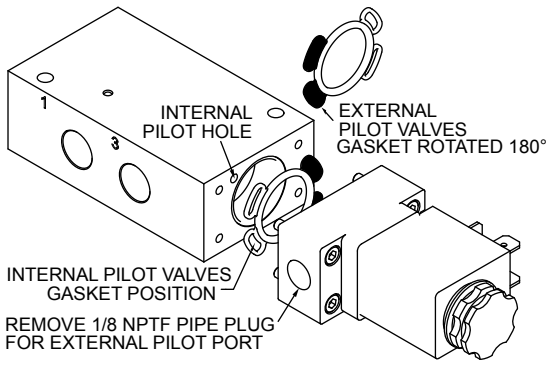


Series	Description	A	C	F	F1	G	G1	H	L1	L2	W
D20	Single	22,2 0.88	12,7 0.50	32,0 1.26	16,0 0.63	23,9 0.94	11,9 0.47	25,4 6.12	15,5 6.12	-	41,9 1.65
	Double	22,2 0.88	12,7 0.50	32,0 1.26	16,0 0.63	23,9 0.94	11,9 0.47	25,4 1.00	-	214 8.42	41,9 1.65

Units of Measure: Top - mm, Bottom - inches

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) *Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.*
B	External Pilot	For solenoid applications where the pressure to port one is less than 2 BAR (35 PSIG). See example below for field conversion. (D20 only)
		Field Conversion • 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. 
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

Option P: Transition Plate

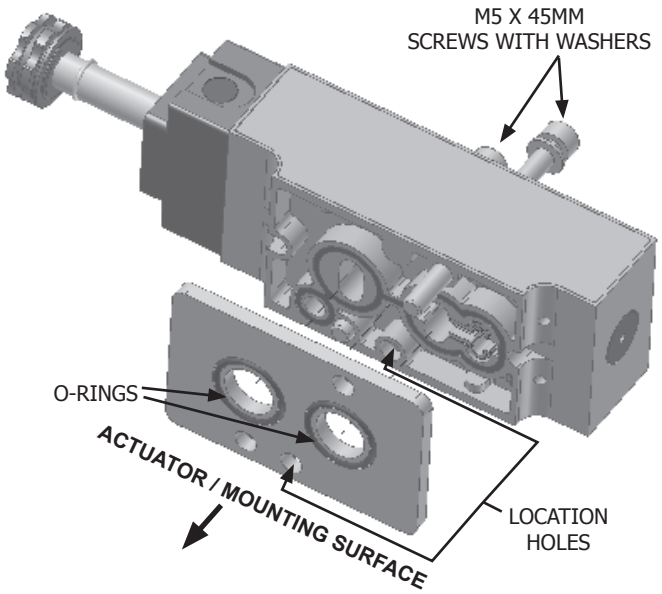
The Transition Plate is designed for use in situations where the sealing face of the solenoid valve extends beyond the mounting surface.

(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



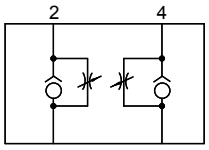
Installation Instructions: Transition Plate

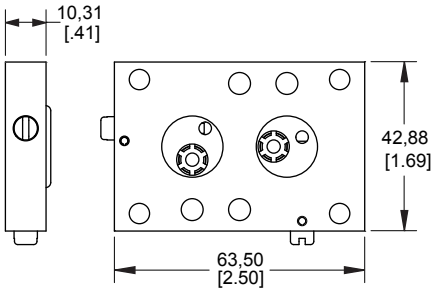
1. Place the plate between the solenoid valve and the actuator with the o-rings facing the actuator.
2. Use the supplied **M5 x 45mm screws** to secure the solenoid valve/plate assembly to the mounting surface. These are the screws supplied in the plate kit, not those originally supplied with the valve.
   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) ±10% to effect a seal on the o-ring and gasket side of the transition plate.

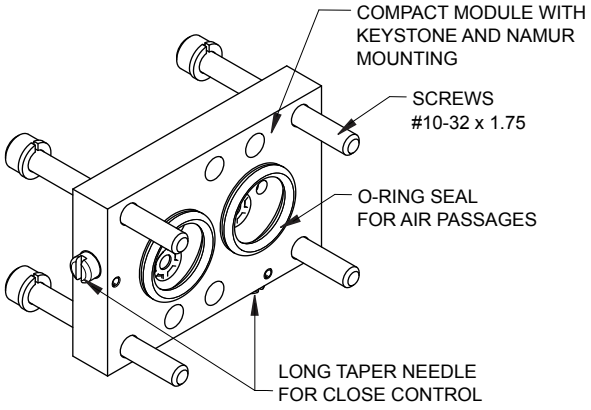
Speed Control Valve

- 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







NAMUR Actuator Solenoids - Accessories

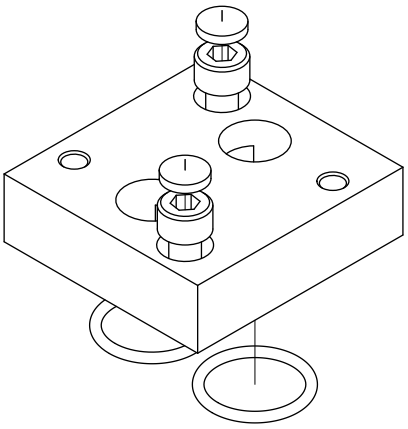
Mufflers

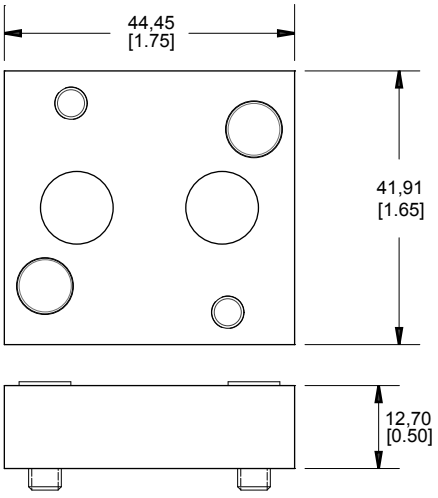
Part Number	Description		Pipe Size NPT	Flow l/min (Cv)	Length mm (in)	Hex Size mm (in)	Weight kg (lb)
84C-2	Exhaust Muffler • Reduces exhaust noise level in air systems. • Maintains full volume air flow with minimum back pressure. • Threads into exhaust port.		1/4	2060 (2.3)	44,5 (1.75)	14,3 (9/16)	0,020 (0.044)
84D-2	Sintered Exhaust Muffler • 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 Restricter/Sintered Muffler • 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

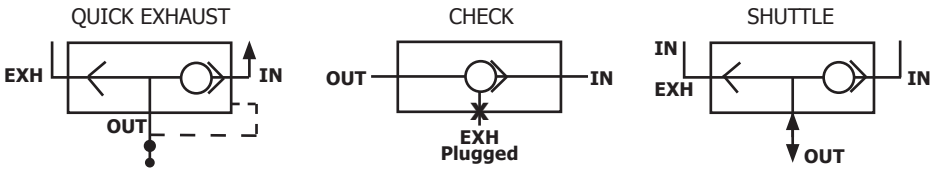




NAMUR Actuator Solenoids - Accessories

Quick Exhaust, Check and Shuttle Valves: Series: MQ2

One model does all three functions



Features

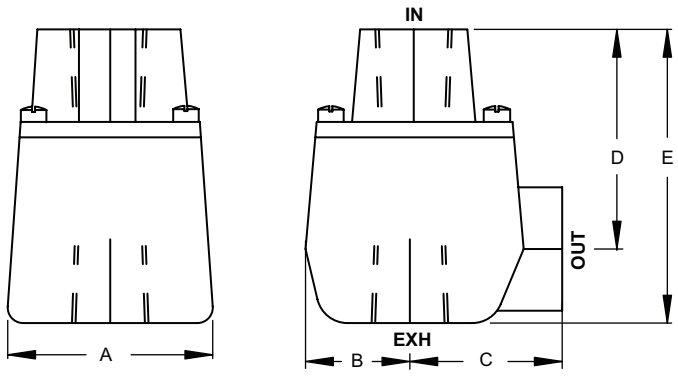
- Rugged internal construction outlasts and out performs the competition.
- Quick Exhaust: When **IN** is pressurized, flow is from **IN** to **OUT** with **EXH** blocked. When **OUT** is pressurized, flow is from **OUT** to **EXH** with **IN** blocked
- Check Valve: Free flow from **IN** to **OUT** 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)

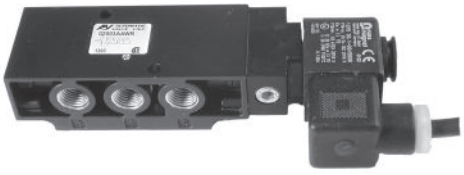
Dimensional Information



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

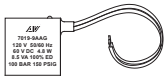
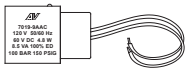
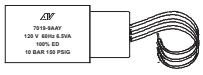
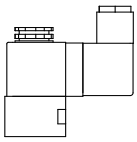
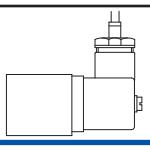
Units of Measure: Top-mm, Bottom-inches

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 **7019-9**Y**	=	 **D2003AAWR-**Y**
 **D2003AAWR**	+	 ATEX Explosion-Proof with 39" Cable **7152-9****	=	 **D2003AAWR-**Z**

NAMUR Actuator Solenoids - Electrical Information

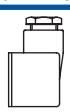
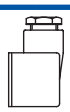
Part Numbers

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 Ex m II T4; AEx m 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 ATEX 2018 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	Z	W		V	Z
	NEMA 4	NEMA 7,9 & 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	Strain Relief with Light & 6' Cord	
		100-240 AC 48-120 DC	6-48 AC/DC			100-240 AC 48-120 DC	6-48 AC/DC
Part Number	**7020-001**	**7020-AA**	**7020-DB**	**7039-001**	**7020-006**	**7094-006**	**7094-007**

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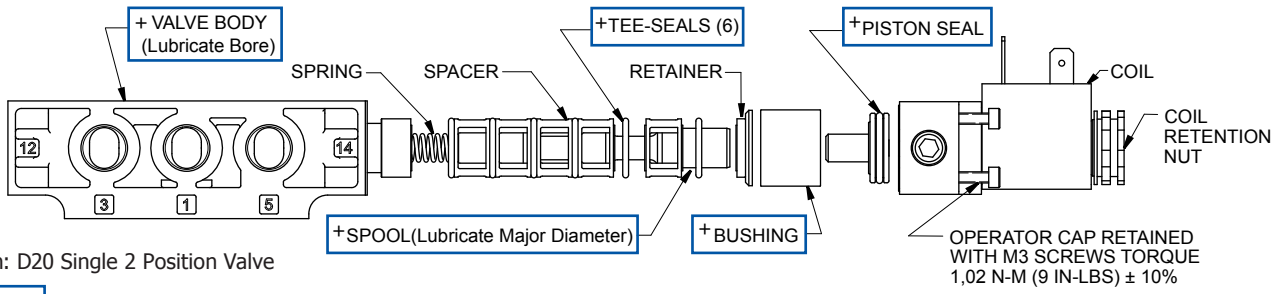
NAMUR Actuator Solenoids - Service Information

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



Shown: D20 Single 2 Position Valve

[+] = Items that Must Be Lubricated

Service Kit Installation Instructions

1. 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.
2. Turn off electrical power to the valve.
3. Remove valve from all electrical and air power sources.
4. Ensure all stored air power is exhausted.
5. Remove coil by first removing coil retention nut.
6. Remove operator cap by first removing 4 socket head cap screws.
7. Remove existing serviceable components by "pushing" internal components gently out of the valve body.
8. Clean the spool with a clean cloth.
9. Discard the spring (Single Spring Return Models Only).
10. 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.
11. Replace components as shown above.
    - 11.1 Replace spring pad and spring (Single Spring Return Models Only).
    - 11.2 Alternate Tee-seals and spacers.
    - 11.3 Once all 6 Tee-seals are installed, replace the retainer, bushing and piston.
12. Orientate the operator cap by aligning the open end of the gasket with the pilot hole in the valve body.
13. 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.

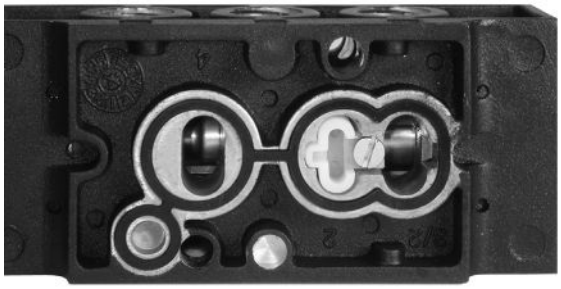
Model Numbers: Service Kits

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)

3/2 5/2 5/3

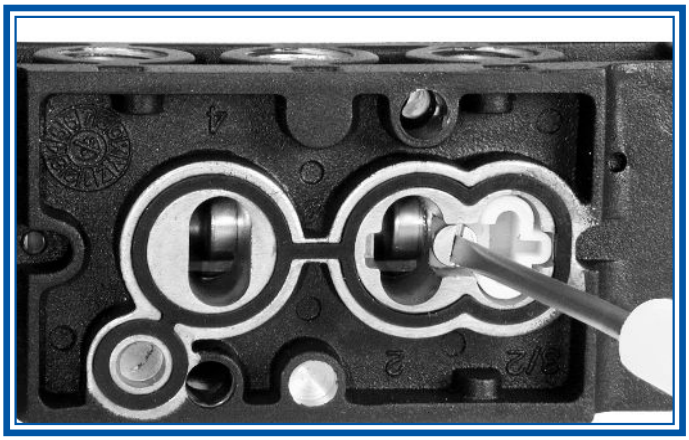
NAMUR Actuator Solenoids - 4 Way/3 Way Conversion

Views

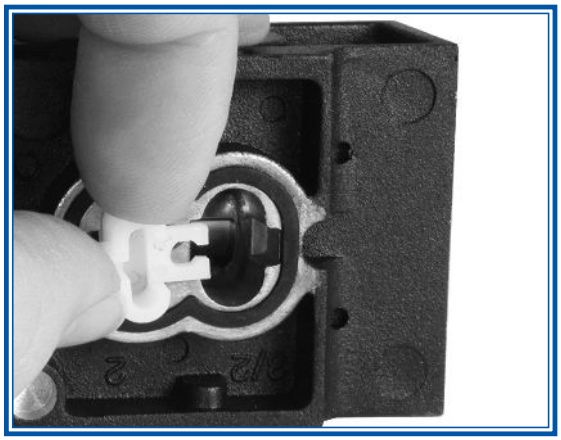
4 Way	3 Way
	
The D20 works as a 4 way when the plug is in the outer cavity.	The D20 works as a 3 way when the plug is in the center cavity.

Conversion Steps

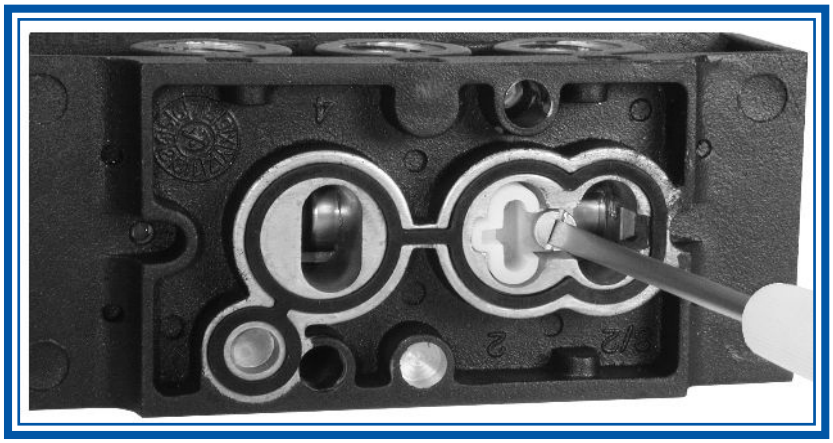
4 Way to 3 Way Conversion



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)