



PERFORMANCE
FOR THE MODERN
WORLD

Product overview

W>PL9
1>15899W//OSIHFG//OIU9889984//>>>5G
X>>123
4684 /
ZZ99 8
/OIU9889984//>>>5G
53 RBB8 // W>PL9 NLUSD68644684 ///987456 0PPR 88//>>979/+ #12-XC/YZZ998/>>555TIXXZ9/
6 0PPR88// >>97 9/+ #12-XC/YZZ998/ >>555TIXXZ9/1/111>15899W//OSIHFG//OIU9889984//>>>5G
XZ9/1/111 >15899W //OSIHFG //OIU98899 84 />>>5G4#1X>>

AFP SPECIALIZES IN THE DESIGN AND MANUFACTURE OF COMPLEX CHROMATOGRAPHY MEASUREMENT VALVES FOR THE INSTRUMENTATION, LABORATORY, SCIENTIFIC AND INDUSTRIAL MARKETS. OUR SOLUTIONS INCORPORATE INNOVATIVE PATENTED TECHNOLOGIES THAT ENSURE CONSISTENT AND EXTREMELY PRECISE MEASUREMENT AND THEY ARE THE CHOICE OF THE WORLD LEADING COMPANIES IN THE FIELD. MANUFACTURED WITH THE BEST TECHNOLOGIES AVAILABLE AND CALIBRATED AND CONTROLLED BY AN EXPERT TEAM DEDICATED TO PERFECTION, OUR ANALYTICAL PRODUCTS REPRESENT A RELIABLE AND AFFORDABLE OPTION FOR ANY COMPANY SUBJECT TO THE INCREASINGLY STRINGENT REQUIREMENTS OF THE MODERN WORLD.



HIGH PERFORMANCE GC DIAPHRAGM VALVE

The only one with an embedded patented purge system.

- UNIQUE PATENTED PURGE FEATURE
- VALVES TO FIT YOUR APPLICATION
- THE ONLY DIAPHRAGM VALVE FOR VACUUM APPLICATION
- REAL-TIME HEALTH MONITORING
- AVAILABLE WITH NO-PURGE OPTION EXCEPT MDVG SERIES

The GC diaphragm valve family is available with multiple configurations to answer to your specific needs. We offer different valve head materials such as SS-316L, Hastelloy®, Monel®, PEEK, PTFE, and more. We also offer coatings like SilcoNert® 2000 and Dursan®. Our valves are rated from 150 to 500 psig but can be tuned up to 1500 psig if required. Actuation pressure is normally 65 psig but can be lowered if needed. Custom requests are welcome.

ELDV1	ELDV2	MDVG
Purged standard Mini-diaphragm valve	Purged high-performance Mini-diaphragm valve	Purged premium-grade Mini-diaphragm valve
LT version: Max 100°C Pressure: Max 150 psig Port sizes: 1/16" and 1/8" Cross-port leak rate Max pressure: 9.0 x 10 ⁻⁹ atm-cc/s He	LT version: Max 100°C MT version: Max 180°C Pressure: Max 300 psig Port sizes: 1/16" and 1/8" Cross-port leak rate Max pressure: 4.7 x 10 ⁻¹¹ atm-cc/s He	LT version: Max 100°C MT version: Max 180°C HT version: Max 250°C Pressure: Max 500 psig Port sizes: 1/16" and 1/8" Cross-port leak rate Max pressure: 3.0 x 10 ⁻¹² atm-cc/s He

ELDV/MDVG series configuration (for other configurations, contact us)

1

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1	2	3	4	5	6	7
MODELS	# OF PORT	FITTING	TEMPERATURE	SAMPLING	RS.L. SIZE	OPTION
ELDV1	4	16 = Fitting 1/16"	LT = 100°C	0 = N/A	0 = N/A	XL = Extended life
ELDV2	6	LS16 = Lip Seal 1/16"	MT = 180°C	ISL	05 = 0.5 µl	S = SilcoNert2000™
MDVG	10	V8 = VCR 1/8"	HT = 250°C	ADSL	10 = 1.0 µl	D = Dursan™
				SDSL	15 = 1.5 µl	C = Pre-conditioning
					20 = 2.0 µl	V = Vacuum
					30 = 3.0 µl	HC = Hastelloy®
					50 = 5.0 µl	MO = Monel®
						TI = Titanium
						P10 = .010" Ports Size
						P15 = .015" Ports Size
						P40 = .040" Ports Size
						NP = No Purge

*Ex.: MDVG-6-16MT-0-0, mini-diaphragm valve grooved, with purge, 6 ports 0.030", fittings 1/16", 180°C, 500 psig, diaphragm AFPD-2, all SS-316L valves.



MRV series

- TREATED ROTOR, NO-STICKING ACTION
- LOW ROTATIONAL FORCE
- MOUNTING COLLAR DESIGN FOR ANTI-ROTATION ASSEMBLY
- EXTENDED PIN DESIGN DRIVE ADAPTOR (DOUBLE-STOP PIN FOR NO RADIAL FORCE)

In many applications where a purge was not necessary and space inside instruments was limited, there was a need for a small form factor rotary valve. The MRV was designed from our purged rotary valve series (RV series) where our embedded purge system made this valve slightly bigger. We kept all our patented features from the RV series that were making it so reliable, like the double stopper, coated guide bushing drive adaptor, anti-rotational dowel pins and treated rotors.

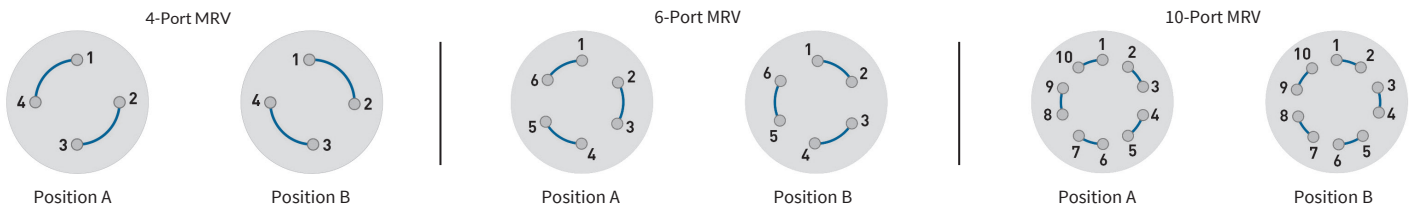
MRV series (non purged)

Available with 4, 6 and 10 ports, Internal sampling (LSV)
Port size available: 1/16"

Rotor R2 (modified PEEK)
T = ambient to 225°C
Pressure: 425 psig

Rotor R3 (modified polyimide)
T = ambient to 225°C
Pressure: 425 psig

Available flow path



Acceptable media

	Gasoline	Strong Acids	Strong Bases	Hydrocarbons	Oxidizing Agents	Alcohols	Ketones	Esters	Steam	Max. Continuous Temperature
AFP™ PEEK	E	F	E	E	F	E	E	E	E	225°C
AFP™ Polyimide	F	F	N	G	N	E	G	E	N	260°C

E: Excellent | G: Good | F: Fair | N: Not Recommended

MRV configuration (for other configurations, contact us)

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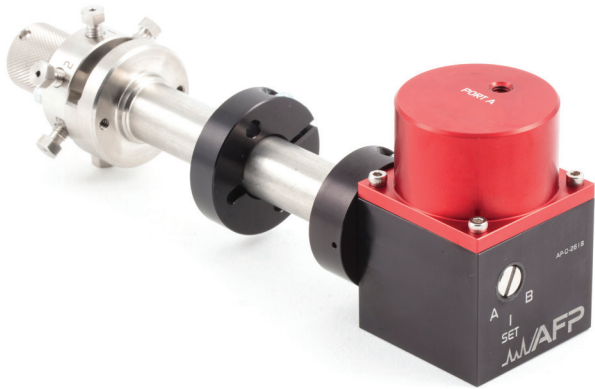
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9

-

10

1	2	3	4	5	6	7	8	9	10
MODELS	# OF PORT	TYPE	PORT SIZE/FITTING	STATOR MATERIAL	ROTOR MATERIAL	SAMPLING	SAMPLING LOOP SIZE	OPTION	STANDOFF AND ACTUATOR
MR	4 6 10	S = Selection G = Generic	A = 1/16" Fitting, .016" ports H = 1/16" Fitting, .025" ports	SS = Stainless Steel HC = Hastelloy C-22	R2 = PEEK: Max 225°C R3 = Polyimide: Max 260°C	0 = None	0 = None	0 = None D = Dursan C = Pre-Conditioning	0 = None (with mounting Hardware) R = Replacement Valve Only CP = Close Mount + MPA 2P = 2" Standoff + MPA 4P = 4" Standoff + MPA 6P = 6" Standoff + MPA CE = Close Mount + MEA 2E = 2" Standoff + MEA 4E = 4" Standoff + MEA 6E = 6" Standoff + MEA



MPA

Mini pneumatic actuator

The MPA was designed to be oven wall mounted with the smallest form factor. It's available with different standoff length. By its internal concept, this actuator is strong compared to its size. It's a low-cost actuator to be used with MRV valves.

- **SMALLER FOOTPRINT ON THE MARKET**
- **HIGH TORQUE COMPARED TO ITS SIZE**
- **UP TO 125°C**
- **STANDOFF AVAILABLE LENGTHS: 2, 4, 6 INCHES**
- **DIRECT OVEN MOUNT AVAILABLE**

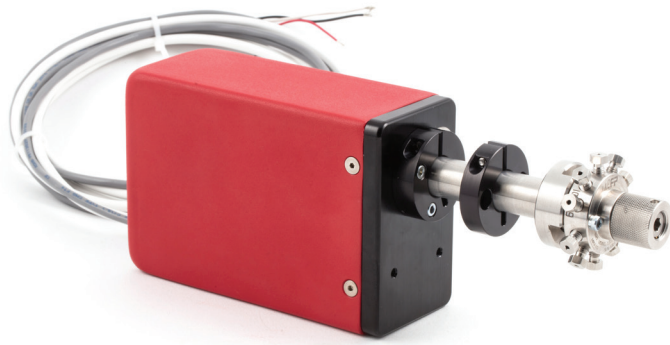
MEA

Mini electrical actuator

Our electrical rotary actuator family makes sure to transfer only rotational forces. No radial or axial force is applied to the valve.

During normal operation, a software routine prevents valve overloading. Here, valve overloading is defined as hitting and positions against valve stoppers at each actuation. On request, the software will execute and record home position. By reducing the overloading action, our actuator is effectively increasing the valve's life. Experience shows that overloading on stopper and/or driver pin tends to engrave them resulting in valve malfunction. Our actuator has its own microcontroller that can be programmed in different ways. Positioning parameters, position feedback and other features can be transmitted to or received from the microcontroller. Many other AFP products can be linked to the actuator.

- **TWO- OR MULTI-POSITION**
- **SOFTWARE-CONTROLLED ADJUSTABLE END OF TRAVELING POSITION**
- **NO RADIAL FORCE TRANSFERRED TO THE ROTOR**
- **SHIP WITH FILL IN THE BLANK TYPE CONFIGURATION SOFTWARE**
- **LABVIEW AND THIRD-PARTY SOFTWARE AVAILABLE**

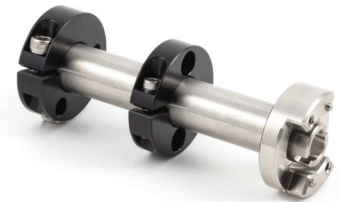


MAC

Manual actuator,
ergonomic design

Standoff

Available in 2", 4" and 6"



Actuator configuration (for other configurations, contact us)

1	-	2	-	3	-	4
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1 MODELS	2 2 POSITIONS	3 VALVE INTERFACE	4 MOUNTING BRACKET (OPTIONAL)
MAC = Manual Actuator MPA = Mini Pneumatic Actuator MEA = Mini Electric Actuator STO = Standoff	— = Standard (2 positions)	0 = None (with mounting hardware) C = Close mount 2 = 2" Standoff 4 = 4" Standoff 6 = 6" Standoff	— = None B01 = Short Benchtop Mounting Bracket B02 = Long Benchtop Mounting Bracket

- 1 Ultra-fine pitch threads transfer the force to the ferrule in a much smoother way.
- 2 An anti-friction and anti-galling coating is applied to the front and the threaded portions of nut. This reduces the friction at least by an order of 10, eliminating the rotation of the ferrule when the nut is screwed in.
- 3 Gold-plated ferrules are used to insure an optimized sealing performance.
- 4 A fine lip has been added on the bottom of the detail; this creates a first metal to metal seal section with no dead volume, similar to VCR fitting.
- 5 The front portion of the ferrule is longer, in order to occupy more of the empty volume. Doing so reduces an eventual dead volume.



///987456 0PPR88//>>97 9/+ #12- XC/YZZ998//>>555TIXXZ9/1/111>15899W//OSIHFG//OIU9889984//
 1X>>123 SGF7 >> 453 RBB8 // W>PL9 NLUSD68644684 ///987456 0PPR88//>>979/+ #12- XC/YZZ998//
 TTXZ9/1/111>15899W//OSIHFG//OIU9889984///
 B8 // W>PL9 NLUSD68644684 ///987456 0PPR88//>>979/+ #12- XC/YZZ998//>>555TIXXZ9/1/111>15899W//
 /OSIHFG//OIU9889984//>>5G4#1X>>123 SGF7 >> 453 RBB8 // W>PL9 NLUSD68644684 ///987456 0PPR88//
 G//OIU9889984//>>5G4# 1X>>123 SGF7 >>



Why use pre-cut tubing? To save time upon assembly since it is always perfectly cut square, without burrs or contamination, and already passivated.

We offer a wide range of ID, OD and straight lengths.

1/16" OD	1/8" OD	Lengths
0.005" ID	0.085" ID	5 cm
0.010" ID		10 cm
0.020" ID		20 cm
0.030" ID		30 cm
0.040" ID		50 cm
		100 cm



Coiltube

We are also able to provide you the same quality seamless tube in coil. If you require any special length cut, just let us know and we will make you a quote.



Sampling loop

We have different sampling loops available from the AFP standard tubing range. This also includes the internally coated tubes.

Please note that when ordered with lip seal fittings, these will be pre-assembled, i.e. with fine pitch threads and low-friction coated fine pitch nuts, helping to prevent galling especially at high temperatures. This option includes gold-plated ferrules.

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>>5G4#  
3//>>555  
123 SGF7 >> 453 RBB8 // W>PL9 NLUSD68644684 ////987456 0PPR88//>>979/+ #12-XC/YZZ998/>>555T  
68644684  
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OSIHFG//OIU9889984//>>5G4#1X>>123 SGF7 >> 453 RBB8 //  
/>>97 9/+ #12-XC/YZZ998/>>555TXXZ9/1/111>15899W//OSIHF-  
453 RBB8 // W>PL9 NLUSD68644684 ////987456 0PPR88//>>9
```




meta4.0

SMART PROCESS MANUFACTURING

Powering performance with data

APN GLOBAL HAS BUILT A REPUTATION ON DEVELOPING PRACTICAL, EFFECTIVE SOLUTIONS THAT ARE PERFECTLY ADAPTED TO YOUR BUSINESS CONTEXT AND STANDARDS. WE GO WELL BEYOND THEORY AND DESIGN. WE CARE ABOUT DELIVERING CONCRETE AND TANGIBLE RESULTS THAT WILL BE NOTICEABLE ON THE SHOP FLOOR. EMPOWER YOUR BUSINESS DATA!

APN Global

APN GLOBAL IS MADE UP OF SIX OF NORTH AMERICA'S MOST INNOVATIVE AND BEST-PERFORMING COMPANIES. EACH ONE SPECIALIZES IN THE MANUFACTURING OF COMPLEX PARTS AND PRODUCTS IN ACCORDANCE WITH SPECIFIC CUSTOMER REQUIREMENTS AND THE HIGHEST INTERNATIONAL STANDARDS FOR INDUSTRIES SUCH AS AEROSPACE, DEFENSE, LIFE SCIENCES, AND THE COMMERCIAL SECTOR.



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PERFECTION MULTIPLIED

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