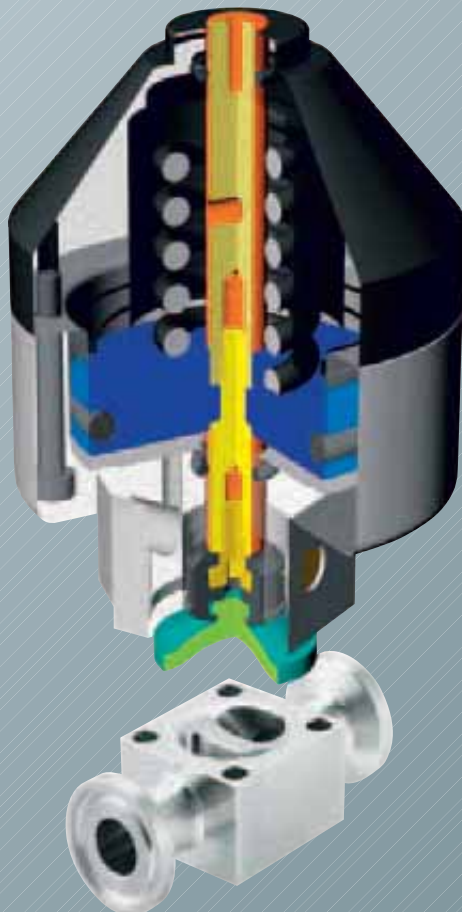


# Sterile VALV diaphragm valves for quality applications



# Diaphragm valves always one step ahead



## Flexibility, Quality, machined from solid

The main feature of our valves is the manufacturing process. All valve bodies are manufactured from solid bar stock or block material, including all connecting ends (DIN, ISO, Tri-Clamp etc). This method excludes welded seams, porosity, varying density, internal material movement and miniature cracks common with forgings/castings. By this extraordinary feature our products differ in a decisive way from comparable products on the market. Our success is based on our customer-oriented design with high standards of quality combined with maximum flexibility. Through the availability of modern CNC-machines combined with highly-qualified staff we are able to offer fast and efficient delivery to our customers.

## Diaphragm valves offer many features

- Self-draining (orientation can be marked on the valve upon request)
- Easy to clean, pocket-less design, no areas for fluid entrapment
- Fluid flow in both directions
- Positive, leak-free closure
- Fully enclosed diaphragms and activators without pockets
- Smooth, streamlined fluid flow due to high quality internal surface.

## Customer benefits

- The totally closed design prevents any dust or fluids getting into the valve body or activators.
- There is a tight fit between valve body and activator. This precisely defined interface prevents any screws from loosening or dirt getting to the valves.
- Valve bodies - all connecting ends are made from one solid block including butt weld, Tri-Clamp, and threaded ends etc. according to DIN/ISO BS/ANSI/SMS.
- 100 % homogenous material, no internal material movement or varying density, and no miniature cracks as often common with forgings.



## VALV – the company



### **Customer driven**

Since 1990, VALV AG has produced high quality diaphragm valves for the pharmaceutical and chemical industry. With a total of 25 employees, equipped with modern machine facilities, we manufacture diaphragm valves of all geometric types with different end connections according to international standards. VALV AG is represented in most European countries and in the US.

Modern facilities with high-tech data processing linked to our fully equipped machine shop ran by trained personnel insure a high standard of quality and production. On time deliveries of the finished product backed by the quality management certificate ISO9001:2000 keeps VALV AG always one step ahead.

### **3D-CAD**

Close collaboration between our design team and experienced users make sure that we are always one step ahead of competition. Being able to connect our three dimensional CAD design system (Solid Works) to our CAM system, CNC machining centres and lathes gives a basis for fast and above all flexible solutions for our customers.

Technical information for specials as well as for standard valve bodies is available as 2D-drawings which can fit into your layouts or as 3D-files for verification and approval.



ISO 9001:2000





### **Machined from solid**

All valve bodies are manufactured from solid bar stock or block material, including all connecting ends. This is the only way to guarantee a porous-free product. Modern machining facilities are available with 12 CNC machining centres and multi-axis lathes, among them a horizontal machining centre with 20 pallets and 300 tools. All valves are 100 % inspected for internal surface defects, correct assembly and leak tested in open and closed position. Special care is taken to produce a high grade surface finish of the valve body. The standard finish is Ra 0.8 µm with Ra 0.2 µm and electro polishing on request.



## Valve bodies machined from solid material



### **Valve bodies with butt-weld connections**

Integral valve body and butt-weld ends are manufactured from one solid block, no welding. Tube lengths are available to accommodate automatic (orbital) welding. Tube sizes and extensions are listed on page 12.



### **Valve bodies with Tri-Clamp end connections**

Tri-Clamp connections according to DIN 11850 and SMS 3008. Clamps for valve sizes are made from one solid block, no welding. This prevents porosity, varying density and eliminates miniature cracks often common in cast or forged materials.



### **Valve bodies with screwed ends**

Integral valve bodies made from one solid block with threaded ends to DIN 11851 SMS and BS 186, internal or external threadings.





**T pattern valve bodies**

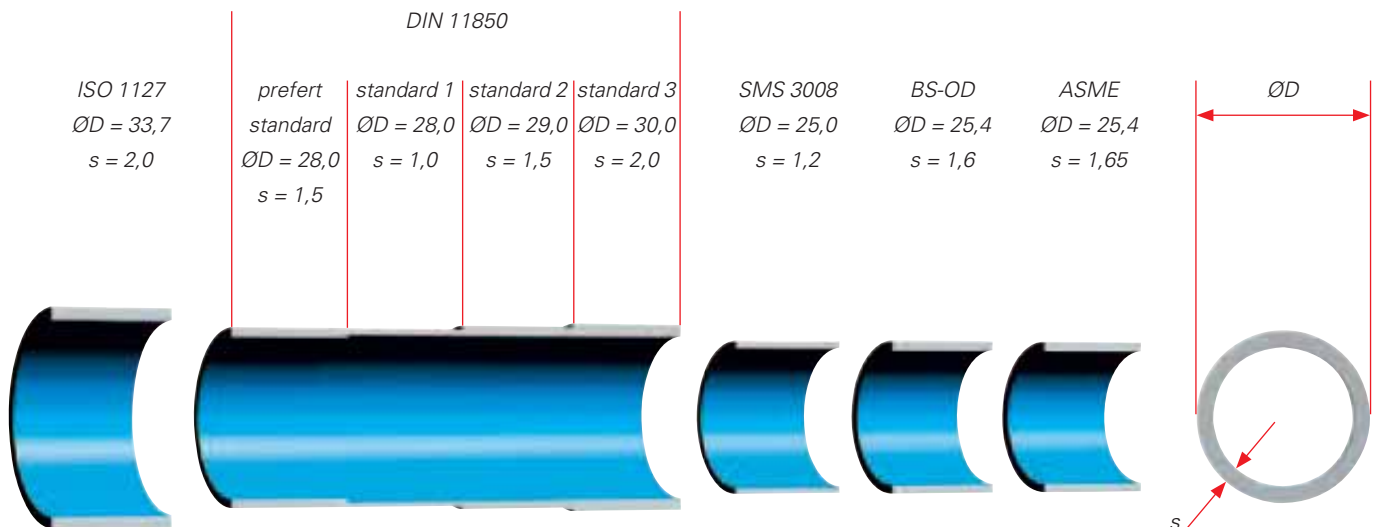
Integral body with ends machined from a solid block. There are a wide variety of port sizes and configurations available. Ideal for sampling valves. Delivered with butt weld ends, Tri-Clamp and threaded ends, standard manual or pneumatic activators.

**Tank bottom valve bodies**

Integral valve body, manufactured from a solid block, no weldings. Entrapment free. The conical flange assures drainability. Delivered with butt weld ends, Tri-Clamp, threaded ends, standard manual or pneumatic activators.



**International standard tube sizes (sample DN 25)**



## VALV Diaphragms



### Elastomer diaphragms

Soft elastomer diaphragms consist of a mixture of vulcanised rubber, reinforced with a net of a special material. This process offers higher wear resistance, increased dimensional stability and increased temperature range. And as a result more flexibility and a longer service life. Standard materials of rubber diaphragms are as follows:

- EPDM reinforced peroxide
- FPM (Viton)

### TFM/PTFE diaphragms

PTFE diaphragms offer the highest possible degree of chemical resistance and last considerably longer than soft elastomer diaphragms. Sizes NW 08/10 have a sandwich construction (TFM and EDPM combined). All other sizes offer a 2 piece construction with higher flexibility. This permits the closing force to be minimal, enhances reliability and increases service life of the diaphragms, in particular if exposed to steam.

### FDA acceptance

All diaphragms meet FDA standards, with the exception of standard FPM (Viton). A certificate of conformity is available upon request.

### Marking

All diaphragms are marked on the reverse side for identification of material and production date. Apart from the standard diaphragm program, other materials are available on request.





## VALV – Bonnets and actuators



### Manual handwheels

Corrosion and wear resistant bonnets with 4 screws for easy assembly. Additional O-ring for perfect sealing. Bonnet material is hard anodised or PFA coated aluminium, or a lower cost unit with PA66-GF. Autoclave temperature is 130° C.

### VALV manual handwheels and pneumatic actuators offer these advantages:

- Modern design = exact position of interface.
- minimal parts – reliable operations and easy assembly.
- totally enclosed and leak proof – high level of reliability.
- Corrosion proof material – means long, trouble free life.



### Stainless steel bonnets

For optimum performance and wear resistance. Autoclave temperature is 130° C. Handwheel made of stainless steel or POM. Polished stainless steel bonnets are available for DN 08–DN 25. Sizes above DN 40 have handwheels with stainless steel spindles.

### Bonnets DN 25 and up

PFA coated or hard anodised aluminium bonnets. Large size handwheels for easy operation. Handwheels are made of an epoxy coated light weight material with stainless steel spindle. Autoclave temperature is 130° C.

### Pneumatic actuators

For automatic operation, double acting spring to close, and to open, with different springs for different diaphragm material. Available with housing made of hard anodised aluminium or with PFA coated aluminium. Visual indication of valve position. Autoclave temperature is 130° C.

### Pneumatic stainless steel actuators

Housing and components made of stainless steel. Spring to close, and to open or double acting in one construction. Visual indication of valve position. Autoclave temperature is 130° C.

## VALV – Accessories for actuators



### Digital position indicator

Inductive positioning indicator for open or closed position. With digital position indicators, diaphragm valves from VALV AG can be considered as automatic control valves.



### Proximity switches

Type 1: open or closed  
 Type 2: open or closed, side mounting  
 Type 3: open or closed, with sensor  
 Type 4: open or closed, with adjustable sensor.



### Solenoid valves

2 types:

- integral solenoid valve
- solenoid valve to be added to the air supply inlet



Special care is taken to produce a high-grade surface finish of the valve body. For standard types the finish is  $Ra \leq 0,8 \mu m$ . For special customer requirements we can produce surface finishes of all grades down to  $Ra \leq 0,2 \mu m$ . These fine finishes can be achieved because the valve body is machined from solid block material with no welded seams between body and connections.

### Quality certificate

We maintain a high standard of quality backed by the quality management certificate ISO 9001:2000. Every valve delivered is clearly marked with an order number and a reference, to trace material according to certificate 3.1.8.

Finishing Level	Mechanical Polishing
Ra 0,8 $\mu m$	Standard, grinding
Ra 0,8 $\mu m$	Standard, electro polishing
Ra 0,6 $\mu m$	Grinding, polishing
Ra 0,6 $\mu m$	Plus electro polishing
Ra 0,4 $\mu m$	Grinding, polishing
Ra 0,4 $\mu m$	Plus electro polishing
Ra 0,2 $\mu m$	Fine polishing
Ra 0,2 $\mu m$	Plus electro polishing

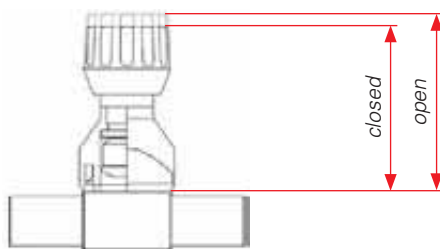
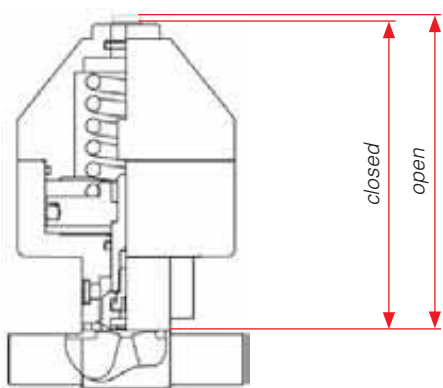
# VALV diaphragm valves, order information

	Description	Code	Sample																		
	<b>Actuators</b> Manually operated, plastic, turning knob (DN 08–DN 25) or handwheel (DN 25) Manually operated, aluminium (DN 40–DN 100) Manually operated, stainless steel 1.4301, turning knob or handwheel Lever control, aluminium Lever control, stainless steel 1.4301 Pneumatic drive, aluminium, spring power opened Pneumatic drive, aluminium, spring power closed Pneumatic drive, aluminium, double acting Pneumatic drive, stainless steel 1.4301, spring power opened Pneumatic drive, stainless steel 1.4301, spring power closed Pneumatic drive, stainless steel 1.4301, double acting	<b>AMDK</b> <b>AMD</b> <b>AMDR</b> <b>AMK</b> <b>AMKR</b> <b>AMP</b> <b>AMPB</b> <b>AMPD</b> <b>AMPR</b> <b>AMPBR</b> <b>AMPDR</b>	<b>AMDK</b> Manually operated, made of plastic, with turning knob																		
	<b>Nominal widths</b> 08 / 10 / 15 / 20 / 25 / 32 / 40 / 50 / 65 / 80 / 100		<b>08</b> Valve size DN08																		
Above mentioned valve bodies are also available with <b>Tri-Clamp</b> ends. <b>TC</b> has to be added in the code after the initial coding. Bodies made of Hastelloy C22 on request	<b>Standard valve bodies made of stainless steel 1.4435 / 1.4404</b> Valve body <b>S</b> -type (self draining) with buttweld ends Valve body <b>V</b> -type with buttweld ends Valve body <b>S</b> -type (self draining) with <b>Tri-Clamp</b> ends Valve body <b>V</b> -type with <b>Tri-Clamp</b> ends <b>Special valve bodies made of stainless steel 1.4435 / 1.4404</b> <b>T</b> -valve bodies S-Type (self draining) with buttweld ends <b>T</b> -valve bodies V-Type with buttweld ends <b>2-way</b> -star valve body <b>S</b> -type (self draining) with buttweld ends <b>2-way</b> -star valve body <b>V</b> -type with buttweld ends <b>3-way</b> -star valve body <b>S</b> -type (self draining) with buttweld ends <b>3-way</b> -star valve body <b>V</b> -type with buttweld ends <b>4-way</b> -star valve body <b>S</b> -type (self draining) with buttweld ends (Quadro) <b>4-way</b> -star valve body <b>V</b> -type with buttweld ends (Quadro) Valve body <b>SP</b> -type (self draining) with sample bore Valve body <b>VP</b> -type with sample bore Floor-drain valve body <b>S</b> -type (self draining) with buttweld ends Valve body <b>SG</b> -type (self draining) with thread ends Valve body <b>VG</b> -type with thread ends valve body <b>SRD</b> -type (self draining) with round thread ends valve body <b>VRD</b> -type with round thread ends	<b>S + D x s</b> <b>V + D x s</b> <b>STC + D x s</b> <b>VTC + D x s</b>  <b>ST + D x s</b> <b>VT + D x s</b> <b>2S + D x s</b> <b>2V + D x s</b> <b>3S + D x s</b> <b>3V + D x s</b> <b>4S + D x s</b> <b>4V + D x s</b> <b>SP + D x s</b> <b>VP + D x s</b> <b>SB + D x s</b> <b>SG + D x s</b> <b>VG + D x s</b> <b>SRD + D x s</b> <b>VRD + D x s</b>	<b>S12 x 1</b> S-type with buttweld ends diameter x wall thickness (D x s)																		
Intermediate stages also available	<b>Surface finishes</b> Ra <b>0.8</b> µm, polished Ra <b>0.8</b> µm, polished and completely electro-polished Ra <b>0.6</b> µm, polished Ra <b>0.6</b> µm, polished and completely electro-polished Ra <b>0.4</b> µm, polished Ra <b>0.4</b> µm, polished and completely electro-polished Ra <b>0.2</b> µm, finest polished Ra <b>0.2</b> µm, finest polished and completely electro-polished	<b>0.8</b> <b>0.8E</b> <b>0.6</b> <b>0.6E</b> <b>0.4</b> <b>0.4E</b> <b>0.2</b> <b>0.2E</b>	<b>0.8E</b> Ra 0.8 µm, polished and completely electro-polished																		
Other materials available on request	<table border="1"> <thead> <tr> <th>Diaphragms</th> <th>Application</th> <th>Temperature</th> </tr> </thead> <tbody> <tr> <td>EPDM</td> <td>wide chemical durability for hot water</td> <td>-30° – +150° C</td> </tr> <tr> <td>EPM</td> <td>highest chemical durability</td> <td>-40° – +140° C</td> </tr> <tr> <td>PTFE/EPDM</td> <td>highest chemical durability</td> <td>-20° – +150° C</td> </tr> <tr> <td>TFM/EPDM</td> <td>wide chemical durability</td> <td>-20° – +150° C</td> </tr> <tr> <td>Viton (R)</td> <td></td> <td>-30° – +200° C</td> </tr> </tbody> </table>	Diaphragms	Application	Temperature	EPDM	wide chemical durability for hot water	-30° – +150° C	EPM	highest chemical durability	-40° – +140° C	PTFE/EPDM	highest chemical durability	-20° – +150° C	TFM/EPDM	wide chemical durability	-20° – +150° C	Viton (R)		-30° – +200° C	<b>VE</b>  <b>E</b> <b>PE</b> <b>TE</b> <b>V</b>	<b>VE</b> Diaphragm EPDM
Diaphragms	Application	Temperature																			
EPDM	wide chemical durability for hot water	-30° – +150° C																			
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TFM/EPDM	wide chemical durability	-20° – +150° C																			
Viton (R)		-30° – +200° C																			
	<b>Order sample:</b> Manually operated valve with plastic drive and turning knob, valve size DN08, valve body S-type with buttweld ends 12 x 1 mm, surface finish Ra 0.8 µm polished and completely electro-polished, EPDM diaphragm.		<b>AMDK-08-S12x1-0.8E-VE</b>																		

# VALV diaphragm valves, technical data

Butt weld connections								
Dimension mm DN	ISO1127 DIN 2462/63 ø D x s	DIN 11850 mod. prefert standard ø D x s	DIN 11850 standard 1 ø D x s			SMS 3008 ø D x s	BS O.D. Tubing ø D x s	ASTM 269 ASME BPE ø D x s
8	13,5 x 1,60	10,0 x 1,0					6,35 x 1,2	6,35 x 0,89
10	17,2 x 1,6		12,0 x 1,0	13,0 x 1,5	14,0 x 2,0		9,53 x 1,2	9,53 x 0,89
15	21,3 x 1,6	18,0 x 1,5	18,0 x 1,0	19,0 x 1,5	20,0 x 2,0		12,7 x 1,2	12,7 x 1,65
20	26,9 x 1,6	22,0 x 1,5	22,0 x 1,0	23,0 x 1,5	24,0 x 2,0		19,05 x 1,2	19,05 x 1,65
25	33,7 x 2,0	28,0 x 1,5	28,0 x 1,0	29,0 x 1,5	30,0 x 2,0	25,0 x 1,2	25,4 x 1,6	25,4 x 1,65
32	42,4 x 2,0	34,0 x 1,5	34,0 x 1,0	35,0 x 1,5	36,0 x 2,0	33,7 x 1,2	31,75 x 1,6	
40	48,0 x 2,0	40,0 x 1,5	40,0 x 1,0	41,0 x 1,5	42,0 x 2,0	38,0 x 1,2	38,1 x 1,6	38,1 x 1,65
50	60,3 x 2,0	52,0 x 1,5	52,0 x 1,0	53,0 x 1,5	54,0 x 2,0	51,0 x 1,2	50,8 x 1,6	50,8 x 1,65
65	76,1 x 2,3		70,0 x 2,0			63,5 x 1,6	63,5 x 1,6	63,5 x 1,65
80	88,9 x 2,3		85,0 x 2,0			76,1 x 1,6	76,2 x 1,6	76,2 x 1,65
100	114,3 x 2,6		104,0 x 2,0			101,6 x 2,0	101,6 x 2,0	101,6 x 2,11

Tri-Clamp connections								
Dimension in mm DN	ISO1127 DIN 2462/63 ø D	DIN 11850 mod. prefert standard ø D	DIN 11850 standard 1 ø D			SMS 3008 ø D	BS O.D. Tubing ø D	ASTM 269 ASME BPE ø D
8	25.0						25.0	
10			34.0				25.0	
15	34.0		34.0				25.0	25.0
20	50.5		34.0				25.0	25.0
25	50.5		50.5			50.5	50.5	50.5
32	50.5		50.5			50.5	50.5	
40	64.0		50.5			50.5	50.5	50.5
50	77.5		64.0			64.0	64.0	64.0
65	91.0		91.0			77.5	77.5	77.5
80			106.0			91.0	91.0	91.0
100			119.0			119.0	119.0	119.0



## VALV pneumatic actuators

	closed AMPB	open AMPB
DN 08-10	106	111
DN 15-20	147	154
DN 25-32	155	165
DN 40	220	239
DN 50-65	222	243
DN 80	401	442

## VALV manual handwheel

	closed AMD	open AMD
DN 08-10	52	58
DN 15-20	87	96
DN 25-32	125	139
DN 40	147	169
DN 50-65	147	169
DN 80	217	258

# VALV diaphragm valves, technical data

Material	Size	Temperature in C°	Water	Acid	Base	Oil + Grease	Fuel	Ozone	Hydro-carbons			Over stretching	Abrasion resistance	Rebound elasticity	FDA
									aliphatic	aromatic	chlorinated				
EPDM	DN 08-100	-30 / +150	++	++	++	-	-	++	-	-	-	+	+	+	yes
TFM / EPDM	DN 08-100	-20 / +150	++	++	++	++	++	++	++	++	++	+	+	+	yes
FPM (Viton)	DN 08-100	-30 / +200	+	+	+	++	++	++	++	++	++	+	+	-	on request
VMQ (Silicon)	DN 08-100	-50 / +200	+	*	+	+	-	+	-	-	-	-	*	+	yes
NR (Rubber)	DN 08-100	-30 / +80	+	*	+	-	-	-	-	-	-	++	++	++	no
NBR (Perbunan)	DN 08-100	-40 / +110	+	+	+	+	+	*	++	-	-	+	++	+	no
HNBR (Therban)	DN 08-100	-40 / +150	+	+	+	+	+	*	++	-	-	+	++	+	no
CSM (Hypalon)	DN 08-100	-20 / +120	+	++	++	+	-	++	+	-	-	+	+	-	no
CR (Neoprene)	DN 08-100	-30 / +120	++	+	+	*	-	++	+	-	-	+	+	+	no

++ excellent; + very good; \* good; - unacceptable

## Detailed information

A technical folder with detailed information on all types of valves, international standards and case histories is available on request. Installation, assembly procedures, spare parts lists, drawings, parts lists and order codes are listed. This folder is available free of charge from: info@valv.ch or www.valv.ch

## VALV Custom made valve bodies and activators



*S-type valve body with internal threads both sides.*

*V-type valve body: special thread on one side and butt weld end on the other. V-type to be used for small liquid flow.*

*special V-type valve body with 3 activators and butt weld ends, for controlling small flows of liquid.*

*T pattern S-type valve body for sampling. Through hole design with Tri-Clamp ends and hose connector exit.*

*Multi-way valve body of compact star design with Tri-Clamp ends. Configuration may be freely chosen as shown with 3 flow channels and 2 activators.*

*Valve body with sampling bore on the side. May be used for adding another valve or to be welded on to a tube.*

### Flexible solutions for customers

Due to their simple design and the wide range of applications, diaphragm valves are widely used when ease of thorough cleaning is required.

In many applications, the use of standard valve bodies is limited. Our special application valves, designed by 3D-CAD systems, very often replace complicated multi-valve designs.

### Customer benefits of multi-way valves:

- Custom-made solutions
- Compact design
- Less welding, less connectors required
- No need for complicated assembly work
- Pocket-less design
- Self-draining
- High level of security and reliability
- May be combined with all kinds of activators
- Easy handling and easy cleaning.





*Special valve body with different size butt weld ends and two activators for easy control when mixing different fluids.*

*Lever activated diaphragm valve for quick control of fluids.*

*Manually operated diaphragm valve with spindle extension for areas with limited access.*

*Diaphragm valve with stroke limiter for restricted stroke, and for applications where uncontrolled opening of the valve should be prohibited.*

*Pneumatic activator with solenoid valve for remote control.*



