

# SAUNDERS ACTUATORS

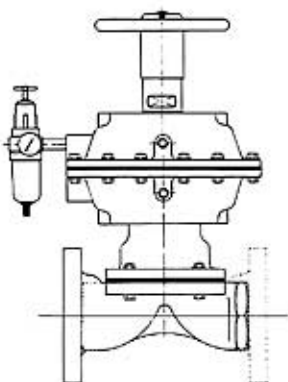
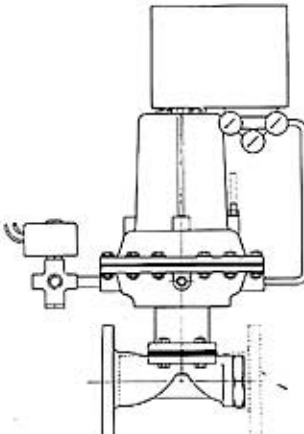
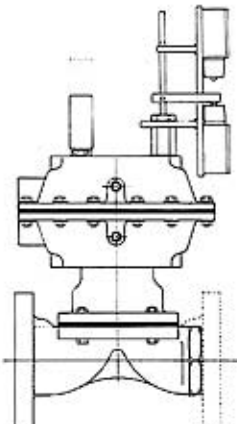
Saunders Actuators are available in three types — spring to close/air to open, spring to open/air to close, and double acting air to open/air to close. All three types are diaphragm operated and may be actuated by air, water, or oil.

Many factors determine which actuator best suits a particular process or plant. If the process determines that the valve should close on air failure, *normally closed*, then the spring to close/air to open type should be used. If the valve must open, *normally open*, then the spring to open/air to close design should be selected. For simple

ON/OFF services where no intermediate control over the flow is needed, nor the "failed position" important, then the double acting air to open/air to close operator should be used.

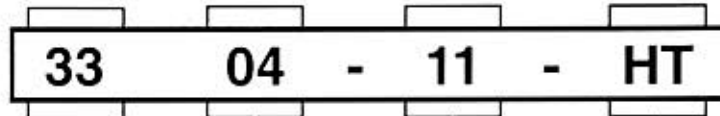
Saunders operators are available with a wide variety of accessories which include position indicators, adjustable travel stops, manual handwheel overrides, positioners, micro switches, and solenoid valves.

All actuators are finished with a tough epoxy coating which gives maximum durability even in exposed locations.

400 SERIES	500 SERIES	600 SERIES
		
<p align="center"><b>400 SERIES</b></p> <p align="center"><b>Double Acting</b> <b>Air To Open/Air To Close</b></p> <p><b>Sizes:</b> ½" thru 8"</p> <p><b>Line Pressure:</b> Vacuum to 230 psi</p> <p><b>Head Sizes:</b> 11 sq. inches to 314 sq. inches</p> <p><b>Max. Supply Pressure:</b> 110 psi</p>	<p align="center"><b>500 SERIES</b></p> <p align="center"><b>Spring To Close/Air To Open</b></p> <p><b>Sizes:</b> ½" thru 8"</p> <p><b>Line Pressure:</b> Vacuum to 230 psi</p> <p><b>Head Sizes:</b> 11 sq. inches to 314 sq. inches</p> <p><b>Max. Supply Pressure:</b> 110 psi</p>	<p align="center"><b>600 SERIES</b></p> <p align="center"><b>Spring To Open/Air To Close</b></p> <p><b>Sizes:</b> ½" thru 8"</p> <p><b>Line Pressure:</b> Vacuum to 230 psi</p> <p><b>Head Sizes:</b> 11 sq. inches to 314 sq. inches</p> <p><b>Max. Supply Pressure:</b> 110 psi</p>

# SAUNDERS FIGURE NUMBERS AND ORDERING INFORMATION

EXAMPLE: 2"



BODY TYPE	BODY MATERIAL/LINING	BONNET	DIAPHRAGM
<b>WEIR TYPE VALVE</b>			<b>STANDARD DIAPHRAGM</b>
22 Screwed Ends	02 Aluminum	10 Handwheel-Non-Indicating	Weir <small>Straight-Thru High Flow</small> AA KA Natural Gum Rubber
23 Socket Weld Ends	03 Bronze	11 Handwheel-Indicating	B KB Butyl (Max. Chem. Resist)
33 Flanged-Unlined	04 Cast Iron	13 Sealed Bonnet	C KC Nitrile Rubber
34 Flanged-Lined	05 Ductile Iron	22 Chainwheel Operated	D KD Butyl (High Temp 300)
	06 Stainless Steel CF8M (316)	27 Bonnet Locking Device	E KE Ethylene Propylene (325)
<b>STRAIGHT-THRU</b>	07 Cast Steel	28 IXEF Nylon	HT KHT Neoprene
44 Screwed Ends	08 Alloy 20 CN7M	31 Sliding Stem	Q KQ Natural/Synthetic
55 Flanged-Unlined	09 PVC	36 Stainless Steel Bonnet	
56 Flanged-Lined	10 CPVC	451-457 Double Acting Actuator	<b>NON-STANDARD DIAPHRAGM</b>
	21 Soft Rubber Lined	551-557 Spring to Close Actuator	Weir <small>Straight-Thru High Flow</small> CF — White BUNA-N, FDA
<b>HIGH FLOW</b>	22 Hard Rubber Lined	651-657 Spring to Open Actuator	EB — Black Ethylene Propylene, FDA (328)
58 Flanged-Unlined	23 Neoprene Lined	EC4 Double Acting EC	EW — White Ethylene Propylene, FDA (326)
59 Flanged-Lined	24 Butyl Lined	EC5 Spring to Close EC	U KU Hypalon (237)
	25 Hypalon Lined	EC6 Spring to Open EC	W KW White Natural Rubber
<b>CHECK VALVE</b>	32 Glass Lined	324 Double Acting EC w/ Switches	W1 KW1 White Butyl (215)
66* Flanged-Unlined	43 Polypropylene Lined	325 Spring to Close EC w/ Switches	V KV Viton® (226)
67* Flanged-Lined	46 ETFE Lined	326 Spring to Open EC w/ Switches	P1 — Teflon/Butyl® Backing (214/300)
	47 PVDF Lined		P2 — Teflon/Hypalon Backing (214/237)
	48 Polypropylene Lined Ductile Iron Body		P3 — Teflon/Viton® Backing (214/226)
	49 ETFE Lined Ductile Iron Body		P4 — Teflon/EP Backing (214/325)
	50 PVDF Lined Ductile Iron Body		PE — TFE/EPDM Backed (400) EC Actuator Only
	52 PFA Lined		

\*Priced upon request

® Reg. Trade Mark — DuPont

In sizes larger than 3", Weir Type diaphragms are specially reinforced for vacuum duties, and are identified by a suffix (V), e.g., q(V), C(V) diaphragms have special bronze studs for shipboard use and are available in sizes 1/2" to 14".

All other (V) diaphragms have ferrous studs and are specified for applications requiring all iron and steel construction, e.g., ammonia, acetylene. B(V) diaphragms are available in sizes 1/2" to 14" to complete a full range of diaphragms with ferrous studs.

# DIAPHRAGM VALVE PERFORMANCE DATA

## GENERAL INFORMATION

CLOSURE TORQUES							HANDWHEEL TURNS REQUIRED				NOMINAL VALVE TRAVELS			
Size	Weir Type (A)		Straight Thru (KB)		High Flow (K)		Valve Size	No. of Turns Between Open and Closed Positions			Valve Size	Weir Type (A)	Straight Thru (KB)	High Flow (K)
	Max. Cold Working Press. psi	Torque in.-lbs.	Max. Cold Working Press. psi	Torque in.-lbs.	Max. Cold Working Press. psi	Torque in.-lbs.		Weir Type (A)	Straight Thru (KB)	High Flow (K)				
1/2"	232	27	100	36	—	—	1/2"	2	—	—	1/4"	1/8"	—	—
3/4"	232	35	—	—	—	—	3/8"	2 1/4	—	—	3/8"	3/16"	—	—
1"	232	37	100	75	—	—	1/2"	1 3/4	5 1/2	—	1/2"	1/4"	5/8"	—
1 1/4"	232	130	—	—	—	—	3/4"	1 1/2	—	—	3/4"	5/16"	—	—
1 1/2"	232	130	100	75	100	155	1"	2 3/4	6 1/2	—	1"	7/16"	1 1/16"	—
2"	232	160	100	155	100	450	1 1/4"	3	—	—	1 1/4"	9/16"	—	—
2 1/2"	145	300	100	450	100	540	1 1/2"	3 1/2	6 1/2	8	1 1/2"	3/4"	1 1/16"	1 9/16"
3"	145	390	100	540	100	720	2"	5 1/4	7 3/4	10	2"	1 1/8"	1 9/16"	1 15/16"
4"	145	624	100	720	100	880	2 1/2"	7 1/4	9 3/4	12 1/2	2 1/2"	1 7/16"	1 15/16"	2 7/16"
5"	145	990	50	880	50	960	3"	8 1/4	13	14	3"	1 5/8"	2 7/16"	2 13/16"
6"	145	1550	50	960	50	1500	4"	10 1/2	14 1/4	17	4"	2 1/8"	2 13/16"	3 5/16"
							5"	14	17	22	5"	2 13/16"	3 5/16"	4 7/16"
							6"	16 3/4	18 1/2	19 1/2	6"	3 3/16"	4 7/16"	4 13/16"
							8"	23	19 1/4	29	8"	4 9/16"	4 13/16"	7 1/4"
							10"	28 3/4	29	32	10"	5 3/4"	7 1/4"	8"
							12"	33	32	48	12"	6 9/16"	8"	12"
							14"	36	48	48	14"	9"	12"	12"

Axial closure loads available on request.

To the nearest 1/4 turn.