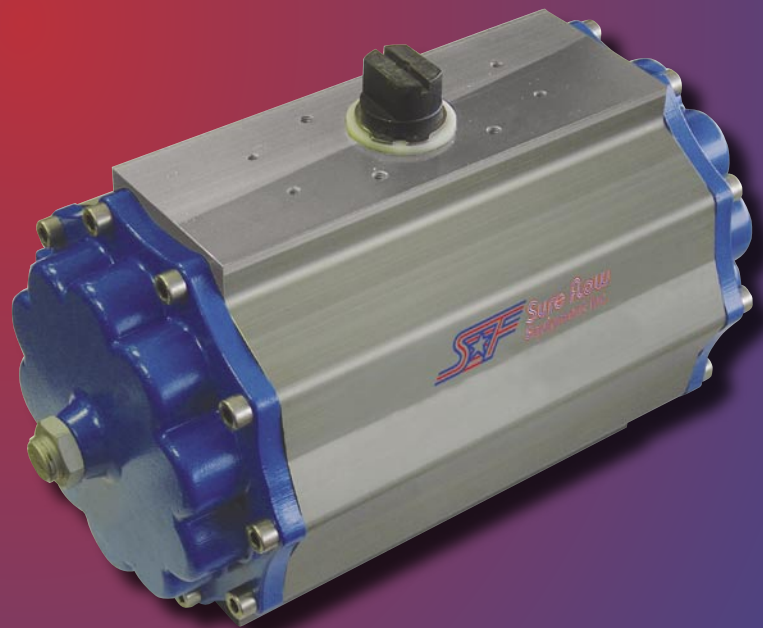
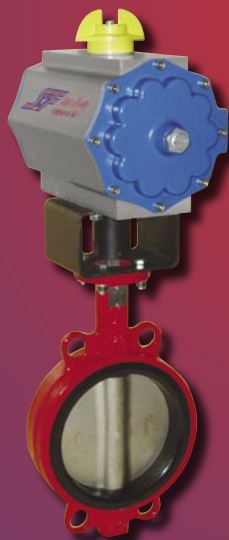
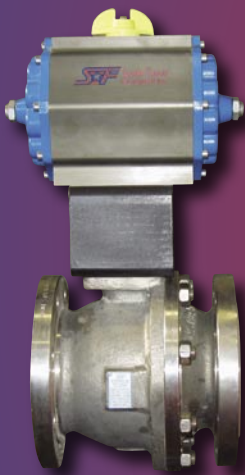


**Sure Flow
Equipment Inc.**

Rack & Pinion, Quarter Turn, Pneumatic

VALVE ACTUATORS



www.sureflowequipment.com

Quality Assurance

All products are manufactured in strict compliance with quality control standards and procedures. Sure Flow Equipment Inc. is certified as a Quality Assured Firm in full compliance with ISO 9001:2000.

Engineering

Sure Flow Actuators are designed with the same exacting standards of the world-class scotch yoke actuators. The result is a rack and pinion actuator that stands up to the most severe weather conditions. Corrosion-proof by design, Sure Flow rack and pinion actuators are designed to operate in a wide range of environments found in virtually all industries where quarter turn valves are used.

The Sure Flow Range Rack and Pinion Actuators are designed to operate "quarter turn valves". The wide torque range capabilities make Sure Flow actuators suitable for many ball valve and butterfly valve applications.

Operating Pneumatic Pressure Ranges

40 psig to 125 psig 2.7 bars to 8.6 bars

Operating Temperature Ranges

Standard Trim (Trim Code 0) -31°F to +230°F -35°C to +110°C

Features and Benefits

- ISO 5211 mounting on all models as well as a secondary bolt pattern for non-ISO mounting patterns
- Namur accessory mounting surfaces are standard on all Sure Flow actuators for attachment of control devices
- Available in Spring Return (SFAS) and Double Acting (SFAD) configurations. Multiple spring design allows for a wider range of torque from a single unit. All springs are self-contained and guided for optimum efficiency.
- Wide range available in both double acting and spring return models
- Unique travel stops in either open or close direction are standard on all models and independently adjustable using standard tools.
- Highly visible position indicator may be removed to expose external Namur drive shaft for simple attachment of Namur accessory devices
- One piece blow-out proof bottom entry drive shaft
- Corrosion resistant by design. Exacting standards of corrosion protection render Sure Flow suitable for most hostile environments
- Complete o-ring sealing protects against outside moisture and contaminants

Materials of Construction

Center Housing

Extruded Aluminum and electrolytic anodized

Spring Sets

Springs are Carbon Steel and coated for corrosion resistance. Spring guides are corrosion resistant nylon

End Caps

Precision-cast aluminum with a generous coat of polyurethane paint

Output Drive Shaft

Carbon Steel and PTFE coated

Pistons

Precision-cast aluminum and electrolytic anodized coated

Seals

Buna-N Nitrile as standard.

Position Indicator

UV resistant polypropylene

Bearing Pad

Corrosion resistant polymer

Fasteners

Stainless Steel

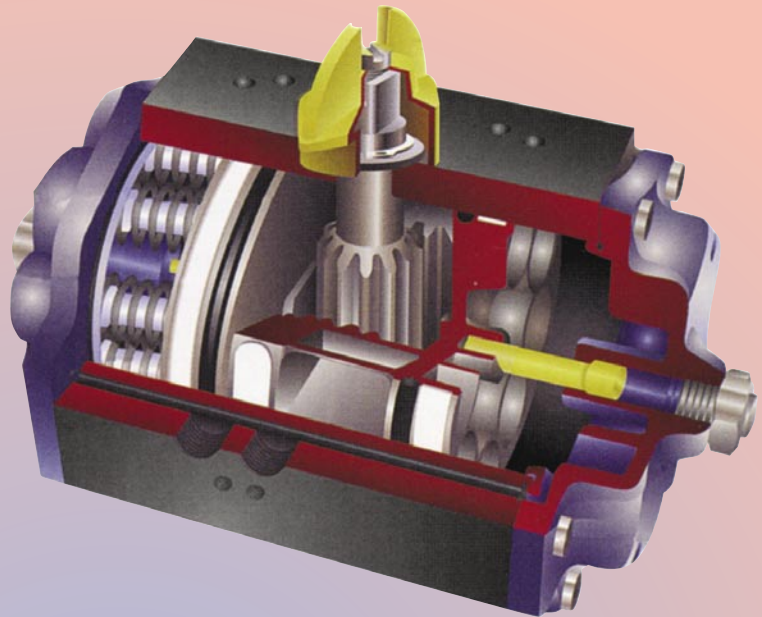
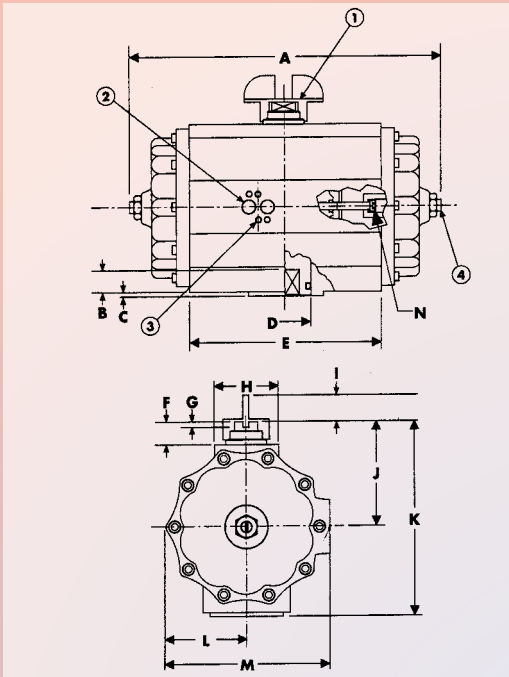


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Dimensions - Weights - Connections



Dimensions (in.), Weights (lb.), ISO, and Connections

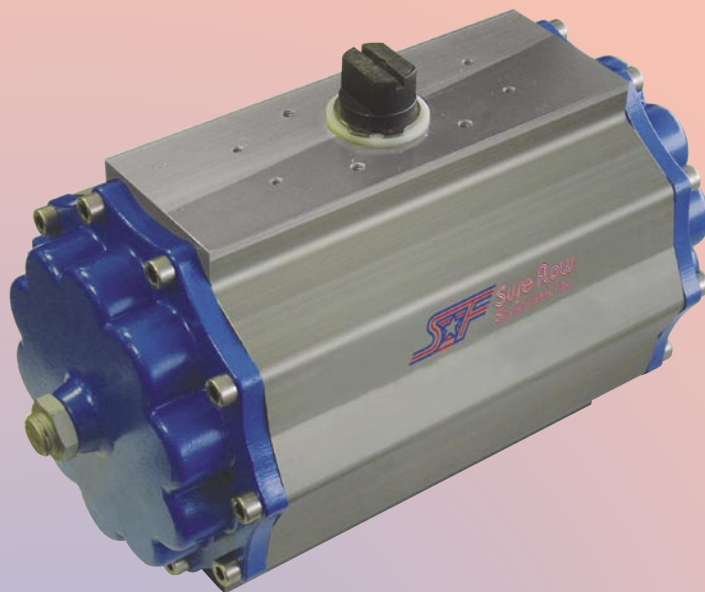
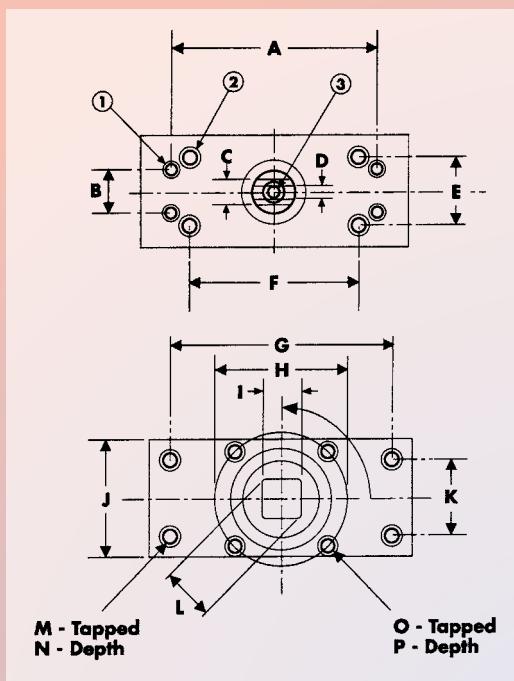
Model Numbers (SFAD = Double Acting, SFAS = Spring Return)

Item	SFAD005 SFAS005	SFAD008 SFAS008	SFAD012 SFAS012	SFAD020 SFAS020	SFAD030 SFAS030	SFAD040 SFAS040	SFAD060 SFAS060	SFAD100 SFAS100	SFAD200 SFAS200	SFAD250 SFAS250	SFAD370 SFAS370	SFAD500 SFAS500	SFAD750 SFAS750
A	7.17	8.86	9.09	11.02	11.14	13.46	14.65	17.13	21.50	18.19	26.30	21.65	22.83
B	0.63	0.79	0.91	1.05	1.05	1.22	1.22	1.50	2.01	2.01	2.52	3.11	3.11
C	0.06	0.06	0.06	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
D	1.10	1.25	1.34	1.73	1.73	2.12	2.28	2.87	3.62	2.87	4.60	4.21	4.50
E	3.94	4.96	5.20	7.01	6.22	8.46	9.13	10.70	14.17	12.48	17.72	18.90	19.49
F	0.79	0.79	0.79	0.79	0.79	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
G	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157
H	1.81	1.81	2.28	2.28	3.15	3.15	2.95	2.95	3.54	3.94	3.94	7.08	7.08
I	0.51	0.51	0.51	0.63	0.63	0.75	0.75	1.10	1.10	1.02	1.02	0.90	0.90
J	2.56	2.91	3.31	3.31	4.02	4.41	4.96	5.81	5.83	7.13	7.13	10.03	11.22
K	4.41	5.24	6.02	6.02	7.48	7.87	8.98	9.65	10.71	13.27	13.27	18.50	20.94
L	1.61	2.09	2.52	2.52	3.27	3.27	3.82	4.09	4.53	6.02	6.02	7.91	9.05
M	3.54	4.37	5.20	5.20	7.40	7.40	7.71	8.31	9.13	12.01	12.01	16.14	18.31
N*	5mm	5mm	6mm	6mm	8mm	8mm	10mm	10mm	10mm	12mm	14mm	14mm	14mm
Weight	4.0	7.5	9.9	13.2	17.6	23.1	31.9	57.2	88.0	121.0	169.4	815.7	851.8
ISO 5211	F.05	F.05	F.07	F.07	F.10	F.10	F.10	F.12	F.14	F.14	F.16	F.25	F.25

- 1 Indicator Shaft according to NAMUR VDI/VDE 3845
- 2 Solenoid Flanges according to NAMUR DIN .228/1
- 3 10-24 UNC, Depth 0.31
- 4 Outer Stop Adjustment by Screwdriver Slot and Wrench (both ends)
- 5 Port Connection = 1/4" NPT (female)

* Inner stop screw A/F socket size, both ends.
Refer to representative for actuator selection.
Sure Flow reserves the right make changes without notice. Revision O.

Mountings



Dimensions (in.)

Model Numbers (SFAD = Double Acting, SFAS = Spring Return)

Item	SFAD005 SFAS005	SFAD008 SFAS008	SFAD012 SFAS012	SFAD020 SFAS020	SFAD030 SFAS030	SFAD040 SFAS040	SFAD060 SFAS060	SFAD100 SFAS100	SFAD200 SFAS200	SFAD250 SFAS250	SFAD370 SFAS370	SFAD500 SFAS500	SFAD750 SFAS750
A	3.15	3.15	3.15	3.15	3.15	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
B	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
C	0.31	0.39	0.39	0.59	0.59	0.87	0.87	1.34	1.34	1.34	1.34	1.97	1.97
D	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157
E	1.38	1.38	1.38	1.38	1.38	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
F	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
G	3.25	3.25	4.31	4.31	4.31	4.31	6.46	6.46	10.00	10.00	12.59	16.73	16.73
H	1.97	1.97	2.76	2.76	4.02	4.02	4.02	4.92	5.51	5.51	6.5	10.00	10.00
I	0.43	0.55	0.67	0.75	0.75	0.87	0.87	1.06	1.42	1.42	1.81	2.17	2.17
J	1.69	1.81	2.44	2.44	3.54	3.54	3.54	4.33	5.12	6.10	6.10	7.09	10.24
K	1.17	1.17	1.75	1.75	1.75	1.75	2.24	2.24	3.89	3.89	3.94	3.94	3.94
L	0.56	0.71	0.87	0.99	0.99	1.11	1.11	1.43	1.90	1.90	2.37	2.84	2.84
M	1/4"-20 UNC		5/16"-18 UNC				3/8"-16 UNC	1/2"-13 UNC	5/8"-11 UNC			3/4"-10 UNC	3/4"-10 UNC
N	0.35	0.35	0.47	0.47	0.47	0.47	0.70	0.94	0.94	0.94	0.94	1.18	1.18
O	1/4"-20 UNC		5/16"-18 UNC			3/8"-16 UNC		1/2"-13 UNC	5/8"-11 UNC		3/4"-10 UNC	3/8"-11 UNC	3/4"-11 UNC
P	0.31	0.39	0.47	0.47	0.59	0.59	0.59	0.70	0.94	0.94	1.18	0.94	0.94

- 1 10-24 UNC Depth 0.31
- 2 3/4" 20 UNC Depth 1.35
- 3 M6, Depth 0.5

* Bolt Circle Diameter (BCD)

Refer to representative for actuator selection. Sure Flow reserves the right to make changes without notice. Revision O.

Spring Return

Quarter Turn, Rack & Pinion, Pneumatic

Output Torques (lbs. ins.) and Pressure Ratings

Model No.	Spring Set	Operating Air Pressure									
		Spring Torque		40 psig		60 psig		80 psig		100 psig	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
SFAS005	6	53.8	98.4	80.2	37.3	145	103	—	—	—	—
	10	88.4	162	—	—	112	41	179	108	—	—
	12	106	200	—	—	—	—	159	72	224	136
SFAS008	8	112	178	170	94	388	218	—	—	—	—
	12	189	302	—	—	234	112	319	241	—	—
	16	227	286	—	—	—	—	341	187	477	311
SFAS012	8	157	286	270	145	471	347	—	—	—	—
	12	239	484	—	—	367	156	586	375	—	—
	16	319	583	—	—	—	—	534	280	735	481
SFAS020	8	232	415	407	231	721	546	—	—	—	—
	12	393	703	—	—	567	273	881	601	—	—
	16	474	847	—	—	—	—	822	464	1130	778
SFAS030	10	339	628	1950	920	984	701	—	—	—	—
	16	543	1005	—	—	1250	346	1940	802	—	—
	20	683	1269	—	—	—	—	1100	538	5380	3290
SFAS040	10	460	916	866	428	1520	1080	—	—	—	—
	16	729	1450	—	—	792	565	1250	1240	—	—
	20	938	1860	—	—	—	—	1740	847	2380	1490
SFAS060	10	701	1300	1260	692	2240	1650	—	—	—	—
	16	1110	2070	—	—	1840	920	2850	1930	—	—
	20	1430	2660	—	—	—	—	2550	1370	3500	2320
SFAS100	10	1120	2180	545	266	3450	2420	—	—	—	—
	16	1770	7480	—	—	2810	1170	4380	2740	—	—
	20	2270	4460	—	—	—	—	3900	1800	1530	966
SFAS200	10	2100	3530	3440	1870	6080	4520	—	—	—	—
	16	3020	5630	—	—	5010	2510	7750	5260	—	—
	20	3880	7210	—	—	—	—	6930	3737	9530	6330
SFAS250	22	2350	4360	4450	2510	7820	5870	—	—	—	—
	34	3670	6830	—	—	6540	3500	10040	7000	—	—
	40	4430	8240	—	—	—	—	9300	5650	12600	8950
SFAS370	10	4060	8130	7840	3940	13710	9810	—	—	—	—
	16	6470	12940	—	—	11410	5200	17530	11320	—	—
	20	8080	16370	—	—	—	—	17780	7810	21550	13600
SFAS500	26	10440	20620	—	—	—	—	30090	19560	41860	31860
	34	13720	26900	—	—	—	—	27170	12920	38670	25750
	42	16900	33270	—	—	—	—	23630	7170	35580	20000
SFAS750	28	11330	22830	—	—	26460	12040	40980	27790	—	—
	40	16200	32300	—	—	—	—	37350	20090	51770	35490
	50	20440	40800	—	—	—	—	33190	12746	47610	28230
	58	23630	47350	—	—	—	—	—	—	43360	20178

Refer to representative for actuator selection. Sure Flow reserves the right to make changes without notice. Revision O.

Torques

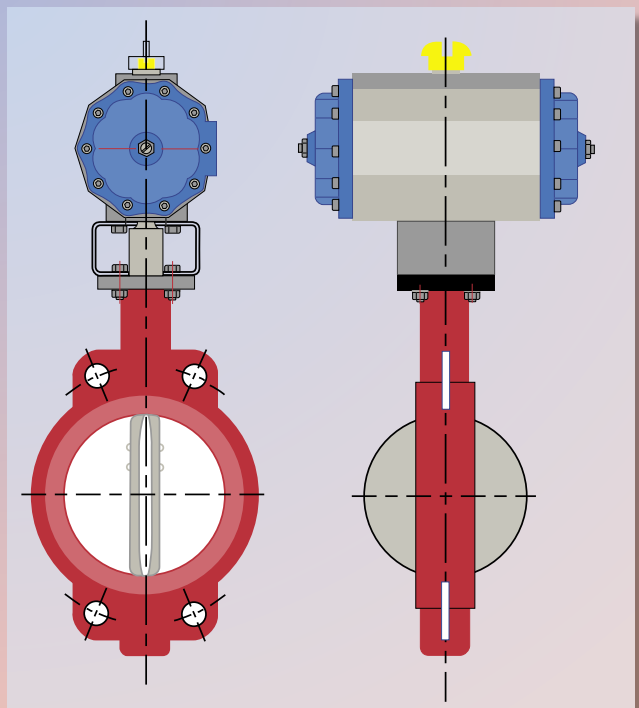
Double Acting

Quarter Turn, Rack & Pinion, Pneumatic

Model No.	Output Torque (lb.ins.)			
	Operating Air Pressure			
	40 psig	60 psig	80 psig	100 psig
SFAD005	136	205	275	342
SFAD008	288	432	583	725
SFAD012	437	647	875	1,084
SFAD020	656	984	1,330	1,659
SFAD030	902	1,358	1,832	2,278
SFAD040	1,358	2,041	2,752	3,427
SFAD060	2,023	3,035	4,092	5,086
SFAD100	3,144	4,712	6,344	8,076
SFAD200	5,496	8,249	11,111	13,819
SFAD250	6,991	12,220	14,123	17,574
SFAD370	12,242	18,358	24,730	30,755
SFAD500	17,430	29,200	41,500	53,630
SFAD750	22,120	37,080	52,660	68,140



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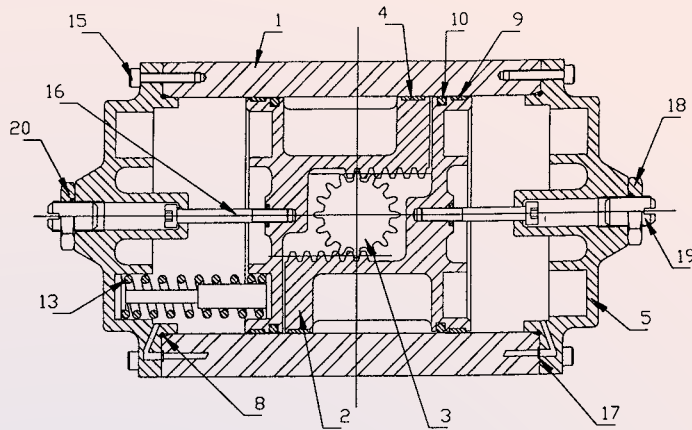
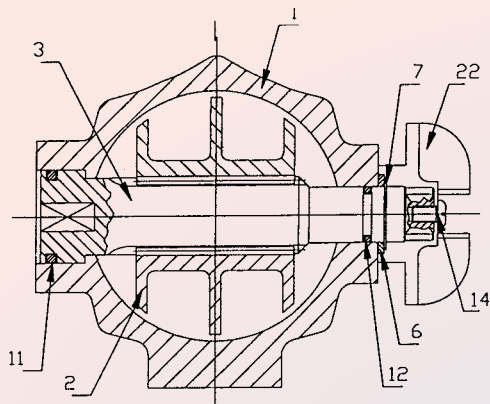


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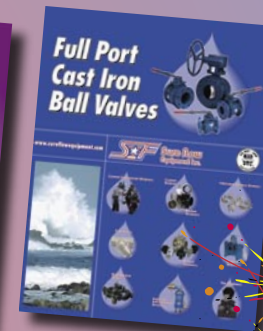
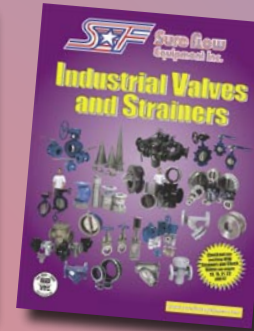
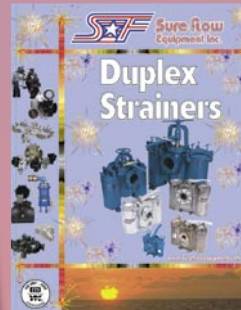
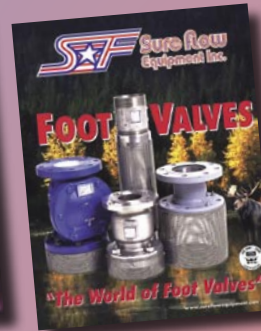
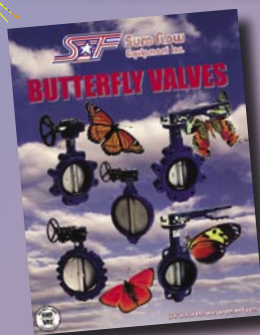
Actuator Bill of Materials



Item	Description	Quantity	Material	International Equivalent Standards			Surface Finish
				British Standards	AISI/SAE/AST	SO/DIN	
1	Body	1	Extruded Aluminum Alloy	6112 T6	6112 T6	6112 T6	Electrolytic Anodized
2	Piston	2	Aluminum Alloy Casting	LM-25 T6	SG 71 A	3.2364	Electrolytic Anodized
3	Output Shaft	1	Carbon Steel	D60 A 47	G 10450	1.0503	Teflon Coated
4	Bearing Pad	2	Delrin				
5	End-Cap	2	Aluminum Alloy Casting	LM-20 T6	S 12 AB	3.2583	Polyurethane Paint
6	Thrust	1	Nylon				
7	Snap Ring	1	Stainless Steel	420 S 45	S42000	1.4028	
8	O-Ring	2	Buna-N Nitrile				
9	Piston Bearing	*	P.T.F.E. (Teflon)				
10	Piston Seal	2	Buna-N Nitrile				
11	O-Ring	1	Buna-N Nitrile				
12	O-Ring	1	Buna-N Nitrile				
13	Spring Assy.	*	Cr Si Wire/Nylon		401	17223 Class C	Corrosion Resistant Coat
14	Screw	1	Stainless Steel	416B A2-70	B.18.3 A2-70	912/4762 A2-70	
15	Socket HD Screw	*	Stainless Steel	416B A2-70	B.18.3 A2-70	912/4762 A2-70	
16	End Stop Screw (Inner)	2	Alloy Steel	EN 30 A	A-490	1.5952 (12.9)	Corrosion Resistant Coat
17	O-Ring	2	Buna-N Nitrile				
18	Lock Nut	2	Alloy Steel	653 M 31	A-325	1.5755 (8.8)	Corrosion Resistant Coat
19	End Stop Screw (Outer)	2	Alloy Steel	653 M 31	A-325	1.5755 (8.8)	Corrosion Resistant Coat
20	O-Ring	2	Buna-N Nitrile				
21	Name Plate	1	Aluminum				
22	Indicator	1	Polypropylene				

C) * - Refer to individual actuator B.O.M. for actual quantities.

Brochures Available from Sure Flow Equipment Inc.



Sure Flow Equipment Inc. – Limited Warranty

All products are warranted to be free of defects in material and workmanship for a period of one year from the date of shipment, subject to below. **All custom products are not subject to return, credit or refund.**

If the purchaser believes a product to be defective, the purchaser shall:

(a) Notify the manufacturer **within ten(10) days after receipt of merchandise**, state the alleged defect and request permission to return the product. Merchandise will not be accepted for return without a "Return Code" clearly marked on the outside of the package. Contact the office to obtain a return code. **Merchandise will not be accepted for return or credit later than six (6) months after invoicing.**

(b) If permission is given, return the product with the transportation prepaid. Collect shipments will not be accepted. Goods must be returned **prepaid**.

If a shipment is received in a damaged or deficient condition, a claim must be filed with the delivering carrier and noted on the freight bill before you accept the merchandise. All other claims must be made in writing and received by Sure Flow Equipment Inc. within ten (10) days after receipt of merchandise.

If the product is accepted for return and found to be defective, the manufacturer will, at its discretion, either repair or replace the product, F.O.B. factory, within 60 days of receipt, or issue credit for the purchase price.

Sure Flow Equipment Inc. shall not be liable for failure to deliver or delays in delivering occasioned by acts of God, war, labor difficulties, inability to obtain materials or any other causes whatsoever beyond our control.

Other than to repair, replace or credit as described above, purchaser agrees that manufacturer shall not be liable for any loss, costs, expenses, or damages of any kind arising out of the product, its use, installation or replacements, labeling, instructions, information or technical data of any kind, description of product use, sample or model, warnings or lack of any of the foregoing.

NO OTHER WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, ARE MADE OR AUTHORIZED. NO AFFIRMATION OF ACT, PROMISE, DESCRIPTION OF PRODUCT OR USE OR SAMPLE OR MODEL SHALL CREATE ANY WARRANTY FROM MANUFACTURER, UNLESS SIGNED BY THE PRESIDENT OF MANUFACTURER.

CANCELLATIONS: Canceled orders will be subject to a charge of at least 35%.
Canceled custom orders will be subject to a charge of 100% of quoted price.

MINIMUM BILLING: \$50.00 NET

SPECIAL DOCUMENTATION: A charge will apply for non-standard, special documentation requests such as Material Test Reports (MTR's) and Certificates of Conformance (COC's).

www.sureflowequipment.com

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March 2005

