



## FEATURES

- **Wear Resistant**

The guide rod and piston rod have an advanced surface treatment, which combined with self-lubricating bearings, provides superior wear resistance and extends the life of all sliding components.

- **Watertight Protection**

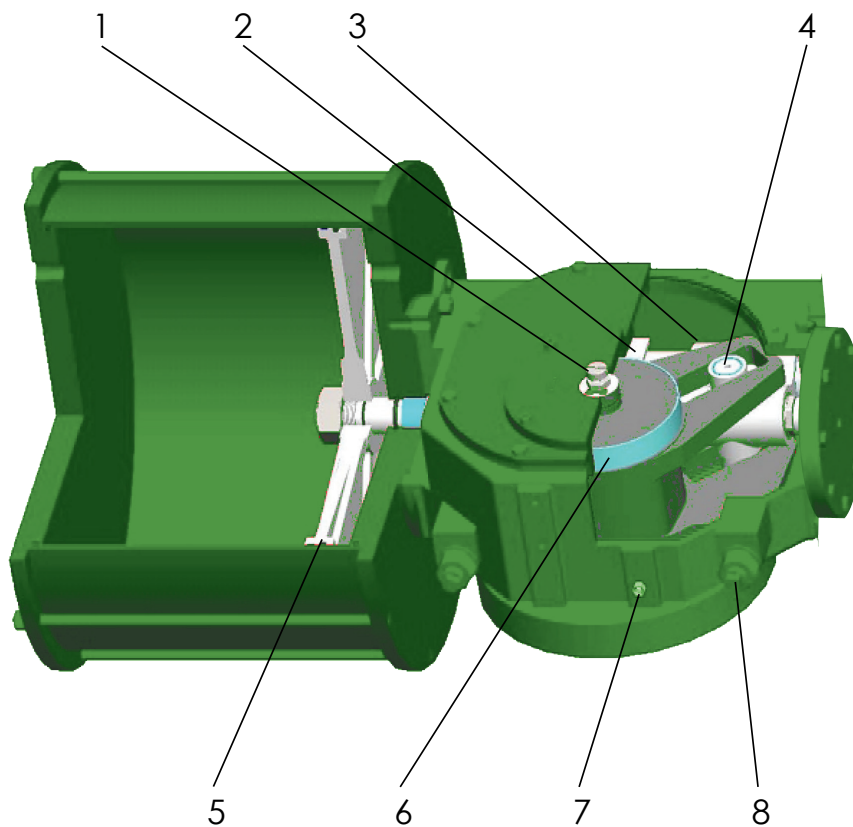
O-Rings are fitted to bodies, caps and joints to prevent water ingress.

- **ISO Valve Mounting**

The Series SF actuators valve interface meets ISO standards, and meets the dimensional requirements of ISO defined for each torque range.

- **Corrosion Resistant**

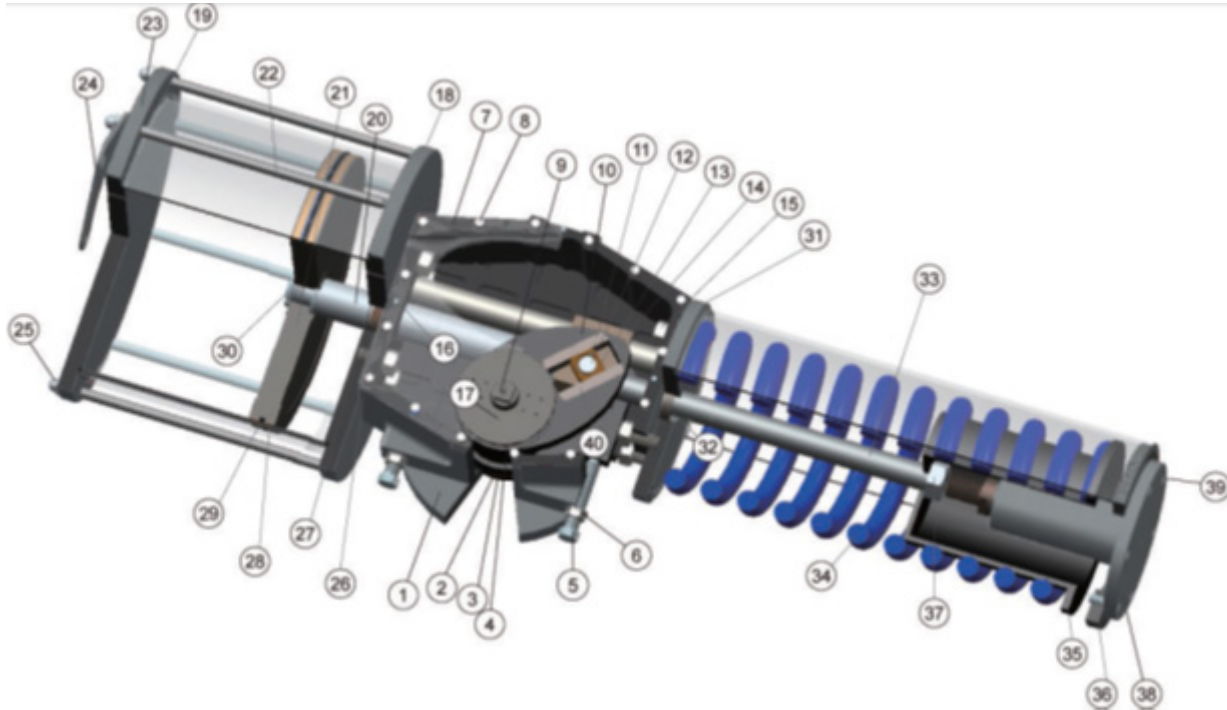
The Series SF actuators incorporate over three stages of internal and external coatings to resist severe weather, chemical and petroleum environments.



1. NAMUR accessory mount.
2. PTFE guide bar. Prevents yoke pin axial movement, transferring axial loads directly to the drive module case.
3. Thrust Bearing. Connects the piston rod with the guide block, compensating for side load deflection and reducing wear on the rod, bearings and seals.
4. Roller. Reduce the friction between the yoke arm and pin, minimizing the wear of the yoke arm and pin.

5. PTFE guide ring. Prevents metal to metal contact with the cylinder bore.
6. Replaceable Bearings. Protect sliding and rotating components, with suitability for either dry or lubricated working conditions.
7. Integral Housing Vent. The main actuator housing incorporates an integral check valve in order to release overpressure.
8. 80°~100° Travel Stops. Bi-directional travel stops that allow for 80°-100° total travel adjustment, preventing ingress of foreign objects or water.

## MATERIALS OF CONSTRUCTION



No.	Description	Standard Material
1	Body	Ductile Iron
2	Lower Bushing	RPTFE
3	Bushing O-Ring	NBR
4	Upper Bushing	RPTFE
5	Stopper Bolt	Steel
6	Stopper Unit	Steel
7	Body Cover	Ductile Iron
8	Body Cover Bolt	Steel
9	Position Indicator	Steel
10	Yoke	Carbon Steel
11	Snap Ring	Steel
12	Slide Pin	Steel
13	Sliding Block	Ductile Iron
14	Slide Block	Ductile Iron
15	Front Cover Bolt	Steel
16	Cover Fixing Pin	Steel
17	Mounting Plate	Iron
18	Cylinder Cover	Iron
19	Cover O-Ring	NBR
20	Piston Rod	Steel

No.	Description	Standard Material
21	Piston	Steel
22	Tie Bolt	Steel
23	Cylinder End Cover	Iron
24	Lift Plate	Steel
25	Tie Bolt Nut	Steel
26	Front Cover Bushing	Bronze
27	O-Ring	NBR
28	Back-Up Ring	PTFE
29	Piston O-Ring	NBR
30	Piston Lock Bolt	Steel
31	Spring Case Front Cover	Steel
32	Spring Rod Guide Bushing	Bronze
33	Spring Rod	Steel
34	Spring	Steel
35	Spring Retainer	Steel
36	Spring Case End Cover	Steel
37	Spring Rod Lock Nut	Steel
38	Cylinder	Steel
39	Cover Bolt	Steel
40	End Stop Unit	Steel

NOTE: All items listed may not be present on all sizes and builds.  
 Materials may vary by size. Consult VSI For Project specific materials list

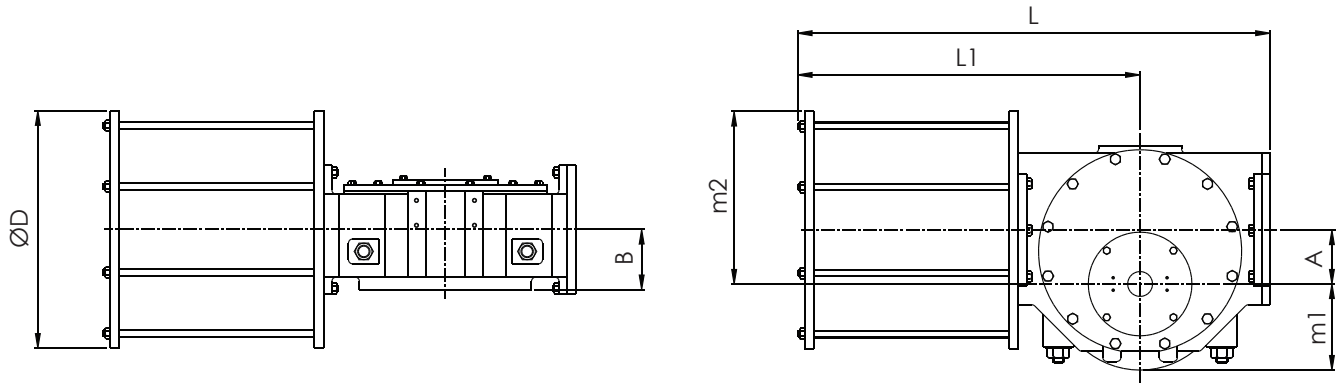


## DOUBLE ACTING TORQUES

MODEL	MAX DESIGN TORQUE	AIR PRESSURE					
		50 PSI		75 PSI		100 PSI	
		BREAK	RUN	BREAK	RUN	BREAK	RUN
SF14-200DA	17,700	7,346	4,460	12,248	7,425	17,142	10,399
SF14-250DA	17,700	11,487	6,965	19,143	11,620	-	-
SF14-300DA	17,700	16,470	9,992	-	-	-	-
SF16-250DA	35,400	14,355	8,708	23,930	14,514	33,506	20,320
SF16-300DA	35,400	20,674	12,540	34,462	20,904	-	-
SF16-350DA	35,400	28,143	17,072	-	-	-	-
SF25-350DA	70,800	34,745	21,072	57,906	35,126	-	-
SF25-400DA	70,800	44,108	26,754	73,517	44,595	-	-
SF25-450DA	70,800	55,835	33,869	-	-	-	-
SF30-450DA	141,600	68,234	41,391	111,333	67,534	-	-
SF30-500DA	141,600	84,243	51,100	140,414	85,181	-	-
SF30-550DA	141,600	101,943	61,844	-	-	-	-
SF35-550DA	283,200	129,741	78,703	216,232	131,175	302,732	183,655
SF35-600DA	283,200	154,406	93,668	257,340	156,114	-	-
SF35-700DA	283,200	210,170	127,502	-	-	-	-
SF40-600DA	557,500	-	-	312,494	189,576	437,500	265,500
SF40-700DA	557,500	-	-	425,349	258,039	595,500	361,250
SF40-800DA	557,500	333,326	202,214	555,550	337,026	-	-
SF48-800DA	1,106,000	-	-	653,590	396,507	915,000	555,000
SF48-900DA	1,106,000	-	-	827,192	501,822	1,160,000	702,000

All torques expressed in in-lbs

## DOUBLE ACTING DIMENSIONS



MODEL	L	L1	m1	m2	A	B	D	ISO Mount	Air Port
SF14-200DA	23.4	17.7	3.44	7.4	2.36	3.46	10.0	F14	3/8"
SF14-250DA	23.4	17.7	3.44	8.4	2.36	3.46	12.0	F14	1/2"
SF14-300DA	23.4	17.7	3.44	9.4	2.36	3.46	14.2	F14	1/2"
SF16-250DA	26.7	19.6	4.13	8.8	2.76	3.62	12.0	F16	1/2"
SF16-300DA	26.7	19.6	4.13	9.7	2.76	3.62	14.2	F16	1/2"
SF16-350DA	26.7	19.6	4.13	10.7	2.76	3.62	16.3	F16	1/2"
SF25-350DA	30.2	21.9	5.91	11.5	3.54	4.09	16.3	F25	1/2"
SF25-400DA	30.2	21.9	5.91	12.5	3.54	4.09	18.3	F25	3/4"
SF25-450DA	30.2	21.9	5.91	13.8	3.54	4.09	20.5	F25	3/4"
SF30-450DA	36.3	26.1	6.89	14.6	4.33	5.11	20.5	F30	3/4"
SF30-500DA	36.3	26.1	6.89	15.6	4.33	5.11	22.4	F30	3/4"
SF30-550DA	36.3	26.1	6.89	16.5	4.33	5.11	24.4	F30	3/4"
SF35-550DA	44.5	32.2	8.17	17.7	5.51	6.50	24.4	F35	3/4"
SF35-600DA	44.5	32.2	8.17	17.7	5.51	6.50	26.4	F35	1"
SF35-700DA	44.5	32.2	8.17	18.7	5.51	6.50	30.3	F35	1"
SF40-600DA	52.0	37.8	9.35	19.9	6.69	7.87	26.4	F40	1"
SF40-700DA	52.0	37.8	9.35	21.9	6.69	7.87	30.3	F40	1"
SF40-800DA	52.0	37.8	9.35	23.9	6.69	7.87	34.4	F40	1-1/2"
SF48-800DA	62.2	44.5	11.02	25.1	7.87	8.27	34.4	F48	1-1/2"
SF48-900DA	62.2	44.5	11.02	27.1	7.87	8.27	38.4	F48	2"

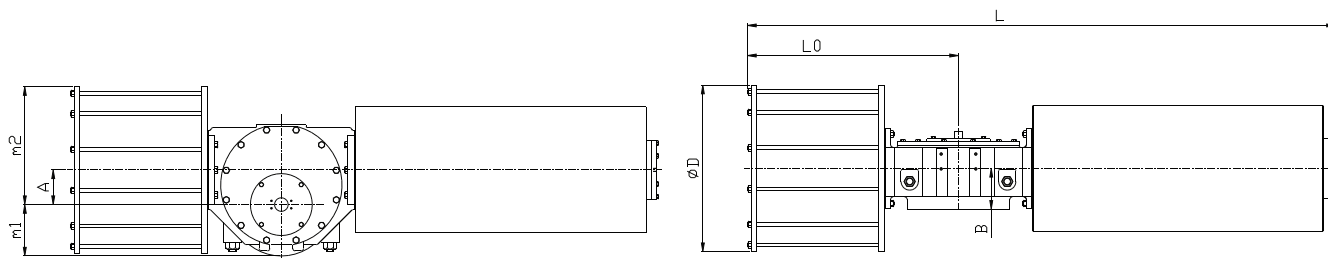


## SPRING RETURN TORQUES AT 50PSI

MODEL	MAX DESIGN TOUQUE	SPRING BREAK TORQUE	SPRING END TORQUE	AIR BREAK TORQUE	AIR END TORQUE
SF14-200DA	17,700	6,009	3,859	5,938	3,788
SF14-250DA	17,700	9,549	5,965	9,346	5,761
SF14-300DA	17,700	11,337	7,239	11,903	7,806
SF16-250DA	35,400	13,071	8,390	13,664	8,983
SF16-300DA	35,400	16,780	10,859	16,709	10,788
SF16-350DA	35,400	22,966	14,417	23,107	14,558
SF25-350DA	70,800	26,515	16,771	28,258	18,514
SF25-400DA	70,800	35,046	22,426	36,391	23,771
SF25-450DA	70,800	43,852	26,541	47,896	30,586
SF30-450DA	141,600	56,012	33,807	57,180	34,975
SF30-500DA	141,600	70,172	43,091	69,242	42,153
SF30-550DA	141,600	82,969	51,542	84,376	52,950
SF35-550DA	283,200	108,828	66,207	106,784	64,163
SF35-600DA	283,200	127,874	78,827	127,051	77,995
SF35-700DA	283,200	144,777	90,907	159,088	105,209
SF40-600DA	557,500	168,761	102,209	178,009	111,457
SF40-700DA	557,500	189,620	120,944	219,321	150,654
SF40-800DA	557,500	265,633	165,999	278,430	178,797
SF48-800DA	1,106,000	299,519	184,319	338,548	223,347
SF48-900DA	1,106,000	405,233	257,508	404,241	256,526

All torques expressed in in-lbs

## SPRING RETURN DIMENSIONS



MODEL	L	L0	m1	m2	A	B	D	ISO Mount	Air Port
SF14-200DA	43.5	17.7	3.44	7.38	2.36	3.46	10.0	F14	3/8"
SF14-250DA	43.5	17.7	3.44	8.37	2.36	3.46	12.0	F14	1/2"
SF14-300DA	44.3	17.7	3.44	9.35	2.36	3.46	14.2	F14	1/2"
SF16-250DA	50.7	19.6	4.13	8.76	2.76	3.62	12.0	F16	1/2"
SF16-300DA	50.7	19.6	4.13	9.74	2.76	3.62	14.2	F16	1/2"
SF16-350DA	51.9	19.6	4.13	10.73	2.76	3.62	16.3	F16	1/2"
SF25-350DA	62.0	21.9	5.91	11.52	3.54	4.09	16.3	F25	1/2"
SF25-400DA	62.0	21.9	5.91	12.50	3.54	4.09	18.3	F25	3/4"
SF25-450DA	65.9	21.9	5.91	13.78	3.54	4.09	20.5	F25	3/4"
SF30-450DA	71.1	26.1	6.89	14.57	4.33	5.12	20.5	F30	3/4"
SF30-500DA	71.1	26.1	6.89	15.55	4.33	5.12	22.4	F30	3/4"
SF30-550DA	71.1	26.1	6.89	16.54	4.33	5.12	24.4	F30	3/4"
SF35-550DA	78.9	32.2	8.17	17.72	5.51	6.50	24.4	F35	3/4"
SF35-600DA	78.9	32.2	8.17	17.72	5.51	6.50	26.4	F35	1"
SF35-700DA	78.9	32.2	8.17	18.70	5.51	6.50	30.3	F35	1"
SF40-600DA	106.1	37.8	9.35	19.88	6.69	7.87	26.4	F40	1"
SF40-700DA	106.1	37.8	9.35	21.85	6.69	7.87	30.3	F40	1"
SF40-800DA	106.1	37.8	9.35	23.92	6.69	7.87	34.4	F40	1-1/2"
SF48-800DA	133.7	44.5	11.02	25.10	7.87	8.27	34.4	F48	1-1/2"
SF48-900DA	133.7	44.5	11.02	27.07	7.87	8.27	38.4	F48	2"

Dimensions reflect spring sized for 50psi.  
 For sizing at other pressures please consult VSI.



## NOTES

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## WARRANTY

This limited warranty applies in the United States to products manufactured by VSI, LLC. VSI, LLC. warrants the product purchased from it or its authorized reseller to be free from defects in material and workmanship under normal use during the two year warranty period from the date of its purchase. Other products not manufactured by VSI, LLC. which are provided as part of an assembly may carry additional warranties from that manufacturer or supplier.

During the warranty period, VSI, LLC. will repair or replace defective parts of the product, or, at VSI, LLC. sole option, issue a credit for the original purchase price of the product. Repaired or replaced product will be warranted hereunder only for the remaining portion of the original warranty period. All exchanged products under this Limited Warranty will become the property of VSI, LLC. A proper Return Material Authorization (RMA) number will have to be obtained for all products to be returned under this Limited Warranty. Any claim under this Limited Warranty must include a description of the problem encountered and any relevant information that may assist VSI, LLC. in the replication or resolution of the problem.

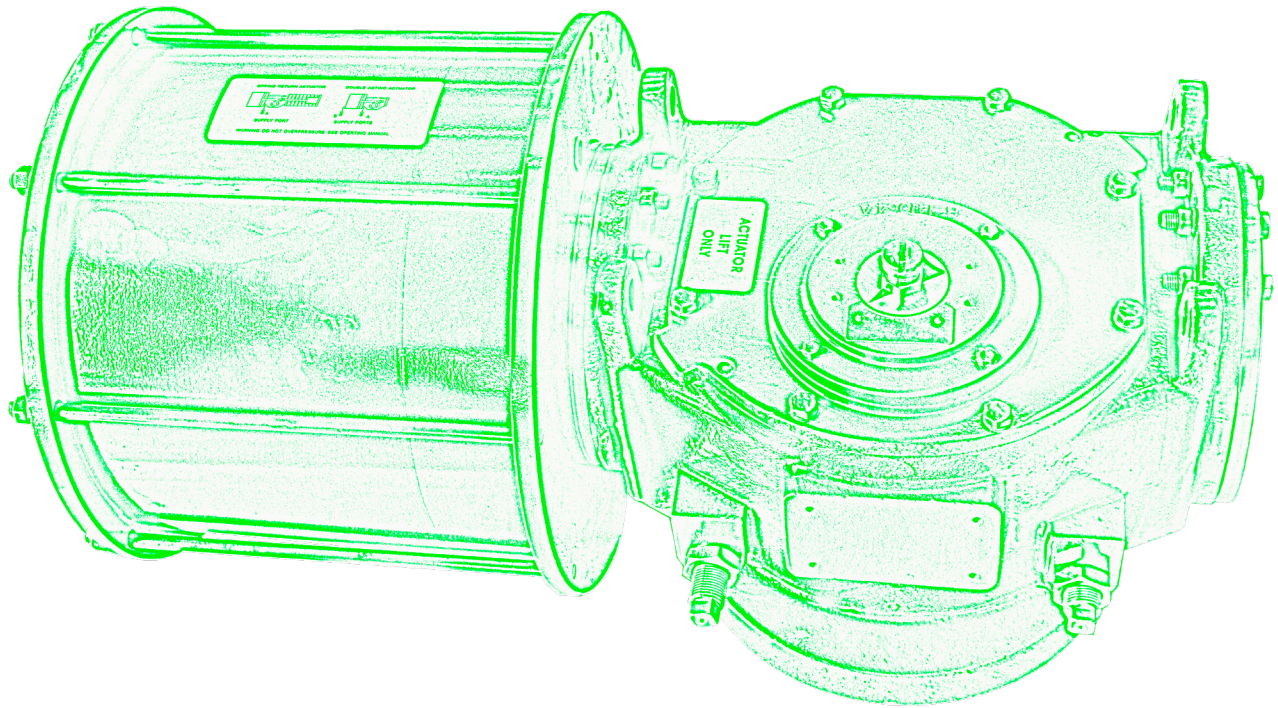
This Limited Warranty is transferable during its term to the end user of the product. Any transfer shall not extend or alter the terms of this Limited Warranty.

This Limited Warranty extends only to products purchased from VSI, LLC. or its authorized reseller and does not extend to any product that has been damaged or rendered defective as a result of (a) modification, repair, alteration or improper installation by any person other than VSI, LLC. or its authorized representative; (b) unreasonable or improper use or storage, use beyond rated conditions, operation other than per VSI, LLC. or the manufacturer's instructions, or being otherwise subjected to improper maintenance, negligence or accident; or (c) any use of the product after purchaser has knowledge of any defect in the product.

**The warranties provided above are in lieu of and exclude all other warranties, statutory, express or implied, including without limitation any warranty or merchantability or fitness for a particular purpose. VSI, LLC. expressly disclaims all warranties not stated in this limited warranty. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty.**

VSI, LLC. warranty liability shall not exceed the original purchase price of the defective product. VSI, LLC. is not liable for any damages caused by the product or other products or the failure of the product or other products to perform, including any lost profits, lost savings, incidental or consequential damages. VSI, LLC. is not responsible for charges resulting from the removal and/or replacement of the product. VSI, LLC. is not liable for any claims made by third parties or by the purchaser for a third party. This limitation applies whether damages are sought, or a claim is made, under the Limited Warranty or as a tort claim, product liability claim, contract claim, or any other claim. This limitation cannot be waived by any person. This limitation of liability will be effective even if VSI, LLC. or its authorized representative has been advised by the purchaser of the possibility of such damages.





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