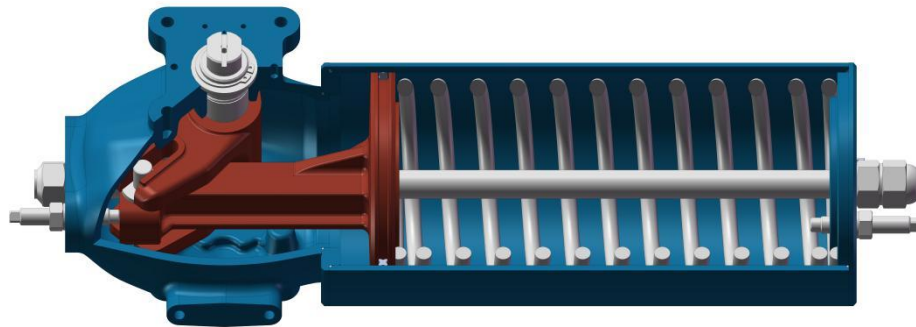


NSF07S~14S Scotch Yoke Type Pneumatic Actuator



High performance and high reliability
Fully compliant with the latest international standards and regulations
More applicable to a wide range of specifications and torque requirements
Compact design is better suited for a variety of industrial applications

Features

● Waterproof Protection

O-Rings are fitted between the body and cover as well as on the modular connections which ensure weatherproof protection.

● Wear Resistant

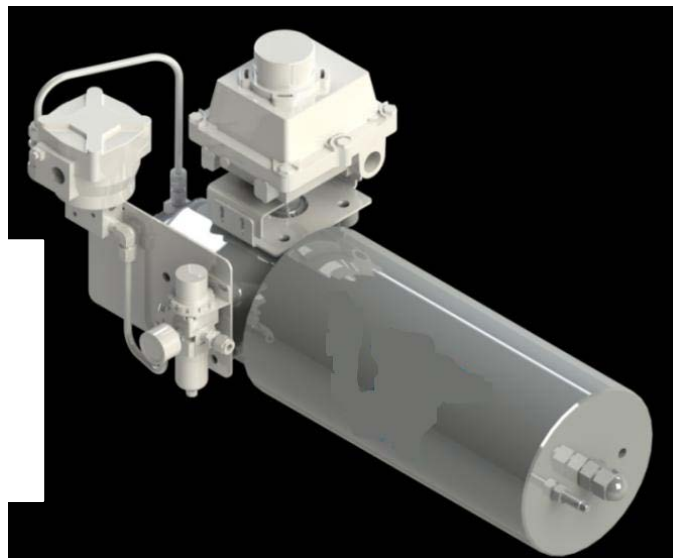
Self-lubricating bearings are used on piston rod, guide bar and other moving parts, which reduces resistance and extends the life of all moving parts.

● Corrosion Resistant

NSF actuator is sprayed with multiple layers of protective coating to meet the environmental requirements of all kinds of working conditions. A Teflon coating on the inner wall of the cylinder increases the corrosion resistance and the lubrication performance.

● Operating pressure and temperature range

Pneumatic operating pressure: 3~8Bar;
Withstand pressure 1MPa
Environment temperature:
Standard type: -20°C-80°C;
High temperature type: -10°C-150°C;
Low temperature type: -40°C-80°C



● Easy to install and high pressure ratings

The NSF actuator complies with the latest international specifications, and the flange dimension meets the ISO5211 standard for easy connection with the valve.

● Compact structure design

The NSF actuators use a compact design, smaller external dimensions under the same torque.

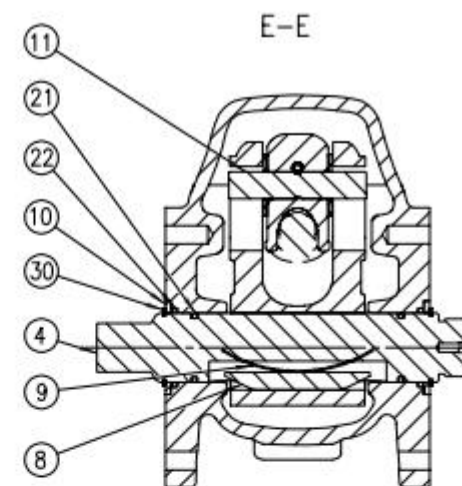
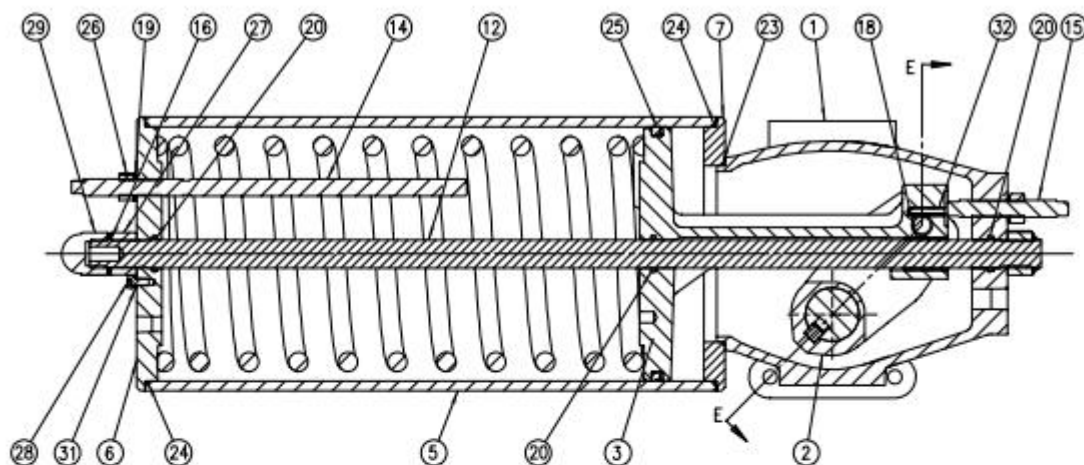
● Spring preload

The NSF actuators use the preload spring and have a special locking device, so it will not release the pressure when disassembling.

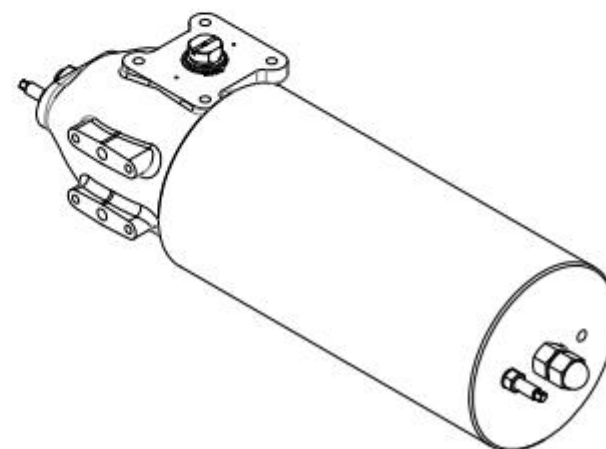
● Segment control

The segment control is used for occasions call for metering line valve and water hammer preventing effect. The opening degree of middle position can be adjusted by 15% to 50%.

Part List



11	Drive pin	42CrMo	22	O—ring	NBR			
10	Shim	06Cr19Ni10	21	O—ring	NBR	32	Pin	45
9	Leaf spring	60Si2Mn	20	O—ring	NBR	31	Grommet	65Mn
8	Key	45#	19	Combination washer	65Mn	30	Circlip	65Mn
7	Connecting plate	45#	18	DU bearing	DU—SF—1	29	CAP NUT	Steel 8
6	Cylinder end cover	45#	17	Spring	60Si2MnA	28	Hexagon socket head cap screw	Steel 8.8
5	Cylinder block	20#	16	Gasket	PA101	27	Nut	Steel 8
4	Output shaft	42CrMo	15	Box limit screw	45#	26	Nut	Steel 8
3	Piston	QT450—10	14	Cylinder limit screw	45#	25	X—ring	NBR
2	Fork	QT600—3	13	Drive pin gasket	PA101	24	O—ring	NBR
1	Box	QT450—10	12	Tension Rod	42CrMo	23	O—ring	NBR
NO.	Name	Material	NO.	Name	Material	NO.	Name	Material



Note: The box and piston material of NSF-07S/10S is WCB, and the dial is 42CrMo

Torque Table-Double Acting Type

SN	Model		Output Torque (Nm)								
			3 Bar	3.5 Bar	4 Bar	4.5 Bar	5 Bar	5.5 Bar	6 Bar	7 Bar	8 Bar
1	NSF07S-080	Start/End	110	129	147	166	184	202	221	258	295
		Run	58	67	77	86	96	105	115	134	153
2	NSF07S-100	Start/End	175	204	233	262	291				
		Run	91	106	121	137	152				
3	NSF10S-100	Start/End	211	246	281	317	352	387	422	492	563
		Run	110	128	146	165	183	201	220	256	293
4	NSF10S-125	Start/End	335	390	446	502	558	614			
		Run	174	203	232	261	290	319			
5	NSF12S-125	Start/End	418	488	557	627	697	766	836	975	1115
		Run	218	254	290	326	363	399	435	508	580
6	NSF12S-160	Start/End	692	807	922	1038	1153	1268			
		Run	360	420	480	540	600	660			
7	NSF12S-180	Start/End	878	1025	1171						
		Run	457	534	610						
8	NSF14S-180	Start/End	1085	1266	1447	1628	1809	1990	2170	2562	
		Run	565	659	753	847	942	1036	1130	1318	
9	NSF14S-200	Start/End	1345	1569	1793	2017	2241	2465	2690		
		Run	700	817	933	1050	1167	1283	1400		
10	NSF14S-220	Start/End	1632	1904	2176	2447	2719				
		Run	849	991	1133	1274	1416				
11	NSF14S-260	Start/End	2287	2669							
		Run	1191	1389							

Torque Table-Single Acting Type

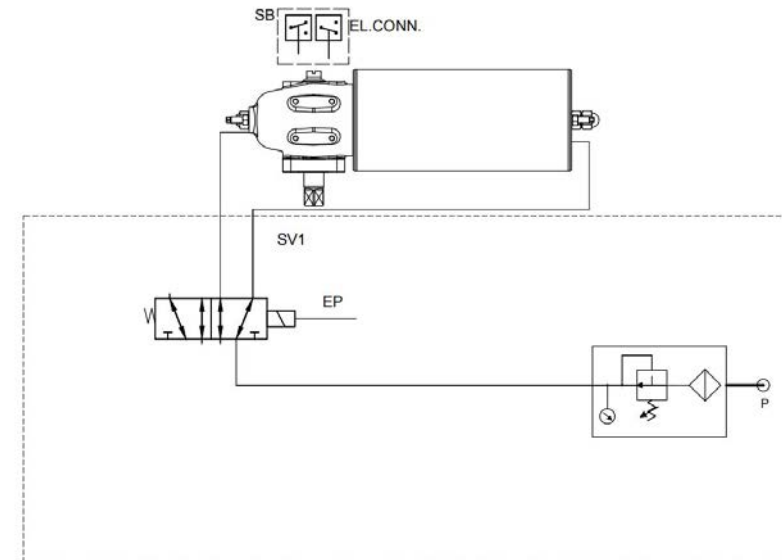
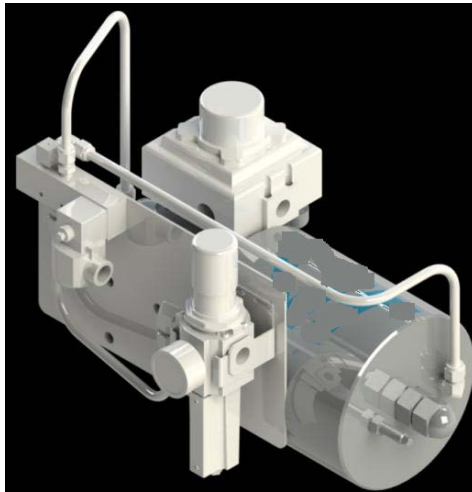
SN	Model	Spring Torque (Nm)		Output Torque (Nm)								
				3 Bar	3.5 Bar	4 Bar	4.5 Bar	5Bar	5.5Bar	6 Bar	7 Bar	8 Bar
1	NSF07S-080-SR3	Start	88	48	67	76	85	122	140	159	196	232
		Run	38	16	26	31	36	55	64	74	93	112
		End	57	15	33	43	52	89	107	125	162	199
2	NSF07S-100-SR3	Start	138	77	106	120	135	193	222	251		
		Run	60	26	41	49	57	87	102	117		
		End	90	24	53	68	82	141	170	199		
3	NSF10S-100-SR3	Start	169	100	135	152	170	240	276	311	381	451
		Run	71	33	51	60	69	106	124	143	179	216
		End	102	26	62	79	97	167	202	238	308	378
4	NSF10S-125-SR3	Start	263		217	245	273	384	440	496	607	
		Run	110		83	98	112	170	199	228	286	
		End	159		103	130	158	270	326	381	493	
5	NSF12S-125-SR3	Start	308		235	305	375	444	514	584	723	862
		Run	140		101	137	173	210	246	282	355	427
		End	232		152	222	292	361	431	500	640	779
6	NSF12S-125-SR2	Start	423					369	439	509	648	787
		Run	188					158	194	230	303	375
		End	301					236	305	375	514	654
7	NSF12S-125-SR1	Start	559						376	446	585	725
		Run	239						139	175	248	320
		End	358						157	227	366	505
8	NSF12S-160-SR3	Start	507	277	392	507	623	738	853	969	1199	
		Run	231	109	169	229	289	349	409	469	589	
		End	381	140	255	371	486	601	716	832	1062	
9	NSF12S-160-SR2	Start	709			378	493	608	724	839	1070	1300
		Run	315			137	197	258	318	378	498	618
		End	500			150	266	381	496	611	842	1073
10	NSF12S-160-SR1	Start	928						621	737	967	1198
		Run	396						229	289	409	529
		End	594						258	373	604	834
11	NSF12S-180-SR3	Start	643	353	499	646	792	938	1085	1231		
		Run	293	138	214	291	367	443	519	595		
		End	483	178	324	471	617	764	910	1056		
12	NSF12S-180-SR2	Start	915			481	627	773	920	1066		
		Run	403			171	247	323	399	476		
		End	634			175	321	468	614	761		
13	NSF12S-180-SR1	Start	1170						803	949	1242	
		Run	498						296	373	525	
		End	742						336	483	775	

Torque Table-Single Acting Type

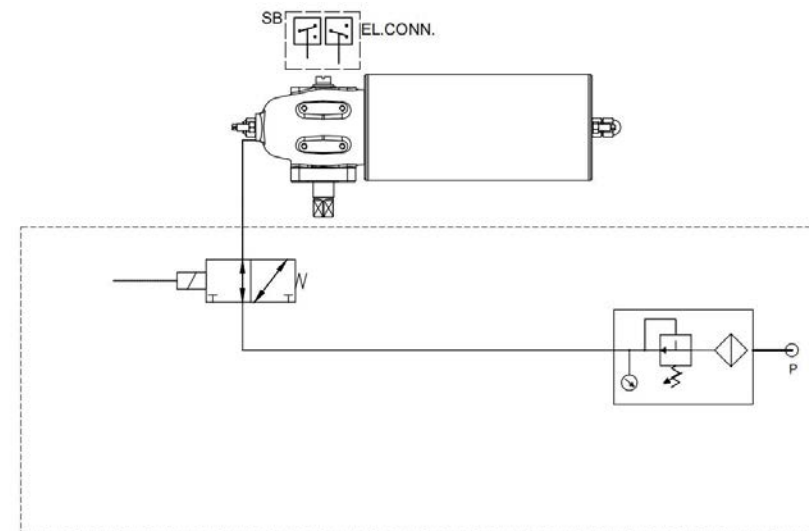
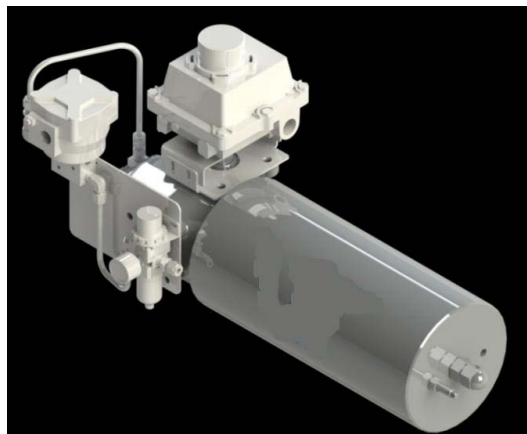
SN	Model	Spring Torque (Nm)		Output Torque (Nm)								
				3 Bar	3.5 Bar	4 Bar	4.5 Bar	5Bar	5.5Bar	6 Bar	7 Bar	8 Bar
14	NSF14S-180-SR3	Start	816		637	818	999	1180	1360	1542	1903	2265
		Run	363		264	358	452	547	641	735	923	1112
		End	578		378	559	739	920	1101	1282	1644	2005
15	NSF14S-180-SR2	Start	1154					1004	1185	1366	1728	2090
		Run	493					405	499	594	782	970
		End	739					552	733	914	1276	1637
16	NSF14S-180-SR1	Start	1487							1252	1614	1976
		Run	606							470	658	846
		End	843							552	914	1275
17	NSF14S-200-SR3	Start	1012	573	797	1022	1246	1470	1694	1918	2366	
		Run	448	212	329	446	563	679	796	913	1146	
		End	709	243	467	691	915	1139	1364	1588	2036	
18	NSF14S-200-SR2	Start	1434					1255	1479	1703	2152	2600
		Run	609					504	620	737	970	1204
		End	906					680	904	1128	1577	2025
19	NSF14S-200-SR1	Start	1897						1549	1997	2445	
		Run	767						566	799	1032	
		End	1048						624	1072	1521	
20	NSF14S-220-SR3	Start	1222	700	972	1244	1516	1787	2059	2331		
		Run	541	260	402	544	685	827	968	1110		
		End	856	301	573	845	1117	1388	1660	1932		
21	NSF14S-220-SR2	Start	1751					1541	1813	2085	2628	
		Run	738					613	754	896	1179	
		End	1083					813	1085	1357	1901	
22	NSF14S-220-SR1	Start	2309							1908	2451	
		Run	925							692	975	
		End	1245							750	1294	
23	NSF14S-260-SR3	Start	1731	989	1370	1751	2132	2514				
		Run	761	362	561	759	958	1156				
		End	1193	402	784	1165	1546	1927				
24	NSF14S-260-SR2	Start	2497					2181	2563			
		Run	1040					853	1051			
		End	1498					1094	1475			

Control Configurations

Model	DA	M	FR	SV
Pneumatic	Double Acting	Modular	Filter Regulator	Solenoid Valve

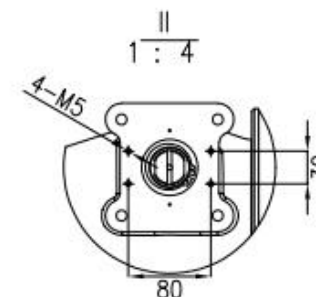
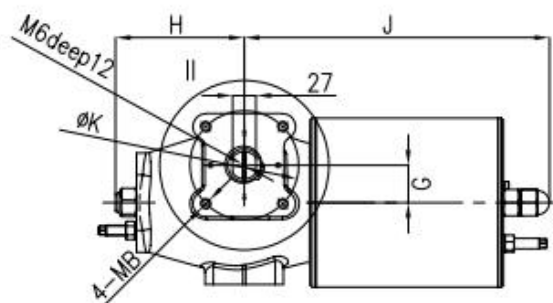
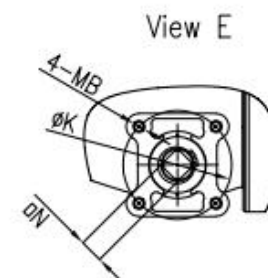
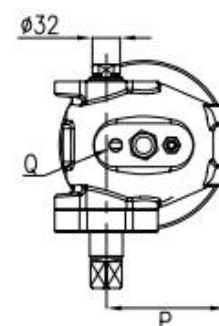
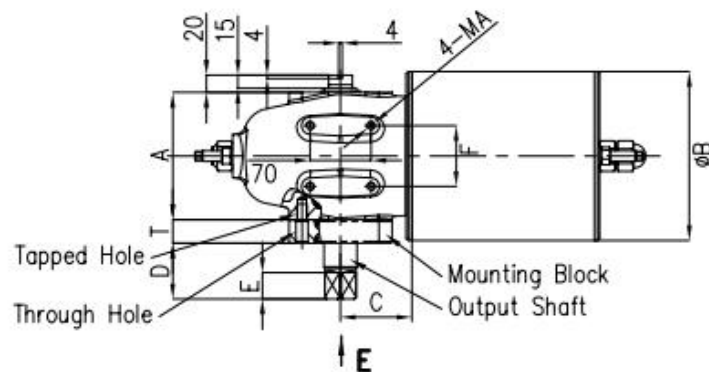


Model	DA	M	FR	SV
Pneumatic	Double Acting	Modular	Filter Regulator	Solenoid Valve



Note: Configurations can be subjected to some late customization depending on project needs

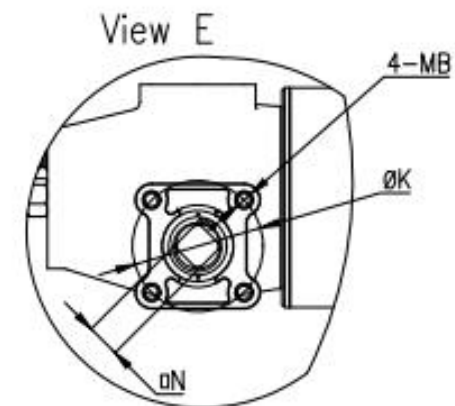
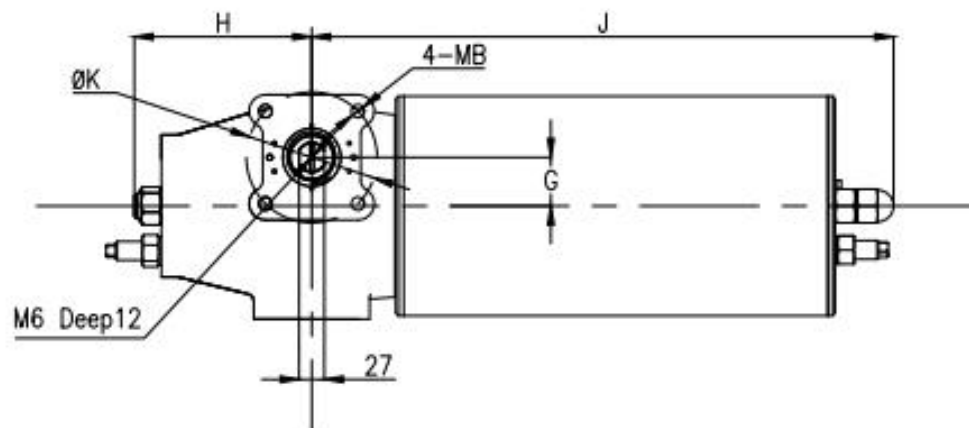
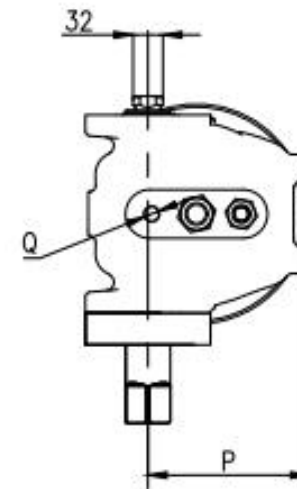
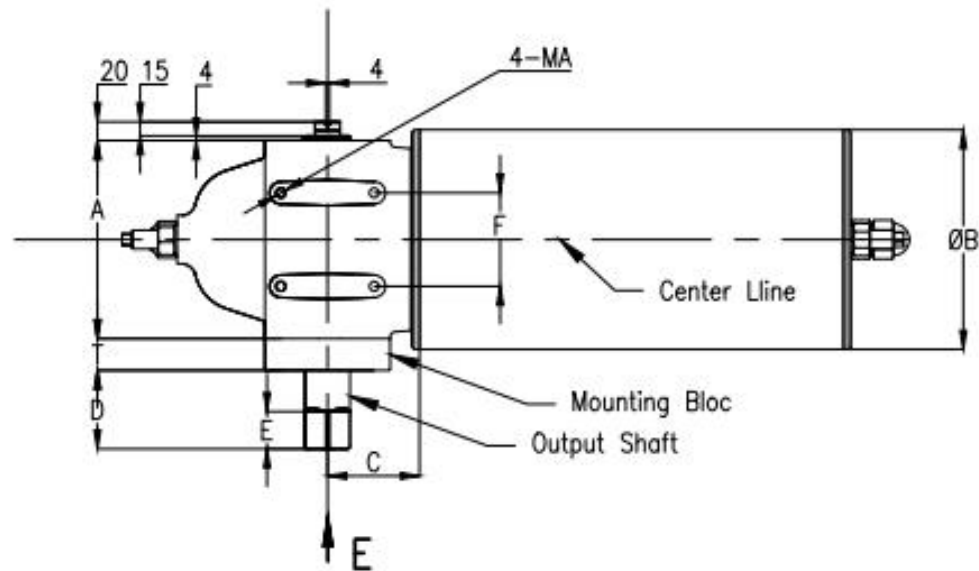
Outline Dimension-Double Acting



This 4-M5 screw hole is available only in the VTS04xx series

Model	Size (mm)																Capacity (L)	Weight (kg)
	A	∅ B	C	D	E	F	G	H	J	∅ K	□N	P	Q	T	MA	MB		
*NSF07S-080	108	87	50	45	20	70	24	120	407	70	17	84	NPT1/4	0	M10	M8	0.7	10.4
NSF07S-100	108	107	50	45	20	70	24	120	407	70	17	84	NPT1/4	0	M10	M8	1.1	13.2
*NSF10S-100	128	107	63	54	25	70	35	144	480	102	22	110	NPT1/4	0	M10	M10	1.4	17.7
NSF10S-125	128	132	63	54	25	70	35	144	480	102	22	110	NPT1/4	0	M10	M10	2.2	21.8
*NSF12S-125	146	132	82	64	30	70	43	148	351	125	27	137	NPT3/8	0	M10	M12	3.4	21
NSF12S-160	146	170	82	64	30	70	43	148	351	125	27	137	NPT3/8	27	M10	M12	4.5	28
NSF12S-180	146	194	82	64	30	70	43	148	351	125	27	137	NPT3/8	27	M10	M12	5.4	32
*NSF14S-180	212	194	98	84	40	100	52	190	424	140	36	173	NPT1/2	0	M12	M16	9	48
NSF14S-200	212	213	98	84	40	100	52	190	424	140	36	173	NPT1/2	34	M12	M16	10.2	44
NSF14S-220	212	235	98	84	40	100	52	190	424	140	36	173	NPT1/2	34	M12	M16	11.4	59
NSF14S-260	212	273	98	84	40	100	52	190	424	140	36	173	NPT1/2	34	M12	M16	14.2	66

Outline Dimension-Single Acting



Outline Dimension-Single Acting

Model	Size (mm)																Capacity (L)	Weight (kg)
	A	∅ B	C	D	E	F	G	H	J	∅ K	□N	P	Q	T	MA	MB		
*NSF07S-080-SRxFC *NSF07S-080-SRxFO	108	87	50	45	20	70	24	120	407	70	17	84	NPT1/4	0	M10	M8	0.7	10.4
NSF07S-100-SRxFC NSF07S-100-SRxFO	108	107	50	45	20	70	24	120	407	70	17	84	NPT1/4	0	M10	M8	1.1	13.2
NSF10S-100-SRxFC NSF10S-100-SRxFO	128	107	63	54	25	70	35	144	480		22	110	NPT1/4	0	M10	M10	1.4	17.7
*NSF10S-125-SRxFC *NSF10S-125-SRxFO	128	132	63	54	25	70	35	144	480	102	22	110	NPT1/4	0	M10	M10	2.2	21.8
*NSF12S-125-SRxFC *NSF12S-125-SRxFO	146	132	82	64	30	70	43	148	546	125	27	137	NPT3/8	0	M10	M12	3.4	29
NSF12S-160-SRxFC NSF12S-160-SRxFO	146	170	82	64	30	70	43	148	546	125	27	137	NPT3/8	27	M10	M12	4.5	37
NSF12S-180-SRxFC NSF12S-180-SRxFO	146	194	82	64	30	70	43	148	546	125	27	137	NPT3/8	27	M10	M12	5.4	45
*NSF14S-180-SRxFC *NSF14S-180-SRxFO	212	194	98	84	40	100	52	190	622	140	36	173	NPT1/2	0	M12	M16	9	61
NSF14S-200-SRxFC NSF14S-200-SRxFO	212	213	98	84	40	100	52	190	622	140	36	173	NPT1/2	34	M12	M16	10.2	69
NSF14S-220-SRxFC NSF14S-220-SRxFO	212	235	98	84	40	100	52	190	622	140	36	173	NPT1/2	34	M12	M16	11.4	78
NSF14S-260-SRxFC NSF14S-260-SRxFO	212	273	98	84	40	100	52	190	622	140	36	173	NPT1/2	34	M12	M16	14.2	90

Note:

1. The "x" in the model in the table indicates the spring number, which is selected according to the required torque compared with the torque meter;
2. The actuator shown in the figure is in the form of air-opening (FC). The shape of the air-closed (FO) actuator needs to be symmetrical to the output shaft relative to the center line AA, and all other sizes are the same;
3. The volume is defined as the water volume of the whole air chamber after the actuator spring is compressed to the whole process;
4. The model with "*" does not need to have a high block (the T size is 0).