

NUTORK[®]

Actuators & Valves



CE SIL3 Ex

NSF Series Scotch Yoke Type Pneumatic & Hydraulic Actuator



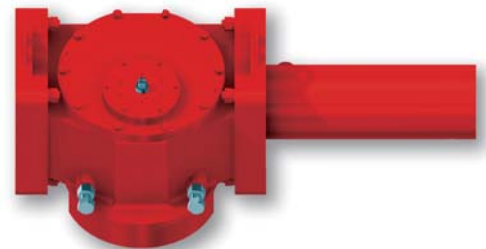
Pneumatic Actuator
Single Acting Type



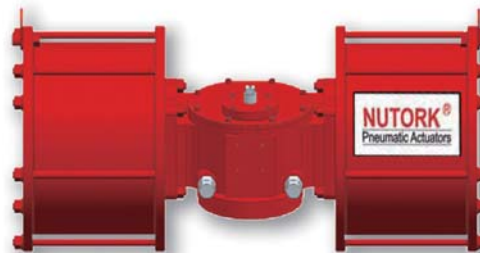
Hydraulic Actuator
Single Acting Type



Pneumatic Actuator
Double Acting Type



Hydraulic Actuator
Double Acting Type



Pneumatic Actuator
Double Cylinders Double Acting Type

NUTORK CORPORATION

Advantages

Water Ingress Protected

O-Rings are fitted on bodies, caps and so on, this ensure water ingress protected.

ISO Valve Mounting

The NSF Series actuators interface meets ISO standard, and meets the dimensional requirements of ISO defined for each torque range.

Standardization

The shaft driven accessory interface conforms to NAMUR and is identical on all NSF Series models, allowing standardization of accessory mounting hardware and installation practices.

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.

High Efficiency

The piston rod and guide block connection superior surface finishes and self-lubricating bearings maximize input energy transfer directly to the valve stem, efficiency is further enhanced by the tension-loaded spring, minimizing radial loads on the piston rod.



Corrosion Resistant

The NSF series actuators incorporate over three stages of internal and external coatings to resist severe weather, chemical and petroleum environments. The inner surface of cylinder is coated by PTFE, enhanced corrosion resistant and self-lubricating

Modular Design

NSF series actuators have available, field-serviceable drive, power, spring and override modules, the modules are removable, serviceable and interchangeable when mounted to the valve. Modules are available for separated purchase to reduce spare parts inventory

Safe Spring Module

To ensure the safety of personnel during installation and maintenance, the spring module has been designed so that it can only be removed from the power module with the spring in the fully extended position. This prevents accidental release of the spring force, protecting personnel from injury and the actuator from accidental damage.



General Application

Torque Outputs(guaranteed)

Double acting: 306~248,769Nm
Spring return end torques: 187~71753Nm

Operating Pressures

Pneumatic: 3~7 Bar
Hydraulic: 100 Bar (Over 100bar hydraulic pressure is available upon request)

Operating Temperatures:

Standard: -20°C~80°C
Low Temperature: -40°C~80°C
High Temperature: -20°C~150°C

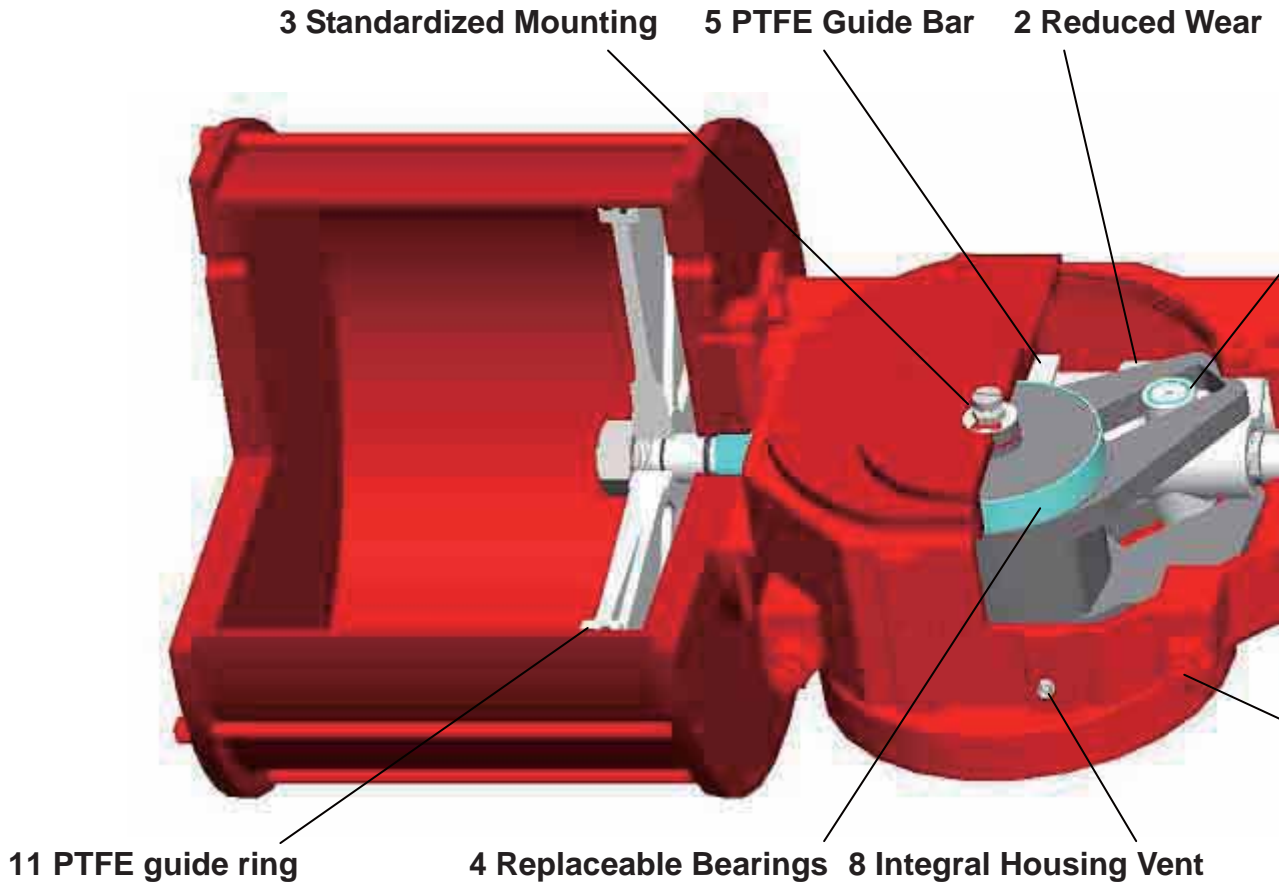
Design Features Offer Unique Benefits

1 Safe Spring Lock

Positively locks the spring module in place under load. This prevents spring module detachment from the drive module.

2 Reduced Wear

Connects the piston rod with the guide block, compensating for side load deflection and reducing wear on rod, bearings and seals.



3 Standardized Mounting

The NAMUR mounting configuration allows standardization of mounting hardware for a wide range of shaft driven accessories.

4 Replaceable Bearings

Replaceable bearings protect sliding and rotating components, with suitability for either dry or lubricated working conditions.

5 PTFE Guide Bar

PTFE thrust bar prevents yoke pin axial movement, transferring axial loads directly to the drive module case.

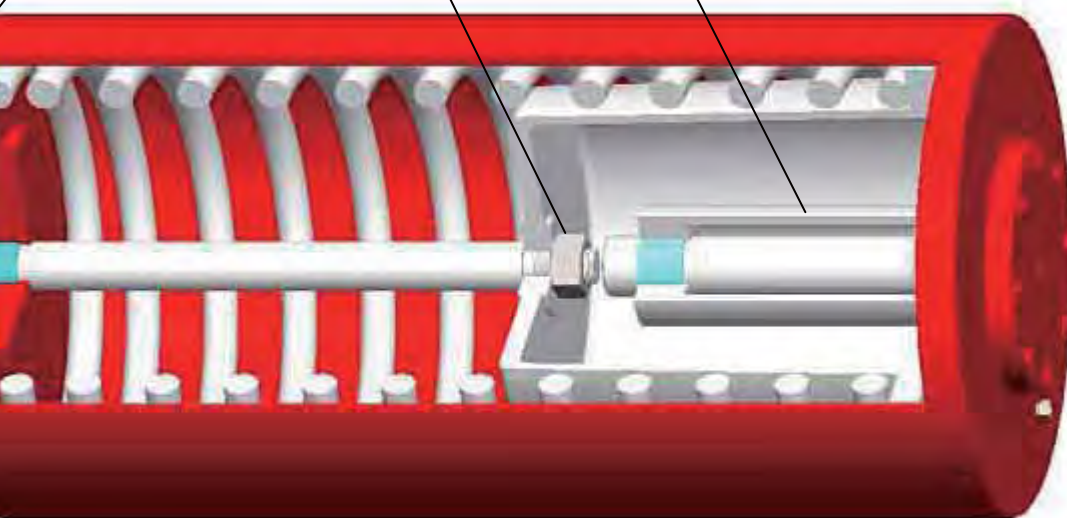
6 Hydraulic Overrides For Spring Module

Inside hydraulic override cylinder module for spring-return models doesn't increase actuator length.

7 Easy Lifting

NSF25 and larger models equipped with four lifting eyes for safe actuator handling during shipping installation and removal.

10 Roller 1 Safe Spring Lock 6 Hydraulic Overrides For Spring Module



9 80° to 100° Travel Adjustment

8 Integral Housing Vent

The main actuator housing incorporates an integral check valve in order to release overpressure while preventing ingress of foreign object or water

10 Roller

Rollers be used, reducing the friction between the yoke arm and pin, minimizing the wear of yoke arm and pin.

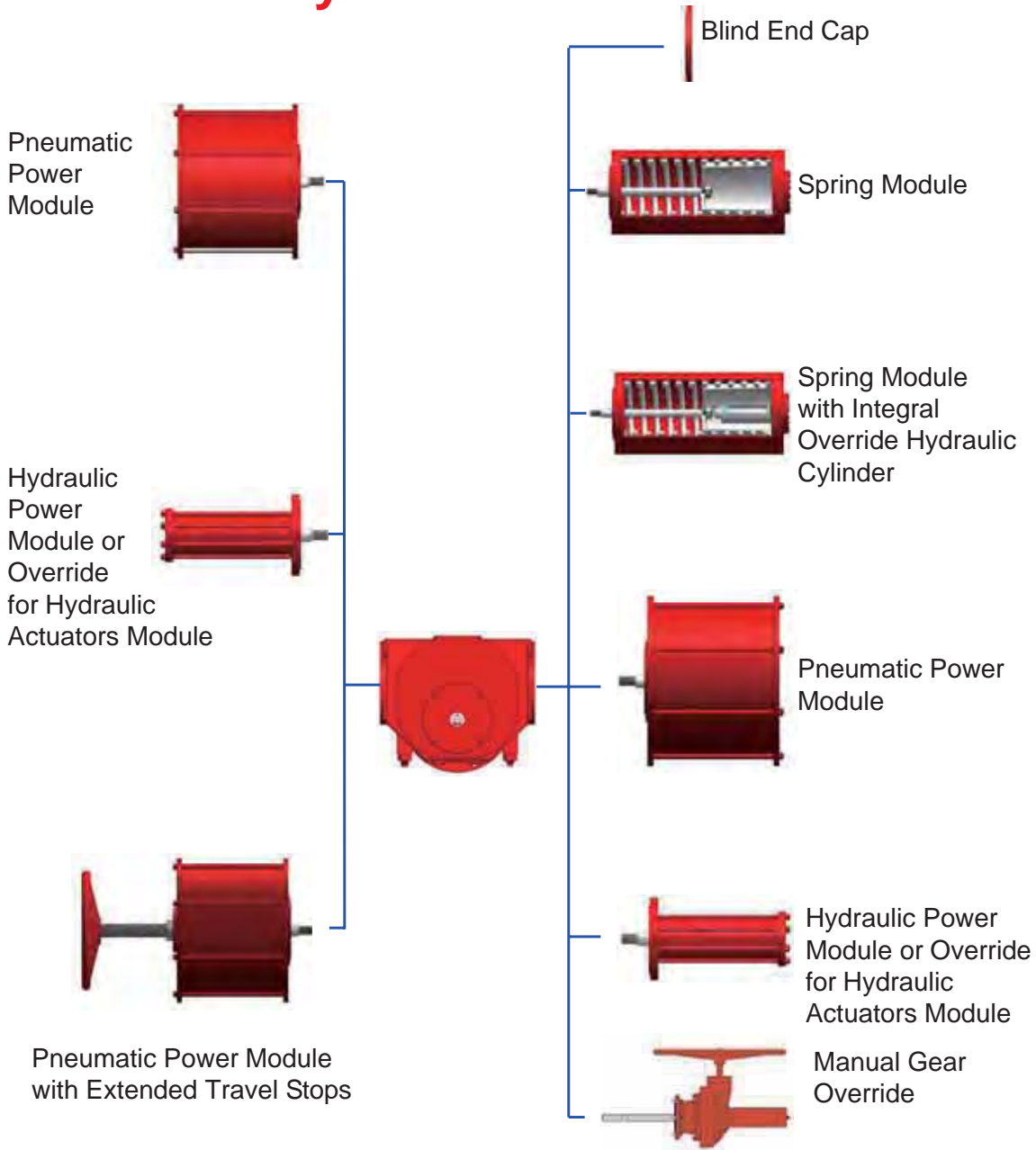
9 80° to 100° Travel Adjustment

Bi-directional travel stops integral to the actuator, the stops allow 80° to 100° total travel adjustment.

11 PTFE Guide Ring

Guide ring, made of PTFE, preventing metal to metal contact with the cylinder bore, project the cylinder not be scratched by pistons.

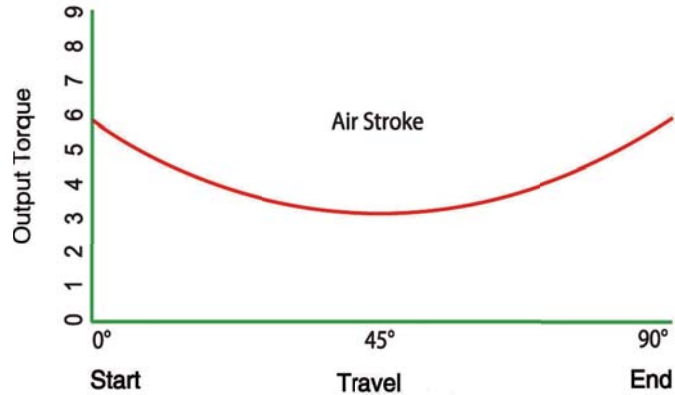
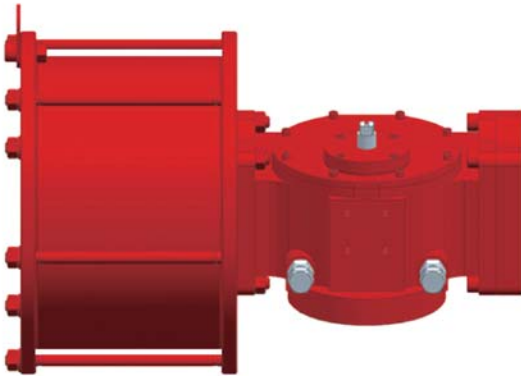
Modular Versatility



Torque Tester

We have developed a unique digital Torque Tester which enables us to accurately measure an actuator's torque output, thus NSF Series actuators can be supplied with a torque sheet, which details actual torque output throughout the actuator's travel range.

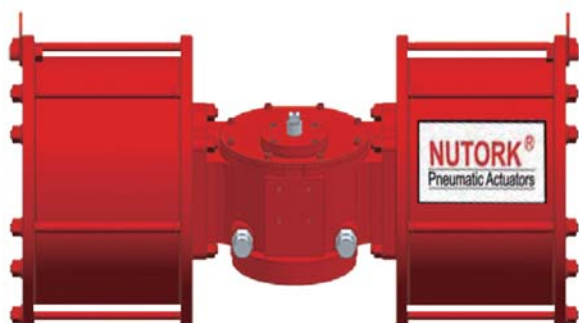
Torque Table - Double Acting (Pneumatic Actuators)



Unit: Nm

Model	Max Torque of Drive Moudule	Air Pressure							
		3 bar		4 bar		5 bar		6 bar	
		Start End	Run	Start End	Run	Start End	Run	Start End	Run
NSF10-150-DA	500	306	173	405	208	509	255	611	310
NSF10-170-DA		398	245	523	310	654	331	----	----
NSF12-170-DA	1000	491	285	654	387	817	475	987	564
NSF12-200-DA		689	391	905	452	1131	565	1357	815
NSF14-200-DA	2000	839	509	1108	679	1385	848	1670	1018
NSF14-250-DA		1295	795	1736	1060	2172	1325	----	----
NSF14-300-DA		1862	1145	----	----	----	----	----	----
NSF16-250-DA	4000	1625	994	2164	1325	2712	1657	3310	1988
NSF16-300-DA		2335	1431	3121	1909	3889	2386	----	----
NSF16-350-DA		3181	1948	4239	2598	----	----	----	----
NSF25-350-DA	8000	3924	2338	5237	3117	6547	3897	7861	4676
NSF25-400-DA		4985	3054	6642	4072	8313	5089	----	----
NSF25-450-DA		6308	3865	8413	5153	----	----	----	----
NSF30-450-DA	16000	7720	4294	10291	5726	12854	7157	15431	8588
NSF30-500-DA		9514	5301	12694	7069	15867	8836	----	----
NSF30-550-DA		11520	6415	15363	9105	----	----	----	----
NSF35-550-DA	32000	14670	8981	19551	11974	24441	14968	29324	17961
NSF35-600-DA		17454	10688	23263	14250	29077	17813	34896	21375
NSF35-700-DA		23751	14547	31678	19396	----	----	----	----
NSF40-600-DA	63000	----	----	----	----	35350	21630	42377	25956
NSF40-700-DA		29012	16658	38440	23553	48071	29441	57681	35329
NSF40-800-DA		37682	29584	50318	39852	62786	38453	----	----
NSF48-800-DA	125000	44462	25528	59282	34038	73862	45239	88640	54287
NSF48-900-DA		56391	32378	74762	45804	93486	57256	112140	68707
NSF48-1000-DA		69285	42412	92351	56549	115320	70686	----	----
NSF60-800-DA	250000	----	----	----	----	----	----	134159	71288
NSF60-900-DA		78948	45329	105041	60311	131301	75388	157562	90466
NSF60-1000-DA		97447	55950	129929	74601	162412	93251	194894	111901
NSF60-1100-DA		118078	67796	157437	90395	196797	112993	236156	135592

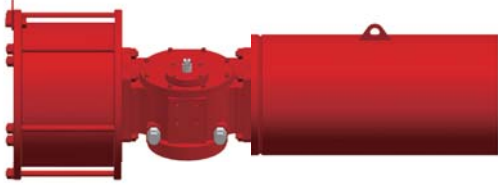
Torque Table - Double Cylinder Double Acting (Pneumatic Actuators)



Unit: Nm

Model	Max Torque of Drive Moudule	Air Pressure							
		3 bar		4 bar		5 bar		6 bar	
		Start End	Run	Start End	Run	Start End	Run	Start End	Run
NSF16-141-DA	4000	1055	561	1407	748	1758	935	2110	1122
NSF16-161-DA		1378	733	1837	977	2296	1221	2756	1466
NSF16-201-DA		2153	1145	2870	1527	3588	1909	4306	2290
NSF25-201-DA	8000	2583	1374	3444	1832	4306	2290	5167	2748
NSF25-251-DA		4037	2147	5382	2863	6728	3578	8073	4294
NSF25-301-DA		5813	3092	7750	4122	----	----	----	----
NSF30-301-DA	16000	6458	3435	8611	4580	10764	5726	12917	6871
NSF30-351-DA		8791	4676	11721	6234	14651	7793	17581	9352
NSF30-401-DA		11482	6107	15309	8143	----	----	----	----
NSF35-401-DA	32000	16074	8550	21432	11400	26790	14250	32149	17100
NSF35-451-DA		20344	10821	27125	14428	----	----	----	----
NSF35-501-DA		25116	13360	33488	17813	41860	22266	50232	26719
NSF40-501-DA	63000	30498	16222	40664	21630	50830	27037	60996	32445
NSF40-551-DA		36903	19629	49204	26172	61505	32715	----	----
NSF40-601-DA		43917	23360	58556	31147	----	----	----	----
NSF48-601-DA	125000	51667	27483	68890	36644	86112	45804	103335	54965
NSF48-651-DA		60637	32254	80850	43005	101062	53757	121275	64508
NSF48-701-DA		70325	37407	93767	49876	117208	62345	----	----
NSF48-801-DA		91853	48858	122471	65144	----	----	----	----
NSF60-801-DA	250000	119409	63515	159212	84687	199015	105859	238818	127031
NSF60-901-DA		151127	80387	201503	107182	251879	133978	----	----
NSF60-1001-DA		186577	99243	248769	132324	----	----	----	----

Torque Table - Spring Return Acting (Pneumatic Actuators)



Spring Return Acting (SR3 3Bar Spring for Air Pressure at 3Bar)

Unit: Nm

Model	Max Torque of Drive Moudule	Spring Start	Spring Running	Spring End	Air Start	Air Running	Air End
NSF10-150-SR3	500	191	93	120	203	95	127
NSF10-170-SR3		245	120	154	261	123	163
NSF12-170-SR3		307	150	192	327	153	204
NSF12-200-SR3	1000	425	207	266	452	212	283
NSF14-200-SR3		510	249	319	543	254	339
NSF14-250-SR3		797	389	498	848	398	530
NSF14-300-SR3	2000	1148	560	718	1221	573	763
NSF16-250-SR3		996	486	623	1060	497	663
NSF16-300-SR3		1435	700	897	1527	716	954
NSF16-350-SR3	4000	1953	952	1221	2078	974	1299
NSF25-350-SR3		2344	1143	1465	2494	1169	1559
NSF25-400-SR3		3061	1493	1914	3257	1527	2036
NSF25-450-SR3	8000	3875	1889	2422	4122	1932	2576
NSF30-450-SR3		4305	2099	2691	4580	2147	2863
NSF30-500-SR3		5315	2592	3322	5655	2651	3534
NSF30-550-SR3	16000	6431	3136	4020	6812	3207	4276
NSF35-550-SR3		9004	4391	5628	9479	4490	5987
NSF35-600-SR3		10716	5225	6698	11400	5344	7125
NSF35-700-SR3	32000	14585	7112	9116	15517	7274	9698
NSF40-600-SR3		13012	6345	8133	13843	6489	8652
NSF40-700-SR3		17711	8636	11070	18842	8832	11776
NSF40-800-SR3	63000	23133	11280	14458	24610	11536	15381
NSF48-800-SR3		29584	13550	16060	29265	14064	15741
NSF48-900-SR3		35571	17003	21703	35799	18040	21931
NSF48-1000-SR3	125000	45628	20025	25572	45539	19975	25483
NSF60-800-SR3		35380	17251	22113	37639	17643	23524
NSF60-900-SR3		44778	21833	27987	47637	22330	29773
NSF60-1000-SR3	250000	55281	26955	34551	58811	27567	36757
NSF60-1100-SR3		66891	32615	41807	71161	33357	44476

Spring Return Acting (SR4 4Bar Spring for Air Pressure at 4Bar)

Unit: Nm

Model	Max Torque of Drive Moudule	Spring Start	Spring Running	Spring End	Air Start	Air Running	Air End
NSF10-150-SR4	500	255	124	159	271	127	170
NSF10-170-SR4		328	160	205	349	163	218
NSF12-170-SR4		410	200	256	436	204	272
NSF12-200-SR4	1000	567	276	354	603	283	377
NSF14-200-SR4		680	332	425	724	339	452
NSF14-250-SR4		1063	518	664	1131	530	707
NSF14-300-SR4	2000	1531	746	957	1629	763	1018
NSF16-250-SR4		1329	648	831	1414	663	884
NSF16-300-SR4		1914	933	1196	2036	954	1272
NSF16-350-SR4	4000	2605	1270	1628	2771	1299	1732
NSF25-350-SR4		3126	1524	1953	3325	1559	2078
NSF25-400-SR4		4082	1991	2551	4343	2036	2714
NSF25-450-SR4	8000	5167	2519	3229	5497	2576	3435
NSF30-450-SR4		5741	2799	3588	6107	2863	3817
NSF30-500-SR4		7087	3456	4430	7540	3534	4712
NSF30-550-SR4	16000	8576	4181	5360	9123	4276	5702
NSF35-550-SR4		12006	5854	7504	12772	5987	7983
NSF35-600-SR4		14288	6967	8930	15200	7125	9500
NSF35-700-SR4	32000	19448	9483	12155	20689	9698	12931
NSF40-600-SR4		17350	8460	10844	18457	8652	11536
NSF40-700-SR4		23615	11515	14760	25123	11776	15702
NSF40-800-SR4	63000	30845	15039	19278	32813	15381	20508
NSF48-800-SR4		35571	17003	21703	38730	19873	24862
NSF48-900-SR4		49122	21153	27577	50625	21973	29035
NSF48-1000-SR4	125000	63104	26508	33058	63768	26870	33701
NSF60-800-SR4		47174	23001	29484	50185	23524	31366
NSF60-900-SR4		59705	29111	37315	63515	29773	39697
NSF60-1000-SR4	250000	73709	35940	46068	78414	36757	49009
NSF60-1100-SR4		89188	43487	55743	94881	44476	59301

Torque Table - Spring Return Acting (Pneumatic Actuators)

Spring Return Acting (SR5 5Bar Spring for Air Pressure at 5bar)

Unit: Nm

Model	Max Torque of Drive Moudule	Spring Start	Spring Running	Spring End	Air Start	Air Running	Air End
NSF10-150-SR5	500	319	156	199	339	159	212
NSF10-170-SR5		410	200	256	436	204	272
NSF12-170-SR5	1000	512	250	320	545	255	340
NSF12-200-SR5		709	346	443	754	353	471
NSF14-200-SR5	2000	850	415	532	905	424	565
NSF14-250-SR5		1329	648	831	1414	663	884
NSF14-300-SR5		1914	933	1196	2036	954	1272
NSF16-250-SR5	4000	1661	810	1038	1767	828	1104
NSF16-300-SR5		2392	1166	1495	2545	1193	1590
NSF16-350-SR5		3256	1587	2035	3464	1624	2165
NSF25-350-SR5	8000	3907	1905	2442	4156	1948	2598
NSF25-400-SR5		5103	2488	3189	5429	2545	3393
NSF25-450-SR5		6458	3149	4037	6871	3221	4294
NSF30-450-SR5	16000	7176	3499	4485	7634	3578	4771
NSF30-500-SR5		8859	4320	5537	9425	4418	5890
NSF30-550-SR5		10720	5227	6700	11404	5346	7127
NSF35-550-SR5	32000	15008	7318	9380	15966	7484	9978
NSF35-600-SR5		17860	8708	11163	19000	8906	11875
NSF35-700-SR5		24310	11853	15194	25862	12123	16163
NSF40-600-SR5	63000	21688	10575	13555	23072	10815	14420
NSF40-700-SR5		29519	14393	18449	31403	14720	19627
NSF40-800-SR5		38556	18799	24097	41017	19227	25635
NSF48-800-SR5	125000	49122	21153	27577	49463	21339	27908
NSF48-900-SR5		59241	26853	36235	59601	27055	36595
NSF48-1000-SR5		77999	33493	43450	77515	33229	42981
NSF60-800-SR5	250000	58967	28752	36855	62731	29405	39207
NSF60-900-SR5		74631	36389	46644	79394	37216	49621
NSF60-1000-SR5		92137	44925	57585	98018	45946	61261
NSF60-1100-SR5		111485	54359	69678	118601	55594	74126

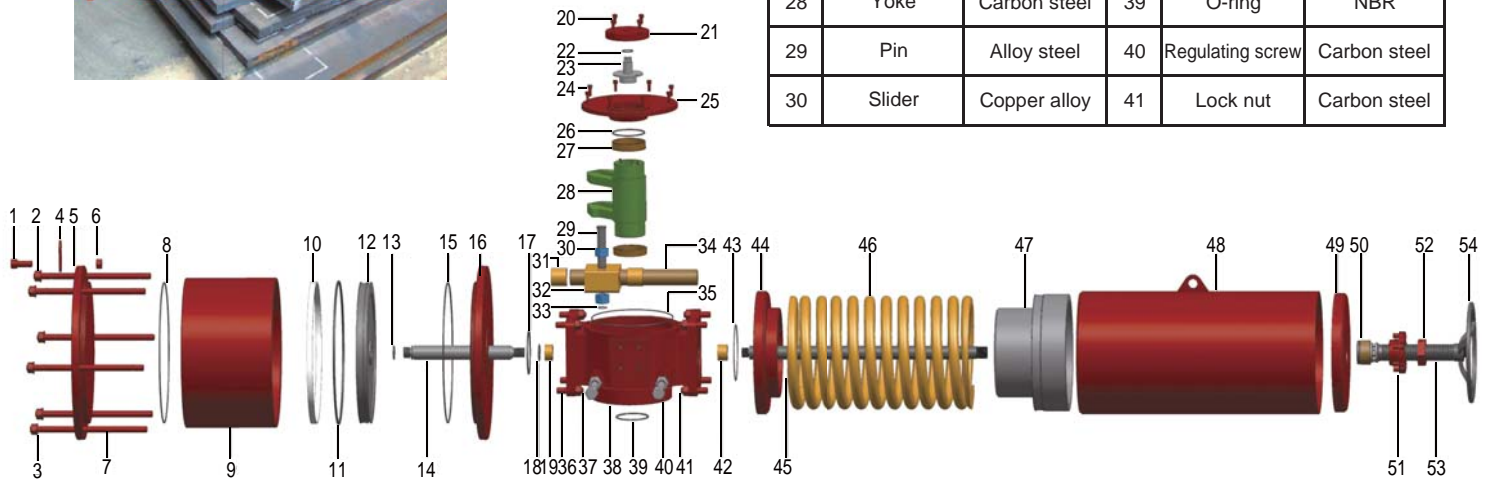
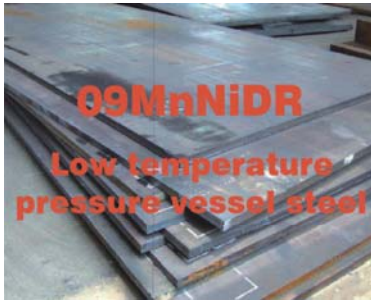
Spring Return Acting (SR6 6Bar Spring for Air Pressure at 6bar)

Unit: Nm

Model	Max Torque of Drive Moudule	Spring Start	Spring Running	Spring End	Air Start	Air Running	Air End
NSF10-150-SR6	500	382	187	239	407	191	254
NSF10-170-SR6		491	240	307	522	245	327
NSF12-170-SR6	1000	614	300	384	653	306	409
NSF12-200-SR6		850	415	532	904	424	565
NSF14-200-SR6	2000	1020	498	638	1085	509	679
NSF14-250-SR6		1594	778	997	1696	795	1060
NSF14-300-SR6		2296	1120	1435	2442	1145	1527
NSF16-250-SR6	4000	1993	972	1246	2120	994	1325
NSF16-300-SR6		2870	1400	1794	3053	1431	1909
NSF16-350-SR6		3906	1905	2442	4156	1948	2598
NSF25-350-SR6	8000	4688	2286	2930	4987	2338	3117
NSF25-400-SR6		6123	2986	3827	6514	3054	4072
NSF25-450-SR6		7750	3779	4843	8244	3865	5153
NSF30-450-SR6	16000	8611	4199	5382	9160	4294	5726
NSF30-500-SR6		10631	5184	6644	11309	5301	7069
NSF30-550-SR6		12863	6272	8040	13684	6415	8553
NSF35-550-SR6	32000	18009	8781	11256	19158	8981	11974
NSF35-600-SR6		21432	10450	13395	22800	10688	14250
NSF35-700-SR6		29171	14224	18232	31033	14547	19396
NSF40-600-SR6	63000	26025	12690	16266	27686	12978	17304
NSF40-700-SR6		35422	17272	22139	37684	17664	23553
NSF40-800-SR6		46266	22559	28917	49219	23072	30762
NSF48-800-SR6	125000	56940	25558	33934	56715	25432	33709
NSF48-900-SR6		77565	32582	40633	76693	32107	39788
NSF48-1000-SR6		96787	40072	48623	96645	39994	48486
NSF60-800-SR6	250000	70760	34502	44226	75277	35286	47048
NSF60-900-SR6		89556	43667	55973	95273	44659	59546
NSF60-1000-SR6		110564	53910	69102	117621	55135	73513
NSF60-1100-SR6		133782	65231	83614	142321	66713	88951

NSF in extreme cold environment

In extreme environment application, PTFE is used for seal and temperature pressure vessel steel (09MnNiDR) is used for each module. The body will be welded with 09MnNiDR.



Body Module

No.	Name	Material	No.	Name	Material
20	Bolt	Carbon steel	31	Bushing	Alloy
21	Gland	Stainless steel	32	Guide block	Carbon steel
22	O-ring	NBR	33	Snap Spring	65Mn
23	Namur indicator	Stainless steel	34	Guide rod	Carbon steel
24	bolt	Carbon steel	35	O-ring	NBR
25	Lid	Ductile iron	36	Stud	Carbon steel
26	O-ring	NBR	37	Nut	Carbon steel
27	Bushing	Alloy	38	Body	Ductile Iron
28	Yoke	Carbon steel	39	O-ring	NBR
29	Pin	Alloy steel	40	Regulating screw	Carbon steel
30	Slider	Copper alloy	41	Lock nut	Carbon steel

Cylinder Module

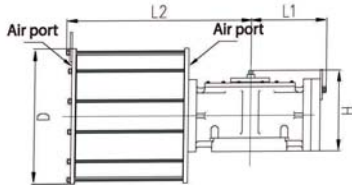
No.	Name	Material	No.	Name	Material
1	Bolt	Carbon steel	11	O-ring	NBR
2	Nut	Carbon steel	12	Piston	Carbon steel
3	Gasket	Carbon steel	13	O-ring	NBR
4	Lug	Carbon steel	14	Push rod	Carbon steel
5	Rear end	Carbon steel	15	O-ring	NBR
6	Nut	Carbon steel	16	Front end	Carbon steel
7	Screw	Carbon steel	17	O-ring	NBR
8	O-ring	NBR	18	O-ring	NBR
9	Cylinder barrel	Carbon steel	19	Bushing	Alloy
10	Guidance tape	PTFE			

Spring Module

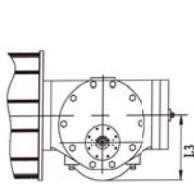
No.	Name	Material
42	Bushing	Alloy
43	O-ring	NBR
44	Spring cover	Carbon steel
45	Spring shaft	Carbon steel
46	Spring	Carbon steel
47	Spring seat	Carbon steel
48	Spring body	Carbon steel
49	End cover	Carbon steel
50	Coupling	Carbon steel
51	Locking device	Carbon steel
52	Nut	Carbon steel
53	Screw rod	Carbon steel
54	Handwheel	Cast iron

Dimension- Double Acting (Pneumatic Actuators)

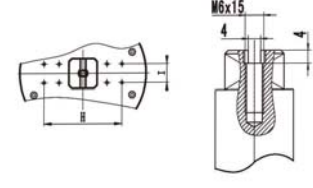
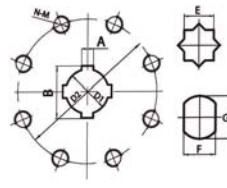
Outside Dimention



Bottom Connection(ISO5211)



Top Connection(Namur)

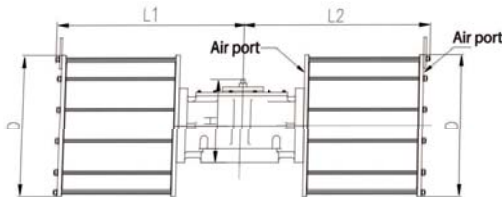


Unit: mm

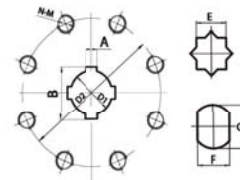
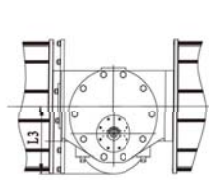
Model	Outside dimension					Female Drive Connexion						Flange Connection			Top Connection (Namur)		Air Port
						Keyed(FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1		E	F	G	D2	N-M	ISO5211	I	
NSF14-200DA	270	170	370	170	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	3/8"
NSF14-250DA	320	170	370	170	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"
NSF14-300DA	380	170	370	170	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"
NSF16-250DA	320	190	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"
NSF16-300DA	380	190	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"
NSF16-350DA	430	190	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"
NSF25-350DA	430	230	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"
NSF25-400DA	480	230	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"
NSF25-450DA	530	230	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"
NSF30-450DA	530	280	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF30-500DA	580	280	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF30-550DA	640	280	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF35-550DA	640	330	830	350	310	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	3/4"
NSF35-600DA	690	330	830	350	310	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	1"
NSF35-700DA	800	330	830	350	310	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	1"
NSF40-600DA	690	380	970	400	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1"
NSF40-700DA	800	380	970	400	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1"
NSF40-800DA	900	380	970	400	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1 1/2"
NSF48-800DA	900	410	1120	450	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	1 1/2"
NSF48-900DA	1000	410	1120	450	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	2"
NSF48-1000DA	1100	410	1120	450	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	2"
NSF60-900DA	1000	440	1260	520	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1000DA	1100	440	1260	520	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1100DA	1200	440	1260	520	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"

Dimension - Double Cylinder Double Acting (Pneumatic Actuator)

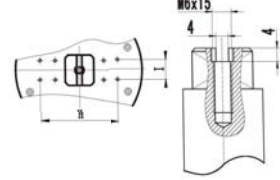
Outside Dimention



Bottom Connection(ISO5211)



Top Connection(Namur)



Unit: mm

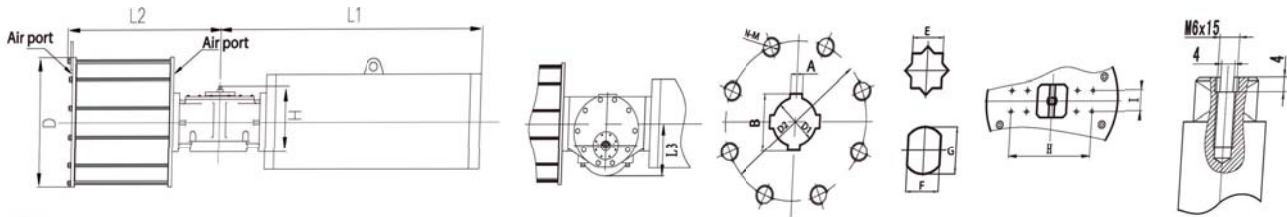
Model	Outside dimension					Female Drive Connetion						Flange Connection			Top Connection (Namur)		Air Port
						Keyed(FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1		E	F	G	D2	N-M	ISO5211	I	
NSF16-141-DA	200	440	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/8"
NSF16-161-DA	220	440	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/8"
NSF16-201-DA	270	440	440	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/8"
NSF25-201-DA	270	510	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-251-DA	320	510	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"
NSF25-301-DA	380	510	510	210	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"
NSF30-301-DA	380	580	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	1/2"
NSF30-351-DA	430	580	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	1/2"
NSF30-401-DA	480	580	580	250	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF35-401-DA	480	830	830	350	310	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	3/4"
NSF35-451-DA	530	830	830	350	310	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	3/4"
NSF35-501-DA	580	830	830	350	310	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	3/4"
NSF40-501-DA	580	970	970	400	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	3/4"
NSF40-551-DA	630	970	970	400	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	3/4"
NSF40-601-DA	690	970	970	400	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1"
NSF48-601-DA	690	1120	450	420	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	1"
NSF48-651-DA	740	1120	450	420	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	1"
NSF48-701-DA	800	1120	450	420	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	1"
NSF48-801-DA	900	1120	450	420	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	1 1/2"
NSF60-801-DA	900	1260	1260	520	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	1 1/2"
NSF60-901-DA	1000	1260	1260	520	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1001-DA	1100	1260	1260	520	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"

Dimension - Spring Return Acting (Pneumatic Actuator)

Outside Dimention

Bottom Connection(ISO5211)

Top Connection(Namur)

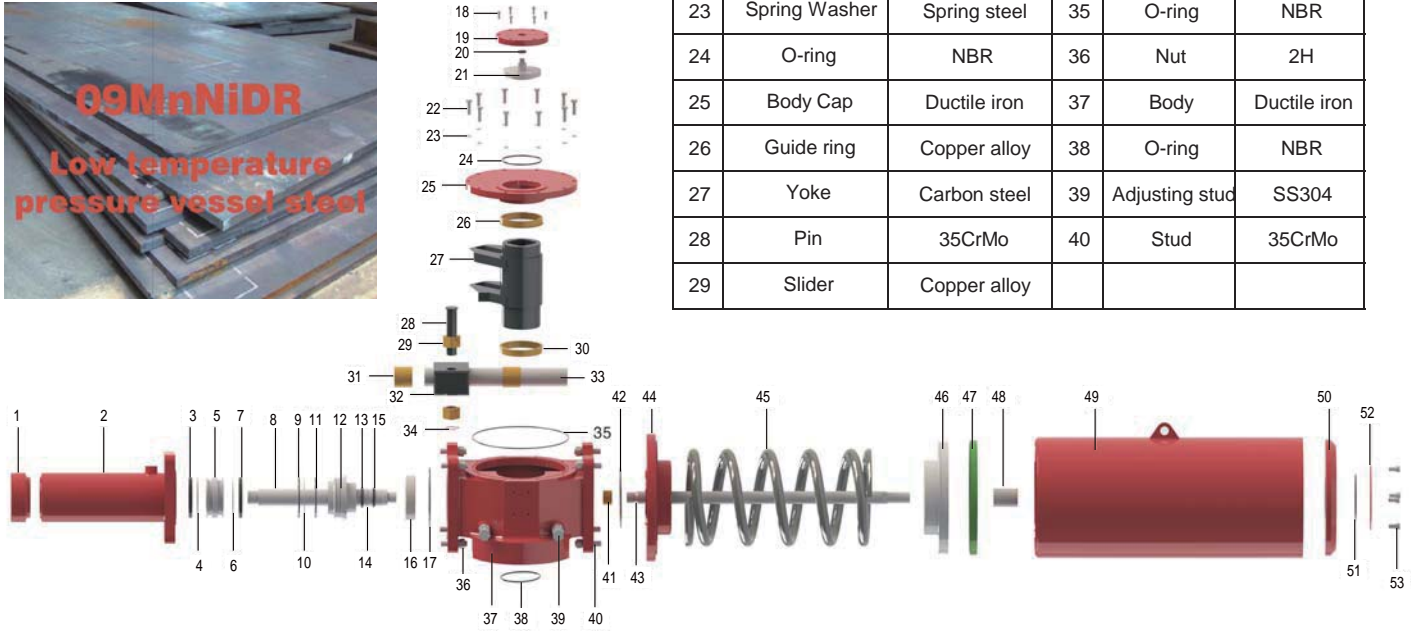
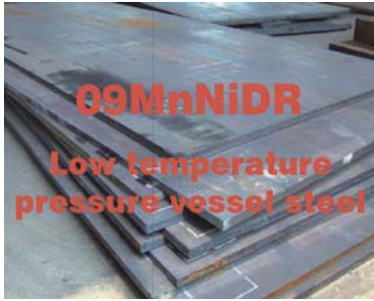


Unit: mm

Model	Outside dimension					Female Drive Connction						Flange Connection			Top Connection (Namur)		Air Port
						Keyed(FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1	E	F	G	D2	N-M	ISO5211	I	H	
NSF10-150SR	210	445	240	80	165	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	3/8"
NSF10-170SR	230	445	240	80	165	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	3/8"
NSF12-170-SR	230	620	290	90	170	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	3/8"
NSF12-200-SR	260	620	290	90	170	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	3/8"
NSF14-200-SR	260	680	370	150	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	3/8"
NSF14-250-SR	310	680	370	150	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"
NSF14-300-SR	370	680	370	150	200	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/2"
NSF16-250-SR	310	910	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"
NSF16-300-SR	370	910	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"
NSF16-350-SR	430	970	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/2"
NSF16-400-SR	480	970	470	180	210	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	3/4"
NSF25-350-SR	430	1040	540	240	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	1/2"
NSF25-400-SR	480	1040	540	240	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"
NSF25-450-SR	530	1100	540	240	230	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/4"
NSF30-450-SR	530	1145	620	275	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF30-500-SR	580	1145	620	275	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF30-550-SR	630	1205	620	275	275	22	90.8	80	75	75	98.2	298	8-M20	F30	30	130(80)	3/4"
NSF35-550-SR	630	1205	810	350	275	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	3/4"
NSF35-600-SR	690	1205	810	350	275	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	1"
NSF35-700-SR	790	1205	810	350	275	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	1"
NSF35-800-SR	900	1355	810	350	275	28	112.8	100	---	---	---	356	8-M30	F35	30	130(80)	1 1/2"
NSF40-600-SR	690	1780	960	410	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1"
NSF40-700-SR	790	1780	960	410	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1"
NSF40-800-SR	900	1780	960	410	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	1 1/2"
NSF40-900-SR	1020	1810	960	410	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	2"
NSF40-1000-SR	1130	1810	960	410	350	40	178.8	160	---	---	---	406	8-M36	F40	30	130(80)	2"
NSF48-800-SR	900	2260	1120	480	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	1 1/2"
NSF48-900-SR	1020	2260	1120	480	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	2"
NSF48-1000-SR	1130	2260	1120	480	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	2"
NSF48-1100-SR	1250	2450	1120	480	420	45	200.8	180	---	---	---	483	12-M36	F48	30	130(80)	2"
NSF48-1200-SR	1370	2450	1120	480	420	45	200.8	180	---	---	---	483	20-M36	F48	30	130(80)	2"
NSF60-800-SR	900	2735	1365	603	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	1 1/2"
NSF60-900-SR	1020	2735	1365	603	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1000-SR	1130	2735	1365	603	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1100-SR	1250	2735	1365	603	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1200-SR	1370	3260	1365	603	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"
NSF60-1300-SR	1480	3490	1365	603	500	50	242.8	220	---	---	---	603	20-M36	F60	30	130(80)	2"

NSF in extreme cold environment

In extreme environment application, PTFE is used for seal and temperature pressure vessel steel (09MnNiDR) is used for each module. The body will be welded with 09MnNiDR.



Body Module

No.	Name	Material	No.	Name	Material
18	Bolt	35	30	Guide ring	Copper alloy
19	Pointer covercap	Carbon steel	31	Bearing	Copper alloy
20	O-ring	NBR	32	Guide block	Carbon steel
21	Pointer	SS304	33	Guide rod	35CrMo
22	Bolt	35	34	Snap spring	65Mn
23	Spring Washer	Spring steel	35	O-ring	NBR
24	O-ring	NBR	36	Nut	2H
25	Body Cap	Ductile iron	37	Body	Ductile iron
26	Guide ring	Copper alloy	38	O-ring	NBR
27	Yoke	Carbon steel	39	Adjusting stud	SS304
28	Pin	35CrMo	40	Stud	35CrMo
29	Slider	Copper alloy			

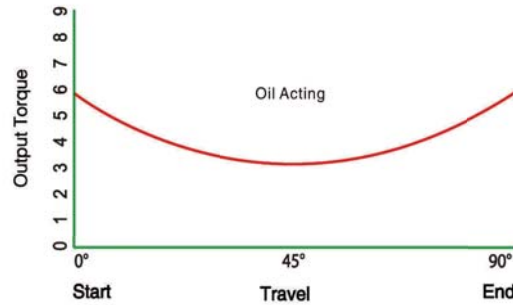
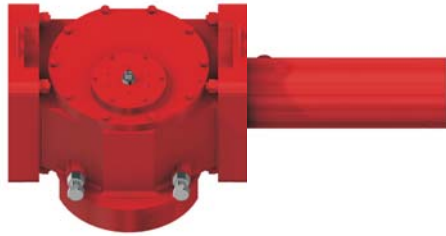
Cylinder Module

No.	Name	Material	No.	Name	Material
1	End cap	Carbon steel	10	Retainer ring	PTFE
2	Hydraulic cylinder	Carbon steel	11	O-ring	NBR
3	UN seal	TPU	12	Adapter	Carbon steel
4	Retainer ring	PTFE	13	Dustproof ring	NBR
5	Piston	QT400-7	14	Retainer ring	PTFE
6	Retainer ring	PTFE	15	UN seal	TPU
7	UN seal	TPU	16	Locknut	Carbon steel
8	Piston rod	35CrMo	17	O-ring	NBR
9	O-ring	NBR			

Spring Module

No.	Name	Material
41	Bearing	Copper alloy
42	O-ring	NBR
43	Piston rod	35CrMo
44	Spring case cover	Carbon steel
45	Spring	60Si2Mn
46	Spring seat	Q235
47	Guide ring	PTFE
48	Nut	45
49	Spring case	20
50	Spring case cover	Carbon steel
51	O-ring	NBR
52	End cap	Carbon steel
53	Bolt	35

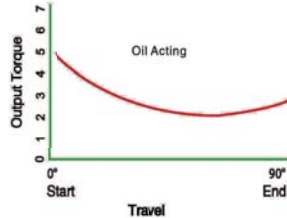
Torque Table - Double Acting (Hydraulic Actuators)



Unit: Nm

Model	Max Torque of Drive Moudule	Oil Supply					
		70 bar		100 bar		135 bar	
		Start End	Run	Start End	Run	Start End	Run
NSF10-40DA-H	500	315	189	450	270	607	364
NSF12-40DA-H	1000	393	236	562	337	758	455
NSF12-50DA-H		756	454	1081	649	----	----
NSF14-60DA-H	2000	1364	818	1949	1169	2631	1578
NSF14-70DA-H		1994	1196	2849	1709	----	----
NSF16-70DA-H	4000	2347	1408	3354	2912	4527	2716
NSF16-80DA-H		3256	1953	4562	2791	----	----
NSF25-90DA-H	8000	4838	2902	6912	4147	9331	5598
NSF25-100DA-H		6219	3871	8885	5331	----	----
NSF25-110DA-H		7746	4648	----	----	----	----
NSF30-110DA-H	16000	8951	5371	12788	7673	17263	10358
NSF30-120DA-H		10995	6596	15708	9424	21205	12722
NSF30-130DA-H		13216	7929	18881	11328	----	----
NSF35-130DA-H	32000	15690	9414	22415	13449	30260	18156
NSF35-150DA-H		22023	13213	31462	18877	----	----
NSF35-170DA-H		29261	17556	----	----	----	----
NSF40-170DA-H	63000	32956	19773	47081	28248	63559	38135
NSF40-190DA-H		42843	25706	61205	36723	----	----
NSF40-220DA-H		59734	35840	----	----	----	----
NSF48-190DA-H	125000	49233	29539	70333	42199	94949	56969
NSF48-220DA-H		69104	41462	98720	59232	133272	79963
NSF48-245DA-H		87884	52730	125549	75329	----	----
NSF48-270DA-H		108684	65210	----	----	----	----
NSF60-245DA-H	250000	113246	67947	161780	97068	218403	131041
NSF60-270DA-H		141326	84795	201895	121136	272558	163533
NSF60-320DA-H		205664	122398	293807	176284	----	----

Torque Table - Spring Return Acting (Hydraulic Actuators)



Torque Table - Spring Return Acting(Oil Pressure at 70Bar)

Unit: Nm

Model	Max Torque of Drive Moudule	Spring			Hydraulic		
		Start	Running	End	Start	Running	End
NSF10-40SR1-H	500	187	91	118	196	97	127
NSF10-50SR2-H		293	148	201	404	214	312
NSF10-60SR3-H		489	242	319	641	333	471
NSF12-60SR1-H	1000	526	267	364	747	374	501
NSF14-70SR1-H	2000	1079	543	647	1321	682	953
NSF14-70SR2-H		1477	752	948	1765	902	1243
NSF14-100SR3-H		2291	1162	1458	2976	1530	2125
NSF16-90SR1-H	4000	2595	1310	1629	2622	1285	1662
NSF16-100SR2-H		3194	1637	2085	3313	1629	2117
NSF16-110SR3-H		3858	1954	2446	4224	2101	2781
NSF25-110SR1-H	8000	4955	2466	2999	4865	2447	2913
NSF25-120SR2-H		6326	3117	3726	5648	2735	3469
NSF25-140SR3-H		7628	3750	4720	8325	4168	5571
NSF30-140SR1-H	16000	9375	4712	5724	9916	4843	6228
NSF30-150SR2-H		11426	5741	7092	10931	5226	6489
NSF30-170SR3-H		14080	6952	8344	15343	7723	10403
NSF35-170SR1-H	32000	18185	8970	10752	18430	9261	12440
NSF35-190SR2-H		23864	11772	14109	23947	12048	16215
NSF35-220SR3-H		28953	14335	17288	33278	16764	22601
NSF40-220SR1-H	63000	35425	17702	21679	37799	18605	24218
NSF40-245SR2-H		47742	23883	29300	48480	23583	30131
NSF48-245SR1-H	125000	57348	28690	35200	53961	25592	31346
NSF48-270SR2-H		69602	34788	42618	64371	31211	39668
NSF48-290SR3-H		82680	41743	51976	73638	35219	43760
NSF60-270SR1-H	250000	95891	47761	58177	86201	41893	53442
NSF60-320SR2-H		112369	57081	71764	133547	67250	90620

Torque Table - Spring Return Acting (Hydraulic Actuators)

Torque Table - Spring Return Acting(Oil Pressure at 100Bar)

Unit: Nm

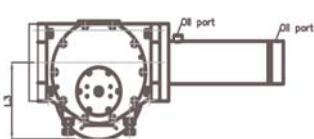
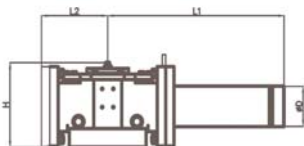
Model	Max Torque of Drive Moudule	Spring			Hydraulic		
		Start	Running	End	Start	Running	End
NSF10-40SR1-H	500	187	91	118	331	178	262
NSF10-50SR2-H		293	148	201	664	370	571
NSF10-50SR3-H		489	242	319	545	276	375
NSF12-60SR2-H	1000	818	407	541	1175	621	897
NSF14-60SR1-H	2000	1079	543	674	1276	655	907
NSF14-70SR2-H		1477	752	948	1893	979	1371
NSF14-80SR3-H		2291	1162	1458	2397	1183	1547
NSF16-80SR1-H	8000	2595	1310	1629	2988	1505	2028
NSF16-90SR2-H		3194	1637	2085	3999	2041	2804
NSF16-100SR3-H		3858	1954	2446	5284	2736	3839
NSF25-100SR1-H	8000	4955	2466	2999	5994	3081	4275
NSF25-110SR2-H		6326	3117	3726	7296	3724	5117
NSF25-120SR3-H		7628	3750	4720	8581	4322	5827
NSF30-120SR1-H	16000	9375	4712	5724	10008	4898	6320
NSF30-130SR2-H		11426	5741	7092	11620	5639	7177
NSF30-150SR1-H		14080	6952	8344	17453	8990	12513
NSF35-150SR1-H	32000	18185	8970	10752	20631	10581	14641
NSF35-170SR2-H		23864	11772	14109	28345	14688	20614
NSF35-190SR3-H		28953	14335	17288	35399	18036	24722
NSF40-190SR1-H	63000	35425	17702	21679	39270	19488	25689
NSF40-220SR2-H		47742	23883	29300	58110	29365	39768
NSF48-220SR1-H		57348	28690	35200	64797	32094	42182
NSF48-245SR2-H	125000	69602	34788	42618	81236	41330	56533
NSF48-270SR3-H		82680	41743	51976	102123	52310	72245
NSF60-245SR1-H		250000	95891	47761	58177	101957	51169
NSF60-270SR2-H	112369		57081	71764	129778	64988	89820

Torque Table - Spring Return Acting(Oil Pressure at 135Bar)

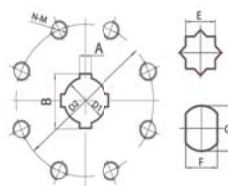
Model	Max Torque of Drive Moudule	Spring			Hydraulic		
		Start	Running	End	Start	Running	End
NSF10-40SR1-H	500	187	91	118	331	178	262
NSF10-40SR2-H		293	148	201	664	370	571
NSF12-50SR1-H		1000	526	267	364	1006	346
NSF12-50SR2-H	818		407	561	919	468	641
NSF14-60SR1-H	2000	1079	543	647	1958	1064	1591
NSF14-60SR2-H		1477	752	948	1675	848	1154
NSF14-70SR3-H		2291	1162	1458	2356	1158	1506
NSF16-70SR1-H	4000	2595	1310	1629	2864	2105	1904
NSF16-80SR2-H		3194	1637	2085	4156	2135	2961
NSF16-80SR3-H		3858	1954	2446	3795	1844	2352
NSF25-90SR1-H	8000	4955	2466	2999	6440	3348	4721
NSF25-100SR2-H		6326	3117	3726	8225	4281	6046
NSF25-100SR3-H		7628	3750	4720	7122	3447	4367
NSF30-110SR1-H	160000	9375	4712	5724	11564	5832	7876
NSF30-120SR2-H		11426	5741	7092	13944	7034	9502
NSF30-130SR3-H		14080	6952	8344	16953	8690	12013
NSF35-130SR1-H	320000	18185	8970	10752	19429	9860	13440
NSF35-150SR2-H		23864	11772	14109	29018	15091	21286
NSF35-170SR3-H		28953	14335	17288	38398	19835	27721
NSF40-170SR1-H	630000	35425	17702	21679	41624	20900	28043
NSF40-190SR2-H		47742	23883	29300	55410	27741	37061
NSF48-190SR1-H		125000	57348	28690	35200	61026	29831
NSF48-220SR2-H	69602		34788	42618	88958	45964	64256
NSF48-245SR3-H	82680		41743	51976	116351	60847	86473
NSF60-220SR1-H	250000	95891	47761	58177	114382	58802	81624
NSF60-245SR2-H		112369	57081	71764	146287	74894	103360

Dimension - Double Acting (Hydraulic Actuator)

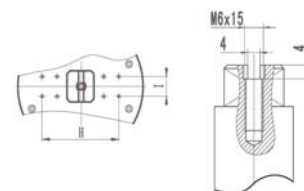
Outside Dimension



Bottom Connection(ISO5211)



Top Connection(Namur)

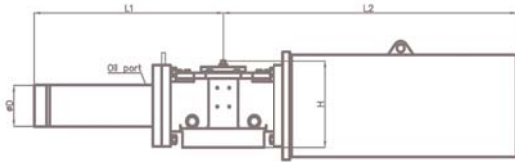


Unit: Nm

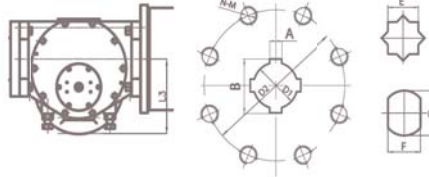
Model	Outside dimension					Female Drive Connexion						Flange Connection			Top Connection (Namur)		Air Port
						Keyed (FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1		E	F	G	D2	N-M	SO521	I	
NSF10-40DA-H	60	345	124	80	184	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	1/4"
NSF12-40DA-H	60	398	140	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF12-50DA-H	70	398	140	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF14-60DA-H	85	455	170	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-70DA-H	100	455	170	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF16-70DA-H	100	530	194	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-80DA-H	120	530	194	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF25-90DA-H	133	610	226	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-100DA-H	140	610	226	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-110DA-H	145	610	226	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF30-110DA-H	145	730	275	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-120DA-H	150	730	275	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-130DA-H	165	730	275	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF35-130DA-H	165	855	332	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-150DA-H	195	855	332	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-170DA-H	208	855	332	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	1/2"
NSF40-170DA-H	208	990	402	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-190DA-H	235	990	402	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-220DA-H	270	990	402	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF48-190DA-H	235	1150	475	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-220DA-H	270	1150	475	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-245DA-H	295	1150	475	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-270DA-H	325	1150	475	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF60-245DA-H	295	1420	468	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-270DA-H	350	1420	468	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-320DA-H	375	1420	468	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"

Dimension - Spring Return Acting (Hydraulic Actuator)

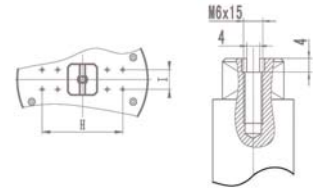
Outside Dimension



Bottom Connection (ISO5211)



Top Connection (Napur)

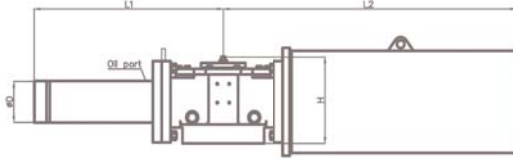


Unit: mm

Model	Outside dimension					Female Drive Connexion						Flange Connection			Top Connection (Napur)		Air Port
						Keyed (FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1		E	F	G	D2	N-M	SO5211	I	
NSF10-40SR1-H	60	345	445	80	184	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	1/4"
NSF10-40SR2-H	70	345	445	80	184	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	1/4"
NSF10-40SR3-H	85	345	445	80	184	8	34.6	28	22	22	28.2	102	4-M10	F10	30	80	1/4"
NSF12-50SR1-H	70	398	620	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF12-60SR1-H	85	398	620	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF12-50SR2-H	70	398	620	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF12-60SR2-H	85	398	620	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF12-70SR2-H	100	398	620	108	190	10	38.6	36	27	27	36.2	125	4-M12	F12	30	80	1/4"
NSF14-60SR1-H	85	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-70SR1-H	100	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-60SR2-H	85	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-70SR2-H	100	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-70SR3-H	100	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-80SR3-H	120	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF14-100SR3-H	140	455	680	150	201	12	48.6	42	36	36	48.2	140	4-M16	F14	30	80	1/4"
NSF16-70SR1-H	100	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-80SR1-H	120	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-90SR1-H	133	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-80SR2-H	120	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-90SR2-H	133	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-100SR2-H	140	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-80SR3-H	120	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-100SR3-H	140	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF16-110SR3-H	145	530	910	180	217	18	68.8	60	46	46	60.2	165	4-M20	F16	30	80	1/4"
NSF25-90SR1-H	133	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-100SR1-H	140	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-110SR1-H	145	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-100SR2-H	140	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-110SR2-H	145	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-120SR2-H	150	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-100SR3-H	140	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-120SR3-H	150	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"
NSF25-140SR3-H	185	610	1040	240	260	20	81.8	72	55	55	72.2	254	8-M16	F25	30	80	3/8"

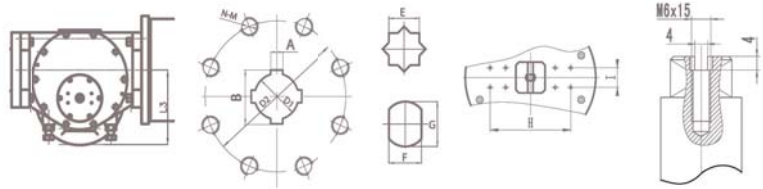
Dimension - Spring Return Acting (Hydraulic Actuator)

Outside Dimension



Bottom Connection(ISO5211)

Top Connection(Namur)



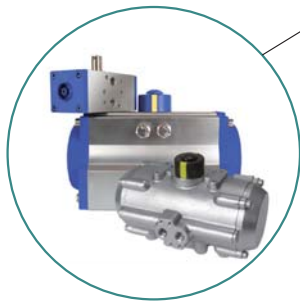
Unit: mm

Model	Outside dimension					Female Drive Connction						Flange Connection			Top Connection (Namur)		Air Port
						Keyed(FK)			Double Square (FS)	Double D (FD)							
	D	L1	L2	L3	H	A	B	D1		E	F	G	D2	N-M	SO5211	I	
NSF30-110SR1-H	145	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-120SR1-H	150	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-140SR1-H	185	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-120SR2-H	150	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-130SR2-H	165	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-150SR2-H	195	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-130SR3-H	165	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-150SR3-H	195	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF30-170SR3-H	208	730	1145	275	302	22	90.8	80	72	72	98.2	298	8-M20	F30	30	80	3/8"
NSF35-130SR1-H	165	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-150SR1-H	195	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-170SR1-H	208	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-150SR2-H	195	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-170SR2-H	208	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-190SR2-H	235	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-170SR3-H	208	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-190SR3-H	235	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF35-220SR3-H	273	855	1205	350	357	28	112.8	100	---	---	---	356	8-M30	F35	30	80	3/8"
NSF40-170SR1-H	208	990	1780	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-190SR1-H	235	990	1780	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-220SR1-H	273	990	1780	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-190SR2-H	235	990	1780	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-220SR2-H	273	990	1780	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF40-245SR2-H	299	990	1780	410	392	40	178	160	---	---	---	406	8-M36	F40	30	80	1/2"
NSF48-190SR1-H	235	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-220SR1-H	273	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-245SR1-H	299	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-220SR2-H	273	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-245SR2-H	299	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-270SR2-H	325	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-245SR3-H	299	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-270SR3-H	325	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF48-290SR3-H	351	1150	2260	440	465	45	200.8	180	---	---	---	483	12-M36	F48	30	80	1/2"
NSF60-220SR1-H	273	1420	2735	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-245SR1-H	299	1420	2735	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-270SR1-H	325	1420	2735	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-245SR2-H	299	1420	2735	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-270SR2-H	325	1420	2735	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"
NSF60-320SR2-H	377	1420	2735	625	470	50	242.8	220	---	---	---	603	20-M36	F60	30	80	1/2"

Ordering Information

NSF	Body Code	Cylinder Size	No. of Cylinder	Actuator Type	Spring Size	Failure Position	Temp. Range	Additional Device
								<p>A. Body Code: 10 12 14 16 25 30 35 40 48 60</p> <p>B. Cylinder Size: For Pneumatic Actuator 150 170 200 250 300 350 400 450 500 550 600 700 800 900 1000 1100 For Hydraulic Actuator 40 50 60 70 80 90 100 110 120 130 150 170 190 220 245 270 320</p> <p>C. Number of Cylinder for Pneumatic Actuator 0: Single Cylinder 1: Double Cylinder</p> <p>D. Actuator Type DA: Double Acting SR: Single Acting</p> <p>E. Spring Size For Pneumatic Actuator 3: 3bar 4: 4bar 5: 5bar 6: 6bar For Hydraulic Actuator 1: Model 1 2: Model 2 3: Model 3</p> <p>F. Failure Position FC: Fail Close FO: Fail Open</p> <p>G. Temperature Range T0: Standard: -20°C~+80°C T1: High Temp.: -20°C~+200°C T2: Low Temp.: -40°C~+80°C T3: Extreme low temp.: -60°C~+80°C</p> <p>H. Additional Device MO: Decutching Manual Override HW: Hand Wheel Override HY: Hydraulic Override EX: Extened mechanical travel stop (for quick stroke within 5s)</p>

NUTORK CORP. manufactures a wide range of pneumatic actuators, electric actuators and the accessories of pneumatic actuator (limit switchbox, solenoid valve, manual override ---etc.) for quarter turn valves



Rack & Pinion Type Pneumatic Actuator.
(Certificated by CE-ATEX/SIL3)
Max. Output Torque: 9340Nm



Scotch Yoke Type Pneumatic & Hydraulic Actuator.
(Certificated by CE-ATEX/SIL3)
Max. Output Torque 293800Nm



NTQ Series Electric Actuator
IP67/IP68(30M@24hrs)Enclosure & EExdIIBT6Max. Output Torque 6000Nm
Approved by SIL3/IP68/MD/LVD/EMC.



NTE Series Electric Actuator
IP67/IP68(30M@24hrs)
EnclosureMax. Output Torque 6000Nm
Approved by SIL3/IP68/MD/LVD/EMC.



Limit Switchbox IP67/IP68(50M@72hrs)
Enclosure & EExdIIBT6/EEExdIICT6



Solenoid Valve 3/2NC & 5/2 Way, Static O-ring Sealing Design.
Aluminum & 316SS Body
IP67 & EExdIIBT6/EEExdIICT6



Air Filter Regulator Aluminum Body with Vinyl Paint & 316SS Body.
Size: 1/4" ~ 1"



Manual Override Aluminum & Cast Iron & Ductile Iron Body
Max Output Torque 70000Nm



Ball valve (Floating ball design),
We can provide different pressure rating/
connection type/ operation mode.



Concentric Soft Seated Butterfly Valve
High Performance Double Eccentric Butterfly Valve
High Performance Triple Offset Metal Seated Butterfly Valve
We can provide different pressure rating/ connection type/ operation mode.