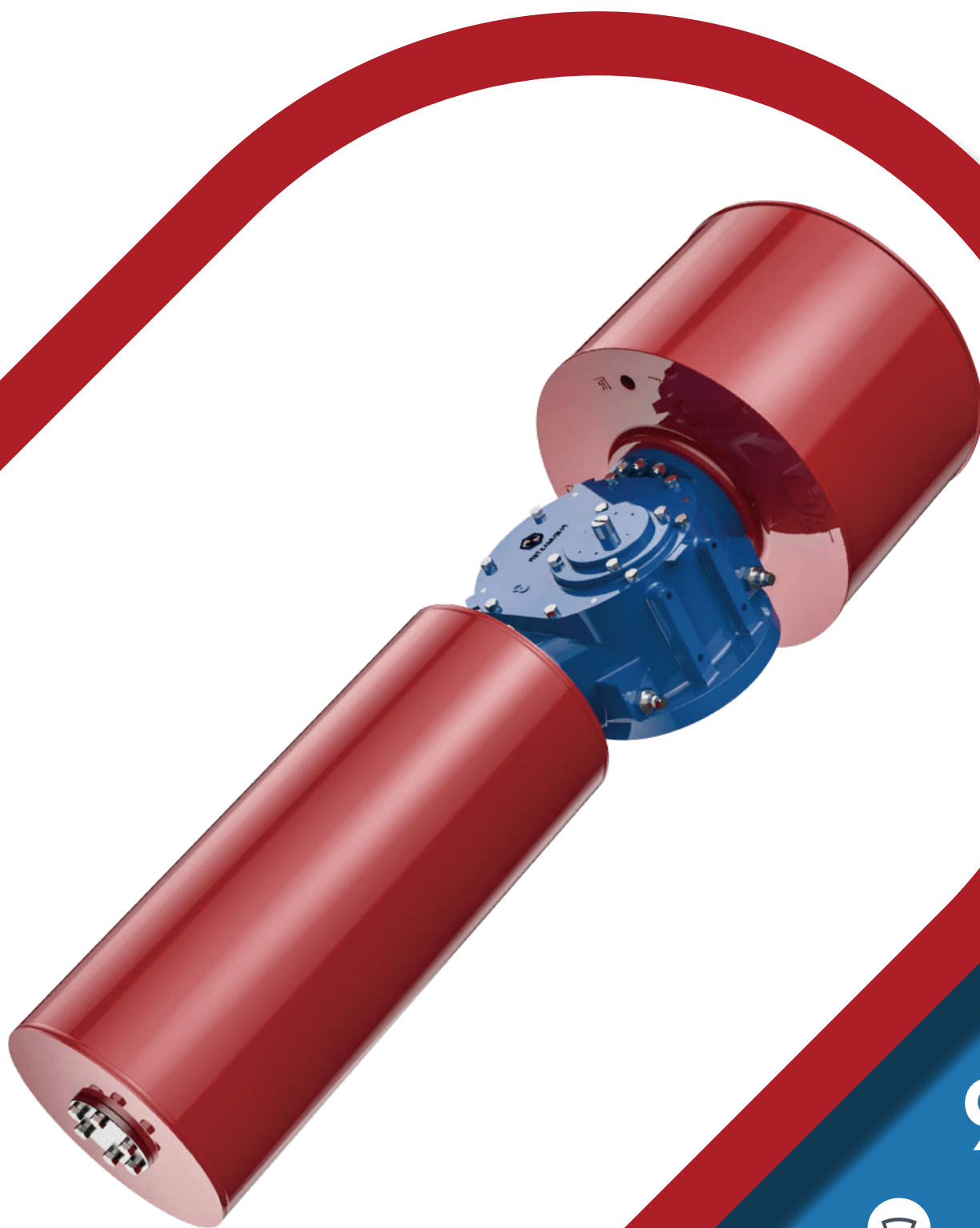




PNEUMASTER

Scotch Yoke N-Series



90°



Pneumatic Pressure



Torque Output



Temperature Ranges

Company Profile

- Global Distribution Market
- Main Valve Accessories
- Thoughtful Service System
- Carefully Designed



PNEUMASTER has a global distribution market of valves accessories of controlling process valves. We focus on technology and supply reliable products manufactured to global customers.

With our manufacturing valve accessories, we keep developing our products and enhancing our products process, maintenance and aim at top-level quality.

Pneumaster's valve accessories are used in all industry area, including explosion-proof and water-proof application, as well as corrosion resistant environment. We provide the protection and automation to meet all kinds of applications.

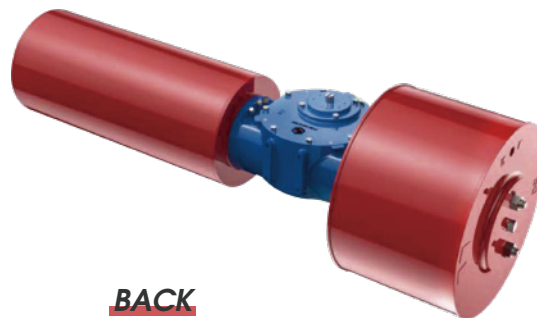
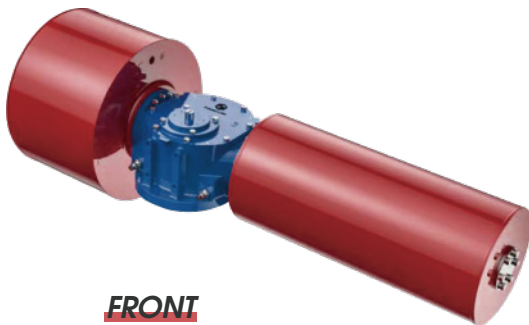




Product Range

- ① Valve Accessories
- ② Insulation System and Service

Scotch Yoke



90° Scotch Yoke Pneumatic Actuator

The scotch yoke actuators for installation on ¼ turn valves are manufactured in different combinations of body sizes and air cylinder diameters according to valves' requirement. Both double acting and single acting is available. We also provide higher quality products which can meet higher temperature, super low temperature, anti-corrosion and higher frequency application.

Scope of Application.

Pneumatic Pressure

Up to 12 bar (174 psig)

Torque Output

Up to 220,000 Nm (185,000 ft lb)

Temperature Ranges: Dry and Clean Air

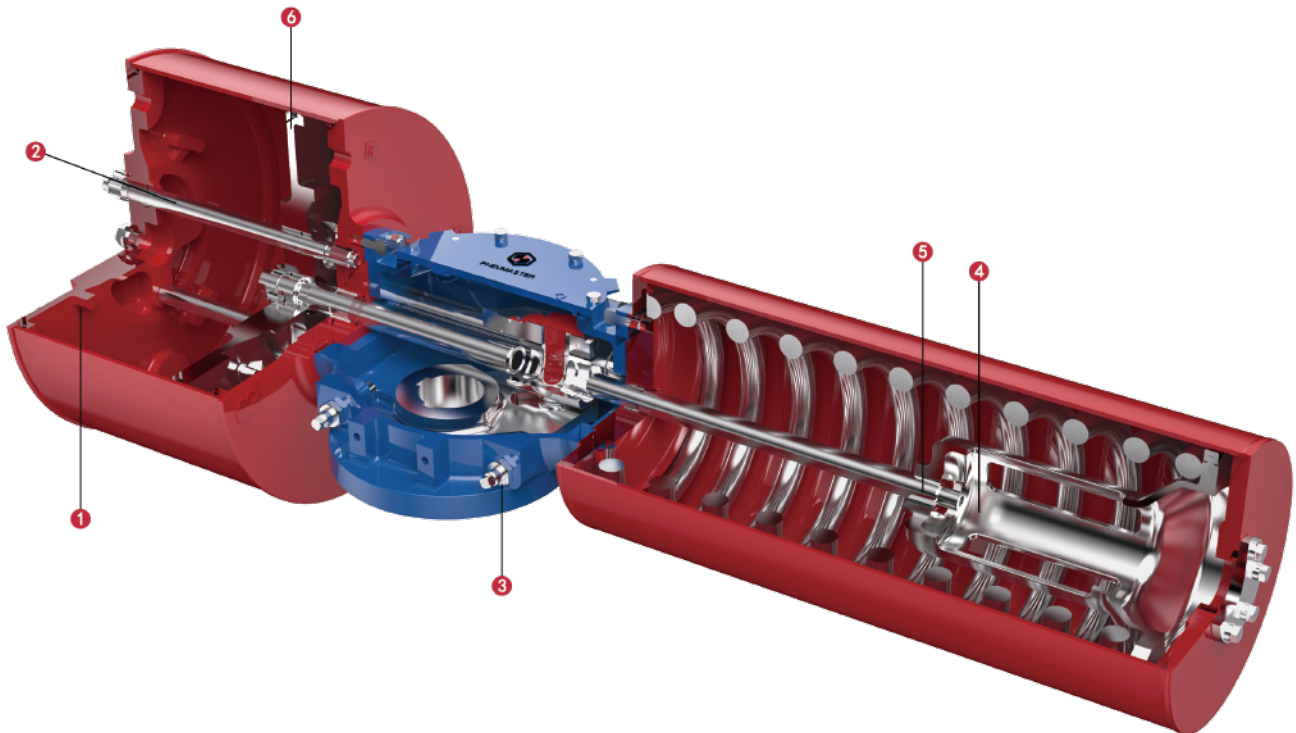
-40°C to 80°C with Normal Temperature.

-60°C to 80°C with Super Low Temperature.

-20°C to 120°C with High Temperature.

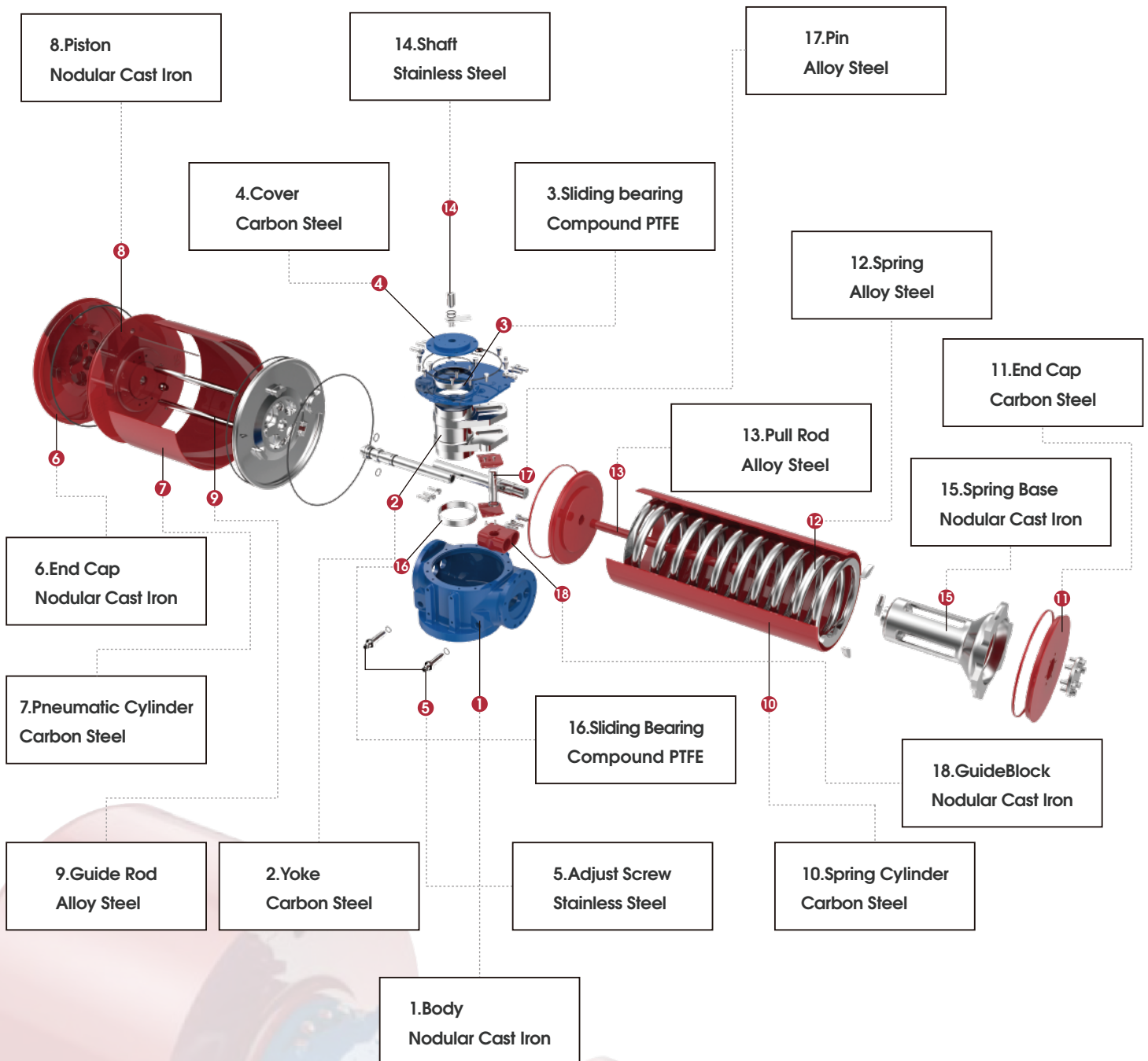


Main Feature.



1. The internal surface of Air cylinder use PTFE coating for anti-corrosion and self-lubricating.
2. Built-in Rod design,reduce the dimension of air cylinder.
3. Adjust Screw can be used $+10^{\circ}$.
4. Internal Hydraulic cylinder for manual pump override.
5. Safe spring lock,prevent spring module detachment from the drive module
6. Special sealing on the piston,for long time cycles.
7. Every joint has O-ring for waterproof's application.
8. Self-lubricating bearing be amounted on piston rod,guide rod moving parts.
9. Module design style to be assembled flexibly according to customer's requirement.

Key Components.



AIR CONSUMPTION: L

Flange	200	250	300	350	400	450	500	600	700	700D	800	800D	900	1000
F14	6.8	10.6	15.4	18.2										
F16		10.6	15.4	18.2	21.3	28.6								
F25			18.4	21.7	27.5	37	43							
F30				26.6	33.7	45.3	53	76						
F35							69	100	145		189			
F40								124	180	360	234		296	
F48									214	428	275	550	353	430
F60									280	560	360	720	462	564

DOUBLE ACTING TORQUE SHEET (Nm)-1

Type	3 Bar		3.5 Bar		4 Bar		4.5 Bar		5 Bar		5.5 Bar		6 Bar		7 Bar		8 Bar	
	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running
NF14-200 DA	1034	546	1206	637	1379	728	1551	819	1723	910	1896	1001	2068	1091	2398	1265	2740	1446
NF14-250 DA	1650	871	1925	1016	2200	1161	2476	1307	2751	1452	3026	1597	3301	1742				
NF14-300 DA	2385	1259	2783	1469	3180	1678												
NF14-350 DA	2860	1509	3336	1761														
NF16-250 DA	2035	1074	2375	1253	2713	1433	3053	1611	3392	1790	3732	1969	4071	2150	4749	2507	5428	2865
NF16-300 DA	2942	1552	3432	1811	3922	2070	4412	2329	4903	2587	5393	2846	5883	3105				
NF16-350 DA	3527	1861	4115	2172	4703	2482	5291	2792	5878	2792	6466	2792						
NF16-400 DA	4655	2457	5430	2866	6206	3275												
NF25-300 DA	3538	1867	4127	2178	4717	2490	5307	2801	5896	3112	6486	3423	7076	3734	8255	4357	9434	4979
NF25-350 DA	4242	2239	4949	2612	5656	2985	6363	3358	7070	3731	7777	4104	8484	4478	9898	5224	11312	5970
NF25-400 DA	5598	2955	6531	3447	7464	3939	8397	4432	9330	4924	10263	5417	11196	5909				
NF25-450 DA	7125	3760	8312	4387	9500	5014	10687	5640	11875	6267								
NF25-500 DA	8854	4673	10330	5452	11806	6231												
NF30-350 DA	5148	2717	6005	3170	6863	3622	7721	4075	8579	4528	9437	4981	10295	5433	12011	6339	13727	7245
NF30-400 DA	6793	3585	7925	4183	9058	4780	10190	5378	11322	5976	12454	6573	13587	7171	15851	8366	18115	9561
NF30-450 DA	8646	4563	10087	5324	11528	6084	12969	6845	14410	7605	15851	8366	17292	9126	20174	10647		
NF30-500 DA	10745	5671	12536	6616	14326	7561	16117	8506	17908	9451	19699	10397	21489	11342				
NF30-600 DA	15550	8207	18142	9575	20734	10943												
NF35-500 DA	13928	7351	16250	8576	18571	9801	20893	11027	23214	12252	25535	13477	27857	14702	32500	17153	37142	19603
NF35-600 DA	20158	10639	23517	12412	26877	14185	30237	15958	33596	17731	36956	19505	40316	21278				
NF35-700 DA	28992	15301	33824	17852	38656	20402	43488	22952										
NF35-800 DA	37587	19838	43852	23144														
NF40-600 DA	24621	12995	28725	15160	32828	17326	36932	19492	41036	21658	45139	23823	49243	25989	57450	30321	65657	34652
NF40-700 DA	35412	18689	41314	21804	47215	24919	53117	28034	59019	31149	64921	34264	70823	37379				
NF40-800 DA	45910	24230	53562	28269	61214	32307	68865	36346	76517	40384								
NF40-900 DA	58969	31122	68797	36309	78625	41496												
NF48-700 DA	42038	22187	49045	25885	56051	29583	63058	33280	70064	36978	77070	40676	84077	44374	98089	51769	112102	59165

DOUBLE ACTING TORQUE SHEET (Nm)-2

Type	3 Bar		3.5 Bar		4 Bar		4.5 Bar		5 Bar		5.5 Bar		6 Bar		7 Bar		8 Bar	
	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running	Start-End	Running
NF48-800 DA	54502	28765	63585	33559	72669	38353	81752	43147	90836	47941	99920	52735	109003	57529				
NF48-900 DA	70004	36946	81671	43104	93338	49262	105006	55420	116673	61577	128340	6779	140008	73893				
NF48-700 DAD	84077	44374	98089	51770	112102	59165	119109	62863	126116	66560	140128	73957						
NF48-800 DAD	109003	57530	127171	67118	145338	76706												
NF60-700 DA	55403	29241	64636	34114	73870	38987	83105	43860	92338	48734	101572	53607	110805	58480	129273	68227	147741	77974
NF60-800 DA	71829	37910	83799	44227	95771	50546	107743	56864	119714	63182	131685	69501	143656	75818	167599	88455	191541	101091
NF60-900 DA	92259	48692	107635	56807	123012	64922	138388	73038	153764	81153	169140	89268	184516	97384	215269	113614	246022	129845
NF60-1000 DA	111961	59090	130622	68939	149282	78787	167943	88637	186603	98485	205263	108333	223923	118182	261243	137879		
NF60-700 DAD	110805	58480	129273	68227	147741	77974	166209	87721	184675	97468	203143	107214	221610	116961	258546	136455		
NF60-800 DAD	143656	75818	167599	88455	191541	101091	215485	113728	239427	126364	263370	139001						
NF60-900 DAD	184516	97384	215269	113614	246022	129845												

SINGLE ACTING TORQUE SHEET (Nm)-1

Type	3 Bar			3.5 Bar			4 Bar			4.5 Bar			5 Bar			5.5 Bar			6 Bar			7 Bar			8 Bar			Spring(Nm)		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
NF14-200 SR4				541	258	437	713	348	608	884	438	779	1055	530	951	1226	620	1121	1398	710	1293	1736	889	1633	2079	1069	1974	696	342	600
NF14-200 SR3																678	307	486	849	40	658	1191	578	999	1533	759	1341	1274	626	1098
NF14-250 SR3				723	331	531	999	476	807	1274	622	1082	1549	767	1357	1824	912	1632	2099	1057	1907	2649	1347	2457	3199	1638	3007	1274	626	1098
NF14-300 SR3	1183	574	991	1581	784	1389	1978	993	1786	2376	1203	2184	2773	1413	2581	3171	1623	2979										1274	626	1098
NF14-350 SR3	1658	824	1466	2135	1076	1943	2611	1327	2419																			1274	626	1098
NF14-200 SR2																			684	293	428	1026	474	770	1368	654	1112	1483	721	1249
NF14-250 SR2				559	227	303	833	372	578	1108	518	853	1383	663	1128	1659	808	1403	1934	953	1678	2484	1243	2228	3034	1534	2778	1483	721	1249
NF14-300 SR2	1018	470	762	1415	680	1160	1813	889	1557	2210	1099	1955	2608	1309	2352	3005	1519	2750										1483	721	1249
NF14-350 SR2	1493	720	1237	1969	972	1713	2446	1223	2190																			1483	721	1249
NF14-200 SR1																					838	364	543	1180	545	885	1691	821	1421	
NF14-250 SR1						645	263	350	920	408	626	1195	553	901	1471	698	1176	1746	843	1451	2296	1134	2001	2846	1424	2551	1691	821	1421	
NF14-300 SR1	830	360	535	1228	570	932	1625	780	1330	2022	990	1728	2420	1199	2125	2817	1409	2523	3215	1619	2920							1691	821	1421
NF14-350 SR1	1305	611	1010	1781	863	1486	2258	1114	1963	2735	1365	2440	3211	1617	2916													1691	821	1421
NF16-250 SR3												1329	535	700	1668	714	1039	2008	894	1379	2686	1252	2057	3364	1610	2735	2461	1147	1886	
NF16-300 SR3				1369	557	740	1859	815	1230	2349	1074	1720	2839	1332	2210	3329	1591	2700	3820	1850	3191	4800	2367	4171	5781	2885	5152	2461	1147	1886
NF16-350 SR3	1464	606	835	2051	917	1422	2639	1227	2010	3227	1537	2598	3815	1847	3186	4403	2158	3774	4991	2468	4362	6166	3088	5537			2461	1147	1886	
NF16-400 SR3	2591	1202	1962	3367	1611	2738	4143	2020	3514	4919	2430	4290	5694	2839	5065													2461	1147	1886
NF16-250 SR2																1351	543	706	1690	722	1045	2368	1080	1723	3047	1438	2402	2765	1304	2176

SINGLE ACTING TORQUE SHEET (Nm)-2

Type	3 Bar			3.5 Bar			4 Bar			4.5 Bar			5 Bar			5.5 Bar			6 Bar			7 Bar			8 Bar			Spring(Nm)		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
NF16-300 SR2							1541	643	896	2031	902	1386	2522	1161	1877	3012	1419	2367	3502	1678	2857	4483	2196	3838	5463	2713	4818	2765	1304	2176
NF16-350 SR2				1734	745	1089	2322	1055	1677	2910	1365	2265	3497	1676	2852	4085	1986	3440	4673	2296	4028	5849	2917	5204				2765	1304	2176
NF16-400 SR2	2274	1030	1629	3049	1431	2405	3825	1849	3180	4601	2258	3956	5377	2668	4732	6153	3077	5508										2765	1304	2176
NF16-250 SR1																						1801	716	913	2479	1074	1592	3505	1636	2695
NF16-300 SR1													1954	797	1067	2444	1056	1557	2934	1315	2047	3915	1832	3028	4895	2350	4008	3505	1636	2695
NF16-350 SR1							1754	692	867	2342	1002	1455	2930	1312	2043	3518	1622	2630	4105	1933	3218	5281	2553	4394				3505	1636	2695
NF16-400 SR1	1706	666	819	2482	1076	1594	3258	1485	2370	4033	1895	3146	4809	2304	3922	5585	2713	4698										3505	1636	2695
NF16-450 SR1	2975	1336	2088	3963	1857	3076	4950	2378	4063																			3505	1636	2695
NF25-300 SR3													2484	1037	1445	3074	1348	2034	3663	1659	2624	4843	2282	3803	6022	2904	4983	4068	1896	3118
NF25-350 SR3							2244	910	1204	2951	1283	1911	3658	1656	2618	4365	2029	3325	5072	2402	4032	6486	3149	5446	7900	3895	6860	4068	1896	3118
NF25-400 SR3	2186	879	1147	3119	1372	2079	4052	1864	3013	4985	2357	3946	5918	2849	4879	6851	3342	5812	7784	3834	6745	9650	4819	8611	11516	5804	10477	4068	1896	3118
NF25-450 SR3	3712	1685	2673	4900	2312	3861	6087	2939	5048	7275	3565	6236	8462	4192	7423	9650	4819	8611	10837	5445	9798							4068	1896	3118
NF25-500 SR3	5442	2598	4403	6918	3377	5879	8394	4156	7354	9869	4935	8830	11345	5713	10306													4068	1896	3118
NF25-300 SR2																2585	1051	1396	3175	1362	1986	4354	1984	3165	5533	2607	4345	4651	2168	3565
NF25-350 SR2													3169	1359	1980	3876	1732	2687	4583	2105	3394	5997	2851	4808	7411	3598	6222	4651	2168	3565
NF25-400 SR2				2630	1075	1441	3563	1567	2375	4496	2059	3308	5429	2552	4241	6362	3044	5174	7295	3537	6107	9161	4522	7973	11027	5506	9839	4651	2168	3565
NF25-450 SR2	3224	1388	2035	4411	2015	3223	5599	2641	4410	6786	3268	5598	7974	3895	6785	9161	4521	7973	10349	5148	9160							4651	2168	3565
NF25-500 SR2	4953	2301	3765	6429	3079	5241	7905	3858	6716	9381	4637	8192	10856	5416	9668													4651	2168	3565
NF25-300 SR2A																			2667	1053	1323	3846	1675	2502	5035	2298	3682	5257	2450	4029
NF25-350 SR2A													2661	1050	1318	3368	1423	2025	4075	1796	2732	5489	2542	4146	6903	3289	5559	5257	2450	4029
NF25-400 SR2A							3055	1258	1712	3988	1750	2645	4922	2243	3578	5855	2735	4511	6788	3228	5444	8654	4213	7310	10520	5197	9176	5257	2450	4029
NF25-450 SR2A				3904	1706	2560	5091	2332	3747	6278	2959	4935	7466	3586	6122	8653	4213	7310	9841	4839	8497	12216	6093	10872				5257	2450	4029
NF25-500 SR2A	4446	1992	3102	5921	2771	4578	7397	3550	6054	8873	4328	7529	10349	5107	9005	11824	5886	10481										5257	2450	4029
NF25-300 SR1																						3195	1279	1653	4374	1902	2833	6033	2812	4624
NF25-350 SR1																2717	1027	1175	3424	1400	1882	4838	2147	3296	6252	2893	4710	6033	2812	4624
NF25-400 SR1							2404	862	863	3337	1355	1796	4270	1847	2729	5203	2339	3662	6136	2832	4595	8003	3817	6461	9869	4802	8327	6033	2812	4624
NF25-450 SR1				3252	1310	1711	4440	1936	2898	5627	2563	4086	6815	3190	5273	8002	3817	6461	9190	4443	7648	11565	5697	10023				6033	2812	4624
NF25-500 SR1	3795	1596	2253	5270	2375	3729	6746	3154	5204	8222	3932	6680	9698	4711	8156	11173	5490	9632										6033	2812	4624
NF30-350 SR4																			4300	1655	1971	6016	2560	3687	7732	3466	5403	7607	3453	5478
NF30-400 SR4													5327	2197	2998	6459	2794	4130	7592	3392	5262	9856	4587	7527	12121	5782	9791	7607	3453	5478
NF30-450 SR4							5533	2305	3204	6974	3066	4645	8415	3826	6086	9856	3908	7526	11297	5348	8967	14179	6869	11849	17061	8390	14731	7607	3453	5478
NF30-500 SR4	4750	1892	2421	6540	2837	4211	8331	3782	6002	10122	4728	7793	11913	5673	9584	13704	6618	11374	15495	7563	13165	19076	9453	16747				7607	3453	5478

SINGLE ACTING TORQUE SHEET (Nm)-3

Type	3 Bar			3.5 Bar			4 Bar			4.5 Bar			5 Bar			5.5 Bar			6 Bar			7 Bar			8 Bar			Spring(Nm)		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
NF30-600 SR4	9555	4428	7226	12147	5797	9818	14739	7164	12410	17331	8532	15001	19922	9900	17593	22514	11268	20185										7607	3453	5478
NF30-350 SR3																						5002	1874	2102	6717	2780	3817	9056	4080	6405
NF30-400 SR3																5456	2113	2550	6577	2706	3677	8842	3901	5942	11106	5096	8206	9056	4080	6405
NF30-450 SR3													7400	3141	4500	8841	3901	5941	10282	4662	7382	13164	6183	10264	16046	7704	13146	9056	4080	6405
NF30-500 SR3				5527	2151	2626	7317	3096	4417	9108	4042	6208	10899	4987	7999	12689	5932	9789	14480	6877	11580	18062	8767	15162	21643	10658	18743	9056	4080	6405
NF30-600 SR3	8541	3742	5641	11133	5110	8232	13725	6478	10824	16316	7846	13416	18908	9214	16008	21500	10582	18600										9056	4080	6405
NF30-400 SR2																						7482	3028	3991	9747	4223	6255	10839	4878	7648
NF30-450 SR2													6041	2267	2549	7482	3027	3990	8923	3788	5431	11805	5309	8313	14687	6830	11195	10839	4878	7648
NF30-500 SR2							5958	2223	2466	7749	3168	4257	9539	4113	6047	11330	5058	7838	13121	6003	9629	16703	7894	13211	20284	9784	16792	10839	4878	7648
NF30-600 SR2	7182	2869	3690	9774	4237	6282	12365	5605	8873	14957	6972	11465	17549	8340	14057	20140	9708	16648										10839	4878	7648
NF30-400 SR1																						6097	2266	2491	8362	3462	4756	12209	5574	8913
NF30-450 SR1																6097	2266	2491	7538	3027	3932	10420	4548	6814	13302	6069	9696	12209	5574	8913
NF30-500 SR1													8154	3352	4548	9945	4297	6339	11736	5242	8130	15317	7133	11711	18899	9023	15293	12209	5574	8913
NF30-600 SR1				8388	3475	4782	10980	4843	7374	13572	6211	9966	16164	7579	12558	18755	8947	15149	21347	10315	17741							12209	5574	8913
NF35-500 SR4																13754	5455	6920	16075	6681	9241	20718	9131	13884	25361	11581	18527	17012	7330	10767
NF35-600 SR4				11736	4390	4902	15095	6164	8261	18455	7937	11621	21815	9710	14981	25174	11483	18340	28534	13256	21700	35253	16802	28419	41972	20349	35139	17012	7330	10767
NF35-700 SR4	17210	7280	10376	22042	9830	15208	26874	12380	20040	31706	14930	24872	36538	17481	29704	41370	20031	34536										17012	7330	10767
NF35-800 SR4	25806	11816	18972	32070	15123	25236	38335	18429	31501																			17012	7330	10767
NF35-500 SR3																			13927	5131	5516	18569	7581	10158	23212	10031	14801	20416	8747	12730
NF35-600 SR3							12947	4614	4536	16307	6387	7896	19666	8160	11255	23026	9933	14615	26386	11706	17975	33105	15252	24694	39824	18799	31413	20416	8747	12730
NF35-700 SR3	15062	5730	6651	19894	8280	11483	24726	10830	16315	29558	13380	21147	34390	15931	25979	39222	18481	30811										20416	8747	12730
NF35-800 SR3	23657	10266	15246	29922	13572	21511	36186	16879	27775																			20416	8747	12730
NF35-500 SR2																						16142	5584	5017	20784	8034	9660	25115	10572	14949
NF35-600 SR2													17239	6162	6114	20598	7936	9474	23958	9709	12833	30677	13255	19552	37396	16801	26272	25115	10572	14949
NF35-700 SR2				17466	6283	6342	22298	8833	11173	27130	11383	16005	31962	13933	20837	36794	16483	25669	41626	19034	30501							25115	10572	14949
NF35-800 SR2	21229	8269	10105	27494	11575	16369	33759	14881	22634																			25115	10572	14949
NF35-500 SR1																									17858	6440	6548	27958	12028	17623
NF35-600 SR1																17671	6342	6362	21031	8115	9722	27750	11662	16441	34470	15208	23160	27958	12028	17623
NF35-700 SR1							19371	7239	8062	24203	9790	12894	29035	12340	17726	33867	14890	22558	38699	17440	27390							27958	12028	17623
NF35-800 SR1	18303	6675	6993	24567	9982	13258	30832	13288	19522	37096	16594	25787	43361	19900	32052													27958	12028	17623
NF40-600 SR4																			26591	10320	12517	34798	14652	20724	43005	18983	28931	33562	14319	20700
NF40-700 SR4							24564	9250	10489	30466	12365	16391	36368	15480	22293	42269	18595	28195	48171	21710	34097	59975	27940	45901	71779	34169	57705	33562	14319	20700

SINGLE ACTING TORQUE SHEET (Nm)-4

Type	3 Bar			3.5 Bar			4 Bar			4.5 Bar			5 Bar			5.5 Bar			6 Bar			7 Bar			8 Bar			Spring(Nm)		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
NF40-800 SR4	23258	8561	9184	30910	12599	16836	38562	16638	24487	46213	20676	32139	53865	24715	39791	61517	28753	47443	69169	32792	55094							33562	14319	20700
NF40-900 SR4	36317	15453	22242	46145	20640	32071	55973	25827	41899	65801	31014	51727	75629	36201	61555													33562	14319	20700
NF40-600 SR3																						30848	11798	13859	39055	16129	22066	39835	16927	24310
NF40-700 SR3													32417	12626	15429	38319	15741	21330	44221	18856	27232	56025	25086	39036	67829	31315	50840	39835	16927	24310
NF40-800 SR3				26960	9745	9971	34612	13784	17623	42263	17822	25275	49915	21861	32926	57567	25899	40578	65218	29938	48230							39835	16927	24310
NF40-900 SR3	32367	12599	15378	42195	17786	25206	52023	22973	35034	61851	28160	44862	71679	33347	54690													39835	16927	24310
NF40-700 SR2																			38863	14985	17921	50667	21214	29725	62471	27444	41529	48344	20465	29207
NF40-800 SR2													44557	17990	23615	52209	22028	31267	59860	26067	38918	75164	34143	54222				48344	20465	29207
NF40-900 SR2				36837	13915	15895	46665	19102	25723	56493	24289	35551	66321	29476	45379	76149	34663	55207										48344	20465	29207
NF40-700D SR2	38863	14985	17921	50667	21214	29725	62471	27444	41529																			48344	20465	29207
NF40-700 SR1																			34913	12131	11056	46717	18361	22860	58521	24590	34664	54618	23073	32817
NF40-800 SR1													40607	15136	16750	48258	19174	24402	55910	23213	32054	71213	31289	47357				54618	23073	32817
NF40-900 SR1							42714	16248	18858	52543	21435	28686	62371	26622	38514	72199	31809	48342										54618	23073	32817
NF40-700D SR1	34913	12131	11056	46717	18361	22860	58521	24590	34664																			54618	23073	32817
NF48-700 SR3																33847	13299	16551	40853	16997	23557	54866	24393	37570	68879	31789	51583	55305	25018	39500
NF48-800 SR3							29445	10976	12150	38529	15771	21233	47613	20565	30317	56696	25359	39400	65780	30153	48484	83947	39741	66651	102114	49329	84818	55305	25018	39500
NF48-900 SR3				38447	15728	21152	50115	21885	32819	61782	28043	44486	73449	34201	56154	85117	40359	67821	96784	46516	79488	120119	58832	102823				55305	25018	39500
NF48-700 SR2																			33277	12171	12845	47290	19567	26857	61302	26962	40870	65095	29429	46423
NF48-800 SR2													40036	15738	19604	49120	20532	28687	58203	25327	37771	76371	34915	55938	94538	44503	74105	65095	29429	46423
NF48-900 SR2				30871	10901	10439	42538	17059	22106	54206	23217	33773	65873	29374	45441	77540	35532	57108	89207	41690	68775	112542	54005	92110				65095	29429	46423
NF48-700D SR2	32447	12002	13036	45897	19101	26487	59348	26201	39938	72799	33300	53389	86250	40399	66840	99701	47498	80291	113152	54597	93742							65095	29429	46423
NF48-800D SR2	58203	25327	37771	76371	34915	55938	94538	44503	74105																			65095	29429	46423
NF48-800 SR1																			49137	18393	20564	67304	27982	38731	85471	37570	56899	80820	35764	54709
NF48-900 SR1													56806	22441	28234	68473	28599	39857	80141	34757	51568	103475	47072	74903				80820	35764	54709
NF48-700D SR1							52337	20233	24336	66213	27557	38212	80089	34880	52088	93965	42204	65964	10841	49526	79840							80820	35764	54709
NF48-800D SR1	49137	18393	20564	67304	27982	38731	85471	37570	56899	103638	47158	75066	121805	56746	93233													80820	35764	54709
NF48-900D SR1	66780	25797	30981	90161	37964	54363	113542	50478	77744																			80820	35764	54709
NF48-700D SR1A																66900	25861	31102	80941	33272	45143							99890	44087	67175
NF48-800D SR1A				53916	19009	18119	72120	28617	36323	90324	38225	54527	108527	47832	72730													99890	44087	67175
NF48-900D SR1A	66780	25798	30981	90161	38138	54363	113542	50478	77744	125234	56648	89434	136924	62817	101124													99890	44087	67175
NF60-800 SR4																			72144	25095	22953	96086	37731	46896	120025	50368	70838	110305	46353	65351
NF60-900 SR4																97628	38545	48437	113004	46660	63813	143757	62891	94566	174510	79122	125319	110305	46353	65351

SINGLE ACTING TORQUE SHEET (Nm)-5

Type	3 Bar			3.5 Bar			4 Bar			4.5 Bar			5 Bar			5.5 Bar			6 Bar			7 Bar			8 Bar			Spring(Nm)		
	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End	Start	Running	End
NF60-1000 SR4							77770	28064	28579	96431	37912	47240	115091	47761	65900	133750	57609	84560	152410	67458	103220	189731	87155	140540				110305	46353	65351
NF60-700D SR4							76228	27250	27037	94696	36998	45505	113163	46744	63972	131631	56491	82440	150098	66237	100907							110305	46353	65351
NF60-800D SR4	72144	25095	22953	96086	37731	46896	120029	50368	70838	143972	63004	94782	167915	75641	118724	191857	88277	142667	215800	100914	166609							110305	46353	65351
NF60-900D SR4	113004	46660	63813	143757	62891	94566	174510	79122	125319	205263	95353	156072	236016	111583	186825	266768	127814	217578										110305	46353	65351
NF60-1000D SR4	152410	67458	103220	189731	87155	140540	227052	106852	177861																			110305	46353	65351
NF60-800 SR3																									106696	38958	40936	137630	56780	77535
NF60-900 SR3																			99671	35251	33911	130424	51482	64664	161177	67713	95417	137630	56780	77535
NF60-1000 SR3													101757	36352	35997	120418	46200	54658	139078	56049	73317	176398	75745	110638				137630	56780	77535
NF60-700D SR3													99830	35335	34070	118298	45082	52537	136765	54828	71005							137630	56780	77535
NF60-800D SR3							106696	38958	40936	130640	51595	64878	154582	64231	88821	178525	76868	112764	202467	89504	136707							137630	56780	77535
NF60-900D SR3				130424	51482	64664	161177	67713	95417	191930	83944	126170	222683	100174	156923	253436	116404	187676										137630	56780	77535
NF60-1000D SR3	139078	56049	73317	176398	75745	110638	213719	95442	147959																			137630	56780	77535
NF60-900 SR2																						114280	43371	50072	145032	59602	80825	150965	64192	92290
NF60-1000 SR2																104273	38089	40066	122933	47937	58726	160254	67635	96046				150965	64192	92290
NF60-700D SR2																102153	36971	37946	120620	46717	56413							150965	64192	92290
NF60-800D SR2													138436	56120	74230	162380	68757	98173	186322	81394	122115							150965	64192	92290
NF60-900D SR2				114280	43371	50072	145032	59602	80825	175785	75833	111578	206538	92063	142331	237291	108294	173084	268044	124524	494837							150965	64192	92290
NF60-1000D SR2	122933	47937	58726	160254	67635	96046	197574	87332	133367																			150965	64192	92290
NF60-1000 SR1																						140982	52135	56580				187031	78357	109901
NF60-700D SR1																												187031	78357	109901
NF60-800D SR1													119165	40620	34764	143108	53257	58706	167050	65893	82649							187031	78357	109901
NF60-900D SR1							125761	44101	41360	156513	60332	72113	187266	76562	102865	218019	92793	133618	248772	109023	164370							187031	78357	109901
NF60-1000D SR1				140982	52135	56580	178302	71831	93901																			187031	78357	109901

EXTERNAL DIMENSION

Flange Connection	Dimension (mm)								
	ØC	N-Md	Ød	H	B	T	ØF	f1	f2
F14	140	4-M16	60	145	18	64.4	100	10	14.5
F16	165	4-M20	72	155	20	76.9	130	10	15.5
F25	254	8-M16	80	175	22	85.4	200	9	9.5
F30	298	8-M20	100	200	28	106.4	230	10	13
F35	356	8-M30	160	295	40	169.4	260	10	66
F40	406	8-M36	180	360	45	190.4	300	10	22
F48	483	12-M36	220	380	50	231.4	370	10	22
F60	603	20-M36	260	445	63	292.4	470	10	22

EXTERNAL DIMENSION

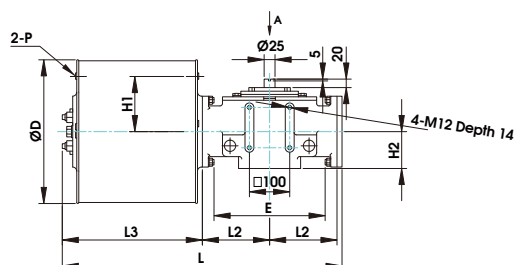
Type	Single Acting (mm)										
	Double Acting (mm)										
	L	L2	L3	ØD	H2	A	P	H1	E	L1	ØD0
F14-200	658	145	355	223	88	60	NPT 3/8"	80	235	1370	220
F14-250	658	145	355	280	88	60	NPT 1/2"	110	235	1370	220
F14-300	658	145	355	332	88	60	NPT 1/2"	124	235	1370	220
F14-350	658	145	355	362	88	60	NPT 1/2"	132	235	1370	220
F16-250	709	170	355	280	94	74	NPT 1/2"	110	285	1440	274
F16-300	709	170	355	332	94	74	NPT 1/2"	124	285	1440	274
F16-350	709	170	355	362	94	74	NPT 1/2"	132	285	1440	274
F16-400	725	170	372	413	94	74	NPT 3/4"	158	285	1456	274
F16-450	778	170	425	463	94	74	NPT 3/4"	178	285	1510	274
F25-300	816	195	411	332	98	89	NPT 1/2"	124	320	1591	327
F25-350	816	195	411	362	98	89	NPT 1/2"	132	320	1591	327
F25-400	827	195	422	413	98	89	NPT 3/4"	158	320	1602	327
F25-450	830	195	425	463	98	89	NPT 3/4"	178	320	1605	327
F25-500	830	195	425	514	98	89	NPT 3/4"	202	320	1605	327
F30-350	977	238	487	362	115	108	NPT 1/2"	132	396	1927	408
F30-400	977	238	487	413	115	108	NPT 3/4"	158	396	1927	408
F30-450	980	238	490	463	115	108	NPT 3/4"	178	396	1930	408
F30-500	980	238	490	514	115	108	NPT 3/4"	202	396	1930	408
F30-600	1000	238	510	616	115	108	NPT 3/4"	244	396	1950	408
F35-500	1191	298	580	514	163	140	NPT 3/4"	202	505	2249	508
F35-600	1211	298	600	616	163	140	NPT 3/4"	244	505	2269	508
F35-700	1244	298	633	739	163	140	NPT 1	305	505	2302	508
F35-800	1280	298	679	839	163	140	NPT 1-1/2"	355	505	2348	508
F40-600	1470	370	700	616	203	171	NPT 3/4"	244	620	2636	682
F40-700	1523	370	753	739	203	171	NPT 1	305	620	2689	682
F40-800	1532	370	762	839	203	171	NPT 1-1/2"	355	620	2698	682
F40-900	1536	370	766	947	203	171	NPT 1-1/2"	402	620	2702	682
F40-700D	-	370	1500	739	203	171	NPT 1	305	620	3436	682
F48-700	1760	425	880	739	214	203	NPT 1	305	690	3590	682
F48-800	1760	425	880	839	214	203	NPT 1-1/2"	355	690	3590	682
F48-900	1760	425	880	947	214	203	NPT 1-1/2"	402	690	3590	682
F48-1000	1760	425	880	1048	214	203	NPT 2	456	690	3590	682
F48-800D	-	425	1725	839	214	203	NPT 1-1/2"	355	690	4435	682
F60-700	2154	562	1030	739	258	266	NPT 1	305	1012	4228	682
F60-800	2154	562	1030	839	258	266	NPT 1-1/2"	355	1012	4228	682
F60-900	2154	562	1030	947	258	266	NPT 1-1/2"	402	1012	4228	682
F60-1000	2154	562	1030	1048	258	266	NPT 2	456	1012	4228	682
F60-800D	-	562	1030	839	258	266	NPT 1-1/2"	355	1012	5248	682
F60-900D	-	562	1030	947	258	266	NPT 1-1/2"	402	1012	5248	682



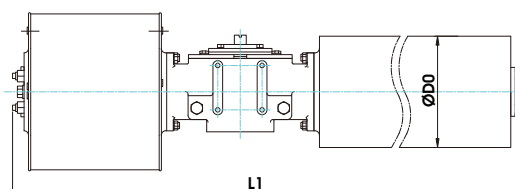
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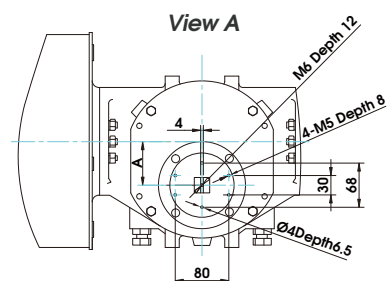
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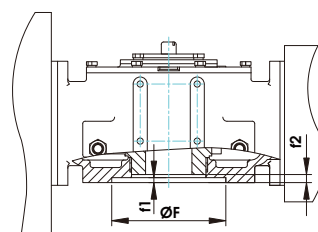
Double Acting



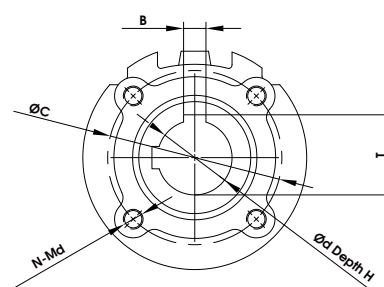
Single Acting



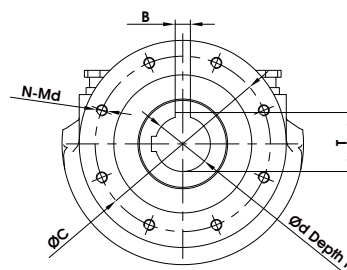
View A



View B



F14 & F16



F25 - F48

Type Selection Table.

N F16 - 300 SR1 HW NT FC 000

Code key							
Series	Flange size	Diameter of Cylinder	Acting Manner	Handwheel	Temperature	Air Failure Position	Special Remark
N	F16	300	DA = Double Acting	HG = Worm Gear Handwheel	NT = -40°C to 80°C	FL = Holding Position	000
			SR1 = Single Acting, Spring Size	HW = Mechanical Handwheel	HT = -20°C to 120°C	FC = Normally Closed	
			SR2 = Single Acting, Spring Size	HB = Bevel Gear Handwheel	ST = -60°C to 80°C	FO = Normally Open	
			SR3 = Single Acting, Spring Size	HY = Hydraulic Handwheel			
			SR4 = Single Acting, Spring Size				



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