

## NS Series Scotch Yoke Type Pneumatic Actuator



### Temperature Range:

Standard: -20°C to +80°C / -5°F to +175 °F

Low temp: -40°C to +60°C / -40 °F to +140 °F

High temp: 0°C to +150°C / +30°F to +300°F

### NS Series S&Y Type Actuators Meet Standards:

Fitting accessories: VDI/VDE 3845(NAMUR)

Fitting to valve: Hole pattern, centering ring

ISO 5211, DIN 3337 and NAMUR

### NS Series S&Y Type Actuators are CE-marked:

According to PED, ATEX and SIL3

### Pressure Ranges:

2-10 bar / 30-145 psi

### Extra Corrosion Protection:

Hard Anodized Actuators as standard

### Option:

Epoxy finished

Offshore(ISO12944-C5M) or other finish to meet customer specifications.

Stainless screws and drive shaft

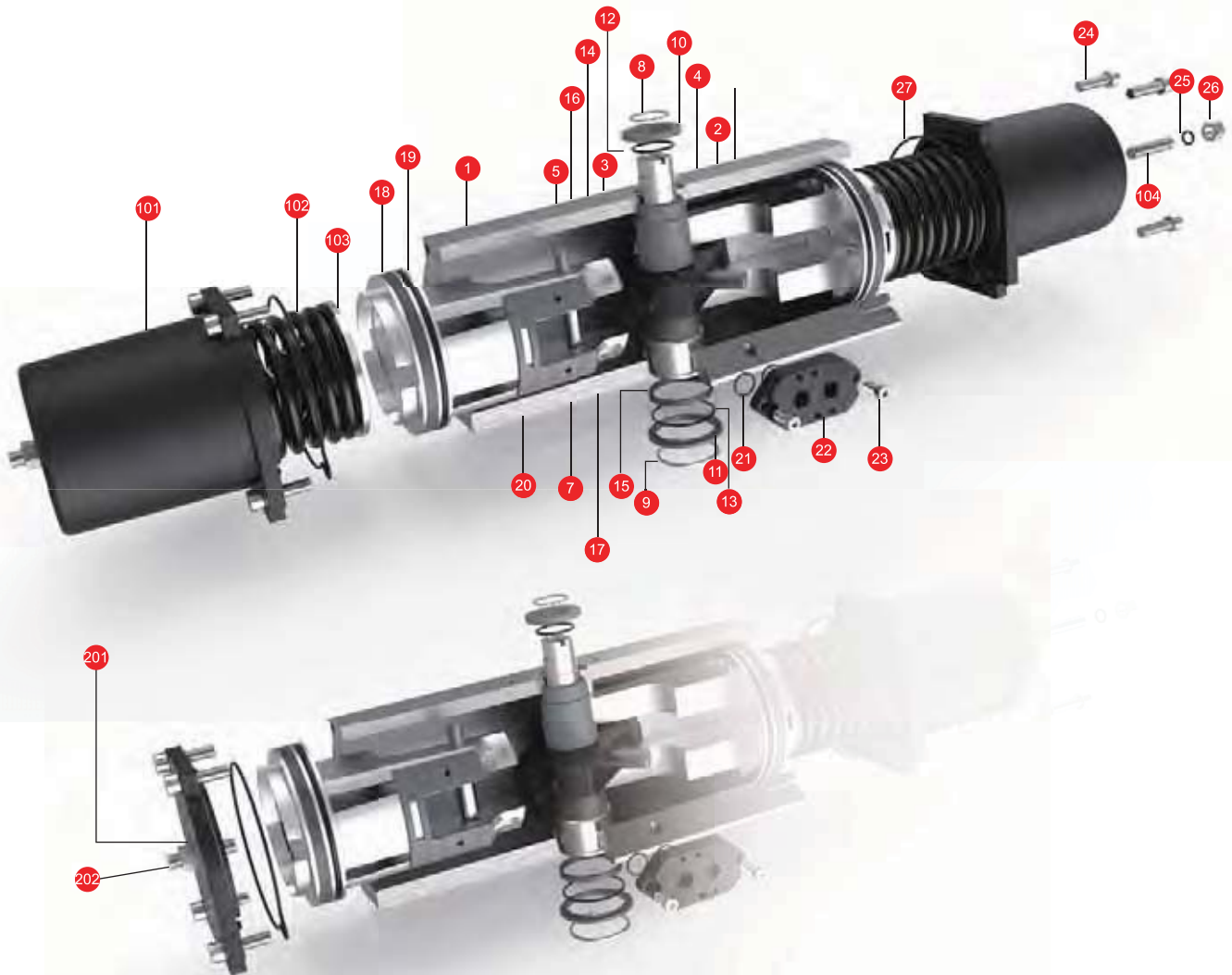
### Operating Medium

Air, inert gases (non-dangerous fluids, group 2 according to directive PED 97/23/EC)

But also available for water or oil hydraulics:

2-10 bar / 30-145 psi

# NUTORK® | Parts List



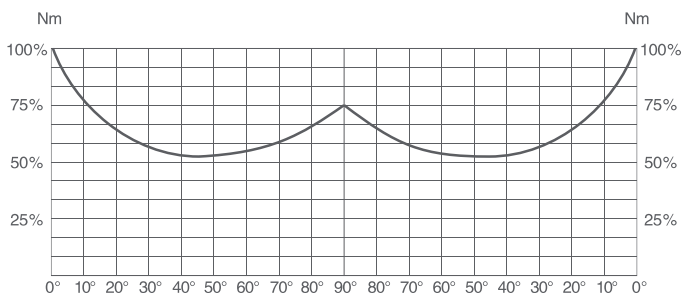
## Part List

Item	Description	Material	Item	Description	Material
1	Body	Aluminium Alloy	18	Piston Ring	Engineering Plastic
2	Piston	Aluminium Alloy	19	Piston O-ring	NBR
3	Shaft	Steel Alloy	20	Piston Support Chip	Engineering Plastic
4	Yoke	Steel Alloy	21	Connection Plate O-ring	NBR
5	Piston Pin	Steel Alloy	22	Connection Plate	Aluminium Alloy
6	Yoke Pin	Steel Alloy	23	Plate Socket Screw	Stainless Steel
7	Bearing	Steel Alloy	24	Cover Socket Screw	Stainless Steel
8	Upper Circlip	Stainless Steel	25	Nut O-ring	NBR
9	Lower Circlip	Stainless Steel	26	Screw	Stainless Steel
10	Upper Washer	Engineering Plastic	27	End Cover Seal Ring	NBR
11	Lower Washer	Engineering Plastic	101	Cover	Aluminium Alloy
12	Upper Shaft O-ring	NBR	102	Spring	Spring Steels
13	Lower Shaft O-ring	NBR	103	Lower Spring Washer	Aluminium Alloy
14	Upper Shaft Bearing	POM/Graphite Copper Bushing	104	Spring Shaft	Stainless Steel
15	Lower Shaft Bearing	POM/Graphite Copper Bushing	201	Double Acting End Cover	Aluminium Alloy
16	Upper Piston Bearing	Engineering Plastic	202	Set Screw	Stainless Steel
17	Lower Piston Bearing	Engineering Plastic			

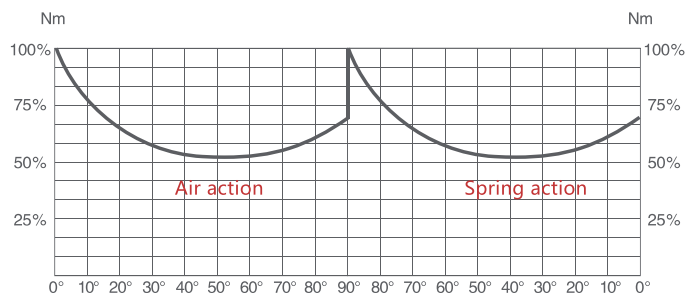
### Technical Data

Model	NS40	NS60		NS70		NS80		NS90		NS100		NS125	
Acting Type	Double	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single
Weight (Kg)	1.00	1.50	2.10	2.70	4.10	3.80	5.90	6.80	8.90	7.50	12.30	12.05	20.80
Air Consumption (NL/Cycle)	0.19	0.47	0.28	0.93	0.60	1.50	0.95	2.36	1.44	3.26	1.97	5.83	3.41
Closing Time (Sec.)	<0.25	<0.25	<0.3	<0.35	<0.4	<0.45	<0.55	<0.60	<0.65	<1.0	<1.05	<1.7	<1.80

Model	NS140		NS160		NS180		NS220		NS260	
Acting Type	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single
Weight (Kg)	20.05	32.10	27.70	47.60	37.45	60.10	65.50	108.70	114.0	211.90
Air Consumption (NL/Cycle)@6bar	7.50	4.51	11.1	6.49	16.58	10.22	29.80	17.60	62.10	36.40
Closing Time @6bar(Sec.)	<2.2	<2.5	<3.4	<4.41	<4.3	<9.6	<4.3	<4.92	<7.0	<9.82



Double Acting Type



Spring Return Type

### Double Acting Actuator Output Torque

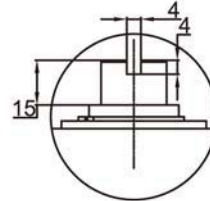
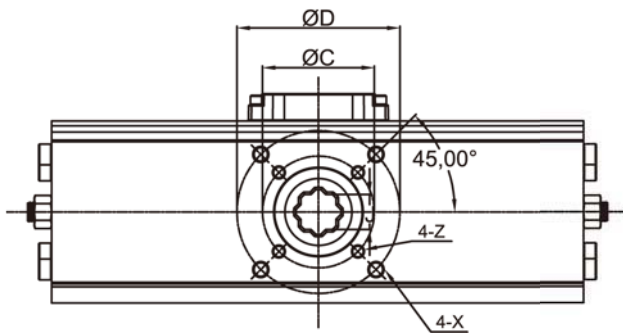
Torque:Nm

Air Pressure Supply	3bar			4bar			5bar			5.6bar			6bar			7bar			8bar		
	0°	49°	90°	0°	49°	90°	0°	49°	90°	0°	49°	90°	0°	49°	90°	0°	49°	90°	0°	49°	90°
NSD40	15	8	12	20	10	16	25	13	20	28	14	22	30	15	24	35	18	28	40	20	32
NSD60	43	21	34	57	28	46	71	35	57	78	39	63	85	42	68	99	50	80	113	57	91
NSD70	87	44	70	116	58	94	146	73	117	160	80	129	175	86	140	204	102	164	233	117	187
NSD80	140	76	119	187	101	158	233	126	198	257	139	218	280	149	238	327	176	277	373	202	317
NSD90	204	110	180	272	147	239	340	184	299	374	202	329	408	216	359	476	257	419	544	294	479
NSD100	276	152	244	367	204	325	459	253	406	505	278	447	551	298	488	643	354	569	735	404	650
NSD125	521	277	425	695	369	567	869	461	709	956	508	780	1066	555	870	1216	646	992	1391	738	1135
NSD140	701	365	581	936	486	775	1170	608	969	1286	669	1066	1404	730	1163	1637	851	1356	1871	973	1550
NSD160	1062	541	859	1415	722	1146	1769	902	1432	1947	993	1576	2123	1083	1719	2477	1264	2005	2831	1444	2292
NSD180	1462	774	1093	1949	1032	1457	2436	1290	1822	2681	1419	2004	2924	1548	2186	3411	1806	2551	3898	2064	2915
NSD220	2703	1403	2168	3604	1870	2890	4505	2338	3613	4956	2571	3974	5406	2805	4335	6307	3273	4293	7208	3740	5780
NSD260	5333	2796	4051	7111	3728	5402	8889	4660	6752	9778	5126	7427	10667	5592	8103	12444	6524	9453	14222	7456	10803

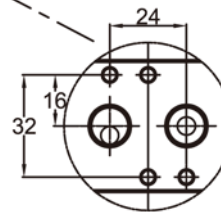
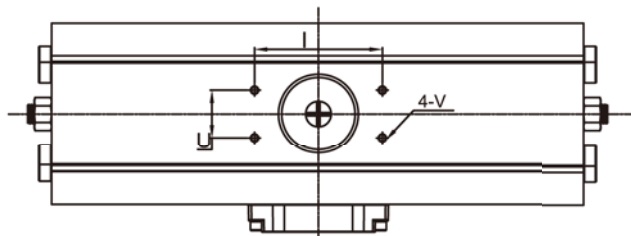
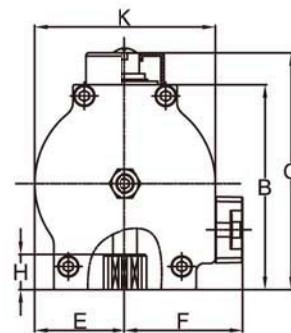
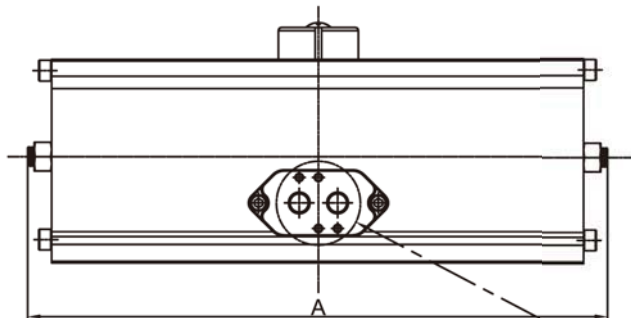
Model	Spring Set	Spring No.	Spring Torque (Nm)			Air Torque Output (Nm)																																		
						2.5 bar / 36psi			3.0 bar / 44psi			4.0 bar / 58psi			5.0 bar / 73psi			5.5 bar / 80psi			6.0 bar / 87psi			7.0 bar / 102psi			8.0 bar / 116psi													
			0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°											
NSS60	K11	2	14	10	19	19	8	10	26	12	15	38	19	26																										
	K12	2	18	13	25				22	9	10	34	16	21	47	23	32																							
	K22	2	22	16	31								30	13	15	43	20	26	49	23	32																			
	K13	3	25	18	34											41	18	23	47	22	29	53	25	34																
	K23	3	29	21	40														43	19	23	50	22	29	62	29	40													
	K33	4	36	26	50																	43	18	20	56	25	31	69	32	42										
NSS70	K11	2	26	18	36	38	16	19	50	23	30	74	36	51																										
	K12	2	34	24	47				43	18	19	67	31	41	91	44	62																							
	K22	2	42	30	59								60	26	30	84	39	51	96	45	62																			
	K13	3	47	34	65											80	36	45	92	42	56	104	49	66																
	K23	3	55	39	77														85	37	45	97	44	56	121	57	77													
	K33	4	68	49	95																			85	35	39	110	49	60	134	62	82								
NSS80	K11	2	42	29	56	60	27	33	80	37	50	119	59	84																										
	K12	2	57	39	74				67	29	33	106	50	68	146	71	102																							
	K22	2	71	49	92								93	41	51	133	63	85	152	73	103																			
	K13	3	78	54	103											127	58	76	146	69	93	166	79	110																
	K23	3	92	63	120															133	60	76	156	71	98	192	92	128												
	K33	4	114	78	149																		134	57	67	173	79	101	213	100	135									
NSS90	K11	2	68	48	91	85	36	42	114	52	68	173	84	119																										
	K12	2	87	61	117				98	40	44	156	72	95	215	104	146																							
	K22	2	105	74	142								140	60	71	198	92	122	228	108	148																			
	K13	3	121	85	162											184	82	104	213	98	129	243	114	155																
	K23	3	140	98	188															197	86	105	226	102	131	285	134	182												
	K33	4	174	122	234																		195	80	88	254	112	139	313	144	190									
NSS100	K11	2	92	64	122	132	59	74	176	82	111	262	129	187																										
	K12	2	122	85	162				149	63	74	235	110	149	321	157	225																							
	K22	2	152	106	202								208	91	112	294	138	187	337	162	225																			
	K13	3	168	117	223											280	128	167	323	151	205	366	175	243																
	K23	3	198	137	263															296	132	168	339	156	205	425	203	281												
	K33	4	244	169	324																		297	127	148	383	174	223	470	220	299									
NSS125	K11	2	158	109	209	227	101	126	301	141	190	448	221	319																										
	K12	2	208	144	275				256	109	129	403	190	257	551	270	386																							
	K22	2	257	178	341								358	158	195	506	238	324	580	278	389																			
	K13	3	286	199	379											480	220	288	554	260	352	627	300	417																
	K23	3	336	233	445															509	229	291	583	269	355	730	349	484												
	K33	4	415	288	550																			511	219	257	659	299	386	807	379	515								

Model	Spring Set	Spring No.	Spring Torque (Nm)			Air Torque Output (Nm)																										
						2.5 bar / 36psi			3.0 bar / 44psi			4.0 bar / 58psi			5.0 bar / 73psi			5.5 bar / 80psi			6.0 bar / 87psi			7.0 bar / 102psi			8.0 bar / 116psi					
			0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°			
NSS140	K11	2	214	148	281	298	132	165	397	186	251	594	293	423																		
	K12	2	275	190	362				342	147	176	538	254	347	735	361	519															
	K22	2	337	232	442							483	216	272	680	323	443	778	376	529												
	K13	3	383	264	502										638	294	387	737	347	473	835	401	558									
	K23	3	444	306	583													682	309	397	780	362	483	977	469	655						
	K33	4	551	380	723																683	295	351	880	402	523	1077	509	694			
NSS160	K11	2	323	223	425	452	201	250	601	281	380	899	443	639																		
	K12	2	408	282	536				525	228	275	822	390	535	1120	551	794															
	K22	2	493	340	648							746	337	431	1043	498	690	1192	579	820												
	K13	3	569	393	749										974	450	595	1123	530	725	1271	611	854									
	K23	3	654	452	860													1046	477	620	1195	558	750	1492	720	1010						
	K33	4	816	563	1073																1049	456	551	1347	618	810	1644	779	1070			
NSS180	K11	2	408	305	593	630	279	348	837	392	529	1252	617	891																		
	K12	2	524	392	763				721	311	370	1137	536	732	1552	762	1094															
	K22	2	639	479	933							1021	456	573	1436	681	935	1643	794	1116												
	K13	3	728	544	1060										1348	620	816	1555	733	997	1763	845	1178									
	K23	3	843	631	1230													1439	652	838	1647	764	1019	2062	990	1380						
	K33	4	1047	783	1526																1443	622	740	1858	848	1102	2273	1073	1464			
NSS220	K11	2	708	531	1035	1215	550	706	1599	759	1042	2369	1176	1712																		
	K12	2	945	709	1383				1363	593	715	2132	1010	1386	2901	1428	2057															
	K22	2	1182	887	1732							1895	844	1060	2664	1262	1730	3049	1471	2066												
	K13	3	1299	974	1901										2547	1181	1572	2932	1390	1907	3316	1599	2242									
	K23	3	1536	1152	2249													2695	1224	1580	3080	1433	1916	3849	1850	2587						
	K33	4	1890	1417	2767																2725	1185	1431	3495	1603	2101	4264	2021	2772			
NSS260	K11	2	1187	1046	2235	2765	1171	1351	3555	1600	2040	5136	2459	3418																		
	K12	2	1746	1406	2865				2997	1265	1449	4578	2123	2827	6158	2981	4206															
	K22	2	2304	1766	3496							4019	1787	2236	5600	2646	3615	6390	3075	4304												
	K13	3	2339	1929	3983										5565	2494	3158	6355	2923	3847	7146	3352	4536									
	K23	3	2898	2289	4613													5797	2588	3256	6587	3017	3945	8168	3875	5324						
	K33	4	3492	2812	5730																5993	2529	2898	7574	3388	4276	9155	4246	5654			

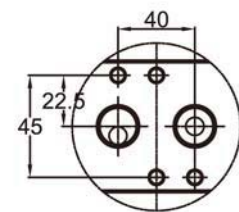
# NUTORK® | Dimension Table - Double Acting



NAMUR



1/4" NAMUR

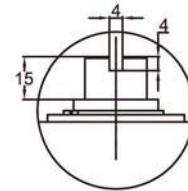
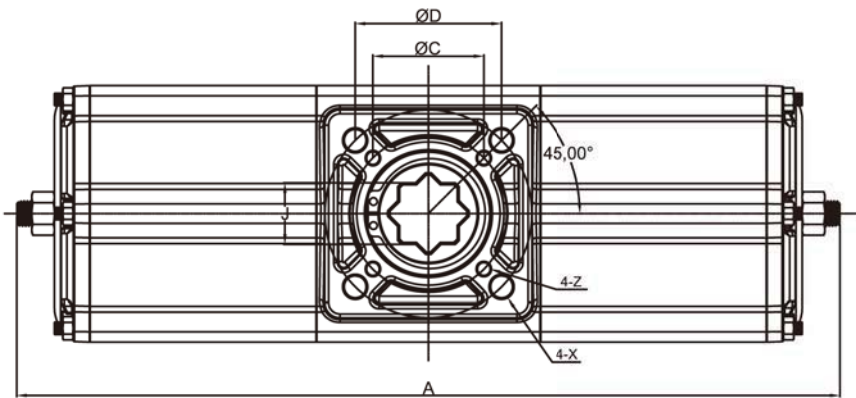


1/2" NAMUR

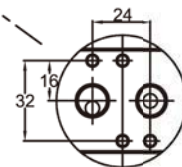
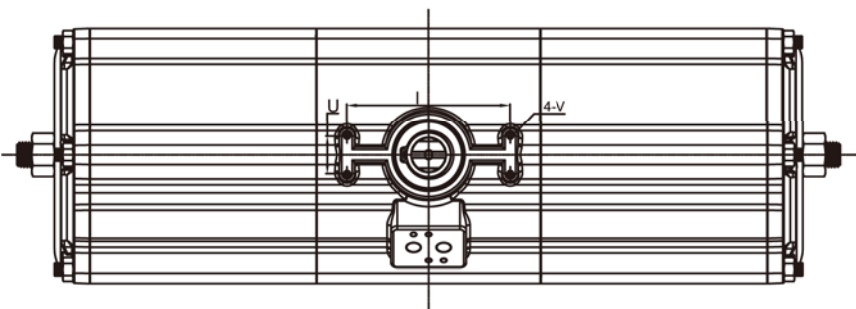
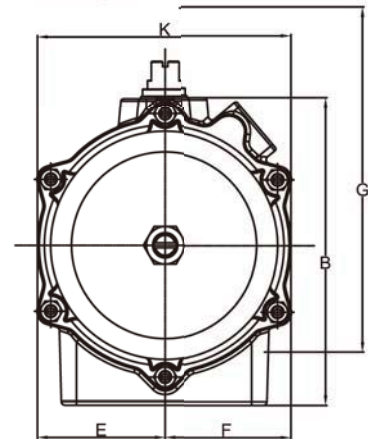
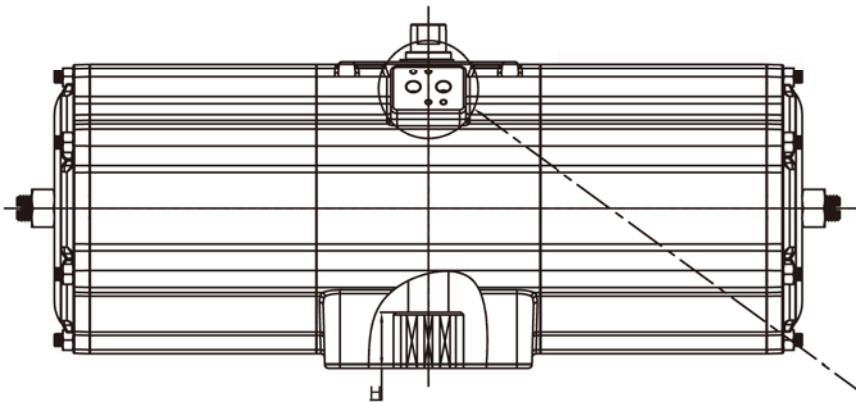
Unit: mm

Model	A	B	ØC	ØD	J	E	F	G	K	H	I	U	V	Z	X	Air Conn.
NSD-40	184	66	Ø50	-----	11	25	44	86	52	16	80	30	4-M5	4-M5	-----	1/4"G
NSD-60	208	77	Ø50	-----	14	31.5	48.5	97	63	16	80	30	4-M5	4-M5	-----	1/4"G
NSD-70	271	91	Ø50	Ø70	17	39.5	56.5	110.9	79	18	80	30	4-M5	4-M6	4-M8	1/4"G
NSD-80	295	108	Ø50	Ø70	17	45.5	62.5	128	91	22	80	30	4-M5	4-M6	4-M8	1/4"G
NSD-90	341	119	Ø70	Ø102	22	52	68	139	103	26	80	30	4-M5	4-M8	4-M10	1/4"G
NSD-100	389	128.5	Ø70	Ø102	22	57	74	148.5	114	26	80	30	4-M5	4-M8	4-M10	1/4"G
NSD-125	445	156	Ø102	Ø125	27	69	86	186	138	30	80	30	4-M5	4-M10	4-M12	1/4"G
NSD-140	520	190	Ø125	Ø165	36	81.5	75	220	154	40	80	30	4-M5	4-M12	4-M20	1/4"G
NSD-160	575	213	Ø125	Ø165	46	85	90	243	175	46	80	30	4-M5	4-M12	4-M20	1/4"G

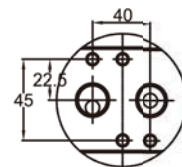
# NUTORK® | Dimension Table - Double Acting



NAMUR



1/4" NAMUR

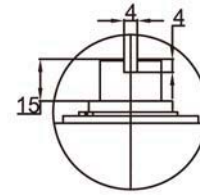
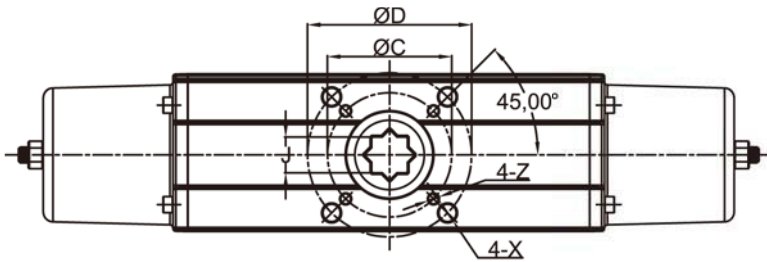


1/2" NAMUR

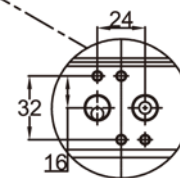
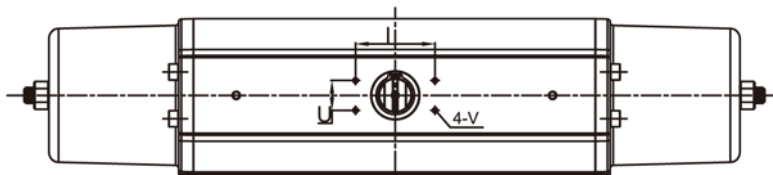
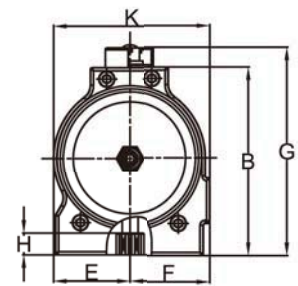
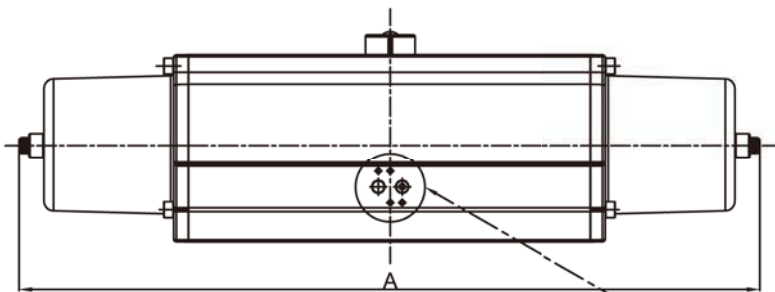
Unit: mm

Model	A	B	ØC	ØD	J	E	F	G	K	H	I	U	V	Z	X	Air Conn.
NSD-180	660	245	Ø125	Ø165	46	102	102	275	204	50	130	30	4-M5	4-M12	4-M20	1/4"G
NSD-220	810	284.5	-----	Ø165	55	133	138.5	314.5	272	57	130	30	4-M5	4-M12	4-M20	1/2"G
NSD-260	972	337.5	-----	Ø254	55	171	171	380	342	57	130	30	4-M5	4-M12	4-M20	1/2"G

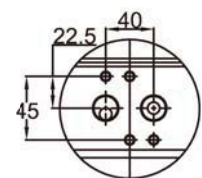
# NUTORK® | Dimension Table - Spring Return Acting



NAMUR



1/4" NAMUR



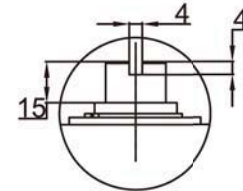
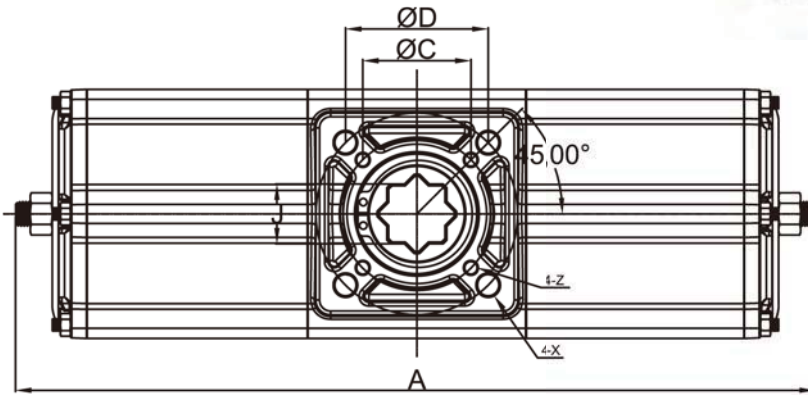
1/2" NAMUR

Unit: mm

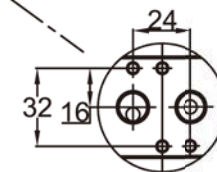
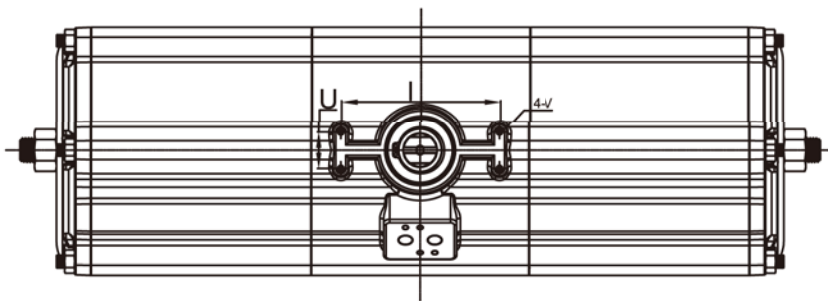
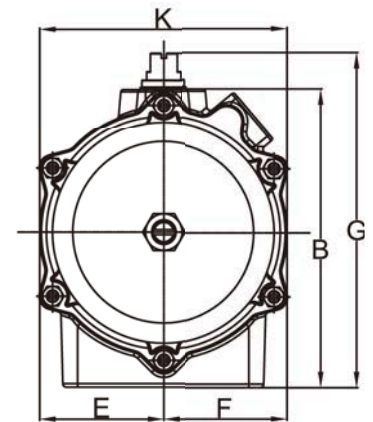
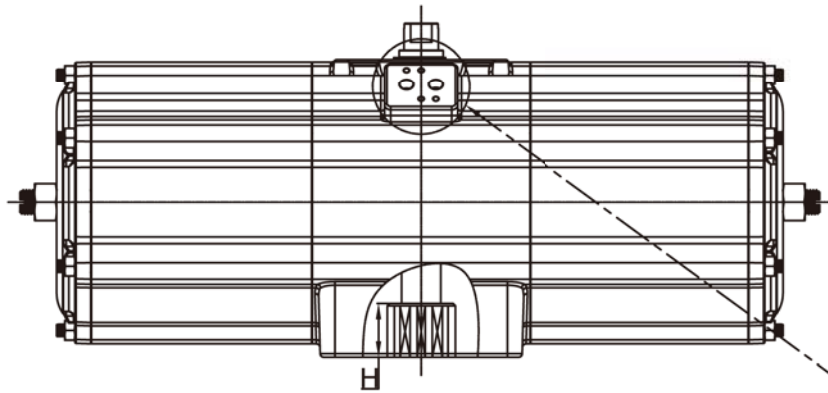
Model	A	B	ØC	ØD	J	E	F	G	K	H	I	U	V	Z	X	Air Conn.
NSS-60	310	77	Ø50	----	14	31.5	48.5	97	80	16	80	30	4-M5	4-M6	----	1/4" G
NSS-70	390	91	Ø50	Ø70	17	39.5	56.5	111	96	18	80	30	4-M5	4-M6	4-M8	1/4" G
NSS-80	438	108	Ø50	Ø70	17	45.5	62.5	128	108	22	80	30	4-M5	4-M6	4-M8	1/4" G
NSS-90	497	119	Ø70	Ø102	22	52	68	139	103	26	80	30	4-M5	4-M8	4-M10	1/4" G
NSS-100	577	128.5	Ø70	Ø102	22	57	74	148.5	131	26	80	30	4-M5	4-M8	4-M10	1/4" G
NSS-125	711	156	Ø102	Ø125	27	69	86	186	155	30	80	30	4-M5	4-M10	4-M12	1/4" G
NSS-140	757	190	Ø125	Ø165	36	75	81.5	220	156.5	40	80	30	4-M5	4-M12	4-M20	1/4" G
NSS-160	880	213	Ø125	Ø165	46	85	90	243	175	46	80	30	4-M5	4-M12	4-M20	1/4" G



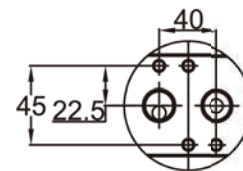
# NUTORK® | Dimension Table - Spring Return Acting



NAMUR



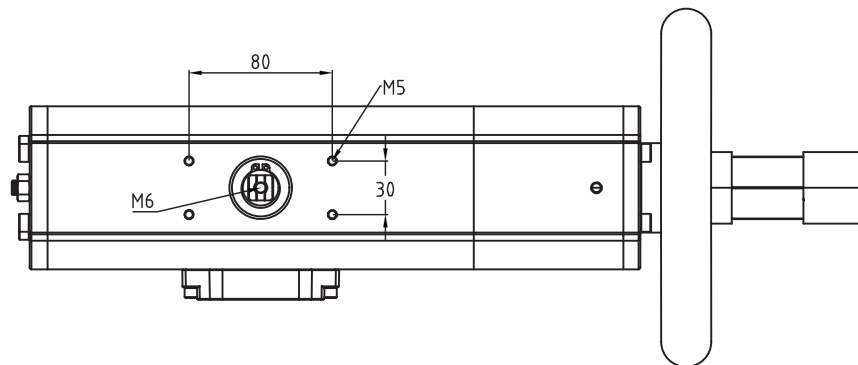
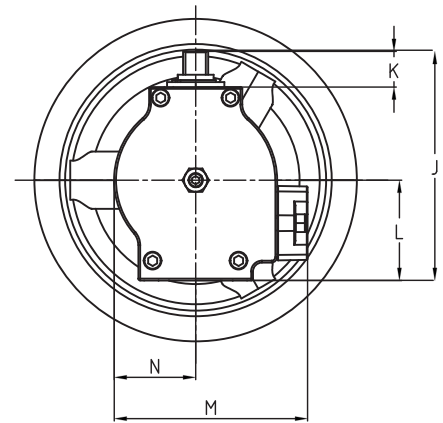
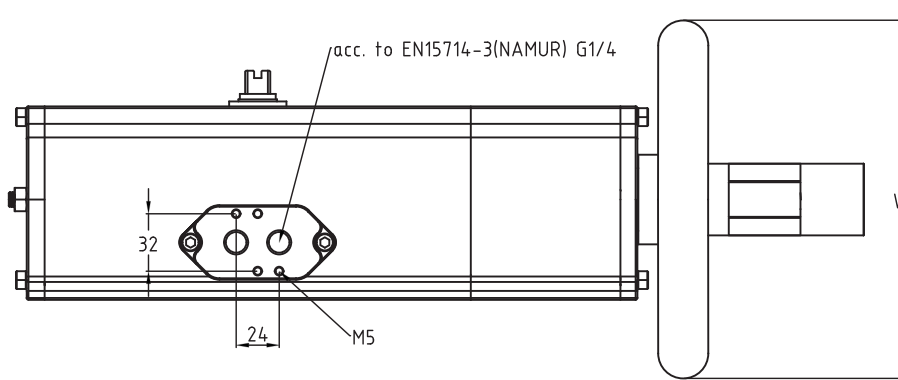
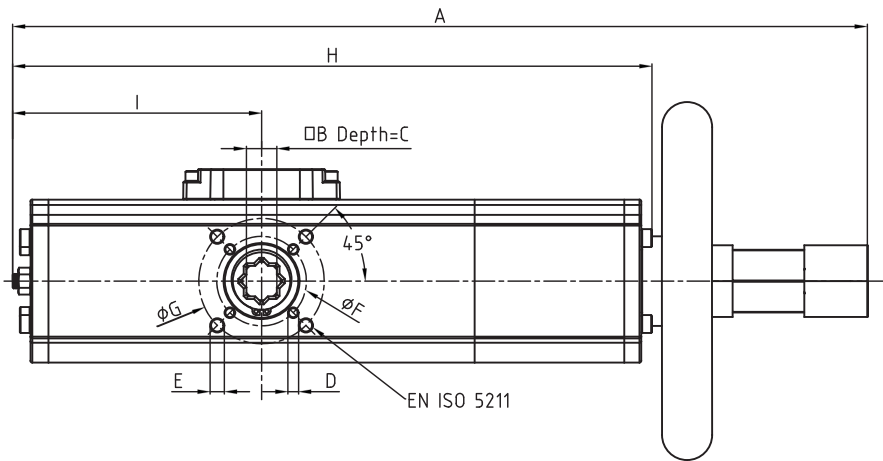
1/4" NAMUR



1/2" NAMUR

Unit: mm

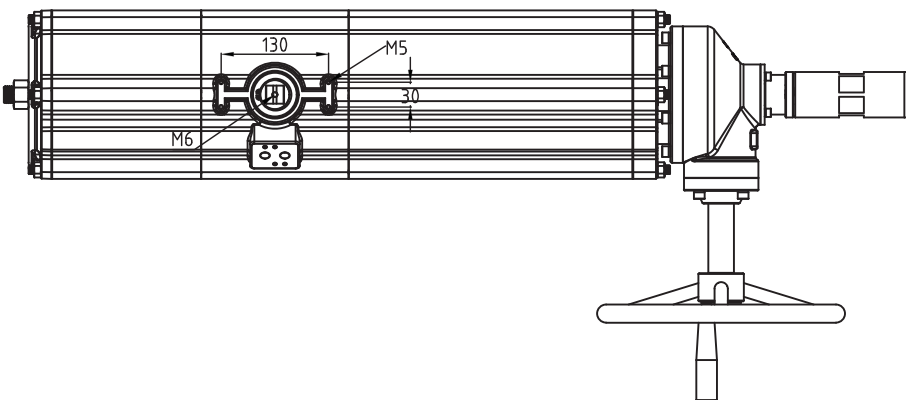
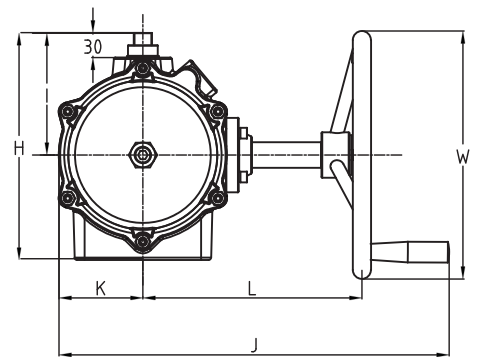
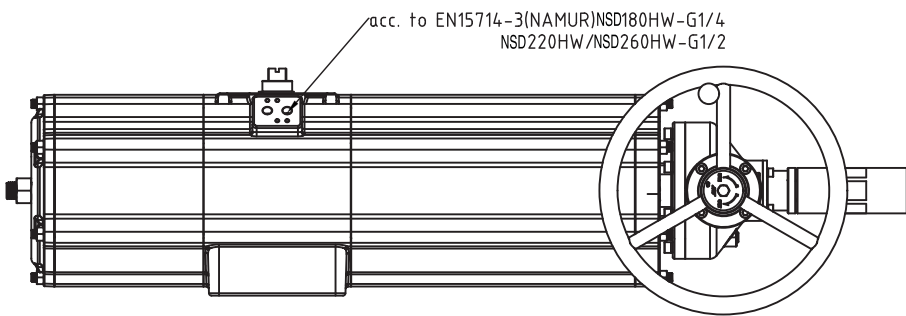
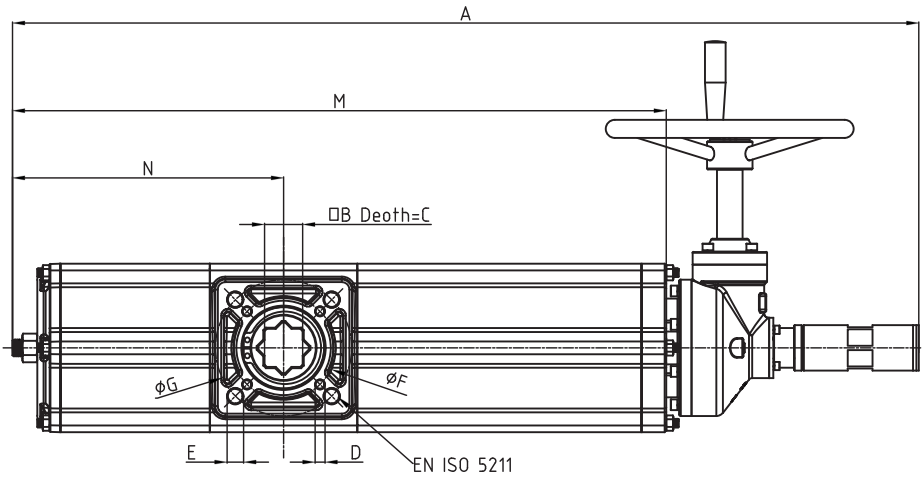
Model	A	B	ØC	ØD	J	E	F	G	K	H	I	U	V	Z	X	Air Conn.
NSS-180	965	245	Ø125	Ø165	46	102	102	275	204	50	130	30	4-M5	4-M12	4-M20	1/4"G
NSS-220	1199	284	-----	Ø165	55	136	136	314	272	57	130	30	4-M5	4-M12	4-M20	1/2"G
NSS-260	1543	351	-----	Ø254	55	171	166	381	337	57	130	30	4-M5	4-M12	4-M20	1/2"G



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	W
NSD-70HW	408	17	18	M6*9	M8*12	50	70	311	136	111	20	47	100	40	Ø180
NSD-80HW	495	17	22	M6*9	M8*12	50	70	357	148	128	20	56	108	46	Ø200
NSD-90HW	565	22	26	M8*12	M10*15	70	102	438	170	139	20	63	120	52	Ø220
NSD-100HW	629	22	26	M8*12	M10*15	70	102	469	195	148	20	66	131	57	Ø220
NSD-125HW	752	27	30	M10*15	M12*18	102	125	565	223	186	30	80	155	69	Ø320
NSD-140HW	834	36	40	M12*20	M20*30	125	165	613	260	220	30	99	156	75	Ø400
NSD-160HW	953	46	46	M12*20	M20*30	125	165	714	288	242	30	113	176	86	Ø400

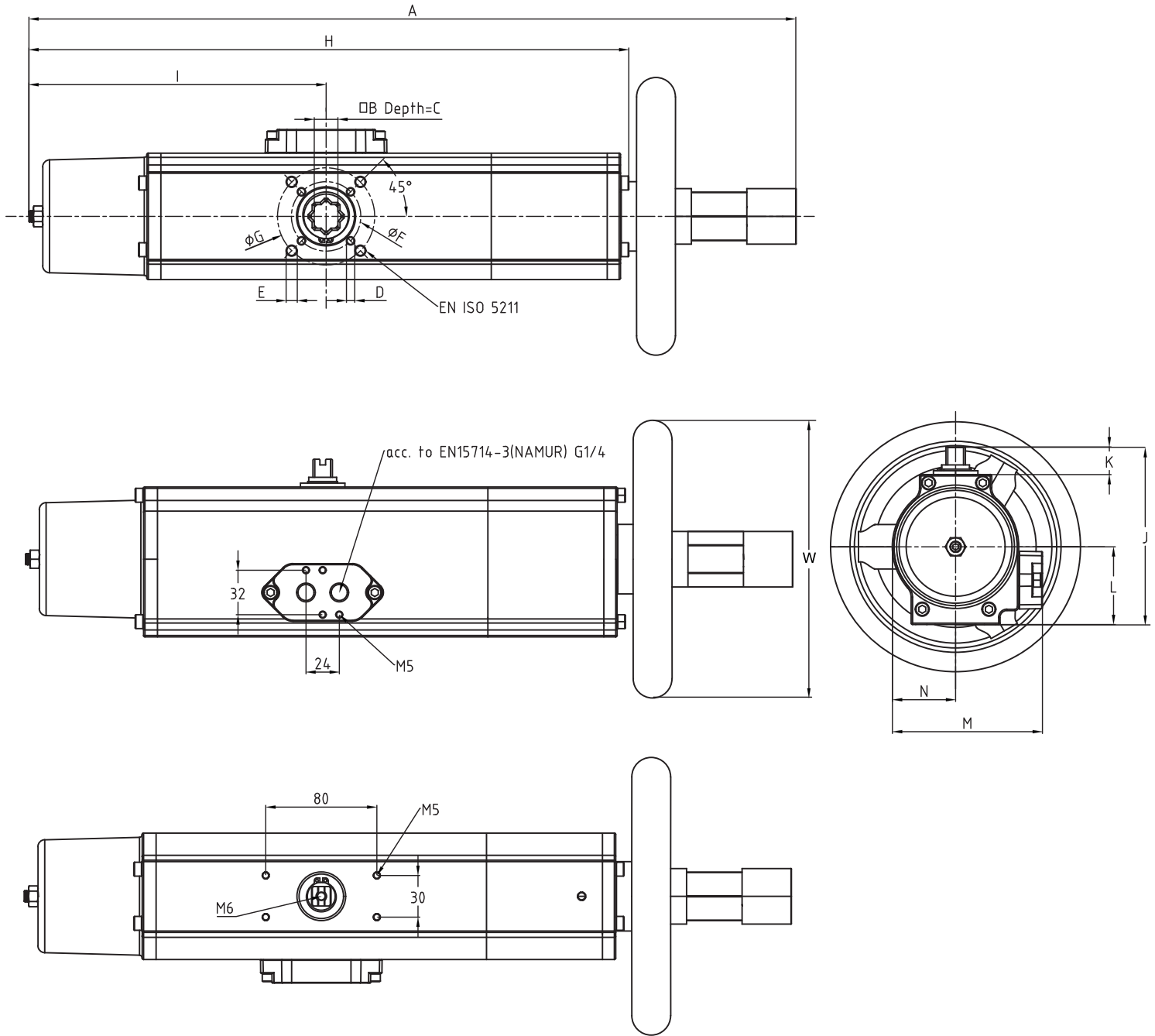
NSD-140HW & NSD-160HW, Ø140 F14(M16\*24)connection size selectable.



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	W
NSD-180HW	1133	46	50	M12*18	M20*30	125	165	275	148	472	101	265	791	328	Ø300
NSD-220HW	1382	55	57	M20*30	---	165	---	314	171	526	142	271	973	397	Ø400
NSD-260HW	1715	55	57	M16*24	---	254	---	380	202	575	173	296	1217	483	Ø500

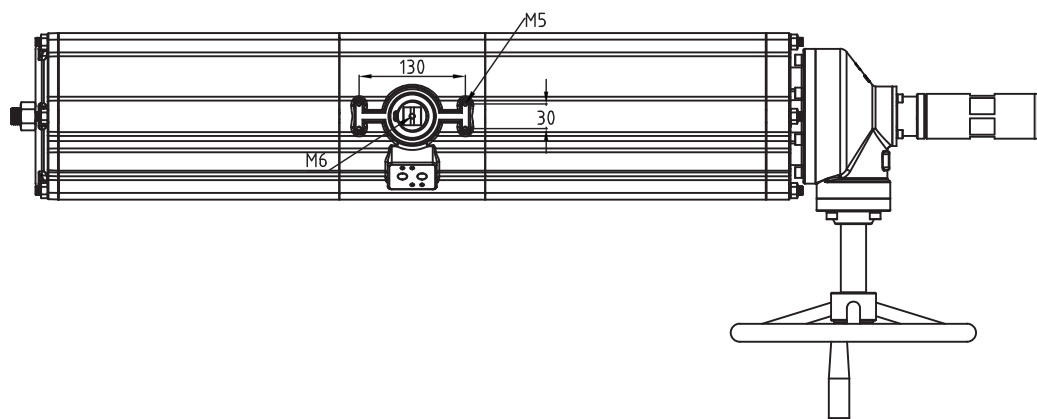
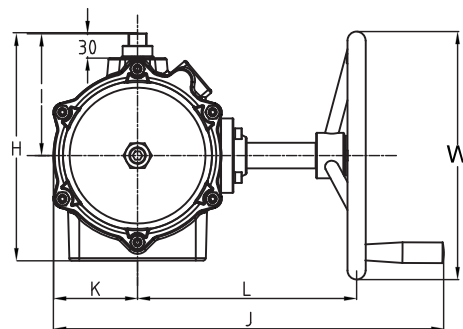
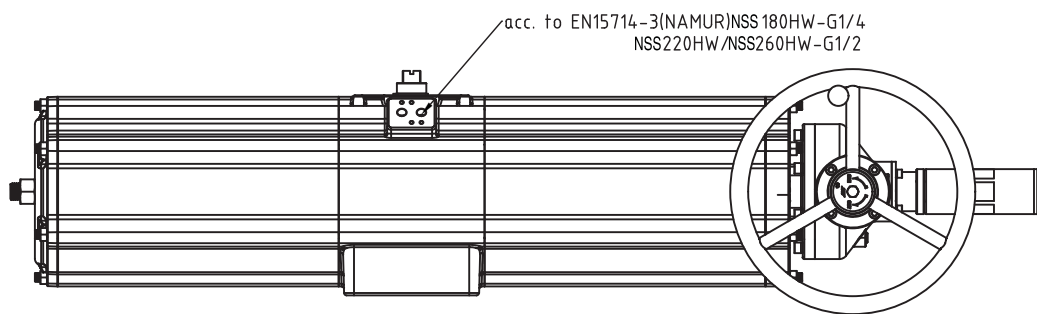
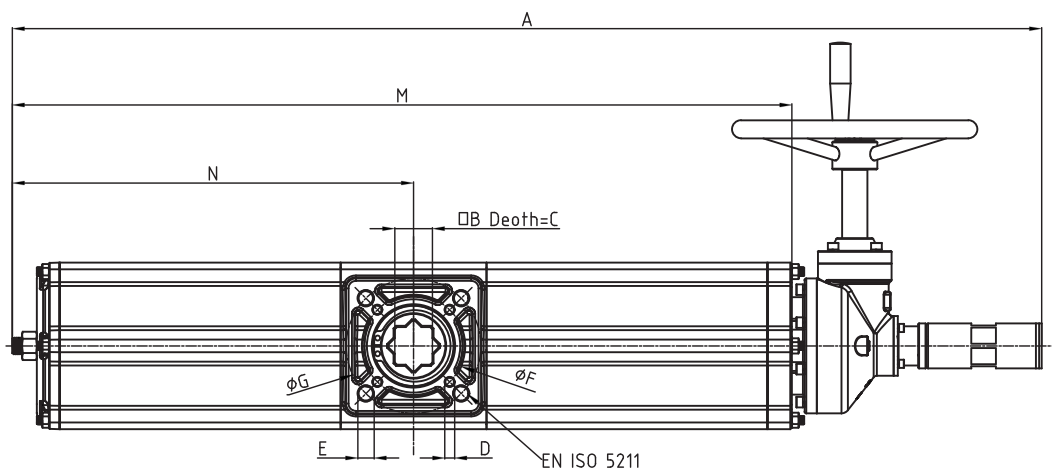
NSD-180HW, Ø140 F14(M16\*24)connection size selectable.



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	W
NSS-70HW	472	17	18	M6*9	M8*12	50	70	374	205	111	20	47	100	40	Ø180
NSS-80HW	553	17	22	M6*9	M8*12	50	70	432	229	128	20	56	108	46	Ø200
NSS-90HW	646	22	26	M8*12	M10*15	70	102	506	255	139	20	63	120	52	Ø220
NSS-100HW	731	22	26	M8*12	M10*15	70	102	571	298	148	20	66	131	57	Ø220
NSS-125HW	881	27	30	M10*15	M12*18	102	125	694	360	186	30	80	155	69	Ø320
NSS-140HW	960	36	40	M12*20	M20*30	125	165	739	390	220	30	99	156	75	Ø400
NSS-160HW	1108	46	46	M12*20	M20*30	125	165	874	440	242	30	113	176	86	Ø400

NSS-140HW & NSS-160HW,  $\phi 140$  F14(M16\*24)connection size selectable.



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	W
NSS-180HW	1270	46	50	M12*18	M20*30	125	165	275	148	472	101	265	944	481	Ø300
NSS-220HW	1560	55	57	M20*30	---	165	---	314	171	526	142	271	1155	580	Ø400
NSS-260HW	1982	55	57	M16*24	---	254	---	380	202	575	173	296	1531	796	Ø500

NSS-180HW, Ø140 F14(M16\*24)connection size selectable.

**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**



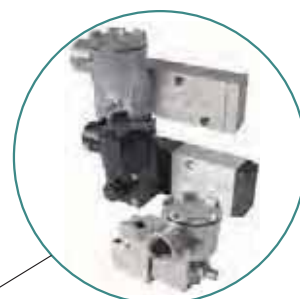
NTQ Series Electric Actuator  
IP67/IP68(30M@24hrs)Enclosure & EExdIIBT6Max. Output Torque 6000Nm  
Approved by SIL3/IP68/MD/LVD/EMC.



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/EExdIICT6



Solenoid Valve 3/2NC & 5/2 Way, Static O-ring Sealing Design.  
Aluminum & 316SS Body  
IP67 & EExdIIBT6/EExdIICT6



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.