

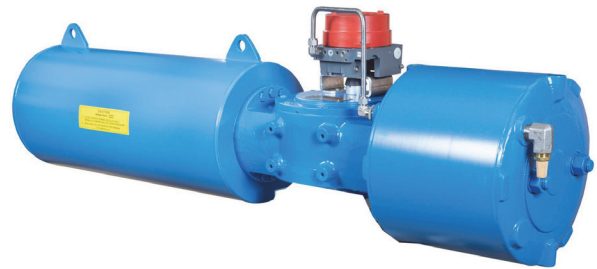
NELES

Neles™ high performance heavy duty scotch yoke actuator, Series N1

The Neles scotch yoke N1 series actuator is designed for use with quarter turn valves in both modulating control and on-off service. Its modular design allows for easy field modification of the actuator. The yoke construction creates high end of stroke torques for reliable use in tight shut-off service and ESD applications up to SIL 3. The N1 actuator's robust design ensures a long life in harsh environments due to unique features such as its internal tie-rod mechanism. This heavy duty actuator has all major approvals to easily meet industry standards and customer process requirements.

Features and benefits

- Suitable for on/off, modulating and control valve applications in general service, protective service and safety applications eg. ESD or HIPPS.
- Ductile cast iron center body, fabricated carbon steel power cylinder and spring module provides rugged actuator construction.
- Suitable for safety integrated systems up to and including SIL 3 accordance with IEC 61508.
- Modular design allows the flexibility of configuring the actuator in either fail open or fail close functions. In case of need an easy on-site modification can be done by interchanging the spring and pneumatic modules..
- Ball bearing, flexi joint and the hardened yoke thrust pin bearing are all incorporated into the actuator for longer life time, smoother operation.
- Internal tie rods providing highest corrosion protection and the best performance.
- The vent valve has built in non-return function for IP67.
- Secondary vent valve for detecting possible leakages in the rod seal area of pneumatic cylinder.
- Springs are non buckling, lifetime lubricated and epoxy coated.
- Full range of accessories: switchboxes, positioners, safety solenoids (ESD, PST) and customized control panels.



Technical specification

- Pneumatic piston type quarter turn actuator
- Spring return and double acting models
- Supply medium: Air, natural gas (sweet), nitrogen
- Design pressure: 12 barg (pressure retaining parts)
- Maximum operating pressure depends on model
- Torque output range
 - Spring return model:
 - Spring nominal: 25 Nm - 79139 Nm, 18 lb ft - 58370 lb ft
 - Air break @ 4.0 barg / 58 psi: 26 Nm - 218765 Nm, 19 lb ft - 161353 lb ft
 - Double acting model:
 - Air break @ 4.0 barg / 58 psi: 71 Nm - 284972 Nm, 52 lb ft - 210184 lb ft
 - Temperature range: Normal -20°...+80 °C, High -20°...+125 °C
- Mounting face in compliance with ISO 5211/1 and VDI/VDE 3845
- Ingress protection class: IP66M & IP 67M
- ATEX 94/9/EC Ex 2G IIC T6 / Ex 2D IIC T80°C.
- Other approvals and certificates:
 - SIL3 capable
 - PED 2014/68/EN for Unfired Pressure Vessels (pending)
 - CE
 - EAC, TR CU (pending)
- External corrosion protection in compliance with ISO 12944-2 and EN 15714-3 class C3; optionally available class C5-I
- Manufactured and tested in compliance with ISO 9001
- Please consult factory for torque details and sizing

ACTUATOR, SERIES N1 TECHNICAL DATA

Stroke volume, dm³ - Single acting and double acting

Cyl. Diam	63	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000	800-2	900-2	1000-2
Actuator	Stroke volume, dm³																		
N1X	0.3	0.6	0.9	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N1A	-	-	0.9	1.4	2.5	3.6	5.7	8.2	11	-	-	-	-	-	-	-	-	-	-
N1B	-	-	-	-	-	-	-	10	14	18	-	-	-	-	-	-	-	-	-
N1C	-	-	-	-	-	-	-	12	17	22	35	-	-	-	-	-	-	-	-
N1D	-	-	-	-	-	-	-	14	20	27	42	63	94	-	-	-	-	-	-
N1E	-	-	-	-	-	-	-	-	-	32	50	76	113	137	171	-	-	-	-
N1G	-	-	-	-	-	-	-	-	-	-	62	93	147	168	202	-	-	-	-
N1H	-	-	-	-	-	-	-	-	-	-	-	115	154	200	261	305	-	-	-
N1J	-	-	-	-	-	-	-	-	-	-	-	-	200	262	331	409	523	662	817

Weights single acting

Cyl. Diam	63	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000	800-2	900-2	1000-2
Actuator	weight, kg																		
N1X	24	30	38	46	60	75	92	110	-	-	-	-	-	-	-	-	-	-	-
N1A	95	110	130	146	162	185	205	230	-	-	-	-	-	-	-	-	-	-	-
N1B	-	-	-	-	-	-	-	220	232	247	-	-	-	-	-	-	-	-	-
N1C	-	-	-	-	-	-	-	354	376	410	441	-	-	-	-	-	-	-	-
N1D	-	-	-	-	-	-	-	490	554	534	570	640	710	-	-	-	-	-	-
N1E	-	-	-	-	-	-	-	-	-	906	919	970	1042	1122	1306	-	-	-	-
N1G	-	-	-	-	-	-	-	-	-	-	1695	1732	1825	1935	2105	-	-	-	-
N1H	-	-	-	-	-	-	-	-	-	-	-	2594	2629	2710	2915	-	-	-	-
N1J	-	-	-	-	-	-	-	-	-	-	-	-	-	5100	5580	6880	6900	7180	8480

Weights double acting

Cyl. Diam	63	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000	800-2	900-2	1000-2
Actuator	weight, kg																		
N1X	15	18	22	32	42	53	68	85	-	-	-	-	-	-	-	-	-	-	-
N1A	60	70	82	95	110	122	135	160	-	-	-	-	-	-	-	-	-	-	-
N1B	-	-	-	-	-	-	-	120	131	147	-	-	-	-	-	-	-	-	-
N1C	-	-	-	-	-	-	-	160	176	190	210	-	-	-	-	-	-	-	-
N1D	-	-	-	-	-	-	-	232	241	260	305	341	422	-	-	-	-	-	-
N1E	-	-	-	-	-	-	-	-	-	504	510	560	632	811	834	-	-	-	-
N1G	-	-	-	-	-	-	-	-	-	-	710	732	817	946	1071	-	-	-	-
N1H	-	-	-	-	-	-	-	-	-	-	-	1152	1189	1270	1475	-	-	-	-
N1J	-	-	-	-	-	-	-	-	-	-	-	-	1610	1800	2000	3300	2900	3600	4900

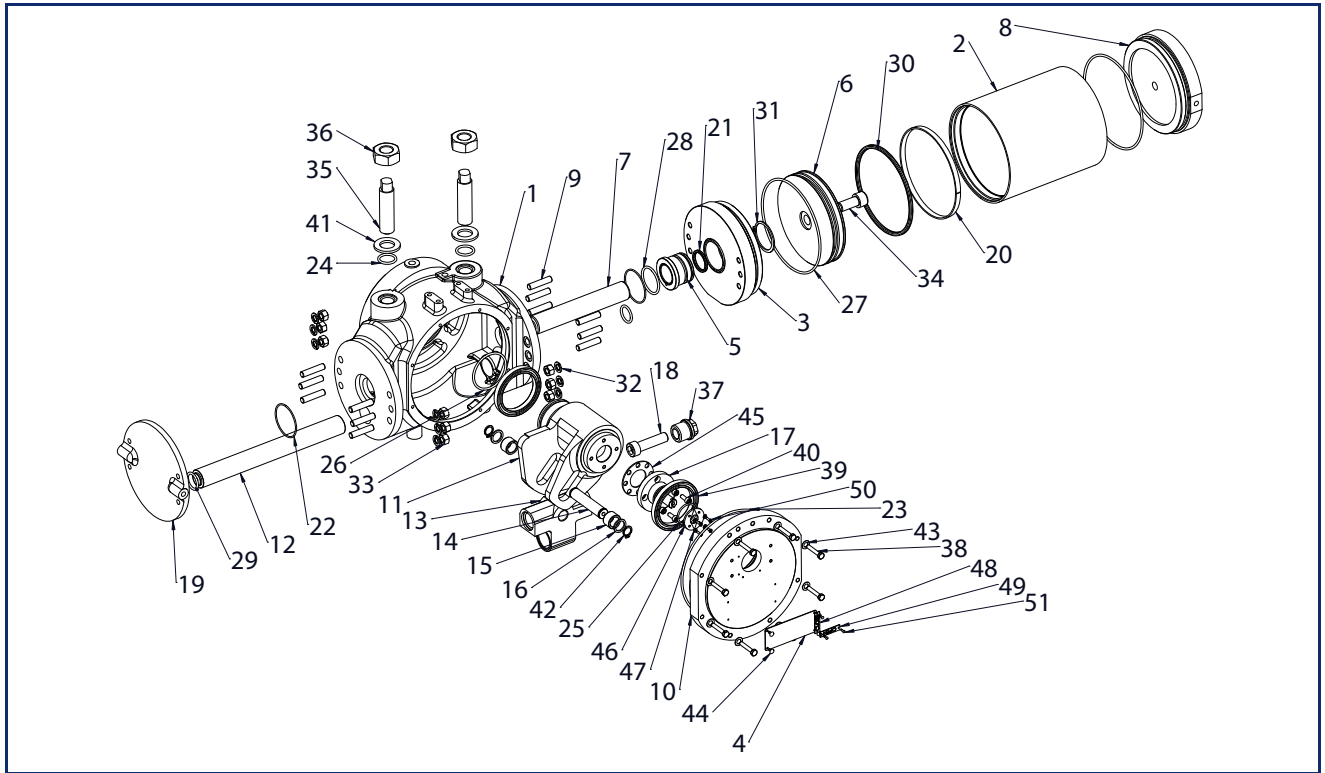
Maximum operating pressure

Cyl. Diam	63	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000	800-2	900-2	1000-2
Actuator	maximum operating pressure. barg																		
N1X	8.0	8.0	8.0	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N1A	-	-	8.0	8.0	8.0	8.0	8.0	8.0	6.0	-	-	-	-	-	-	-	-	-	-
N1B	-	-	-	-	-	-	-	8.0	7.7	6.0	-	-	-	-	-	-	-	-	-
N1C	-	-	-	-	-	-	-	8.0	8.0	8.0	6.0	-	-	-	-	-	-	-	-
N1D	-	-	-	-	-	-	-	8.0	8.0	8.0	6.0	5.5	5.5	-	-	-	-	-	-
N1E	-	-	-	-	-	-	-	-	-	8.0	6.0	5.5	5.5	5.5	5.5	-	-	-	-
N1G	-	-	-	-	-	-	-	-	-	-	6.0	5.5	5.5	5.5	5.5	-	-	-	-
N1H	-	-	-	-	-	-	-	-	-	-	-	5.5	5.5	5.5	5.5	5.5	-	-	-
N1J	-	-	-	-	-	-	-	-	-	-	-	-	5.5	5.5	5.5	5.5	5.5	5.5	4.5

Note: Actuator output torques - consult factory.

EXPLODED VIEWS AND PARTS LISTS

DOUBLE ACTING ACTUATOR, CYLINDER SIZES FROM 63 TO 150

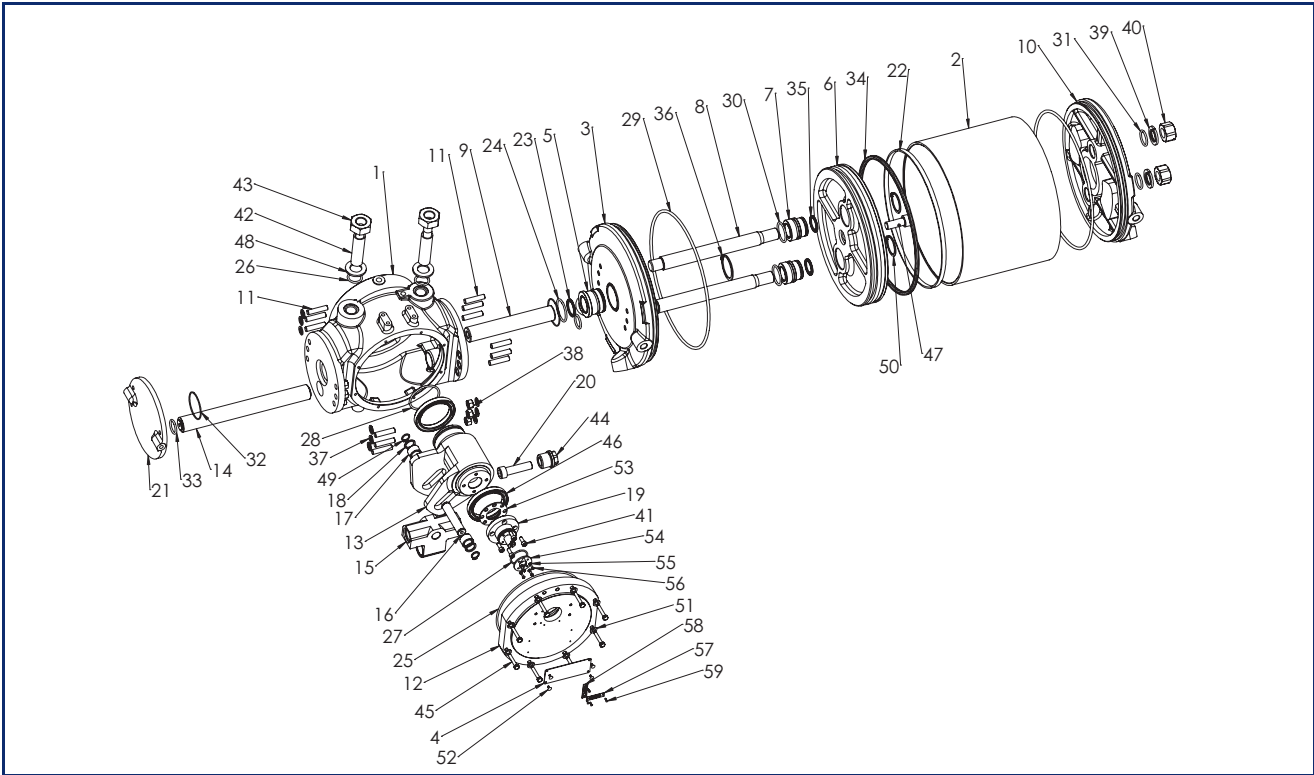


Item no.	DISCRIPTION	QTY.	MATERIAL
1	CENTRAL BLOCK	1	DUCTILE IRON
2	CYLINDER	1	CARBON STEEL / CHROME PLATED
3	CYLINDER FRONT COVER	1	CARBON STEEL
4	NAME PLATE	1	STAINLESS STEEL
5	BEARING BUSH	1	CARBONSTEEL + PHOSPHOR BRONZE
6	PISTON	1	CARBON STEEL
7	PISTON ROD	1	STAINLESS STEEL
8	CYLINDER REAR COVER	1	CARBON STEEL
9	STUD BOLT	12	ALLOY STEEL
10	CENTRAL BLOCK COVER	1	DUCTILE IRON
11	YOKE	1	DUCTILE IRON
12	GUIDE ROD	1	STAINLESS STEEL
13	CARRIER	1	DUCTILE IRON
14	YOKE PIN	1	ALLOY STEEL
15	ROLLER FOR YOKE PIN	2	ALLOY STEEL
16	WASHER	2	STAINLESS STEEL
17	YOKE INSERT	1	DUCTILE IRON
18	CONNECTING BOLT PNEUMATIC SIDE	1	ALLOY STEEL
19	REAR CAP	1	DUCTILE IRON
20	PISTON STRIP	1	DELTRIN
21	ROD SEAL	1	NBR
22	O-RING	1	NBR
23	O-RING	1	NBR
24	O-RING	2	NBR
25	O-RING	1	NBR
26	O-RING	1	NBR

Item no.	DISCRIPTION	QTY.	MATERIAL
27	O-RING	2	NBR
28	O-RING	2	NBR
29	O-RING	2	NBR
30	QUAD SEAL	1	NBR
31	EXTERNAL CIRCLIP	1	DIN 471
32	SPRING WASHER	12	DIN 128
33	HEX. NUT	12	DIN 934 CLASS 12
34	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS-12.9
35	STROKE ADJUSTMENT SCREW	2	CARBON STEEL
36	HEX. NUT	2	DIN 934 CLASS 12
37	CONNECTING NUT	2	ALLOY STEEL
38	HEX. SOC. HEAD CAP SCREW	8	DIN 912 CLASS-8.8
39	RADIAL BALL BEARING	2	-
40	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS-8.8
41	WASHER	2	CARBON STEEL
42	EXTERNAL CIRCLIP	2	DIN 471
43	SPRING WASHER	8	DIN 128
44	RIVET	4	-
45	GASKET FOR COVER	1	NBR
46	POSITION INDICATOR	1	ALUMINIUM ALLOY
47	SPRING WASHER	4	DIN 128
48	CLOSE POSITION INDICATOR	1	STAINLESS SHEEL
49	OPEN POSITION INDICATOR	1	STAINLESS STEEL
50	SLOTTED HEAD CAP SCREW	4	IS 6101
51	RIVET	4	-

Spare part category 1: Marked components are the parts of the seal kit
 Spare part category 2: Marked components are the parts of the repair kit
 Spare part category 3: Marked components are critical components

DOUBLE ACTING ACTUATOR, CYLINDER SIZES FROM 200 TO 1000

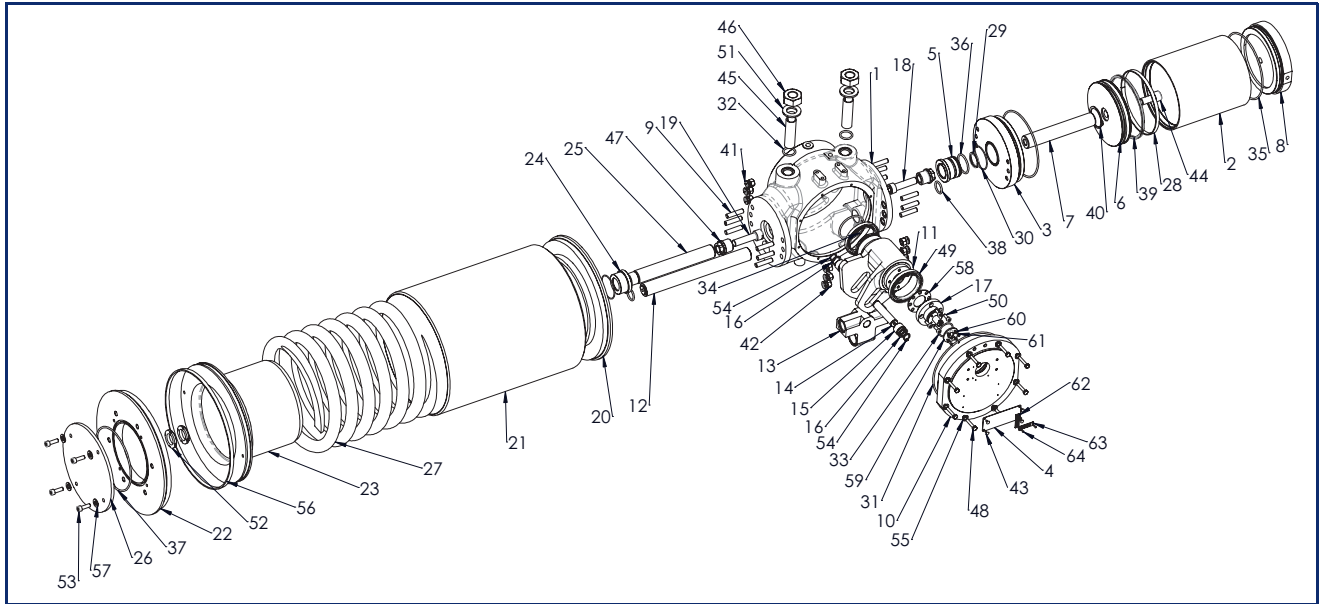


Item no.	DISCRIPTION	QTY.	MATERIAL
1	CENTRAL BLOCK	1	DUCTILE IRON
2	CYLINDER	1	CARBON STEEL / CHROME PLATED
3	CYLINDER FRONT COVER	1	CARBON STEEL
4	NAME PLATE	1	STAINLESS STEEL
5	BEARING BUSH	1	CARBONSTEEL + PHOSPHOR BRONZE
6	PISTON	1	CARBON STEEL
7	GUIDE BUSH	2	CARBONSTEEL + PHOSPHOR BRONZE
8	TIE ROD	2	STAINLESS STEEL
9	PISTON ROD	1	STAINLESS STEEL
10	CYLINDER REAR COVER	1	CARBON STEEL
11	STUD BOLT	12	ALLOY STEEL
12	CENTRAL BLOCK COVER	1	DUCTILE IRON
13	YOKE	1	DUCTILE IRON
14	GUIDE ROD	1	STAINLESS STEEL
15	CARRIER	1	DUCTILE IRON
16	YOKE PIN	1	ALLOY STEEL
17	ROLLER FOR YOKE PIN	2	ALLOY STEEL
18	WASHER	2	STAINLESS STEEL
19	YOKE INSERT	1	DUCTILE IRON
20	CONNECTING BOLT PNEUMATIC SIDE	1	ALLOY STEEL
21	REAR CAP	1	DUCTILE IRON
22	PISTON STRIP	1	DELTRIN
23	ROD SEAL	1	NBR
24	O-RING	1	NBR
25	O-RING	1	NBR
26	O-RING	2	NBR
27	O-RING	1	NBR
28	O-RING	1	NBR
29	O-RING	2	NBR
30	O-RING	2	NBR

Item no.	DISCRIPTION	QTY.	MATERIAL
31	O-RING	2	NBR
32	O-RING	2	NBR
33	O-RING	2	NBR
34	QUAD SEAL	1	NBR
35	QUAD SEAL	2	NBR
36	EXTERNAL CIRCLIP	1	DIN 471
37	SPRING WASHER	12	DIN 128
38	HEX. NUT	12	DIN 934 CLASS 12
39	SPRING WASHER	2	DIN 128
40	HEX. NUT	2	DIN 934 CLASS-10
41	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS-12.9
42	STROKE ADJUSTMENT SCREW	2	CARBON STEEL
43	HEX. NUT	2	DIN 934 CLASS 12
44	CONNECTING NUT	2	ALLOY STEEL
45	HEX. SOC. HEAD CAP SCREW	8	DIN 912 CLASS 8.8
46	RADIAL BALL BEARING	2	-
47	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS-12.9
48	WASHER	2	DIN 128
49	EXTERNAL CIRCLIP	2	DIN 471
50	CIRCLIP	2	DIN 471
51	SPRING WASHER	8	DIN 128
52	RIVET	1	-
53	GASKET FOR COVER		NBR
54	POSITION INDICATOR		ALUMINIUM ALLOY
55	SPRING WASHER		DIN 128
56	SLOTTED HEAD CAP SCREW		IS 6101
57	CLOSE POSITION INDICATOR		STAINLESS STEEL
58	OPEN POSITION INDICATOR		STAINLESS STEEL
59	RIVET		-

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 Spare part category 2: Marked components are the parts of the repair kit
 Spare part category 3: Marked components are critical components

SINGLE ACTING ACTUATOR, CYLINDER SIZES FROM 63 TO 150

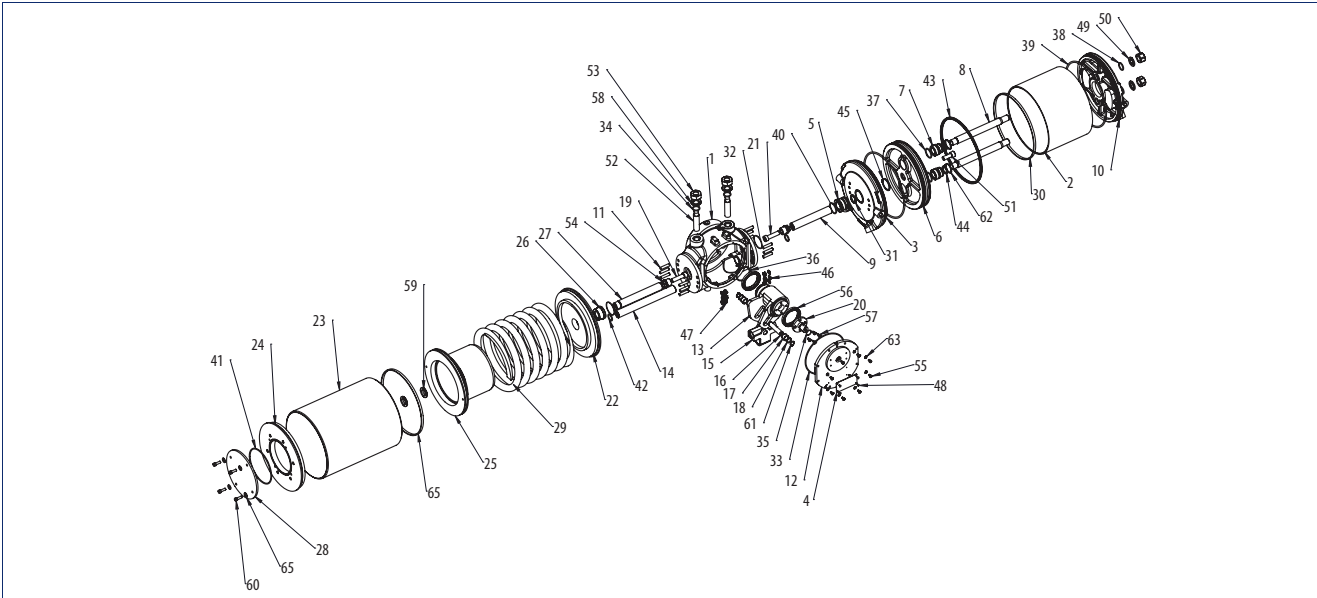


Item no.	DESCRIPTION	QTY.	SPARE CAT.
1	CENTRAL BLOCK	1	DUCTILE IRON
2	CYLINDER	1	CARBON STEEL / CHROME PLATED
3	CYLINDER FRONT COVER	1	CARBON STEEL
4	NAME PLATE	1	STAINLESS STEEL
5	BEARING BUSH	1	CARBONSTEEL + PHOSPHOR BRONZE
6	PISTON	1	CARBON STEEL
7	PISTON ROD	1	STAINLESS STEEL
8	CYLINDER REAR COVER	1	CARBON STEEL
9	STUD BOLT	12	ALLOY STEEL
10	CENTRAL BLOCK COVER	1	DUCTILE IRON
11	YOKE	1	STAINLESS STEEL
12	GUIDE ROD	1	STAINLESS STEEL
13	CARRIER	1	STAINLESS STEEL
14	YOKE PIN	1	ALLOY STEEL
15	ROLLER FOR YOKE PIN	2	ALLOY STEEL
16	WASHER	2	STAINLESS STEEL
17	YOKE INSERT	1	DUCTILE IRON
18	CONNECTING BOLT PNEUMATIC SIDE	1	ALLOY STEEL
19	CONNECTING BOLT SPRING SIDE	1	ALLOY STEEL
20	SPRING COVER FRONT END	1	CARBON STEEL
21	E- TUBE	1	CARBON STEEL
22	SPRING COVER REAR END	1	CARBON STEEL
23	SPRING RETAINER	1	DUCTILE IRON
24	BEARING BUSH	1	CARBONSTEEL + PHOSPHOR BRONZE
25	CONNECTING ROD	1	STAINLESS STEEL
26	E-COVER REAR CAP	1	CARBONSTEEL
27	SPRING	1	ALLOY STEEL
28	PISTON STRIP	1	DELTRIN
29	ROD SEAL	1	NBR

Item no.	DESCRIPTION	QTY.	SPARE CAT.
30	O-RING	2	NBR
31	O-RING	1	NBR
32	O-RING	2	NBR
33	O-RING	1	NBR
34	O-RING	1	NBR
35	O-RING	2	NBR
36	O-RING	1	NBR
37	O-RING	1	NBR
38	O-RING	2	NBR
39	QUAD SEAL	1	NBR
40	EXTERNAL CIRCLIP	1	DIN 471
41	SPRING WASHER	12	DIN 128
42	HEX. NUT	12	DIN 934 CLASS 12
43	RIVET	4	-
44	HEX. SOC. HEAD CAP SCREW	1	DIN 912 CLASS-12.9
45	STROKE ADJUSTMENT SCREW	2	CARBON STEEL
46	HEX. NUT	2	DIN 934 CLASS 12
47	CONNECTING NUT	2	ALLOY STEEL
48	HEX. SOC. HEAD CAP SCREW	8	DIN 912 CLASS-8.8
49	RADIAL BALL BEARING	2	-
50	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS-8.8
51	WASHER	2	CARBON STEEL
52	SLOTTED ROUND NUT	2	-
53	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS-8.8
54	EXTERNAL CIRCLIP	2	DIN 471
55	SPRING WASHER	8	DIN 128
56	RETAINER GUIDE STRIP	1	CFT
57	SPRING WASHER	4	DIN 128
58	GASKET FOR COVER	1	NBR
59	POSITION INDICATOR	1	ALUMINIUM ALLOY
60	SPRING WASHER	4	DIN 128
61	SLOTTED HEAD CAP SCREW	4	IS 6101
62	CLOSE POSITION INDICATOR	1	STAINLESS STEEL
63	OPEN POSITION INDICATOR	1	STAINLESS STEEL
64	REVIT	4	-

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SINGLE ACTING ACTUATOR, CYLINDER SIZES FROM 200 TO 1000



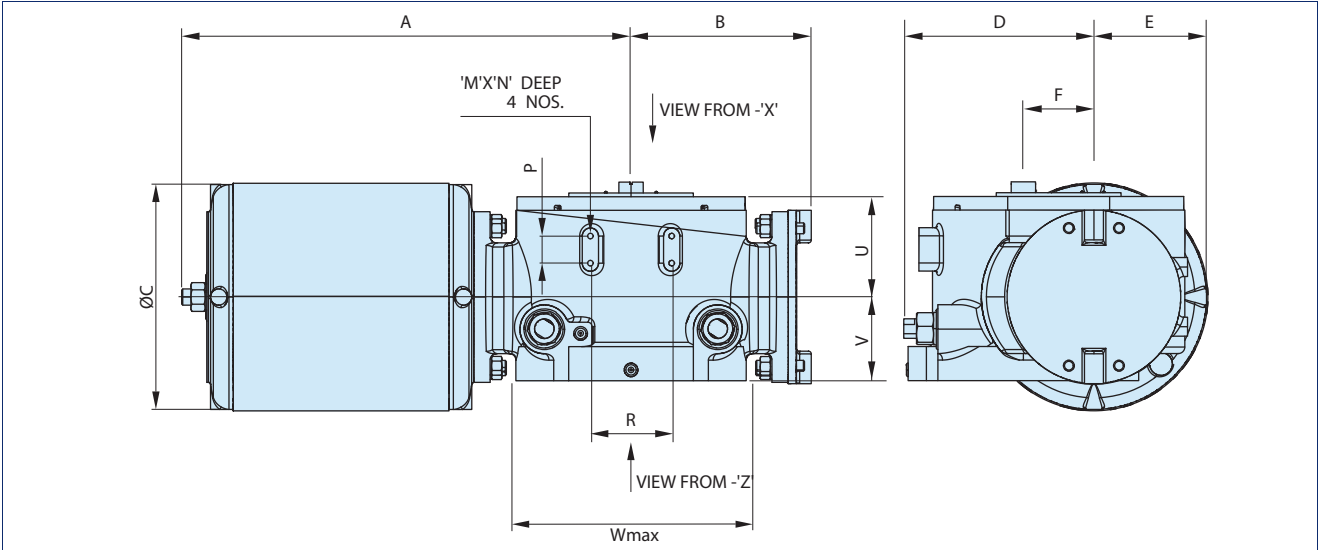
Item no.	DESCRIPTION	QTY.	SPARE CAT.
1	CENTRAL BLOCK	1	DUCTILE IRON
2	CYLINDER	1	CARBON STEEL / CHROME PLATED
3	CYLINDER FRONT COVER	1	CARBON STEEL
4	NAME PLATE	1	STAINLESS STEEL
5	BEARING BUSH	1	CARBONSTEEL + PHOSPHOR BRONZE
6	PISTON	1	CARBON STEEL
7	GUIDE BUSHING		CARBONSTEEL + PHOSPHOR BRONZE
8	TIE ROD		STAINLESS STEEL
9	PISTON ROD	1	STAINLESS STEEL
10	CYLINDER REAR COVER	1	CARBON STEEL
11	STUD BOLT	12	ALLOY STEEL
12	CENTRAL BLOCK COVER	1	DUCTILE IRON
13	YOKE	1	DUCTILE IRON
14	GUIDE ROD	1	STAINLESS STEEL
15	CARRIER	1	DUCTILE IRON
16	YOKE PIN	1	ALLOY STEEL
17	ROLLER FOR YOKE PIN	2	ALLOY STEEL
18	WASHER	2	STAINLESS STEEL
19	YOKE INSERT	1	DUCTILE IRON
20	CONNECTING BOLT PNEUMATIC SIDE	1	ALLOY STEEL
21	CONNECTING BOLT SPRING SIDE	1	ALLOY STEEL
22	SPRING COVER FRONT END	1	CARBON STEEL
23	E- TUBE	1	CARBON STEEL
24	SPRING COVER REAR END	1	CARBON STEEL
25	SPRING RETAINER	1	DUCTILE IRON
26	BEARING BUSH	1	CARBONSTEEL + PHOSPHOR BRONZE
27	CONNECTING ROD	1	STAINLESS STEEL
28	E-COVER REAR CAP	1	CARBON STEEL
29	SPRING	1	ALLOY STEEL
30	PISTON STRIP	1	DELTRIN
31	ROD SEAL	1	NBR
32	O-RING	2	NBR
33	O-RING	1	NBR

Item no.	DESCRIPTION	QTY.	SPARE CAT.
34	O-RING	2	NBR
35	O-RING	1	NBR
36	O-RING	1	NBR
37	O-RING	2	NBR
38	O-RING	2	NBR
39	O-RING	2	NBR
40	O-RING	1	NBR
41	O-RING	1	NBR
42	O-RING	2	NBR
43	QUAD SEAL	1	NBR
44	QUAD SEAL	2	NBR
45	EXTERNAL CIRCLIP	1	DIN 471
46	SPRING WASHER	12	DIN 128
47	HEX. NUT	12	DIN 934 CLASS 12
48	RIVET	4	-
49	SPRING WASHER	2	DIN 934 CLASS 12
50	HEX NUT	2	DIN 934 CLASS 12
51	HEX. SOC. HEAD CAP SCREW	1	DIN 912 CLASS-12.9
52	STROKE ADJUSTMENT SCREW	2	CARBON STEEL
53	HEX. NUT	2	DIN 934 CLASS 12
54	CONNECTING NUT	2	ALLOY STEEL
55	HEX. SOC. HEAD CAP SCREW	8	DIN 912 CLASS 8.8
56	RADIAL BALL BEARING	2	-
57	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS 8.8
58	WASHER	2	CARBON STEEL
59	SLOTTED ROUND NUT	2	-
60	HEX. SOC. HEAD CAP SCREW	4	DIN 912 CLASS 8.8
61	EXTERNAL CIRCLIP	2	DIN 471
62	EXTERNAL CIRCLIP	2	DIN 471
63	SPRING WASHER	8	DIN 128
64	RETAINER GUIDE STRIP	1	CFT
65	SPRING WASHER	4	DIN 128
66	GASKET FOR COVER		NBR
67	POSITION INDICATOR		ALUMINIUM ALLOY
68	SPRING WASHER		DIN 128
69	SLOTTED HEAD CAP SCREW		IS 6101
70	CLOSE POSITION INDICATOR		STAINLESS STEEL
71	OPEN POSITION INDICATOR		STAINLESS STEEL
72	RIVET		-

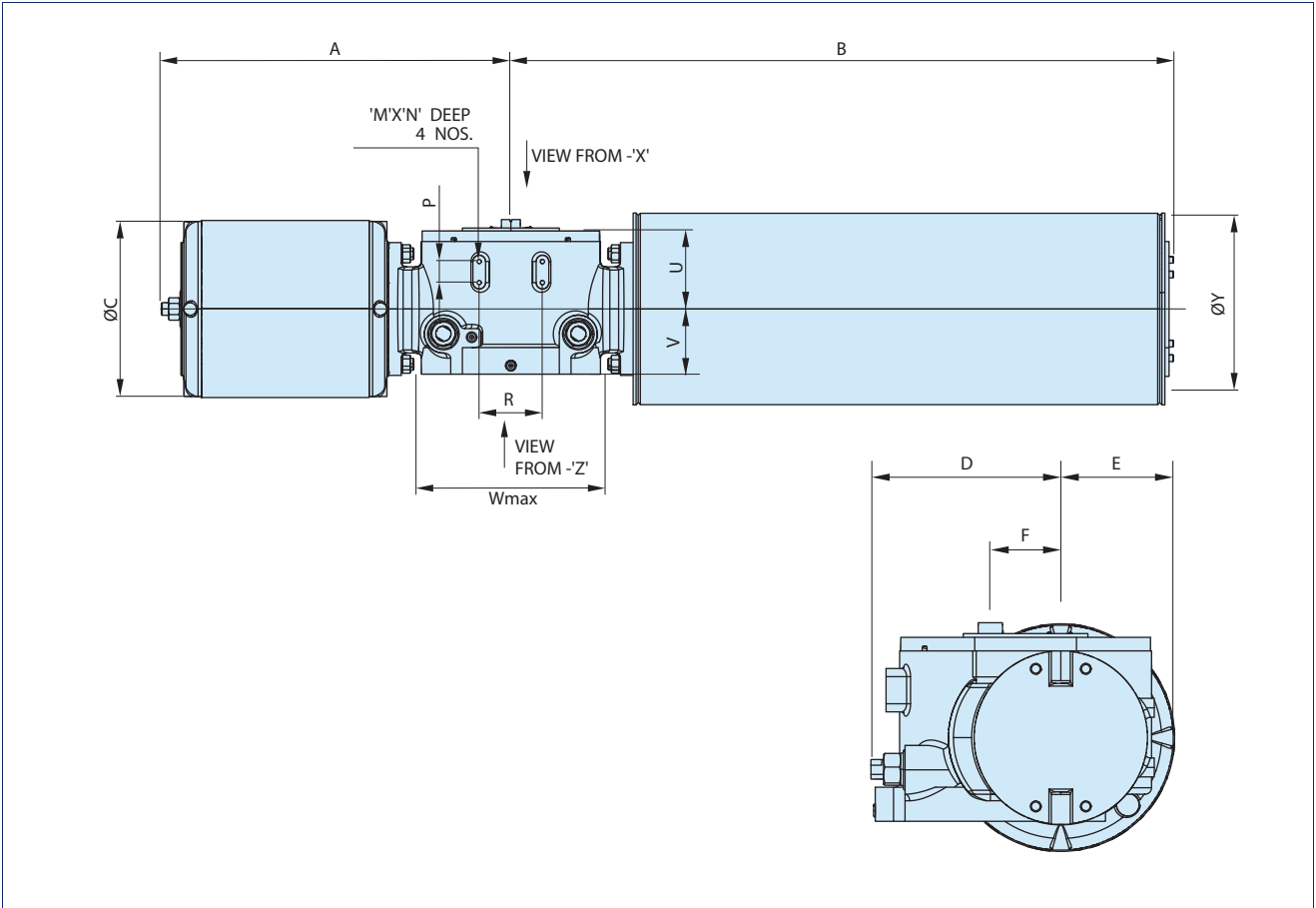
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DIMENSIONS

DOUBLE ACTING ACTUATOR



SINGLE ACTING ACTUATOR



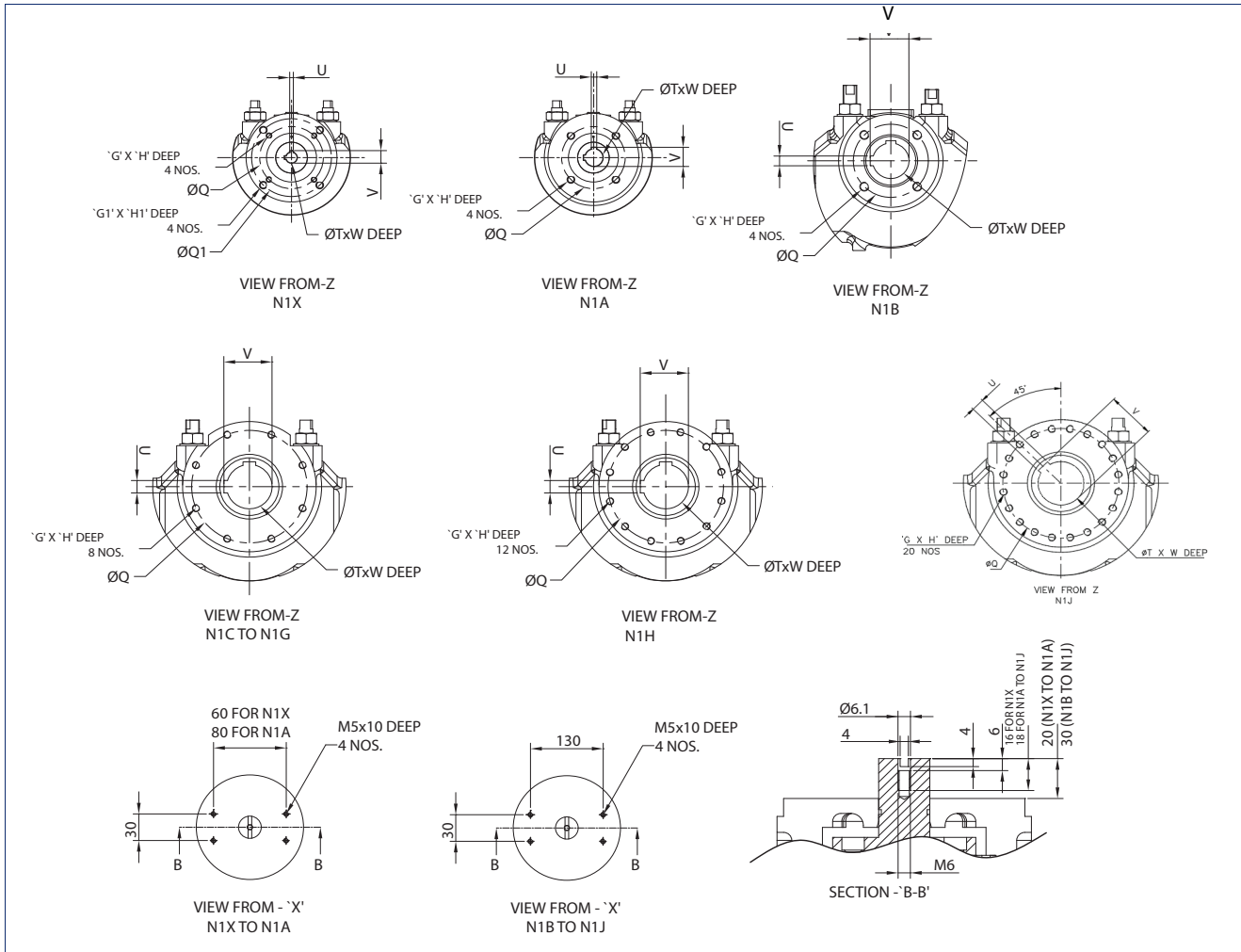
Dimensions double acting actuator

MODEL	A	B	Øc	D	E	F	M	N	P	R	Wmax	U	V	S
N1X0063	239	365	84	116	73	28	M6	9	20	30	125	67	58	1/4" NPT
N1X0080	237	365	100	116	73	28	M6	9	20	30	125	67	58	1/4" NPT
N1X0100	257	365	122	116	73	28	M6	9	20	30	125	67	58	1/4" NPT
N1X0125	285	365	150	116	73	28	M6	9	20	30	125	67	58	1/4" NPT
N1A0100	385	171	122	194	88	58	M8	12	25	60	200	94	86	1/4" NPT
N1A0125	411	171	150	194	88	58	M8	12	25	60	200	94	86	1/4" NPT
N1A0150	395	171	175	194	88	58	M8	12	25	60	200	94	86	3/8" NPT
N1A0200	476	171	210	194	88	58	M8	12	25	60	200	94	86	1/2" NPT
N1A0250	413	171	260	194	130	58	M8	12	25	60	200	94	86	1/2" NPT
N1A0300	456	171	310	194	155	58	M8	12	25	60	200	94	86	3/4" NPT
N1A0350	459	171	360	194	180	58	M8	12	25	60	200	94	86	3/4" NPT
N1B0250	568	230	260	245	130	75	M10	15	25	80	210	102	105	1/2" NPT
N1B0300	548	230	308	245	155	75	M10	15	25	80	210	102	105	3/4" NPT
N1B0350	551	230	360	245	180	75	M10	15	25	80	210	102	105	3/4" NPT
N1B0400	596	230	416	245	208	75	M10	15	25	80	210	102	105	3/4" NPT
N1C0300	599	248	308	252	155	90	M10	15	50	90	294	130	112	3/4" NPT
N1C0350	583	248	360	252	180	90	M10	15	50	90	294	130	112	3/4" NPT
N1C0400	660	248	416	252	208	90	M10	15	50	90	294	130	112	3/4" NPT
N1C0500	675	248	522	252	257	90	M10	15	50	90	294	130	112	3/4" NPT
N1D0300	786	328	308	321	180	108	M12	15	50	150	350	138	121	3/4" NPT
N1D0350	789	328	366	321	180	108	M12	15	50	150	350	138	121	3/4" NPT
N1D0400	736	328	416	321	208	108	M12	15	50	150	350	138	121	3/4" NPT
N1D0500	739	328	522	321	257	108	M12	15	50	150	350	138	121	3/4" NPT
N1D0600	767	328	624	321	312	108	M12	15	50	150	350	138	121	1" NPT
N1D0700	819	328	725	321	304	108	M12	15	50	150	350	138	121	1" NPT
N1E0500	832	365	522	368	257	130	M12	15	50	150	425	199	155	3/4" NPT
N1E0600	849	365	624	368	312	130	M12	15	50	150	425	199	155	1" NPT
N1E0700	902	365	725	368	404	130	M12	15	50	150	425	199	155	1" NPT
N1E0800	912	365	826	368	458	130	M12	15	50	150	425	199	155	1" NPT
N1E0900	985	365	926	368	558	130	M12	15	50	150	425	199	155	1 1/2" NPT
N1G0600	975	450	624	444	312	160	M12	15	50	150	475	251	177	1" NPT
N1G0700	1035	450	725	444	404	160	M12	15	50	150	475	251	177	1" NPT
N1G0800	1065	450	826	444	458	160	M12	15	50	150	475	251	177	1" NPT
N1G0900	1095	450	926	444	558	160	M12	15	50	150	475	251	177	1 1/2" NPT
N1H0700	1228	566	724	549	404	198	M12	15	50	150	600	222	213	1" NPT
N1H0800	1253	566	824	549	458	198	M12	15	50	150	600	222	213	1" NPT
N1H0900	1305	566	925	549	558	198	M12	15	50	150	600	222	213	1 1/2" NPT
N1H1000	1284	566	1040	549	549	198	M12	15	50	150	600	222	213	1 1/2" NPT
N1H0800-2	1944	566	824	549	558	198	M12	15	50	150	600	222	213	1" NPT
N1J0700	1498	676	724	677	404	260	M16	32	100	300	686	299	247	1" NPT
N1J0800	1517	676	824	677	458	260	M16	32	100	300	686	299	247	1" NPT
N1J0900	1570	676	926	677	558	260	M16	32	100	300	686	299	247	1 1/2" NPT
N1J1000	1529	676	1040	677	549	260	M16	32	100	300	686	299	247	1 1/2" NPT
N1J0800-2	2363	676	826	677	458	260	M16	32	100	300	686	299	247	1" NPT
N1J0900-2	2414	676	926	677	558	260	M16	32	100	300	686	299	247	1 1/2" NPT
N1J1000-2	2420	676	1040	677	549	260	M16	32	100	300	686	299	247	1 1/2" NPT

Dimensions single acting actuator

MODEL	A	B	ØC	D	E	F	M	N	P	R	Wmax	U	V	ØY	S
N1X0063-E1-E5	239	365	84	116	73	28	M6	9	20	30	125	67	58	170	1/4" NPT
N1X0080-E1-E5	237	365	100	116	73	28	M6	9	20	30	125	67	58	170	1/4" NPT
N1X0100-E1-E4	257	365	122	116	73	28	M6	9	20	30	125	67	58	170	1/4" NPT
N1X0125-E1-E2	285	365	150	116	73	28	M6	9	20	30	125	67	58	170	1/4" NPT
N1A0100-E7	385	573	122	194	88	58	M8	12	25	60	200	94	86	310	1/4" NPT
N1A0100-E8-E11	385	498	122	194	88	58	M8	12	25	60	200	94	86	225	1/4" NPT
N1A0125-E7	411	573	150	194	88	58	M8	12	25	60	200	94	86	310	1/4" NPT
N1A0125-E8-E11	411	498	150	194	88	58	M8	12	25	60	200	94	86	225	1/4" NPT
N1A0150-E5-E7	395	573	175	194	88	58	M8	12	25	60	200	94	86	310	3/8" NPT
N1A0150-E8-E11	395	498	175	194	88	58	M8	12	25	60	200	94	86	225	3/8" NPT
N1A0200-E2-E4	476	612	210	194	88	58	M8	12	25	60	200	94	86	360	1/2" NPT
N1A0200-E5-E6	476	573	210	194	88	58	M8	12	25	60	200	94	86	310	1/2" NPT
N1A0250-E1-E4	413	612	260	194	194	58	M8	12	25	60	200	94	86	360	1/2" NPT
N1A0250-E5-E6	413	573	260	194	194	58	M8	12	25	60	200	94	86	310	1/2" NPT
N1A0300-E1-E4	456	612	310	194	194	58	M8	12	25	60	200	94	86	360	3/4" NPT
N1A0300-E5	456	573	310	194	194	58	M8	12	25	60	200	94	86	310	3/4" NPT
N1A0350-E1-E4	459	612	360	194	194	58	M8	12	25	60	200	94	86	360	3/4" NPT
N1B0250-E1-E6	568	955	260	245	130	75	M10	15	25	80	210	102	105	321	1/2" NPT
N1B0300-E1-E6	548	955	308	245	155	75	M10	15	25	80	210	102	105	321	3/4" NPT
N1B0350-E1-E6	551	955	360	245	180	75	M10	15	25	80	210	102	105	321	3/4" NPT
N1B0400-E1-E6	596	955	416	245	208	75	M10	15	25	80	210	102	105	321	3/4" NPT
N1C0300-E1-E4	599	1060	308	252	155	90	M10	15	50	90	294	130	112	379	3/4" NPT
N1C0350-E1-E4	583	1060	360	252	180	90	M10	15	50	90	294	130	112	379	3/4" NPT
N1C0400-E1-E4	660	1060	416	252	208	90	M10	15	50	90	294	130	112	379	3/4" NPT
N1C0500-E1-E4	675	1060	522	252	257	90	M10	15	50	90	294	130	112	379	3/4" NPT
N1D0300-E4	786	1287	308	321	180	108	M12	15	50	150	350	138	121	434	3/4" NPT
N1D0350-E3-E4	789	1287	366	321	180	108	M12	15	50	150	350	138	121	434	3/4" NPT
N1D0400-E1-E4	736	1287	416	321	208	108	M12	15	50	150	350	138	121	434	3/4" NPT
N1D0500-E1-E4	739	1287	522	321	257	108	M12	15	50	150	350	138	121	434	3/4" NPT
N1D0600-E1-E4	767	1287	624	321	312	108	M12	15	50	150	350	138	121	434	1" NPT
N1D0700-E1-E3	819	1287	725	321	363	108	M12	15	50	150	350	138	121	434	1" NPT
N1E0500-E3-E4	832	1573	522	368	257	130	M12	15	50	150	425	199	155	454	3/4" NPT
N1E0600-E1-E4	849	1573	624	368	312	130	M12	15	50	150	425	199	155	454	1" NPT
N1E0700-E1-E4	902	1573	725	368	404	130	M12	15	50	150	425	199	155	454	1" NPT
N1E0800-E1-E4	912	1573	826	368	458	130	M12	15	50	150	425	199	155	454	1" NPT
N1E0900-E1-E4	985	1573	926	368	558	130	M12	15	50	150	425	199	155	454	1 1/2" NPT
N1G0600-E1-E4	975	2380	624	444	312	160	M12	15	50	150	475	251	177	550	1" NPT
N1G0700-E1-E4	1035	2380	725	444	404	160	M12	15	50	150	475	251	177	550	1" NPT
N1G0800-E1-E4	1065	2380	826	444	458	160	M12	15	50	150	475	251	177	550	1" NPT
N1G0900-E1-E4	1095	2380	926	444	558	160	M12	15	50	150	475	251	177	550	1" NPT
N1H0700-E1	1228	2615	724	549	404	198	M12	15	50	150	600	222	213	684	1" NPT
N1H0700-E2	1228	2382	724	549	404	198	M12	15	50	150	600	222	213	628	1" NPT
N1H0700-E3	1228	1942	724	549	404	198	M12	15	50	150	600	222	213	605	1" NPT
N1H0800-E1	1253	2615	824	549	458	198	M12	15	50	150	600	222	213	684	1" NPT
N1H0800-E2	1253	2382	824	549	458	198	M12	15	50	150	600	222	213	628	1" NPT
N1H0800-E3	1253	1942	824	549	458	198	M12	15	50	150	600	222	213	605	1" NPT
N1H0900-E1	1305	2615	925	549	558	198	M12	15	50	150	600	222	213	684	1 1/2" NPT
N1H0900-E2	1305	2382	925	549	558	198	M12	15	50	150	600	222	213	628	1 1/2" NPT
N1H0900-E3	1305	1942	925	549	558	198	M12	15	50	150	600	222	213	605	1 1/2" NPT
N1H1000-E1	1284	2615	1040	549	549	198	M12	15	50	150	600	222	213	684	1 1/2" NPT
N1H1000-E2	1284	2382	1040	549	549	198	M12	15	50	150	600	222	213	628	1 1/2" NPT
N1H1000-E3	1285	1942	1040	549	549	198	M12	15	50	150	600	222	213	605	1 1/2" NPT
N1H0800-2-E1	1944	2615	824	549	558	198	M12	15	50	150	600	222	213	684	1" NPT
N1H0800-2-E2	1944	2382	824	549	558	198	M12	15	50	150	600	222	213	628	1" NPT
N1H0800-2-E3	1944	1942	824	549	558	198	M12	15	50	150	600	222	213	605	1" NPT
N1J0800-E4	1517	2868	824	677	458	260	M16	32	100	300	686	299	247	782	1" NPT
N1J0900-E2-E4	1570	2868	926	677	558	260	M16	32	100	300	686	299	247	782	1 1/2" NPT
N1J1000-E2-E4	1529	2868	1040	677	549	260	M16	32	100	300	686	299	247	782	1 1/2" NPT
N1J0800-2-E1-E4	2363	2868	826	677	458	260	M16	32	100	300	686	299	247	782	1" NPT
N1J0900-2-E2-E4	2414	2868	926	677	558	260	M16	32	100	300	686	299	247	782	1 1/2" NPT
N1J1000-2-E2-E4	2420	2868	1040	677	549	260	M16	32	100	300	686	299	247	782	1 1/2" NPT

MOUNTING FACE DIMENSIONS



Actuator	Dimensions, mm										Mounting face
	G	G1	H	H1	Q	Q1	T	U	V	W	
N1X	M8	-	12	-	70	-	20	4.76	22.3	35	F07
	-	M10	-	15	-	102	20	4.76	22.3	35	F10
N1A	M16	-	24	-	140	-	40	9.53	44.4	68	F14
N1B	M20	-	30	-	165	-	70	19.05	78.3	173	F16
N1C	M16	-	24	-	254	-	95	22.23	105.0	202	F25
N1D	M20	-	30	-	298	-	105	25.40	116.3	217	F30
N1E	M30	-	45	-	356	-	135	31.75	149.0	309	F35
N1G	M36	-	54	-	406	-	180	44.45	199.4	383	F40
N1H	M36	-	54	-	483	-	200	50.80	222.1	385	F48
N1J	M36	-	54	-	603	-	280	63.00	292.4	483	F60

Note: More detailed dimensions with tolerances available in document F102307.

N1-series type code

Heavy duty scotch yoke actuator

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
N1	B	0250	S	1	G	E03	C	N	/	*(NIL)

1.	Series
N1	Neles heavy duty actuator

4.	Link type
S	Symmetric

2.	Frame size
B	X
	A
	B
	C
	D
	E
	G
	J

5.	Cylinder type
1	Single cylinder
2	Dual cylinder

6.	Temperature range
G	-20°...+80 °C
H	-20°...+125 °C

3.	Cylinder size	Available frame
0250	0063	X
	0080	X
	0100	X, A
	0125	X, A
	0150	A
	0200	A
	0250	A, B
	0300	A, B, C
	0350	A, B, C, D
	0400	B, C, D
	0500	C, D, E
	0600	D, G, E
	0700	D, G, E, H, J
	0800	E, G, H, J
	0900	E, G, H, J
	1000	H, J
	0800-2	J
	0900-2	J
1000-2	J	

7.	Single / Double acting
E01 ... E11	Single acting
D00	Double acting

8.	Spring action
C	Spring to close
A	Spring to open
D	Double acting

9.	Shaft bore-key type
N	Neles bore, female double key way
D	ISO bore, female keyway.

10.	Break
	Type code break to be left blank if no options specified

11.	Options
HW	Handwheel, manual override
HP	Hydraulic, manual override

Neles

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