NACHI

PNEUMATIC ACTUATOR
DOUBLE ACTING
SINGLE ACTING

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Design and Construction

1. Indicator
Indicator according to VID/VIE3845 is convenient for mounting accessories such as limit swit stainless chrome ner and etc.

2. Pinion
The design of the nickel-plated alloy steel integrated forging pinion drive is according the NAMUR,ISO5211 and DIN3337 standards. Special standard are available upon request.

3. Actuator Body
High quality aluminum alloy extrusion formed. The surface has been treated by anodized hardening followed by epoxy polyester coating. Other surface treatments are available e.g. PTFE and Nickel plating as well as other colour coatings on request.

4. End Cap
The surface has been treated by anodized hardening followed by epoxy polyester coating. Other surface treatments are available on request e.g. PTFE and Nickel plating as well as other colours on request.

5. Piston
Are manufactured from Die-cast aluminum and treated by anodized hardening process. Symmetric mounting of the piston helps to ensure easy maintenance. Reverse action requirements can be achieved by inverting the pistons.

6. Adjusting Bolt
The two independent adjustment bolts can adjust opening and closing of the mounted valve within±5°

7. Spring
Are manufactured from 65Mn and are epoxy polyester coated. Springs are easily demounted and can be changed by quantity to suit different torque requirement.

8. Piston Ring
Are manufactured from low friction long life material POM. Can be easily changed for maintenance purposes.

9. O-rings
Standard NBR rubber O-rings provide trouble-free operation at standard temperature ranges. For other temperature requirements relevant materials can be offered on request.

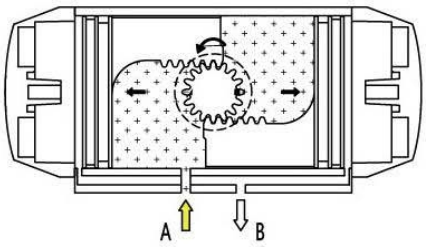
10. Air Connection
Conforms to NAMUR standards

11. All stop parts are manufactured from SS304.

Design and Construction

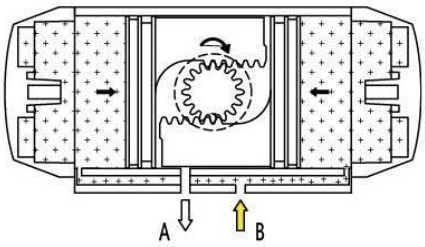
The standard rotation is clockwise to close; counter-clockwise rotation is obtained when port A is pressurized.

DOUBLE ACTING OPERATION TOP VIEW



CCW

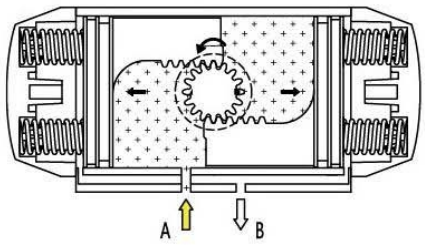
Air supplied to Port A forces the pistons apart and toward end positions, with exhaust air exiting at Port B, a counter-clockwise rotation is obtained.



CW

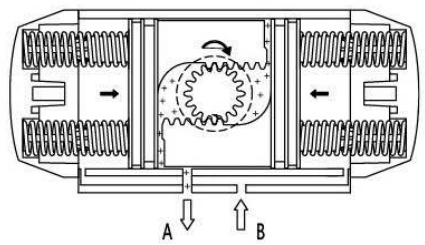
Air supplied to Port B forces the pistons together with exhaust air exiting at Port A, a clockwise rotation is obtained.

SINGLE ACTING OPERATION TOP VIEW



CCW

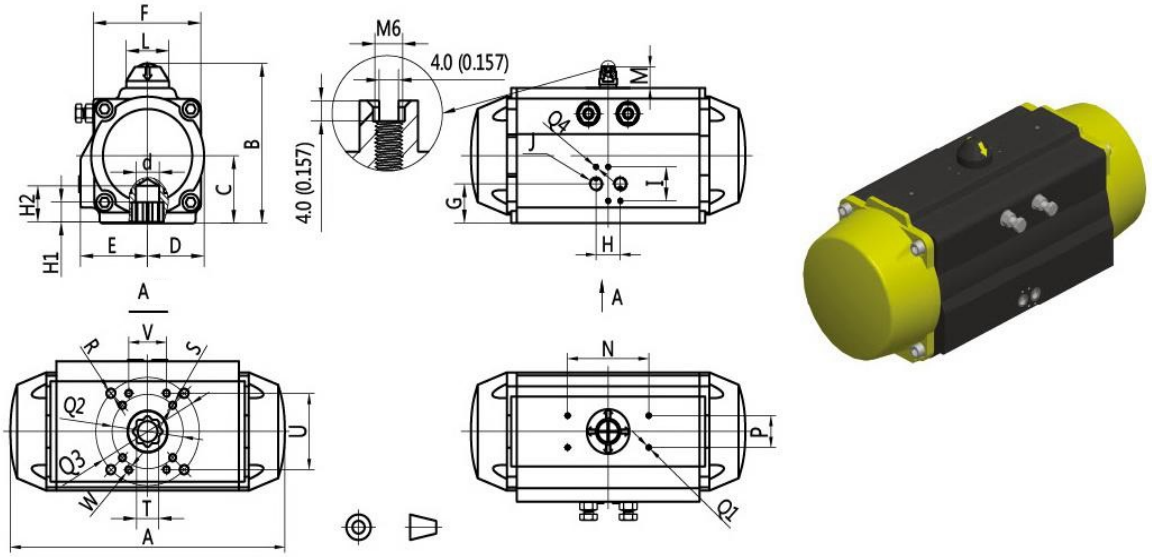
Air supplied to Port A forces the pistons apart and toward end positions, compressing the springs with exhaust air exiting at Port B, a counter-clockwise rotation is obtained.



CW

On loss of air pressure (air or electric failure) at Port A allow the springs to force the pistons to the centre position with exhaust air exiting at Port A, a clockwise rotation is obtained.

Drawing and Dimensions:



Metric Unit mm

Model / Size	NC50	NC63	NC75	NC85	NC100	NC115	NC125	NC145	NC160	NC180	NC200	NC240	NC265	NC300	NC350
A	148	159	213	249	271	315	346	412	443	492	547	614	729	839	900
B	92	108	125	138	151	175	190	209.5	230	253	277	348	389	410	465
C	34.25	42.4	51	57.6	63.5	72.5	78.5	88	98.25	110	122	146	166.8	177.5	205
D	28.5	36	43.5	48.6	56	64	69	80	88	98.5	109	130.5	147	162	190
E	40.8	29	52.5	56.5	66	77	82	90	98.3	105.5	112	131	146.8	173	194.5
F	58	72	86	96.5	106	127	130	148.5	159.6	179.6	194	231	253.7	290	336
G	26	30	26.1	32	37	42.5	45.7	55	51.7	60.2	66	70	90	85	92
H	24	24	24	24	24	24	24	24	24	24	24	40	40	40	40
I	32	32	32	32	32	32	32	32	32	32	32	45	45	45	45
J	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G3/8"	G3/8"	G1/2"	G1/2"
L	ϕ42	ϕ42	ϕ42	ϕ42	ϕ42	ϕ66	ϕ66	ϕ66	ϕ66	ϕ80	ϕ80	ϕ80	ϕ80	ϕ80	ϕ80
M	20	20	20	20	20	20	30	30	30	30	30	50	50	50	50
N	80	80	80	80	80	80	80	80	80	130	130	130	130	130	130
P	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Q1	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5
Q2	ϕ42	ϕ50	ϕ50	ϕ50	ϕ70	ϕ70	ϕ102	ϕ102	ϕ102	ϕ102	ϕ102	ϕ125	–	–	–
Q3	–	–	ϕ70	ϕ70	ϕ102	ϕ102	–	ϕ125	ϕ125	ϕ140	ϕ140	ϕ165	ϕ165	ϕ165	254
Q4	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M5	M6	M6	M6	M6
R	–	–	4–M8	4–M8	4–M10	4–M10	–	4–M12	4–M12	4–M16	4–M16	4–M20	4–M20	4–M20	8–M16
S	4–M5	4–M6	4–M6	4–M6	4–M8	4–M8	4–M10	4–M10	4–M10	4–M10	4–M10	4–M12	–	–	–
T	17	17	22	22	22	22	36	36	36	36	36	46	46	46	55
H1	12	16	19	19	23	23	29	29	29	42	42	50	50	50	60
d	ϕ14.3	ϕ14.3	ϕ19.5	ϕ19.5	ϕ23	ϕ23	ϕ36	ϕ36	ϕ36	ϕ38	ϕ38	ϕ48	ϕ48	ϕ48	ϕ55
H2	32	34	34	34	48	48	65	65	65	92	92	92	92	92	100
U	–	–	–	–	72	–	72	72	72	99	99	–	–	–	–
V	–	–	–	–	37	–	37	37	37	53	53	–	–	–	–
W	–	–	–	–	M8	M8	M8	M8	M8	M10	M10	–	–	–	–

Output Torque of Double Acting Actuator(metric)

metric unit N.m

Output Torque of Double Acting Actuator							
Model \ Air Pressure	3.0bar	4.0bar	5.0bar	5.5bar	6.0bar	7.0bar	8.0bar
NC32	3.2	4.5	5.9	6.6	7.2	8.5	9.8
NC40	5	7	9	10	11	13	15
NC50	9.5	12	15.8	17.5	19	23	26.5
NC63	16	21.5	28.7	31	34	39	46
NC75	34	47	58.5	63	69	80.5	91
NC85	53	70	88	98	106	124	145
NC100	76.5	104	127	142	155	184	214
NC115	129	170	215	236	258	301	344
NC125	163	210	268	300	328	385	442
NC145	230	315	420	462	531	590	690
NC160	350	450	560	625	675	788	910
NC180	445	607	770	848	910	1064	1237
NC200	625	840	1058	1165	1260	1462	1681
NC240	1070	1435	1785	1970	2150	2508	2865
NC265	1745	2320	2900	3200	3500	4080	4670
NC300	2195	2927	3681	4025	4391	5122	5854
NC350	3205	4274	5369	5876	6411	7479	8547
NC400	5024	6698	8415	9210	10048	11722	13397

Output Torque of Single Acting Actuator

metric unit N.m

Model \ Size	Spring Quantity	Output Torque of Spring Return Actuator														Spring Return	
		3.0bar		4.0bar		5.0bar		5.5bar		6.0bar		7.0bar		8.0bar		0°	90°
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
NC115	5	88	63	131	106	174	149	195	170	217	192	260	235	303	279	41	66
	6	**80**	**50**	123	93	166	136	187	158	209	180	252	222	295	266	49	79
	7	72	37	115	80	158	123	179	145	200	166	244	209	287	252	57	92
	8			**106**	**67**	149	110	171	132	192	153	235	196	279	239	66	105
	9			98	54	141	97	163	118	184	140	227	183	270	226	74	118
	10					**133**	**84**	154	105	176	127	219	170	262	213	82	131
	11					125	71	**146**	**92**	168	114	211	157	254	200	90	144
	12							138	79	**159**	**101**	202	144	245	187	98	157
NC125	5	112	82	159	129	217	187	249	219	277	247	334	304	391	361	51	81
	6	**102**	**65**	149	112	207	170	239	202	266.5	230	323.5	287	380.5	344	61.5	98
	7	91	49	138	96	196	154	228	186	256	214	313	271	370	328	72	114
	8			**127**	**79**	185	137	217	169	245	197	302	254	359	311	83	131
	9			117	62	175	120	207	152	234.5	180	291.5	237	348.5	294	93.5	148
	10			106	45	**164**	**103**	196	135	224	163	281	220	338	277	104	165
	11					154	87	**186**	**119**	213.5	147	270.5	204	327.5	261	114.5	181
	12					143	70	175	102	**203**	**130**	259.5	187	316.5	244	125.5	198
NC145	5	149	103	234	188	339	293	381	335	329	283	509	463	609	563	81	127
	6	**132**	**77**	217	162	322	267	364	309	312	257	492	437	592	537	98	153
	7	115	51	200	136	305	241	347	283	295	231	475	411	575	511	115	179
	8			**184**	**110**	289	215	331	257	279	205	459	385	559	485	131	205
	9			167	85	272	190	314	232	262	180	442	360	542	460	148	230
	10			150	59	**255**	**164**	297	206	245	154	425	334	525	434	165	256
	11					239	138	**281**	**180**	229	128	409	308	509	408	181	282
	12					223	112	265	154	**213**	**102**	393	282	493	382	197	308
NC160	5	240	185	340	285	450	395	515	460	565	510	678	623	800	745	110	165
	6	**217**	**152**	317	252	427	362	492	427	542	477	655	590	777	712	133	198
	7	194	118	294	218	404	328	469	393	519	443	632	556	754	678	156	232
	8			**271**	**185**	381	295	446	360	496	410	609	523	731	645	179	265
	9			249	151	359	261	424	326	474	376	587	489	709	611	201	299
	10			226	118	**336**	**228**	401	293	451	343	564	456	686	578	224	332
	11					313	194	**378**	**259**	428	309	541	422	663	544	247	366
	12					291	161	356	226	**406**	**276**	519	389	641	511	269	399
NC180	5	289	206	451	368	604	521	692	609	754	671	908	825	1081	998	156	239
	6	**257**	**159**	419	321	572	474	660	562	722	624	876	778	1049	951	188	286
	7	225	112	387	274	540	427	628	515	690	577	844	731	1017	904	220	333
	8			**355**	**226**	508	379	596	467	658	529	812	683	985	856	252	381
	9			324	179	477	332	565	420	627	482	781	636	954	809	283	428
	10			292	132	**445**	**285**	533	373	595	435	749	589	922	762	315	475
	11					414	238	**502**	**326**	564	388	718	542	891	715	346	522
	12					382	191	470	279	**532**	**341**	686	495	859	668	378	569
NC200	5	409	307	624	522	842	740	949	847	1044	942	1246	1144	1465	1363	216	318
	6	**367**	**244**	582	459	800	677	907	784	1002	879	1204	1081	1423	1300	258	381
	7	325	181	540	396	758	614	865	721	960	816	1162	1018	1381	1237	300	444
	8			**498**	**334**	716	552	823	659	918	754	1120	956	1339	1175	342	506
	9			455	272	673	490	780	597	875	692	1077	894	1296	1113	385	568
	10			412	209	**630**	**427**	737	534	832	629	1034	831	1253	1050	428	631
	11					588	365	**695**	**472**	790	567	992	769	1211	988	470	693
	12					545	302	652	409	**747**	**504**	949	706	1168	925	513	756