AIGNEP

Actuator Series

Cartridge Cylinders
Ø 6-16 mm



CA - CAF Series
Pg. 20.3

Mini Cylinders ISO 6432
Ø 8-25 mm



Mini Series
Pg. 20.5

Mini Stainless Steel Cylinders
ISO 6432 Ø 16-25 mm



Mini Stainless Steel Series
Pg. 20.13

Limited Space
Ø 32-63 mm



A95 Series
Pg. 20.16

Compact Cylinders
Ø 12-100 mm



Q Series
Pg. 20.23

ISO 15552 Cylinders
Ø 32-125 mm



L Series
Pg. 20.36

ISO 6431 Cylinders
Ø 160-320 mm



E Series
Pg. 20.45

Stainless Steel ISO 15552 Cylinders
Ø 32-125 mm



V Series
Pg. 20.47

Twin Rod Cylinders
Ø 32-100 mm



NHA Series
Pg. 20.50

Compact Cylinders ISO 21287
Ø 20-100 mm



W Series
Pg. 20.54

Cylinder Accessories
ISO 6431 - ISO 15552 - ISO 21287



Accessories
Pg. 20.62

Magnetic Position Sensing Switches



Sensors
Pg. 20.72

Rodless Actuator Series

Rodless Cylinders Standard Version



S1 Series
Pg. 20.82

Rodless Cylinder with Integrated Guides in Technopolymer



S5 Series
Pg. 20.91

Click here to view the Actuator Series on our Website

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PNEUMATIC ACTUATORS

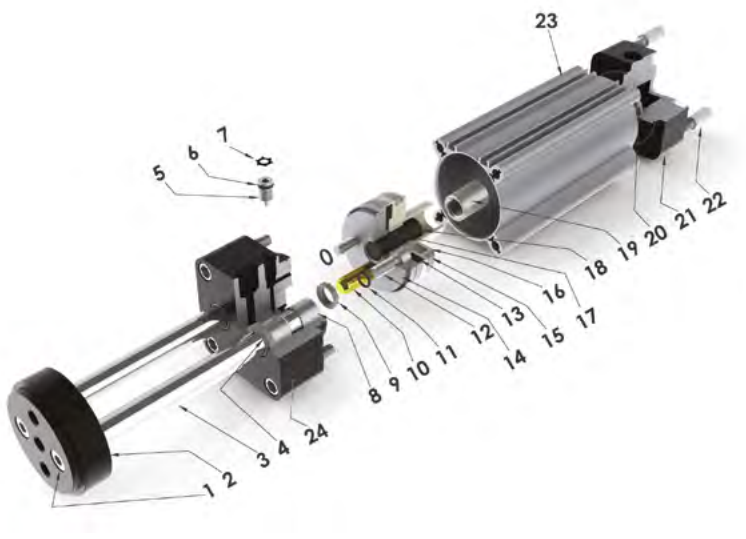


Actuator Series

P.A.

SERIES NHA - TWIN ROD CYLINDER - ISO 15552

TECHNICAL CHARACTERISTICS





Component Parts and Materials

1	Galvanized steel fixing screw
2	Anodized aluminum tooling plate
3	Chrome-plated steel or stainless steel piston rods
4	Polyurethane rod seal
5	Galvanized steel cushion adjustment screw
6	NBR O-ring
7	Steel elastic ring
8	Steel bearing
9	Polyurethane cushion seal
10	Brass cushion spear
11	NBR O-ring
12	Galvanized steel fixing screw
13	Bonded ferrite magnet
14	Aluminum front piston
15	Polyurethane piston seal
16	Acetal resin piston
17	NBR O-ring
18	Steel grub screw
19	Galvanized steel nut
20	Polyurethane cushion seal
21	Die-cast aluminum end cap
22	Galvanized steel fixing screw
23	Anodized aluminum tube
24	Die-cast aluminum end cap

Reference Standard

1907/2006 REACH ✓ | 2011/65/CE RoHS ✓ | PED 2014/68/UE | SILICON FREE | ATEX 2014/34/UE

Pressures

14.5 psi (1 bar / 0.1 MPa)
145 psi (10 bar / 1 MPa)

Temperatures

32 °F ~ 176 °F
0 °C ~ 80 °C (- 4 °F / -20 °C with dry air)

Media

Filtered and lubricated or non-lubricated compressed air.

Functions

Double-acting cushioned magnetic.
Single or through piston rod magnetic.

Bores

from 32 to 100 mm

Standard Strokes

from 25 to 500 mm
Strokes on demand.

Series	Ø (mm)	Stroke (mm)	Mounting type	Special version
N H A	0 3 2	0 0 2 5	G	I S

- ▲ NHA Double acting - cushioned - magnetic
- ▲ NLA Double acting - double rod cushioned magnetic
- ▲ NQA Double acting - cushioned - magnetic with double rod end

032 040 050 063 080 100

0025 0050 0080 0100 0125 0160 0200 0250 0320 0350 0400

Intermediate or longer strokes are available upon request.

G Anodized aluminum tube lobed profile with slots

IS Stainless steel rod

Ø (mm)	Stroke (mm)											
	25	50	80	100	125	160	200	250	320	350	400	500
32	▲	▲	▲	▲	▲	▲	▲	▲	▲			
40	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		
50	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		
63	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
80	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
100	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

FORCES AND AIR CONSUMPTION

Extend and Retract Forces

Cylinder Ø	Piston Rod Ø	Piston Area mm²	mm²	Operating pressure bar 1	2	3	4
				Output force N			
32	8	100.48	Extend = 804	72	144	215	287
			Retract = 703.52	54	108	161	215
40	10	157	Extend = 1257	110	220	330	440
			Retract = 1100	84	168	252	336
50	12	226.08	Extend = 1963	175	350	526	701
			Retract = 1736.92	135	270	404	539
63	16	401.92	Extend = 3117	280	560	840	1120
			Retract = 2715.08	206	413	619	826
80	20	628	Extend = 5027	450	900	1350	1800
			Retract = 4399	336	673	1009	1345
100	20	628	Extend = 7854	700	1400	2100	2800
			Retract = 7226	589	1177	1766	2355

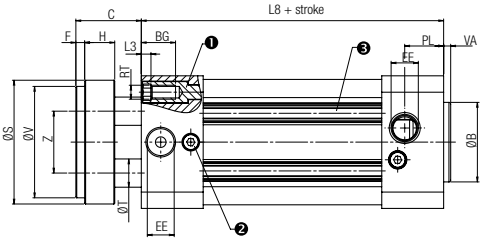
Air Consumption

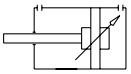
Cylinder Ø	Piston Rod Ø	Piston Area mm²	mm²	Operating pressure bar 1	2	3	4
				Air consumption for each 10 mm of stroke Nl			
32	8	100.48	Extend = 804	0.016	0.032	0.048	0.064
			Retract = 703.52	0.012	0.024	0.036	0.048
40	10	157	Extend = 1257	0.025	0.050	0.075	0.100
			Retract = 1100	0.019	0.038	0.057	0.075
50	12	226.08	Extend = 1963	0.039	0.079	0.118	0.157
			Retract = 1736.92	0.030	0.060	0.091	0.121
63	16	401.92	Extend = 3117	0.062	0.125	0.187	0.249
			Retract = 2715.08	0.046	0.092	0.139	0.185
80	20	628	Extend = 5027	0.100	0.201	0.301	0.402
			Retract = 4399	0.075	0.151	0.226	0.301
100	20	628	Extend = 7854	0.157	0.314	0.471	0.628
			Retract = 7226	0.132	0.264	0.396	0.528

NHA

DOUBLE ACTING - CUSHIONED - MAGNETIC





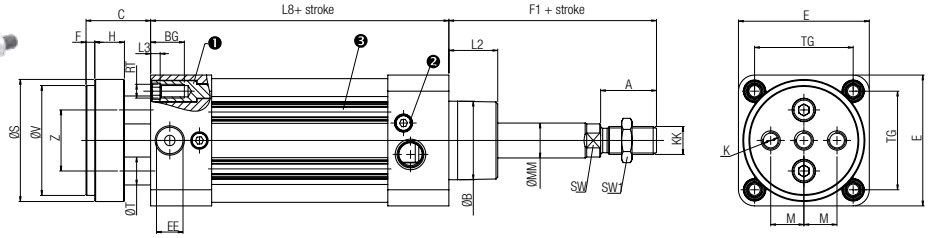


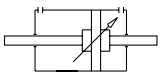
Ø	Ø B d11	C	F	H	K	M	S	T	V	Z	VA	L8	BG	RT	E	TG	EE	PL	L3
32	30	26	4	15	M6	9.5	35	8	32	18	4	94	16	M6	47	32.5	G1/8	14	5
40	35	30	4	15	M8	11.25	45	10	40	22	4	105	16	M6	53	38	G1/4	16	5
50	40	37	5	18	M8	15	55	12	50	26	4	106	16	M8	65	46.5	G1/4	21	5
63	45	37	5	22	M10	19	70	16	63	35	4	121	16	M8	75	56.5	G3/8	22	5
80	45	46	5	22	M12	25	85	20	80	40	4	128	18	M10	95	72	G3/8	23	6
100	55	51	5	22	M12	35	105	20	100	50	4	138	18	M10	115	89	G1/2	26	6

NLA

DOUBLE ACTING - DOUBLE ROD - CUSHIONED - MAGNETIC





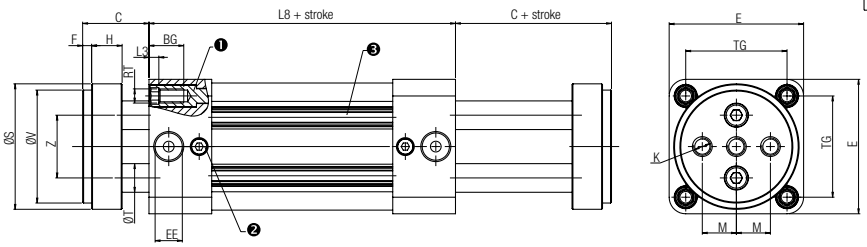


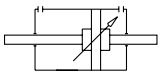
Ø	A	Ø B d11	C	F	H	K	M	S	T	V	Z	F1	L2	Ømm	SW	KK	L8	BG	RT	E	TG	EE	L3
32	22	30	26	4	15	M6	9.5	35	8	32	18	50	20	12	10	M10X1.25	94	16	M6	47	32.5	G1/8	5
40	24	35	30	4	15	M8	11.25	45	10	40	22	55	22	16	13	M12X1.25	105	16	M6	53	38	G1/4	5
50	32	40	37	5	18	M8	15	55	12	50	26	69	28	20	17	M16X1.5	106	16	M8	65	46.5	G1/4	5
63	32	45	37	5	22	M10	19	70	16	63	35	69	28	20	17	M16X1.5	121	16	M8	75	56.5	G3/8	5
80	40	45	46	5	22	M12	25	85	20	80	40	86	34	25	22	M20X1.5	128	18	M10	95	72	G3/8	6
100	40	55	51	5	22	M12	35	105	20	100	50	91	38	25	22	M20X1.5	138	18	M10	115	89	G1/2	6

NQA

DOUBLE ACTING - CUSHIONED - MAGNETIC WITH DOUBLE ROD ENDS







Ø	C	F	H	K	M	S	T	V	Z	BG	RT	E	TG	EE	L3
32	26	4	15	M6	9.5	35	8	32	18	16	M6	47	32.5	G1/8	5
40	30	4	15	M8	11.25	45	10	40	22	16	M6	53	38	G1/4	5
50	37	5	18	M8	15	55	12	50	26	16	M8	65	46.5	G1/4	5
63	37	5	22	M10	19	70	16	63	35	16	M8	75	56.5	G3/8	5
80	46	5	22	M12	25	85	20	80	40	18	M10	95	72	G3/8	6
100	51	5	22	M12	35	105	20	100	50	18	M10	115	89	G1/2	6

KEY

① = Socket head screw with female thread for mounting attachments.

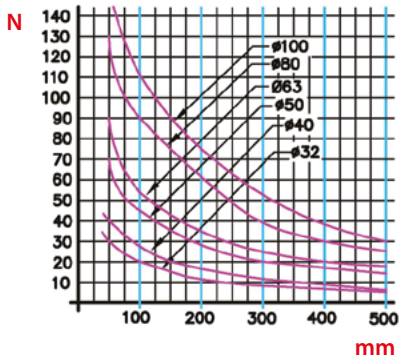
② = Adjustment screw for adjustable end-position cushioning.

③ = Slot for proximity sensor.

NHA CYLINDER LOAD CHARTS

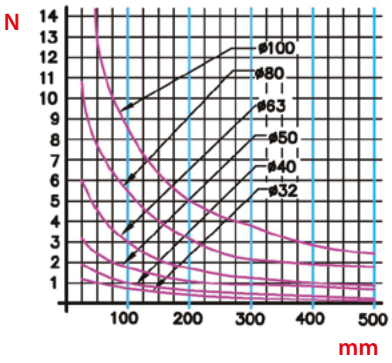
Transverse Moment





Torsional Moment

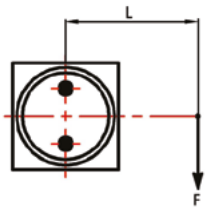




N
Max admitted load

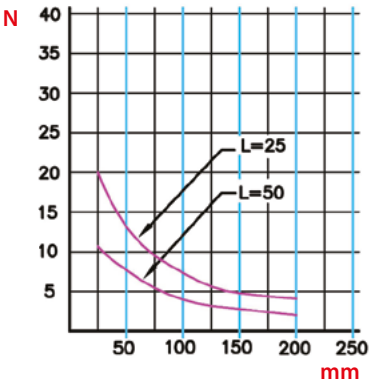
mm
Stroke

Maximum Transverse and Torsional Loads by bore

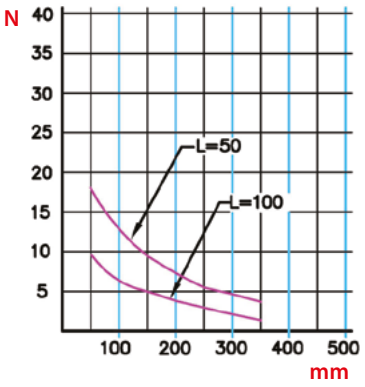


Max load F in N

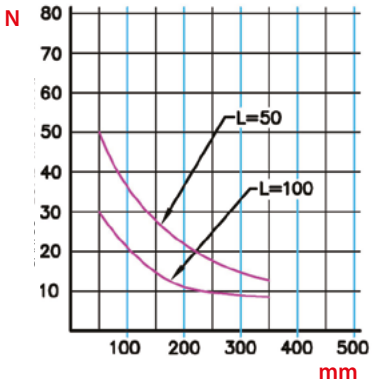
Ø 32



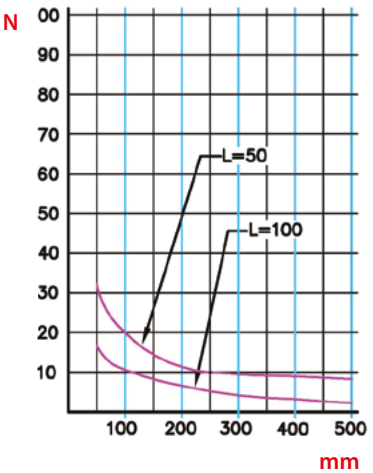
Ø 40



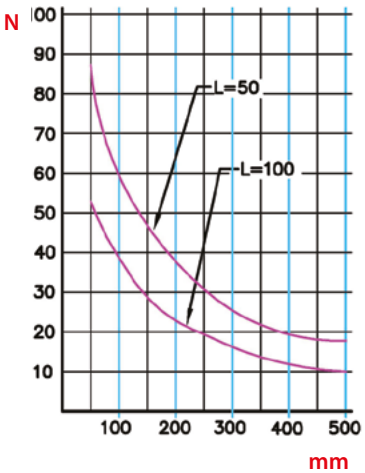
Ø 50



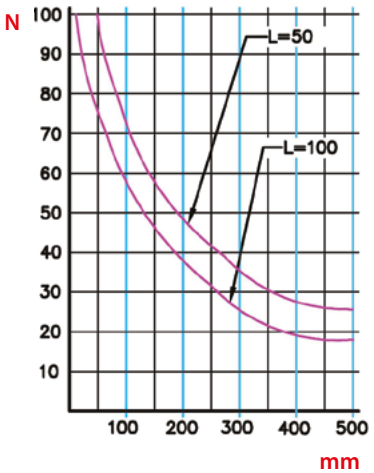
Ø 63



Ø 80



Ø 100



FORCES, SPRING LOADS, AND AIR CONSUMPTION

Compatible for Series E - V - N - L

Extend and Retract Forces

Cylinder	Piston Rod	Piston Area	Operating pressure									
Ø	Ø	mm²	bar									
			1	2	3	4	5	6	7	8	9	10
			Output force N									
32	12	Extend = 804	72	144	216	288	360	432	504	576	648	720
		Retract = 691	62	124	186	248	310	372	434	496	558	620
40	16	Extend = 1257	110	220	330	440	550	660	770	880	990	1100
		Retract = 1056	95	190	285	380	475	570	665	760	855	950
50	20	Extend = 1963	175	350	525	700	875	1050	1225	1400	1575	1750
		Retract = 1649	148	296	444	592	740	888	1036	1184	1332	1480
63	20	Extend = 3117	280	560	840	1120	1400	1680	1960	2240	2520	2800
		Retract = 2803	250	500	750	1000	1250	1500	1750	2000	2250	2500
80	25	Extend = 5027	450	900	1350	1800	2250	2700	3150	3600	4050	4500
		Retract = 4536	405	810	1215	1620	2025	2430	2835	3240	3645	4050
100	25	Extend = 7854	700	1400	2100	2800	3500	4200	4900	5650	6360	7000
		Retract = 7363	660	1320	1980	2640	3300	3960	4620	5280	5940	6600
125	32	Extend = 12270	1104	2208	3312	4416	5520	6624	7728	8832	9936	11040
		Retract = 11468	1032	2064	3096	4128	5160	6192	7224	8256	9288	10320
160	40	Extend = 20096	1774	3548	5322	7097	8871	10645	12419	14194	15968	17742
		Retract = 18840	1663	3326	4990	6653	8316	9980	11643	13307	14970	16633
200	40	Extend = 31440	2772	5544	8316	11089	13861	16633	19406	22178	24950	27723
		Retract = 30144	2661	5322	7984	10645	13307	15968	18629	21291	23952	26614
250	50	Extend = 48750	4331	8663	12995	17326	21658	25990	30322	34653	38985	43317
		Retract = 46800	4158	8316	12475	16663	20792	24950	29109	33267	37426	41584
320	63	Extend = 78872	7097	14194	21291	28388	35485	42582	49679	56776	63873	70971
		Retract = 76776	6822	13644	20466	27288	34110	40932	47754	54576	61398	68220

Spring Loads

Cylinder	Spring load	Stroke (mm)				
Ø		25	50	75	80	100
				Output force N		
32	Load of spring at rest	50	41	33	31.5	24.5
	Load of compressed spring	58	58	58	58	58
40	Load of spring at rest	52	43	34	32	25
	Load of compressed spring	61	61	61	61	61
50	Load of spring at rest	92	77	64	60	49
	Load of compressed spring	110	110	110	110	110
63	Load of spring at rest	92	77	64	60	49
	Load of compressed spring	110	110	110	110	110
80	Load of spring at rest	117	98	79	75	59
	Load of compressed spring	138	138	138	138	138
100	Load of spring at rest	117	98	79	75	59
	Load of compressed spring	138	138	138	138	138

Air Consumption

Cylinder	Piston Rod	Piston Area	Operating pressure									
Ø	Ø	mm²	bar									
			1	2	3	4	5	6	7	8	9	10
			Air consumption for each 10 mm of stroke Nl									
32	12	Extend = 804	0.016	0.024	0.032	0.040	0.048	0.056	0.064	0.072	0.080	0.088
		Retract = 691	0.014	0.021	0.028	0.035	0.041	0.048	0.055	0.062	0.069	0.076
40	16	Extend = 1257	0.025	0.038	0.050	0.063	0.075	0.088	0.101	0.113	0.126	0.138
		Retract = 1056	0.021	0.032	0.042	0.053	0.063	0.074	0.084	0.095	0.106	0.116
50	20	Extend = 1963	0.039	0.059	0.079	0.098	0.118	0.137	0.157	0.177	0.196	0.216
		Retract = 1649	0.033	0.049	0.066	0.082	0.099	0.115	0.132	0.148	0.165	0.181
63	20	Extend = 3117	0.062	0.094	0.125	0.156	0.187	0.218	0.249	0.281	0.312	0.343
		Retract = 2803	0.056	0.084	0.112	0.140	0.168	0.196	0.224	0.252	0.280	0.308
80	25	Extend = 5027	0.101	0.151	0.201	0.251	0.302	0.352	0.402	0.452	0.503	0.553
		Retract = 4536	0.091	0.136	0.181	0.227	0.272	0.318	0.363	0.408	0.454	0.499
100	25	Extend = 7854	0.157	0.236	0.314	0.393	0.471	0.550	0.628	0.707	0.785	0.864
		Retract = 7363	0.147	0.221	0.295	0.368	0.442	0.515	0.589	0.663	0.736	0.810
125	32	Extend = 12270	0.245	0.368	0.491	0.614	0.736	0.859	0.982	1.104	1.227	1.350
		Retract = 11468	0.229	0.344	0.459	0.573	0.688	0.803	0.917	1.032	1.147	1.261
160	40	Extend = 20096	0.402	0.603	0.804	1.005	1.206	1.407	1.608	1.809	2.010	2.211
		Retract = 18840	0.377	0.565	0.754	0.942	1.130	1.319	1.507	1.1696	1.884	2.072
200	40	Extend = 31440	0.628	0.942	1.256	1.570	1.884	2.198	2.512	2.826	3.140	3.454
		Retract = 30144	0.603	0.904	1.206	1.507	1.809	2.110	2.412	2.713	3.014	3.316
250	50	Extend = 48750	0.981	1.472	1.963	2.453	2.948	3.434	3.925	4.415	4.906	5.400
		Retract = 46800	0.942	1.413	1.884	2.355	2.826	3.297	3.768	4.239	4.710	5.181
320	63	Extend = 78872	1.610	2.411	3.215	4.020	4.820	5.626	6.430	7.234	8.038	8.843
		Retract = 76776	1.545	2.320	3.100	3.863	4.630	5.408	6.181	6.954	7.726	8.450