

Actuators

Cartridge Cylinders

Ø 6-16 mm



CA - CAF Series

Pg. 15.3

Mini Cylinders ISO 6432

Ø 8-25 mm



Mini Series

Pg. 15.5

Mini Stainless Steel ISO 6432

Ø 16-25 mm



Mini Stainless Steel Series

Pg. 15.14

Limited Space

Ø 32-63 mm



A95 Series

Pg. 15.17

Compact Cylinders

Ø 12-100 mm



Q Series

Pg. 15.24

ISO 15552 Cylinders

Ø 32-125 mm



L Series

Pg. 15.37

ISO 6431 Cylinders

Ø 160-320 mm



E Series

Pg. 15.44

ISO 15552 Cylinders

Ø 32-125 mm



X Series

Pg. 15.46

Stainless Steel ISO 15552

Ø 32-125 mm



V Series

Pg. 15.51

Twin Rod Cylinders

Ø 32-100 mm



NHA Series

Pg. 15.54

Compact Cylinders

Ø 20-100 mm



W Series

Pg. 15.58

Cylinder Accessories

ISO 6431 - ISO 15552 - ISO 21287



Pg. 15.66

Guided Units

ISO 15552 - Ø 12-25 mm
ISO 6431 VDMA - Ø 32-100 mm



Pg. 15.76

Rodless Cylinders

Ø 16-63 mm



R Series

Pg. 15.85

Rotary Actuators

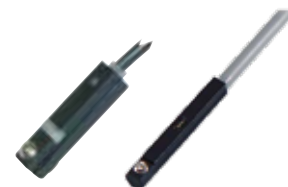
Ø 32-100 mm



XR Series

Pg. 15.96

Magnetic Position Sensing Switches



Sensor

Pg. 15.99

PNEUMATIC ACTUATORS

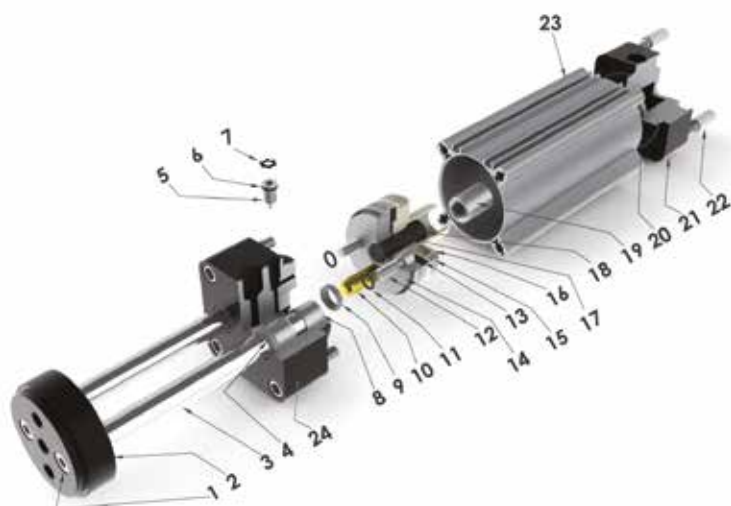


Actuators

SERIES NHA - TWIN ROD CYLINDER - ISO 15552



TECHNICAL CHARACTERISTICS



Component Parts and Materials

- 1 Galvanized steel fixing screw
- 2 Anodized aluminium tooling plate
- 3 Chromium 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 Aluminium 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 aluminium 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

1 bar (0.1 MPa) / 14.5 psi
10 bar (0.7 MPa) / 145 psi



Temperatures

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



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 Intermediate or longer strokes are available upon request.	G Anodized aluminium 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

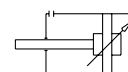
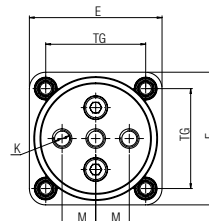
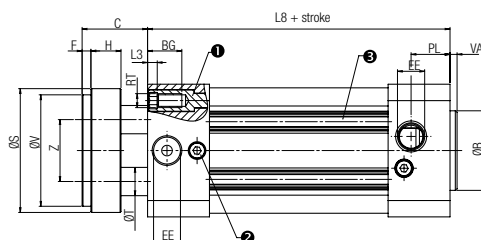
Cylinder Ø	Piston Rod Ø	Piston Area mm ²	Operating pressure					
			mm ²	bar				
				1	2	3	4	
Output force N								
32	8	100.48	Extend = 804 Retract = 703.52	72 54	144 108	215 161	287 215	
40	10	157	Extend = 1257 Retract = 1100	110 84	220 168	330 252	440 336	
50	12	226.08	Extend = 1963 Retract = 1736.92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

Air Consumption

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

NHA

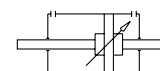
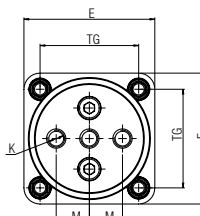
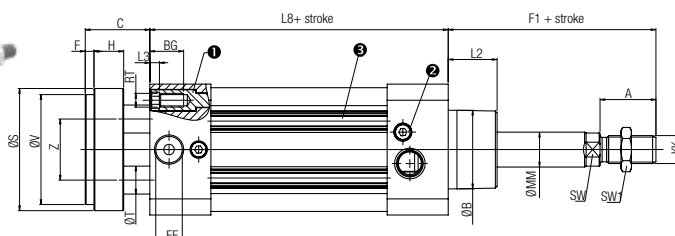
DOUBLE ACTING - CUSHIONED - MAGNETIC



Ø	Ø B d11	C	E	F	H	K	M	S	T	V	Z	F1	VA	L2	WH	Ømm	SW	KK	L8	BG	RT	E	TG	EE	PL	L3	ZM
32	30	26	47	4	15	M6	9.5	35	8	32	18	48	4	20	26	12	10	M10X1.25	94	16	M6	47	32.5	G1/8	14	5	146
40	35	30	53	4	15	M8	11.25	45	10	40	22	54	4	22	30	16	13	M12X1.25	105	16	M6	53	38	G1/4	16	5	165
50	40	37	65	5	18	M8	15	55	12	50	26	69	4	28	37	20	17	M16X1.5	106	16	M8	65	46.5	G1/4	21	5	180
63	45	37	75	5	22	M10	19	70	16	63	35	69	4	28	37	20	17	M16X1.5	121	16	M8	75	56.5	G3/8	22	5	195
80	45	46	95	5	22	M12	25	85	20	80	40	86	4	34	46	25	22	M20X1.5	128	18	M10	95	72	G3/8	23	6	220
100	55	51	115	5	22	M12	35	105	20	100	50	91	4	38	51.5	25	22	M20X1.5	138	18	M10	115	89	G1/2	26	6	240

NLA

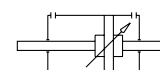
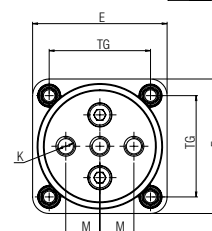
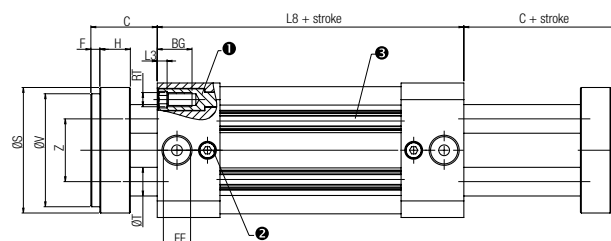
DOUBLE ACTING - DOUBLE ROD - CUSHIONED - MAGNETIC



Ø	A	Ø B d11	C	E	F	H	K	M	S	T	V	Z	F1	VA	L2	WH	Ømm	SW	KK	L8	BG	RT	E	TG	EE	PL	L3	ZM
32	22	30	26	47	4	15	M6	9.5	35	8	32	18	50	4	20	26	12	10	M10X1.25	94	16	M6	47	32.5	G1/8	14	5	146
40	24	35	30	53	4	15	M8	11.25	45	10	40	22	54	4	22	30	16	13	M12X1.25	105	16	M6	53	38	G1/4	16	5	165
50	32	40	37	65	5	18	M8	15	55	12	50	26	69	4	28	37	20	17	M16X1.5	106	16	M8	65	46.5	G1/4	21	5	180
63	32	45	37	75	5	22	M10	19	70	16	63	35	69	4	28	37	20	17	M16X1.5	121	16	M8	75	56.5	G3/8	22	5	195
80	40	45	46	95	5	22	M12	25	85	20	80	40	86	4	34	46	25	22	M20X1.5	128	18	M10	95	72	G3/8	23	6	220
100	40	55	51	115	5	22	M12	35	105	20	100	50	91	4	38	51.5	25	22	M20X1.5	138	18	M10	115	89	G1/2	26	6	240

NQA

DOUBLE ACTING - CUSHIONED - MAGNETIC WITH DOUBLE ROD ENDS



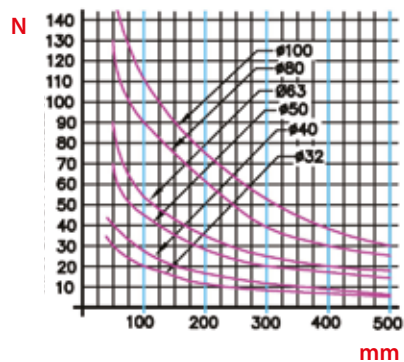
Ø	Ø B d11	C	E	F	H	K	M	S	T	V	Z	F1	VA	L2	WH	Ømm	SW	KK	L8	BG	RT	E	TG	EE	PL	L3	ZM
32	30	26	47	4	15	M6	9.5	35	8	32	18	48	4	20	26	12	10	M10X1.25	94	16	M6	47	32.5	G1/8	14	5	146
40	35	30	53	4	15	M8	11.25	45	10	40	22	54	4	22	30	16	13	M12X1.25	105	16	M6	53	38	G1/4	16	5	165
50	40	37	65	5	18	M8	15	55	12	50	26	69	4	28	37	20	17	M16X1.5	106	16	M8	65	46.5	G1/4	21	5	180
63	45	37	75	5	22	M10	19	70	16	63	35	69	4	28	37	20	17	M16X1.5	121	16	M8	75	56.5	G3/8	22	5	195
80	45	46	95	5	22	M12	25	85	20	80	40	86	4	34	46	25	22	M20X1.5	128	18	M10	95	72	G3/8	23	6	220
100	55	51	115	5	22	M12	35	105	20	100	50	91	4	38	51.5	25	22	M20X1.5	138	18	M10	115	89	G1/2	26	6	240

KEY ① = Socket head screw with female thread for mounting attachments. ② = Adjustment screw for adjustable end-position cushioning. ③ = Slot for proximity sensor.

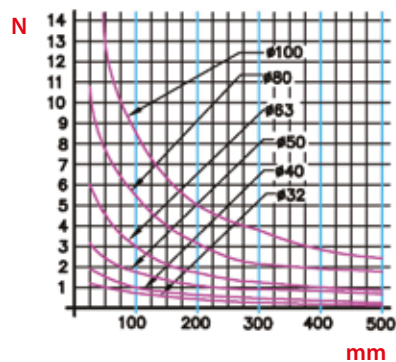
NHA CYLINDER LOAD CHARTS



Transverse Moment



Torsional Moment



N
Max admitted load
mm
Stroke



Maximum Transverse and Torsional Loads by bore

