

Actuators Series

Cartidge 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 Poition Sensing Switches



Sensor

Pg. 20.72

Rodless Actuators Series

Rodless Cylinders Standard Version



S1 Series

Pg. 20.78

Rodless Cylinder with Integrated
Guides in Tecnopolymer



S5 Series

Pg. 20.87

Click here to view the **Actuators Series** on our Website



PNEUMATIC ACTUATORS



Actuators Series



Light weight ✓

Low friction ✓

Clean design ✓

Adjustable cushion ✓

Long lasting quality ✓

Multiple versions for every application ✓

Aluminium piston ✓

SERIE T

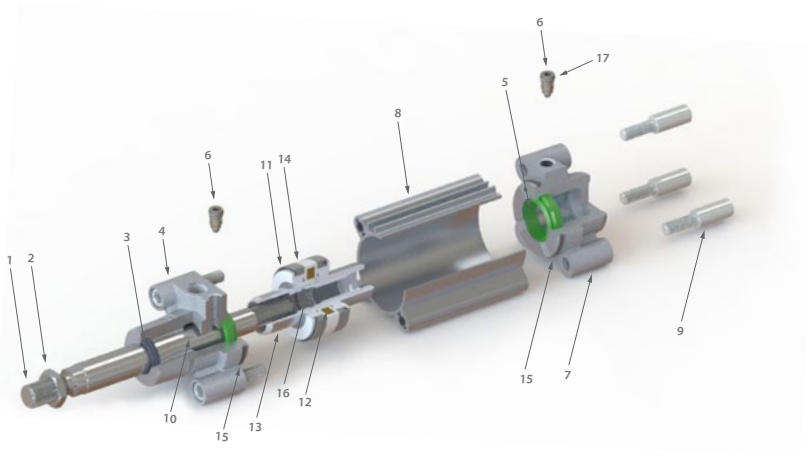
Ø 32÷125

Serie T Aluminum profile with tie rods.





TECHNICAL CHARACTERISTICS



Component Parts and Materials

- 1 Chrome-plated Steel C40 piston rod
- 2 Zinc-plated steel nut
- 3 PU rod seal
- 4 Aluminium front head
- 5 NBR cushion seal
- 6 Zinc-plated steel cushion screw
- 7 Aluminium rear head
- 8 Anodized Aluminium cylinder profile.
- 9 Zinc-plated screw
- 10 KU bushing
- 11 NBR piston seals
- 12 Plastroferrite magnet
- 13 Aluminium piston
- 14 Guide
- 15 NBR O-Ring (front head)
- 16 NBR O-Ring (piston)
- 17 NBR O-Ring (cushion screw)



Reference Standard

1907/2006
REACH ✓

2011/65/CE
RoHS ✓

PED
2014/68/UE

SILICON
FREE

ATEX
2014/34/UE



Recommended Sensors

DT



Pressures

1 bar (0.1 MPa) / 14.5 psi

10 bar (0.7 MPa) / 145 psi

Starting pressure: 0,3 bar (0.03 MPa)



Temperatures

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

+ 80 °C / 176 °F



Media

Filtered and lubricated compressed air as well as non lubricated air.



Functions

Single acting magnetic or non-magnetic. Double acting single or double end rod, magnetic or non-magnetic, cushioned or non-cushioned and tandem.



Bores

from 32 to 125 mm



Standard Strokes

from 25 to 1000 mm

Strokes on demand: up to 2700 mm

FORCES, SPRING LOADS AND AIR CONSUMPTION

SEE PG. 20.34-20.35

Serie	Execution	Ø mm	Stroke	Version	Choices
L H		0 3 2	0 0 2 5		
● LH Double acting - cushioned - magnetic	= Male rod	032	0025	= Standard	= Standard NBR
▲ LB Single acting - magnetic	L Piston Rod Lock	040	0040	T Tie rods	PU Polyurethane
● LL Double acting - cushioned - magnetic with double rod end	T Tandem Common Rod	050	0050		F -40° Versione
	D Tandem Independent Rod	063	0060		VS Only Rod Seals in FKM
	C Opposite Independent Rod	080	0075		IS Stainless steel rod
	K Opposite Independent Rod	100	0080		V All FKM seals
		125	0100		W Water and chemical Version
			0125		R Metal Scraper (NBR)
			0150		IVR Corrosion resistant and chemical agents compatible.
			0160		
			0200		
			0250		
			0300		
			0320		
			0350		
			0400		
			0450		
			0500		
			0600		
			0700		
			0800		
			0900		
			1000		

Intermediate or higher strokes are available upon request Maximum stroke 2700 mm.

Ø mm	Strokes mm																							
	25	40	50	60	75	80	100	125	150	160	200	250	300	320	350	400	450	500	600	700	800	900	1000	
32	▲●	▲●	▲●	▲●	▲●	▲●	▲●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
40	▲●	▲●	▲●	▲●	▲●	▲●	▲●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
50	▲●	▲●	▲●	▲●	▲●	▲●	▲●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
63	▲●	▲●	▲●	▲●	▲●	▲●	▲●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
80	▲●	▲●	▲●	▲●	▲●	▲●	▲●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
100	▲●	▲●	▲●	▲●	▲●	▲●	▲●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
125	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

MOST POPULAR VERSIONS

L H 0 3 2 0 0 2 5

STANDARD AUTOMATION



-10 / +80 °C
NBR SEALS - LOW FRICTION

L H 0 3 2 0 0 2 5 P U

LONG LIFE



-20 / +80 °C
PU SEALS



L H 0 3 2 0 0 2 5 V

HIGH TEMPERATURE AND CHEMICAL COMPATIBLE



-10 / +150 °C
FKM SEALS




L H 0 3 2 0 0 2 5 I S

STAINLESS STEEL ROD



-10 / +80 °C
NBR SEALS - LOW FRICTION
ROD: AISI 303



L H 0 3 2 0 0 2 5 F

LOW TEMPERATURES



-40 / +80 °C
PU SEALS



L H 0 3 2 0 0 2 5 F R

LOW TEMPERATURES WITH METAL SCRAPER



-30 / +80 °C
NBR SEALS
METAL SCRAPER




L H 0 3 2 0 0 2 5 W

WATER AND CHEMICAL WASHING RESISTANT



-10 / +60 °C
PU SEALS - WATERPROOF
ROD: AISI 303
SPECIAL PAINTING




L H 0 3 2 0 0 2 5 I V R

CORROSION RESISTANT AND CHEMICAL AGENTS COMPATIBLE



-10 / +150 °C
FKM SEALS
ROD: AISI 303

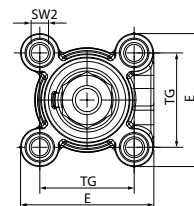
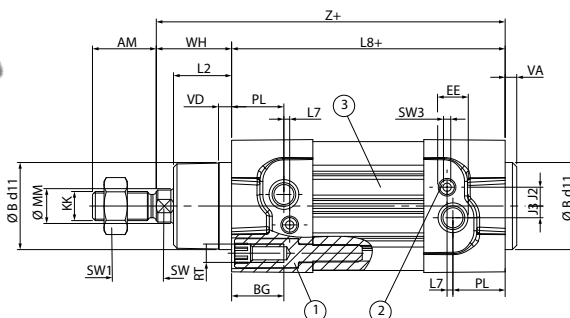
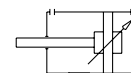
SPECIAL PAINTING
METAL SCRAPER





LH

DOUBLE ACTING - CUSHIONED - MAGNETIC

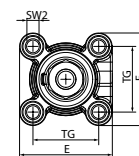
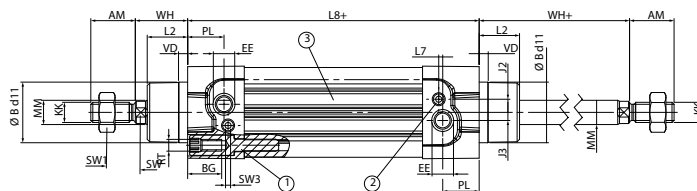
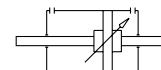


+ = Add Stroke

Ø	ØB ⁴¹¹	VD	VA	L2	WH	Ømm	SW	KK	AM	SW1	ZJ	L8	BG	RT	SW2	E	TG	EE	PL	J3	J2	L7	SW3
32	30	10	4	16	26	12	10	M10X1.25	22	17	120	94	18	M6	6	46	32.5	G1/8	18	4	6.5	2	2.5
40	35	10.5	4	20	30	16	13	M12X1.25	24	19	135	105	18	M6	6	54	38	G1/4	17.5	3.5	8	5.8	2.5
50	40	11.5	4	25	37	20	17	M16X1.5	32	22	143	106	20	M8	8	64	46.5	G1/4	20.5	7	10	2	4
63	45	15	4	26	37	20	17	M16X1.5	32	22	158	121	20	M8	8	74	56.5	G3/8	22	11	8.5	4	4
80	45	15.7	4	32	46	25	22	M20X1.5	40	30	174	128	19	M10	6	94	72	G3/8	22	11	8.5	4	4
100	55	19.2	4	35	51.5	25	22	M20X1.5	40	30	189.5	138	19	M10	6	111	89	G1/2	26	9	12.5	5	4
125	60	20	6	45	65	32	27	M27X2	54	41	225	160	21	M12	8	135	110	G1/2	30	9	12.5	2.5	4

LL

DOUBLE ACTING - CUSHIONED - MAGNETIC WITH DOUBLE ROD END



+ = Add Stroke

Ø	ØB ⁴¹¹	VD	VA	L2	WH	Ømm	SW	KK	AM	SW1	ZJ	L8	BG	RT	SW2	E	TG	EE	PL	J3	J2	L7	SW3
32	30	10	4	16	26	12	10	M10X1.25	22	17	120	94	18	M6	6	46	32.5	G1/8	18	4	6.5	2	2.5
40	35	10.5	4	20	30	16	13	M12X1.25	24	19	135	105	18	M6	6	54	38	G1/4	17.5	3.5	8	5.8	2.5
50	40	11.5	4	25	37	20	17	M16X1.5	32	22	143	106	20	M8	8	64	46.5	G1/4	20.5	7	10	2	4
63	45	15	4	26	37	20	17	M16X1.5	32	22	158	121	20	M8	8	74	56.5	G3/8	22	11	8.5	4	4
80	45	15.7	4	32	46	25	22	M20X1.5	40	30	174	128	19	M10	6	94	72	G3/8	22	11	8.5	4	4
100	55	19.2	4	35	51.5	25	22	M20X1.5	40	30	189.5	138	19	M10	6	111	89	G1/2	26	9	12.5	5	4
125	60	20	6	45	65	32	27	M27X2	54	41	225	160	21	M12	8	135	110	G1/2	30	9	12.5	2.5	4

KEY

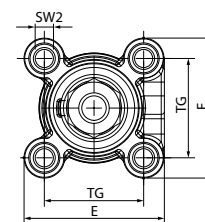
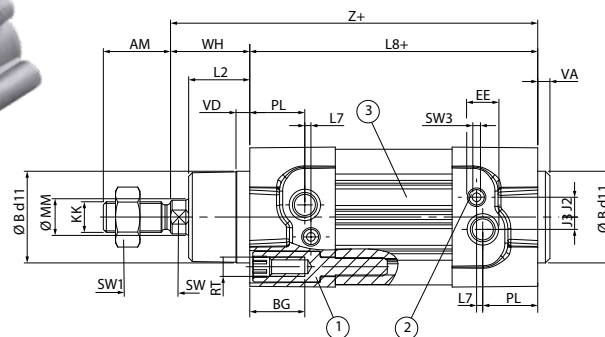
① = Socket head screw with female thread for mounting attachments.

② = Adjustment screw for adjustable end-position cushioning.

③ = Slot for proximity sensor.

LB

SINGLE ACTING - MAGNETIC



+ = Add Stroke

Ø	ØB ⁴¹¹	VD	VA	L2	WH	Ømm	SW	KK	AM	SW1	ZJ	L8	BG	RT	SW2	E	TG	EE	PL	J3
32	30	10	4	16	26	12	10	M10X1.25	22	17	145	119	18	M6	6	46	32.5	G1/8	18	4
40	35	10.5	4	20	30	16	13	M12X1.25	24	19	160	130	18	M6	6	54	38	G1/4	17.5	3.5
50	40	11.5	4	25	37	20	17	M16X1.5	32	22	168	131	20	M8	8	64	46.5	G1/4	20.5	7
63	45	15	4	26	37	20	17	M16X1.5	32	22	183	146	20	M8	8	74	56.5	G3/8	22	8
80	45	15.7	4	32	46	25	22	M20X1.5	40	30	199	153	19	M10	6	94	72	G3/8	22	11
100	55	19.2	4	35	51.5	25	22	M20X1.5	40	30	214.5	163	19	M10	6	111	89	G1/2	26	9

KEY

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

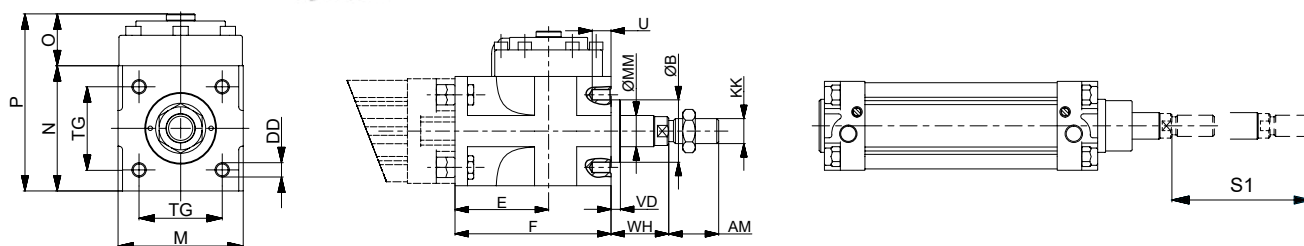
② = Adjustment screw for adjustable end-position cushioning.

③ = Slot for proximity sensor.

CYLINDER ISO 15552 / 6431 WITH PISTON ROD LOCK

LHL

DOUBLE ACTING CUSHIONED MAGNETIC WITH PISTON ROD LOCK

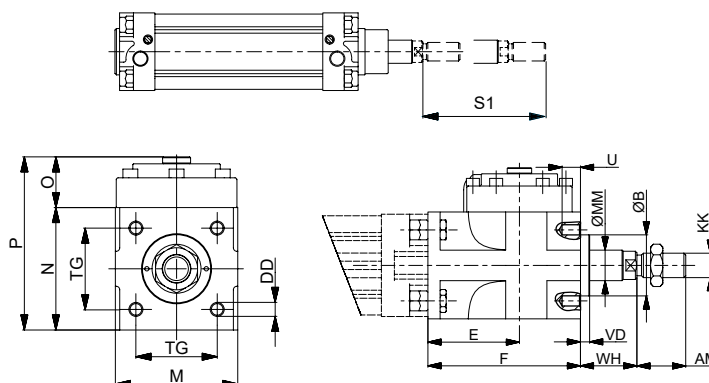


+ = Add Stroke

Code	Ø	Ø Rod (mm)	AM	B	DD	E	F	H1	KK	M	MM	N	O	P	S1	TG	U	VD	WH
LHL 032 0000	32	12	22	30	M6	54.5	84	16	M10 x 1.25	50	12	50	29.5	79.5	85	32.5	10	6	26
LHL 040 0000	40	16	24	35	M6	58	90	15	M12 x 1.25	58	16	58	29.5	87.5	90	38	9	6	30
LHL 050 0000	50	20	32	40	M8	60	100	17	M16 x 1.5	70	20	70	29	99	100	46.5	10	6	37
LHL 063 0000	63	20	32	45	M8	65	110	17	M16 x 1.5	85	20	85	37	122	110	54.5	13	6	37
LHL 080 0000	80	25	40	45	M10	75	125	21	M20 x 1.5	100	25	100	40.5	140.5	125	72	16	8	46
LHL 100 0000	100	25	40	55	M10	90	152	26	M20 x 1.5	116	25	116	59	179	150	89	18	8	51
LHL 125 0000	125	32	54	60	M12	112.5	185	35	M27 x 2	145	32	145	62	207	185	110	22	9.5	65

UL1N

PISTON ROD LOCK



Code	Ø	AM	B	DD	E	F	H1	KK	M	MM	N	O	P	S1	TG	U	VD	WH
UL1N 032 12	32	22	30	M6	54.5	84	16	M10 X 1.25	50	12	50	29.5	79.5	85	32.5	10	6	26
UL1N 040 16	40	24	35	M6	58	90	15	M12 X 1.25	58	16	58	29.5	87.5	90	38	9	6	30
UL1N 050 20	50	32	40	M8	60	100	17	M16 X 1.5	70	20	70	29	99	100	46.5	10	6	37
UL1N 063 20	63	32	45	M8	65	110	17	M16 X 1.5	85	20	85	37	122	110	56.5	13	6	37
UL1N 080 25	80	40	45	M10	75	125	21	M20 X 1.5	100	25	100	40.5	140.5	125	72	16	8	46
UL1N 100 25	100	40	55	M10	90	152	26	M20 X 1.5	116	25	116	59	179	150	89	18	8	51
UL1N 125 32	125	54	60	M12	112.5	185	35	M27 X 2	145	32	145	62	207	185	110	22	9.5	65

CYLINDER ISO 15552 / 6431 - TANDEM AND OPPOSITE

LHT

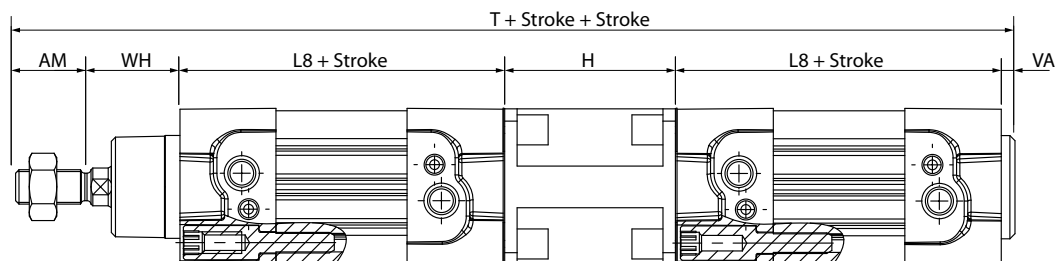
TANDEM DOUBLE-ACTING MAGNETIC COMMON ROD

LHD

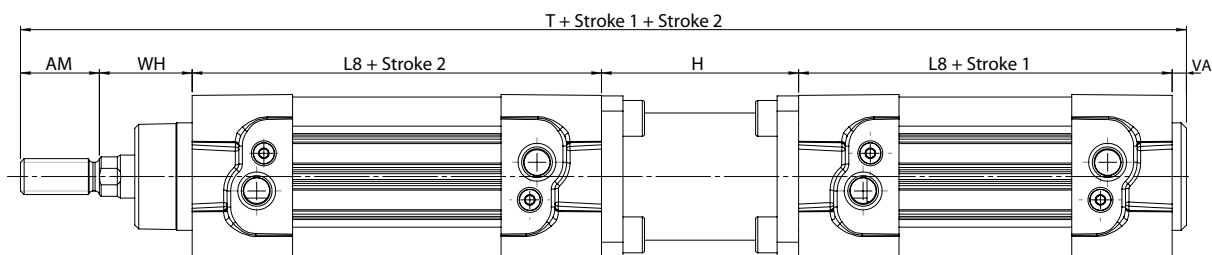
TANDEM DOUBLE-ACTING MAGNETIC INDEPENDENT RODS



LHT



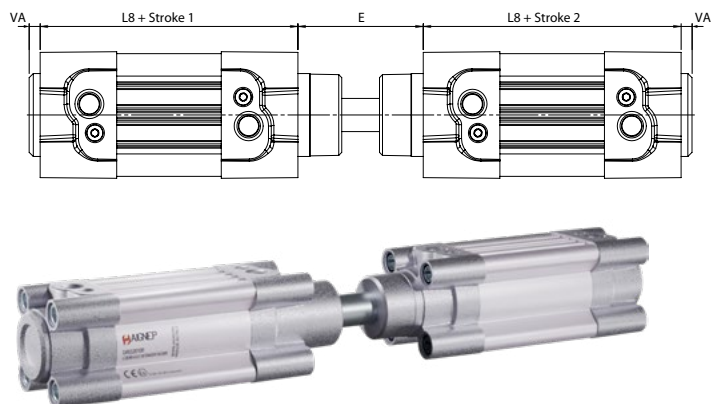
LHD



Ø	VA	WH	AM	L8	H	T
32	4	26	22	94	55	295
40	4	30	24	105	55	323
50	4	37	32	106	68	353
63	4	37	32	121	68	383
80	4	46	40	128	92	438
100	4	51.5	40	138	92	463.5
125	6	65	54	160	120	565

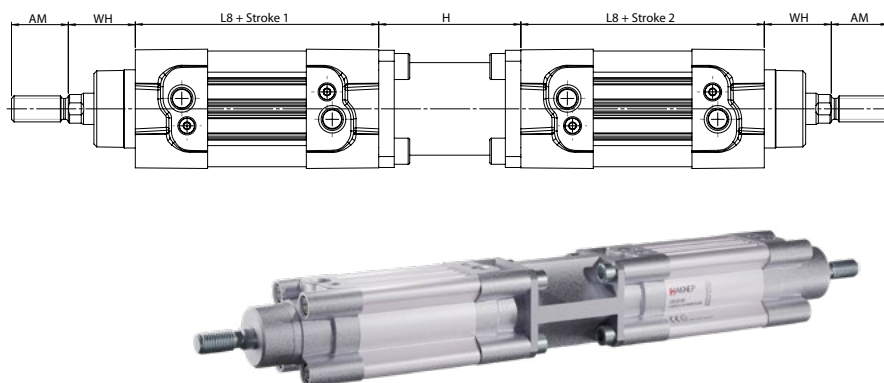
LV

FRONTAL OPPOSITE WITH COMMON ROD



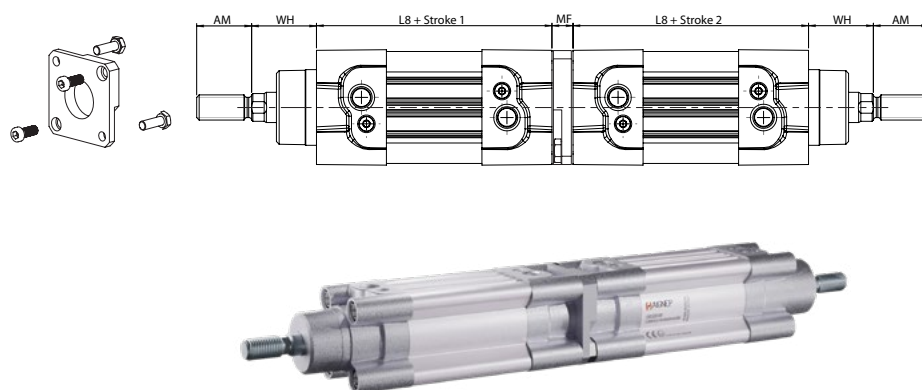
LHC

OPPOSITE INDEPENDENT RODS



LHK

OPPOSITE INDEPENDENT RODS



Ø	VA	WH	AM	L8	H	E	MF
32	4	26	22	94	55	46	10
40	4	30	24	105	55	52	10
50	4	37	32	106	68	67	15
63	4	37	32	121	68	67	15
80	4	46	40	128	92	82	15
100	4	51.5	40	138	92	87	15
125	6	65	54	160	120	115	15



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												
NI												
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	1.696	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