## 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

AIGNEP

# PNEUMATIC ACTUATORS




# Actuator Series

P.A.

# SERIES E - CYLINDER ISO 6431

## TECHNICAL CHARACTERISTICS





### Functions
Double acting single or double end rod, magnetic or non-magnetic.

### 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.

## FORCES, SPRING LOADS, AND AIR CONSUMPTION

SEE PG. 20.34-20.35

| Serie | Ø (mm) | Stroke (mm) | Mounting type | Special version |
|---|---|---|---|---|
| E H | 1 6 0 | 0 0 2 5 | T | V S |

**Serie**
- ▲ EH Double acting - cushioned - magnetic
- ▲ EL Double Acting - cushioned - magnetic with double rod end

**Ø (mm)**
160
200
250
320

**Stroke (mm)**
0025 0050 0075 0080 0100 0125 0150 0160 0200 0250 0300
0320 0350 0400 0450 0500 0600 0700 0800 0900 1000

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

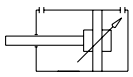
**Mounting type**
- T Anodized aluminum tube round profile with tie rods

**Special version**
- VS Only Rod Seals in FKM
- IS Stainless steel rod
- V All FKM seals
- R Metal Scraper (160-200-250)

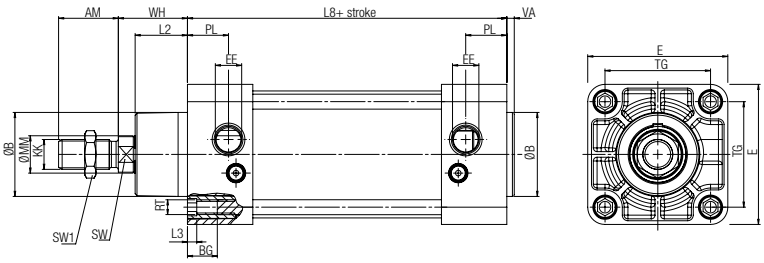
| Ø (mm) | Stroke (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | 50 | 75 | 80 | 100 | 125 | 150 | 160 | 200 | 250 | 300 | 320 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 |
| 160 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| 200 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| 250 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| 320 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |

# EH T

**DOUBLE ACTING - CUSHIONED - MAGNETIC**



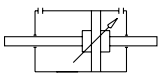




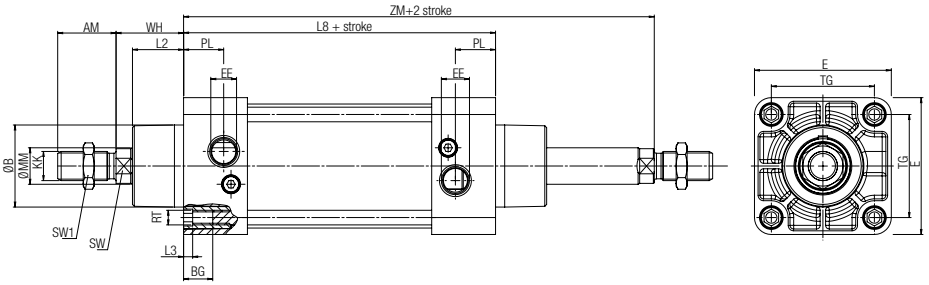

| Ø | Ø B | VA | L2 | WH | Ø mm | SW | KK | AM | L8 | BG | RT | E | TG | EE | PL | L3 | ZM | SW1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 65 | 6 | 55 | 80 | 40 | 36 | M36X2 | 72 | 180 | 24 | M16 | 180 | 140 | G3/4 | 29 | 0 | 340 | 55 |
| 200 | 75 | 6 | 60 | 95 | 40 | 36 | M36X2 | 72 | 180 | 24 | M16 | 220 | 175 | G3/4 | 29 | 0 | 370 | 55 |
| 250 | 90 | 10 | 75 | 105 | 50 | 46 | M42X2 | 84 | 200 | 25 | M20 | 275 | 220 | G1" | 31 | 0 | 410 | 65 |
| 320 | 110 | 10 | 90 | 120 | 63 | 55 | M48X2 | 96 | 220 | 30 | M24 | 350 | 270 | G1" | 30 | 0 | 460 | 75 |

# EL T

**DOUBLE ACTING - CUSHIONED - MAGNETIC WITH DOUBLE ROD END**








| Ø | Ø B | VA | L2 | WH | Ø mm | SW | KK | AM | L8 | BG | RT | E | TG | EE | PL | L3 | ZM | SW1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 65 | 6 | 55 | 80 | 40 | 36 | M36X2 | 72 | 180 | 24 | M16 | 180 | 140 | G3/4 | 29 | 0 | 340 | 55 |
| 200 | 75 | 6 | 60 | 95 | 40 | 36 | M36X2 | 72 | 180 | 24 | M16 | 220 | 175 | G3/4 | 29 | 0 | 370 | 55 |
| 250 | 90 | 10 | 75 | 105 | 50 | 46 | M42X2 | 84 | 200 | 25 | M20 | 275 | 220 | G1" | 31 | 0 | 410 | 65 |
| 320 | 110 | 10 | 90 | 120 | 63 | 55 | M48X2 | 96 | 220 | 30 | M24 | 350 | 270 | G1" | 30 | 0 | 460 | 75 |

## 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 |