**SPECIAL COVERS**
- Anti Corrosion treatment
  No retention areas
  Stainless steel nuts and protective screws as an option
- Adapted to aggressive cleaning agents, easy to clean and flexible configuration

**QUALITY / RELIABILITY**
- Based on 453 technocology, ISO 15552 compliant specifically designed for "Food Industry Applications"
- Robust, reliable and long lasting

**SPECIAL GREASE**
- According to food & pharmaceutical process industry specifications

FDA

B

**VERSIONS TO ATEX**
(see page P229-6)

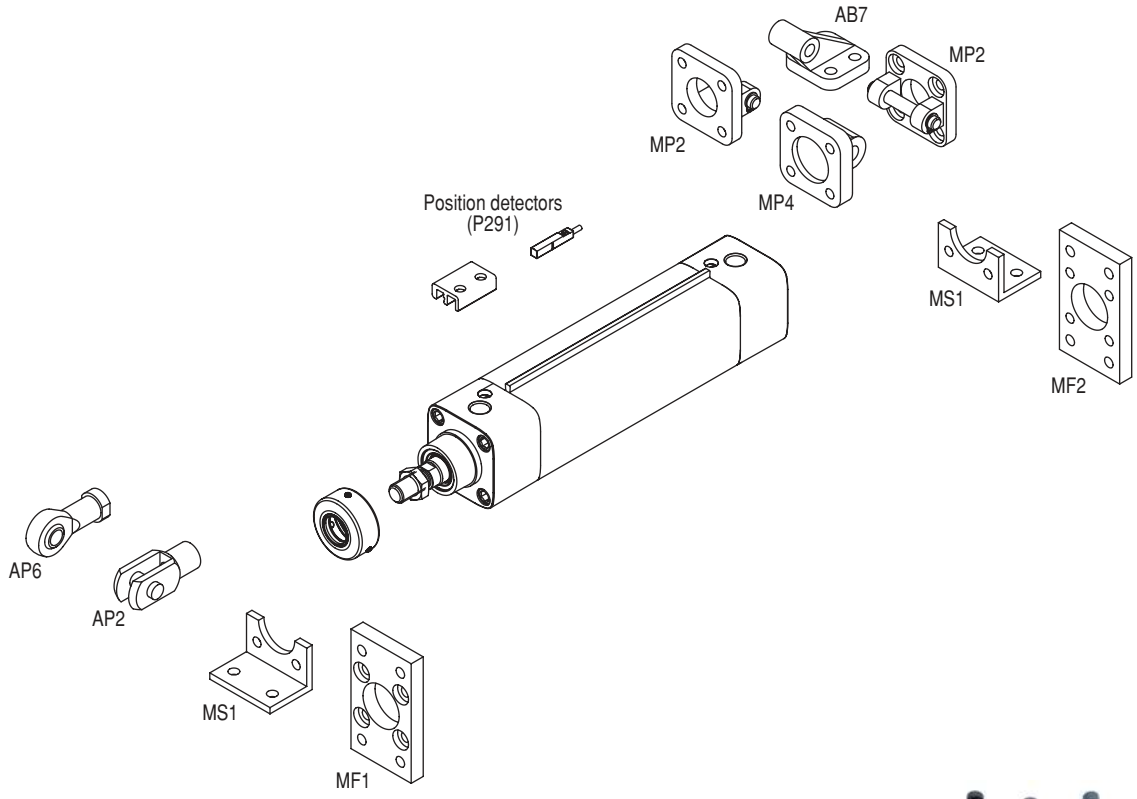

**SPECIAL TUBE PROFILE**
- Square shaped with rounded edges, no retention areas and light design with a “rail” for magnetic detector
- Easy to clean
- Laser marked tube as an option

**MAGNETIC DETECTION**
- "Rail" to adapt magnetic detectors (e.g. IP69K version)
- Reed-switch type or magneto-resistive type (MR)

**ROD SEALS CONFIGURATION**
- Rod Seals in special PUR, FPM, or FPM + PTFE
- External cartridge option for rod seal protection

**OPTIONS** (see page P229-6)

**ANTICORROSION MOUNTINGS** (see page P235)




## MOUNTINGS

**Mountings must be ordered separately:** see page P235

**Consult our range of mountings with anticorrosion treatment or in stainless steel:** see page P235

## POSITION DETECTORS

**Magnetic position detectors must be ordered separately:** "T" model (see page P291), reed switch or magneto-resistive type

numatics

# CYLINDER FOR FOOD INDUSTRY APPLICATIONS

**Ø 32 to 100 mm** - double acting
ISO 15552
**with pneumatic cushioning**

Series **454**

## GENERAL

| | |
|---|---|
| **Detection** | **Equipped for magnetic position detectors** |
| **Fluid** | Air or inert gas, filtered, lubricated or not |
| **Operating pressure** | 10 bar, max. [1 bar =100 kPa] |
| **Ambient temperature** | -20°C to +70°C |
| **Optimal max. speed** | ≤ 1 m/s (for optimal service life) |
| **Max. speed rate** | 2 m/s (for higher and lower speed rate, see LFS option) |
| **Standards** | ISO 15552 |


2D/3D CAD models - *In 3D*

## CONSTRUCTION

| | |
|---|---|
| **Barrel** | Hard anodized aluminium alloy<br>Positive groove for adapting a magnetic sensor |
| **Front and rear ends** | Aluminium alloy with anti-corrossion treatment |
| **Bearing** | Self-lubricating metal |
| **Cushioning seals** | PUR (polyurethane) |
| **Cushioning** | Pneumatic, adjustable from both sides with captive screw |
| **Rod** | Stainless steel, AISI 316L stainless steel, hard chromed |
| **Rod nut** | Stainless steel |
| **Piston** | Ø 32 to 80 mm POM (polyacetal)<br>Ø 100 mm light alloy<br>fitted with an annular permanent magnet |
| **Piston seals** | PUR (polyurethane) |
| **Grease** | Grease for food & pharmaceutical applications, ISO 21469<br>FDA 21 CFR § 178.3570 |

## HOW TO ORDER

### 15-DIGIT PRODUCT CODE

| G | 454 | A | - | 3 | A | - - - - | A00 |
|---|---|---|---|---|---|---|---|

**Thread connection**
**G** = ISO 16030

**Product series**
**454**

**Revision letter**
**A** = Initial release

**Diameter (mm)**
**3** = 32
**4** = 40
**5** = 50
**6** = 63
**8** = 80
**1** = 100

**Rod options 1**
**3** = Stainless steel single rod

**4** = Stainless steel through rod

**6** = AISI 316L stainless steel single rod

**7** = AISI 316L stainless steel through rod

**S** = Hard chromed single rod
**2** = Hard chromed through rod
All cylinders delivered with rod nut, in stainless steel for options 3, 4, 6 and 7.

**Options**
**A00** = Without Option
**SCN** = Stainless steel cover nuts
**AT1** = ATEX zones 1/21
**AT2** = ATEX zones 2/22
**LFS** = Low friction - Ø 32 to 80 mm
**LSR** = Laser marked Logo & Code
**LSS** = Option Combination LSR +SCN

**Recommended standard strokes** (mm) (1)

| Ø mm | connect. Ø (G) | 25 | 50 | 80 | 100 | 125 | 160 | 200 | 250 | 320 | 400 | 500 | 630 | 700 | 800 | 900 | 1000 | 1500 | max. stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | G1/8 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | 2000 |
| 40 | G1/4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | 2000 |
| 50 | G1/4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | 2000 |
| 63 | G3/8 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | 2000 |
| 80 | G3/8 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | 2000 |
| 100 | G1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 2000 |

Strokes range available up to "max. stroke" column on the right.
Please note strokes marked in grey exceed the maximum recommended.
(1) Other strokes on request. / Min. stroke: 5 mm

**Rod seal options**
**A** = PUR rod seal for "Agro Applications"
**F** = FPM Rod seal
**P** = FPM Rod seal + PTFE rod scraper
**C** = Protective cartridge for rod seal protection + "AGRO" PUR rod seal, only available in Ø 80 and Ø 100 mm
Note: Cylinders with option "C" are delivered with 10 mm rod overlength.

For extended piston rod and special rod threads, please obtain a code with DPM, our on-line configurator tool.



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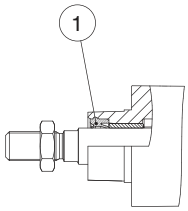
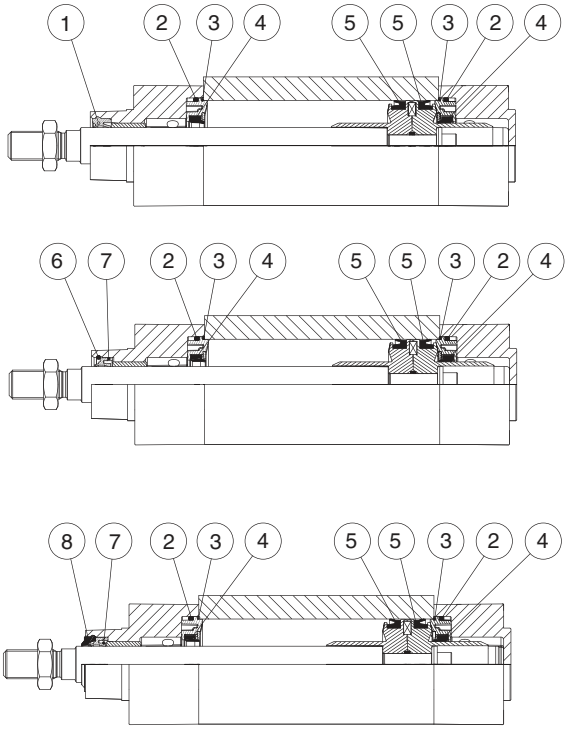
## SPARE PARTS KITS CODE

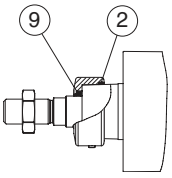
**R**




**S**




1 - PUR rod seal for "Agro Applications"
2 & 3 - O-ring
4 - Cushioning seal
5 - Piston seal
6 - Stainless steel retaining ring
7 - FPM rod seal
8 - PTFE rod scraper
9 - PUR rod scraper




### 15-DIGIT PRODUCT CODE

| M | 454 | A | - | S | A | 0000 | A00 |
|---|---|---|---|---|---|---|---|

**Spare Parts digit**
**M**

**Product series**
**454**

**Revision letter**
**A** = Initial release

**Diameter (mm)**
**3** = 32
**4** = 40
**5** = 50
**6** = 63
**8** = 80
**1** = 100

**Rod seal and rod scraper seal**
**A** = PUR rod seal for "Agro Applications"
**F** = FPM Rod Seal
**P** = FPM Rod Seal+ PTFE Rod Scraper seal
**C** = Protective Cartridge for Rod Seal Protection + PUR rod seal for "Agro Applications"

**Type of kit**
**S** = Complete set of seals
**R** = Rod seals only

## ACCESSORIES

- Special adaptor for magnetic detector (code : **P494A0029100A00**)
  Magnetic position detectors must be ordered separately: "T" model (see page P291)

- Set of 4 stainless steel protection screws to cover the cylinder mounting holes:

| Ø (mm) | code |
|---|---|
| 32-40 | **P4994395723N001** |
| 50-63 | **P4994395735N001** |
| 80-100 | **P4994395748N001** |

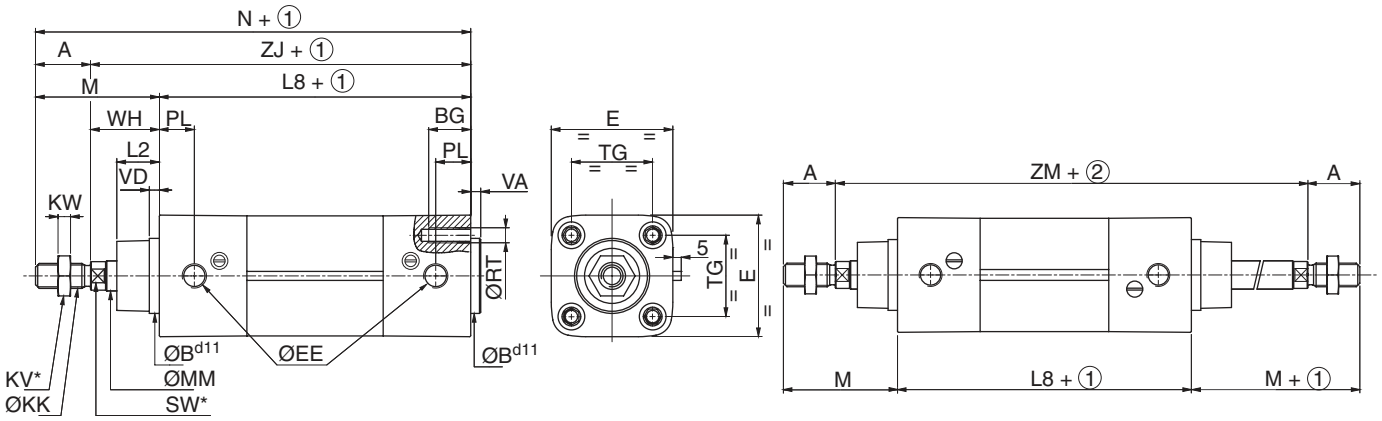
- External cartridge for rod seal:

| Ø (mm) | code |
|---|---|
| 80 | **P4994378238N001** |
| 100 | **P4994378241N001** |

## DIMENSIONS (mm), WEIGHT (kg)

### SINGLE-ROD TYPE CYLINDER
Bare cylinder
ISO 15552

### THROUGH-ROD TYPE CYCLINDER
Bare cylinder
ISO 15552




① Stroke
② Stroke x 2
✻ Width across flats

| Ø (mm) | A | ØB d11 | BG | E | ØEE (3) | ØKK | KV | KW | L2 | L8 | M | ØMM | N | PL | ØRT | SW | TG | VA | VD min. | WH | ZJ | ZM | weight (4) | weight (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 22 | 30 | 16 | 48 | G1/8 | M10x1,25 | 16 | 5 | 17 | 94 | 48 | 12 | 142 | 14 | M6 | 10 | 32,5 ±0,5 | 4 | 4 | 26 | 120 | 146 | 0,49 | 0,0029 |
| 40 | 24 | 35 | 16 | 54 | G1/4 | M12x1,25 | 18 | 6 | 19 | 105 | 54 | 16 | 159 | 16 | M6 | 13 | 38 ±0,5 | 4 | 4 | 30 | 135 | 165 | 0,78 | 0,0037 |
| 50 | 32 | 40 | 16 | 66 | G14 | M16x1,5 | 24 | 8 | 24 | 106 | 69 | 20 | 175 | 18,5 | M8 | 17 | 46,5 ±0,5 | 4 | 4 | 37 | 143 | 180 | 1,00 | 0,0053 |
| 63 | 32 | 45 | 16 | 78 | G3/8 | M16x1,5 | 24 | 8 | 24 | 121 | 69 | 20 | 190 | 19 | M8 | 17 | 56,5 ±0,5 | 4 | 4 | 37 | 158 | 195 | 1,35 | 0,0057 |
| 80 | 40 | 45 | 17 | 96 | G3/8 | M20x1,5 | 30 | 10 | 33 | 128 | 86 | 25 | 214 | 16,5 | M10 | 22 | 72 ±0,5 | 4 | 4 | 46 | 174 | 220 | 2,36 | 0,0086 |
| 100 | 40 | 55 | 17 | 115 | G1/2 | M20x1,5 | 30 | 10 | 35,5 | 138 | 91 | 25 | 229 | 19,5 | M10 | 22 | 89 ±0,5 | 4 | 4 | 51 | 189 | 240 | 3,46 | 0,0099 |

(3) Thread connections G have standard thread according to ISO 16030.
(4) Cylinder weight at 0 mm stroke.
(5) Weight to be added per additional mm length.