ISO 15552 CYLINDER

Cylinders made to ISO 15552 available in various versions and with a wide range of accessories:

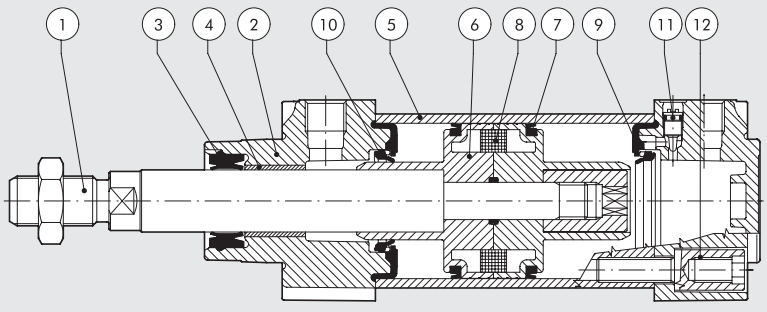
- Configuration with or without magne
- Single-or double acting – single-or through-rod
- Wide choice of NBR, POLYURETHANE and FKM/FPM gaskets (for high temperatures), for LOW TEMPERATURE
- Piston rod scrapers for use in hostile environments available
- Special versions on request
- Fixing accessories, guide units and mechanical piston rod lock.

They are available in three series, which differ according to the shape of the barrel and, consequently, the type of sensors and accessories that can be mounted.
These cylinders are called series STD, type A, series 3.

TECHNICAL DATA		Polyurethane	NBR	FKM/FPM	Low Temperature	Other piston rod gasket
Max operating pressure	bar	10				
	MPa	1				
	psi	145				
Temperature range	°C	–25 to +80	–10 to +80	–10 to +150 (non-magnetic cyl.)	–35 to +80	See next page
Fluid		Unlubricated air. Lubrication, if used, must be continuous				
Bore	mm	32; 40; 50; 63; 80; 100; 125				
Design		Heads with Tap Tite screws				
Standard stroke ✚	mm	Single-acting: for bores 32 to 63 strokes from 1 to 250				
		Double-acting: for bores 32 to 80 strokes from 1 to 2800				
		for bores 100 to 125 strokes from 1 to 2600				
Versions		Double-acting cushioned, Single-acting extended or retracted rod cushioned, Through-rod cushioned, Long cushioning, High-temperature, Piston rod lock, Oil seal, Through-rod oil seal, Low friction, No stick-slip.				
Sensor magnet		All versions come complete with magnet. Supplied without magnet on request.				
Inrush pressure		Ø 32; 40: 0.4 bar				For type-R gasket:
		Ø 50; 63 strokes < 1500 mm: 0.3 bar; strokes > 1500 mm: 0.4 bar				Ø 32: 1.5 bar
		Ø 80; 100; 125 strokes < 1500 mm: 0.2 bar; strokes > 1500 mm: 0.4 bar				Ø 40; 50: 1 bar
						Ø 63: 0.8 bar
						Ø 80; 100; 125: 0.5 bar
Notes		**For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.**				
		✚ Maximum recommended strokes. Higher values can create operating problems				
Forces generated at 6 bar thrust/retraction		See cylinder "**General technical data**" at the beginning of the chapter				
Weights		See cylinder "**General technical data**" at the beginning of the chapter				

COMPONENTS

① PISTON ROD: C45 steel or stainless steel, thick chromed
② HEAD: die cast aluminium
③ PISTON ROD GASKET: polyurethane, NBR, FKM/FPM, FKM/FPM with metal scraper
④ GUIDE BUSHING: steel strip with bronze and PTFE insert
⑤ BARREL: drawn anodized calibrated aluminium
⑥ HALF-PISTON: self-lubricating technopolymer with built-in cushioning olives (aluminium with PTFE pad for diameters 80-100-125)
⑦ PISTON GASKET: polyurethane, NBR or FKM/FPM
⑧ MAGNET: plastoferrite
⑨ BUFFER + Static O-rings: NBR or FKM/FPM
⑩ CUSHIONING GASKET: polyurethane, NBR or FKM/FPM
⑪ CUSHIONING NEEDLE: OT 58 with needle out movement safety system even when fully open
⑫ SCREWS: Tap Tite for assembly



METAL WORK PNEUMATIC

OVERVIEW OF SEALS AND SCRAPERS

	Code identifier	Key feature	Applications	Gasket material	Temperature range	Notes
① 	**....N**	General use.	Standard applications, also with humidity.	NBR	-10 to + 80 °C	
② 	**....P**	Long life.	Applications with long strokes or high number of cycles.	Polyurethane	-25 ÷ + 80 °C	
③ 	**....V**	High temperatures - chemicals.	Industrial applications with chemical agents and/or at high temperatures.	FPM/FKM	-10 to + 150 °C (non magnetic cylinders)	
④ 	**....B**	Low temperatures.	Applications in presence of low temperature such as in cold environments.	NBR	-35 to + 80 °C	
⑦ 	**....C**	Dirt and dust. Reference name: COMBI	Applications in dirty and dusty environments.	Scraper made of technopolymer, the other seals are made of NBR.	-10 to + 80 °C	Maximum recommended speed: 1 m/s
⑧ 	**....R**	Dirt and low temperatures. Reference name: HARD PU	Medium-Heavy duty applications, with presence of dirt and low temperatures, such as in agricolture or in transport sector.	Piston rod seal made of hard polyurethane, the other seals are made of polyurethane.	-25 to + 80 °C	Low temperature versions for a minimum temperature of -35°C are available on request.
⑨ 	**....M**	Dirt and high temperature. Reference name: METAL	Heavy duty applications, in presence of hard dirt and high temperatures, like in cement plants, foundries or in transport sector.	Metal scraper, the other seals are made of FKM/FPM.	-10 to + 150 °C	Not available in Ø 32. The scraper is housed in a special head.
SEALS USED IN OTHER FAMILIES OF ISO 15552 CYLINDERS						
① 	**123....** only for series 3	Ultra low friction.	Textile industry, dandy devices, pneumatic springs.	NBR	-10 to + 80 °C	
⑩ 	**....BL** and **....WL**	HCR (High Corrosion Resistance)	Food and Beverage sector, such as dairy industry.	Anti-stagnation scraper made of special polyurethane, the other seals are made of NBR.	-10 to + 60 °C	
② 	**W184...** **W185...**	INOX	Industrial applications with aggressive chemical agents.	Polyurethane	-20 to + 80 °C	
③ 	**W184V...** **W185V...**	Stainless steel high temperature.	Industrial applications, in presence of chemicals and high temperatures requested, such as in chemical plants.	FKM/FPM	-10 to + 150 °C	
SEALS AVAILABLE ON REQUEST						
⑥ 	**Only on request**	Self lubricated.	Applications where the lubricants in the cylinder could be removed, such as in car washing plants.	Self lubricated tecnopolymer.	-35 to + 80 °C	

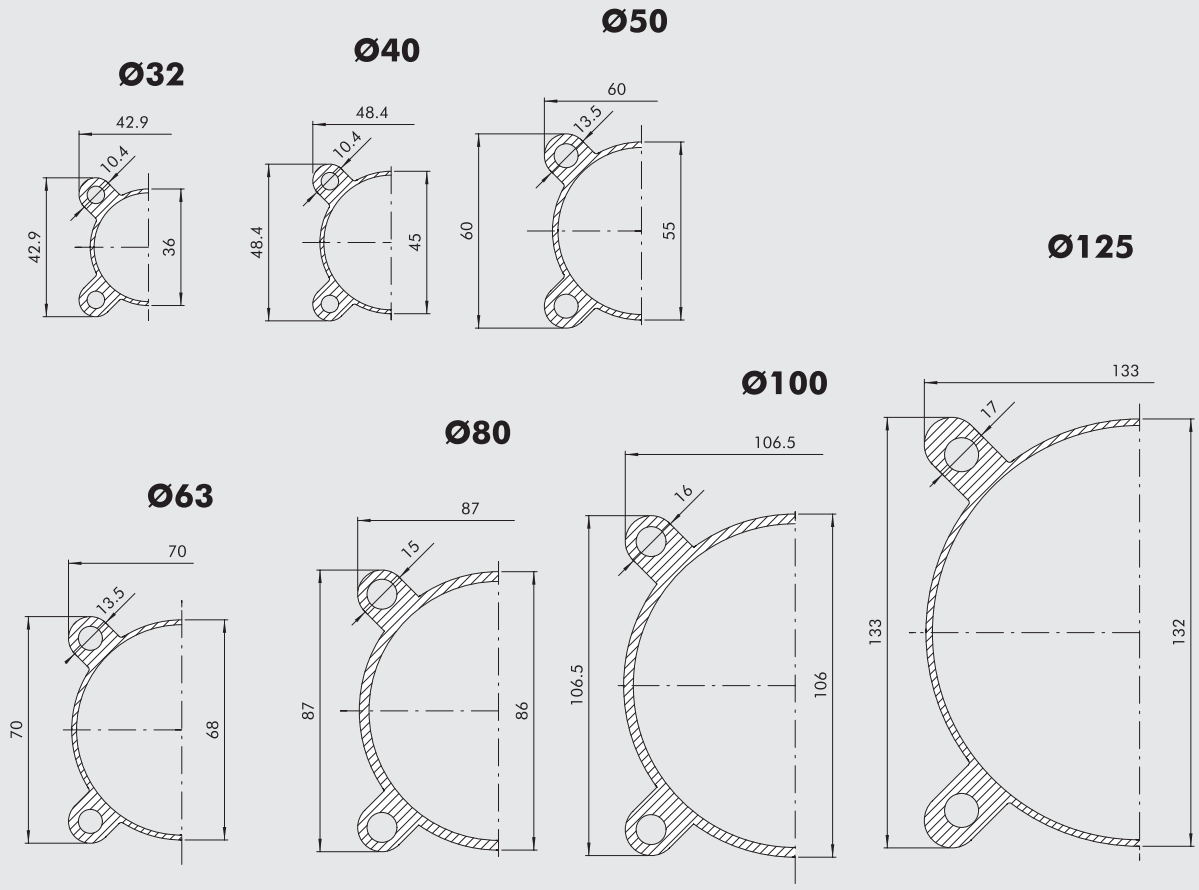
Anti-contamination Effect Indicators

An index of protection against the dirt that settles and adheres to the piston rod is provided for each version, on a 1 to 100 scale.

ISO 15552 CYLINDER
SERIES STD

ISO 15552 cylinders, featuring a smooth barrel with no longitudinal slots.
This means it is easier to clean the cylinder and there are fewer points where dirt can collect.
Specific brackets are required for mounting magnetic sensors

BARREL CROSS SECTION



METAL WORK PNEUMATIC

KEY TO CODES CYLINDER ISO 15552 STD

CYL	1 2 1	0	3 2	0 0 5 0	C	P	▼ E
	TYPE		BORE	STROKE	MATERIAL	GASKETS	
	120 Double-acting, cushioned, non-magnetic 121 Double-acting, cushioned ● 122 Through-rod 124 Double-acting, non-cushioned 125 Opposed ✚ 126 Single-acting 127 Tandem 134 Rod lock version ✱ 136 Version with piston rod lock ✱ ◆ 137 Piston rod lock + guide unit	0 Diameter S Non-magnetic ▲ G No stick-slip	32 40 50 63 80 ■ 100 ■ 125	For the maximum suppliable strokes, look at the technical data	A C45 chromed piston rod, aluminium piston: standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes Z Stainless steel piston rod and nut aluminium piston X Stainless steel piston rod and nut technopolymer piston	N NBR gaskets P Polyurethane gaskets V FKM/FPM gaskets ● B Low temperature C "Combi" piston rod gasket ▶ R "Hard PU" piston rod gasket ● ◘ M "Metal" piston rod gasket	E Single-acting extended rod

■ In the code of cylinder with letter in fourth position Ø 100 becomes A1; Ø 125 becomes A2
● Only available for versions with aluminium piston (A or Z)
✚ Available until Ø 63 and only the versions with piston in aluminum (A or Z)
126... Single-acting retracted rod
126...E Single-acting extended rod
◘ Not available in Ø 32
▲ **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only**
◆ Available up to Ø 100
✱ Not available for gaskets V or B
▼ Letter to be added only to the single acting extended rod version
▶ The 126 (single-action) type and the (No-stick-slip) version G are not available

KEY TO CODES CYLINDER ISO 15552 STD LOW-FRICTION

CYL	1 2 3	A	3 2	0 0 5 0	C	P
		TYPE	BORE	STROKE	MATERIAL	GASKETS
		A Low friction, type A B Low friction, type B C Low friction, type C D Low friction, type D E Low friction, type E F Low friction, type F	32 40 50 63 80 A1 = Ø 100 A2 = Ø 125	Ø 32 to 80 stroke 1 to 2800 mm Ø 100 to 125 stroke 1 to 2600 mm	A C45 chromed piston rod, aluminium piston: standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes Z Stainless steel piston rod and nut aluminium piston X Stainless steel piston rod and nut technopolymer piston	N NBR gaskets P Polyurethane gaskets V FKM/FPM gaskets

KEY TO CODES CYLINDER ISO 15552 STD LONG-CUSHIONING

CYL	1 3 1	A	3 2	0 0 5 0	A	P
		TYPE	BORE	STROKE	MATERIAL	GASKETS
		A 200 mm front/rear cushioning cone – 200 mm ext. B 150 mm front/rear cushioning cone – 150 mm ext. C 100 mm front/rear cushioning cone – 100 mm ext. D 150 mm front/rear cushioning cone – 200 mm ext. E 100 mm front/rear cushioning cone – 200 mm ext. F 50 mm front/rear cushioning cone – 100 mm ext. G 100 mm front/rear cushioning cone – 150 mm ext. H 200 mm front cushioning cone – 200 mm ext. I 150 mm front cushioning cone – 150 mm ext. L 100 mm front cushioning cone – 100 mm ext. M 150 mm front cushioning cone – 200 mm ext. N 100 mm front cushioning cone – 150 mm ext. O 50 mm front cushioning cone – 100 mm ext. Q 200 mm rear cushioning cone – 200 mm ext. R 150 mm rear cushioning cone – 150 mm ext. S 100 mm rear cushioning cone – 100 mm ext. T 150 mm rear cushioning cone – 200 mm ext. U 100 mm rear cushioning cone – 200 mm ext. V 50 mm rear cushioning cone – 100 mm ext.	32 40 50 63	1 to 2600 mm	A C45 chromed rod, aluminium piston rod for all sizes Z Stainless steel piston rod and nut aluminium piston	N NBR gaskets P Polyurethane gaskets ✱ V FKM/FPM gaskets

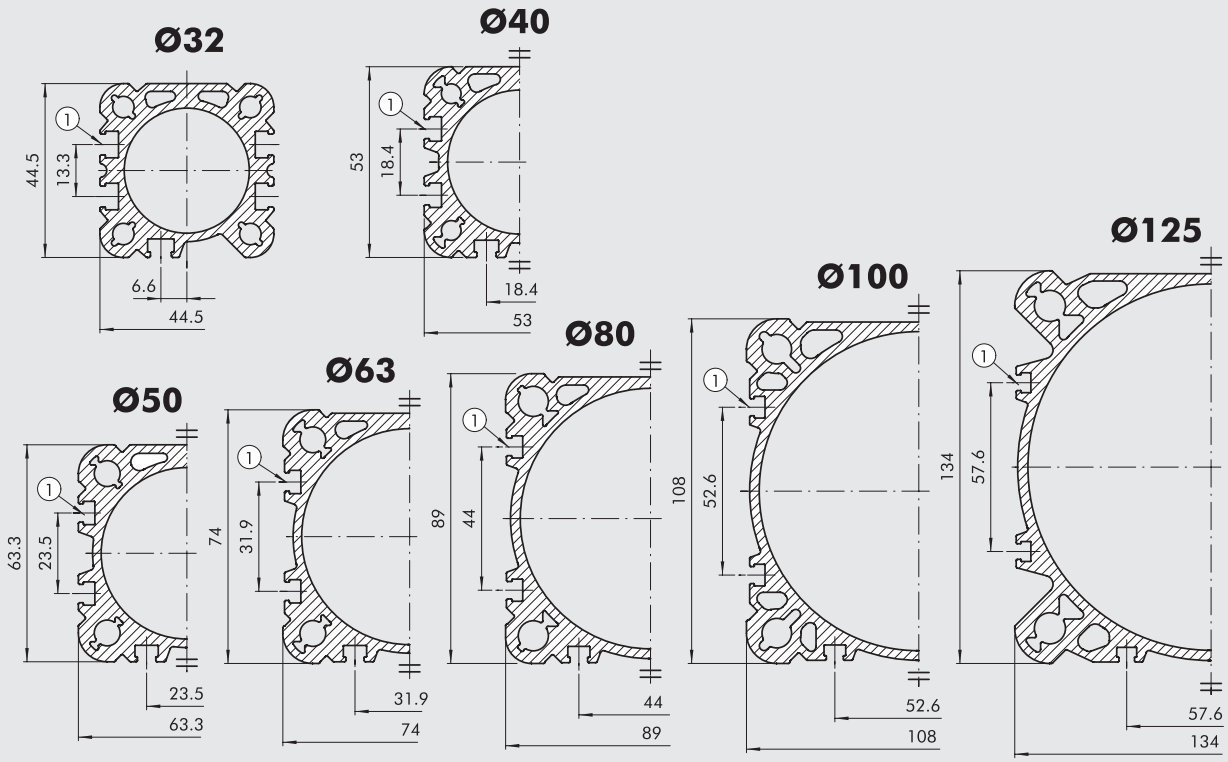
✱ Version valid only for types: Q, R, S, T, U and V.

ISO 15552 CYLINDER
TYPE A

ISO 15552 cylinders, featuring a barrel with longitudinal slots
on three sides for inserting and securing retractable sensors.
The same slots can also be used for valves and other mechanical parts.

BARREL CROSS SECTION

① SLOTS FOR RETRACTABLE SENSOR



METAL WORK PNEUMATIC

KEY TO CODES CYLINDER ISO 15552 TYPE "A"

CYL	121	A	32	0050	C	P	▼E
	TYPE		BORE	STROKE	MATERIAL	GASKETS	
	121 Double-acting, cushioned ● 122 Through-rod 124 Double-acting, non-cushioned 125 Opposed ✚ 126 Single-acting 127 Tandem 134 Rod lock version ✱ 136 Version with piston rod lock ✱ ◆ 137 Piston rod lock + guide unit	A Standard ▲ B No stick-slip C Non-magnetic	32 40 50 63 80 A1 = Ø 100 A2 = Ø 125	For the maximum suppliable strokes, look at the technical data	A C45 chromed piston rod, aluminium piston: standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes Z Stainless steel piston rod and nut aluminium piston X Stainless steel piston rod and nut technopolymer piston	N NBR gaskets P Polyurethane gaskets V FKM/FPM gaskets ● B Low temperature C "Combi" piston rod gasket ▶ R "Hard PU" piston rod gasket ● ◘ M "Metal" piston rod gasket	E Single-acting extended rod

● Only available for versions with aluminium piston (A or Z)
✚ Available until Ø 63 and only the versions with piston in aluminum (A or Z)
126... Single-acting retracted rod
126...E Single-acting extended rod
◘ Not available in Ø 32
▼ Letter to be added only to the single acting extended rod version

▲ **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only**
◆ Available up to Ø 100
✱ Not available for gaskets V or B
▶ The 126 (single-action) type and the (No-stick-slip) version B are not available

KEY TO CODES CYLINDER ISO 15552 LOW-FRICTION TYPE "A"

CYL	129	A	32	0050	C	P
		TYPE	BORE	STROKE	MATERIAL	GASKETS
		A Low friction, type A B Low friction, type B C Low friction, type C D Low friction, type D E Low friction, type E F Low friction, type F	32 40 50 63 80 A1 = Ø 100 A2 = Ø 125	Ø 32 to 80 stroke 1 to 2800 mm Ø 100 to 125 stroke 1 to 2600 mm	A C45 chromed piston rod, aluminium piston: standard for all cylinders with ≥1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes Z Stainless steel piston rod and nut aluminium piston X Stainless steel piston rod and nut technopolymer piston	N NBR gaskets P Polyurethane gaskets V FKM/FPM gaskets

KEY TO CODES CYLINDER ISO 15552 LONG-CUSHIONING TYPE "A"

CYL	130	A	32	0050	A	P
		TYPE	BORE	STROKE	MATERIAL	GASKETS
		A 200 mm front/rear cushioning cone – 200 mm ext. B 150 mm front/rear cushioning cone – 150 mm ext. C 100 mm front/rear cushioning cone – 100 mm ext. D 150 mm front/rear cushioning cone – 200 mm ext. E 100 mm front/rear cushioning cone – 200 mm ext. F 50 mm front/rear cushioning cone – 100 mm ext. G 100 mm front/rear cushioning cone – 150 mm ext. H 200 mm front cushioning cone – 200 mm ext. I 150 mm front cushioning cone – 150 mm ext. L 100 mm front cushioning cone – 100 mm ext. M 150 mm front cushioning cone – 200 mm ext. N 100 mm front cushioning cone – 150 mm ext. O 50 mm front cushioning cone – 100 mm ext. Q 200 mm rear cushioning cone – 200 mm ext. R 150 mm rear cushioning cone – 150 mm ext. S 100 mm rear cushioning cone – 100 mm ext. T 150 mm rear cushioning cone – 200 mm ext. U 100 mm rear cushioning cone – 200 mm ext. V 50 mm rear cushioning cone – 100 mm ext.	32 40 50 63	1 to 2600 mm	A C45 chromed piston rod, aluminium piston for all sizes Z Stainless steel piston rod and nut aluminium piston	N NBR gaskets P Polyurethane gaskets ✱ V FKM/FPM gaskets

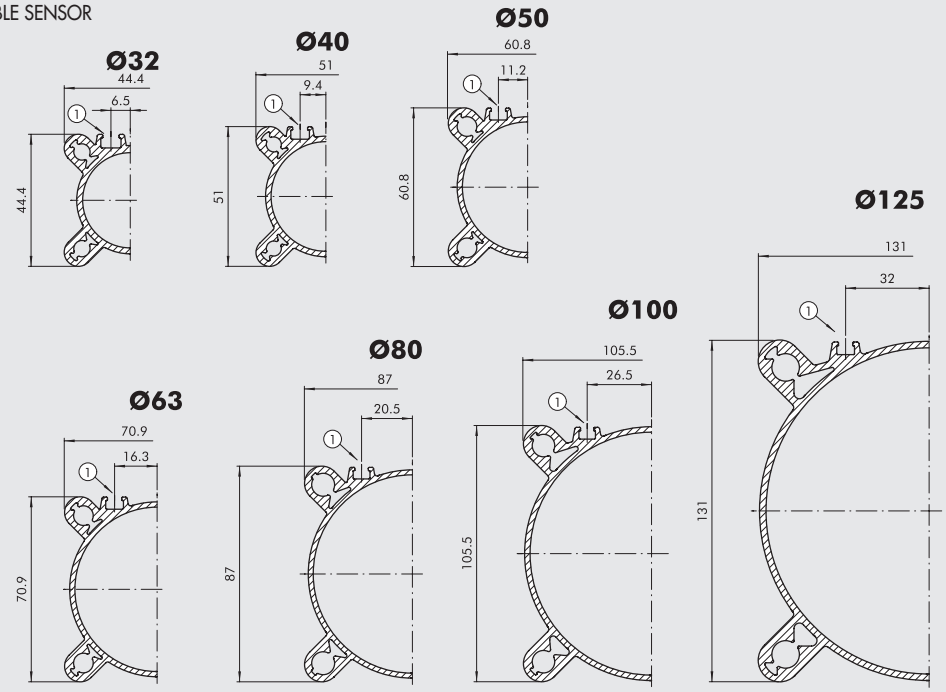
✱ Version valid only for types: Q, R, S, T, U and V.

ISO 15552 CYLINDER SERIES 3

ISO 15552 cylinders, featuring specially-shaped barrels designed to reduce weight to a minimum.
Two T-slots on the same side as the threaded fittings can take retractable sensors.
The other three sides of the barrel are smooth, with no slots, and hence easy to clean.

BARREL CROSS SECTION

① SLOTS FOR RETRACTABLE SENSOR



KEY TO CODES

CYL	1 2 1 TYPE	3	3 2 BORE	0 0 5 0 STROKE	C MATERIAL	P GASKETS	▼ E
	121 Double-acting, cushioned ● **122** Through-rod **124** Double-acting, non-cushioned **125** Opposed ✚ **126** Single-acting **127** Tandem **134** Rod lock version ■ **136** Version with piston rod lock ■ ✱ **137** Piston rod lock + guide unit	**3** Series 3 ◆ **4** Series 3 No stick slip **5** Series 3 Non-magnetic	32 40 50 63 80 A1 = Ø 100 A2 = Ø 125	For the maximum suppliable strokes, look at the technical data	**A** C45 chromed piston rod, aluminium piston: standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over **C** C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes **Z** Stainless steel piston rod and nut aluminium piston **X** Stainless steel piston rod and nut technopolymer piston	**N** NBR gaskets **P** Polyurethane gaskets **V** FKM/FPM gaskets ● **B** Low temperature **C** "Combi" piston rod gasket ▶ **R** "Hard PU" piston rod gasket ● ◘ **M** "Metal" piston rod gasket	**E** Single-acting extended rod

● Only available for versions with aluminium piston (A or Z)
✚ Available until Ø 63 and only the versions with piston in aluminum (A or Z)
126... Single-acting retracted rod
126...E Single-acting extended rod
▼ Letter to be added only to the single acting extended rod version
◆ **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only**
✱ Available until Ø 100
■ Not available for gasket V or B
◘ Not available in Ø 32
▶ The 126 (single-action) type and the (No-stick-slip) version 4 are not available

ISO 15552 LOW-FRICTION CYLINDER
CODE 123 FOR SERIES STD
CODE 129 FOR TYPE A

METAL WORK PNEUMATIC

The low-friction cylinder is typically used as a dandy or tensioning cylinder since it is a single-acting cylinder without a return spring.
The configurations are shown below

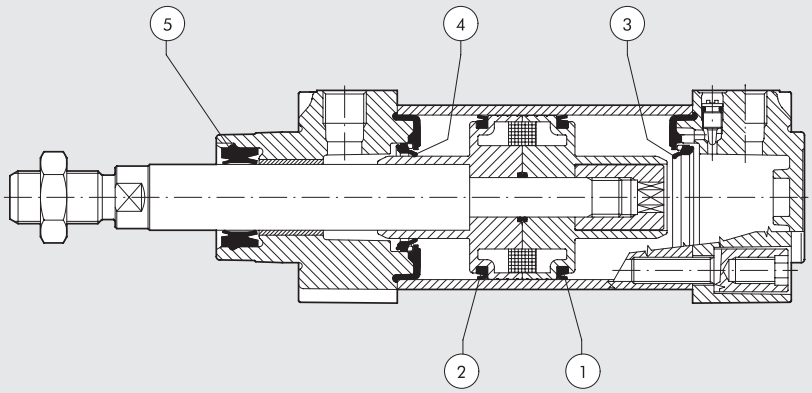
1) The best type is A as it involves less friction.
2) Type B should be used when the cylinder is working under normal conditions outside the pneumatic cushioning area.
   Cushioning is only for emergency use. It acts as a shock absorber in the case of malfunction.
3) Type C differs from type A due to the presence of a piston rod gasket that prevents dirt getting in when operating in dirty environments.
4) Type D differs from type B due to the presence of a piston rod gasket that prevents dirt getting in when operating in dirty environments.
5) Type E should be used when the pressurized chamber is the front one.
6) For type F, see point 2.

NB. THE CYLINDER IS ALWAYS SINGLE-ACTING WITHOUT A RETURN SPRING.

	TYPE	GASKETS
Rear chamber pressure	A	1
Rear chamber pressure and cushioning in case of impact	B	1+3
Rear chamber pressure and piston rod gasket	C	1+5
Rear chamber pressure, cushioning in case of impact and piston rod gasket	D	1+3+5
Front chamber pressure	E	2+5
Front chamber pressure and cushioning in case of impact	F	2+5+4

COMPONENTS

① Rear chamber piston gasket made of polyurethane, NBR or FKM/FPM
② Front chamber piston gasket made of polyurethane, NBR or FKM/FPM
③ Rear chamber cushioning gasket made of polyurethane, NBR or FKM/FPM
④ Front chamber cushioning gasket made of polyurethane, NBR or FKM/FPM
⑤ Piston rod gasket made of polyurethane, NBR or FKM/FPM



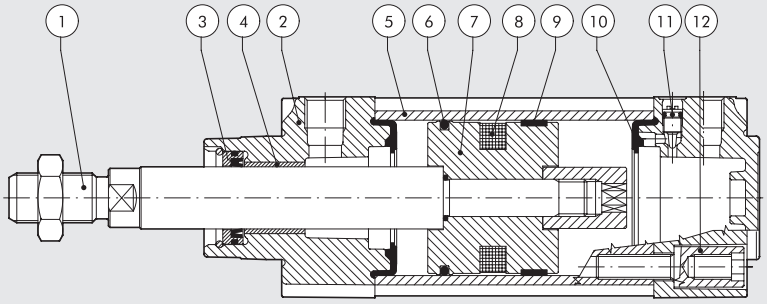
ISO 15552 ULTRA-LOW FRICTIONS CYLINDER

A typical ultra-low friction cylinder is generally used as an oscillating or tensioning cylinder. It is single acting, in the sense that compressed air is normally fed into one of the two chambers only. An external force acts on the other side. Metal Work's ultra-low friction cylinder is designed as a double-acting one, which means the compressed air can be fed into the rear or either the front chamber. They are built to comply with ISO 15552 and are available with or without a magnet.
Supplied with a series 3 barrel.
A through-rod version is not available.
These cylinders are always non-cushioned.
The gaskets are made of NBR.
A full range of accessories is available.

TECHNICAL DATA		NBR
Max operating pressure	bar	10
	MPa	1
	psi	145
Temperature range	°C	–10 to +80
Fluid		Unlubricated air
Bore	mm	32; 40; 50; 63; 80; 100; 125
Standard stroke	mm	1 to 1200
Design		Heads with Tap Tite screws
Versions		Double-acting magnetic, Double-acting non-magnetic (always "No stick-slip" cylinder)
Sensor magnet		All the versions with or without magnet
Inrush pressure	bar	Ø 32 = 0.08
		Ø 40 = 0.06
		Ø 50 = 0.05
		Ø 63 = 0.04
		Ø 80 = 0.03
		Ø 100 = 0.03
		Ø 125 = 0.03
Forces generated at 6 bar thrust/retraction		See cylinder "**General technical data**" at the beginning of the chapter
Weights		See cylinder "**General technical data**" at the beginning of the chapter
Notes		There may be leakage between the two chambers in the presence of low pressures (up to 1 bar)

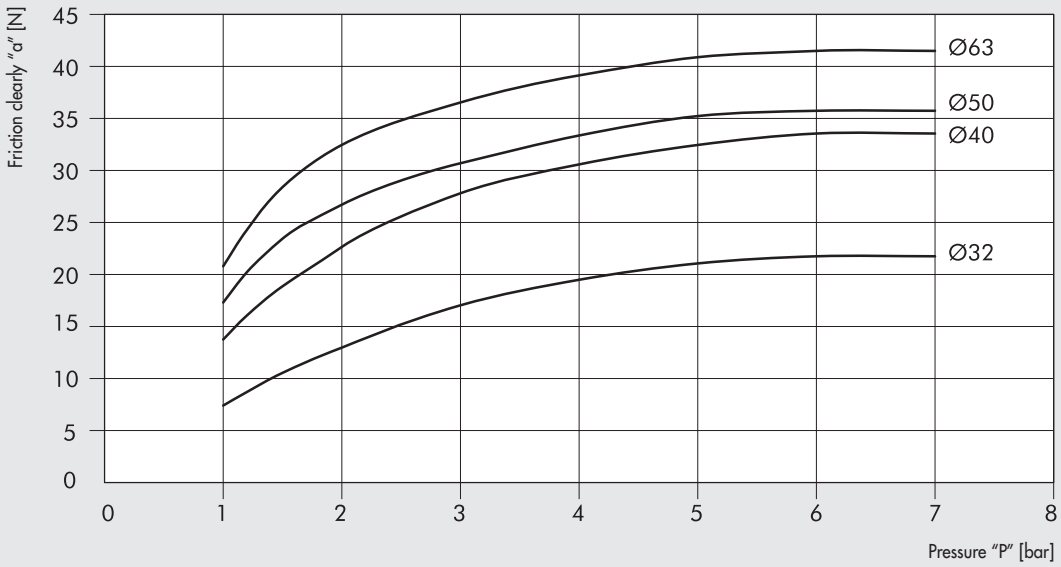
COMPONENTS

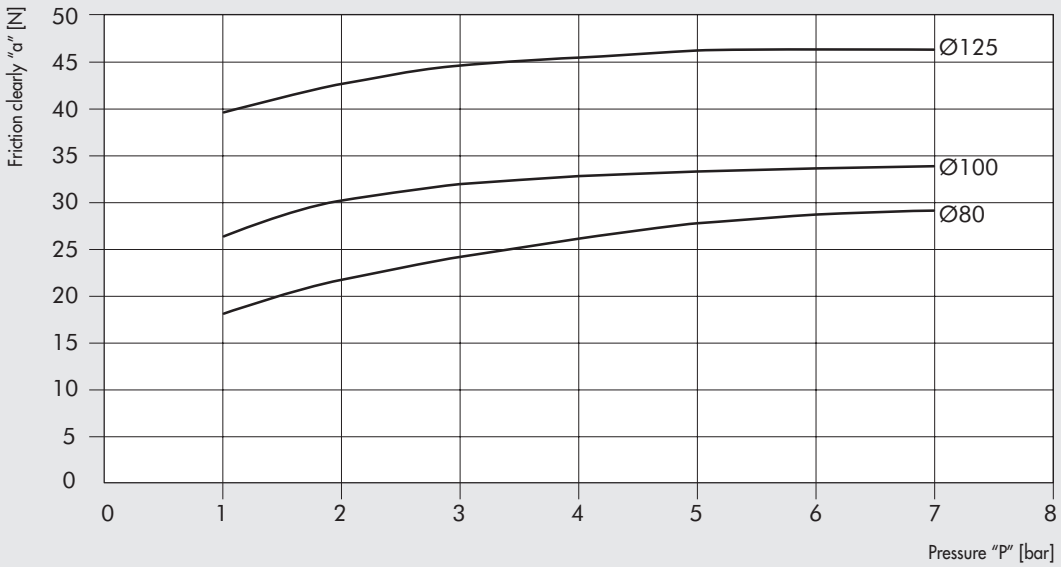
① PISTON ROD: C45 steel or stainless steel, thick chromed
② HEAD: die cast aluminium
③ PISTON ROD GASKET: NBR
④ GUIDE BUSHING: steel strip with bronze insert
⑤ BARREL: drawn anodized calibrated aluminium
⑥ PISTON GASKET: NBR
⑦ HALF-PISTON: aluminium alloy
⑧ MAGNET: plastoferrite
⑨ GUIDE RING: special technopolymer
⑩ BUFFER + Static O-rings: NBR
⑪ CUSHIONING NEEDLE: OT 58 with needle out movement safety system even when fully open
⑫ SCREWS: Tap Tite for assembly



METAL WORK PNEUMATIC

DIAGRAM OF THE CLEAN FRICTIONS





The clean friction values "a" in N have been obtained by inserting in the back chamber the pressure "P" in bars, and simultaneously by detecting the necessary force "F" in N to make the rod re-enter, applying the following formula:

$a = F - [(P \times S) \times 9.81]$

where "S" is the thrust section in cm^2

KEY TO CODES

CYL	1 2 3 TYPE	3	3 2 BORE	0 1 0 0 STROKE	A MATERIAL	N GASKETS
	123 Ultra-low friction	**3** Double-acting magnetic **5** Double-acting not magnetic	32 40 50 63 80 A1 = 100 A2 = 125	From 1 to 1200 mm	**A** C45 chromed piston rod, aluminium piston rod **Z** Stainless steel piston rod and nut aluminium piston	**N** NBR gaskets

ALL the cylinders are No stick-slip.
ALL the cylinders are non-cushioned.
Ultra-low friction cylinders are not available in the through-rod version.

ISO 15552 CYLINDER Ø 160-200 WITH ROUND BARREL

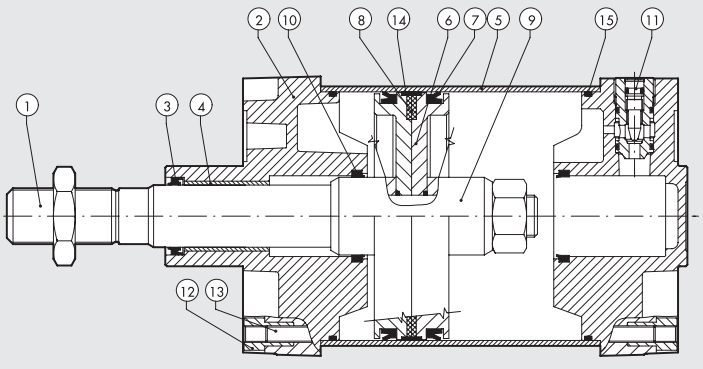
Cylinders made to ISO 15552 available in various versions and with a wide range of accessories:

- configuration with or without magne
- double-acting – single-or through-rod
- wide choice of NBR and FKM/FPM (for high temperature)
- available with mounted intermediate hinge
- special configurations on reques

TECHNICAL DATA		NBR	FKM/FPM	Other piston rod gasket
Max operating pressure	bar		10	
	MPa		1	
Temperature range	°C	-20 to +80	-10 to +150	See next page
Design		Round barrel with tie rods		
Standard strokes	mm	25-50-75-80-100-125-150-200-250-300-350-400-500-600-700-800-900-1000		
Forces generated at 6 bar (tensile stress)		See cylinder "**General technical data**" at the beginning of the chapter		
Weight		See cylinder "**General technical data**" at the beginning of the chapter		

COMPONENTS

① PISTON ROD: C45 steel or stainless steel, thick chromed
② HEAD: die cast aluminium
③ PISTON ROD GASKET: NBR, FKM/FPM, FKM/FPM with metal scraper
④ GUIDE BUSHING: sintered bronze
⑤ BARREL: drawn anodized aluminium alloy
⑥ PISTON: aluminium
⑦ PISTON GASKET: NBR or FKM/FPM
⑧ MAGNET: plastoferrite
⑨ CUSHIONING CAP: aluminium
⑩ CUSHIONING GASKET: polyurethane or FKM/FPM
⑪ CUSHIONING NEEDLE: OT 58 with needle out movement safety system even when fully open
⑫ SCREWS: galvanised steel
⑬ TIE RODS: stainless steel
⑭ GUIDE BELT: technopolimer
⑮ STATIC O-RINGS: NBR or FKM/FPM



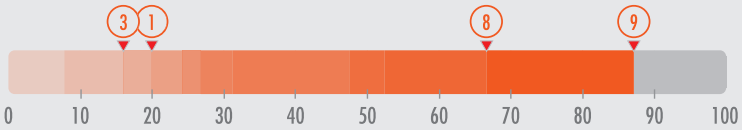
METAL WORK PNEUMATIC

OVERVIEW OF SEALS AND SCRAPERS

	Code identifier	Key feature	Applications	Gasket material	Temperature range
① 	.....	General use.	Standard applications, also with humidity.	NBR	-20 to + 80 °C
③ 	V	High temperatures - chemicals.	Industrial applications with chemical agents and/or at high temperatures.	FPM/FKM	-10 to + 150 °C
⑧ 	....R	Dirt and low temperatures. Reference name: HARD PU	Medium-Heavy duty applications, with presence of dirt and low temperatures, such as in agricolture or in transport sector.	Piston rod seal made of hard polyurethane, the other seals are made of NBR.	-10 to + 80 °C
⑨ 	....M	Dirt and high temperature. Reference name: METAL	Heavy duty applications, in presence of hard dirt and high temperatures, like in cement plants, foundries or in transport sector.	Metal scraper, the other seals are made of FKM/FPM.	-10 to + 150 °C

Anti-contamination Effect Indicators

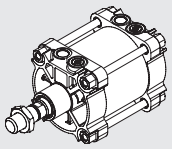
An index of protection against the dirt that settles and adheres to the piston rod is provided for each version, on a 1 to 100 scale.

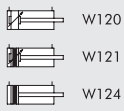


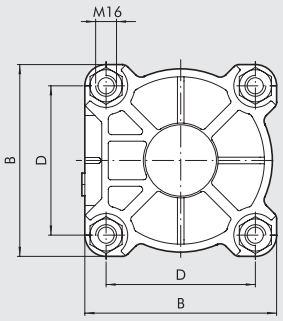
NOTES

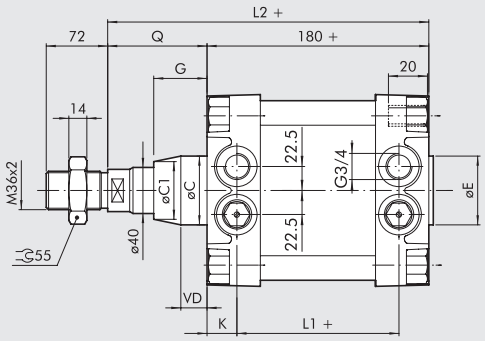
DIMENSIONS OF STANDARD VERSION

+ = ADD THE STROKE





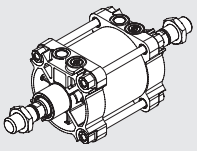


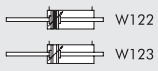


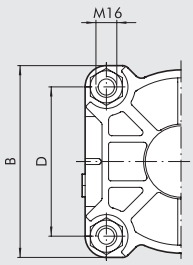
Ø	B	øC	øC1	øE	D	G	L_1	L_2	Q	VD	K
160	180	65	-	65	140	50	124	260	80	-	28
200	220	75	~ 65	75	175	60	122	275	95	~ 15	29

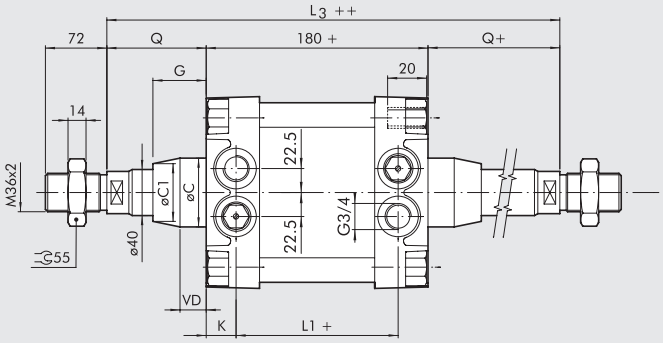
DIMENSIONS OF THROUGH-ROD VERSION

+ = ADD THE STROKE
++ = ADD TWICE THE STROKE





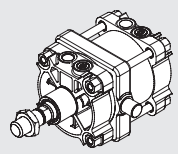


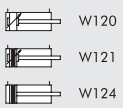


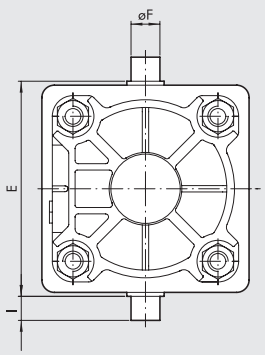
Ø	B	øC	øC1	D	G	L_1	L_3	Q	VD	K
160	180	65	-	140	50	124	340	80	-	28
200	220	75	~ 65	175	60	122	370	95	~ 15	29

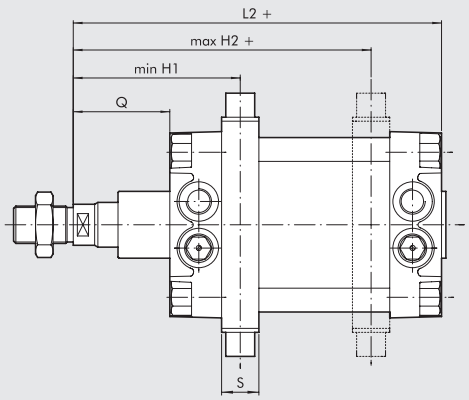
DIMENSIONS OF VERSION WITH INTERMEDIATE HINGE

+ = ADD THE STROKE









Ø	E	øF	H1	H2	I	L2	Q	S
160	200	32	150	190	32	260	80	40
200	250	32	165	205	32	275	95	40

For the missing values, refer to standard cylinders. **In your order, please specify the desired value for H1**

METAL WORK PNEUMATIC

KEY TO CODES FOR ROUND BARREL

CIL	W 1 2 1	1 6 0	0 0 5 0	▼ R
	TYPE	DIAMETER-EXECUTION	STROKE	SPECIAL SCRAPER
	W120 Double-acting, cushioned, non magnetic **W121** Double-acting, cushioned **W122** Double-acting, cushioned, through-rod **W123** Double-acting, cushioned, through-rod, non magnetic **W124** Double-acting, non-cushioned	**160** 160 **200** 200 **XA3** 160 stainless steel piston rod **XA4** 200 stainless steel piston rod **VA3** 160 FKM/FPM gasket, stainless steel piston rod **VA4** 200 FKM/FPM gasket, stainless steel piston rod **KA3** 160 FKM/FPM gasket, C45 piston rod **KA4** 200 FKM/FPM gasket, C45 piston rod ● **GA3** 160 No stick-slip ● **GA4** 200 No stick-slip	✚ 0025 to 2800 mm	◆ **R** Hard PU ■ **M** Metal

✚ Maximum recommended strokes. Higher values can create operating problems.
● **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only.**
▼ Letter to be added only for versions with a special scraper.
◆ To be matched with NBR execution: 160, 200, XA3, XA4
■ To be matched with FKM/FPM execution: VA3, VA4, KA3, KA4

KEY TO CODES FOR CONFIGURATION WITH INTERMEDIATE HINGE

CIL	W 1 2 1	A A 3	0 0 5 0	0 2 0 0	▼ R
	TYPE	DIAMETER-EXECUTION	STROKE	EXECUTION	SPECIAL SCRAPER
	W120 Double-acting, cushioned, non magnetic **W121** Double-acting, cushioned **W122** Double-acting, cushioned, through-rod **W123** Double-acting, cushioned, through-rod, non magnetic **W124** Double-acting, non-cushioned	**AA3** 160 + intermediate hinge **AA4** 200 + intermediate hinge	✚ 0025 to 2800 mm	**H1 dimension** (hinge position, see drawing on the previous page)	**R** Hard PU

✚ Maximum recommended strokes. Higher values can create operating problems.
▼ Letter to be added only for versions with a special scraper.
Note: Type M scraper only on request.
For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only. For coding please contact our sales support department.

NOTES

VERSION WITH SHAPED BARREL

An alternative to the round barrel version is a version with a shaped barrel.
The technical data, components and dimensions are the same as for the round barrel version.

Note: Type with intermediate hinge not available.

KEY TO CODES FOR SHAPED BARREL

CYL	121 TYPE	160 DIAMETER-EXECUTION	0050 STROKE	A MATERIAL	N GASKETS
	120 Double-acting, cushioned, non-magnetic **121** Double-acting, cushioned **122** Double-acting, cushioned, through-rod **124** Double-acting, non-cushioned	**160** 160 **200** 200 **SA3** 160 non magnetic **SA4** 200 non magnetic ● **GA3** 160 No stick-slip ● **GA4** 200 No stick-slip	✚ 0025 to 2800 mm	**A** C45 chromed, piston rod **Z** Stainless steel chromed, piston rod	**N** NBR gaskets **V** FKM/FPM gaskets

✚ Maximum recommended strokes. Higher values can create operating problems
● **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only**

NOTES