

ISO 15552 CYLINDER

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

- Configuration with or without magnet
- 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 rod lock.

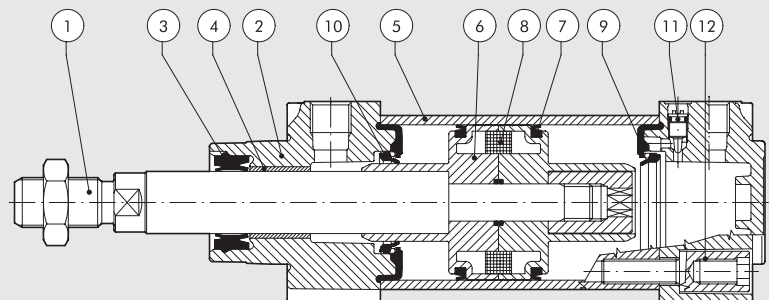
They are available in three versions, series STD, type A, series 3, which differ according to the shape of the barrel and, consequently, the type of sensors and accessories that can be mounted.










TECHNICAL DATA		Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125
Max operating pressure	bar					10		
	MPa					1		
	psi					145		
Temperature range	POLYURETHANE °C					-25 to +80		
	NBR °C					-10 to +80		
	FKM/FPM °C					-10 to +150 (non-magnetic cylinders)		
	Low Temperature °C					-40 to +80		
	Other piston rod gasket °C					See next page		
Design	Heads with Tap Tite screws							
Fluid	Unlubricated air. Lubrication, if used, must be continuous							
Standard stroke †	single-acting mm	1 to 250	1 to 250	1 to 250	1 to 250	-	-	-
	double-acting with spring mm	1 to 250	1 to 250	1 to 250	1 to 250	-	-	-
	double-acting mm	1 to 2800	1 to 2800	1 to 2800	1 to 2800	1 to 2800	1 to 2600	1 to 2600
Versions	Double-acting cushioned, Double-acting cushioned with spring, extended or retracted piston rod, Single-acting extended or retracted rod cushioned, Through-rod cushioned, Long cushioning, High-temperature, Protective bellows, Rod lock, Oil seal, Through-rod oil seal, Low friction, No stick-slip. All versions come complete with magnet. Supplied without magnet on request.							
Sensor magnet								
Inrush pressure	bar	0.4	0.4	strokes < 1500 mm: 0.3		strokes < 1500 mm: 0.2		
	bar			strokes > 1500 mm: 0.4		strokes > 1500 mm: 0.4		
	for type-R gasket bar	1.5	1	1	0.8	0.5	0.5	0.5
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	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							

COMPONENTS





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




OVERVIEW OF SEALS AND SCRAPER

	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	-40 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 agriculture 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

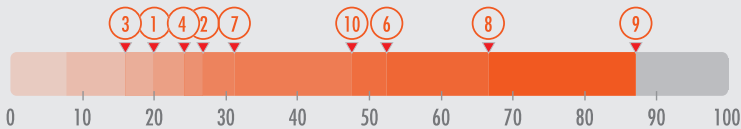
①	 123... only for series 3	Ultra low friction.	Textile industry, dandy devices, pneumatic springs.	NBR	-10 to +80 °C	
⑩	BL andWL	HCR (High Corrosion Resistance)	Food and Beverage sector, such as dairy industry.	Anti-stagnation scraper made of special polyurethane, the other seals are made of NBR.	-10 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.	-30 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.



OVERVIEW DEGREE OF RESISTANCE TO CORROSION OF ISO 15552 CYLINDERS

Degree	Family	
MW S	STANDARD	 ISO 15552 cylinder (STD, type A, series 3)
MW M	MEDIUM	 ISO 15552 cylinder - series MCR
MW H	HIGH	 ISO 15552 cylinder - series HCR
MW X	EXTRA	 Stainless steel ISO 15552 cylinder

ISO 15552 CYLINDER – SERIES MCR (Medium Corrosion Resistance)



In some applications, cylinders are exposed to certain environments that may shorten the life of surface treatments normally used for heads and screws. For example, this is the case in outdoor applications, where UV-rays, weathering and sometimes chemical agents cause damage to the coating of the cylinder heads and the screw zinc-plating. MCR series cylinders have been designed for such applications, with an anodized head, chemically nickel-plated clamping screws and a stainless steel cushioning pin.

MCR cylinders are made to ISO 15552. They come either with a STD or Series 3 liner, chromium-plated and polished stainless steel piston rod, and are fitted with the main seals recommended for ISO 15552 cylinders.

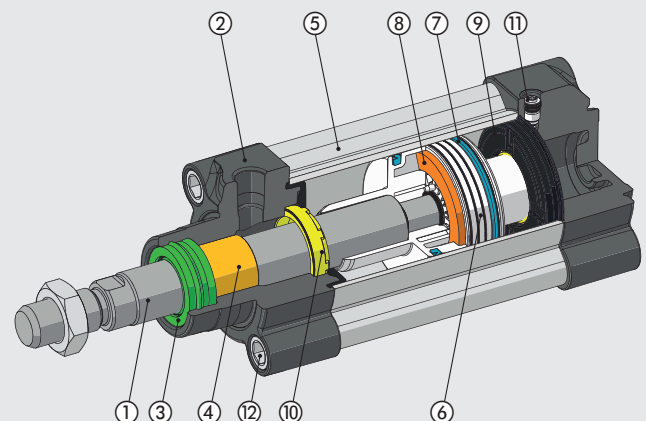
They can be fitted with the accessories usually recommended for ISO 15552 cylinders and those specific to the HCR series.



TECHNICAL DATA		Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125
Max operating pressure	bar				10			
	MPa				1			
	psi				145			
Temperature range	POLYURETHANE	°C		-25 to +80				
	NBR	°C		-10 to +80				
	FKM/FPM	°C		-10 to +150 (non-magnetic cylinders)				
	Low temperature	°C		-40 to +80				
	Other piston rod gasket	°C		See page A1.27				
Resistance in corrosive environments at 20°C		Basic solution (sodium hydroxide - pH max 9) Acid solution (hydrochloric acid - pH min. 5.5) Salt mist testing to DIN 50021-SS, 300 hours						
Fluid		Unlubricated air. Lubrication, if used, must be continuous						
Standard strokes	mm	1 to 2800				1 to 2600		
Versions		Double-acting cushioned, Double-acting non-cushioned, Through-rod cushioned						
Sensor magnet		Available magnetic and non-magnetic versions						
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						

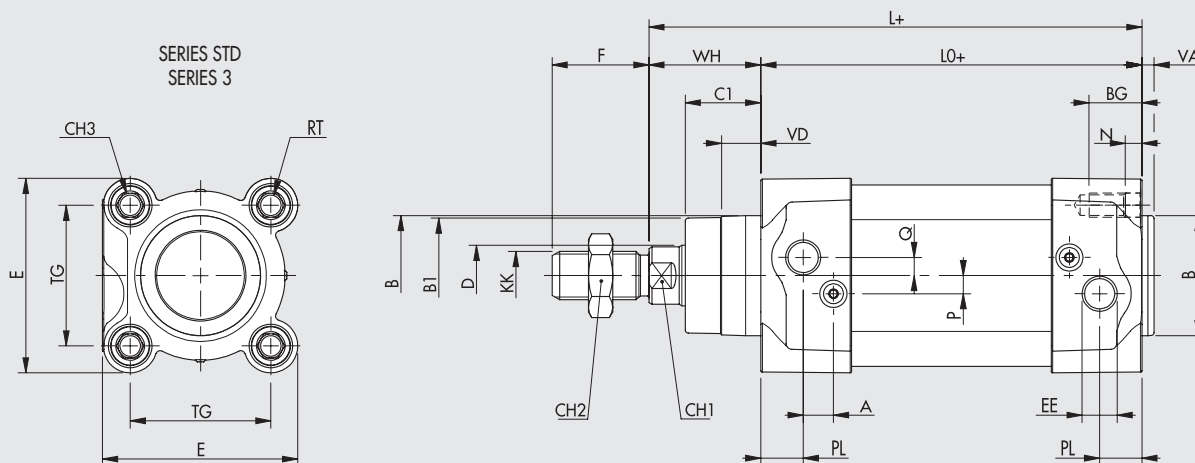
COMPONENTS

- ① PISTON ROD: stainless steel, thickness-chromed
- ② HEAD: anodized pressure die-cast aluminium
- ③ PISTON ROD GASKET: polyurethane, NBR or FKM/FPM
- ④ GUIDE BUSHING: steel strip with bronze and PTFE insert
- ⑤ BARREL: drawn anodized calibrated aluminium
- ⑥ SEMI-PISTON: made of self-lubricating technopolymer with built-in cushioning olives (aluminium with technopolymer pad for Ø 80, 100 and 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: stainless steel
- ⑫ SCREWS: tap Tite for assembly, chemically nickel-plated



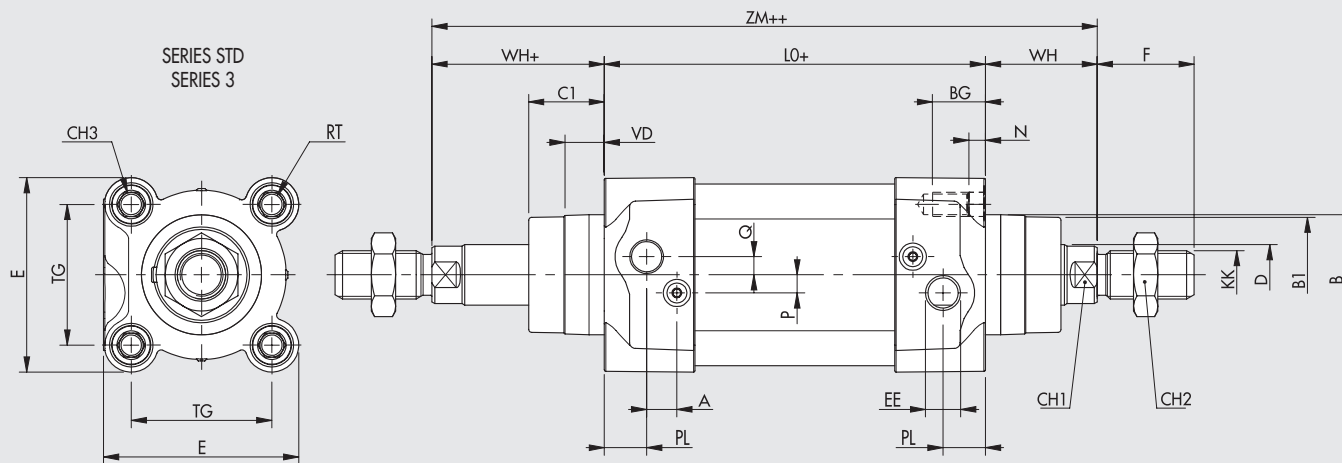
DIMENSIONS

STANDARD VERSION



THROUGH-ROD VERSION

+ = ADD STROKE
 ++ = ADD TWICE THE STROKE



Ø	PL	VD	A	B	B ₁	WH	C ₁	CH ₁	CH ₂	CH ₃	KK	D	TG	VA	F	EE	RT	E	L	L ₀	ZM	BG	N	P	Q
32	10	6.5	10	30	28	26	16	10	17	6	M10x1.25	12	32.5	4	22	G1/8	M6	46	120	94	146	14.5	4.5	6	4
40	12	8	10	35	33	30	20	13	19	6	M12x1.25	16	38	4	24	G1/4	M6	54	135	105	165	14.5	4.5	6	4
50	14	13	10	40	38	37	25	17	24	8	M16x1.5	20	46.5	4	32	G1/4	M8	64.5	143	106	180	17.5	5.5	6	6
63	16	14	10	45	40	37	25	17	24	8	M16x1.5	20	56.5	4	32	G3/8	M8	75.5	158	121	195	17.5	5.5	6	6
80	18	12	12	45	43	46	33	22	30	10	M20x1.5	25	72	4	40	G3/8	M10	94	174	128	220	21.5	5.5	10	7
100	20	14	12	55	49	51	38	22	30	10	M20x1.5	25	89	4	40	G1/2	M10	111	189	138	240	21.5	5.5	10	7
125	25	20	10	60	54	65	45	27	41	12	M27x2	32	110	6	54	G1/2	M12	135	225	160	290	25.5	6.5	12	8

KEY TO CODES

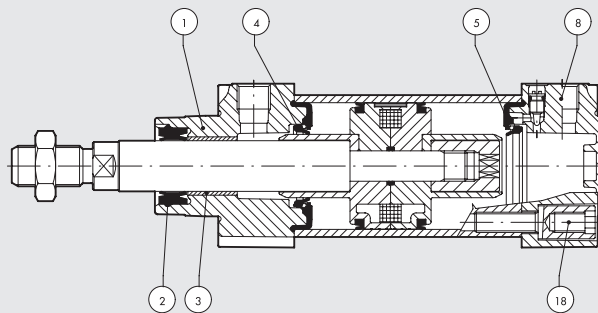
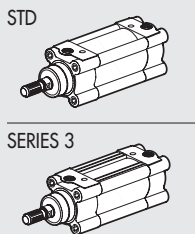
CYL	1 2 1 TYPE	0	32 BORE	0050 STROKE	E MATERIAL	P GASKETS
	121 Double-acting, cushioned	0 Diameter	32	Ø 32 to 80	E AISI 316 piston rod, technopolymer piston: standard for cylinders of Ø32 to Ø63	N NBR gaskets
▲	122 Through-rod	5 Standard Non-magnetic	40	stroke 1 to 2800 mm	Y AISI 316 piston rod, aluminium piston: standard for all cylinders from Ø80 to Ø125, from Ø32 to Ø63 with strokes > 999 and Ø32 to 125 for through piston rod versions	P Polyurethane gaskets
	124 Double-acting, non-cushioned	3 Series 3 Non-magnetic	50	Ø 100 to 125		▲ V FKM/FPM gaskets
		5 Series 3 Non-magnetic	63	stroke 1 to 2600 mm		▲ B Low temperature
			80			C "Combi" piston rod gasket
			■ 100			R "Hard PU" piston rod gasket
			■ 125			

- ▲ Only available for versions with aluminium piston (Y)
- In the code of cylinder with digit 3, 4 or 5 in fourth position bore 100 becomes A1; bore 125 becomes A2

ACCESSORIES

They can be fitted with the accessories recommended for ISO 1552 cylinders and those specific to HCR ISO 15552 cylinders.

SPARE PARTS



Code	Bore	Type	Parts
009 ... 0129N	Ø 32 to 125	Complete polyurethane MCR front head kit	1-2-3-4-5-18
009 ... 0131N	Ø 32 to 125	Complete NBR MCR front head kit	1-2-3-4-5-18
009 ... 0130N	Ø 32 to 125	Complete polyurethane MCR rear head kit	4-5-8-18
009 ... 0132N	Ø 32 to 125	Complete NBR MCR rear head kit	4-5-8-18

Notes
Cylinders in the R version do not come with the single piston rod gasket.