

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.

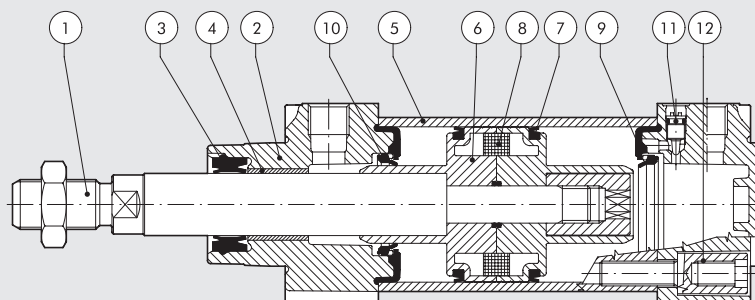
They are available in three versions, series STD, type A, series 3 which differ according to the shape of the barrel and, consequently, the type of sensors and accessories that can be mounted.



TECHNICAL DATA		Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125
Max operating pressure	bar					10		
	MPa					1		
Temperature range	POLYURETHANE					145		
						-25 to +80		
	NBR					-10 to +80		
						-10 to +150 (non-magnetic cylinders)		
FKM/FPM					-35 to +80			
	Low Temperature					See next page		
Other piston rod gasket	°C							
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
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, 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	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
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

- 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



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 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

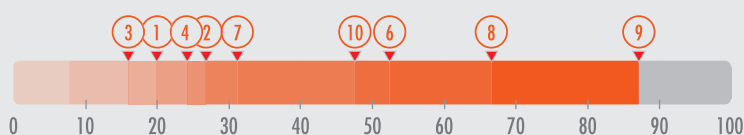
①	123.... only for series 3	Ultra low friction.	Textile industry, dandy devices, pneumatic springs.	NBR	-10 to + 80 °C	
⑩	....BL and....WL	HCR (High Corrosion Resistance)	Food and Beverage sector, such as dairy industry.	Anti-stagnation scraper made of special polyurethane, the other seals are made of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

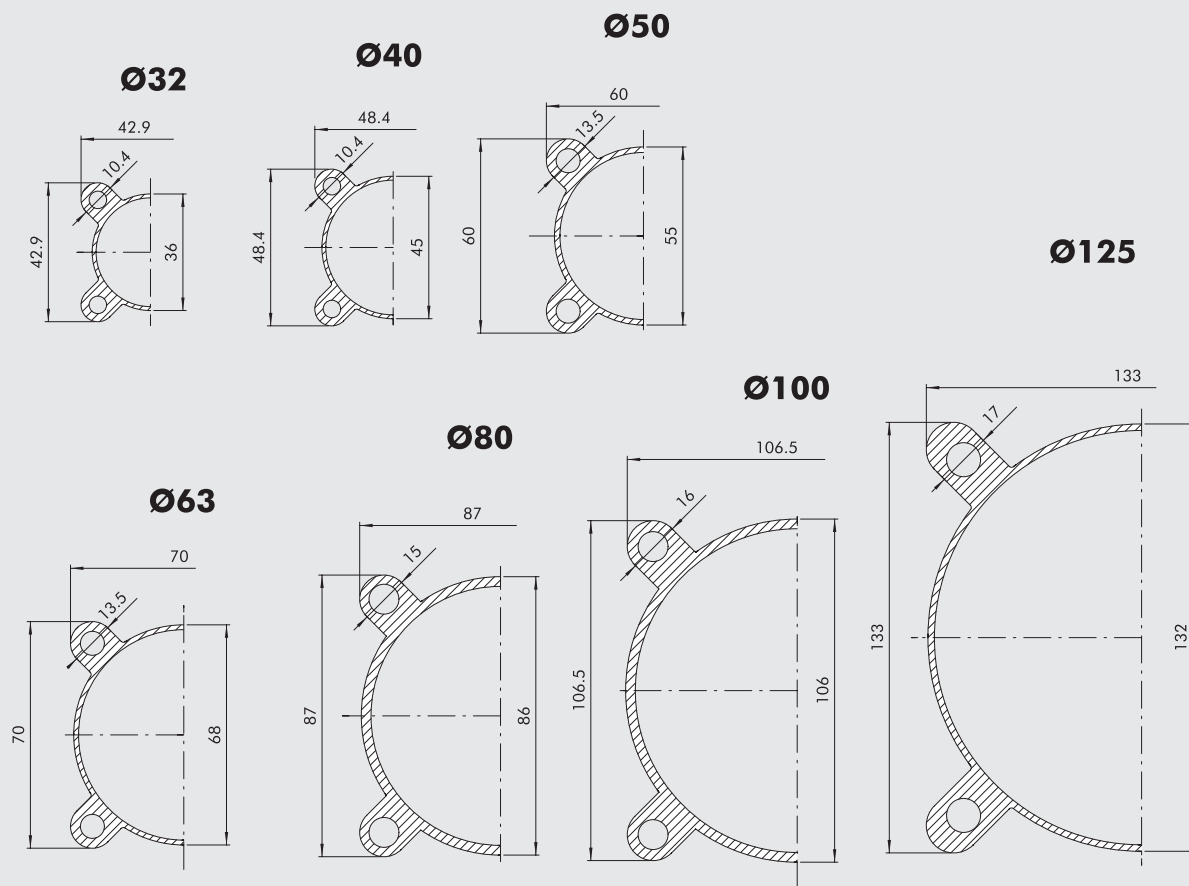


ISO 15552 CYLINDER SERIES STD

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



KEY TO CODES

CYL	1 2 1	0	3 2	0 0 5 0	C	P	E
	TYPE	VERSION	BORE	STROKE	MATERIAL	GASKETS	
	120 Double-acting, cushioned, non-magnetic	0 Diameter	32	For the maximum	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	N NBR gaskets	+ ▼ E Single-acting extended rod or double-acting with spring, extended piston rod
	121 Double-acting, cushioned	S Non-magnetic	40	suppliable strokes, look at the technical data	C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes	P Polyurethane gaskets	+ ✕ R Double-acting with spring, retracted piston rod
●	122 Through-rod	▲ G No stick-slip	50		Z Stainless steel piston rod and nut aluminium piston	V FKM/FPM gaskets	★ 1 + Secure Lock with manual control
	124 Double-acting, non-cushioned		63		X Stainless steel piston rod and nut technopolymer piston	● B Low temperature	★ 2 + Secure Lock without manual control
	125 Opposed		80			C "Combi" piston rod gasket	
+	126 Single-acting		100			▶ R "Hard PU" piston rod gasket	
▷	127 Tandem		125			● ◻ M "Metal" piston rod gasket	
	134 Version suitable for rod lock						
* ▷	136 Version with rod lock						
* ◊ ▷	137 Version suitable for rod lock + guide unit						

- 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). The versions without the final "E" are to be considered with retracted piston 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
- ▷ Not available for single-acting and double-acting with spring versions
- ▼ Letter to be added only to the single acting extended piston rod version or double-acting with spring, extended piston rod
- ✕ Letter to be added only for the double-acting version with spring, retracted piston rod
- ★ Extra digit to be added only for types 136 with the "Secure Lock" device
- ▶ The 126 (single-action) type and the (No-stick-slip) version G are not available

KEY TO CODES VERSION 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	32	Ø 32 to 80	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	N NBR gaskets
		B Low friction, type B	40	stroke 1 to 2800 mm	C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes	P Polyurethane gaskets
		C Low friction, type C	50	Ø 100 to 125	Z Stainless steel piston rod and nut aluminium piston	V FKM/FPM gaskets
		D Low friction, type D	63	stroke 1 to 2600 mm	X Stainless steel piston rod and nut technopolymer piston	
		E Low friction, type E	80			
		F Low friction, type F	A1 = Ø 100 A2 = Ø 125			

KEY TO CODES VERSION 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.	32	1 to 2600 mm	A C45 chromed rod, aluminium piston rod for all sizes	N NBR gaskets
		B 150 mm front/rear cushioning cone – 150 mm ext.	40		Z Stainless steel piston rod and nut aluminium piston	P Polyurethane gaskets
		C 100 mm front/rear cushioning cone – 100 mm ext.	50			* V FKM/FPM gaskets
		D 150 mm front/rear cushioning cone – 200 mm ext.	63			
		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.				

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

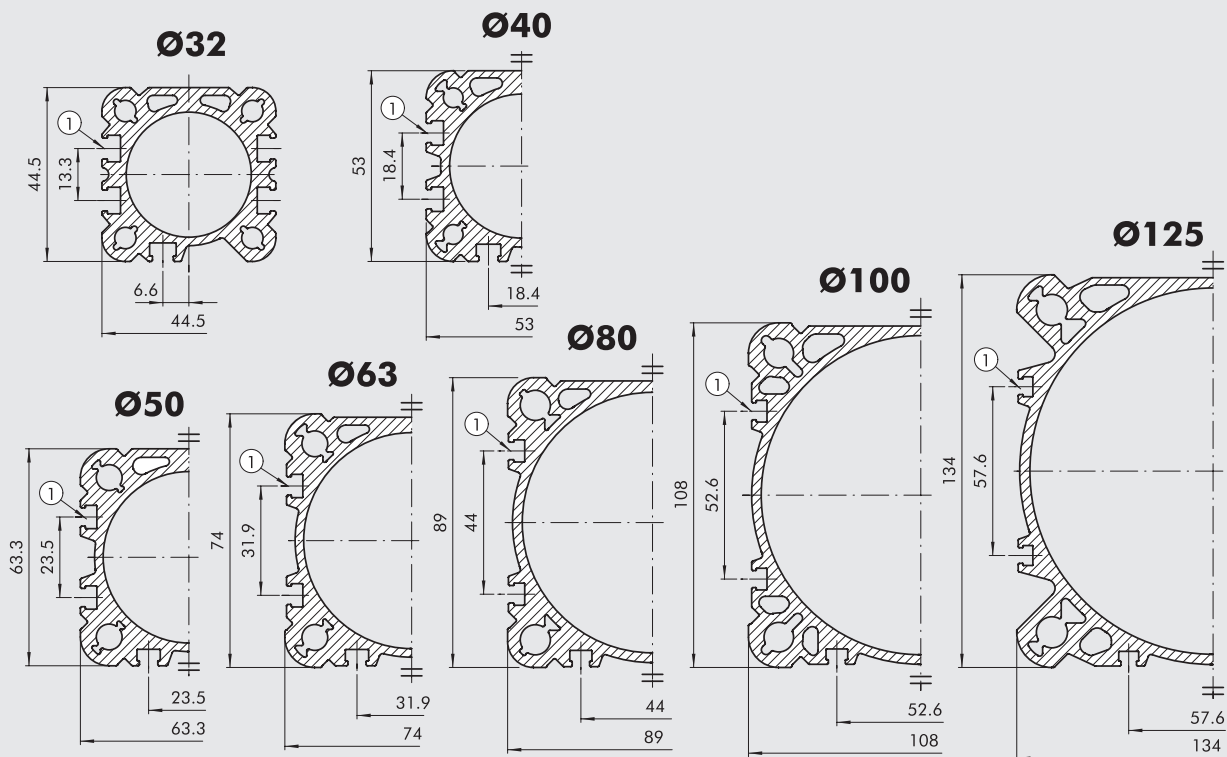
ISO 15552 CYLINDER TYPE A

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



KEY TO CODES

CYL	1 2 1 TYPE	A VERSION	3 2 BORE	0 0 5 0 STROKE	C MATERIAL	P GASKETS	E
	121 Double-acting, cushioned	A Standard	32	For the maximum	A C45 chromed piston rod, aluminium piston:	N NBR gaskets	+ ▼ E Single-acting extended rod or double-acting with spring, extended piston rod
●	122 Through-rod	▲ B No stick-slip	40	suppliable strokes, look at the technical data	standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over	P Polyurethane gaskets	
	124 Double-acting, non-cushioned	C Non-magnetic	50			V FKM/FPM gaskets	
	125 Opposed		63			● B Low temperature	+ * R Double-acting with spring, retracted piston rod
+	126 Single-acting		80		C C45 chromed piston rod, technopolymer piston:	C "Combi" piston rod gasket	
▷	127 Tandem		A1 = Ø 100		standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes	▶ R "Hard PU" piston rod gasket	* 1 + Secure Lock with manual control
	134 Version suitable for rod lock		A2 = Ø 125		Z Stainless steel piston rod and nut aluminium piston	● ◻ M "Metal" piston rod gasket	* 2 + Secure Lock without manual control
* ▷	136 Version with rod lock				X Stainless steel piston rod and nut technopolymer piston		
* ◻ ▷	137 Version suitable for rod lock + guide unit						

- 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). The versions without the final "E" are to be considered with retracted piston rod.
- ◻ Not available in Ø 32
- ▼ Letter to be added only to the single acting extended piston rod version or double-acting with spring, extended piston rod
- * Letter to be added only for the double-acting version with spring, retracted piston rod

- ★ Extra digit to be added only for types 136 with the "Secure Lock" device
- ▲ 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
- ▷ Not available for single-acting and double-acting with spring versions
- ▶ The 126 (single-action) type and the (No-stick-slip) version B are not available

KEY TO CODES VERSION LOW-FRICTION

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

KEY TO CODES VERSION LONG-CUSHIONING

CYL	1 3 0 TYPE	A BORE	3 2 BORE	0 0 5 0 STROKE	A MATERIAL	P GASKETS
	A 200 mm front/rear cushioning cone – 200 mm ext.	32	32	1 to 2600 mm	A C45 chromed piston rod, aluminium piston for all sizes	N NBR gaskets
	B 150 mm front/rear cushioning cone – 150 mm ext.	40	40			P Polyurethane gaskets
	C 100 mm front/rear cushioning cone – 100 mm ext.	50	50		Z Stainless steel piston rod and nut aluminium piston	* V FKM/FPM gaskets
	D 150 mm front/rear cushioning cone – 200 mm ext.	63	63			
	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.					

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

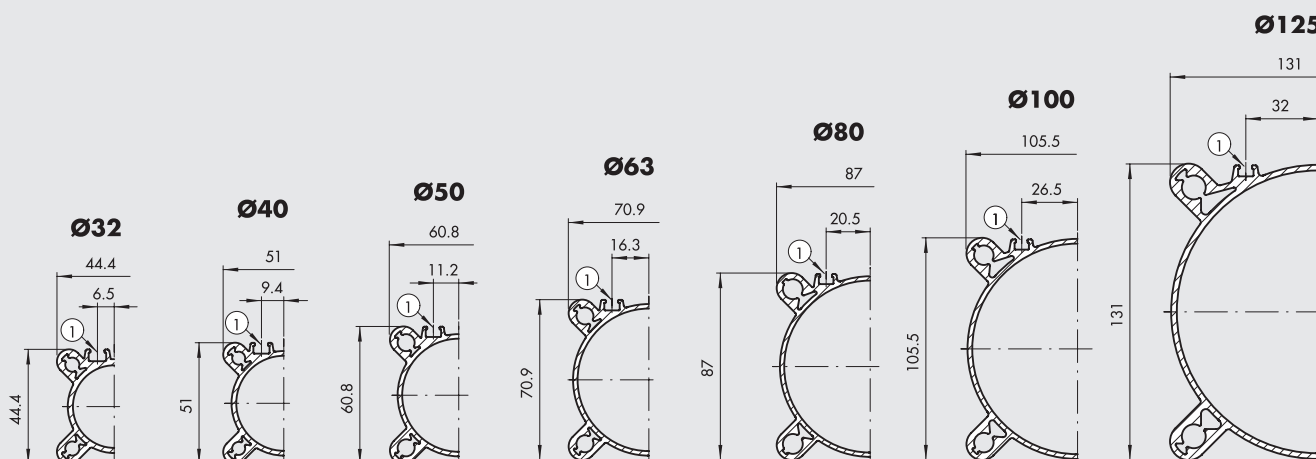
ISO 15552 CYLINDER SERIES 3

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 VERSION	3 2 BORE	0 0 5 0 STROKE	C MATERIAL	P GASKETS	E
	121 Double-acting, cushioned	3 Series 3	32	For the maximum applicable 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 ≥ 80 mm and over	N NBR gaskets P Polyurethane gaskets V FKM/FPM gaskets	+ \blacktriangledown E Single-acting extended rod or double-acting with spring, extended piston rod
●	122 Through-rod 124 Double-acting, non-cushioned	4 Series 3 No stick slip 5 Series 3	40 50 63 80				
	125 Opposed	Non-magnetic	A1 = $\varnothing 100$ A2 = $\varnothing 125$		C C45 chromed piston rod, technopolymer piston: standard for cylinders of $\varnothing 32$ to 63 mm with < 1000 mm strokes	● B Low temperature C "Combi" piston rod gasket ▶ R "Hard PU" piston rod gasket ● ◻ M "Metal" piston rod gasket	+ * R Double-acting with spring, retracted piston rod
+	126 Single-acting						
▷	127 Tandem						★ 1 + Secure Lock with manual control ★ 2 + Secure Lock without manual control
◻▷	134 Version suitable for rod lock			Z Stainless steel piston rod and nut aluminium piston X Stainless steel piston rod and nut technopolymer piston			
◻▷	136 Version with rod lock						
◻*▷	137 Version suitable for rod lock + guide unit						

- Only available for versions with aluminium piston (A or Z)
- + Available until $\varnothing 63$ and only the versions with piston in aluminium (A or Z). The versions without the final "E" are to be considered with retracted piston rod.
- \blacktriangledown Letter to be added only to the single acting extended piston rod version or double-acting with spring, extended piston rod
- * Letter to be added only for the double-acting version with spring, retracted piston rod
- ★ Extra digit to be added only for types 136 with the "Secure Lock" device
- ◆ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only.
- * Available until $\varnothing 100$
- ▷ Not available for single-acting and double-acting with spring versions
- ◻ Not available for gasket V or B
- ◻ Not available in $\varnothing 32$
- ▶ 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



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.

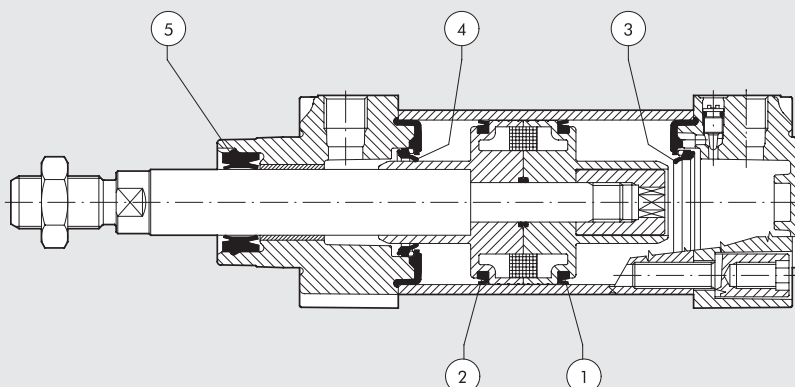


NB. THE CYLINDER IS ALWAYS SINGLE-ACTING WITHOUT A RETURN SPRING.

	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
Forces generated at 6 bar thrust/retraction		See cylinder "General technical data" at the beginning of the chapter
		See cylinder "General technical data" at the beginning of the chapter
Weights		
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

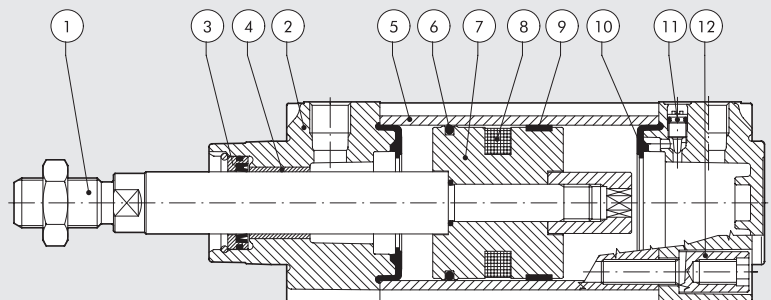
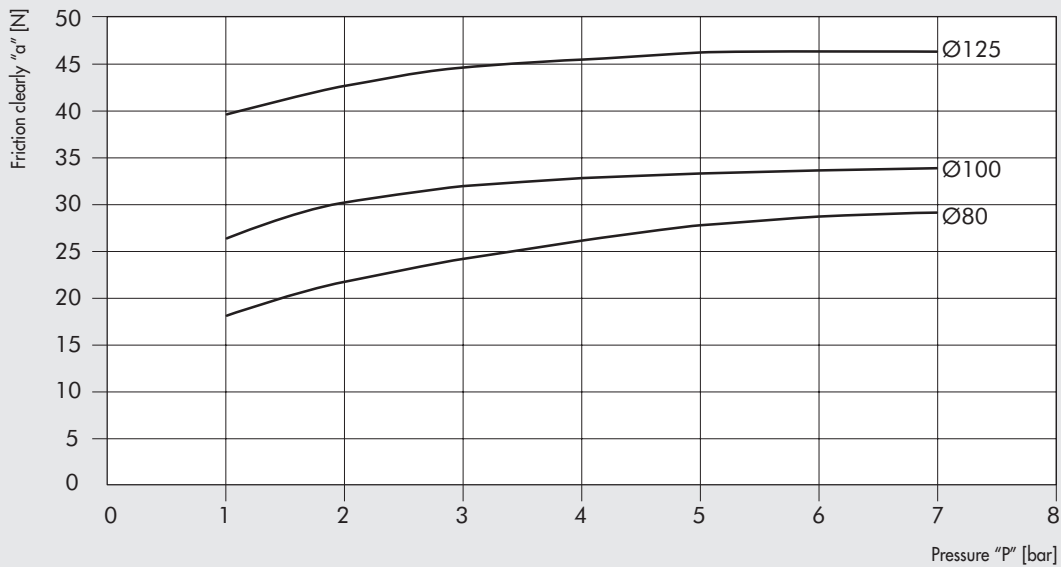
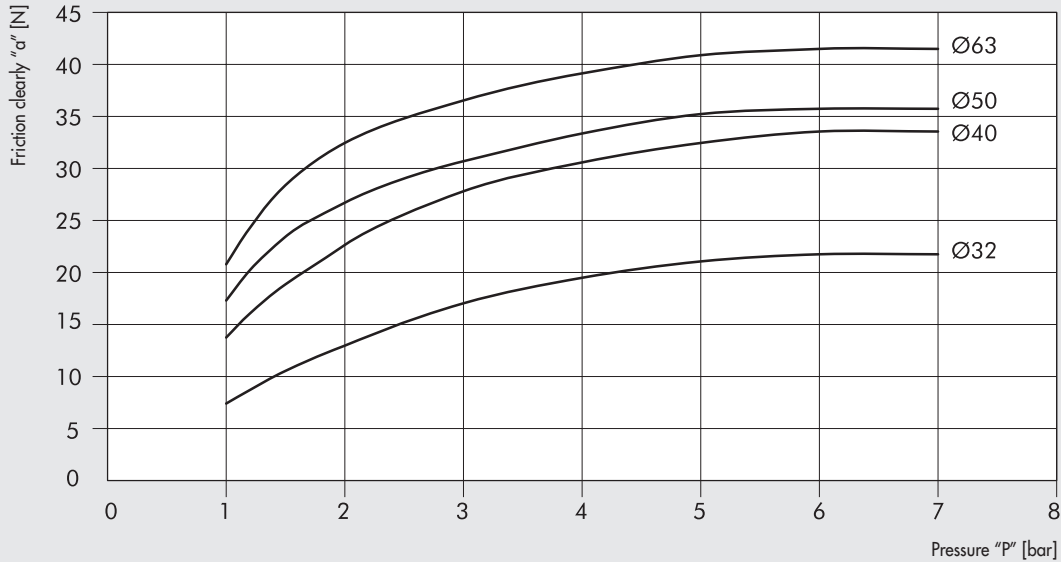


DIAGRAM OF THE CLEAN FRICTIONS



The clean friction values "α" 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:

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

where "S" is the thrust section in cm²

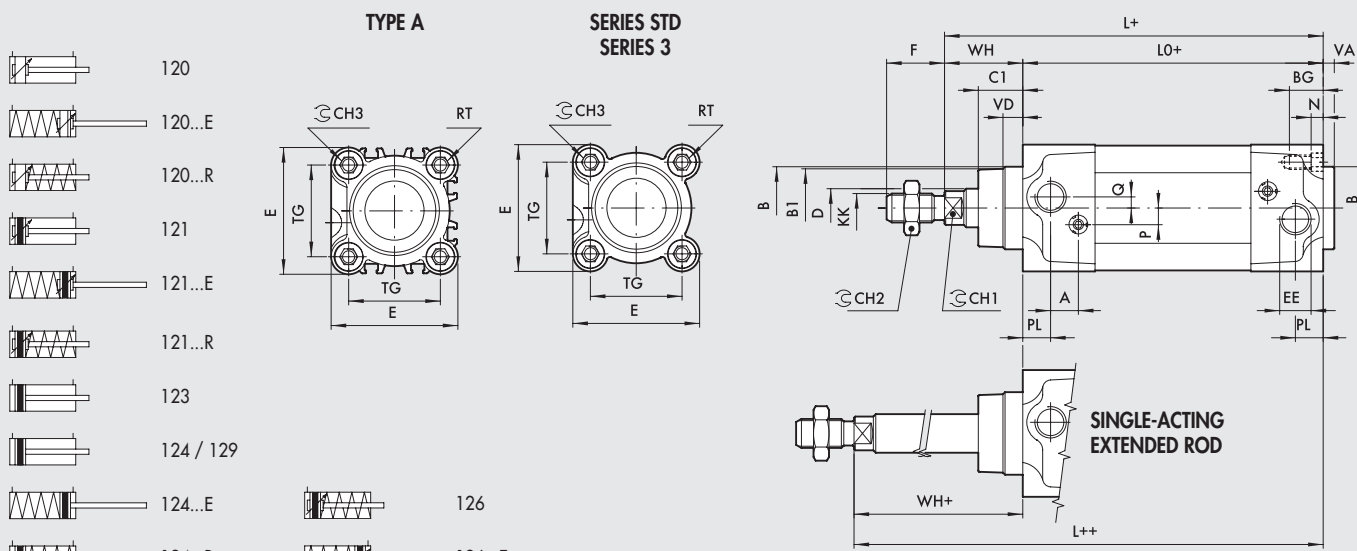
KEY TO CODES

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 DIMENSIONS

DIMENSIONS SINGLE PISTON ROD VERSIONS



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

VERSION 120... / 121... (double-acting cushioned)

VERSION 123... / 124... / 129... (double-acting)

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

VERSION 126... (single-acting cushioned retracted piston rod)

VERSION 126...E (single-acting cushioned extended piston rod)

Stroke	L0								L							
	Ø 32		Ø 40		Ø 50		Ø 63		Ø 32		Ø 40		Ø 50		Ø 63	
0 - 25	94 •	94 •	105 •	105 •	106 •	106 •	121 •	121 •	120 •	120 •	135 •	135 •	143 •	143 •	158 •	158 •
26 - 50	94 •	115	105 •	129.5	106 •	130.5	121 •	145.5	120 •	141	135 •	159.5	143 •	167.5	158 •	182.5
51 - 75	115	136	129.5	154	130.5	155	145.5	170	141	162	159.5	184	167.5	192	182.5	207
76 - 100	136	157	154	178.5	155	179.5	170	194.5	162	183	184	208.5	192	216.5	207	231.5
101 - 125	157	178	178.5	203	179.5	204	194.5	219	183	204	208.5	233	216.5	241	231.5	256
126 - 150	178	199	203	227.5	204	228.5	219	243.5	204	225	233	257.5	241	265.5	256	280.5
151 - 175	199	220	227.5	252	228.5	253	243.5	268	225	246	257.5	282	265.5	290	280.5	305
176 - 200	220	241	252	276.5	253	277.5	268	292.5	246	267	282	306.5	290	314.5	305	329.5
201 - 225	241	262	276.5	301	277.5	302	292.5	317	267	288	306.5	331	314.5	339	329.5	354
226 - 250	262	283	301	325.5	302	326.5	317	341.5	288	309	331	355.5	339	363.5	354	378.5

* Dimensions according to ISO 15552

VERSION 12...R (double-acting with spring, retracted piston rod)

VERSION 12...E (double-acting with spring, extended piston rod)

Stroke	L0								L							
	Ø 32		Ø 40		Ø 50		Ø 63		Ø 32		Ø 40		Ø 50		Ø 63	
0 - 25	104	104	117	117	106 •	106 •	121 •	121 •	130	130	147	147	143 •	143 •	158 •	158 •
26 - 50	104	125	117	141.5	106 •	130.5	121 •	145.5	130	151	147	171.5	143 •	167.5	158 •	182.5
51 - 75	125	146	141.5	166	130.5	155	145.5	170	151	172	171.5	196	167.5	192	182.5	207
76 - 100	146	167	166	190.5	155	179.5	170	194.5	172	193	196	220.5	192	216.5	207	231.5
101 - 125	167	188	190.5	215	179.5	204	194.5	219	193	214	220.5	245	216.5	241	231.5	256
126 - 150	188	209	215	239.5	204	228.5	219	243.5	214	235	245	269.5	241	265.5	256	280.5
151 - 175	209	230	239.5	264	228.5	253	243.5	268	235	256	269.5	294	265.5	290	280.5	305
176 - 200	230	251	264	288.5	253	277.5	268	292.5	256	277	294	318.5	290	314.5	305	329.5
201 - 225	251	272	288.5	313	277.5	302	292.5	317	277	298	318.5	343	314.5	339	329.5	354
226 - 250	272	293	313	337.5	302	326.5	317	341.5	298	319	343	367.5	339	363.5	354	378.5

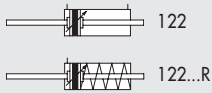
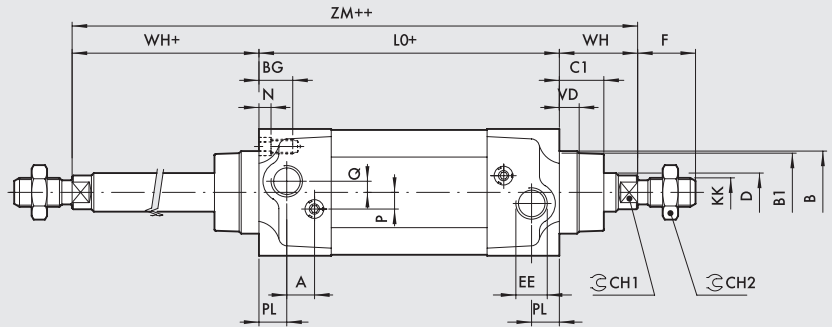
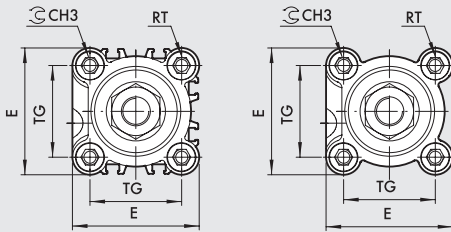
* Dimensions according to ISO 15552

DIMENSIONS THROUGH-ROD VERSIONS

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

TYPE A

**SERIES STD
 SERIES 3**



VERSION 122... (double-acting cushioned)

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

VERSION 122...R (double-acting cushioned with spring, retracted piston rod)

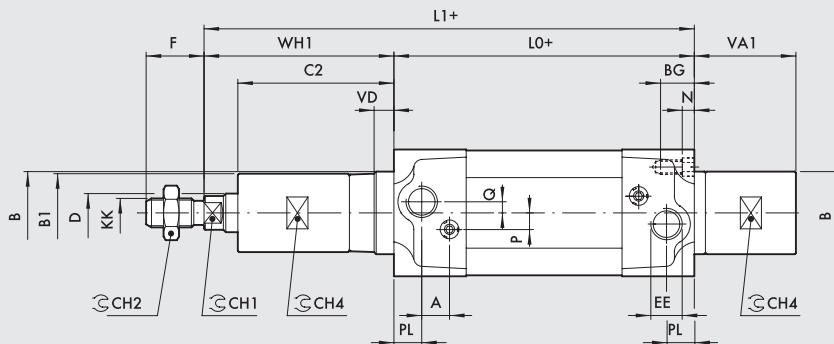
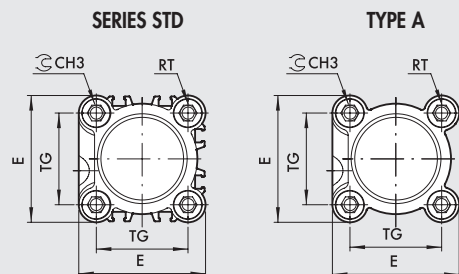
Stroke	L0				ZM			
	Ø 32	Ø 40	Ø 50	Ø 63	Ø 32	Ø 40	Ø 50	Ø 63
0 - 25	104	117	106 •	121 •	156	177	180	195
26 - 50	104	117	106 •	121 •	156	177	180	195
51 - 75	125	141.5	130.5	145.5	177	201.5	204.5	219.5
76 - 100	146	166	155	170	198	226	229	244
101 - 125	167	190.5	179.5	194.5	219	250.5	253.5	268.5
126 - 150	188	215	204	219	240	275	278	293
151 - 175	209	239.5	228.5	243.5	261	299.5	302.5	317.5
176 - 200	230	264	253	268	282	324	327	342
201 - 225	251	288.5	277.5	292.5	303	348.5	351.5	366.5
226 - 250	272	313	302	317	324	373	376	391

* Dimensions according to ISO 15552

NOTES

DIMENSIONS LONG-CUSHIONING VERSION

+ = ADD THE STROKE



130 / 131

Ø	PL	VD	A	B	B ₁	CH ₁	CH ₂	CH ₃	CH ₄	KK	D	TG	F	EE	RT	E	L ₀	BG	N	P	Q
32	10	6.5	10	30	29	10	17	6	27	M10x1.25	12	32.5	22	G1/8	M6	46	94	14.5	4.5	6	4
40	12	8	10	35	34	13	19	6	30	M12x1.25	16	38	24	G1/4	M6	54	105	14.5	4.5	6	4
50	14	13	10	40	38	17	24	8	35	M16x1.5	20	46.5	32	G1/4	M8	64.5	106	17.5	5.5	6	6
63	16	14	10	45	38	17	24	8	35	M16x1.5	20	56.5	32	G3/8	M8	75.5	121	17.5	5.5	6	6

100 mm LONG-CUSHIONING

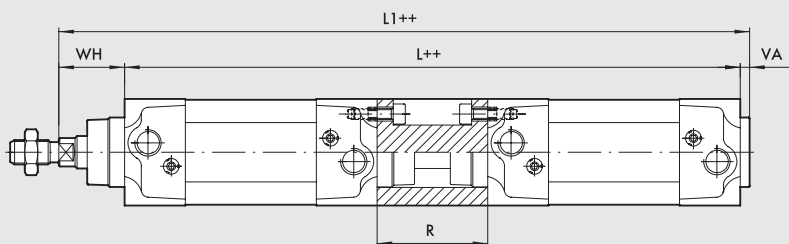
150 mm LONG-CUSHIONING

200 mm LONG-CUSHIONING

Ø	WH ₁	C ₂	VA ₁	L ₁	Ø	WH ₁	C ₂	VA ₁	L ₁	Ø	WH ₁	C ₂	VA ₁	L ₁
32	106	96	79	200	32	156	146	129	250	32	206	196	179	300
40	107	97	76.5	212	40	157	147	121.5	262	40	207	197	176.5	312
50	113.5	101.5	76.5	219.5	50	162.5	150.5	119.5	268.5	50	213.5	201.5	176.5	319.5
63	113.5	101.5	76.5	234.5	63	162.5	150.5	123.5	283.5	63	213.5	201.5	176.5	334.5

DIMENSIONS TANDEM VERSION

++ = ADD TWICE THE STROKE



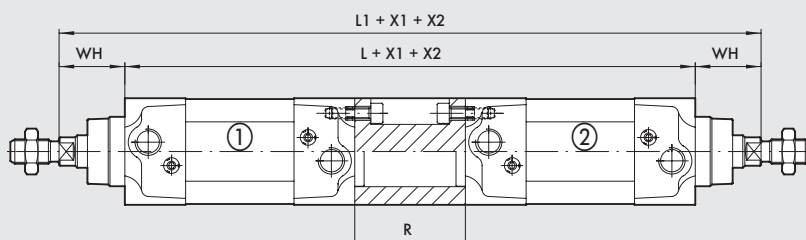
127

Ø	WH	VA	R	L	L ₁
32	26	4	55	243	273
40	30	4	55	265	299
50	37	4	68	280	321
63	37	4	68	310	351
80	46	4	92	348	398
100	51	4	92	368	423
125	65	6	120	440	511

Refer to standard cylinders for other values.

DIMENSIONS OPPOSED VERSION

X1 = STROKE CYLINDER 1
X2 = STROKE CYLINDER 2



125

Ø	WH	R	L	L ₁
32	26	55	243	295
40	30	55	265	325
50	37	68	280	354
63	37	68	310	384
80	46	92	348	440
100	51	92	368	470
125	65	120	440	570

Refer to standard cylinders for other values.