

ISO 15552 TWO-FLAT CYLINDERS (EX ISO 6431)

This version of cylinder is used to keep the parts fixed to the piston rod at an angle and to apply torques within the specified limits.

The piston rod of the Two Flat has two opposing longitudinal surfaces; it is made of stainless steel.

The front cylinder head includes a sintered bronze bush that matches the profile of the piston rod and prevents it from rotating on its own axis.

A special polyurethane gasket ensures pneumatic seal and prevents the accumulation of dirt. This technical solution is more reliable and gives a better pneumatic seal than with square or hexagonal piston rods.

Supplied in series STD, with a smooth barrel, and type A or Series 3, with a barrel with slots for retractable sensors.

They are available in several versions and with a wide range of accessories:

- with or without magnet
- double acting, single piston rod
- double acting, through rod; one piston rod is Two Flat, the other cylindrical
- fixing accessories.



TECHNICAL DATA		POLYURETHANE			
Max operating pressure	bar	10			
	MPa	1			
	psi	145			
Temperature range	°C	-10 to +80			
Fluid		Unlubricated air. Lubrication, if used, must be continuous			
Bore	mm	32; 40; 50; 63			
Design		Heads with Tap Tite screws			
Maximun stroke	mm	Ø 32 = 300	Ø 40 = 400	Ø 50 = 500	Ø 63 = 500
Versions		Double-acting cushioned, Through-rod cushioned, no-stick slip			
Sensor magnet		All versions come complete with magnet. Supplied without magnet on request.			
Inrush pressure	bar	Ø 32 = 0.4	Ø 40 = 0.4	Ø 50 = 0.3	Ø 63 = 0.3
Max torque on piston rod	Nm	Ø 32 = 0.2	Ø 40 = 0.4	Ø 50 = 1	Ø 63 = 1
Maximum rotation on the rod	degrees	Ø 32 = 0.70°	Ø 40 = 0.75°	Ø 50 = 0.65°	Ø 63 = 0.65°
Forces generated at 6 bar thrust/retraction		See page 1-7			
Weights		See page 1-8			
Notes		For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.			

KEY TO CODES FOR ISO 15552 TWO-FLAT STD CYLINDERS

CYL	1 2 1 TYPE	0 DIAMETER	3 2 BORE	0 0 5 0 STROKE	F MATERIAL	P GASKETS
120	Double-acting, cushioned, non-magnetic	0 Diameter S Non-magnetic ▲ G No stick slip	32 40 50 63	+ Ø 32 stroke 1 to 300 mm + Ø 40 stroke 1 to 400 mm + Ø 50 to 63 stroke 1 to 500 mm	F "Two Flat" piston rod AISI 303 stainless steel nut	P Polyurethane gaskets
121	Double-acting, cushioned					
122	Through-rod					

+ 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

KEY TO CODES FOR ISO 15552 TWO-FLAT TYPE A CYLINDERS

CYL	1 2 1 TYPE	A DIAMETER	3 2 BORE	0 0 5 0 STROKE	F MATERIAL	P GASKETS
121	Double-acting, cushioned	A Standard ▲ B No stick slip C Non-magnetic	32 40 50 63	+ Ø 32 stroke 1 to 300 mm + Ø 40 stroke 1 to 400 mm + Ø 50 to 63 stroke 1 to 500 mm	F "Two Flat" piston rod AISI 303 stainless steel nut	P Polyurethane gaskets
122	Through-rod					

+ 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

KEY TO CODES FOR ISO 15552 TWO-FLAT SERIES 3 CYLINDERS

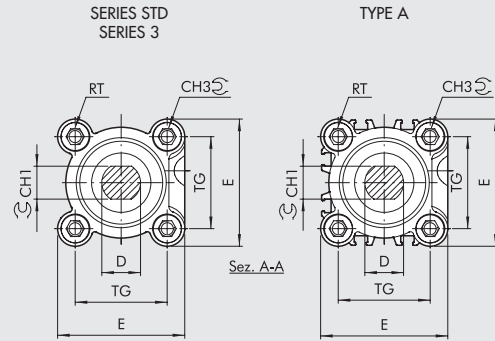
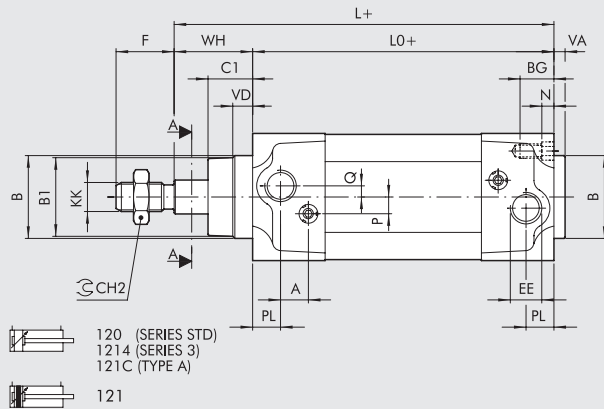
CYL	1 2 1 TYPE	3	3 2 BORE	0 0 5 0 STROKE	F MATERIAL	P GASKETS
121	Double-acting cushioned	3 Series 3	32	+ Ø 32 stroke 1 to 300 mm	F "Two Flat" piston rod AISI 303 stainless steel nut	P Polyurethane gaskets
122	Through-rod	4 Series 3 No stick slip ▲ 5 Series 3 Non-magnetic	40 50 63	+ Ø 40 stroke 1 to 400 mm + Ø 50 to 63 stroke 1 to 500 mm		

- + 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

DIMENSIONS

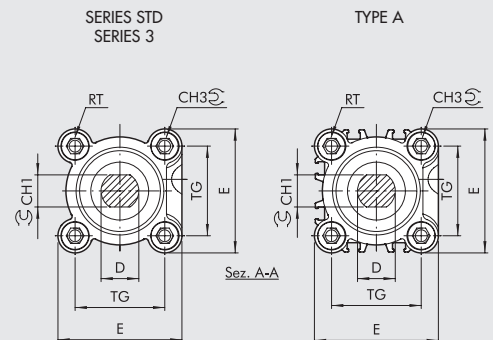
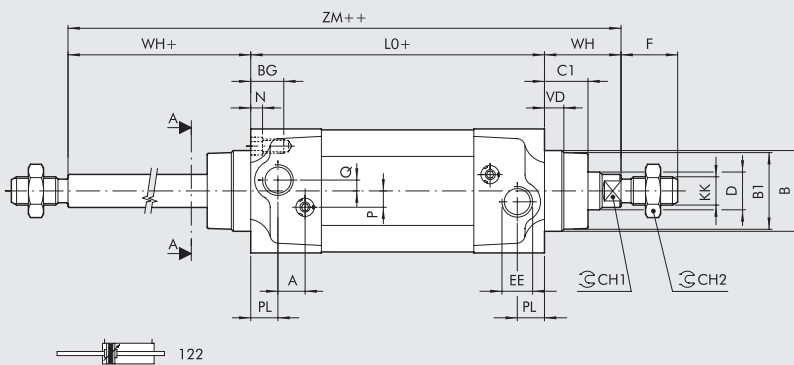
STANDARD VERSION

+= ADD THE STROKE



THROUGH-ROD VERSION

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



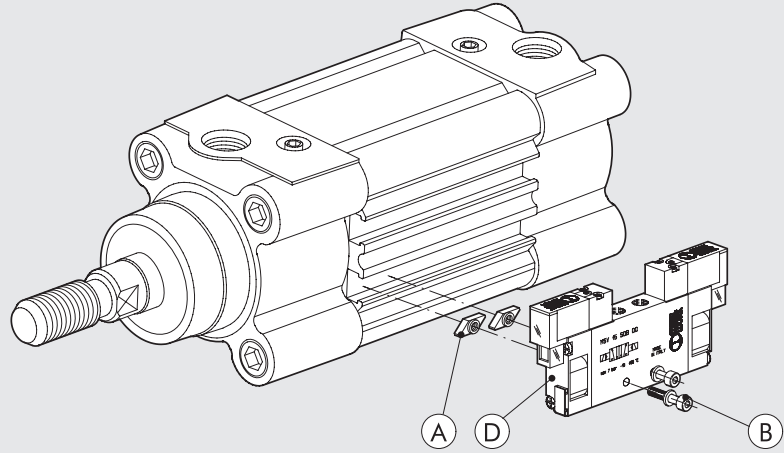
Ø	PL	VD	A	B	B ₁	WH	C ₁	CH ₁	CH ₂	CH ₃	KK	D	TG	VA	F	EE	RT	E	L	L ₀	ZM	BG	N	P	Q
32	10	6.5	10	30	28	26	16	10	17	6	M10x1.25	12	32.5	4	22	G1/8	M6	46	120	94	146	14.5	4.5	6	4
40	12	8	10	35	33	30	20	13	19	6	M12x1.25	16	38	4	24	G1/4	M6	54	135	105	165	14.5	4.5	6	4
50	14	13	10	40	38	37	25	17	24	8	M16x1.5	20	46.5	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

VALVE ASSEMBLY ON CYLINDER FOR TYPE A AND SERIES 3 CYLINDERS

With this type of cylinder, the valves (D) can be mounted directly using the retracting sensor slot, without requiring the use of intermediate brackets.

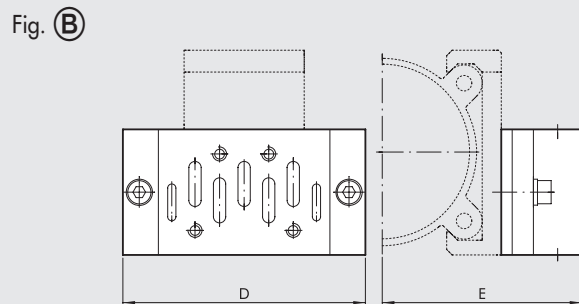
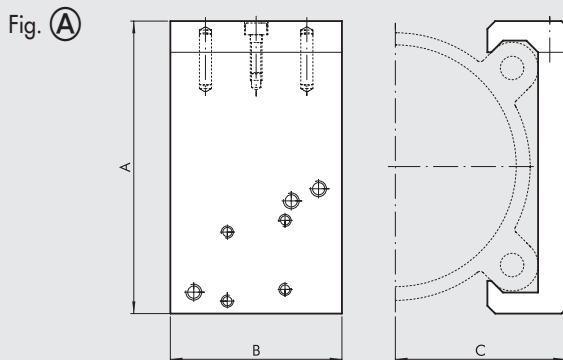
This can be done using the special plates (A), which come with both the M3 and M4 threads, and screws (B) of the size, type and quantity shown in the table below.

For ISO 1 and ISO 2 valves, the kit on which the valve is to be mounted (codes shown in the tables) will be fitted to the cylinder using the special plates (A) and the screws (B) listed in the table.



Type of valve to mount (D)	M3 fixing plate (A) code 0950003002	M4 fixing plate (A) code 0950003001	Screw (B) for connection to cylinder (one per plate)	Washer (B) (one per screw)	Valve assembly kit
MINIMACH	n° 2	-	M3x16 UNI 5931 (DIN 912)	A3.2 UNI 1751 (DIN 127A)	-
MACH 11	n° 2	-	M3x16 UNI 5931 (DIN 912)	A3.2 UNI 1751 (DIN 127A)	-
SERIE 70 1/8	-	n° 2	M4x25 UNI 5931 (DIN 912)	-	-
SERIE 70 1/4	-	n° 2	M4x30 UNI 5931 (DIN 912)	A4.3 UNI 1751 (DIN 127A)	-
SERIE 70 1/2	-	n° 2	M4x45 UNI 5931 (DIN 912)	A4.3 UNI 1751 (DIN 127A)	-
ISO 1	-	n° 2	M4x8 UNI 7688 (DIN 965A)	-	0950002001
ISO 2	-	n° 2	M4x8 UNI 7688 (DIN 965A)	-	0950002002

FIXING BRACKET SERIES KCV FOR TYPE A AND SERIES 3 CYLINDERS



VALVE FIXING BRACKET - CYLINDER (Fig. A)

Code	Ø	A	B	C	D	ISO 1		ISO 2		Applicable valves	Weight [g]
						E	D	E			
0950322090	32	54	40	29.5	110	64.5	124	70.5	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	80	
0950402090	40	59.5	40	32.2	110	67.2	124	73.2	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	86	
0950502090	50	71.5	40	37	110	72	124	78	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	93	
0950632090	63	81.5	40	42	110	77	124	83	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	101	
0950802090	80	99	60	53.5	110	88.5	124	94.5	Series 70 1/8-1/4-1/2 ISO 1 - ISO 2	222	
0951002090	100	119.5	60	63.5	110	98.5	124	104.5	Series 70 1/8-1/4-1/2 ISO 1 - ISO 2	258	
0951252090	125	148	60	76.5	110	111.5	124	117.9	Series 70 1/8-1/4-1/2 ISO 1 - ISO 2	298	

KIT FOR FIXING VALVES TO BRACKETS, FOR SERIES KCV BRACKETS

Code	Valve kit	Composition	Weight [g]
0950002003	MACH 16	2 hex. screws M3x25 with washer	4
0950002004	Series 70 1/8-1/4	2 hex. screws M4x50 with washer	8
0950002006	Series 70 1/2	2 hex. screws M5x50 with washer	20
0950002001	ISO 1	Adaptor + ISO 1 BASE SIDE + screws + washers (Fig.B)	230
0950002002	ISO 2	Adaptor + ISO 2 BASE SIDE + screws + washers (Fig.B)	350