

ISO 6432 MINI-CYLINDER SERIES STD

Mini-cylinders to ISO 6432 with a chamfered stainless steel barrel. The cylinder head dimensions have been reduced for some sizes so that they can be used where there are space restrictions. Can be used with different types of sensors.

Available in various versions with a wide range of accessories:

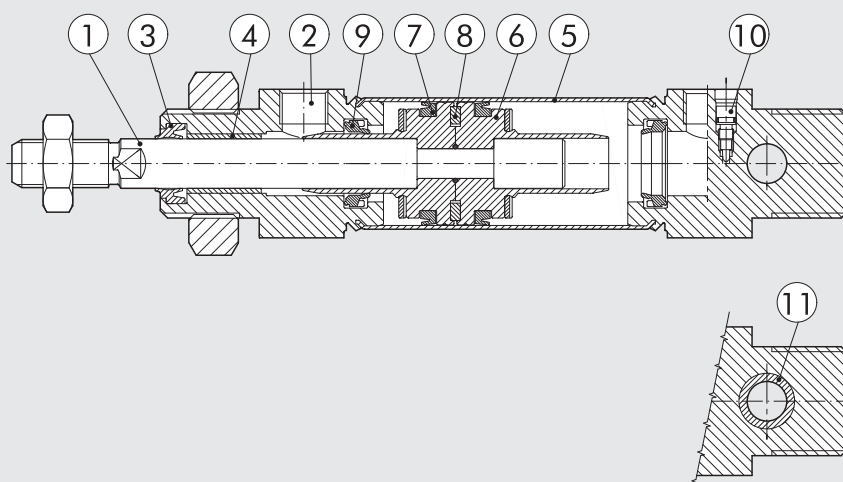
- with or without magnet
- single acting extended, retracted or through piston rod
- double acting, single or through piston rod
- with pneumatic cushioning (Ø 16-20-25)
- gaskets made of NBR, POLYURETHANE, and FKM/FPM (for high temperatures), and low-temperature gaskets
- special executions on request
- fixing accessories, guide units and mechanical rod locking



TECHNICAL DATA		Polyurethane	NBR	FKM/FPM	Low temperature		
Max operating pressure	bar			10			
	MPa			1			
Temperature range	°C	-10 to +80	-10 to +80	-10 to +150 (non-magnetic cylinders)	-35 to +80		
Fluid		Unlubricated air. Lubrication, if used, must be continuous					
Bores	mm	8; 10; 12; 16; 20; 25					
Design		Chamfered barrel					
Standard strokes ⁺	mm	Single-acting: for bores Ø 8 to 25 strokes from 1 to 50 Double-acting: for bores Ø 8 to 10 strokes from 1 to 100 for bores Ø 12 to 16 strokes from 1 to 200 for bores Ø 20 to 25 strokes from 1 to 500 Double-acting, cushioned: for bores Ø 16 strokes from 1 to 300 for bores Ø 20 to 25 strokes from 1 to 500					
Versions		Double-acting, Double-acting cushioned, Single-acting extended or retracted rod, Through-rod, Through-rod cushioned, Version with piston rod block, No stick-slip					
Magnet for sensors		All versions come complete with magnet. Supplied without magnet on request.					
Inrush pressure		Ø 8	Ø 10	Ø 12	Ø 16	Ø 20	Ø 25
single piston rod	bar	0.8	0.8	0.8	0.6	0.6	0.6
through-rod	bar	1	1	1	0.8	0.8	0.8
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					

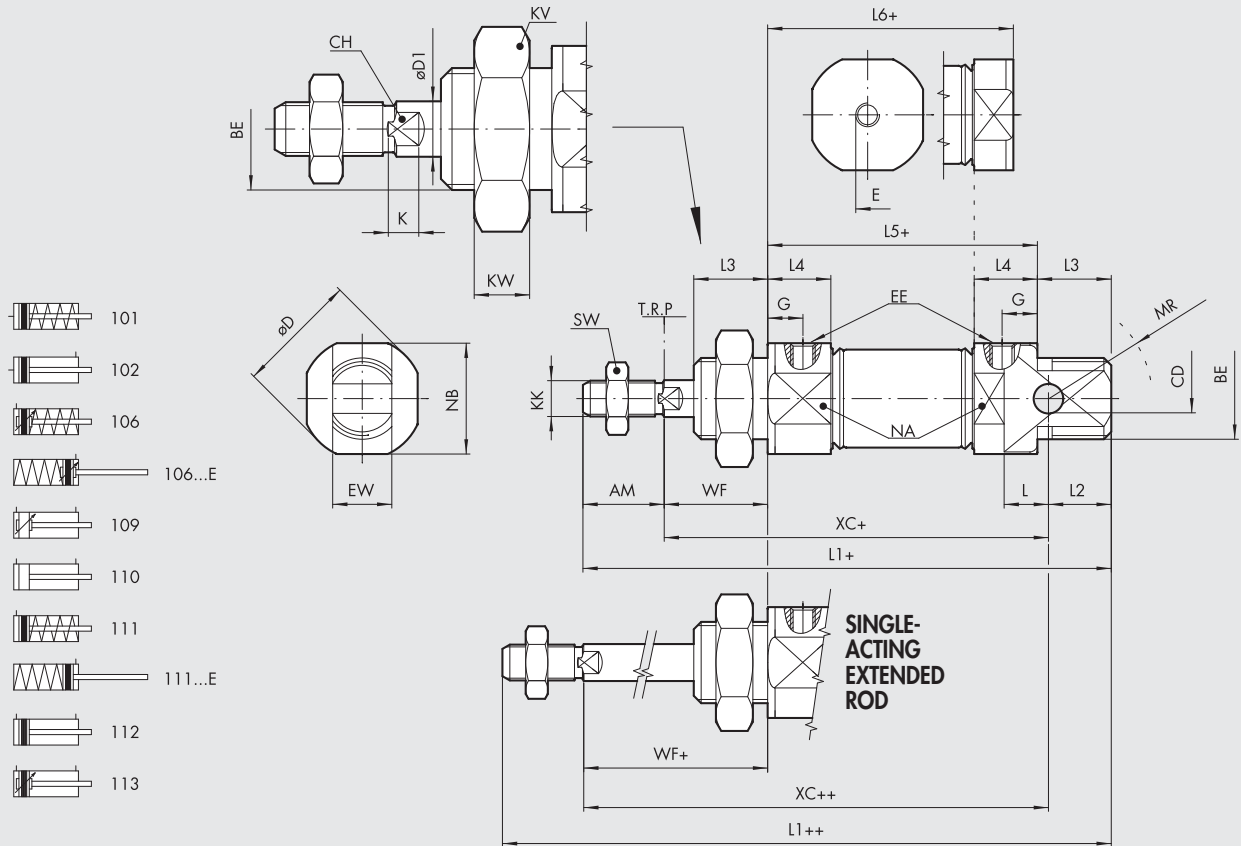
COMPONENTS

- PISTON ROD: C45 steel or stainless steel, thick chromed
- HEAD: anodised aluminium alloy
- PISTON ROD GASKET: polyurethane, NBR or FKM/FPM
- GUIDE BUSHING: steel strip with bronze and PTFE insert
- BARREL: AISI 304 steel
- HALF-PISTON: acetal resin
- PISTON GASKET: polyurethane, NBR or FKM/FPM
- MAGNET: plasteodymium
- CUSHIONING GASKET: NBR or FKM/FPM
- NEEDLE: OT 58 with needle out movement safety system even when fully open
- BUSHING (optional): self-lubricating bronze



DIMENSIONS

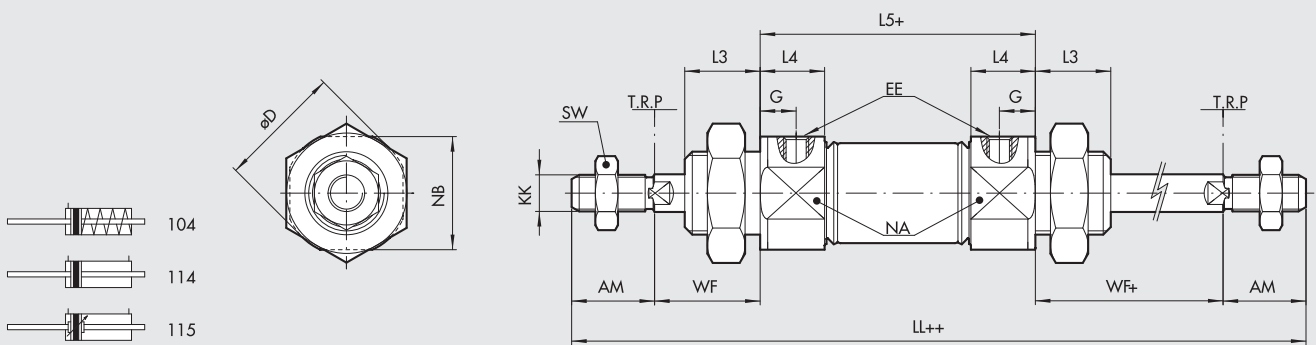
STANDARD VERSION



SINGLE-ACTING EXTENDED ROD

+ = ADD STROKE
++ = ADD TWICE THE STROKE

THROUGH-ROD VERSION



Ø	AM ^{+0.0/-2.0}	BE	øCD ^{H9}	øD	øD1	E	G	EE	EW ^{d13}	L	LL	L1	L2	L3	L4	L5	L6	KK	XC ^{±1}	WF ^{±1.2}	KW	KV	MR	NA	NB	SW	CH	K
8	12	M12x1.25	4	16.7	4	M5	6	M5	8	6.5	102	86	10	12	10	46	46	M4	64	16	7	19	12	15	15	7	3	3
10	12	M12x1.25	4	16.7	4	M5	6	M5	8	6.5	102	86	10	12	10	46	46	M4	64	16	7	19	12	15	15	7	3	3
12	16	M16x1.5	6	19	6	M5	6	M5	12	9	125	104	13	17	10	49	47	M6	75	22	8	24	16	17	17	10	5	3.5
16	16	M16x1.5	6	19.7	6	1/8	6	M5	12	9	132	111	13	17	10	56	53	M6	82	22	8	24	16	18	18	10	5	3.5
20	20	M22x1.5	8	27.9	8	1/8	8	G 1/8	16	12	156	129	14	17	15.5	68	61	M8	95	24	7	32	18	24	24	13	7	4.6
25	22	M22x1.5	8	33	10	1/8	9	G 1/8	16	12	173	143	17	20	17.1	73	66.5	M10x1.25	104	28	7	32	21	30	30	17	8	5

VERSION 106...E (SINGLE-ACTING EXTENDED ROD, CUSHIONED)
VERSION 111...E (SINGLE-ACTING EXTENDED ROD)

Ø	Stroke	L1	L5	XC	Ø	Stroke	L1	L5	XC	Ø	Stroke	L1	L5	XC
16	0 - 25	115.4	60.4	86.4	20	0 - 25	133.4	72.4	99.4	25	0 - 25	146.1	76.1	107.1
16	26 - 50	135.4	80.4	106.4	20	26 - 50	154.4	93.4	120.4	25	26 - 50	169	99	130

ISO 6432 MINI-CYLINDER SERIES TP



Minicylinders manufactured according to the ISO 6432 regulation having high resistance technopolymer heads and anodized aluminium liner. Available in various versions with a wide range of accessories:

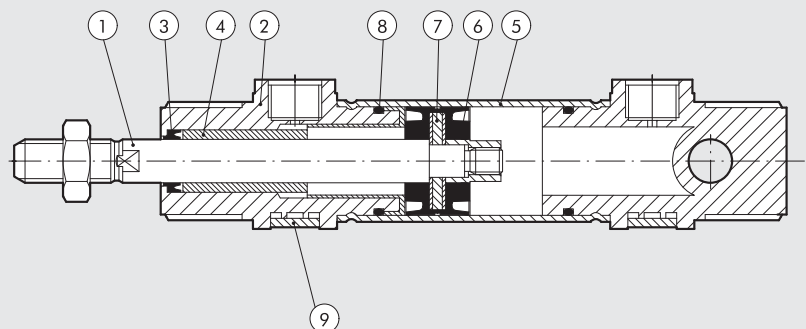
- with or without magnet
- single and double acting-single or through rod
- gaskets made of POLYURETHANE
- fixing accessories and guide units.



TECHNICAL DATA		POLYURETHANE		
Max operating pressure	bar	10		
	MPa	1		
Temperature range	°C	-10 to +60		
Fluid		Unlubricated air. Lubrication, if used, must be continuous		
Bores	mm	16; 20; 25		
Design		Aluminium liner chamfered on the heads		
Standard strokes †	mm	Ø 16: from 1 to 200		
	mm	Ø 20 to 25: from 1 to 500		
Versions		Double-acting, Double Through-rod (for both there are 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		
Inrush pressure		Ø 16	Ø 20	Ø 25
single piston rod	bar	0.6	0.6	0.6
through-rod	bar	0.8	0.8	0.8
Notes		The standard version is lacking of the head nut.		
		Use of fittings with a taper thread is NOT recommended.		
		† Maximum recommended strokes. Higher values can create operating problems		

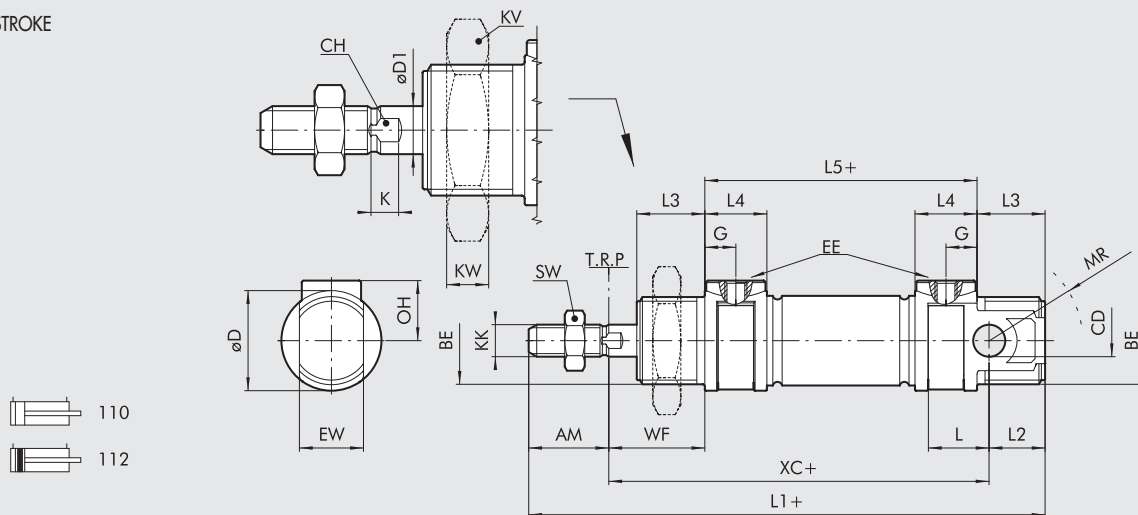
COMPONENTS

- PISTON ROD: C45 steel or stainless steel, thick chromed
- HEADS: high resistance technopolymer
- PISTON ROD GASKET: polyurethane
- GUIDE OPERATOR: technopolymer
- BARREL: drawn anodized aluminium alloy
- PISTON GASKET: polyurethane
- MAGNET: neodymium
- STATIC O-RINGS: NBR
- COVER PLATE: technopolymer



DIMENSIONS OF STANDARD VERSIONS

+ = ADD STROKE



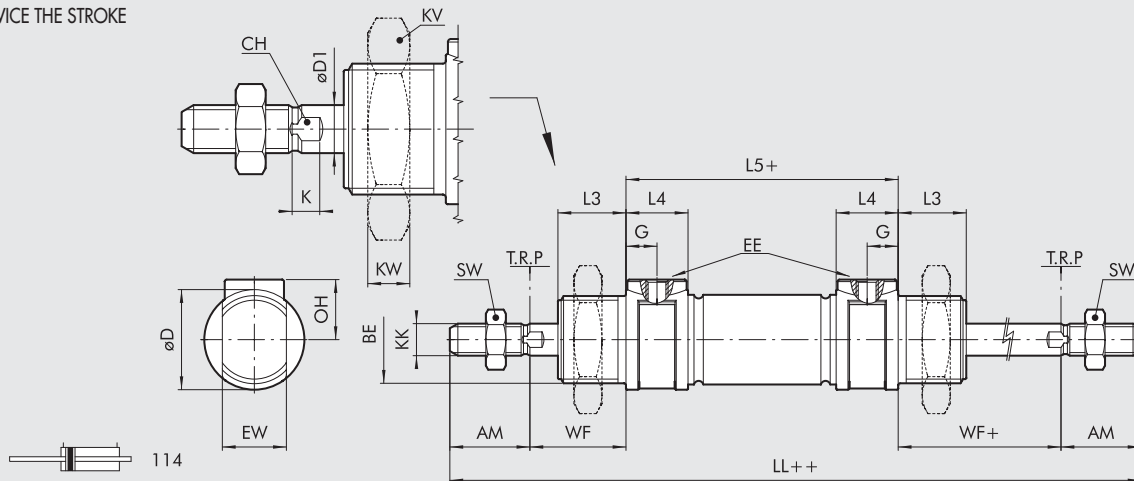
MAX LOCKING TORQUE [Nm]

Ø	AM	BE	CD (H9)	øD	øD1	G	EE	EW (d13)	OH	L	L1	L2	L3	L4	L5	KK	XC(±1)	WF	KW	KV	MR	SW	CH	K	Ø	BE (front/rear)	EE
16	16	M16x1.5	6	21	6	4.7	M5	12	12	11	111	13	17	9.5	56	M6	82	22	8	24	16	10	5	3.5	16	12/8	1.2
20	20	M22x1.5	8	25	8	7.7	1/8"	16	16	15	129	14	17	15.5	68	M8	95	24	7	32	18	13	7	4.6	20	22/15	3
25	22	M22x1.5	8	30	10	7.7	1/8"	16	17	15	143	17	20	15.5	73	M10x1.25	104	28	7	32	21	17	8	5.5	25	22/15	3

DIMENSIONS OF STANDARD VERSIONS WITH THROUGH-ROD

+ = ADD STROKE

++ = ADD TWICE THE STROKE



MAX LOCKING TORQUE [Nm]

Ø	AM	BE	øD	øD1	G	EE	OH	LL	L3	L4	L5	KK	WF	KW	KV	SW	CH	K	Ø	BE	EE
16	16	M16x1.5	21	6	4.7	M5	12	132	17	9.5	56	M6	22	8	24	10	5	3.5	16	12	1.2
20	20	M22x1.5	25	8	7.7	1/8"	16	156	17	15.5	68	M8	24	7	32	13	7	4.6	20	22	3
25	22	M22x1.5	30	10	7.7	1/8"	17	173	20	15.5	73	M10x1.25	28	7	32	17	8	5.5	25	22	3

KEY TO CODES

CYL	110 TYPE	3	16 BORE	0	020 STROKE	C MATERIAL	P GASKETS
110	DE non-magnetic minicylinder	● 3 TP heads (standard)	■ 16 20 25	0 Standard S Non-magnetic	For the maximum suppliable strokes, look at the technical data	C C45 chrome rod X Stainless rod	P Polyurethane
112	DEM minicylinder	● 4 TP heads (standard) + head nut					
114	DEM through-rod minicylinder						

DE: Double-acting (non-cushioned, not magnetic).
DEM: Double action magnetic (unless otherwise specified) not cushioned.

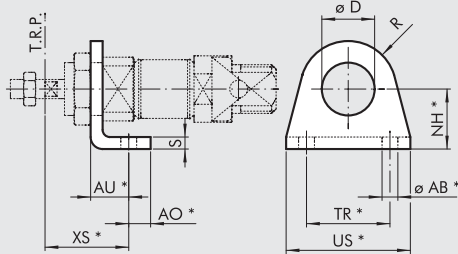
As standard the cylinders are already No stick-slip version.
● This version don't provide the nut on the head.
■ Ø 16 will be only in version with stainless rod (X).

ACCESSORIES FOR ISO 6432 MINI-CYLINDERS



FIXINGS

FOOT MODEL A

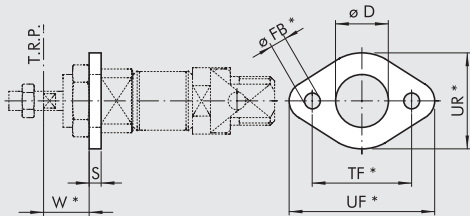


Code	Ø	ø D	XS ±1.4	AU	AO	NH ±0.3	TR J ¹⁴	US	ø AB H ¹³	R	S	Weight [g]
W0950080001	8	12	24	11	5	16	25	35	4.5	10	3	22
W0950080001	10	12	24	11	5	16	25	35	4.5	10	3	22
W0950120001	12	16	32	14	6	20	32	42	5.5	13	4	42
W0950120001	16	16	32	14	6	20	32	42	5.5	13	4	42
W0950200001	20	22	36	17	8	25	40	54	6.5	20	5	90
W0950200001	25	22	40	17	8	25	40	54	6.5	20	5	90

*ISO 6432 values

Note: Individually packed

FLANGE MODEL C

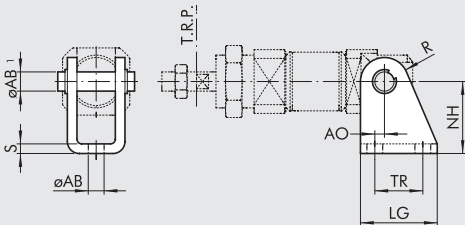


Code	Ø	ø D	W ±1.4	ø FB H ¹³	TF J ¹⁴	UF	UR	S	Weight [g]
W0950080002	8	12	13	4.5	30	40	22	3	10
W0950080002	10	12	13	4.5	30	40	22	3	10
W0950120002	12	16	18	5.5	40	52	30	4	26
W0950120002	16	16	18	5.5	40	52	30	4	26
W0950200002	20	22	19	6.5	50	66	40	5	52
W0950200002	25	22	23	6.5	50	66	40	5	52

*ISO 6432 values

Note: Individually packed

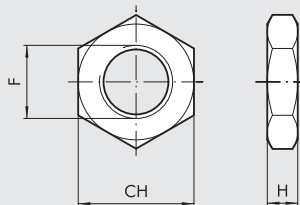
COUNTER-HINGE MODEL BC



Code	Ø	AO	LG	TR J ¹³	NH ±0.2	MO	ø AB1	ø AB H ¹³	R	S	Weight [g]
W0950080005	8	2.5	22	12.5	24	18	4	4.5	6	2.5	24
W0950080005	10	2.5	22	12.5	24	18	4	4.5	6	2.5	24
W0950120005	12	2	25	15	27	25	6	5.5	7	3	40
W0950120005	16	2	25	15	27	25	6	5.5	7	3	40
W0950200005	20	4	32	20	30	30	8	6.5	10	4	78
W0950200005	25	4	32	20	30	30	8	6.5	10	4	78

Note: Supplied complete with 1 pin and 2 snap rings

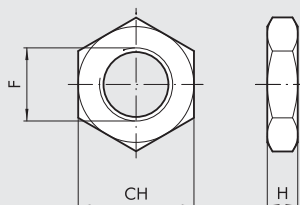
NUT FOR HEADS MODEL D



Code	Ø	F	CH	H	Weight [g]
0950080010	8	M12x1.25	19	7	12
0950080010	10	M12x1.25	19	7	12
0950120010	12	M16x1.5	24	8	20
0950120010	16	M16x1.5	24	8	20
0950200010	20	M22x1.5	32	7	44
0950200010	25	M22x1.5	32	7	44

Note: Individually packed

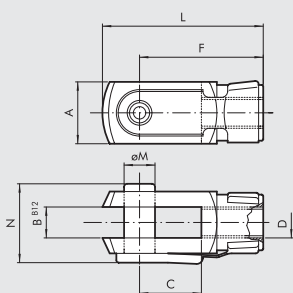
NUT FOR PISTON RODS MODEL DA



Code	Ø	F	CH	H	Weight [g]
0950080011	8	M4	7	3	0.6
0950080011	10	M4	7	3	0.6
0950120011	12	M6	10	4	1
0950120011	16	M6	10	4	1
0950200011	20	M8	13	5	3
0950322010	25	M10x1.25	17	6	7

Note: Individually packed

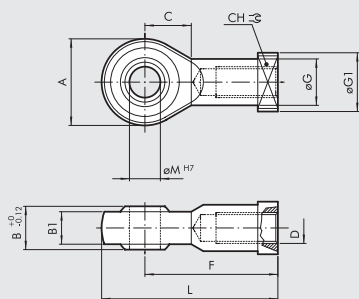
FORK MODEL GK-M



Code	Ø	øM	C	B	A	L	F	D	N	Weight [g]
W0950080020	8	4	8	4	8	21	16	M4	11	8
W0950080020	10	4	8	4	8	21	16	M4	11	8
W0950120020	12	6	12	6	12	31	24	M6	16	20
W0950120020	16	6	12	6	12	31	24	M6	16	20
W0950200020	20	8	16	8	16	42	32	M8	22	48
W0950322020	25	10	20	10	20	52	40	M10x1.25	26	92

Note: Individually packed

ROD EYE MODEL GA-M



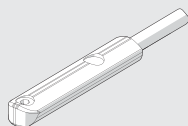
Code	Ø	øM	C	B	B1	A	L	F	D	øG	øG1	CH	Weight [g]
W0950080025	8	5	10	8	6	18	36	27	M4	9	11	9	22
W0950080025	10	5	10	8	6	18	36	27	M4	9	11	9	22
W0950120025	12	6	11	9	6.75	20	40	30	M6	10	13	11	28
W0950120025	16	6	11	9	6.75	20	40	30	M6	10	13	11	28
W0950200025	20	8	13	12	9	24	48	36	M8	12.5	16	14	50
W0950322025	25	10	15	14	10.5	28	57	43	M10x1.25	15	19	17	78

Note: Individually packed

ACCESSORIES FOR ISO 6432 MINI-CYLINDERS: MAGNETIC SENSORS

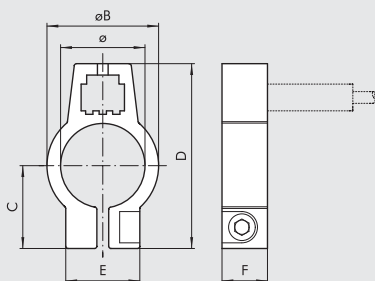
(E) RETRACTABLE SENSOR

SENSOR, OVAL TYPE
Traditional



For codes and technical data, see **chapter A6**.

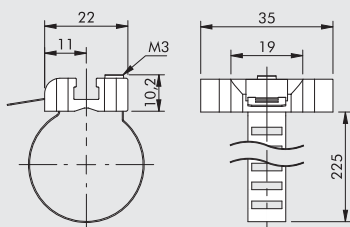
(F) SENSOR CIRCLIP MOD. DSW



Code	Bore	Model	Ø	øB	C	D	E	F
W0950000608	8	Circlip DSW - 08	9.3	12.3	11	24	12.3	9
W0950000610	10	Circlip DSW - 10	11.3	14.3	12	26	12.3	9
W0950000612	12	Circlip DSW - 12	13.3	16.3	13	28	12.3	9
W0950000616	16	Circlip DSW - 16	17.3	20.3	15.5	32	12.3	9
W0950000620	20	Circlip DSW - 20	21.3	24.3	17.5	36	14	9
W0950000625	25	Circlip DSW - 25	26.3	29.3	20	41.5	14	9

Note: Individually packed

(G) UNIVERSAL SENSOR CIRCLIP



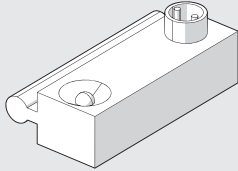
Code	Bore	Model
W0950001103	8 to 25	Sensor circlip

Note: Individually packed

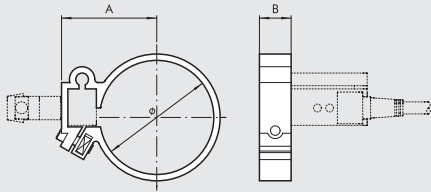
MATERIAL
Circlip: stainless steel
Sensor holder: zamak

A SENSOR SERIES DSM

For codes and technical data, see **chapter A6**.



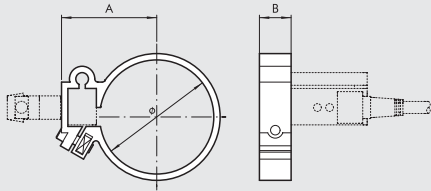
B SENSOR CIRCLIP MOD. DXF FOR STAINLESS STEEL BARREL



Code	Bore	Model	Ø	A	B
W0950000508	8	Circlip DXF - 09	9.3	15	10
W0950000510	10	Circlip DXF - 11	11.3	16.5	10
W0950000512	12	Circlip DXF - 13	13.3	17.5	10
W0950000516	16	Circlip DXF - 17	17.3	18.5	10
W0950000520	20	Circlip DXF - 21	21.3	21	10
W0950000525	25	Circlip DXF - 26	26.3	23.5	10

Note: Individually packed

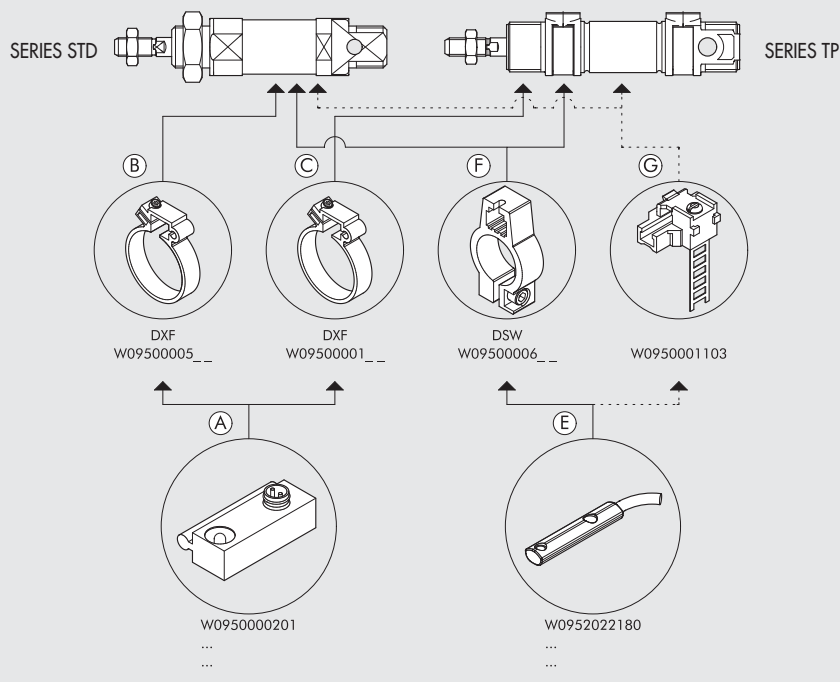
C SENSOR CIRCLIP MOD. DXF FOR ALUMINIUM BARREL



Code	Bore	Model	Ø	A	B
W0950000108	8	Circlip DXF 12- 8	12	17	10
W0950000110	10	Circlip DXF 14-10	14	18	10
W0950000112	12	Circlip DXF 16-12	16	19	10
W0950000116	16	Circlip DXF 20-16	20	21	10
W0950000120	20	Circlip DXF 24-20	24	23	10
W0950000125	25	Circlip DXF 29-25	29	28	10

Note: Individually packed. For the Ø16 in addition to the circlip 2 reduction rings, for the Ø20 and Ø25 1 reduction ring.

USE SENSORS



ACCESSORIES FOR ISO 6432 MINI-CYLINDERS: MECHANICAL PISTON ROD LOCK

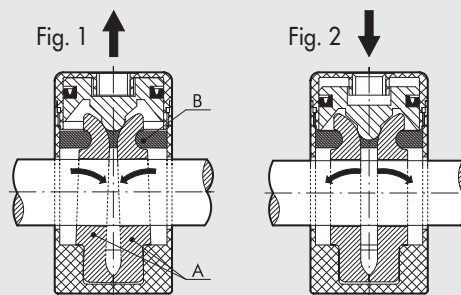
TECHNICAL DATA

Operating pressure	bar	3 to 6
	MPa	0.3 to 0.6
Temperature range	°C	-10 to +80
Installation		In any position
Mechanics		Double pad with mechanical locking Mechanical stick-slip
Operation		NC bidirectional
Fluid		Lubricated or unlubricated compressed air
Locking force		Ø 12-16: 180 N / Ø 20: 250 N Ø 25: 400 N
Pilot port		M5
MATERIALS		
body		Aluminium
pad		Brass
spring		NBR
piston		Synthetic, with added teflon®
gasket		NBR



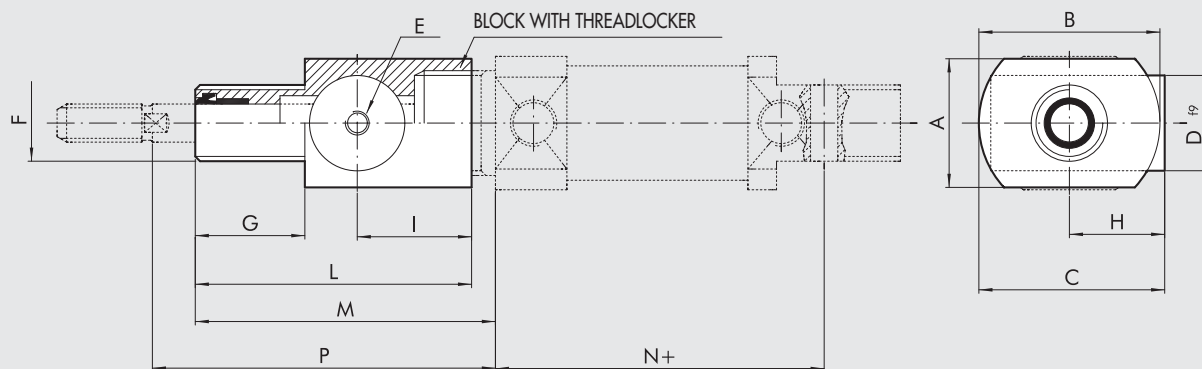
OPERATING PRINCIPLE

The mechanical piston rod lock is a normally-closed mechanism. In the absence of pneumatic piloting, the two pads (A) lock the cylinder rod in both directions (Fig. 1). With pneumatic piloting, the piston rod guide forces the pads to come right up to each other and overcome the counter spring (B) force and the piston rod can slide (Fig. 2). **It is important to remember that the mechanical piston rod lock is a static type, which means that it is necessary to stop the cylinder piston rod pneumatically before locking the part mechanically.**



DIMENSIONS

+ = ADD STROKE



Code	Ø	A	B	C	D	E	F	G	H	I	L	M	N	P(±1.2)	Weight [g]
W5010001099	12	∇ 25	∇ 25	31.5	20	M5	M16x1.5	12	19	23	47	52	53	57	100
W5010001099	16	∇ 25	∇ 25	31.5	20	M5	M16x1.5	12	19	23	47	52	60	57	100
W5010001100	20	27	38	40	20	M5	M22x1.5	23	21	24	58	65	71	72	100
W5010001101	25	27	38	40	20	M5	M22x1.5	23	21	24	58	68	76	76	100

ACCESSORIES FOR ISO 6432 MINI-CYLINDERS: GUIDE UNIT

Guide units series DS-DH-DM ensure optimal alignment and anti-rotation effect of the pneumatic cylinder connected to it. The guide units can be used separately or combined in order to get complete handling units: in which case the guide units can be coupled using the type A and C anchorage (foot and flange).

The guide unit can be coupled to ISO 6432 cylinders (Ø 12 - Ø 25).

The following versions are available:

U PROFILE (GDS)*: for limited loads and speeds

H PROFILE (GDH)*: for high loads

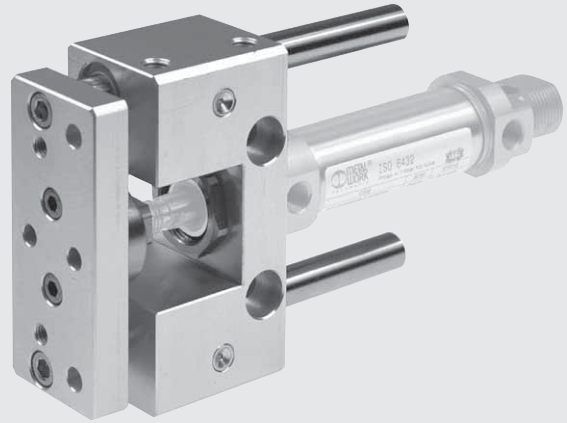
H PROFILE (GDM)**: for high speeds

* With bronze guide bushing

** With ball guide bushing

STANDARD STROKES: 50 - 100 - 150 - 200 - 250 - 320 - 400 - 500

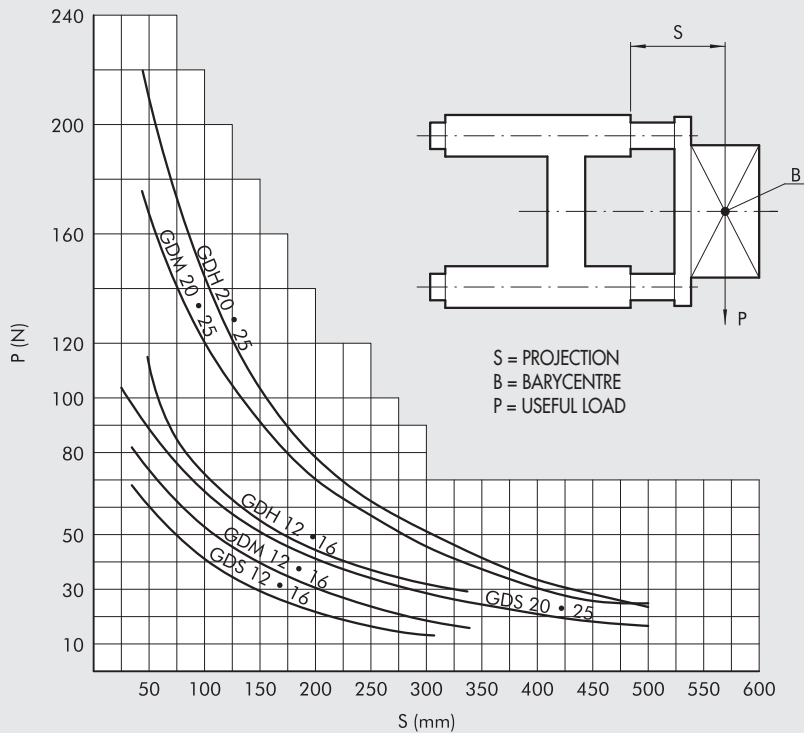
For weights, see cylinder "General technical data" at the beginning of the chapter.



GUIDE ELEMENTS

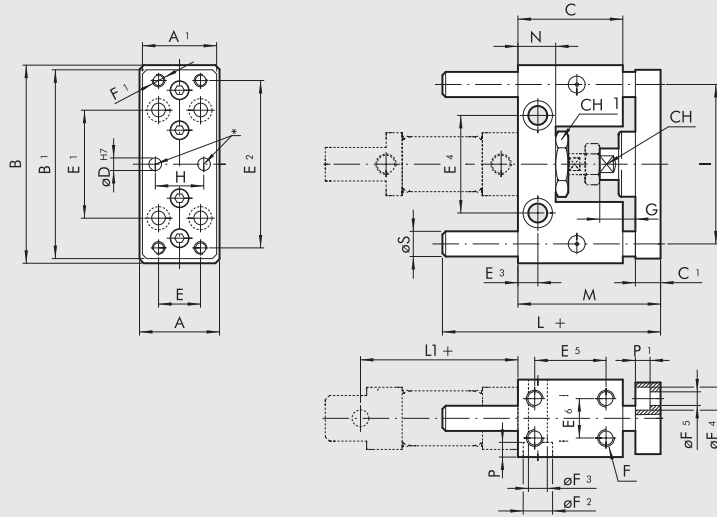
SERIES GDS-GDH	Body:	aluminium alloy
	Guide bushing:	self-lubricating sintered bronze and wiper rings
	Piston rod:	chromed rolled steel
SERIES GDM	Body:	aluminium alloy
	Guide bushing:	linear guide ball bearings and wiper rings
	Piston rod:	tempered and chromed steel

GUIDE UNIT LOAD DIAGRAM



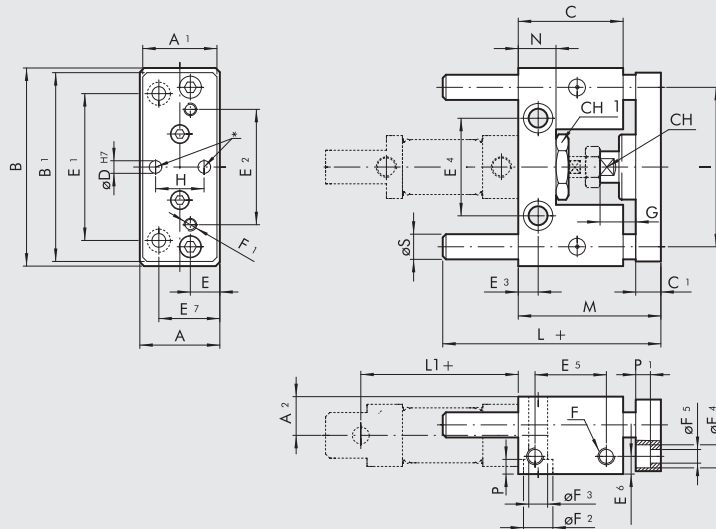
DIMENSIONS OF TYPE GDS

+ = ADD THE STROKE
 * = CENTERING PINHOLES



Ø	A	A ₁	B	B ₁	C	C ₁	Ch	Ch ₁	D	E	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	F	F ₁	F ₂	F ₃	F ₄	F ₅	G	H	I	L	L ₁	M	N	P	P ₁	S
12	30	27	65	63	38	10	8	19	4	15	32	54	6.5	24	25	22	M4	M4	8.5	5.1	7.5	4.5	15	15	46	70	53	54	13	5.5	4.5	10
16	30	27	65	63	38	10	8	19	4	15	32	54	6.5	24	25	22	M4	M4	8.5	5.1	7.5	4.5	15	15	46	70	60	54	13	5.5	4.5	10

+ = ADD THE STROKE
 * = CENTERING PINHOLES



Ø	A	A ₁	A ₂	B	B ₁	C	C ₁	Ch	Ch ₁	D	E	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	F	F ₁	F ₂	F ₃	F ₄	F ₅	G	H	I	L	L ₁	M	N	P	P ₁	S
20	40	38	20	100	90	48	12	13	27	6	14	70	55	8.5	46.5	32	10	30	M8	M6	14	9	11	6.5	22	20	76	77	71	65	17	9	6.5	12
25	40	38	20	100	90	48	12	13	27	6	14	70	55	8.5	46.5	32	10	30	M8	M6	14	9	11	6.5	22	20	76	77	76	71	17	9	6.5	12

GDS (BRONZE GUIDE BUSHING)

Code	Bore	Type
W0700121...	12	UNIT MW DS 012
W0700161...	16	UNIT MW DS 016
W0700201...	20	UNIT MW DS 020
W0700251...	25	UNIT MW DS 025

...Enter the stroke in 3 digits (e.g. 50 = 050).

STROKE

Cylinder stroke [mm]		Guide stroke [mm]
from	to	
0	50	50
51	100	100
101	150	150
151	200	200
201	250	250

Note:

Thanks to the dimensional features, it is possible to use the range of strokes - cylinders, as shown in the table here, without the guide piston rods projecting beyond the cylinder fixing value (L1 +).