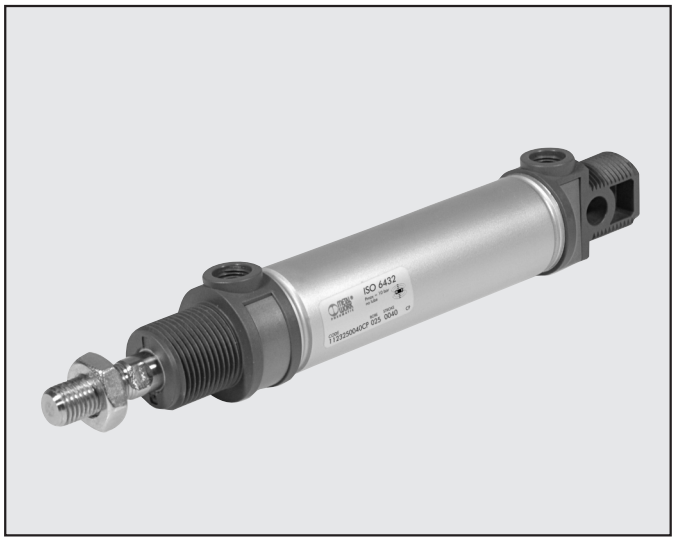
MINI-CYLINDER "ISO 6432" SERIES TP Ø 16÷25 mm AND ACCESSORIES

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:

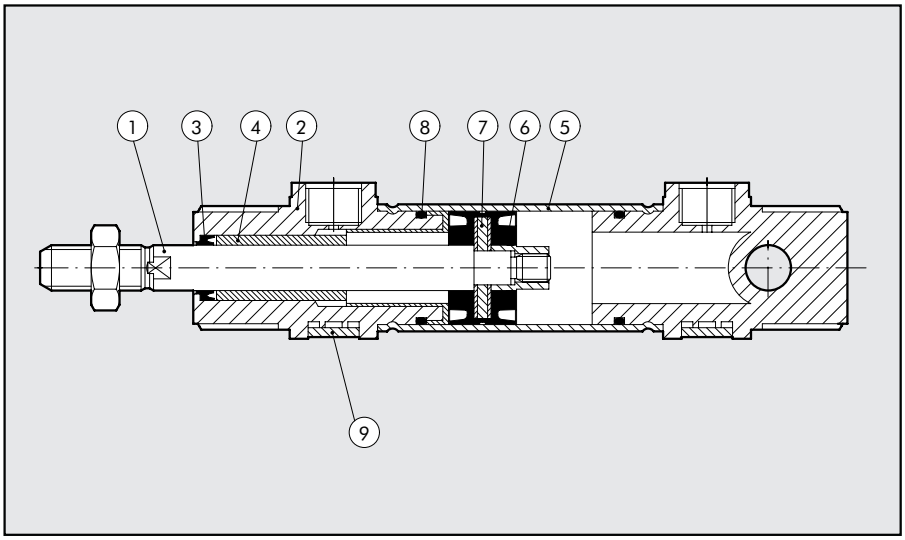
- with or without magnet
- single and double acting-single or through rod
- gaskets made of POLYURETHANE
- fixing accessories and guide units.



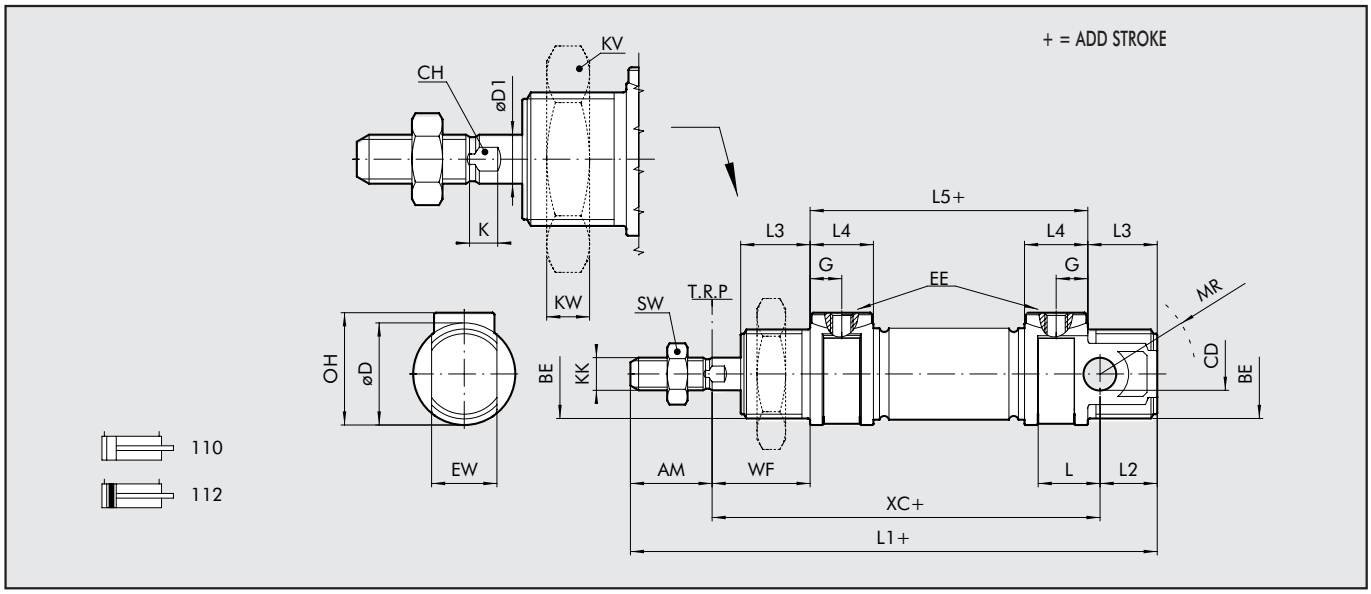
TECHNICAL DATA		POLYURETHANE
Operating pressure		max 10 bar (max 1 MPa)
Temperature range	°C	–10÷+60
Fluid		Unlubricated air. Lubrication, if used, must be continuous
Bores	mm	Ø 16 ; Ø 20 ; Ø 25
Design		Aluminium liner chamfered on the heads
Standard strokes ✚	mm	Ø 16: 1 to 200
	mm	Ø 20÷25: 1 to 500
		✚ Maximum recommended strokes. Higher values can create operating problems.
Versions		Double-acting, Double Through-rod (for both there are magnetic and non magnetic versions)
Forces generated at 6 bar thrust/retraction		See PAGE 9
Weights		See PAGE 9
Inrush pressure		Max 0.6 bar
Notes		The standard version is lacking of the head nut

COMPONENTS

① PISTON ROD: C45 steel or stainless steel, thick chromed
② HEADS: high resistance technopolymer
③ PISTON ROD GASKET: polyurethane
④ GUIDE OPERATOR: technopolymer
⑤ BARREL: drawn anoside aluminium alloy
⑥ PISTON GASKET: polyurethane
⑦ MAGNET: plastoneodymium
⑧ STATIC O-RINGS: NBR
⑨ COVER PLATE: technopolymer



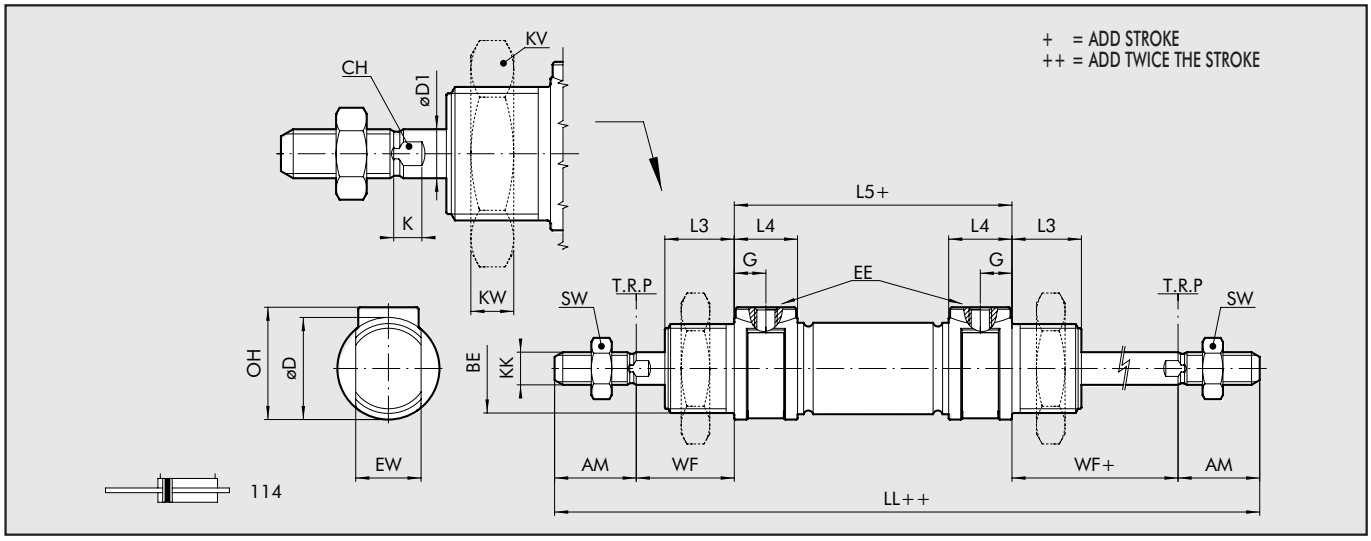
DIMENSIONS OF STANDARD VERSIONS



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
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
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
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

MAX LOCKING TORQUE [Nm]		
Ø	BE (front/rear)	EE
16	12/8	1.2
20	22/15	3
25	22/15	3

DIMENSIONS OF STANDARD VERSIONS WITH THROUGH-ROD



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

MAX LOCKING TORQUE [Nm]		
Ø	BE	EE
16	12	1.2
20	22	3
25	22	3

KEY TO CODES

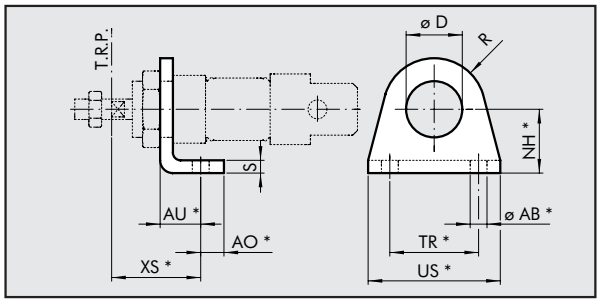
CYL	1 1 0	3	1 6	0	0 2 0	C	P
	TYPE		DIAMETER		STROKE	CONFIGURATION	
	110 DE non-magnetic minicylinder **112** DEM minicylinder **114** DEM through-rod minicylinder	● **3** TP heads (standard) **4** TP heads (standard) + head nut	■ 16 20 25	**0** Standard **S** Non-magnetic	For the maximum suppliable strokes, look at the technical data	**C** C45 chrome rod **X** Stainless rod	**P** polyurethane

As standard the cylinders are already stick-slip version.
- ● This version don't provide the nut on the head.
- ■ ø16 will be only in version with stainless rod (X).

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

ACCESSORIES: FIXINGS

FOOT MODEL A

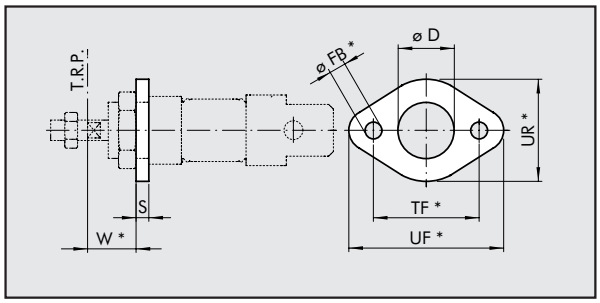


Code	Ø	D	XS (±1.4)	AU	AO	NH (±0.3)	TR (Js14)	US	AB (H13)	R	S	Weight [g]
W0950120001	16	16	32	14	6	20	32	42	5.5	13	4	42
W0950200001	20	22	36	17	8	25	40	54	6.5	20	5	90
W0950200001	25	22	40	17	8	25	40	54	6.5	20	5	90

*ISO 6432 values

Note: Individually packed

FLANGE MODEL C

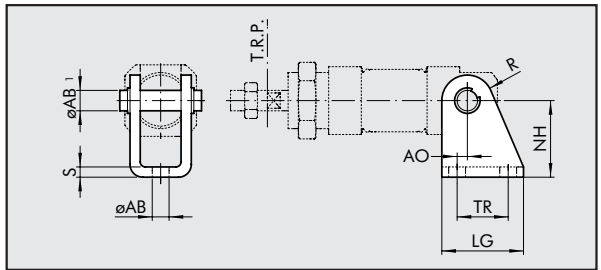


Code	Ø	D	W (±1.4)	FB (H13)	TF (Js14)	UF	UR	S	Weight [g]
W0950120002	16	16	18	5.5	40	52	30	4	26
W0950200002	20	22	19	6.5	50	66	40	5	52
W0950200002	25	22	23	6.5	50	66	40	5	52

*ISO 6432 values

Note: Individually packed

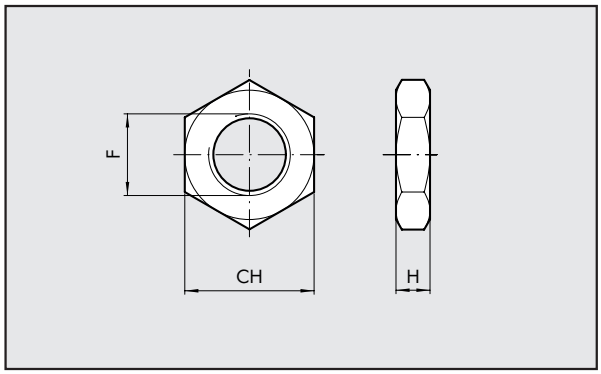
COUNTER-HINGE MODEL BC



Code	Ø	AO	LG	TR (Js13)	NH (±0.2)	MO	AB1	AB (H13)	R	S	Weight [g]
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

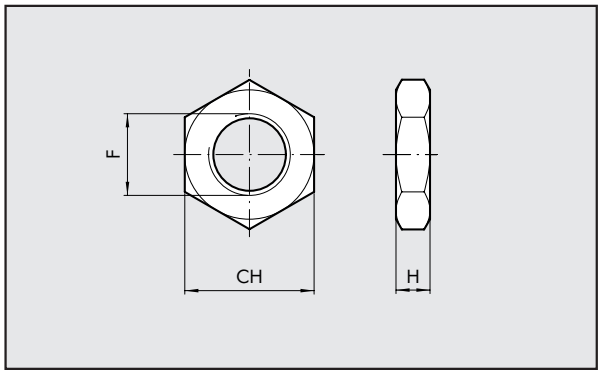
NUT FOR HEADS MODEL D



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

Note: Individually packed

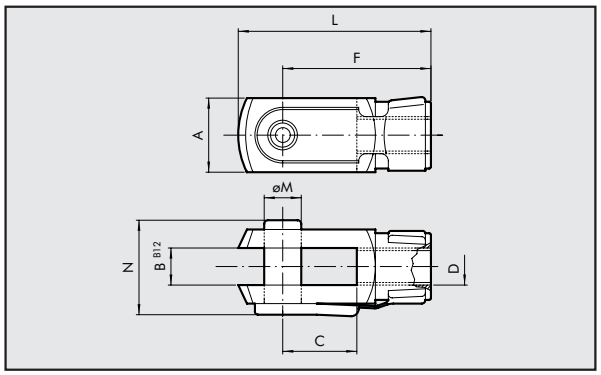
NUT FOR PISTON RODS MODEL DA



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

Note: Individually packed

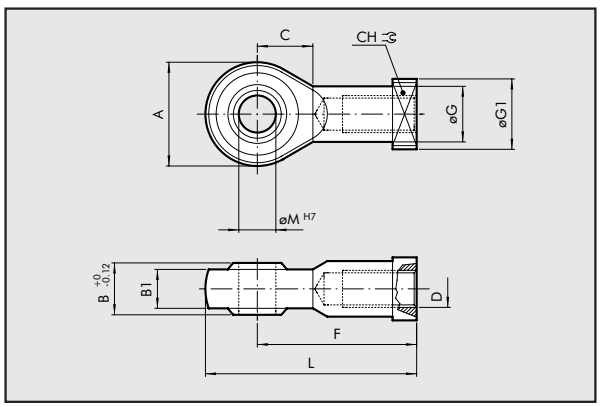
FORK MODEL GK-M



Code	Ø	Ø M	C	B	A	L	F	D	N	Weight [g]
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

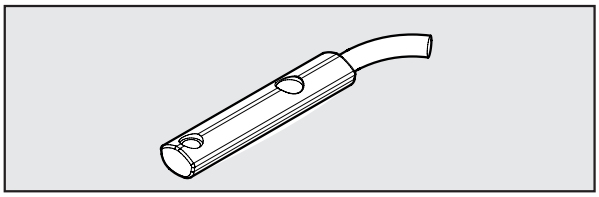


Code	Ø	ØM	C	B	B1	A	L	F	D	øG	øG1	CH	Weight [g]
W0950120025	16	6	11	9	6.75	20	40	30	M6	10	13	11	28
W0950200025	20	8	13	12	9	24	48	36	M8	12.5	16	14	50
W0950322025	25	10	15	14	10.5	28	57	43	M10x1.25	15	19	17	78

Note: Individually packed

ACCESSORIES: MAGNETIC SENSORS

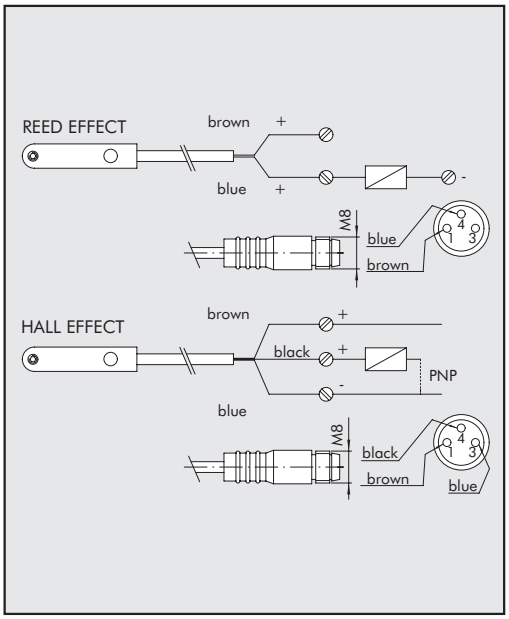
RETRACTABLE SENSOR WITH INSERTION FROM ABOVE



Code	Description
W0952025390	HALL N.O. SENSOR, VERTICAL INSERTION 2.5m
W0952029394	HALL N.O. SENSOR, VERTICAL INSERTION 300 mm M8
W0952022180	REED N.O. SENSOR, VERTICAL INSERTION 2.5m
W0952028184	REED N.O. SENSOR, VERTICAL INSERTION 300 mm M8
W0952125556	HALL N.O. SENSOR, VERTICAL INSERTION 2m ATEX

Note: Individually packed

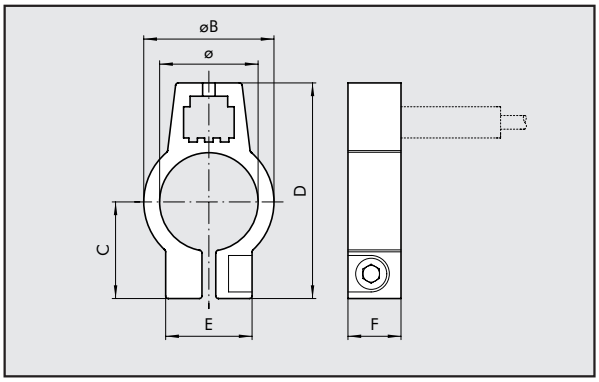
WIRING DIAGRAM



TECHNICAL DATA

		Reed	Effetto Hall	ATEX Effetto Hall
Type of contact		N.O.	N.O.	N.O.
Switch		-	PNP	PNP
Supply voltage (Ub)	V	10 ÷ 30 AC/DC	10 ÷ 30 DC	18 ÷ 30 DC
Power	W	3 (peak valve=6)	3	≤ 1.7
Voltage variation		-	≤ 10% di Ub	≤ 10% di Ub
Voltage drop	V	-	≤ 2	≤ 2.2
Input current	mA	-	≤ 10	≤ 10
Output current	mA	≤ 100	≤ 100	≤ 70
Switching frequency	Hz	≤ 400	≤ 5000	1000
Short-circuit protection		-	Yes	Yes
Over-voltage suppression		-	Yes	Yes
Polarity inversion protection		-	Yes	Yes
EMC		EN 60 947-5-2	EN 60 947-5-2	EN 60 947-5-2
LED display		Yellow	Yellow	Yellow
Magnetic sensitivity		2,8 mT ±25%	2,8 mT ±25%	2.6
Repeatability		≤ 0,1 mT	≤ 0,1 mT	≤ 0,1 (Ub and ta fixed)
Degree of protection (EN 60529)		IP 67	IP 67	IP 68, IP 69K
Vibration and shock resistance		30 g, 11 ms, 10÷55 Hz, 1mm	30 g, 11 ms, 10÷55 Hz, 1mm	30 g, 11 ms, 10÷55 Hz, 1mm
Temperature range	°C	-25 ÷+75	-25 ÷ +75	-20 ÷ +45
Sensor capsule material		PA66 + PA6I/6T	PA66 + PA6I/6T	PA
2.5m/2m connecting cable		PVC; 2 x 0,12 mm^2	PVC; 3 x 0,14 mm^2	PVC; 3 x 0,12 mm^2
Connecting cable with M8x1		Polyurethane; 2 x 0,14 mm^2	Polyurethane; 3 x 0,14 mm^2	-
Wire NO.		2	3	3

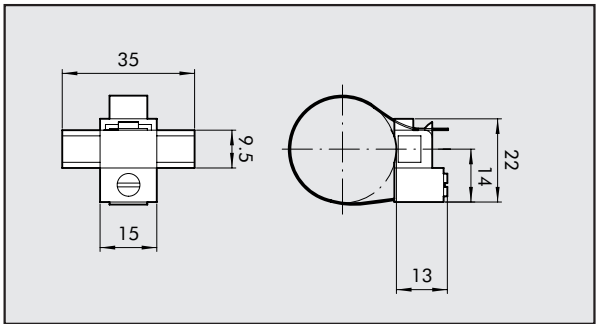
SENSOR CIRCLIP MOD. DSW



Code	Bore	Model	Ø	ØB	C	D	E	F
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

UNIVERSAL SENSOR CIRCLIP



Code	Bore	Model
W0950001103	16÷25	SENSOR CIRCLIP

Note: Individually packed

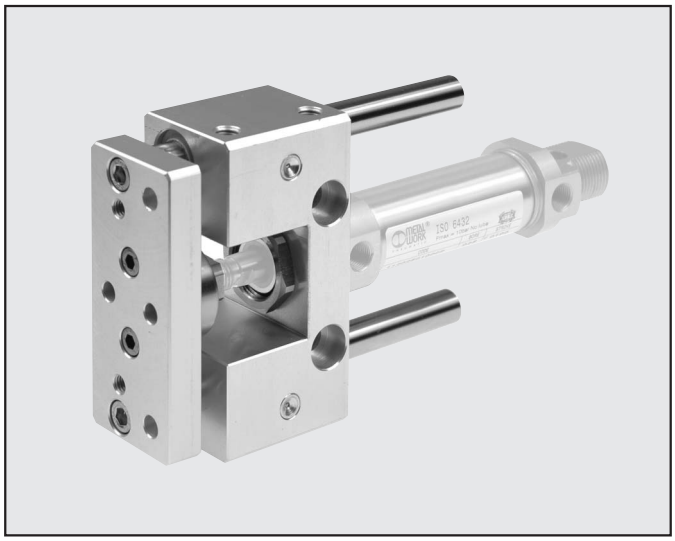
MATERIAL
Circlip: stainless steel
Sensor holder: plastic

GUIDE UNIT FOR ISO 6432 CYLINDERS

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 16÷Ø 25). The following versions are available:
U PROFILE*: for limited loads and speeds (GDS)
H PROFILE*: for high loads (GDH)
H PROFILE**: for high speeds (GDM)
(For weights, see GENERAL CATALOGUE page 9).

GUIDE UNIT LOAD DIAGRAM

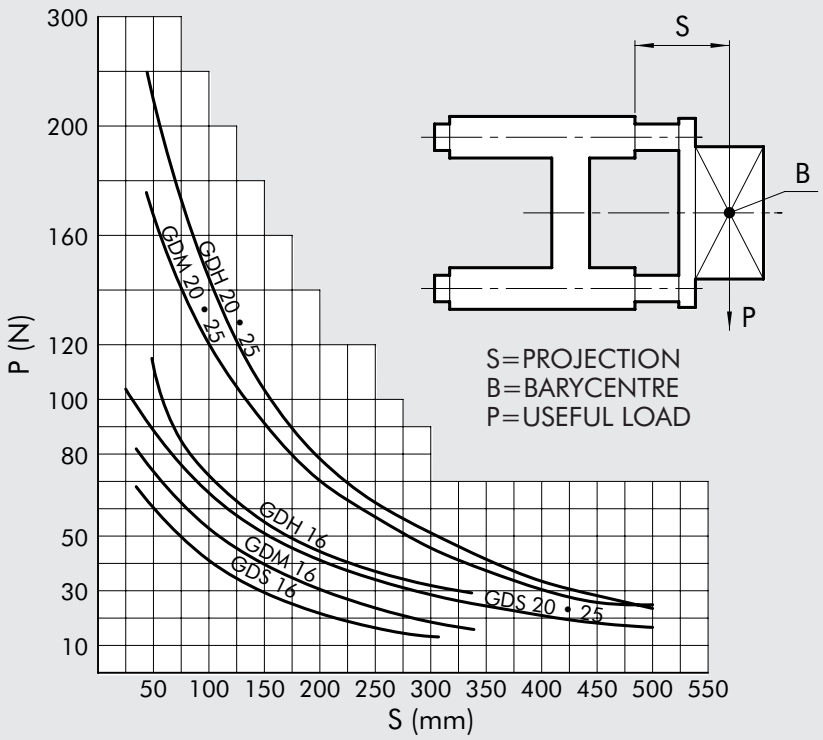
*With bronze guide bushing
**With ball guide bushing



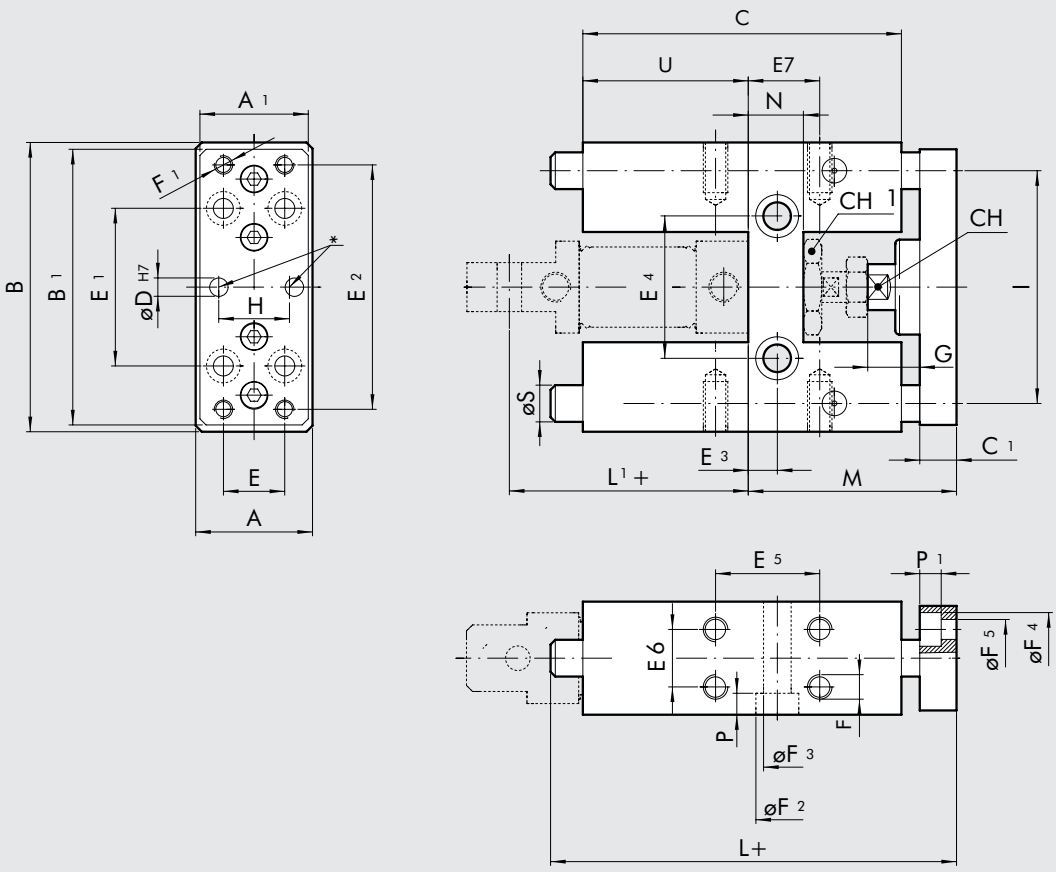
GUIDE ELEMENTS

SERIES GDS-GDH	Body:	aluminium alloy
	Guide bushing:	self-lubricating syntered 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

LOAD DIAGRAM



DIMENSIONS OF TYPE GDH-GDM



+ = 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	E_7	F	F_1	F_2	F_3	F_4	F_5	G	H	I	L	L_1	M	N	P	S	U
16	30	27	65	63	75	10	8	19	4	15	32	54	6.5	24	32.5	22	11	M4	M4	8.5	5.1	7.5	4.5	15	15	46	130	60	54	15	5.5	10	37
20	34	32	79	76	108	12	13	27	6	20	40	68	8.5	38	32.5	23	15	M6	M5	10.5	6.5	9	5.5	22	20	58	160	71	65	15	7	12	58
25	34	32	79	76	108	12	13	27	6	20	40	68	8.5	38	32.5	23	15	M6	M5	10.5	6.5	9	5.5	22	20	58	160	76	65	15	7	12	58

Note:
Thanks to the dimensional features, it is possible to extend the use of GDH/GDM guides to cylinders with strokes up to 25 mm above the nominal guide stroke. The table here shows the stroke/cylinder range that can be used depending on the nominal stroke of the guide.

Cylinder stroke [mm]	Guide stroke [mm]
0÷75	50
75÷125	100
125÷175	150
175÷225	200
225÷275	250
275÷345	320
345÷425	400
425÷525	500

ORDERING CODES GDH (BRONZE GUIDE BUSHING)

Code	Type	Bore
W0700162...	UNIT MW DH 016	16
W0700202...	UNIT MW DH 020	20
W0700252...	UNIT MW DH 025	25

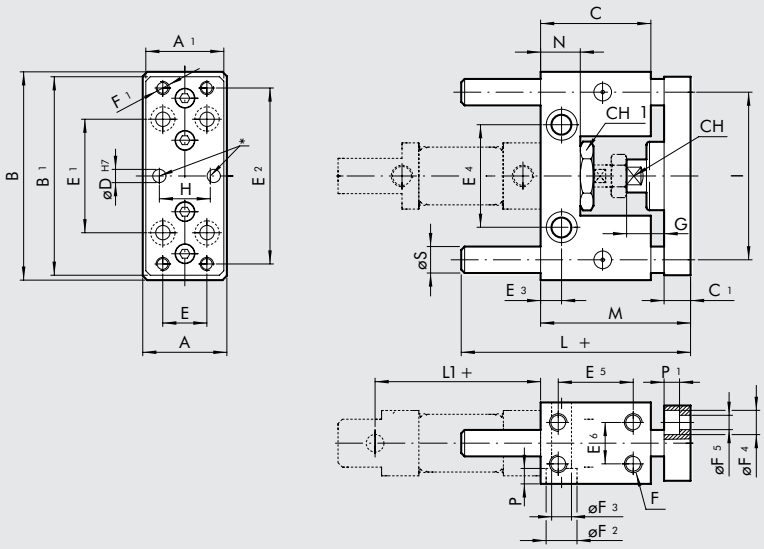
... = Complete the code by adding the stroke in mm.

ORDERING CODES GDM (BALL GUIDE BUSHING)

Code	Type	Bore
W0700163...	UNIT MW DM 016	16
W0700203...	UNIT MW DM 020	20
W0700253...	UNIT MW DM 025	25

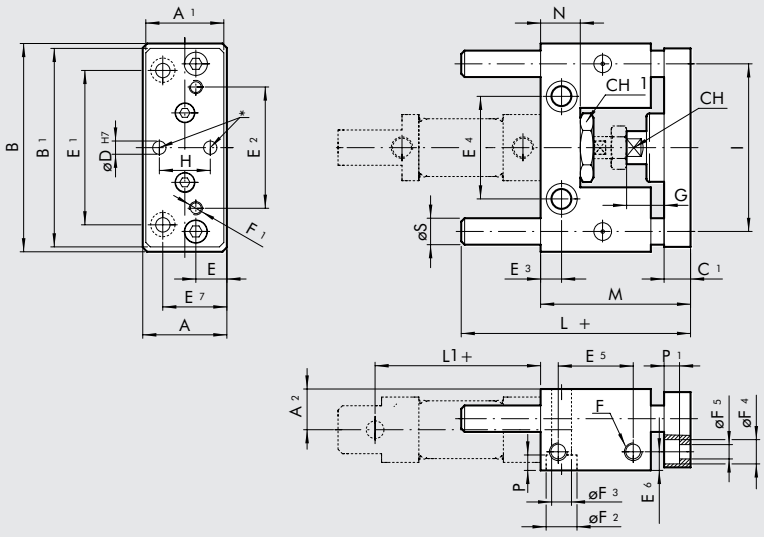
... = Complete the code by adding the stroke in mm.

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
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	24	100	90	48	12	13	27	6	15	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	24	100	90	48	12	13	27	6	15	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

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 +).

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

ORDERING CODES GDS (BRONZE GUIDE BUSHING)

Code	Type	Bore
W0700161...	MW DS 016	16
W0700201...	MW DS 020	20
W0700251...	MW DS 025	25

... = Complete the code by adding the stroke in mm.

GENERALE TECHNICAL DATA

FORCES GENERATED DURING THRUST AND TRACTION (THEORETICAL)

Cylinder bore D mm	Piston rod diameter d mm	Motion	Useful area cm^2	Thrust and traction force in daN depending on the operating pressure in bar									
				1 bar	2 bar	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
16	6	thrust traction	2.01 1.73	2.0 1.7	4.0 3.5	6.0 5.2	8.0 6.9	10.1 8.6	12.1 10.4	14.1 12.1	16.1 13.8	18.1 15.6	20.1 17.3
20	8	thrust traction	3.14 2.64	3.1 2.6	6.3 5.3	9.4 7.9	12.6 10.6	15.7 13.2	18.8 15.8	22.0 18.5	25.1 21.1	28.3 23.8	31.4 26.4
25	10	thrust traction	4.91 4.12	4.9 4.1	9.8 8.2	14.7 12.4	19.6 16.5	24.5 20.6	29.5 24.7	34.4 28.9	39.3 33.0	44.2 37.1	49.1 41.2

WEIGHT OF CYLINDERS

Ø	Cylinder "ISO 6432" Series TP			
	Single-rod		Through-rod	
	Weight [g] Stroke=0	Weight [g] each mm	Weight [g] Stroke=0	Weight [g] each mm
16	66	0.377	101	0.604
20	94	0.628	131	1.03
25	144	0.908	207	1.536

NOTES

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www.metalwork.it - metalwork@metalwork.it