

IDROTECK

COSTRUZIONI OLEODINAMICHE

HYDRAULIC CYLINDERS ISO 6020/2



ISO 6020/2
20 EN

INDEX

ABOUT US	PAGE 4
RANGE OF ISO 6020/2 HYDRAULIC CYLINDERS	PAGE 5
GENERAL CHARACTERISTICS	PAGE 6
TECHNICAL CHARACTERISTICS	PAGE 7
CYLINDER SECTION	PAGE 8
ORDER CODE COMPOSITION	PAGE 9
CYLINDER CHOICE	PAGE 11
ROD ENDS	PAGE 17
MOUNTING X, T, A, B, C, M, D, E, G, L, H, Q, R, S	PAGE 19
DOUBLE ROD MOUNTING X, A, E, G, H, Q	PAGE 33
ACCESSORIES	PAGE 40
“CS” ROD END	PAGE 40
“TS” and “CF” ROD END	PAGE 41
“ISH” and “CM” ROD END	PAGE 42
“CSA” and “CSB” ROD END	PAGE 43
“CTS” and “PCS” ROD END	PAGE 44
“PTS”, “KCS” and “PP” ROD END	PAGE 45
EXAMPLES OF ATTACHMENTS	PAGE 46
SENSORS	PAGE 47
EXAMPLES OF SPECIAL CONSTRUCTIONS	PAGE 50
RANGE OF IDROTECK PRODUCTS	PAGE 53
WARRANTY AND LIMITS OF LIABILITY	PAGE 54

COMPANY



We are specialists in the hydraulic sector, producing cylinders and components for hydraulic systems and we boast over twenty-five years of highly consolidated expertise.

We constantly face the new challenges of the markets with the strength of an innate vocation, of an exclusive and highly specialised production, and a know-how that allows us to better meet our customers' requests in terms of delivery time and product quality.

The choice of top-quality materials and a well-stocked warehouse with pre-machined components at our disposal guarantee fast delivery within a stable time frame.

The feasibility study and the project are carried out in our in-house technical department, which is specifically responsible for designing and processing special applications; the ability to evolve and meet the needs of our customers has allowed us to develop a research and development department with modern and innovative methods and technologies for the realisation of customised cylinders.

The parts that make up the cylinders are made with the latest generation of numerically controlled machine tools.

Process management and continuous research for improvement have allowed us to supply components for applications in many production sectors with success and merit that is recognized by our customers.



RANGE OF ISO 6020/2 HYDRAULIC CYLINDERS

CD – DK SERIES OF HYDRAULIC CYLINDERS

Manufactured according to ISO 6020/2, double acting, they are used in all industrial sectors where hydraulic actuators working at medium pressure (160 Bar) are required. They are available in 14 standard fastening combinations, 3 rod diameters for each bore (excluding $\varnothing 25$), 3 types of seals and 3 types of rod ends which, together with the availability of special constructions, offer a wide choice to the end user.

MD MAGNETIC SERIES OF HYDRAULIC CYLINDERS

With the same mechanical and dimensional characteristics of the CD series, with the difference that a permanent magnet is inserted inside the piston, allowing the activation of a magnetic field that extends to the outside of the special non-magnetic alloy sleeve.

The magnetic field moves solidly with the piston along the entire length of the stroke and when it passes through it, it activates one or more suitably fastened sensors that generate an electrical signal. The magnetic sensors can be with (REED) contact or electronic upon request.



MAIN CHARACTERISTICS OF ISO 6020/2 HYDRAULIC CYLINDERS

(according to standard ISO 6020/2 - 1991 - DIN 24554)

PISTON DIAMETERS (ø mm) 25 - 32 - 40 - 50 - 63 - 80 - 100 - 125 - 160 - 200

ROD DIAMETERS (ø mm) 12 - 14 - 18 - 22 - 28 - 36 - 45 - 56 - 70 - 90 - 110 - 140

PRESSURE

Working pressure (bar) 160 without peaks

Minimum(bar) 8

STROKE (mm) up to 4000

Tolerance on the stroke (mm) 0 + 2 (according to standard ISO 8131)

WORKING TEMPERATURE (°C)

with standard seals -20 ÷ +80

with VITON® seals (W) -20 ÷ +150

with low friction seals (Y) -20 ÷ +90

TRANSLATION SPEED (M/S)

with standard seals 0.02 ÷ 0,4

with VITON® seals (W) 0.02 ÷ 3

with low friction seals (Y) 0.01 ÷ 3

FLUID USED with reference (according to ISO 6743/4 - ISO 4406 standards)

Mineral hydraulic oil

Synthetic oils and phosphoric esters

Water-glycol fluid (HFC)

HEADS in squared steel with 4 tie-rods

TIE-RODS in hardened and tempered steel

ROD GUIDE in bronze

BRAKING front and/or rear upon request

ATTACHMENTS 14 fastening types

ROD END with standard male or female thread upon request

SUPPLY PORTS standard cylindrical gas threaded, NPTF or SAE threads can be supplied upon request

CD-DK SERIES

Internally smoothed steel sleeve H8 Ra 0.4

C45 chrome-plated steel rod, possible variants in hardened-tempered stainless steel

Steel piston

MD SERIES (with magnetic sensors)

Internally smoothed non-magnetic sleeve H8 Ra 0.4

Special non-magnetic alloy piston with magnetic insert

TECHNICAL CHARACTERISTICS



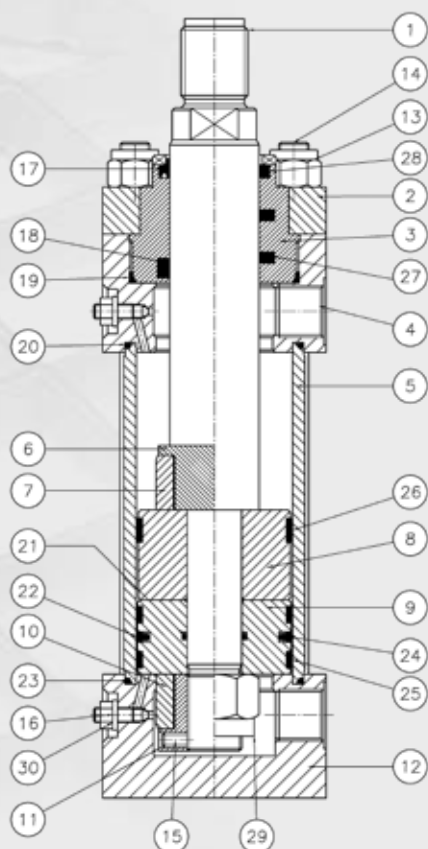
Series	CD	MD	DK
Construction standard	ISO 6020/2 - 1991 - DIN 24554		
Piston diameter	25 - 32 - 40 - 50 - 63 - 80 - 100		125 - 160 - 200
Working pressure (Bar)	160		160
Minimum pressure (Bar)	8		
Stroke (mm)	5 - 4000	20 - 2000	5 - 4000
Tolerance on the stroke (mm)	0 +2 according to ISO 8131 standard		
Working temperature (°C)	Standard seals		-20 ÷ +80
	VITON® (W) seals		-20 ÷ +150
	Low friction seals (Y)		-20 ÷ +90
Translation speed (m/s)	Standard seals		0,02 ÷ +0,4
	VITON® (W) seals		0,02 ÷ +3
	Low friction seals (Y)		0,01 ÷ +3
Fluid	Mineral hydraulic oil – Synthetic oils and Phosphoric Esters		
	Water - Glycol (HFC) with reference to ISO 6743/4 - ISO 4406 standards		
Braking	Front and/or Rear		
Magnetic sensors	Only for MD series		
Heads	Squared steel assembled with 4 tie-rods		
Sleeve	CD-DK series with internally smoothed steel H8 MD series with internally smoothed special non-magnetic alloy H8		
Rod	C45 chromed steel (Possible hardened-tempered-stainless steel variants)		
Piston	Steel CD-DK series Stainless-steel MD series with Magnetic Insert		
Rod guide	Bronze		
Tie-rods	Hardened and tempered steel		

HYDRAULIC CYLINDER SERIES: CD - DK - MD

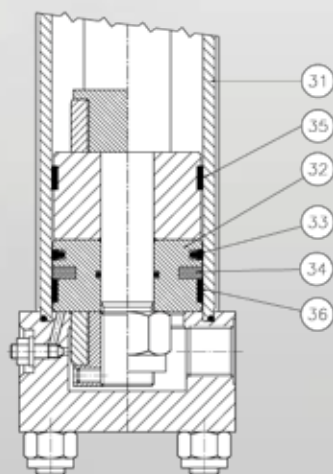
CD-DK SERIES STANDARD SECTION

SEAL SECTION
STANDARD

SEAL SECTION
LOW FRICTION



MD SERIES STANDARD SECTION



Pos.	Name	Material
1	Rod	Chrome-plated steel
2	Flange	Steel
3	Guide bushing	Bronze
4	Front head	Steel
5	Sleeve	Steel
6	Front brake bushing (upon request)	Steel
7	Front brake (upon request)	Tempered steel
8	Spacer (upon request)	Steel
9	Piston	Steel
10	Rear brake (upon request)	Tempered steel
11	Rear brake bushing (upon request)	Steel
12	Rear head	Steel
13	Self-locking nut	Steel
14	Tie-rod	Acciaio bonificato
15	Anti-unscrewing grain	Steel
16	Braking adjustment pin	Steel
17	Rod scraper	Polyurethane
18	Rod seal	Polyurethane
19	OR seal + anti-extrusion	Nitrile rubber + P.T.F.E.
20	OR seal + anti-extrusion	Nitrile rubber + P.T.F.E.
21	OR seal	Nitrile rubber
22	Piston seal	NBR/Polyurethane
23	OR seal + anti-extrusion	Nitrile rubber + P.T.F.E.
24	Piston seal (Y)	Nitrile rubber + P.T.F.E.
25	Piston guide runner	P.T.F.E.
26	Spacer guide runner	P.T.F.E.
27	Rod seal	Nitrile rubber + P.T.F.E.
28	Rod scraper	Nitrile rubber + P.T.F.E.
29	Self-locking nut	Steel
30	Brake nut	Steel

Pos.	Name	Material
31	Sleeve	Non-magnetic alloy
32	Piston	Stainless steel
33	Piston seal (Y)	Nitrile rubber + P.T.F.E.
34	Magnet	Neodinium
35	Spacer guide runner	P.T.F.E.
36	Piston guide runner	P.T.F.E.

ORDER CODE

Section 1 2 3 4 5 6 7 8 9 10 11

CD	50	/	22	-	22	A	K	600	SJ50	W	SF	SX
----	----	---	----	---	----	---	---	-----	------	---	----	----

SERIES

Standard - CD / DK
Magnetic - MD

BRAKING

Without braking	-
Front	V
Rear	Z
Front + Rear	K

*See table 6.1 page 15

STROKE

*Indicate lenght in mm.

SPACER FOR STROKES

standard	0mm.	Up to 1000
SJ	50mm.	1000/1500
	100mm.	1500/2000
	150mm.	2000/2500

For strokes over 2500mm.
contact the Technical

*See table 8.1 page15

MOUNTING

	CODE	ISO6020/2	DIN24554
Base cylinder	X	MX5	
Front flange	A	ME5	ME5
Rear flange	B	ME6	ME6
Feet	E	MS2	MS2
Male hinge	C	MP3	
Hinge with bearing	D	MP5	MP5
Female hinge	M	MP1	
Front pins	G	MT1	
* Intermediate pins	H	MT4	MT4
Rear pins	L	MT2	
Front/rear extended tie-rods	Q	MX1	
Front extended rods	R	MX3	
Rear extended rods	S	MX2	
Rear fastening	T	MX6	

*Indicate part XV (See parts page 29)

BORE	ø ROD	ø 2° ROD*
25	12	12
	18	18
32	14	14
	18	18
40	22	22
	18	18
	22	22
50	28	28
	22	22
	28	28
63	36	36
	28	28
	36	36
80	45	45
	36	36
	45	45
100	56	56
	45	45
	70	70
125	90	90
	70	70
	56	56
160	110	110
	90	90
	70	70
200	140	140
	110	110
	90	90

(*second rod must be omitted if not requested)

SEALS

-	Polyurethane
W	Viton®
Y	Low friction NBR + PTFE

ROD ENDS

-	Standard male thread
SF	Female thread
ST	Floating joint
SL	Male thread DIN24554
FL	Female thread DIN24554

SPECIAL VARIANTS

SX

For any variant that is unspecified in the catalogue, please contact our Technical Department

NOTES:

- To compose the order code, follow the coding scheme by inserting the acronyms that identify the various construction characteristics of the cylinder in sequence, leaving out those not required.

STANDARD: standard characteristics should not be stated.

- Each acronym has a number (above) as a reference that identifies the section in which all the technical characteristics are explained.

- The sensors for magnetic cylinders, even if included in the code, are supplied separately, and must be requested separately, indicating the quantity and type.

E.g.:

1 MD50/28A600cylinder – No. 2 SCTM8 sensors

Magnetic cylinder, ø50 bore, ø28 rod, fastening with front flange A (ME5), 600 mm stroke.

No. 2 SCTM8 type sensors are supplied separately with relative brackets and connectors (see page 47).



CHARACTERISTICS AND CYLINDER CHOICE

1 CONSTRUCTION SERIES: **CD** STANDARD e **MD** MAGNETIC (from ø 25 to ø 100) 160 bar
DK LARGE DIAMETERS (from ø 125 to ø 200) 160 bar

2 BORE

It is chosen in relation to the force to be developed. The table below shows the push and pull area of the piston, depending on the rod used.

By multiplying the area (cm²) with the working pressure (Bar – Kg/cm²) you obtain the push (DaN - Kg) and pull force of the cylinder.

E.g. Cylinder ø50 – rod ø28

operating at 100 bar

Push force **F1** = (19,63x100) = 1.963 daN = 19,63 kN

Pull force **F2** = (13,47x100) = 1.347 daN = 13,47 kN



Table 2.1

Dimensions		Surface ratio	Surface (area)		Theoretical force			
			Push	Pull	Push	Pull	Push	Pull
Bore ø Piston (mm)	ø Rod (mm)	Push area > < Pull area	Push area (cm ²)	Pull area (cm ²)	100 bar F1 (kN)	100 bar F2 (kN)	160 bar F1 (kN)	160 bar F2 (kN)
25	12	1,30	4,91	3,78	4,91	3,78	7,85	6,04
	18	2,08		2,36		2,36		3,78
32	14	1,24	8,04	6,50	8,04	6,50	12,87	10,40
	18	1,46		5,50		5,50		8,80
	22	1,90		4,24		4,24		6,79
40	18	1,25	12,56	10,02	12,56	10,02	20,11	16,03
	22	1,43		8,77		8,77		14,02
	28	1,96		6,40		6,40		10,25
50	22	1,24	19,63	15,83	19,63	15,83	31,42	25,33
	28	1,46		13,48		13,48		21,56
	36	2,08		9,45		9,45		15,13
63	28	1,25	31,17	25,01	31,17	25,01	49,88	40,02
	36	1,48		20,99		20,99		33,59
	45	2,04		15,27		15,27		24,43
80	36	1,25	50,26	40,08	50,26	40,08	80,42	64,14
	45	1,46		34,36		34,36		54,98
	56	1,96		25,63		25,63		41,02
100	45	1,25	78,53	62,64	78,53	62,64	125,66	100,21
	56	1,46		53,91		53,91		86,26
	70	1,96		40,06		40,06		64,09
125	56	1,25	121,05	98,09	121,05	98,09	196,35	156,94
	70	1,46		84,23		84,23		134,77
	90	2,08		59,10		59,10		94,56
160	70	1,24	200,96	162,58	200,96	162,58	321,70	260,12
	90	1,46		137,44		137,44		219,91
	110	1,90		106,03		106,03		169,65
200	90	1,25	314,15	250,54	314,15	250,54	502,65	400,86
	110	1,43		219,12		219,12		350,60
	140	1,96		160,22		160,22		256,35

3 ROD

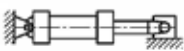
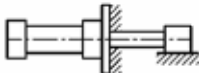
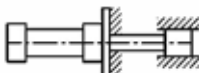
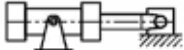
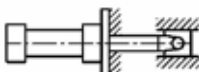
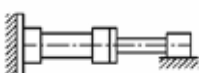
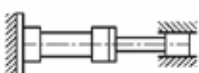
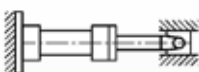
Choose the available rod in relation to the cylinder diameter (Table 2.1) checking the peak loads in the next paragraph.

3.1 CHECKING THE PEAK LOAD

During the push phase, the rod is subjected to a contrary axial force that tends to flex or break it if it exceeds the permissible peak load. Depending on the choice made, it is necessary to check the load on the rod at maximum extension, depending on the type of mounting used.

The table below shows the stroke factor value.

Table 3.2

Mounting	Rod connection	Assembly	Stroke factor	Mounting	Rod connection	Assembly	Stroke factor
D - M - C	Pivoted and supported		4	A - X - R - Q	Fixed and supported		2
	Pivoted and rigidly guided		2		Fixed and rigidly guided		0,5
G - H - L	Pivoted and supported		3		Pivoted and rigidly guided		0,7
	Pivoted and rigidly guided		1,5	B - T - S - Q	Fixed and supported		4
E	Fixed and rigidly guided		0,5		Fixed and rigidly guided		1
	Fixed and supported		2		Pivoted and rigidly guided		1,5
	Pivoted and rigidly guided		0,7	By multiplying the stroke factor for the actual stroke of the cylinder, you find the = IL "Ideal Length" parameter.			

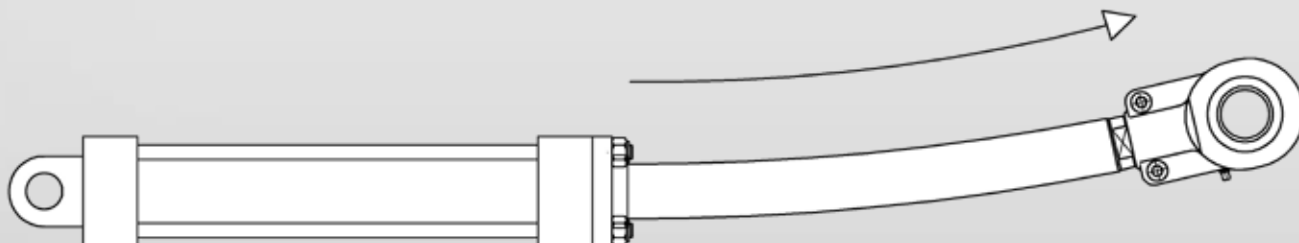
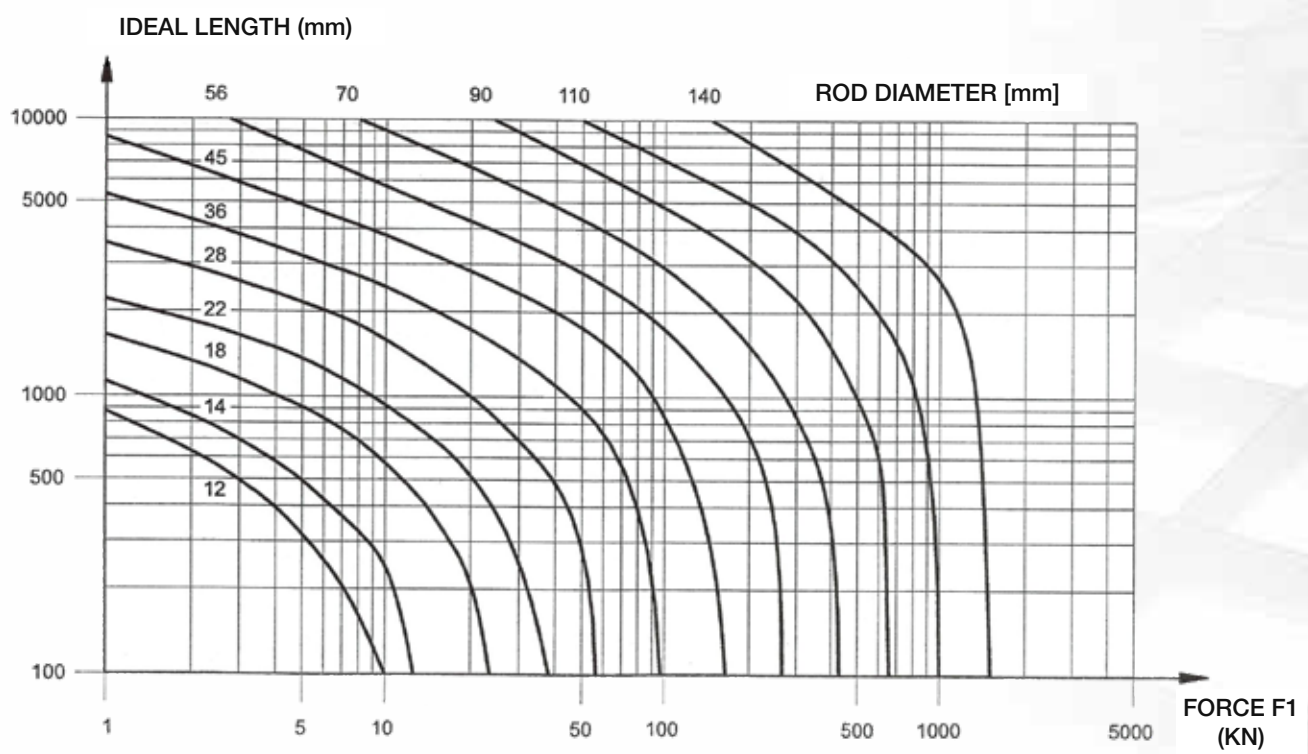
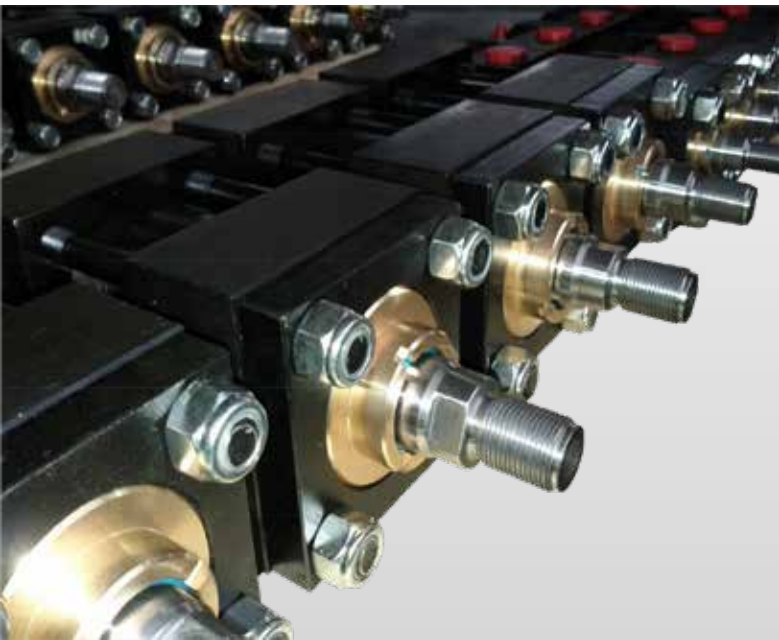


Table 3.3



Find the intersection point between the **IL** value “**Ideal length**”(mm) and the **F1** value “**maximum push**” (kN) provided for the cylinder on the diagram.
The rod that meets the peak load check is the one corresponding to the curve immediately above the point of intersection found on the diagram.



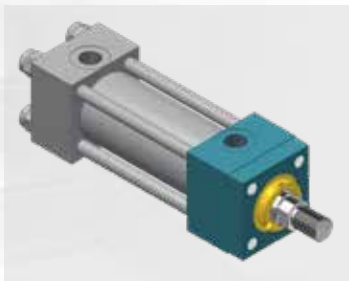
4 DOUBLE ROD

If the needs require it, it is possible to manufacture double-acting hydraulic cylinders with double rods. It is necessary to keep in mind that with double rods of the same diameter (with the same bore) the push force F1 is equal to the pull force F2; if the rods have different diameters (with the same bore) it is necessary to calculate the push force F1 and pull force F2 (see Table 2.1) for each one.

5 MOUNTING

There are 14 types of mounting (special mountings can be manufactured upon request)

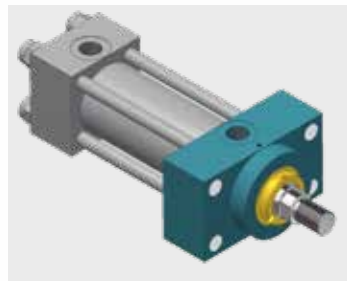
“X”



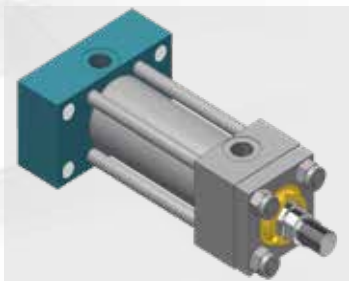
“T”



“A”



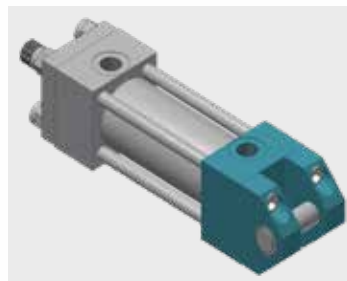
“B”



“C”



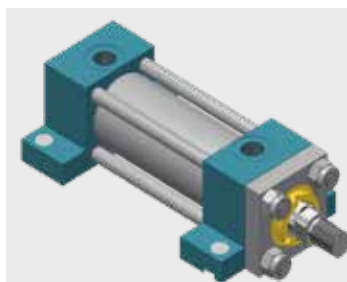
“M”



“D”



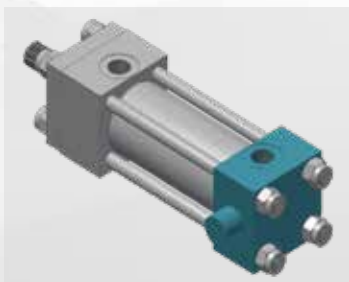
“E”



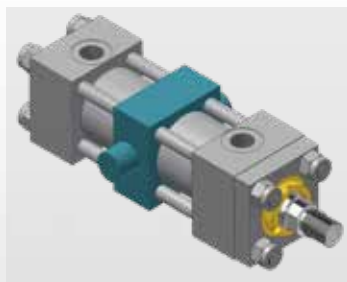
“G”



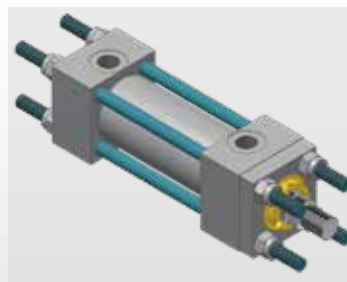
“L”



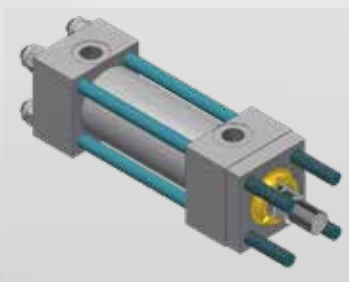
“H”



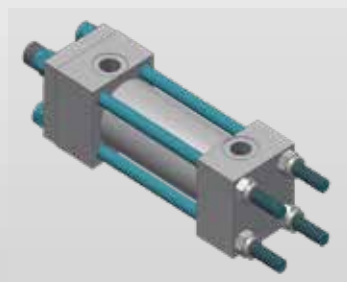
“Q”



“R”



“S”



6 BRAKING

On request, braking devices can be supplied in the heads and adjustable by means of a pin (excluding ø25). They have the task of slowing the speed of the moving mass at the end stroke proximity.

Cylinder heads should not be used as limit switches for displaced load. The use of external mechanical stops is recommended: otherwise damage to the hydraulic system could occur quickly.

During the slowing down phase the braking systems are subjected to much higher pressures than the working pressure, therefore they are manufactured with special hardened and rebored materials to guarantee excellent braking even after thousands of cycles.

The table below shows the theoretical braking length for cylinder bores.

Table 6.1										
Bore	25	32	40	50	63	80	100	125	160	200
Front (mm)	10	12	20	20	20	25	25	28	28	30
Rear (mm)	10	12	20	20	20	25	25	28	28	30

The effectiveness of braking depends on many variables (mass, speed, temperature, ...) so the amounts indicated above are related to the mechanical length of the damper, not to be confused with the actual cushioning length.

7 STROKE

Variable strokes are possible depending on the bores and the construction series (see PAGE 7).
Minimum strokes of 20 mm for MD magnetic cylinders to avoid magnetic field interference in the sensors.

For particularly long strokes pay attention to the type of mounting, in order to avoid radial loads and bending moments that can interact on the rod-piston guide creating early wear.

In relation to the bore and the type of mounting with very long strokes, section-breakers are inserted externally on the sleeve to keep the tie rods under tension and make the cylinder assembly compact.

8 SPACERS

With strokes greater than 1000 mm, the assembly of special spacers inside the cylinder is provided to increase the guide of the rod and piston, in order to avoid unwanted wear.

Table 8.1				
Strokes (mm)	1000 - 1500	1500 - 2000	2000 - 2500	> 2500
Spacer (mm)	50	100	150	Contact our Technical Department

9 SEALS

STANDARD = NITRILE RUBBER-POLYURETHANE

Used in most types of cylinders, they guarantee excellent sealing even in intermediate stops; they ensure a long life and maintain good efficiency at medium temperatures up to 80°C. Acceptable friction coefficient, they guarantee good translation speeds up to 0.4 m/s.

VITON® (W) = ELASTOMERS, ETHYLENE PROPYLENE

They give sealing reliability both at low and high temperatures (-20 / +150° C); they have an excellent durability; they allow a good translation speed up to 3 m/s; they are particularly suitable for fluids increasingly used as water-glycol (HFC). They can allow leakage at low pressures; not suitable for intermediate stops.

LOW FRICTION (Y) = THERMOPLASTICS P.T.F.E. CHARGED WITH BRONZE

Suitable for high speeds up to 3 m/s and low speeds from 0.01 m/s; good resistance to medium temperatures up to 90° C; excellent durability. Due to their low elasticity they can allow leakages and therefore are not suitable for intermediate stops.

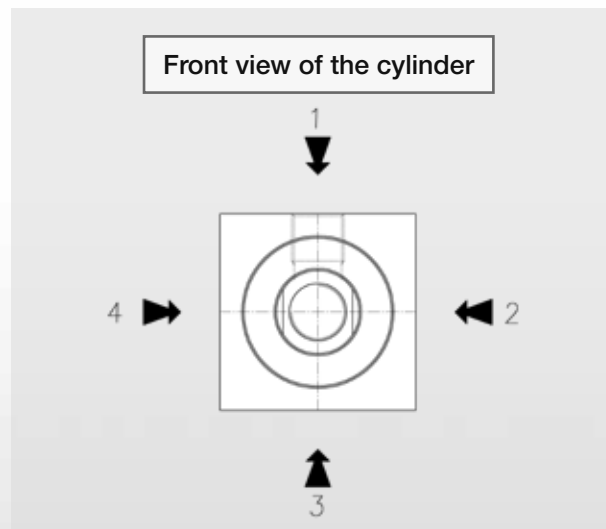
For the use of fluids, temperatures, speeds and particular pressures, please contact our Technical Department.

CONNECTIONS

They are designed to hydraulically supply the cylinder on both sides and sized for a maximum translation speed of 0.5 m/s. They can be executed in the position indicated in the figure on request, or increased as shown in the table below.

Series	Increased connections		
	Bore	Front	Rear
CD MD DK	25 - 32	/	G 3/8"
	40	/	G 1/2"
	50 - 63	/	G 3/4"
	80 - 100	/	G 1"
	125 - 160	G 1 - 1/4"	G 1 - 1/4"
	200	G 1 - 1/2"	G 1 - 1/2"

Not valid for mounting "E"



- Standard supplies: **pos. 1**
- Standard braking: **pos. 3** - excluding mounting "E": **pos. 2** (double rod in pos. 2 and 4)
- For mounting "G" e "L" not possible with supply in **pos. 2 and 4**

10 ROD ENDS

Rod ends are manufactured according to ISO 6020/2 standard in the following ways:

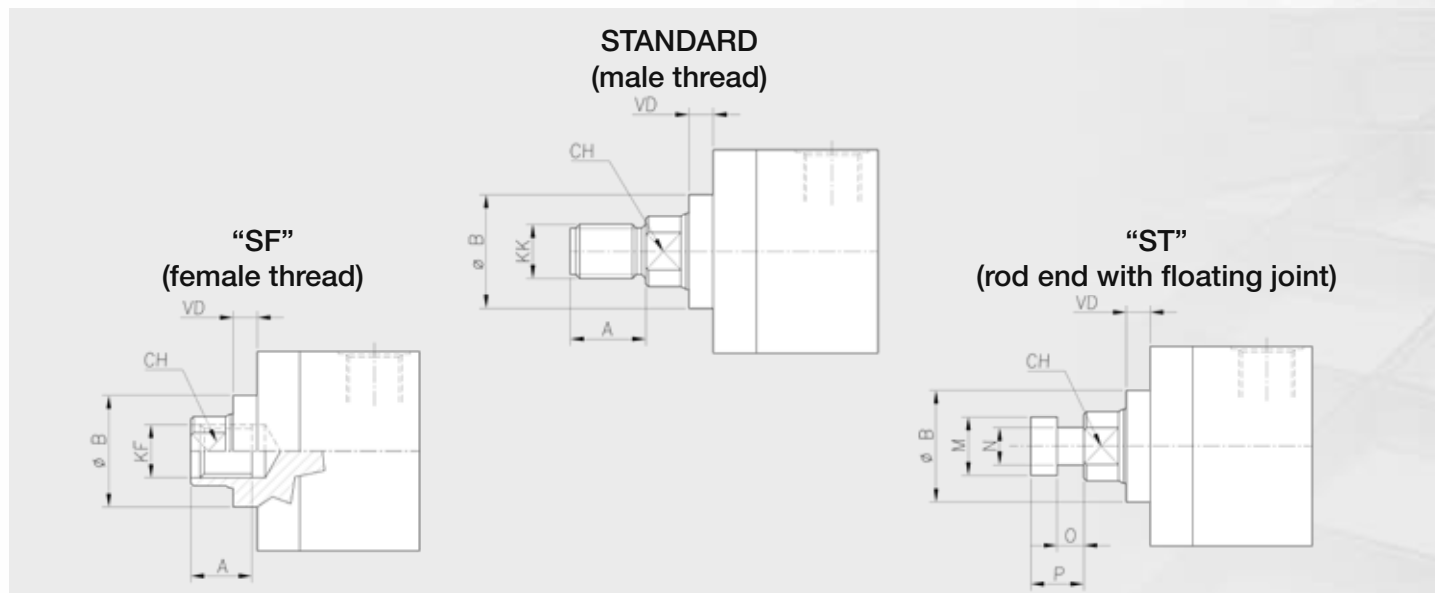


Table 10.1

Rod	A	B f9	CH	KK	KF	M	N	O	P
12	14	24	10	M10x1,25	M8x1	11	6,5	5	10
14	16	26	12	M12x1,25	M10x1,25	13	8	6	12
18	18	30	15	M14x1,5	M12x1,25	16	10	7	14
22	22	34	19	M16x1,5	M16x1,5	18	11	8	16
28	28	42	22	M20x1,5	M20x1,5	22	14	10	20
36	36	50	30	M27x2	M27x2	28	18	13	25
45	45	60	36	M33x2	M33x2	35	22	16	32
56	56	72	46	M42x2	M42x2	45	28	20	40
70	63	88	60	M48x2	M48x2	56	35	25	50
90	85	108	75	M64x3	M64x3	70	45	35	70
110	95	133	95	M80x3	M80x3				
140	112	163	120	M100x3	M100x3				

Piston	25			32			40			50			63		
Rod	12	-	18	14	18	22	18	22	28	22	28	36	28	36	45
VD	6			12			12			9			13		

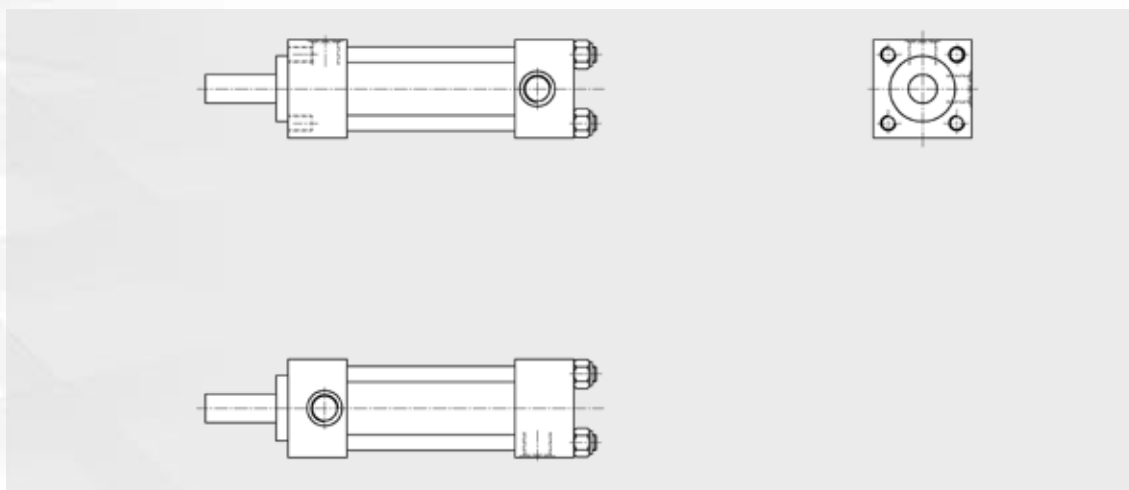
Piston	80			100			125			160			200		
Rod	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140
VD	9			10			10			7			7		

10.2 ROD END DIN 24554

Rod ends with “male thread” and “female thread” according to DIN 24554 can be made. Please consult our technical office.

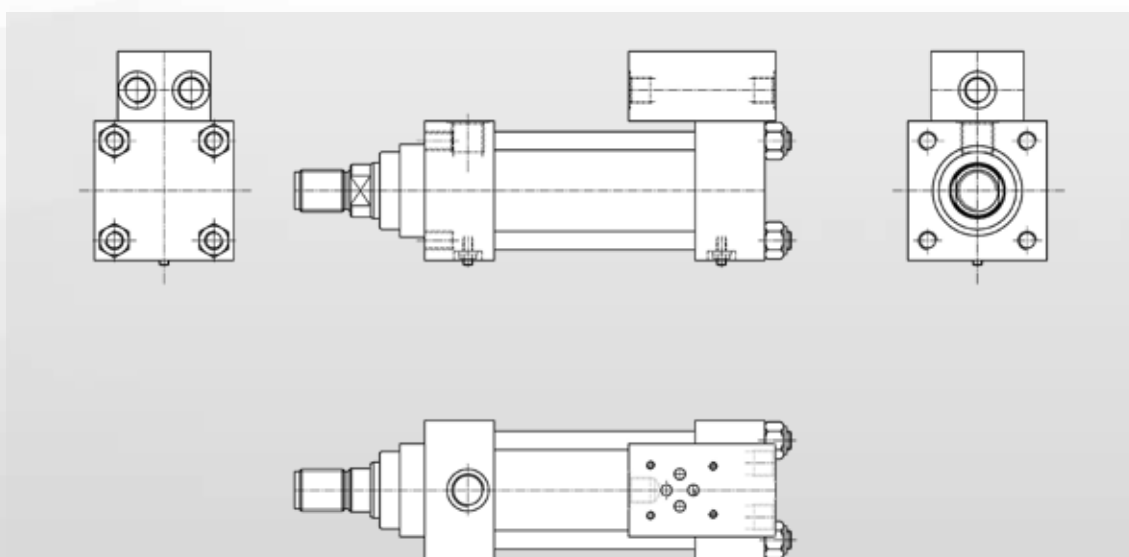
11 SPECIAL CONSTRUCTION SX

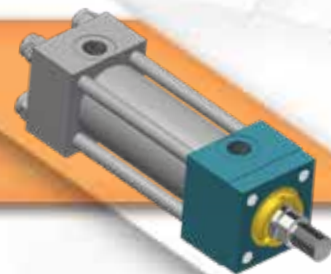
Any type of execution or unspecified special variant in this catalogue (extended rod - rod end - mounting modification - surface treatments - air purges - etc...) can be requested to our Technical Department. After studying the application, they will send a drawing to be approved.



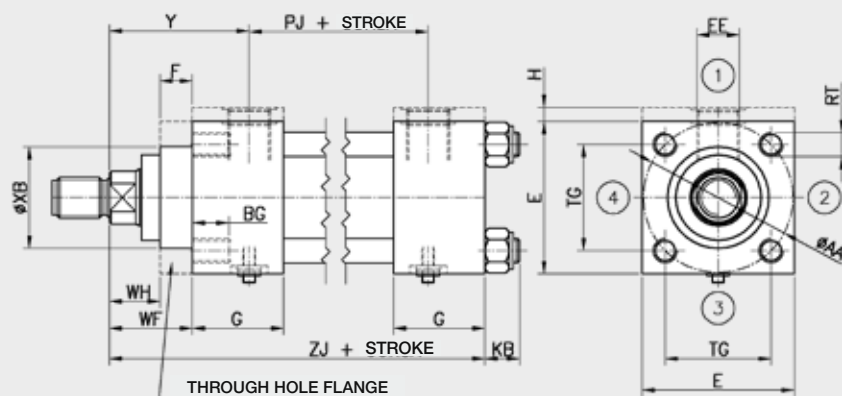
BUILT-IN PLATES

The built-in plates can be used for control valve assemblies with assembly surfaces from bore 40. The assembly is made directly on the rear cylinder head, in order to reduce the oil volumes between the valve and the cylinder, thus obtaining an immediate pilot response. For information please consult our Technical Department.

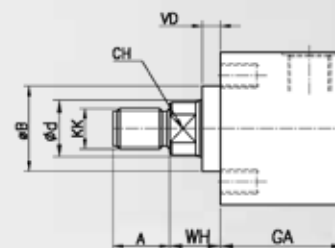




CD-MD



DK



Mounting X (ISOMX5)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
AA	40	47	59	74	91	117	137	178	219	269
BG	12	15	16	18	18	24	24	30	35	40
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	-	-	-
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KB	7	10	13	17	17	23	23	30	35	37
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
RT	M5	M6	M8	M12	M12	M16	M16	M22	M27	M30
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,2
WF	25	35	35	41	48	51	57	-	-	-
WH	15	25	25	25	32	31	35	35	32	32
XB (*) f 9	30	34	42	50	60	72	88	-	-	-
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

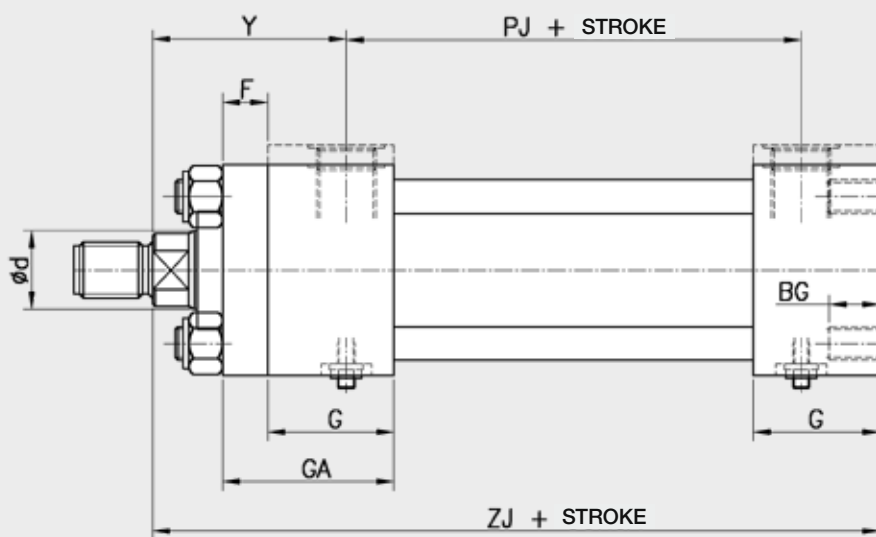
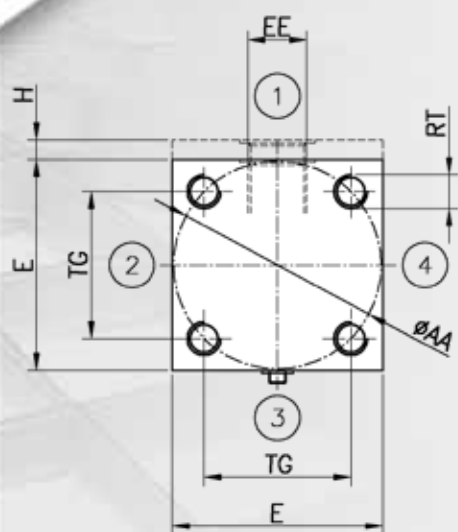
Piston	25			32			40			50			63		
Rod	12	-	18	14	18	22	18	22	28	22	28	36	28	36	45
B f9	24	-	30	26	30	34	30	34	42	34	42	50	42	50	60
VD	6			12			12			9			13		

Piston	80			100			125			160			200		
Rod	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140
B f9	50	60	72	60	72	88	72	88	108	88	108	133	108	133	163
VD	9			10			10			7			7		

(*) = Part non-compliant with ISO 6020/2 - 1991

Insert closing flange (part F) to make the WF parts and B centering compliant to ISO 6020/2

DK Series cylinders: parts F and G replaced by GA



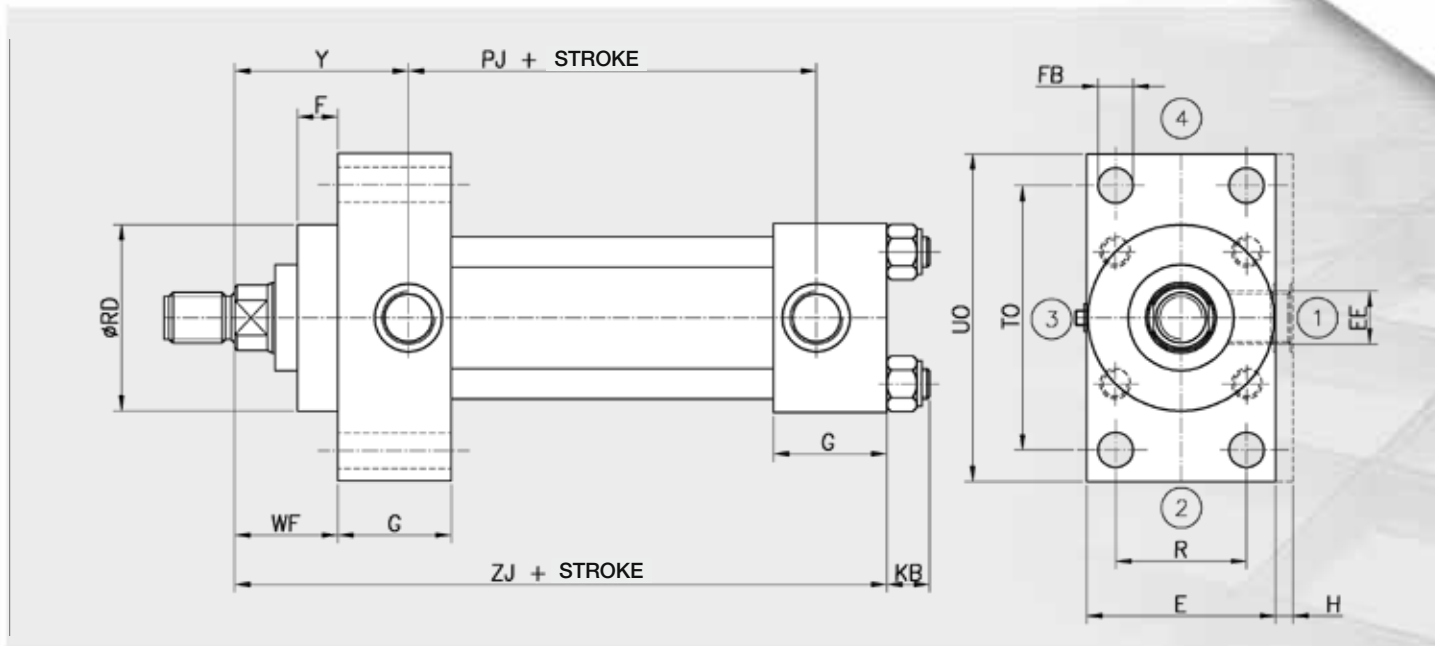
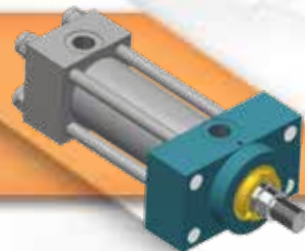
Mounting T (ISOMX6)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
AA	40	47	59	74	91	117	137	178	219	269
BG	12	15	16	18	18	24	24	30	35	40
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	-	-	-
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
RT	M5	M6	M8	M12	M12	M16	M16	M22	M27	M30
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,2
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

(*) = Part non-compliant with ISO 6020/2 - 1991
DK Series cylinders: parts F and G replaced by GA

A

ISO ME5 MOUNTING



Mounting A (ISO ME5)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
FB	5,5	6,6	11	14	14	18	18	22	26	33
G	32	35,5	46	45	45	52	55	65	70	92
H	5	5	-	-	-	-	-	-	-	-
KB	7	10	13	17	17	23	23	30	35	37
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
R	27	33	41	52	65	83	97	126	155	190
RD f8	38	42	62	74	88 (**)	105 (**)	125 (**)	150 (**)	170 (**)	210 (**)
TO	51	58	87	105	117	149	162	208	253	300
UO	65	70	110	130	145	180	200	250	300	360
WF	25	35	35	41	48	51	57	57	57	57
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

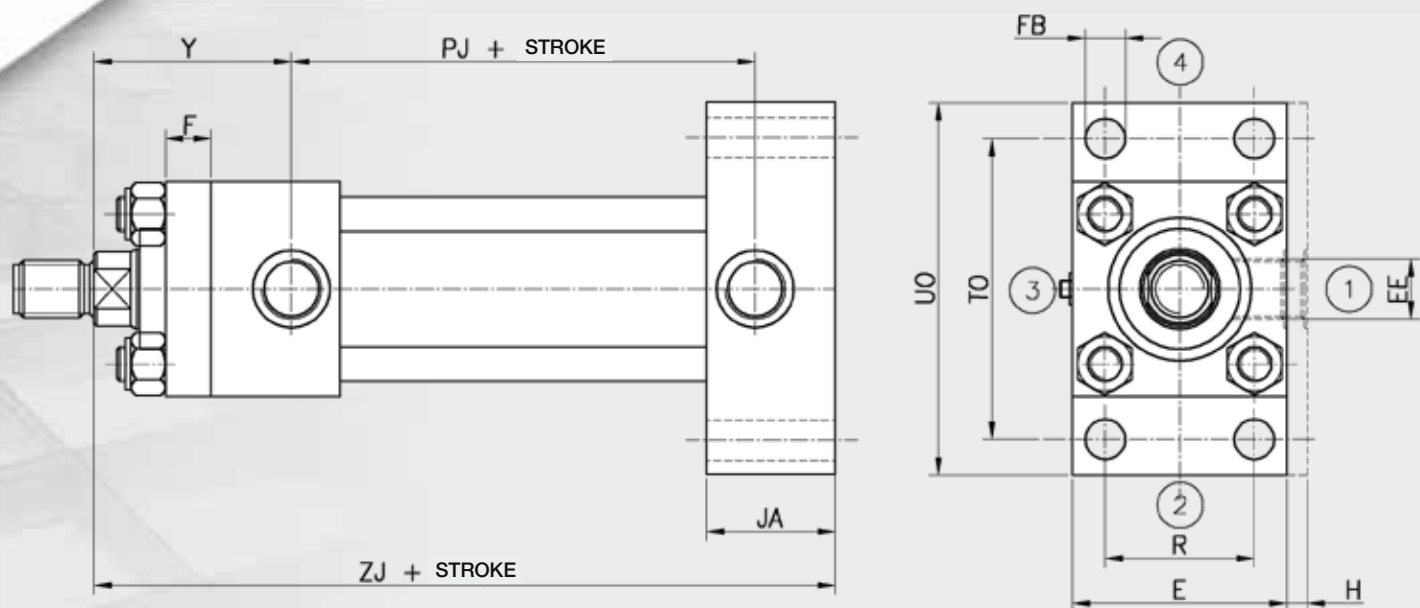
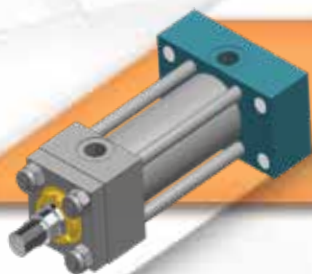
(*) = Part non-compliant with ISO 6020/2 – 1991

(**) Part unified to the top diameter as ISO 6020/2 with RD centering ring.

Original XB part PAGE 19 (type X)

The cylinder centering housing (part RD) is to be made with length (part F) + 0.2 to give greater compactness to the whole cylinder, this greatly improves the performance and durability of the cylinder.

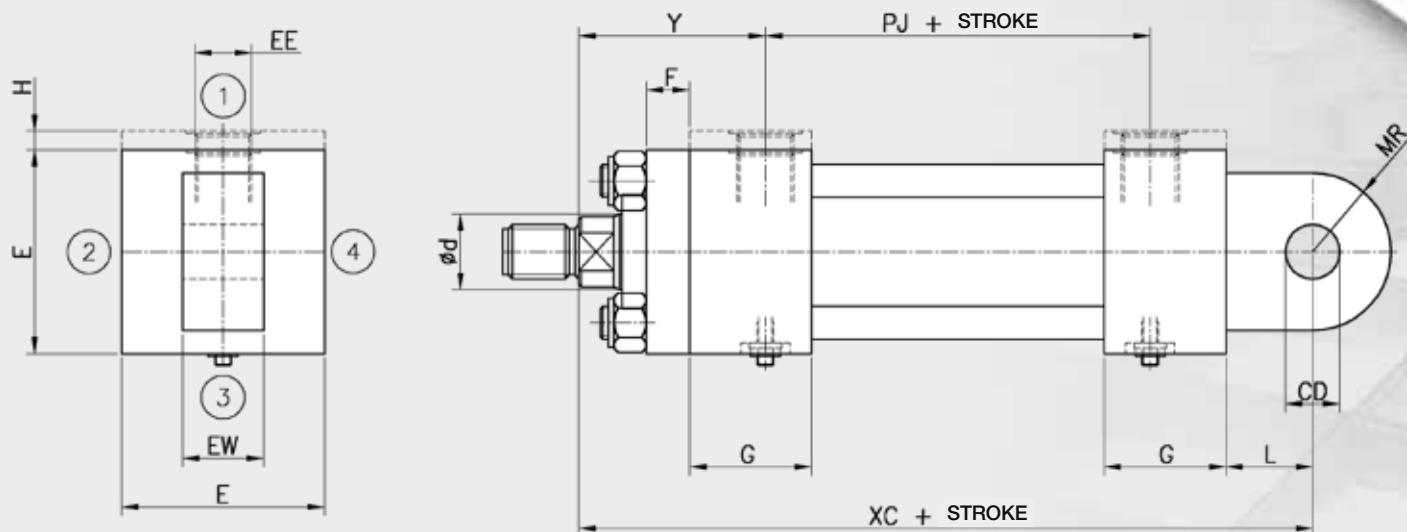
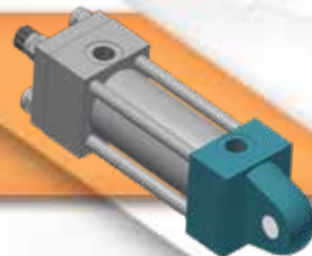
DK Series cylinders: parts F and G replaced by GA



Mounting B (ISO ME6)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
FB	5,5	6,6	11	14	14	18	18	22	26	33
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
JA	32	35,5	46	45	45	52	55	65	70	92
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
R	27	33	41	52	65	83	97	126	155	190
TO	51	58	87	105	117	149	162	208	253	300
UO	65	70	110	130	145	180	200	250	300	360
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

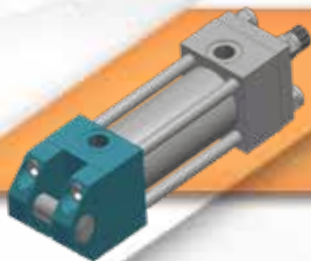
(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA



Mounting C (ISO MP3)

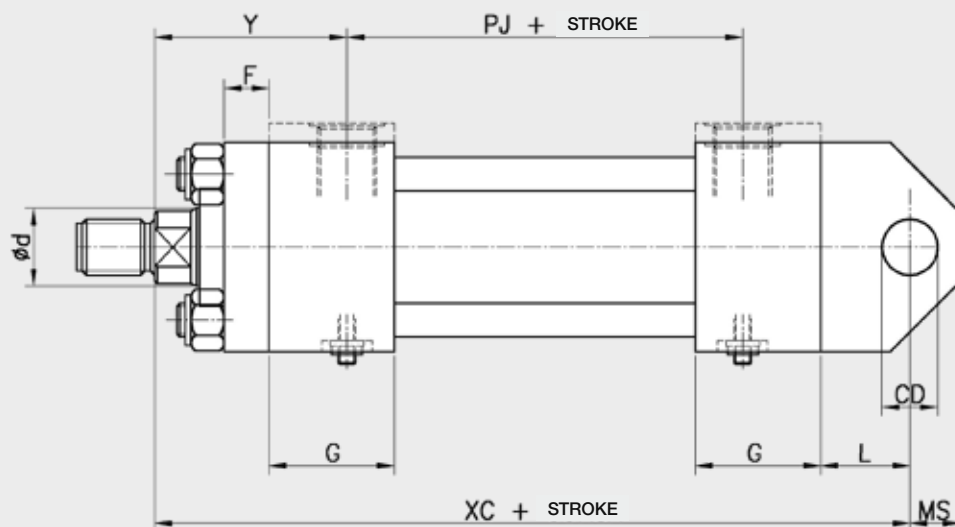
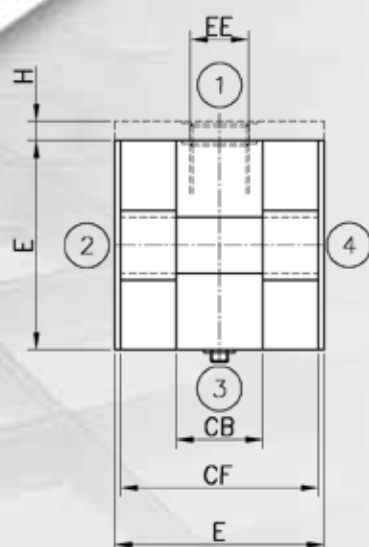
Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
CD	10	12	14	20	20	28	36	45	56	70
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
EW	12	16	20	30	30	40	50	60	70	80
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
L	13	19	19	32	32	39	54	57	63	82
MR max	12	17	17	29	29	34	50	53	59	78
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
XC +	127	147	172	191	200	229	257	289	308	381
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98

(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA



ISO MP1 MOUNTING

M



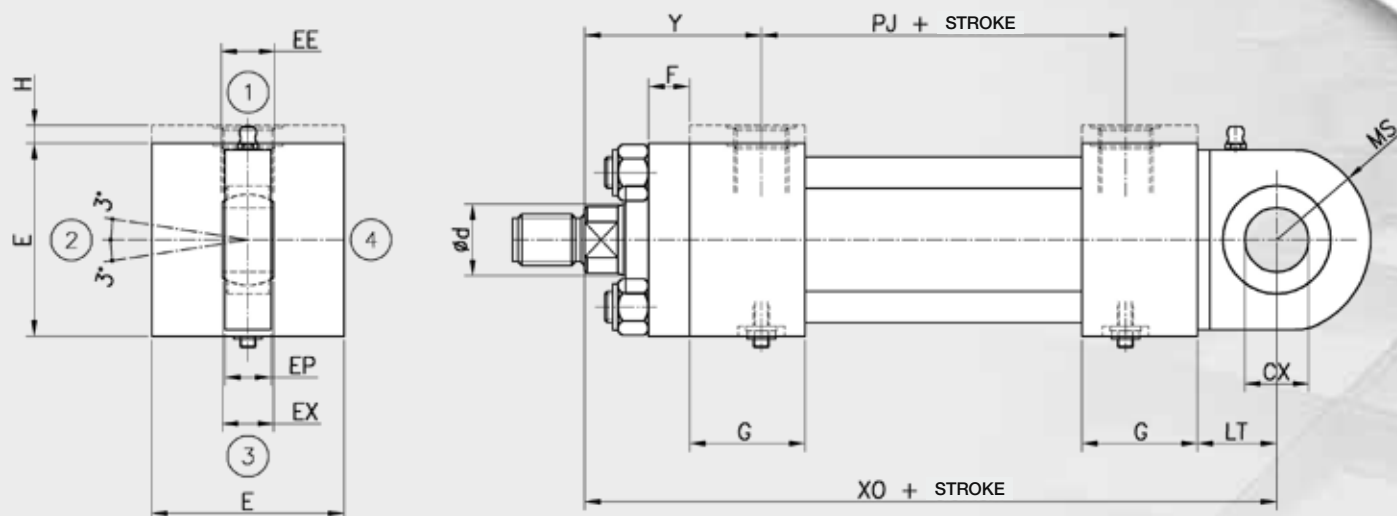
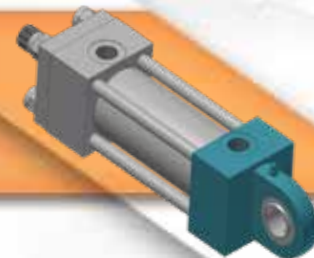
Mounting M (ISO MP1)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
CB	16 (*)	16	20	30	30	40	50	64 (*)	80 (*)	80
CD	10	12	14	20	20	28	36	45	56	70
CF	40	45	60	74	90	110	130	164	200	240
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
L	13	19	19	32	32	39	54	57	63	82
MS	12	11	16	18	18	31	46	43	57	68
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
XC +	127	147	172	191	200	229	257	289	308	381
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98

(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA

D

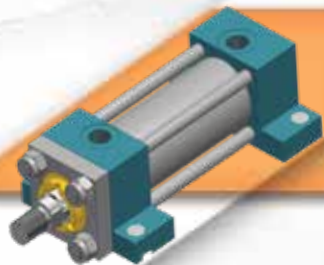
ISO MP5 MOUNTING



Mounting D (ISO MP5)

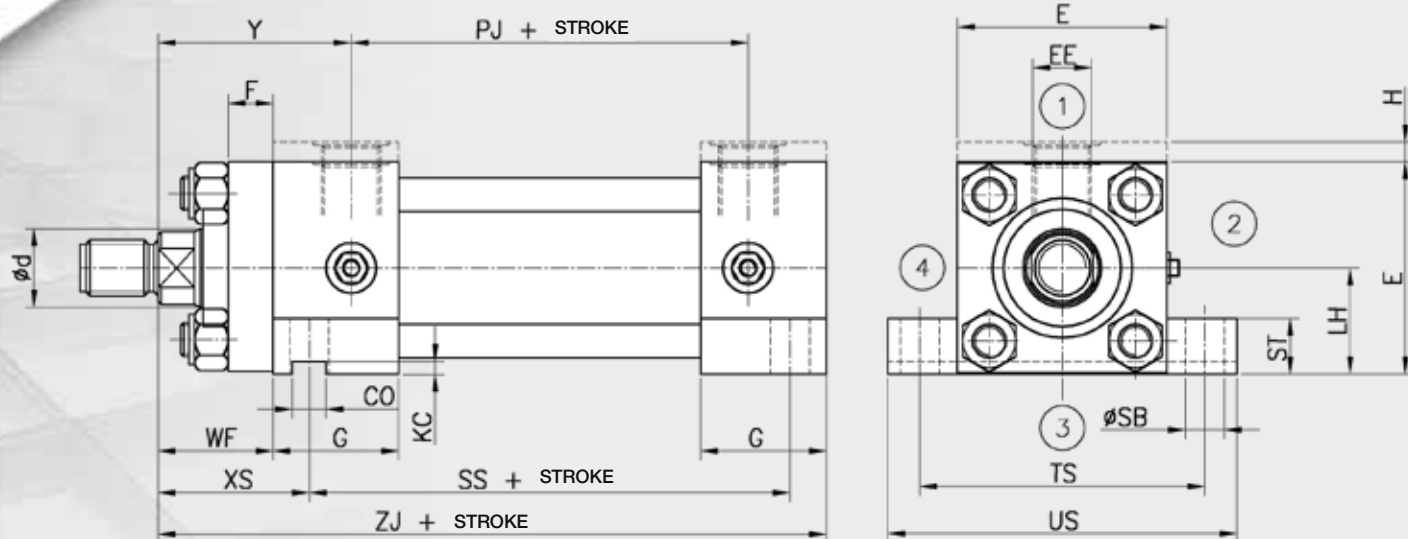
Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
CX	12	16	20	25	30	40	50	60	80	100
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
EP	9	12	14	18	20	24	30	38	47	58
EX	10	14	16	20	22	28	35	44	55	70
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
LT	16	20	25	31	38	48	58	72	92	116
MS	20	25	30	35	40	55	65	90	100	135
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
XO	130	148	178	190	206	238	261	304	337	415
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98

(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA



ISO MS2 MOUNTING

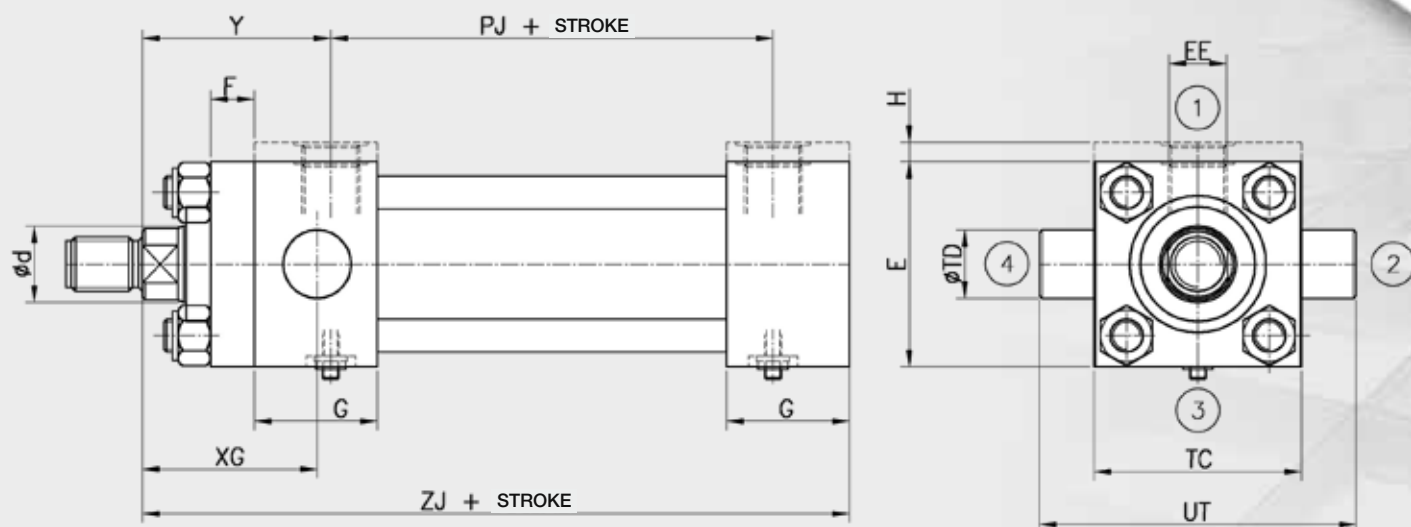
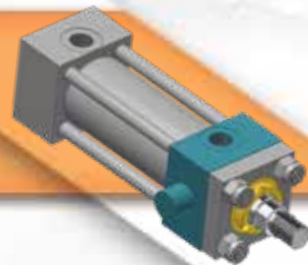
E



Mounting E (ISO MS2)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
CO (H8)	-	-	12	12	16	16	16	20	30	40
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KC	-	-	4	4,5	4,5	5	6	6	8	8
LH h10	19	22	31	37	44	57	63	82	101	122
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
SB	6,6	9	11	14	18	18	26	26	33	39
SS +	73	73	98	92	86	105	102	131	130	172
ST	8,5	12,5	12,5	19	26	26	32	32	38	44
TS	54	63	83	102	124	149	172	210	260	311
US	72	84	103	127	161	186	216	254	318	381
WF	25	35	35	41	48	51	57	57	57	57
XS	33	45	45	54	65	68	79	79	86	92
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

(*) = Part non-compliant with ISO 6020/2 - 1991
DK Series cylinders: parts F and G replaced by GA



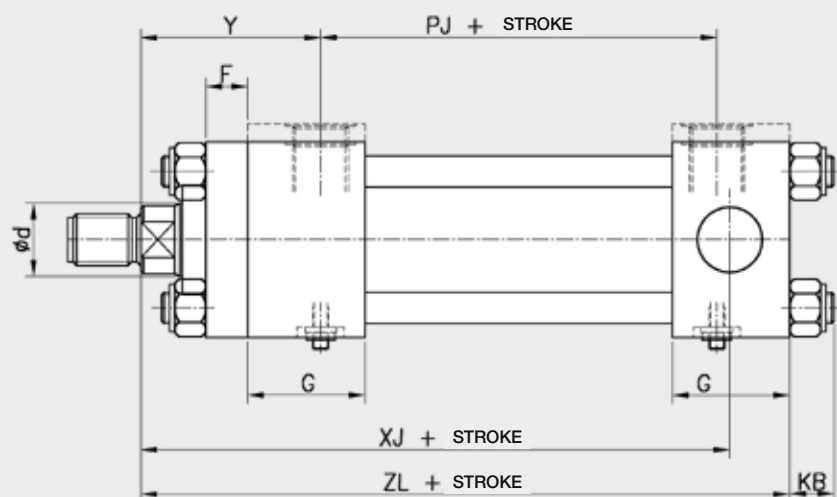
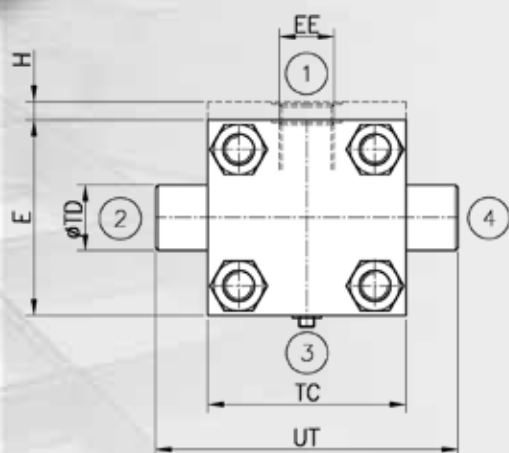
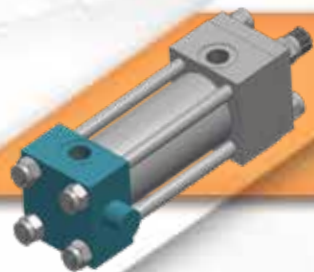
Mounting G (ISO MT1)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TC	38	44	63	76	89	114	127	165	203	241
TD f8	12	16	20	25	32	40	50	63	80	100
UT	58	68	95	116	139	178	207	265	329	401
XG	44	54	57	64	70	76	71	75	75	85
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA

ISO MT2 MOUNTING

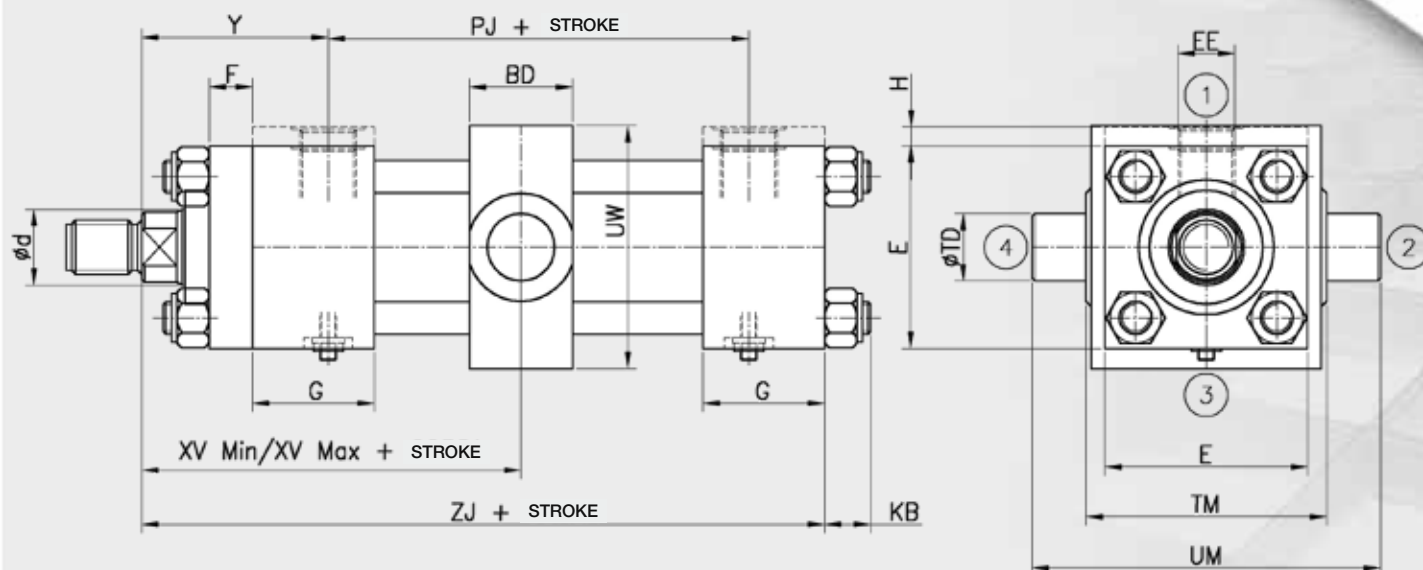
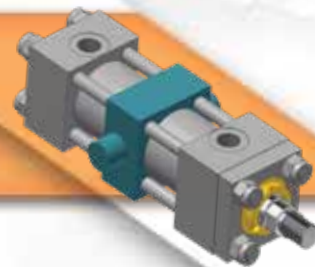
L



Mounting L (ISO MT2)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KB	7	10	13	17	17	23	23	30	35	37
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TC	38	44	63	76	89	114	127	165	203	241
TD f8	12	16	20	25	32	40	50	63	80	100
UT	58	68	95	116	139	178	207	265	329	401
XJ +	95	109	131	136	146	165	177	214	227	271
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZL +	114	128	153	159	168	190	203	254	270	324

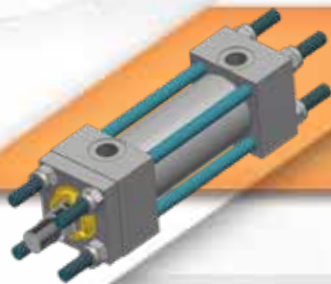
(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA



Mounting H (ISO MT4)

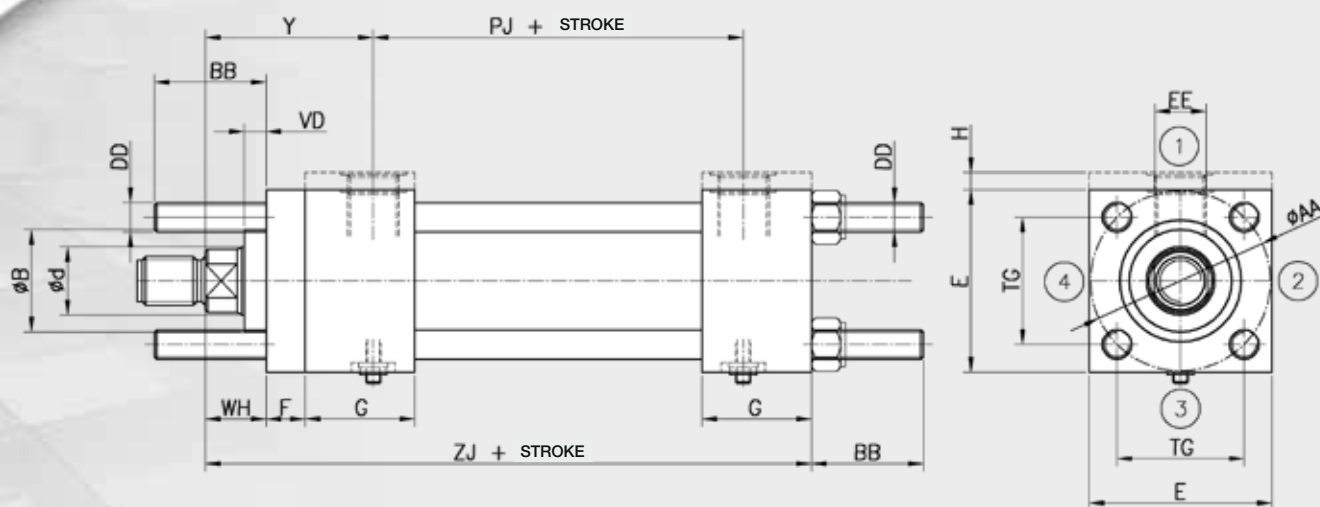
Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
BD	20	25	29	38	48	58	68	88	108	125
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KB	7	10	13	17	17	23	23	30	35	37
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TD f8	12	16	20	25	32	40	50	63	80	100
TM	48	55	76	89	100	127	140	178	215	279
UM	68	79	108	129	150	191	220	278	341	439
UW	45	50	70	90	100	130	140	180	215	300
XV min	67	83	96	106	118	133	147	166	182	213
XV max +	72	80	92	94	98	108	113	123	120	142
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA



ISO MX1 MOUNTING

Q



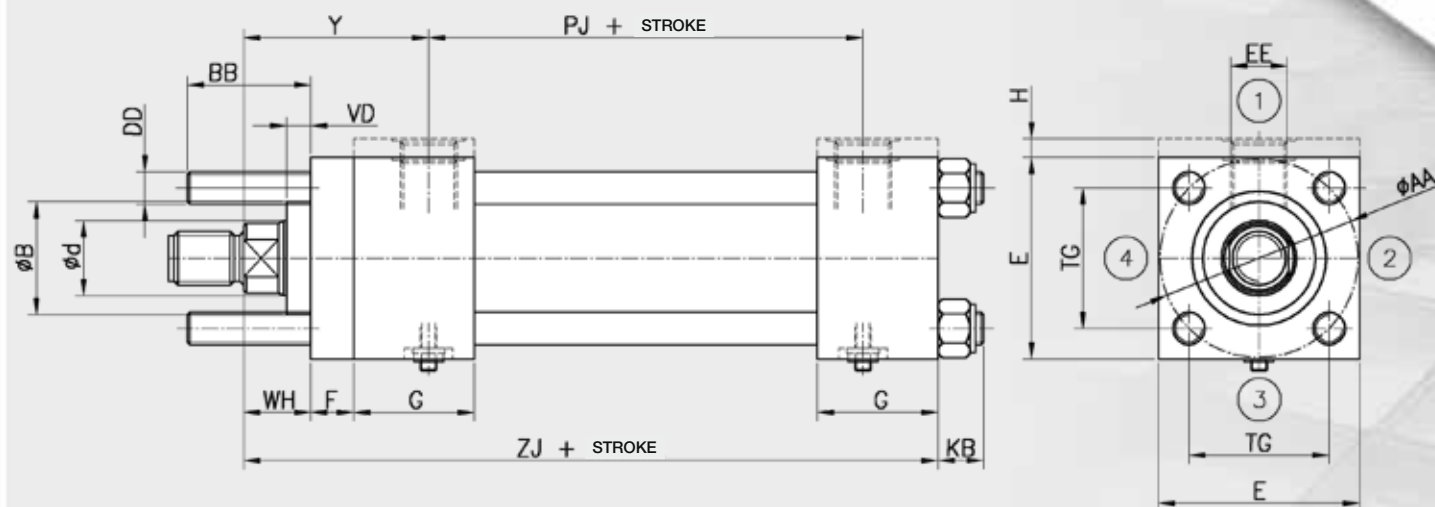
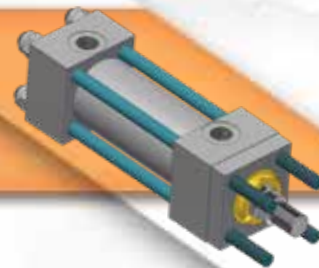
Mounting Q (ISO MX1)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
AA	40	47	59	74	91	117	137	178	219	269
BB	19	24	35	46	46	59	59	81	92	115
DD	M5x0,8	M6x1	M8x1	M12x1,25	M12x1,25	M16x1,5	M16x1,5	M22x1,5	M27x2	M30x2
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,9
WH	15	25	25	25	32	31	35	35	32	32
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

(*) = Part non-compliant with ISO 6020/2 - 1991
DK Series cylinders: parts F and G replaced by GA

Piston	25			32			40			50			63		
Rod	12	-	18	14	18	22	18	22	28	22	28	36	28	36	45
B f9	24	-	30	26	30	34	30	34	42	34	42	50	42	50	60
VD	6			12			12			9			13		

Piston	80			100			125			160			200		
Rod	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140
B f9	50	60	72	60	72	88	72	88	108	88	108	133	108	133	163
VD	9			10			10			7			7		



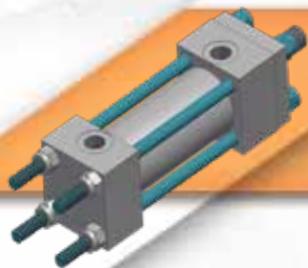
Mounting R (ISO MX3)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
AA	40	47	59	74	91	117	137	178	219	269
BB	19	24	35	46	46	59	59	81	92	115
DD	M5x0,8	M6x1	M8x1	M12x1,25	M12x1,25	M16x1,5	M16x1,5	M22x1,5	M27x2	M30x2
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KB	7	10	13	17	17	23	23	30	35	37
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,9
WH	15	25	25	25	32	31	35	35	32	32
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	168	190	203	232	245	299

(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA

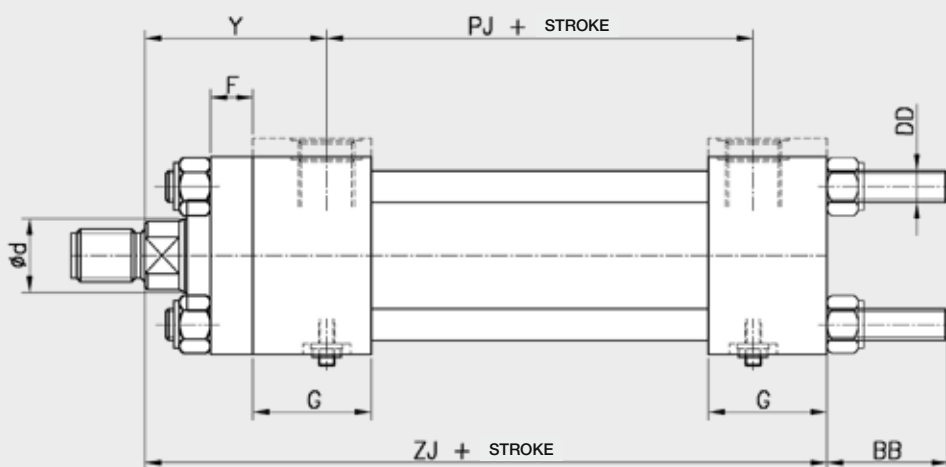
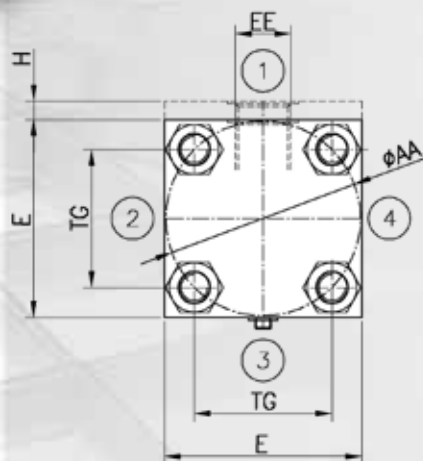
Piston	25			32			40			50			63		
Rod	12	-	18	14	18	22	18	22	28	22	28	36	28	36	45
B f9	24	-	30	26	30	34	30	34	42	34	42	50	42	50	60
VD	6			12			12			9			13		

Piston	80			100			125			160			200		
Rod	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140
B f9	50	60	72	60	72	88	72	88	108	88	108	133	108	133	163
VD	9			10			10			7			7		



ISO MX2 MOUNTING

S



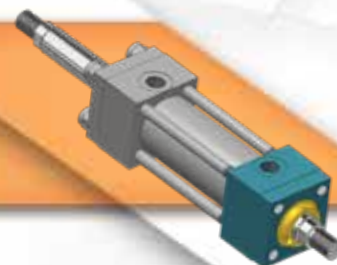
Mounting S (ISOMX2)

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
AA	40	47	59	74	91	117	137	178	219	269
BB	19	24	35	46	46	59	59	81	92	115
DD	M5x0,8	M6x1	M8x1	M12x1,25	M12x1,25	M16x1,5	M16x1,5	M22x1,5	M27x2	M30x2
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KB	7	10	13	17	17	23	23	30	35	37
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,9
WH	15	25	25	25	32	31	35	35	32	32
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZJ +	114	128	153	159	169	190	203	232	245	299

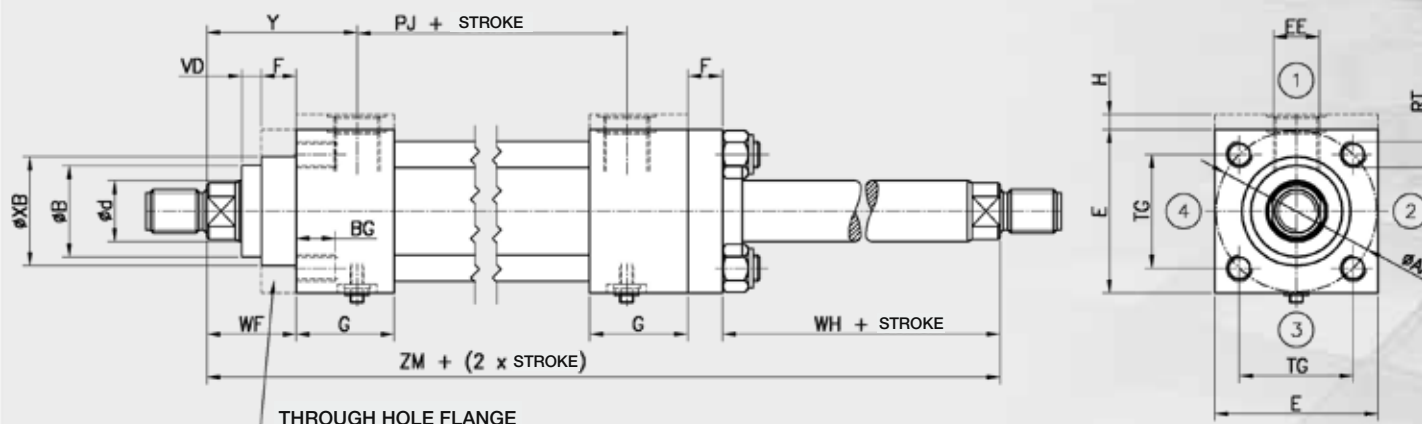
(*) = Part non-compliant with ISO 6020/2 – 1991
DK Series cylinders: parts F and G replaced by GA

X

ISO MX5 DOUBLE ROD MOUNTING



CD-MD



Double rod mounting X (CD - MD)

Bore	25	32	40	50	63	80	100
d (ø rod)	12	14	18	22	28	36	45
	-	18	22	28	36	45	56
	18	22	28	36	45	56	70
AA	40	47	59	74	91	117	137
BG	12	15	18	18	18	24	24
E	40	45	60	75	90	115	130
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4
F	10	10	10	16	16	20	22
G	32	35,5	46	45	45	52	55
H	5	5	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)
RT	M5	M6	M8	M12	M12	M16	M16
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9
WF	25	35	35	41	48	51	57
WH	15	25	25	25	32	31	35
XB (*) f9	30	34	42	50	60	72	88
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)
ZM + (2x)	139	163	188	200	216	241	260

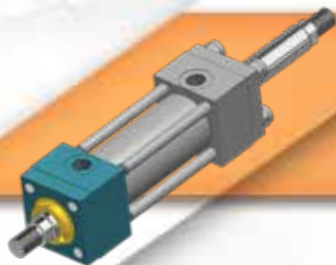
Piston	25			32			40			50			63			80			100		
Rod	12	-	18	14	18	22	18	22	28	22	28	36	28	36	45	36	45	56	45	56	70
B f9	24	-	30	26	30	34	30	34	42	34	42	50	42	50	60	50	60	72	60	72	88
VD	6			12			12			9			13			9			10		

(*) = Part non-compliant with ISO 6020/2 - 1991

(2x) = dual stroke

Insert closing flange to make the WF parts and "B" centering compliant (see PAGE 17)

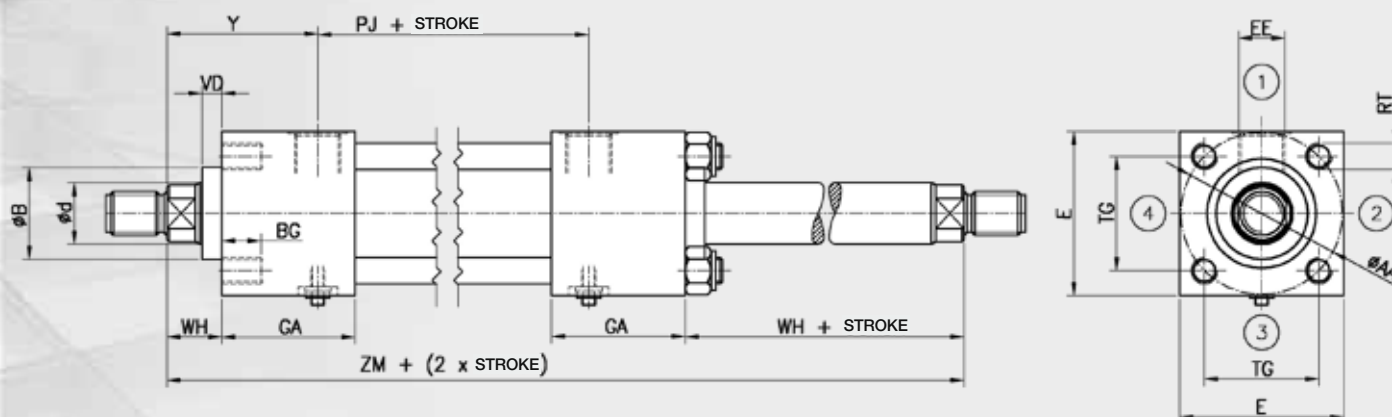
DK Series cylinders: parts F and G replaced by GA



ISO MX5 DOUBLE ROD MOUNTING

X

DK



Double rod mounting X (DK)

Bore	125	160	200
d (ø rod)	56	70	90
	70	90	110
	90	110	140
AA	178	219	269
BG	30	35	35
E	165	200	245
EE	G1	G1	G1 1/4
F	22	25	25
GA	87	95	117
PJ +	117	130	165
RT	M22	M27	M30
TG	125,9	154,9	190,2
WH	35	32	32
Y	86	86	98
ZM + (2x)	289	302	356

Piston	125			160			200		
Rod	56	70	90	70	90	110	90	110	140
B f9	72	88	108	88	108	133	108	133	163
VD	10			7			7		

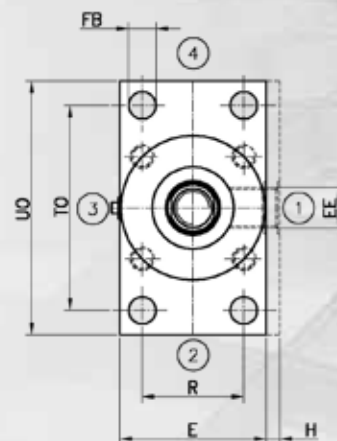
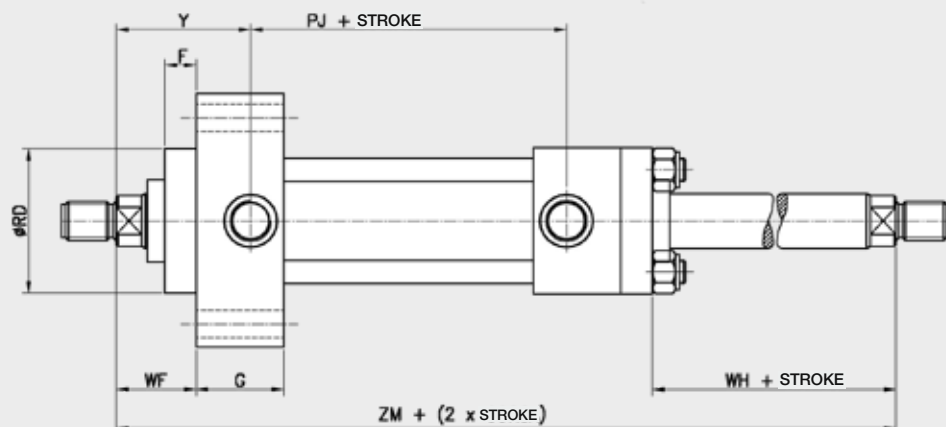
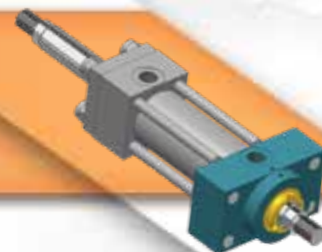
(*) = Part non-compliant with ISO 6020/2 – 1991

(2x) = dual stroke

DK Series cylinders: parts F and G replaced by GA

A

ISO ME5 DOUBLE ROD MOUNTING



Double rod mounting A

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
FB	5,5	6,6	11	14	14	18	18	22	26	33
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
R	27	33	41	52	65	83	97	126	155	190
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
RD f8	38	42	62	74	88 (**)	105 (**)	125 (**)	150 (**)	170 (**)	210 (**)
TO	51	58	87	105	117	149	162	208	253	300
UO	65	70	110	130	145	180	200	250	300	360
WF	25	35	35	41	48	51	57	57	57	57
WH + (2x)	15	25	25	25	32	31	35	35	32	32
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZM + (2x)	139	163	188	200	216	241	260	289	302	356

(*) = Part non-compliant with ISO 6020/2 – 1991

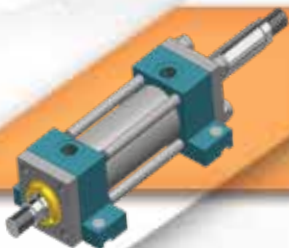
(2x) = dual stroke

(**) Part unified to the top diameter as ISO 6020/2 with RD centering ring.

Original XB part PAGE 19 (type X)

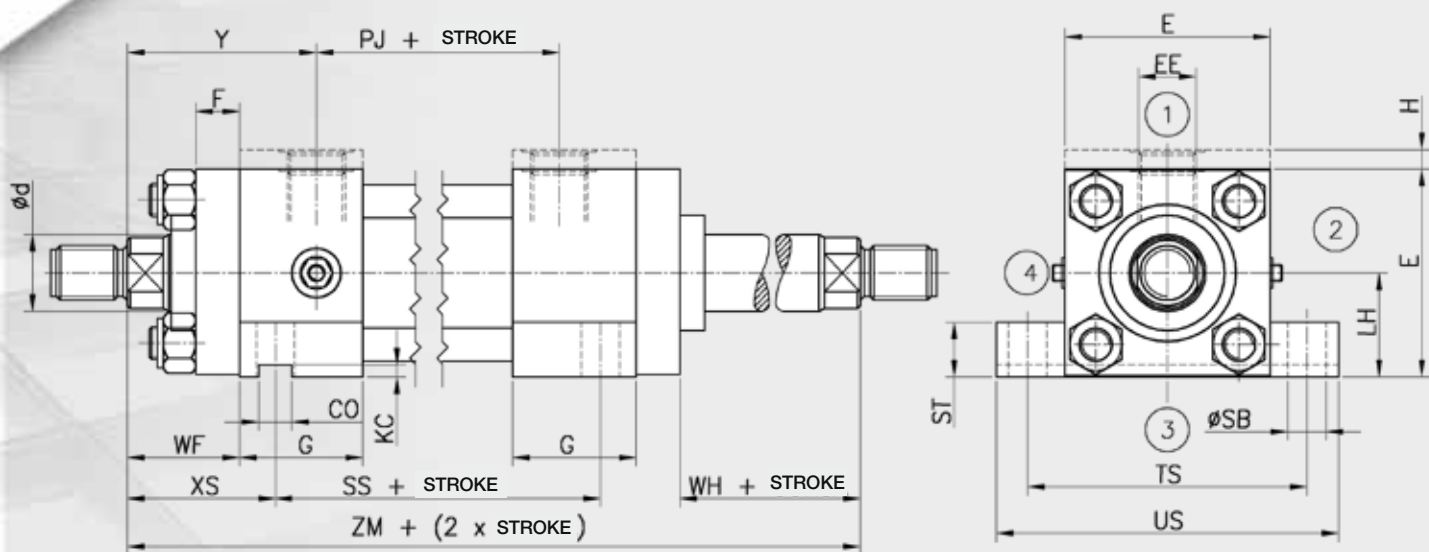
The cylinder centering housing (part RD) is to be made with length (part F) + 0.2 to give greater compactness to the whole cylinder, this greatly improves the performance and durability of the cylinder.

DK Series cylinders: parts F and G replaced by GA



ISO MS2 DOUBLE ROD MOUNTING

E



Double rod mounting E

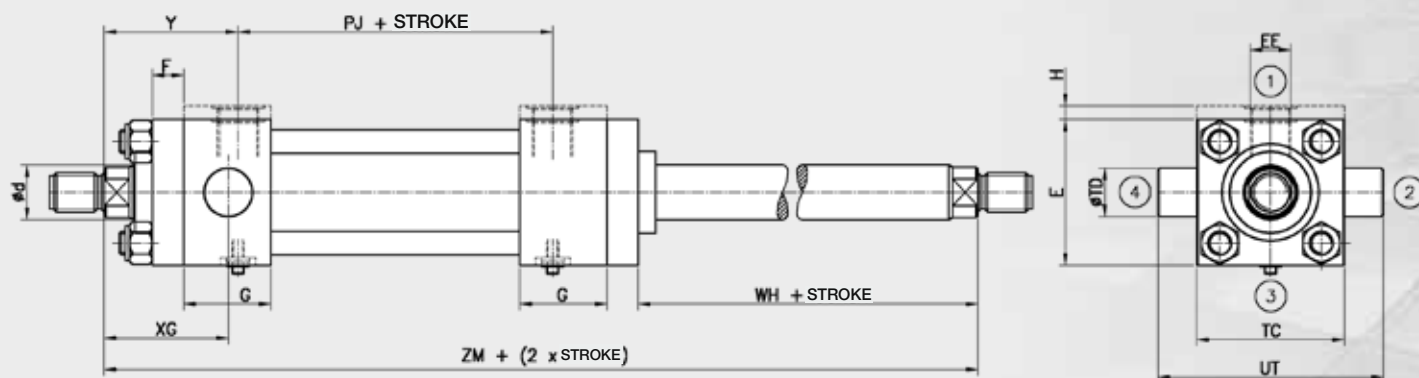
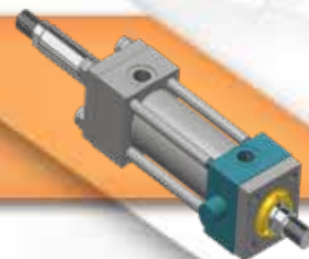
Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
CO (H8)	-	-	12	12	16	16	16	20	30	40
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
KC	-	-	4	4,5	4,5	5	6	6	8	8
LH h10	19	22	31	37	44	57	36	82	101	122
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
SB	6,6	9	11	14	18	18	26	26	33	39
SS +	73	73	98	92	86	105	102	131	130	172
ST	8,5	12,5	12,5	19	26	26	32	32	38	44
TS	54	63	83	102	124	149	172	210	260	310
US	72	84	103	127	161	186	216	254	318	381
WF	25	35	35	41	48	51	57	57	57	57
WH	15	25	25	25	32	31	35	35	32	32
XS	33	45	45	54	65	68	79	79	86	92
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZM + (2x)	139	163	188	200	216	241	260	289	302	356

(*) = Part non-compliant with ISO 6020/2 - 1991

(2x) = dual stroke

Adjustment pin for braking in pos. 2 and 4

DK Series cylinders: parts F and G replaced by GA



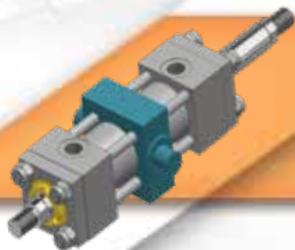
Double rod mounting G

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TC	38	44	63	76	89	114	127	165	203	241
TD f8	12	16	20	25	32	40	50	63	80	100
UT	58	68	95	116	139	178	207	265	329	401
WH	15	25	25	25	32	31	35	35	32	32
XG	44	54	57	64	70	76	71	75	75	85
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZM + (2x)	139	163	188	200	216	241	260	289	302	356

(*) = Part non-compliant with ISO 6020/2 – 1991

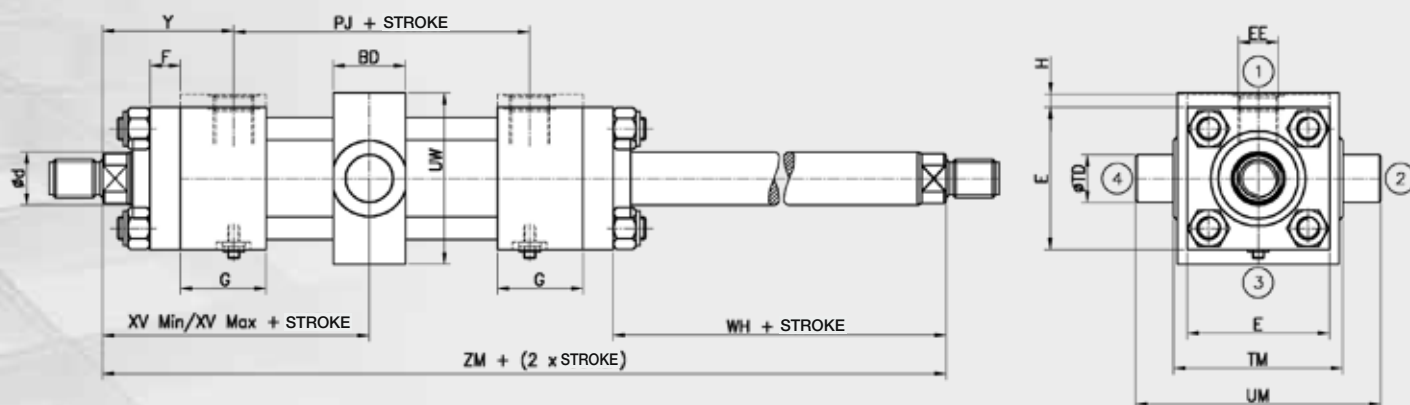
(2x) = dual stroke

DK Series cylinders: parts F and G replaced by GA



ISO MT4 DOUBLE ROD MOUNTING

H



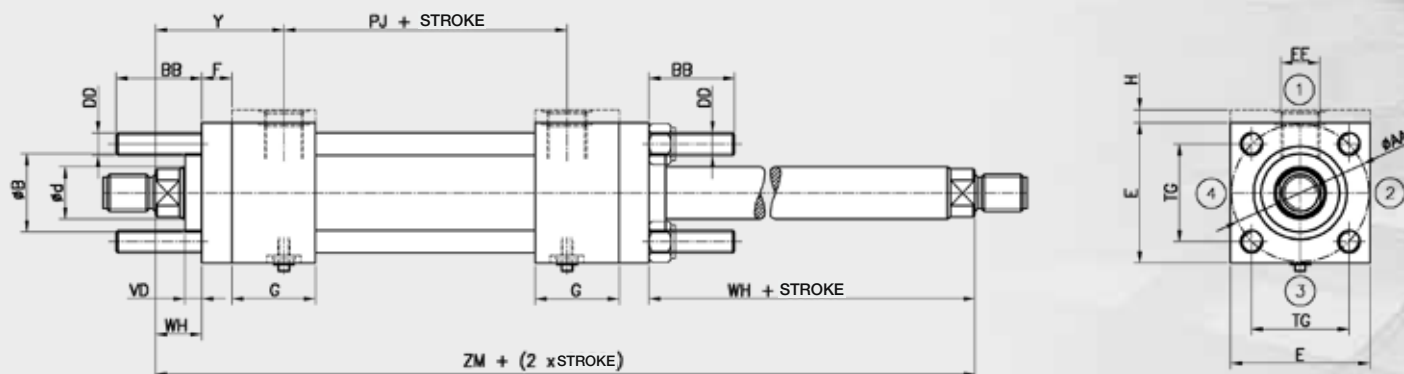
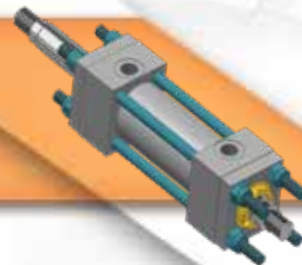
Double rod mounting H

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
BD	20	25	29	38	48	58	68	88	108	125
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TD f8	12	16	20	25	32	40	50	63	80	100
TM	48	55	76	89	100	127	140	178	215	279
UM	68	79	108	129	150	191	220	278	341	439
UW	45	50	70	90	100	130	140	180	215	300
WH	15	25	25	25	32	31	35	35	32	32
XV min	67	83	96	106	118	133	147	166	182	213
XV max +	72	80	92	94	98	108	113	123	120	142
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZM + (x2)	139	163	188	200	216	241	260	289	302	356

(*) = Part non-compliant with ISO 6020/2 – 1991

(2x) = dual stroke

DK Series cylinders: parts F and G replaced by GA



Double rod mounting Q

Bore	25	32	40	50	63	80	100	125	160	200
d (ø rod)	12	14	18	22	28	36	45	56	70	90
	-	18	22	28	36	45	56	70	90	110
	18	22	28	36	45	56	70	90	110	140
AA	40	47	59	74	91	117	137	178	219	269
BB	19	24	35	46	46	59	59	81	92	115
DD	M5x0,8	M6x1	M8x1	M12x1,25	M12x1,25	M16x1,5	M16x1,5	M22x1,5	M27x2	M30x2
E	40	45	60	75	90	115	130	165	200	245
EE	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4	G3/4	G1	G1	G1 1/4
F	10	10	10	16	16	20	22	22	25	25
G	32	35,5	46	45	45	52	55	65	70	92
GA	-	-	-	-	-	-	-	87	95	117
H	5	5	-	-	-	-	-	-	-	-
PJ +	49 (*)	47 (*)	58 (*)	61 (*)	64 (*)	77 (*)	78 (*)	117	130	165
TG	28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,2
WH	15	25	25	25	32	31	35	35	32	32
Y	45 (*)	58 (*)	65 (*)	69 (*)	76 (*)	82 (*)	91 (*)	86	86	98
ZM + (2x)	139	163	188	200	216	241	260	289	302	356

Piston	25			32			40			50			63		
Rod	12	-	18	14	18	22	18	22	28	22	28	36	28	36	45
B f9	24	-	30	26	30	34	30	34	42	34	42	50	42	50	60
VD	6			12			12			9			13		

Piston	80			100			125			160			200		
Rod	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140
B f9	50	60	72	60	72	88	72	88	108	88	108	133	108	133	163
VD	9			10			10			7			7		

(*) = Part non-compliant with ISO 6020/2 - 1991

(2x) = dual stroke

DK Series cylinders: parts F and G replaced by GA

ACCESSORIES

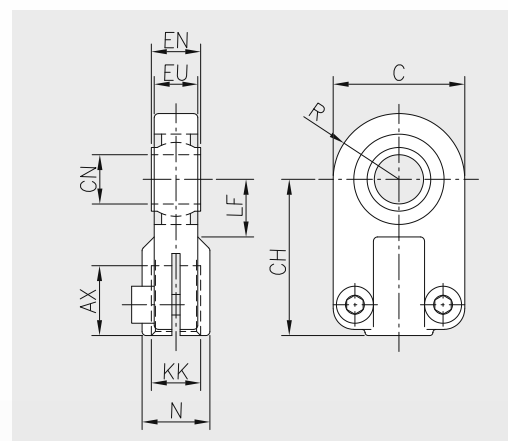


Given the considerable forces involved, it is necessary to guarantee perfect coaxiality between the cylinder and the moved load, in order to achieve a longer life.

In the case of a rigid type of mounting, the mounting on the rod end of a self-aligning system is of great utility.
The following types of rod ends and appropriate supports are available.

“CS” ROD END WITH SPHERICAL BEARING ISO 6982

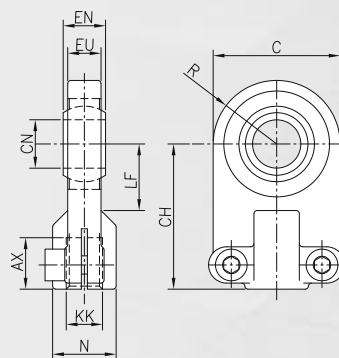
CS



	CS12125	CS1415	CS1615	CS2015	CS272	CS332	CS422	CS482	CS643	CS803	CS1003
AX	17	19	23	29	37	46	57	64	86	96	113
C	32	40	47	58	70	89	108	132	168	212	264
CH	38	44	52	65	80	97	120	140	180	210	260
CN	12	16	20	25	32	40	50	63	80	100	125
EN	12	16	20	25	32	40	50	63	80	100	125
EU	10,05	13	17	21	27	32	40	52	66	85	103
KK	M12x1,25	M14x1,5	M16x1,5	M20x1,5	M27x2	M33x2	M42x2	M48x2	M64x3	M80x3	M100x3
LF	14	18	22	27	32	41	50	62	78	98	120
N	16	21	25	30	38	47	58	70	90	110	135
R	16	20	24	29	35	40	54	66	84	106	132
Static force (kN)	24,5	36,5	48	78	114	204	310	430	695	1060	1430
Dynamic force (kN)	10,5	17,5	30	48	67	100	156	255	400	610	950

“TS” ROD END WITH SPHERICAL BEARING DIN 24555

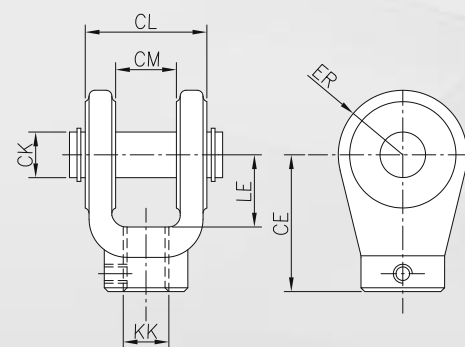
TS



	TS10125	TS12125	TS1415	TS1615	TS2015	TS272	TS332	TS422	TS482	TS643
AX	15	17	19	23	29	37	46	57	64	86
C	32	42	50	62	76	96	116	150	195	235
CH	42	48	58	68	85	105	130	150	185	240
CN	12	16	20	25	30	40	50	60	80	100
EN	10	14	16	20	22	28	35	44	55	70
EU	8	11	13	17	19	23	30	38	47	57
KK	M10x1,25	M12x1,25	M14x1,5	M16x1,5	M20x1,5	M27x2	M33x2	M42x2	M48x2	M64x3
LF	18	22	28	34	38	48	62	74	98	122
N	17	21	25	30	36	45	55	68	78	100
R	16	21	25	31	38	48	58	75	98	118
Static force (kN)	17	28,5	42,5	67	108	156	245	380	585	865
Dynamic force (kN)	10,8	21,1	30	48	62	100	156	245	400	610

“CF” ROD END CLEVIS WITH PIN ISO 8133

CF

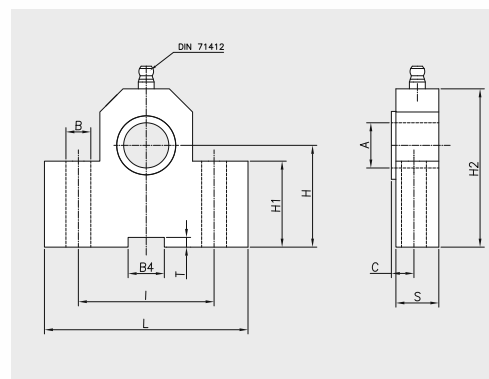


	CF10125	CF12125	CF1415	CF1615	CF2015	CF272	CF332	CF422	CF482	CF643	CF803
CE	32	36	38	54	60	75	99	113	126	168	168
CK	10	12	14	20	20	28	36	45	56	70	70
CL	24	32	40	60	60	80	100	120	140	160	160
CM	12	16	20	30	30	40	50	60	70	80	80
ER	12	17	17	29	29	34	50	53	59	78	78
KK	M10x1,25	M12x1,25	M14x1,5	M16x1,5	M20x1,5	M27x2	M33x2	M42x2	M48x2	M64x3	M80x3
LE	13	19	19	32	32	39	54	57	63	83	83
Force (kN)	8	12,5	20	32	50	80	125	200	320		

“ISH” CYLINDER SUPPORT ISO 8132

* can be used with “G – L – H” mounting (PAGES 27 - 28 - 29)

ISH

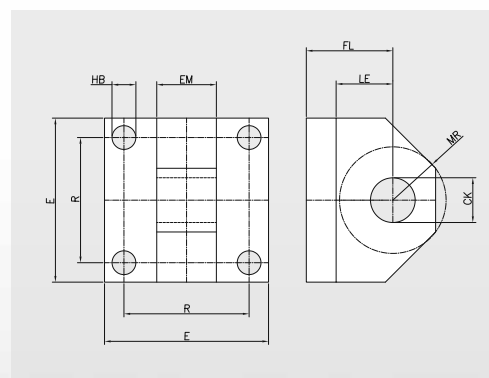


		ISH025	ISH032	ISH040	ISH050	ISH063	ISH080	ISH100	ISH125	ISH160
A (H7)	mm.	12	16	20	25	32	40	50	63	80
ØB (H13)		9	11	11	13,5	17,5	22	26	33	39
B4 (N9)		10	16	16	25	25	36	36	50	50
C		8	10	10	12	15	16	20	25	31
H		34	40	45	55	65	76	95	112	140
H1		25	30	38	45	52	60	75	85	112
H2 (MAX)		49	59	69	80	100	120	140	177	220
I		40	50	60	80	110	125	160	200	250
L		63	80	90	110	150	170	210	265	325
S		17	21	21	26	33	41	51	61	81
T (0/+0,3)		3,3	4,3	4,3	5,4	5,4	8,4	8,4	11,4	11,4
Nominal force	kN	8	12,5	20	32	50	80	125	200	320

“CM” CYLINDER SUPPORT ISO 8133 - DIN 24555 - DIN 24556

* to be used for fastening on “M” cylinder heads (PAGE 24)

CM

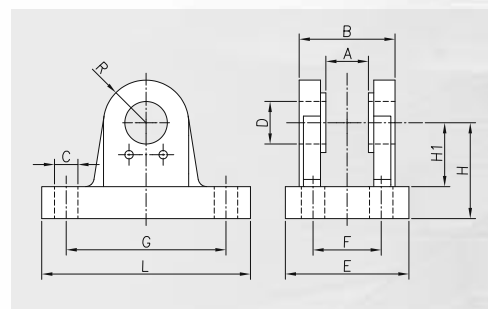


		CM025	CM032	CM040	CM050	CM063	CM080	CM100	CM125	CM160	CM200
ØCK (H8)	mm.	10	12	14	20	20	28	36	45	56	70
E		40	45	60	75	90	115	130	165	205	245
EM		12	16	20	30	30	40	50	60	70	80
FL		23	29	29	48	48	59	79	87	103	132
HB		5,5	6,6	9	13,5	13,5	17,5	17,5	24	30	33
LE min		13	19	19	32	32	39	54	57	63	82
MR		12	17	17	29	29	34	50	53	59	78
R		28,3	33,2	41,7	52,3	64,3	82,7	96,9	125,9	154,9	190,2

“CSA” CYLINDER SUPPORT 180° ISO 8132

* to be used on rod ends with CS type spherical bearing (PAGE 40)

CSA

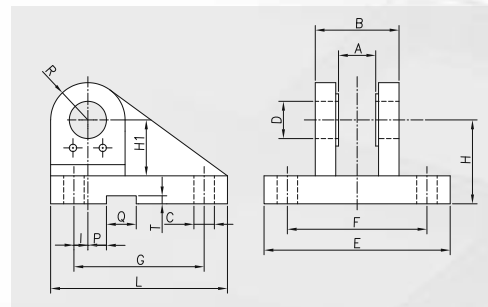


		CSA010	CSA012	CSA016	CSA020	CSA025	CSA032	CSA040	CSA050	CSA063	CSA080
mm.	A	10	12	16	20	25	32	40	50	63	80
	B	24	28	36	45	56	70	90	110	140	170
	C	6,6	9	11	11	13,5	17,5	22	26	33	39
	D (H9)	10	12	16	20	25	32	40	50	63	80
	E	33	40	50	58	70	85	108	130	160	210
	F	17	20	26	32	40	50	65	80	100	125
	G	42	50	65	75	85	110	130	170	210	250
	H	32	34	40	45	55	65	76	95	112	140
	H1	22	22	27	30	37	43	52	65	75	95
	L	60	70	90	98	113	143	170	220	270	320
	R	10	12	16	20	25	32	40	50	63	80
kN	Nominal force	5	8	12,5	20	32	50	80	125	200	320

“CSB” 90° CYLINDER SUPPORT ISO 8132

* to be used on rod ends with CS type spherical bearing (PAGE40)

CSB



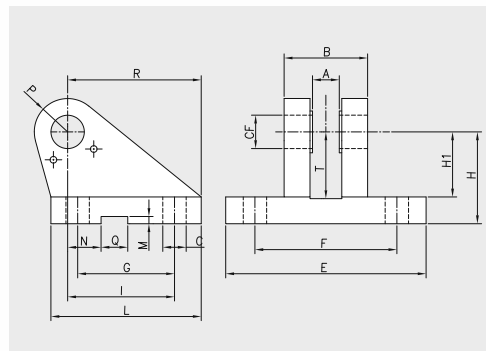
		CSB010	CSB012	CSB016	CSB020	CSB025	CSB032	CSB040	CSB050	CSB063	CSB080
mm.	A	10	12	16	20	25	32	40	50	63	80
	B	24	28	36	45	56	70	90	110	140	170
	C	6,6	9	11	11	13,5	17,5	22	26	33	39
	D (H9)	10	12	16	20	25	32	40	50	63	80
	E	56	72	90	100	120	145	185	215	270	320
	F	39	52	65	70	90	110	140	165	210	250
	G	44	45	55	70	85	110	125	150	170	210
	H	32	34	40	45	55	65	76	95	112	140
	H1	22	22	27	30	37	43	52	65	75	95
	I	2	2	3,5	7,5	10	14,5	17,5	25	33	45
	L	60	65	80	95	115	145	170	200	230	280
	P	10	10	10	10	10	6	6	-	-	-
	Q	8	10	16	16	25	25	36	36	50	50
	R	10	12	16	20	25	32	40	50	63	80
	T	3,3	3,3	4,3	4,3	5,4	5,4	8,4	8,4	11,4	11,4

“CTS” CYLINDER SUPPORT DIN 24556

* to be used on “D” MP5 mounting cylinders (PAGE 25)

* to be used on rod ends with TS type spherical bearing (PAGE 41)

CTS

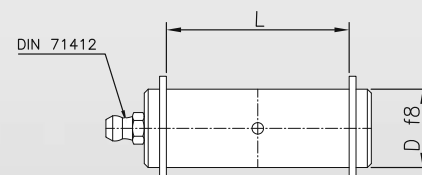


		CTS012	CTS016	CTS020	CTS025	CTS030	CTS040	CTS050	CTS060	CTS080	CTS100
mm.	A	10	14	16	20	22	28	35	44	55	70
	B	30	40	50	60	70	80	100	120	160	200
	C	9	11	13,5	15,5	17,5	22	30	39	45	48
	CF (K7)	12	16	20	25	30	40	50	60	80	100
	E	75	95	120	140	160	190	240	270	320	400
	F	55	70	85	100	115	135	170	200	240	300
	G	40	55	58	70	90	120	145	185	260	300
	H	40	50	55	65	85	100	125	150	190	210
	H1	28	37	39	48	62	72	90	108	140	150
	I	46	61	64	78	97	123	155	187	255	285
	L	60	80	90	110	135	170	215	260	340	400
	M	3,3	4,3	4,3	5,4	5,4	8,4	8,4	11,4	11,4	12,4
	N	16	18	20	22	24	24	35	35	35	35
	P	12	16	20	25	30	40	50	60	80	100
	Q	10	16	16	25	25	36	36	50	50	63
	R	56	74	80	98	120	148	190	225	295	335
	T	29	38	40	49	63	73	92	110	142	152
kN	Nominal force	8	12,5	20	32	50	80	125	200	320	500

“PCS” PIN FOR CSA AND CSB SUPPORT

* to be used on CSA and CSB supports (PAGE 43)

PCS

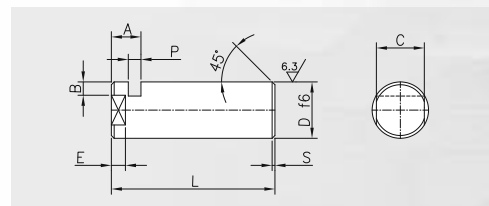


		PCS010	PCS012	PCS016	PCS020	PCS025	PCS032	PCS040	PCS050	PCS063	PCS080
mm.	D (f8)	10	12	16	20	25	32	40	50	63	80
	L	25	29	37	46	57	72	92	112	142	172
kN	Nominal force	5	8	12,5	20	32	50	80	125	200	320

“PTS” PIN FOR CTS SUPPORT

* to be used on CTS supports (PAGE 44)
supplied with PP plate

PTS

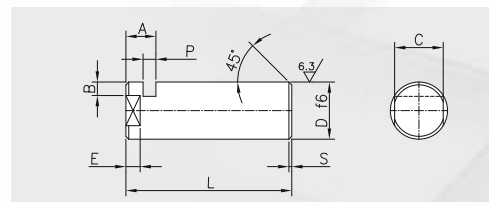


		PTS012	PTS016	PTS020	PTS025	PTS030	PTS040	PTS050	PTS060	PTS80	PTS100
mm.	D (h6)	12	16	20	25	30	40	50	60	80	100
	L	40	50	62	72	85	100	122	145	190	235
	A	8	8	10	10	13	16	19	20	26	30
	P	3,3	3,3	4,5	4,5	5,5	6,5	9	9	11	13
	E	4,5	5,5	5,5	5,5	7,5	9,5	10	11	15	15
	C	10	13	17	22	24	32	41	50	70	90
	B	4	4	5	5	6	7	8	9	11	14
	S	1	1	1,5	1,5	2	2	2	2	3	3

“KCS” PIN FOR CSA AND CSB SUPPORT

* to be used on CSA and CSB supports (PAGE 43)
supplied with PP plate

KCS

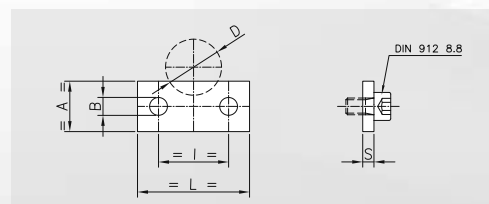


		KCS010	KCS012	KCS016	KCS020	KCS025	KCS030	KCS040	KCS050	KCS060	KCS080
mm.	D (f8)	10	12	16	20	25	30	40	50	60	80
	L	34	38	46	58	72	85	100	122	145	190
	A	8	8	8	10	10	13	16	19	20	26
	P	3,3	3,3	3,3	4,5	4,5	5,5	6,5	9	9	11
	E	4,5	4,5	5,5	5,5	6,5	8,5	8,5	8,5	8,5	11,5
	C	8	10	13	17	21	27	32	41	55	5
	B	3	4	4	5	5	6	7	8	9	11
	S	1	1	1	1,5	1,5	2	2	2	2	3

“PP” FASTENING PLATE

* supplied with PTS and KCS pin

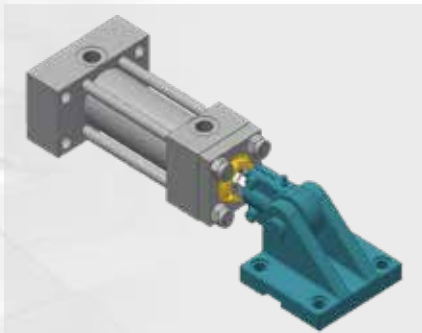
PP



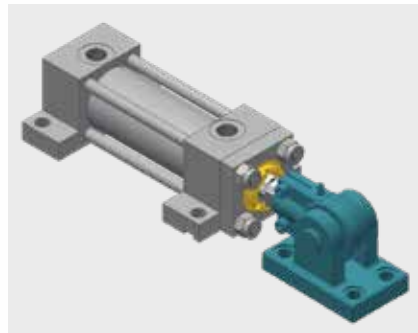
		PP012	PP020	PP025	PP030	PP040	PP050	PP060	PP080	PP100
mm.	B	6,4	6,4	6,4	6,4	8,4	8,4	10,5	10,5	10,5
	D	12	20	25	30	40	50	60	80	100
	A	15	18	18	20	20	25	25	30	40
	S	3	4	4	5	6	8	8	10	12
	L	27	40	40	45	62	65	80	90	120
	I	16	25	25	30	42	45	55	60	90
M	Hole	6x12	6x16	6x16	6x16	8x20	8x20	10x25	10x25	10x25
ø	Security ring	6	6	6	6	8	8	10	10	10

EXAMPLES OF ATTACHMENTS

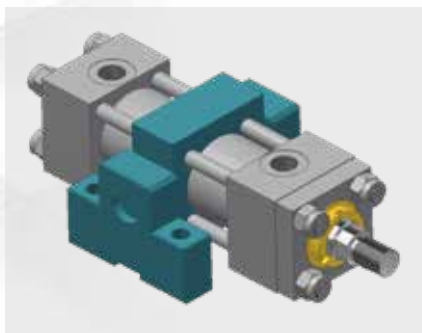
ATTACHMENT WITH CS SPHERICAL BEARING AND CSB SUPPORT



ATTACHMENT WITH CS SPHERICAL BEARING AND CSA SUPPORT

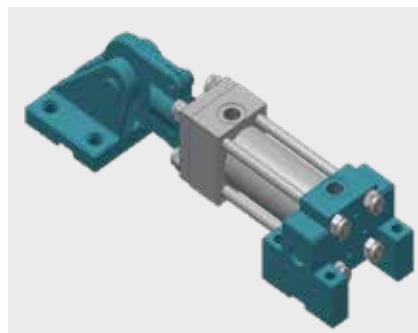


ATTACHMENT WITH "H" INTERMEDIATE PINS AND ISH SUPPORT

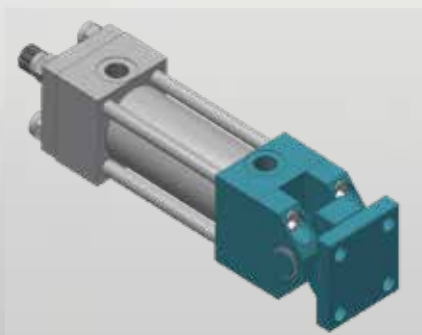


ATTACHMENT WITH REAR "L" PINS AND ISH SUPPORT

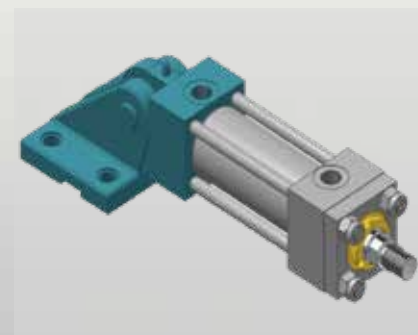
ATTACHMENT WITH TS SPHERICAL BEARING AND CTS SUPPORT



ATTACHMENT WITH "M" FEMALE HINGE AND CM SUPPORT



ATTACHMENT WITH "D" BEARING HINGE AND CTS SUPPORT



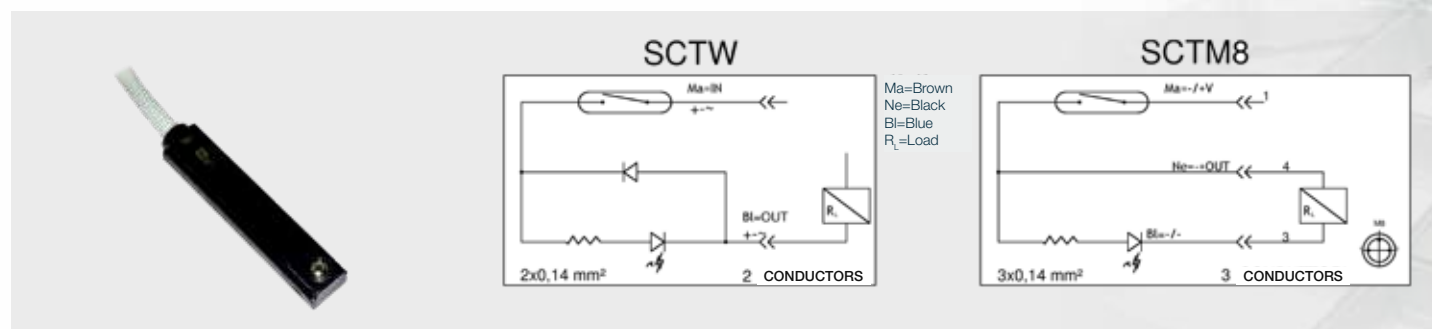
SENSORS

REED SENSORS :

The limit switch consists of a Reed contact drowned in synthetic resin; as a magnetic field (permanent magnet mounted on the piston) approaches, the contact closes generating an electrical signal.

“SCTM8” type with 3 wires and connector (temperature up to 85°)

“SCTW” type with 2 wires and drowned cable (* to combine with Viton® seals and temperature up to 120°)



MAGNETIC SENSORS

Technical characteristics		
Sensor	SCTW	SCTM8
Working voltage	0-30 V AC/DC	5-30V DC
Current (max) REED	500 mA	250 mA
Power (max) REED	10 W 10VA	10 W 8VA
Led indicator light	None	Yellow
Cable	PUR 2X0,14mm. ²	PVC/PUR 3X0,14mm. ²
Cable length	2,5 m.	0,15 m.
Connection	-	M8 Male Connector
Temperature	- 40°C / +120 °C	- 20°C / +85 °C
Degree of protection	IP67	IP67
Cable terminal	2 wires	3 wires with connector

CABLE WITH CONNECTORS FOR SCTM8 SENSOR

	CONN	CONN5	CONN10
Cable length	2,5 m	5 m	10 m
Connection	M8 Female	M8 Female	M8 Female
No. poles	3	3	3



SENSOR HOLDER BRACKETS

	S70	S145	S165
Depending on ø cylinder bore	25 - 32 - 40	50 - 63	80 - 100



WARNINGS FOR USING MAGNETIC CYLINDERS

The magnetic field measured outside the cylinder sleeve extends for about 5 mm in length, so care must be taken with the mechanical positioning of the sensor to have the signal as close as possible to the desired position. In case of close mounting of magnetic cylinders with relative limit switches, the distance between them must be at least 30 mm.

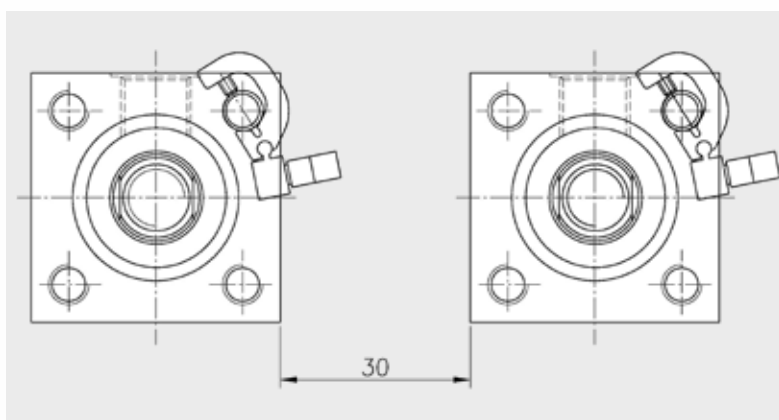
If the magnetic cylinder is positioned in the cavity of a ferrous magnetic absorption system, maintain a minimum distance of at least 20 mm between the external dimensions of the cylinder and the nearest metal wall (excluding the fastening wall), in order to avoid the deformation of the magnetic field and the consequent lack of sensor activation.

It is advisable not to use cylinders with magnetic limit switches in the vicinity of strong magnetic fields (e.g. resistance welders).

Under no circumstances should the maximum current, the working voltage and the maximum switching power of the contact be exceeded.

In case of inductive loads, a high voltage peak is produced when disconnecting (see solenoid valve coils); for this reason, it is necessary to provide a suitable protection circuit (R-C) or varistor to protect the sensor. The same effects can also occur when the sensor wires exceed 5 m in length.

The inrush power (relay-fuse-filament lamp) is considerably higher (8-10 times) than the operating power, so it is necessary to rely on the inrush value when selecting the sensor.



The use of an ohmically set tester is recommended for bench-top adjustment of the position of the sensors.

CONNECTING SENSORS IN SERIES

The SCTW (two-wire) REED sensors allow connection in series, bearing in mind that for each sensor there is a voltage drop of about 4V, so a maximum number of 2 sensors can be connected and the supply voltage is not less than 24VDC. If it is necessary to connect 3 or more sensors in series, use the SCTM8 3-wire type.

INDUCTIVE PROXIMITY SENSORS

Inductive proximity sensors detect non-contact rod stroke and are normally applied where magnetic sensors are not used for technical or environmental reasons.

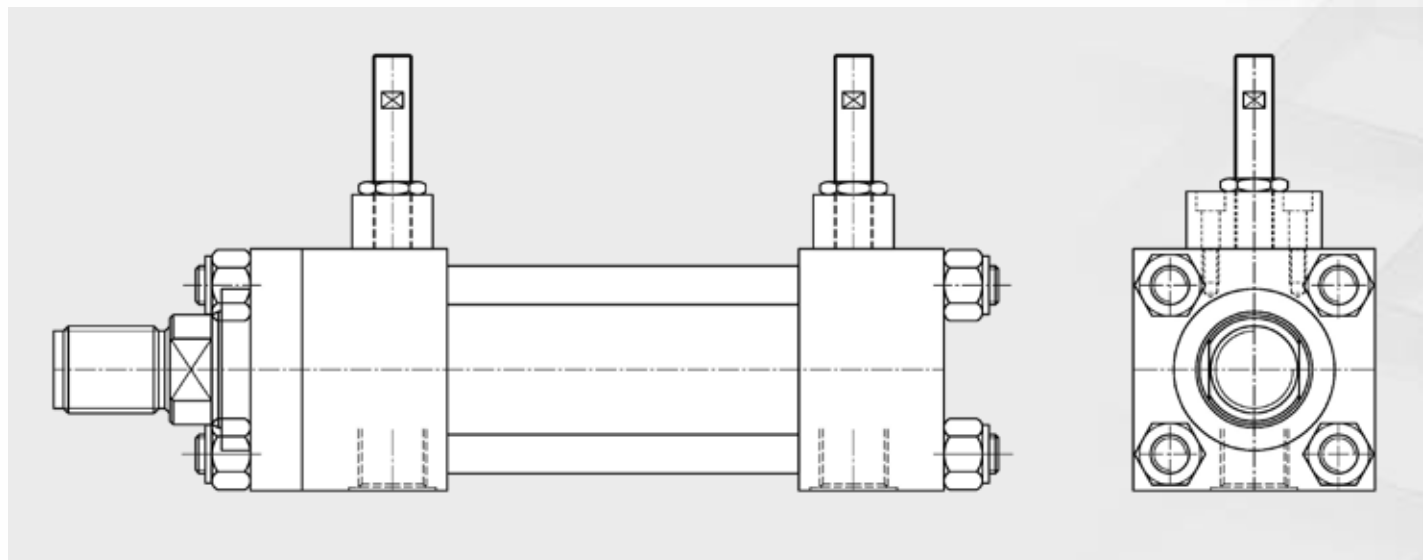
The operating principle of inductive proximity sensors is based on the detection of metal parts in the immediate vicinity of their sensing side, without any actual physical contact.

When the piston arrives at the limit switch, the sensor detects the presence of the metal part inside and provides the switching signal.

For correct operation they must be used at a temperature from -25°C to $+80^{\circ}\text{C}$, moreover the absence of contact makes these sensors highly reliable, they are not affected by vibrations and have a good resistance to environmental conditions such as electrical and electromagnetic disturbances.

The limit switch sensors can be mounted both on the front and rear head. (* for space reasons they can be mounted on cylinders from bore 40 and above).

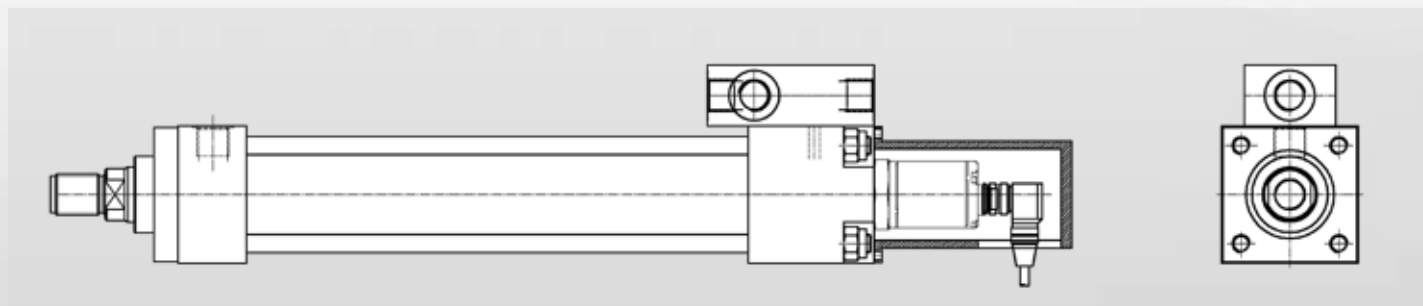
For further information please consult our Technical Department.



TRANSDUCER

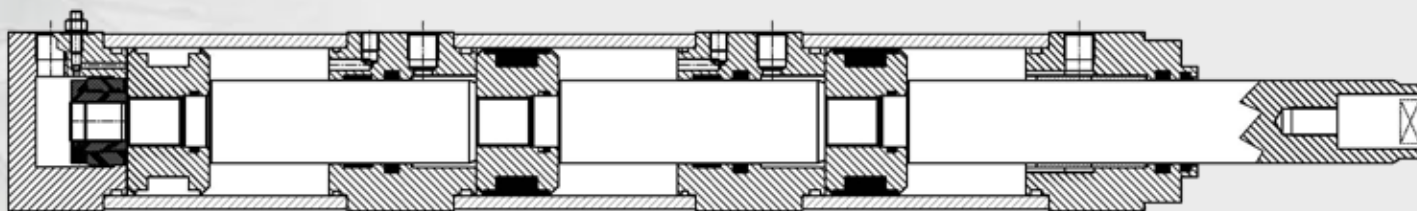
The servo-cylinder is designed for mounting transducers (potentiometric or magnetosonic), which are used to obtain very precise control positions.

For further information please consult our Technical Department.

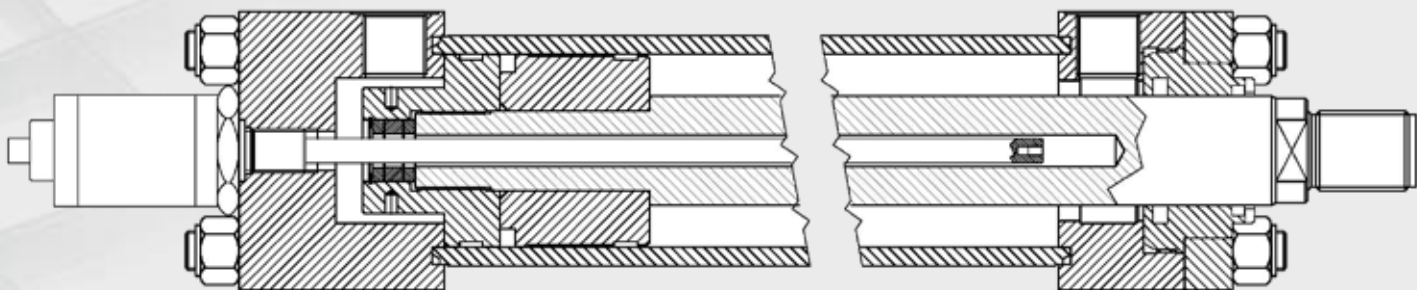


EXAMPLES OF SPECIAL CONSTRUCTIONS

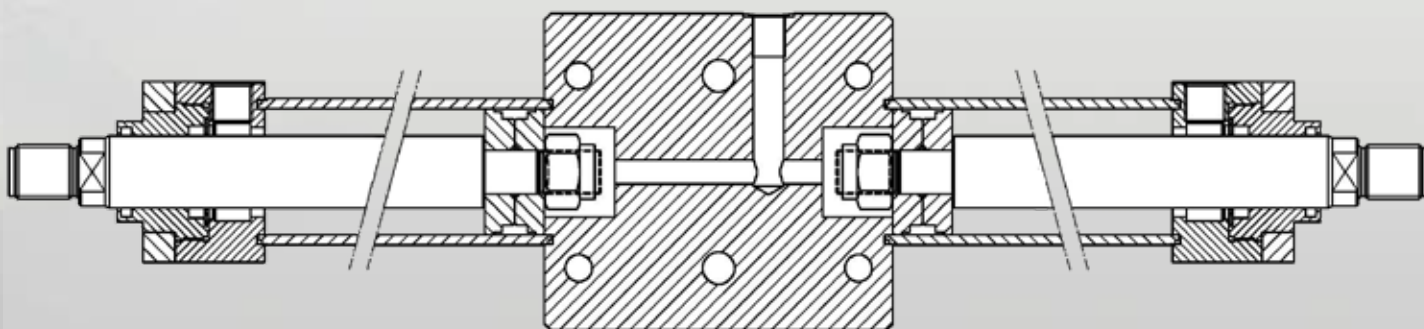
3-STAGE TANDEM CYLINDER, BORE $\varnothing 80$, ROD $\varnothing 45$, STROKE 60 mm. REAR CUSHIONING, WORKING PRESSURE 100 BAR PER STAGE.



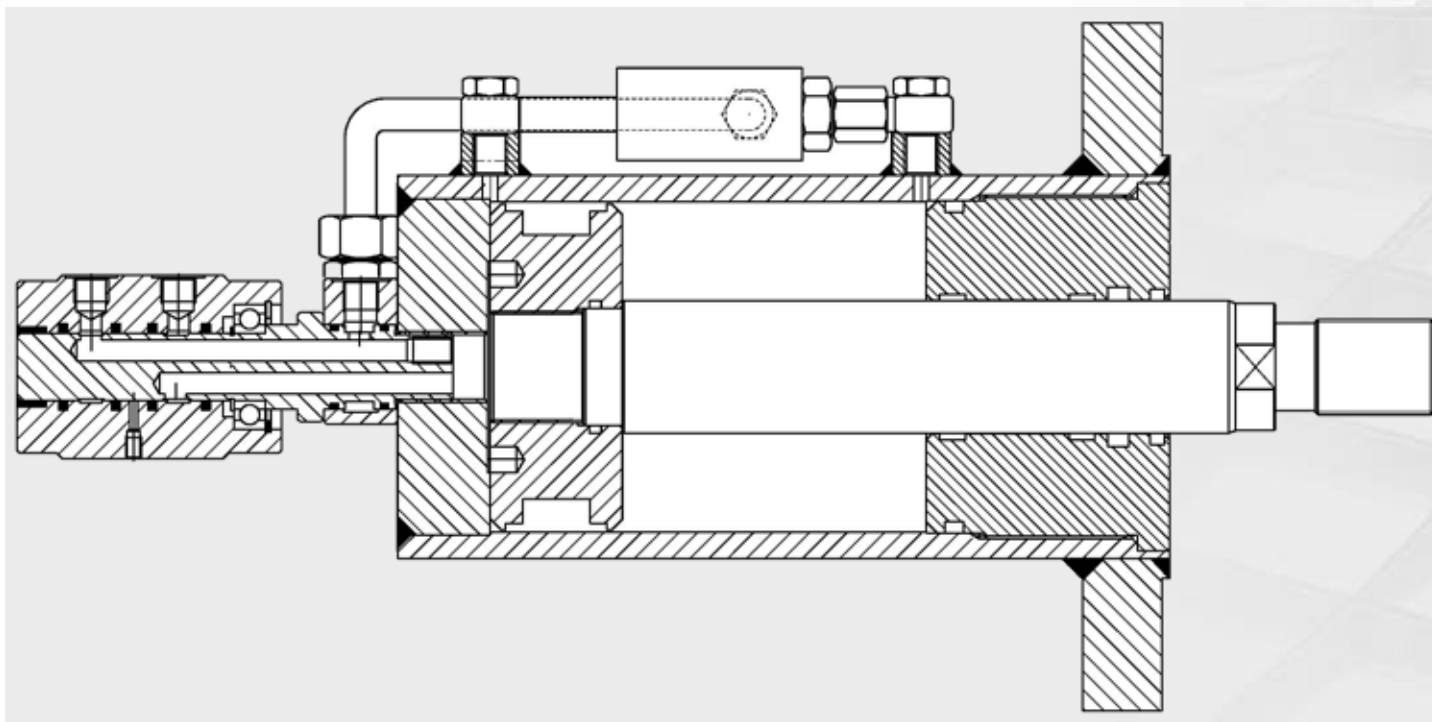
CYLINDER ISO 6020/2, BORE $\varnothing 80$, ROD $\varnothing 45$, STROKE 1100 mm. WITH BUILT-IN ANALOGUE-DIGITAL DETECTION SYSTEM, WORKING PRESSURE 150 BAR.



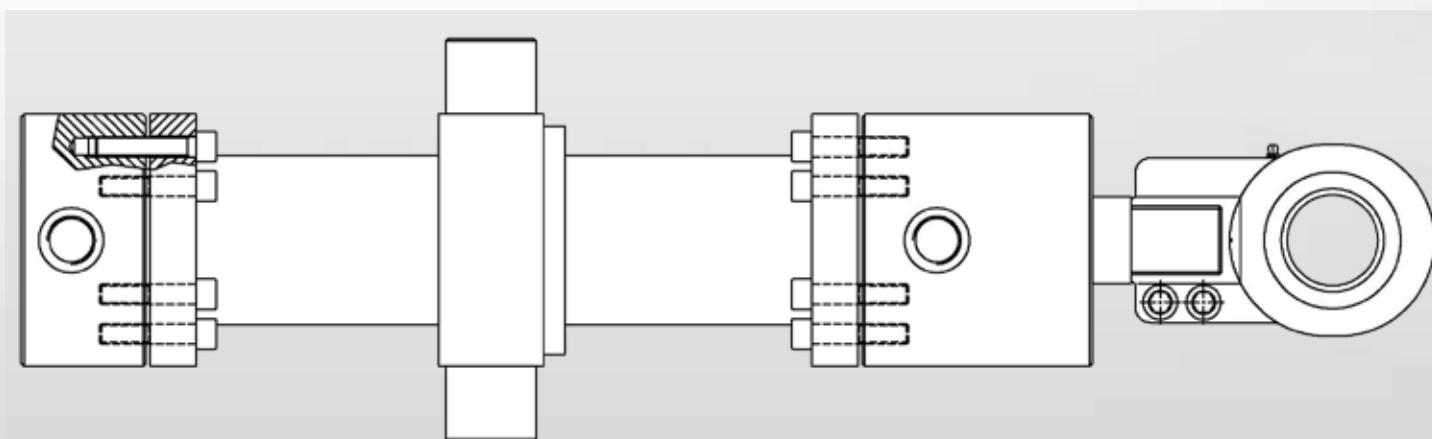
OPPOSED CYLINDER ON ISO 6020/2 BASE WITH DIFFERENTIATED STROKE, BORE $\varnothing 63$, ROD $\varnothing 36$, WORKING PRESSURE 130 BAR.



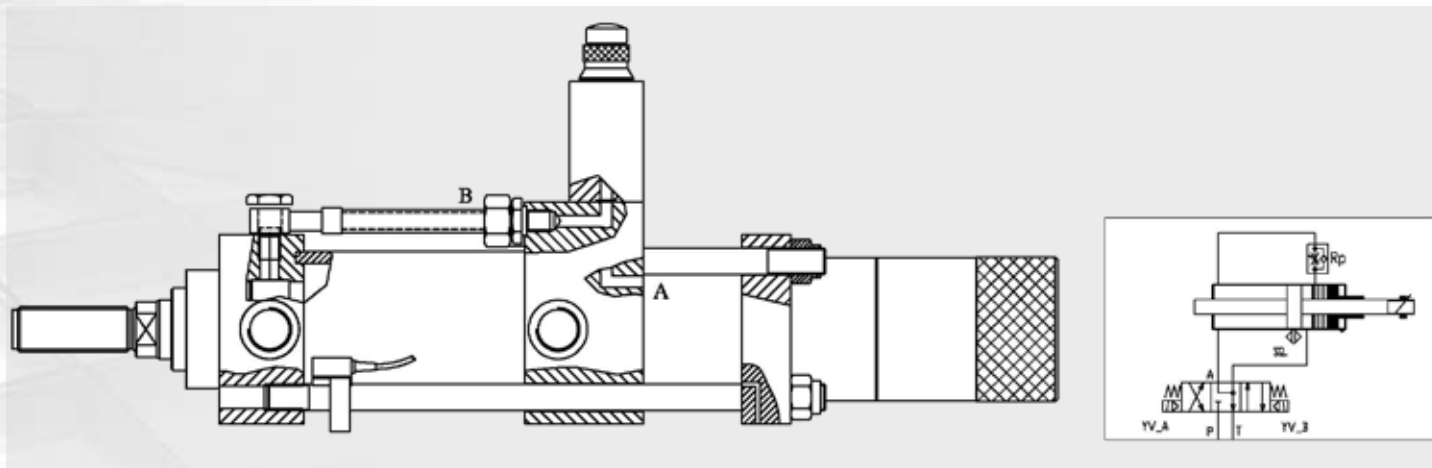
CYLINDER BORE $\varnothing 160$, ROD $\varnothing 70$, STROKE 115 mm. FRONT FLANGE WITH CHECK VALVE, SUBJECT TO 400 REV/MIN ROTATION, POWERED BY A ROTARY JOINT, WORKING PRESSURE 130 BAR.



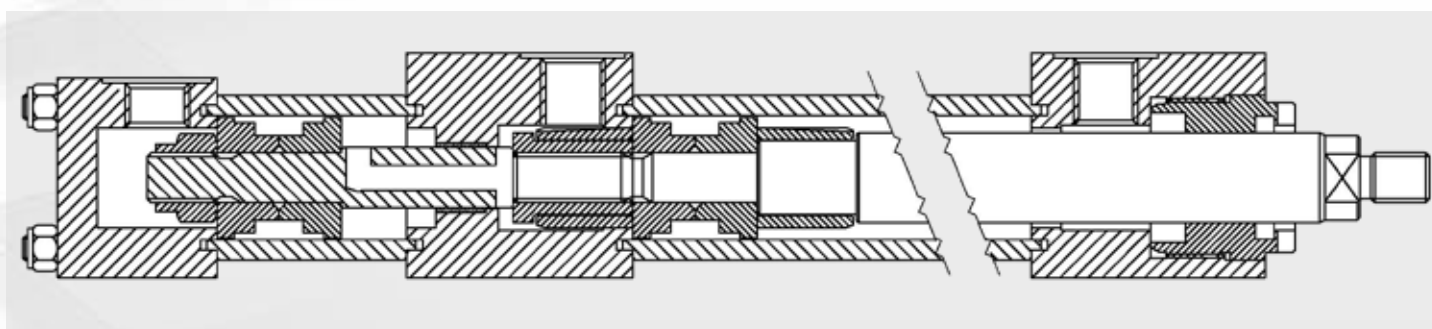
CYLINDER ON ISO 6022 BASE, BORE $\varnothing 100$, ROD $\varnothing 70$, STROKE 1650 mm, INTERMEDIATE PINS, WORKING PRESSURE 280 BAR.



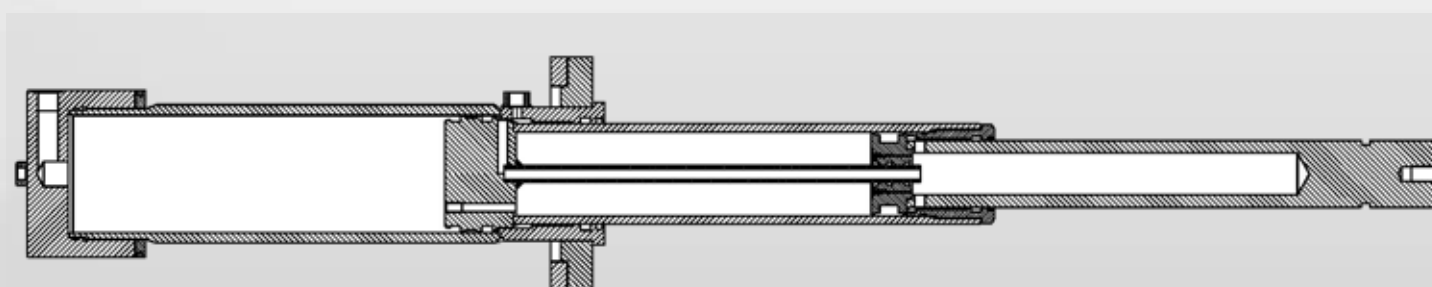
MAGNETIC CYLINDER ON ISO 6020/2 BASE, BORE $\varnothing 80$, ROD $\varnothing 36$, STROKE 100 mm. ADJUSTABLE, WITH INDEPENDENT HIGH-PRECISION BRAKE WITH ADJUSTABLE COUPLING, WORKING PRESSURE 100 BAR.



CYLINDER ON ISO 6020/2 BASE WITH DIFFERENTIATED STROKE, BORE $\varnothing 25$, ROD $\varnothing 18$, STROKES 20 + 250mm, WITH FRONT AND INTERMEDIATE CUSHIONING, WORKING PRESSURE 100 BAR.



DOUBLE ACTING TELESCOPIC CYLINDER, 1st BORE STAGE $\varnothing 140$, 2nd BORE STAGE $\varnothing 100$, ROD $\varnothing 80$, WORKING PRESSURE 180 BAR.



SHORT STROKE COMPACT CYLINDERS



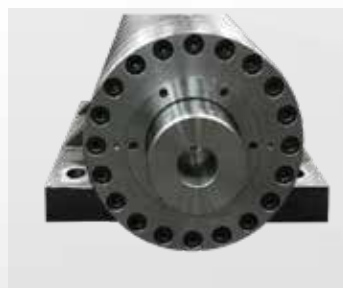
CYLINDERS ISO 6022



SPECIAL CUSTOM HYDRAULIC CYLINDERS



PRESSURE MULTIPLIER



HYDRAULIC CYLINDER WITH WELDED BOTTOM



WARRANTY AND LIMITS OF LIABILITY

The product has a 12 (twelve) month warranty from the date of shipment from the factory. The warranty is intended for material or workmanship defects that occur during:

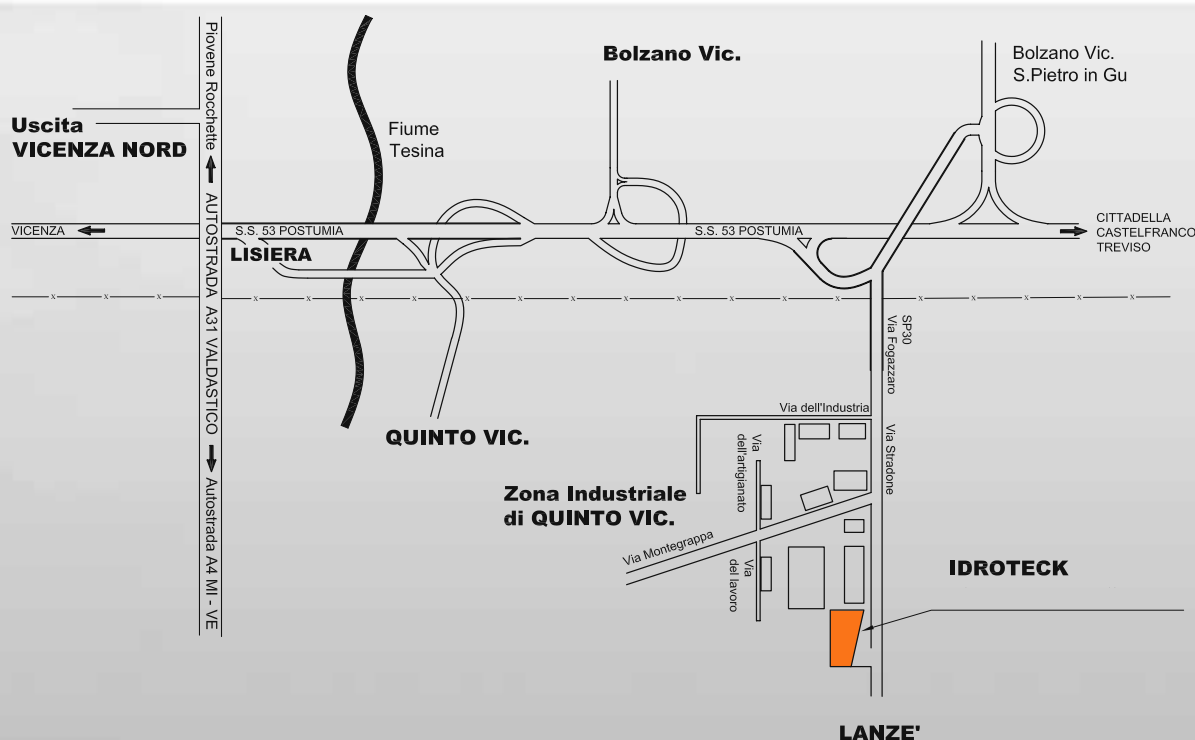
- Correct use
- Normal conditions of use
- Technically suitable installation

The warranty is limited to the repair or replacement, at IDROTECK Srl's discretion, of any item or part of it whose defect has been ascertained with the above-mentioned criteria. Any replacement will be made only with carriage forward. IDROTECK reserves the right to inspect the product at its choice, both at the purchaser's premises and at its own premises, requesting that the item be sent carriage paid. The above warranty does not extend to items damaged after shipment from the factory, nor to those modified or repaired by anyone not expressly authorised by IDROTECK Srl. There are no other forms of warranty than the one mentioned above.

Any description of the sold products, including the characteristics expressly requested by the purchaser, as well as those appearing in the catalogues and other material published by IDROTECK Srl for the sole purpose of identifying the product, does not create the explicit conformity guarantee of the product to the given description. The conformity of the purchased items to the use that the purchaser intends to make of them is the sole responsibility of the purchaser. In no case shall IDROTECK Srl be held liable for damages related to the improper use of parts it has sold, such as incorrect installation, use or operation. In any case, IDROTECK Srl shall not be liable for damages, accidents, or consequential damages unless they are within the limits of the consideration received for the items for which liability is proven. IDROTECK Srl reserves the right to discontinue, modify or revise the products described or their characteristics. All details are approximated and may vary depending on the installation. For any dispute, the competent court is Vicenza.

In line with the constant development of product improvement, IDROTECK Srl reserves the right to modify this catalogue and the technical specifications contained in it without prior notice.

The reproduction, even partial, of the texts and images contained herein may only occur with the express authorisation of IDROTECK Srl.





IDROTECK
COSTRUZIONI OLEODINAMICHE

IDROTECK s.r.l.

Via Stradone, 2/A - 36050 Quinto Vicentino (VI)
Tel. +39 0444 355000 - Fax +39 0444 355012
vendite@idroteck.eu
www.idroteck.eu

