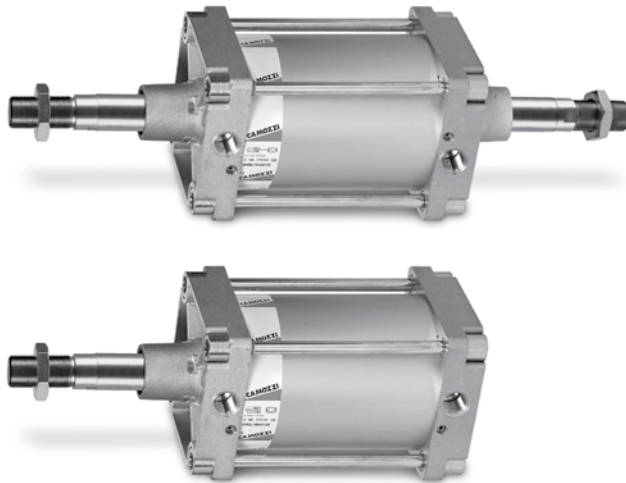


# Large Bore Tie-rod Cylinders, ISO 6431 Series 40

**EXPRESS DELIVERY AVAILABLE**

Double acting, cushioned, magnetic  
 ø 160 - 200 - 250 - 320 mm (DIN/ISO 6431)



- » In compliance with ISO 15552 standards and with the previous DIN/ISO 6431-VDMA 24562 standards
- » Adjustable pneumatic cushioning
- » Rolled stainless steel rod (Ø 160 - 200 mm)
- » Chrome plated steel rod (Ø 250 - 320 mm)

The cylinders Series 40 with diameters 160, 200, 250 have been designed so as to comply with the dimensions laid down in the DIN/ISO 6431 standards. A permanent magnet is mounted on the piston in these cylinders. The position of the cylinder is obtained by the magnetic proximity switches mounted on the cylinders.

This cylinder series is normally equipped with adjustable end-stroke cushioning. Moreover, to reduce the noise of the impact of the piston and end-caps, these cylinders are equipped with a mechanical cushioning.

## GENERAL DATA

<b>Type of construction</b>	with tie-rods
<b>Operation</b>	double-acting
<b>Materials</b>	end-caps = aluminium - other parts: see coding
<b>Mounting</b>	with tie-rods, front flange, rear flange, feet, centre trunnion, front and rear trunnion, swivel combination
<b>Strokes min - max</b>	10 - 2500 mm
<b>Operating temperature</b>	0°C - 80°C (with dry air - 20°C) (32 - 176°F, with dry air -4°F)
<b>Operating pressure</b>	1 - 10 bar
<b>Speed</b>	10 - 500 mm/sec (without load)
<b>Fluid</b>	filtered air, without lubrication. If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted.

**STANDARD STROKES FOR DOUBLE-ACTING CYLINDERS SERIES 40**

■ = Double-acting cylinders

MAXIMUM STROKE LENGTHS (mm)		
Series (and Ø)	Min-Max Stroke (Produced in USA)	Min-Max Stroke (Produced in Italy)
40, 41 (Ø 160-320)	10-1500 mm	10-2500 mm

Ø	25	50	75	80	100	125	150	160	200	250	300	320	400	500
160		■		■	■		■		■		■		■	■
200		■			■				■		■			
250		■			■				■		■			
320		■			■				■		■			

**CODING EXAMPLE**

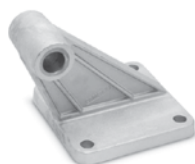
<b>40</b>	<b>M</b>	<b>2</b>	<b>L</b>	<b>160</b>	<b>A</b>	<b>0200</b>	
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<b>40</b>	SERIES
<b>M</b>	VERSION: M = standard, magnetic
<b>2</b>	OPERATION: 2 = double-acting (front and rear cushions) 3 = double-acting (no cushion) 4 = double-acting (rear cushions) 5 = double-acting (front cushion) 6 = double-acting (through-rod with front and rear cushions)
<b>L</b>	MATERIALS: L = see the general data on page 1/1.10.01 T = stainless steel AISI 420B tie-rods - stainless steel AISI 303 tie-rod nuts C = rolled stainless steel AISI 303 piston rod, stainless steel AISI 304 piston rod nut U = rolled stainless steel AISI 303 piston rod, stainless steel AISI 304 piston-rod nut, stainless steel AISI 420B tie-rods, stainless steel AISI 303 tie-rod nuts W = rolled stainless steel AISI 304 piston rod, stainless steel AISI 304 piston-rod nut, stainless steel AISI 420B tie-rods, stainless steel AISI 303 tie-rod nuts  Note: rod of cylinders with bore of 250 mm = C40 chrome plated steel.
<b>160</b>	BORE: 160 = 160 mm 200 = 200 mm 250 = 250 mm 320 = 320 mm
<b>A</b>	TYPE OF BRACKET: A = standard F = cylinder with centre trunnion
<b>0200</b>	STROKE see table
	= standard V = FKM rod seals W = all FKM seals, up to 140°C C = PU coated cylinder. Colour: Grey * ( _ _ _ ) = extended piston rod _ _ _ mm  Notes: the C version is available on request. For further details, contact our technical dept. The W and C versions are available for diameters 160 and 200 only. The V version is available for diameters 160, 200 and 250 only.

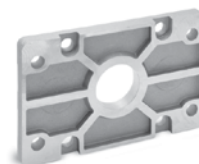
## ACCESSORIES FOR CYLINDERS SERIES 40



Clevis pin Mod. S

90° Swivel combination  
Mod. ZSCounter bracket for  
centre trunnion Mod. BF

Rod fork end Mod. G

Front and rear flange  
Mod. D-E

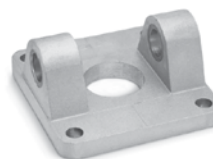
Centre trunnion Mod. F



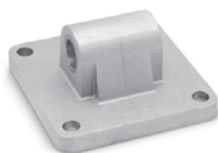
Foot mount Mod. B



Swivel ball joint Mod. GA

Female trunnion  
Mod. C-H

Piston rod nut Mod. U

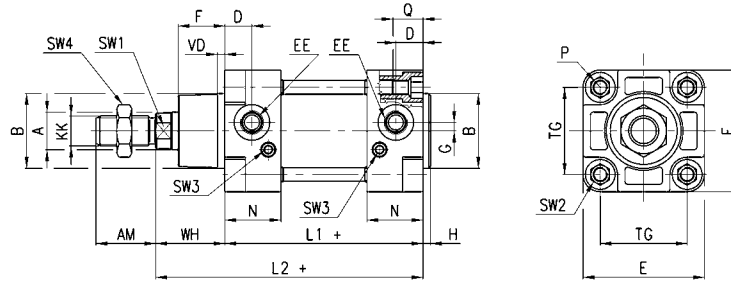
Rear trunnion, male  
Mod. LSwivel Combination  
Mod. I

All accessories are supplied separately except for Piston rod nut Mod. U

Cylinders Series 40



+ = add the stroke



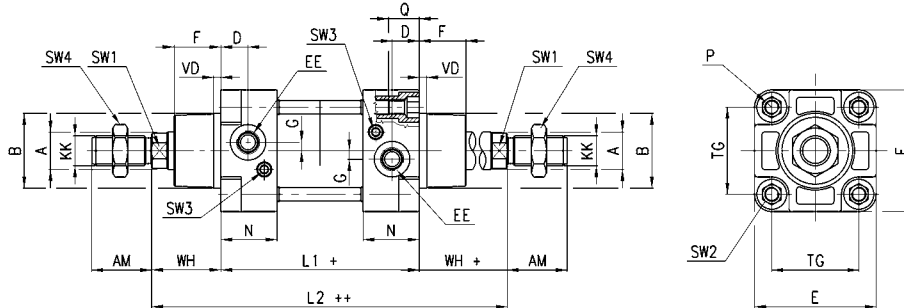
DIMENSIONS (mm)

Ø	ØA	KK	ØB	D	G	F	AM	H	EE	WH	L1+	L2+	VD	N	P	Q	TG	E	SW1	SW2	SW3	SW4	cushion strokes front/rear
160	40	M36x2	65	25	12	53.5	72	6	G3/4	80	180	260	6	45	M16	26	140	176	36	17	4	55	29 / 36
200	40	M36x2	75	25	12	63.5	72	6	G3/4	95	180	275	6	45	M16	26	175	216	36	17	4	55	44 / 42
250	50	M42x2	90	31	12	67	84	10	G1	105	200	305	6	60	M20	26	220	270	46	19	6		50 / 50
320	63	M48x2	110	31	12	83	96	10	G1	120	220	340	12	55.5	M24	28	270	340	55	-	-	75	56 / 56

Cylinders Series 40 - through-rod



+ = add the stroke  
++ = add the stroke twice



DIMENSIONS (mm)

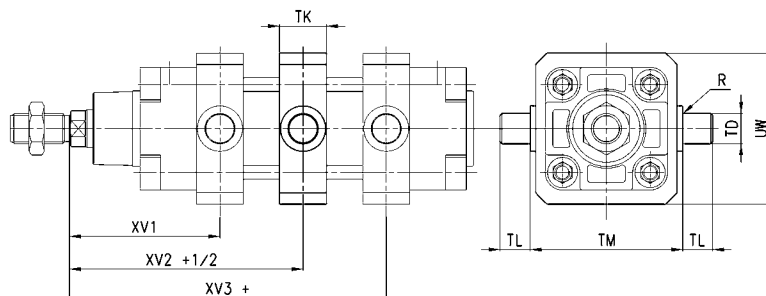
Ø	ØA	KK	ØB	D	G	F	AM	H	EE	WH	L1+	L2++	VD	N	P	Q	TG	E	SW1	SW2	SW3	SW4	cushion strokes front/rear
160	40	M36x2	65	25	12	53.5	72	6	G3/4	80	180	340	6	45	M16	26	140	176	36	17	4	55	29 / 36
200	40	M36x2	75	25	12	63.5	72	6	G3/4	95	180	370	6	45	M16	26	175	216	36	17	4	55	44 / 42
250	50	M42x2	90	31	12	67	84		G1	105	200	410	6	60	M20	26	220	270	46	19			50 / 50
320	63	M48x2	110	31	12	83	96	10	G1	120	220	460	12	55.5	M24	28	270	340	55	-	-	75	56 / 56

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### Cylinders Series 40 with centre trunnion Mod. F



+ = add the stroke



**DIMENSIONS (mm)**

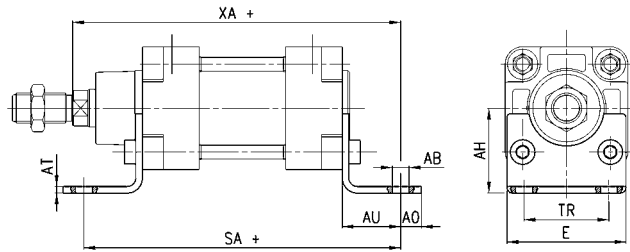
Ø	XV1	XV2+ 1/2	XV3+	TM	TK	TD	TL	UW	R
160	145	170	195	200	40	32	32	200	0,2
200	160	185	210	250	40	32	32	250	0,2
250	185	205	225	320	50	40	40	300	-
320	210,5	230	249,5	400	70	50	50	400	-

Foot mount Mod. B

Material: black-painted steel  
(cataphoresis)  
Supplied with:  
2x feet  
4x screws



+ = add the stroke

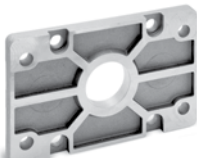


DIMENSIONS (mm)

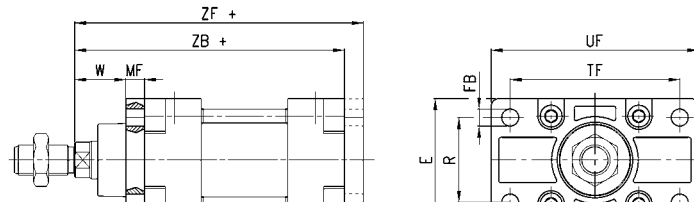
Mod.	∅	AT	SA +	XA+	TR	E	∅AB	AH	AO	AU
B-41-160	160	10	300	320	115	175	18	115	20	60
B-41-200	200	11	320	345	135	215	22	135	30	70
B-41-250	250	20	350	380	165	270	28	165	35	75
B-41-320	320	20	390	425	200	353	35	200	45	85

Front and rear flange Mod. D-E

Material: Aluminium.  
Supplied with:  
1x flange  
4x screws



+ = add the stroke



DIMENSIONS (mm)

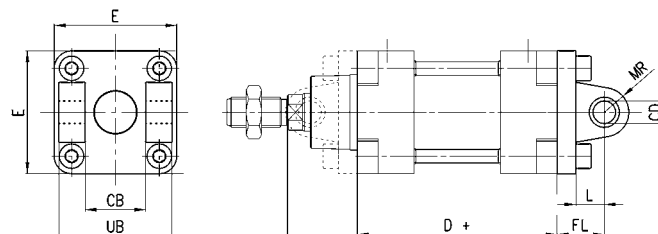
Mod.	∅	W	MF	ZB+	TF	R	UF	G1	∅FB	ZF +
D-E-41-160	160	60	20	260	230	115	276	175	18	280
D-E-41-200	200	70	25	275	270	135	312	215	22	300
D-E-41-250	250	80	25	305	330	165	390	240	26	330
D-E-41-320	320	90	30	340	400	200	470	334	33	370

Front and rear female trunnion Mod. C-H

Material: Aluminium.  
Supplied with:  
1x female trunnion  
4x screws



+ = add the stroke

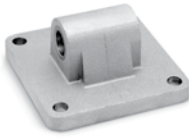


DIMENSIONS (mm)

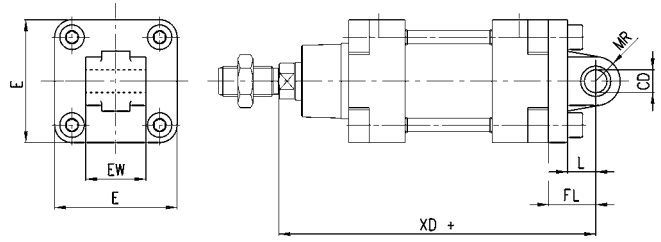
Mod.	∅	∅CD	L	FL	D+	XD+	MR	E	CB	UB
C-H-41-160	160	30	35	55	180	315	30	175	90	170
C-H-41-200	200	30	35	60	180	335	30	215	90	170
C-H-41-250	250	40	45	70	-	375	40	270	110	200
C-H-41-320	320	45	50	80	220	420	45	350	120	220

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**Rear male trunnion Mod. L**



Material: Aluminium.  
 Supplied with:  
 1x male trunnion  
 4x screws



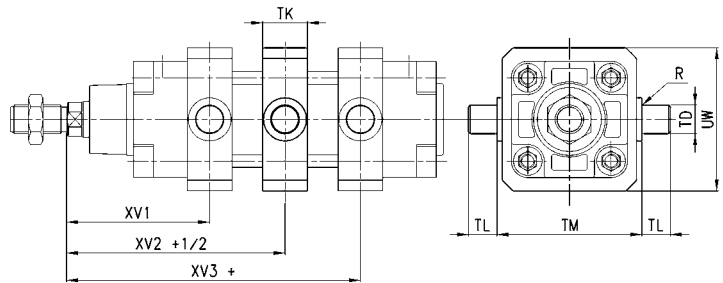
+ = add the stroke

DIMENSIONS (mm)								
Mod.	∅	∅CD	L	FL	XD+	MR	E	EW
L-41-160	160	30	35	55	315	30	175	90
L-41-200	200	30	35	60	335	30	215	90
L-41-250	250	40	45	70	375	40	270	110
L-41-320	320	40	50	80	375	45	270	110

**Centre trunnion Mod. F**



Material: white zinc-plated steel.  
 Supplied with:  
 1x centre trunnion  
 4x clamping elements  
 8x locking screws



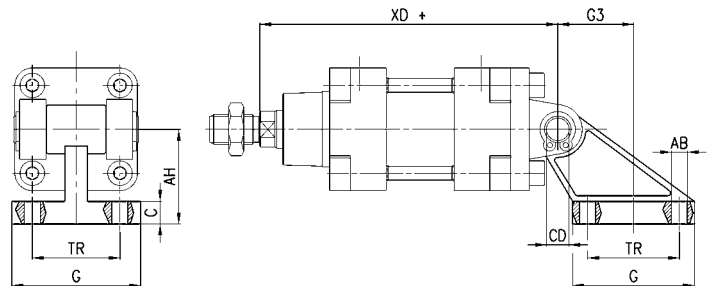
+ = add the stroke

DIMENSIONS (mm)										
Mod.	∅	XV 1	XV + 1/2	XV3 +	TM	TK	∅TD	TL	UW	R
F-160	160	145	170	195	200	40	32	32	200	0,2
F-200	200	160	185	210	250	40	32	32	250	0,2
F-250	250	185	205	225	320	50	40	40	300	-
F-320	320	210,5	230	249,5	400	70	50	50	400	-

**90° Swivel combination Mod. ZS\***



Material: Aluminium.  
 \*not according to standard  
 Supplied with:  
 1x 45° swivel combination



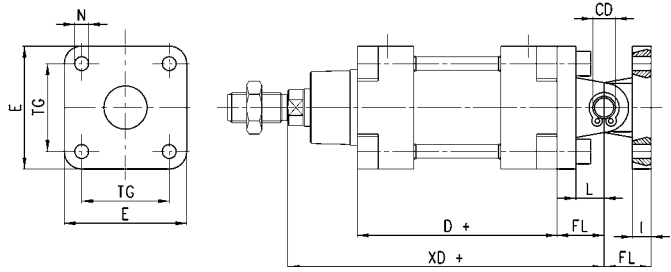
+ = add the stroke

DIMENSIONS (mm)									
Mod.	∅	TR	∅AB	AH	C	G	∅CD	XD +	G3
ZS-160	160	140	18	140	20	180	30	315	105
ZS-200	200	175	18	140	25	220	30	335	125

Swivel combination Mod. I (combination of C + L + S)



+ = add the stroke



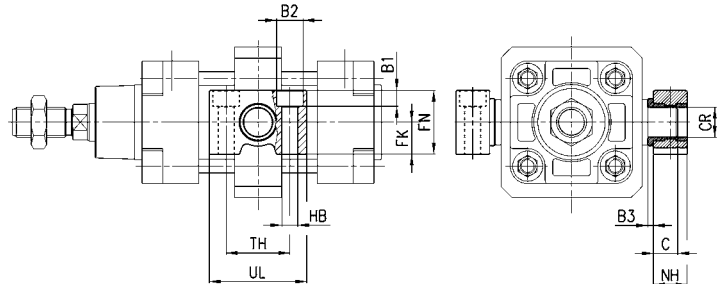
**DIMENSIONS (mm)**

Mod.	Ø	ØCD	L	FL	D	XD	TG	E	ØN	I
I-41-160	160	30	35	55	180	315	140	175	17	20
I-41-200	200	30	35	60	180	335	175	215	17	25

Counter bracket for centre trunnion Mod. BF



Material: Aluminium.  
 Supplied with:  
 2x supports

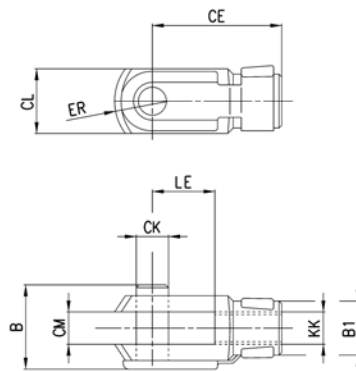


**DIMENSIONS (mm)**

Mod.	Ø	ØCR	NH	C	B3	TH	UL	FK	FN	B1	ØB2	ØHB
BF-160-200	160-200	32	35	17,5	4	60	92	30	60	16	26	18

Rod fork end Mod. G

ISO 8140.  
 Material: zinc-plated steel.



**DIMENSIONS (mm)**

Mod.	Ø	ØCK	LE	CM	CL	ER	CE	KK	B	ØB1
G-160-200	160-200	35	72	35	70	44	144	M36X2	92	60
G-250	250	40	84	40	85	-	168	M42x2	96	70
G-320	320	50	90	50	90	73	192	M48x2	120	80



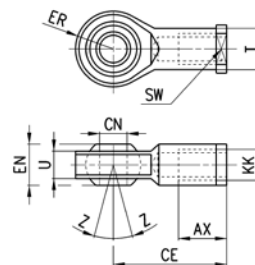
**EXPRESS DELIVERY AVAILABLE**



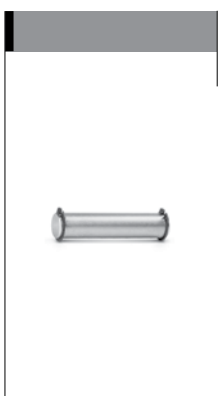
### Swivel ball joint Mod. GA

ISO 8139.

Material: zinc-plated steel.

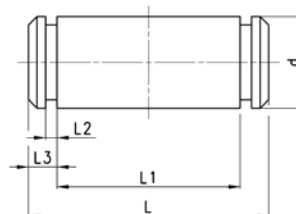


DIMENSIONS (mm)											
Mod.	Ø	ØCN	U	EN	ER	AX	CE	KK	ØT	Z	SW
GA-160-200	160-200	35	28	43	40	56	125	M36x2	46	6	50
GA-250	250	40	33	49	-	60	142	M42x2	55	-	-
GA-320	320	50	45	60	58,5	65	160	M48x2	65	12	65



### Clevis pin Mod. S

Supplied with:  
1x clevis pin (stainless steel 303)  
2x C-clips (plain carbon steel)



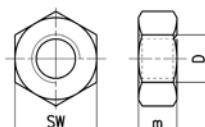
DIMENSIONS (mm)						
Mod.	Ø	d	L	L1	L2	L3
S-160-200	160-200	30	179	170,5	1,6	4,25
S-250	250	40	210	202	-	4
S-320	320	45	236	222	1,85	7



### Piston rod nut Mod. U

ISO 4035.

Material: zinc-plated steel.



DIMENSIONS (mm)				
Mod.	Ø	D	m	SW
U-160-200	160-200	M36x2	14	55
U-250	250	M42x2	16	65
U-320	320	M48x2	24	75