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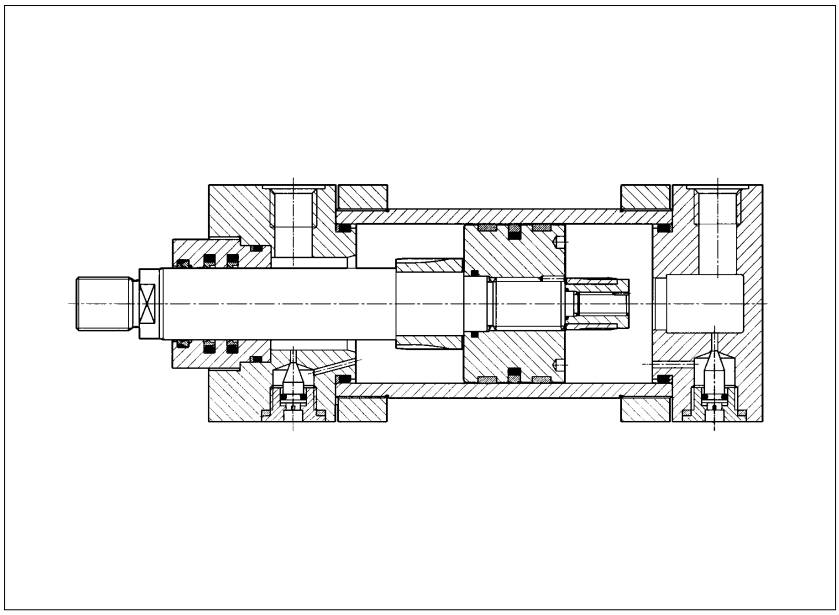
Atos spa
21018 Sesto Calende, Italy - Fax 0331 920005

Hydraulic cylinders series CC • standard round heads

ISO 6022, DIN 24333, AFNOR NFE 48-025, CETOP RP 73H standard
double acting - nominal pressure 250 bar - maximum pressure 320 bar



- **Eight bore diameters from 63 to 400 mm.**
- **Round heads with counterflanges.**
- **Strokes on request.**
- **According to ISO 6022 and DIN 24333 standard.**
- **Guides designed with abundant overload margin.**
- **Seals with seats up to ISO 7425.**

- Available options: air bleeds, adjustable cushioning devices.
- Also in version with built-in position transducer (see tab. 310).
- Rod attachments: see table B500.

1 MODEL CODE

CC P 200 / 140 / 140 ∗0500 – S 3 0 8 A 20

Cylinder series
CC=ISO 6022 and DIN 24333 standard
nominal pressure:250 bar
max. pressure:320 bar

Eventual transducer for servocylinders:
P= potentiometric
M= magnetosonic
W= inductive
Dimension and performance: see tab. B310

Bore diameter [mm]

Rod (rods) diameter [mm]
Report the second dimension only for double-rod cylinders.

Stroke [mm]
Max. stroke 5000 mm. For longer strokes consult our technical office.
For tolerances and further information see tab. B005.

Attachments - sect. 4

		ISO ref.	
A =	front flange	MF3	
B =	rear flange	MF4	∗
L =	mid-body trunnion	MT4	
S =	swivel attachment with eye	MP5	∗
X =	basic execution		
Z =	front tapped holes		

Other attachments, not included in ISO 6022, available on request:
E = feet
G = front body trunnion
H = rear body trunnion
Consult our technical office for their installation dimensions.

∗: Not available for double-rod versions.
In double-rod versions the codes of the attachments are relative to rod 1.

Cushioning:
0 = none
1 = rear only
2 = front only
3 = front and rear
For construction characteristics and performances see tabl. B005 and B015.

Spacer: **2** = 50 mm - **4** = 100 mm - **6** = 150 mm - **8** = 200 mm.
See note at sect. 2 for the dimensions recommended up to the stroke.
For further information see tab. B005

Seals:
1 = (NITRILE+PTFE and POLIURETHAN) low friction.
Speed: up to 0,5 m/s. For mineral oils and water-glycol
8 = (NITRILE+PTFE and POLIURETHAN) anti-friction, for speed up to 1 m/sec; for mineral oil, water-glycol and organic esters based fluids.
2 = (VITON+PTFE) anti-friction, for high fluid temperatures, for speed up to 1 m/sec; for mineral oil, water-glycol and phospate ester based fluids.
For other characteristics, see tab. B005.
Consult our technical office for other typologies and/or rod-draining.

Options: to report in alphabetical order
– ROD PROCESSING:
K = NIKROM= for 56÷110 mm diam. rods 350 h resistance in saline mist up to ISO 3768.For pressure >100 bar, consult our technical office
T = hardening and chrome plating
For other features see tab. B005
– FURTHER OPTIONS:
A = front air-bleed; opposite to the oil port
D = oversize oil port on the front head
L = rod side drain
M = front and rear flange type SAE 6000.
Nominal size: see dimension EE
W = rear air-bleed; opposite to the oil port
Y = oversize oil port on the rear head

Drawing number
Always indicate the drawing number of the label in case you require spare parts

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2 DIMENSIONS [mm] see drawing sect. 3 ,4

	Ø PISTON	63	80	100	125	160	200	250	320	400
	Ø ROD	45	56	70	90	110	140	180	220	280
	α, β	32°, 26°	35°, 20°	35°, 20°	35°, 20°	25°, 20°	25°, 20°	27°, 18°	-	-
	A	45	56	63	85	95	112	125	160	200
	AA	105	128	152	188	241	295	365	-	-
	B f9	75	90	110	132	160	200	250	320	400
	BG min	23	23	30	33	43	40	58	-	-
	CH	39	48	62	80	100	128	-	-	-
	CX H7	40	50	63	80	100	125	160	200	250
	D	36	36	42	42	52	52	58	69	69
	E_{max}	124	148	175	214	270	330	412	510	-
	EE	3/4"	3/4"	1"	1"	1 1/4"	1 1/4"	1 1/2"	2"	2"
	EE1	1"	1"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	2"	-	-
	EP	35	40	52	66	84	102	130	162	192
	EX H12	40	50	63	80	100	125	160	200	250
	FB	13,5	17,5	22	22	26	33	39	45	n° 12 holes 45
	FC	150	180	212	250	315	385	475	600	720
	KK	M33x2	M42x2	M48x2	M64x3	M80x3	M100x3	M125x4	M160x4	M200x4
	Lf (indicative)	40	45	55	60	65	65	90	100	-
	LT_{min}	50	63	71	90	112	160	200	250	320
	MS_{max}	50	63	71	90	112	160	200	250	320
	NF	28	32	36	40	45	56	63	80	-
	RT	n°12 holes M10	n°12 holes M12	n°12 holes M14	n°12 holes M16	n°12 holes M18	n°12 holes M22	n°12 holes M27	-	-
	TD	40	50	63	80	100	125	160	200	250
	TL	32	40	50	63	80	100	125	160	200
	TM	125	150	180	224	280	335	425	530	630
	UC	175	220	260	295	370	460	540	675	-
	UM	189	230	280	350	440	535	675	850	1030
	UV_{max}	124	150	180	219	280	333	412	510	-
(1)	minimum stroke for version with attachments A,B,S,X	70	20	25	50	50	70	80	120	-
	VD min	4	4	5	5	5	5	8	8	10
	VE	32	36	41	45	50	61	71	88	110
	WC	25	28	32	36	40	45	50	56	63
	WF	53	60	68	76	85	101	113	136	163
(1)	minimum stroke for version with L attachment	185	150	160	245	260	390	460	560	-
	XV_{min}	285	290	320	410	465	590	690	820	-
	XV_{max}	100+ stroke	140+ stroke	160+ stroke	165+ stroke	205+ stroke	200+ stroke	230+ stroke	260+ stroke	-
	Y	112	120	134	153	185	220	260	310	-

(1) For strokes shorter than that one indicated on table, consult our technical office.

	PJ	133	155	171	205	235	278	325	350	-
	ZB	274	305	340	396	467	550	652	764	775
	ZP	298	332	371	430	505	596	703	830	855
	XO	348	395	442	520	617	756	903	1080	1075

For not indicated dimensions, consult our technical office

The dimensions of the cylinder and relative attachments are reported at the side (sect. 4).

- For bore diameter 50 mm consult our technical office.
- Other rod diameters are available on request. Consult our technical office.
- Dimension for double-rod executions: consult our technical office.

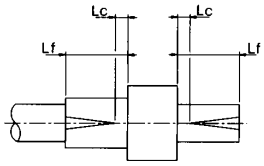
Note:

- **CH** - milling for key
- **EE** - il ports and drain are threaded according to BSP standards; with counterbore dimension **D**, according to DIN 3852-2 (big size series).
  When oversize oil port are provided, the dimension **EE** becomes **EE1**.
- **SAE FLANGES (opt. "M")** pre-arrangements for SAE flanges can be provided according to ISO 6162 with nominal dimension EE.

- **XV** - For L-attachment. The XV value must be included between **XV min**. and **XV max**. and must always be reported in the model code. For execution with L-attachment, if the standard stroke is shorter than the min. value reported in the table, proper spacers are inserted and then it is necessary to take into account the complessive dimensions.
- **SPACERS**: For strokes longer than 1000 mm proper spacers (also for shorter strokes, on request) are designed to increase the rod and bore guide, protecting it from overloads and easy wear. Spacers can be omitted for cylinder working retracted.
  The table below shows the recommended dimensions depending on the stroke: for strokes longer than the ones shown in table, consult our technical office.

strokes [mm]	1001 ÷ 1500	1501 ÷ 2000	2001 ÷ 2500	2501 ÷ 3000
spacer code	**2**	**4**	**6**	**8**
length [mm]	50	100	150	200

- **Lf** - cushioning operates a progressive damping action and are adjustable with proper screws, Lf is the total cushioning length.
  Lc= (about 8÷10 mm) is the distance, measured starting from the cylinder bottom out, where the progressive cushioning action ends (see figure):



- Consult also tab. B005 and B015 to check the kinetic energy table to damp, depending on bore.
- Inductive stroke sensors available on request. Consult our technical office.
- In the cushioned CC with bore diameter > 160 mm, the foreward heads are provided with an additional oil port (1/2" BSP) directly connected to the cushioning chamber; in order to limit the overpressures during the cushioning stroke, we recommend to use this additional port for the connection in line, close to the cylinder, of a pressure relief valve (maximum pressure 350 bar).

To obtain the real total dimensions add the values on the side to the stroke-end values and to the eventual spacers(see drawings of sect. 3 and 4).

N.B.: - for strokes, consider the following tolerances:
- 0 + 1,2 mm for strokes up to 1000 mm
- 0 + 2,5 mm for strokes longer than 1000 mm

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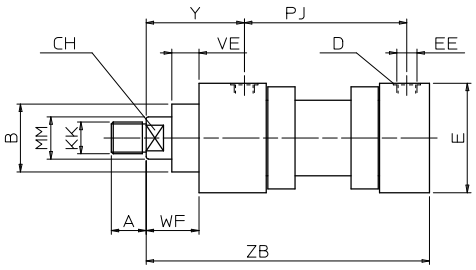
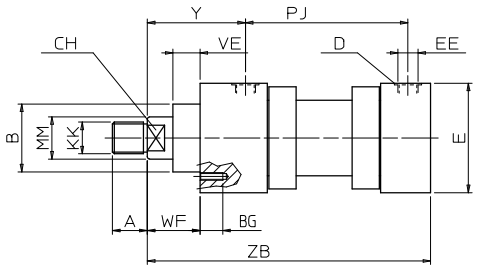
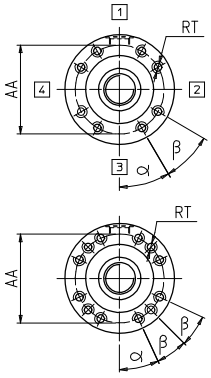
3 CC BASIC CONFIGURATION - dimensions in table 2



Basic configuration: X
Cushioning adjustment on side 3

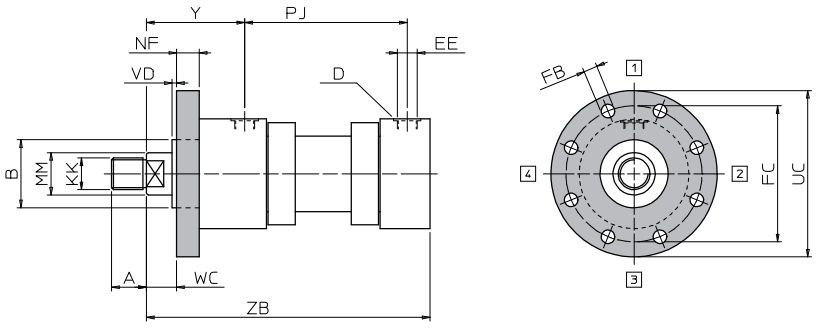


Front tapped holes: Z

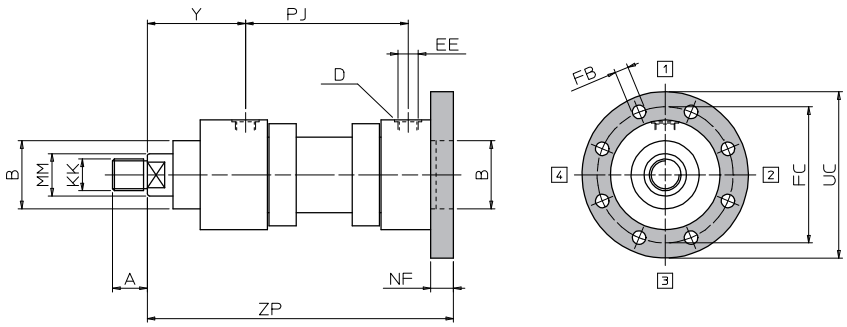


Diameters ø 160÷250

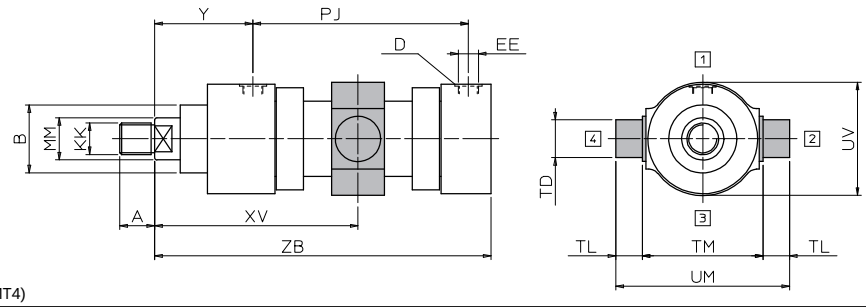
4 ATTACHMENTS - dimension in table 2



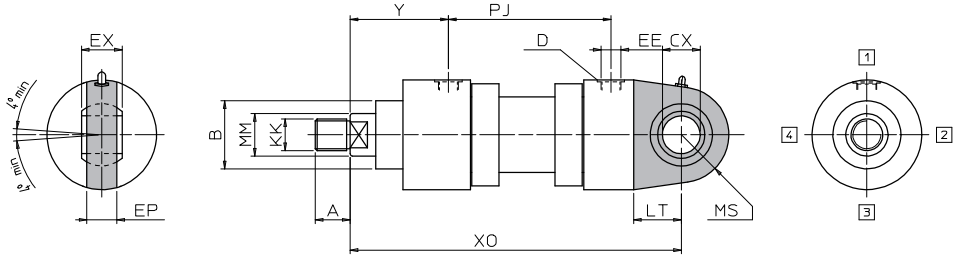
Front flange attachment: A (ISO MF3)



Rear flange attachment: B (ISO MF4)



Mid-body trunnion: L (ISO MT4)



Swivel attachment with eye: S (ISO MP6)

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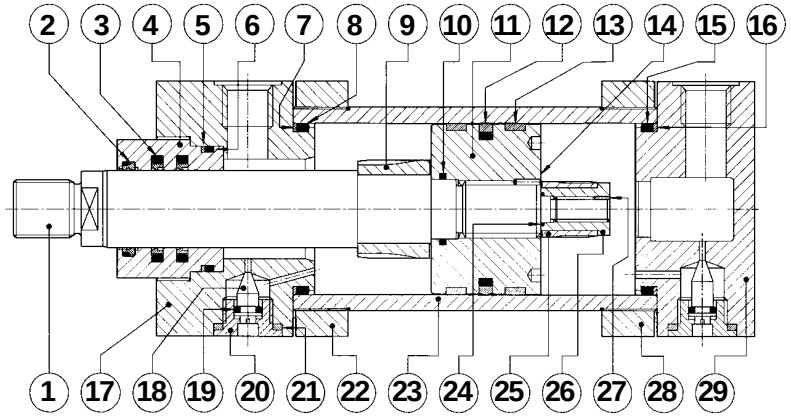
5 MASSES OF CC CYLINDER (in kg ± 5% tolerance)

		BASIC MASSES for single rod x-execution		ADDITIVE MASSES depending on attachment and options					
Ø Bore [mm]	**Ø Rod** [mm]	for 100 mm stroke	each 100 mm more	attachment A, B	attachment L	attachment S	front cushioning	rear cushioning	25 mm spacer
63	**45**	20,1	2,6	4,2	4,8	4,1	0,3	1	1
80	**56**	35,5	4,1	7,4	7,5	6,3	0,5	1	1,65
100	**70**	58	6,5	11,4	12,6	10,3	0,8	1,5	2,3
125	**90**	100	10,9	16,1	22	19,6	1,2	2	4,3
160	**110**	189	17,1	29	40,3	37,8	1,7	3	6,3
200	**140**	335	27,2	56	64	82	2,5	5	11

For double executions and for Ø higher than 200, consult our technical office.

6 CC TYPICAL SECTION WITH FRONT AND REAR CUSHIONING



POS.	DESCRIPTION	MATERIAL	POS.	DESCRIPTION	MATERIAL	POS.	DESCRIPTION	MATERIAL
1	Rod	Chrome-plated steel	11	Piston	Steel	21	Seal	Steel and nitrile rubber
2	Wiper	Nitrile rubber PTFE	12	Piston seal	Nitrile rubber and PTFE	22	Counter flange	Steel
3	Rod seal	Nitrile rubber PTFE	13	Low-friction seal	PTFE	23	Cylinder housing	Steel
4	Rod guide ring	Cast iron or bronze	14	Screw stop pin	steel	24	“O” ring seal	Nitrile rubber
5	Anti-extrusion	PTFE	15	“O” ring seal	Nitrile rubber	25	Rear cushioning piston	Hardened steel
6	“O” ring seal	Nitrile rubber	16	Anti-extrusion	PTFE	26	Piston locking nut	Steel
7	Anti-extrusion	PTFE	17	Forward cylinder head	Steel	27	Screw stop pin	Steel
8	“O” ring seal	Nitrile rubber	18	Metering rod	Steel	28	Counter flange	Steel
9	Forward cushioning piston	Hardened steel	19	“O” ring seal	Nitrile rubber	29	Rear cylinder head	Steel
10	“O” ring seal	Nitrile rubber	20	Screw stop plug	Steel			

7 MODEL CODE FOR SPARE KIT OF SEALS

SP – G 8 – CC – 200 / 140/140 20

- **SP** — Spare kit of seals
- **G** — Type of seals
- **8** — Cylinder series
- **CC** — Cylinder series
- **200** — Piston diameter [mm]
- **140/140** — Rod (rods) diameter [mm]
  Indicate the second dimension for double rod cylinders only
- **20** — Drawing number
  Always indicate the drawing number of the label

Note: usually including the low-friction seal pos. 13.