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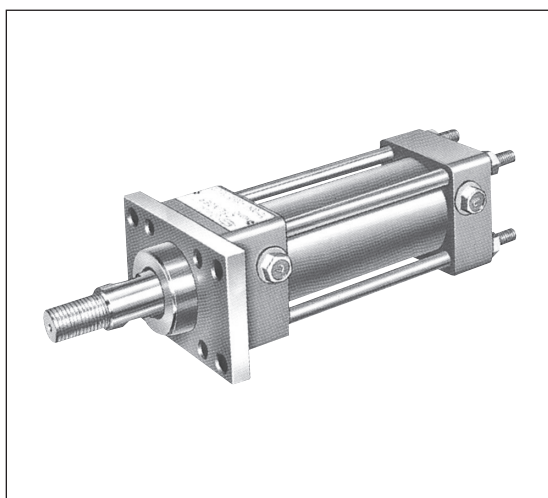
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HYDRAULIC CYLINDER

HYDRAULIC CYLINDER FOR 7 MPa (HC1-X*) $\phi 40$ to $\phi 100$



Features

1. A wide variety of mount types can be configured by assembling the relevant accessories on the base model.
 2. The cylinder is highly wear resistant since the cylinder tube internal face is finished by precision honing and the piston rod is coated by hard chromium plating.
 3. Highly durable Y-shape packing is adopted for the piston rod.
- The maximum available stroke is 1600 mm.

Specifications

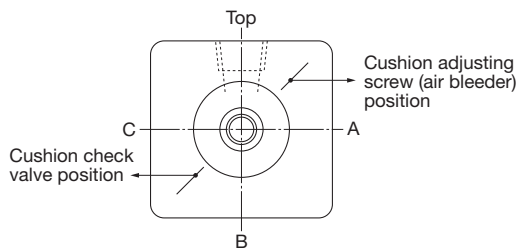
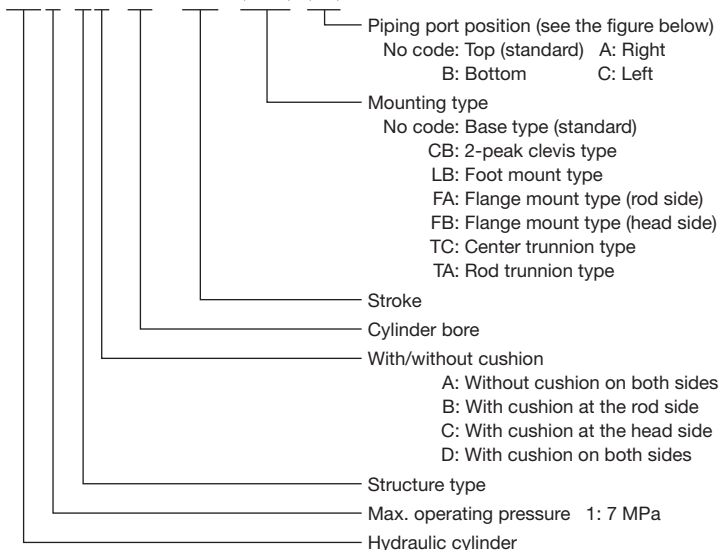
Max. operating pressure	7 MPa	
Min. working pressure	Head side	0.3 MPa or lower
	Rod side	0.4 MPa or lower
Operating speed range	8 to 300 mm/s	
Operating temperature range	-15 to 80 °C	

Permissible stroke error

Stroke	100 or less	100 to 250	250 to 630	630 to 1,000	1,000 to 1,600
Permissible error	+0.8 0	+1.0 0	+1.25 0	+1.4 0	+1.6 0

Description of the model designation

HC1-XD-40×100-(FA) (A)



Piping port positions

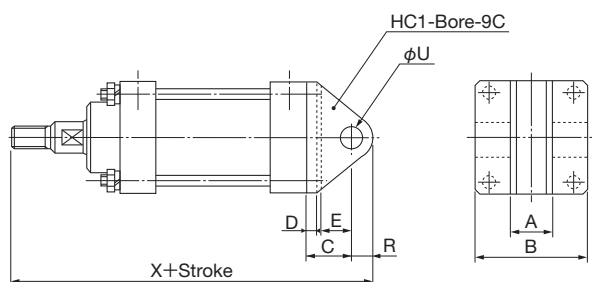
NOTE 1: The cushion adjusting screw position and cushion check valve position are interchangeable.

NOTE 2: The piping ports, cushion adjusting screw and cushion check valve positions are as shown in the figure above.

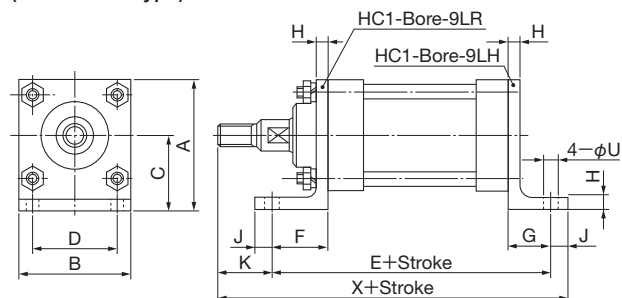
■ Thrust obtainable at each operating pressure (Theoretical value)

Cylinder bore (mm)	Cylinder cross sectional area (cm ²)	Rod diameter (mm)	Rod cross sectional area (cm ²)	Pressure receiving area (cm ²)		Obtainable thrust at each operating pressure (kgf)			
						2MPa	3.5MPa	5MPa	7MPa
40	12.6	20	3.1	Head side	12.6	252	441	630	882
				Rod side	9.5	190	333	475	665
50	19.6	25	4.9	Head side	19.6	392	686	980	1372
				Rod side	14.7	294	515	735	1029
63	31.2	31.5	7.8	Head side	31.2	624	1092	1560	2184
				Rod side	23.4	468	819	1170	1638
80	50.3	40	12.6	Head side	50.3	1006	1761	2515	3521
				Rod side	37.7	754	1320	1885	2639
100	78.5	50	19.6	Head side	78.5	1570	2748	3925	5495
				Rod side	58.9	1178	2062	2945	4123

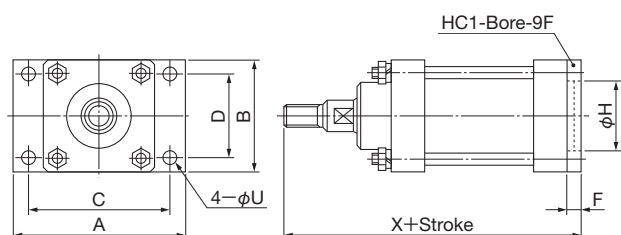
CB (2-peak clevis type)



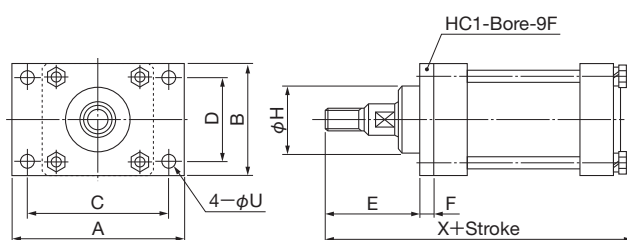
LB (Foot mount type)



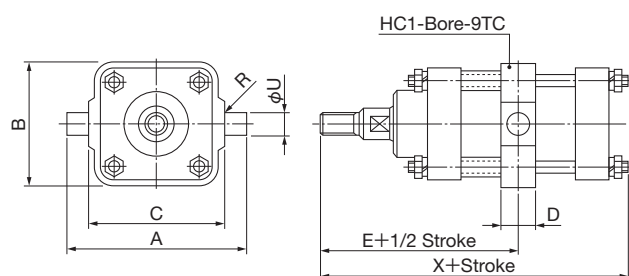
FB (Head side flange mount type)



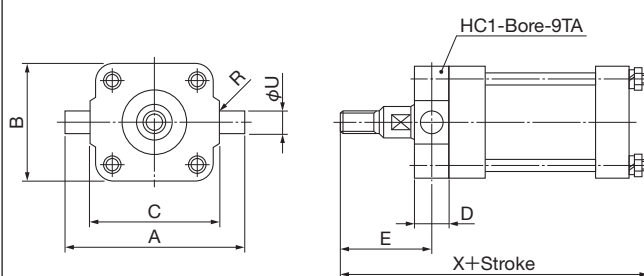
FA (Rod side flange mount type)



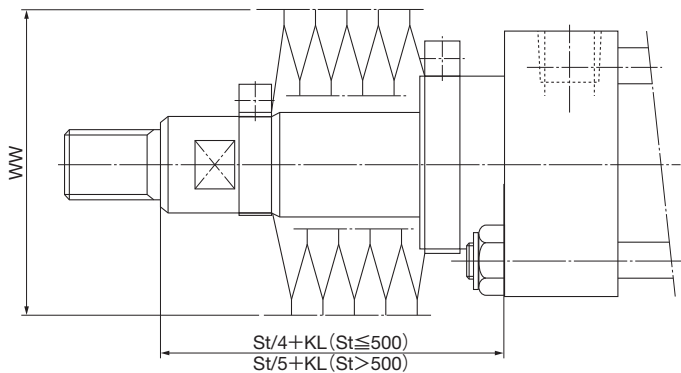
TC (Center trunnion type)



TA (Rod trunnion type)



Dustproof cover mounting dimensions



■ Description of the model designation

HC1-J*-*X*-**

_____ With dustproof cover

Note: If a calculated value includes a decimal fraction, round up the result to an integer. For the ta type, please consult us since special calculation is necessary to obtain the dimension.

(Unit: mm)

Model Symbol \ Bore		40	50	63	80	100
Base type	A	60	75	90	114	130
	B	44	55	65	84	100
	C	11	16	18.5	22	30
	D	25	30	35	40	55
	E	M16×1.5	M20×1.5	M24×2	M30×2	M42×3
	ℓ	3	3	4	4	6
	F	20	25	31.5	40	50
	G	17	21	24	32	41
	d(h7)	20	24	30	38	48
	H(h9)	40	50	60	70	80
	J	M8×1.25	M10×1.5	M12×1.75	M14×2	M16×2
	K	24	26	28	29	31
	L	22	26	28	30	33
	M	33	38	45	48	50
	N	26	28	32	40	40
	P	Rc¼	Rc¾	Rc½	Rc¾	Rc¾
	Q	16	19	22	23	26
	S	54	62	76	88	92
	T	13	14	16	20	20
	V	36	46	52	67	75
	W	37	45	52	68	76
	X	200	229	266	298	327
R	9	10	10	14	14	
u	12	13	15	19	19	
Y	M8×1.25	M8×1.25	M8×1.25	M12×1.75	M12×1.75	
Z	M6×1	M6×1	M6×1	M6×1	M6×1	
CB type	A	20	28	32	38	50
	B	60	75	90	114	130
	C	38	42	50	60	75
	D	12	14	16	18	20
	E	23	25	30	35	45
	R	20	22	25	30	40
	u(H9)	16	18	20	25	35
X	242	274	319	365	416	
LB type	A	80	97.5	115	142	160
	B	60	75	90	114	130
	C	50	60	70	85	95
	D	44	55	65	84	100
	E	179	204	241	272	296
	F	38	44	51	56	66
	G	28	32	37	40	48

Model \ Symbol		Bore	40	50	63	80	100
LB type	H	10	12	14	14	16	
	J	10	11	13	15	17	
	K	33	38	40	43	53	
	u	9	11	13	15	17	
	X	222	253	294	330	366	
FB type	A	95	117	142	175	195	
	B	60	75	90	114	130	
	C	77	97	116	145	165	
	D	44	55	65	84	100	
	F	10	12	14	16	18	
	H	40	50	60	70	80	
	u	9	11	13	15	17	
	X	194	222	258	291	319	
	FA type	A	95	117	142	175	195
B		60	75	90	114	130	
C		77	97	116	145	165	
D		44	55	65	84	100	
E		61	70	77	83	101	
F		10	12	14	16	18	
H		40	50	60	70	80	
u		9	11	13	15	17	
X		206	236	274	305	335	
TC type	A	109	135	160	180	225	
	B	67	81	94	116	141	
	C	69	85	98	118	145	
	D	30	38	44	48	58	
	E	131	151	174	191	215	
	R	2	2.5	2.5	2.5	3	
	u(e8)	20	25	31.5	31.5	40	
	X	196	224	260	293	321	
TA type	A	109	135	160	180	225	
	B	60	75	90	114	130	
	C	69	85	98	118	145	
	D	22	28	34	34	44	
	E	60	68	74	82	97	
	R	2	2.5	2.5	2.5	3	
	u(e8)	20	25	31.5	31.5	40	
	X	196	224	260	293	321	
Dustproof Cover	WW	70	80	90	100	110	
	KL	65	72	74	81	83	

Accessories

(Unit: mm)

Knuckle bracket

HC-A1-*

Bracket pin

HC-C1-*

Knuckle

HC-B2-*

Locknut

HC-N1-*

Bore		40	50	63	80	100
Knuckle bracket	A	44	55	65	84	100
	B	60	75	90	114	130
	C	19	27	30	36	48
	D	9	11	13	15	17
	E	12	14	16	20	24
	F	22	24	27	35	50

Bore		40	50	63	80	100
Knuckle bracket	G	37	41	46	60	80
	H	57	63	71	90	120
	J	40	50	60	70	80
	K	19	23	28	31	34
	R	20	22	25	30	40
	u (H8)	16	18	20	25	35
	Used bolts	M8x25	M10x30	M12x35	M14x35	M16x40

Bore		40	50	63	80	100
Bracket pin	A	78	95	112	140	160
	B	70	86	102	128	148
	C (f8)	16	18	20	25	35
	D	2.5	2.5	2.5	3	4
	E	4	4.5	5	6	6
Knuckle	A	75	80	85	105	140
	B	60	63	67	85	113
	C	16	17	20	25	32
	D	28	32	38	46	56
	d (H8)	13	16	16	22	30
	E	M16x1.5	M20x1.5	M24x2	M30x2	M42x3
	F	28	33	38	43	60
	H	22	24	27	32	41
	K	5	5	8	10	14
	L (F8)	20	24	30	38	48
	M	16.2	20.3	24.4	30.5	43
	ℓ	4	4	5	5	7
Locknut	A	M16x1.5	M20x1.5	M24x2	M30x2	M42x3
	B	24	30	36	46	65
	C (Approx.)	27.7	34.6	41.6	53.1	75
	D	10	12	14	18	25

Internal construction drawing and parts list

No.	Part name	No.	Part name	No.	Part name
1	Cylinder tube	6	Piston rod	11	Washer
2	Head cover	7	Piston	12	Setscrew
3	Rod cover	8	Cushion ring	13	O-ring
4	Rod seal	9	Tie rod	14	Piston seal
5	Scraper	10	Hex. nut	15	Hex. nut
				16	Cushion valve
				17	O-ring
				18	Steel ball
				19	Spring
				20	Seal washer
				21	Check valve
				22	Air bleeding screw
				23	Steel ball

Packing, o-ring and seal washer list

No.	Location where used	Cylinder bore	40	50	63	80	100
④	Rod seal		SKY-20	SKY-25	SKY-31.5	SKY-40	SKY-50
			1	←	←	←	←
⑤	Scraper		SDR-20	SDR-25	SDR-31.5	SDR-40	SDR-50
			1	←	←	←	←
⑬	O-ring at cylinder tube		JIS B 2401-G40	JIS B 2401-G45	(Special) JIS B 2401-G58	JIS B 2401-G75	JIS B 2401-G95
			2	←	←	←	←
⑭	Piston seal		SKY-30	SKY-40	SKY-53	SKY-71	SKY-85
			2	←	←	←	←
⑰	O-ring at cushion valve		JIS B 2401-P3	←	←	JIS B 2401-P6	←
			*	←	←	←	←
⑳	Seal washer at check		W8	←	←	W12	←
			*	←	←	←	←

NOTE: *: 2 pcs. for a cylinder with a cushion at both sides, 1 pc. for a cylinder with a cushion at one side, and not used for cylinders without cushions.

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