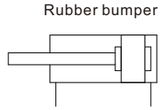
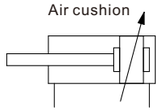
CG1 Series Mini Cylinder









Ordering Code

CG1 Series Mini Cylinder

CDG1 | B | N | 20 | - | 100 | □

- CDG1: Nil: Standard; D: With auto switch
- B: Mounting type
  - B: Basic (Without trunnion mounting female thread)
  - Z*1): Basic (With trunnion mounting female thread)
  - L: Axial foot bracket
  - F: Rod flange
  - G: Head flange
  - U*1): Rod trunnion
  - T*1): Head trunnion
  - D: Clevis
- N: Type — N: Rubber bumper; A: Air cushion
- 20: Bore
- 100: Stroke
- □: Rod end thread — Nil: Male rod end; F: Female rod end

*1) Not available for Φ80 and Φ100
*2) The cylinder for L, F, G, and D mounting types is B: Basic (Without trunnion mounting female thread).

Specifications

Bore size (mm)			20	25	32	40	50	63	80	100
Acting type			Double acting, Single rod							
Lubricant			Not required (Non-lube)							
Working medium			Air							
Proof pressure			1.5 MPa							
Max. working pressure			1.0 MPa							
Min. working pressure			0.05 MPa							
Working temperature			Without auto switch: –10°C to 70°C With auto switch: –10°C to 60°C (No freezing)							
Piston speed			50 to 1000 mm/s						50 to 700 mm/s	
Stroke length tolerance*1)			Up to 1000 $^{+1.4}_{0}$ mm, Up to 1500 $^{+1.8}_{0}$ mm							
Cushion			Rubber bumper, Air cushion							
Mounting*2)			Basic (Without trunnion mounting female thread), Basic (With trunnion mounting female thread), Axial foot bracket, Rod flange, Head flange, Rod trunnion, Head trunnion, Clevis							
Allowable kinetic energy (J)	Rubber bumper	Male rod end	0.28	0.41	0.66	1.20	2.00	3.40	5.90	9.90
		Female rod end	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54
	Air cushion	Male rod end*3)	R: 0.35 H: 0.42	R: 0.56 H: 0.65	0.91	1.80	3.40	4.90	11.80	16.70
		Female rod end	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54

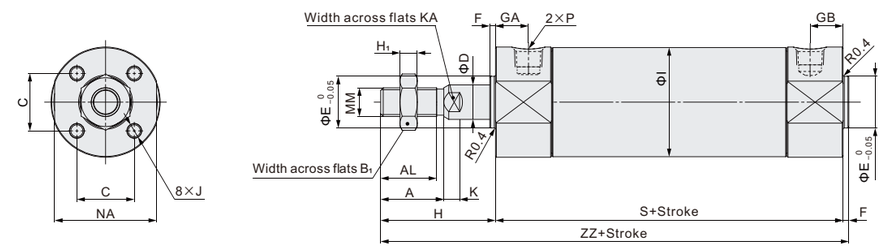
*1) Does not include the amount of bumper change.
*2) Cylinder sizes ø80 and ø100 do not have basic (with trunnion mounting female thread), rod trunnion, and head trunnion types. Foot, flange, and clevis types of cylinder sizes from Φ20 to Φ63 do not have trunnion mounting female thread. Operate the cylinder within the allowable kinetic energy.
*3) R: Rod side, H: Head side

ISO9001 CE

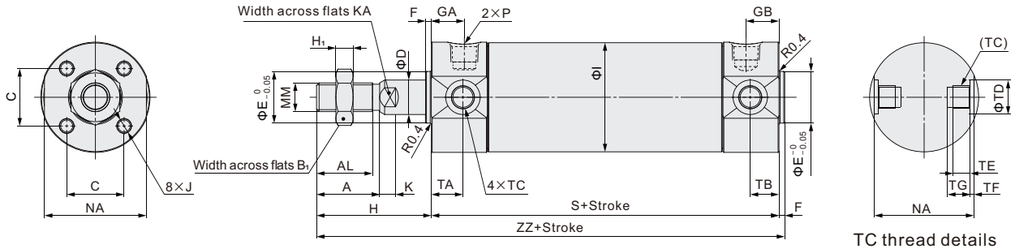
CG1 Series Mini Cylinder

Main Dimension Basic Type

Without trunnion mounting female thread/C□G1B

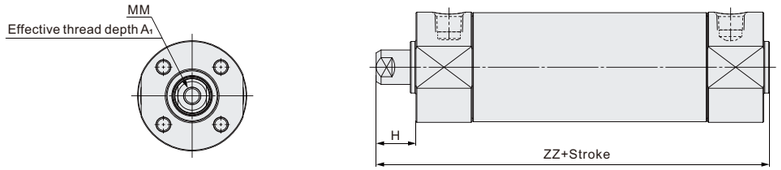


With trunnion mounting female thread/C□G1Z



TC thread details

Female rod end



(mm)

Bore	A	AL	B_1	C	D	E	F	H	H_1	I	J	K	KA	MM	NA	S	TA	TB	ZZ
20	18	15.5	13	14	8	12	2	35	5	26	M4×0.7 depth 7	5	6	M8×1.25	24	69	11	11	106
25	22	19.5	17	16.5	10	14	2	40	6	31	M5×0.8 depth 7.5	5.5	8	M10×1.25	29	69	11	11	111
32	22	19.5	17	20	12	18	2	40	6	38	M5×0.8 depth 8	5.5	10	M10×1.25	35.5	71	11	10	113
40	30	27	19	26	16	25	2	50	8	47	M6×1 depth 12	6	14	M14×1.5	44	78	12	10	130
50	35	32	27	32	20	30	2	58	11	58	M8×1.25 depth 16	7	18	M18×1.5	55	90	13	12	150
63	35	32	27	38	20	32	2	58	11	72	M10×1.5 depth 16	7	18	M18×1.5	69	90	13	12	150
80	40	37	32	50	25	40	3	71	13	89	M10×1.5 depth 22	10	22	M22×1.5	86	108	—	—	182
100	40	37	41	60	30	50	3	71	16	110	M12×1.75 depth 22	10	26	M26×1.5	106	108	—	—	182

(mm)

Bore	Rc, NPT port			G port		
	GA	GB	P	GA	GB	P
20	11.5	11.5	1/8	11.5	11.5	M5×0.8
25	11.5	11.5	1/8	12	12	M5×0.8
32	11.5	11.5	1/8	10.5	10.5	1/8
40	13	13	1/8	13	13	1/8
50	14	14	1/4	14	14	1/4
63	14	14	1/4	14	14	1/4
80	20	20	3/8	20	16	3/8
100	16	16	1/2	16	16	1/2

Female Rod End (mm)

Bore	A_1	H	MM	ZZ
20	8	13	M4×0.7	84
25	8	14	M5×0.8	85
32	12	14	M6×1	87
40	13	15	M8×1.25	95
50	18	16	M10×1.5	108
63	18	16	M10×1.5	108
80	21	19	M14×1.5	130
100	25	22	M16×1.5	133

TC Thread (mm)

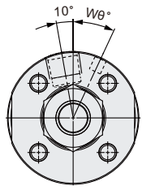
Bore	TC	TD	TE	TF	TG
20	M5×0.8	$8^{+0.08}_{0}$	4	0.5	5.5
25	M6×0.75	$10^{+0.08}_{0}$	5	1	6.5
32	M8×1.0	$12^{+0.08}_{0}$	5.5	1	7.5
40	M10×1.25	$14^{+0.08}_{0}$	6	1.25	8.5
50	M12×1.25	$16^{+0.08}_{0}$	7.5	2	10
63	M14×1.5	$18^{+0.08}_{0}$	11.5	3	14.5
80	—	—	—	—	—
100	—	—	—	—	—

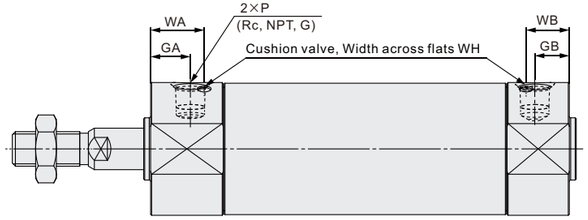
*1) Cylinder sizes Φ80 and Φ100 do not have trunnion mounting female thread on the width across flats NA.

CG1 Series Mini Cylinder

Main Dimension Basic Type/CG1B

With air cushion

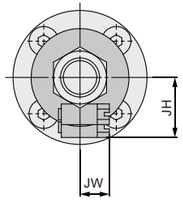


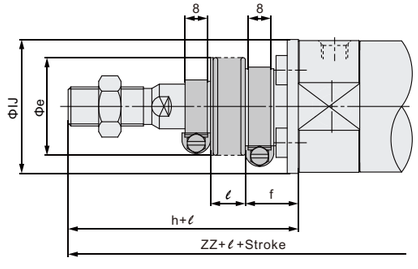


With Air Cushion (mm)

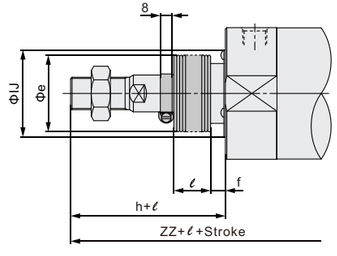
Bore	GA			GB			P	WA	WB	WH	Wθ
	Rc	NPT	G	Rc	NPT	G	Rc, NPT, G				
20	11.5	—	—	8.5	—	—	M5×0.8	16	12	1.5	25°
25	12	—	—	10	—	—	M5×0.8	13.5	13.5	1.5	25°
32	11.5		10.5	10			1/8	15.5	12.5	1.5	25°
40	13			10			1/8	18	14	1.5	20°
50	14			12			1/4	18	17	3	20°
63	14			12			1/4	18	17	3	20°
80	20			16			3/8	24	20	4	20°
100	16			16			1/2	20	20	4	20°

With rod boot





Φ20 to Φ63



Φ80, Φ100

With Rod Boot (mm)

Bore	e	f	h	IJ	JH (Reference)	JW (Reference)	ℓ	ZZ
20	30	18	55	27	15.5	10.5	1/4 stroke	126(134)
25	30	19	62	32	16.5	10.5		133(141)
32	35	19	62	38	18.5	10.5		135(143)
40	35	19	70	48	21.5	10.5		150(159)
50	40	19	78	59	24	10.5		170(182)
63	40	20	78	72	24	10.5		170(182)
80	52	10	80	59	—	—		191(205)
100	62	7	80	71	—	—		191(205)

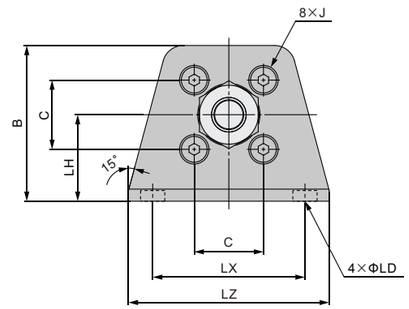
* The minimum stroke with a rod boot is 20 mm.

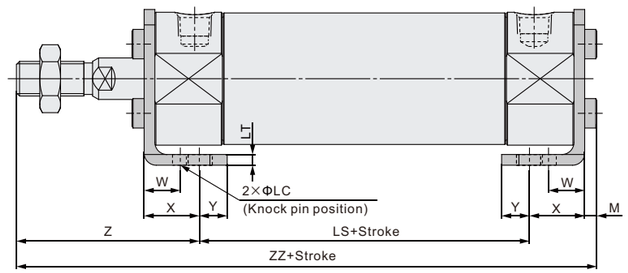
ISO9001 CE

CG1 Series Mini Cylinder

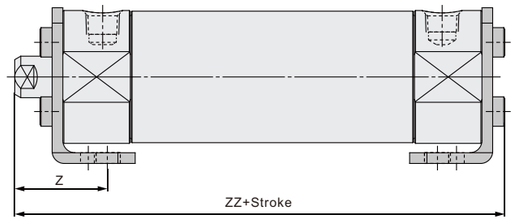
Main Dimension Axial Foot Bracket

C□G1L





Female rod end



(mm)

Bore	B	C	J	LC	LD	LH	LS	LT	LX	LZ	M	W	X	Y	Z	ZZ
20	34	14	M4×0.7	4	6	20	45	3	32	44	3	10	15	7	47	110
25	38.5	16.5	M5×0.8	4	6	22	45	3	36	49	3.5	10	15	7	52	115.5
32	45	20	M5×0.8	4	7	25	45	3	44	58	3.5	10	16	8	53	117.5
40	54.5	26	M6×1	4	7	30	51	3	54	71	4	10	16.5	8.5	63.5	135
50	70.5	32	M8×1.25	5	10	40	55	4.5	66	86	5	17.5	22	11	75.5	157.5
63	82.5	38	M10×1.5	5	12	45	55	4.5	82	106	5	17.5	22	13	75.5	157.5
80	101	50	M10×1.5	6	11	55	60	4.5	100	125	5	20	28.5	14	95	188.5
100	121	60	M12×1.75	6	14	65	60	6	120	150	7	20	30	16	95	192

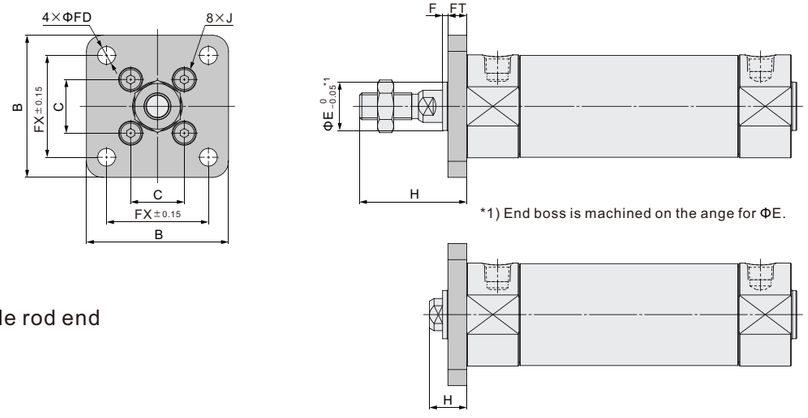
Female Rod End (mm)

Bore	Z	ZZ
20	25	88
25	26	89.5
32	27	91.5
40	28.5	100
50	33.5	115.5
63	33.5	115.5
80	43	136.5
100	46	143

CG1 Series Mini Cylinder

Main Dimension Flange

Rod flange/C□G1F



*1) End boss is machined on the ange for ΦE.

Female rod end

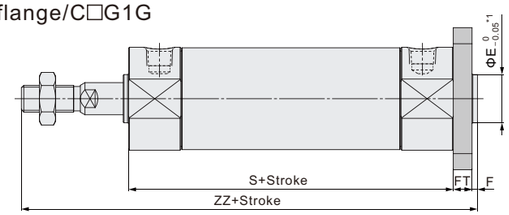
(mm)

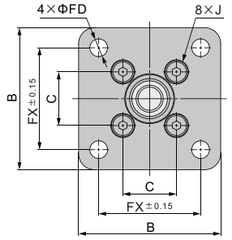
Bore	B	C	E	F	FD	FT	FX	H	J
20	40	14	12	2	5.5	6	28	35	M4×0.7
25	44	16.5	14	2	5.5	7	32	40	M5×0.8
32	53	20	18	2	6.6	7	38	40	M5×0.8
40	61	26	25	2	6.6	8	46	50	M6×1
50	76	32	30	2	9	9	58	58	M8×1.25
63	92	38	32	2	11	9	70	58	M10×1.5
80	104	50	40	3	11	11	82	71	M10×1.5
100	128	60	50	3	14	14	100	71	M12×1.75

Female Rod End (mm)

Bore	H
20	13
25	14
32	14
40	15
50	16
63	16
80	19
100	22

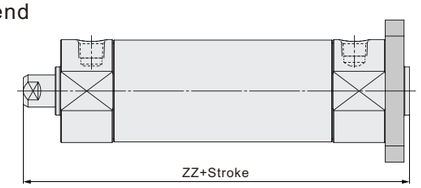
Head flange/C□G1G





*1) End boss is machined on the ange for ΦE.

Female rod end



(mm)

Bore	B	C	E	F	FD	FT	FX	J	S	ZZ
20	40	14	12	2	5.5	6	28	M4×0.7	69	112
25	44	16.5	14	2	5.5	7	32	M5×0.8	69	118
32	53	20	18	2	6.6	7	38	M5×0.8	71	120
40	61	26	25	2	6.6	8	46	M6×1	78	138
50	76	32	30	2	9	9	58	M8×1.25	90	159
63	92	38	32	2	11	9	70	M10×1.5	90	159
80	104	50	40	3	11	11	82	M10×1.5	108	193
100	128	60	50	3	14	14	100	M12×1.75	108	196

Female Rod End (mm)

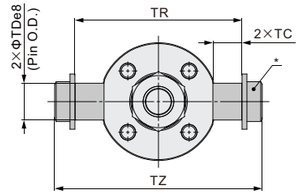
Bore	ZZ
20	90
25	92
32	94
40	103
50	117
63	117
80	141
100	147

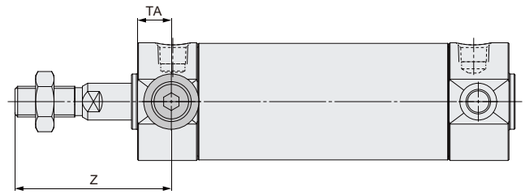
ISO9001 CE

CG1 Series Mini Cylinder

Main Dimension Trunnion

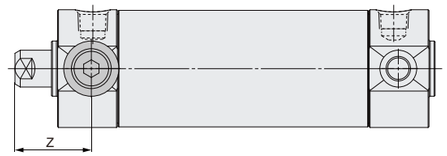
Rod trunnion/C□G1U





The part marked with an asterisk (*) is constructed of a trunnion pin, flat washer, and hexagon socket head cap screw.

Female rod end



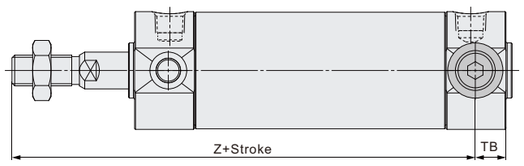
(mm)

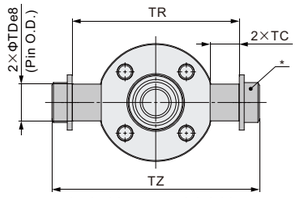
Bore	TA	TC	TDe8	TR	TZ	Z
20	11	7.5	$8^{-0.025}_{-0.047}$	39	47.6	46
25	11	7	$10^{-0.025}_{-0.047}$	43	53	51
32	11	9.5	$12^{-0.032}_{-0.059}$	54.5	67.7	51
40	12	10.5	$14^{-0.032}_{-0.059}$	65.5	78.7	62
50	13	12.5	$16^{-0.032}_{-0.059}$	80	98.6	71
63	13	14.5	$18^{-0.032}_{-0.059}$	98	119.2	71

Female Rod End (mm)

Bore	Z
20	24
25	25
32	25
40	27
50	29
63	29

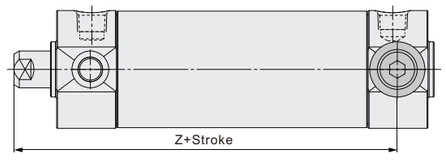
Head trunnion/C□G1T





The part marked with an asterisk (*) is constructed of a trunnion pin, flat washer, and hexagon socket head cap screw.

Female rod end



(mm)

Bore	TB	TC	TDe8	TR	TZ	Z
20	11	7.5	$8^{-0.025}_{-0.047}$	39	47.6	93
25	11	7	$10^{-0.025}_{-0.047}$	43	53	98
32	10	9.5	$12^{-0.032}_{-0.059}$	54.5	67.7	101
40	10	10.5	$14^{-0.032}_{-0.059}$	65.5	78.7	118
50	12	12.5	$16^{-0.032}_{-0.059}$	80	98.6	136
63	12	14.5	$18^{-0.032}_{-0.059}$	98	119.2	136

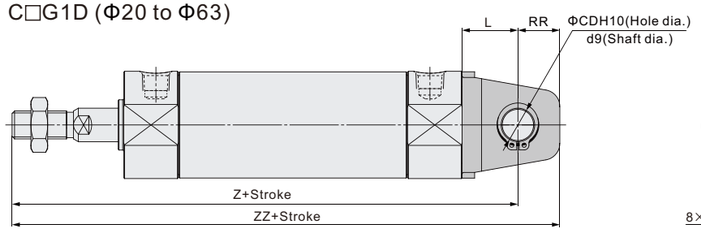
Female Rod End (mm)

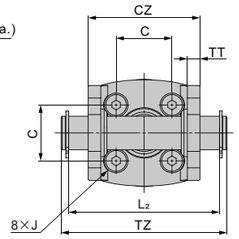
Bore	Z
20	71
25	72
32	75
40	83
50	94
63	94

CG1 Series Mini Cylinder

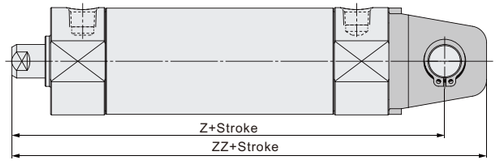
Main Dimension Clevis

C□G1D (Φ20 to Φ63)





Female rod end



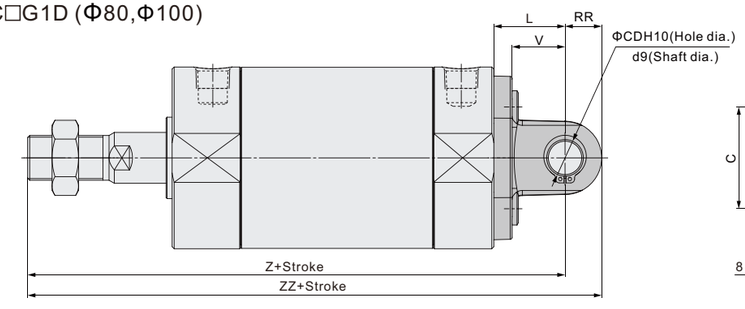
(mm)

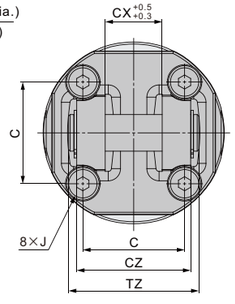
Bore	C	CD	CZ	J	L	L₂	RR	TT	TZ	Z	ZZ
20	14	8	29	M4×0.7	14	38.6	11	3.2	43.4	118	129
25	16.5	10	33	M5×0.8	16	42.6	13	3.2	48	125	138
32	20	12	40	M5×0.8	20	54	15	4.5	59.4	131	146
40	26	14	49	M6×1	22	65	18	4.5	71.4	150	168
50	32	16	60	M8×1.25	25	79.6	20	6	86	173	193
63	38	18	74	M10×1.5	30	97.8	22	8	105.4	178	200

Female Rod End (mm)

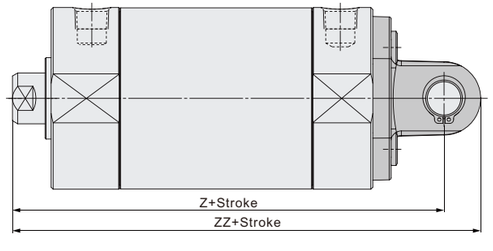
Bore	Z	ZZ
20	96	107
25	99	112
32	105	120
40	115	133
50	131	151
63	136	158

C□G1D (Φ80,Φ100)





Female rod end



(mm)

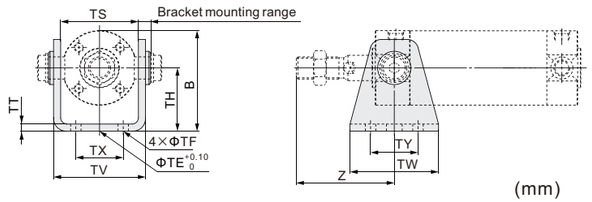
Bore	C	CD	CX	CZ	J	L	RR	TT	V	Z	ZZ
80	50	18	28	56	M10×1.5	35	18	64	26	214	232
100	60	22	32	64	M12×1.75	43	22	72	32	222	244

Female Rod End (mm)

Bore	Z	ZZ
80	162	180
100	173	195

Main Dimension With Pivot Bracket

Rod trunnion (U) with pivot bracket



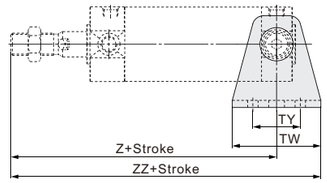
(mm)

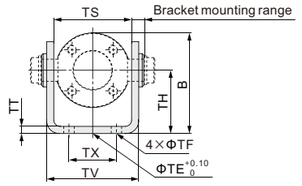
Bore	B	TE	TF	TH	TS	TT	TV	TW	TX	TY	Z
20	38	10	5.5	25	28	3.2	35.8	42	16	28	46
25	45.5	10	5.5	30	33	3.2	39.8	42	20	28	51
32	54	10	6.6	35	40	4.5	49.4	48	22	28	51
40	63.5	10	6.6	40	49	4.5	58.4	56	30	30	62
50	79	20	9	50	60	6	72.4	64	36	36	71
63	96	20	11	60	74	8	90.4	74	46	46	71

Female Rod End (mm)

Bore	Z
20	24
25	25
32	25
40	27
50	29
63	29

Head trunnion (T) with pivot bracket





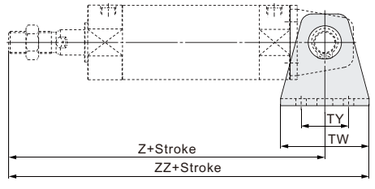
(mm)

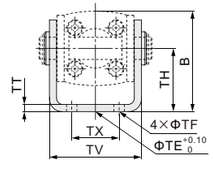
Bore	B	TE	TF	TH	TS	TT	TV	TW	TX	TY	Z	ZZ
20	38	10	5.5	25	28	3.2	35.8	42	16	28	93	114
25	45.5	10	5.5	30	33	3.2	39.8	42	20	28	98	119
32	54	10	6.6	35	40	4.5	49.4	48	22	28	101	125
40	63.5	10	6.6	40	49	4.5	58.4	56	30	30	118	146
50	79	20	9	50	60	6	72.4	64	36	36	136	168
63	96	20	11	60	74	8	90.4	74	46	46	136	173

Female Rod End (mm)

Bore	Z	ZZ
20	71	92
25	72	93
32	75	99
40	83	111
50	94	126
63	94	131

Clevis (D) with pivot bracket
Φ20 to Φ63





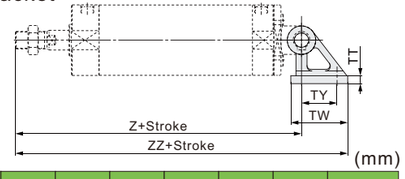
(mm)

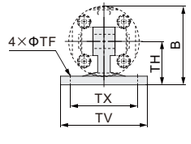
Bore	B	TE	TF	TH	TT	TV	TW	TX	TY	Z	ZZ
20	38	10	5.5	25	3.2	35.8	42	16	28	118	139
25	45.5	10	5.5	30	3.2	39.8	42	20	28	125	146
32	54	10	6.6	35	4.5	49.4	48	22	28	131	155
40	63.5	10	6.6	40	4.5	58.4	56	30	30	150	178
50	79	20	9	50	6	72.4	64	36	36	173	205
63	96	20	11	60	8	90.4	74	46	46	178	215

Female Rod End (mm)

Bore	Z	ZZ
20	96	117
25	99	120
32	105	129
40	115	143
50	131	163
63	136	173

Clevis (D) with Pivot Bracket
Φ80, Φ100





(mm)

Bore	B	TF	TH	TT	TV	TW	TX	TY	Z	ZZ
80	99.5	11	55	11	110	72	85	45	214	272.5
100	120	13.5	65	12	130	93	100	60	222	298.5

Female Rod End (mm)

Bore	Z	ZZ
80	162	220.5
100	173	249.5