

MCDB series

DUAL-ROD SLIDE CYLINDER



Features:

- A thin and compact dual rod cylinder unit with high precision guiding for picking and placing.
- High Anti-roll accuracy & double thrust.
- The user may use as plate slide type or body slide type according to his requirement.
- Provided with shock absorbers to absorb impact to noise.

Specification:

Model	MCDB		
Acting type	Double acting		
Tube I.D. (mm)	10,16	20	25,32
Port size Rc(PT)	M5 × 0.8		PT 1/8
Medium	Air		
Max operating pressure	15 kgf/cm ²		
Min operating pressure	9.9 kgf/cm ²		
Proof pressure	1.5 kgf/cm ²	1.0 kgf/cm ²	
Available Temperature range	- 5~+ 60°C (No freezing)		
Available speed range	30~500 mm/sec		
Lubricator	Not required		
Cushion	Shock absorber		
Stroke adjustable range	Stand stroke ±2mm		
Sensor switch	RCB		

Table for standard stroke

Tube I.D.	Stroke (mm)
φ 10	25,50,75
φ 16, 20, 25, 32	25,50,75,100,125,150,175,200

Order example:

MCDB — 03 — 10 — 50(M)

MODEL

TUBE I.D.

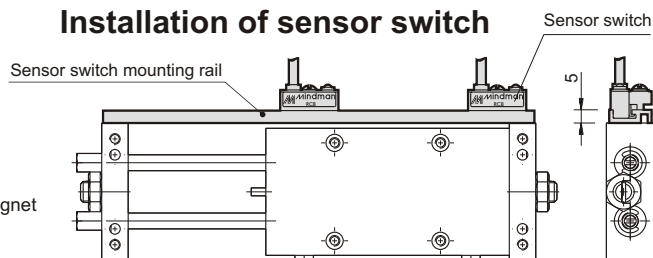
STROKE
(mm)

TYPE OF BEARING:

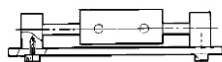
03 Slide bearing

M: Magnet

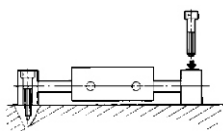
Installation of sensor switch



Affixing the plate

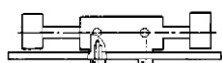


Mounting from the bottom side

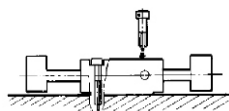


Mounting from the upper side

Affixing the housing

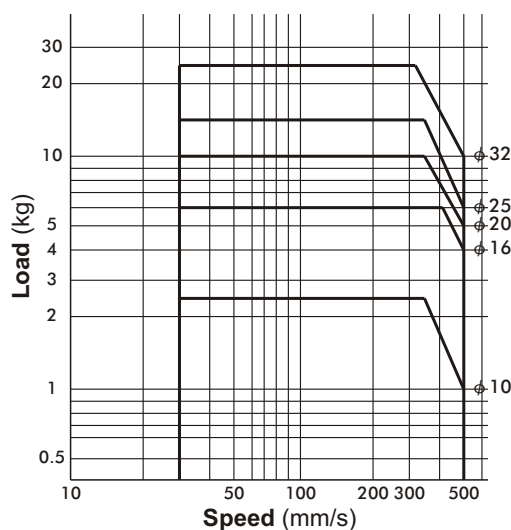


Mounting from the bottom side



Mounting from the upper side

Capacity graph



MCDB Capacity / Installation of sensor switch $\phi 10 \sim \phi 32$



DUAL-ROD SLIDE CYLINDER

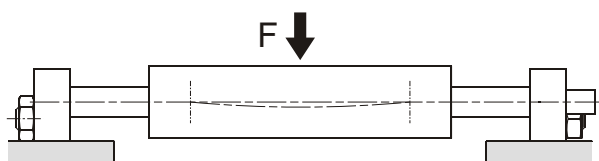
Max. Movable Load / Non-rotating Accuracy

Tube I.D. (Mm)	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Max. movable weight※	1 kg	4 kg	5 kg	6 kg	10 kg
Non-rotating accuracy (Deflection of a piston rod is not included.)	$\pm 0.09^\circ$	$\pm 0.03^\circ$	$\pm 0.03^\circ$	$\pm 0.02^\circ$	$\pm 0.01^\circ$

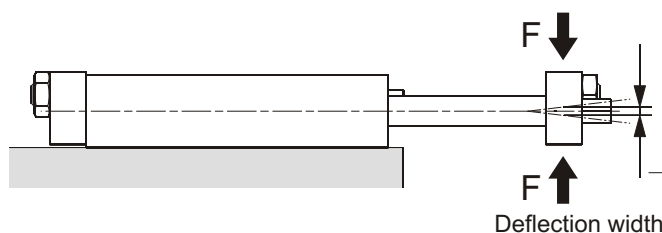
※Place the center of gravity of the load and center of the slide unit close during operation.

Deflection of the piston rod by center loading (Reference)

(1) When center loading is applied to the middle of the housing.



(2) When center loading is applied to the middle of the plate.



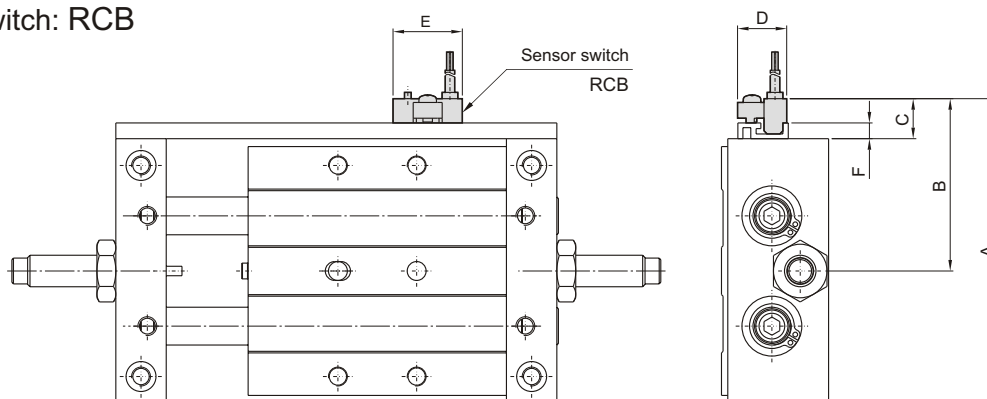
Tube I.D.	Stroke (mm) Load (N)	100	200
10	9.81	0.07	-
16	39.2	0.05	0.2
20	49	0.04	0.15
25	58.8	0.02	0.08
32	98.1	0.02	0.07

Tube I.D.	Stroke (mm) Load (N)	50	100	150	200
10	2.94	0.06	0.3	-	-
16	4.9	0.03	0.1	0.25	0.45
20	7.84	0.03	0.09	0.18	0.35
25	9.81	0.03	0.09	0.16	0.25
32	29.42	0.02	0.05	0.1	0.15

Remark: The factors are the total widths of deflections in the vertical direction.

Installation of sensor switch

Sensor switch: RCB



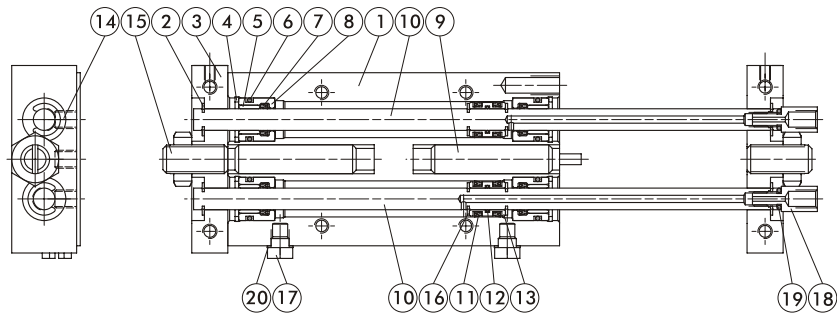
Code Stroke	A	B	C	D	E	F
10	61	37	13	16	22	5
16	75	44	13	16	22	5
20	86	49.5	13	16	22	5
25	92	52.5	13	16	22	5
32	126	69.5	13	16	22	5

MCDB Inside structure & Parts list $\phi 10$, $\phi 16$, $\phi 25$

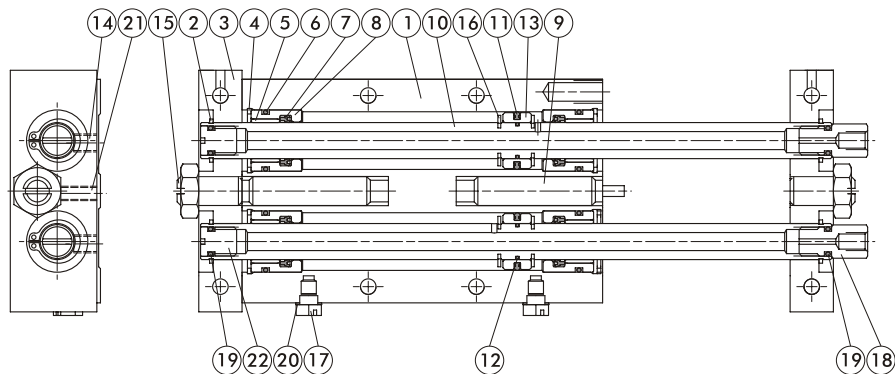


DUAL-ROD SLIDE CYLINDER

$\phi 10$



$\phi 16$, $\phi 25$



Material

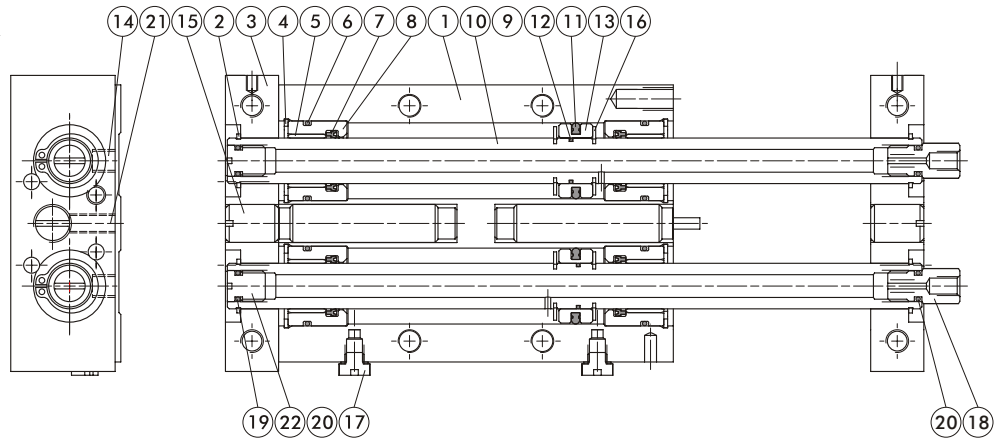
No.	Part name	Material
1	Body	Aluminum alloy
2	Snap ring #1	Tool steel
3	Connector	Aluminum alloy
4	Snap ring #2	Tool steel
5	Rod bush	Copper
6	Cover gasket	NBR
7	Rod packing	NBR
8	Rod cover	Aluminum alloy
9	Absorber	—
10	Piston rod	Carbon steel
11	Piston packing	NBR
12	Piston gasket	NBR
13	Piston	Aluminum alloy
14	Set screw #1	Carbon steel
15	Set screw #2	Rolled steel
16	Snap ring #3	Tool steel
17	Plug #1	Copper
18	Fitting	Steel
19	O ring for fitting	NBR
20	Plug gasket	Plastic
21	Set screw #3	Carbon steel
22	Plug #2	Copper

MCDB Inside structure & Parts list $\phi 20$, $\phi 32$



DUAL-ROD SLIDE CYLINDER

$\phi 20$, $\phi 32$

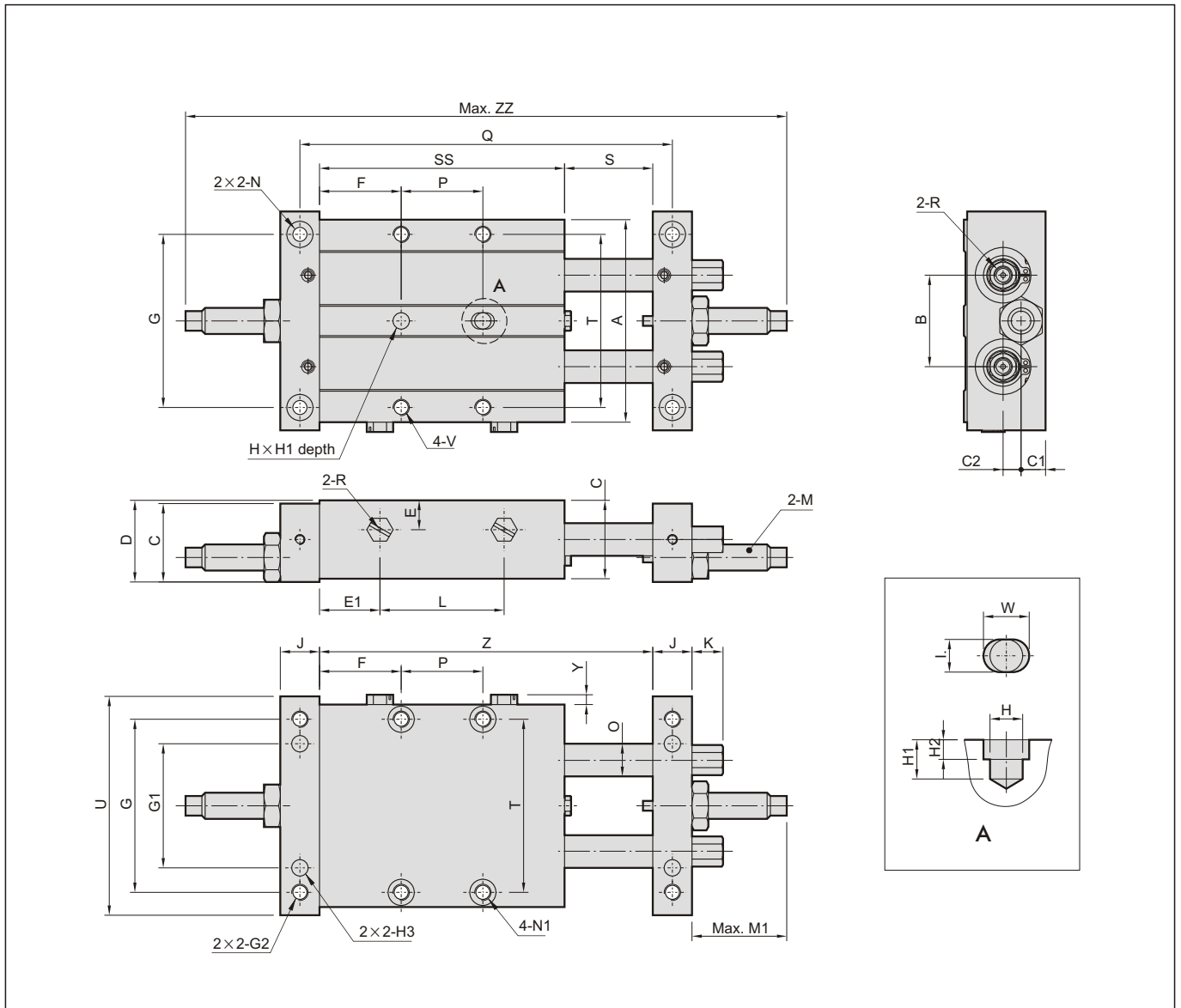


Material

No.	Part name	Material
1	Body	Aluminum alloy
2	Snap ring #1	Tool steel
3	Connector	Aluminum alloy
4	Snap ring #2	Tool steel
5	Rod bush	Copper
6	Cover gasket	NBR
7	Rod packing	NBR
8	Rod cover	Aluminum alloy
9	Absorber	—
10	Piston rod	Carbon steel
11	Piston packing	NBR
12	Piston gasket	NBR
13	Piston	Aluminum alloy
14	Set screw #1	Carbon steel
15	Set screw #2	Rolled steel
16	Snap ring #3	Tool steel
17	Plug #1	Copper
18	Fitting	Steel
19	O ring for fitting	NBR
20	Plug gasket	Plastic
21	Set screw #3	Carbon steel
22	Plug #2	Copper

MCDB-03 Dimensions $\phi 10, \phi 16, \phi 25$ stroke: 25

DUAL-ROD SLIDE CYLINDER



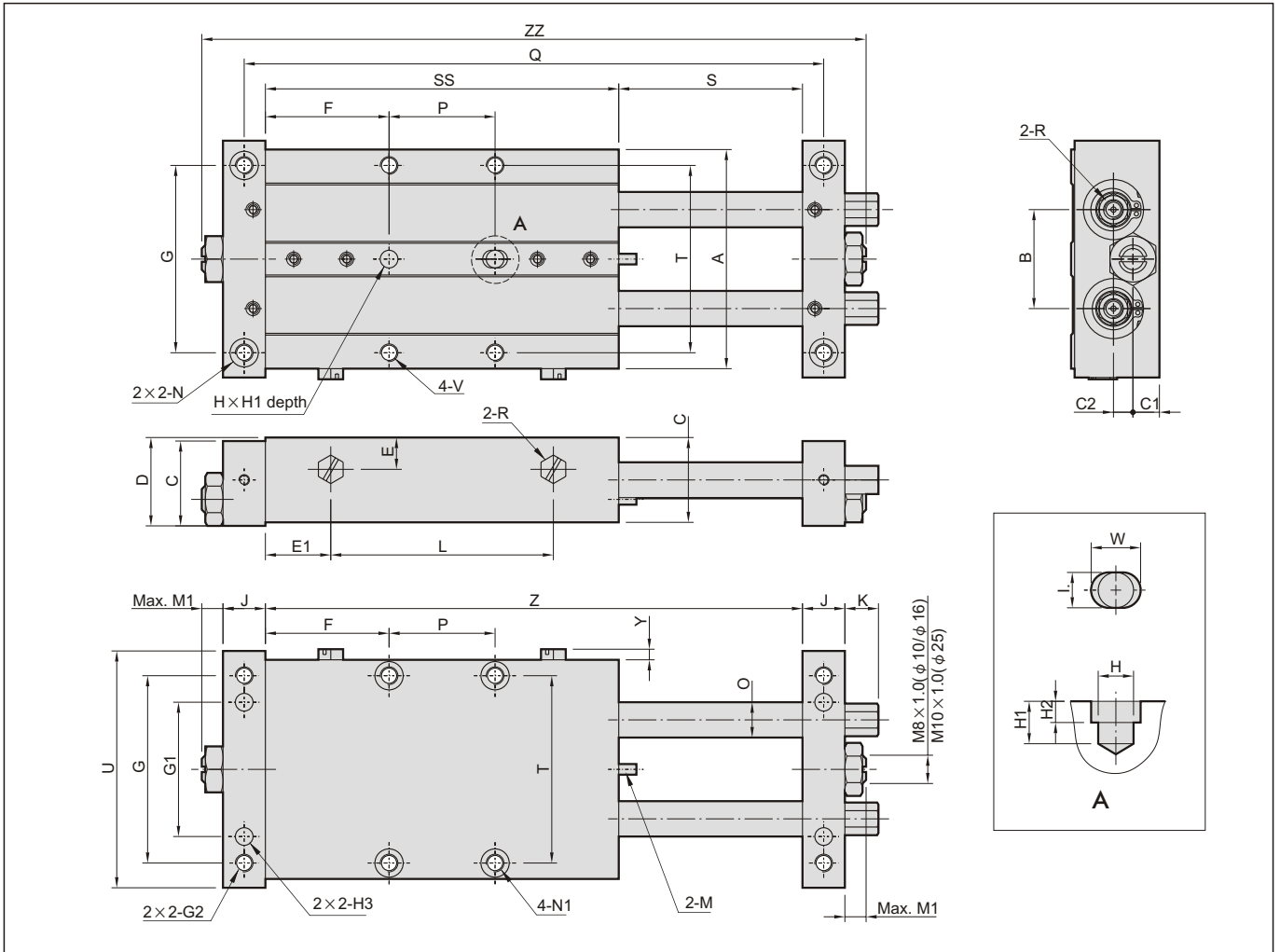
(mm)

Tube I.D.	Code Stroke	A	B	C	C1	C2	D	E	E1	F	G	G1	G2	H _(H7)	H1	H2	H3 _(H7)	I	J	K	L	M
10	25	48	22	18	6	3	19	6.5	14.5	21	40	28	M4×0.7×8dp	φ4	6	3	φ4×5dp	φ4	10	9.5	38	M8×1.0(MAC-0806-SN)
16	25	62	28	24	7.5	5.5	25	9	18.5	25	53	38	M5×0.8×10dp	φ5	6	3	φ5×6dp	φ5	12	9.5	38	M8×1.0(MAC-0806-SN)
25	25	79	35	32	9	9	34	16	19.5	28.5	67	50	M6×1.0×12dp	φ6	8	4	φ6×8dp	φ6	16	-	43	M10×1.0(MAC-1007-SN)

Tube I.D.	Code Stroke	M1	N	N1	O	P	Q	R	S	SS	T	U	V	W	Y	Z	ZZ
10	25	32.6	φ3.3thru 6.5×3.2dp	φ3.2thru 6.5×3.3dp	φ6	25	104	M5×0.8	27	67	37	52	M4×0.7×6dp	6	3	94	179.2
16	25	30.6	φ4.3thru 8×4.5dp	φ4.3thru 8×4.5dp	φ10	25	114	M5×0.8	27	75	53	67	M5×0.8×10dp	7	3	102	187.2
25	25	33	φ5.2thru 9.5×5dp	φ5.5thru 9.5×5.5dp	φ12	25	125	PT 1/8	27	82	67	84	M6×1.0×12dp	8	-	109	207

MCDB-03 ϕ 10 stroke: 50~75 / ϕ 16, ϕ 25 stroke: 50~200

DUAL-ROD SLIDE CYLINDER



MCDB-03

(mm)

Tube I.D.	Code Stroke	A	B	C	C1	C2	D	E	E1	G	G1	G2	H _(H7)	H1	H2	H3 _(H7)	I	J	K	M	M1
10	50~75	48	22	18	6	3	19	6.5	14.5	40	28	M4×0.7×8dp	ϕ 4	6	3	ϕ 4×5dp	ϕ 4	10	9.5	M8×1.0(MAC-0806-2)	8
16	50~200	62	28	24	7.5	5.5	25	9	18.5	53	38	M5×0.8×10dp	ϕ 5	6	3	ϕ 5×6dp	ϕ 5	12	9.5	M8×1.0(MAC-0806-2)	6
25	50~200	79	35	32	9	9	34	16	20.5	67	50	M6×1.0×12dp	ϕ 6	8	4	ϕ 6×8dp	ϕ 6	16	-	M10×1.0(MAC-1008-2)	6

Tube I.D.	Code Stroke	N	N1	O	R	T	U	V	W	Y
10	50~75	ϕ 3.3thru 6.5×3.2dp	ϕ 3.2thru 6.5×3.3dp	ϕ 6	M5×0.8	37	52	M4×0.7×6dp	6	3
16	50~200	ϕ 4.3thru 8×4.5dp	ϕ 4.3thru 8×4.5dp	ϕ 10	M5×0.8	53	67	M5×0.8×10dp	7	3
25	50~200	ϕ 5.2thru 9.5×5dp	ϕ 5.5thru 9.5×5.5dp	ϕ 12	PT 1/8	67	84	M6×1.0×12dp	8	-

MCDB-03 : ϕ 10

Code Stroke	F	L	P	Q	S	SS	Z	ZZ
50	26	63	40	154	52	92	144	172
75	26	88	65	204	77	117	194	222

MCDB-03 : ϕ 16

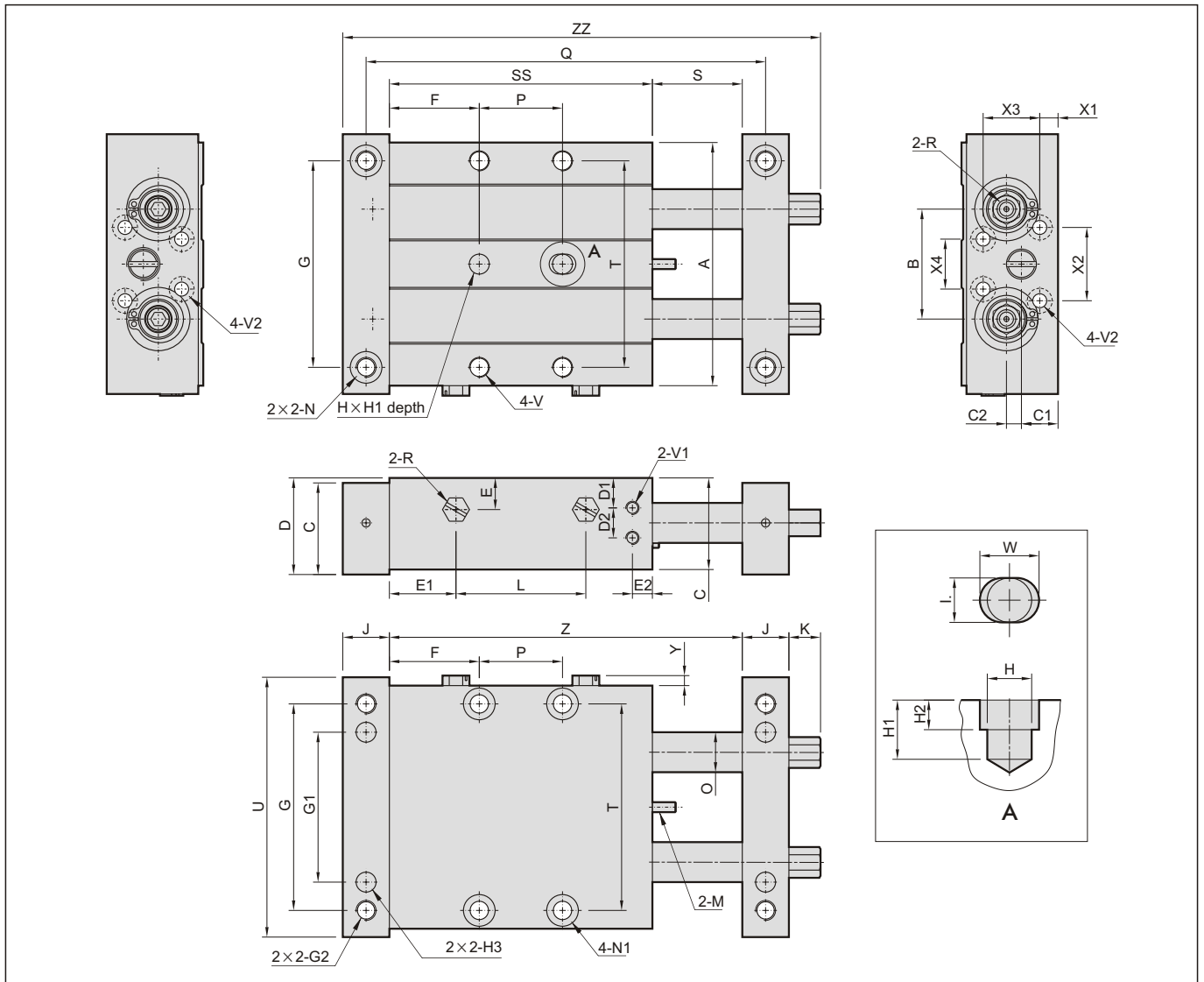
Code Stroke	F	L	P	Q	S	SS	Z	ZZ
50	35	63	30	164	52	100	152	188
75	32.5	88	60	214	77	125	202	238
100	37.5	113	75	264	102	150	252	288
125	42.5	138	90	314	127	175	302	338
150	55	163	90	364	152	200	352	388
175	67.5	188	90	414	177	225	402	438
200	80	213	90	464	202	250	452	488

MCDB-03 : ϕ 25

Code Stroke	F	L	P	Q	S	SS	Z	ZZ
50	31	66	45	175	52	107	159	203
75	33.5	91	65	225	77	132	209	253
100	33.5	116	90	275	102	157	259	303
125	46	141	90	325	127	182	309	353
150	58.5	166	90	375	152	207	359	403
175	71	191	90	425	177	232	409	453
200	83.5	216	90	475	202	257	459	503

MCDB-03 $\phi 20$ stroke: 50~200 / $\phi 32$ stroke: 75~200

DUAL-ROD SLIDE CYLINDER



MCDB-03

(mm)

Tube I.D.	Code Stroke	A	B	C	C1	C2	D	D1	D2	E	E1	E2	G	G1	G2	H _(H7)	H1	H2	H3 _(H7)	I	J	K	M
20	50~200	73	33	27.5	11	4.5	29	9	10.5	9.5	20	6	62	45	M6×1.0×12dp	$\phi 6$	8	4	$\phi 6 \times 8dp$	$\phi 6$	14	9.5	M10×1.0(MAC-1008-2)
32	75~200	113	55	38.5	13.5	7	40	9	12	15	28	10	105	84	M8×1.25×15dp	$\phi 8$	12	6	$\phi 8 \times 12dp$	$\phi 8$	20	14.5	M14×1.5(MAC-1412-SN)

Tube I.D.	Code Stroke	N	N1	O	R	R1	T	U	V	V1	V2	W	X1	X2	X3	X4	Y
20	50~200	$\phi 5.2$ thru $9.5 \times 5dp$	$\phi 5.5$ thru $9.5 \times 5.5dp$	$\phi 12$	M5×0.8	M4×0.7×5dp	62	78	M6×1.0×9dp	M4×0.7×5dp	M5×0.8 thru $7.5 \times 4.5dp$ (back side)	8	5.5	22	17	15	3
32	75~200	$\phi 6.9$ thru $11 \times 6.5dp$	$\phi 6.9$ thru $11 \times 7dp$	$\phi 20$	PT 1/8	M6×1.0×7dp	100	118	M8×1.25×15dp	M6×1.0×7dp	M5×0.8 thru $7.5 \times 4.5dp$ (back side)	10	7.5	31	24.5	31	-

MCDB-03 : $\phi 20$

Code Stroke	F	L	P	Q	S	SS	Z	ZZ
50	34.5	64	35	170	52	104	156	193.5
75	34.5	89	60	220	77	129	206	243.5
100	39.5	114	75	270	102	154	256	293.5
125	44.5	139	90	320	127	179	306	343.5
150	57	164	90	370	152	204	356	393.5
175	69.5	189	90	420	177	229	406	443.5
200	82	214	90	470	202	254	456	493.5

MCDB-03 : $\phi 32$

Code Stroke	F	L	P	Q	S	SS	Z	ZZ
75	38	90	70	243	77	146	223	277.5
100	38	115	95	293	102	171	273	327.5
125	38	140	120	343	127	196	323	377.5
150	38	165	145	393	152	221	373	427.5
175	38	190	170	443	177	246	423	477.5
200	38	215	195	493	202	271	473	527.5