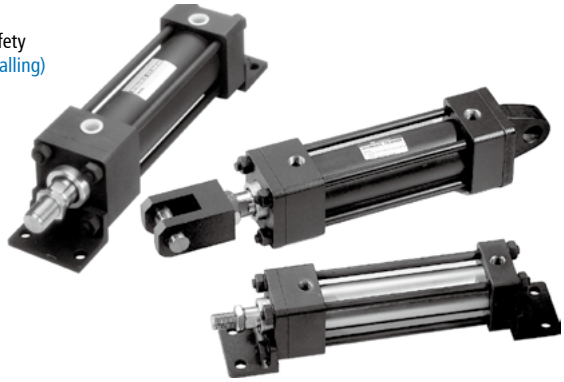
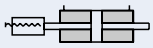
MDH*/ MDM* series

HYDRAULIC CYLINDER

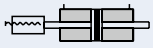
Caution for safety
(Read before installing)



Double acting

MDHB	Standard type	
MDHD	Double rod type	
MDHN-A/B	Adjustable forward stroke cylinder	

Double acting (with magnet)

MDMB	Standard type	
MDMD	Double rod type	
MDMN-A/B	Adjustable forward stroke cylinder	

* The series of hydraulic cylinder can be with cushion.

Specification

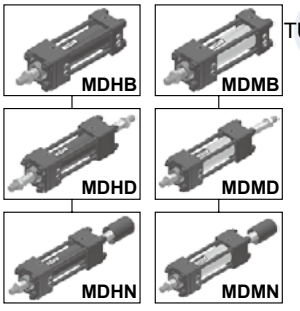
Model	MDHB, MDHD, MDHN	
Tube I.D. (mm)	40, 50, 63	80, 100, 125, 150
Standard stroke (mm)	50, 100, 150, 200, 250, 300, 350, 400, 450, 500	
The range of stroke	Max.1500 mm	Max.1900 mm
Medium	Filtered oil	
Material of cylinder barrel	Carbon steel STKM 13C	
Max. operating pressure	14 MPa	
Ambient temperature	-10~+60°C (No freezing)	

Model	MDMB, MDMD, MDMN		
Tube I.D. (mm)	40, 50	63	80, 100
Standard stroke (mm)	50, 100, 150, 200, 250, 300, 350, 400, 450, 500		
Medium	Filtered oil		
Material of cylinder barrel	SUS304 Stainless steel		
Max. operating pressure	7 MPa		
Proof pressure	10.5 MPa		
Speed range (mm/sec)	0.5~300 mm/sec		
Ambient temperature	-10~+60°C (No freezing)		
Sensor switch	LN01P	LN02P	LN03P

Order example

1 — MDHB — 50 — N — 100 — □ — A — LB — Y

STANDARD / WITH MAGNET

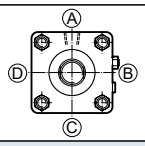


TUBE I.D.

STROKE

CUSHION
N: No cushion
R: Rod end with cushion (One side)
H: End end with cushion (One side)
B: Both end with cushion (Both sides)

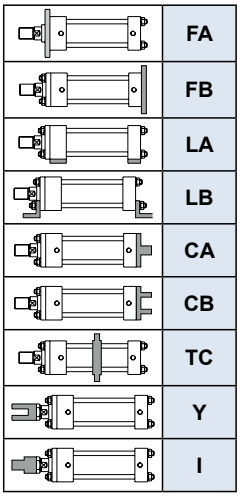
PORT & CUSHION ADJ. LOCATION

Blank: Standard type Ⓐ Port location Ⓑ Cushion adjustment location	

* Change port & cushion adj. location. (Made to order)
Ex. Port location Ⓑ Ⓒ Cushion adjustment location

ADJUSTABLE STROKE
Blank: Standard type
A: Adjustable 25mm
B: Adjustable 50mm
(Only for **MD*N** type)

MOUNTING TYPE



SEAL MATERIAL

Symbol	Seal material	Kind of fluid				
		Petroleum - based fluid	Water - glycol fluid	Phosphate - ester fluid	Water in oil fluid	Oil in water fluid
1	NBR Nitrile rubber	○	○	×	○	○
2	PU Polyurethane rubber	○	×	×	△	△
3	VITON Fluoro elastomer	○	×	○	○	○

Note. ○ allowable ×unallowable △ consult us

MDHB, MDHD, MDHN Standard stroke

Unit: mm

Tube I.D.	50	100	150	200	250	300	350	400	450	500
ø40	●	●	●	●	●	●	–	–	–	–
ø50	●	●	●	●	●	●	–	–	–	–
ø63	●	●	●	●	●	●	●	●	●	●
ø80	●	●	●	●	●	●	●	●	●	●
ø100	●	●	●	●	●	●	●	●	●	●
ø125	●	●	●	●	●	●	●	●	●	●
ø150	●	●	●	●	●	●	●	●	●	●

Note. May to order of unstandard stroke.

MDMB, MDMD, MDMN Standard stroke

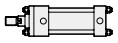
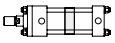
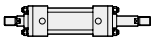
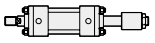
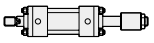
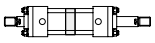
Unit: mm

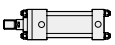
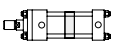
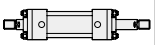
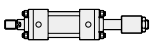
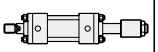
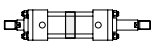
Tube I.D.	50	100	150	200	250	300	350	400	450	500
ø40	●	●	●	●	●	●	–	–	–	–
ø50	●	●	●	●	●	●	–	–	–	–
ø63	●	●	●	●	●	●	●	●	●	●
ø80	●	●	●	●	●	●	●	●	●	●
ø100	●	●	●	●	●	●	●	●	●	●

Note. May to order of unstandard stroke.

Cylinder weight

Unit: kg

Model	Basic weight **MDHB**	Stroke 25 mm **MDHB**	Basic weight **MDHD**	Basic weight **MDHN-A**	Basic weight **MDHN-B**	Stroke 25 mm **MDHD/MDHN**
Tube I.D.						
ø40	3.7	0.155	4.8	5.5	5.8	0.21
ø50	6.2	0.244	8.0	9.1	9.6	0.34
ø63	8.9	0.421	11.2	12.8	13.4	0.60
ø80	14.6	0.546	17.3	19.5	20.3	0.80
ø100	24.2	0.895	28.2	31.3	32.3	1.28
ø125	40.9	1.462	49.4	53.2	54.4	2.01
ø150	64.5	2.337	80.5	87.6	89.4	3.31

Model	Basic weight **MDMB**	Stroke 25 mm **MDMB**	Basic weight **MDMD**	Basic weight **MDMN-A**	Basic weight **MDMN-B**	Stroke 25 mm **MDMD/MDMN**
Tube I.D.						
ø40	3.66	0.14	4.8	5.5	5.8	0.21
ø50	6.15	0.22	8.0	9.1	9.5	0.32
ø63	8.70	0.34	11.0	12.6	13.2	0.53
ø80	14.60	0.54	17.3	19.5	20.3	0.80
ø100	23.80	0.75	27.8	30.9	32.0	1.14

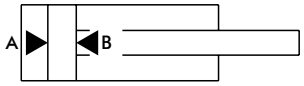
Model	FA	FB	LA	LB	CA	CB+Pin	TC	Y+Pin	I	Nut (Rod)
Tube I.D.										
ø40	0.3	0.6	0.5	0.6	0.6	0.7	0.6	0.6	0.6	0.02
ø50	0.8	1.2	0.9	0.8	1.0	1.1	1.0	0.9	0.9	0.04
ø63	1.3	1.8	1.0	1.4	1.8	2.1	1.2	1.5	1.2	0.08
ø80	1.4	2.7	1.6	1.8	3.0	3.6	2.1	1.8	1.8	0.08
ø100	2.2	4.8	1.9	3.0	5.1	6.6	3.8	4.2	3.3	0.18
ø125	3.6	8.1	3.6	6.0	10.2	12.9	6.2	6.9	6.0	0.22
ø150	6.2	13.5	5.1	8.4	16.2	20.4	10.9	10.8	9.6	0.57

Stroke tolerance

Unit: mm

stroke	~100	101~250	251~630	631~1000	1001~1600	1601~2000
Tolerance	+0.8	+1.0	+1.25	+1.4	+1.6	+1.8
	0	0	0	0	0	0

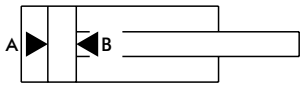
MDHB, MDHD, MDHN Theoretic force



Unit: KN

Tube I.D. (mm)	Rod (mm)	Area (mm^2)		Operating pressure (MPa)								
				6	7	8	9	10	11	12	13	14
ø40	ø20	A	1256	7.54	8.79	10.05	11.30	12.56	13.82	15.07	16.33	17.58
		B	942	5.65	6.59	7.54	8.48	9.42	10.36	11.30	12.25	13.19
ø50	ø25	A	1963	11.78	13.74	15.70	17.67	19.63	21.59	23.56	25.52	27.48
		B	1472	8.83	10.30	11.78	13.25	14.72	16.19	17.66	19.14	20.61
ø63	ø35	A	3116	18.70	21.81	24.93	28.06	31.18	34.28	37.39	40.51	43.62
		B	2154	12.92	15.08	17.23	19.39	21.54	23.69	25.85	28.00	30.16
ø80	ø40	A	5024	30.14	35.17	40.19	45.22	50.24	55.26	60.29	65.31	70.34
		B	3768	22.61	26.38	30.14	33.91	37.68	41.45	42.22	48.98	52.75
ø100	ø50	A	7850	47.10	54.95	62.80	70.65	78.50	86.35	94.20	102.05	109.90
		B	5887	35.32	41.21	47.10	52.98	58.87	64.76	70.64	76.53	82.42
ø125	ø60	A	12266	73.60	85.86	98.13	110.39	122.66	134.93	147.19	159.46	171.72
		B	9440	56.64	66.08	75.52	84.96	94.40	103.84	113.28	122.72	132.16
ø150	ø80	A	17662	105.97	123.63	141.30	158.96	176.62	194.28	211.94	229.61	247.27
		B	12638	75.83	88.47	101.10	113.74	126.38	139.02	151.66	164.29	176.93

MDMB, MDMD, MDMN Theoretic force



Unit: N

Tube I.D. (mm)	Rod (mm)	Area (mm^2)		Operating pressure (MPa)								
				2	3	4	5	6	7	8	9	10
ø40	ø20	A	1256	2512	3768	5024	6280	7536	8792	10048	11304	12560
		B	942	1884	2826	3768	4710	5652	6594	7536	8478	9420
ø50	ø25	A	1963	3926	5889	7852	9815	11778	13741	15704	17667	19630
		B	1472	2944	4416	5888	7360	8832	10304	11776	13248	14720
ø63	ø35	A	3116	6232	9348	12464	15580	18696	21812	24928	28062	31180
		B	2154	4308	6462	8616	10770	12924	15078	17232	19386	21540
ø80	ø40	A	5024	10048	15072	20096	25120	30144	35168	40192	45216	50240
		B	3768	7536	11304	15072	18840	22608	26376	30144	33912	3768
ø100	ø50	A	7850	15700	23550	31400	39250	47100	54950	62800	70650	78500
		B	5887	11774	17661	23548	29435	35322	41209	47196	52983	58870

The method of calculation (Hydraulic cylinders' force)

$$F = P \times A - f$$

F :	Cylinders' force	(N)
P :	Operating pressure	(MPa)
A :	Piston area	(mm^2)
f :	Friction drag	(N)

How to order the seal kit

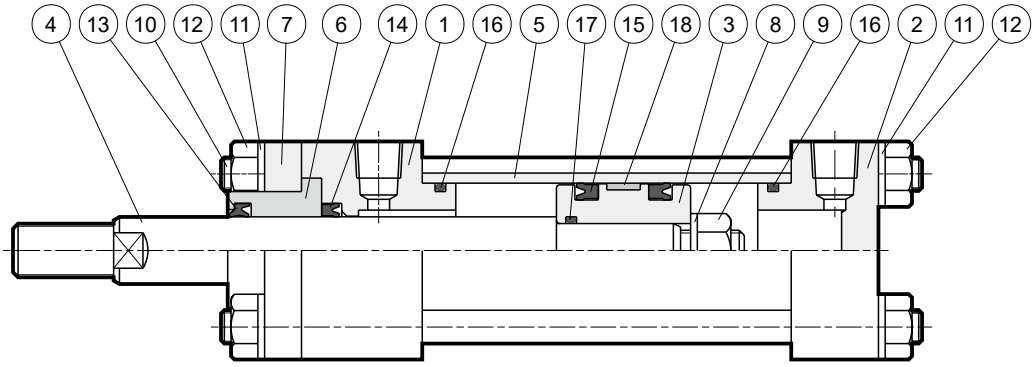
MDHBSK ☐

Tube I.D.	Seal kit
40	MDHBSK40 - Including No.13,14,15,16,17,18
50	MDHBSK50 - Including No.13,14,15,16,17,18
63	MDHBSK63 - Including No.13,14,15,16,17,18
80	MDHBSK80 - Including No.13,14,15,16,17,18
100	MDHBSK100 - Including No.13,14,15,16,17,18
125	MDHBSK125 - Including No.13,14,15,16,17,18
150	MDHBSK150 - Including No.13,14,15,16,17,18

MDHDSK ☐

Tube I.D.	Seal kit
40	MDHDSK40 - Including No.10,11,12,13,14,15
50	MDHDSK50 - Including No.10,11,12,13,14,15
63	MDHDSK63 - Including No.10,11,12,13,14,15
80	MDHDSK80 - Including No.10,11,12,13,14,15
100	MDHDSK100 - Including No.10,11,12,13,14,15
125	MDHDSK125 - Including No.10,11,12,13,14,15
150	MDHDSK150 - Including No.10,11,12,13,14,15

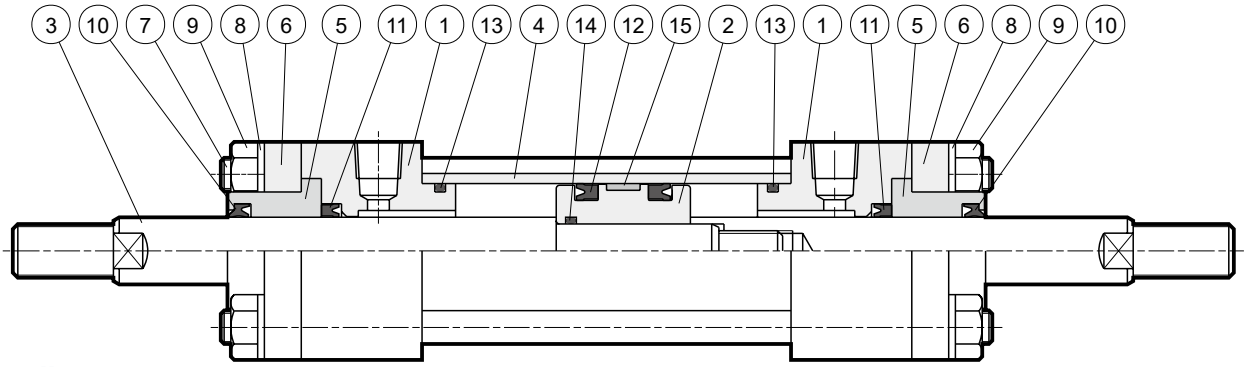
MDHB



Parts list

No.	Part name	Q'y	No.	Part name	Q'y	No.	Part name	Q'y
1	Rod cover	1	7	End plate	1	13	Dust wiper	1
2	Head cover	1	8	Spring washer	1	14	Rod packing	1
3	Piston	1	9	Piston nut	1	15	Piston packing	2
4	Piston rod	1	10	Tie bolt	4	16	Cylinder gasket	2
5	Cylinder tube	1	11	Spring washer	8	17	Piston gasket	1
6	Rod bush	1	12	Nut	8	18	Wearing ring	1

MDHD



Parts list

No.	Part name	Q'y	No.	Part name	Q'y	No.	Part name	Q'y
1	Rod cover	2	6	End plate	2	11	Rod packing	2
2	Piston	1	7	Tie bolt	4	12	Piston packing	2
3	Piston rod	1	8	Spring washer	8	13	Cylinder gasket	2
4	Cylinder tube	1	9	Nut	8	14	Piston gasket	1
5	Rod bush	2	10	Dust wiper	2	15	Wearing ring	1

How to order the seal kit

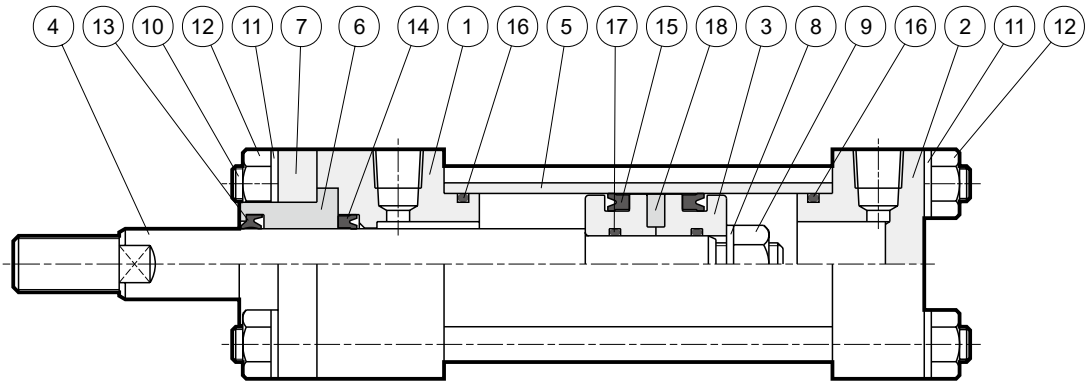
MDMBSK ☐

Tube I.D.	Seal kit
40	MDMBSK40 - Including No.13,14,15,16,17
50	MDMBSK50 - Including No.13,14,15,16,17
63	MDMBSK63 - Including No.13,14,15,16,17
80	MDMBSK80 - Including No.13,14,15,16,17
100	MDMBSK100 - Including No.13,14,15,16,17

MDMDSK ☐

Tube I.D.	Seal kit
40	MDMDSK40 - Including No.10,11,12,13,14
50	MDMDSK50 - Including No.10,11,12,13,14
63	MDMDSK63 - Including No.10,11,12,13,14
80	MDMDSK80 - Including No.10,11,12,13,14
100	MDMDSK100 - Including No.10,11,12,13,14

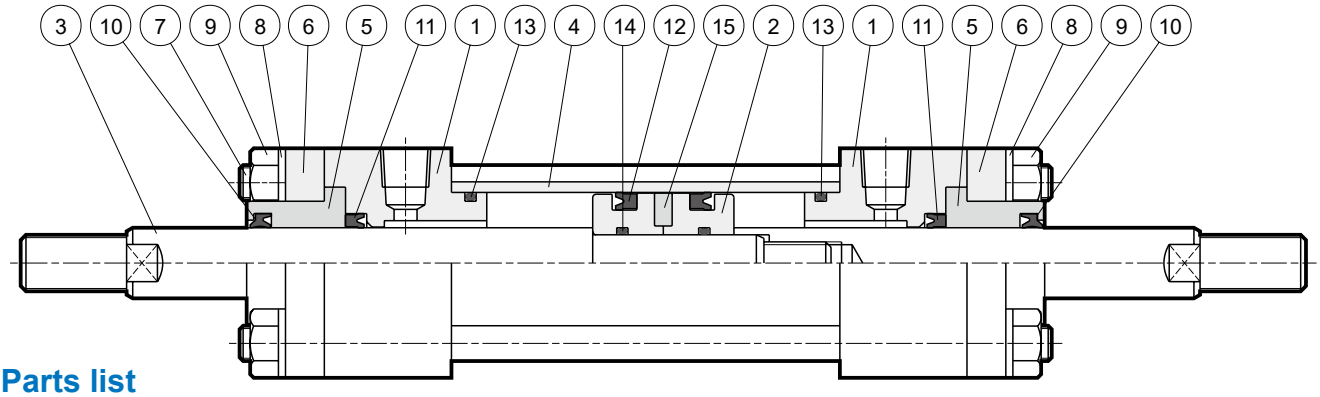
MDMB



Parts list

No.	Part name	Q'y	No.	Part name	Q'y	No.	Part name	Q'y
1	Rod cover	1	7	End plate	1	13	Dust wiper	1
2	Head cover	1	8	Spring washer	1	14	Rod packing	1
3	Piston	1	9	Nut	1	15	Piston packing	2
4	Piston rod	1	10	Tie bolt	4	16	Cylinder gasket	2
5	Cylinder tube	1	11	Spring washer	8	17	Piston gasket	1
6	Rod bush	1	12	Nut	8	18	Magnet	1

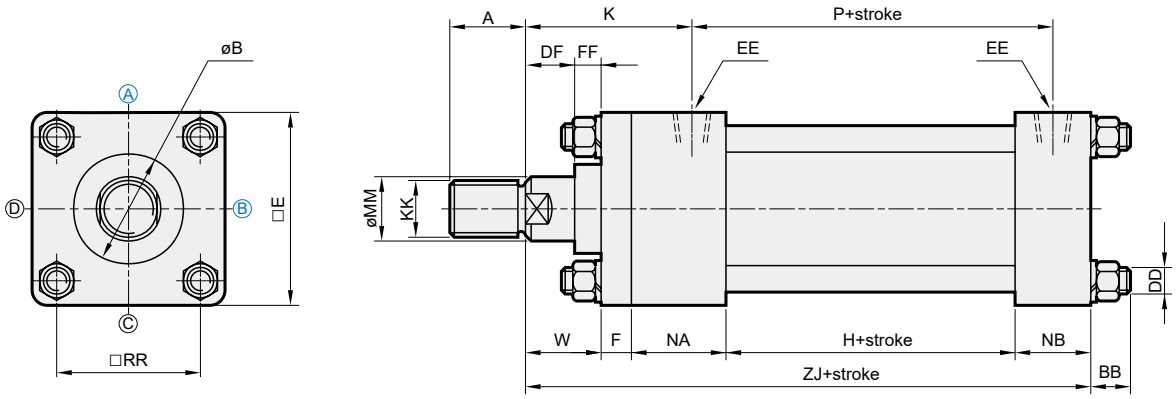
MDMD



Parts list

No.	Part name	Q'y	No.	Part name	Q'y	No.	Part name	Q'y
1	Rod cover	2	6	End plate	2	11	Rod packing	2
2	Piston	1	7	Tie bolt	4	12	Piston packing	2
3	Piston rod	1	8	Spring washer	8	13	Cylinder gasket	2
4	Cylinder tube	1	9	Nut	8	14	Piston gasket	1
5	Rod bush	2	10	Dust wiper	2	15	Magnet	1

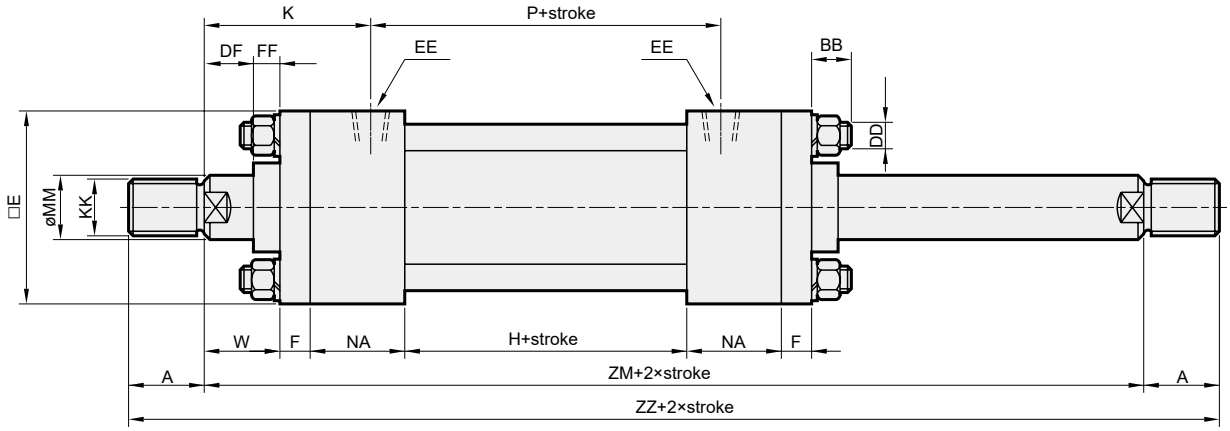
MDHB / MDMB Standard type



Note. Ⓐ Port location
Ⓑ Cushion adjustment location

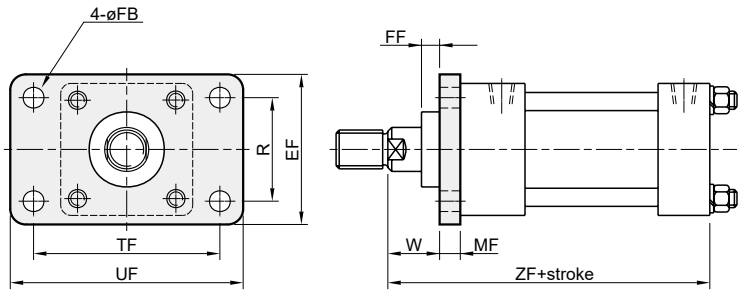
Code / Tube I.D.	A	B	BB	DD	DF	E	EE	F	FF	H	K	KK	MM	NA	NB	P	RR	W	ZJ
ø40	30	35	16	M10×1.25	14	65	Rc1/4	11	11	60	60	M16×1.5	20	36	26	84	45	25	158
ø50	35	40	16	M10×1.25	16	75	Rc3/8	13	9	60	66	M22×1.5	25	42	34	88	52	25	174
ø63	40	50	18	M12×1.5	21	90	Rc3/8	15	9	65	73	M30×1.5	35	42	34	93	63	30	186
ø80	45	55	18	M16×1.5	23	110	Rc1/2	18	7	65	79	M30×1.5	40	46	39	95	80	30	198
ø100	50	65	25	M18×1.5	33	135	Rc1/2	20	7	74	95	M40×2.0	50	50	40	104	102	40	224
ø125	60	75	30	M22×1.5	38	165	Rc3/4	25	7	74	109	M48×2.0	60	58	47	112	122	45	249
ø150	70	95	30	M26×1.5	43	195	Rc3/4	30	7	90	119	M72×2.0	80	58	48	128	148	50	276

MDHD / MDMD Double rod type



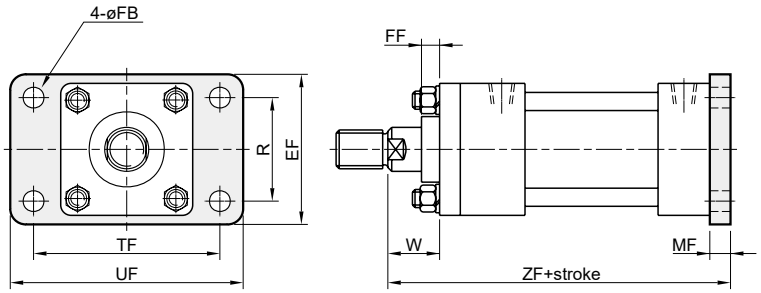
Code / Tube I.D.	A	B	BB	DD	DF	E	EE	F	FF	H	K	KK	MM	NA	P	RR	W	ZM	ZZ
ø40	30	35	16	M10×1.25	14	65	Rc1/4	11	11	60	60	M16×1.5	20	36	84	45	25	204	264
ø50	35	40	16	M10×1.25	16	75	Rc3/8	13	9	60	66	M22×1.5	25	42	88	52	25	220	290
ø63	40	50	18	M12×1.5	21	90	Rc3/8	15	9	65	73	M30×1.5	35	42	93	63	30	239	319
ø80	45	55	18	M16×1.5	23	110	Rc1/2	18	7	65	79	M30×1.5	40	46	95	80	30	253	343
ø100	50	65	25	M18×1.5	33	135	Rc1/2	20	7	74	95	M40×2.0	50	50	104	102	40	294	394
ø125	60	75	30	M22×1.5	38	165	Rc3/4	25	7	74	109	M48×2.0	60	58	112	122	45	330	450
ø150	70	95	30	M26×1.5	43	195	Rc3/4	30	7	90	119	M72×2.0	80	58	128	148	50	366	506

FA Front flange



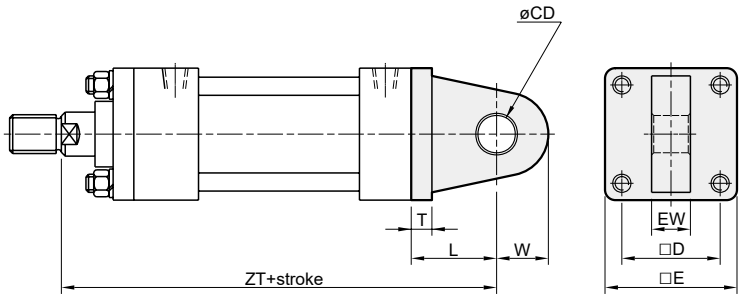
Code / Tube I.D.	EF	FB	FF	MF	R	TF	UF	W	ZF
ø40	69	11	11	11	46	95	118	25	158
ø50	85	11	9	13	58	115	145	25	174
ø63	98	14	9	15	65	132	165	30	186
ø80	118	18	7	18	87	155	190	30	198
ø100	150	22	7	20	109	190	230	40	224
ø125	175	24	7	25	130	224	272	45	249
ø150	210	28	7	30	155	270	320	50	276

FB Rear flange



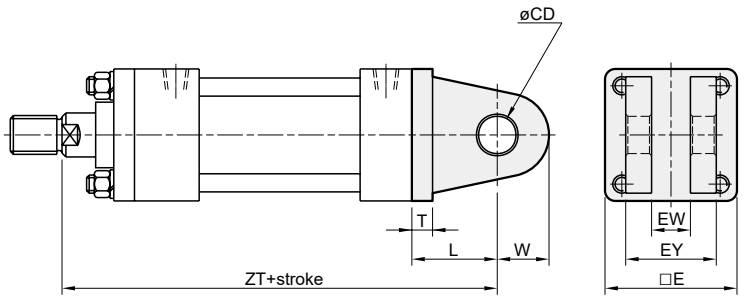
Code / Tube I.D.	EF	FB	FF	MF	R	TF	UF	W	ZF
ø40	69	11	11	11	46	95	118	25	169
ø50	85	11	9	13	58	115	145	25	187
ø63	98	14	9	15	65	132	165	30	201
ø80	118	18	7	18	87	155	190	30	216
ø100	150	22	7	20	109	190	230	40	244
ø125	175	24	7	25	130	224	272	45	274
ø150	210	28	7	30	155	270	320	50	306

CA Male pivot



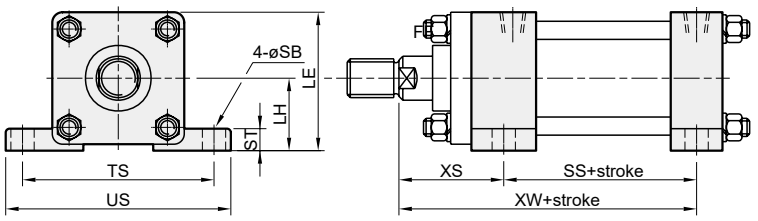
Code / Tube I.D.	CD	D	E	EW	L	T	W	ZT
ø40	16	45	65	20	38	11	16	196
ø50	20	52	75	25	45	13	20	219
ø63	25	63	90	30	54	15	25	240
ø80	30	80	110	35	71	18	30	269
ø100	40	102	135	40	86	20	40	310
ø125	50	122	165	50	110	25	50	359
ø150	60	148	195	60	109	30	60	385

CB Female pivot



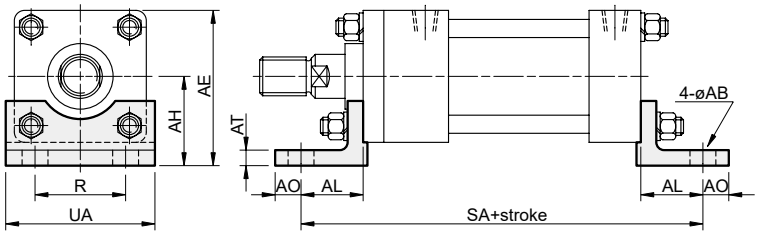
Code / Tube I.D.	CD	E	EW	EY	L	T	W	ZT
ø40	16	65	20	50	38	11	16	196
ø50	20	75	25	57	45	13	20	219
ø63	25	90	30	70	54	15	25	240
ø80	30	110	35	80	71	18	30	269
ø100	40	135	40	100	86	20	40	310
ø125	50	165	50	126	110	25	50	359
ø150	60	195	60	160	109	30	60	385

LA Side lugs



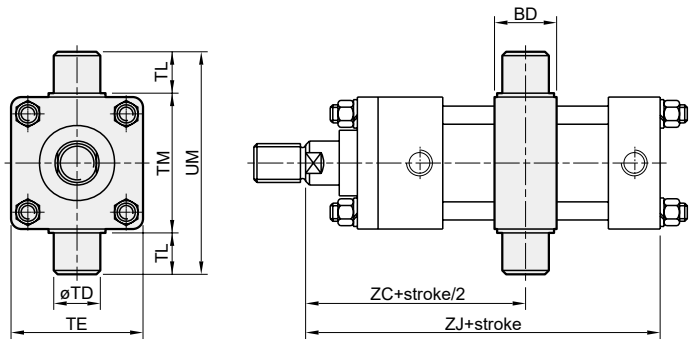
Code / Tube I.D.	LE	LH	SB	SS	ST	TS	XS	XW	US
ø40	70	37.5	11	91	14	95	54	145	118
ø50	82.5	45	11	98	17	115	59	157	145
ø63	95	50	14	103	19	132	66	169	165
ø80	115	60	18	107.5	25	155	71	178.5	190
ø100	138.5	71	22	119	27	190	85	204	230
ø125	167.5	85	24	126.5	32	224	99	225.5	272
ø150	203.5	106	28	143	37	270	109	252	320

LB Foot mouting



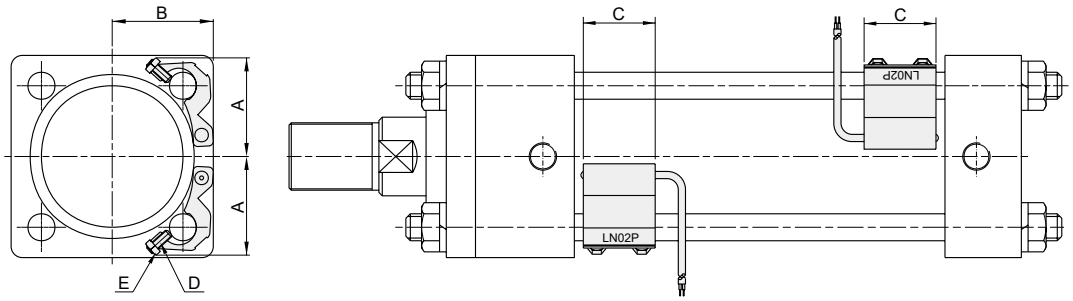
Code / Tube I.D.	AB	AE	AH	AL	AO	AT	R	SA	UA
ø40	11	75.5	43	32.5	13	8	46	198	69
ø50	11	87.5	50	32.5	15	8	58	214	85
ø63	14	105	60	37	18	10	65	230	98
ø80	18	127	72	49	20	12	87	266	118
ø100	22	152.5	85	58	23	12	109	300	150
ø125	24	187.5	105	68.5	29	15	130	341	175
ø150	28	220.5	123	74.5	30	18	155	375	210

TC Intermediate pivot



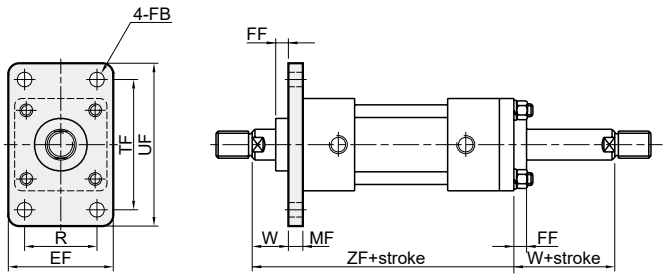
Code / Tube I.D.	BD	TE	TD	TL	TM	UM	ZC	ZJ
ø40	28	65	20	20	69	109	102	158
ø50	33	75	25	25	85	135	110	174
ø63	38	90	30	30	98	158	119.5	186
ø80	38	110	30	30	118	178	126.5	198
ø100	48	135	40	40	145	225	147	224
ø125	58	165	50	50	175	275	165	249
ø150	73	195	60	63	205	331	183	276

Installation of sensor switchs



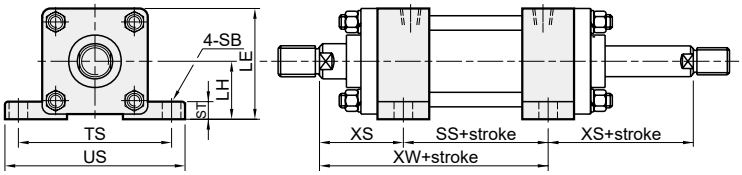
Code / Tube I.D.	Sensor switch	A	B	C	D	E
ø40	LN01P	33.7	33	32	M4×12L	M4
ø50	LN01P	36.6	37	32	M4×12L	M4
ø63	LN02P	44	45	32	M4×12L	M4
ø80	LN03P	54	56	32	M4×12L	M4
ø100	LN03P	65	67	32	M4×12L	M4

FA Front flange



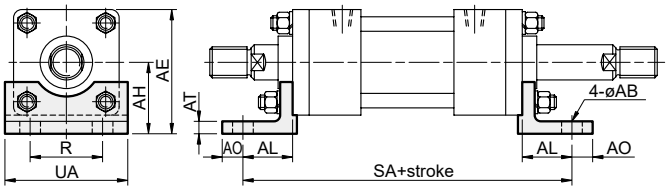
Code / Tube I.D.	EF	FB	FF	MF	R	TF	UF	W	ZF
ø40	69	11	11	11	46	95	118	25	179
ø50	85	11	9	13	58	115	145	25	195
ø63	98	14	9	15	65	132	165	30	209
ø80	118	18	7	18	87	155	190	30	223
ø100	150	22	7	20	109	190	230	40	254
ø125	175	24	7	25	130	224	272	45	285
ø150	210	28	7	30	155	270	320	50	316

LA Side lugs



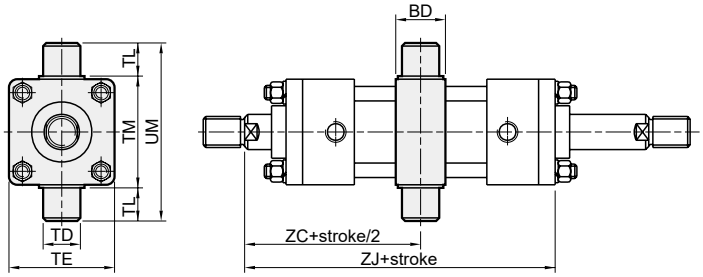
Code / Tube I.D.	LE	LH	SB	SS	ST	TS	XS	XW	US
ø40	70	37.5	11	96	14	95	54	150	118
ø50	82.5	45	11	102	17	115	59	161	145
ø63	95	50	14	107	19	132	66	173	165
ø80	115	60	18	111	25	155	71	182	190
ø100	138.5	71	22	124	27	190	85	209	230
ø125	167.5	85	24	132	32	224	99	231	272
ø150	203.5	106	28	148	37	270	109	257	320

LB Foot mouting



Code / Tube I.D.	AB	AE	AH	AL	AO	AT	R	SA	UA
ø40	11	75.5	43	32.5	13	8	46	219	69
ø50	11	87.5	50	32.5	15	8	58	235	85
ø63	14	105	60	37	18	10	65	253	98
ø80	18	127	72	49	20	12	87	291	118
ø100	22	152.5	85	58	23	12	109	330	150
ø125	24	187.5	105	68.5	29	15	130	377	175
ø150	28	220.5	123	74.5	30	18	155	415	210

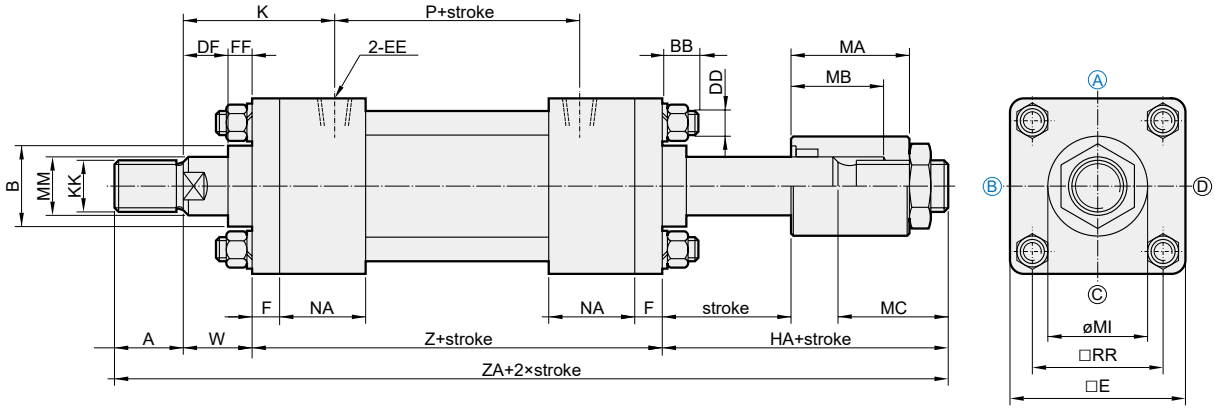
TC Intermediate pivot



Code / Tube I.D.	BD	TE	TD	TL	TM	UM	ZC	ZJ
ø40	28	65	20	20	69	109	102	179
ø50	33	75	25	25	85	135	110	195
ø63	38	90	30	30	98	158	119.5	209
ø80	38	110	30	30	118	178	126.5	223
ø100	48	135	40	40	145	225	147	254
ø125	58	165	50	50	175	275	165	285
ø150	73	195	60	63	205	331	183	316

MDHN / MDMN (A : adjustable stroke 25 mm)

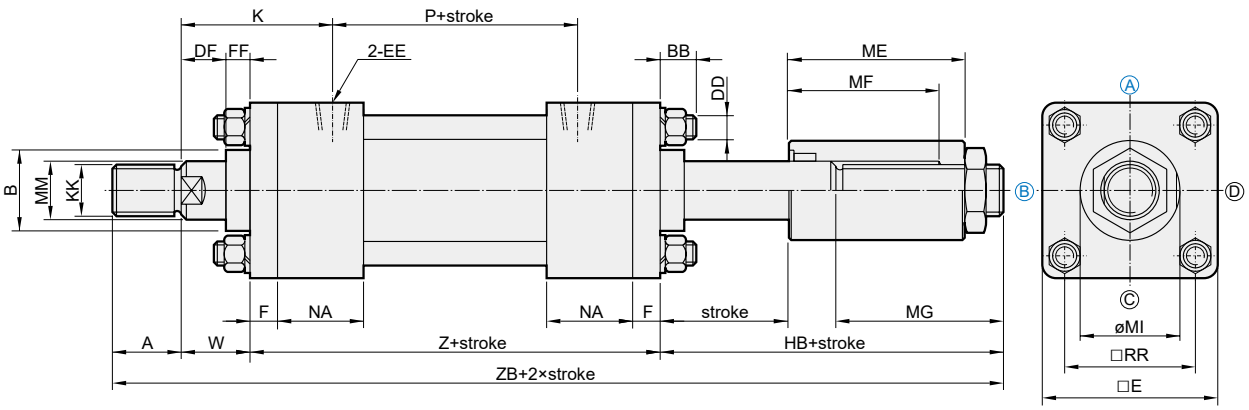
Note. Ⓐ Port location
Ⓑ Cushion adjustment location



Code / Tube I.D.	A	B	BB	DD	DF	E	EE	F	FF	HA	K	KK	MA	MB	MC	MI	MM	NA	P	RR	W	Z	ZA
ø40	30	35	14	M10×1.25	14	65	Rc1/4	11	11	71	59	M16×1.5	60	45	51	42	20	36	86	45	25	154	280
ø50	35	40	14	M10×1.25	16	75	Rc3/8	13	9	77	65	M22×1.5	63	45	57	50	25	42	90	52	25	170	307
ø63	40	50	16	M12×1.5	21	90	Rc3/8	15	9	81	72	M30×1.5	65	45	61	60	35	42	95	63	30	179	330
ø80	45	55	19	M16×1.5	23	110	Rc1/2	18	7	81	76	M30×1.5	65	45	61	70	40	46	101	80	30	193	349
ø100	50	65	25	M18×1.5	33	135	Rc1/2	20	7	88	92	M40×2.0	70	45	68	80	50	50	110	102	40	214	392
ø125	60	75	30	M22×1.5	38	165	Rc3/4	25	7	97	108	M48×2.0	76	46	73	85	60	58	114	122	45	240	442
ø150	70	95	30	M26×1.5	43	195	Rc3/4	30	7	112	118	M72×2.0	86	46	92	110	80	58	130	148	50	266	498

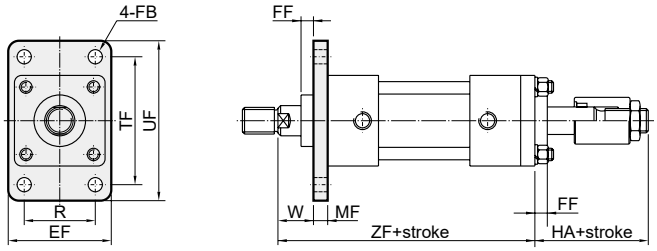
MDHN / MDMN (B : adjustable stroke 50 mm)

Note. Ⓐ Port location
Ⓑ Cushion adjustment location



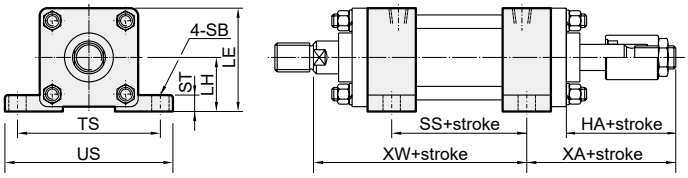
Code / Tube I.D.	A	B	BB	DD	DF	E	EE	F	FF	HB	K	KK	ME	MF	MG	MI	MM	NA	P	RR	W	Z	ZB
ø40	30	35	14	M10×1.25	14	65	Rc1/4	11	11	96	59	M16×1.5	85	70	76	42	20	36	86	45	25	154	305
ø50	35	40	14	M10×1.25	16	75	Rc3/8	13	9	102	65	M22×1.5	88	70	82	50	25	42	90	52	25	170	332
ø63	40	50	16	M12×1.5	21	90	Rc3/8	15	9	106	72	M30×1.5	90	70	86	60	35	42	95	63	30	179	355
ø80	45	55	19	M16×1.5	23	110	Rc1/2	18	7	106	76	M30×1.5	90	70	86	70	40	46	101	80	30	193	374
ø100	50	65	25	M18×1.5	33	135	Rc1/2	20	7	113	92	M40×2.0	95	70	93	80	50	50	110	102	40	214	417
ø125	60	75	30	M22×1.5	38	165	Rc3/4	25	7	122	108	M48×2.0	101	71	98	85	60	58	114	122	45	240	467
ø150	70	95	30	M26×1.5	43	195	Rc3/4	30	7	137	118	M72×2.0	111	71	117	110	80	58	130	148	50	266	523

FA (A : adjustable stroke 25 mm)



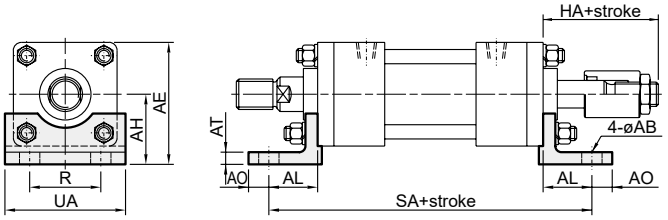
Code / Tube I.D.	EF	FB	FF	HA	MF	R	TF	UF	W	ZF
ø40	69	11	11	71	11	46	95	118	25	179
ø50	85	11	9	77	13	58	115	145	25	195
ø63	98	14	9	81	15	65	132	165	30	209
ø80	118	18	7	81	18	87	155	190	30	223
ø100	150	22	7	88	20	109	190	230	40	254
ø125	175	24	7	97	25	130	224	272	45	285
ø150	210	28	7	112	30	155	270	320	50	316

LA (A : adjustable stroke 25 mm)



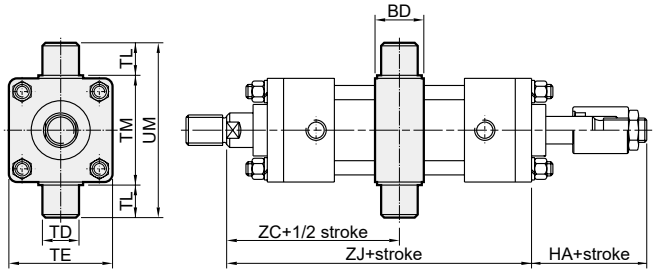
Code / Tube I.D.	LE	LH	HA	SB	SS	ST	TS	XA	XW	US
ø40	70	37.5	71	11	96	14	95	100	150	118
ø50	82.5	45	77	11	102	17	115	111	161	145
ø63	95	50	81	14	107	19	132	117	173	165
ø80	115	60	81	18	111	25	155	122	182	190
ø100	138.5	71	88	22	124	27	190	133	209	230
ø125	167.5	85	97	24	132	32	224	151	231	272
ø150	203.5	106	112	28	148	37	270	171	257	320

LB (A : adjustable stroke 25 mm)



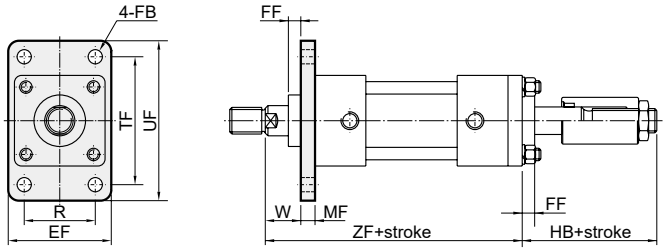
Code / Tube I.D.	AB	AE	AH	AL	AO	AT	HA	R	SA	UA
ø40	11	75.5	43	32.5	13	8	71	46	219	69
ø50	11	87.5	50	32.5	15	8	77	58	235	85
ø63	14	105	60	37	18	10	81	65	253	98
ø80	18	127	72	49	20	12	81	87	291	118
ø100	22	152.5	85	58	23	12	88	109	330	150
ø125	24	187.5	105	68.5	29	15	97	130	377	175
ø150	28	220.5	123	74.5	30	18	112	155	415	210

TC (A : adjustable stroke 25 mm)



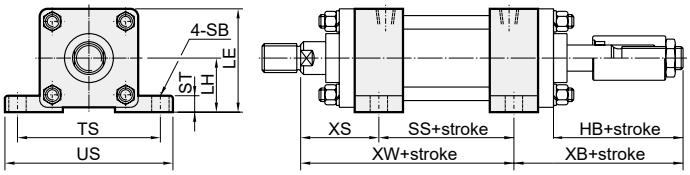
Code / Tube I.D.	BD	HA	TE	TD	TL	TM	UM	ZC	ZJ
ø40	28	71	65	20	20	69	109	102	179
ø50	33	77	75	25	25	85	135	110	195
ø63	38	81	90	30	30	98	158	119.5	209
ø80	38	81	110	30	30	118	178	126.5	223
ø100	48	88	135	40	40	145	225	147	254
ø125	58	97	165	50	50	175	275	165	285
ø150	73	112	195	60	63	205	331	183	316

FA (B : adjustable stroke 50 mm)



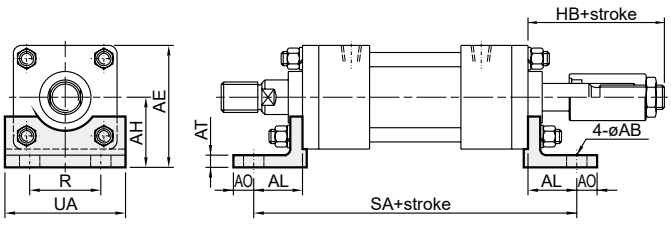
Code / Tube I.D.	EF	FB	FF	HB	MF	R	TF	UF	W	ZF
ø40	69	11	11	96	11	46	95	118	25	179
ø50	85	11	9	102	13	58	115	145	25	195
ø63	98	14	9	106	15	65	132	165	30	209
ø80	118	18	7	106	18	87	155	190	30	223
ø100	150	22	7	113	20	109	190	230	40	254
ø125	175	24	7	122	25	130	224	272	45	285
ø150	210	28	7	137	30	155	270	320	50	316

LA (B : adjustable stroke 50 mm)



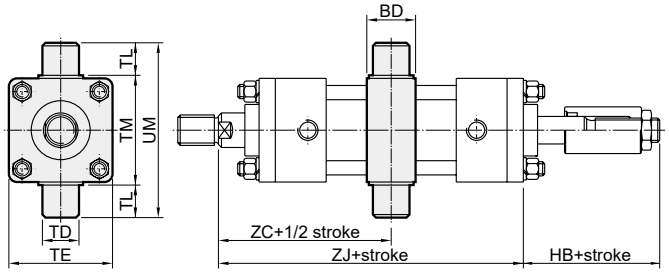
Code / Tube I.D.	LE	LH	HB	SB	SS	ST	TS	XB	XW	US
ø40	70	37.5	96	11	96	14	95	125	150	118
ø50	82.5	45	102	11	102	17	115	136	161	145
ø63	95	50	106	14	107	19	132	142	173	165
ø80	115	60	106	18	111	25	155	147	182	190
ø100	138.5	71	113	22	124	27	190	158	209	230
ø125	167.5	85	122	24	132	32	224	176	231	272
ø150	203.5	106	137	28	148	37	270	196	257	320

LB (B : adjustable stroke 50 mm)



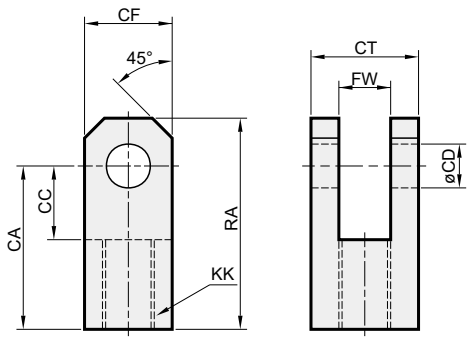
Code / Tube I.D.	AB	AE	AH	AL	AO	AT	HB	R	SA	UA
ø40	11	75.5	43	32.5	13	8	96	46	219	69
ø50	11	87.5	50	32.5	15	8	102	58	235	85
ø63	14	105	60	37	18	10	106	65	253	98
ø80	18	127	72	49	20	12	106	87	291	118
ø100	22	152.5	85	58	23	12	113	109	330	150
ø125	24	187.5	105	68.5	29	15	122	130	377	175
ø150	28	220.5	123	74.5	30	18	137	155	415	210

TC (B : adjustable stroke 50 mm)



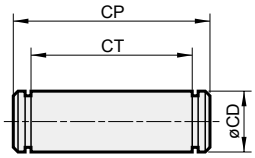
Code / Tube I.D.	BD	HB	TE	TD	TL	TM	UM	ZC	ZJ
ø40	28	96	65	20	20	69	109	102	179
ø50	33	102	75	25	25	85	135	110	195
ø63	38	106	90	30	30	98	158	119.5	209
ø80	38	106	110	30	30	118	178	126.5	223
ø100	48	113	135	40	40	145	225	147	254
ø125	58	122	165	50	50	175	275	165	285
ø150	73	137	195	60	63	205	331	183	316

Y connector



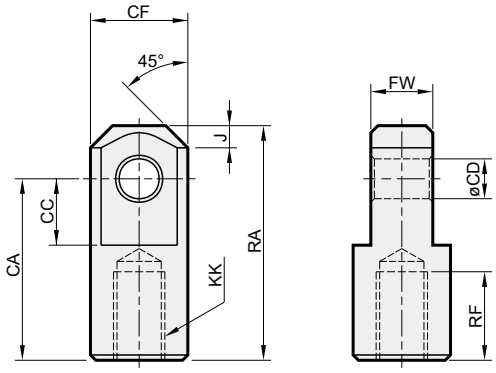
Model	Tube I.D.	CA	CC	CD	CF	CT	FW	KK	RF
Y-M16×1.5	ø40	50	26	16	35	45	20	M16×1.5	24
Y-M22×1.5	ø50	60	30	20	40	50	25	M22×1.5	30
Y-M30×1.5	ø63	80	40	25	50	60	30	M30×1.5	40
Y-M30×1.5	ø80	80	40	30	60	65	35	M30×1.5	40
Y-M40×2.0	ø100	90	50	40	80	90	40	M40×2.0	40
Y-M48×2.0	ø125	110	60	50	100	100	50	M48×2.0	50
Y-M72×2.0	ø150	130	70	60	120	120	60	M72×2.0	60

Pin



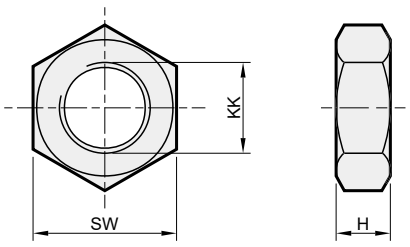
Model	Tube I.D.	CD	CP		CT	
		Y / CB-PIN	**Y**-PIN	**CB**-PIN	**Y**-PIN	**CB**-PIN
P1659	ø40	16	59	64	46	51
P2066	ø50	20	66	73	51	58
P2576	ø63	25	76	86	61	71
P3081	ø80	30	81	96	66	81
P40114	ø100	40	114	124	91	101
P50124	ø125	50	124	150	101	127
P60156	ø150	60	156	196	121	161

I connector



Model	Tube I.D.	CA	CC	CD	CF	FW	J	KK	RA	RF
I-M16×1.5	ø40	55	30	16	40	20	8	M16×1.5	75	20
I-M22×1.5	ø50	65	35	20	50	25	10	M22×1.5	90	25
I-M30×1.5	ø63	80	40	25	55	30	12.5	M30×1.5	110	35
I-M30×1.5	ø80	90	45	30	60	35	15	M30×1.5	125	35
I-M40×2.0	ø100	105	55	40	80	40	20	M40×2.0	145	40
I-M48×2.0	ø125	120	65	50	100	50	30	M48×2.0	170	50
I-M72×2.0	ø150	140	75	60	120	60	30	M72×2.0	200	55

Mounting nut



Model	Tube I.D.	H	KK	SW
N-M16×1.5	ø40	8	M16×1.5	24
N-M22×1.5	ø50	11	M22×1.5	32
N-M30×1.5	ø63	13	M30×1.5	41
N-M30×1.5	ø80	13	M30×1.5	41
N-M40×2.0	ø100	15	M40×2.0	57
N-M48×2.0	ø125	15	M48×2.0	65
N-M72×2.0	ø150	20	M72×2.0	100