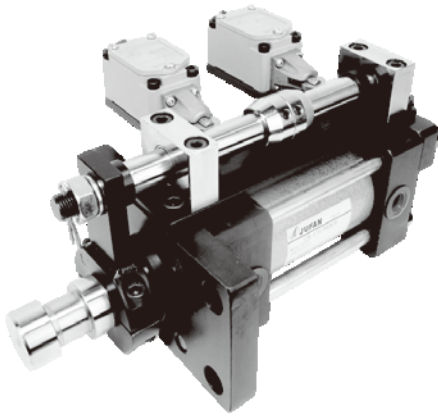


MDH SENSOR TIE ROD CYLINDERS



- MDH model is a heavy duty tie-rod cylinder with limit switches which are used to control precisely position of molds.
- MDH is especially suit for die-casting molding machines.

Tie-rod
Hydraulic
Cylinder

Mold
Hydraulic
Cylinders

Swivel &
Clamp
Hydraulic
Cylinders

Booster
Cylinders
&
Undamping
cylinders

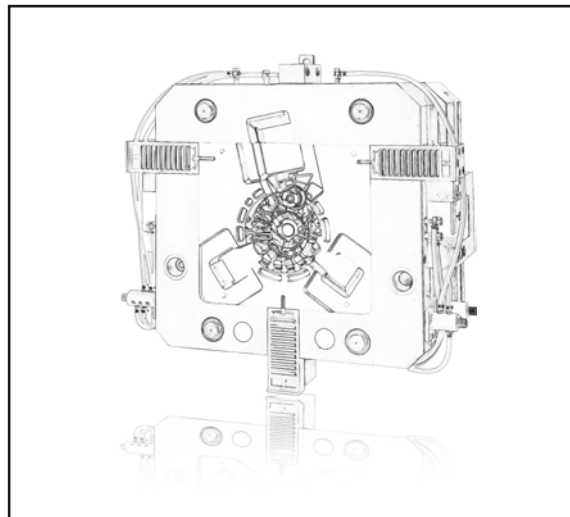
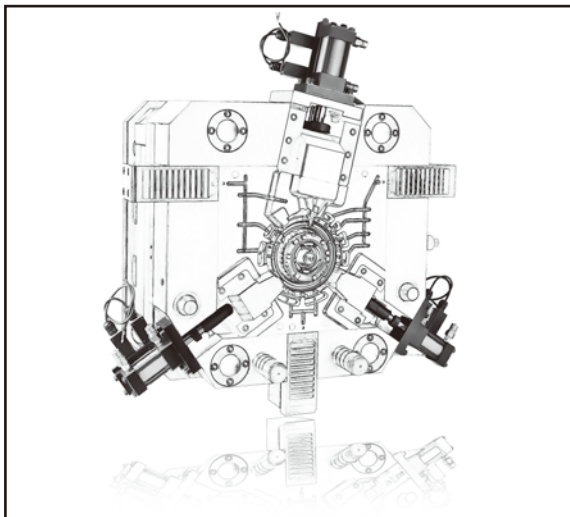
ISO
Specifications
Cylinders

Round
Hydraulic
Cylinders

Specific
Hydraulic
Cylinders

Systems
&
Fittings

EXAMPLE



THEORETICAL OUTPUT TABLE

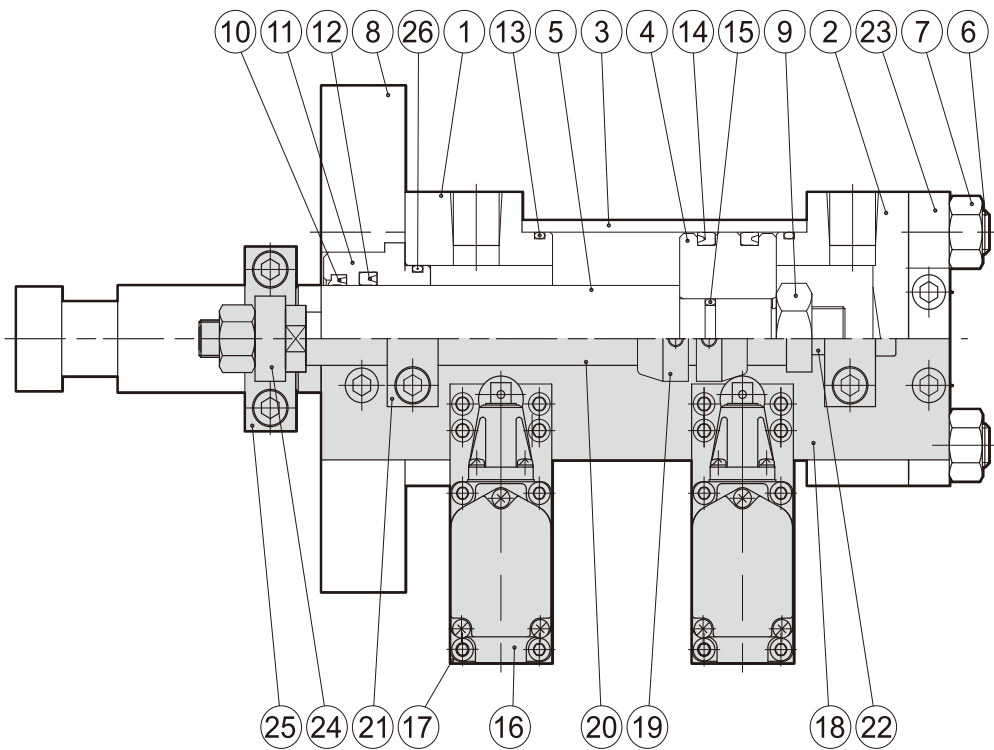
Bore (mm)				32	40	50	63	80	100	125	150
Piston pressure area (cm ²)	Retract (cm ²)			8.0	12.6	19.6	31.2	50.3	78.5	122.7	176.7
	Extend (cm ²)	Shaft diameter	C class	6.0	9.4	14.7	24.1	40.6	66.0	98.1	143.5
			B class	4.9	7.7	12.6	21.6	37.7	53.9	84.2	120
Theoretical output (kgf)	Pressure (70kgf/cm ²)	Retract		563	880	1374	2182	3519	5498	8590	12370
		Shaft diameter	C class	422	660	1031	1687	2845	4618	6866	10047
			B class	343	536	880	1509	2639	3774	5896	8398
	Pressure (140kgf/cm ²)	Retract		1126	1759	2749	4364	7037	10996	17181	24740
		Shaft diameter	C class	844	1319	2062	3375	5690	9236	13732	20094
			B class	686	1072	1759	3017	5278	7547	11793	16796
	Pressure (210kgf/cm ²)	Retract		1689	2639	4123	6546	10556	16493	25771	37110
		Shaft diameter	C class	1267	1979	3093	5062	8535	13854	20599	30142
			B class	1029	1608	2639	4526	7917	11321	17689	25194



Notes:

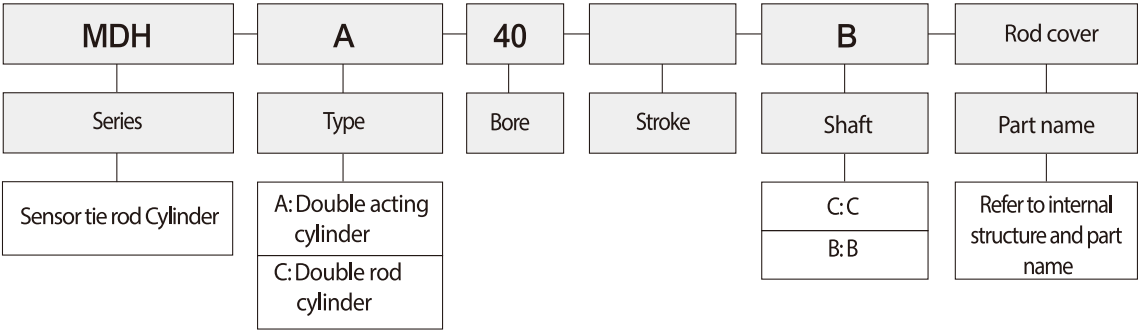
Application of MDH tie-rod mold cylinders especially attent to the compression area and output of the extend side.

INTERNAL STRUCTURE
AND PART NAMES



Item	Part name	Qty	Item	Part name	Qty	Item	Part name	Qty
①	Rod cover	1	⑩	Dust seal	1	⑲	Touch block	2
②	Head cover	1	⑪	Rod O-ring	1	⑳	Touch rod	1
③	Tube	1	⑫	Rod seal	1	㉑	Mounting socket	2
④	Piston	1	⑬	Cover O-ring	2	㉒	Support rod	1
⑤	Rod	1	⑭	Piston seal	2	㉓	Holding plate	1
⑥	Tie-rod	4	⑮	Piston O-ring	1	㉔	Rod connector	1
⑦	Tie-rod nut	4	⑯	Limit switches	2	㉕	Connecting plate	1
⑧	Flange	1	⑰	Limit switches mounting plate	2	㉖	Cover O-ring	1
⑨	Piston nut	1	⑱	Main mounting plate	1			

ORDER INDICATION



Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Undamping cylinders

ISO Specifications Cylinders

Round Hydraulic Cylinders

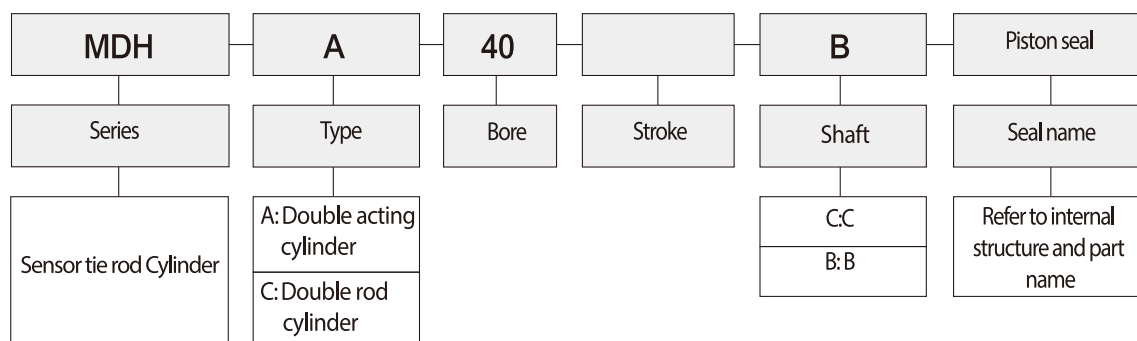
Specific Hydraulic Cylinders

Systems & Fittings

SEAL SPEC.

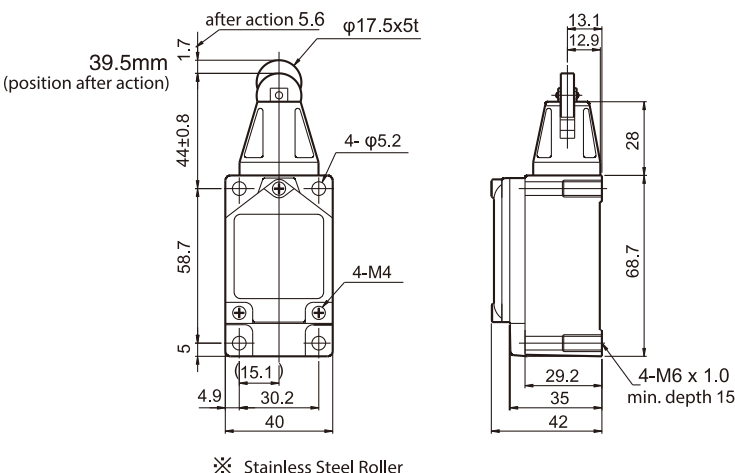
Bore	Shaft	Item	⑩	⑫	⑬	⑭	⑮	⑳
			Dust seal	Rod seal	Cover O-ring	Piston seal	Piston O-ring	Cover O-ring
			1	1	2	2	1	1
40	C		20x28x6	20x28x5	G35	30x40x6	AP10A	G30
	B		25x33x6	25x33x5				
50	C		25x33x6	25x33x5	G45	40x50x6	P14	G35
	B		30x38x6.5	30x40x6				
63	C		30x38x6.5	30x40x6	G58	53x63x6	P20	G45
	B		35x43x6.5	35x45x6				
80	C		35x43x6.5	35x45x6	G75	70x80x6	G25	G50
	B		40x48x6.5	40x50x6				
100	C		40x48x6.5	40x50x6	G95	85x100x9	G30	G60
	B		56x64x6.5	56x66x6			G40	
125	C		56x64x6.5	56x66x6	G120	112x125x9	G45	G85
	B		70x80x8	70x80x8				
150	C		65x73x6.5	65x75x6	G145	136x150x8.5	G50	G100
	B		85x95x8	85x100x9				

ORDER INDICATION

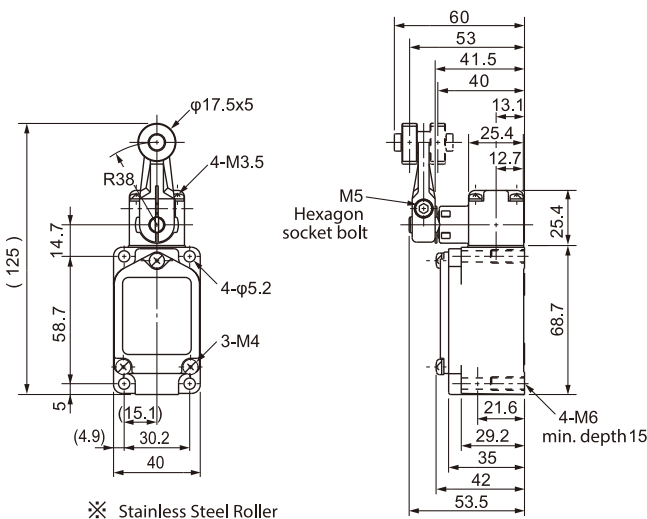


MDH FEATURE & SPEC. OF LIMIT SWITCHES

● WLD2-Q (Roller plunger type)



● WLCA2-Q



Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Undamping cylinders

ISO Specifications Cylinders

Round Hydraulic Cylinders

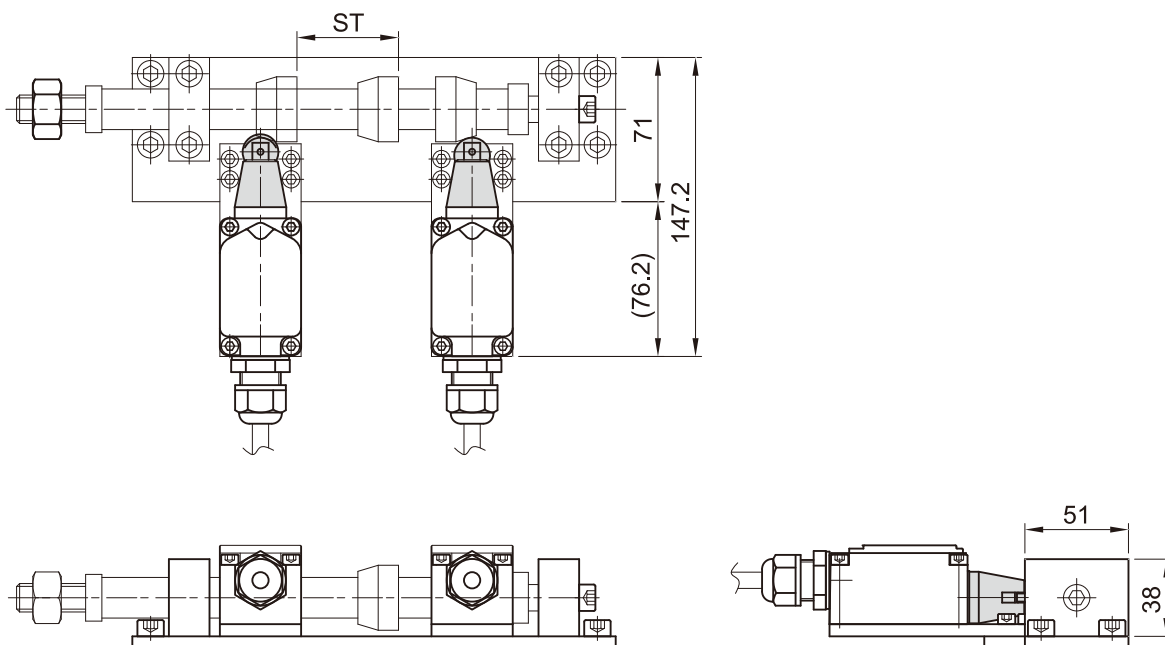
Specific Hydraulic Cylinders

Systems & Fittings

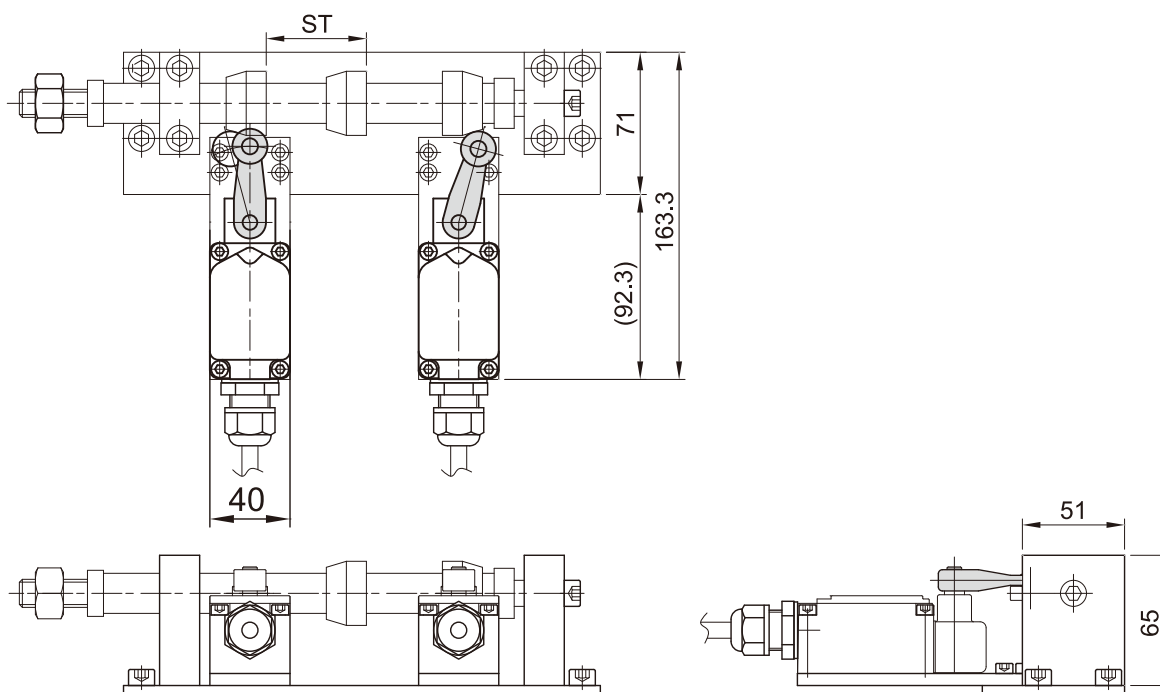
Protection	IP67		Fix frequency	50/60Hz
Operating speed	1mm-1m/s		Insulation resistance	100MΩmin.(DC500 V)
Durability	Electrical	>15 million times	Contact resistance	<25mΩ (initial value)
	Mechanical	>750,000 times	Insulation voltage(UI)	250V (EN60947-5-1)
Operating frequency	Electrical	120 times/ mins	Temperature	-10°C~+80°C (without freezing)
	Mechanical	30 times/ mins	Humidity	35~95% RH

LIMIT SWITCHES TYPE

- LD2 (Roller plunger type)

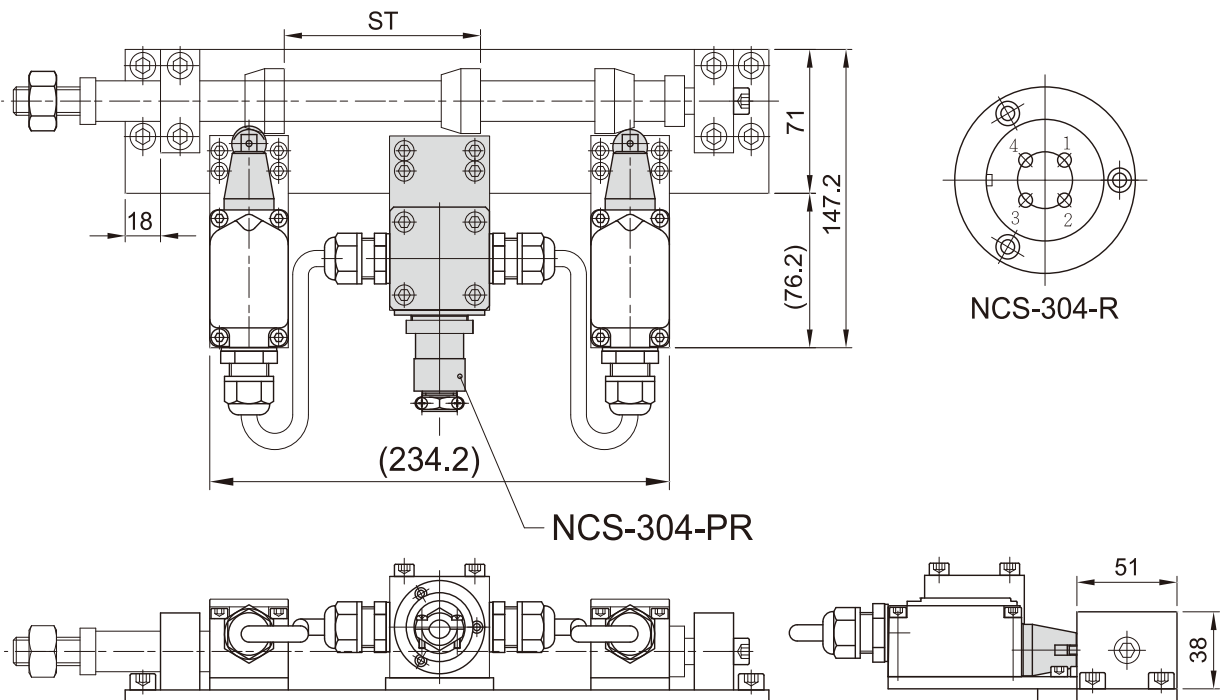


- LC2 (Roller handle type)

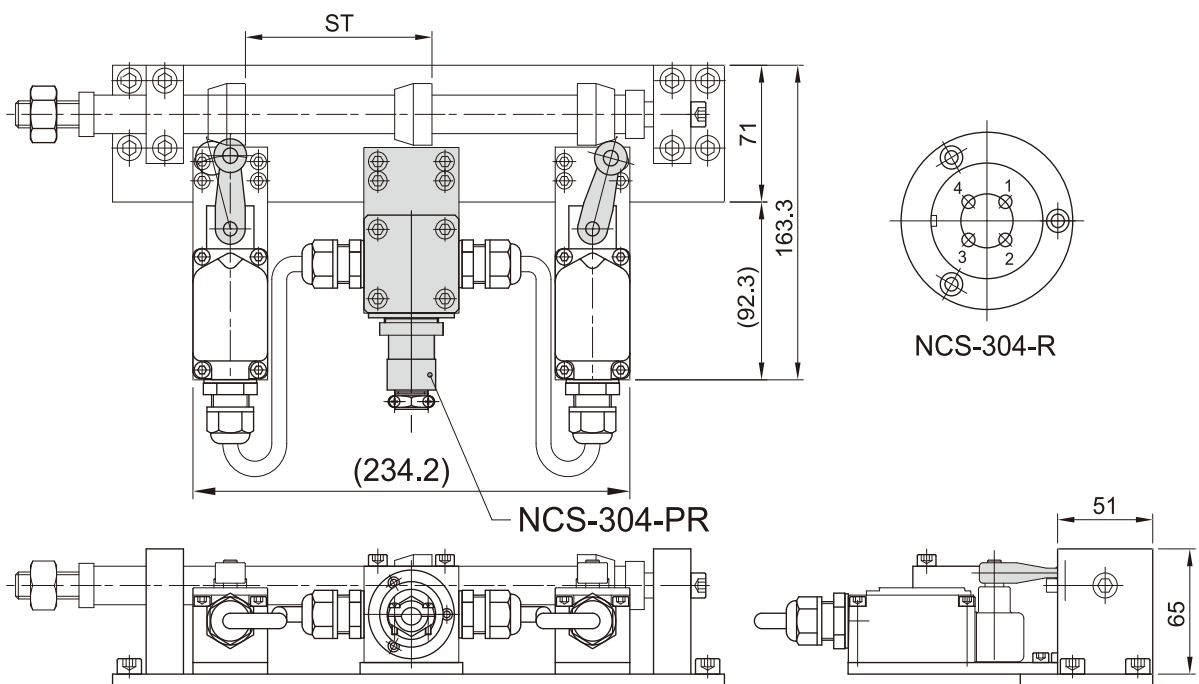


LIMIT SWITCHES TYPE

- **PLD** (LD2 with nanaboshi connector)



- **PLC** (LC2 with nanaboshi connector)



Tie-rod
Hydraulic
Cylinder

Mold
Hydraulic
Cylinders

Swivel &
Clamp
Hydraulic
Cylinders

Booster
Cylinders
&
Undamping
cylinders

ISO
Specifications
Cylinders

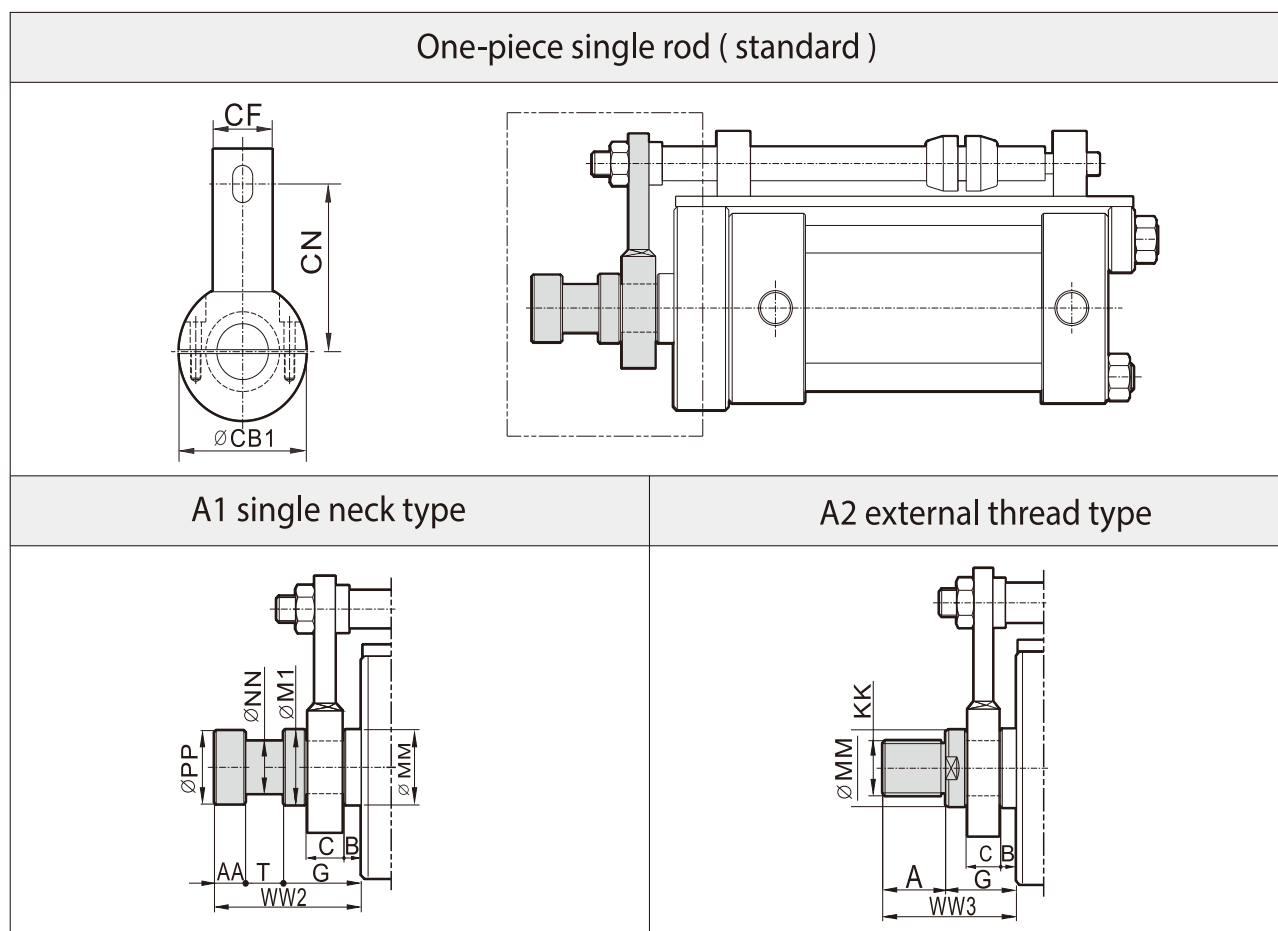
Round
Hydraulic
Cylinders

Specific
Hydraulic
Cylinders

Systems
&
Fittings

MDH ROD END TYPE

- Single rod

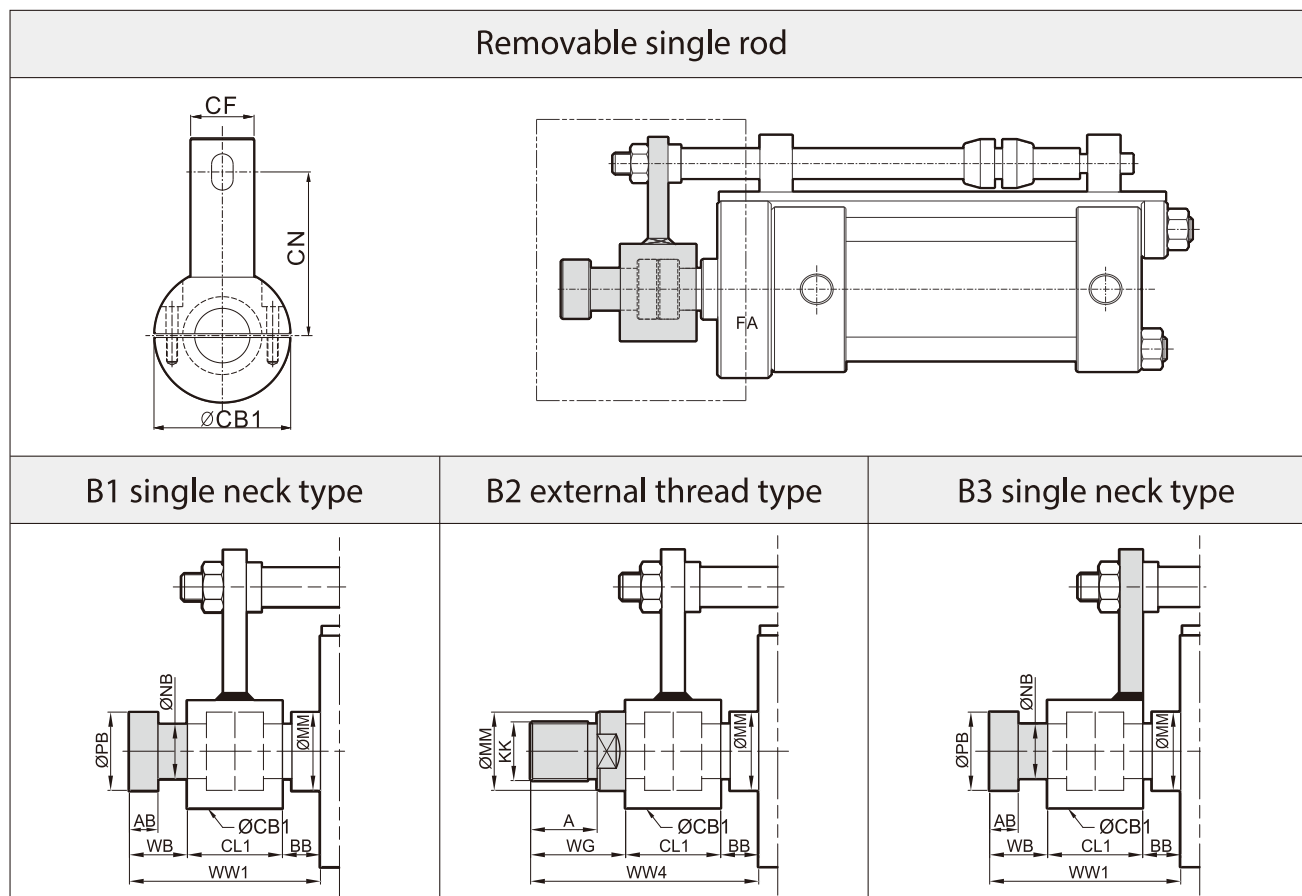


Symbol Bore	B class rod															
	A	B	C	G	T	M1	MM	AA	PP	NN	CF	CN	CB1	WW2	WW3	KK
40	30	5	22	40	15	25	25	15	25	18	25	59.5	60	70	70	M20x1.5
50	35	5	22	40	15	30	30	15	30	22	25	67.5	60	70	75	M24x1.5
63	45	5	22	40	22	35	35	18	34	25	32	74	69	80	85	M30x1.5
80	55	10	22	45	22	40	40	18	39	28	32	84	69	85	100	M36x2.0
100	70	10	22	45	27	56	56	20	49	38	38	100	89	92	115	M48x2.0
125	80	10	22	50	27	70	70	20	63	49	38	113	99	97	140	M64x2.0
150	110	10	22	50	30	85	85	25	70	58	38	130	119	105	160	M76x2.0

Symbol Bore	C class rod															
	A	B	C	G	T	M1	MM	AA	PP	NN	CF	CN	CB1	WW2	WW3	KK
40	25	5	22	40	15	20	20	15	20	15	25	59.5	60	70	65	M16x1.5
50	30	5	22	40	15	25	25	15	25	18	25	67.5	60	70	70	M20x1.5
63	35	5	22	40	15	30	30	15	30	22	32	74	69	70	75	M24x1.5
80	45	10	22	45	22	35	35	18	34	25	32	84	69	85	90	M30x1.5
100	60	10	22	45	22	40	40	18	39	28	32	100	69	85	105	M36x2.0
125	75	10	22	50	27	56	56	20	49	38	38	113	89	97	125	M48x2.0
150	85	10	22	50	27	65	65	20	54	44	38	130	99	97	135	M60x2.0

MDH ROD END TYPE

- Single rod (JUFAN spec.)

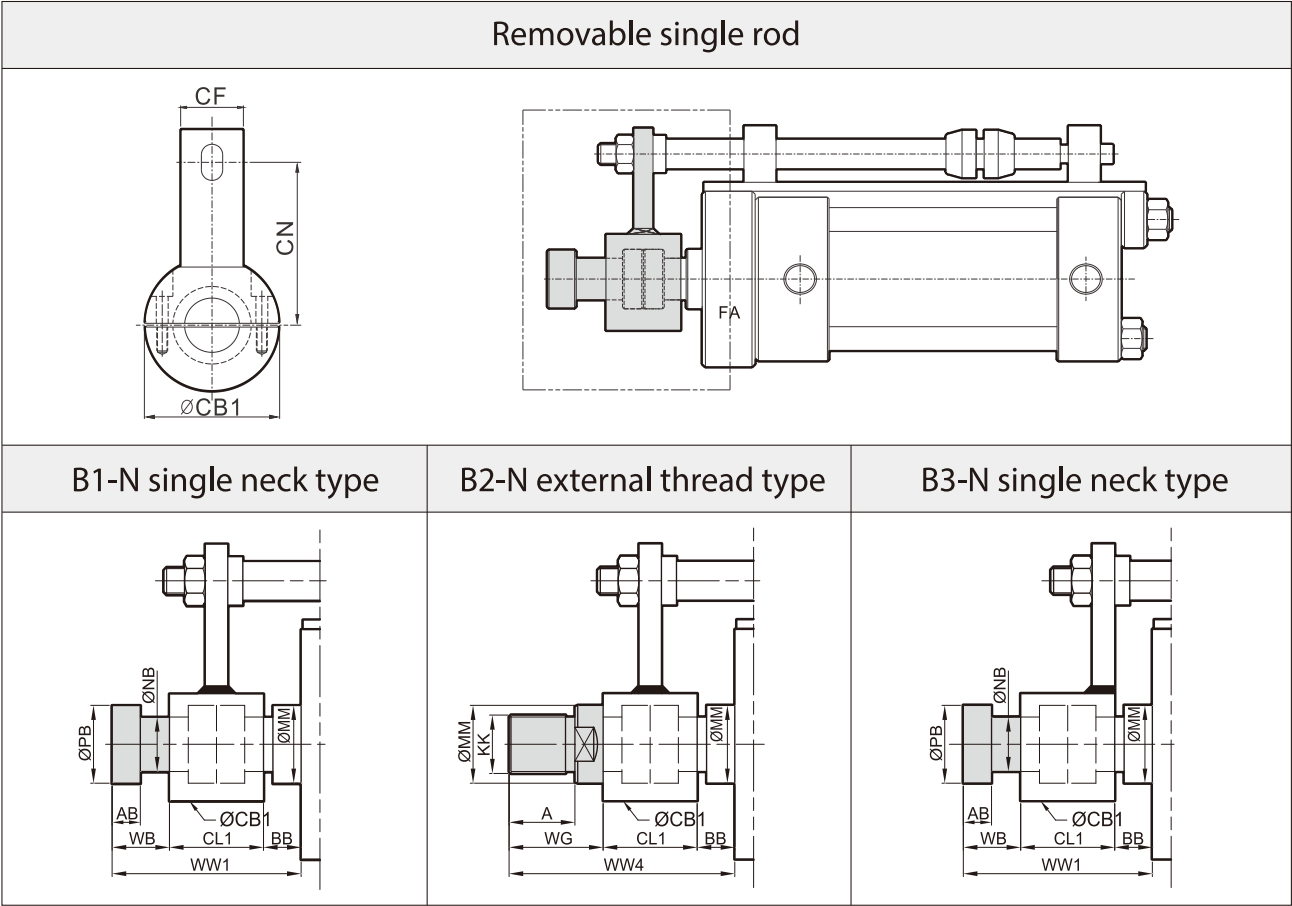
Tie-rod
Hydraulic
CylinderMold
Hydraulic
CylindersSwivel &
Clamp
Hydraulic
CylindersBooster
Cylinders
&
Undamping
cylindersISO
Specifications
CylindersRound
Hydraulic
CylindersSpecific
Hydraulic
CylindersSystems
&
Fittings

Symbol Bore	B class rod														
	A	BB	MM	AB	CF	CN	NB	PB	WB	WG	CB1	CL1	WW1	WW4	KK
40	30	20	25	15	25	59.5	18	25	30	45	60	60	110	125	M20x1.5
50	35	20	30	15	25	67.5	22	30	30	50	60	60	110	130	M24x1.5
63	45	20	35	18	32	74	25	34	40	60	69	80	140	160	M30x1.5
80	55	20	40	18	32	84	28	39	40	70	69	80	140	170	M36x2.0
100	70	18	56	20	38	100	38	49	47	85	89	87	152	190	M48x2.0
125	90	18	70	20	38	113	49	63	47	105	99	87	152	210	M64x2.0
150	110	15	85	25	38	130	58	70	55	125	119	105	175	245	M76x2.0

Symbol Bore	C class rod														
	A	BB	MM	AB	CF	CN	NB	PB	WB	WG	CB1	CL1	WW1	WW4	KK
40	25	20	20	15	25	59.5	15	20	30	40	60	60	110	120	M16x1.5
50	30	20	25	15	25	67.5	18	25	30	45	60	60	110	125	M20x1.5
63	35	20	30	15	32	74	22	30	30	50	69	60	110	130	M24x1.5
80	45	20	35	18	32	84	25	34	40	60	69	80	140	160	M30x1.5
100	60	20	40	18	38	100	28	39	40	75	69	80	140	175	M36x2.0
125	75	18	56	20	38	113	38	49	47	90	89	87	152	195	M48x2.0
150	85	18	65	20	38	130	44	54	47	100	99	87	152	205	M60x2.0

MDH ROD END TYPE

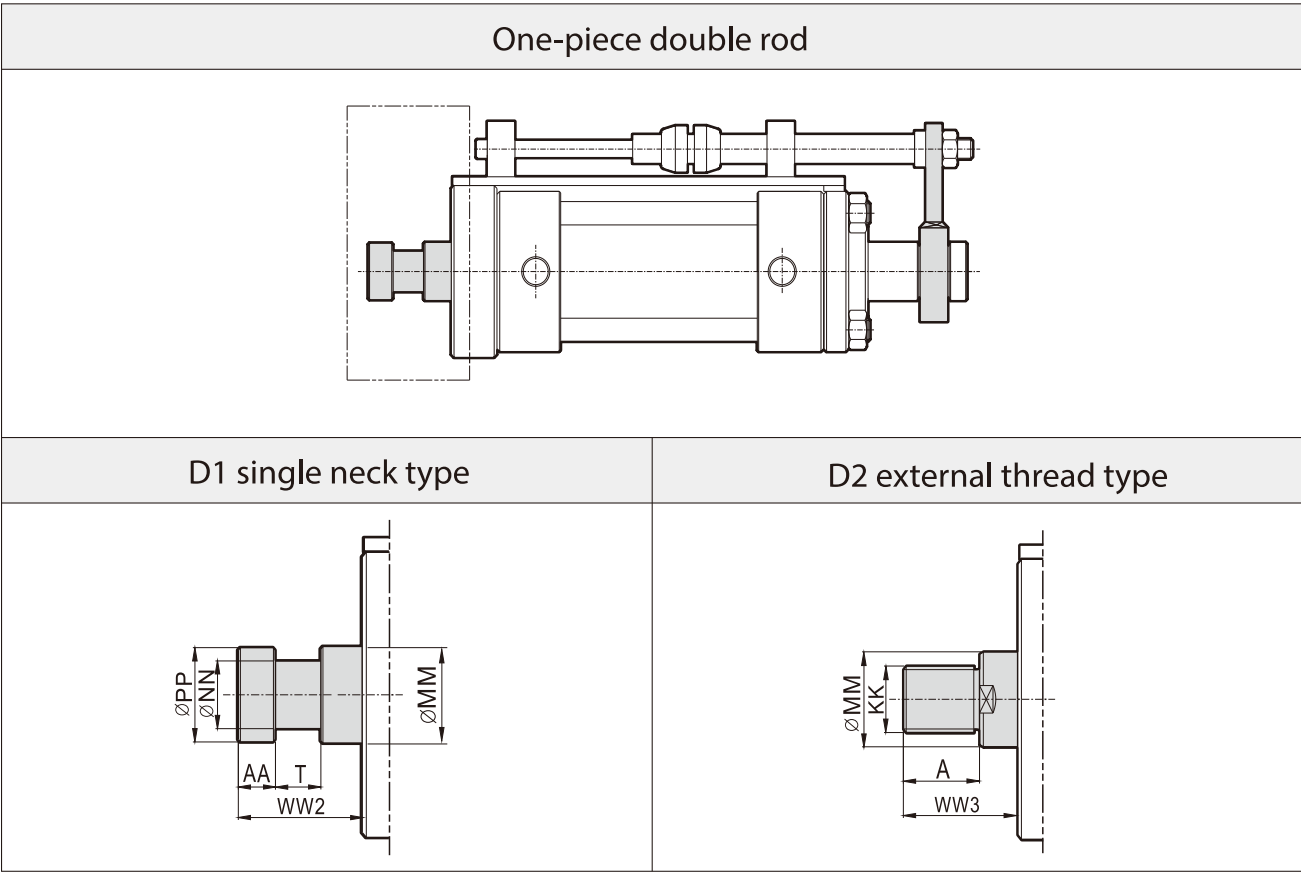
- Single rod (Nan-wu spec.)



Symbol Bore	A	BB	MM	AB	CF	CN	NB	PB	WB	WG	CB1	CL1	WW1	WW4	KK
40	14	30	25	12.5	25	59.5	13	18	30	44	35	50	110	124	M12x1.75
50	22	35	30	12.5	25	67.5	16	22.4	30	52	42	50	115	137	M20x2.5
63	25	40	35	12.5	32	74	20	28	30	55	46	50	120	145	M22x2.5
80	25	40	40	15	32	84	25	35.5	35.5	60.5	54	60	135.5	160.5	M24x3.0
100	30	45	56	15	38	100	31	45	35.5	65.5	62	60	140.5	170.5	M30x3.5
125	40	50	70	20	38	113	38	56	45.5	85.5	75	80	175.5	215.5	M39x4.0
150	45	60	85	25	38	130	46	67	55.5	100.5	88	100	215.5	260.5	M45x4.5

MDH ROD END TYPE

- Double rod



Symbol Bore	B class rod								
	A	T	MM	AA	PP	NN	WW2	WW3	KK
40	30	15	25	15	25	18	70	70	M20x1.5
50	35	15	30	15	30	22	70	75	M24x1.5
63	45	22	35	18	34	25	80	85	M30x1.5
80	55	22	40	18	39	28	85	100	M36x2.0
100	70	27	56	20	49	38	92	115	M48x2.0
125	90	27	70	20	63	49	97	140	M64x2.0
150	110	30	85	25	70	58	105	160	M76x2.0

Symbol Bore	C class rod								
	A	T	MM	AA	PP	NN	WW1	WW4	KK
40	25	15	20	15	20	15	70	65	M16x1.5
50	30	15	25	15	25	18	70	70	M20x1.5
63	35	15	30	15	30	22	70	75	M24x1.5
80	45	22	35	18	34	25	85	90	M30x1.5
100	60	22	40	18	39	28	85	105	M36x2.0
125	75	27	56	20	49	38	97	125	M48x2.0
150	85	27	65	20	54	44	97	135	M60x2.0

Tie-rod
Hydraulic
Cylinder

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ISO
Specifications
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Round
Hydraulic
Cylinders

Specific
Hydraulic
Cylinders

Systems
&
Fittings

ORDER INDICATION

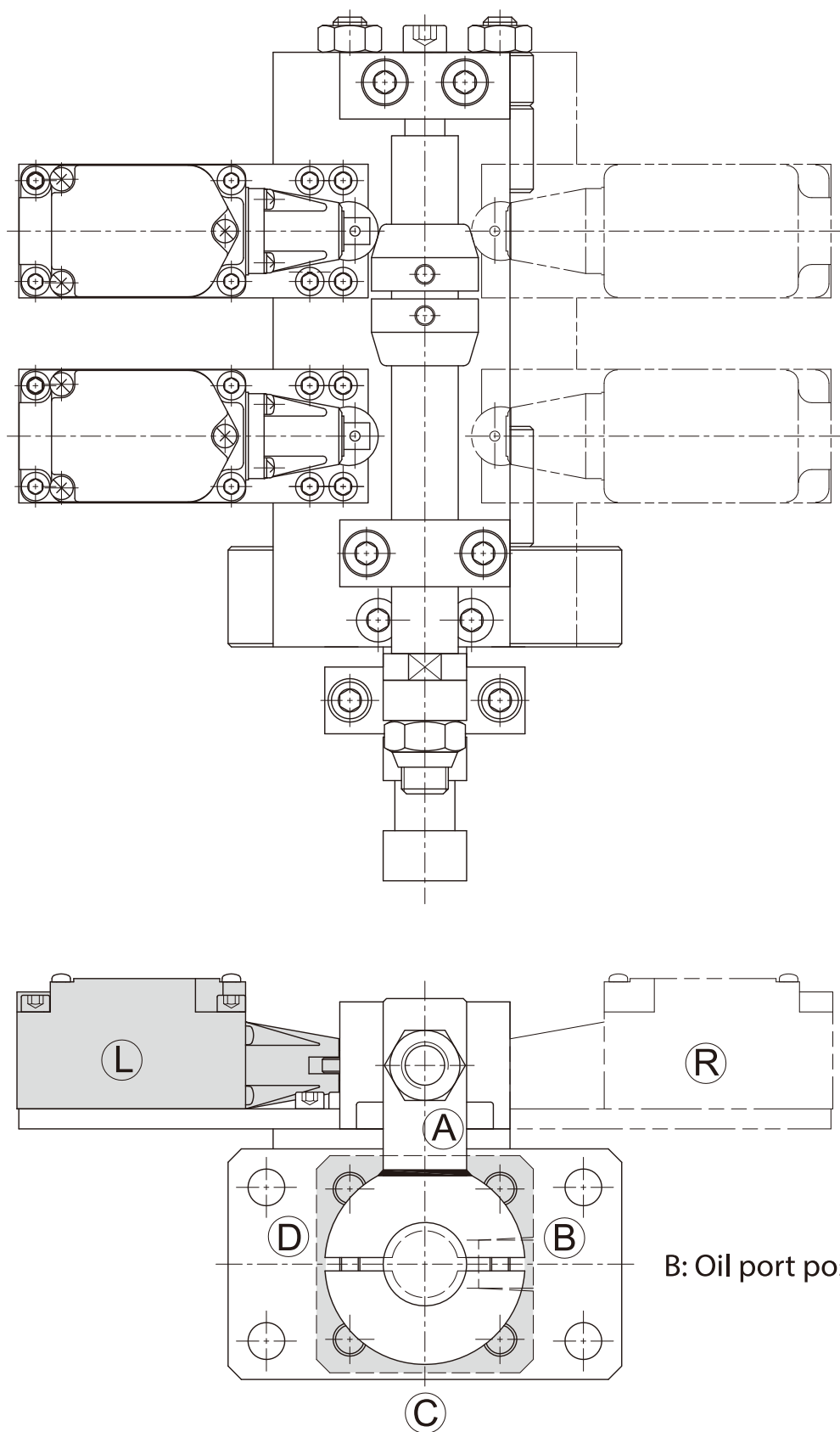
MDH	A	70	FA	C	100	200ST
Series	Type	Working pressure	Installation	Shaft	Bore	Stroke
Sensor tie rod cylinder	A: Double acting cylinder C: Double rod cylinder	70: 70kgf/cm ² (7MPa) 140: 140kgf/cm ² (14MPa)	FA: JUFAN type FA-N: Nan-wu type	C: C class B: B class Notes: 1. MDH-70 match C class shaft. 2. MDH-140 match B class shaft. 3. If MDH-70 match with B & MDH-140 match with C, pls specify when order.	40: 40mm 50: 50mm 63: 63mm 80: 80mm 100: 100mm 125: 125mm 150: 150mm	Customized

A1		LC2	R	A
Rod end type	Seal material	Limit switches type	Limit switches position	Oil port position
1. Single rod: Pls refer P.210 One-piece single rod (standard) A1 single neck (narrow round connecting plate) A2 external thread (narrow round connecting plate)	Blank = indicates standard (NBR) J: FPM maximum heat resistance 150°C	LC2: Pls refer P.208 limit switches WLCA2-Qx2 LD2: Pls refer P.208 limit switches WLD2-Qx2 PLC: Pls refer P.209 limit switches WLCA2-Qx2 nanaboshi connector NCS-304-PR PLD: Pls refer P.209 limit switches WLD2-Qx2 nanaboshi connector NCS-304-PR	R: Right L: Left	A 、 B C 、 D
2. Single rod: Pls refer P.211, P.212 Removable single rod B1 single neck (wide round connecting plate) B2 external thread (wide round connecting plate) B3 single neck (wide round connecting plate) B1-N single neck (wide round connecting plate) B2-N external thread (wide round connecting plate) B3-N single neck (wide round connecting plate)				
3. Double rod: Pls refer P.213 One-piece single rod D1 single neck (narrow round connecting plate) D2 external thread (narrow round connecting plate)				



Blank = indicates standard, order without marking

**LIMIT SWITCHES POSITION
& OIL PORT POSITION**



Tie-rod
Hydraulic
Cylinder

Mold
Hydraulic
Cylinders

Swivel &
Clamp
Hydraulic
Cylinders

Booster
Cylinders
&
Undamping
cylinders

ISO
Specifications
Cylinders

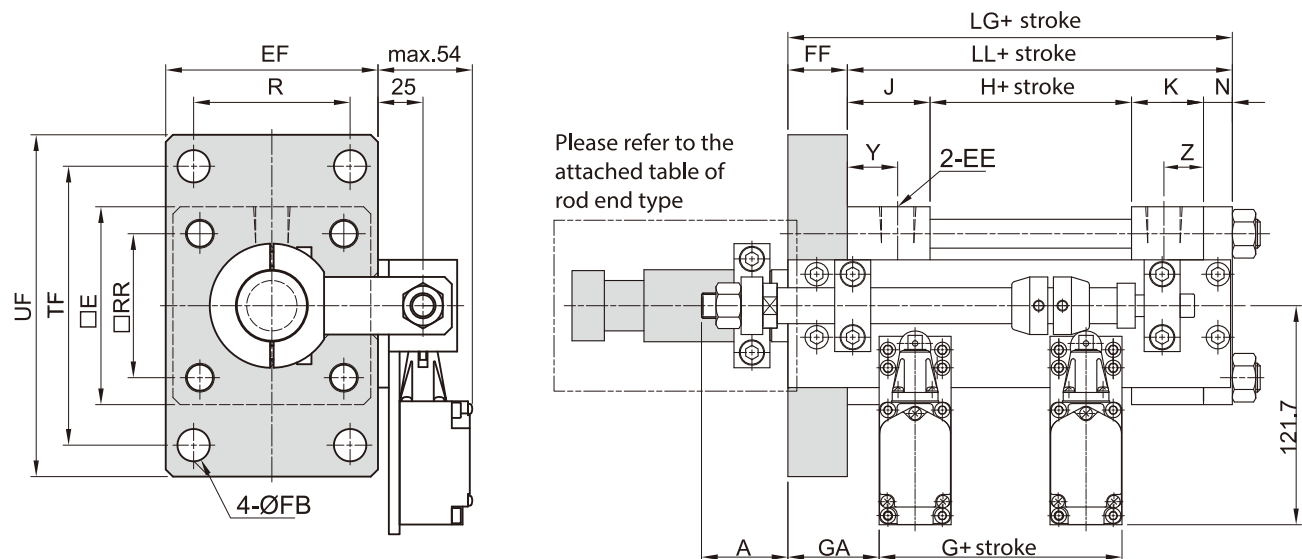
Round
Hydraulic
Cylinders

Specific
Hydraulic
Cylinders

Systems
&
Fittings

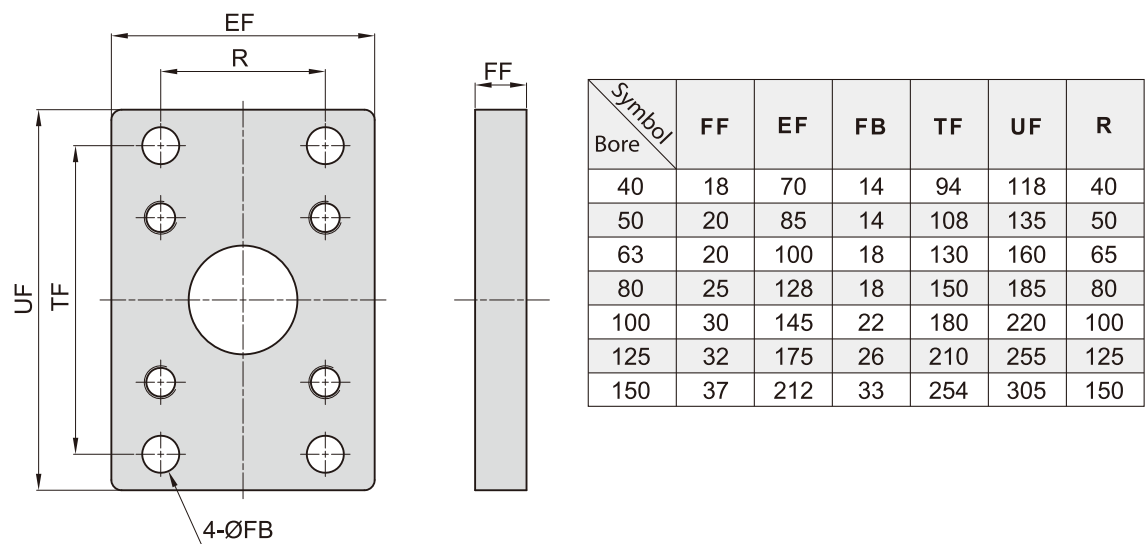
B: Oil port position

EXTERNAL DIMENSIONS



Symbol Bore	E	RR	FF	H	J	K	N	Y	Z	EE	EF	FB	TF	UF	R	LL	LG	GA	G
40	65	45	30	50	36	26	16	21	13	RC3/8	69	11	95	118	46	112	158	48	90.5
50	75	52	30	58	42	34	16	27	19	RC3/8	85	14	115	145	58	134	180	48	90.5
63	90	63	30	58	42	34	16	27	19	RC1/2	98	18	132	165	65	134	180	48	90.5
80	110	80	33	62	46	40	16	28	22	RC1/2	118	18	155	190	87	148	194	48	90.5
100	135	102	36	74	50	40	16	30	20	RC3/4	150	22	190	230	109	164	216	50	90.5
125	165	122	42	83	58	48	16	38	28	RC3/4	175	26	224	272	130	189	247	53	90.5
150	196	148	48	89	58	48	16	38	28	RC3/4	210	30	270	320	155	195	259	56	90.5

FA-N EXTERNAL DIMENSIONS(NAN-WU TYPE)



⚠ Note: EF, UF, TF, FF, R for reference only, all can be customized.