AUTO Strong

PRODUCT CATALOG

HYDRAULIC CYLINDER



A STRONGHOLD BY PRECISION AND POWER



Product schematic

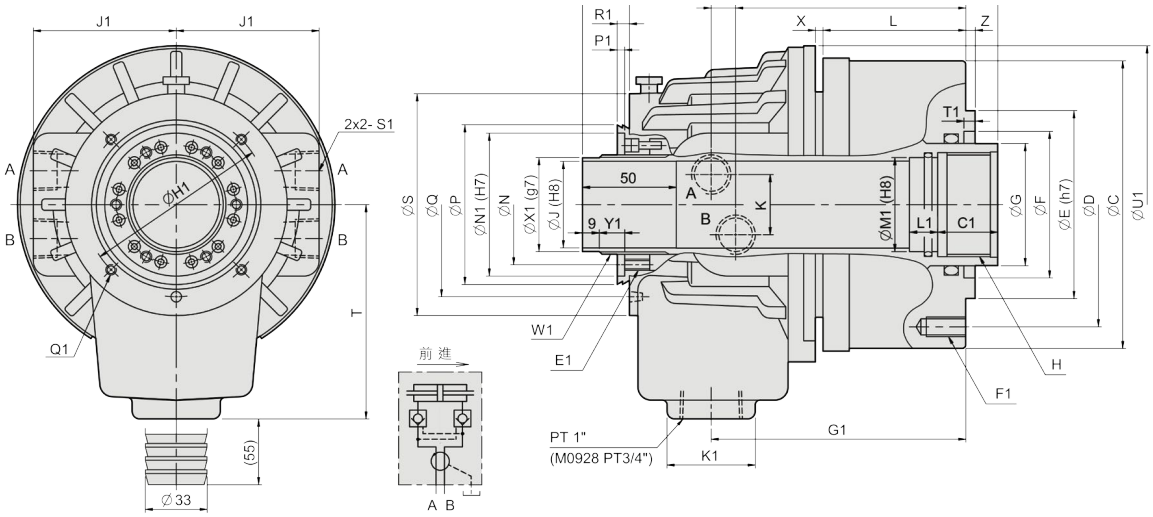
M

High speed through-hole rotary hydraulic cylinder

1. Compact and light weight :
   Comparing with the regular product, it is compact (reduced to MAX 95mm) and lighter (weighted MAX 4.5kg). It's more stable to reduce the burden of the machinery at high speed turning.
2. The largest bore : Comparing with the regular product, it has about 20% larger bore diameter for utilizing the capacity of machinery.
3. The safety structure : It can retain the gripping force by check valve.

UNIT : mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm^2) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm^2)	Max. Speed (r.p.m)	Moment Of Inertia I (kg · m^2)	Weight (kg)	Total Leakage L/min
M0926A	90	53.2 / 48.3	19.9(2029) / 18(1835)	10	4.0(40.8)	8000	0.006	5.7	3.0
M0928A	90	53.2 / 48.3	19.9(2029) / 18(1835)	10	4.0(40.8)	8000	0.006	5.5	3.0
M1036	105	71 / 68.5	26(2651) / 25(2549)	15	4.0(40.8)	8000	0.011	8.6	3.0
M1038	105	71 / 66	26(2651) / 24.5(2498)	15	4.0(40.8)	8000	0.011	8.5	3.0
M1236	125	100 / 89	38(3875) / 33(3365)	15	4.0(40.8)	7000	0.019	13	3.0
M1246	125	100 / 89	38(3875) / 33(3365)	15	4.0(40.8)	7000	0.019	12	3.0
M1546	155	161 / 154	60(6118) / 57.8(5894)	22	4.0(40.8)	6200	0.056	18	3.9
M1552	155	161 / 150	60(6118) / 56(5710)	22	4.0(40.8)	6200	0.052	16.8	3.9
M1768	175	184 / 183	69.3(7067) / 69(7036)	25	4.0(40.8)	4700	0.096	27.5	4.2
M1870	180	198 / 183	74(7546) / 69(7036)	25	4.0(40.8)	4700	0.095	26.5	4.2
M1875	180	198 / 183	74(7546) / 69(7036)	25	4.0(40.8)	4700	0.095	26	4.2
M1878	180	198 / 183	74(7546) / 69(7036)	25	4.0(40.8)	4700	0.095	25.5	4.2
M2078	205	262 / 234	98(9993) / 88(8973)	23	4.0(40.8)	3800	0.15	36.5	4.5
M2085	205	252 / 234	94(9585) / 88(8973)	30	4.0(40.8)	3800	0.15	37.5	4.5
M2091	205	252 / 234	94(9585) / 88(8973)	30	4.0(40.8)	3800	0.15	37	4.5
M2511S	250	348 / 336	124(12644) / 120(12236)	23	4.0(40.8)	2800	0.41	53	7.0



UNIT：mm

DIM Model	A1	B1	C1	E1	F1	G1	H1	J1	K1	L1	M1	N1	P1	Q1	R1	S1	T1	U1	W1	X1	Y1
M0926A	9	108	25	8-M5x10	6-M8x15	110	76	58	44	15	30	53	4	4-M4x7	5	PT 1/4"	6	116	M34x1.5	32	15
M0928A	9	108	25	8-M5x10	6-M8x15	110	76	58	44	15	34	53	4	4-M4x7	5	PT 1/4"	6	116	M34x1.5	32	15
M1036	11	120.5	25	6-M5x10	6-M10x17	126	88	68	53	15	38	64	4	6-M5x12	5	PT 3/8"	6	136	M44x1.5	42	14
M1038	11	120.5	25	6-M5x10	6-M10x17	126	88	68	53	15	40	64	4	6-M5x12	5	PT 3/8"	6	136	M44x1.5	42	14
M1236	11	126.5	25	6-M6x12	12-M10x20	135	98	76	47	15	38	76	4	4-M5x12	6	PT 1/2"	6	169	M52x1.5	50	14
M1246	11	126.5	30	6-M6x12	12-M10x20	135	98	76	47	15	50	76	4	4-M5x12	6	PT 1/2"	6	169	M52x1.5	50	14
M1546	11	133.5	30	6-M6x12	12-M10x20	145	110	86	47	15	50	85	4	4-M6x12	7	PT 1/2"	6	188	M58x1.5	56	13.5
M1552	11	133.5	30	6-M6x12	12-M10x20	145	110	86	47	15	55	85	4	4-M6x12	7	PT 1/2"	6	188	M58x1.5	56	13.5
M1768	17.5	152.5	35	6-M6x12	12-M10x20	166	155	101	47	15	70	108	4	4-M6x12	7.5	PT 1/2"	6	215	M84x2	81	12.5
M1870	17.5	152.5	35	6-M6x12	12-M10x20	166	155	101	47	15	75	108	4	4-M6x12	7.5	PT 1/2"	6	215	M84x2	81	12.5
M1875	17.5	152.5	35	6-M6x12	12-M10x20	166	155	101	47	15	80	108	4	4-M6x12	7.5	PT 1/2"	6	215	M84x2	81	12.5
M1878	17.5	152.5	35	6-M6x12	12-M10x20	166	155	101	47	20	82	108	4	4-M6x12	7.5	PT 1/2"	6	215	M84x2	81	12.5
M2078	21	166.5	35	6-M6x12	12-M12x24	182	165	110	47	20	84	120	4	4-M6x12	7	PT 1/2"	6	240	M99x2	96	20
M2085	21	166.5	35	6-M6x12	12-M12x24	182	165	110	47	20	89	120	4	4-M6x12	7	PT 1/2"	6	240	M99x2	96	13
M2091	21	166.5	35	6-M6x12	12-M12x24	182	165	110	47	15	95	120	4	4-M6x12	7	PT 1/2"	6	240	M99x2	96	13
M2511S	21	169.5	45	6-M6x12	12-M16x32	192	206	132	55	20	123	160	5	4-M6x12	7	PT 1/2"	6	294	—	134.6	—

DIM Model	C	D	E	F	G	H	J	K	L	N	P	Q	S	T	U	V max.	V min.	W max.	W min.	X	Z
M0926A	120	100	80	65	44	M34x1.5	26	25	63	44	59	76	90	105	151	14	4	35	25	3	5
M0928A	120	100	80	65	44	M38x1.5	28	25	63	44	59	76	90	105	151	14	4	35	25	3	5
M1036	136	115	100	65	48	M42x1.5	36	32	71	55	73	88	104	115	174.5	15	0	39	24	2.5	5
M1038	136	115	100	65	50	M44x1.5	38	32	71	55	73	88	104	115	174.5	15	0	39	24	2.5	5
M1236	155	130	100	80	65	M42x1.5	36	36	76	64	85	98	118	114	179	15	0	40	25	4	5
M1246	155	130	100	80	65	M55x2	46	36	76	64	85	98	118	114	179	15	0	40	25	4	5
M1546	190	170	130	85	65	M55x2	46	36	84	73	96	114	137	130	190.5	22	0	47.5	25.5	3.5	5
M1552	190	170	130	85	70	M60x2	52	36	84	73	96	114	137	130	190.5	22	0	47.5	25.5	3.5	5
M1768	215	190	160	120	85	M75x2	68	36	95	98	121	140	165	159	225	25	0	50	25	3	5
M1870	215	190	160	120	95	M78x2	70	36	95	98	121	140	165	159	225	25	0	50	25	3	5
M1875	215	190	160	120	95	M85x2	75	36	95	98	121	140	165	159	225	25	0	50	25	3	5
M1878	215	190	160	120	95	M87x2	78	36	95	98	121	140	165	159	225	25	0	50	25	3	5
M2078	240	215	180	140	110	M90x2	78	36	104	108	138	158	182	177	248	23	0	55	32	3	5
M2085	240	215	180	140	110	M93x2	85	36	104	108	138	158	182	177	248	30	0	55	25	3	5
M2091	240	215	180	140	110	M100x2	91	36	104	108	138	158	182	177	248	30	0	55	25	3	5
M2511S	310	275	230	166	140	M130x2	117.5	36	101	148	178	190	232	215	258	24	1	38	15	3	6



Product schematic

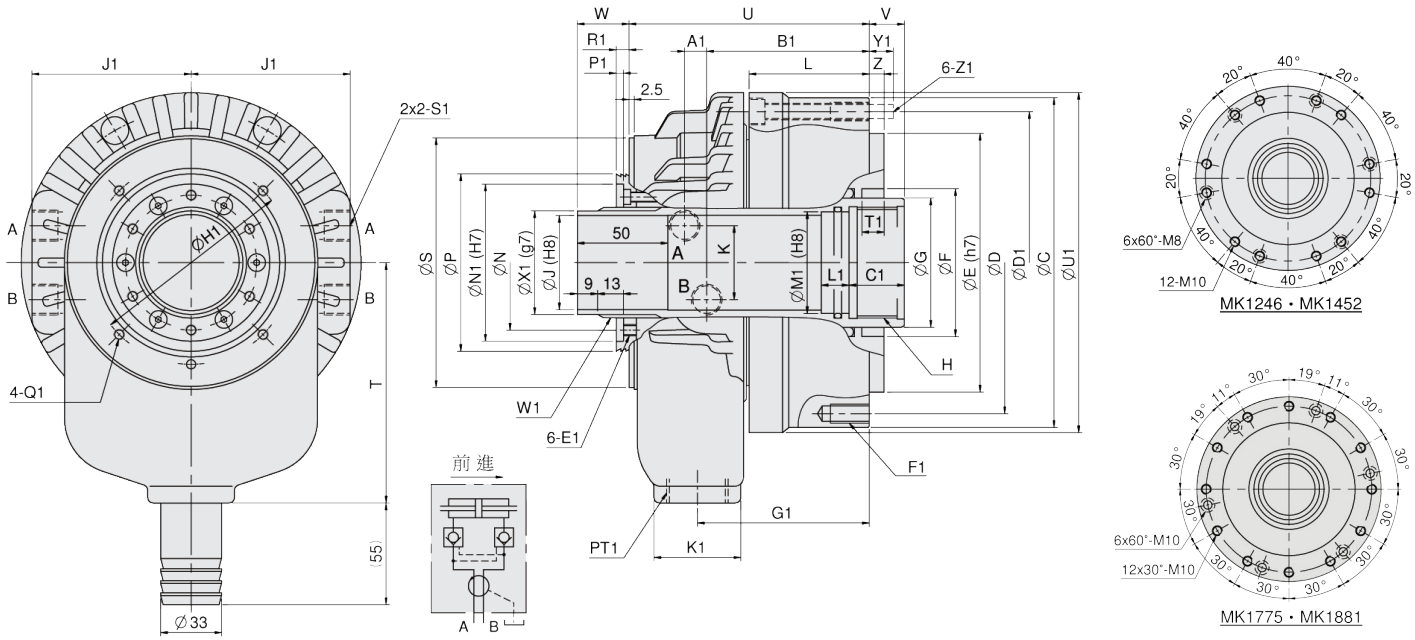
MK

Super high speed through-hole compact rotary hydraulic cylinder

1. The compact hydraulic cylinder which is shorten the length about 30% and light weight can reduce the spindle loading while running in high speed.
2. Built-in check valve in safety auto lock and pressure relief valve in case of power failure occurs.
3. New model developed for rear locking installation.

UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MK1246	128	102.6 / 91.4	43.6(4466) / 38.9(3967)	16	4.5(45.9)	8000	0.017	8.6	3.1
MK1246F	128	102.6 / 91.4	43.6(4466) / 38.9(3967)	16	4.5(45.9)	8000	0.018	9.2	3.1
MK1452	145	133 / 122.6	56.5(5761) / 52.1(5313)	22	4.5(45.9)	6500	0.028	12	3.9
MK1452F	145	133 / 122.6	56.5(5761) / 52.1(5313)	22	4.5(45.9)	6500	0.029	12.5	3.9
MK1768	170	166 / 152	70.7(7209) / 64.7(6597)	25	4.5(45.9)	5500	0.065	19.4	4.5
MK1775	170	166 / 152	70.7(7209) / 64.7(6597)	25	4.5(45.9)	5500	0.060	17.8	4.5
MK1778	170	166 / 152	70.7(7209) / 64.7(6597)	25	4.5(45.9)	5500	0.059	17.4	4.5
MK1881	180	187 / 171.9	79.5(8107) / 73.1(7454)	25	4.5(45.9)	4800	0.087	24	4.5



UNIT：mm

DIM Model	A1	B1	C1	E1	F1	G1	H1	J1	K1	L1	M1	N1	P1	Q1	R1	S1	T1	U1	W1	X1	Y1	Z1
MK1246	8.5	79.5	25	M6x10	12-M10x20	84	98	76	47	15	50	76	4	M5x6	9	PT 3/8	12	165	M52x1.5	50	15	M8
MK1246F	8.5	89.5	30	M6x10	6-M10x20	94	98	76	47	15	50	76	4	M5x6	9	PT 3/8	8	165	M52x1.5	50	15	M8
MK1452	9	88	30	M6x12	12-M10x20	93	110	86	47	15	55	85	4	M6x6	16	PT 3/8	12	184	M58x1.5	56	12	M8
MK1452F	9	95	30	M6x12	6-M10x20	100	110	86	47	15	55	85	4	M6x6	16	PT 3/8	8	184	M58x1.5	56	15	M8
MK1768	17.5	99	30	M6x12	12-M10x20	110	155	100	47	15	70	108	4	M6x10	7	PT 1/2	12	216	M84x2.0	81	18	M10
MK1775	17.5	99	30	M6x12	12-M10x20	110	155	100	47	15	80	108	4	M6x10	7	PT 1/2	12	216	M84x2.0	81	18	M10
MK1778	17.5	99	30	M6x12	12-M10x20	110	155	100	47	15	82	108	4	M6x10	7	PT 1/2	12	216	M84x2.0	81	18	M10
MK1881	17	106	35	M6x12	12-M10x20	115	166	105	47	15	85	113	4	M6x10	16.5	PT 1/2	12	226	M89x2.0	86	19	M10

DIM Model	C	D	D1	E	F	G	H	J	K	L	N	P	S	T	U	V max.	V min.	W max.	W min.	Z
MK1246	162	147	147	130	75	65	M55x2.0	46	40	58	64	85	116	120	120	13	-3	44	28	8
MK1246F	162	130	147	100	75	65	M55x2.0	46	40	68	64	85	116	120	130	14	-2	44	28	5
MK1452	184	165	165	140	80	70	M60x2.0	52	40	66	73	96	135	130	130	19	-3	53.5	31.5	8
MK1452F	186	170	165	130	80	70	M60x2.0	52	40	73	73	96	135	130	137	21	-1	53.5	31.5	5
MK1768	212	195	195	160	105	95	M75x2.0	68	46	71	98	121	164	160	157	22	-3	50	25	8
MK1775	212	195	195	160	105	95	M85x2.0	75	46	71	98	121	164	160	157	22	-3	50	25	8
MK1778	212	195	195	160	105	95	M87x2.0	78	46	71	98	121	164	160	157	22	-3	50	25	8
MK1881	222	205	205	168	110	100	M90x2.0	81	46	71	103	126	175	175	167	23	-2	58	33	8

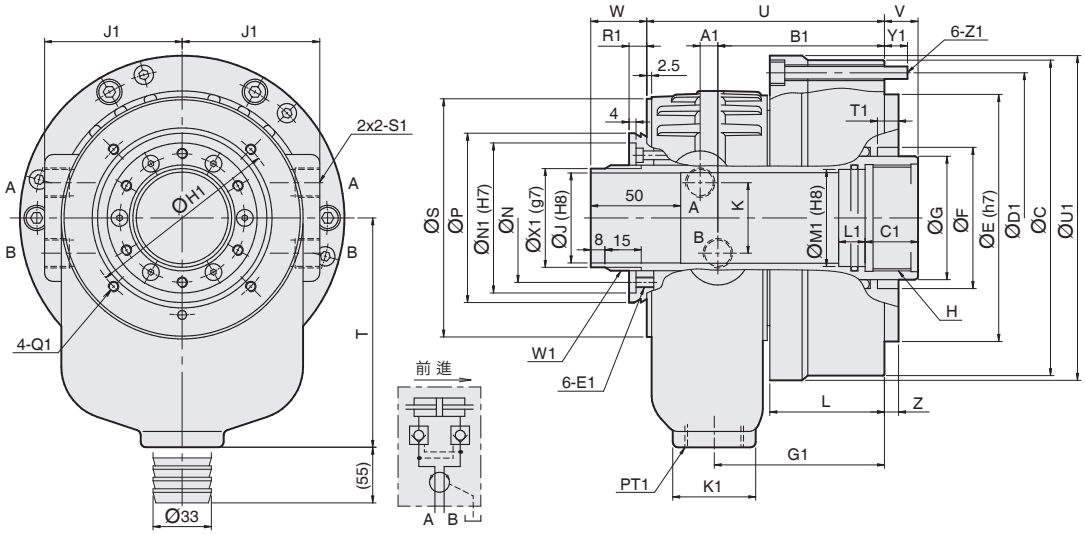


Product schematic

MA

Compact High Speed Through-hole Rotary Hydraulic Cylinder

1. The compact hydraulic cylinder which is shorten the length about 30% and light weight can reduce the spindle loading while running in high speed.
2. Safety structure with built-in patented check valve mechanism ensures that pressure is maintained immediately when abnormal power failure.
3. The newly patented model with opened back-end design is convenient for back-mounted bolt.



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Push Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MA1453	145	133.8 /123.5	56.8(5792) / 52.4(5343)	20	4.5(45.9)	6500	0.032	12	3.9

DIM Model	C	D1	E	F	G	H	J	K	L	N	P	S	T	U	V max.	V min.	W max.	W min.	Z
MA1453	183	165	140	80	70	M60x2.0	53	36	64.5	73	96	135	130	134	19	-1	47	27	5

DIM Model	A1	B1	C1	E1	G1	H1	J1	K1	L1	M1	N1	Q1	R1	S1	T1	U1	W1	X1	Y1	Z1
MA1453	8	96	30	M6x12	96	110	78	47	15	55	85	M6x7	11	PT 3/8	10	183	M58x1.5	56	14	M8x70

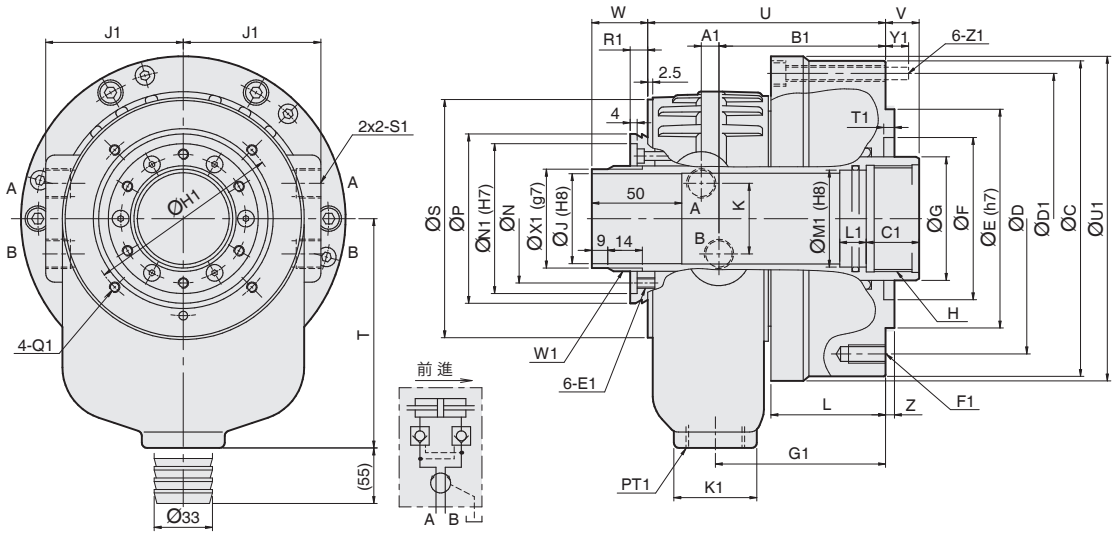


Product schematic

MB

Compact High Speed Through-hole Rotary Hydraulic Cylinder

1. The compact hydraulic cylinder which is shorten the length about 30% and light weight can reduce the spindle loading while running in high speed.
2. Safety structure with built-in patented check valve mechanism ensures that pressure is maintained immediately when abnormal power failure.
3. The newly patented model with opened back-end design is convenient for back-mounted bolt.



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Push Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia (kg · m²)	Weight (kg)	Total Leakage L/min
MB2091	200	233.1 / 216	87(8871) / 80.6(8218)	30	4.0(40.8)	3800	0.13	24.5	4.5

DIM Model	C	D	D1	E	F	G	H	J	K	L	N	P	S	T	U	V max.	V min.	W max.	W min.	Z
MB2091	244	215	225	180	140	110	M100x2	91	46	83.5	108	138	180	180	170	30	0	55	25	5

DIM Model	A1	B1	C1	E1	F1	G1	H1	J1	K1	L1	M1	N1	Q1	R1	S1	T1	U1	W1	X1	Y1	Z1
MB2091	10	121	35	M6x12	12-M12x24	121	165	107	47	15	95	120	M6x12	7	PT 1/2”	6	247	M99x2	96	17	M10

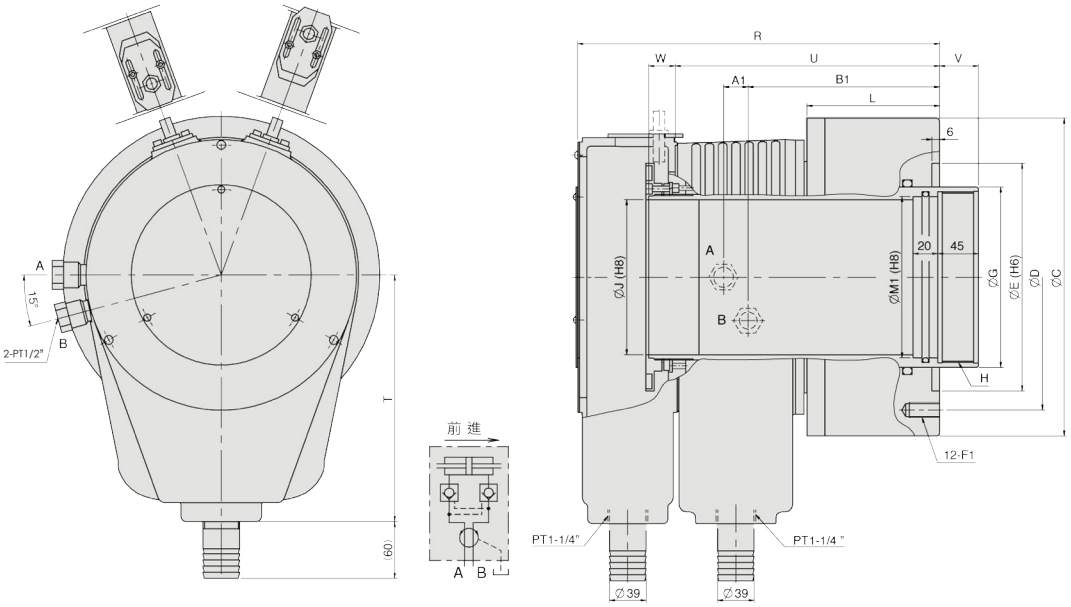


ML-CM.B

Extra large through-hole rotary hydraulic cylinder

1. Matching for large bore power chucks.
2. Special aluminum alloy steel body, light weight for reducing the spindle loading.
3. Within check valves to maintain the thrust force.
4. Extra large bore design, equipped with coolant collector and detective plate.
5. The proximity switches and mounting bolts are extra option.

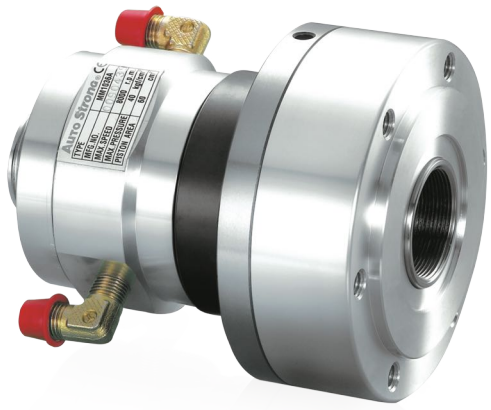
Product schematic



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
ML2814CM28B	285	394 / 350	116.8(11910) / 106.8(10584)	42	3.3(33.6)	2000	1.08	87	9
ML2816CM28B	285	394 / 350	116.8(11910) / 106.8(10584)	42	3.3(33.6)	2000	0.90	72	9
ML3320CM33B	335	515.7 / 416.9	152.9(15591) / 136.9(13960)	42	3.3(33.6)	1600	1.09	103	10

DIM Model	C	D	E (H6)	G	H	J	L	R	T	U	V max.	V min.	W max.	W min.	A1	B1	F1	M1
ML2814CM28B	335	280	240	190	M158x3.0	145	140	382	260	279	41	-1	67	25	18	202	M16x32L	150
ML2816CM28B	335	280	240	190	M180x3.0	166.5	140	382	260	279	41	-1	67	25	18	202	M16x32L	170
ML3320CM33B	390	320	280	230	M215x3.0	205	147	392	260	292	41	-1	67	25	18	210	M20x32L	210

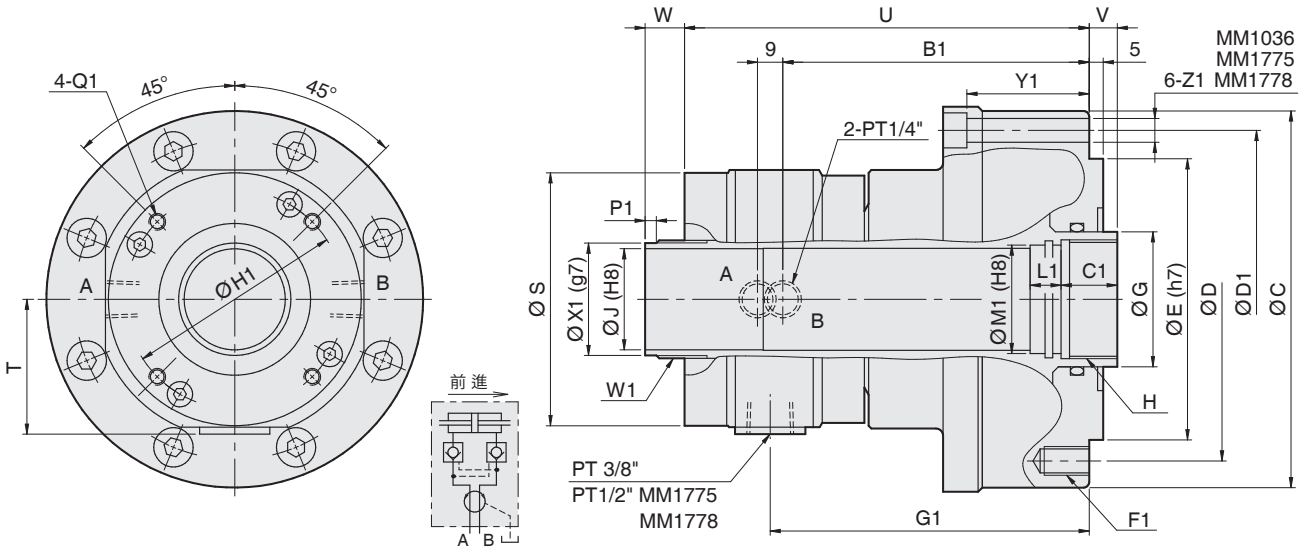


Product schematic

MM

High speed and compact through-hole rotary hydraulic cylinder

1. Compact hydraulic cylinder design with light weight can reduce the spindle loading while running in high speed.
2. Built-in check valve in safety auto lock and pressure relief valve in case of power failure occur.



UNIT : mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MM0933B	90	50.3 / 47	19.1(1947) / 17.8(1815)	10	4.0(40.8)	8000	0.012	5.9	0.8
MM1036B	100	64 / 60	23.8(2427) / 22.3(2274)	5	4.0(40.8)	8000	0.013	7	0.8
MM1036B15	100	64 / 60	23.8(2427) / 22.3(2274)	15	4.0(40.8)	8000	0.014	7.4	0.8
MM1246B	125	100 / 89	38(3875) / 33(3365)	15	4.0(40.8)	7000	0.027	11.8	3.0
MM1552B	155	161 / 150	60(6118) / 56(5710)	22	4.0(40.8)	6200	0.046	16	3.0
MM1775B	170	169 / 154.5	63.5(6475) / 58(5914)	25	4.0(40.8)	4200	0.081	22	4.5
MM1778B	170	169 / 154.5	63.5(6475) / 58(5914)	25	4.0(40.8)	4200	0.079	21.5	4.5

DIM Model	C	D	D1	E	G	H	J	S	T	U	V max.	V min.	W max.	W min.	B1	C1	F1	G1	H1	L1	M1	Q1	W1	P1	X1	Y1	Z1
MM0933B	120	100	-	80	46	M40x1.5	33	90	48	152	10	0	30	20	117	25	6-M8x15	121.5	76	10	36	M4x9L	M39xP1.5	5	37	-	-
MM1036B	134	115	115	100	48	M42x1.5	36	90	48	144	10	5	17	12	109	20	6-M10x15	113.5	76	10	38	M4x9L	M42xP1.5	2	40	44	8.5
MM1036B15	134	115	115	100	48	M42x1.5	36	90	48	158	15	0	30	15	123	25	6-M10x15	127.5	76	15	38	M4x9L	M42xP1.5	3	40	44	8.5
MM1246B	155	130	-	100	65	M55x2.0	46	117	61	179	15	0	40	25	135.5	30	12-M10x20	140	98	15	50	M5x6L	M52xP1.5	9	50	-	-
MM1552B	190	170	-	130	70	M60x2.0	52	135	68	189	22	0	47	25	146.5	30	12-M10x20	150	110	15	55	M6x6L	M58xP1.5	9	56	-	-
MM1775B	212	190	190	160	95	M85x2.0	75	164	82.5	208	25	0	50	25	159	35	12-M10x20	163.5	155	15	80	M6x10L	M84xP2.0	9	81	84	11
MM1778B	212	190	190	160	95	M87x2.0	78	164	82.5	208	25	0	50	25	159	35	12-M10x20	163.5	155	15	82	M6x10L	M84xP2.0	9	81	84	11



Product schematic

CM.B

Hydraulic cylinder coolant collector

1. Can install stroke confirmation device and reclaim oil as well as water.
2. The proximity switches are extra option.

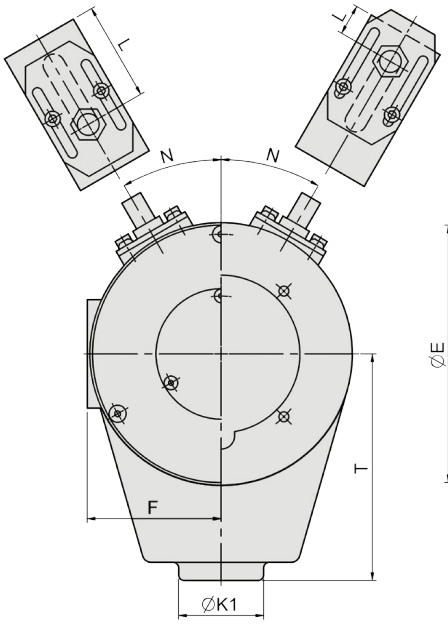


Fig-1

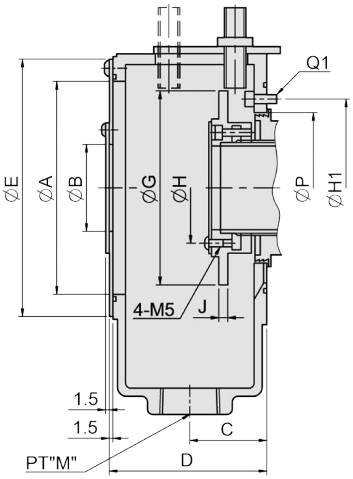
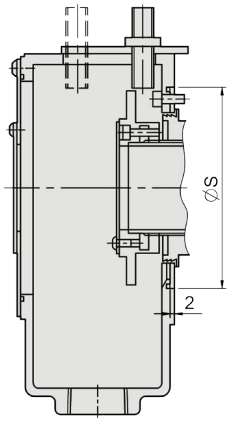


Fig-2



UNIT : mm

DIM Model	A	B	C	D	E	F	G	H	J	L max.	L min.	N	P	S	T	M	H1	K1	Q1	Reference	Matching Cylinder	Weight (kg)
CM09B	82.5	30	35	71.5	106	55.5	77	43	5	47.5	17.5	30	67	90	105	PT 3/4"	76	44	4-M4	Fig2	M0926A, M0928A MM0933B, MM1036B	0.85
CM10B1	82.5	40	35	71.5	106	55.5	77	52	5	47.5	17.5	30	75	—	105	PT 3/4"	88	44	6-M5	Fig1	M1036, M1038	1.0
CM12B	117.5	48	42	85.5	142	74	107	61	5	60.5	17.5	30	87	—	130	PT 1"	98	47	4-M5	Fig1	M1236, M1246, MK1246, MM1246B	1.6
CM15B8	117.5	55	42	85.5	142	74	107	67	5	60.5	17.5	30	98	—	130	PT 1"	110	47	4-M6	Fig1	M1546, M1552, MK1452, MM1552B	1.6
CM18B	155	80	42.5	86.5	184	94	147	92	5	58.5	17.5	30	123	—	150	PT 1"	155	47	4-M6	Fig1	M1768, M1875, MK1775, MM1775B	2.0
CM18BK	155	80	42.5	86.5	184	94	147	97	5	60.5	19.5	30	126	175	150	PT 1"	166	47	4-M6	Fig2	MK1881	2.0
CM20B	155	95	42.5	86.5	184	94	147	106	5	60.5	17.5	30	140	—	150	PT 1"	165	47	4-M6	Fig1	M2078, M2085, M2091	2.1
CM25B	200	120	44	89.5	230	117	192	—	12	60	21	27	179	—	180	PT 1"	206	47	4-M6	Fig1	M2511S	2.4
CM28B	254	170	52	103	285	147	240	182	8	74.5	20.5	20	222.6	278	260	PT 1-1/4"	256	85	4-M6	Fig2	ML2814, ML2816	4.2
CM33B	300	208	52	101.5	330	—	285	222	8	74.5	20.5	20	262.6	328	259	PT 1-1/4"	308	70	4-M6	Fig2	ML3320	7.2

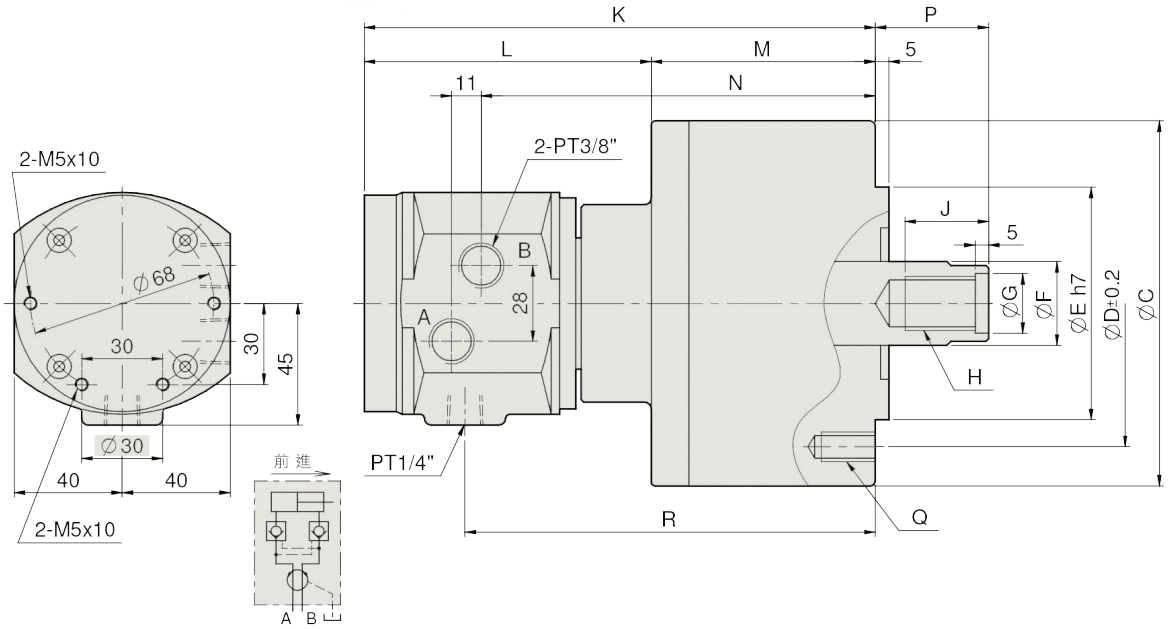


Product schematic

MS

Non through-hole rotary hydraulic cylinder (valve included)

· Built-in safety check valves.



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MS105	105	86 / 79	32(3263) / 29(2957)	20	4.0(40.8)	6000	0.0125	7.1	0.8
MS125	125	122 / 113	46(4691) / 42(4283)	25	4.0(40.8)	6000	0.0225	10	0.8
MS150	150	176 / 160	66(6730) / 60(6118)	30	4.0(40.8)	5500	0.0475	13.5	0.8
MS200	200	314 / 290	117(11930) / 108(11013)	35	4.0(40.8)	5500	0.0975	22	0.8

DIM Model	C	D	E	F	G	H	J	K	L	M	N	P max.	P min.	Q	R
MS105	135	100	80	30	21	M20x2.5	35	197	108	89	152	45	25	6-M10x20	158
MS125	160	130	110	35	25	M24x3.0	44	205	108	97	160	51	26	6-M12x24	166
MS150	190	130	110	45	31	M30x3.5	45	214	108	106	169	56	26	12-M12x24	175
MS200	245	145	120	55	37	M36x4.0	60	228	108	122	183	69	34	12-M16x30	189

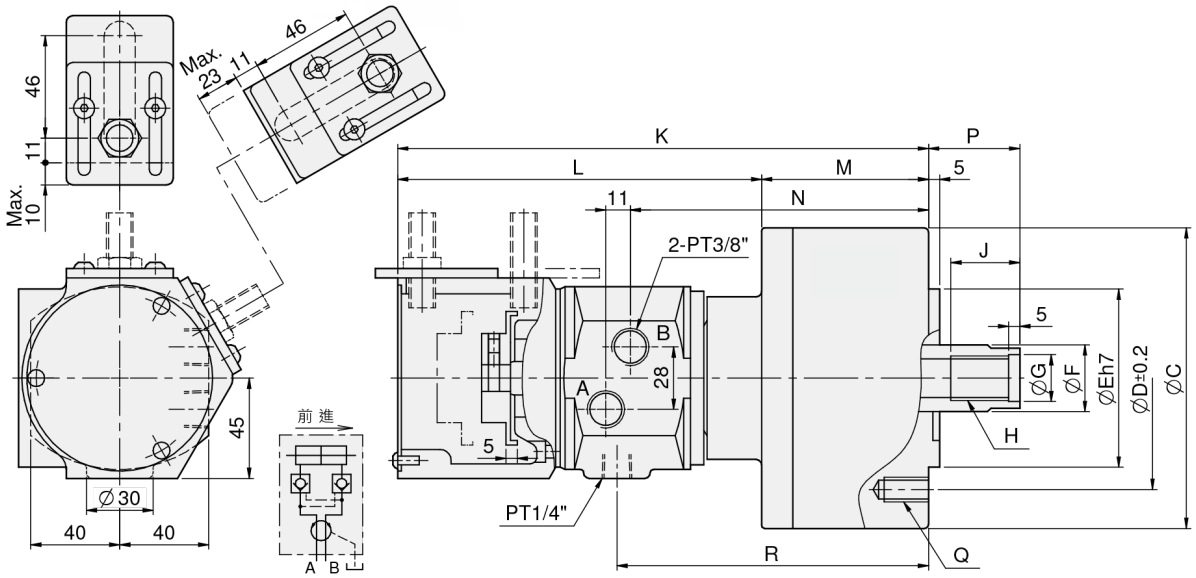
MS-C

Non through-hole rotary hydraulic cylinder (valve and switch brackets included)

1. Check valve is included.
2. Check-up safety device is included.
3. The proximity switches are extra option.



Product schematic



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MS105C	105	84 / 79	31 (3161) / 29 (2957)	20	4.0(40.8)	6000	0.0125	7.6	0.8
MS125C	125	120 / 113	45 (4589) / 42 (4283)	25	4.0(40.8)	6000	0.022	10.5	0.8
MS125C35	125	120 / 113	45 (4589) / 42 (4283)	35	4.0(40.8)	6000	0.022	10.5	0.8
MS150C	150	174 / 160	65 (6628) / 60 (6118)	30	4.0(40.8)	5500	0.047	14	0.8
MS200C	200	312 / 290	117 (11930) / 108 (11013)	35	4.0(40.8)	5500	0.097	22.5	0.8

DIM Model	C	D	E	F	G	H	J	K	L	M	N	P max.	P min.	Q	R
MS105C	135	100	80	30	21	M20x2.5	35	257	168	89	152	45	25	6-M10x20	158
MS125C	160	130	110	35	25	M24x3.0	44	265	168	97	160	51	26	6-M12x24	166
MS125C35	160	130	110	35	25	M24x3.0	44	269	168	101	164	57	22	6-M12x24	170
MS150C	190	130	110	45	31	M30x3.5	45	274	168	106	169	56	26	12-M12x24	175
MS200C	245	145	120	55	37	M36x4.0	60	288	166	122	183	69	34	12-M16x30	189

· Draw bar pull force : Pressure 4.0 MPa(40.8kgf / cm²)
· Total leakage : Pressure 3.0 MPa(30.6kgf / cm²) and oil temperature 50°C
· Proximity switch : Model BESS 16-329-E4-Y (BALLUFF) DC 12 / 24V 200mA NPN

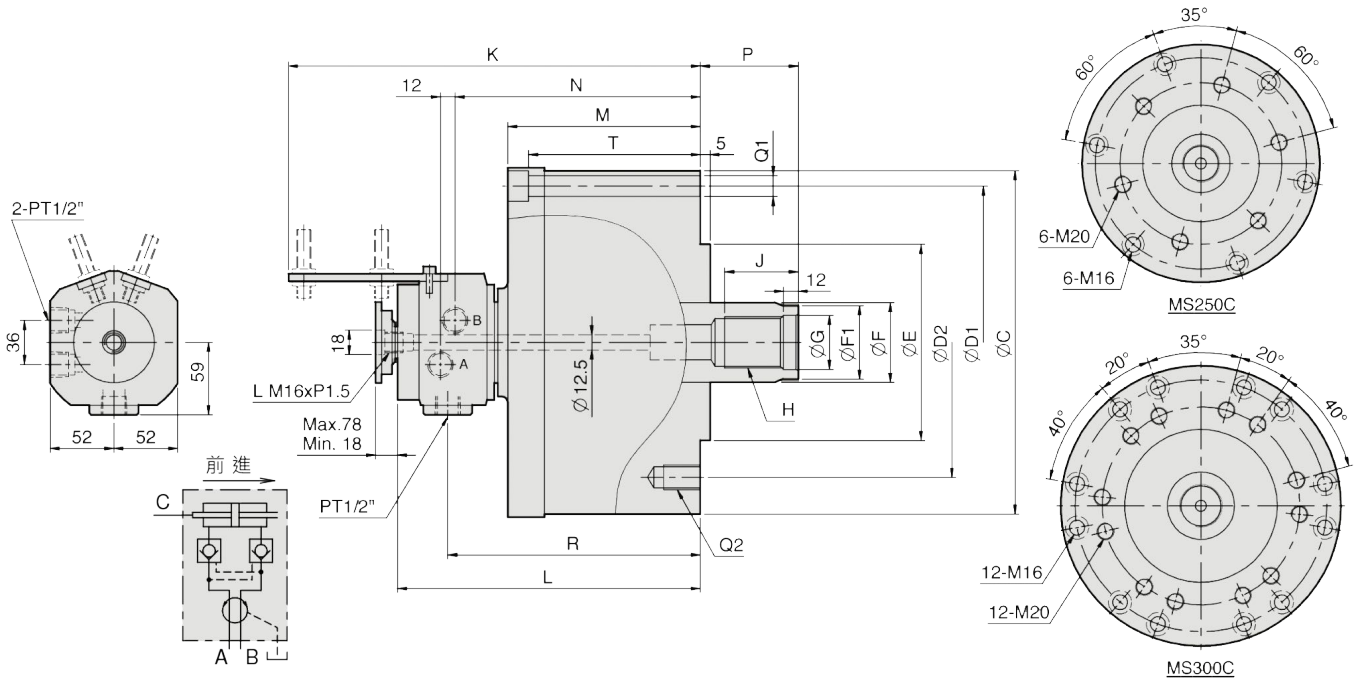
MS250C/MS300C

Non through-hole rotary hydraulic cylinder (valve and switch brackets included)

1. Through-hole for coolant, oil or air with thread for rotary unit.
2. Mounting from the rear or front side.
3. Built-in safety check valves and bracket for proximity switch. (The proximity switches are extra option.)



Product schematic



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MS250C	250	481.5 / 453.6	227(23147) / 214(21822)	60	4.9(50)	2000	0.85	73	2
MS300C	300	697.5 / 658.6	262(26716) / 247(25186)	60	4.0(40.8)	1500	1.60	106	3

DIM Model	C	D1	D2	E (h7)	F	F1	G	H	J	K	L	M	N	P max.	P min.	Q1	Q2	R	T
MS250C	300	275	220	160	65	62	44	M42x3.0	60	349	260	170	213	85	25	6-Ø17	6-M20x30	219	153
MS300C	355	330	270	210	75	70	50	M48x3.0	70	359	270	182	223	85	25	12-Ø17	12-M20x30	229	165

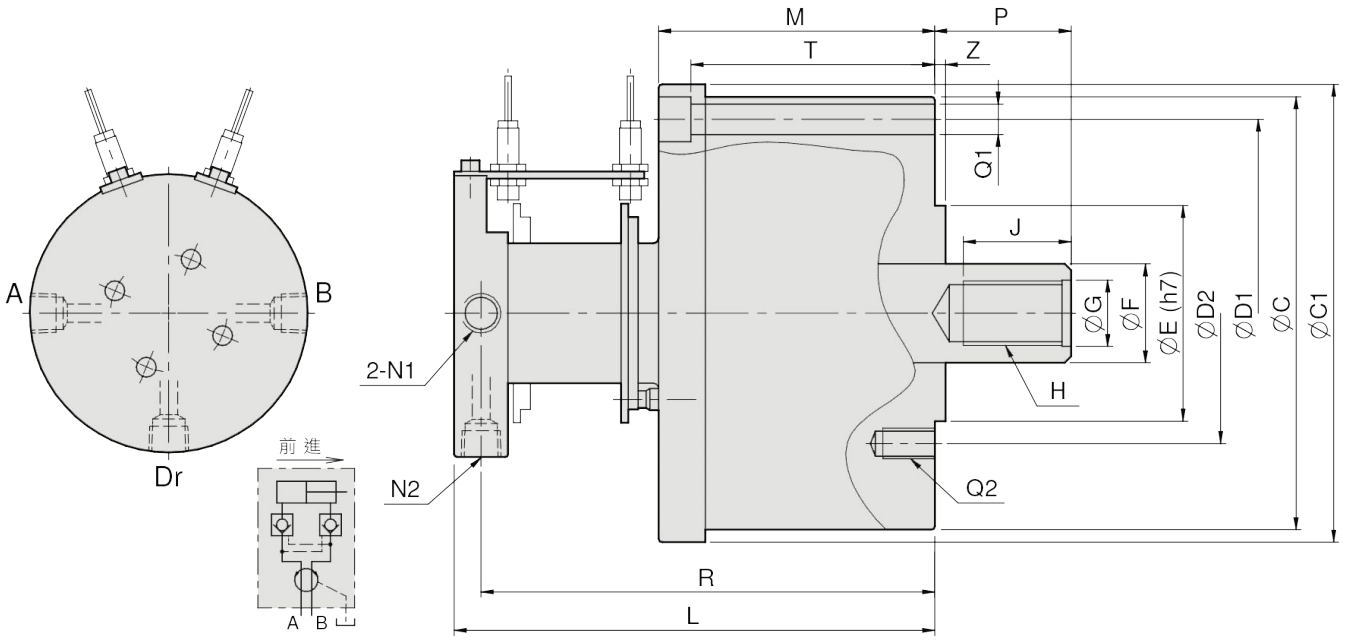


MR

Short Type Non Through Hole Rotary Hydraulic

1. Light weight design can reduce the spindle loading for vertical lathe application.
2. Built-in check valve and proximity switch brackets.
3. Developed for rear locking installation.

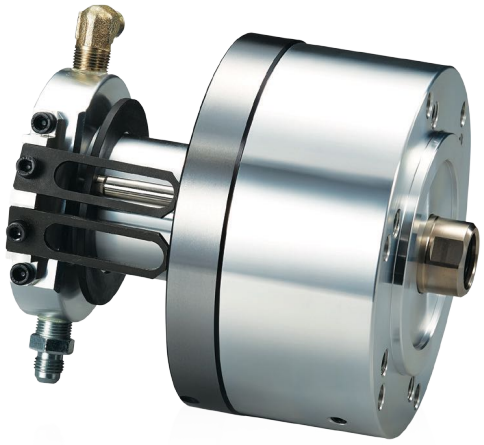
Product schematic



UNIT : mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MR10530	105	81 / 75.5	34(3467) / 31.7(3232)	30	4.5(45.9)	6000	0.015	6.8	0.8
MR12535	125	117 / 107.5	49(4996) / 45(4588)	35	4.5(45.9)	6000	0.028	9.5	0.8
MR15035	150	171.1 / 156.7	72(7342) / 66(6730)	35	4.5(45.9)	5500	0.043	12.8	0.8
MR20060	200	310 / 286	146(14887) / 134(13664)	60	4.9(50)	5500	0.55	49	2
MR25060	250	481.5 / 453.6	227(23147) / 214(21822)	60	4.9(50)	2000	0.81	72	2

DIM Model	C	C1	D1	D2	E (h7)	F	G	H	J	L	M	N1	N2	P max.	P min.	Q1	Q2	R	T	Z
MR10530	143	143	125	100	80	30	21	M20x2.5	35	167	87	PT 3/8"	PT 1/4"	50	20	6-Ø9	6-M10	155	78	5
MR12535	169	171	150	130	110	35	25	M24x3.0	44	174	94	PT 3/8"	PT 1/4"	57	22	6-Ø11	6-M12	162	82	5
MR15035	202	204	180	130	110	45	31	M30x3.5	45	175	95	PT 3/8"	PT 1/4"	61	26	6-Ø13	12-M12	163	82	5
MR20060	250	255	225	145	120	55	37	M36x4.0	60	270	156	PT 1/2"	PT 1/2"	85	25	6-Ø17	6-M16	255	140	6
MR25060	300	305	275	220	160	65	44	M42x3.0	60	280	168	PT 1/2"	PT 1/2"	85	25	6-Ø17	6-M20	265	150	6

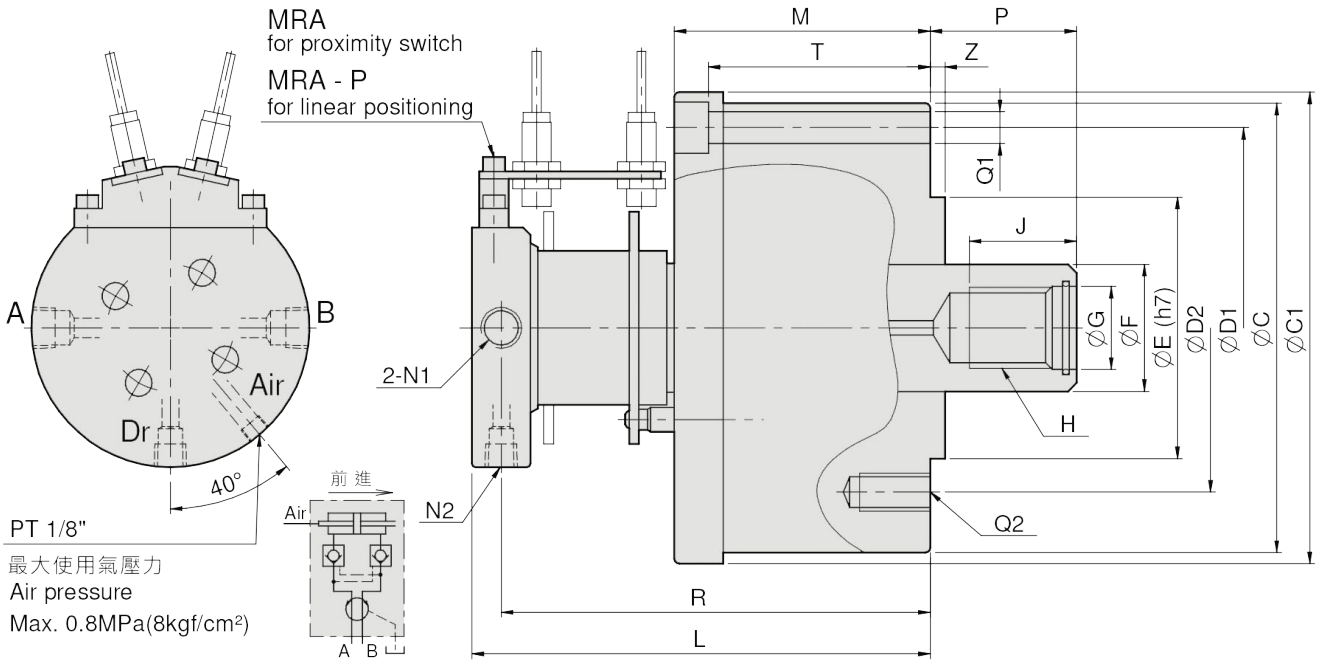


Product schematic

MRA

Super-short type, non through-hole of rotary hydraulic cylinder with gas injection function

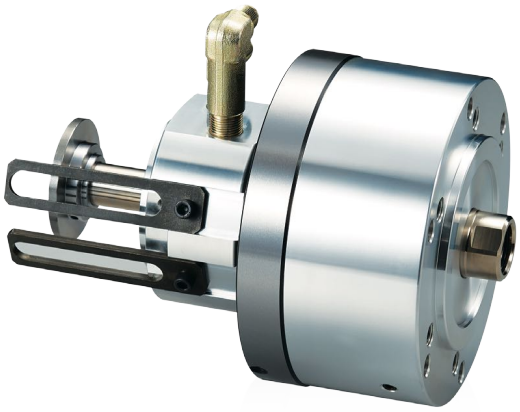
1. High-speed and lightweight design, suitable for vertical lathes.
2. Check valve and stroke detection frame are included.
3. Can lock in at back end during installation.
4. Can be equipped with gas injection function.



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MRA12535	125	116 / 107.5	48.5(4945) / 45(4588)	35	4.5(45.9)	6000	0.028	9.3	0.8
MRA15035	150	170.2 / 156.7	71.6(7301) / 66(6730)	35	4.5(45.9)	5500	0.043	12.8	0.8

DIM Model	C	C1	D1	D2	E (h7)	F	G	H	J	L	M	N1	N2	P max.	P min.	Q1	Q2	R	T	Z
MRA12535	169	171	150	130	110	35	25	M24x3.0	44	177	94	PT3/8”	PT1/4”	57	22	6-Ø11	6-M12	165	82	5
MRA15035	202	204	180	130	110	45	31	M30x3.5	45	178	95	PT3/8”	PT1/4”	61	26	6-Ø13	12-M12	166	82	5

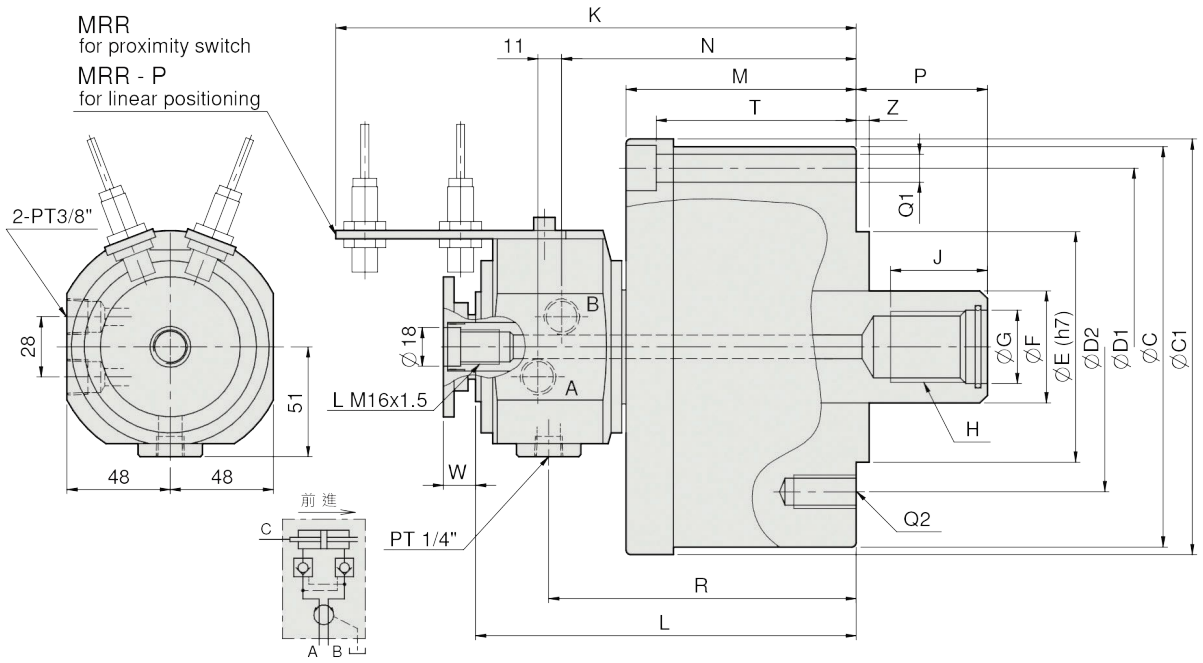


Product schematic

MRR

Short type non through-hole of rotary hydraulic Cylinder (for rotary union)

1. High-speed and lightweight design, suitable for vertical lathes.
2. Check valve and stroke detection frame are included.
3. Can lock in at the back end during installation.
4. Can inject water and gas from the center bore through rotary adaptor.



UNIT：mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MRR12535	125	113 / 107.5	47.3(4823) / 45(4588)	35	4.5(45.9)	6000	0.027	9.8	0.8
MRR15035	150	168.7 / 156.7	71(7240) / 66(6730)	35	4.5(45.9)	5500	0.055	13.5	0.8

DIM Model	C	C1	D1	D2	E (h7)	F	G	H	J	K	L	M	N	P max.	P min.	Q1	Q2	R	T	W max.	W min.	Z
MRR12535	169	171	150	130	110	35	25	M24x3.0	44	229	164	94	124	57	22	6-Ø11	6-M12	130	82	50	15	5
MRR15035	202	204	180	130	110	45	31	M30x3.5	45	230	165	95	125	61	26	6-Ø13	6-M12	131	82	50	15	5

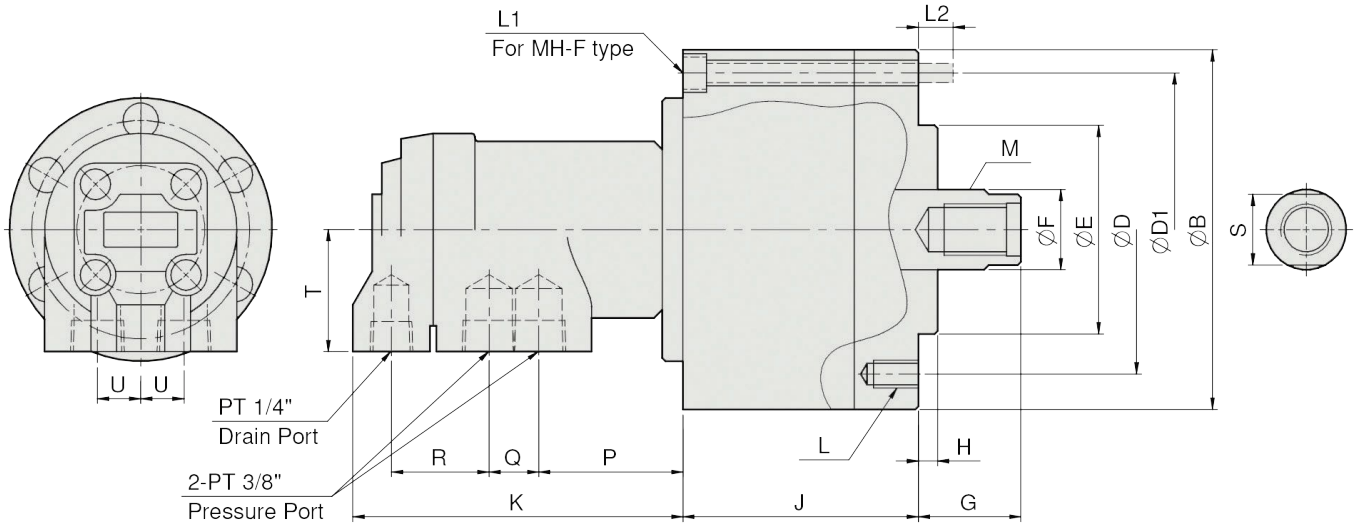


Product schematic

MH-F

Non through-hole rotary hydraulic cylinder

1. Dense substance, low inertia, light shape: this hydraulic cylinder is made of aluminum alloy, which is light design and can reduce the load of machine main shaft.
2. High speed operation: The balance design of this hydraulic cylinder is with light and dense substance, which can maintain the outside shape evenly and stably while operating at high speed.
3. Long life: due to the high quality of oil seal and high precision on surface roughness of parts ensures the long life of this hydraulic cylinder.



UNIT : mm

SPEC Model	Piston Dia. (mm)	Piston Area (cm²) Push Side / Pull Side	Max. Draw Bar Force kN(kgf) Push Side / Pull Side	Piston Stroke (mm)	Max. Operating Pressure MPa(kgf / cm²)	Max. Speed (r.p.m.)	Moment Of Inertia I (kg · m²)	Weight (kg)	Total Leakage L/min
MH80	80	47.7 / 42.8	15.5(1580) / 13.9(1417)	15	3.5(35.7)	6000	0.005	5.1	0.4
MH100F	100	75.4 / 70.5	24.5(2498) / 22.9(2335)	20	3.5(35.7)	5500	0.013	6.7	0.4
MH125F	125	121.1 / 114	39.3(4007) / 37(3773)	25	3.5(35.7)	5500	0.021	8.6	0.4
MH150F	150	176 / 160	66(6730) / 60(6118)	30	4.0(40.8)	4000	0.049	10.8	0.8

DIM Model	B	D	D1	E (h7)	F	G max.	G min.	H	J	K	L	L1	L2	M	P	Q	R	T	U	S
MH80	112	90	—	65	25	45	30	6	73.5	103	6-M8x16	—	—	M16x2.0x32	45	15.5	30.5	38	13.5	22
MH100F	135	100	115	80	25	45	25	6	88.5	103	6-M10x19	6-M8x90	12	M16x2.0x32	45	15.5	30.5	38	13.5	22
MH125F	160	130	140	110	30	51	26	6	95.5	103	6-M12x20	6-M8x100	13	M20x2.5x32	45	15.5	30.5	38	13.5	27
MH150F	190	130	170	110	45	50	20	6	107	103	12-M12x20	8-M10x110	16	M30x3.5x40	45	15.5	30.5	38	13.5	38