



**ROTARY  
CYLINDER**

# Compact Style Hydraulic Cylinder with Closed Centre

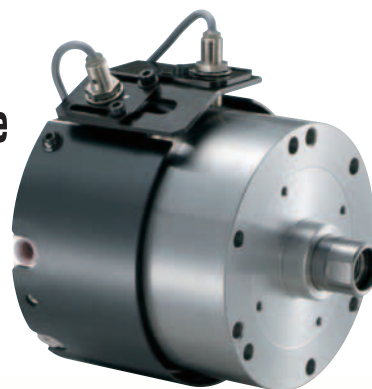
## M series

### Short, Compact, and Light

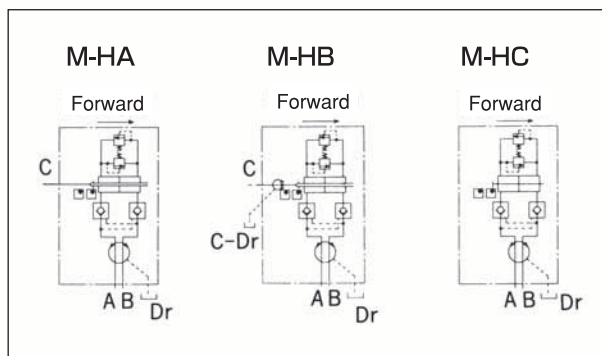
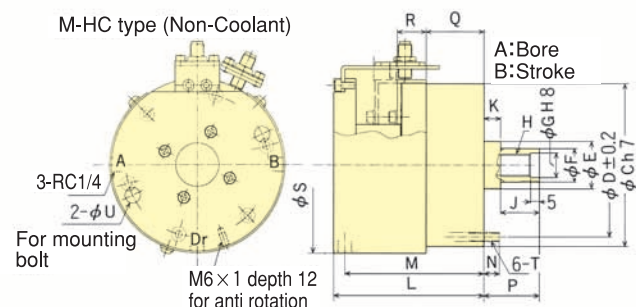
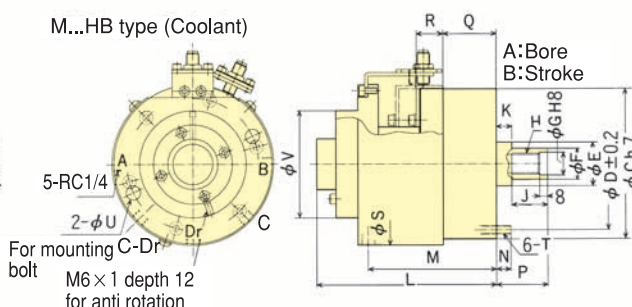
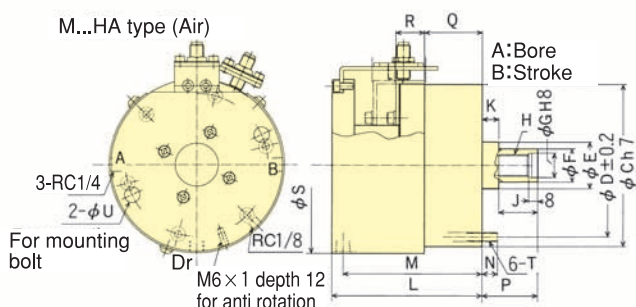
The compact design maximises Lathe performance

- Compact and lightweight
- Built-in check valve and pressure relief valve, and sensor switches

\*CE correspondence



### Dimensional Drawings



### Dimensions

Model	A	B	C (h7)	D	E	F	G (H8)	H	J	K	L	M	N	P max.	P min.	Q max.	Q min.	R	S	T	U	V
M1120HA21N	110	20	145	128	42	30	22	M20	30	15	135	125	14	60	40	72	52	26	159.2	M 8	14	-
M1120HB21N	110	20	145	128	42	30	22	M20	30	15	175	125	14	60	40	72	52	26	159.2	M 8	14	104
M1120HC21N	110	20	145	128	42	30	22	M20	30	15	135	125	14	60	40	72	52	26	159.2	M 8	14	-
M1221HA21N	120	21	168	145	44	32	22	M20	30	15	138	128	14	60	39	75	54	27	182.2	M10	17	-
M1221HB21N	120	21	168	145	44	32	22	M20	30	15	178	128	14	60	39	75	54	27	182.2	M10	17	104
M1221HC21N	120	21	168	145	44	32	22	M20	30	15	138	128	14	60	39	75	54	27	182.2	M10	17	-
M1330HA21N	130	30	168	150	51	36	26	M24	35	15	144	134	18	60	30	79	49	37	182.2	M10	17	-
M1330HB21N	130	30	168	150	51	36	26	M24	35	15	184	134	18	60	30	79	49	37	182.2	M10	17	104
M1330HC21N	130	30	168	150	51	36	26	M24	35	15	144	134	18	60	30	79	49	37	182.2	M10	17	-

### Specifications

\*Draw bar: Max. Operation Pressure M1120H 3.5MPa (35.7kgf/cm<sup>2</sup>), M1221H 4.0MPa (40.8kgf/cm<sup>2</sup>), M1330H 4.0MPa (40.8kgf/cm<sup>2</sup>)

\*Total leakage: Pressure 3.0MPa (30.6kgf/cm<sup>2</sup>) and oil temperature 50°C. \*Proximity switch: Model BES516-325-E3R (manufactured by B & Plus KK) DC 12/24 V 200mA PNP

Model	Piston stroke mm	Piston Area Push Side cm <sup>2</sup>	Piston Area Pull Side cm <sup>2</sup>	Draw bar Push Side kN(kgf)	Draw bar Pull Side kN(kgf)	Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Total leakage l/min	Max. Speed min <sup>-1</sup>	Net Weight kg	Moment of inertia kg·m <sup>2</sup>
M1120HA21N	20	87.6	84	28.0 (2855)	27.0 (2753)	3.50 (35.7)	1.2	6000	8.2	0.016
M1120HB21N	20	87.6	84	28.0 (2855)	27.0 (2753)	3.50 (35.7)	1.2	6000	8.5	0.016
M1120HC21N	20	87.6	84	28.0 (2855)	27.0 (2753)	3.50 (35.7)	1.2	6000	8.2	0.016
M1221HA21N	21	105.7	102	39.0 (3977)	38.0 (3875)	4.00 (40.8)	1.2	6000	10.2	0.028
M1221HB21N	21	105.7	102	39.0 (3977)	38.0 (3875)	4.00 (40.8)	1.2	6000	10.5	0.028
M1221HC21N	21	105.7	102	39.0 (3977)	38.0 (3875)	4.00 (40.8)	1.2	6000	10.2	0.028
M1330HA21N	30	125.3	119	47.0 (4793)	45.0 (4589)	4.00 (40.8)	1.2	6000	10.3	0.029
M1330HB21N	30	125.3	119	47.0 (4793)	45.0 (4589)	4.00 (40.8)	1.2	6000	10.6	0.029
M1330HC21N	30	125.3	119	47.0 (4793)	45.0 (4589)	4.00 (40.8)	1.2	6000	10.3	0.029