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CYLINDER**

▶ **P.51 ~ P.61**

# Cylinder

Cylinder

## Cylinder Series exclusive for KITAGAWA Chucks

From standard to advanced type, a recognised line-up of high performance cylinders accommodates every KITAGAWA chuck.

When selecting the combination of chuck cylinders, contact us.

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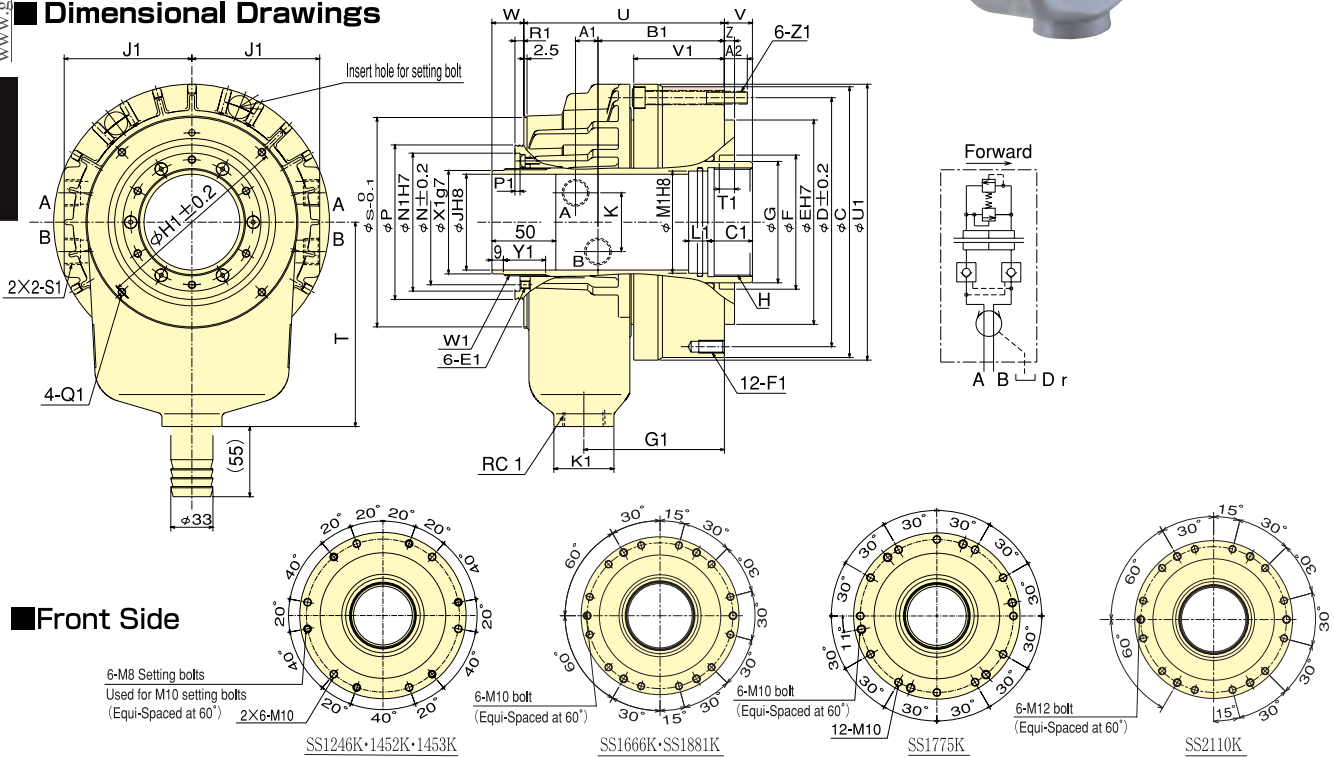
# Compact Style Hydraulic Cylinder with Open Centre SS series

**Accommodates BB200 and B-200 series**  
**The compact design maximises Lathe performance**

- Compact : 30% reduction in length of current S series
- Speed Increased
- Can operate one size larger chuck due to increased pull forces



## Dimensional Drawings



## Dimensions

Model	C	D	E	F	G	H	J	K	N	P	S	T	U	V max.	V min.	W max.	W min.	Z	A1	B1	C1
SS1246K	162	147	130	75	65	M55×2	46	40	64	85	116	120	120	13	-3	41	25	8	8.5	79.5	25
SS1452K	180	165	140	80	70	M60×2	52	40	73	96	135	130	130	19	-3	47	25	8	9.0	88	30
SS1453K	180	165	140	80	70	M60×2	53	40	73	96	135	130	130	19	-3	47	25	8	9.0	88	30
SS1666K	207	190	168	95	85	M75×2	66	48	88	111	154	150	150	22	-3	50	25	8	13.0	99.5	35
SS1775K	212	195	160	105	95	M85×2	75	46	98	121	164	160	157	22	-3	50	25	8	17.5	99	35
SS1881K	222	205	168	110	100	M90×2	81	46	103	126	175	175	167	23	-2	50	25	8	17.0	106	35
SS2110K	260	240	200	135	125	M115×2	106	46	133	160	210	200	192	27	-3	55	25	8	20.0	120.5	35

Model	E1 depth	F1 depth	G1	H1	J1	K1	L1	M1	N1	P1	Q1 depth	R1	S1	T1	U1	V1	W1	X1	Y1	Z1	A2
SS1246K	M6×6	M10×20	84	98	76	47	15	50	76	4	M5×6	6	Rc <sup>3</sup> / <sub>8</sub>	12	165	57.5	M52×1.5	50	29	M8	15
SS1452K	M6×7	M10×20	93	110	86	47	15	55	85	4	M6×6	7	Rc <sup>3</sup> / <sub>8</sub>	12	184	66.5	M58×1.5	56	29	M8	12
SS1453K	M6×7	M10×20	93	110	86	47	15	55	85	4	M6×6	7	Rc <sup>3</sup> / <sub>8</sub>	12	184	66.5	M58×1.5	56	29	M8	12
SS1666K	M6×7	M12×24	108	145	97	47	15	70	100	4	M6×10	7	Rc <sup>1</sup> / <sub>2</sub>	12	211	71	M74×1.5	71.5	33	M10	19
SS1775K	M6×8	M10×20	110	155	100	47	15	80	108	4	M6×10	7	Rc <sup>1</sup> / <sub>2</sub>	12	216	71	M84×2	81	33	M10	18
SS1881K	M6×8	M12×24	115	166	105	47	15	85	113	4	M6×10	7	Rc <sup>1</sup> / <sub>2</sub>	12	226	71	M89×2	86	33	M10	19
SS2110K	M6×8	M12×24	130	201	124	47	15	110	145	4	M6×10	7	Rc <sup>1</sup> / <sub>2</sub>	12	263	79.5	M118×2	115	38	M12	18

## Specifications

Model	Piston Dia. mm	Plunger Stroke mm	Draw bar		Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Max. Speed (min <sup>-1</sup> r.p.m)	Moment of inertia kg·m <sup>2</sup>	Net Weight kg	Total leakage ℓ /min
			Push Side kN (kgf)	Pull Side kN (kgf)					
SS1246K	128	16	43.6(4466)	38.9(3967)	4.5(45.9)	8000	0.017	8.0	3.0
SS1452K	145	22	56.5(5761)	52.1(5313)	4.5(45.9)	6500	0.031	13.0	3.9
SS1453K	145	22	56.5(5761)	52.1(5313)	4.5(45.9)	6500	0.031	13.0	3.9
SS1666K	165	25	70.6(7199)	65.0(6628)	4.5(45.9)	5600	0.065	19.0	4.0
SS1775K	170	25	70.7(7209)	64.7(6587)	4.5(45.9)	5500	0.061	18.5	4.2
SS1881K	180	25	79.5(8107)	73.1(7454)	4.5(45.9)	4800	0.087	24.0	4.3
SS2110K	210	30	74.7(7617)	71.0(7240)	3.5(35.7)	3500	0.197	37.0	6.0

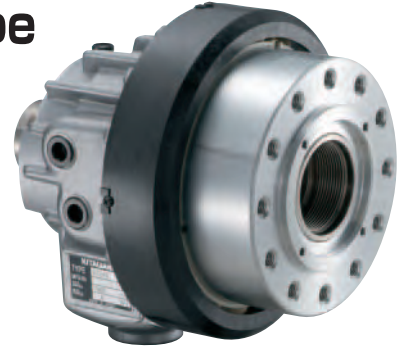


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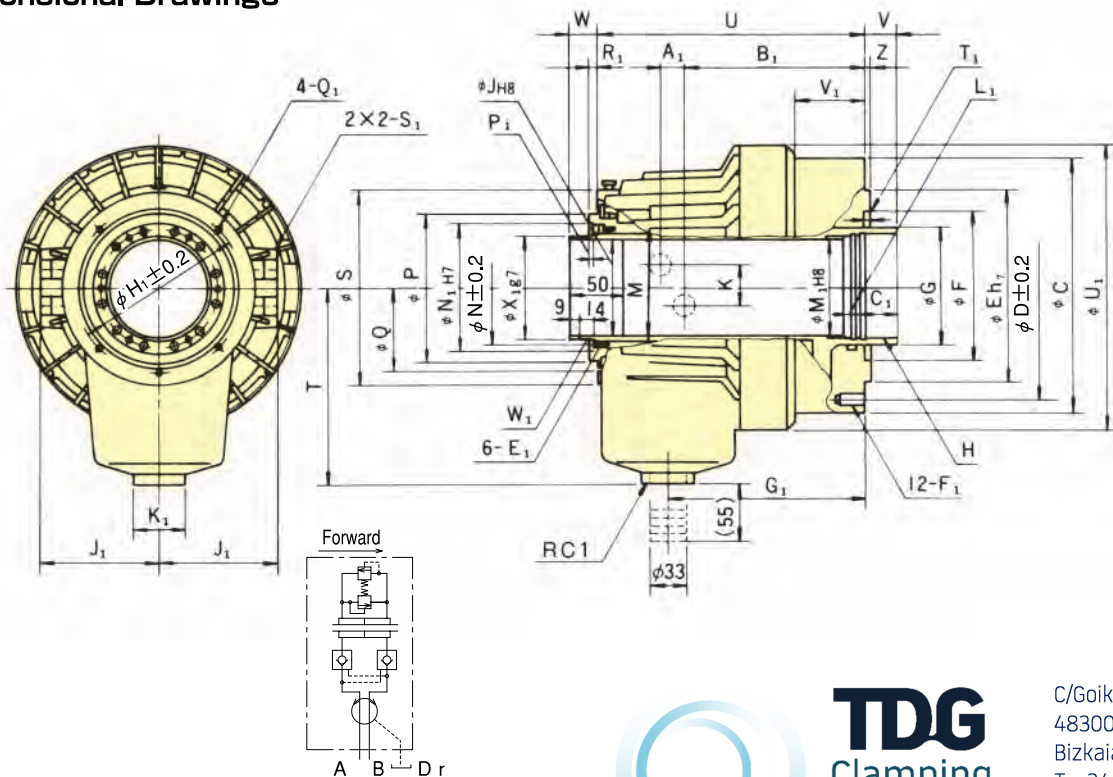
# Large Thru-Hole High Speed Hydraulic Cylinder with Open Centre S series

## KITAGAWA standard thru-hole type

- Compact and light weight
- Built-in check valve and relief valve



### Dimensional Drawings



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### Dimensions

Model	C	D	E	F	G	H	J Thru-hole	K	M	N	P	Q	S	T	U	V max.	V min.	W max.	W min.	Z	A <sub>1</sub>
S1246	155	130	100	80	65	M 55x2.0	46	36	52.9	64	85	51.5	118	115	179	15	0	40	25	5	11.5
S1552	190	170	130	85	70	M 60x2.0	52	36	59.6	73	96	57.5	137	130	191	22	0	47	25	5	12
S1875	215	190	160	120	95	M 85x2.0	75	36	84.6	98	121	70.5	166	160	225	25	0	50	25	5	17.5
S2091	240	215	180	140	110	M100x2.0	91	34	93.6	108	138	79	182	185	248	30	0	55	25	5	21

Model	B <sub>1</sub>	C <sub>1</sub>	E <sub>1</sub> depth	F <sub>1</sub> depth	G <sub>1</sub>	H <sub>1</sub>	J <sub>1</sub>	K <sub>1</sub>	L <sub>1</sub>	M <sub>1</sub>	N <sub>1</sub>	P <sub>1</sub>	Q <sub>1</sub> depth	R <sub>1</sub>	S <sub>1</sub>	T <sub>1</sub>	U <sub>1</sub>	V <sub>1</sub>	W <sub>1</sub>	X <sub>1</sub>
S1246	126.5	30	M6x9	M10x20	135	98	76	47	15	50	76	4	M5x10	6	RC1/2	6	200	46	M52x1.5	50
S1552	136	30	M6x9	M10x20	145	110	86	47	15	55	85	4	M6x12	7	RC1/2	6	220	51	M58x1.5	56
S1875	153.5	35	M6x9	M10x20	166.5	155	101	47	15	80	108	4	M6x12	7	RC1/2	6	242	58	M84x2.0	81
S2091	168	35	M6x14	M12x24	183	165	110	47	15	95	120	4	M6x12	7	RC1/2	6	267	66	M99x2.0	96

### Specifications

\*Total leakage : Pressure 3.0MPa (30.6kgf/cm<sup>2</sup>) and oil temperature 50°C. \*Draw bar pull force : Pressure 4.0MPa (40.8kgf/cm<sup>2</sup>)

Model	Piston Dia. mm	Piston stroke mm	Piston Area		Draw bar		Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Max. Speed min <sup>-1</sup> (r.p.m)	Moment of inertia kg·m <sup>2</sup>	Net Weight kg	Total leakage ℓ /min
			Push Side cm <sup>2</sup>	Pull Side cm <sup>2</sup>	Push Side kN(kgf)	Pull Side kN(kgf)					
S1246	125	15	100	89	38.0 (3875)	33.0 (3365)	4.0 (40.8)	7000	0.019	12.0	3.0
S1552	155	22	161	150	60.0 (6118)	56.0 (5710)	4.0 (40.8)	6200	0.053	16.8	3.9
S1875	180	25	198	183	74.0 (7546)	69.0 (7036)	4.0 (40.8)	4700	0.095	26.0	4.2
S2091	205	30	252	234	94.0 (9585)	88.0 (8973)	4.0 (40.8)	3800	0.153	33.0	4.5



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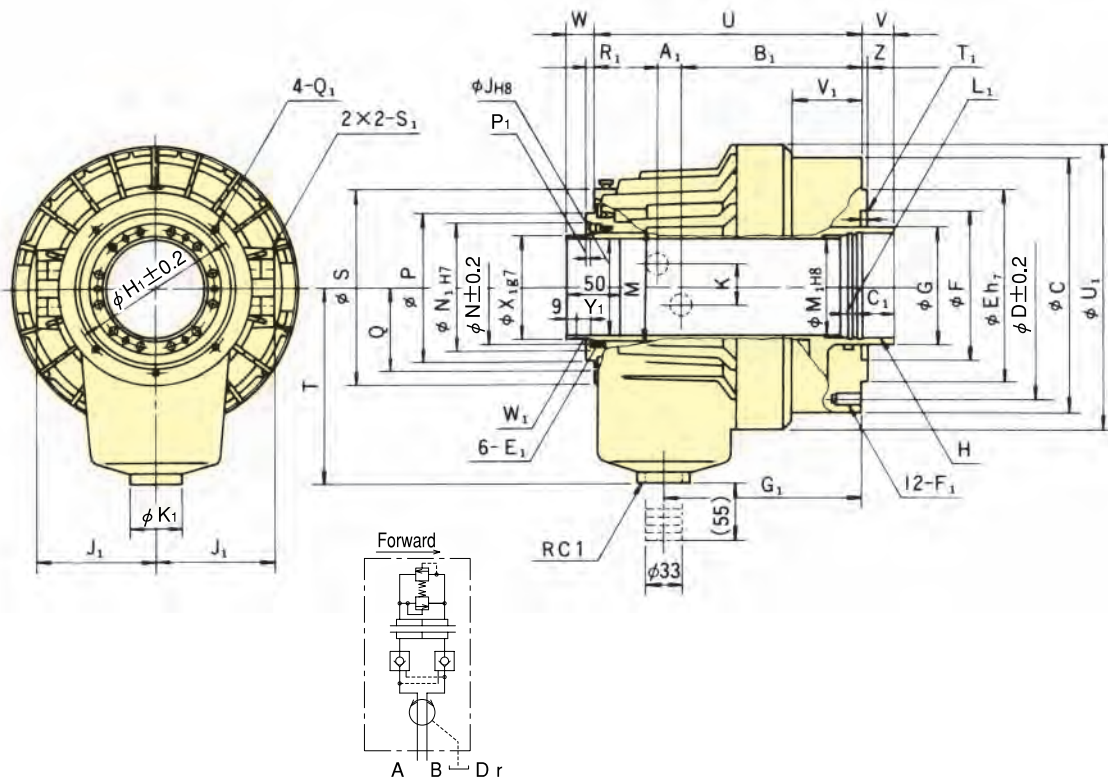
# Large Thru-Hole High Speed Hydraulic Cylinder with Open Centre S-L series

## KITAGAWA standard thru-hole type

- Long piston stroke
- Built-in check valve and relief valve



### Dimensional Drawings



### Dimensions

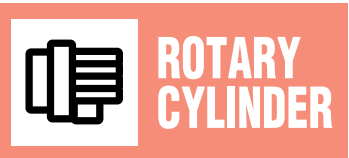
Model	C	D	E	F	G	H	J Thru-hole	K	M	N	P	Q	S	T	U	V max.	V min.	W max.	W min.	Z	A <sub>1</sub>
S1246L	155	130	100	80	65	M55×2.0	46	36	52.9	64	85	51.5	118	115	200	27	-5	57	25	5	11.5
S1552L	190	170	130	85	70	M60×2.0	52	36	59.6	73	96	57.5	137	130	208	29	-5	59	25	5	12
S1875L	215	190	160	120	95	M85×2.0	75	36	84.6	98	121	70.5	166	160	241	35	-5	65	25	5	17.5
S2091L	240	215	180	140	110	M100×2.0	91	34	99.6	108	138	79	182	185	268	45	-5	75	25	5	21

Model	B <sub>1</sub>	C <sub>1</sub>	E <sub>1</sub> depth	F <sub>1</sub> depth	G <sub>1</sub>	H <sub>1</sub>	J <sub>1</sub>	K <sub>1</sub>	L <sub>1</sub>	M <sub>1</sub>	N <sub>1</sub>	P <sub>1</sub>	Q <sub>1</sub> depth	R <sub>1</sub>	S <sub>1</sub>	T <sub>1</sub>	U <sub>1</sub>	V <sub>1</sub>	W <sub>1</sub>	X <sub>1</sub>	Y <sub>1</sub>
S1246L	147.5	30	M6×9	M10×20	156	98	76	47	15	50	76	4	M5×10	6	RC1/2	12	200	67	M52×1.5	50	33
S1552L	153	30	M6×9	M10×20	162	110	86	47	15	55	85	4	M6×12	7	RC1/2	12	220	68	M58×1.5	56	33
S1875L	169.5	35	M6×9	M10×20	182.5	155	101	47	15	80	108	4	M6×12	7	RC1/2	12	242	74	M84×2.0	81	33
S2091L	188	35	M6×14	M12×24	203	165	110	47	15	95	120	4	M6×12	7	RC1/2	12	267	86	M99×2.0	96	38

### Specifications \*Total leakage : Pressure 3.0MPa (30.6kgf/cm<sup>2</sup>) and oil temperature 50°C. \*Draw bar pull force : Pressure 4.0MPa (40.8kgf/cm<sup>2</sup>)

Model	Piston Dia. mm	Piston stroke mm	Piston Area		Draw bar		Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Max. Speed min <sup>-1</sup> (r.p.m)	Moment of inertia kg·m <sup>2</sup>	Net Weight kg	Total leakage ℓ / min
			Push Side cm <sup>2</sup>	Pull Side cm <sup>2</sup>	Push Side kN(kgf)	Pull Side kN(kgf)					
S1246L	125	32	100	89	38.0(3875)	33.0(3365)	4.0 (40.8)	7000	0.022	12.8	3.0
S1552L	155	34	161	150	60.0(6118)	56.0(5710)	4.0 (40.8)	6200	0.058	17.0	3.9
S1875L	180	40	198	183	74.0(7546)	69.0(7036)	4.0 (40.8)	4700	0.100	26.8	4.2
S2091L	205	50	252	234	94.0(9585)	88.0(8973)	4.0 (40.8)	3800	0.160	34.1	4.5





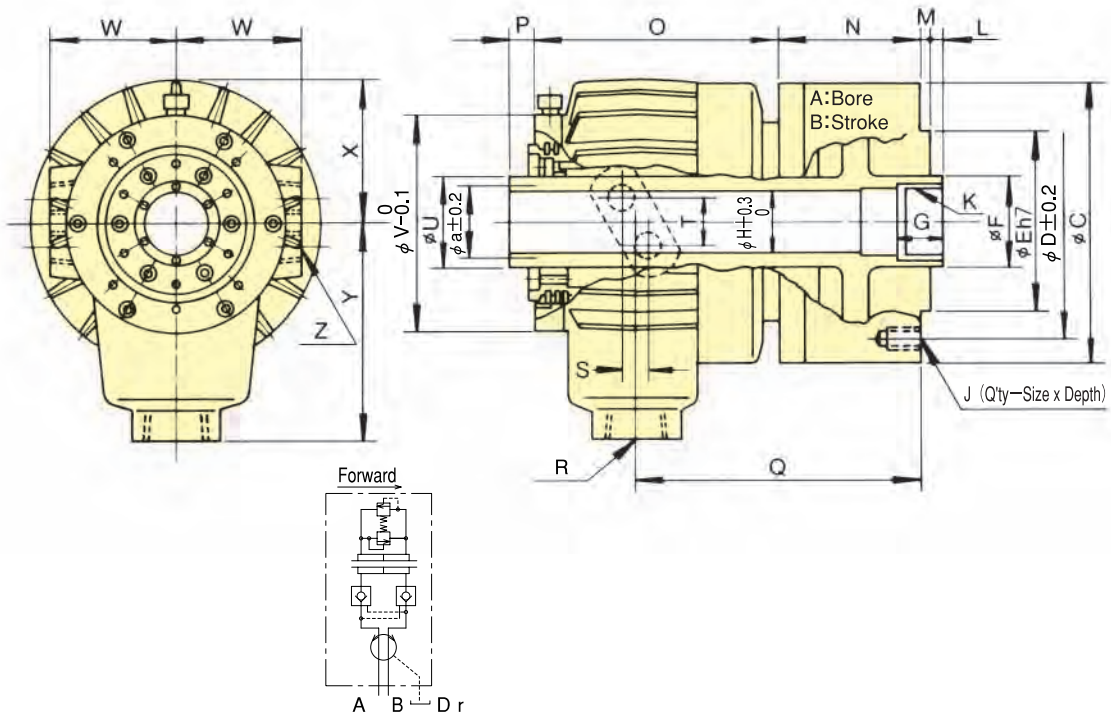
# High Speed Hydraulic Cylinder with Open Centre F series

## KITAGAWA standard thru-hole type

- Built-in check valve and relief valve



### Dimensional Drawings



Cylinder

### Dimensions

Model	A	B	C	D	E (h7)	F	G	H	J	K	L max.	L min.	M	N	O	P max.	P min.	Q	R	S	T	U	V	W	X	Y	Z	a
F0933H	95	12	125	100	80	45	25	33.5	6M 8x15	M 38x1.5	+7	-5	5	71	119	41	29	142	RC <sup>3</sup> /4	11.8	22	M39x1.5	104	64	66	110	2x2-RC <sup>1</sup> /4	-
F2511H	250	23	310	275	230	140	45	117.5	12M 16x32	M 130x2.0	+18	-5	6	101	209	38	15	217	RC1	27	20	134.6	232	125	135.5	215	2x2-PT <sup>3</sup> /8	127

※ Total leakage : Pressure 3.0MPa (30.6kgf/cm<sup>2</sup>) and oil temperature 50°C. ※ Draw bar pull force : Pressure 4.0MPa (40.8kgf/cm<sup>2</sup>)

Model	Thru-Hole mm	Piston stroke mm	Piston Area		Draw bar		Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Total leakage ℓ /min	Max. Speed min <sup>-1</sup> (r.p.m)	Net Weight kg	Moment of inertia kg·m <sup>2</sup>
Model	Thru-Hole mm	Piston stroke mm	Push Side cm <sup>2</sup>	Pull Side cm <sup>2</sup>	Push Side kN(kgf)	Pull Side kN(kgf)	MPa (kgf/cm <sup>2</sup> )	ℓ /min	min <sup>-1</sup> (r.p.m)	kg	kg·m <sup>2</sup>
F0933H	33	12	58	55	22.0 (2243)	20.6 (2100)	4.0 (40.8)	3.0	8000	8.5	0.008
F2511H	117.5	23	348	336	125.0 (12746)	120.0 (12236)	4.0 (40.8)	7.0	2800	60.0	0.455



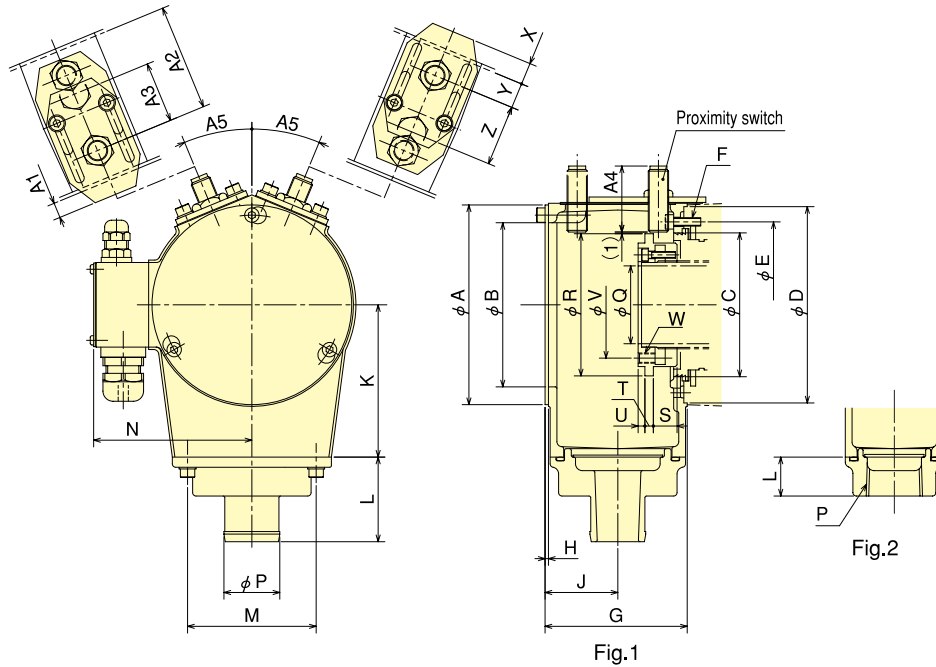
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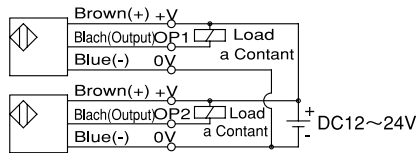
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# Coolant Collector Confirmation Device

## Dimensional Drawings

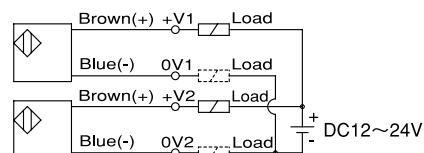


**Proximity Switch Type 1**  
manufactured by B & Plus KK  
BES516-329-E3R



Circuit Diagram for Proximity Switch Output  
NPN A Contact (Normally open)

**Proximity Switch Type 2**  
manufactured by Yamatake  
FL7M-3J6HD



Circuit Diagram for Proximity Switch Output  
DC two-wire system A Contact (Normally open)  
Lead = Both sides connectable

## Dimensions

\*The under bodies of CSK12Y2, CSK14Y2, CSK16Y2, CSK17Y2, CSK18Y2, CSK21Y2, and CS-25HW are based on Fig. 2.

Model	Cylinder	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
CS-S10BN	S1036	118	97	73	104	88	4-M5	84	2	43	90	50	76	93.5	33	36
CS-S12BN	S1246	118	97	85	116	98	4-M5	84	2	43	90	50	76	93.5	33	46
CS-S15BN	S1552	136	114	96	135	110	4-M6	84	2	43	100	50	76	103.5	33	52
CS-S18BN	S1875	181	154	121	164	155	4-M6	88	2	46	140	50	76	126.5	33	75
CS-S20BN	S2091	181	154	138	180	165	4-M6	104	2	44	140	50	76	126.5	33	91
CSK12Y2	SS1246K	118	97	85	116	98	4-M5	62	2	32	90	23	76	92	Rc 1	46
CSK14Y2	SS1453K	136	114	96	135	110	4-M6	84	2	35	100	23	76	102	Rc 1	53
CSK16Y2	SS1666K	171	144	111	154	145	4-M6	88	2	38	135	23	76	120	Rc 1	66
CSK17Y2	SS1775K	181	154	121	164	155	4-M6	71	2	37.5	140	23	76	125	Rc 1	75
CSK18Y2	SS1881K	191	165	126	175	166	4-M6	88	2	38	145	23	76	130	Rc 1	81
CSK21Y2	SS2110K	229	200	160	210	201	4-M6	84	2	35	163	23	76	150	Rc 1	106
CS-F08BN	F0933H	118	97	73	104	88	4-M5	84	2	43	90	50	76	93.5	26	33
CS-25HW	F2511H	232	200	179	-	206	4-M6	101.6	1.6	51.6	180	-	76	148.5	Rc3/4	117.5

Model	Cylinder	R	S	T	U	V	W	X <sub>max</sub>	Y	Z	A1 <sub>max</sub>	A2	A3	A4	A5	Proximity switch
CS-S10BN	S1036	84	14	5	4	52	4-M6	13	15	36	9	63	36	39	22.5°	TYPE.1
CS-S12BN	S1246	84	14	5	4	63	4-M6	13	15	36	9	63	36	39	22.5°	TYPE.1
CS-S15BN	S1552	99	14	5	4	70	4-M6	13	15	36	9	63	36	39	22.5°	TYPE.1
CS-S18BN	S1875	144	14	5	4	95	4-M6	15	15	39	15	71	39	39	15°	TYPE.1
CS-S20BN	S2091	144	21	5	2	108	4-M6	8	22	41	10	82	41	39	15°	TYPE.1
CSK12Y2	SS1246K	84	10	5	8	63	4-M6	10	15	27	7	42	27	35	22.5°	TYPE.2
CSK14Y2	SS1453K	99	4	5	11.5	70	4-M6	13	15	36	10	64	36	35	20°	TYPE.2
CSK16Y2	SS1666K	134	12.5	5	4	85.5	4-M6	8	15	55	7	70	55	35	15°	TYPE.2
CSK17Y2	SS1775K	144	14	5	4	95	4-M6	13.5	14.5	32.5	13.5	54.5	32.5	35	15°	TYPE.2
CSK18Y2	SS1881K	155	12.5	5	4	100	4-M6	8	15	55	7	70	55	35	15°	TYPE.2
CSK21Y2	SS2110K	190	14	5	4	130	4-M6	13	15	48	9	63	48	35	12°	TYPE.2
CS-F08BN	F0933H	72	25	7	-	-	-	13	15	36	9	63	36	39	22.5°	TYPE.1
CS-25HW	F2511H	192	12	12	-	-	-	18	17	52	11.4	85	36	39	22.5°	TYPE.1

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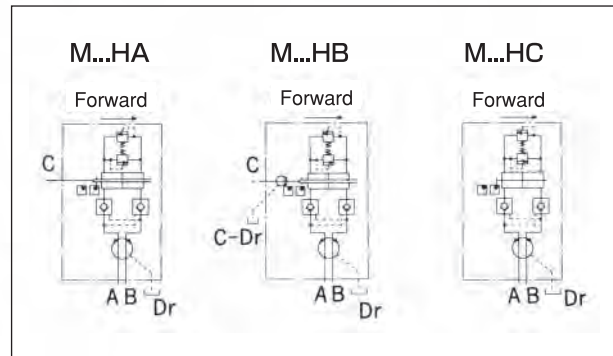
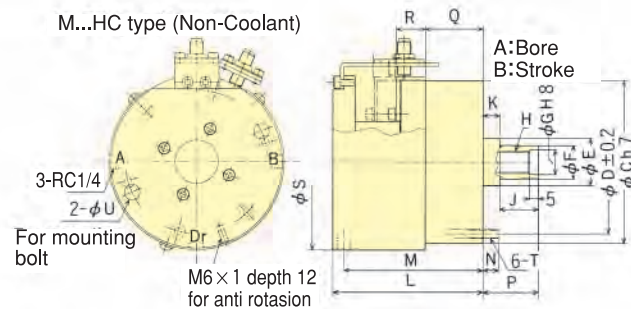
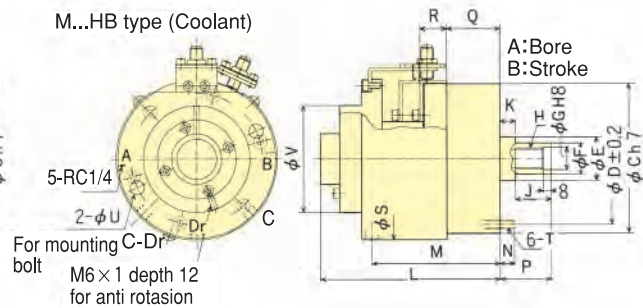
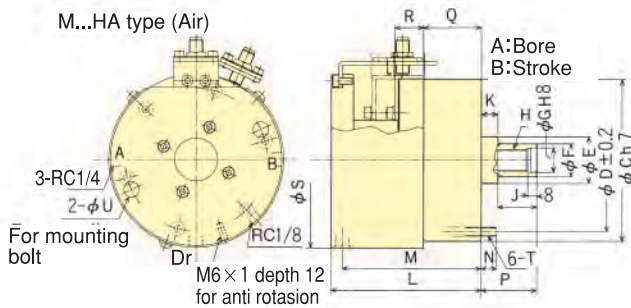
# Compact Style Hydraulic Cylinder with Closed Centre M series

**Short, Compact, and Light**  
The compact design maximises Lathe performance

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



## Dimensional Drawings



## Dimensions

Model	A	B	C (h7)	D	E	F	G (HB)	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> (r.p.m)	Weight kg	Moment of inertia kg·m <sup>2</sup>
M1120HA21N	20	87.6	84	28.0 (2855)	27.0 (2753)	3.5 (35.7)	1.2	6000	8.2	0.016
M1120HB21N	20	87.6	84	28.0 (2855)	27.0 (2753)	3.5 (35.7)	1.2	6000	8.5	0.016
M1120HC21N	20	87.6	84	28.0 (2855)	27.0 (2753)	3.5 (35.7)	1.2	6000	8.2	0.016
M1221HA21N	21	105.7	102	39.0 (3977)	38.0 (3875)	4.0 (40.8)	1.2	6000	10.2	0.028
M1221HB21N	21	105.7	102	39.0 (3977)	38.0 (3875)	4.0 (40.8)	1.2	6000	10.5	0.028
M1221HC21N	21	105.7	102	39.0 (3977)	38.0 (3875)	4.0 (40.8)	1.2	6000	10.2	0.028
M1330HA21N	30	125.3	119	47.0 (4793)	45.0 (4589)	4.0 (40.8)	1.2	6000	10.3	0.029
M1330HB21N	30	125.3	119	47.0 (4793)	45.0 (4589)	4.0 (40.8)	1.2	6000	10.6	0.029
M1330HC21N	30	125.3	119	47.0 (4793)	45.0 (4589)	4.0 (40.8)	1.2	6000	10.3	0.029





**ROTARY CYLINDER**

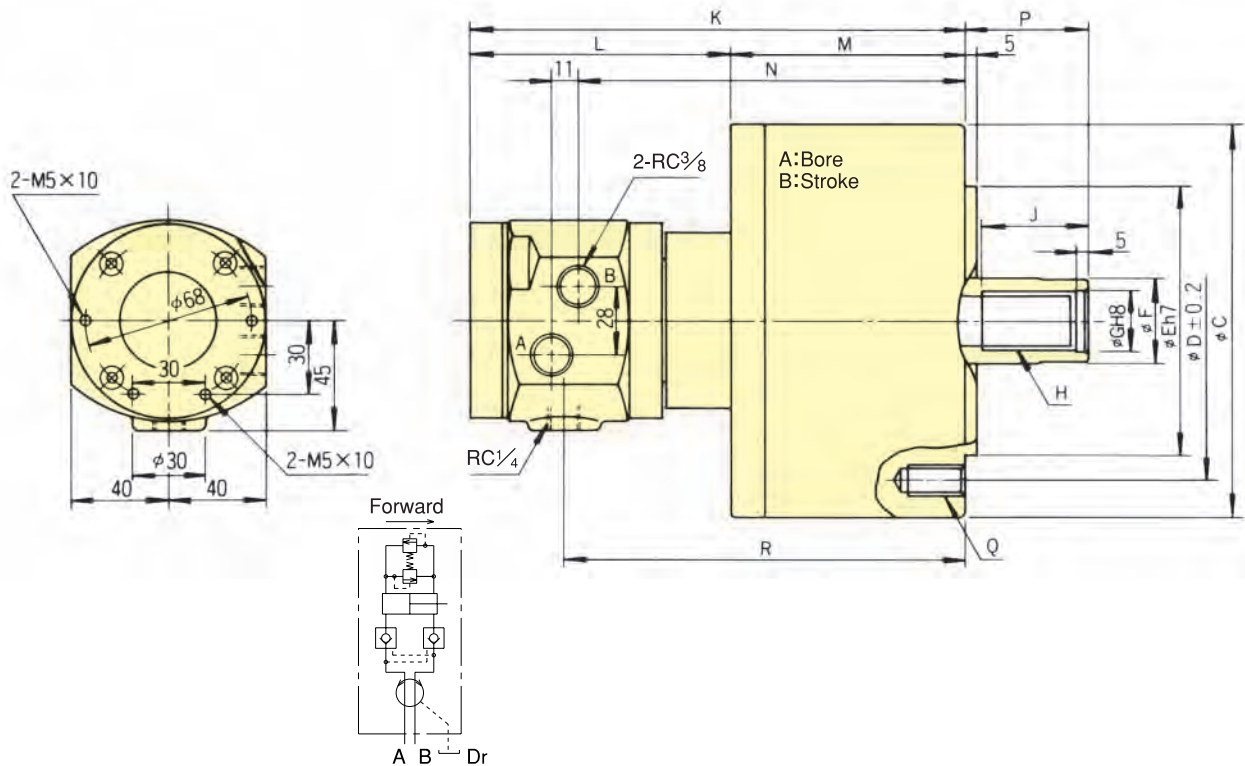
# Hydraulic Cylinder with Closed Centre Y-R series

## Closed Center KITAGAWA standard type

- Built in safety check valves and pressure relief valves



### Dimensional Drawings



### Dimensions

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P max.	P min.	Q	R
Y0715R	75	15	104	90	65	30	21	M20	35	172	106	66	127	46	31	6-M 6x20	133
Y1020R	105	20	135	100	80	30	21	M20	35	197	108	89	152	45	25	6-M10x20	158
Y1225R	125	25	160	130	110	35	25	M24	44	205	108	97	160	51	26	6-M12x24	166
Y1530R	150	30	190	130	110	45	31	M30	45	214	108	106	169	56	26	12-M12x24	175
Y2035R	200	35	245	145	120	55	37	M36	60	228	106	122	183	69	34	12-M16x30	189

### Specifications

\*Draw bar pull force : Pressure 4.0MPa (40.8kgf/cm<sup>2</sup>) \*Total leakage : 3.0MPa (30.6kgf/cm<sup>2</sup>) and oil temperature 50°C.

Model	Piston stroke mm	Piston Area		Draw bar		Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Total leakage l / min	Max. Speed min <sup>-1</sup> (r.p.m)	Weight kg	Moment of inertia kg·m <sup>2</sup>
		Push Side cm <sup>2</sup>	Pull Side cm <sup>2</sup>	Push Side kN(kgf)	Pull Side kN(kgf)					
Y0715R	15	44	37	16.6 (1693)	13.9 (1417)	4.0 (40.8)	0.8	6000	4.0	0.003
Y1020R	20	86	79	32.0 (3263)	29.0 (2957)	4.0 (40.8)	0.8	6000	7.1	0.013
Y1225R	25	122	113	46.0 (4691)	42.0 (4283)	4.0 (40.8)	0.8	6000	10.0	0.023
Y1530R	30	176	160	66.0 (6730)	60.0 (6118)	4.0 (40.8)	0.8	5500	13.5	0.048
Y2035R	35	314	290	117.0 (11930)	108.0 (11013)	4.0 (40.8)	0.8	5500	22.0	0.098



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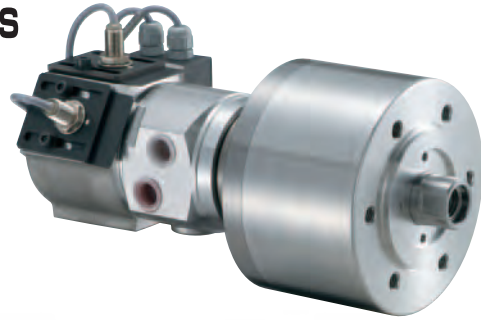


**ROTARY  
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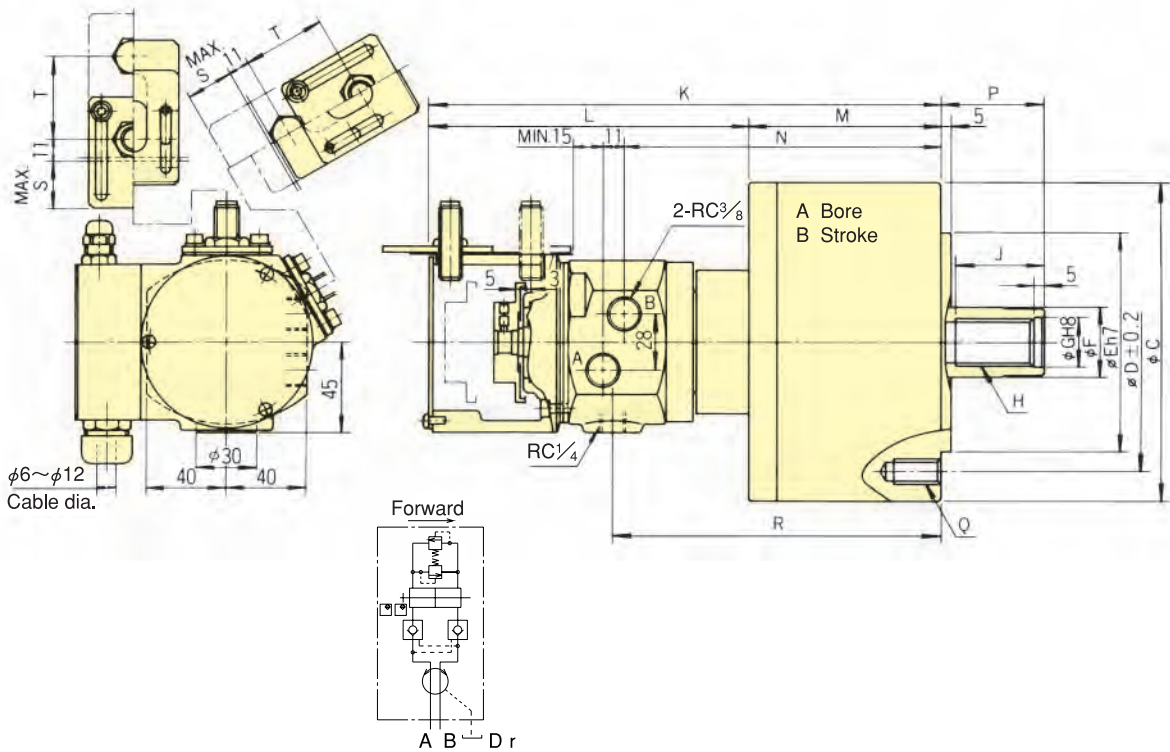
# Hydraulic Cylinder with Closed Centre Y-RE series

**Closed Centre Kitagawa standard series  
Built in proximity switch**

- Built-in check valve, relief valve and sensor switches



## Dimensional Drawings



## Dimensions

Dimensions	A	B	C	D	E	F	G	H	J	K	L	M	N	P max.	P min.	Q	R	S	T
Y0715RE	75	15	104	90	65	30	21	M20	32	227	161	66	127	46	31	6-M 6×20	133	23	41
Y1020RE	105	20	135	100	80	30	21	M20	35	252	163	89	152	45	25	6-M10×20	158	23	41
Y1225RE	125	25	160	130	110	35	25	M24	44	260	163	97	160	51	26	6-M12×24	166	23	41
Y1530RE	150	30	190	130	110	45	31	M30	45	269	163	106	169	56	26	12-M12×24	175	23	41
Y2035RE	200	35	245	145	120	55	37	M36	60	288	166	122	183	69	34	12-M16×30	189	28	46

※ Draw bar pull force : Pressure 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 BES516-329-E3R (manufactured by B & Plus KK) DC12/24V 200mA NPN

## Specifications

Specifications	Piston stroke mm	Piston Area		Draw bar		Max. Operation Pressure MPa (kgf/cm <sup>2</sup> )	Total leakage ℓ /min	Max. Speed min <sup>-1</sup> (r.p.m)	Net Weight kg	Moment of inertia kg·m <sup>2</sup>
		Push Side cm <sup>2</sup>	Pull Side cm <sup>2</sup>	Push Side kN(kgf)	Pull Side kN(kgf)					
Y0715RE	15	42	37	15.9 (1621)	13.9 (1417)	4.0 (40.8)	0.8	6000	4.5	0.003
Y1020RE	20	84	79	31.0 (3161)	29.0 (2957)	4.0 (40.8)	0.8	6000	7.6	0.012
Y1225RE	25	120	113	45.0 (4589)	42.0 (4283)	4.0 (40.8)	0.8	6000	10.5	0.023
Y1530RE	30	174	160	65.0 (6628)	60.0 (6118)	4.0 (40.8)	0.8	5500	14.0	0.048
Y2035RE	35	312	290	117.0 (11930)	108.0 (11013)	4.0 (40.8)	0.8	5500	22.5	0.098

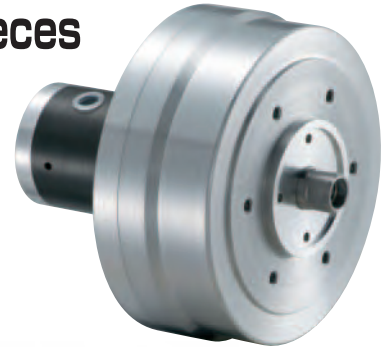


**ROTARY  
CYLINDER**

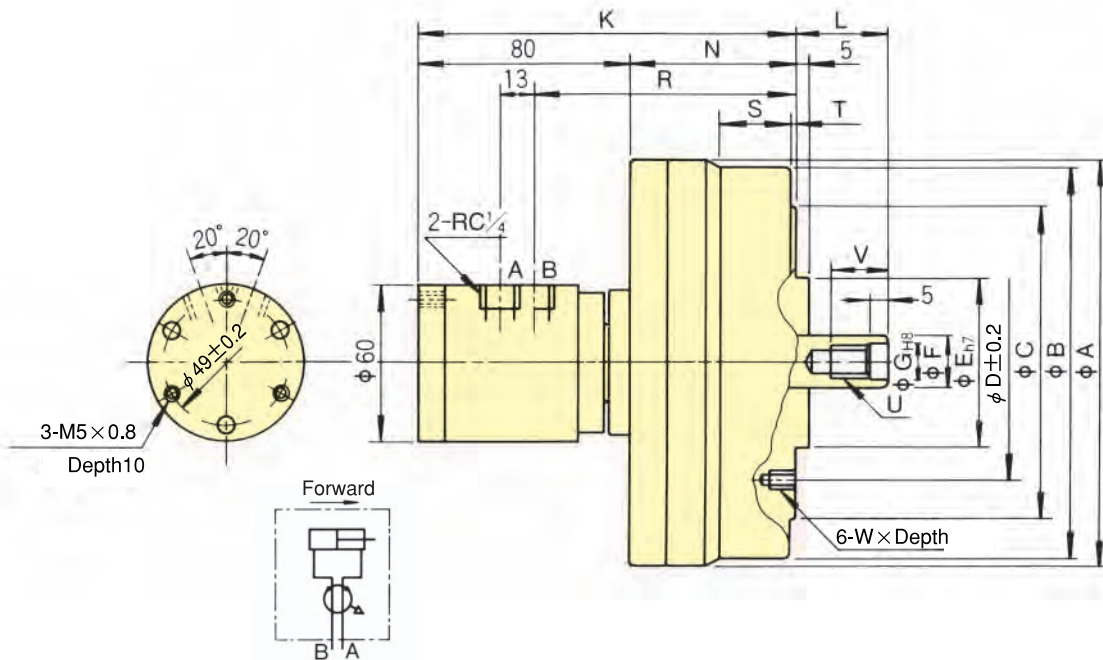
# High Speed Air Cylinder with Closed Centre AY-R series

## Ideally for extremely thin walled workpieces

- Secure operation even at low thrust  
Air cylinder for machining easily deformed thin workpieces



## Dimensional Drawings



## Dimensions

Model	A	B	C	D	E (h7)	F	G (H8)	K	L max.	L min.	N	R	S	T	U	V	W
AY1315R	156	150	120	90	65	20	13	143	35	20	63	99	27	2	M12	22	M 6×10
AY1720R	200	195	140	100	80	25	17	162	65	45	82	118	45	5	M16	30	M10×16
AY2225R	255	245	170	130	110	30	21	173	71	46	93	129	33	5	M20	35	M12×20

## Specifications \*Draw bar pull force : air pressure 0.5MPa (5.1kgf/cm<sup>2</sup>) [at efficiency 75%]

Model	Piston stroke mm	Piston Area		Draw bar		Max. air pressure MPa (kgf/cm <sup>2</sup> )	Max. Speed min <sup>-1</sup> (r.p.m)	Net Weight kg	Moment of inertia kg·m <sup>2</sup>
		Push Side cm <sup>2</sup>	Pull Side cm <sup>2</sup>	Push Side kN(kgf)	Pull Side kN(kgf)				
AY1315R	15	131	128	4.9 (500)	4.8 (489)	0.8 (8.2)	5000	5.0	0.010
AY1720R	20	227	220	8.5 (867)	8.2 (836)	0.8 (8.2)	5000	8.2	0.028
AY2225R	25	378	371	14.1 (1438)	13.9 (1417)	0.8 (8.2)	4000	9.8	0.080

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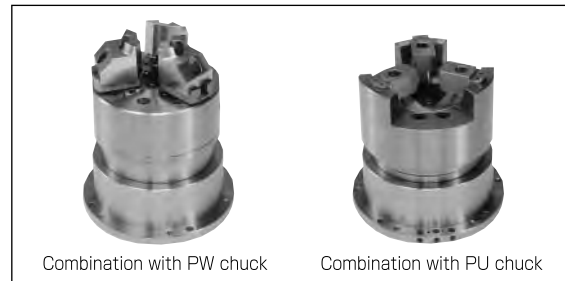
# Stationary Cylinder YS series

Provided for M/C system  
Suitable for a variety of chuck types



- Best suited for versatile workpieces
- Can be easily mounted to milling and drilling machines
- Easily mounted to work gripper multiplate
- Pneumatic or hydraulic pressure can be supplied

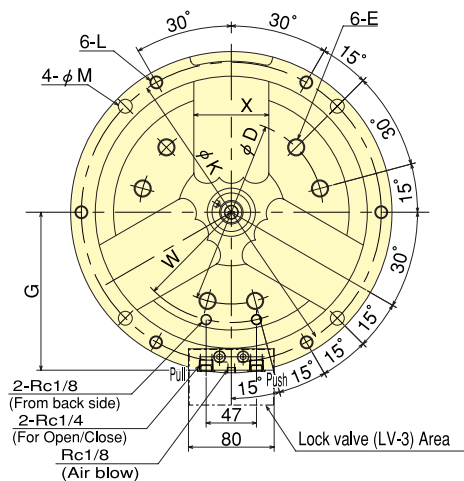
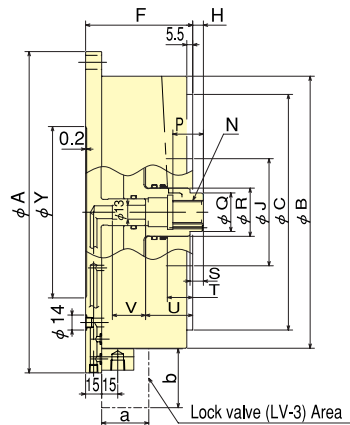
### Combination example



Combination with PW chuck

Combination with PU chuck

### Dimensional Drawings



### Dimensions

※The dimensions of a/b marked are the size of LV-3(Lock-valve).

Model	$\phi$ Ah7	$\phi$ B	$\phi$ Ch7	$\phi$ D	E	F	G	H max.	H min.	$\phi$ J	$\phi$ K	L	$\phi$ M
YS1415K	203	165	140	104.8	M10depth17	72	103	8	-7	75	185	M10	11
YS1820K	248	210	170	133.4	M10depth17	92	125.5	11	-9	100	230	M10	11
YS2220K	300	254	220	171.4	M10depth17	100	147.5	10	-10	100	280	M12	13

Model	N	P	$\phi$ Q	$\phi$ R	S	T	U	V	W	X	Y	a	b
YS1415K	M16	14	—	40	—	9.3	23	25	60	48	95	45	55
YS1820K	M18	21.5	30	40	7.3	17.3	35.5	31	80	70	125	45	55
YS2220K	M22	28.5	36	45	12.5	23.7	44	31	95	70	160	45	55

### Specifications

Model	Piston stroke	Max. allowable pressure		Max. thrust				Weight	Matching chuck size
		Pneumatic	Hydraulic	Pneumatic	0.6MPa (6kgf/cm <sup>2</sup> )	Hydraulic	1.5MPa (15.3kgf/cm <sup>2</sup> )		
YS1415K	15mm	0.7MPa (7kgf/cm <sup>2</sup> )	1.5MPa (15.3kgf/cm <sup>2</sup> )	Push	8.5kN (867kgf)	Push	20.8kN (2121kgf)	15.0kg	6inch
				Pull	8.1kN (826kgf)	Pull	20.1kN (2050kgf)		
YS1820K	20mm	0.7MPa (7kgf/cm <sup>2</sup> )	1.5MPa (15.3kgf/cm <sup>2</sup> )	Push	15.1kN (1540kgf)	Push	37.7kN (3844kgf)	22.0kg	8inch
				Pull	14.6kN (1489kgf)	Pull	36.5kN (3722kgf)		
YS2220K	20mm	0.7MPa (7kgf/cm <sup>2</sup> )	1.5MPa (15.3kgf/cm <sup>2</sup> )	Push	21.4kN (2182kgf)	Push	53.6kN (5466kgf)	39.0kg	10inch
				Pull	20.8kN (2121kgf)	Pull	51.9kN (5292kgf)		