

# Options

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# JWM (Machine Screw Type) with Gearmotor



Model No.	Motor Weight	Gear Ratio	Jack Gear Ratio			
			50Hz ( 1500r/min )		60Hz ( 1800r/min )	
			Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }	Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }
JWM005	25W	1/5	216 ( 3.6 )	1.27 { 130 }	258 ( 4.3 )	1.08 { 110 }
		1/10	108 ( 1.8 )	2.55 { 260 }	126 ( 2.1 )	2.16 { 220 }
JWM010	40W	1/5	210 ( 3.5 )	1.76 { 180 }	258 ( 4.3 )	1.47 { 150 }
		1/10	108 ( 1.8 )	3.63 { 370 }	126 ( 2.1 )	2.84 { 290 }
JWM025	0.1kW	1/5	252 ( 4.2 )	4.41 { 450 }	300 ( 5.0 )	3.63 { 370 }
		1/10	126 ( 2.1 )	8.92 { 910 }	150 ( 2.5 )	7.55 { 770 }
		1/15	84 ( 1.4 )	13.6 { 1390 }	102 ( 1.7 )	11.3 { 1150 }
		1/20	60 ( 1.0 )	18.6 { 1900 }	78 ( 1.3 )	15.0 { 1530 }
	0.2kW	1/25	48 ( 0.8 )	23.2 { 2370 }	60 ( 1.0 )	18.6 { 1900 }
		1/5	252 ( 4.2 )	8.92 { 910 }	300 ( 5.0 )	7.45 { 760 }
		1/10	126 ( 2.1 )	18.6 { 1900 }	150 ( 2.5 )	15.0 { 1530 }
		1/15	84 ( 1.4 )	24.5 { 2500 }	102 ( 1.7 )	23.2 { 2370 }
JWM050	0.2kW	1/5	402 ( 6.7 )	5.88 { 600 }	480 ( 8.0 )	4.80 { 490 }
		1/10	198 ( 3.3 )	11.8 { 1200 }	240 ( 4.0 )	9.80 { 1000 }
		1/15	132 ( 2.2 )	18.2 { 1860 }	162 ( 2.7 )	15.2 { 1550 }
		1/20	102 ( 1.7 )	23.3 { 2380 }	120 ( 2.0 )	20.3 { 2070 }
	0.4kW	1/25	78 ( 1.3 )	29.4 { 3000 }	96 ( 1.6 )	24.3 { 2480 }
		1/5	402 ( 6.7 )	12.4 { 1270 }	480 ( 8.0 )	10.3 { 1050 }
		1/10	198 ( 3.3 )	25.4 { 2590 }	240 ( 4.0 )	21.3 { 2170 }
		1/15	132 ( 2.2 )	37.5 { 3830 }	162 ( 2.7 )	31.5 { 3210 }
1/20	102 ( 1.7 )	49.0 { 5000 }	120 ( 2.0 )	41.7 { 4250 }		
JWM100	0.4kW	1/5	378 ( 6.3 )	13.2 { 1350 }	450 ( 7.5 )	11.0 { 1120 }
		1/10	186 ( 3.1 )	27.0 { 2760 }	228 ( 3.8 )	22.7 { 2320 }
		1/15	126 ( 2.1 )	40.1 { 4090 }	150 ( 2.5 )	33.5 { 3420 }
		1/20	96 ( 1.6 )	53.0 { 5410 }	114 ( 1.9 )	44.4 { 4530 }
		1/25	78 ( 1.3 )	67.1 { 6850 }	90 ( 1.5 )	55.3 { 5640 }
	0.75kW	1/30	60 ( 1.0 )	80.2 { 8180 }	78 ( 1.3 )	67.1 { 6850 }
		1/5	378 ( 6.3 )	24.9 { 2540 }	450 ( 7.5 )	20.8 { 2120 }
		1/10	186 ( 3.1 )	49.8 { 5080 }	228 ( 3.8 )	42.2 { 4310 }
		1/15	126 ( 2.1 )	74.8 { 7630 }	150 ( 2.5 )	62.8 { 6410 }
		1/20	96 ( 1.6 )	98.0 { 10000 }	114 ( 1.9 )	83.4 { 8510 }
JWM150	0.4kW	1/5	378 ( 6.3 )	12.1 { 1230 }	450 ( 7.5 )	10.0 { 1020 }
		1/10	186 ( 3.1 )	24.6 { 2510 }	228 ( 3.8 )	20.7 { 2110 }
		1/15	126 ( 2.1 )	36.5 { 3720 }	150 ( 2.5 )	30.5 { 3110 }
		1/20	96 ( 1.6 )	48.2 { 4920 }	114 ( 1.9 )	40.4 { 4120 }
		1/25	78 ( 1.3 )	61.1 { 6230 }	90 ( 1.5 )	50.2 { 5120 }
	0.75kW	1/30	60 ( 1.0 )	69.9 { 7130 }	78 ( 1.3 )	61.1 { 6230 }
		1/5	378 ( 6.3 )	22.6 { 2310 }	450 ( 7.5 )	18.9 { 1930 }
		1/10	186 ( 3.1 )	45.3 { 4620 }	228 ( 3.8 )	38.4 { 3920 }
		1/15	126 ( 2.1 )	67.9 { 6930 }	150 ( 2.5 )	57.1 { 5830 }
		1/20	96 ( 1.6 )	91.5 { 9340 }	114 ( 1.9 )	75.9 { 7740 }
1/25	78 ( 1.3 )	114 { 11660 }	90 ( 1.5 )	94.6 { 9650 }		
JWM200	0.75kW	1/5	450 ( 7.5 )	18.9 { 1930 }	540 ( 9.0 )	15.7 { 1600 }
		1/10	228 ( 3.8 )	37.7 { 3850 }	270 ( 4.5 )	31.9 { 3260 }
		1/15	150 ( 2.5 )	56.6 { 5780 }	180 ( 3.0 )	47.5 { 4850 }
		1/20	114 ( 1.9 )	76.3 { 7790 }	138 ( 2.3 )	63.2 { 6450 }
	1.5kW	1/25	90 ( 1.5 )	95.2 { 9710 }	108 ( 1.8 )	78.8 { 8040 }
		1/5	450 ( 7.5 )	37.9 { 3870 }	540 ( 9.0 )	31.5 { 3220 }
		1/10	228 ( 3.8 )	76.3 { 7790 }	270 ( 4.5 )	63.2 { 6450 }
		1/15	150 ( 2.5 )	114 { 11640 }	180 ( 3.0 )	95.1 { 9710 }
		1/20	114 ( 1.9 )	151 { 15490 }	138 ( 2.3 )	126 { 12900 }
1/25	90 ( 1.5 )	189 { 19350 }	108 ( 1.8 )	158 { 16160 }		

- : Standard
- : Rush Order
- : Made-to-Order

\* Other shaft speeds and thrusts also available.

\* Values in striped cells  indicate thrust rates that exceed allowable capacities. Be sure to adjust thrust to below these rates.

\* These thrust rates do not take allowable buckling rates into account. Consider as necessary.

## JWB (Ball Screw Type) with Gearmotor



Model No.	Motor Weight	Gear Ratio	Jack Gear Ratio			
			50Hz ( 1500r/min )		60Hz ( 1800r/min )	
			Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }	Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }
JWB005	25W	1/5	270 ( 4.5 )	2.55 { 260 }	318 ( 5.3 )	2.16 { 220 }
		1/10	138 ( 2.3 )	4.90 { 500 }	162 ( 2.7 )	4.21 { 430 }
JWB010	40W	1/5	264 ( 4.4 )	4.12 { 420 }	318 ( 5.3 )	3.43 { 350 }
		1/10	132 ( 2.2 )	8.62 { 880 }	162 ( 2.7 )	6.66 { 680 }
JWB025	0.1KW	1/5	402 ( 6.7 )	8.23 { 840 }	480 ( 8.0 )	6.86 { 700 }
		1/10	198 ( 3.3 )	16.6 { 1690 }	240 ( 4.0 )	14.0 { 1430 }
	1/15	132 ( 2.2 )	24.5 { 2500 }	162 ( 2.7 )	20.9 { 2130 }	
	0.2KW	1/5	402 ( 6.7 )	16.6 { 1690 }	480 ( 8.0 )	13.7 { 1400 }
JWB050	0.2KW	1/5	498 ( 8.3 )	13.6 { 1390 }	600 ( 10 )	11.3 { 1150 }
		1/10	252 ( 4.2 )	28.3 { 2890 }	300 ( 5.0 )	22.8 { 2330 }
	1/15	168 ( 2.8 )	42.5 { 4340 }	198 ( 3.3 )	35.4 { 3610 }	
	0.4KW	1/5	498 ( 8.3 )	26.3 { 2690 }	600 ( 10 )	24.1 { 2461 }
JWB100	0.4KW	1/5	450 ( 7.5 )	31.8 { 3240 }	540 ( 9.0 )	26.4 { 2690 }
		1/10	228 ( 3.8 )	64.6 { 6590 }	270 ( 4.5 )	54.2 { 5530 }
	1/15	150 ( 2.5 )	95.6 { 9760 }	180 ( 3.0 )	80.2 { 8180 }	
	0.75KW	1/5	450 ( 7.5 )	59.5 { 6070 }	540 ( 9.0 )	49.6 { 5060 }
JWB150	0.4KW	1/5	600 ( 10 )	23.8 { 2430 }	720 ( 12 )	19.7 { 2010 }
		1/10	300 ( 5.0 )	48.4 { 4940 }	360 ( 6.0 )	40.7 { 4150 }
		1/15	198 ( 3.3 )	71.7 { 7320 }	240 ( 4.0 )	60.1 { 6130 }
	0.75KW	1/20	150 ( 2.5 )	95.0 { 9690 }	180 ( 3.0 )	79.5 { 8110 }
		1/5	600 ( 10 )	44.6 { 4550 }	720 ( 12 )	37.2 { 3800 }
		1/10	300 ( 5.0 )	89.2 { 9100 }	360 ( 6.0 )	75.6 { 7710 }
	1/15	198 ( 3.3 )	134 { 13650 }	240 ( 4.0 )	112 { 11470 }	
JWB200	0.75KW	1/5	600 ( 10 )	44.0 { 4490 }	720 ( 12 )	36.6 { 3730 }
		1/10	300 ( 5.0 )	87.7 { 8950 }	360 ( 6.0 )	74.4 { 7590 }
		1/15	198 ( 3.3 )	132 { 13440 }	240 ( 4.0 )	111 { 11290 }
	1/20	150 ( 2.5 )	177 { 18110 }	180 ( 3.0 )	147 { 14990 }	
	1.5KW	1/5	600 ( 10 )	88.1 { 8990 }	720 ( 12 )	73.4 { 7490 }
	1/10	300 ( 5.0 )	177 { 18110 }	360 ( 6.0 )	147 { 14990 }	

## JWH (High Lead Ball Screw Type) with Gearmotor



Model No.	Motor Weight	Gear Ratio	Jack Gear Ratio			
			50Hz ( 1500r/min )		60Hz ( 1800r/min )	
			Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }	Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }
JWH010	40W	1/5	1200 ( 20 )	0.98 { 100 }	1440 ( 24 )	0.88 { 90 }
		1/10	600 ( 10 )	2.16 { 220 }	720 ( 12 )	1.67 { 170 }
JWH025	0.1KW	1/5	1260 ( 21 )	2.74 { 280 }	1500 ( 25 )	2.25 { 230 }
		1/10	600 ( 10 )	5.49 { 560 }	780 ( 13 )	4.70 { 480 }
JWH025	0.2KW	1/5	1260 ( 21 )	5.49 { 560 }	1500 ( 25 )	4.61 { 470 }
		1/10	600 ( 10 )	11.5 { 1170 }	780 ( 13 )	9.31 { 950 }
JWH050	0.2KW	1/5	1260 ( 21 )	5.78 { 590 }	1500 ( 25 )	4.80 { 490 }
		1/10	600 ( 10 )	12.1 { 1230 }	780 ( 13 )	9.70 { 990 }
	0.4KW	1/5	1260 ( 21 )	12.3 { 1260 }	1500 ( 25 )	10.2 { 1040 }
	1/10	600 ( 10 )	25.1 { 2560 }	780 ( 13 )	21.1 { 2150 }	
JWH100	0.4KW	1/5	1200 ( 20 )	12.3 { 1250 }	1440 ( 24 )	10.2 { 1040 }
		1/10	600 ( 10 )	25.0 { 2550 }	720 ( 12 )	21.0 { 2140 }
	0.75KW	1/5	1200 ( 20 )	22.9 { 2340 }	1440 ( 24 )	19.2 { 1960 }
	1/10	600 ( 10 )	46.0 { 4690 }	720 ( 12 )	39.0 { 3980 }	
JWH150	0.4KW	1/5	1200 ( 20 )	12.3 { 1250 }	1440 ( 24 )	10.2 { 1040 }
		1/10	600 ( 10 )	25.0 { 2550 }	720 ( 12 )	21.0 { 2140 }
	0.75KW	1/5	1200 ( 20 )	22.9 { 2340 }	1440 ( 24 )	19.2 { 1960 }
	1/10	600 ( 10 )	46.0 { 4690 }	720 ( 12 )	39.0 { 3980 }	
JWH200	0.75KW	1/5	1200 ( 20 )	22.6 { 2310 }	1440 ( 24 )	18.9 { 1930 }
		1/10	600 ( 10 )	45.3 { 4620 }	720 ( 12 )	38.4 { 3920 }

: Standard  
 : Rush Order  
 : Made-to-Order

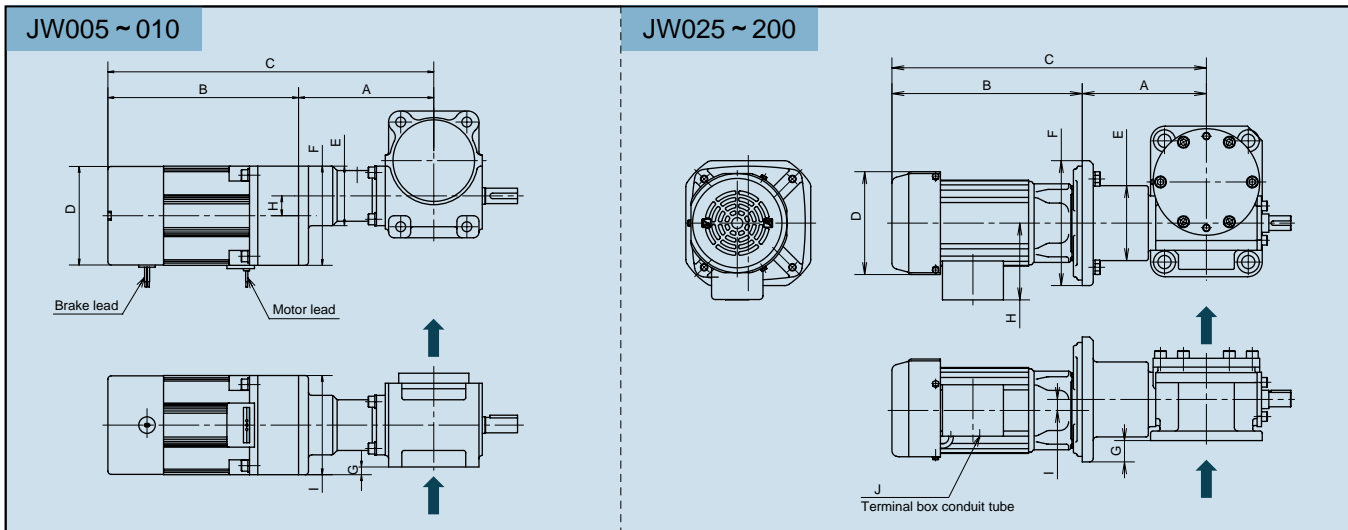
\* Other shaft speeds and thrusts also available.

\* Values in striped cells  indicate thrust rates that exceed allowable capacities. Be sure to adjust thrust to below these rates.

\* These thrust rates do not take allowable buckling rates into account. Consider as necessary.

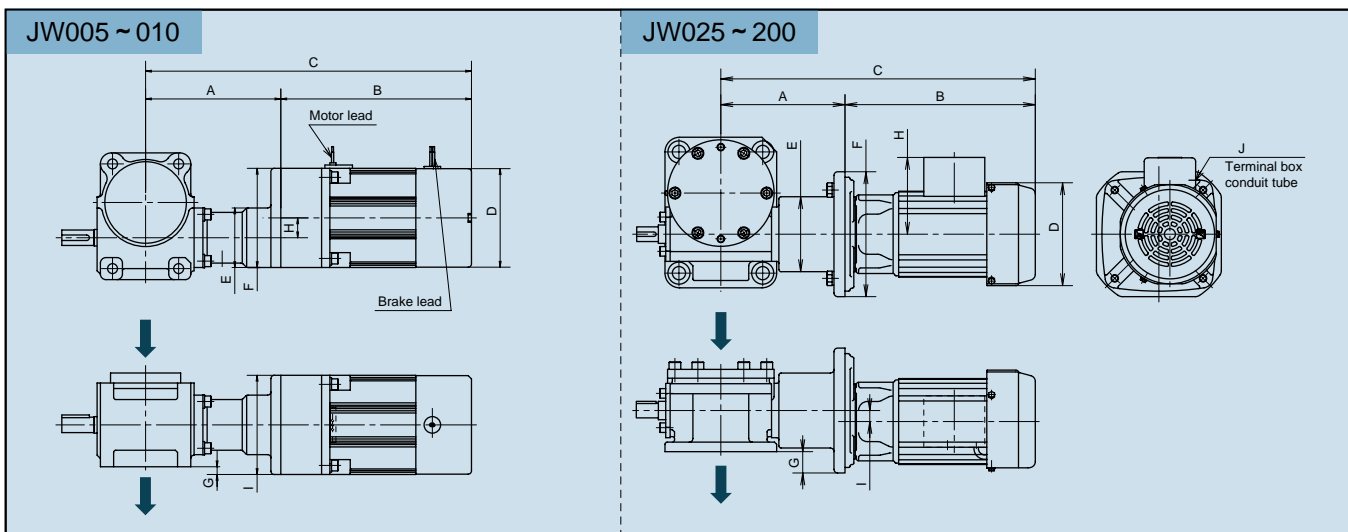
# Outline Drawings for Motored Jacks

## Standard Gearmotor Mounting



Note) For standard (US, DS) and rotation prevention types (UM, DM), screw shafts will lift in the direction of ➡ with normal wiring.  
 For travel nut types (UR,DR), nuts will lift in the direction of ➡ with normal wiring.

## Gearmotor Mounting on the Opposite Side



Note) For standard (US, DS) and rotation prevention types (UM, DM), screw shafts will lift in the direction of ➡ with normal wiring.  
 For travel nut types (UR,DR), nuts will lift in the direction of ➡ with normal wiring.

Table - Jack Dimensions

mm

Frame No.	Motor Weight	A	B	C	D	E	F	G	H	I	J
JW005	25W	106	160	266	84	60	85	15	15	80	
JW010	40W	123	188	311	93	54	90	7	18	90	
JW025	0.1kW	144	242	386	140	93	170	40	105	15	12
	0.2kW	144	259	403	140	93	170	40	105	15	12
JW050	0.2kW	169	259	428	140	102	170	29	105	15	12
	0.4kW	191	301	492	140	102	200	44	105	18	12
JW100	0.4kW	207	301(323)	508(530)	140	131	200	44	105	18(23)	12
	0.75kW	207	351	558	158	131	200	44	114	23	12
JW150	0.4kW	211	301(323)	512(534)	140	131	200	30	105	18(23)	12
	0.75kW	211	351	562	158	131	200	30	114	23	12
JW200	0.75kW	231	353	584	158	144	200	15	114	23	12
	1.5kW	246	461	707	198	150	280	55	143	27	27

\* ( ) assumes 1/30 rpm.

## Standard Gearmotor

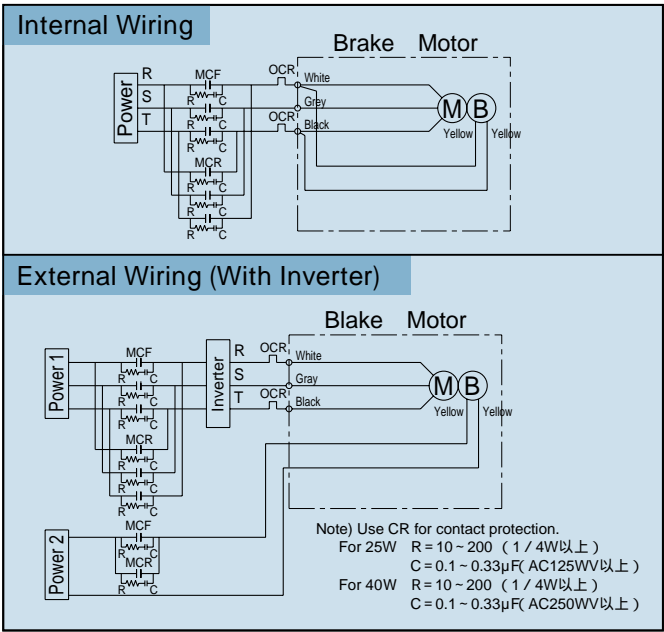
Output	25W ~ 40W	0.1kW ~ 1.5kW
Model	With Brake/Totally Enclosed	
Voltage	200/200/220V	
Frequency	50/60/60Hz	
Pole	4P	
Phase	3 Phase	
Protection	IP20	
Rating	Continuous	
Insulation Class	E	

## Specialized Gearmotor

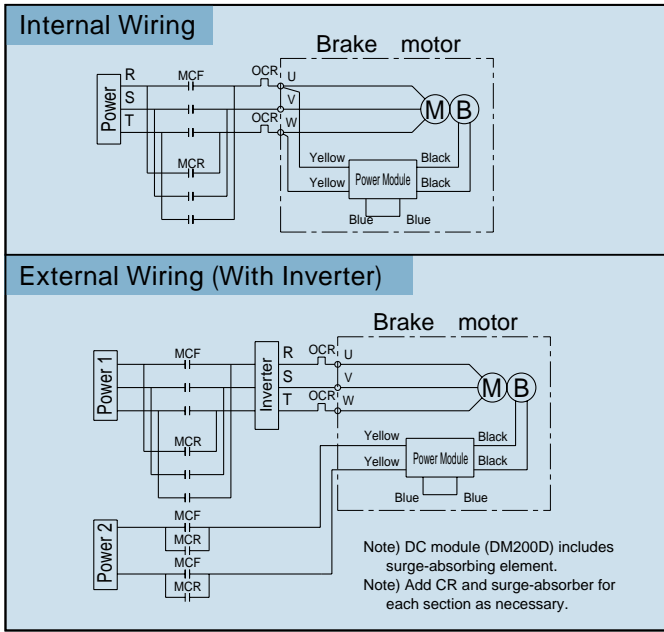
Specifications	25W ~ 40W	0.1kW ~ 1.5kW	1.5kW
Single Phase 100V 50/60Hz		(100W,200W only)	-
Inverter Motor	-		
Out door Use (IP55)	-		
400V Class Voltage	400V, 50Hz only		
Special Voltage	-		
Global Use (CCC,CE,UL)			-
One touch brake manual release	-		
Manual shaft	-		
Rotary encoder	-		

## Circuit Diagrams

### Circuit Diagrams for 25 ~ 40W



### Circuit Diagrams for 0.1 ~ 1.5kW



Selecting Process  
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 Product Information

## JWM (Machine Screw Type) with Motor

Model No.	Motor Weight	Jack Gear Ratio			
		50Hz ( 1500r/min )		60Hz ( 1800r/min )	
		Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }	Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }
JWM025	0.2kW	1260 ( 21 )	1.96 { 200 }	1500 ( 25 )	1.66 { 170 }
	0.4kW	1260 ( 21 )	4.02 { 410 }	1500 ( 25 )	3.33 { 340 }
	0.75kW	1260 ( 21 )	7.55 { 770 }	1500 ( 25 )	6.27 { 640 }
	1.5kW	1260 ( 21 )	10.0 { 1020 }	1500 ( 25 )	8.33 { 850 }
JWM050	0.75kW	1980 ( 33 )	4.98 { 508 }	2400 ( 40 )	4.12 { 420 }
	1.5kW	1980 ( 33 )	9.80 { 1000 }	2400 ( 40 )	8.23 { 840 }
JWM100	2.2kW	1860 ( 31 )	15.5 { 1580 }	2280 ( 38 )	12.8 { 1310 }
	3.7kW	1860 ( 31 )	19.6 { 2000 }	2280 ( 38 )	16.4 { 1670 }
JWM150	2.2kW	1860 ( 31 )	14.0 { 1430 }	2280 ( 38 )	11.7 { 1190 }
	3.7kW	1860 ( 31 )	19.8 { 2020 }	2280 ( 38 )	16.4 { 1670 }
JWM200	2.2kW	2280 ( 38 )	11.7 { 1190 }	2700 ( 45 )	9.70 { 990 }
	3.7kW	2280 ( 38 )	19.7 { 2010 }	2700 ( 45 )	16.4 { 1670 }

## JWB (Ball Screw Type) with Motor

Model No.	Motor Weight	Jack Gear Ratio			
		50Hz ( 1500r/min )		60Hz ( 1800r/min )	
		Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }	Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }
JWB025	0.2kW	1980 ( 33 )	3.72 { 380 }	2400 ( 40 )	3.13 { 320 }
	0.4kW	1980 ( 33 )	7.45 { 760 }	2400 ( 40 )	6.27 { 640 }
	0.75kW	1980 ( 33 )	14.0 { 1430 }	2400 ( 40 )	11.7 { 1190 }
	1.5kW	1980 ( 33 )	24.4 { 2490 }	2400 ( 40 )	20.0 { 2050 }
JWB050	0.75kW	2520 ( 42 )	11.6 { 1180 }	3000 ( 50 )	9.60 { 980 }
	1.5kW	2520 ( 42 )	22.9 { 2340 }	3000 ( 50 )	19.1 { 1950 }
JWB100	2.2kW	2280 ( 38 )	36.9 { 3770 }	2700 ( 45 )	30.8 { 3140 }
	3.7kW	2280 ( 38 )	59.5 { 6080 }	2700 ( 45 )	50.3 { 5140 }
JWB150	2.2kW	3000 ( 50 )	27.7 { 2830 }	3600 ( 60 )	23.0 { 2350 }
	3.7kW	3000 ( 50 )	46.6 { 4750 }	3600 ( 60 )	38.7 { 3950 }
JWB200	2.2kW	3000 ( 50 )	27.2 { 2780 }	3600 ( 60 )	22.6 { 2310 }
	3.7kW	3000 ( 50 )	45.8 { 4670 }	3600 ( 60 )	38.1 { 3890 }

## JWH (High Lead Ball Screw Type) with Motor

Model No.	Motor Weight	Jack Gear Ratio			
		50Hz ( 1500r/min )		60Hz ( 1800r/min )	
		Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }	Shaft Speed mm/min ( mm/s )	Thrust kN { kgf }
JWH025	0.4kW	6240 ( 104 )	2.45 { 250 }	7500 ( 125 )	2.06 { 210 }
	0.75kW	6240 ( 104 )	4.70 { 480 }	7500 ( 125 )	3.92 { 400 }
	1.5kW	6240 ( 104 )	9.31 { 950 }	7500 ( 125 )	7.74 { 790 }
JWH050	0.75kW	6240 ( 104 )	4.90 { 500 }	7500 ( 125 )	4.12 { 420 }
	1.5kW	6240 ( 104 )	9.70 { 990 }	7500 ( 125 )	8.13 { 830 }
JWH100	2.2kW	6000 ( 100 )	14.3 { 1460 }	7200 ( 120 )	11.9 { 1210 }
	3.7kW	6000 ( 100 )	24.0 { 2450 }	7200 ( 120 )	20.0 { 2040 }
JWH150	2.2kW	6000 ( 100 )	14.3 { 1460 }	7200 ( 120 )	11.9 { 1210 }
	3.7kW	6000 ( 100 )	24.0 { 2450 }	7200 ( 120 )	20.0 { 2040 }
JWH200	2.2kW	6000 ( 100 )	14.0 { 1430 }	7200 ( 120 )	11.7 { 1190 }
	3.7kW	6000 ( 100 )	23.6 { 2410 }	7200 ( 120 )	19.7 { 2010 }

- : Standard  
 : Rush Order  
 : Made-to-Order

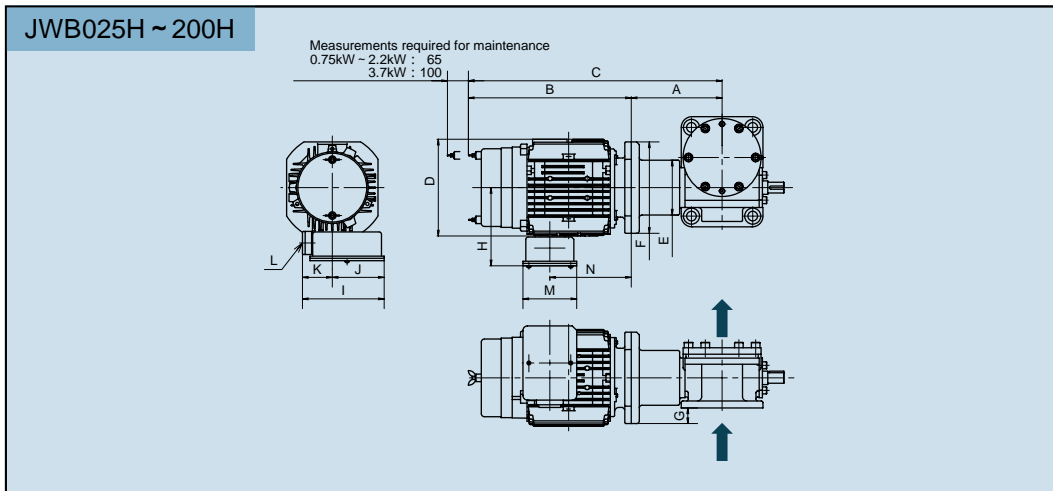
\* Other shaft speeds and thrusts also available.

\* Values in striped cells  indicate motor specifications that exceed maximum allowable input capacities. Be sure to adjust motor specifications to below these rates.

\* These thrust rates do not take allowable buckling rates into account. Consider buckling as necessary.

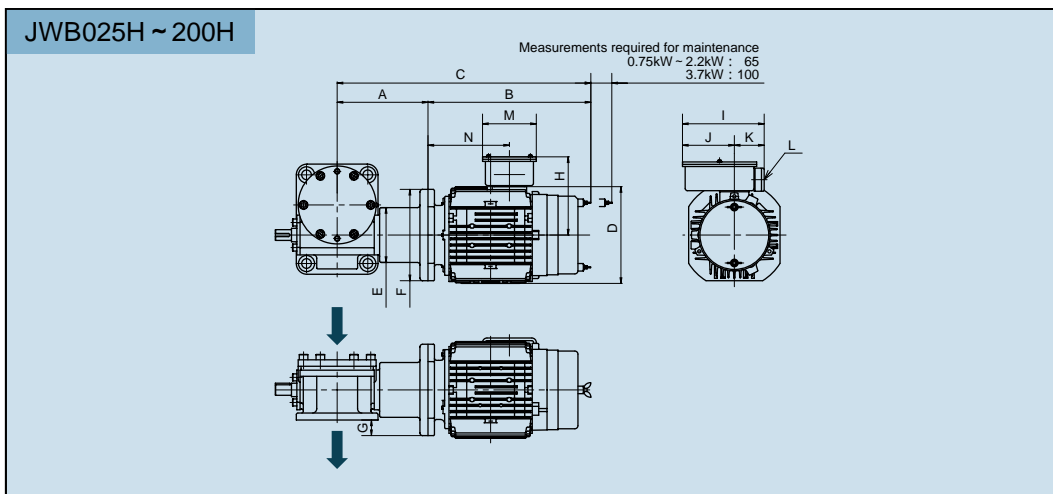
# Outline Drawings for Motored Jacks

## Standard Gearmotor Mounting



Note) For standard (US, DS) and rotation prevention types (UM, DM), screw shafts will lift in the direction of ➡ with normal wiring.  
 For travel nut types (UR,DR), nuts will lift in the direction of ➡ with normal wiring.

## Gearmotor Mounting on the Opposite Side



Note) For standard (US, DS) and rotation prevention types (UM, DM), screw shafts will lift in the direction of ➡ with normal wiring.  
 For travel nut types (UR,DR), nuts will lift in the direction of ➡ with normal wiring.

Table - Jack Dimensions

Frame No.	Motor Weight	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
JW025	0.4kW	139	253	392	132	95	120	15	123	124	45	79	PF1/2	84	134	20
	0.75kW	146	300	446	170	93	170	40	143	169	104	65	PF3/4	112	148	65
	1.5kW	156	303	459	192	93	170	40	153	169	104	65	PF3/4	112	152	65
JW050	0.75kW	169	300	469	170	102	170	29	143	169	104	65	PF3/4	112	148	65
	1.5kW	169	303	472	192	102	170	29	153	169	104	65	PF3/4	112	152	65
JW100	2.2kW	207	348	555	207	131	200	44	161	169	104	65	PF1	112	179	65
	3.7kW	222	380	602	235	131	200	44	179	225	151	74	PF1	132	193	100
JW150	2.2kW	211	348	559	207	131	200	30	161	169	104	65	PF1	112	179	65
	3.7kW	226	380	606	235	131	200	30	179	225	151	74	PF1	132	193	100
JW200	2.2kW	231	348	579	207	144	200	15	161	161	104	65	PF1	112	179	65
	3.7kW	231	380	611	235	144	200	15	179	225	151	74	PF1	132	193	100

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 Installation Precautions  
 Product Information

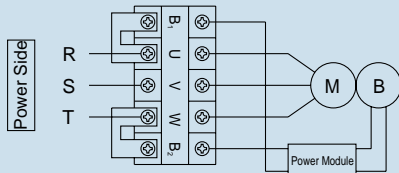
# Motor Specifications

Output	0.2kW ~ 0.4kW	0.75kW ~ 3.7kW
Power Source	200/200/220V	
	400/400/440	380/400/415/400/440V
Frequency	50/60/60Hz	50/50/50/60/60Hz
Pole	4P	
Phase	3 Phase	
Protection	IP55	IP54
Rating	S2 30min	S2 30min
Insulation Class	E (B for 400V)	B (F for 3.7kW only)
With Brake	Electromagnetic Brake (DC, non-excitation type)	

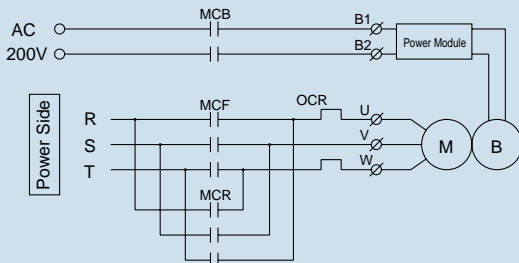
## Circuit Diagrams

### Circuit Diagrams for 0.2 ~ 0.4kW

#### Brake Internal Wiring



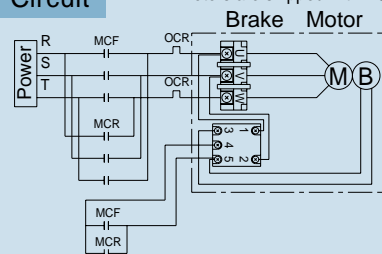
#### Brake External Wiring



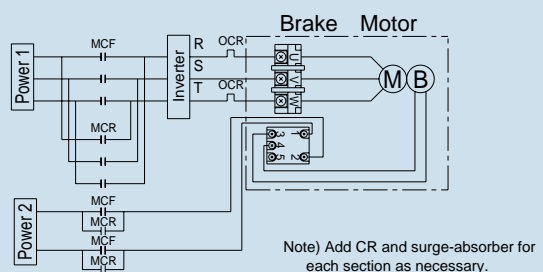
### Circuit Diagrams for 0.75 ~ 2.2kW

#### AC DC Off Circuit

\* Motors are shipped with AC/DC off circuits.



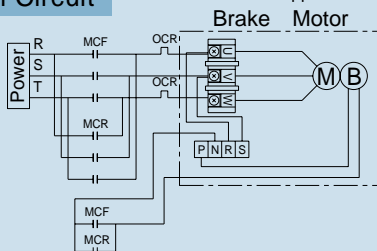
#### External Wiring Circuit (With Inverter)



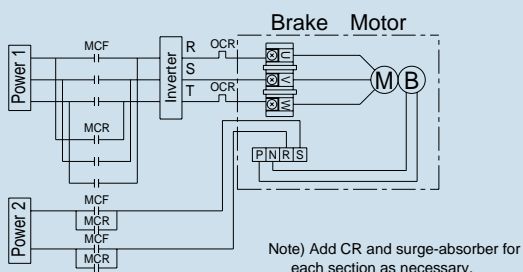
### Circuit Diagrams for 3.7kW

#### AC DC Off Circuit

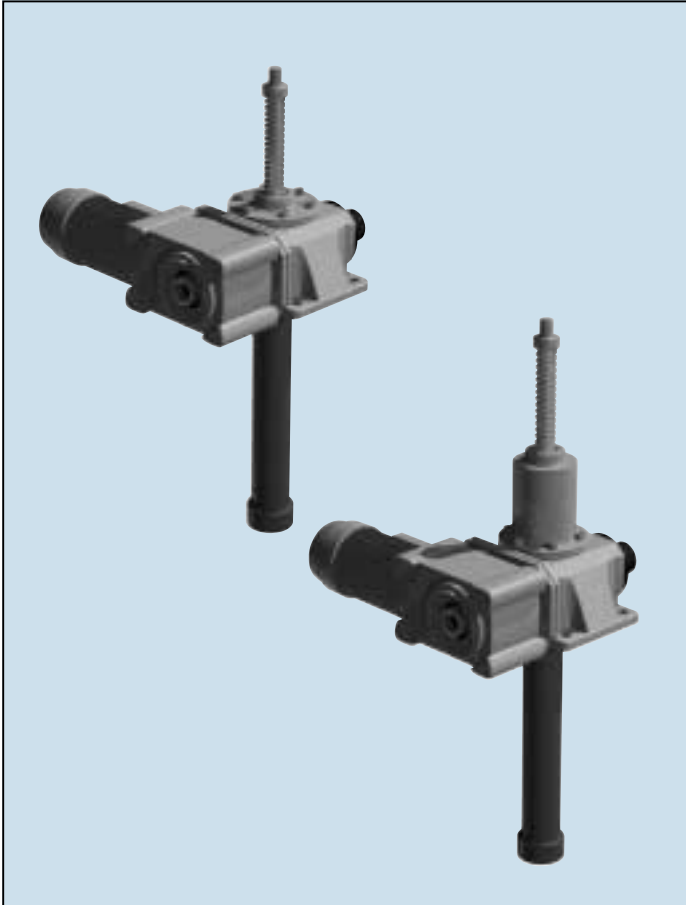
\* Motors are shipped with AC/DC off circuits.



#### External Wiring Circuit (With Inverter)



## Hypoid Motor Type

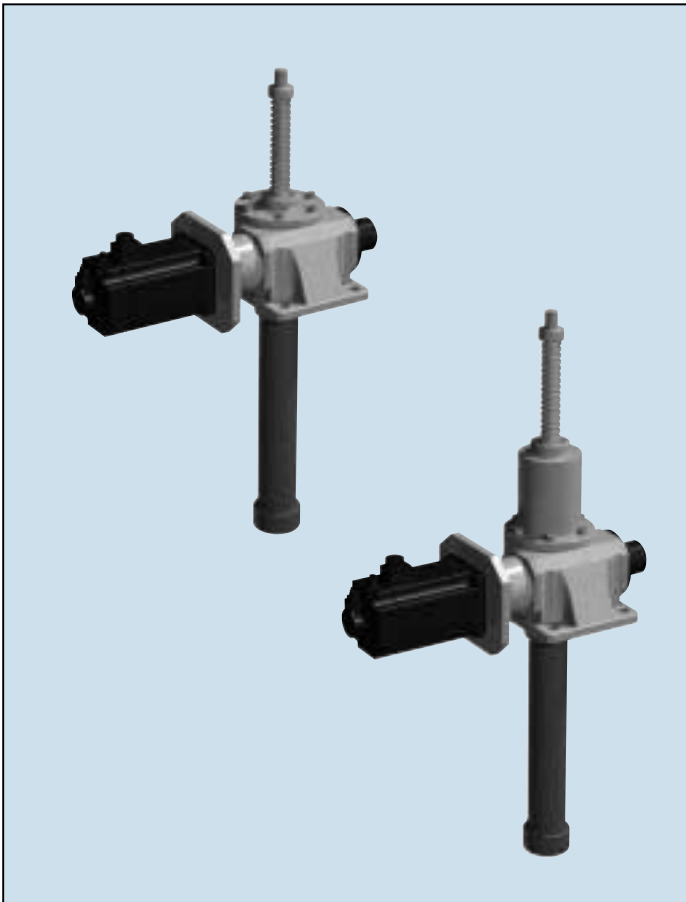


### Notes

1. Tsubaki Emerson's compact Hypoid Motor is a space saver.
2. To install, the Hypoid Motor can be adjusted at 90 ° intervals from the input shaft, based on specific applications.

\* Hypoid Motor is a space saving right-angle reducer with high starting and running efficiencies. (Another Tsubaki Emerson product)

## Servo Motor Type

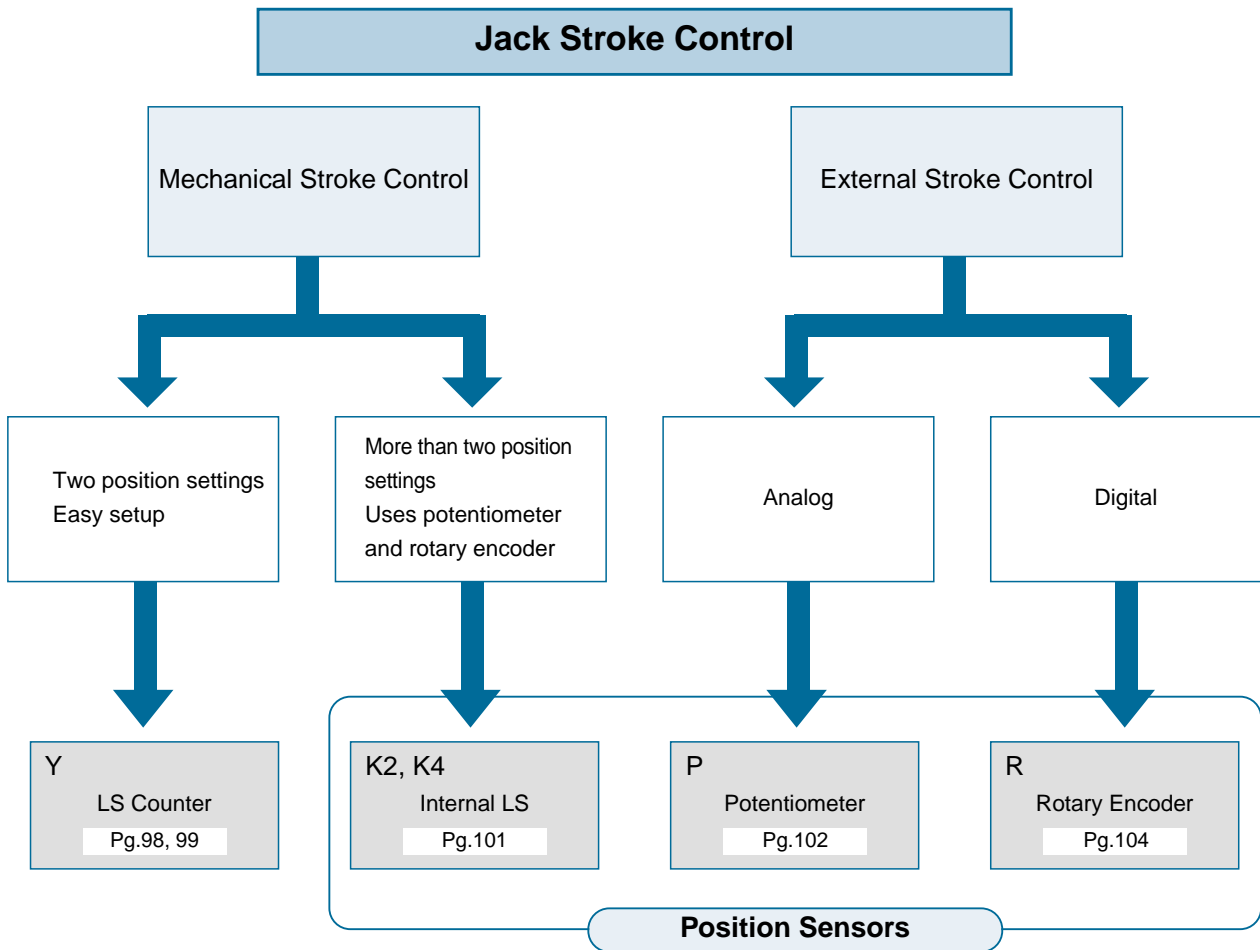


### Notes

1. Allows complete control of screw shaft speed.
2. Allows accurate control of stopping.
3. Allows accurate control of force applied to the jack.
4. Maintains load with Servo Lock function.
5. Operates multiple jack systems without mechanical connections.
6. Compatible with any brand of servo motor.

# Jack Control System

We offer various stroke control options to suit your specific needs and conditions. Select from a limit switch, analog device with potentiometer, and digital device with an encoder.



Note) LS Counter and position sensor cannot be used together. If a limit switch is required in addition to a potentiometer or rotary encoder, be sure to use the Internal LS.



LS Counter



Position Sensor

Above is a standard model. Installation of input shaft on the opposite side is also possible.

Note) LS Counters and position sensors with motor or gearmotors cannot be used for manual operations, due to both sides of the manual shaft being occupied.

## LS Counter

A compact stroke adjusting device as well as a detection unit that combines a cam mechanism with a microswitch.

## Position Sensor

- 1. Internal LS
  - 2. Potentiometer
  - 3. Rotary Encoder
- 3 options are available based on specific needs.  
A combination of all 3 is also available.

### 1. Internal LS

Can be used in addition to a potentiometer and rotary encoder, and is effective under dusty conditions.  
2 or 4 microswitch types available. (K2 or K4)

### 2. Potentiometer

Comes with a convenient meter that displays stroke range, and allows full adjustment of stroke. It also measures changes in stroke resistance. Below are options available with a potentiometer.

- Stroke display meter (PCB provided)
- Meter relay (PCB provided)
- R controller

### 3. Rotary Encoder

Digital signal of Sequencer or PLC (programmable controller) allows you to control jack stroke. Open collector and line driver output power sources are available.

The following option is possible with a rotary encoder.

- Pulse counter

# LS Counter

A Limit Switch that uses a mechanical counter to accurately measure and adjust stroke at small intervals. It can be mounted directly to the input shaft. Use two counters and limit switches to control both the upper and lower travel limits. Its one-touch reset button also allows you to stop or reset stroke at any time.

Note) LS Counters cannot be used with a rotary encoder or potentiometer. Rotary encoders and potentiometers must be used with a position detection unit (with internal LS).

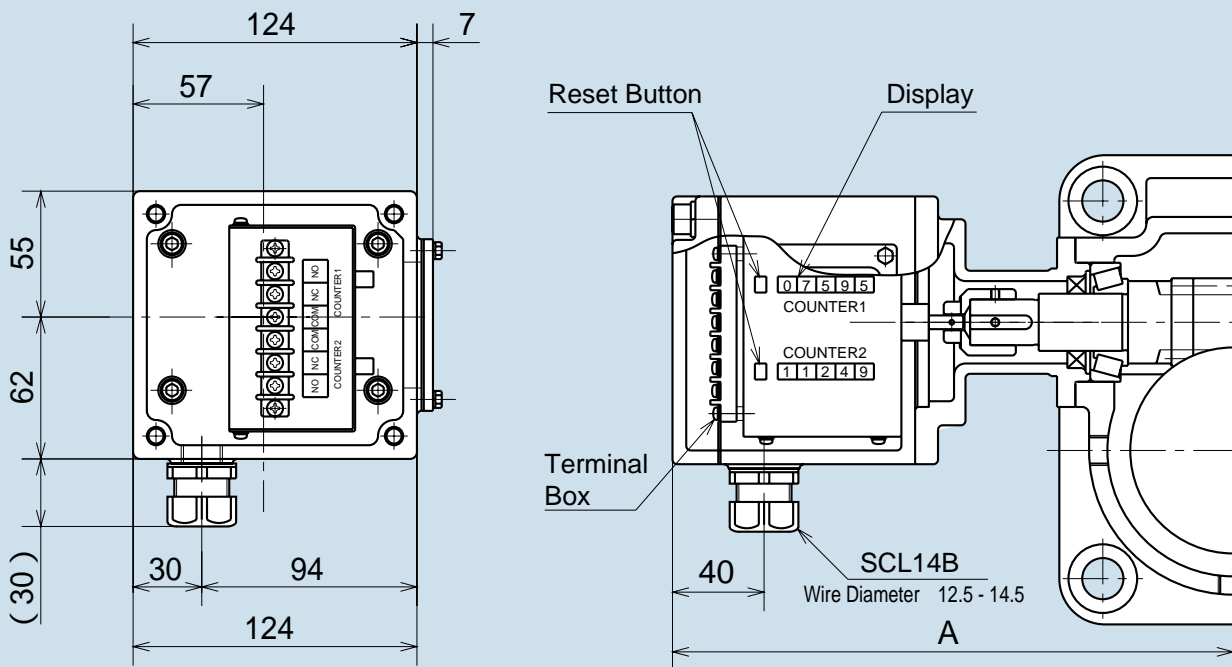
Form	Mechanical Counter
No. of Counter Digits	5 (1 Count/Input Shaft Revolution)
Allowable Max. Input Rotation	1800r/min
Limit Switch Used	AVT3254 (Matsushita Electronics)
Contact Composition	1 C (Max. and Min. 1 pt. each)
Power Voltage	AC250V 3A

\* LS is not factory adjusted and requires initial setting before use.

\* Take caution so as to avoid water from contacting internal parts while adjusting.

When the limit switch is working, the numbers displayed on the LS Counter unit changes from 00000 to 99999 (or 99999 to 00000).

## Dimensions and Features



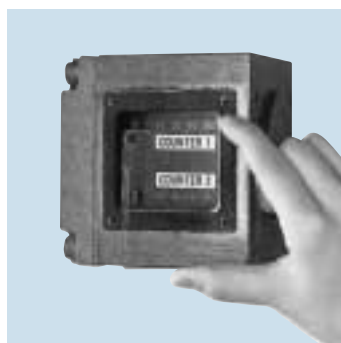
\* The above installation position (left of input shaft) is standard.

mm

Frame No.	002	005	010	025	050	100	150	200
A	187	187	211	220	245	271	275	280

## Setting the LS Counter

Setting the limit switch is as easy as 1 ~ 6 below.



1. Remove cover.

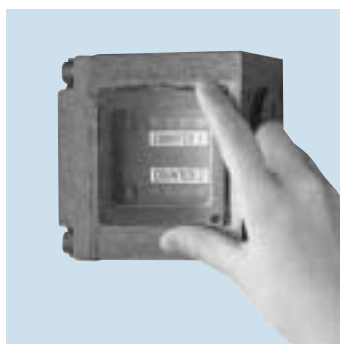


2. Set jack at desired maximum and minimum positions manually or by inching.
3. Press the counter reset button.  
(The display will show 00000 and measure from this position.)
4. Confirm by moving the jack and then returning it to the set position. Limit switch is now activated.

5. Next, set the jack at another position and confirm in the same manner.



6. Replace cover.



Note) Turning the shaft or travel nut after adjustment will change the setting.

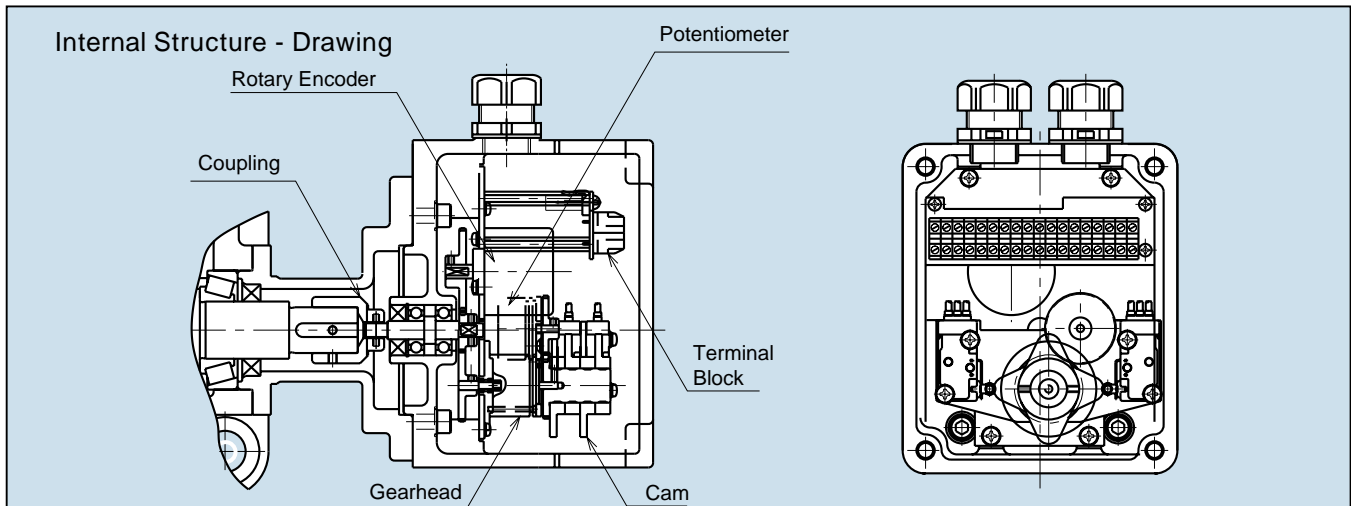
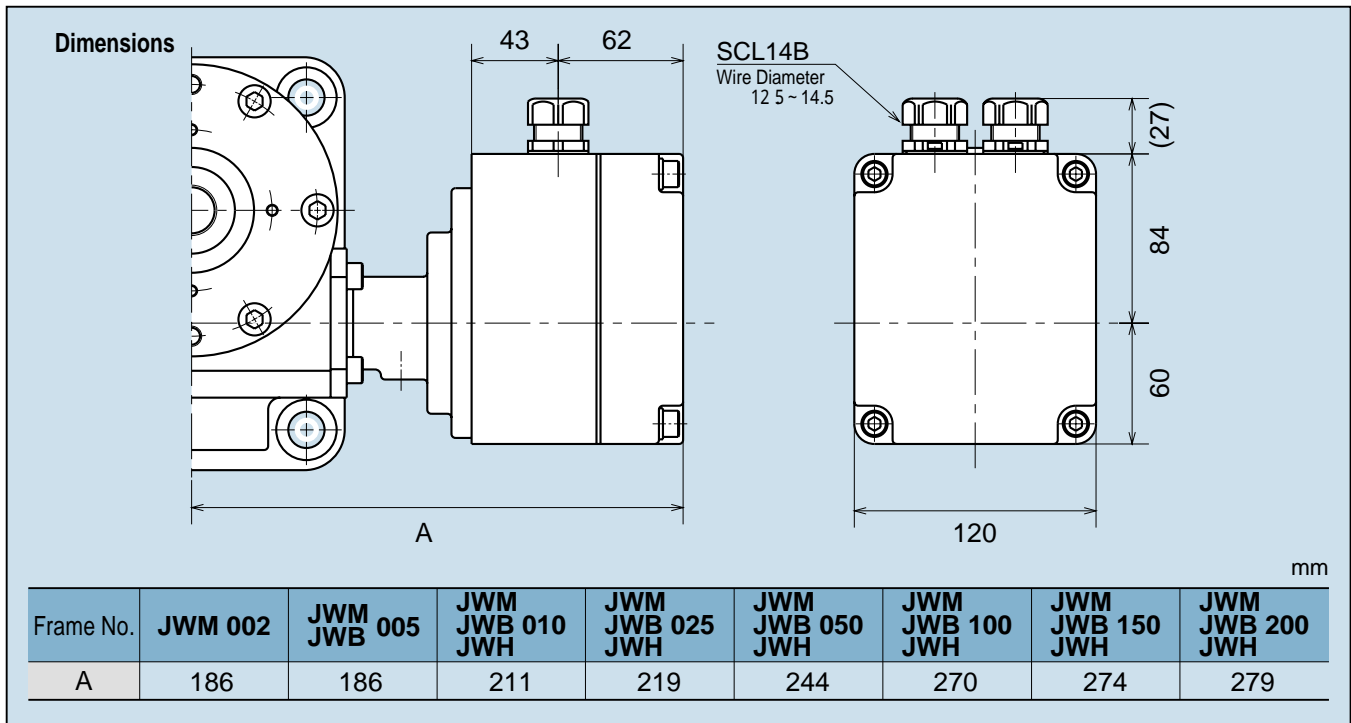
# Position Sensors

3 kinds of position sensors are available.

Internal LS (2 or 4)

Potentiometer

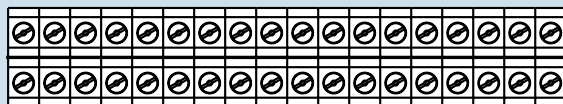
Rotary encoder



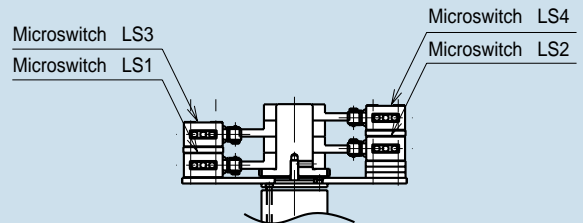
**Position detection unit wiring**

To connect internal LS, potentiometer or rotary encoder, use the terminal block installed in the unit.

Use a shield wire in wiring a rotary encoder.



Terminal No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



Option	Internal LS (K2,K4)								Potentiometer			Rotary Encoder						
Symbol	LS1		LS2		LS3		LS4		Common	P			R					
Contact	a	b	a	b	a	b	a	b	c	1	2	3	1	2	Z	5V	0V	Case
Terminal No.	18	17	5	6	16	15	7	8	4	1	2	3	9	10	11	12	13	14

# Internal LS

K2.....Arrange microswitches LS1 and LS2 as shown below.

K4.....Arrange microswitches LS1, LS2, LS3, LS4 as shown below.

	Option	Example	
Position Detection Unit Internal LS	K2		Both ends fixed
Position Detection Unit Internal LS	K4		Forward: Fixed at midway position. Fixed end. Return: Fixed at midway position. Fixed end.

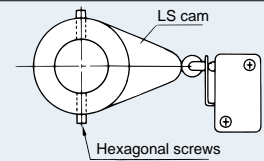
Model No.	D2VW-5L2A-1M
Electric Composition	AC250V 4A (cos 0.7)
Contact Composition	1C 

## <LS Setting>

Consider inertia when adjusting LS Cam.

To adjust LS Cam, use a hexagonal wrench and loosen the hexagonal screws (2).

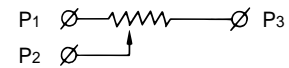
\*LS is not factory adjusted.



# Potentiometer

Potentiometers are programmed to activate within effective angles. Do not rotate the input shaft before installing the screw shaft to your equipment. This can shift the stroke phase.

Model No.	CP-30
Maker	Sakae Tsushin Kougyou
Maximum Resistance	1.0k
Rated Power	0.75W
Dielectric Strength Voltage	AC1000V (1min)
Effective Electrical Angle	355 °
Effective Mechanical Angle	360 °



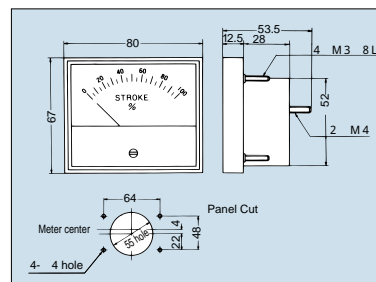
## Potentiometer Control Option 1

### Stroke Display Meter

Displays stroke in % by receiving signals from the Printed Circuit Board.

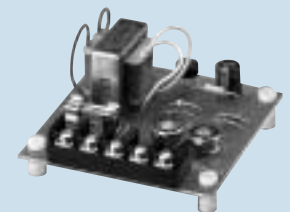
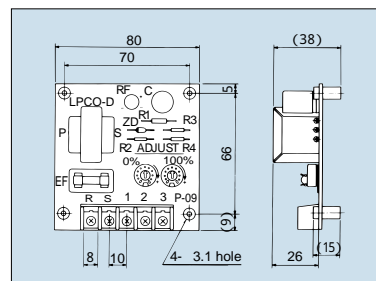
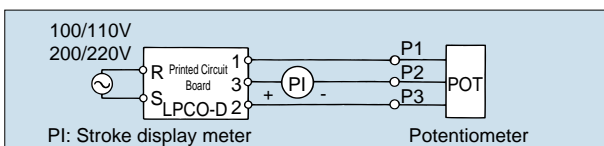
Jack models with a potentiometer should be used.

Model No.	RM-80B (DC100 μ A) Equivalent
Class	JIS C 1102.25
Exterior	Black Frame
Scale Used	Maximum Stroke 100%



### Printed Circuit Board

Converts power signals from potentiometer into currents.



In order to adjust the meter, adjust the volume on the printed circuit board. Do not confuse - and +. When adjusting the meter to 100% while stroke is at MIN, replace the terminal 1.2 of the printed circuit board.

Model no. LPCO-D1 (voltage 100/110V 50/60Hz)

LPCO-D2 (voltage 200/220V 50/60Hz)

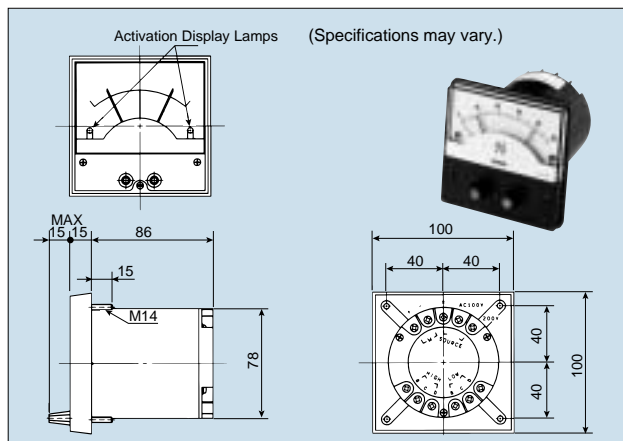
## Potentiometer Control Option 2

### Meter Relay

Easy stroke adjustment is possible using the display panel.

( Standard model comes with a metal panel.  
Aluminum panels are available upon request. )

Note) When requesting TC unit (4 ~ 20mA output), specify as 4 ~ 20mA output.



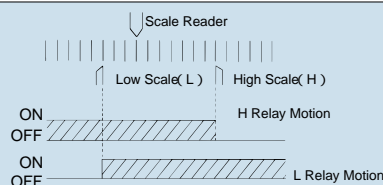
Model No.	NRP-100 (TSURUGA) or Equivalent
Class	JIS C1102 2.5
Exterior	Black Frame
Scale	Maximum Stroke 100%
Power	AC 100/100.200/220V 50/60 Hz
Input	Maximum DC100 $\mu$ A
Output Contact	High, Low both 1C
Composition	(see graph below)
Contact Capacity	AC250V 3A (cos $\phi$ = 1)

Use Linipower Jack models with a potentiometer. Take caution so that the input shaft does not rotate while the shaft and the potentiometer are not fully connected. This can shift the phase of the stroke.

Once the maximum and minimum stroke positions are roughly set using the LS, use the meter relay thereafter.

### <Relay> (Brake Contact)

Wiring is the same as that for a stroke display meter. However, a separate power source is necessary for the relay. Supply power from the main source used for operation and connect brakes contact in series rather than arranging them in a parallel method.

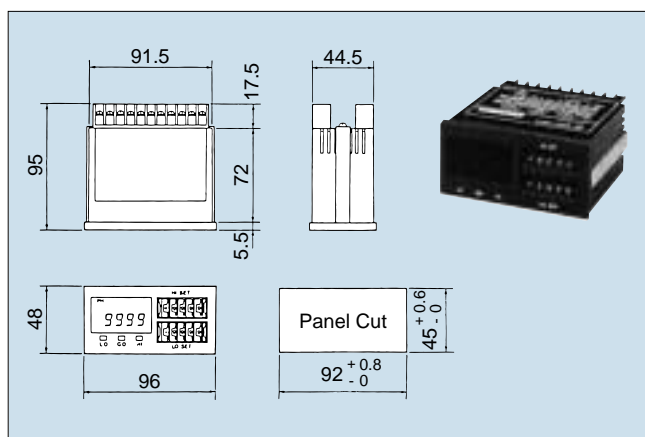


## Potentiometer Control Option 3

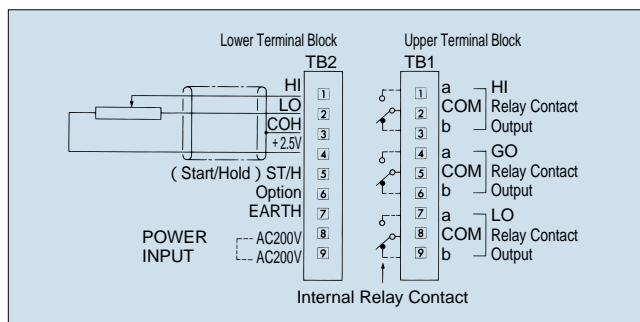
### R Controller

Converts signals received from the potentiometer in the position detection unit into a digital display, and allows precise stroke control. Its scaling device displays actual stroke and distance in %. Direct connection of R Controller and Potentiometer is possible.

Use Linipower Jack models with a potentiometer.



Model No.	RX-5455-NBAS- (BURRUF)
Input Potentiometer	0.8k ~ 12k
Maximum Resistance	
Display	4 Rows 7 Segment LED
Exterior	Black
Relative Output	HI, LO, GO (Relay output)
Relative Position	0 $\pm$ 9999
Relative Output Contact Capacity	DC30V/1A AC250V/0.2A
Output Contact Structure	1C (HI, GO, LO)
Power	200V AC $\pm$ 10% 50/60Hz



# Rotary Encoder

Excellent for controlling stroke by sequencer and programmable controller.

\* Encoder is set at 30 pulses per input rpm in the position detection unit.

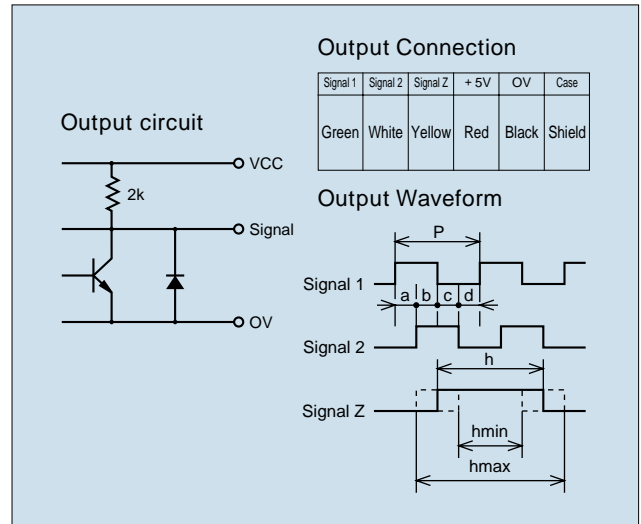
Note) Standard encoders produce voltage output. Take caution in the output mode when directly connecting to a sequencer.  
Open collector, line driver and other output sources are also available.

## <Encoder>

Output Pulse	60P/R
Output Waveform	AB90° Phase different signal + original signal
Power	DC4.5 ~ 13.2V (Insert)
Max. response frequency	200kHz
Operating Temperature	- 10 ~ + 70
Storage Temperature	- 30 ~ + 80
Humidity	RH85% or below. No condensation
Vibration	10 ~ 55HZ/1.5mm 2hr
Shock	490m/s <sup>2</sup> /11ms (XYZ Directions 3 times each)
Protection	IP50

Note) Above reference is for encoders only.

Model No.	OVW2-006-2M-050
Maker	Nihon Densan Nemikon Co.
Output	Incremental



1. Set starter with the limit switch.
2. External load must not exceed allowable loss P.

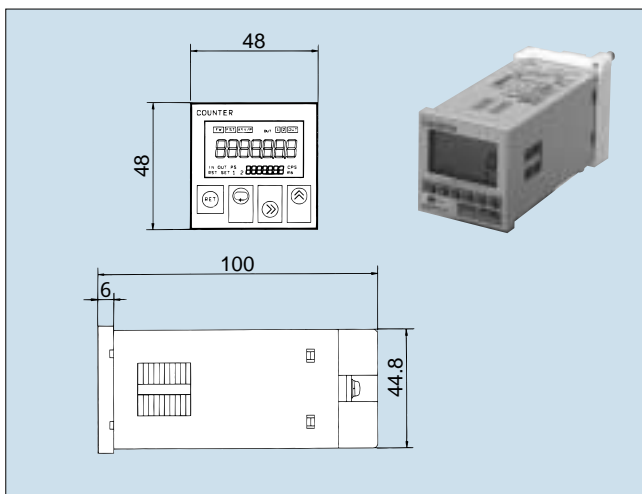
## Rotary Encoder Control Option

### Pulse Counter

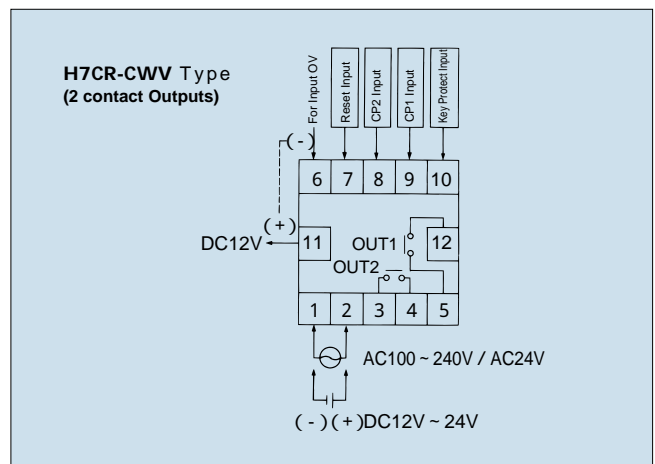
Counts and displays pulse from rotary encoder. This counter can also produce relay outputs and its pre-scale function displays actual movement. Connect to self-holding circuit when using to control stroke. Display and counter are backed up by internal battery to avoid mechanical damage in times of power outage.

Note) Do not move the jack during a power outage. Encoder will lose count.  
Use with internal LS is recommended.

Use Linipower Jack models with a Rotary Encoder.



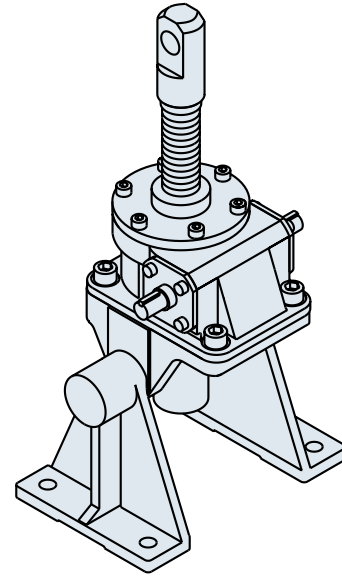
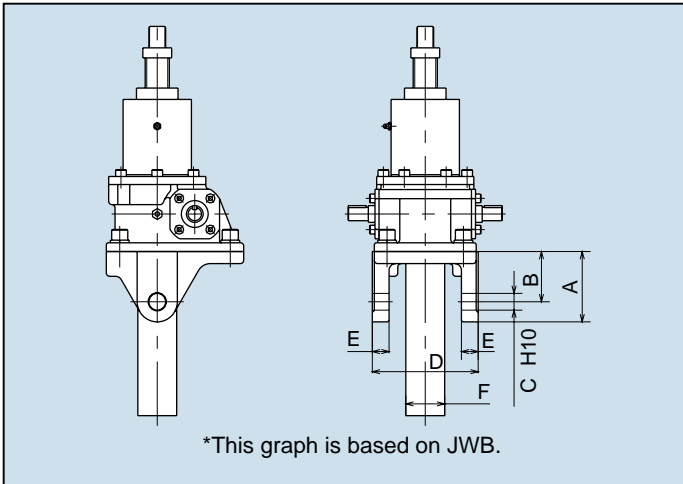
Model No.	OMRON H7CR-CWV (± Area Type)
Type	Pre-set Counter
Protection	IP54F (Panel Surface)
Pre-Scale Function	Yes (0.0001 ~ 99.999)
Display Type	7 Segment LCD Calculation, Back light
Rated Power	AC100 ~ 240V (50/60Hz)
Power Consumption	Approx. 6.6VA (at AC 240V 50Hz)
Control Output	Contact point: AC250V 3A (cos φ=0.8 ~ 1)
Common Power Source	DC12V ± 10% 100mA (Ripple 5% <)
Ambient Temperature	- 10 ~ 55 (Do not freeze)
Storage Temperature	- 25 ~ 65 (Do not freeze)
Ambient Humidity	35 ~ 80% RH



# Clevis and Trunnion Mounting Adapters

## 1. Clevis Mounting Adapter

Convenient for use with opening/closing or tilting devices.



### Clevis Measurements

mm

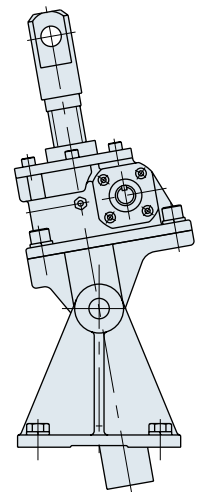
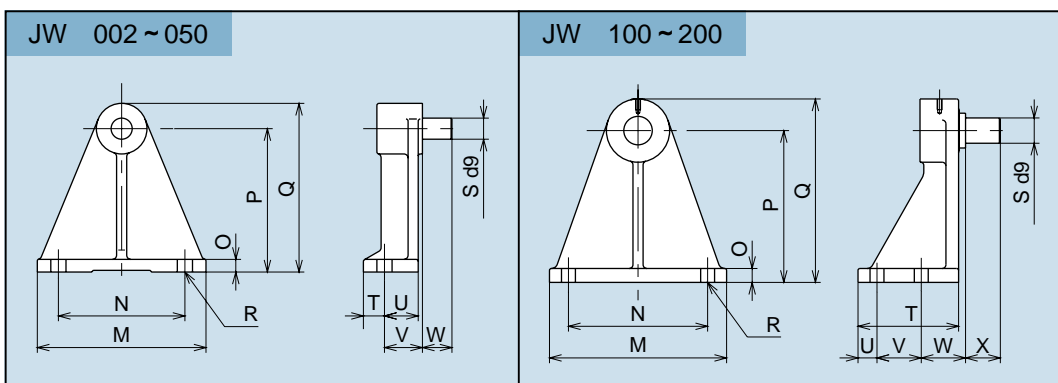
Frame No.	A	B	C	D	E	F
002	75	60	15	64	12	25
005	75	60	15	64	12	25
010	77.5	60	15	86	15	35
025	100	75	20	115	20	45
050	105	75	25	158	25	58
100	145	100	40	201	30	76.3
150	155	105	50	224	44	76.3
200	173	110	63	244	50	89.1

Note) Although standard clevis mounting adapters are for lifting, suspending types are also available.

Note) Clevis mounting adapters for rotation prevention are also available in different configurations.

## 2. Trunnion Mounting Adapter

This trunnion mounting adapter is the same as those for power cylinders.



### Trunnion Measurements

mm

Frame No.	Trunnion Model No.s	M	N	O	P	Q	R	S	T	U	V	W	X
002	LPD300KT-T	130	100	12	100	118.5	2- 12	15	15	28	30	15	
005	LPD300KT-T	130	100	12	100	118.5	2- 12	15	15	28	30	15	
010	LP500-T	180	130	15	150	178	2- 18	15	25	40	45	17	
025	LPTB1000-T	180	130	15	150	178	2- 18	20	25	40	45	30	
050	LPTB2000-T	200	150	15	170	200	2- 18	25	25	40	45	35	
100	LPTB6000-T	280	220	22	240	290	4- 22	40	159	30	70	70	55
150	LPTB12000-T	360	280	27	300	360	4- 33	50	195	40	85	85	70
200	LPTB16000-T	400	320	30	380	450	4- 33	63	210	40	90	90	75

# Hand Wheel and Column

## 3. Hand Wheel

Hand wheels are available for manual operations. Appropriate hand wheels for various frame numbers are specified below.

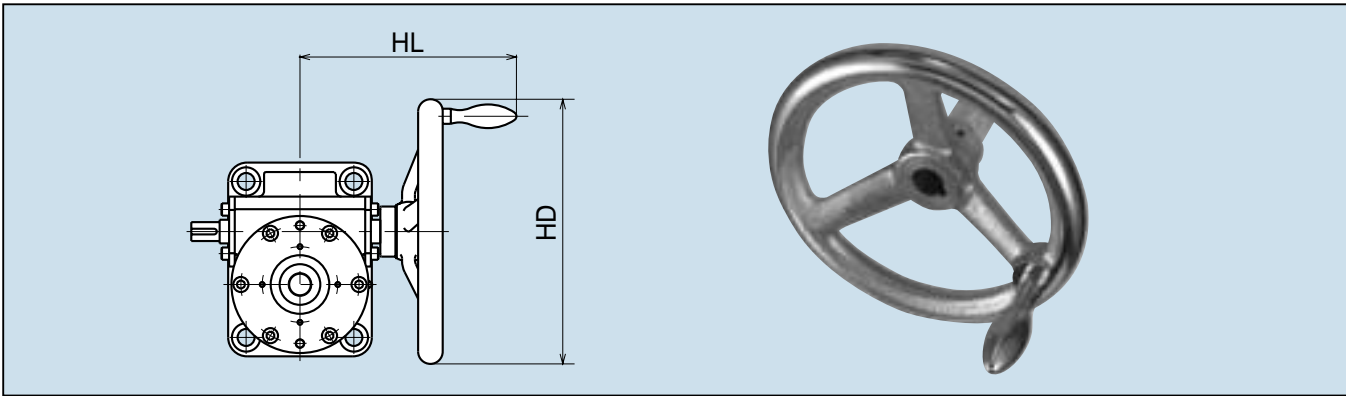
Hand wheels are used with self-lock equipped JWMs (Machine Screw Types) only. If they are used with JWBs (Ball Screw Types) and JWHs (High Lead Screw Types), they may reverse rotate and lead to possible accidents. Be sure NOT to use hand wheels with JWB and JWH.

Hand wheel efficiency is determined by the required torque for a specified load and the diameter of the hand wheel.

$$\text{Hand Wheel Efficiency} = \frac{\text{Required Input Torque}}{\text{Hand Wheel Radius}}$$

Hand wheel efficiency equivalent to or below 49N {5kg} is recommended.

Also, vibration and shock may cause self-lock failure, in which case a brake unit is recommended.



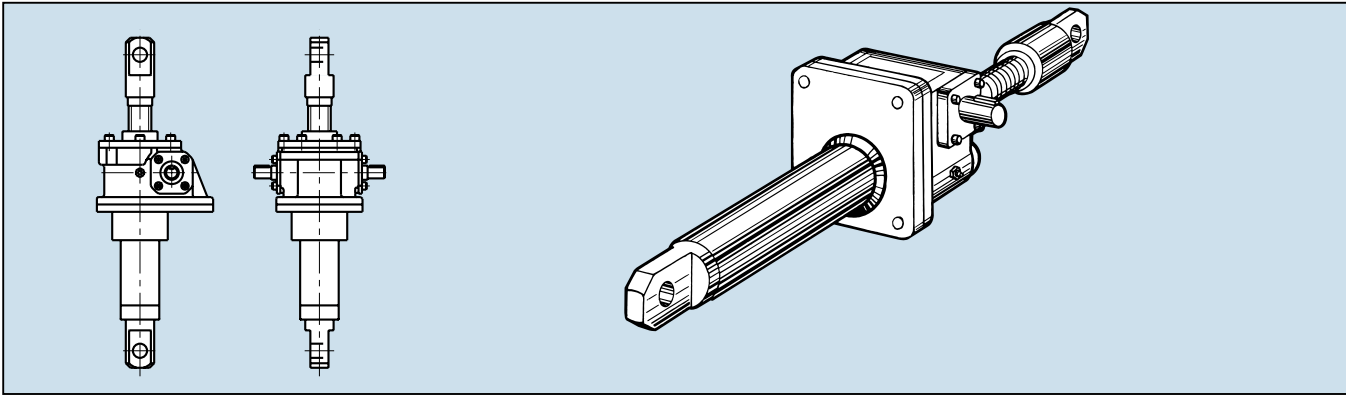
### Hand Wheel Size

mm

Handle Size Frame No.	NV80		NV100		NV200		NV280		NV450	
	HD	HL	HD	HL	HD	HL	HD	HL	HD	HL
JWM002	80	108								
JWM005	80	108								
JWM010	80	122	100	125						
JWM025			100	140	200	198				
JWM050					200	221	280	229		
JWM100							280	242	450	295
JWM150							280	247	450	300
JWM200									450	304

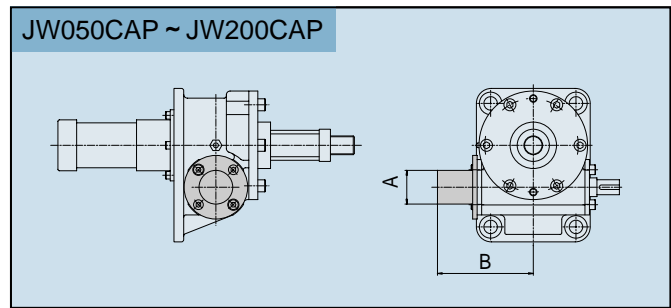
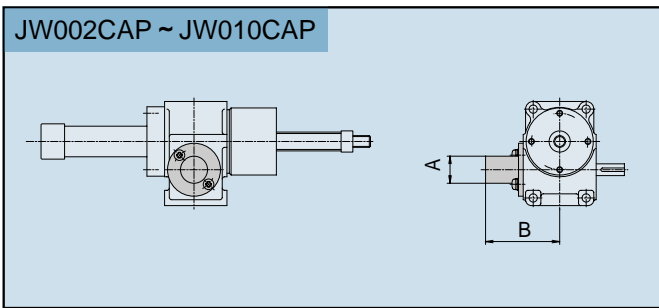
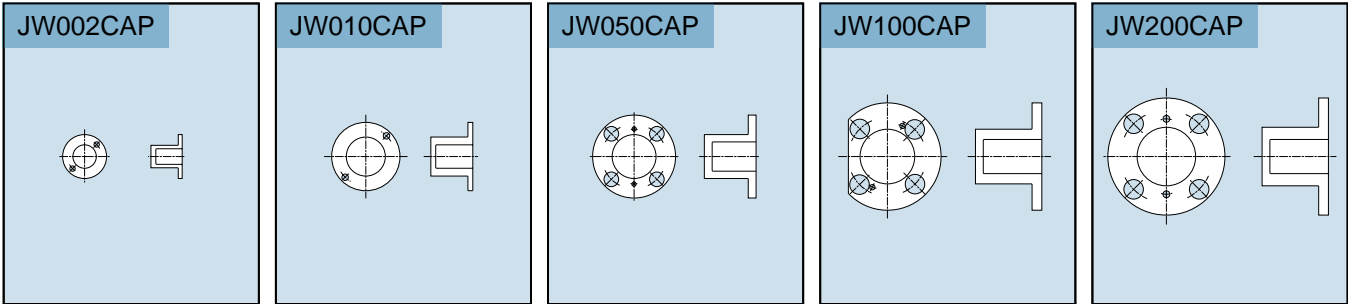
## 4. Column

This can be used with Open/Close, Reverse Rotation, Positioning and other devices.



# Safety Cap

The cap is attached to the jack input shaft, on the other side of the motor unit. By covering the shaft, a safety cap can prevent accidents and even prevent dust generation for clean room operations. It is compatible with any of the three jack models: JWM (Machine Screw Type), JWB (Ball Screw Type) and JWH (High Lead Ball Screw Type).



mm

Safety Cap Model No.	Suitable Jack Model No.	A	B
JW002CAP	JW002	22	63
	JW005		
JW010CAP	JW010	40	87
	JW025		100
JW050CAP	JW050	45	128
JW100CAP	JW100	52	155
	JW150		159
JW200CAP	JW200	60	163

\*All of the above are in stock. Installation screws are provided.

Material : MC Nylon Color : Black

Safety caps made from other materials also available.

# Bellows

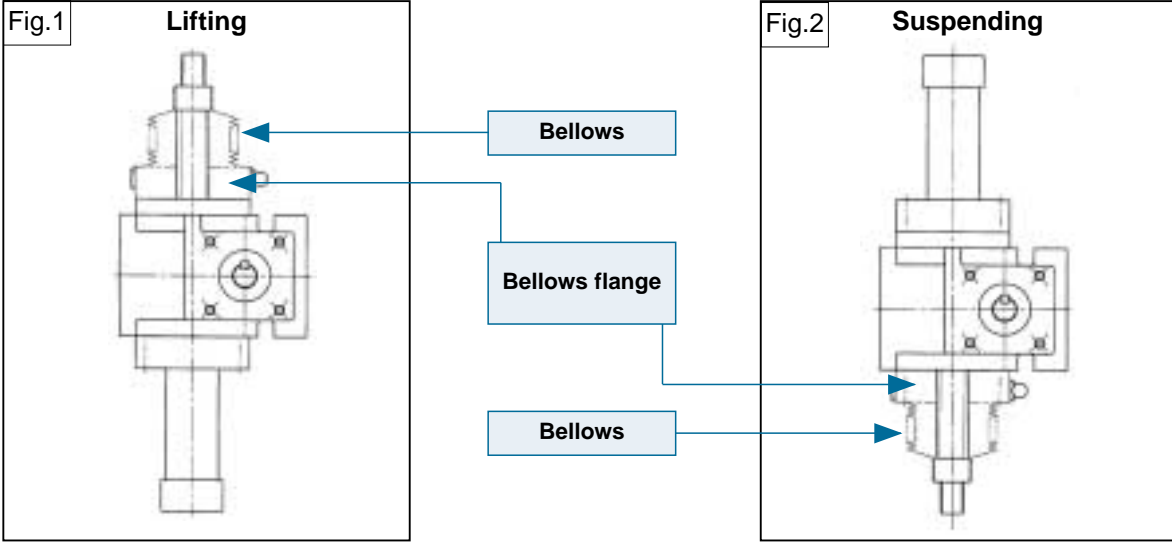
Use to protect jack components from liquid, chips, dirt, dust and other debris.

## Bellows Below JW010

Sizes below JW010 with bellows are as follows.

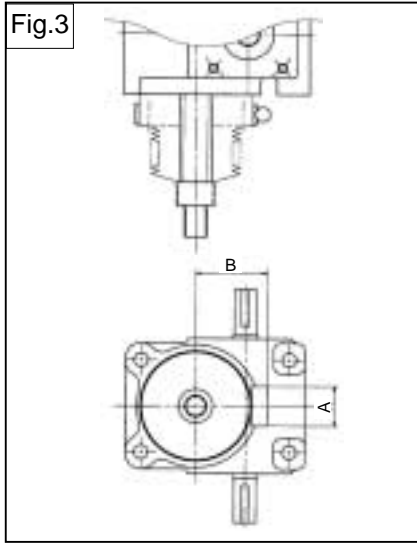
Take caution in jack sizing, especially when using for suspension.

Jack Models { JWM002 · 005 · 010  
 JWB005 · 010  
 JWH010



A flange is provided for jacks under JW010 with bellows. When using for suspension, avoid the bellows interfering with machine parts, including the bellows band.

Frame No.	A	B
JW002	28	42
JW005	28	42
JW010	28	47



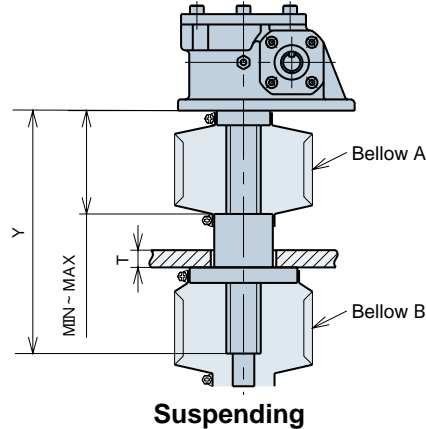
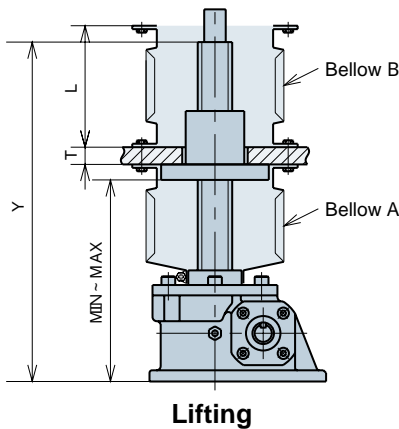
## High Lead Ball Screw

Bellows for High Lead Ball Screw Types are specially designed for specific shaft rpm.

Contact Tsubaki Emerson to select the most suitable bellows for your High Lead Ball Screw.

# Travel Nut Bellows

Select bellows for use with travel nuts based on the diagrams below. Select from band or flange type bellows.



Jack model No. \_\_\_\_\_

Actual stroke \_\_\_\_\_ mm

MIN \_\_\_\_\_ mm ~ MAX \_\_\_\_\_ mm

Type of bellows

Bellows A Band-band, band-flange, flange-flange

Bellows B Band-band, band-flange, flange-flange

Jack screw shaft length limited yes / no

Y= \_\_\_\_\_ mm

Base measurements

T= \_\_\_\_\_ mm

Maximum outer diameter of bellow J

No Limit, JA= \_\_\_\_\_ mm JB= \_\_\_\_\_ mm

Bellows L measurements L

LA<sub>MIN</sub> \_\_\_\_\_ mm ~ LA<sub>MAX</sub>= \_\_\_\_\_ mm (bellows A)

LB<sub>MIN</sub> \_\_\_\_\_ mm ~ LB<sub>MAX</sub>= \_\_\_\_\_ mm (bellows B)

Bellows attachment opening C

CA<sub>1</sub>= \_\_\_\_\_ mm CA<sub>2</sub>= \_\_\_\_\_ mm (bellows A)

CB<sub>1</sub>= \_\_\_\_\_ mm CB<sub>2</sub>= \_\_\_\_\_ mm (bellows B)

Flange type and structure (Record only if flange type was selected in 3).

DA<sub>1</sub>= \_\_\_\_\_ mm dA<sub>1</sub>= \_\_\_\_\_ mm bolt mounting part M<sub>1</sub>= \_\_\_\_\_

N<sub>1</sub>= \_\_\_\_\_ mm (bellows A)

DA<sub>2</sub>= \_\_\_\_\_ mm dA<sub>2</sub>= \_\_\_\_\_ mm bolt mounting part M<sub>2</sub>= \_\_\_\_\_

N<sub>2</sub>= \_\_\_\_\_ mm

DB<sub>1</sub>= \_\_\_\_\_ mm dB<sub>1</sub>= \_\_\_\_\_ mm bolt mounting part M<sub>1</sub>= \_\_\_\_\_

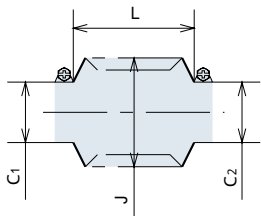
N<sub>1</sub>= \_\_\_\_\_ mm (bellows B)

DB<sub>2</sub>= \_\_\_\_\_ mm dB<sub>2</sub>= \_\_\_\_\_ mm bolt mounting part M<sub>2</sub>= \_\_\_\_\_

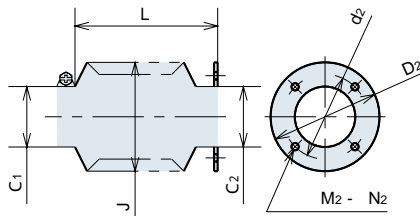
N<sub>2</sub>= \_\_\_\_\_ mm

## Bellows Types

### Band - Band Type



### Band - Flange Type



### Flange - Flange Type

