

Linispeed Jack Linipower Jack

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With Gearmotor JWM (Machine Screw Type)



Model Size	Motor Capacity	Gear Ratio	Jack Gear Ratio H			
			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}
		1/25	48 (0.8)	23.2 {2370}	60 (1.0)	18.6 {1900}
	0.2kW	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}
		1/25	78 (1.3)	29.4 {3000}	96 (1.6)	24.3 {2480}
	0.4kW	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}
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}
		1/30	60 (1.0)	80.2 {8180}	78 (1.3)	67.1 {6850}
	0.75kW	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}
		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}
JWM150	0.4kW	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}
		1/30	60 (1.0)	69.9 {7130}	78 (1.3)	61.1 {6230}
	0.75kW	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}
		1/5	450 (7.5)	18.9 {1930}	540 (9.0)	15.7 {1600}
JWM200	0.75kW	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}
		1/25	90 (1.5)	95.2 {9710}	108 (1.8)	78.8 {8040}
	1.5kW	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

■ : Option

▨ : 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.

With Gearmotor JWB (Ball Screw Type)



Model Size	Motor Capacity	Gear Ratio	Jack Gear Ratio H			
			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)	29.1 {2967}	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}
		1/20	150 (2.5)	95.0 {9690}	180 (3.0)	79.5 {8110}
	0.75kW	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}
JWB200	0.75kW	1/15	198 (3.3)	134 {13650}	240 (4.0)	112 {11470}
		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}
	1.5kW	1/20	150 (2.5)	177 {18110}	180 (3.0)	147 {14990}
		1/5	600 (10)	88.1 {8990}	720 (12)	73.4 {7490}
		1/10	300 (5.0)	177 {18110}	360 (6.0)	147 {14990}

With Gearmotor JWH (High Lead Ball Screw Type)



Model Size	Motor Capacity	Gear Ratio	Jack Gear Ratio H			
			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}
	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
 : Option
 : Made-to-Order

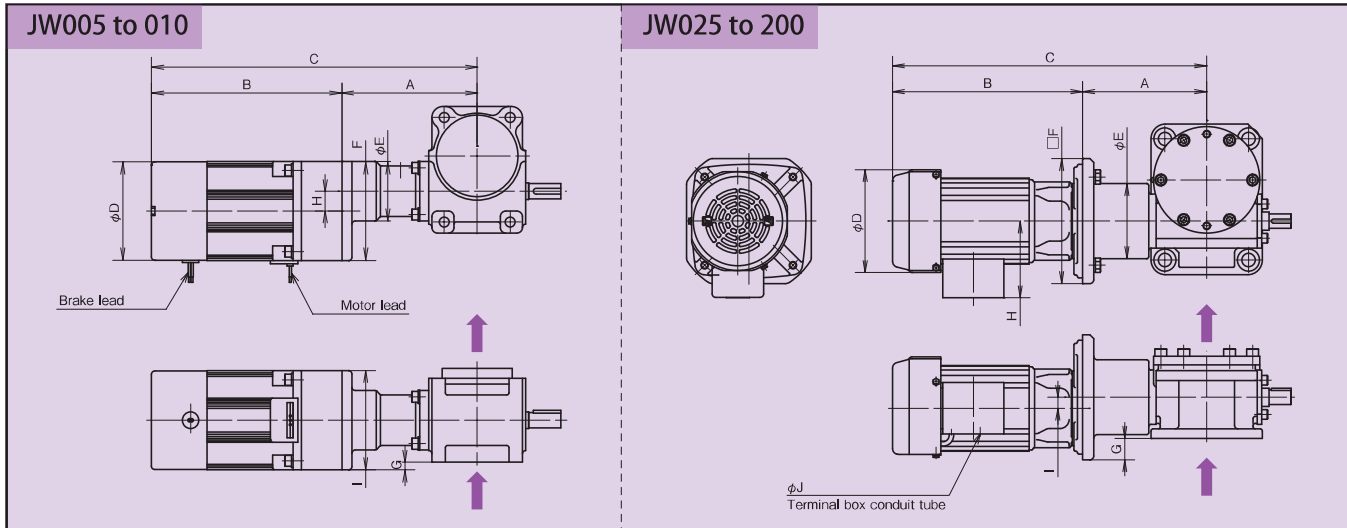
* Other shaft speeds and thrusts also available.

* 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.

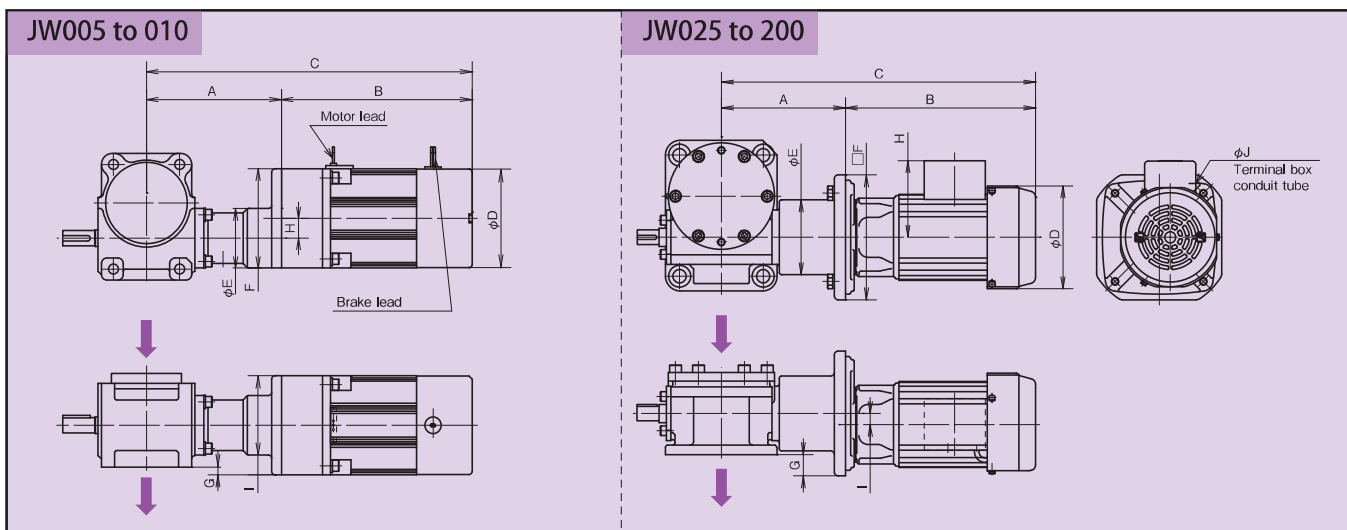
Dimensions for Motored Jacks

Standard Gearmotor Mounting



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

Unit: mm

Frame Size	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	353	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	353	564	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 to 40W	0.1kW to 1.5kW
Model	With Brake/Totally Enclosed	
Voltage	200/200/220V	
Frequency	50/60/60Hz	
Pole	4P	
Phase	3 Phase	
Protection	IP 20	IP44
Rating	SI (Continuous)	
Insulation Class	E (F:0.75 to 1.5kW)	

Specialized Gearmotor

Specifications	25W to 40W	0.1kW to 0.4kW	0.75kW to 1.5kW
Inverter Motor	—	○	○
400V Class Voltage	△*	○	○
Special Voltage	—	○	○
Global Use (CCC,CE,UL)	△*	○	—
One touch brake manual release	—	○	○
Manual shaft	—	○	○
Rotary encoder	—	○	○

* Contact to Tsubaki.

Motor current value and brake current value

Motor	Motor current value (A)			Brake model No.	Brake current value (A)		
	200V 50Hz	200V 60Hz	220V 60Hz		200V 50Hz	200V 60Hz	220V 60Hz
4P - 25W	0.25	0.22	0.23		0.03	0.03	0.03
4P - 40W	0.31	0.29	0.28		0.07	0.07	0.08
4P - 0.1 kW	0.63	0.57	0.58	SLB01	0.178	0.178	0.178
4P - 0.2 kW	1.2	1.1	1.1	SLB02	0.178	0.178	0.178
4P - 0.4kW	2.3	2.0	2.0	SLB04	0.232	0.232	0.232
4P - 0.75kW	4.0	3.5	3.4	SLB07	0.272	0.272	0.273
4P - 1.5 kW	6.8	6.4	6.0	SLB15	0.289	0.289	0.289

Note) 1. The above values are the rated current values of motors and brakes.

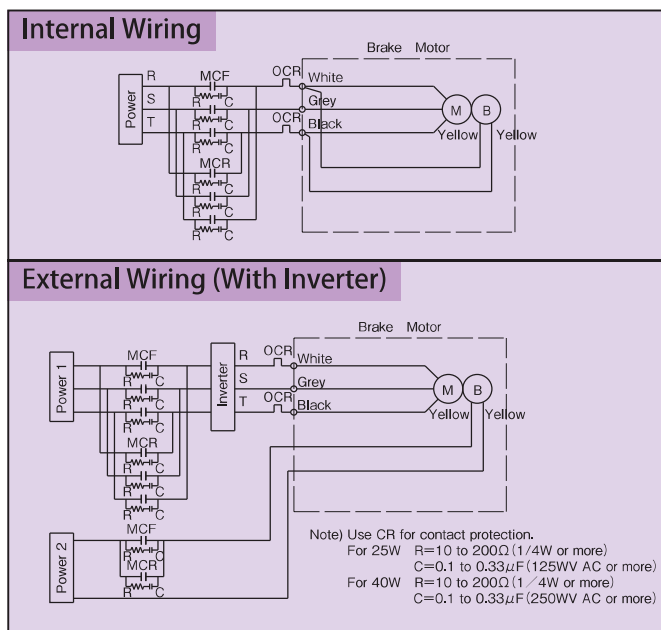
They are given for reference because they may differ according to the actually acting thrust, jack efficiency, etc.

2. The rated motor current values do not include brake current values.

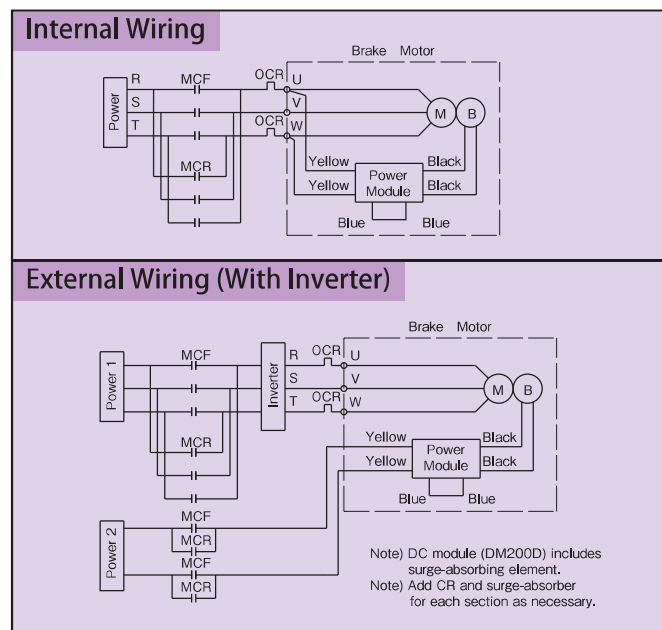
3. The brake current values show the values on the secondary side of the power supply module (0.1kW up to 1.5kW).

Circuit Diagrams

Circuit Diagrams for 25 to 40W



Circuit Diagrams for 0.1 to 1.5kW



With Motor JWM (Machine Screw Type)

Frame Size	Motor Capacity	Jack Gear Ratio H			
		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}

With Motor JWB (Ball Screw Type)

Frame Size	Motor Capacity	Jack Gear Ratio H			
		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}

With Motor JWH (High Lead Ball Screw Type)

Frame Size	Motor Capacity	Jack Gear Ratio H			
		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.

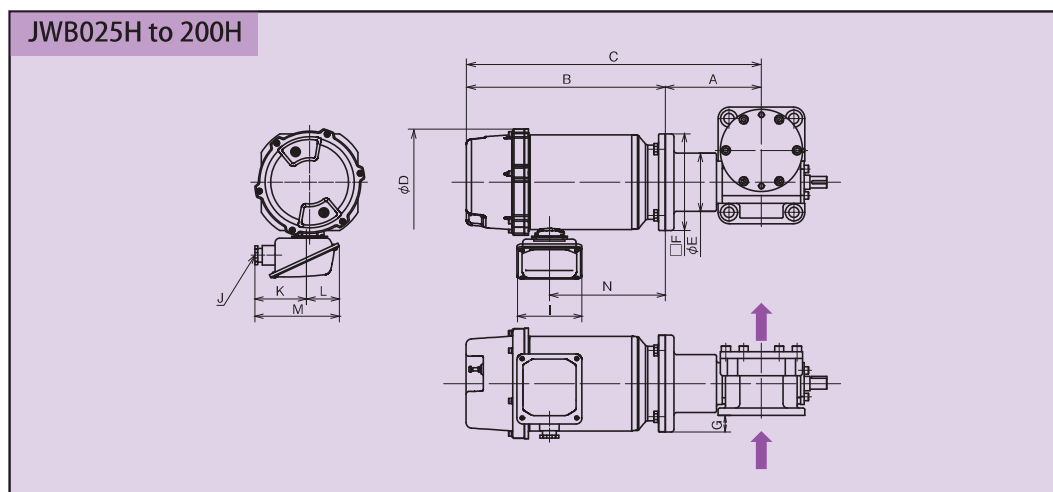
* Values in striped cells indicate thrust rates that exceed allowable capacities. Be sure to adjust thrust to below these rates.

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

* As for worm ratio L, consult Tsubakimoto chain.

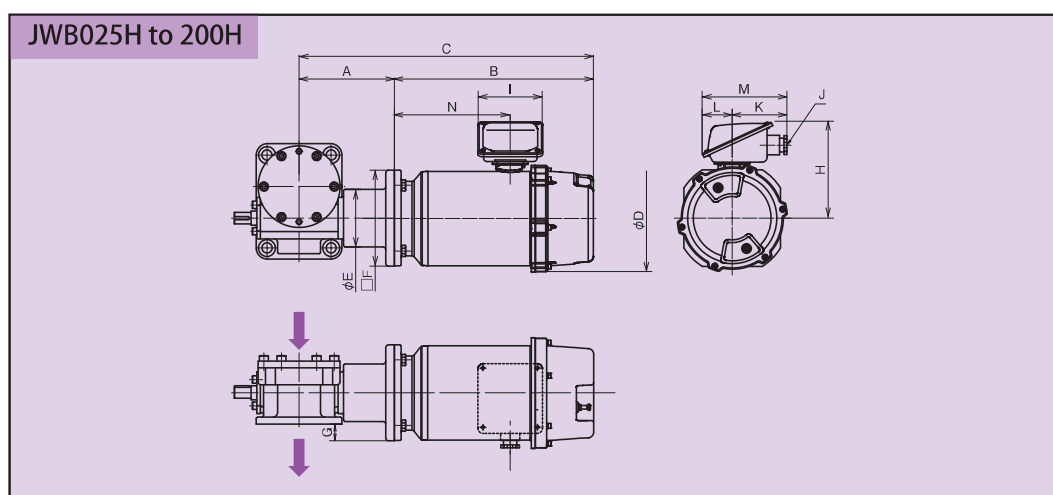
Dimensions for Motored Jacks

Standard motor 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.

Motor mounting on the Opposite Side



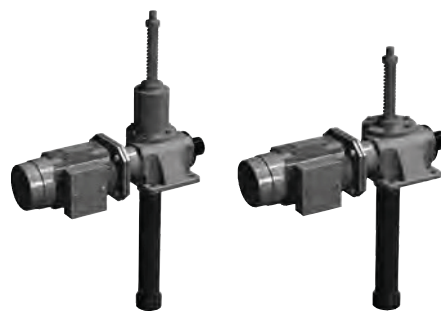
Note) For standard (US, DS) and rotation prevention types (UM, DM), screw shafts will lift in the direction of  with normal wiring.
For travel nut types (UR, DR), nuts will lift in the direction of  with normal wiring.

Unit: mm

Frame Size	Motor Capacity	A	B	C	D	E	F	G	H	I	J	K	L	M	N
JW025	0.2kW	132	231	363	132	95	120	15	125	84	SK-14L(PF1/2)	79	45	124	112
	0.4kW	139	253	392	132	95	120	15	125	84	SK-14L(PF1/2)	79	45	124	134
	0.75kW	146	289	435	180	102	170	40	166	114	A20C(PF3/4)	106	49	155	145
	1.5kW	146	351	497	194	102	170	40	178	114	A20C(PF3/4)	106	49	155	204
JW050	0.75kW	169	289	458	180	102	170	29	166	114	A20C(PF3/4)	106	49	155	145
	1.5kW	169	351	520	194	102	170	29	178	114	A20C(PF3/4)	106	49	155	204
JW100	2.2kW	207	381	588	207	131	200	44	178	114	A25C(PF1)	110	49	159	213
	3.7kW	207	414	621	229	144	200	44	189	114	A25C(PF1)	110	49	159	239
JW150	2.2kW	211	381	592	207	131	200	44	178	114	A25C(PF1)	110	49	159	213
	3.7kW	211	414	625	229	144	200	44	189	114	A25C(PF1)	110	49	159	239
JW200	2.2kW	231	381	612	207	131	200	15	178	114	A25C(PF1)	110	49	159	213
	3.7kW	231	414	645	229	144	200	15	189	114	A25C(PF1)	110	49	159	239

Motor Specifications

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



Motor current value and brake current value

Motor	Motor current value (A)						Brake model No.	Brake current value (A)					
	200V 50Hz	200V 60Hz	220V 60Hz	400V 50Hz	400V 60Hz	440V 60Hz		200V 50Hz	200V 60Hz	220V 60Hz	400V 50Hz	400V 60Hz	440V 60Hz
4P - 0.2 kW	1.3 (4.91)	1.1 (4.68)	1.1 (5.14)	0.63 (2.40)	0.55 (2.22)	0.56 (2.41)	SBH02LP	0.17 0.26	0.17 0.26	0.17 0.28	0.17 0.26	0.17 0.26	0.17 0.28
4P - 0.4 kW	2.4 (11.6)	2.1 (10.2)	2.1 (11.0)	1.2 (5.14)	1.1 (4.88)	1.1 (5.39)	SBH04LP	0.17 0.26	0.17 0.26	0.17 0.28	0.17 0.26	0.17 0.26	0.17 0.28
4P - 0.75 kW	3.9 (24.0)	3.5 (22.0)	3.4 (24.0)	1.9 (12.0)	1.7 (11.0)	1.7 (12.0)	SLB07LP	0.21 0.28	0.21 0.28	0.23 0.31	0.11 0.15	0.11 0.15	0.12 0.16
4P - 1.5 kW	6.5 (49.0)	6.1 (45.0)	5.8 (50.0)	3.2 (24.5)	3.1 (22.5)	2.9 (25.0)	SLB15LP	0.22 0.29	0.22 0.29	0.24 0.32	0.11 0.15	0.11 0.15	0.12 0.16
4P - 2.2 kW	9.4 (63.7)	8.9 (58.2)	8.3 (63.0)	4.7 (31.8)	4.4 (29.1)	4.2 (31.5)	SLB22LP	0.18 0.29	0.18 0.29	0.20 0.32	0.09 0.15	0.09 0.15	0.11 0.16
4P - 3.7 kW	14.8 (104)	14.3 (87.9)	13.2 (98.0)	7.4 (52.0)	7.1 (43.9)	6.6 (49.0)	VNB371K (NB-31186)	0.10 0.30	0.10 0.30	0.10 0.30	0.05 0.15	0.05 0.15	0.05 0.15

Note) 1. The above values are rated current values of the motor and brake. A numerical value in parentheses is a start current value of the motor.

2. The rated current values and start current values do not include a brake current value.

3. A DC brake is used as a brake. The upper stage of the brake current value indicates a value on the primary side of the power module, and the lower stage indicates a value on the secondary side.

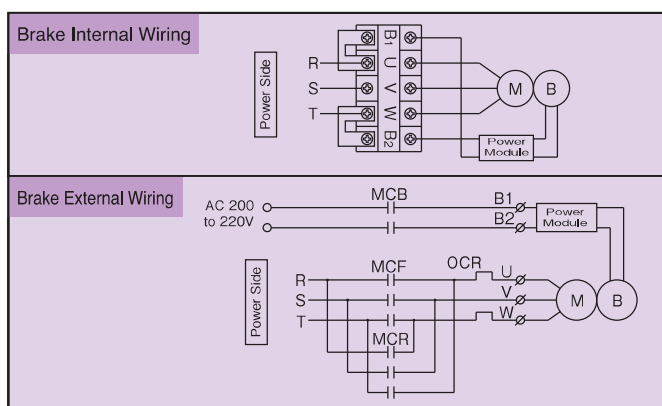
4. The above values are references because the rated current values for the power cylinder vary depending on operating conditions.

5. For simultaneous turnoff of 0.1kW to 0.4kW, 400V class, the voltage is converted to 200V through the motor intermediate tap to be input. For individual turnoff, decrease the voltage to 200 to 220V by a transformer. The capacity of the transformer capacity shall be 90VA or more.

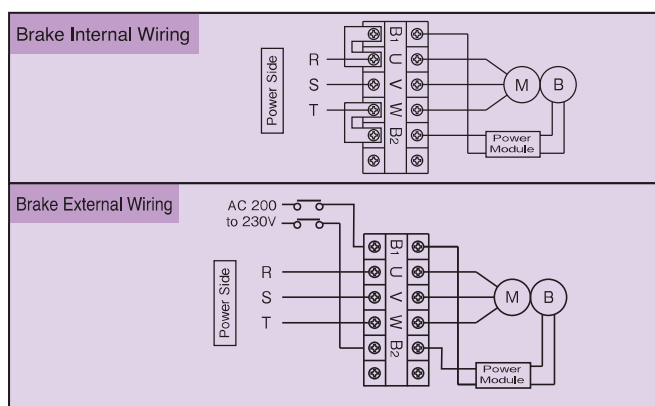
6. For individual turnoff of 0.75kW or more, 400V class, the DC module is applicable for 400V class, therefore, it is unnecessary to decrease the voltage.

Circuit Diagrams

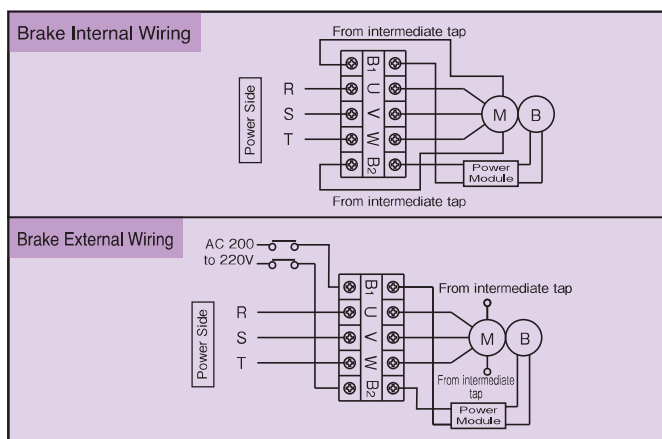
Circuit Diagrams for 0.2 to 0.4kW(200V)



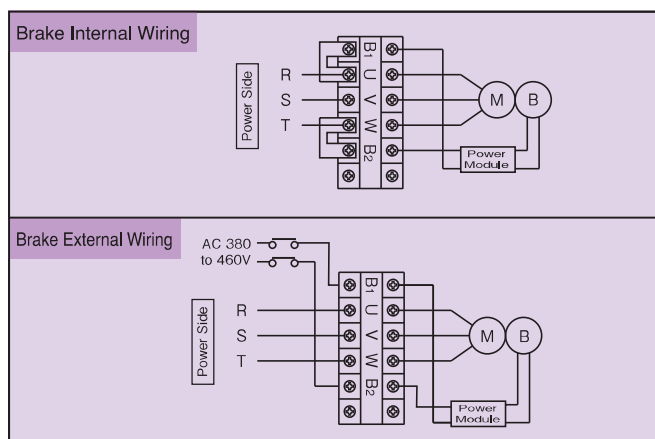
Circuit Diagrams for 0.75 to 3.7kW(200V)



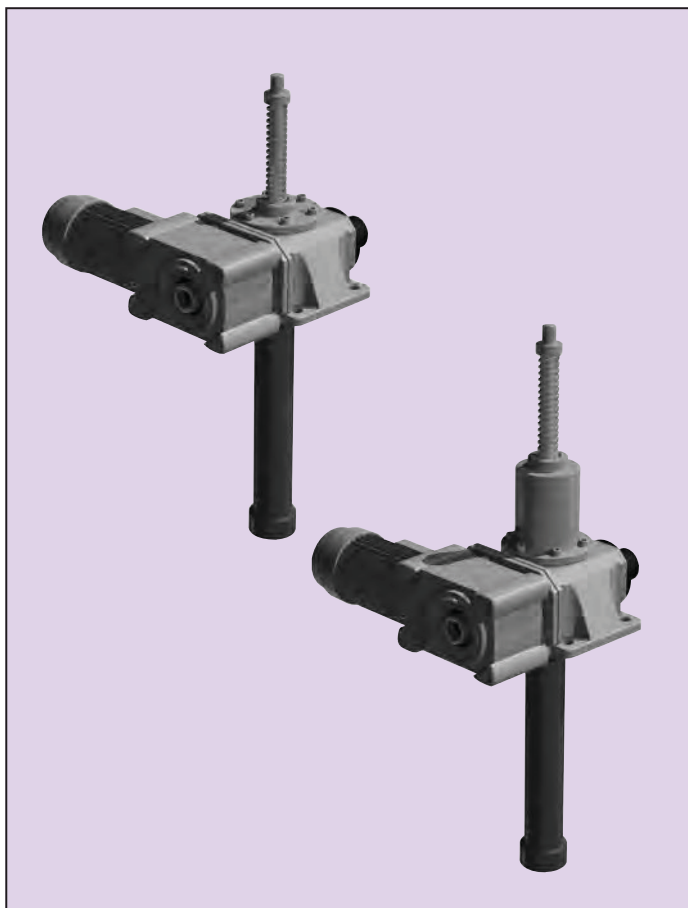
Circuit Diagrams for 0.2 to 0.4kW(400V)



Circuit Diagrams for 0.75 to 3.7kW(400V)

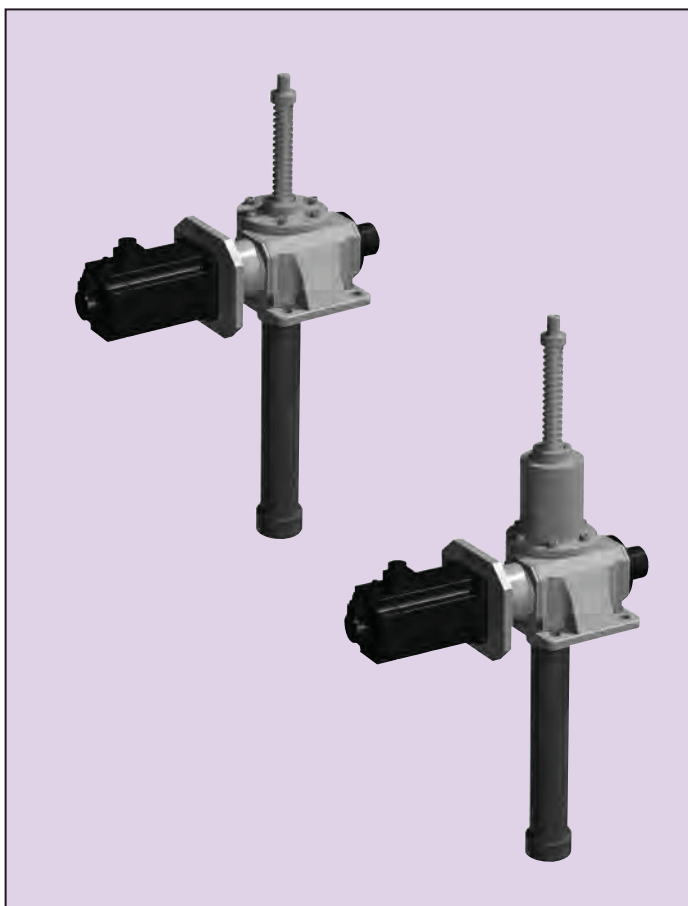


Hypoid Motor Type



1. TSUBAKI Hypoid Motor is a space saver.
2. To install, the Hypoid Motor can be adjusted at 90° intervals from the input shaft.

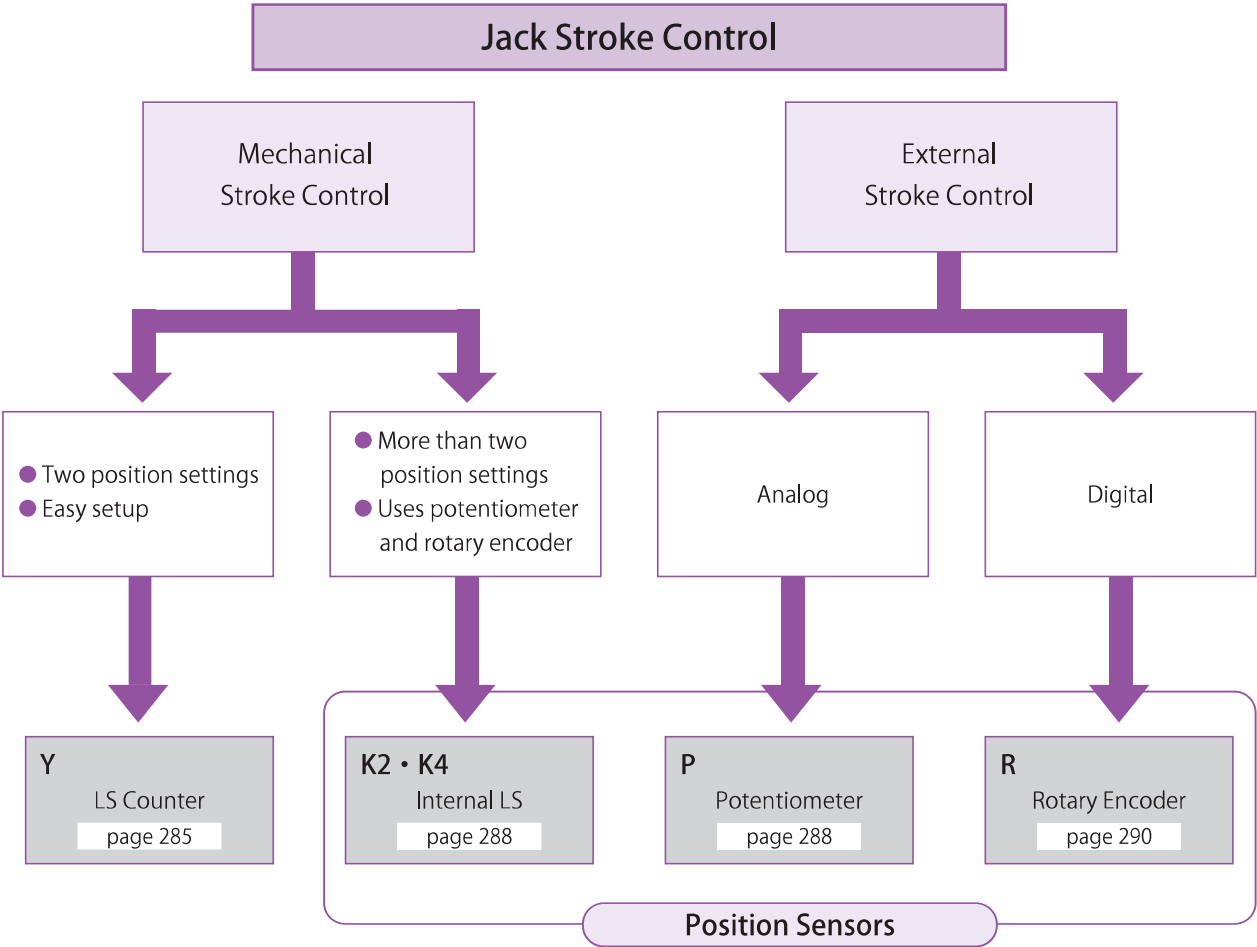
Servo Motor Type



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. It can be mounted directly to the input shaft of a jack, and mechanical positioning of upper and lower limits of strokes can easily be performed. Stroke control can be performed only by setting the stop position by the reset button. This economy-type limit switch allows for easy adjustment.

Position Sensor

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> (1) Internal LS (2) Potentiometer (3) Rotary Encoder | } | <p>3 options are available based on specific needs.</p> <p>A combination of all 3 is also available.</p> |
|--|---|--|

(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)

(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.

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).

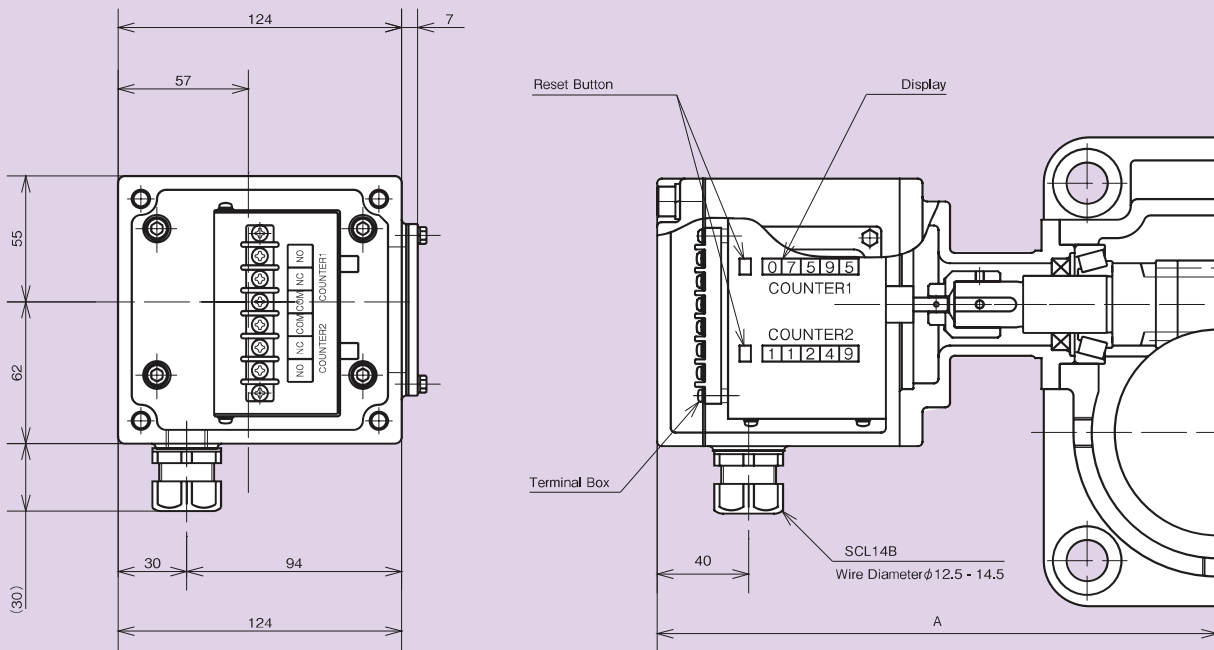
Form	Mechanical Counter
No. of Counter Digits	5 (1 Count/Input Shaft Revolution)
Allowable Max. Input Rotation	1800r/min
Limit Switch Used	AVT3254 (Matsushita Electronics)
Contact Composition	1 C (Max. and Min. 1 pt. each)
Power Voltage	250V AC 3A
Ambient Temperature	−5 to 40°C

* 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.

Linipower Jack

Unit: mm

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

Linispeed Jack

Unit: mm

Frame No.	SJ030H	SJ050H
A	277	306

Setting the LS Counter

Setting the limit switch is as easy as 1 to 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.

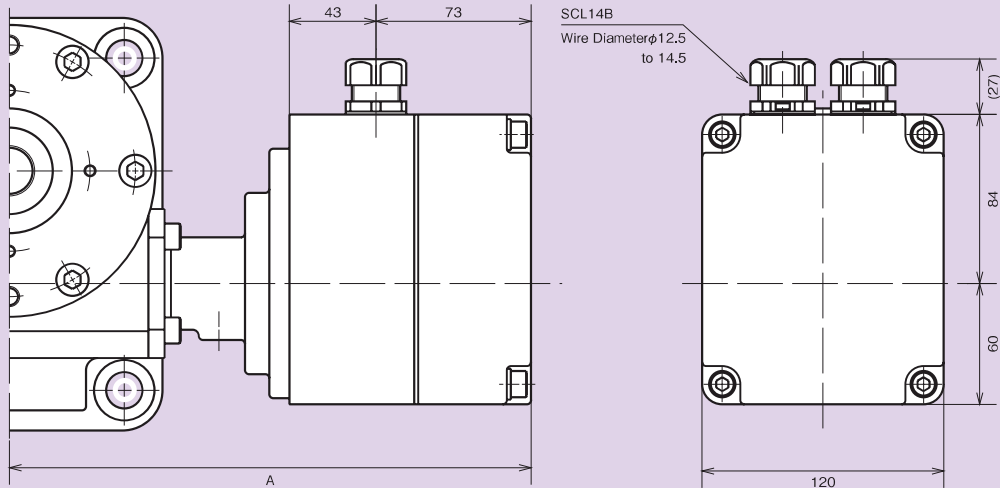
Note) Turning the shaft or travel nut after adjustment will change the setting.

Position Sensors

3 kinds of position sensors are available.

- ① Internal LS (2 or 4)
- ② Potentiometer
- ③ Rotary Encoder

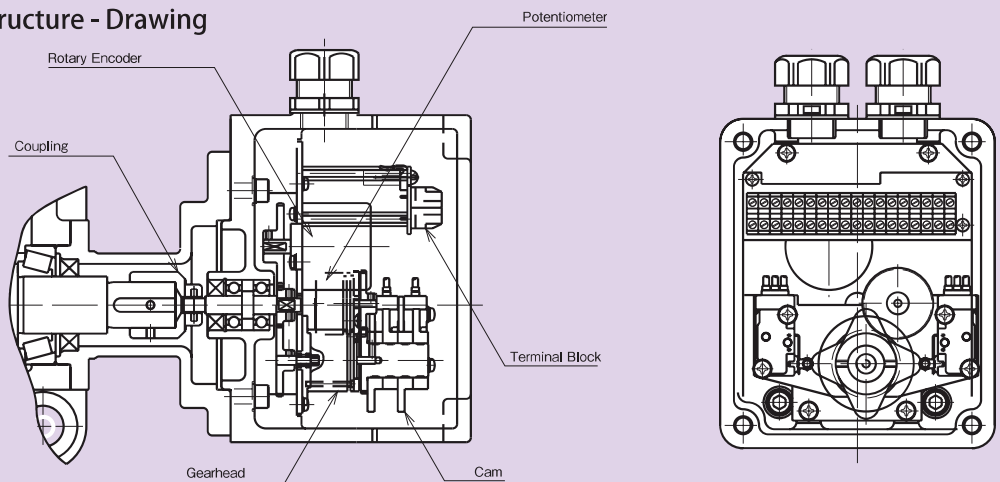
■Dimensions



Unit: mm

Frame No.	JWM 002	JWM JWB 005	JWM JWB 010 JWH	JWM JWB 025 JWH	JWM JWB 050 JWH	JWM JWB 100 JWH	JWM JWB 150 JWH	JWM JWB 200 JWH
A	197	197	222	230	255	281	285	290

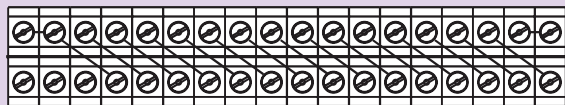
■Internal Structure - Drawing



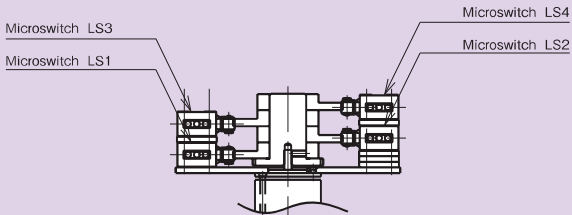
Position detection unit wiring

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.

⚠ Each terminal is connected behind terminal block by printing board.



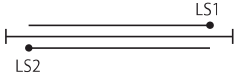
Terminal No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

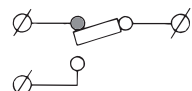


Option	Internal LS (K2,K4)									Potentiometer			Rotary Encoder					
Symbol	LS1		LS2		LS3		LS4		Common	P			R					
Contact	a	b	a	b	a	b	a	b	c	1	2	3	1	2	Z	+5 to 24V	0V	Case
Terminal No.	18	17	5	6	16	15	7	8	4	1	2	3	9	10	11	12	13	14

① Internal LS

- K2·····Arrange microswitches LS1 and LS2 as shown below.
- K4·····Arrange microswitches LS1, LS2, LS3, LS4 as shown below.

	Option Symbol	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.

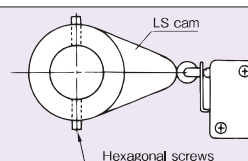
Model No.	D2VW-5L2A-1M Equivalent
Electric Composition	250V AC 4A (cosφ0.7)
Contact Composition	1C 

〈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.



② 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.

Note that the output resistance value varies depending on each frame No. and each stroke.

Total resistance value is 1.0 kΩ, however, depending on the stroke, approximately 1/3 of the total resistance value may be output according to the rotation angle, therefore, confirm it before use.

Model No.	CP-30 Equivalent
Maker	Sakae Tsushin Kougyou
Maximum Resistance	1.0kΩ
Rated Power	0.75W
Dielectric Strength Voltage	1000V AC (1min)
Effective Electrical Angle	355°
Effective Mechanical Angle	360° Endless



Potentiometer Control Option 1

Stroke Display Meter

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

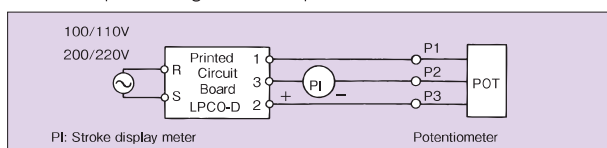
Jack models with a potentiometer should be used.

Model No.	RM-80B (100μA DC) Equivalent
Class	JIS C 1102 2.5
Exterior	Black Frame
Scale Used	Maximum Stroke 100%

* A separate printed board is also required.

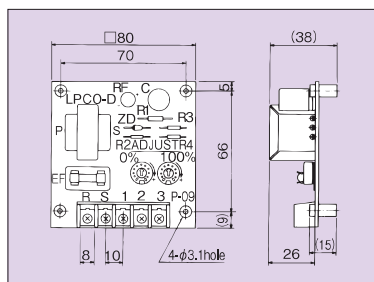
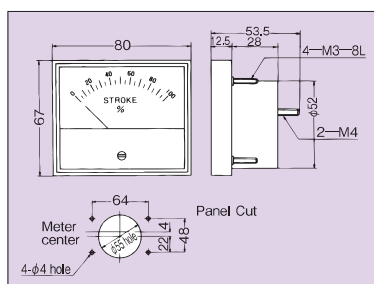
Printed Circuit Board

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)

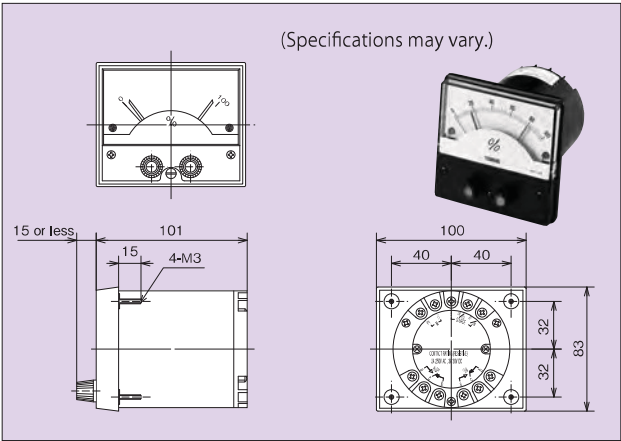


Potentiometer Control Option 2

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) For using 4 – 20mA output, designate as “for 4 – 20mA output.”
* A separate printed board is also required.

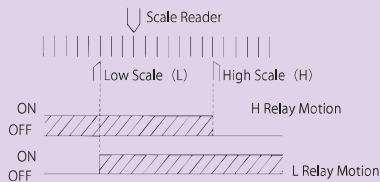


Model No.	NRC-100HL (TSURUGA) or Equivalent
Class	JIS C1102 2.5
Exterior	Black Frame
Scale	Maximum Stroke 100%
Power	100/100V AC 200/220V AC 50/60 Hz
Input	Maximum 100 μ A DC
Output Contact Composition	High, Low both 1C (see graph below)
Contact Capacity	250V AC 3A (cos φ=1)

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.



③Rotary Encoder

Rotary encoder specifications		
Model	TS5305N251	
Manufacturer	Tamagawa Seiki Co., Ltd.	
Output pulse number	600P/R	
Output waveform	90° phase difference two-phase square wave + home position output	
Output voltage	H	— Note 1)
	L	1V or less Note 1)
Power supply	5 to 24V DC	

The output signal of the standard specification is of an incremental type, however, an absolute type is also available.

The output type in standard specifications is open collector.

If voltage output type is required, see (Note 1) below.

If the specification of line driver output is required, contact us.

Note 1) Due to the open collector output, output signals are obtained when the pull-up resistor is connected.

Signal 1 and signal 2 are output voltages of H "(power supply voltage – 1)V or more" and L "1V or less."

For the Z-phase, negative logic applies.

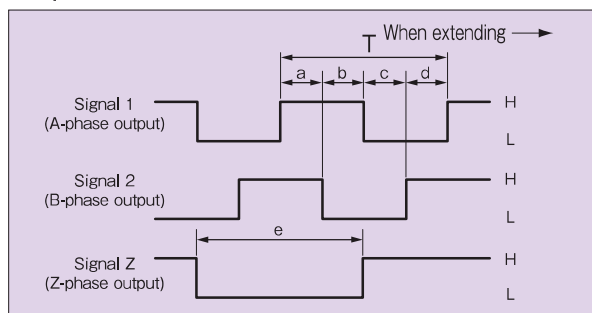
<Reference resistance values> 5V: 220Ω, 12V: 470Ω, 24V: 1kΩ

Output connection

Signal 1	Signal 2	Signal Z	+5V to 24V	0V	Case
(9)	(10)	(11)	(12)	(13)	(14)

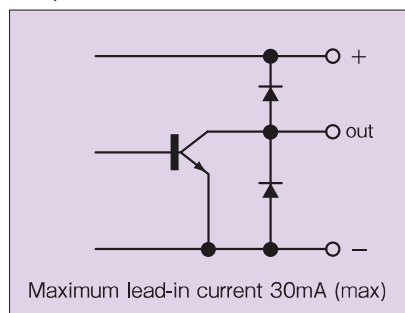
Figures in parentheses indicate terminal No.

Output waveform



a. b. c. d = $T/4 \pm T/8$ $T/2 \leq e \leq 3T/2$

Output circuit



* Best suited to controlling the stroke by a sequencer or programmable controller, etc.

More accurate positioning control is possible in combination with motor speed control by an inverter, etc.

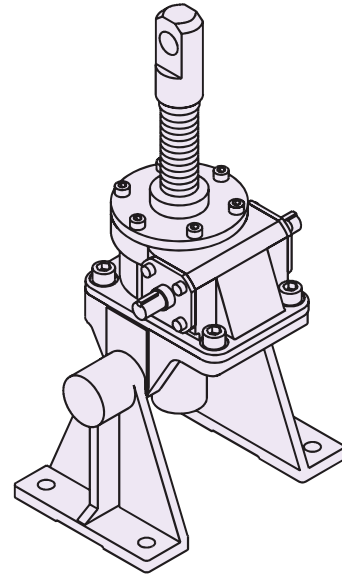
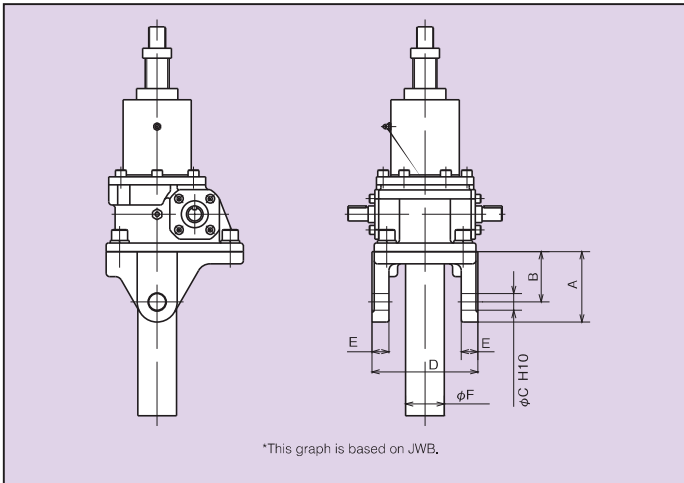
- ① The standard products incorporate an incremental type encoder.
- ② It has been set to output 300 pulses per revolution of the input shaft.
- ③ It is possible to set an accurate home position of the machine in combination with a limit switch because home position output is read out every 600 pulses.
- ④ Do not apply vibration or impact to the rotary encoder because it is precision equipment.
- ⑤ Use shield wire for wiring to the rotary encoder.
- ⑥ As a guide for the distance between the rotary encoder and control panel, a collector current of 20mA should be able to be transmitted approximately 50m (12V pull-up).

For distances other than the above, consult with us.

Clevis and Trunnion Mounting Adapters

1. Clevis Mounting Adapter

Convenient for use with opening/closing or tilting devices.



Clevis Measurements

Unit: mm

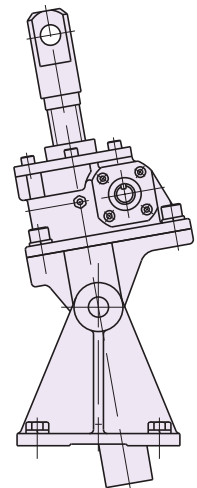
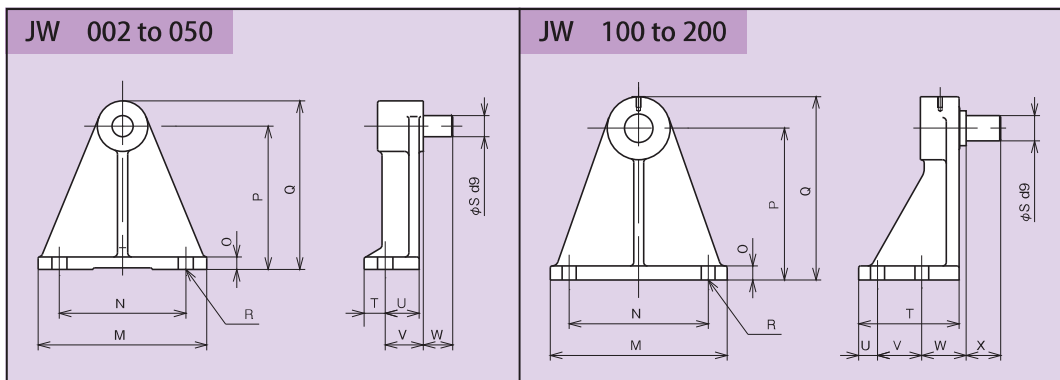
Frame No.	A	B	C	D	E	ϕF
002	75	60	15	64	12	25
005	75	60	15	64	12	25
010	77.5	60	15	86	15	35
025	100	75	20	115	20	45
050	105	75	25	158	25	58
100	145	100	40	201	30	76.3
150	155	105	50	224	44	76.3
200	173	110	63	244	50	89.1

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

Unit: 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-ϕ12	15	15	28	30	15	—
005	LPD300KT-T	130	100	12	100	118.5	2-ϕ12	15	15	28	30	15	—
010	LP500L-T	180	130	15	150	178	2-ϕ18	15	25	40	45	17	—
025	LPTB1000-T	180	130	15	150	178	2-ϕ18	20	25	40	45	30	—
050	LPTB2000-T	200	150	15	170	200	2-ϕ18	25	25	40	45	35	—
100	LPTB6000-T	280	220	22	240	290	4-ϕ22	40	159	30	70	70	55
150	LPTB12000-T	360	280	27	300	360	4-ϕ33	50	195	40	85	85	70
200	LPTB16000-T	400	320	30	380	450	4-ϕ33	63	210	40	90	90	75

Hand Wheel and Fitting

1. Hand Wheel

Hand wheels are available for Linipower Jack so that it can be easily used for manual operation.

Types of hand wheels and applicable jack frame No. are as follows.

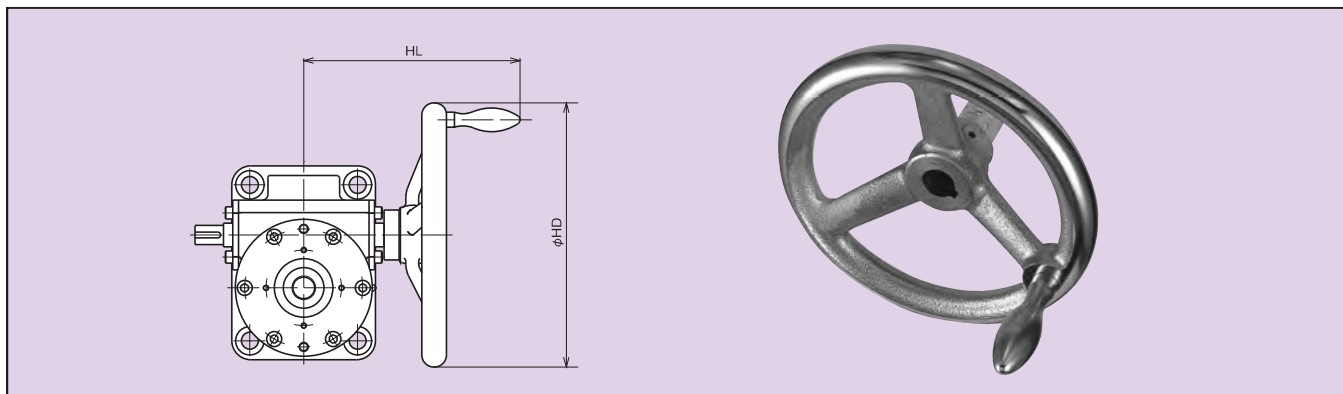
Hand wheels are used for self-lock equipped JWM (Machine Screw Type) only.

Hand wheels are not available for JWB (ball screw type) and JWH (high lead ball screw type) because they are not equipped with a self-lock with the result that the input shaft may be reversed by a load, where it is dangerous to use the hand wheel. Hand wheel efficiency is determined by the required torque for a specified load and the diameter of the hand wheel via the following equation.

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

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

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



Hand Wheel Measurements

Example model No. for order placement: JWM010-NV100

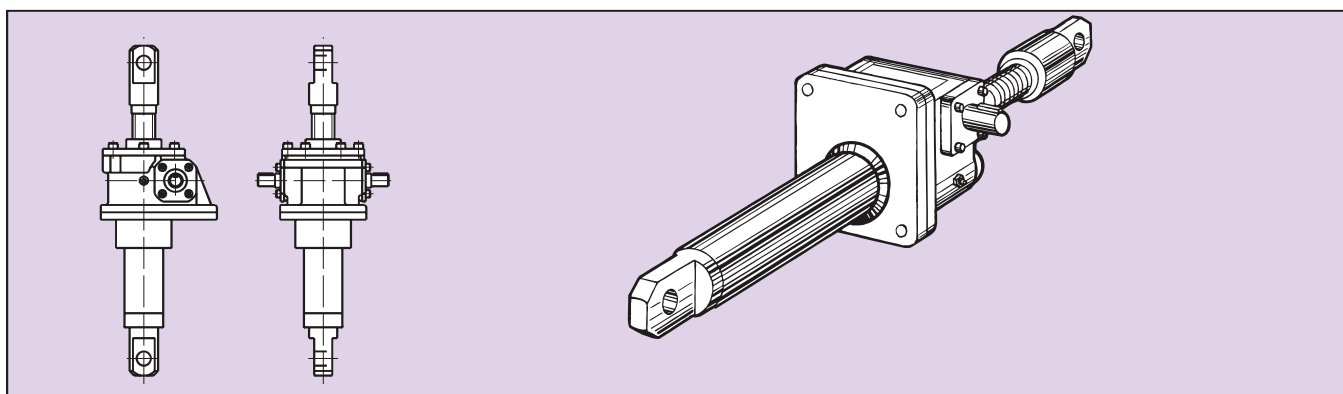
Unit: mm

Handle Size	JWM005-NV80		JWM010-NV80		JWM010-NV100		JWM025-NV100		JWM025-NV200		JWM050-NV200		JWM050-NV280*		JWM100-NV280*		JWM100-NV450*	
Frame No.	HD	HL	HD	HL	HD	HL	HD	HL	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

Note) When using in combination with hand wheels marked with an * and clevis fitting, trunnion fitting, hand wheel interferes with trunnion fitting.
Separately contact Tsubakimoto Chain.

2. Fitting

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



Safety Cap

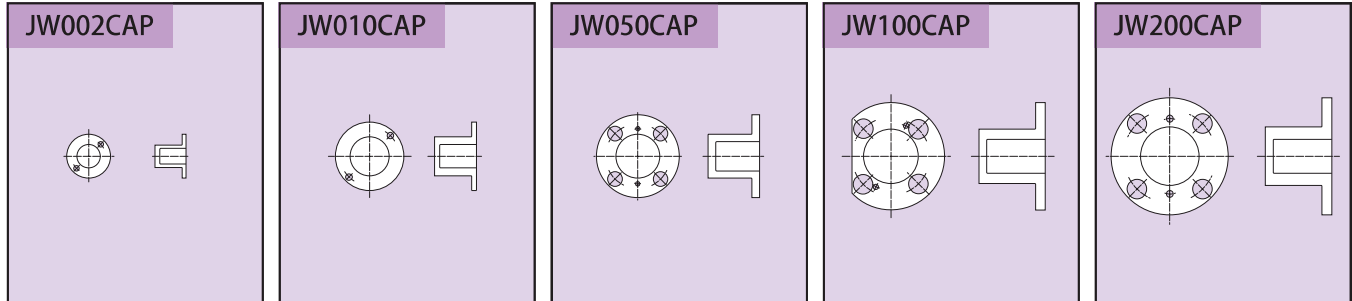
The cap is attached to the jack input shaft, on the other side of the motor unit.

By covering the shaft, a safety cap can prevent accidents and even prevent dust generation for clean room operations.

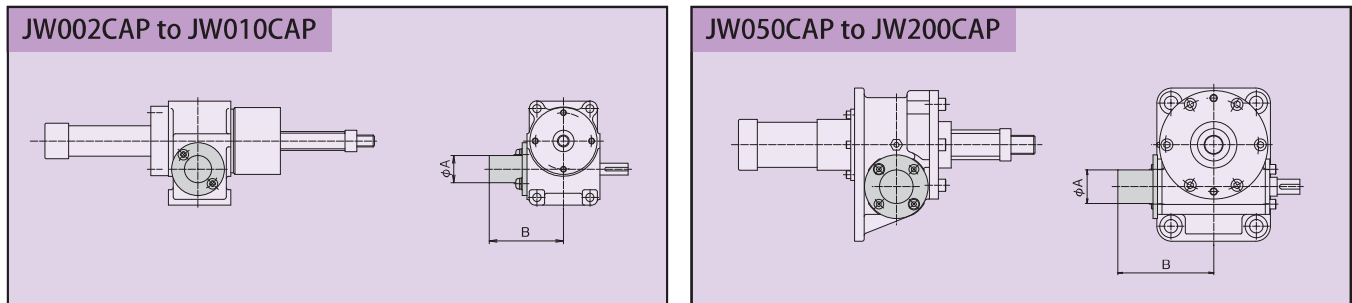
It is compatible with any of the three jack models: JWM (Machine Screw Type), JWB (Ball Screw Type) and JWH (High Lead Ball Screw Type).

Even if the jack body has already been purchased, safety caps can be installed subsequently.

Cap structure



Dimensional drawing



Unit: mm

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

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

Material : MC Nylon Color : Black

Safety caps made from other materials are also available.

Bellows

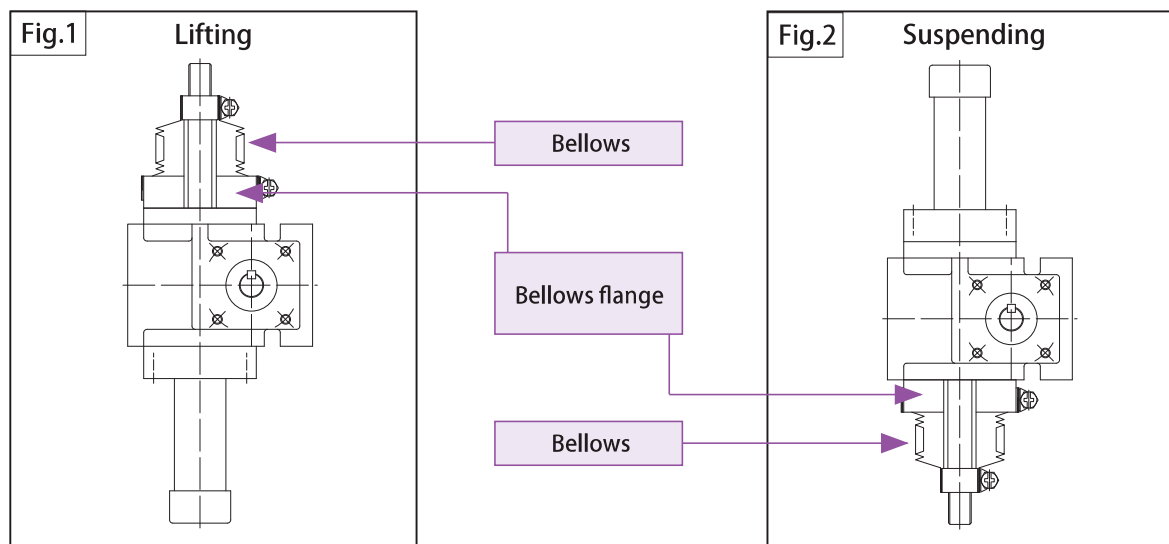
Use to protect jack components from liquid, chips, dirt, dust and other debris.

Bellows Below JW010

Sizes below JW010 with bellows are as follows.

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

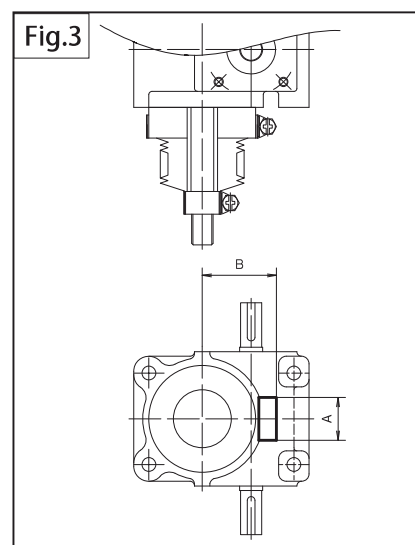
Jack Models { JWM002 • 005 • 010
JWB005 • 010
JWH010



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.

Unit: mm

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 Tsubakimoto chain to select the most suitable bellows for your High Lead Ball Screw.

[illegible]

Linipower Jack

Notes on Installation

Installation	P297•298
Maintenance and Inspection	P299
General Notes	P300
Glossary	P301

Installation

1. Orientation

Jacks can be installed horizontally, perpendicularly or inclined. Before installing, however, be sure to select the correct (lifting or suspending) jack type.

Since jacks have an open structure, grease or oil separated from grease may splatter or drop. Prepare oil pans or the like. Especially in the case of using a jack for suspending, grease may run down the screw shaft.

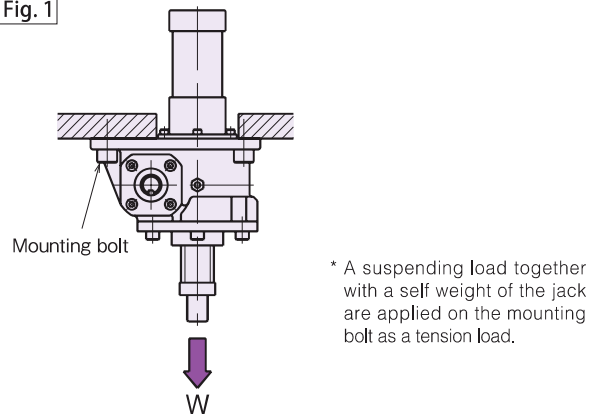
2. Installation Method

Tighten bolts into the 4 mounting holes in the gear case (mounting bolts are not provided). See Table 1 for bolt sizes. Strength class 8.8 or 10.9 bolts are usually used for mounting. Use 10.9 when load applies directly to the mounting bolts as in Fig. 1.

Table 1. Bolt Sizes

Frame No.	Mounting Hole	Bolt Size
JW002	4- ϕ 7	M6
JW005	4- ϕ 7	M6
JW010	4- ϕ 9	M8
JW025	4- ϕ 11	M10
JW050	4- ϕ 18	M16
JW100	4- ϕ 22	M20
JW150	4- ϕ 22	M20
JW200	4- ϕ 26	M24
JW300	4- ϕ 33	M30
JW500	4- ϕ 42	M39
JW750	4- ϕ 42	M39
JW1000	6- ϕ 42	M39
SJ030H	4- ϕ 14	M12
SJ050H	4- ϕ 18	M16

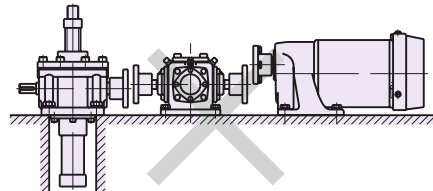
Fig. 1



3. Installing Motor, Reducer

When installing a motor and reducer unit in addition to the jack body, prepare a robust counter making allowance for a safety factor to prevent alignment accuracy at installation from being reduced even if the maximum load is applied. Make sure that the transmission shaft connected to the input shaft is aligned accurately (Fig.2). Using a floating shaft may result in malfunction due to vibration depending on rotation speed, therefore, sufficiently consider rigidity of the shaft and backlash of the coupling.

Fig. 2



4. Rotation Prevention

The jack's thrusting force may cause the screw shaft (nut in the case of ravel nut type) to rotate, in which case a rotation prevention is required. Screw rotation torque at the basic capacity is described in the standard specification list. When operating with the end connected, and pulling the rope or chain with a sheave or sprocket installed, use the rotation prevention type (symbol M).

5. Shaft End

Attach shaft end by applying an adhesive agent to its setscrew. It is possible for the shaft end to become detached by the rotational torque applied to the shaft. To avoid this, use one of the following adhesives:

<Tightening Agents>

Use the following brands or their equivalent.

Read instructions and safety precautions provided with each product before applying.

Tightening Agents

Brand	Model
Nihon Lock Tight	# 262, 271
Three Bond	# 1307N

<Fixing with set screw>

After tightening the end fitting, fix with the attached set screw (hexagon socket head screw) as a locking device.

6. Setting the Limit Switch

Consider maximum possible inertia before setting the limit switch. This means calculating the maximum coasting distance affected by specific load and installation conditions. Also, install a mechanical stopper within the stroke range in case of emergencies.

7. Setting the Position Detection Unit

An optional position detection unit (internal LS, potentiometer or rotary encoder) is not factory adjusted for its stroke. Make sure to adjust stroke prior to use. Control units such as the potentiometer and rotary encoder generate various signals by measuring the rotation number of the input shaft. Do not allow the screw shaft (nut in the case of the travel nut) to rotate after adjustment because the setting will deviate if the screw shaft is rotated with the input shaft fixed. When adjusting the internal LS, operate the jack manually or by inching with sufficient care so as not to exceed the stroke range of the jack. If the jack exceeds its stroke limit, the screw shaft may fall off or the bellows may be damaged.

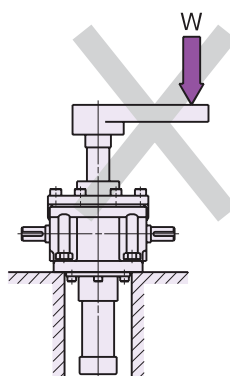
8. Horizontal use of jack with bellows

When using a jack with bellows in the horizontal direction (including use with swing), the screw shaft may catch the bellows, and damage the bellows, or result in failure of the jack. Please contact Tsubakimoto chain.

9. Caution

- ⚠ (1) Jacks that range under the standard capacity of 49.0kN {5tf} are provided with screw covers made of hard vinyl chloride pipe. Never suspend or carry a jack by its cover.
- ⚠ (2) Be certain that the jack rating exceeds the maximum possible stroke. If the stroke capacity is exceeded, the shaft may disengage from the unit or fail to function. Preventative devices for such situations are not provided for JWMs (Machine Screw Type) so over stroke must be avoided. Shaft protection provided for JWBs (Ball Screw Type) and JWHs (High Lead Ball Screw Type) is solely for the purpose of preventing shaft rotation during installation. When installing, be sure that the shaft does not rotate or move. When rotation cannot be avoided, use a rotation prevention type.
- ⚠ (3) Do not operate input shaft manually while loaded. Load pressure will rotate the shaft.
- ⚠ (4) Do not use mechanical stops. This will cause major internal damage.
- (5) Provide oil pans for food manufacturing machines to prevent oil from leaking into food products.
- (6) To install a screw shaft or cover to the base, avoid drilling large holes so as not to reduce the surface area of contact between the jack and the base.
- (7) Apply load in the same direction as that of the screw shaft. Load from inappropriate angles can bend the shaft (Fig. 3). For side load, make sure to use guides so the load or bending momentum do not apply directly to the jack.

Fig. 3



Maintenance and Inspection

1. Screw shaft and reducer unit are factory greased. See Table 1 for the type of grease used.
2. Regular lubrication intervals for the shaft screw are as recommended in Table 2. For the amount of grease, see Table 3. To regrease, expand the shaft to full stroke, remove old grease and apply using a grease gun or brush.
Grease for maintenance is also available. Contact Tsubakimoto Chain.
3. Reducer units should be greased based on the lubrication intervals shown in Table 2. However, these intervals may vary depending on operation frequency and conditions. Reducer units of JW025 or greater are provided with grease nipples and hexagon socket head plug. When greasing, remove the hexagon socket head plug and pour grease until grease seeps from the hole for the hexagon socket head plug. After greasing, firmly rewind the seal tape on the hexagon socket head plug to tighten so as to prevent grease from leaking.

Table 1. Recommended Grease

Part	Maker	Grease
Shaft	TSUBAKI	JWGS100G
	Idemitsu	* Daphne Eponex Grease SR No.1
	Nippon Grease	Niglube EP-1K
Reducer Unit	Exxon Mobil	Mobilux EP No.1
	Cosmo Lubricants	Cosmo Grease Dynamax EP No.1
	Showa Shell	Shell Alvania EP Grease 1

* Factory filled with this grease.

Note) JWGS100G is separately sold in a 100g container. (See page 280.)

Table 2. Lubrication Intervals

Operation Frequency	Lubrication Intervals		
	Machine screw shaft	Ball screw shaft	Reducer unit
50 to 100/day	1 month	3 months	3 months
10 to 50/day	3 months	3 months to 6 months	3 months to 6 months
1 to 10/day	6 mo.s to 1 yr.	6 mo.s to 1 yr.	6 mo.s to 1 yr.

* Numerical values described above do not indicate the life of screws and reducer units.

Table 3. Amount of Grease

Frame No.	Application quantity	Initial enclosed quantity
	Shaft (Stroke 100mm)	Reducer Unit
JW002	5g	35g
JW005	5g	35g
JW010	5g	80g
JW025	10 to 15g	170g
JW050	10 to 15g	370g
JW100	20 to 30g	470g
JW150	20 to 30g	700g
JW200	40 to 50g	830g
JW300	40 to 50g	2600g
JW500	50 to 100g	5500g

4. Grease upper bearings for JWB (Ball Screw Type) and JWH (High Lead Ball Screw Type) using the grease nipple set attached to their housings, at 6-month intervals. Not necessary for jacks JWB/JWH010 and below.
5. Inspect regularly for general backlash and screw unit condition. Jack life and replacement timing are determined by the following:
 - JWM···Backlash in the direction of screw shaft and nut hits 1/4 of the screw pitch.
 - JWB · JWH···Visible particles due to wear and tear of the screw unit.
 - All types···Replace gear when its input shaft exceeds 30 rpm with backlash at H speed, or exceeds 60 rpm at L speed.

⚠ Generally, continuous use without lubrication at recommended intervals may cause inefficiency of shafts and failure of travel nuts.
6. Adjust brake gaps for brake and gearmotors before their gaps reach their maximum capacities. Gap adjustment is not possible for gearmotors with outputs 25W or 40W. For details, see respective instruction manuals.

General Notes

- Carefully consider jack ratings before making a selection. Make sure that all anticipated loads, whether static, dynamic or shock, fall within the rated capacity of the jack at reasonable safety levels.
- Carefully consider the combination of screw shaft rpm and rated load. Also, take extra care in verifying rated buckling load, overhang load and shaft rpm. Exceeding the data provided in this catalog can cause major damage to the system.
- Confirm that the operating temperature of the jack is within -15 to 80°C . To measure, check the surface temperature of input shaft (or nut, if used). Make sure that all rotating parts are completely stopped before proceeding to measure.
- Do not exceed the maximum rpm of 1800/min.
- Continuous operation is not possible. Duty cycle at 30 minute intervals for JWM is within 20% ED, JWB and JWH are within 30% ED.

$$\text{Duty cycle (\%ED)} = \frac{1 \text{ Duty cycle}}{1 \text{ Duty cycle} + 1 \text{ Rest cycle}} \times 100\%$$

- Be sure not to exceed the maximum input torque for multiple jack systems by verifying the rated input torque for each jack.
- Activating torque should be maintained at 200% above the required torque.
- If operating in freezing temperatures, a change in viscosity may reduce the efficiency of the grease. Set the drive unit so as to accommodate this change.
- ⚠ Although JWM is equipped with a self-locking device, vibration and shock may affect its efficiency, in which case a brake unit is required. Because of their extremely high efficiencies, JWB and JWH must have sufficient brake units that over power their holding torques.
- ⚠ Evaluate operating environment based on the following:

Location	Indoors where rain and moisture are not present
Room Condition	Dust Volume - Normal
Ambient Temperature	-15°C to 80°C (See General Notes No.3)
Relative Humidity	85% or less (no dew condensation)

- When dust level is high, protect shaft with a bellows.
The bellows, which are not water-proof, do not prevent external water from entering and grease in the jack from penetrating to the outside.
(For outdoor use, place a cover to protect jack from factors such as rain and wind).

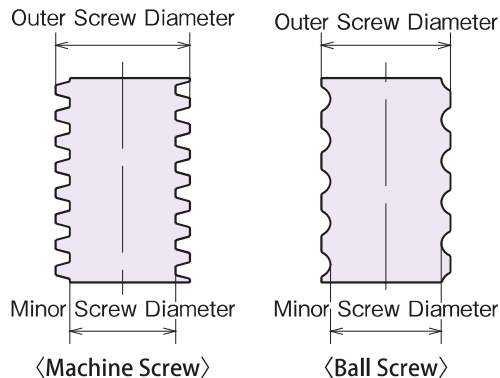
Glossary

① Basic Capacity :

The maximum possible load sustained or lifted by a jack.
Must be calculated by using the safety rate Sf.

② Outer Screw Diameter / Minor Screw Diameter:

As illustrated below.



③ Screw Lead :

Distance the shaft (or nut, if used) advances in one revolution of worm wheel.

④ Stroke :

Possible distance traveled by screw shaft (or nut). Derived from $X_{MAX} - X_{MIN}$.

⑤ Worm Ratio :

Number of input shaft revolutions required to complete one worm wheel revolution. (Gear ratio of input shaft and worm wheel.)

⑥ Overall Efficiency :

Total efficiency of the jack including those of the screw and the worm wheel.

⑦ Maximum Allowable Input Capacity :

Input capacity that can regulate the balance between load and screw shaft speed or input rpm.

Operate within the rated capacity of duty cycle (%ED) and reducer unit surface temperature (max.80°C).

⑧ Tare Drag Torque :

Torque required to rotate the input shaft of an unloaded jack.

⑨ Holding Torque :

Input torque required for sustaining basic load capacity.

⑩ Allowable Input Shaft Torque :

Maximum possible torque allowed for input shaft only. For multiple jack systems, it is the sum of total torque required for synchronous drive, and the actual amount of torque transferred from one jack to another.

⑪ Required Input Torque of Basic Capacity :

Input torque required at the input shaft to lift load of basic capacity.

⑫ Screw Movement Per Revolution of Input Shaft :

Distance the screw shaft (or nut) advances in one revolution of the input shaft.

⑬ Maximum Input rpm for Basic Capacity :

Maximum possible rpm applied to the input shaft to lift load of basic capacity.

⑭ Screw Shaft Rotational Torque for Basic Capacity :

Torque generated when the screw (or nut) auto-rotates to lift load of basic capacity. Rotation prevention must be installed either on the machine or the jack to prevent screw and nut from rotating simultaneously.

⑮ Rated Load :

Load derived from the maximum allowable input capacity once the input screw shaft rpm is determined.

⑯ Buckling :

Buckling is produced when the jack rapidly bends from excessive thrusts. Buckling load varies depending on installation condition and/or position.

⑰ Rated Screw Shaft rpm :

Screw shaft may resonate and vibrate when its rpm comes close to the eigen frequency. It is important that the rpm is lower than the resonance point or the rated screw shaft rpm. Must confirm this for travel nut types.

⑱ Coasting Distance (Inertia) :

Distance traveled after the motor is switched off. System inertia results in over travel depending on the load, brake size and operation circuit.

⑲ Stopping Accuracy :

Range of positions where the screw shaft stops after each operation.

⑳ Self-lock :

The ability to maintain load with no brake unit. Self-lock applies to all frame numbers for JWM (Machine Screw Type) 002 to 1000.

㉑ Duty Cycle :

The ratio of run time to total cycle time.

$$\text{Duty cycle (\%ED)} = \frac{1 \text{ Duty cycle}}{1 \text{ Duty cycle} + 1 \text{ Rest cycle}} \times 100(\%)$$

㉒ Thrust :

Power converted from rated torque that is used to lift maximum loads for motored or geared jacks. Motors must be selected carefully when used to run a jack with another motored jack. Also, select thrust for motored jacks with care.

㉓ Ball Screw Wear Life :

Ball screw wear life is determined by the distance advanced by the screw nut until the ball "flakes" from friction and fatigue. This distance varies even when operated under similar conditions. If the system runs without this "flaking" of the nut for more than 90% of the time, this is considered B10 or the rated ball screw wear life.

Linipower Jack

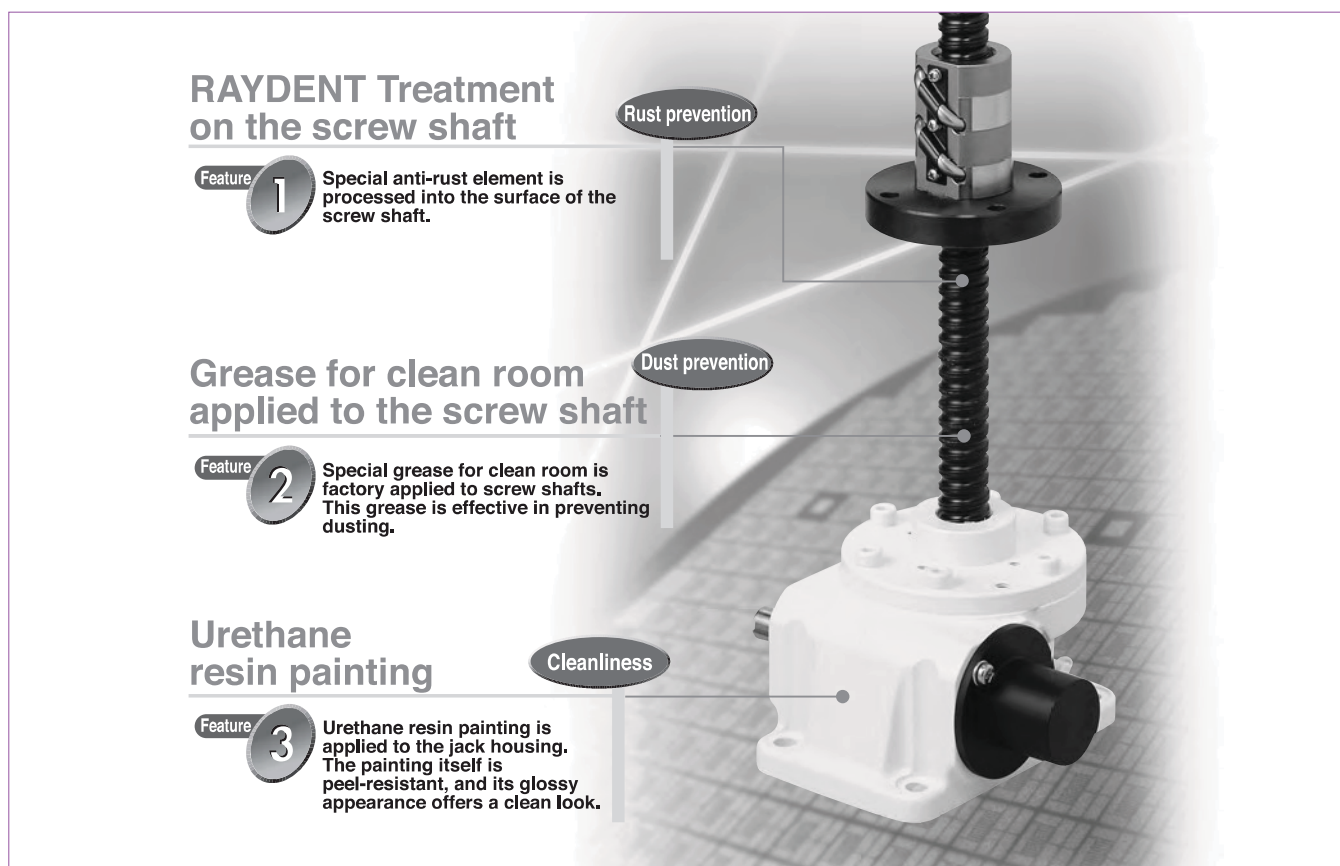
Product Information

Linipower Jack LD Type	P303
Linipower Jack Bevel Gear Type	P304
Mechatro Center	P305・306

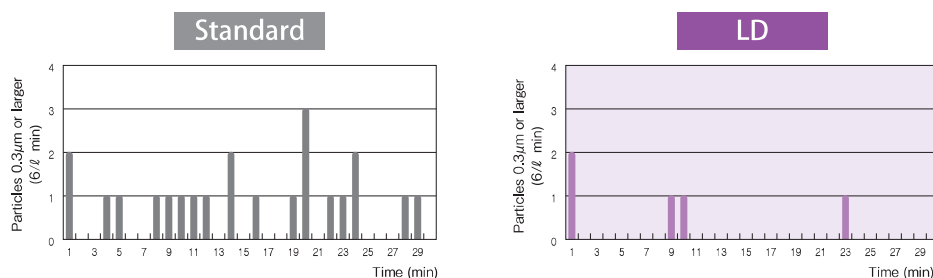
Linipower Jack LD Type

Excellent choice for clean room systems such as FDP (Liquid Crystal/PDP). This model regulates dust generation caused by wear as well as rust produced from the screw. Factory tested for dust volume, it is highly reliable for clean room operations.

1. Basic Specifications



2. Dust Emission Comparison Graphs (Our test results)



[Test Conditions]

Heading	Contents
Frame no.	JWB025URH5D (Travel nut type)
Speed	40mm/s (Fixed nut, lift/lower repetition, no load)
Location	Clean Room Clean Bench
Portion	Bottom of screw
Equipment	Laser Dust Monitor
Flow	6 ℓ /min
Measured dia. of particles	0.3 μ m and larger

* The above data is based on dust emitted from the screw portion. Use a safety cap to prevent dust from the oil seal in the input shaft portion. Dust is collected in this cap and prevented from entering into the atmosphere.

3. Options

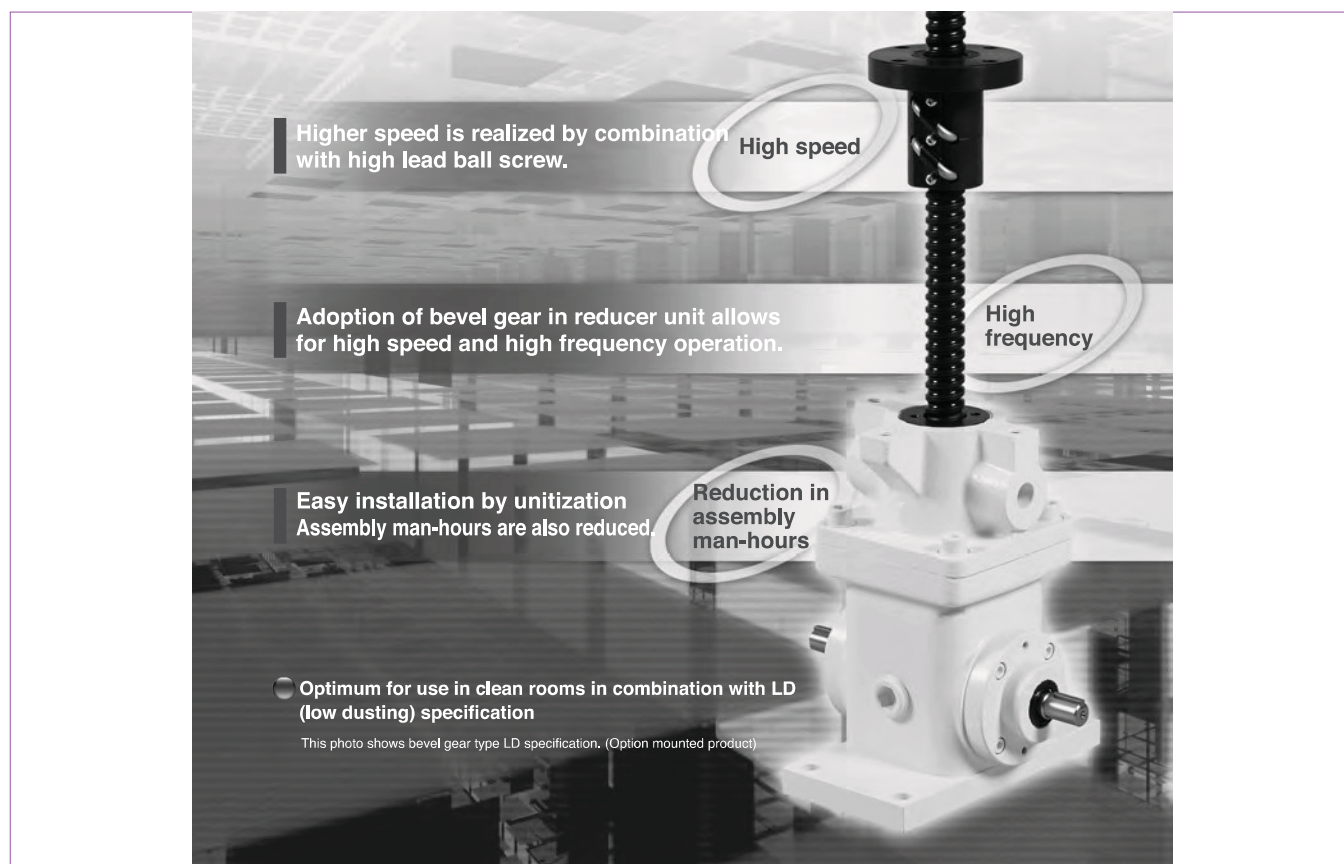
The following options are available with Linipower Jack LD Type:
(Select according to specific requirements)

- Input shaft.....Electroless nickel plating
- End fitting.....Electroless nickel plating
- Steel pipe.....Metallic screw cover
- Safety cap.....Plastic
- Ball nut.....RAYDENT treatment.

Linipower Jack Bevel Gear Type

Bevel gear type released in response to voices demanding high speed and high frequency operation.

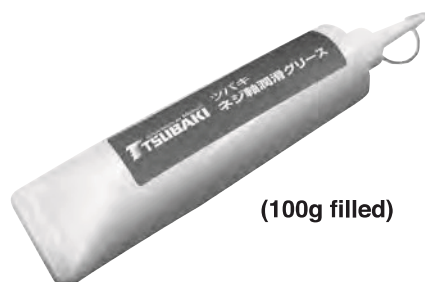
1. Basic Specifications



Lubrication Grease for Power Cylinder and Linipower Jack

TSUBAKI screw shaft lubrication grease

Model No.: JWGS100G



Linipower jack screw set on sale

Sets of screw shafts and nuts for linipower jacks are on sale. For screw specifications (screw diameter and screw lead), see the following pages.

Trapezoidal screw	P215 to 216 (up to $\phi 85$)
Ball screw	P241 to 242 (up to $\phi 85$)

For use and selection set with coupling and reducer, please feel free to consult with us.



Selection service

● Service contents

An optimum jack linkage system is offered according to customer application. Selection of drive part and peripheral equipment, preparation of layout drawing, etc., are flexibly handled.

Selecting calculation

The image shows a detailed technical calculation sheet for a jack linkage system. It includes various tables and formulas for selecting the drive source, coupling, gearbox, and jack. The sheet is organized into sections for different components and their specifications.

Selection of drive source
 · Type
 · Characteristics
 · Torque

Selection of coupling
 · Size
 · Length
 · Shaft diameter

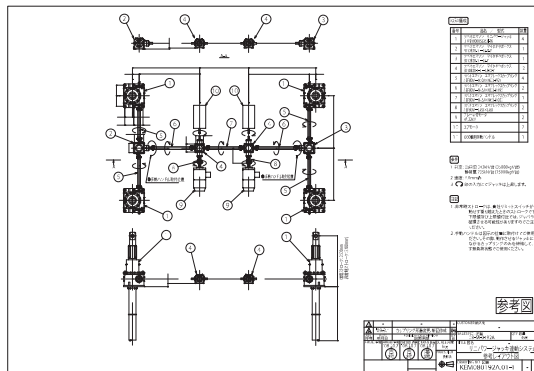
Selection of gearbox
 · Capacity
 · Gear ratio
 · Shaft arrangement

Selection of jack
 · Model No.
 · Buckling
 · Life

Quick response!

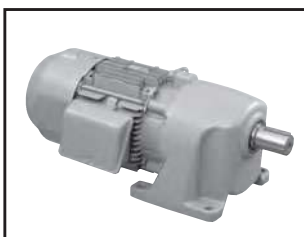
To improve design efficiency!

Preparation of layout drawing



[Reducers]

Gearmotor



- Low noise, compact, light
- 0.1 to 2.2 kW
Gear ratio 1/5 to 1/200
- Unique face mount (standard)
- Quiet, high performance brake.

Hypoid Motor

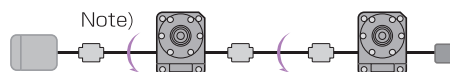


- Space saver
- 0.1 to 5.5kW
Gear ratio 1/5 to 1/1200
- Face or foot mounting and hollow shaft (all standard).
- Quiet, high performance brake.

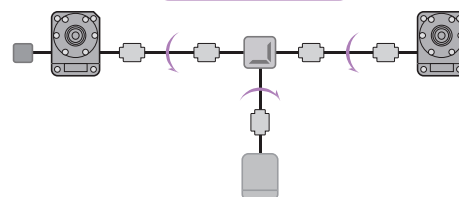
For linkage of two

[Ideally, T-type]

Straight type

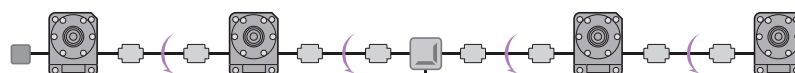


T-type

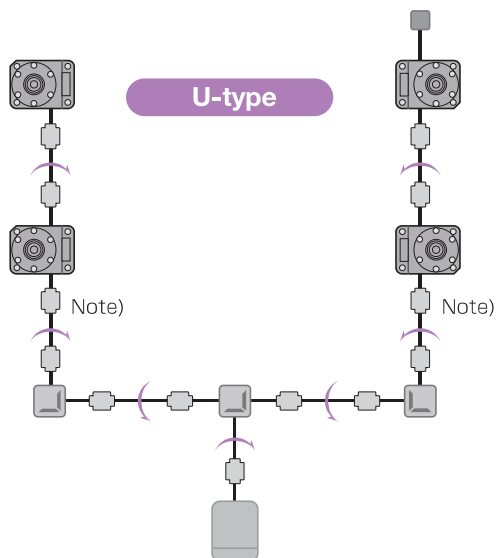


For linkage of four

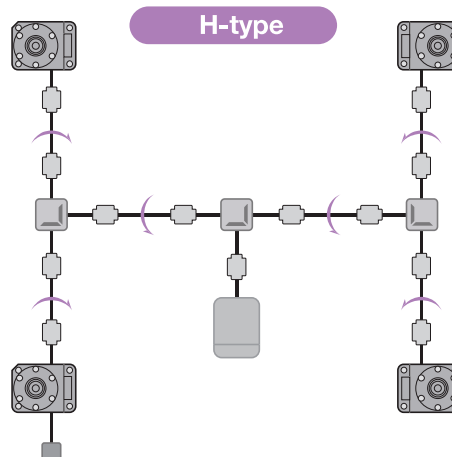
Ideally, H-type



T-type



U-type



H-type



...Linipower Jack



...Drive Source



...Coupling



...LS Counter Position Sensor



...Gear Box

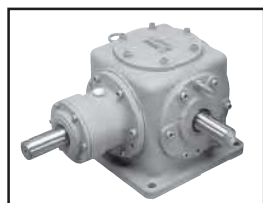


Jacks lift as rotational input is applied in the direction of each arrow.

Note) Consider allowable input torque when driving in series.

[Gear Boxes]

Miter Gear Box



- Gear ratio 1 : 1 size 10
- Gear ratio 1.5 : 1 size 5
- Gear ratio 2 : 1 size 9
- Gear ratio 2.5 : 1 size 5
- Gear ratio 3 : 1 size 5
- Enhanced performance by new AGMA standards.
- Wide variation of models.
- High reliability

[Coupling]

ECHT-FLEX® coupling



- Torque range : 2.9 to 176400 N·m
- Bore diameter range : 5 to 289 mm
- No backlash, high efficiency and servo motor compatible.
- Requires less maintenance, no lubrication and long life.
- Long Spacer Types requiring no bearings available.

Jaw Flex Coupling



- Compact, light
- Simple
- Easy to un/install

Ask Tsubakimoto Chain for other protecting devices such as shock relays, torque limiters, and shock guards.

This image shows a full page of white paper designed for handwriting practice. It features numerous horizontal dashed lines spaced evenly across the page, providing a guide for letter height and placement. There are no margins, text, or other markings on the paper.

Inquiry Form

Power Cylinder Inquiry Form

Inform Tsubakimoto Chain of the following items when making an inquiry.

Company name: _____

Your name: _____

Phone : _____

FAX : _____

Address: _____

Basic Specification	1. Application load (thrust)	Normal operation	N{kgf}	Max	N{kgf}
	2. Speed	mm/s (at 50Hz, 60Hz)			
	3. Stroke	Actual stroke	mm	Max stroke	mm
Electric Motor	4. Power source	3-phase 200V/50Hz, 200V/60Hz, 220V/60Hz 3-phase 400V/50Hz, 400V/60Hz, 440V/60Hz [Others]			
	5. Special specification	Brake, Outdoors [Others]			
Operating Environment	6. Operation	times/min x min/hr x hrs./day x days/yr (Back and forth count as 2 times)			
	7. Ambient temperature	°C			
	8. Mounting location	Indoor, Outdoors [Others]			
	9. Dust	Average, High			
	10. Control device	Stroke adjustment external limit switch, Thrust detection limit switch, Internal limit switch, Potentiometer, Rotary encoder [Others]			
	11. Others	Trunnion fitting, clevis fitting, I-shape end fitting [Others]			

Layout and other information

Servo Type Inquiry Form

Inform Tsubakimoto Chain of the following items when making an inquiry.

Company name: _____

Your name: _____

Phone: _____

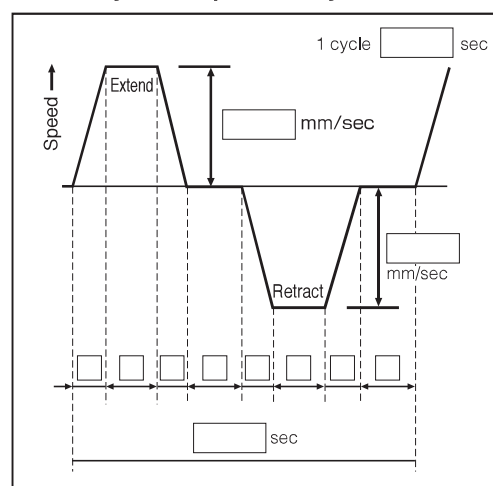
FAX : _____

Address: _____

[Equipment standard condition] Description of equipment used

Type and property of load	☐ Horizontal ☐ lift ☐ suspension ☐ tilt ☐ others extent of shock, inertia and vibration ☐ Small ☐ Middle ☐ Large			
Transfer mass	_____ kg		_____ kg	
Necessary thrust	Normal operation _____ N (kgf)	Max. _____ N (kgf)		
Speed	Normal operation _____ mm/s	Max. _____ mm/s		
Stroke	Normal operation _____ mm	Max. _____ mm		
Operating frequency (Back and forth count as 2 times)	times/min x	min/hr x	hrs./day x	days/yr
Power cylinder expected life	() years operating			

[Power cylinder operation cycle]



[Servomotor used]

Servomotor manufacturer	_____	Servomotor model No.	_____
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[Other conditions]

Operating Environment	Ambient temperature	_____ °C
	Location	☐ Indoor ☐ Others ()
	Dust	☐ Nearly average ☐ Others ()
	Power source	☐ 3-phase 200/200 220V AC 50/60/60Hz ☐ Others ()
	Others	☐ Trunnion fitting ☐ U-shape end fitting ☐ Magnetic sensor ☐ Bellows ☐ Others ()

Layout and other information _____

Linipower Jack Inquiry Form

Inform Tsubakimoto Chain of the following items when making an inquiry.

Company name: _____ Your name: _____

Phone _____ FAX : _____

Address: _____

Operating condition	Equipment or load condition	Equip. description _____ • no shock light load • moderate shock medium load • severe shock heavy load
	Overall equip. weight/No.of jacks	Equip. Max load _____ kN { _____ tf}/Jack (Equip. Min. load _____ kN { _____ tf)/Jack)
	Installation form	Standard specification (Lift/Suspend) With/Without Rotation prevention Travel Nut (Lift/Suspend)
	Installation condition (Buckling safety rate sf)	A. Fixed base, and free shaft end B. Clevis on both ends C. Fixed base and fixed shaft end (Sf= _____) Leave open if no buckling load applies to the screw shaft.
	Screw type	Machine screw type Ball screw type High lead screw type

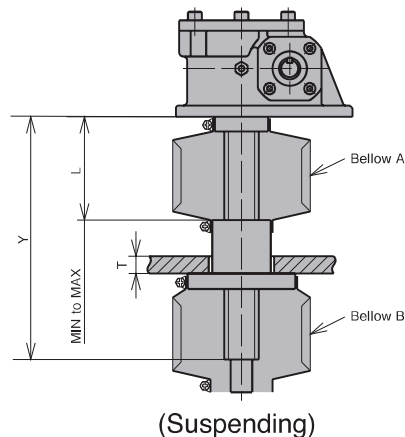
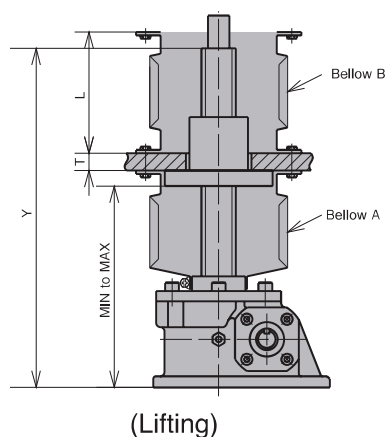
Three specifications	1. Load requirement	Load /Jack based on above information _____ kN { _____ tf}
	2. Speed	_____ to _____ mm/s (_____ to _____ mm/min)
	3. Stroke	Actual Stroke _____ mm Max. stroke _____ mm

Operating condition	Operation	_____ times/min x _____ min/hr x _____ hrs./day x _____ days/yr (Back and forth count as 2 times)
	Source	Motor with brake (Gearmotor with brake)
	Power	_____ kW (1/ _____) Others _____
	Input R.P.M	_____ V _____ Hz
	Ambient temperature	_____ r/min _____ °C
	Equipment condition	Location _____ with/without guides
	Dust	Average High with / without bellows Others _____
	Control device	Counter limit swich • Internal limit swich • Potentiometer • Rotary encoder • Others _____
Others	Shaft end (B•I•M type end fitting) • Hand wheel • Clevis • Others _____	

Layout and other information

Bellows Inquiry Form for Travel Nut Type

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



① Jack model No. _____

② Actual stroke _____ mm
MIN _____ mm to MAX _____ mm

③ Type of bellows
Bellows A Band-band, band-flange, flange-flange
Bellows B Band-band, band-flange, flange-flange

④ Jack screw shaft length limited yes / no
Y= _____ mm

⑧ Bellows L measurements L
L_{MIN} _____ mm to L_{MAX} = _____ mm (bellows A)
L_{MIN} _____ mm to L_{MAX} = _____ mm (bellows B)

⑤ Base measurements
T= _____ mm

⑨ Bellows attachment opening ϕC
 ϕC_{A1} = _____ mm ϕC_{A2} = _____ mm (bellows A)
 ϕC_{B1} = _____ mm ϕC_{B2} = _____ mm (bellows B)

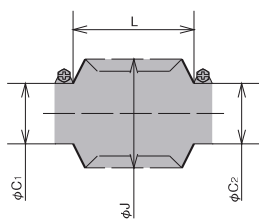
⑥ Maximum outer diameter of bellow ϕJ
No Limit, ϕJ_A = _____ mm ϕJ_B = _____ mm

⑦ Flange type and structure (Record only if flange type was selected in ③).

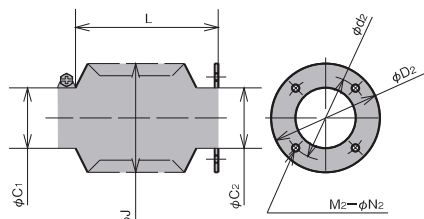
ϕD_{A1} = _____ mm	ϕd_{A1} = _____ mm	bolt mounting part	M1 = _____ Pcs	ϕN_1 = _____ mm	(bellows A)
ϕD_{A2} = _____ mm	ϕd_{A2} = _____ mm	bolt mounting part	M2 = _____ Pcs	ϕN_2 = _____ mm	
ϕD_{B1} = _____ mm	ϕd_{B1} = _____ mm	bolt mounting part	M1 = _____ Pcs	ϕN_1 = _____ mm	(bellows B)
ϕD_{B2} = _____ mm	ϕd_{B2} = _____ mm	bolt mounting part	M2 = _____ Pcs	ϕN_2 = _____ mm	

● Bellows Types

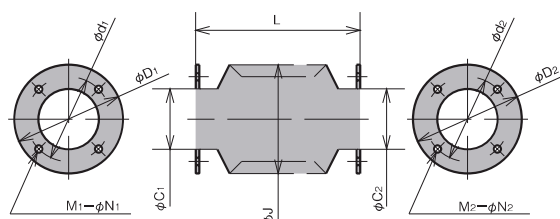
Band - Band Type



Band - Flange Type



Flange - Flange Type



This image shows a full page of white paper designed for handwriting practice. It features approximately 20 evenly spaced horizontal dashed lines running across the entire width of the page. There are no margins, text, or other markings present.

SAFETY



Warning Observe the following safety precautions to prevent serious injuries.

- Do not release the brake while jack is loaded. If the brake is released under loaded conditions, suspended objects may fall and lead to accidents.
- Make sure the jack is not loaded when manually operated. Operate jack according to the instruction manual.
- During suspending operations, provide safety guards to prevent load from falling and never stand under the jack.
- Observe the Labor Safety & Hygiene Regulations, General Criteria, Paragraph 1, Chapter 1, Edition 2, or your local regulations.
- Installation, removal, maintenance and inspection:
 - Carry out operation according to the instruction manual.
 - While performing electrical wiring, observe laws and regulations such as Electricity Equipment Criteria and Extension Rules, as well as the cautions (e.g. direction, space, operating conditions, etc.) indicated in the manual. Be especially careful in following the instructions on grounding to prevent electric shocks.
 - Turn off the power and make sure that it does not reconnect accidentally.
 - Wear appropriate clothing and protective gears (safety glasses, gloves, safety shoes, etc.).



Caution Observe the following safety precautions to prevent accidents.

- Always operate within the allowable stroke range. Operating a jack outside its allowable stroke range may result in accidents.
- Before switching on the jack, make sure the limit switches have been wired correctly and the stroke has been adjusted appropriately.
- The motor must be driven within the correct electrical voltage range to prevent motor burnout or fire.
- Efficiencies of parts may decrease with wear and age. Carry out periodic inspections as set forth in the manual.
When the parts are no longer functioning or are ineffective, please contact a TSUBAKI distributor for repair.
- Read the manual provided with the product thoroughly before operating and refer to it as necessary. If the instruction manual is misplaced, request a replacement copy from TSUBAKI or your TSUBAKI distributor, indicating the product name, series, and model number.
- The instruction manual must be delivered to the final user.

Warranty

1. Warranty period without charge

18 months effective the date of shipment or 12 months effective the first use of Goods, including installation of Goods to Buyer's equipment or machine - whichever comes first.

2. Warranty coverage

Should any damage or problem with the Goods arise within the warranty period, given that the Goods were operated and maintained according to the instructions provided in the manual, Seller will repair and replace at no charge once the Goods are returned to the Seller. This warranty does not cover the following:

- 1) Any costs related to removal of Goods from the Buyer's equipment or machine to repair or replace parts.
- 2) Cost to transport Buyer's equipment or machine to the Buyer's repair shop.
- 3) Costs to reimburse any profit loss due to any repair or damage and other consequential losses caused by the Buyer.

3. Warranty with charge

Seller will charge any investigation and repair of Goods caused by:

- 1) Improper installation by failing to follow the instruction manual.
- 2) Insufficient maintenance or improper operation by the Buyer.
- 3) Incorrect installation of Goods to other equipment or machine.

4) Any modifications or alterations of Goods by the Buyer.

5) Any repair by engineers other than the Seller or those designated by the Seller.

6) Operation in an inappropriate environment not specified in the manual.

7) Force Majeure or forces beyond the Seller's control such as natural disasters and injustices done by a third party.

8) Secondary damage or problem incurred by the Buyer's equipment or machine.

9) Defected parts supplied, or specified by the Buyer.

10) Incorrect wiring or parameter setting by the Buyer.

11) The end of life cycle of the Goods under normal usage.

12) Loss or damage not liable to the Seller

4. Dispatch service

Service to dispatch a Seller's engineer to investigate, adjust or trial test Seller's Goods is at the Buyer's expense.



Caution

This catalog does not include operating instructions. Read the actual manual thoroughly before installing or operating the product.



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Global Group Companies

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CHINA

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