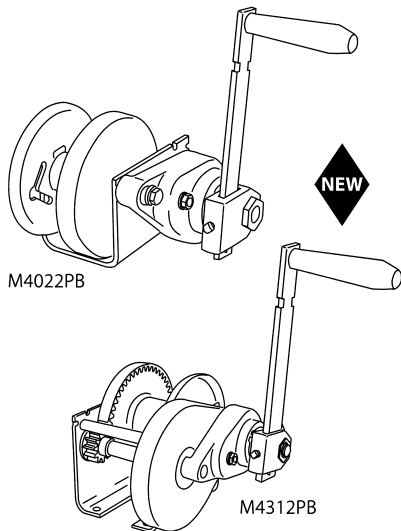


Spur Gear Hand Winches

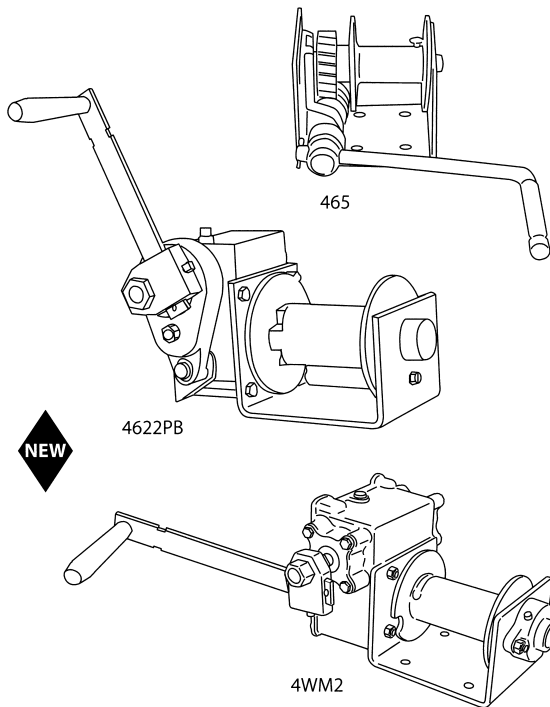
Up to 2,000 lb capacity



- **Machine Cut Spur Gears** for accurate and long lasting service.
- **Automatic Brake Models** provide positive load control for lifting and lowering operations. Brake models have PB suffix.
- **Corrosion Resistant** zinc and iridescent dichromate plated finish protects against corrosion in harsh environments.
- **Quick Disconnect Anchor** for quickly attaching or removing wire rope equipped with a swagged ball fitting.
- **Bronze and radial ball bearings** provide smooth and efficient operation.
- **Large Diameter Drums** minimize wear to extend wire rope life.
- **Gear Covers** protect gears and help prevent injuries.
- **Stainless Steel Models Available** for harsh environments, see models with SS suffix. Stainless steel models are electro-polished for added corrosion resistance.
- **Wire Rope Assemblies** sold separately.

Worm Gear Hand Winches

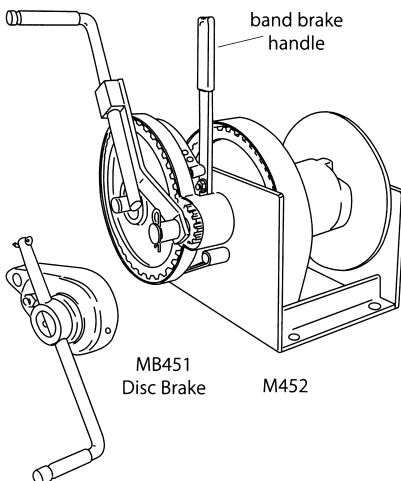
Up to 4000 lb capacity



- **Machine Cut Worm Gears** provide accurate operation and long lasting service.
- **Enclosed Oil Bath** provides continuous lubrication of gears to minimize wear, except on Model 465. On Model 4WM2 oil seals keep oil in and dirt out.
- **Hex Drive** and handle are included. Model 4WM2 can be power driven with a maximum 400 rpm drill-motor.
- **Automatic Brake Models** provide positive load control for lifting. Brake models have a PB or B suffix. Model 4WM2 features an internal mechanical brake.
- **Corrosion Resistant** durable paint finish protects against corrosion in harsh environments.
- **Bronze Bearings** on most models for smooth operation.
- **Large Diameter Drums** minimize wire rope wear.
- **Handles Adjust** in length to change force required to move the load.
- **Mounting Options** include floor, wall, or ceiling. Add 10% for factory modification for wall or ceiling mount, adapter plate may be required.
- **Wire Rope Assemblies** sold separately.

Spur Gear Hand Winches Double Reduction

Up to 10,000 lb capacity



- **Machine Cut Spur Gears** for accurate and long lasting service.
- **Automatic Brake Models** provide positive load control for lifting and lowering operations. Brake models have B suffix.
- **Corrosion Resistant** durable paint finish combined with zinc and iridescent dichromate plating protects against corrosion.
- **Bronze and radial ball bearings** provide smooth and efficient operation.
- **Large Diameter Drums** minimize wear to extend wire rope life.
- **Spring Loaded Ratchets** for positive engagement with gear.
- **Steel Gear Covers** protect gears and help prevent injuries.
- **Handles Adjust** in length to change force required to move load.
- **Wire Rope Assemblies** sold separately.

Spur Gear Hand Winches – Configurations and Performance Characteristics

model number	description	load rating (lb)			wire rope dia.	drum capacity (ft) ¹			single gear ratio	double gear ratio	force ² to lift 1000 lb	approx. ship wt. (lb)
		1st layer	mid drum	full drum		1st layer	mid drum	full drum				
M401	500 lb – marine duty (for pulling only)	500	400	300	1/8 3/16	7 4	60 27	130 60	—	—	—	8
M4022	1000 lb – marine duty (for pulling only)	1000	700	500	1/8 3/16	4 3	52 26	130 57	2.85:1	—	40 lb	11
M4022PB	1000 lb – marine duty with brake (for lifting)	1000	700	500	1/8 3/16	4 3	52 26	130 57	2.85:1	—	41 lb	15
M4032	1000 lb – marine duty (for pulling only)	1000	700	500	1/8 3/16	11 7	110 51	250 110	2.85:1	—	40 lb	13
M4032PB	1000 lb – marine duty with brake (for lifting)	1000	700	500	1/8 3/16	11 7	110 51	250 110	2.85:1	—	41 lb	17
M4042PBSS	1000 lb – stainless steel with brake (for lifting)	1000	800	600	1/8 in 3/16 in 1/4 in	12 8 5	110 48 27	240 110 59	3.83:1	—	46 lb (single gear)	24
M4312	2000 lb – marine duty (for pulling only)	2000	1600	1200	3/16 1/4 5/16	8 5 4	48 27 17	110 59 39	3.83:1	14.7:1	20 lb (double gear)	23
M4312PB	2000 lb – marine duty with brake (for lifting)	2000	1600	1200	3/16 1/4 5/16	8 5 4	48 27 17	110 59 39	—	14.7:1	17 lb (double gear)	28
M4312PBSS	2000 lb – stainless steel with brake (for lifting)	2000	1600	1200	3/16 in 1/4 in 5/16 in	8 5 4	48 27 17	110 59 39	—	14.7:1	17 lb (double gear)	28
M4412	2000 lb – marine duty (for pulling only)	2000	1600	1200	3/16 1/4 5/16	18 14 11	97 52 35	210 120 77	3.83:1	14.7:1	20 lb (double gear)	25
M4412PB	2000 lb – marine duty with brake (for lifting)	2000	1600	1200	3/16 1/4 5/16	18 14 11	97 52 35	210 120 77	—	14.7:1	17 lb (double gear)	30

Worm Gear Hand Winches – Configurations and Performance Characteristics

model number	description	load rating (lb)			wire rope dia. (in)	drum capacity (ft) ¹			gear ratio	force ² to lift 1000 lb	approx. ship wt. (lb)
		1st layer	mid drum	full drum		1st layer	mid drum	full drum			
465	750 lb – open gears (recommended for pulling only)	750	600	400	1/8 3/16	7 4	58 27	130 59	20:1	21 lb	12
462	1000 lb – enclosed gearing (recommended for pulling only)	1000	700	500	1/8 3/16	7 4	61 28	140 61	15:1	34 lb	15
4622PB	1000 lb – enclosed gearing with brake (for lifting)	1000	700	500	1/8 3/16	7 4	61 28	140 61	15:1	26 lb	20
472	2000 lb – enclosed gearing (recommended for pulling only)	2000	1700	1300	3/16 1/4 5/16	15 11 8	65 35 23	140 77 52	24:1	24 lb	32
4WM2	2000 lb – enclosed gearing with brake (for lifting)	2000	1500	1200	1/4	11	35	77	32:1	14 lb	43
	ED120BD – electric drill-motor drive kit – for 4WM2 only – 400 rpm – 120 VAC with 1-1/8" hex socket										12
482	4000 lb – enclosed gearing (recommended for pulling only)	4000	3300	2500	1/4 5/16 3/8	23 18 14	140 91 65	300 200 140	26:1	31 lb	97
482B	4000 lb – enclosed gearing with brake (for lifting)	4000	3300	2500	1/4 5/16 3/8	23 18 14	140 91 65	300 200 140	26:1	31 lb	110

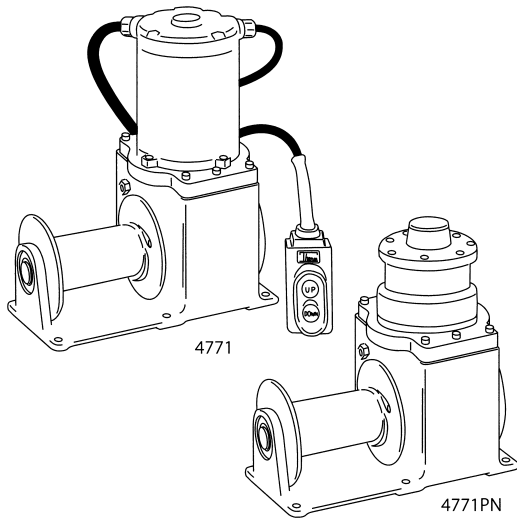
Spur Gear Hand Winches – Configurations and Performance Characteristics

model number	description	load rating (lb)			wire rope dia.	drum capacity (ft) ¹			single gear ratio	double gear ratio	force ² to lift 1000 lb	approx. ship wt. (lb)
		1st layer	mid drum	full drum		1st layer	mid drum	full drum				
M452	4000 lb – marine duty (for pulling only)	4000	3300	2500	1/4 5/16 3/8	23 18 14	130 89 64	300 200 140	4.42:1	19.54:1	10 lb (double gear)	81
M452B	4000 lb – marine duty with brake (for lifting)	4000	3300	2500	1/4 5/16 3/8	23 18 14	130 89 64	300 200 140	—	19.54:1	10 lb (double gear)	89
M452B-A	4000 lb – marine duty with brake (for lifting) 4 inch drum width	4000	3300	2500	1/4 5/16 3/8	13 9 7	83 56 40	190 120 89	—	19.54:1	10 lb (double gear)	75
M492	10,000 lb – marine duty (for pulling only)	10,000	7400	5400	5/16 3/8 1/2	27 21 15	240 170 100	540 390 230	5.00:1	25.00:1	8 lb (double gear)	166
M492B	10,000 lb – marine duty with brake (for lifting)	10,000	7400	5400	5/16 3/8 1/2	27 21 15	240 170 100	540 390 230	—	25.00:1	8 lb (double gear)	173
M492-12	10,000 lb – marine duty (for pulling only) 12 inch drum width	10,000	7400	5400	5/16 3/8 1/2	46 37 27	380 270 160	850 610 360	5.00:1	25.00:1	8 lb (double gear)	183
M492B-12	10,000 lb – marine duty with brake (for lifting) 12 inch drum width	10,000	7400	5400	5/16 3/8 1/2	46 37 27	380 270 160	850 610 360	—	25.00:1	8 lb (double gear)	190
MB451	disc brake only for M452 (for lifting)										13	
MB491	disc brake only for M492 and M492-12 (for lifting)										15	
HW452	hand wheel only for M452 (for pulling only)										19	
HW492	hand wheel only for M492 and M492-12 (for pulling only)										20	

¹ Actual drum capacities may be 25-30% less, due to nonuniform winding. Wire rope tension will also affect drum capacity.

² Approximate handle force required to lift 1000 lb with an empty drum, and maximum handle length.

³ Please contact factory or nearest Tern Distributor for firm fixed price and delivery.



Series 477 Helical/Worm Gear Power Winches

Up to 2000 lb capacity

- **Machine Cut Gears** for accurate and long lasting service.
- **Enclosed Oil Bath** provides continuous lubrication of gears to minimize wear. Oil seals keep oil in and dirt out.
- **Internal Mechanical Brake** for positive load control.
- **Cast Aluminum** construction for lightweight strength, with durable paint finish to resist corrosion.
- **Ball Bearings** ensure smooth and efficient operation.
- **Series 4777** is designed with a 4 inch wide drum for tight fleet angle installations.
- **Accessory Options** include limit switches, cable pressure plates, torque limiting controls, and manual overrides.
- **Wire Rope** sold separately.

Series 477 – Configurations and Performance Characteristics

model number	motor description	amps		load rating (lb)			wire line speed (fpm)			drum capacity (ft) ¹			approx. ship wt. (lb)
		motor hp	full load	1st layer	mid drum	full drum	rope dia. (in)	1st layer	full drum	1st layer	mid drum	full drum	
4771 ²	115/1/60 VAC – 6 ft pendant	1.2	16	2000	1500	1200	5/16	13	22	13	40	90	88
4771AC-1PH	115/1/60 VAC – less controls	1.2	16	2000	1500	1200	5/16	13	22	13	40	90	87
4771AC-1PH2	115/230/1/60 VAC – less controls	1.5	16/8	2000	1500	1200	5/16	13	22	13	40	90	115
4771AC-3PH ⁵	230/460/3/60 VAC – less controls	1.5	5/2.5	2000	1500	1200	5/16	13	22	13	40	90	111
4771DC ⁶	12 VDC – with 10 ft pendant	1.0	100	2000	1500	1200	5/16	13	22	13	40	90	105
4771PN ^{6,7}	pneumatic – less controls	1.2		2000	1500	1200	5/16	13	22	13	40	90	74
4771HY ^{6,7}	hydraulic – less controls	2.3		2000	1500	1200	5/16	13	22	13	40	90	72
4777 ²	115/1/60 VAC – 6 ft pendant	1.2	16	2000	1500	1200	5/16	13	22	7	27	60	93
4777DC ⁶	12 VDC – with 10 ft pendant	1.0	100	2000	1500	1200	5/16	13	22	7	27	60	105

¹ Actual drum capacities may be 25-30% less, due to nonuniform winding. Tension in wire rope will also affect drum capacity.

² Motor includes an 8 ft. power cord with grounded plug, and a push button pendant control on 6 ft cord.

³ Please contact factory or nearest Tern Distributor for firm fixed price and delivery.

⁴ For Model 4771AC-3PH, please specify voltage when ordering.

⁶ For pneumatic, hydraulic, and DC models, line speed is based on rated load, actual line speed varies with load weight and power supply.

⁷ For Model 4771PN, ratings are for 80 cfm at 100 psi. For Model 4771HY, ratings are for 4 gpm at 1000 psi.

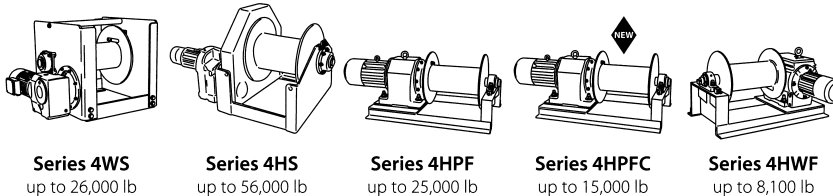
Series 477 – Controls

model	description	approx. ship wt.
477CS ⁸	control switch – for AC models (mounted and wired)	3 lb
477CSW ⁸	weatherproof control switch – for AC models (mounted and wired)	4 lb
477PN-CNTRL	pneumatic control valve (not mounted or plumbed, no hoses)	6 lb
477PN-HS6	6 ft hoses for pneumatic controls (not plumbed)	4 lb
477HY-CNTRL	hydraulic control valve (not mounted or plumbed, no hoses)	5 lb
477HY-HS6	6 ft hoses for hydraulic controls (not plumbed)	4 lb

³ Please contact factory or nearest Tern Distributor for firm fixed price and delivery.

⁸ Controls for 115 volt, single phase, 60 cycle include an 8 ft. power cord with grounded plug.

Power Winches – for LIFTING or PULLING –



Series 4WS
up to 26,000 lb

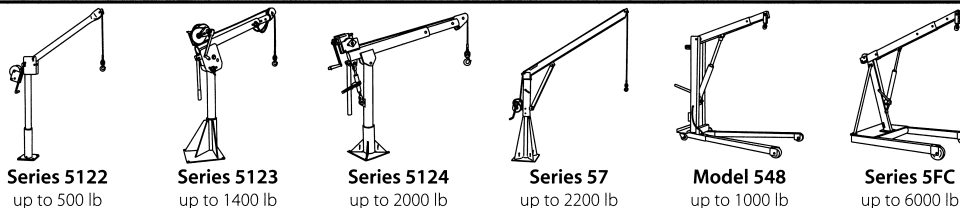
Series 4HS
up to 56,000 lb

Series 4HPF
up to 25,000 lb

Series 4HPFC
up to 15,000 lb

Series 4HWF
up to 8,100 lb

Davit and Floor Cranes



Series 5122
up to 500 lb

Series 5123
up to 1400 lb

Series 5124
up to 2000 lb

Series 57
up to 2200 lb

Model 548
up to 1000 lb

Series 5FC
up to 6000 lb