



HAND WINCHES

SPUR GEAR



SPUR GEAR

HAND WINCHES—UP TO 2,000 LBS



LIGHT-DUTY PERFORMANCE

with Robust Construction & Features

The Spur Gear Series of hand winches (up to 2,000 pounds) is a popular, versatile solution for lifting, lowering, and positioning loads in a variety of applications. Yet, it incorporates the same uncompromised quality and features for which Thern is known. Heavy steel construction, clear zinc-coated finish, machine-cut steel gears, bronze bushings, and radial ball bearings deliver rugged-duty service that will last. It's perfect for construction, maritime, and manufacturing environments.

Adjustable Handle

- Adjustable handle provides ability to increase mechanical advantage or speed as load weight varies

Solid Steel Machine-Cut Gears

- Precision-cut, zinc-coated steel gears resist corrosion, increase efficiency, and provide accurate and durable operation

Composite Gear Guards

- Glass-filled nylon, encased gear guard enhances safety and includes grease zerks for easy lubrication

Welded Steel Drum

- Robust drum design and large spool diameter minimize drum wear and extend wire rope life

Quick-Disconnect Anchor

- Swaged ball fitting holds load and allows additional flexibility for quickly attaching or removing wire rope

Product Shown:
M4312PB

Automatic Weston-Style Brake

- Spring-engaged, ratchet-pawl design offers additional reliability and positive load control for lifting and lowering
- Enclosed (pawl and ratchet) envelope keeps brake clean, dry, and protected for reliable service and haptic feedback
- Durable friction discs reduce wear and increase service life



PERFORMANCE

Series	IMPERIAL					
	Load Rating	Finish	Drum	Brake	Drum Capacity	Force to Lift 1,000 lbs
M4022PB	1,000 lbs	Clear Zinc Plating	Narrow	Yes	130 ft	41 lbs
M4032PB	1,000 lbs	Clear Zinc Plating	Wide	Yes	250 ft	41 lbs
M4042PBSS	1,000 lbs	Stainless	Wide	Yes	240 ft	46 lbs
M4312PB	2,000 lbs	Clear Zinc Plating	Narrow	Yes	110 ft	17 lbs
M4312PBSS	2,000 lbs	Stainless	Narrow	Yes	110 ft	17 lbs
M4412PB	2,000 lbs	Clear Zinc Plating	Wide	Yes	210 ft	17 lbs

Available Non-Brake Units

- Non-brake unit allows additional flexibility in horizontal pulling applications only

Series	METRIC					
	Load Rating	Finish	Drum	Brake	Drum Capacity	Force to Lift 453 kg
M4022PB	450 kg	Clear Zinc Plating	Narrow	Yes	39 m	19 kg
M4032PB	450 kg	Clear Zinc Plating	Wide	Yes	76 m	19 kg
M4042PBSS	450 kg	Stainless	Wide	Yes	73 m	21 kg
M4312PB	905 kg	Clear Zinc Plating	Narrow	Yes	33 m	8 kg
M4312PBSS	905 kg	Stainless	Narrow	Yes	33 m	8 kg
M4412PB	905 kg	Clear Zinc Plating	Wide	Yes	64 m	8 kg



NOTICE: These products are not for lifting people or things over people.

Refer to technical pages for detailed performance information.

SPUR GEAR

HAND WINCHES—UP TO 10,000 LBS



ROBUST CONSTRUCTION for Dependable Heavy-Duty Service

The Spur Gear Series of hand winches (up to 10,000 pounds) is designed to lift, lower, and position heavy loads, dependably. It is also a perfect solution for high-capacity stabilization and tensioning needs. The rugged design features heavy steel construction, machine-cut steel gears, bronze bushings, and radial ball bearings. You can count on long, rugged service life for many applications, like construction and aerospace.

Spring-Loaded Ratchets & Locking Mechanism

- Ratchets automatically engage to hold loads securely when winch is not being operated
- Frame-based, gear-locking mechanism enhances load control

Adjustable Handle

- Adjustable handle provides ability to increase mechanical advantage or speed accordingly as load weight varies

Steel Gear Guards

- Steel-encased gear guard enhances safety

Available Non-Brake Units

- Non-brake unit allows additional flexibility in horizontal pulling applications only
- Two gear ratios increase efficiency, depending on load

Solid Steel Machine-Cut Gears

- Precision-cut, zinc gears resist corrosion, increase efficiency, and provide precise operation for outdoor use

Product Shown: M452

Automatic Weston-Style Brake*

- Spring-engaged, ratchet-pawl design offers additional reliability and positive load control for lifting and lowering
- Enclosed (pawl and ratchet) envelope keeps brake clean, dry, and protected for reliable service and haptic feedback
- Durable friction discs reduce wear and increase service life

*Available without brake for pulling applications only

Welded Steel Drum

- Robust drum design and large spool diameter minimizes drum wear and extends wire rope life

PERFORMANCE

Series	IMPERIAL			
	Load Rating	Brake	Drum Capacity	Low-Speed Force to Lift 1,000 lbs at Base Layer
M452	4,000 lbs	No	300 ft	10 lbs
M452B	4,000 lbs	Yes	300 ft	10 lbs
M492	10,000 lbs	No	540 ft	8 lbs
M492B	10,000 lbs	Yes	540 ft	8 lbs

Series	METRIC			
	Load Rating	Brake	Drum Capacity	Low-Speed Force to Lift 1,000 lbs at Base Layer
M452	1,810 kg	No	91 m	5 kg
M452B	1,810 kg	Yes	91 m	5 kg
M492	4,535 kg	No	164 m	4 kg
M492B	4,535 kg	Yes	164 m	4 kg



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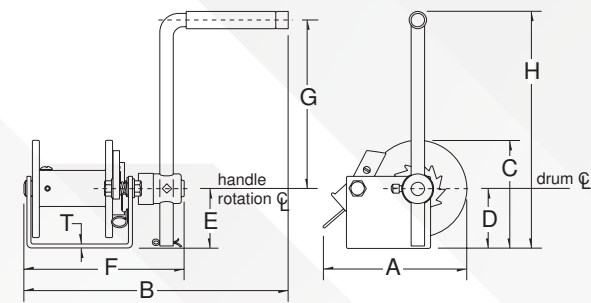
Refer to technical pages for detailed performance information.

TECHNICAL DRAWINGS & SPECIFICATIONS

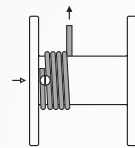
SPUR GEAR SERIES

HAND WINCHES

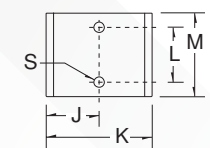
Model M401



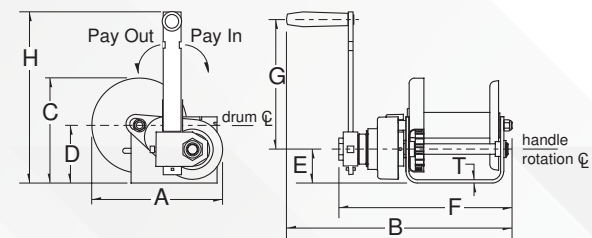
Wire Rope Installation:
Model M401



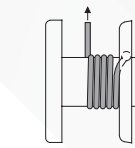
Model M401 Base



Models M4022PB and M4032PB



Wire Rope Installation: Models M4022,
M4022PB, M4032, and M4032PB

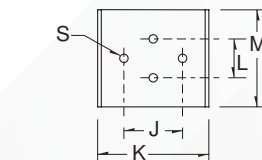


Quick-Disconnect Anchor

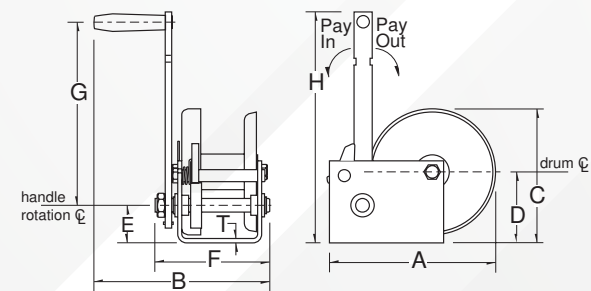


Flange-Clip Anchor

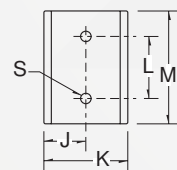
Model M4032 and M4032PB Base



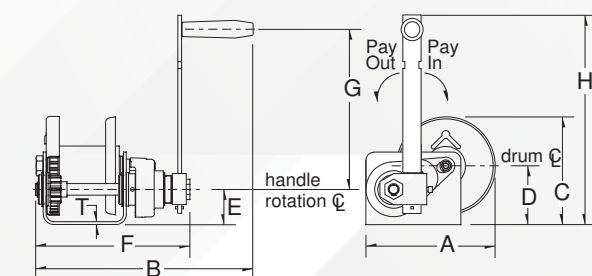
Models M4022 and M4032



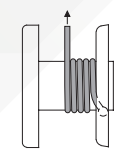
Model M4022 and M4022PB Base



Model M4042PBSS



Wire Rope Installation: Model M4042PBSS

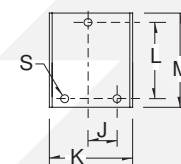


Quick-Disconnect Anchor

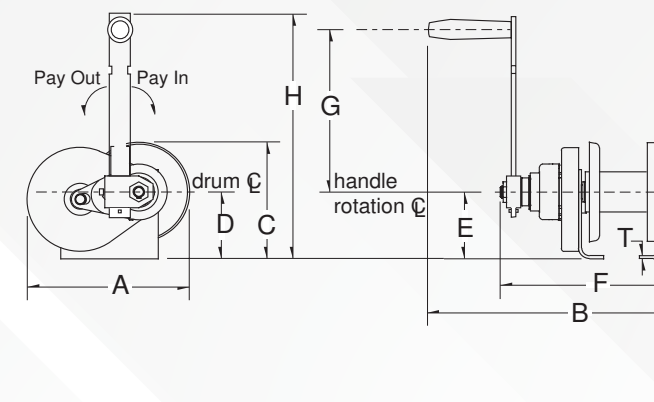


Flange-Clip Anchor

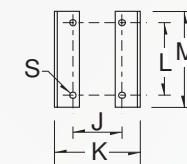
M4042PBSS Base



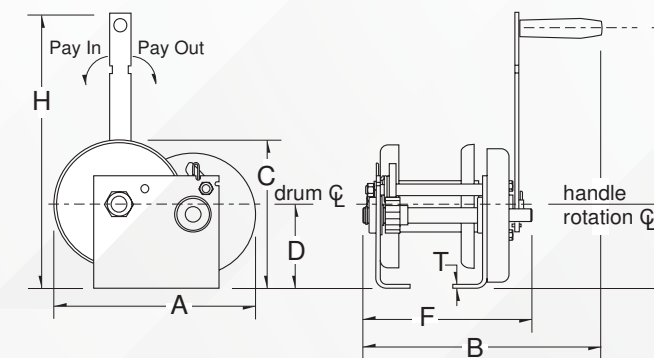
Models M4312PB, M4412PB, and M4312PBSS



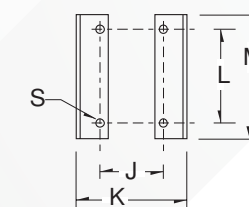
M4312PB, M4412PB, and M4312PBSS Base



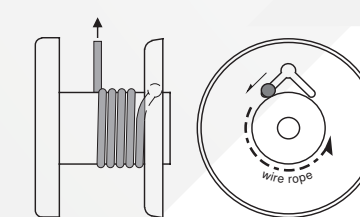
Models M4312 and M4412



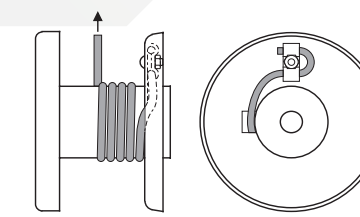
M4042PBSS and M4412 Base



Wire Rope Installation: Models M4312, M4312PB,
M4312PBSS, M4412, and M4412PB



Quick-Disconnect Anchor



Flange-Clip Anchor

Spur Gear Hand Winches—Dimensions

	M401		M4022		M4022PB		M4032		M4032PB		M4042PBSS		M4312		M4312PB		M4312PBSS		M4412		M4412PB	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
Drum Diameter	1.50	38.10	1.50	38.10	1.50	38.10	1.50	38.10	1.50	38.10	2.50	63.50	2.50	63.50	2.50	63.50	2.50	63.50	2.50	63.50	2.50	63.50
Flange Diameter	4.06	103.12	4.56	115.82	4.56	115.82	4.56	115.82	4.56	115.82	5.50	139.70	5.50	139.70	5.50	139.70	5.50	139.70	5.50	139.70	5.50	139.70
Drum Width	2.75	69.85	2.00	50.80	2.00	50.80	4.00	101.60	4.00	101.6	3.00	76.20	3.00	76.20	3.00	76.20	3.00	76.20	6.00	152.40	6.00	152.40
A	6.56	166.62	7.34	187.00	7.34	186.60	7.36	187.00	7.36	187.00	8.30	211.00	10.70	272.00	10.70	272.00	10.20	259.00	13.70	348.00	13.70	348.00
B	10.56	268.22	8.97	228.00	12.12	310.40	11.00	278.00	14.22	361.00	13.90	354.00	13.00	330.00	14.40	367.00	14.20	360.00	16.00	406.00	17.40	443.00
C	4.56	115.82	6.12	156.00	6.12	156.00	6.12	156.00	6.12	156.00	6.90	176.00	7.20	183.00	7.20	183.00	7.20	183.00	7.20	183.00	7.20	183.00
D	2.50	63.50	3.27	83.00	3.27	83.00	3.37	83.00	3.27	83.00	3.80	96.00	4.00	101.00	4.00	101.00	4.00	101.00	4.00	101.00	4.00	101.00
E	2.50	63.50	1.88	48.00	2.00	48.00	1.88	48.00	2.00	48.00	2.30	58.00	4.00	101.00	4.40	101.00	4.00	101.00	4.00	101.00	4.00	101.00
F	5.81	147.57	5.25	133.00	8.22	209.00	7.19	183.00	10.19	259.00	9.90	249.00	8.30	210.00	10.80	275.00	10.70	273.00	11.30	286.00	13.80	351.00
G ¹	8.50	215.90	10.53	267.50	10.53	268.00	10.53	268.00	10.53	268.00	10.50	267.00	8.80	222.00	10.50	268.00	10.50	267.00	8.80	222.00	10.50	268.00
H ¹	11.28	288.51	13.56	344.00	13.12	333.00	13.56	344.00	13.12	333.00	13.40	343.00	13.30	339.00	15.10	387.00	15.20	386.00	13.30	339.00	15.10	387.00
J	2.19	55.63	1.84	47.00	1.84	47.00	3.00	76.00	3.00	76.00	1.40	37.00	3.30	85.00	3.30	85.00	3.30	85.00	6.30	161.00	6.30	161.00
K	4.38	111.25	3.68	94.00	3.68	94.00	5.68	145.00	5.68	145.00	5.30	134.00	5.30	134.00	5.30	134.00	5.30	134.00	8.30	210.00	8.30	210.00
L	2.50	63.50	2.82	72.00	2.82	72.00	2.00	51.00	2.00	51.00	5.00	127.00	5.00	127.00	5.00	127.00	5.00	127.00	5.00	127.00	5.00	127.00
M	3.50	88.90	5.00	127.00	5.00	127.00	5.00	127.00	5.00	127.00	6.00	152.00	6.00	153.00	6.00	152.00	6.00	152.00	6.00	152.00	6.00	153.00
S (hole dia.)	.40	10.16	.43	11.00	.43	11.00	.43	11.00	.43	11.00	.40	10.00	.40	10.00	.40	10.00	.40	10.00	.40	10.00	.40	10.00
T	.18	4.57	.18	5.00	.18	5.00	.18	5.00	.18	5.00	.20	5.00	.20	5.00	.20	5.00	.20	5.00	.20	5.00	.20	5.00

Dimensions are for reference only and subject to change without notice.
¹ Models M401, M4022PB, M4032PB, and M4042PBSS handles are adjustable.
 Dimension shown is for maximum handle length.

Spur Gear Hand Winches—Dimensions

Model	Drum Dia.		Flange Dia.		Drum Width		A		B		C		D		E		F		G ¹		H ¹		J		K		L		M		S (hole dia.)		T	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)		
M4312	2.5	63.5	5.5	139.7	3	76.2	10	254	12.7	322.6	7.15	181.6	4	101.6	4	101.6	8	203.2	8.75	222.25	13.35	339.09	3.34	84.84	5.31	134.87	5	127	6	152.4	.40	10.16	.18	4.57
M4312PB	2.5	63.5	5.5	139.7	3	76.2	10	254	14.5	368.3	7.15	181.6	4	101.6	4	101.6	10.78	273.8	10.59	268.99	15.19	385.83	3.34	84.84	5.31	134.87	5	127	6	152.4	.40	10.16	.18	4.57
M4312PBSS	2.5	63.5	5.5	139.7	3	76.2	10	254	14.5	368.3	7.15	181.6	4	101.6	4	101.6	10.78	273.8	10.59	268.99	15.19	385.83	3.34	84.84	5.31	134.87	5	127	6	152.4	.40	10.16	.18	4.57
M4412	2.5	63.5	5.5	139.7	6	152.4	10	254	15.7	398.8	7.15	181.6	4	101.6	4	101.6	11	279.4	8.75	222.25	13.35	339.09	6.34	161.04	8.31	211.07	5	127	6	152.4	.40	10.16	.18	4.57
M4412PB	2.5	63.5	5.5	139.7	6	152.4	10	254	17.5	444.5	7.15	181.6	4	101.6	4	101.6	13.78	350.0	10.59	268.99	15.19	385.83	6.34	161.04	8.31	211.07	5	127	6	152.4	.40	10.16	.18	4.57

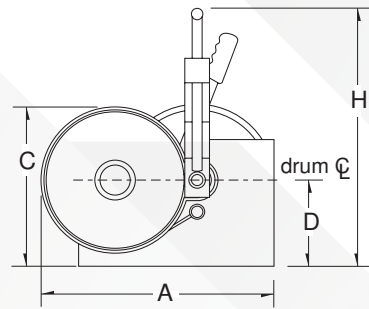
¹ Models M4312PB, M4312PBSS, and M4412PB handles are adjustable. Dimension shown is for maximum handle length. Dimensions are for reference only and subject to change without notice.

Spur Gear Double Reduction Hand Winches—Dimensions

Model	Drum Dia.		Flange Dia.		Drum Width		A		B		C		D		E		F		G ¹		H ¹		J		K		L		M		S (hole dia.)		T		V	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)		
M452	4.00	101.6	8.50	215.9	6.38	162.0	15.25	387.3	22.00	558.8	10.69	271.5	5.81	147.5	5.81	147.5	14.81	376.1	18.62	472.9	24.44	620.7	6.75	171.4	9.50	241.3	11.25	285.7	12.50	317.5	.56	14.2	.25	6.3	—	—
M452B	4.00	101.6	8.50	215.9	6.38	162.0	15.25	387.3	21.90	556.2	10.69	271.5	5.81	147.5	5.81	147.5	16.43	417.3	18.38	466.8	24.19	614.4	6.75	171.4	9.50	241.3	11.25	285.7	12.50	317.5	.56	14.2	.25	6.3	—	—
M452B-A	4.00	101.6	8.50	215.9	4.00	101.6	15.25	387.3	19.62	498.3	10.83	275.0	5.81	147.5	5.81	147.5	14.06	357.1	18.38	466.8	24.19	614.4	4.50	114.3	7.12	180.8	11.25	285.7	12.50	317.5	.56	14.2	.25	6.3	—	—
M492	5.00	127	12.38	314.4	7.62	193.5	20.38	517.6	25.12	638.0	14.00	355.6	7.50	190.5	7.50	190.5	18.44	468.3	22.50	571.5	30.00	762.0	8.00	203.2	12.00	304.8	15.50	393.7	17.00	431.8	.81	20.5	.38	9.6	—	—
M492B	5.00	127	12.38	314.4	7.62	193.5	20.38	517.6	25.00	635.0	14.00	355.6	7.50	190.5	7.50	190.5	19.53	496.0	18.50	469.9	26.00	660.4	8.00	203.2	12.00	304.8	15.50	393.7	17.00	431.8	.81	20.5	.38	9.6	—	—
M492-12	5.00	127	12.38	314.4	12.00	304.8	20.38	517.6	29.50	749.3	14.00	355.6	7.50	190.5	7.50	190.5	22.82	579.6	22.50	571.5	30.00	762.0	8.00	203.2	16.38	416.0	15.50	393.7	17.00	431.8	.81	20.5	.38	9.6	12.38	314.4
M492B-12	5.00	127	12.38	314.4	12.00	304.8	20.38	517.6	29.38	746.2	14.00	355.6	7.50	190.5	7.50	190.5	23.90	607.0	18.50	469.9	26.00	660.4	8.00	203.2	16.38	416.0	15.50	393.7	17.00	431.8	.81	20.5	.38	9.6	12.38	314.4

¹ Models M4312PB, M4312PBSS, and M4412PB handles are adjustable. Dimension shown is for maximum handle length. Dimensions are for reference only and subject to change without notice.

All Models

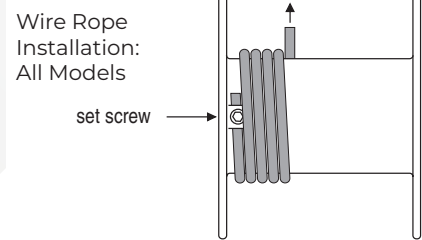
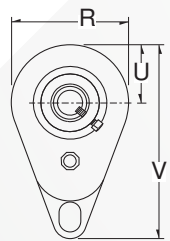
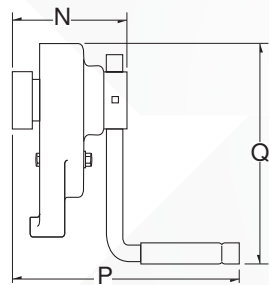


Disc Brakes—Dimensions

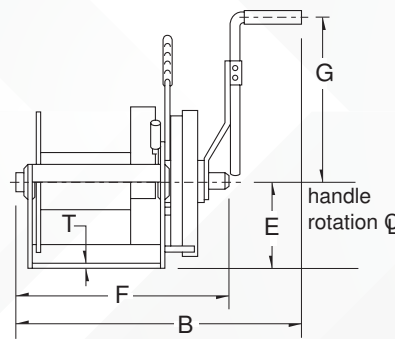
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	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
MB451	4.97	126.2	10.44	265.1	21.25	539.7	4.87	123.6	2.44	61.9	8.62	218.9
MB491	5.15	130.8	10.62	269.7	21.38	543.0	4.87	123.6	2.44	61.9	10.56	268.2

¹ Handles are adjustable. Dimension shown is for maximum handle length. Dimensions are for reference only and subject to change without notice.

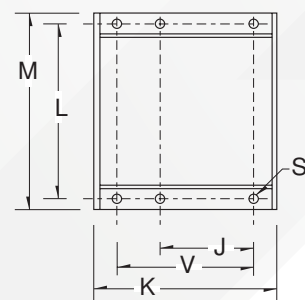
Models MB451 and MB491



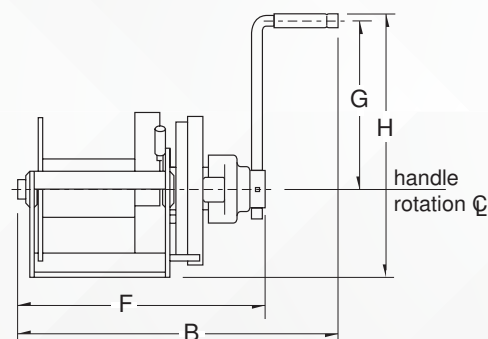
Models M452, M492, and M492-12



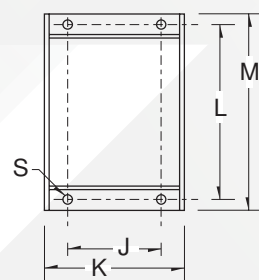
Base for M492-12 and M492B-12



Models M452B, M452B-A, M492B, and M492B-12



Base for M452, M452B, M492B, and M492B Models



Configurations and Performance Characteristics—Up to 2,000 lbs

Model	Description	LOAD RATING						Wire Rope Dia. ¹		DRUM CAPACITY ²						Single Gear Ratio	Double Gear Ratio	Force ³ to lift 1,000 lb		Approx. Ship Weight	
		1st Layer		Mid Drum		Full Drum				1st Layer		Mid Drum		Full Drum							
		(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(in)	(mm)	(ft)	(m)	(ft)	(m)	(ft)	(m)			(lb)	(kg)	(lb)	(kg)
M401	500 lb—marine duty (for pulling only)	500	226	400	181	300	136	1/8	3.2	7	2	60	18	130	39	—	—	—	—	8	3
M4022	1,000 lb—marine duty (for pulling only)	1,000	453	700	317	500	226	1/8	3.2	4	1	52	15	130	39	2.85:1	—	40	18.1	12	5
M4022PB	1,000 lb—marine duty with brake (for lifting)	1,000	453	700	317	500	226	1/8	3.2	4	1	52	15	130	39	2.85:1	—	41	18.6	17	7
M4032	1,000 lb—marine duty (for pulling only)	1,000	453	700	317	500	226	1/8	3.2	11	3	110	33	250	76	2.85:1	—	40	18.1	14	6
M4032PB	1,000 lb—marine duty with brake (for lifting)	1,000	453	700	317	500	226	1/8	3.2	11	3	110	33	250	76	2.85:1	—	41	18.6	18	8
M4042PBSS	1,000 lb—stainless steel with brake (for lifting)	1,000	453	800	362	600	272	1/8	3.2	12	3	110	33	240	73	3.83:1	—	46	20.9	24	10
M4312	2,000 lb—marine duty (for pulling only)	2,000	907	1,600	725	1,200	544	3/16	4.8	8	2	48	14	110	33	3.83:1	14.7:1	20	9.1	23	10
M4312PB	2,000 lb—marine duty with brake (for lifting)	2,000	907	1,600	725	1,200	544	3/16	4.8	8	2	48	14	110	33	—	14.7:1	17	7.7	28	12
M4312PBSS	2,000 lb—stainless steel with brake (for lifting)	2,000	907	1,600	725	1,200	544	3/16	4.8	8	2	48	14	110	33	—	14.7:1	17	7.7	28	12
M4412	2,000 lb—marine duty (for pulling only)	2,000	907	1,600	725	1,200	544	3/16	4.8	18	5	97	29	210	64	3.83:1	14.7:1	20	9.1	25	11
M4412PB	2,000 lb—marine duty with brake (for lifting)	2,000	907	1,600	725	1,200	544	3/16	4.8	18	5	97	29	210	64	—	14.7:1	17	7.7	30	13

Please contact Thern or nearest Thern Distributor for firm fixed price and delivery.
¹For Models M4022, M4022PB, M4032, and M4032PB, ball end is available for 1/8 inch and 3/16 inch only. For Models 4042PBSS, M4312, M4312PB, M4312PBSS, M4412, and M4412PB, ball end is available for 3/16-inch and 1/4 inch only.
²Actual drum capacities may be 25-30% less due to nonuniform winding. Wire rope tension will also affect drum capacity.
³Approximate handle force required to lift 1,000 lbs with an empty drum and maximum handle length.

Configurations and Performance Characteristics—Up to 10,000 lbs

Model	Description	LOAD RATING						Wire Rope Dia. ¹		DRUM CAPACITY ¹						Single Gear Ratio	Double Gear Ratio	Force ² to lift 1,000 lb		Approx. Ship Weight			
		1st Layer		Mid Drum		Full Drum				1st Layer		Mid Drum		Full Drum									
		(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(in)	(mm)	(ft)	(m)	(ft)	(m)	(ft)	(m)			(lb)	(kg)	(lb)	(kg)		
M452	4,000 lb—marine duty (for pulling only)	4,000	1,814	3,300	1,496	2,500	1,133	1/4	6.4	23	7	130	39	300	91	4.42:1	19.54:1	10	4.5	83	38		
M452B	4,000 lb—marine duty with brake (for lifting)	4,000	1,814	3,300	1,496	2,500	1,133	1/4	6.4	23	7	130	39	300	91	—	19.54:1	10	4.5	91	42		
M452B-A	4,000 lb—marine duty with brake (for lifting) 4-inch drum width	4,000	1,814	3,300	1,496	2,500	1,133	1/4	6.4	13	3	83	25	190	57	—	19.54:1	10	4.5	83	38		
M492	10,000 lb—marine duty (for pulling only)	10,000	4,535	7,400	3,356	5,400	2,449	5/16	7.9	27	8	240	73	540	164	5.00:1	25.00:1	8	3.6	166	76		
M492B	10,000 lb—marine duty with brake (for lifting)	10,000	4,535	7,400	3,356	5,400	2,449	5/16	7.9	27	8	240	73	540	164	—	25.00:1	8	3.6	173	79		
M492-12	10,000 lb—marine duty (for pulling only) 12-inch drum width	10,000	4,535	7,400	3,356	5,400	2,449	5/16	7.9	46	14	380	115	850	259	5.00:1	25.00:1	8	3.6	175	80		
M492B-12	10,000 lb—marine duty with brake (for lifting) 12-inch drum width	10,000	4,535	7,400	3,356	5,400	2,449	5/16	7.9	46	14	380	115	850	259	—	25.00:1	8	3.6	190	87		
MB451	Disc brake only for M452 (for lifting)																				13	6	
MB491	Disc brake only for M492 and M492-12 (for lifting)																					15	7

Please contact Thern or nearest Thern Distributor for firm fixed price and delivery.
¹Actual drum capacities may be 25-30% less due to nonuniform winding. Wire rope tension will also affect drum capacity.
²Approximate handle force required to lift 1,000 lbs with an empty drum and maximum handle length.



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