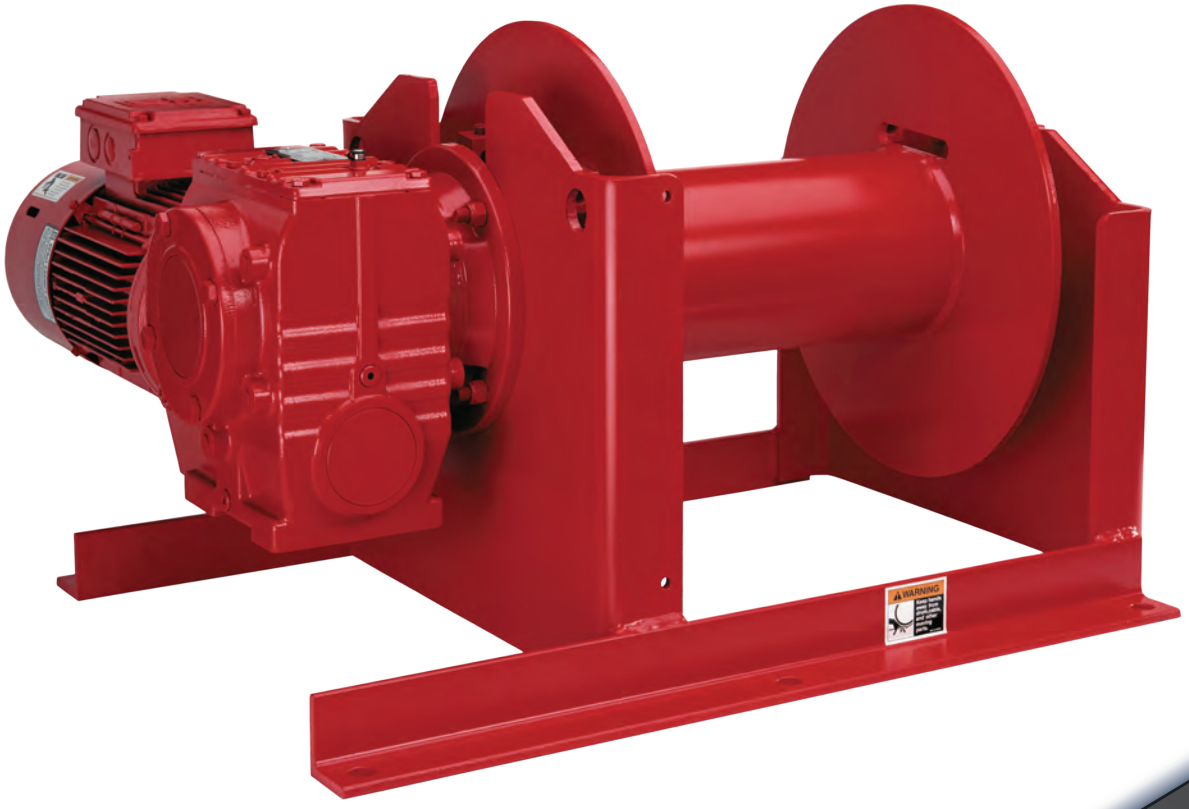
Thern
Winches & Cranes

HEAVY-DUTY ELECTRIC POWER WINCH

4HBN SERIES



Made in USA

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(507) 454-2996

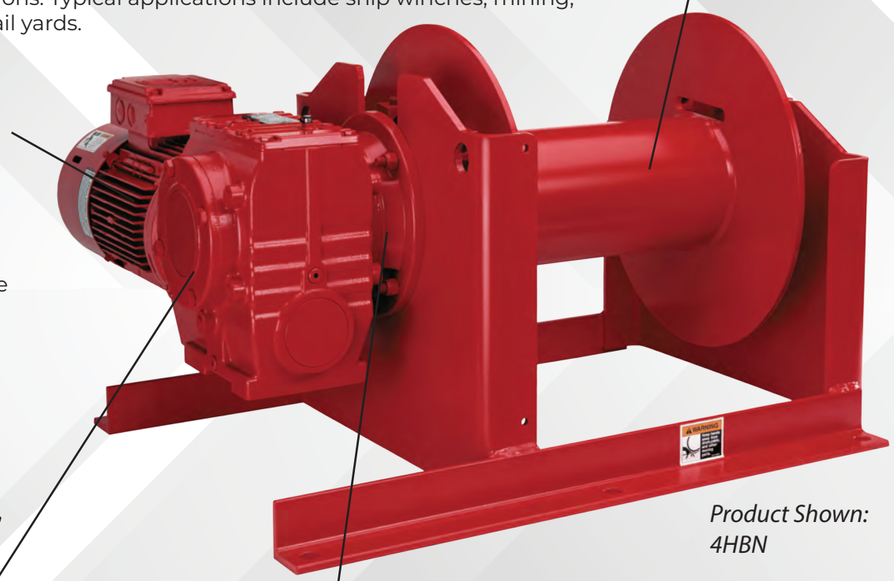
4HBN SERIES

HEAVY-DUTY ELECTRIC POWER WINCHES

HELICAL/BEVEL RIGHT ANGLE GEARING

for Highly Efficient Load Handling

The 4HBN Series of power winches (2,000 to 25,000 pounds) is designed for applications requiring long travel distances and fast line speeds. The heat-treated, helical/bevel gear set provides durability and high efficiency—up to 94 percent. A modular design allows configuration to a variety of customer specifications. These winches are ideal for harsh and hazardous environments, including hard-to-reach locations. Typical applications include ship winches, mining, construction, and rail yards.



Product Shown: 4HBN

Energy-Efficient Premium Motor

- Energy-efficient 230/460 volt, reversible, three-phase, industrial-grade motor, endures continuous use
- A totally enclosed, fan-cooled (TEFC) design, featuring IP55 and F-class insulation, resists debris and contamination for long service life
- Standard motors comply with industry standards: UL, CSA, IEC, and NEMA MG1

Load Holding Motor Disk Brake

- Spring-set, electrically released brake helps control loads and facilitates safe operation

Durable Gears & Right Angle Gearbox Design

- Fully enclosed, direct-drive, helical/bevel gear reducers deliver high efficiencies (from 88 to 94 percent) for applications requiring long travel distances and fast line speeds
- Large-capacity bearings enhance smooth operation and durability
- Sealed, cast-iron gearbox with integral oil bath for rotating gears dissipates heat and provides continuous lubrication for enhanced service life
- Primary speed reducers meet AGMA and/or DIN standards

Modular Design

- Flexible winch design allows customization by Thern to meet specific customer requirements

ASME B30.7 Compliance Available

- Contact Thern for details

Integral Drum & Shaft Design

- Large-diameter, welded-steel drum, featuring outside flange anchors, promotes uniform winding and life of wire rope
- Anchors allow cable to be over or under wound and provide multiple drum exit angles
- Flange-style, self-aligning roller bearings with cast-iron housing maintain smooth drum rotation
- Continuous, solid-steel drum shaft and steel frame provide optimal strength and security
- Complete wire rope assemblies available upon request

Thern Winches & Cranes

PERFORMANCE

IMPERIAL

Series	Load Rating	Power Supply	Line Speed	Drum Capacity	Clutch
4HBN2M	2,000 lbs	1–3 hp	18–53 fpm	830 ft	No
4HBN3M	3,100 lbs	1.5–5 hp	16–55 fpm	750 ft	No
4HBN5M	4,600 lbs	2–7.5 hp	15–54 fpm	2,120 ft	No
4HBN7M	6,800 lbs	3–10 hp	16–51 fpm	990 ft	No
4HBN9M	9,000 lbs	5–10 hp	21–44 fpm	1,210 ft	No
4HBN15M	15,300 lbs	10–20 hp	21–51 fpm	940 ft	No
4HBN20M	19,500 lbs	10–25 hp	18–47 fpm	2,070 ft	No
4HBN25M	25,100 lbs	15–30 hp	21–46 fpm	1,050 ft	No

METRIC

Series	Load Rating	Power Supply	Line Speed	Drum Capacity	Clutch
4HBN2M	900 kg	.75–2.2 kW	5–16 mpm	253 m	No
4HBN3M	1,400 kg	1.1–3.7 kW	4–15 mpm	228 m	No
4HBN5M	2,080 kg	1.5–5.5 kW	4–16 mpm	646 m	No
4HBN7M	3,080 kg	2.2–7.5 kW	4–15 mpm	301 m	No
4HBN9M	4,080 kg	3.7–7.5 kW	6–13 mpm	368 m	No
4HBN15M	6,940 kg	7.5–15 kW	6–15 mpm	286 m	No
4HBN20M	8,840 kg	7.5–18.5 kW	5–14 mpm	630 m	No
4HBN25M	11,380 kg	11–22 kW	6–14 mpm	320 m	No

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

Refer to technical pages for detailed performance information.

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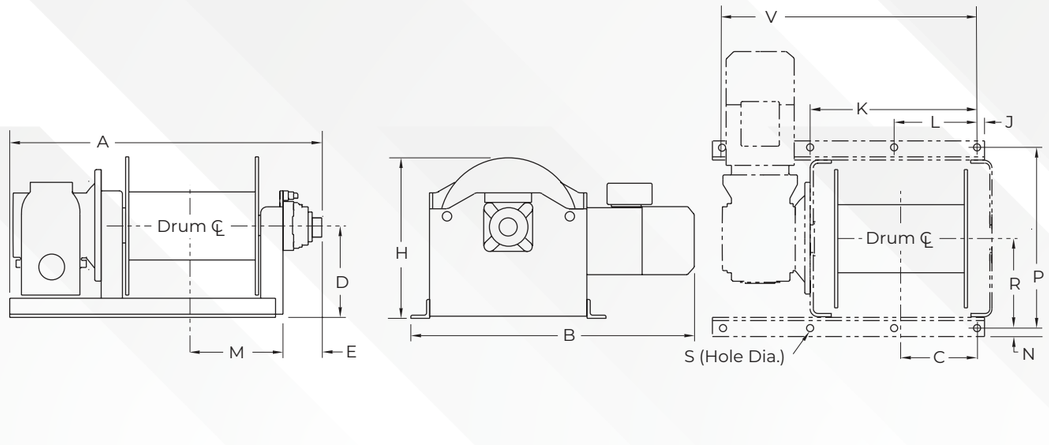
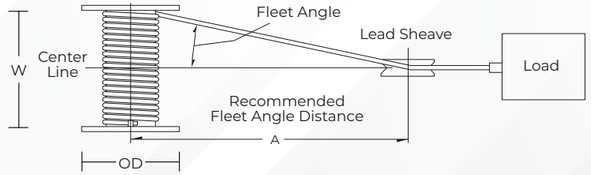
TECHNICAL DRAWINGS & SPECIFICATIONS

4HBN SERIES

HEAVY-DUTY ELECTRIC POWER WINCHES

4HBN Series





4HBN Series Drum Dimensions

Model	Drum Diameter (ID)		Flange Diameter (OD)		Drum Width (W)		Fleet Angle Distance (A)[1]	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(ft)	(m)
4HBN2M	4.5	114	12	305	10	254	16	4.9
4HBN3M	5.5	140	12	305	10	254	16	4.9
4HBN5M	7	178	18	457	16	406	26	7.9
4HBN7M	9	229	18	457	16	406	26	7.9
4HBN9M	10.75	273	22	559	20	508	32	9.8
4HBN15M	11.5	292	22	559	20	508	32	9.8
4HBN20M	14	356	30	762	30	762	48	14.6
4HBN25M	16	406	30	762	30	762	48	14.6

[1] Recommended minimum distance between drum and lead sheave for smooth drum.

Dimensions are for reference only and subject to change without notice.
Please contact Thern for exact dimensions.

Electric Motor Controls

Model	Description	Approx. Ship Wt.	
		(lb)	(kg)
10S3D4	electric motor controls 230/3/60 to 3 hp	25	12
10S7D4	electric motor controls 230/3/60 to 7.5 hp	25	12
10S10D4	electric motor controls 230/3/60 to 10 hp	28	13
10S20D4	electric motor controls 230/3/60 to 20 hp	28	13
10S30D4	electric motor controls 230/3/60 to 30 hp	60	28
10S7E4	electric motor controls 460/3/60 to 7.5 hp	25	12
10S15E4	electric motor controls 460/3/60 to 15 hp	25	12
10S20E4	electric motor controls 460/3/60 to 20 hp	28	13
10S40E4	electric motor controls 460/3/60 to 40 hp	60	28

Controls include NEMA 4 rated enclosure and NEMA 4X rated pendant control on 50-foot cord.

Motor controls sold separately. Please contact Thern or nearest Thern Distributor for firm, fixed price and delivery. All prices include mounting and wiring to motor.

4HBN Series Drum Capacities

Wire Rope Diameter		Breaking Strength[2]		Drum Capacity	4HBN2M		4HBN3M		4HBN5M		4HBN7M		4HBN9M		4HBN15M		4HBN20M		4HBN25M	
(in)	(mm)	(lb)	(kg)		(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)
				1st	43	13.1	51	15.5	–	–	–	–	–	–	–	–	–	–	–	–
¼	6.4	7,000[3]	3,175	Mid	370	112.8	340	103.6	–	–	–	–	–	–	–	–	–	–	–	–
				Full	830	253.0	750	228.6	–	–	–	–	–	–	–	–	–	–	–	–
				1st	34	10.4	41	12.5	87	26.5	–	–	–	–	–	–	–	–	–	–
5⁄16	7.9	9,800[3]	4,445	Mid	250	76.2	230	70.1	950	289.6	–	–	–	–	–	–	–	–	–	–
				Full	560	170.7	500	152.4	2,120	646.2	–	–	–	–	–	–	–	–	–	–
				1st	27	8.2	33	10.1	70	21.3	–	–	–	–	–	–	–	–	–	–
⅜	9.7	15,100	6,849	Mid	180	54.9	160	48.8	680	207.3	–	–	–	–	–	–	–	–	–	–
				Full	400	121.9	360	109.7	1,520	463.3	–	–	–	–	–	–	–	–	–	–
				1st	23	7	28	8.5	60	18.3	76	23.2	–	–	–	–	–	–	–	–
7⁄16	11.2	20,400	9,254	Mid	130	39.6	120	36.6	510	155.4	450	137.2	–	–	–	–	–	–	–	–
				Full	300	91.4	270	82.3	1,140	347.5	990	301.8	–	–	–	–	–	–	–	–
				1st	–	–	–	–	52	15	66	20.1	–	–	–	–	–	–	–	–
½	12.7	26,600	12,066	Mid	–	–	–	–	400	121	350	106.7	–	–	–	–	–	–	–	–
				Full	–	–	–	–	890	271	770	234.7	–	–	–	–	–	–	–	–
				1st	–	–	–	–	46	14.0	58	17.7	89	27.1	–	–	–	–	–	–
9⁄16	14.2	33,600	15,240	Mid	–	–	–	–	320	97.5	280	85.3	540	164.6	–	–	–	–	–	–
				Full	–	–	–	–	710	216.4	620	189	1,210	368.8	–	–	–	–	–	–
				1st	–	–	–	–	–	–	51	15.5	78	23.8	84	25.6	–	–	–	–
⅝	16.0	41,200	18,688	Mid	–	–	–	–	–	–	230	70.1	440	134.1	420	128	–	–	–	–
				Full	–	–	–	–	–	–	510	155.5	990	301.8	940	286.5	–	–	–	–
				1st	–	–	–	–	–	–	–	–	65	19.8	69	21	130	39.6	–	–
¾	19.1	58,800	26,671	Mid	–	–	–	–	–	–	–	–	310	94.5	300	91.4	930	283.5	–	–
				Full	–	–	–	–	–	–	–	–	700	213.4	660	201.2	2,070	630.9	–	–
				1st	–	–	–	–	–	–	–	–	54	16.5	57	17.4	110	33.5	–	–
⅞	22.4	79,600	36,106	Mid	–	–	–	–	–	–	–	–	230	70.1	210	64	670	204.2	–	–
				Full	–	–	–	–	–	–	–	–	500	152.4	480	146.3	1,490	454.2	–	–
				1st	–	–	–	–	–	–	–	–	47	14.3	57	17.4	97	29.6	110	33.5
1	25.4	103,400	46,902	Mid	–	–	–	–	–	–	–	–	180	54.9	210	64	520	158.5	470	143.3
				Full	–	–	–	–	–	–	–	–	390	118.9	480	146.3	1,160	353.6	1,050	320
				1st	–	–	–	–	–	–	–	–	–	–	–	–	85	25.9	96	29.3
1-⅛	28.7	130,000	58,968	Mid	–	–	–	–	–	–	–	–	–	–	–	–	420	128	380	115.8
				Full	–	–	–	–	–	–	–	–	–	–	–	–	920	280.4	840	256
				1st	–	–	–	–	–	–	–	–	–	–	–	–	76	23.2	86	26.2
1-¼	31.8	159,800	72,485	Mid	–	–	–	–	–	–	–	–	–	–	–	–	330	100.6	300	91.4
				Full	–	–	–	–	–	–	–	–	–	–	–	–	740	225.6	670	204.2
				1st	–	–	–	–	–	–	–	–	–	–	–	–	68	20.7	76	23.2
1-⅜	34.9	192,000	87,090	Mid	–	–	–	–	–	–	–	–	–	–	–	–	280	85.3	250	76.2
				Full	–	–	–	–	–	–	–	–	–	–	–	–	610	185.9	560	170.7
				1st	–	–	–	–	–	–	–	–	–	–	–	–	–	–	69	21
1-½	38.1	228,000	103,420	Mid	–	–	–	–	–	–	–	–	–	–	–	–	–	–	210	64
				Full	–	–	–	–	–	–	–	–	–	–	–	–	–	–	470	143.3

[2] Values based on 6x37 IWRC EIPS wire rope.
[3] Values based on 7x19 galvanized aircraft cable.

Actual drum capacities 25–30% less due to nonuniform winding. Wire rope tension will also affect drum capacity.

Wire rope should be selected based on the breaking strength to load rating ratio and application parameters.
Industry standards suggest a 5:1 breaking strength to load rating ratio for lifting and a 3:1 ratio for pulling.

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4HBN Series Winch Dimensions

Model	A		B		C		D		E		H		J		K		L		M		N		P		S (hole dia.)		V		Ship Weight	
	(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)	(lb)	(kg)
4HBN2M	VARIES	VARIES	VARIES	VARIES	6	152	8	203	2.25	57	14	356	1	25	20	508	10	254	7.56	192	0.63	16	15.75	400	19/32	15	–	–	VARIES	VARIES
4HBN3M	VARIES	VARIES	VARIES	VARIES	6	152	8	203	2.38	60	14	356	1	25	20	508	10	254	7.56	192	0.63	16	15.75	400	19/32	15	–	–	VARIES	VARIES
4HBN5M	VARIES	VARIES	VARIES	VARIES	9.63	244	12	305	5.13	130	21	533	1	25	30.5	775	15.25	388	11.5	292	1	25	24	610	7/8	22	–	–	VARIES	VARIES
4HBN7M	VARIES	VARIES	VARIES	VARIES	9.63	244	12	305	5.19	132	21	533	1	25	30.5	775	15.25	388	11.5	292	1	25	24	610	7/8	22	–	–	VARIES	VARIES
4HBN9M	49.75	1,263.75	VARIES	VARIES	12	305	14.5	368	6.25	159	25.5	648	1.25	32	26.5	673	13.25	337	14.5	368	1.13	29	28.75	730	1 1/8	29	39.75	1,010	VARIES	VARIES
4HBN15M	VARIES	VARIES	VARIES	VARIES	12	305	14.5	368	6.25	159	VARIES	VARIES	1.25	32	26.5	673	13.25	337	14.5	368	1.13	29	28.75	730	1 1/8	29	39.75	1,010	VARIES	VARIES
4HBN20M	VARIES	VARIES	VARIES	VARIES	18.88	479	19.5	495	6.19	157	34.25	876	1.5	38	32	813	16	406	21.56	548	1.5	38	40	1,016	1 3/8	35	48	1,219	VARIES	VARIES
4HBN25M	VARIES	VARIES	VARIES	VARIES	18.88	479	19.5	495	6.19	157	VARIES	VARIES	1.5	38	32	813	16	406	21.56	548	1.5	38	40	1,016	1 3/8	35	48	1,219	VARIES	VARIES

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