Options and Technical Data

LOAD LIMITER

Reduces the potential for making hazardous, over-capacity lifts. The load limiter is preset at 115% of rated capacity and protects the hoist mechanism from damage due to overloading. Overloading the hoist electrically activates the load limiter, making the hoist inoperable (load can still be lowered at any time).

STEEL CHAIN CONTAINERS

Containers are installed differently depending on the type of product or lift. The steel containers may not cover the standard beam curve radii depending on their installation conditions.

BULLARD® AND SHUR-LOC® HOOKS

These hooks offer a positive locking latch feature. Consult Customer Service for full details.

Bullard®

Shur-Loc®

PENDANT COVER

Pliable silicone rubber pendant cover designed to protect hoist and trolley push button pendants.

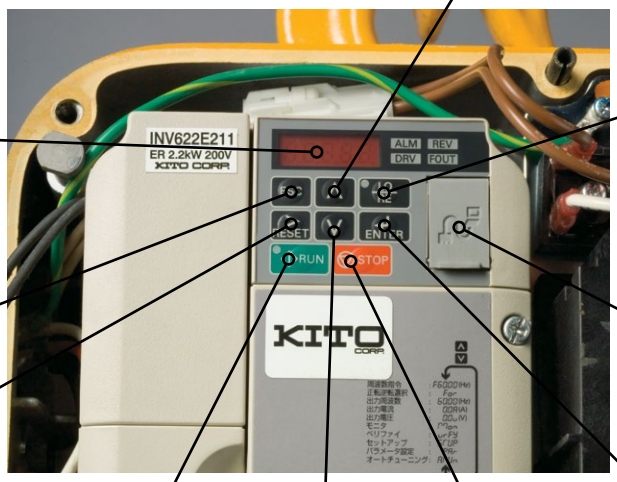
Options and Technical Data

VARIABLE FREQUENCY DRIVE – VFD (INVERTER FOR SMOOTH TRANSITIONAL SPEED)

The dual speed inverter delivers smoother movement than contactor control which reduces load swing. The inverter can be programmed to operate specific to the application resulting in smooth starts, improved control, improved positioning accuracy and overall increased productivity. Standard lifting speed ratio for 1/8 Ton through 5 Ton is 6:1 adjustable to 12:1.* Standard lifting speed ratio for 8 Ton and larger capacities is 3:1 adjustable to 12:1.* Standard traversing speed ratio is 6:1 adjustable to 10:1.

(N)ER/MR inverter unit is well-customized for lifting/traversing applications including exclusive software and is also provided with measures against impact and heat which were verified through long-run tests.

**For a speed ratio other than the standard 2-speed or to request 2-step or 3-step infinitely variable, please make the request at the time of placing an order.*



Up Arrow Key
Moves cursor up.

LO/RE Key
Switches drive control between the operator (local) and the control circuit terminals (remote). Illuminates while the operator (local) is selected to run the drive.

LED Digital Display (5 digits)
Readout for viewing VFD status information and programming.

ESC Key (escape)
Returns to the previous menu.

Y-Stick Port
Area for y-stick program insertion.

Reset Key (shift/reset)
Moves the cursor to the right. Resets the drive to clear errors.

Enter Key
Confirms all modes, parameters or settings selected. Used to progress to the next screen.

Run Key
Starts the drive. Illuminates when inverter is in operation.

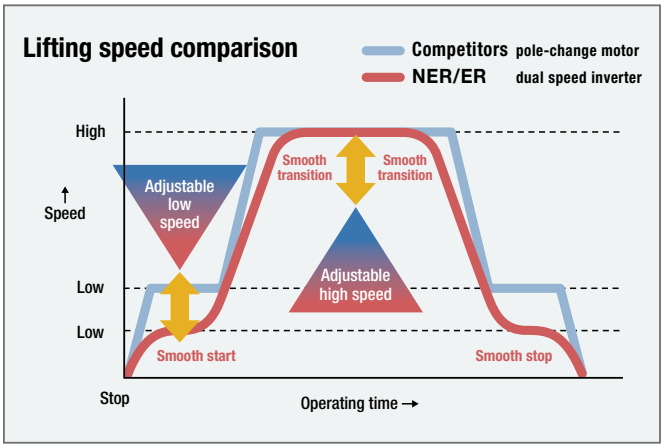
Stop Key
Stops the drive.

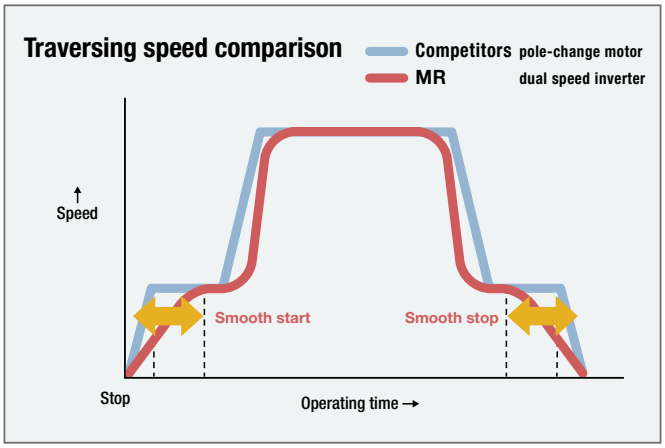
Down Arrow Key
Moves cursor down.

UL Standards
The UL mark applied to products in the United States indicates that UL has performed product testing and evaluation and determined that their stringent standards for product safety have been met. For a product to receive UL certification, all components inside that product must also receive UL certification.

In general terms, with some exceptions, standard configurations of Harrington NER/ER three phase electric chain hoists qualify for UL. Custom configurations do not qualify. Examples of some product configurations that do not qualify include the addition of radio remote control, a load limiter, Bullard® hooks, flat cable festooning and cylinder control models.

SPEED COMPARISONS





VFD HOIST CONTROL DESCRIPTIONS

Dual Speed Control
Uses a 2-step button and a VFD to control the speed. Pressing the button to the first step causes the hoist to accelerate smoothly to the low speed. Pressing the button to the second step causes the hoist to accelerate smoothly to the high speed. Releasing the button from the second step to the first step causes the hoist to smoothly decelerate to the low speed. Releasing the button completely from any step causes the hoist to decelerate quickly to a stop with the brake holding the load.

2–Step Infinitely Variable Control
Uses a 2-step button and a VFD to control the speed. The acceleration rate can be changed by changing parameters in the VFD. The 2-Step Infinitely Variable differs from Dual Speed Control in that when releasing the button from the second step to the first step it will maintain whatever the speed was at the instant before the button arrived at the first step. This allows you to hold any speed between the low and the high speed. If the hoist is operating at a speed that is less than high speed, and you wish it to operate at a faster speed, press the button to the second step to accelerate the hoist. When you reach the desired speed, release the button to the first step. Note that there is no deceleration function other than completely releasing the button.

3–Step Infinitely Variable Control
Uses a 3-step button and a VFD to control the speed. This control is similar to the 2-Step Infinitely Variable Control with the added feature of a deceleration function. If the hoist is operating at a particular speed and you wish it to operate at a faster speed, press the button to the third step to accelerate. When you reach the desired speed, release the button to the second step to maintain that speed. If the hoist is operating at a particular speed and you want it to operate at a slower speed, release the button to the first step to decelerate. When you reach the desired speed, press the button to the second step to maintain that speed.

Contact Customer Service for additional documentation and descriptions.

"THE GUARDIAN": SMART BRAKE TECHNOLOGY—DESCRIPTION

The Guardian Smart Brake releases when it senses current being consumed by the motor. If the motor burns out OR is single-phased, the motor does not consume current (amps). This cuts power to the brake and the brake assembly locks. It is electrically failsafe by design. The brake does not need adjustment or replacement parts, and it carries a **10 year warranty.**

Options and Technical Data

(N)ER CHAIN—DIMENSIONS

Cap. (Tons)	Product Code	d (in)	a (in)	b (in)	P (in)
1/8	(N)ER001HCC(D)	0.17	0.26	0.59	0.48
1/8	(N)ER001H(D)	0.17	0.26	0.59	0.48
1/4	(N)ER003S(D)	0.17	0.26	0.59	0.48
1/4	(N)ER003SCC(D)	0.17	0.26	0.59	0.48
1/4	(N)ER003H(D)	0.24	0.35	0.83	0.66
1/2	(N)ER005L(D)	0.24	0.35	0.83	0.66
1/2	(N)ER005S(D)	0.24	0.35	0.83	0.66
1	(N)ER010L(D)	0.30	0.46	1.06	0.85
1	(N)ER010S(D)	0.30	0.46	1.06	0.85
1 1/2	(N)ER015S(D)	0.40	0.60	1.41	1.13
2	(N)ER020C(D)	0.30	0.46	1.06	0.85
2	(N)ER020L(D)	0.40	0.60	1.41	1.13
2	(N)ER020S(D)	0.40	0.60	1.41	1.13
2 1/2	(N)ER025S(D)	0.44	0.65	1.54	1.24
3	(N)ER030L(D)*	0.49	0.62	1.73	1.50
3	(N)ER030C(D)	0.40	0.60	1.41	1.13
5	(N)ER050L(D)	0.44	0.65	1.54	1.24
8	(N)ER080S(D)	0.44	0.65	1.54	1.24
10	(N)ER100L(D)	0.44	0.65	1.54	1.24
10	(N)ER100S(D)	0.44	0.65	1.54	1.24
15	(N)ER150S(D)	0.44	0.65	1.54	1.24
20	(N)ER200S(D)	0.44	0.65	1.54	1.24

The (N)ER030L(D) listed is the previous hoist model.

SNER CHAIN—DIMENSIONS

Cap. (Tons)	Product Code	d (in)	a (in)	b (in)	P (in)
1/4	SNER003S	0.20	0.25	0.71	0.59
1/2	SNER005L	0.25	0.31	0.87	0.75
1/2	SNER005S	0.25	0.31	0.87	0.75
1	SNER010L	0.31	0.39	1.10	0.94
1	SNER010S	0.31	0.39	1.10	0.94
2	SNER020L	0.39	0.49	1.38	1.18
3	SNER030C	0.39	0.49	1.38	1.18

ED CHAIN—DIMENSIONS

Cap. (lbs)	Product Code	d (in)	a (in)	b (in)	P (in)
125 to 1050	(All Models)	0.16	0.20	0.53	0.48

(N)ER HOOK—DIMENSIONS

Product Code	Hook**	a (in)	b (in)	c (in)	d (in)	e (in)	f (in)	g (in)	h (in)
(N)ER001H, 003S, 003H, 005L, 005S	T & B	1.1	0.7	0.9	0.7	1.4	1.5	1.1	3.7
(N)ER001HCC, 003SCC	T	1.1	0.7	0.9	0.7	1.4	1.5	1.1	3.7
	B	0.8	0.5	0.7	0.5	1.4	1.4	0.9	3.0
(N)ER010L, 010S	T & B	1.5	0.9	1.2	0.9	1.7	1.8	1.2	4.3
(N)ER020C	T & B	1.9	1.1	1.6	1.1	2.0	2.2	1.5	5.4
(N)ER015S	T	2.0	1.3	1.7	1.3	2.1	2.2	1.5	5.7
	B	1.7	1.1	1.5	1.1	1.9	2.0	1.4	4.9
(N)ER020L, 020S	T & B	2.0	1.3	1.7	1.3	2.1	2.2	1.6	5.7
(N)ER025S	T	2.0	1.3	1.7	1.3	2.4	2.4	1.7	6.1
	B	2.0	1.3	1.7	1.3	2.1	2.2	1.6	5.7
(N)ER030L*, 030C	T & B	2.2	1.4	1.9	1.4	2.4	2.5	1.8	6.3
(N)ER050L	T & B	2.6	1.7	2.2	1.7	2.5	2.9	1.9	7.4
(N)ER080S	B	3.3	2.2	2.9	1.9	3.3	3.7	2.5	9.5
(N)ER100L, 100S	T & B	4.1	2.8	3.4	2.4	3.9	4.3	3.2	11.4
(N)ER150S	T & B	4.6	3.3	3.9	2.8	4.3	4.9	3.4	12.3
(N)ER200S	T & B	5.2	3.3	4.4	2.8	4.9	5.6	4.1	14.4

The (N)ER030L listed is the previous hoist model.
***T = top hook, B = bottom hook*

SNER* HOOK—DIMENSIONS

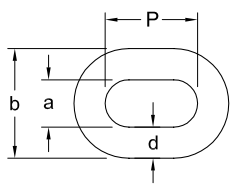
Capacity Code	Hook*	a (in)	b (in)	c (in)	d (in)	e (in)	f (in)	g (in)	h (in)
003, 005L, 005S	T	1.1	0.7	0.9	0.7	1.4	1.5	1.1	3.5
	B	1.1	0.7	0.9	0.7	1.4	1.5	0.9	3.4
010L, 010S	T & B	1.4	0.9	1.2	0.9	1.7	1.8	1.2	4.2
020L	T & B	1.9	1.1	1.6	1.1	2.0	2.2	1.5	5.3
030C	T & B	2.2	1.4	1.9	1.4	2.4	2.5	1.7	6.3

**T=top hook, B=bottom hook.*

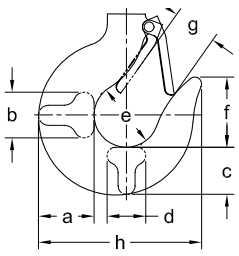
ED HOOK—DIMENSIONS

Capacity Code	Hook*	a (in)	b (in)	c (in)	d (in)	e (in)	f (in)	g (in)	h (in)
125 – 525	T	0.8	0.3	0.7	0.3	1.3	1.2	1.0	2.9
	B	0.8	0.5	0.7	0.5	1.4	1.4	1.0	3.0
1000 – 1050	T	1.1	0.7	0.9	0.7	1.4	1.2	1.1	3.5
	B	1.1	0.7	0.9	0.7	1.4	1.4	0.9	3.4

**T=top hook, B=bottom hook.*



Chain Dimensions



Hook Dimensions

CORROSION-RESISTANT CHAINS NICKEL-PLATED (NP) AND NICKEL DIFFUSED (ND) CHAIN

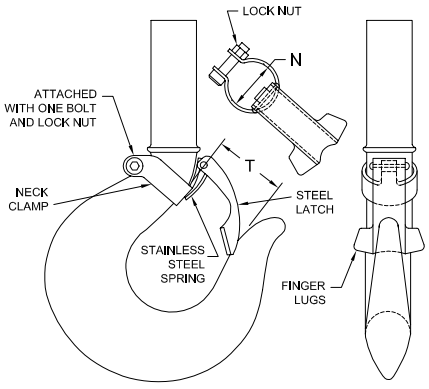
Examples of Corrosion Resistance to Acids, Salts, and Other Substances Under Normal Temperatures			
Substance		**Concentration %**	**Corrosion Resistance**
Air	Indoors, Outdoors	—	No Corrosion
Mineral Acids	Sulfuric Acid	10	Corrosion
	Nitric Acid	10	Corrosion
	Hydrochloric Acid	10	Corrosion
	Phosphoric Acid	10	Slight Corrosion
	Boric Acid	5	Slight Corrosion
Organic Acids	Acetic Acid	10	Slight Corrosion
	Tartaric Acid	10	No Corrosion
Alkalis	Caustic Soda	10	No Corrosion
	Ammonia	10	Slight Corrosion
Other	Salt Water	—	Slight Corrosion

Results listed in this table are for chemicals in a pure state. The degree of corrosion resistance may differ from this table with the presence of other chemicals, different concentrations, mixed substances or damage to the nickel surface layer.

UNIVERSAL LATCH KITS

Generic design to fit most hooks. Available in standard steel or stainless steel. Neck and throat dimensions can be combined for proper fit. (Example, neck size E with throat size L.) Neck measurement must be diameter—not circumference. Contact Customer Service for dimensions not shown.

Latch Kit Product Code	Neck Diameter N (in)	Throat Opening T (in)
A	9/16 to 5/8	1 1/16 to 1 1/8
B	3/4 to 1 3/16	1 1/4
C	7/8 to 1	1 3/8 to 1 1/2
D	1 1/8 to 1 1/4	1 3/4 to 1 7/8
E	1 3/8 to 1 1/2	2 1/16
F	1 5/8 to 11 1/16	2 1/4
G	1 3/4 to 11 3/16	2 1/2
H	1 7/8 to 2	3
J	2 1/16 to 2 1/8	3 3/8
K	2 3/16 to 2 1/4	3 1/2
L	2 5/16 to 2 3/8	3 3/4
M	2 7/16 to 2 3/4	4
O	3 to 3 1/4	4 1/2



Options and Technical Data

DUTY CLASSIFICATIONS

Hoist Duty Class	Typical Areas of Application	Operation Time Ratings at K = 0.65*			
		Uniformly Distributed Work Periods		Infrequent Work Periods	
		Max. Time (min/hr)	Max. No. of Starts/hr	Max. Time From Cold Start (min)	Max. No. of starts
H2	Light machine shop fabricating, service and maintenance; loads and utilization randomly distributed; rated loads infrequently handled	7.5 (12.5%)	75	15	100
H3	General machine shop fabricating, assembly, storage, and warehousing; loads and utilization randomly distributed	15 (25%)	150	30	200
H4	High volume handling in steel warehouses, machine shops, fabricating plants and mills, and foundries; manual or automatic cycling operations in heat treating and plating; loads at or near rated load frequently handled	30 (50%)	300	30	300

**K = Mean effective load factor.*

State of Loading		Total duration of use (hr)						
		200	400	800	1600	3200	6300	12500
Light	Mechanisims subjected very rarely to the maximum load and, normally, to light loads	-	-	M1	M2	M3	M4	M5
Moderate	Mechanisims subjected fairly frequently to the maximum load and, normally, to rather moderate loads	-	M1	M2	M3	M4	M5	M6
Heavy	Mechanisims subjected frequently to the maximum load and, normally, to loads of heavy magnitude	M1	M2	M3	M4	M5	M6	-
Very Heavy	Mechanisims subjected regularly to the maximum load	M2	M3	M4	M5	M6	-	-

This classification refers to ISO 4301-1 and applies to the mechanical components including gears and bearings except for consumable parts.

COMPLIANCE

Harrington's electric chain hoists are produced to comply with:

- UL 1340*
- ANSI/NFPA 70, "National Electrical Code"
- ANSI/ASME B30.16, "Safety Standard—Overhead Hoists (Underhung)"
- ANSI/ASME HST—1M, "Performance Standard for Electric Chain Hoists"

Harrington's manual and electric-powered trolleys are produced to comply with the trolley-related requirements of:

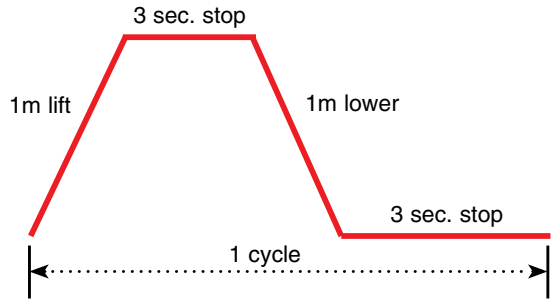
- OSHA Section 1910.179 of Title 29, "Occupational Safety and Health Regulations — Overhead and Gantry Cranes"
- ANSI/ASME B30.11, "Safety Standard—Monorails and Underhung Cranes"
- ANSI/ASME B30.17, "Safety Standard—Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)"

**Most models shipped with UL listing. Contact Customer Service for listed models.*

LIFTING MOTOR RATINGS

Short Time Rating

This rating indicates how long the hoist can be operated continuously at the rated capacity on the cycle below, assuming continued operation for a short time span.

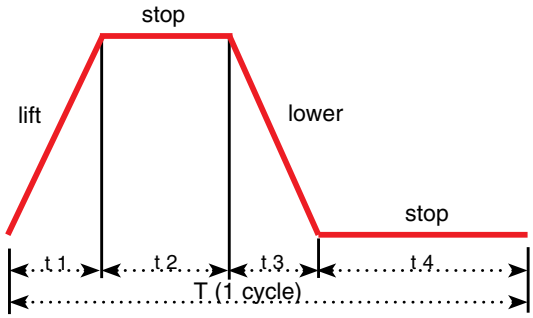


- Single speed: 60 min
- Dual speed: 30/10 min

Intermittent Rating (Percent ED)

Max. Number of Starts Per Hour

This rating indicates the allowable ratio of motor ON time to motor OFF time, and starts per hour for a hoist operated continuously at 63% of rated capacity on the cycle below, assuming continued operation or repeated starting over a long time span.



Example (single speed): $\%ED = \frac{\text{Motor ON time } (t1 + t3)}{T \text{ (1 cycle)}} \times 100$

(Where T = 1 cycle (t1 + t2 + t3 + t4) and is not more than 10 minutes.)

NER/ER Lifting Motor Ratings

- Single speed: 60% ED, 360 starts/hr
- Dual speed: 40/20% ED, 120/240 starts/hr

Product Code For NER/ER Series

ERM 020 SD-SD

Type:	Capacity Code (examples):	Lifting Speed:	Traversing Speed:
ER = ER Hook Mount	001 = 1/8 Ton	C = Common	L = Low, 40 fpm
ERM = ER with Motorized Trolley	003 = 1/4 Ton	L = Low	S = Standard, 80 fpm
ERP = ER with Push Trolley	005 = 1/2 Ton	S = Standard	SD = Standard Dual, 80/13 fpm
ERG = ER with Geared Trolley	010 = 1 Ton	H = High	
NER = NER Hook Mount	100 = 10 Ton	CD = Com. Dual	
NERM = NER with Motorized Trolley		LD = Low Dual	
NERP = NER with Push Trolley		SD = Std. Dual	
NERG = NER with Geared Trolley		HD = High Dual	