



LODEKINGTM

ELECTRIC WIRE ROPE HOISTS



LODEKING LTTM
10 TO 25 TON
LOW-HEADROOM MODELS
15 THROUGH 25 HP

LODEKINGTM
15 TO 60 TON
HIGH-CAPACITY MODELS
30 THROUGH 60 HP

C O L U M B U S M C K I N N O N C O R P O R A T I O N

LODEKING[™]

HIGH-CAPACITY ELECTRIC WIRE ROPE HOISTS

When you need a heavy-duty, high-capacity wire rope hoist, turn to the Yale LodeKing[™]. Manufactured in Salem, Ohio, the LodeKing is available in capacities from 15 to 60 tons.

The LodeKing is engineered with an efficient, space-saving center drive configuration and dual drum design for superior load control and centering. These hoists also feature a robust commercial gear drive that delivers reliable performance with easy maintenance.



CAPACITIES 15 to 60 TONS

KEY SPECIFICATIONS

Feature	LODEKING
Service Class	CMAA Class D, ASME / HMI – Class “H4”
Design Safety Factor	5:1 (min.)
Bottom-Block-Sheave-to-Rope Ratio	24:1 (min.)
Operating Environment	Indoor
Hook Assembly	360° rotation with safety latch
Rope Guide	No
Drum	Steel drum w/nominal 50% groove depth 24:1 (min.) drum to rope ratio
Safety Wraps	3
Hoist Control	Closed-Loop (Flux Vector) VFD

Feature	LODEKING
Hoist Limit Switches	Two-position rotary cam upper/lower type plus upper block type limit switch
Trolley Control	Open-Loop VFD
Trolley Brake	Included
Control Enclosure	Nema 4/12
Voltages	Line: 460-3-60 • Optional 208-3-60, 230-3-60 & 575-3-60 • Control: 115-1-60
Pendant	Not included as standard
Bearings	Sealed and/or shielded, lifetime lubricated
CSA Approval	Optional
UL Approval	No

STANDARD FEATURES:

- TRUE VERTICAL LIFT**
Better load control. Easy movement and placement of product.
- CENTER DRIVE CONFIGURATION**
Improves load centering on the crane and provides cleaner outside dimensions.
- WELDED ECCENTRIC OUTER BEARING**
Welding prevents tampering with the bearing. It also allows for fast, easy change-out of bearing in the field with no adjustments required. No shims needed.
- INDUSTRY-PROVEN GEAR DRIVE**
Easy-to-maintain gear drive features a sight glass for quick inspection of the oil level. Standard availability improves product lead time.
- STANDARD FLUX VECTOR HOIST DRIVE PACKAGE**
Improves load control and allows for precise movements. Reduces brake wear.
- SUPPLEMENTAL UPPER & LOWER LIMIT SWITCH**
Safely stops load from being lifted or lowered beyond set limits, reducing damage to equipment and hoist.
- EXCEEDS CMAA CLASS D ROPE TO SHEAVE & DRUM DIAMETER**
Reduces rope maintenance.
- 200% MOTOR BRAKE TORQUE RATING**
Secondary brake exceeds CMAA Standards. Stops and holds a rated load quickly and securely.
- 30 TO 60 HP MOTORS AVAILABLE**
Offers wide range of hoist lifting speeds.
- BUILT-UP CONSTRUCTION**
Fabricated frames made from steel structures add structural integrity.
- ROTATING AXLE TROLLEYS**
Ideal for Class D service requirements. Longer bearing life with roller bearings versus ball bearings for capacities over 30 ton.
- THERMAL OVERLOAD PROTECTION**
Provided within the drive.



60-TON LODEKING >>

OPTIONAL FEATURES:

ION NITRIDING OF SHEAVES & DRUMS

LOAD SENSING

Standard field programmable.

OVERLAY PROTECTION WITH SPOOLING BAR

CUSTOM TROLLEY GAGES

AUXILIARY HOIST

CSA MODELS

Available through special inspection.

LODEKING

HIGH-CAPACITY ELECTRIC WIRE ROPE HOISTS

MODEL COMPARISON

Feature	Capacity (US Tons)							
	15	20	25	30	40	45	50	60
Hoist Lifting Speed (FPM)	30	22	18	15	14	13	14	12
Standard Hoist Motor Hp	30	30	30	30	40	40	50	50
Optional Lifting Speeds Available (FPM)	40, 50, 60	29, 37, 45	24, 30, 36	20, 25, 30	18, 21	16, 20	17	14
Standard Hoist Motor Frame Size (IEC Designations)	180L	180L	180L	180L	200L	200L	225S	225S
Hoist Full Load Amps @ 460V Power	37.2	37.2	37.2	37.2	48	48	58	58
Hoist Inverter Amps @ 460V Power	45	45	45	45	60	60	75	75
Hoist Motor Rpm	1,765	1,765	1,765	1,765	1,780	1,780	1,765	1,765
Hoist Bearing Life (hrs.)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Trolley Traverse (FPM)	100	100	100	100	100	100	100	100
Trolley Motor Hp	1.5 (x2)	1.5 (x2)	2 (x2)	2 (x2)	3 (x2)	3 (x2)	3 (x2)	5 (x2)
Trolley Motor Frame Size	D80	D80	D90L	D90L	215 w/ 184TC Face	215 w/ 184TC Face	215 w/ 184TC Face	215TC
Trolley Full Load Amps @ 460V Power	2.3 (x2)	2.3 (x2)	3.2 (x2)	3.2 (x2)	4.5 (x2)	4.5 (x2)	4.5 (x2)	7 (x2)
Trolley Inverter Amps @ 460V Power	4.8	4.8	9.2	9.2	14.8	14.8	14.8	18.0
Trolley Motor Rpm	3,960	3,960	1,670	1,670	1,725	1,725	1,725	1,725
Trolley Bearing Life (hrs.)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Standard Gage (in.)	60	60	60	72	78	78	84	84
Standard Lift (ft.)	50	50	33	44	37	30	33	28
Maximum One Wheel Load (lbs.)	9,000	12,000	15,000	18,000	24,000	27,000	30,000	36,000
Trolley Wheel Diameter	200 mm	200 mm	260 mm	260 mm	12 in.	12 in.	12 in.	15 in.
Trolley Wheel Hardness (BHN)	300-350	300-350	300-350	300-350	400-450	400-450	400-450	400-450
Axle Bearings	Roller	Roller	Roller	Roller	Roller	Roller	Roller	Roller
Operate On Both ASCE Rail & Square Bar	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hoist Motor Brake Type	DC	DC	DC	DC	DC	DC	DC	DC
Manual Release Type	Yes (Spring Return to On)	Yes (Spring Return to On)	Yes (Spring Return to On)	Yes (Spring Return to On)	Yes (Spring Return to On)	Yes (Spring Return to On)	Yes (Spring Return to On)	Yes (Spring Return to On)
Hoist Motor Torque Rating (Brake Rating 200% Min.)	210.29%	210.29%	210.29%	210.29%	252.85%	252.85%	202.19%	202.19%
Hoist Motor Duty	S3-60% Duty	S3-60% Duty	S3-60% Duty	S3-60% Duty	S3-60% Duty	S3-60% Duty	S3-60% Duty	S3-60% Duty
Motor Insulation Class	F	F	F	F	F	F	F	F
Hoist Thermal Overload Protection	TAS In Motor & Thermal Overload Provided By VFD							
Trolley Drive Type	VFD	VFD	VFD	VFD	VFD	VFD	VFD	VFD
Trolley Motor Brake Type	DC	DC	DC	DC	AC	AC	AC	AC
Manual Release Type	N/A	N/A	N/A	N/A	Maintained - Auto Reset	Maintained - Auto Reset	Maintained - Auto Reset	Maintained - Auto Reset
Trolley Motor Torque Rating (Brake Rating 50% Min.)	86.50%	86.50%	116.60%	116.60%	65.72%	65.72%	65.72%	65.70%
Trolley Motor Duty	S3-40%	S3-40%	S3-40%	S3-40%	30 Minute	30 Minute	30 Minute	30 Minute
Motor Insulation Class	F	F	F	F	F	F	F	F
Trolley Thermal Overload Protection	TAS In Motor (Standard); Thermal Overload External (Optional)							
Number Of Reductions On Gear Drive	3	3	3	3	3	3	3	3
Helical Gear Or Combination Helical & Spur	Helical	Helical	Helical	Helical	Helical	Helical	Helical	Helical
AGMA Standard	AGMA Class 13	AGMA Class 13	AGMA Class 13	AGMA Class 13	AGMA Class 13	AGMA Class 13	AGMA Class 13	AGMA Class 13
Gear Case Material	Gray Iron	Gray Iron	Gray Iron	Gray Iron	Gray Iron	Gray Iron	Gray Iron	Gray Iron
Overhung Gearing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parts Of Rope	4	4	6	6	8	10	10	12
Rope Diameter (mm)	16	16	16	16	16	16	16	16
Wire Rope Type	Dynaflex DFS 8							
Wire Rope Drum Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Wire Rope Drum Diameter (in.)	16	16	16	16	16	16	16	16
Wire Rope Drum Groove Depth (%)	50	50	50	50	50	50	50	50
Upper Block Sheave Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Upper Block Sheave Diameter (in.)	16	16	16	16	16	16	16	16
Removable From Upper Sheave Nest	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lower Block Sheave Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Lower Block Sheave Diameter (in.)	16	16	16	16	16	16	16	16
Roller Thrust Bearing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hook Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel



30-TON LODEKING >>
WITH MOUNTED ENCLOSURE



<< 60-TON LODEKING
WITH MOUNTED ENCLOSURE

WHAT'S DRIVING YOUR HOIST?

Magnetek's IMPULSE®•VG+ Series 4 drive, used in the Yale LodeKing & Yale LodeKing LT, offers industry-leading safety and performance features.



FEATURES & BENEFITS

MAGNETEK IMPULSE•VG+ SERIES 4 DRIVE USED FOR HOIST CONTROL

Industry-leading safety and performance features.

MULTIPLE CONTROL OPTIONS

2-step infinitely variable control as standard. Available with additional control options including 3-step infinitely variable control, 2-speed multi-step control and 3-speed multi-step control.

MULTIPLE POWER SUPPLIES

Available for 208V-3PH-60HZ, 230V-3PH-60HZ, 460V-3PH-60HZ and 575V-3PH-60HZ power supplies.

FAULT HISTORY

Recorded history to aid in troubleshooting.

EQUIPPED WITH 115V INTERFACE CARD

Compatible with existing 115V crane control systems. Additional control voltages available upon request.

EXTERNAL HOIST BRAKE RESISTOR

Allows for dynamic braking and uninterrupted drive service at high duty cycles.

MOTOR THERMAL OVERLOAD PROTECTION

Drive offers built-in thermal overload and overcurrent protection.

LOAD CHECK II™

Continuously monitors the hoist hook load during acceleration and constant speed, eliminating the need for load cells in most applications. *Note: Optional feature. Request upon order.*

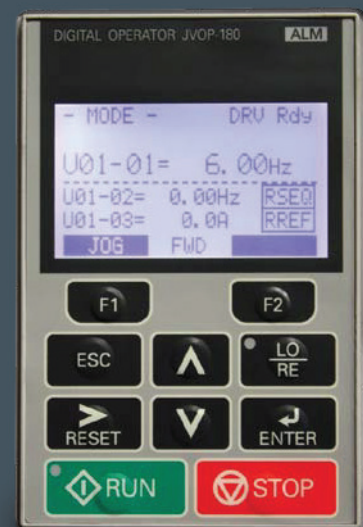
ANTI-SHOCK FEATURE

Automatically stabilizes loads by detecting and minimizing rapid increases in motor torque, reducing the potential for crane damage caused by operator-induced load shock. *Note: Optional feature. Request upon order.*

KEYPAD WITH DIGITAL DISPLAY

Magnetek's user-friendly keypad with digital display gives you five lines of 16 characters each and includes soft keys and upgraded parameter selection. The display makes navigation and reading diagnostics even easier and allows for:

- PROGRAMMING VARIOUS DRIVE PARAMETERS
- READING OF ALPHA-NUMERIC FAULT DIAGNOSTIC INSTRUCTIONS
- PARAMETER BACK-UP (STORE AND COPY)
- REMOTE MONITORING
- MONITORING FUNCTIONS OF THE DRIVE



MAGNETEK

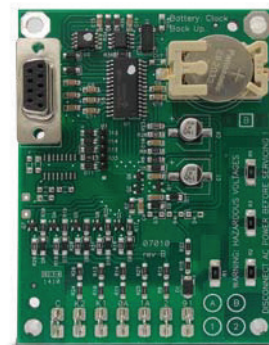
PULSE™ MONITOR

ELECTRONIC HOIST DATA INTERFACE

The proper use and maintenance of your Columbus McKinnon powered hoists can help ensure a long service life as well as operator safety.

Pulse Monitor is an electronic monitoring system that records key performance data for your hoist during normal operation. The captured data can be read with the Pulse computer interface kit* to assist you in troubleshooting and determining preventative maintenance solutions. A more accurate diagnosis can help reduce maintenance costs and minimize downtime.

Pulse Monitor card and interface kits are available for the Yale LodeKing & LodeKing LT electric wire rope hoists.



WHAT INFORMATION DOES THE PULSE MONITOR RECORD?

MOTOR STARTS

A motor start is recognized by energization of either the slow or fast motor winding for 300ms or more.

CUMULATIVE RUN TIME

Every time the motor is energized, the Pulse Monitor records how long it runs and adds to the cumulative total run time.

PLUG EVENT (EXCESSIVE PLUGGING)

A plug event is recorded when the directional contactor (node 0A or 1A) is energized four times within any two second period of operation.

OVERCAPACITY EVENT

An overcapacity trip will be recorded when the monitor card terminals K1 and K2 measure 115 volts** and terminal 0A is at 0 volts. The overcapacity event is recorded based on absence of a voltage at the normally closed contact from the overload limit switch relay. It is not measuring load on the motor, but rather the state of the overload limit switch.

MOTOR TRIP EVENT

A motor trip event will be recorded when the monitor card terminal K1 measures 115 volts** and terminal K2 is at 0 volts.

VOLTAGE MEASUREMENT

For every motor event, the voltage will be measured.



Pulse Monitor Interface Kit with USB Adaptor

TOTAL COST OF OWNERSHIP

The long-term expense of maintenance, service fees and replacement parts can add up over the full service life of a hoist. All of these after-sale costs contribute to the total cost of ownership – which is an important factor to consider when making a purchasing decision.

The Pulse Monitor can help provide an even lower total cost of ownership for your CMCO hoist, by allowing for:

BETTER MAINTENANCE TIMING

Consistently monitors motor starts, hoist run time and cumulative run time for preventative maintenance planning.

REDUCED DOWNTIME DUE TO IMPROPER HOIST USE

Monitors excessive hoist use, excessive plugging, motor trip events and overcapacity events.

VERIFICATION OF CLEAN LINE VOLTAGE

Measures voltages for every motor event to ensure hoist is running on adequate line voltage.

LONGER HOIST LIFE

Allows operator to schedule maintenance at regular intervals and monitor hoist abuse.

PULSE MONITOR KIT OFFERING

The Pulse Monitor is available in 2 different kit varieties to accommodate individual needs.

PULSE MONITOR INDIVIDUAL CARD KITS

Catalog #: **PCARDKIT1** (Use with 115V control)

Catalog #: **PCARDKIT2** (Use with 24V control)

Use kits to install Pulse Monitor Card on CMCO hoists that do not include card as standard equipment. To read data on the card, a computer interface kit, sold separately, is also required. Kit includes:

- (1) Pulse Monitor Card
- (1) Card Mounting Bracket
- (1) Pulse Monitor Software Disk
- (6) Pan Head Phillips Screw Self Tap #6-32 X 5/8" (includes 2 extra)
- (3) Pan Head Phillips Screw Self Tap #10-24 X 1/4" (includes 1 extra)
- (10) Terminal Wire Insulated Female Quick Connector Panduit
Part no. DNR14-188F1B-C (tab size 0.187 X 0.020) (includes 3 extra)
- (1) 16# Insulated Wire (15 ft.)

PULSE MONITOR COMPLETE CARD & INTERFACE KITS

Catalog #: **PCOMLETEKIT1** (Use with 115V control)

Catalog #: **PCOMLETEKIT2** (Use with 24V control)

Use to install Pulse Monitor Card on CMCO hoists that do not include the Pulse Monitor Card as standard equipment. Kit also includes computer interface kits required to read card data. (Requires 3" X 5-1/4" X 2-1/2" envelope in control enclosure.) Kit includes:

- (1) Pulse Monitor Card
- (1) Card Mounting Bracket
- (1) Pulse Monitor Computer Interface (9V battery not included)
- (2) Serial Extension Cable (6 ft.)
- (1) Pulse Monitor Software Disk
- (1) StarTech.com USB Adaptor Software Disk
- (1) Serial Port to USB Adaptor Cable (3 ft.)
- (6) Pan Head Phillips Screw Self Tap #6-32 X 5/8" (includes 2 extra)
- (3) Pan Head Phillips Screw Self Tap #10-24 X 1/4" (includes 1 extra)
- (10) Terminal Wire Insulated Female Quick Connector Panduit
Part no. DNR14-188F1B-C (tab size 0.187 X 0.020) (includes 3 extra)
- (1) 16# Insulated Wire (15 ft.)

Note: Kit also includes a DB9 to DB25 pin adapter for 25-pin RS232 serial communication, which will not be needed in most cases.

* Computer interface kit (sold separately) is required to read Pulse Monitor Card data.

** While the Pulse Monitor itself is capable of +/-5% voltage measurement accuracy, two additional factors may further decrease accuracy. Motor voltage is calculated using the control voltage powering the Pulse Monitor. This calculation is based on the ideal ratio of the control transformer (primary voltage to secondary voltage). Any variation in the control transformer ratio will consistently skew the motor voltage data. Additionally, this voltage measurement is made at the point where the Pulse Monitor is connected. If this point is significantly removed from the motor being monitored, a noticeable voltage drop may exist. The user is cautioned to consider both these contributing factors while interpreting the stored voltage data.