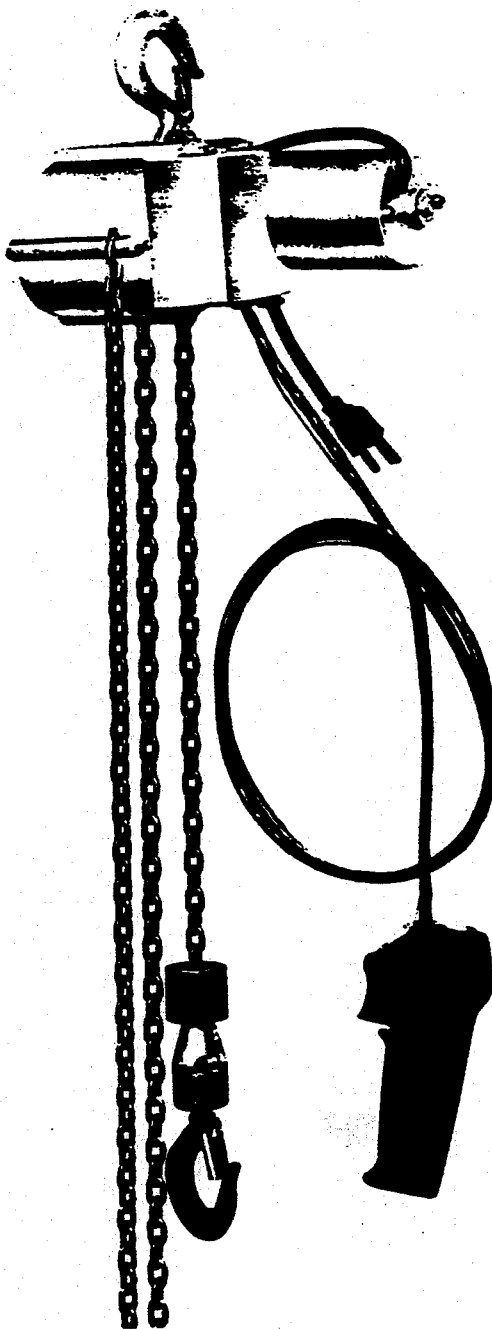


**Yale** **SEL**  
**ELECTRIC CHAIN HOIST**  
**PARTS AND INSTRUCTION MANUAL**

**Yale**<sup>®</sup>



July 1988

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SEL.001

# SEL 1/4 & SEL 1/2 Ton CHAIN HOIST

## Operating Instructions

Read instructions carefully before attempting to install, operate, or service this electric hoist. Failure to comply with instructions could result in personal injury and/or property damage.

## Description

The Yale SEL Electric Chain Hoist features self locking, hardened steel gears that also function as a load brake. The hoist is equipped with electronic overload protection, adjustable upper and lower limit switches, permanently lubricated and hardened steel gear train, and pendant trigger control.

## Specifications:

Volts: 115 Volt 50/60 Hz 1 phase

Amps at full load - 4.0

Capacity - 500 lbs. single line, vertical lift  
1,000 lbs. double line, vertical lift

Lift speed full load - 12 FPM @ 500 lbs.

6 FPM @ 1,000 lbs.

Min. distance between hooks - 500 lb. hoist - 14"

1,000 lb. hoist - 15"

Chain length - 10' SEL 1/4; 20' SEL 1/4 & SEL 1/2

Chain Size - 4MM link (welded and heat treated) minimum breaking strength  
3,400 lbs.

## Duty Cycle

This is an intermittent duty hoist. Failure to comply with this duty cycle will cause overheating of the gear box and the motor. Overheated gears, thin out the lubricant causing excessive wear on the gears. An overheated motor breaks down insulation on the winding causing premature motor failure. A temperature sensing device built into the hoist will indicate if the duty cycle has been exceeded. **EXCEEDING THE DUTY CYCLE VOIDS THE WARRANTY.** Therefore, it is very important to allow sufficient time for the motor and gear box to cool down after each usage. The following chart gives recommended rest periods for varying amounts of usage. Running the motor over 2 minutes at full load is not recommended.

| MOTOR<br>"ON" TIME<br>(MINUTES) | VERTICAL TRAVEL<br>DISTANCE (FEET) |                | COOL DOWN<br>PERIOD (MINUTES) |                 |
|---------------------------------|------------------------------------|----------------|-------------------------------|-----------------|
|                                 | 500 LB. HOIST                      | 1,000 LB HOIST | FULL RATED LOAD               | HALF RATED LOAD |
| 1/4                             | 3                                  | 1 1/2          | 1                             | 1/2             |
| 1/2                             | 6                                  | 3              | 3                             | 1 1/2           |
| 1                               | 12                                 | 6              | 7                             | 3 1/2           |
| 2*                              | 24                                 | 12             | 15                            | 7 1/2           |

\* Do Not Exceed 2 Minutes "on" Time

## General Safety Information

This hoist is designed for safe operation within the limits of its rated capacity. There are safety features built into the hoist to protect the operator and others from injury due to failure of the hoist itself. However, listed below are safety precautions which must be followed in order to protect personnel and property.

1. Align hoist for straight line pull. Avoid side pulls and pulling horizontally.
2. Limit switches are emergency devices only. Do not use limit switches to stop the hoist in normal operation. Repeated actuation of these limit switches under load could damage the hoist.
3. Do not operate hoist with twisted, kinked, or damaged chain.

4. Do not operate a damaged or malfunctioning hoist until adjustments or repairs have been made.
5. Do not use hoist to lift people or carry loads over people.
6. Do not lift more than rated capacity of the hoist.
7. Do not leave a load suspended in the air unattended.
8. Avoid jogging controls or quick reversals of load.
9. Always remove load and disconnect hoist from power supply before making repairs.
10. Read American National Standards Institute - B30.16  
**WARNING: DO NOT USE HOIST FOR MOVEMENT OF PERSONNEL OR LOADS OVER PERSONNEL. DO NOT OPERATE HOIST IN AN EXPLOSIVE ATMOSPHERE OR CORROSIVE ENVIRONMENT.**
11. Do not replace chain supplied with hoist with any other type.
12. Do not attempt to operate hoist on any other power supply other than 115 volt, 50/60 Hz, single phase.

## OPERATION

This hoist is operated by the pistol grip switch at the end of the control cord.

To raise a load, move the direction lever to the "up" position and squeeze the trigger to operate. To lower a load, move direction lever to "down" position and squeeze the trigger. The load will stop and hold from either direction by releasing the trigger.

**NOTE:** The direction lever cannot be moved unless the trigger is released. Forcing the direction lever while holding the trigger in will only result in broken switch.

A load, whether being raised or lowered, will stop in approximately 1/8 inch when the control trigger is released. At this point, the motor and face gears are locked and the load will remain in position until the control switch is again activated.

## Limit Switches

The hoist is equipped with an upper and lower limit switch. The upper switch is intended as an emergency shut-off to limit the upward travel of the load hook and should not be used during normal operation of the hoist. The lower limit switch is also intended as an "emergency only" stop and should not be used during normal operation of the hoist. Repeated use of the upper and lower limit switch under load can cause shock loads that could damage the hoist.

If one of the limit switches has been activated, do not attempt to continue hoist movement in the same direction. Hoist must be reversed. Continued attempts to operate the hoist in the direction of the activated limit will break limit switch arm. A broken arm on limit switch is not covered by warranty.

## Chain Bucket

A chain bucket is standard equipment and may be used when slack chain hanging from hoist is not desired. Note how the hook is fastened to the bucket before removing it for installation on the hoist. To install, feed the hook through the third link down of the fixed chain end (See figure 2). Attach hook to the bucket by inserting hook ends through the TOP of the tabs at the bucket rim.

## Trouble Shooting

If hoist operated in one direction only, check for a jammed limit switch arm. This can be done by removing the limit switch cover.

If hoist starts to lift a heavy load and then stops, check the overload light while holding the control switch in the up position. If the light comes on, then lower and reduce the load and repeat the procedure.

If hoist will not operate, check for blown fuse. The fuse is located in the bottom of the control handle. If the fuse is blown, replace with a new 5 Amp fuse. Do not increase fuse size.

## **INSTALLATION**

### **Mounting**

The hoist must be hung by the upper hook only, and should not be mounted by any other means. The mounting support must be capable of handling loads in excess of hoist rating. Suggested locations are on a support beam or trolley.

### **Electrical Connection**

This hoist is to be connected to a 115-volt A.C., single phase, 50/60 Hz current only. The outlet must be grounded.

### **Maintenance**

On a daily basis, the following should be checked:

1. Controls - Check all controls and operating mechanisms for proper function.
2. Safety Devices - Check upper and lower limit switches for proper function.
3. Hooks - Check for cracks or deformation.
4. Chain - Inspect for wear, distortion, and proper attachment at each end. Check for dirt and foreign matter on chain that can be carried back into hoist.

On a periodic basis (suggested intervals of one to three months, depending on service), the following should be checked:

1. Bolts, screws, and connections for any loosening.
2. Pocket wheel for wear.
3. Wear of chain, including chain stretch. Chain stretch can be checked by measuring 11 links of a section of chain that normally runs over the pocket wheel.

This hoist is equipped with a 4MM welded link chain with a .472 nom. pitch; therefore, 11 links of a new chain should measure  $5.197 + .016 - .008$  inches.

If any 11 links of chain measure more than 5.275 inches, then stretch and wear is excessive and the chain must be replaced.

4. Hooks - Check for cracks with dye penetrants, magnetic particles, or other suitable methods at least once a year.
5. Check electrical components for corrosion or other signs of deterioration.
6. Check hook retaining pins for wear and secureness.

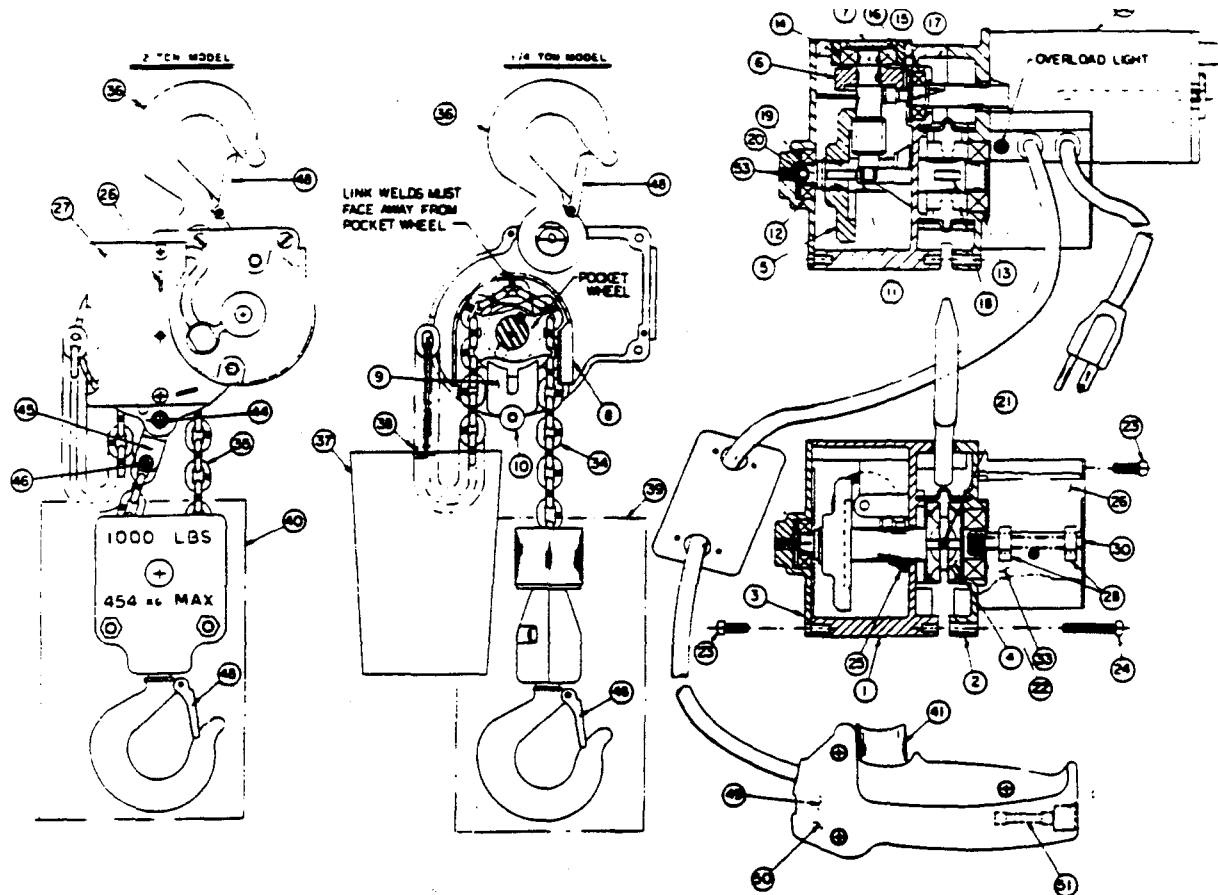
### **Testing**

After repair, check to see that the welds on each link face away from the pocket wheel. After repair or modification of a hoist, it must be tested for proper operation. Begin test with a light load and increase to rated capacity. Test should also include operation of upper and lower limit switch.

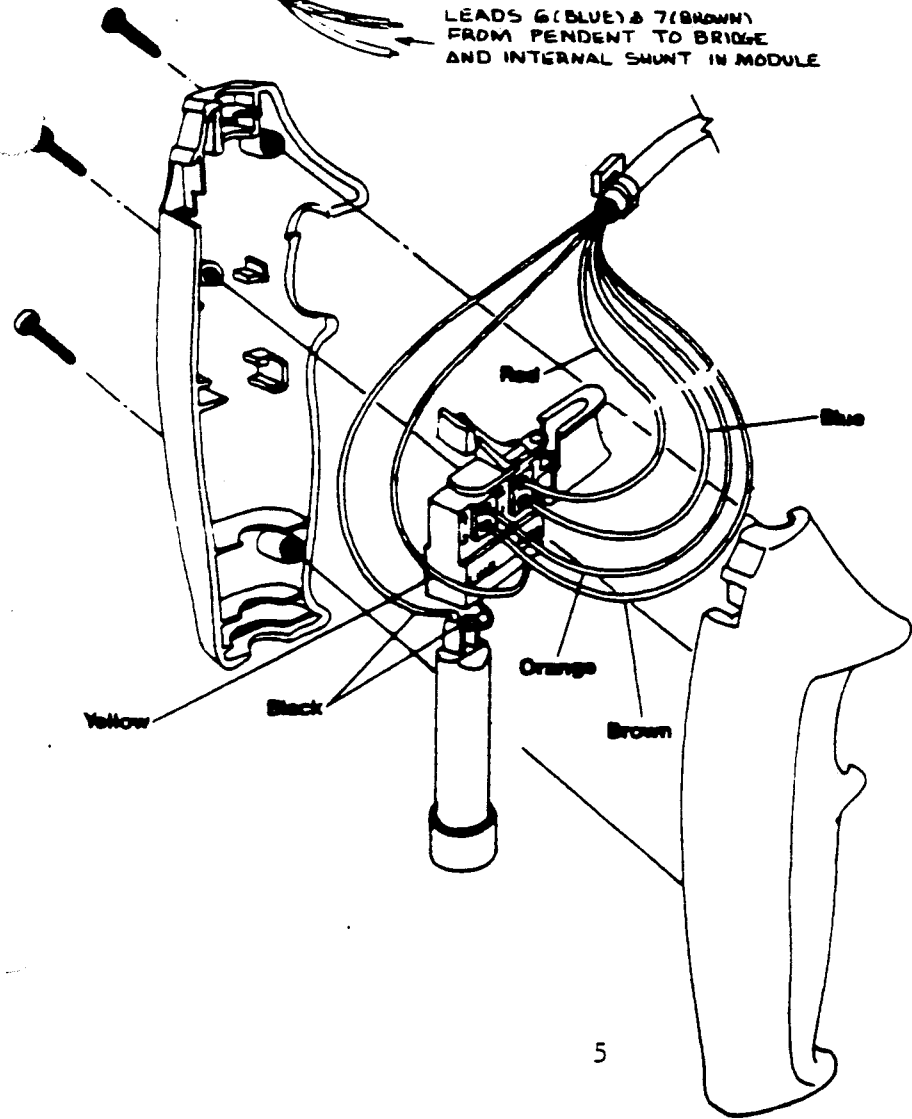
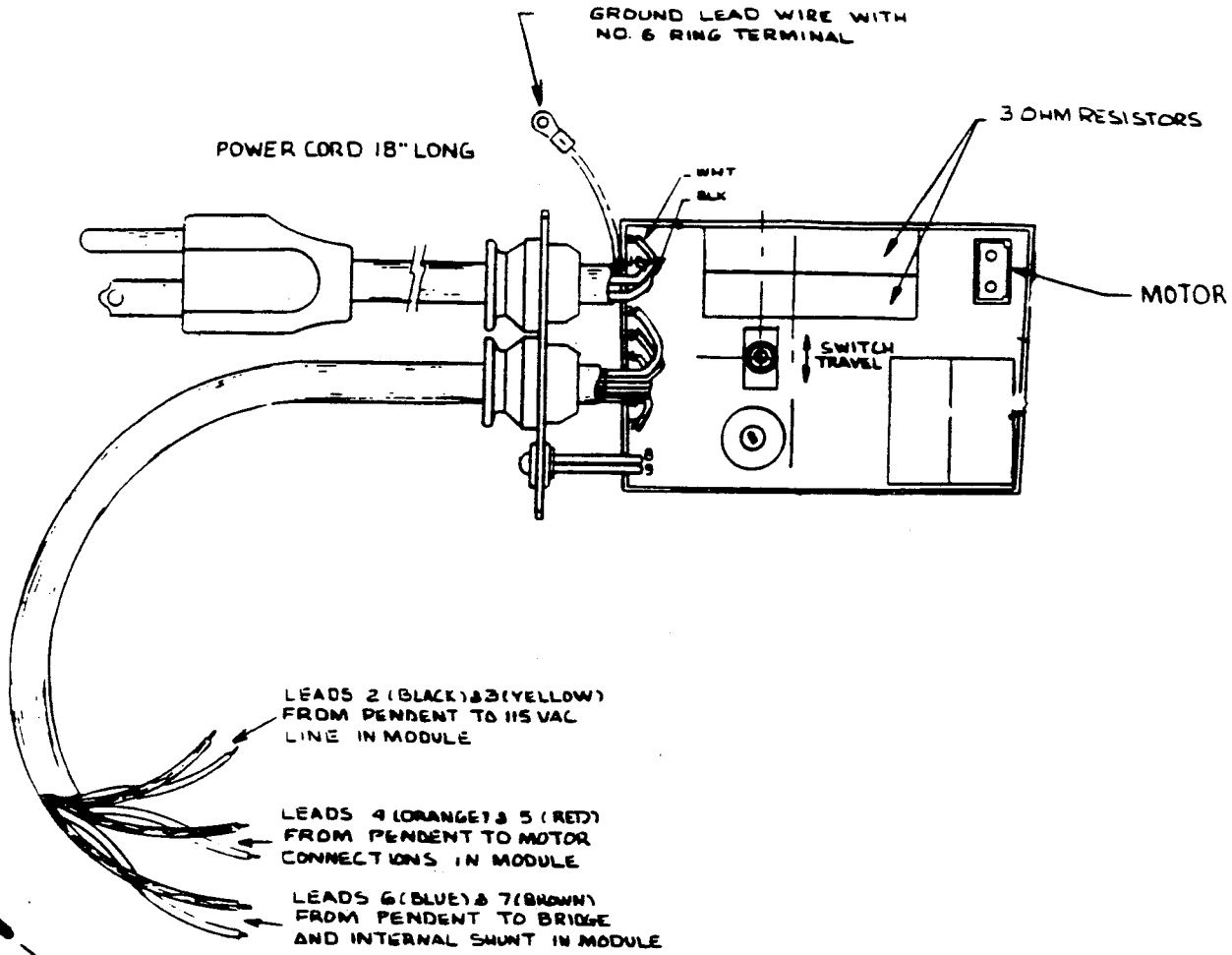
### **Lubrication**

If lubrication of the gearbox is required because of unusual conditions, then use only Yale grease Part No. 911502000. This is the only grease approved for use in the Yale hoist.

The chain should be lubricated with SAE 20-30 grade motor oil.



| Key No. | Part No.  | Description                      | Qty. | Key No. | Part No.  | Description                           | Qty.    |
|---------|-----------|----------------------------------|------|---------|-----------|---------------------------------------|---------|
| 1       | 914500200 | Housing                          | 1    | 30      | 912501501 | Drive Screw                           | 1       |
| 2       | 914500300 | Sprocket Cover                   | 1    | 32      | 913204600 | Motor                                 | 1       |
| 3       | 913500100 | Gear Cover                       | 1    | 33      | 913107600 | MODULE, HOIST BOARD                   | 1       |
| 4       | 912500600 | Pocket Wheel (4MM Chain)         | 1    | 34      | 912501801 | Chain (4MM x 10 Ft.)                  | 1       |
| 5       | 912501300 | Pocket Wheel Shaft & Gear Ass'y. | 1    | 35      | 912501802 | Chain (4MM x 20 Ft.)                  | 1       |
| 6       | 912501200 | Primary Gear & Pinion Ass'y.     | 1    | 36      | 902285900 | Hook (Safety Latch Inc.)              | 1       |
| 7       | 911500200 | Adjusting Plug                   | 1    | 37      | 912502000 | Chain Bucket (500 lb)                 | 1       |
| 8       | 911500902 | Chain Guide                      | 1    |         | 912502100 | Chain Bucket (1000 lb)                | 1       |
| 9       | 911501000 | Chain Stripper                   | 1    | 38      | 911501700 | Hook, Chain Bucket (500 lb)           | 1       |
| 10      | 911501200 | Spacer (500 Lb. Hoist)           | 1    |         | 911502400 | Hook, Chain Bucket (1000 lb)          | 1       |
| 11      | 912304115 | Needle Bearing                   | 1    | 39      | 912502200 | Clevis & Hook Ass'y. 500 Lb. Hoist    | 1       |
| 12      | 912307904 | Ball Bearing                     | 1    | 39A     | 912306700 | Hook & Latch Ass'y. (Part of Key #39) | 1       |
| 13      | 912307905 | Ball Bearing                     | 1    | 39B     | 912501700 | Clevis Half (Part of Key # 39)        | 2       |
| 14      | 912307906 | Ball Bearing                     | 1    | 39C     | 911232500 | Bumper (Part of Key # 39)             | 1       |
| 15      | 912307903 | Ball Bearing                     | 1    | 39D     | 932312014 | Flat Washer (Part of Key # 39)        | 1       |
| 16      | 912302912 | Retaining Ring                   | 1    | 39E     | 912306604 | Dowel Pin (Part of Key # 39)          | 1       |
| 17      | 912302910 | Retaining Ring                   | 2    | 40      | 913500500 | Pulley Block Ass'y. 1000 lb. Hoist    | 1       |
| 18      | 912303502 | Woodruff Key                     | 1    | 40A     | 912306700 | Hook & Latch Ass'y. (Part of Key #40) | 1       |
| 19      | 911501100 | Spacer (Gear Cover)              | 1    | 40B     | 911500100 | Sprocket (Part of Key #40)            | 1       |
| 20      | 911500800 | Shaft Adj. Ball                  | 1    | 40C     | 911501800 | Pin Pulley Block (Part of Key #40)    | 1       |
| 21      | 912316403 | Set Screw 1/4 - 20 x 1/4         | 1    | 40D     | 913500300 | Block Half (Part of Key #40)          | 2       |
| 22      | 912316402 | Set Screw 1/2 - 13 x 3/8         | 1    | 41      | 913500700 | Switch, Single Speed                  | 1       |
| 23      | 912303002 | Screw 10-32 x 1/2                | 7    | 42      | 911502000 | Synco TFE Grease (Not Shown)          | 3 cu/in |
| 24      | 912303005 | Screw 10-32 x 1-1/4              | 5    | 43      | 912305802 | Cable Tie (Not Shown)                 | 1       |
| 25      | 912500901 | Checkseal                        | 1    | 44      | 912305505 | Screw, Hex Socket Hd. Cap             | 1       |
| 26      | 911501400 | Guide Plate                      | 1    | 45      | 911503100 | Clevis                                | 1       |
| 27      | 911501300 | Limit Switch Housing Cover       | 1    | 46      | 912305504 | Screw, Hex Socket Hd. Cap             | 1       |
| 28      | 911501603 | Limit Switch Arm                 | 2    | 47      | 912307303 | Hex Nut Prevailing Torque (Not Shown) | 1       |
|         |           |                                  |      | 48      | 911232600 | Safety Latch Set                      | 2       |
|         |           |                                  |      | 49      | 904095700 | Control Handle Left Half              | 1       |
|         |           |                                  |      | 50      | 904095800 | Control Handle Right Half             | 1       |
|         |           |                                  |      | 51      | 912318004 | Circuit Breaker                       | 1       |
|         |           |                                  |      | 53      | 912316408 | Screw 5/16-24 x 3/8                   | 1       |



## Yale Limited Warranty

LIMITED WARRANTY. Yale, Inc. ("Seller") warrants all parts and components to be free from defects in materials and workmanship for a period of 90 days from the provable date of purchase. Any Yale SEL chain hoist which is defective will be repaired or replaced without charge to the Buyer upon compliance with these procedures. Other warranties - express or implied - are limited or excluded, and remedies are limited, as provided herein.

LIMITED WARRANTY PERFORMANCE PROCEDURE. Upon discovery of a defective Yale SEL chain hoist, the Buyer shall mail to the Seller at his factory or to any Factory Authorized Service Center written notice of such defect and mail, ship, or otherwise deliver the defective Yale SEL chain hoist, postage or shipping prepaid. Repairs or replacements by Seller under this Limited Warranty will normally be accomplished within 15 business days after receipt of the defective Yale SEL chain hoist. Seller or his Authorized Agents may make reasonable charges for parts and labor for repairs not covered by this Limited Warranty.

WARRANTY AND REMEDY LIMITATIONS AND EXCLUSIONS. Repair and/or replacement of the defective Yale SEL chain hoist or component part thereof as provided herein is the primary remedy for the Buyer. The following exclusions or limitations or warranties and limitations or remedies shall be expressly applicable:

- A. Express Warranties. Seller warrants that the Yale SEL chain hoist is as described in the "Yale SEL Owner's Manual" provided herewith; no other express warranty is made in respect to the Yale SEL chain hoist. If any model or sample was shown to the Buyer, such model or sample was used for illustrative purposes only, and shall not be construed as a warranty that the Yale SEL chain hoist will conform to the sample or model.
- B. Implied Warranties. THE IMPLIED WARRANTY OF MERCHANTABILITY AND ALL OTHER IMPLIED WARRANTIES SHALL ONLY EXTEND FROM THE PROVABLE DATE OF PURCHASE FOR 90 DAYS.
- C. Incidental and Consequential Damages. SELLER SHALL NOT BE RESPONSIBLE FOR INCIDENTAL DAMAGES OF ANY KIND, OR FOR CONSEQUENTIAL DAMAGES TO PROPERTY, LOSS OF PROFITS AND LOSS OF USE WHICH MAY BE CAUSED BY ANY DEFECT IN OR MALFUNCTION OR FAILURE OF THE ENCLOSED YALE SEL CHAIN HOIST.
- D. Condition of Warranty. Seller shall not be required to comply with its warranty duties provided herein if the defect, malfunction, or failure of the Yale SEL chain hoist was caused by damage (not resulting from defective components) while in the possession of the Buyer, or unreasonable use by the Buyer. Unreasonable use shall include, but is not limited to, installation or use of the Yale SEL chain hoist without compliance with the instructions contained in the Yale SEL Owner's Manual, and subjecting the Yale SEL chain hoist to loads in excess to the load listed in the Owner's Manual for the particular model number.

LEGAL REMEDIES OF BUYER. This Limited Warranty gives a Buyer specific legal rights. The Buyer also has implied warranty rights. In the event of a problem with Limited Warranty Service or performance, the Buyer may be able to go to a small claims court, a State court, or a Federal district court.

INQUIRIES. Any inquiries regarding compliance with the warranties provided herein may be addressed in writing to:

Yale Industrial Products  
S.W. 11th Avenue  
Fort Lauderdale, FL 33315

# Yale<sup>®</sup>

## HOISTS

### Warranty

Every hoist is thoroughly inspected and tested prior to shipment from the factory. Should any problems develop, return the complete hoist prepaid to your nearest Yale Authorized Warranty Repair Station.

This warranty does not apply where: (1) deterioration is caused by normal wear, abuse, improper or inadequate power supply, eccentric or side loading, overloading, chemical or abrasive actions, improper maintenance or excessive heat; (2) problems resulted from repairs, modifications or alterations made by persons other than factory or Duff-Norton personnel;

(3) the hoist has been abused or damaged as a result of an accident; (4) repair parts or accessories other than those supplied by Duff-Norton are used on the hoist. Equipment and accessories not of the seller's manufacture are warranted only to the extent that they are warranted by the manufacturer. EXCEPT AS STATED HEREIN, DUFF-NORTON MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

#### Improvements:

Yale is constantly striving to improve its product. Changes in design and improvements will be made whenever the manufacturer believes the efficiency of the product will be improved without incurring any obligation to incorporate such improvements in any products which have been shipped or are in service.

#### Important Notice:

Use of chain, wire rope or replacement parts other than as supplied as original equipment on Yale hoists may lead to dangerous operation. Accordingly, Yale cannot be responsible in such cases and our warranty should be voided.

For more information write Yale Hoists, Forrest City, Arkansas 72335.

*Authorized Sales & Service*

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