

## HANDLING and MAINTENANCE INSTRUCTIONS

# HARRINGTON PEERLESS ELECTRIC CHAIN HOIST CODE SH (SINGLE PHASE)

**⚠ WARNING** : Not to be used for lifting personnel. Always remain away from the load while hoist is operating.



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HARRINGTON PEERLESS (SH series) electric chain hoists are single phase hoists with low voltage push button stations.

Please read this manual thoroughly before operating the hoist.

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## **PREOPERATIONAL CHECKS**

### **1. CHECK VOLTAGE AND ELECTRICAL CONNECTION**

The SH series electric chain hoist are available in 110 or 220 volt single phase ratings. Check for proper voltage supply and electrical connections before the first test operation after installation.

### **2. FILL GEAR BOX**

The required amount of gear oil is supplied with the hoist. Remove the oil plug from the oil-fill port, fill with oil and replug the port.

Recommended Gear Oil:

Meropa Lubricant No. 320 -- Texaco Oil co., or Caltex Oil Co.

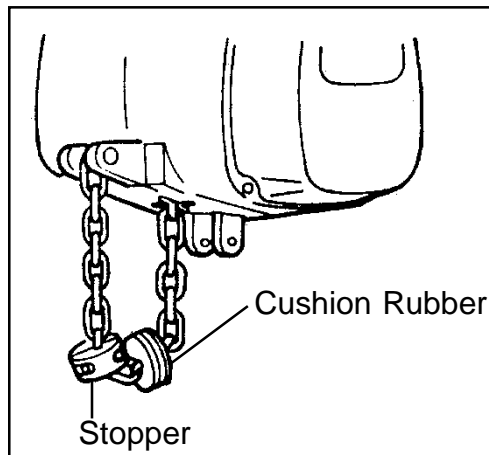
### **3. INSTALL LOAD CHAIN CONTAINER TO HOIST BODY**

A vinyl chain container is a standard accessory. When the chain container is used, install it to the hoist body (Fig. 1). Each chain container is marked with its load chain capacity. Special instructions will be provided with the hoist if additional chain containers are supplied.

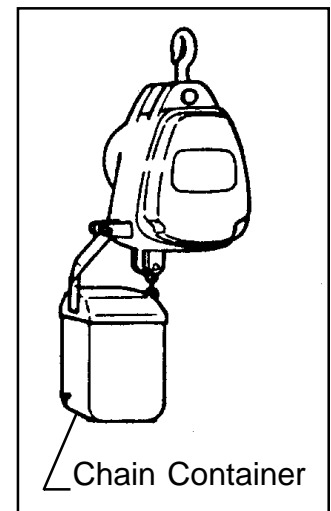
Cap. (Tons)	Amount of Oil (l)
1/4	0.6
1//2L	
1/2S	
1L	
1S	
2L	

### **4. WHEN A CHAIN CONTAINER IS NOT USED**

Mount a stopper on the ninth link from the end of load chain (Fig. 2) and connect the end of load chain to hoist body. The load chain must not be twisted (Fig.3).



**Fig. 2**

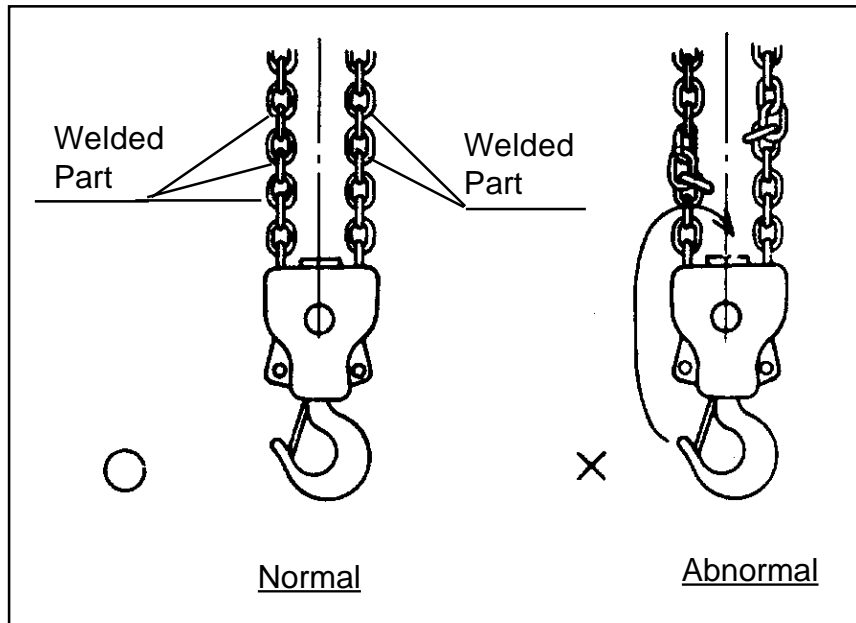


**Fig. 1**

### **5. COAT LOAD CHAIN WITH OIL**

For proper service of the load chain, apply a light coat of machine or gear oil.

6. If your hoist is either an SH005-L or SH020-L the bottom hook is suspended by a double load chain. The correct load chain setup is when the weld of every link faces inward (Fig. 3). Never try to suspend a load on a twisted chain.

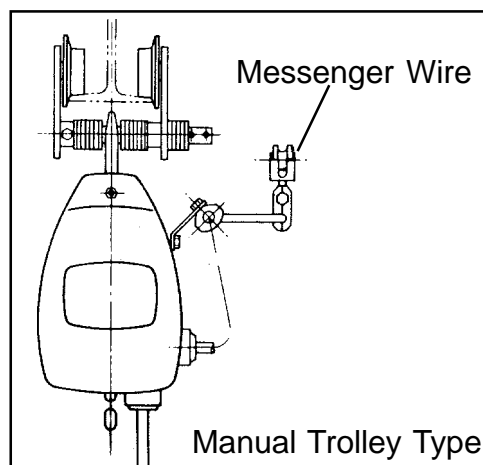


**Fig. 3**

**7. ELECTRICAL POWER SUPPLY**

**7-1 INSTALLATION OF POWER SUPPLY CABLE (PT and GT type)**

- a) Suspend a 1/4" diameter steel messenger wire along the beam and hang the power supply cable through the cable hangers without twisting the power cable.
- b) Install the messenger wire (Fig. 4). For PT and GT types, the wire should be on the right side of the cable hanger arm of the hoist.
- c) A messenger wire can not be installed on a curved beam. A special T-type cable hanger for the curved beam section is available upon request. Consult factory for the proper number of hangers and spacing between them as they differ depending on the location and radius of the curve in the beam.



**Fig. 4**

## 7-2 ELECTRICAL WIRING

The Single phase hoist is to be used on single phase electrical power source (110 or 220 volt). Compared with conventional home electrical equipment, a large capacity motor is used on the hoist. Consult you local electric codes for proper wiring of the single phase hoist.

a) Connect RED and WHITE lead wires of the power supply cable to the switch in the main switch box. Cables must be securely connected for safe operation.

b) Ground wiring

The GREEN wire with YELLOW stripe is the ground wire. This wire should always be connected to a suitable ground. Unless the wire is grounded, operators may sometimes feel a shock when touching any part of the hoist or chain. Do not paint the trolley running surface of the beam when electrical grounding work is not provided on the copper conductor.

c) Connection by wall outlet and plug

The best way of connection to power source is directly from power supply cable to main power switch. When using a plug, it must be grounded.

## 8. NOTES ON TRIAL OPERATION

After initial installation of the hoist and before each day's use, perform a trial operation to ensure the hoist functions properly.

a) Check voltage supply before each day's use. IF the voltage is not within plus or minus 10% of the rated value, electrical devices may not function properly.

b) Check the control button. The depression of "UP" button must lift the load chain and the depression of the "DOWN" button must lower the chain.

## **TIPS FOR SAFE OPERATION**

### 1. FRICTION CLUTCH

The SH electric chain hoist is equipped with a built-in friction clutch as the overwinding protection device. This clutch eliminated complex electrical circuitry and its simple construction reduces trouble to a minimum.

a) Do not overload the hoist.

The friction clutch is not an overload protection device. The load to be lifted must be within the capacity of the hoist. When the hoist is overloaded in excess of the slip torque, the friction clutch slips allowing the motor to run freely, protecting the other parts. However, if the hoist is overloaded close to the slip torque and if the load is forcibly lifted with the clutch slipping, the lifted load may fail.

b) Do not overwind the hoist

The friction clutch will slip allowing the motor to run free when either the rubber cushion hits the load chain guide or when the chain is overlifted or overlowered. However, do not use this safety device as a means to stop the hoist.

c) Do not readjust the setting of friction clutch

The clutch is preset to function correctly before the hoist leaves the factory. Do not attempt to readjust the clutch setting in the field.

## 2. HANG LOAD CAREFULLY ON THE HOOK

Hang the load precisely (Fig. 5). Loads should not be hung forcibly or bound directly to the hook (Fig. 6). This could cause the hangers either to slip off or become deformed. We recommend the use of slings between the hook and the load. The particular sling used should be seated on the load-bearing surface of the hook. Do not put load on the tip of the hook.

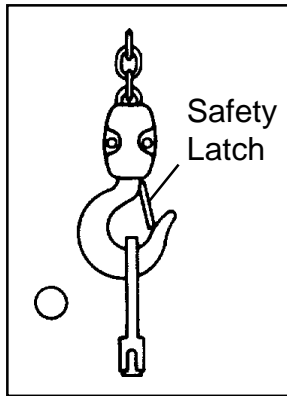


Fig. 5

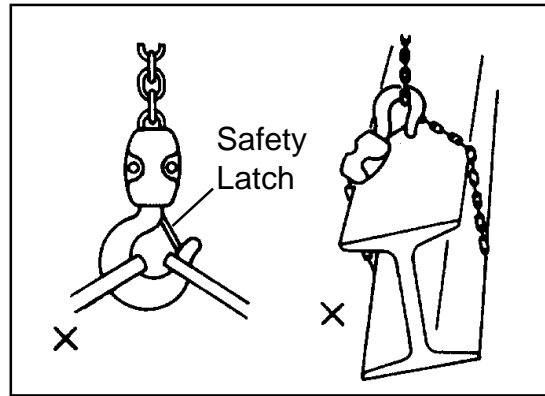


Fig. 6

## 3. SAFETY LATCH ON HOOK

Before hoisting, properly position the safety latch (Fig. 5). Safety latches are provided on both hooks to minimize the danger of the load slipping off the hook.

## 4. DO NOT LIFT LOAD WITH MULTIPLE HOISTS

It is NOT recommended to overload any hoist or to lift with two or more hoists. IF such is unavoidable, each hoist must be capable of supporting a full, evenly distributed load and should be designed by the factory for multiple hoist lifting.

## 5. ALWAYS LIFT LOAD AT CENTER OF GRAVITY

An unbalanced load may slip off the hook. In the case of a trolley type, cocked trolley may force the beam to swing sideways or damage the trolley.

## 6. DO NOT REVERSE DIRECTION OF MOTOR ROTATION QUICKLY

Always bring motor to a complete stop when you move from one operation (e.g., lifting) to the next (e.g. lowering). Continued jogging (rapid reversal of motor) may lead to premature failure of electrical contactors and motor. Motor will not reverse direction if motor is not brought to a complete stop when under load.

## 7. DO NOT BUMP TROLLEY AGAINST BEAM STOPPER

Bumping into the beam stopper may damage the trolley or hoist mechanism. A stopper should be attached at each end of the beam to prevent the trolley from running off the beam.

## 8. DO NOT PULL THE PUSH BUTTON CORD

Electrical trouble may result from attempting to move the trolley by pulling the push button control cord. Always move the trolley by pulling/pushing on the hook or load.

9. EXERCISE CAUTION WHEN WELDING

To avoid electrical shock, keep the load chain and the hook away from the grounding wire of the electrical welder.

10. DO NOT ALLOW LOAD TO HIT LOAD CHAIN CONTAINER

Do not hang load directly by the bottom hook without the use of a sling or other device when lifting to full height as the load could hit and push up the load chain container.

11. TEST LIMIT SWITCH PERIODICALLY

The SH005-S through SH020-L hoists are supplied with an upper limit switch. Periodically (2-3 months) test the limit switch by hand to assure that it is functioning properly.

**CARE AND MAINTENANCE**

1. GEAR BOX OIL

The oil in the gear box need not be replaced under normal use.\* If the hoist is used more frequently than normal, the oil should be replaced every two years.

Recommended Gear Oil:

Meropa Lubricant No. 320 - Texaco Oil Co., or Caltex Oil Co.

2. CLEANING AND COATING OF LOAD CHAIN WITH OIL

Clean the load chain occasionally and apply a light coat of machine or gear oil to assure long service life and safe operation.

3. STORAGE

- a) When the hoist is installed outdoors, do not expose to rain or dew.
- b) Hang the hook suspension type from a ceiling or on a wall.
- c) Do not store the hoist in a humid place.

\* NORMAL SERVICE---operation with random loading at or below rated capacity or uniform loading not exceeding 65% of rated capacity for not more than 25% of the time.

HEAVY SERVICE -----operation with loads less than or equal to rated capacity which exceed normal service limits.

SEVERE SERVICE---operation with loads less than or equal to rated capacity involving normal or heavy service with abnormal conditions.  
(service classes from ASME B30.16-1987)

## TROUBLE SHOOTING

Trouble	Cause	Remedy	Remarks
Will not move. Will not lift.	Broken fuse	Replace fuse of same rating	Do not use copper wire as substitute. Do not use fuse of larger rating.
	Broken limit switch	Replace limit switch	
	Broken condensor	Replace with new ones.	Replacement should be made as one complete set (1 pair).
	Voltage drop	Check the voltage with a voltohmmeter and check wiring.	Interrupt the operation.
	Discontinuity in power supply cable Discontinuity in push button control cord	Check discontinuity in the cable where cable is subject to frequent bending, and repair cable and cord.	The motor turns immediately but does not rotate.
	Overload	Check the weight of the load.	
	Slipping due to poor friction clutch performance	Replace with factory adjusted friction clutch.	
Brake slips	Worn brake shoe	Replace brake shoe if necessary.	
Clicking sound is heard	Worn load chain Rusted load chain	Replace load chain if necessary.	
Trolley will not stop	Angulation of beam Oil-stained beam	Correct the angulation Remove oil, clean	
Electrical leak	Poor grounding work	Provide correct grounding	Leak at places other than the electric chain hoist may sometimes be responsible.
	Foreign matters or moisture depositing on electrical parts	Remove foreign matter from or dry the electrical parts.	
Oil leak	Oil plug missing	Install the regular oil plug.	If oil leak occurs at places other than oil plug, disassemble and check thoroughly for the cause and repair.
	Loose oil plug	Tighten the plug.	
	Oil plug packing missing	Use new packing.	



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