



PIERCE

PULLING FOR YOU

Owner's Manual:
1T CHAIN HOIST
PS65620



WARNING

The winch is not intended to be used in any manner for the movement or lifting of personnel.

PIERCE ARROW INC.
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HENRIETTA, TEXAS 76365

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Check out our product videos on YouTube.



SPECIFICATIONS

BEFORE OPERATION

PIERCE		
PRODUCT DESCRIPTION AC Mini Chain Hoist		PART NUMBER PS65620
CAPACITY 2,204 LBS	MAX LOAD 11 AMPS	WEIGHT 62 LBS
CHAIN WIDTH 1/2 IN.	CHAIN LENGTH 20 FT.	MOTOR 1.8 HP
CONTACT Pierce Arrow Inc. U.S. Hwy 287 S. Henrietta, Texas 76365		SPEED 8 FPM
800-658-6301 940-538-5643 phone 940-538-4382 fax www.piercearrow.us		VOLTAGE 110V / 1400 W

Read all attached warning stickers affixed to hoist.

Make sure chain is oiled generously over entire length of chain.

Make sure that load chain is not twisted. If so, untwist load chain before using.

If furnished, make sure that the trolley wheels are spaced properly in relation to the load beam.


It is essential to make sure that:


- (a) The correct lifting sling/apparatus is being used.
- (b) The lifting sling is located in the hook and that a safety latch has been fitted.
- (c) The object to be lifted is well secured for direct, vertical lifting.
- (d) The point of lift on the object to be lifted is secure.

OPERATION

- Always pay attention to the hoist and object being lifted.
- Depress the UP button on the remote to raise the hoist's load. Depress the DOWN button on the remote to lower the load.
- Firm and steady button operation is required. Never push the button switch intermittently.
- Always make sure the hoist motor completely stops before reversing.
- Press the emergency stop button to remove power from the pendant control's buttons.
- Never lift any object which is insecure or out of balance.
- Never use the hoist for horizontal operation. No end or side pulling of load.
- Do NOT use the chain as a sling. Do NOT wrap the hook around an object and hook back to the chain.
- Do NOT stand under the hoist while in operation.
- Do NOT stand under any object that is being supported by the hoist itself.
- Do NOT leave any lifted loads unattended.
- Do NOT overload the hoist. Over-capacity load lifting is dangerous and will void warranty.
- Make sure that the hook latches are closed and not supporting any part of the load.
- Make sure that the load is free and clear of any and all obstructions.
- Do NOT swing the load or chain.

INSTALLATION


WARNING Failure to properly ground the hoist presents the danger of electric shock.
To avoid injury: Permanently ground the hoist as instructed in this manual.


WARNING Failure to provide a proper power supply system for the hoist may cause hoist damage and offer the potential for a fire.
To avoid injury: Provide the hoist with a 20 amp, minimum, over current protected power supply per the National Electrical Code (ANSI/NFPA 70) and applicable local codes as instructed in this manual.

A. PRE-INSTALLATION CHECKS:

1. Check for transit damage.
2. Check that all external wiring is in good order.
3. Check that the load chain is in good order.
4. Check that all fasteners and joints are tight and secure.
5. Check the capacity of the lifting unit and bottom block.

B. POWER SUPPLY SYSTEM:

To insure proper operation, to avoid damage to the hoist and electrical system, and to reduce the risk of electrical shock or fire, the branch circuit supplying power to the hoist must:

1. Effectively ground the hoist in accordance with the National Electrical Code and other applicable codes. Proper grounding provides a path with the least resistance for the electrical current to travel reducing the risk of electrical shock. The standard power cord is equipped with a three prong plug, used with our 110V, 220V, 240V unit. Make sure that the receptacle opening that receives the longest prong is properly grounded.
2. Be in accordance with the National Electrical Code (ANSI/NFPA-70) and applicable National, State and Local codes.
3. Include a disconnecting means capable of being locked in the 'open' position.
4. Have ample capacity to prevent excessive voltage drop during starting and operation. When determining the size of branch circuit components and conductors, special consideration should be given to the starting current amps (approximately three times that shown on the hoist identification plate) and the length of the conductors. As a minimum, the system should be rated for 20 amps and the system should have #14 AWG or larger wiring.
5. Include slow blow type fuses or inverse trip time circuit breakers to permit the hoist to start and accelerate the load.

C. CONNECTION TO THE ELECTRICAL SUPPLY:

An adequate supply system is required along the total length of travel (where appropriate). The supply voltage and frequency at which the hoist operates, is marked on the motor rating plate. It is imperative to check before connecting the unit that these figures correspond with those of the supply voltage.

D. MOUNTING THE HOIST:

Hang the hoist from its intended support. The structure used to support the hoist must have sufficient strength to withstand several times the load amount. If you are not sure of the weight the structure can hold, consult a registered engineer and the local building codes.



Suspending the hoist from an inadequate support could allow the hoist and load to fall and cause personal injury and/or property damage.
To avoid injury: Make sure that the structure has sufficient strength to withstand several times the hoist and its rated load amount. Using the upper hook, hang the hoist from the support. Make sure the hoist is solidly held in the innermost part of the hook eye and the latch is tightly closed. See hook pin.

E. LOAD CHAIN:

The chain should feed smoothly into and away from the hoist and hook block (½ ton and 1 ton). If the chain binds, jumps or is noisy, first clean and lubricate the chain, if trouble persists inspect chain and mating parts for wear, distortion and other damages.

F. LOAD CHAIN LUBRICATION:

Always lubricate load chain weekly or more frequently depending on severity of service. Lubricate load chain with a light coat of Lubriplate Bar and Chain Oil 10-R (Fiske Bros. Refining Co.) or equal lubricant. Be sure the lubricant reaches the bearing surfaces between the links. Remove the excess oil from the chain.



Used motor oils contain unknown carcinogenic materials.
To avoid health problems: Never use used motor oils as a chain lubricant. Only use Lubriplate Bar and Chain Oil 10-R as a lubricant for the load chain.

G. HOOK AND EYE SUSPENSION HOISTS:

The suspension point should be of a correct size to admit the top hook or eye of the hoist and allow it to rest properly on the saddle. It must be adequate to support the hoist while it is being operated at its maximum capacity (safe working load).

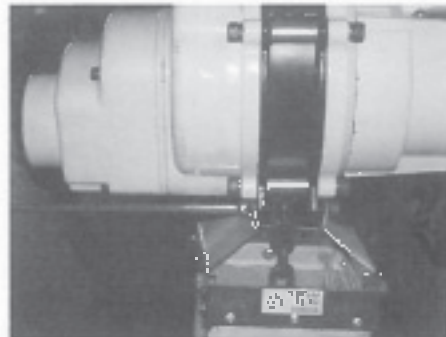
I. CHAIN CONTAINER:

For installations where the slack chain hanging from the hoist may be objectionable or hazardous, the use of a chain container is recommended.



Do not attempt to store more chain in the chain container than what is specified for the hoist or serious damage to hoist may result and hazardous conditions may be created.

INSTALLATION OF STANDARD CHAIN CONTAINER:



1. Remove both bolts from the chain container mounting bracket.
2. Attach the chain container to the bracket.
3. Reinsert the bolts.

I. TEST AND OPERATIONAL CHECKS:

On completion of installation, but before the hoist is put into regular service, the following procedure should be carried out:

1. Record the hoist's Code, Lot and Serial Number from the name plate on the hoist.
2. Check that the hoist is properly installed to either a fixed point or trolley, whichever applies.
3. If hoist is installed on a trolley, ensure that:
 - The trolley is properly installed on the beam.
 - The stops for the trolley are correctly positioned and securely installed on the beam.
4. Isolate the power supply.
5. Check that all mechanical and electrical joints and connections are tight and secure.
6. Check that all nuts, bolts and split pins (cotter pins) are securely fastened.
7. Confirm proper operation:
 - Before operating read and become familiar with this manual.
 - Before operating check to ensure that the hoist (and trolley) meet the Inspection, Testing and Maintenance requirements of ANSI/ASME B30.16.
 - Before operating check that nothing will interfere with the full range of the hoist's (and trolley's) operation.
8. Switch on the power supply.
9. Run lightly with no load, throughout the full extent of the hoist and check that the operation is smooth at all times.
10. Check the operation of the hoist brake, run under light load and full load conditions.



Check supply voltage before everyday use. If the voltage varies more than 10% of the rated value, electrical devices may not function normally.



Confirm the adequacy of the rated capacity for all slings, chains, wire ropes and all other lifting attachments before use. Inspect all load suspension members for damage prior to use and replace or repair all damaged parts.



Verify and correct all chain irregularities prior to operating the hoist.

J. UNPACKING:

Once package has been opened, carefully inspect the hoist frame, hooks, chain and control station for damage that may have occurred during shipment.



Operating a unit with obvious external damage may cause load to drop and could result in personal injury and/or property damage.

To avoid injury: Carefully check unit for external damage prior to installation.


MAINTENANCE

A. CHAIN INSPECTION:

1. First clean chain with a non-combustible acid type solvent and make a link by link inspection for nicks, gouges, twisted links, weld splatter, corrosion pits, striations (minute parallel lines), cracks in weld areas, wear and stretching. A chain with any of these defects must be replaced before use.
2. When checking the chain for wear, check the part of the chain that goes through the lift wheel of the hoist most often. Check the interlink area of the chain links for the point of maximum wear. Measure and record the stock diameter at this point of the link. Then measure stock diameter in the same area on a link that does not pass through the lift wheel. Compare these two measurements. If the stock diameter of the worn link is 0.010 inches or more, less than the stock diameter of the unworn link, the chain must be replaced.
3. Check the chain for stretch with a vernier caliper. Select an unused, unstretched section of chain then measure and record the length. Measure and record the same length on a worn section of chain. Obtain the amount of stretch and wear by subtracting the measurement of the unworn section from the worn section. If the result is greater than 0.145 inch, the chain must be replaced.
4. Use only a 'Knife-edge' caliper to eliminate the possibility of false reading by not measuring full pitch length.
5. These chains are specially heat treated and hardened, they should never be repaired.

Important: Do not use replaced chain for other purposes such as lifting or pulling. Load chain may break suddenly without visual deformation. For this reason, cut replaced chain into short lengths to prevent use after disposal.


NOTE: A worn chain can be an indication of worn hoist components. For this reason, the hoist's chain guide, hook block and lift wheel should be examined for wear and replaced as necessary when replacing worn chain.

 WARNING	Use of commercial or other manufactures' chain and parts to repair CH Hoists may cause load loss. To avoid injury: Use only factory supplied replacement load chain and parts. Chain and parts may look alike, but factory original chain and parts are made of specific materials or processed to achieve specific properties.
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B. CUTTING THE CHAIN:


The load chain is hardened and is difficult to cut. The following methods are recommended when cutting a length of new chain from stock or cutting a T worn chain. **(Always wear eye protection when cutting the load chain.)**

1. Use a 7" minimum diameter by 1/8" thick abrasive wheel (or type recommended by your wheel supplier) that will clear the adjacent links.
2. Use a grinder and nick the link on both sides, then secure the link with a vise and break off the chain link with a hammer.

 WARNING	Cutting chain can produce flying particles. To avoid health problems: - Wear eye protection. - Place shield over chain to prevent flying objects.
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C. LUBRICATION:

1. **Load Chain:** The full length of the chain must be lubricated, including where the chain passes over the chain wheel(s). Ensure that the contact points between the links (i.e. the chain saddles) are adequately lubricated. A small amount of lubrication will greatly increase the life of the load chain. **DO NOT** allow the chain to run dry. Keep the chain clean and lubricate the chain at regular intervals with Lubriplate Bar and Chain Oil 10-R or equal lubricant. Normally, weekly lubrication and cleaning is satisfactory, but under hot and dirty conditions, it may be necessary to clean the chain at least once daily and lubricate the chain several times between cleanings. When lubricating the chain, apply sufficient lubricant to obtain natural run-off and full coverage, especially in the interlink area.

 WARNING	Used motor oils contain known carcinogenic materials. To avoid health problems: Never use used motor oils as a chain lubricant. Only use Lubriplate Bar and Chain Oil 10-R as a lubricant for the load chain.
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2. **Gearhoist:** For ambient temperature of approx., 50^o F to 122^o F, a gear oil of Mm 78 at 104 F, with mild high-pressure additives should be used. Examples of the oil types that can be used are:

Dex 51502 Clg 220
 F.C. Bp Fuergol G-Xg 20
 Esso Spartan Eo 220
 Shell Omala Oil 220
 Mobil gear 630
 Aral Degol Bg 220

3. **Important:** The bottom block must not touch the floor; if necessary adjust the position of the chain stop on the slack end of the chain.



The lubricants used for the CH Mechanics Hoist may contain hazardous materials that mandate specific handling and disposal procedures.

To avoid contact and contamination: Handle and dispose of lubricants only as directed in applicable material safety data sheets and in accordance with applicable local, state and federal regulations.

D. TESTING:

Before using, all altered, repaired or used hoists that have not been operated for the previous 12 months must be tested by the user for proper operation.

1. Test the unit without a load and then test the unit with a light load of 50 pounds (23 kg) times the number of load chain supporting parts to be sure that the hoist operates properly and that the brake holds the load when control is released.
2. Next test with a load of 125% of the rated capacity. In addition, hoists in which load sustaining parts have been replaced, you should test the load with 125% of rated capacity by or under an appointed person and a written report prepared for record purposes.
3. In accordance with the CMAA 78, it is required to have a 100% load test performed every four years.



The hoist must only be inspected and maintained by qualified, competent and trained personnel.

Table 7-1 Lubrication Chart

PART	DESCRIPTION	FREQUENCY
Cables	Check control cables and strain relief elements	Before each shift
Clutch	Check operation of the slipping clutch (if fitted)	Before each shift
Pendant	Check control pendant housing for damage	Before each shift
Hook	Check suspension eye/suspension hook assembly	After 50-200 service hours
Electrical	Check electrical switch gear and wiring	Before each shift, Monthly
Hook	Check tight fit of securing belts on load hook assembly	Before each shift, After 50-200 service hours
Chain	Check ends of chain/chain bag to ensure they are secure	Before each shift
Chain	Lubricate chain, under normal usage Lubricate chain, under heavy usage	After 50-200 service hours
Oil	Check oil level and change oil (if needed)	Before each shift

Hook	Check hooks for cracks, deformation, pitting and wear	After 50-200 service hours
Clips/Bolts/Nuts	Check securing elements for tight fit and corrosion	After 50-200 service hours
Bottom Block	Lubricate chain sprocket bearing and check for a tight fit of securing bolts.	After 50-200 service hours
Brakes	Check operation of brakes	After 50-200 service hours
Brake	Check brake stroke, brake disc and adjust brake as required	After 50-200 service hours

INSPECTION

A. GENERAL:

The inspection procedure is based on ANSI/ASME B30.16. The following definitions are from ANSI/ASME B30.16 and pertain to the inspection procedure below:

1. Qualified Person: A person who, by possession of a recognized degree or certificate of professional standing, or who, by extensive knowledge, training and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter at work.
2. Designated Person: A person assigned or selected as being competent to perform the specific duties to which he/she is assigned.
3. Normal Service: A distributed service which involves operation with randomly distributed loads within the rated load limit or uniform loads less than 65% of rated load for not more than 25% of the time.
4. Heavy Service: A service which involves operation within the rated load limit which exceeds normal service.
5. Severe Service: A service which involves normal or heavy service with abnormal operating conditions.

B. INSPECTION METHODS AND CRITERIA

This section covers the inspection of specific items. The list of items in this section is based on those listed in ANSI/ASME B30.16 for the Frequent and Periodic Inspection. In accordance with ANSI/ASME B30 volumes listed under the General heading on the previous pages, these inspections are not intended to involve disassembly of the hoist. Rather, disassembly for further inspection would be required if frequent or periodic inspection results so indicate. Such disassembly and further inspection should only be performed by a certified or qualified person trained in the disassembly and re-assembly of the hoist.

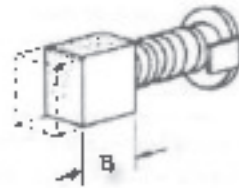
Table 8-1 Hoist Inspection Methods and Criteria

Item	Method	Criteria	Action
Functional operating mechanisms	Visual, Auditory	Mechanisms should be properly adjusted and should not produce unusual sounds when operated.	Repair or replace as required
Braking System Operation	Function	Braking distance with rated capacity should not exceed approximately five chain links.	Repair or replace as required
Hooks (surface condition)	Visual	Should be free of significant rust, weld splatter, deep nicks or gouges.	Replace
Hooks (stretch)	Measure	The "D" dimension should not exceed the measured value for discard from Table 8-3.	Replace
Links (fetting wear)	Measure	The "T" and "T'" dimensions should not be less than discard value listed in Table 8-3.	Replace
Hooks (yoke assembly)	Visual	Should be free of significant rust, weld splatter, nicks or gouges. Links should not be elongated, fasteners should not be loose and there should be no gap between mating parts.	Tighten or replace as required

Table 8-1 Hoist Inspection Methods and Criteria

Item	Method	Criteria	Action
Hooks (heat shank or neck)	Visual	Shank and neck portions of hook should be free of deformations.	Replace
Hooks (hook latches)	Visual, Function	Latch should not be deformed. Attachment of latch to hook should not be loose. Latch spring should not be missing and should not be weak. Latch movement should not be stiff when depressed and released latch should snap smartly to its closed position.	Replace
Hooks (swivel bearing)	Visual, Function	Bearing parts and surfaces should not show significant wear. They should be free of dirt, grime and deformations. Hook should rotate freely with no roughness.	Clean/Lubricate, or replace as required
Load Chain (surface condition)	Visual	Should be free of rust, necks, gouges, dents and weld spatter. Links should not be deformed or show signs of abrasion. Surfaces where links bear on one another should be free of significant wear.	Replace
Load Chain (lubrication)	Visual, Auditory	Entire surface of each link should be coated with lubricant and free of dirt/grime. Chain should not emit creaking noise when hoisting a load.	Clean/Lubricate
Load Chain (pitch and wire diameter)	Measure	The "G" dimension should not be greater than maximum value listed in Table 8-4. The "E" dimension should not be less than minimum value listed in Table 8-4.	Replace. Inspect Load Sheave by qualified personnel
Load Chain (reeving)	Visual	Chain should be reeved properly through load sheave. Clean, custom rubbers, washers and stoppers should be installed properly.	Reeve/Install chain properly
Chain Contactor	Visual	Contactor should not be damaged. Brackets should not be deformed or missing.	Replace
Hoisting and Mechanical Components	Visual, Auditory, Vibration, Function	Hoist components including load blocks, suspension housing, chain attachments, cylinders, yokes, suspension bolts, shafts, gears, bearings, pins and rollers should be free of cracks, distortion, significant wear and corrosion. Evidence of same can be detected visually or via hearing of unusual sounds or vibration during operation.	Replace
Bolts, Nuts and Rivets	Visual, Check with proper tool	Bolts, nuts and rivets should not be loose.	Tighten or replace as required
Motor Busbar	Measure, Visual	The "B" dimension should not be less than minimum value listed in Table 8-2.	Replace
Cushion Rubber	Visual	Should be free of significant deformation.	Replace
Contactors/Contacts	Visual	Contacts should be free of significant pitting or deterioration.	Replace
Pendant (switches)	Function	Depressing and releasing push buttons should make and break contacts in switch contact block and result in corresponding electrical continuity or open circuit. Push buttons should be interlocked either mechanically or electrically to prevent simultaneous energization of circuits for opposing motions. Example: Up and Down	Repair or replace as necessary
Pendant (wiring)	Visual	Wire connections to switches in pendant should not be loose or damaged.	Tighten or repair
Pendant (housing)	Visual	Pendant housing should be free of cracks and mating surfaces of parts should seal without gaps.	Replace
Pendant (labels)	Visual	Labels denoting functions should be legible.	Replace
Pendant (cord)	Visual, Electrical Continuity	Surface of cord should be free from nicks, gouges and abrasions. Each conductor in cord should have 100% electrical continuity even when cord is flexed back and forth. Pendant cord strain relief cable should absorb the entire load associated with forces applied to the pendant.	Replace
Warning Labels	Visual	Warning labels should be affixed to the hoist and they should be legible.	Replace
Hoist Capacity Label	Visual	The label that indicates the capacity of the hoist should be legible and securely attached to the hoist.	Replace

Table 8-2 Motor Brush Dimensions



Capacity (Ton)	"B" Dimension (inch)
	Discard
½ to 1	0.24

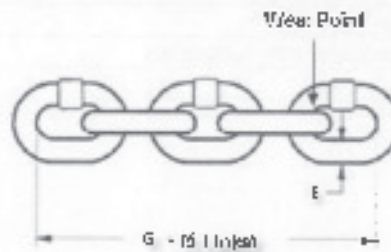
Table 8-3 Top Hook & Bottom Hook Dimensions



Capacity (Ton)	Hook	Nominal "D" Dimension (inch) *		"F" Dimension (inch)		"C" Dimension (inch)	
		Standard	Discard	Standard	Discard	Standard	Discard
		½ to 1	Bottom	1.54	1.70	0.94	0.85
	Top	1.54	1.70	0.94	0.85	0.75	0.68

* These values are nominal since the dimension is not controlled to a tolerance. The "D" dimension should be measured when the hook is new, this becomes a reference measurement. Subsequent measurements are compared to this reference to make determinations about hook deformation/stretch.

Table 8-4 Chain Wear Dimensions



Capacity (Ton)	"G" Dimension (inch)		"E" Dimension Wear Limit (inch)	
	Standard	Discard	Standard	Discard
½ to 1	3.78	3.96	0.25	0.22

* Chain wear will occur in section of chain that passes thru the sheave.

C. INSPECTION CLASSIFICATION:

The inspection procedure for hoist in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the hoist and the degree of their exposure to wear, deterioration or malfunction. The two general classifications are designated as Frequent and Periodic, with respective intervals between inspections as defined below.



Initial Inspection: Prior to initial use, all new, altered or modified hoist shall be inspected by a designated person to ensure compliance with the applicable provisions of this manual.

FREQUENT INSPECTIONS - Frequent inspections are visual examinations by the operator or other designated personnel with interval per the following criteria.

1. Normal Service - Monthly
2. Heavy Service - Weekly to Monthly
3. Severe Service - Daily to Weekly
4. Special or Infrequent Service - As recommended by a qualified person before and after each occurrence.

PERIODIC INSPECTIONS - Periodic inspections are visual inspections by a designated person with interval per the following criteria.

1. Normal Service - Yearly
2. Heavy Service - Semi-Annually
3. Severe Service - Quarterly
4. Special or Infrequent Service - As recommended by a qualified person before the first occurrence.

D. FREQUENT INSPECTION:

Inspections should be made on a frequent basis in accordance with Table 8-5, "Frequent Inspection." Included in these frequent inspections are observations made during operation for any defects or damage that might appear between Periodic Inspections. Frequent inspections shall be made by a designated person to ensure that the hoist is maintained in safe working condition.

TABLE 8-5 FREQUENT INSPECTION

1. Check all functional operating mechanisms for misadjustment and unusual sounds.
2. Check the operation of the limit switch and associated components.
3. Check the hoist braking system for proper operation.
4. Check the hooks in accordance with ANSI/ASME B30.10.
5. Check the hook latch operation.
6. Check the Load Chain in accordance with Section 8B.
7. Check the Load Chain reeving.

E. PERIODIC INSPECTION:

Inspections should be made on a Periodic basis in accordance with Table 8-6, "Periodic Inspection." Evaluation and resolution of the results of Periodic Inspections shall be made by a designated person to ensure that the hoist is maintained in safe working condition.



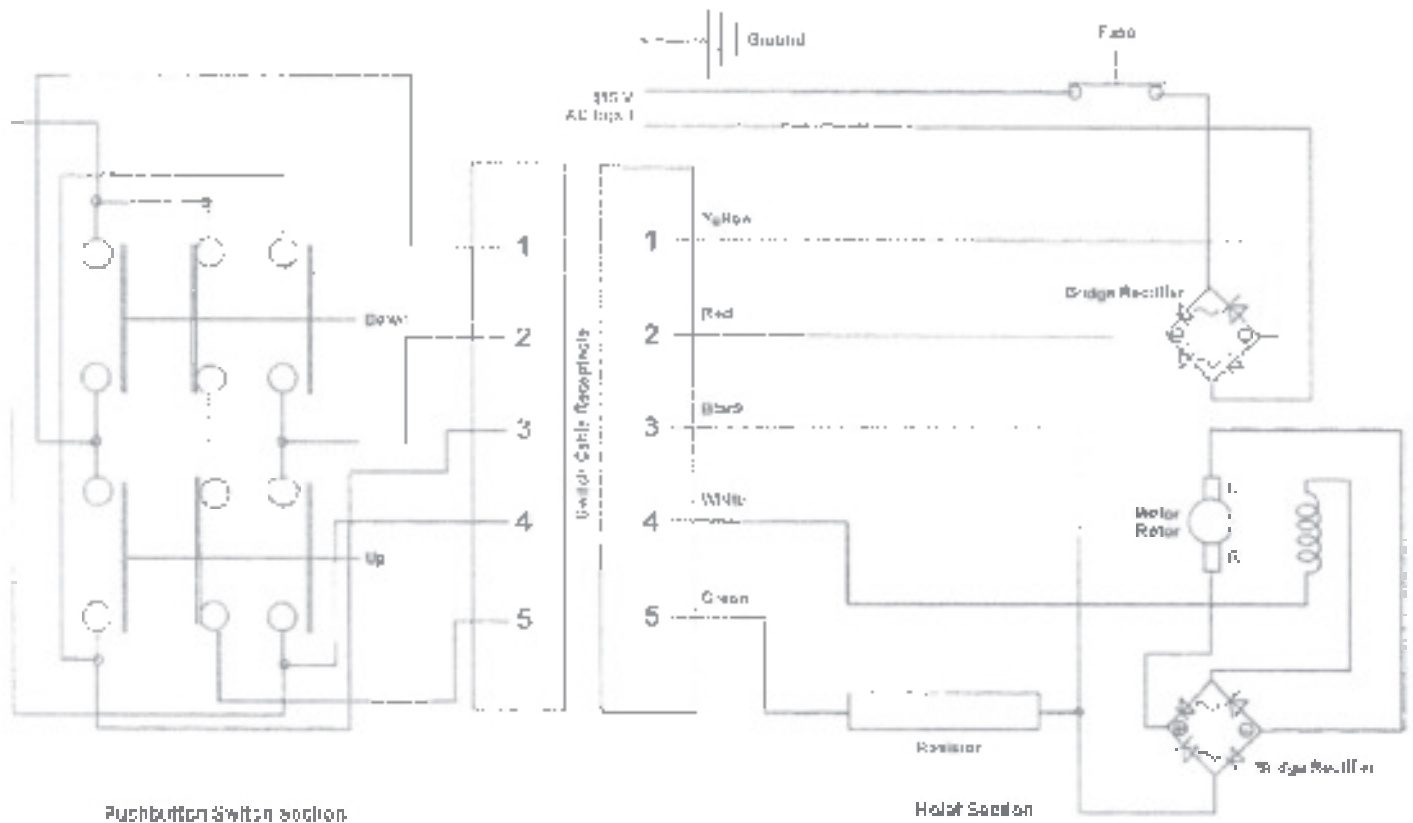
Periodic Inspection: For inspections where load suspension parts of the hoist are disassembled, a load test per ANSI/ASME B30.16 must be performed on the hoist after it is re-assembled and prior to its return to service.

TABLE 8-6 PERIODIC INSPECTION

1. Complete the requirements of frequent inspection.
2. Check to ensure there is no evidence of loose bolts, nuts or rivets.
3. Check to ensure there is no evidence of damage or excessive wear of load and idler sheaves.
4. Check to ensure there is no evidence of damage to hook retaining nuts or collars and pins, and welds or rivets used to secure the retaining members.
5. Check to ensure the warning label is properly attached to the hoist and legible.
6. Check to ensure the function labels on the pendant control stations are legible.
7. Check to ensure there is no evidence of worn, corroded, cracked or distorted parts such as load blocks, suspension hoisting, chain attachments, clevises, yokes, suspension bolts, shafts, gears, bearings, pins and rollers.
8. Check to ensure there is no evidence of damage to the supporting structure or trolley, if used.
9. Check to ensure there is no evidence of damage in the end connections of the load chain.
10. Check to ensure there is no evidence of excessive wear on motor or load hook.
11. Check to ensure there is no electrical apparatus for signs of pitting or any deterioration of visible contact contacts.

WIRING DIAGRAM

Wiring Diagram

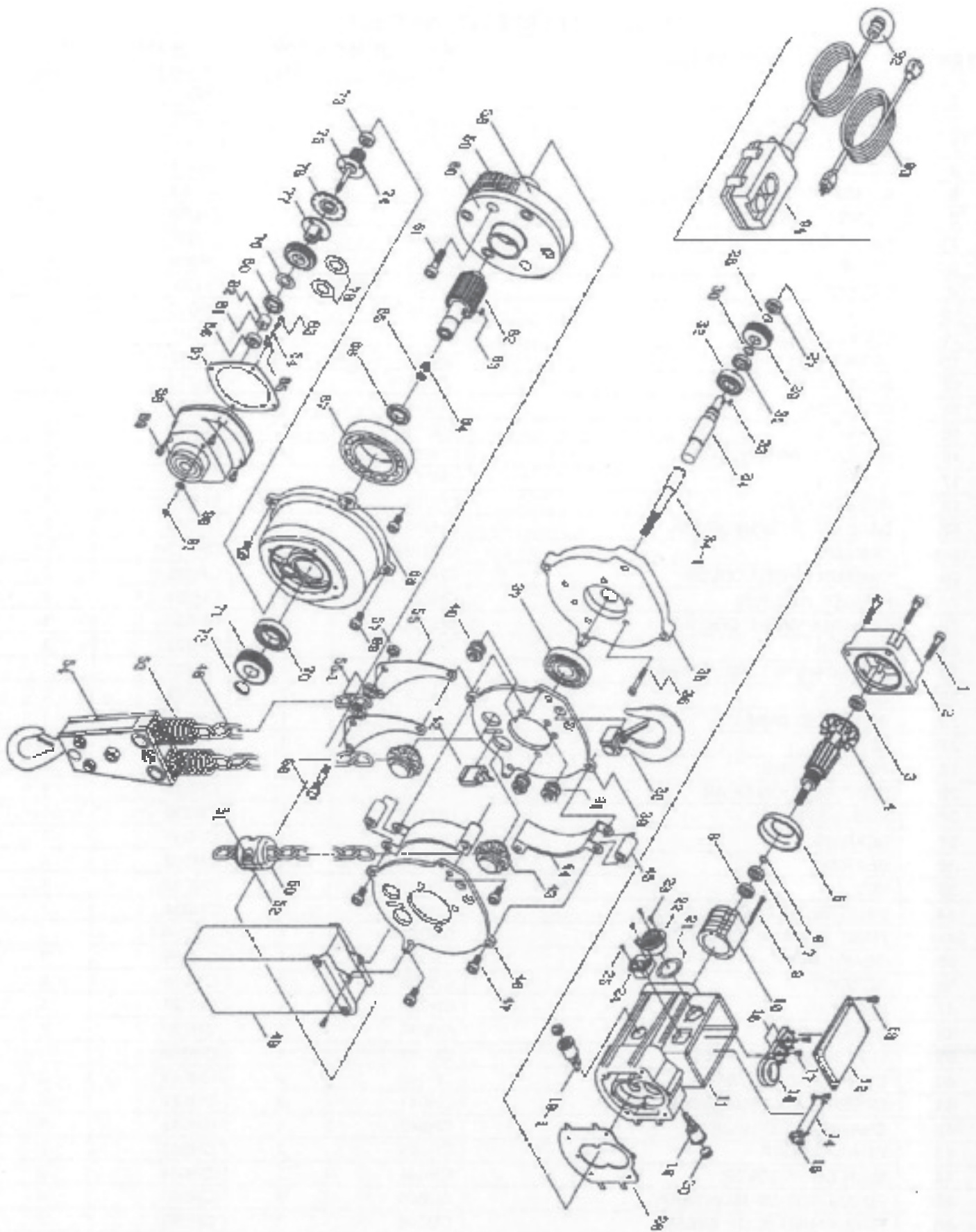


TROUBLESHOOTING

Table 8-7 Troubleshooting Guide

Symptom	Cause	Remedy
Hoist will not operate	Loss of power	Check circuit breakers, switches, fuses and connections on power lines/cable.
	Wrong voltage or frequency	Check voltage and frequency of power supply against the rating on the nameplate of the motor.
	Hoist overload	Reduce load to within rated capacity of hoist.
	Improper, loose or broken wire in the hoist electrical system	Shut off power supply, check wiring connections on hoist control panel and inside push button pendant.
	Brush wear	Inspect both motor brushes per Table 8-2 and replace if necessary.
	Fuses burned out	Replace fuses.
Hoist lifts but will not lower	Motor burned out	Replace motor frame/stator, shaft/rotor and any other damaged parts.
	Faulty switch in pendant	Check electrical continuity. Check electrical connections. Replace or repair as needed.
Hoist lowers but will not lift	Broken conductor in pendant cord	Check the continuity for each conductor in the cable. If one is broken, replace the entire cable.
	Hoist overload	Reduce load to within rated capacity of hoist.
	Worn friction clutch	Repair by a qualified person trained in the repair of hoists and proper friction clutch adjustment procedures. Replace as needed.
	Broken conductor in pendant cord	Check the continuity for each conductor in the cable. If one is broken, replace the entire cable.
	Faulty switch in pendant	Check electrical continuity. Check electrical connections. Replace or repair as needed.
	Low voltage in hoist's power supply	Determine cause of low voltage and bring to within plus or minus 5% of the voltage specified on the motor nameplate. The voltage should be measured at the hoist contactor.
Hoist will not lift rated load or does not have the proper lifting speed	Hoist overload	Reduce load to within rated capacity
	Low voltage in hoist's power supply	Determine cause of low voltage and bring to within plus or minus 5% of the voltage specified on the motor nameplate. The voltage should be measured at the hoist contactor.
	Faulty friction clutch	If abnormal operation or slippage occurs do NOT attempt to disassemble or adjust the Mechanical Load Brake with Friction Clutch. Replace the worn or malfunctioning Mechanical Load Brake with Friction Clutch as an assembly with a new, factory adjusted part.
Load lifts excessively when hoist is stopped	Motor demagnetized	Motor demagnetizing is generally caused from using the hoist beyond its duty rating. Replace stator assembly and reduce usage to comply with the duty rating stated.
	Improper gear oil	Replace oil with the correct gear oil.
Hoist operates intermittently	Loose connection in circuit	Check all wires and terminals for bad connections. Replace as needed.
	Collectors making poor contact	Check movement of spring loaded arm, weak spring, connections and shoe. Replace as needed.
	Broken conductor in pendant cord	Check for intermittent continuity in each conductor in the pendant cord. Replace the entire pendant cord if continuity is not constant.

PARTS



ITEM	PART DESCRIPTION	Part No.	Qty
1	SCREWS	CH001	4
2	MOTOR COVER	CH002	1
3	BEARING	CH003	1
4	ROTOR	CH004	1
5	AIR GUIDING IRON COVER	CH005	1
6	FIXING SPRING	CH006	1
7	BEARING	CH007	1
8	OIL SEAL	CH008	1
9	SCREWS	CH009	2
10	STATOR	CH010	1
11	MAIN BODY BASE	CH011	1
12	WIRING BOX	CH012	1
13	SCREWS	CH013	4
14	REF. STOP	CH014	1
15	SCREWS	CH015	2
16	BRIDGE TYPE RECTIFIER	CH016	2
17	SCREWS	CH017	2
18	RUBBER BAND	CH018	1
19	BASE OF CARBON BRUSH	CH019	2
19-1	CARBON	CH019-1	2
20	CARBON BRUSH COVER	CH020	2
21	RUBBER WASHER	CH021	1
22	CONTROL CABLE SOCKET	CH022	1
23	SCREWS	CH023	3
24	POWER SUPPLY INPUT TERM.	CH024	1
25	SCREWS	CH025	2
26	INSULATED SHEET	CH026	1
27	BEARING	CH027	1
28	FIXING SPRING	CH028	1
29	FIRST SECTION GEAR	CH029	1
30	FIXING SPRING	CH030	1
31	BEARING	CH031	1
32	BEARING	CH032	1
33	KEY	CH033	1
34	FIRST SECTION GEAR SHAFT	CH034	1
34-1	FIRST SECTION GEAR SHAFT	CH034-1	1
35	GEAR COVER	CH035	1
36	SCREWS	CH036	8
37	BEARING	CH037	1
38	UPPER HOOK	CH038	1
39	LEFT MAIN BODY SHEET	CH039	1
40	CHAIN GUIDING WHEEL	CH040	2
41	UPPER CHAIN GUIDING WHEEL	CH041	2
42	CHAIN PAWL DEVICE	CH042	1
43	CHAIN GUIDER	CH043	2
44	MAIN BODY COVER	CH044	2
45	FIXING ROD OF MAIN BODY	CH045	1
46	RINCH MAIN BODY SHEET	CH046	1
47	SCREWS	CH047	2
48	CHAIN	CH048	1
49	CHAIN BAG	CH049	1
50	CHAIN STOPPING BLOCK	CH050	1
51	SCREWS	CH051	2
52	NUTS, WASHER	CH052	2

ITEM	PART DESCRIPTION	Part No. Qty	
		53	CHAIN GUIDING SPRING
54		See Table 11-3	
55		See Table 11-3	
56	SCREWS	CH056	1
57	NUTS, WASHER	CH057	1
58	CHAIN GUIDER	CH058	1
59	GEAR SHAFT	CH059	2
60	FIXING BASE OF GEAR SHAFT	CH060	1
61	SCREWS	CH061	4
62	THIRD SECTION GEAR SHAFT	CH062	1
63	KEY	CH063	1
64	OIL SEAL	CH064	1
65	BEARING	CH065	1
66	OIL SEAL	CH066	1
67	BEARING	CH067	1
68	GEAR REDUCE BOX OF SECOND LAYER	CH068	1
69	SCREWS	CH069	4
70	BEARING	CH070	1
71	THIRD SECTION GEAR	CH071	1
72	FIXING SPRING	CH072	1
73	BEARING	CH073	1
74	THIRD SECTION GEAR SHAFT	CH074	1
75	KEYLESS GEAR	CH075	1
76	PAWL BRAKE LINING	CH076	1
77	BRAKE DEPRESSOR (LOWER)	CH077	1
78	PRESS DISK TYPE SPRING	CH078	2
79	NUTS FIXING SHEET	CH079	1
80	TORQUE LIMITED NUTS	CH080	1
81	BRAKE DEPRESSOR (UPPER)	CH081	1
82	FIXING PIN	CH082	1
83	CLICK FIXING BOLT	CH083	1
84	CLICK SPRING	CH084	1
85	CLICK	CH085	1
86	PRESS DISK TYPE SPRING	CH086	1
87	PACKING	CH087	1
88	FIRST LAYER GEAR BOX	CH088	1
89	SCREWS	CH089	4
90	WASHER	CH090	1
91	NUTS	CH091	1
92	CONTROL PLLG	CH092	1
93	POWER CABLE SET	CH093	1
94	CABLE SET OF CONTROL SWITCH	CH094	1
95	FUSE	CH095	2

ITEM	PART DESCRIPTION	Model CH-010	
		Part No.	Qty
54	LOWER HOOK	CH354B	1
55	CHAIN SHEET IRON	CH355B	1

Pierce Arrow Product Limited Warranty

Pierce Arrow Inc. warrants to the original purchaser only (whether a wholesale, OEM or retail customer) that the goods, equipment, and merchandise manufactured by Pierce Arrow are free from defects in material and workmanship. The Pierce Arrow limited warranty on parts covers such items for a period of one year on mechanical and electrical from the date of shipment by Pierce Arrow. All warranties cover only the product or product parts, and are nontransferable.

OBTAINING WARRANTY SERVICE

Pierce Arrow must be notified promptly in writing, about the defect before any means of repair have been made. The merchandise must be delivered by the purchaser to Pierce Arrow in Henrietta, Texas at the purchaser's expense. Pierce Arrow reserves the right to repair or replace the merchandise proved to be defective. The purchaser is responsible for the cost of repairs made by Pierce Arrow if the repairs are not covered by the Pierce Arrow warranty.

EXCLUSIONS

The Pierce Arrow warranty is not intended to cover normal maintenance parts, including but not limited to: wear pads, bushings, mud flaps, fender flares, light bulbs, oil filters, wire rope (winch cable), oil leakage and remote holdings. Nor is the warranty intended to cover any change or defect due to accident; misuse; improper, inadequate or unauthorized repair; failure to provide maintenance or uses for which the equipment was not intended; and normal deterioration due to weather or road conditions. Reference the owner's manual for safety, installation, operation and maintenance guidelines.

The warranty does not bear the cost of labor, transportation, shipping damages, claimed down time, loss of profit or goodwill, or any other special, incidental, indirect, or consequential damages, concerning or related to any product or part, whether based upon negligence, strict liability, breach of contract, breach of warranty, misrepresentation, or any other legal theory.

Merchandise sold by Pierce Arrow, but not manufactured by it, is not warranted by Pierce Arrow and is subject to the manufacturer's warranty only. The manufacturer's warranty is available upon request.

Pierce Arrow makes no warranty, expressed or implied, to finished products manufactured or supplied by other manufacturers, and supplied from Pierce Arrow to the purchaser, including but not limited to, any vehicle to which our products is affixed to, and any accessories.

Merchandise manufactured by Pierce Arrow is not designed or intended for the movement of people and are not to be used in the operation of elevators or other improper uses. Any improper use of the product may void the warranty.

Please contact Pierce Arrow with any questions:

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WARNING

The winch is not intended to be used in any manner for the movement or lifting of personnel.