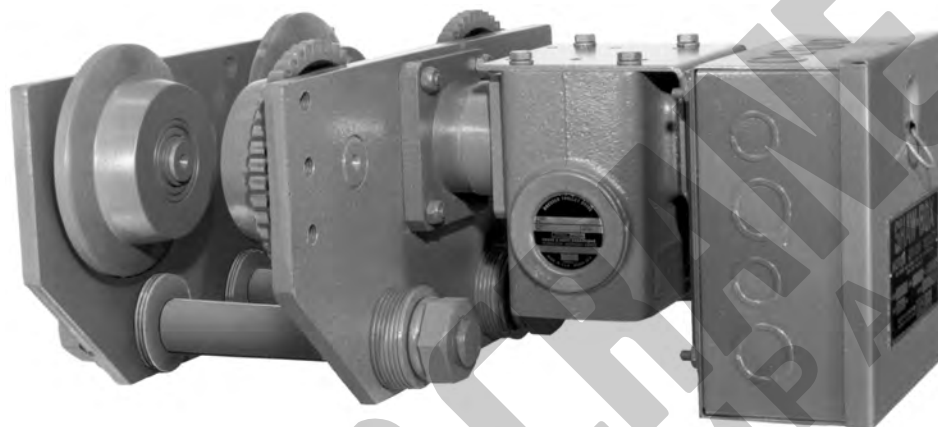


OPERATING, MAINTENANCE & PARTS MANUAL

MOTOR-DRIVEN TROLLEY



Yale[®] TROLLEY

MOTORIZED

Before using the trolley, fill in the information below. Refer to the trolley identification plate.

Model Number _____
Serial No. _____
Purchase Date _____
Voltage _____
Rated Load _____

RATED LOADS 1/5 TO 15 TON

Follow all instructions and warnings for inspecting, maintaining and operating this trolley.

The use of any hoist and trolley presents some risk of personal injury or property damage. That risk is greatly increased if proper instructions and warnings are not followed. Before using this trolley, each operator should become thoroughly familiar with all warnings, instructions and recommendations in this manual.

Retain this manual for future reference and use.

Forward this manual to the trolley operator. Failure to operate equipment as directed in manual may cause injury.

Manual Number: 11740409 REV AA October 2018



YALE/SHAWBOX HOIST PARTS AND SERVICES ARE AVAILABLE IN THE UNITED STATES AND IN CANADA

As a Yale/Shawbox Hoist and Trolley user you are assured of reliable repair and parts services through a network of Master Parts Depots and Service Centers that are strategically located in the United States and Canada. These facilities have been selected on the basis of their demonstrated ability to handle all parts and repair requirements promptly and efficiently. To quickly obtain the name of the Master Parts Depot or Service Center located nearest you, call (800) 888-0985, Fax: (716) 689-5644, visit www.cmworks.com

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Soyez assurés qu'en temps d'utilisateur de palan et treuil Yale/Shawbox, d'un service de réparation et de pièces fiable par l'entremise d'un réseau de Centres de service et de Dépôts de pièces maîtresses qui sont stratégiquement situés aux États-Unis et au Canada. Ces établissements ont été sélectionnés sur une base de leur habileté démontrée à s'occuper promptement et efficacement des besoins de réparation de pièces. Appelez le (800) 888-0985, Fax: (716) 689-5644, visite [HYPERLINK "http://www.cmworks.com"](http://www.cmworks.com) www.cmworks.com pour obtenir rapidement le nom du dépôt de pièces maîtresses ou du centre de service situé le plus près.



OPERATING AND SAFETY PROCEDURES

WARNING

Improper operation of a trolley can create a potentially hazardous situation which, if not avoided, could result in death or serious injury. To avoid such a potentially hazardous situation, the operator shall follow these operating and safety procedures.

The following are operating and safety procedures for safe operation of the Yale Motor-Driven Trolley. Taking precedence over any specific rules listed here, however, is the most important rule of all, **USE COMMON SENSE**. A few minutes spent reading these rules can make an operator aware of dangerous practices to avoid and precautions to take for his own safety and the safety of others. Frequent examinations and periodic inspections of the equipment as well as a conscientious observance of safety rules may save lives as well as time and money.

1. Immediately after installation, operate trolley (according to the Operating and Safety Procedures as follows) with 100% load over the entire length of runway or monorail system to be sure that all adjustments and operations are satisfactory.
2. Rail stops must be installed for all trolleys operating on open end beams. These stops must be positioned such that impact forces are absorbed by the trolley sideplates only.
3. When preparing to lift a load, be sure that the attachments to the hook are firmly seated in hook saddle. Avoid off-center loading of any kind, especially loading on the point of hook.
4. When lifting, raise the load only enough to clear the floor or support and check to be sure that the attachments to hook and load are firmly seated. Continue lift only after you are assured the load is free of all obstructions.
5. When applying a load, it should be directly under the trolley. Avoid off-center loading of any kind.
6. Take up a slack load chain carefully and start lifting load slowly to avoid shock and jerking of hoist load chain. If there is any evidence of overloading, immediately lower the load and remove the excess load.
7. **DO NOT** allow the load to swing or twist while hoisting.
8. Anticipate the stopping point and allow trolley to coast to a smooth stop. Reversing or "plugging" to stop trolley causes overheating of motor and swaying of load.
9. **DO NOT** load trolley beyond the rated capacity. Overload can cause immediate failure of load carrying parts or cause damage resulting in future failure at less than rated capacity.
10. **DO NOT** use this or any other overhead materials handling equipment for lifting or transporting people.
11. Stand clear of all loads and avoid moving a load over the heads of other people. Warn people of your intention to move a load in their area.
12. **DO NOT** leave the load suspended in the air unattended.
13. **DO NOT** wrap the load chain around the load and hook onto itself as a choker chain. Doing this will result in the following:
 - a. Operation of the upper limit switch is bypassed and the load could hit the hoist.
 - b. The loss of the swivel effect of the hook which could mean twisted chain and a jammed liftwheel
 - c. The chain could be damaged at the hook.
14. Permit only qualified personnel to operate unit.

SAFETY PRECAUTIONS

Each Yale Motor-Driven Trolley is built in accordance with the specifications contained herein and at the time of manufacture complied with our interpretation of applicable sections of the *American Society of Mechanical Engineers Code B30.11 "Monorail Systems and Underhung Cranes," the National Electrical Code (ANSI/NFPA 70) and the Occupational Safety and Health Act. Since OSHA states the National Electrical Code applies to all electrical installations and utilization equipment, installers are required to provide current overload protection and grounding in keeping with the code. Check each installation for compliance with the application, operation and maintenance sections of these articles.

After you have completely familiarized yourself with the contents of this manual, we recommend that you carefully file it for future reference.

*Copies of this standard can be obtained from ASME Order Department, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300, U.S.A.



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL AND ANY PROVIDED WITH THE EQUIPMENT BEFORE ATTEMPTING TO OPERATE YOUR YALE MOTOR-DRIVEN TROLLEY.



NOTES

Lined area for notes, featuring a large diagonal watermark reading "HOOSIER CRANE SERVICE COMPANY".



FOREWORD

This manual contains important information to help you properly install, operate and maintain the Yale Motor-Driven Trolley for maximum performance, economy and safety.

Please study its contents thoroughly before putting your trolley into operation. By practicing correct operating procedures and by carrying out the recommended preventive maintenance suggestions, you will experience long, dependable and safe service.

After you have completely familiarized yourself with the contents of this manual, we recommend that you carefully file it for future reference.

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GENERAL LAYOUT

As received, your trolley kit will be preassembled with the control assembly attached to the plain sideplate and the drive assembly attached to the geared sideplate. The push button and cable assembly and input power cord will be attached and wired to the control enclosure. The motor cord will be attached and wired to the motor. The suspension pins, washers and spacers will not be assembled to either sideplate. The installer will be required to set the trolley spacing according to the beam flange width the trolley is to be mounted. A cord kit will be needed to wire the hoist to the trolley. Some hoists use one combination cord for both power and control while other hoists use two separate cords for power and control.

Note: Some hoists do not require a trolley enclosure. In those cases, the trolley controls will be located inside the hoist body and the push button control will be attached to the hoist body.

HOOSIER CRANE
SERVICE COMPANY



GENERAL INFORMATION

Yale Motor Driven Trolleys are designed for use on Yale Wire Rope Electric Hoists in rated loads from 1/2 through 15 tons. They are used singularly on standard lift hoists, or in combination with plain wheel trailer trolleys on low headroom or longer lift hoists.

These trolleys are built in three basic wheel sizes (single motor and/or double motor drive) to accommodate the entire range of rated loads offered in the SHAW-BOX hoist line. These sizes are 4" diameter wheels, 6-1/2" diameter wheels and 8" diameter wheels.

Push button station, ballast resistors, fuse kit and mainline contactor panels (all optional) will be mounted on trolley and completely wired into the trolley. Current collectors (when ordered) will be shipped loose.

The trolley (or trolleys on long lift and low headroom model hoists) mount on a special integral lug at top of hoist frame. Assembly of trolley(s) on hoist and installation of trolley-hoist unit on its runway beam can be accomplished with minimum effort by following the instructions given herein.

Specifications herein subject to change without notice.

WARNING

This equipment is not suitable or designed to be used in conjunction with lifting or lowering persons.

THE INFORMATION CONTAINED IN THIS MANUAL IS FOR INFORMATIONAL PURPOSES ONLY AND YALE DOES NOT WARRANT OR OTHERWISE GUARANTEE (IMPLIEDLY OR EXPRESSLY) ANYTHING OTHER THAN THE COMPONENTS THAT YALE MANUFACTURES AND ASSUMES NO LEGAL RESPONSIBILITY (INCLUDING BUT NOT LIMITED TO CONSEQUENTIAL DAMAGES) FOR INFORMATION CONTAINED IN THIS MANUAL.

ASSEMBLY OF TROLLEY TO HOIST

Place hoist on workbench, suspension lug facing up, and proceed as follows:

- Before installing trolley on hoist, determine the proper orientation of hoist.
 - On both single-motor and two-motor trolleys, except on low headroom model hoists, position trolley so that its electrical control panel is on the same side as the electrical compartment of the hoist. Note: On long lift model hoists, locate motor driven trolley on mounting lug at motor end of hoist and trailer trolley at opposite end.
 - On low headroom model hoists, locate motor driven trolley on mounting lug at drum side of hoist, with electrical control panel toward gear case end. A 2-wheel or 4-wheel trailer trolley mounts on opposite, or electrical compartment side of hoist.
- Determine proper spacing for trolley side plates so that adequate wheel clearance (approximately 1/8") is provided on both sides of I-beam, between inside faces of wheel flanges and edges of bottom beam flange. Proper spacing is obtained by varying the number of spacer washers (furnished with trolley) installed on suspension cross pins between suspension lug and trolley side plates (Figure 1).



ASSEMBLY OF TROLLEY TO HOIST CONTINUED

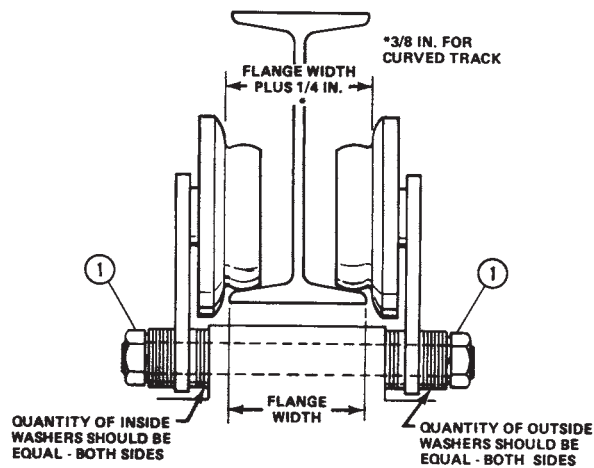


Figure 1. Proper Wheel Spacing

3. Due to manufacturing tolerances, I-beams having the same size designations may have varying dimensions making it impossible to prescribe the specific number of spacer washers required between trolley side plates and suspension lug for any given beam size. It will, therefore, be necessary to determine the spacer washer requirement by "trial and error" assembly.
 - a. First measure the exact width of bottom flange on runway beam, and then add 1/4" to that measurement (3/8" for curved beam). The total is the required distance between inside faces of wheel flanges to obtain satisfactory wheel operating clearance. See Figure 1.
 - b. Temporarily assemble trolley to hoist using about 3 or 4 washers at each end of suspension pins, between side plates and suspension lug. Tighten pin nuts for accurate check of spacing.
 - c. Measure distance between inside faces of wheel flanges and compare with the total dimension obtained in paragraph above.
 - d. Remove trolley sides and add or remove an equal number of inside spacer washers as required to obtain proper distance between wheels.
 - e. When wheel spacing is correct, remaining spacer washers are to be installed on outside ends of suspension pins (see note below) and the pins then secured with lockwashers and hex nuts. The nuts (1, Figure 1) should not be completely tightened until after hoist and trolley are mounted on runway beam.
 - f. **Note:** It is important that all spacer washers that come with trolley be used. Install remaining spacer washers equally on outside ends of pins.
4. Open cover on trolley electrical panel enclosure. Remove one knockout from enclosure and thread hoist flexible cable leads through hole. Secure box type connector with locknut and connect leads to terminal strip in accordance with appropriate wiring diagrams furnished with trolley.

CURRENT COLLECTORS

1. Current collectors are not standard and must be ordered as an option. They are shipped in a separate carton and must be installed in field.
2. Determine collector arrangement on trolley before starting assembly (i.e., whether all on one side or on two sides.)
3. Assemble collector bracket with hardware provided. Secure lightly for later adjustment.
4. Arrange collectors on pole in approximate locations and finger tighten to pole.
5. Open cover on trolley electrical panel. Feed wire leads from collector shoe terminals into trolley electrical panel through box type connector in enclosure. Connect collector wire leads to terminal strip in accordance with appropriate wiring diagrams furnished with trolley. Close panel cover.
6. If trolley is equipped with a mainline disconnect panel and/ or fuse panel, connect the collector wire leads per "Fuse and Mainline Disconnect Panels" section.

INSTALLING TROLLEY AND HOIST

1. Hoist and trolley combination may be installed on runway beam by either of two methods.

WARNING

Be certain that electrical power supply to runway current conductors (if used) is "off" and locked in the open position.

- a. If one end of beam is open or exposed, trolley may be installed by sliding it onto beam.
- b. If trolley cannot be slid over end of beam, remove hex nuts (1, Figure 1), lockwashers and outer spacer washers from pins on one side of trolley. Spread or remove one side plate to facilitate positioning trolley over bottom flange of beam. Reinstall, side plate, outer spacer washers, lockwashers and hex nuts on suspension pins.

WARNING

After trolley has been installed on beam, make sure suitable stop(s) is secured on open ended beams to prevent trolley from rolling off the beam. (Stops should contact trolley side plates, not wheels.) Make certain that all spacer washers and lockwashers are in place on suspension pins and that hex nuts are tight. Recheck clearance dimension between wheel flanges and beam flanges (Figure 1).

2. Engage slide collector shoes with runway conductor bars and make final adjustment to pole bracket and collector spacing. Tighten securely.

CAUTION

Power supply must be same voltage, phase and frequency as specified on hoist and trolley motor nameplates.

3. Follow National, State and Local electrical codes when providing electrical service to hoist and trolley. Make electrical connections using the wiring diagrams furnished with the trolley and the wiring diagram furnished with the hoist. Do not attempt to operate trolley or hoist before completing "Pre-Operation Checks and Adjustments."

WARNING

This equipment must be effectively grounded according to the National Electric Code or other applicable codes.

ATTACH PUSH BUTTON STATION STRAIN CABLE

Trolleys ordered for use with hoists are shipped from the factory with the upper end of the push button station strain cable unconnected. If this is the case, it will be necessary to remove rope thimble from loose end of strain cable and attach strain cable as shown in either Figure 2 or Figure 3.

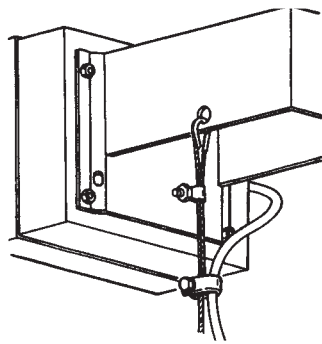


Figure 2. Push Button Strain Cable Attachment to Y80 Yale Hoist.

CONNECTING TROLLEY TO ELECTRICAL SERVICE

1. Follow Local, State and National Electric Codes when providing electrical service to hoist. Connect wires in accordance with appropriate trolley wiring diagram. Be certain that the electrical power supply is the same as specified on trolley and hoist motor data plates. On dual voltage hoists and trolleys be certain that connections are made inside the hoist and inside the trolley motor conduit box for the appropriate voltage. On three phase models DO NOT attempt to operate trolley or hoist before completing TESTS AND ADJUSTMENTS FOR 3 PHASE MODELS which follows.
2. Common methods of connecting trolley to power supply are current collectors, previously described and flexible cable (tag line, festooned or cable reel).

Note: A grounding type male plug or permanent connection in an outlet box may be used for wiring tag line or festooned cable to power supply.

CAUTION

Power supply must be same voltage, frequency and phase as specified on hoist and trolley nameplates.

WARNING

All equipment must be effectively grounded electrically.

PRE-OPERATION CHECKS AND ADJUSTMENTS

WARNING

On three phase hoists it is possible to have "Reverse Phasing" causing the lower block to lower when the "Up" button is depressed. When this condition exists the automatic limit stop switch is inoperative and hoist operation will be dangerous.

1. Check Push Button Operation and Phasing.
 - a. To properly check the phase of the hoist, follow steps below:
 - (1) With "POWER OFF" operate the "START", "STOP" and "UP" push buttons and determine that they do not bind or stick in any position. DO NOT REMOVE WARNING TAG or test "DOWN" push button at this time.
- ### **WARNING**
- If any push button binds or sticks in any position - DO NOT TURN POWER ON - determine the cause and correct the malfunction before operating.
- (2) Temporarily connect hoist to power source.
 - (3) Operate "UP" button briefly to determine direction of hook travel.
 - (4) If hook raises, phase is correct. Turn power off and make temporary connections permanent.
 - (5) If hook lowers, hoist is "Reverse Phased." TURN POWER OFF and correct by interchanging any two leads at power source connection. **Do not change internal wiring of hoist.**
- b. The red WARNING TAG should be removed from push button cable only after it has been determined that the hoist is correctly phased. With "POWER OFF" the "DOWN" button should now be checked for freedom of operation. If malfunction exists, correct before operating with power.

2. Observe and perform all pre-operation checks required for the hoist, as outlined in the "Hoist Operation, Service and Parts Manual" furnished with the hoist.
3. **Check Trolley Travel Directions.** With trolley-hoist unit positioned on I-beam so that there is clear track to allow travel in each direction, check both "RIGHT" and "LEFT" traverse operation.

Note:

When it is desired to change direction of **trolley travel** in relation to push button markings, turn POWER OFF and interchange connections of motor leads "CT-1" and "CT-2" at trolley contactor "L" on single speed trolleys. Be certain to interchange connections on both motors on 2-motor trolleys. For two speed trolleys, interchange wires "A" and "C" at trolley contactor "L".

4. Adjust Ballast Resistors (if furnished).

- a. Ballast resistors installed on 3 phase motor driven trolleys provide a "cushion-start" effect which is helpful in reducing load swing during acceleration. It will be necessary to adjust resistor slide bands with hoist under load as directed below to obtain the desired rate of acceleration.

⚠ WARNING

Ballast resistors are neither suitable nor intended for use in reducing maximum trolley running speed.

- b. Resistor slide bands (taps) are approximately set when shipped from factory. Field adjustments for desired acceleration should be made by user with maximum load to be moved suspended from hoist as follows:

1. Turn power "OFF" at power source.
2. Remove resistor cover. Discard any paper covering resistors.
3. Loosen the three slide bands and move them to the extreme end to which jumpers are attached. This provides maximum resistance resulting in reduced motor voltage and motor torque.

⚠ CAUTION

To prevent damage to trolley motor, be certain the three slide bands are IN-LINE HORIZONTALLY on their respective resistors after any adjustment. DO NOT ROTATE slide bands on their resistors. This may cause electrical shorting.

4. Turn power "ON" and with maximum load to be traversed suspended from hoist, press "RIGHT" or "LEFT" trolley button and note speed of trolley acceleration. If trolley does not move or accelerates too slowly, turn power "OFF" and move all three slide bands approximately 1" away from jumper end. Turn power on and repeat above test. Continue above procedure until desired acceleration is obtained.
5. Replace resistor cover.

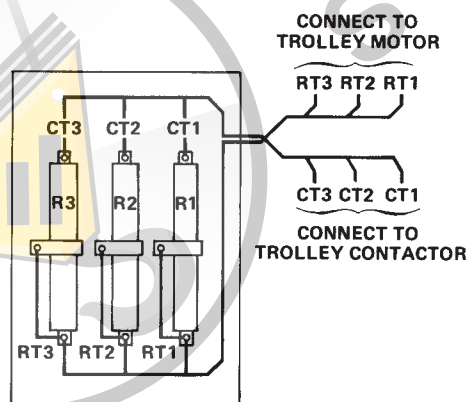


Figure 5. Resistor Wiring Diagram

FUSE AND MAINLINE DISCONNECT PANELS

Mainline disconnect panels and/or hoist-trolley fuse panels are provided as options on motor driven trolleys to assist users in complying with OSHA codes. When ordered with trolley, they will be completely installed on trolley and wired into trolley electrical system.

Electrical service is to be connected to trolleys equipped with fuse panels and/or mainline disconnect panels as follows:

1. Fuse Panels Only. Connect leads from power supply to hoist fuse terminals "L-1", "L-2" and "L-3" (3-phase) under hoist fuses. See trolley wiring diagram.
2. Mainline disconnect (furnished with fuse panels only). Connect power supply leads "ML-1", "ML-2" and "ML-3" (3-phase) to the upper power terminals of mainline contactor. Refer to trolley wiring diagram.

⚠ CAUTION

Power supply must be same voltage, frequency and phase as specified on hoist and trolley nameplates.

MAINTENANCE AND LUBRICATION

1. Shawbox Motor Driven Trolleys are built to give long service, but should be inspected periodically for evidence of damage or wear, particularly when subjected to unusually severe operating conditions.
2. Lubrication requirements:
 - a. Wheel bearings are permanently lubricated and require no additional lubricant.
 - b. Drive wheel gears are to be lubricated with an open type gear grease which is heavy, plastic, extreme pressure and tacky; such as MOBILTAC 275 NC or equal.
 - c. The right angle worm gear reducer oil is a synthetic lubricant with excellent wear protection capability and long life. This oil does not require changing. When replacing oil due to repairs use: Mobil SHC 634 or equal for 439509-XX and 439077-XX Reducers Klubersynth UH-6-460 for C333750-XX and C333751-XX Reducers

REPLACEMENT PARTS LIST

The following parts lists and illustrations cover standard model Yale motor driven trolleys. Typical units are used as the basis for the exploded parts illustrations; therefore, certain variations may occur from the parts information given. For this reason, when ordering replacement parts, always give the:

- 1. Serial number
- 2. model number
- 3. motor horsepower, voltage, phase and frequency

For motors, gearboxes and electrical components, give complete nameplate data. Pins referred to in some column headings are trolley suspension pins.

The factory recommends complete replacement of the motor or gearbox. Gearbox service is available, however, from your local authorized Yale repair station.

Use only factory provided replacement parts. Parts may look alike but parts are made of specific materials and processes to achieve specific properties.

The numbers assigned to the parts of our various assemblies In our parts lists are not the part numbers used In manufacturing the part. They are identification numbers, that when given with the trolley serial number, permit us to identify, select or manufacture, and ship the correct part needed for any trolley.

Supply Complete numbers from the identification plate of the gearbox that match the numbers (including digits - where x's appear) In the lower right hand corner of the parts illustration for the motor and gearbox assemblies.

Parts should be ordered from Yale's authorized Master Parts Depots conveniently located throughout the United States and Canada. To quickly obtain the name of the Master Parts Depot or Service Center located nearest you, visit www.cmworks.com

NOTE: When ordering replacement parts, it is recommended that consideration be given to the need for also ordering such items as bearings, contacts, fasteners, etc. These items may be damaged or lost during disassembly or just unfit for future use because of deterioration from age or service.

**WARNING**

Using “commercial” or other manufacturer’s parts to repair the Yale Motor-Driven Trolley may cause load loss.

TO AVOID CONTACT AND CONTAMINATION:
Use only Yale supplied replacement parts. Parts may look alike, but Yale parts are made of specific materials or processed to achieve specific properties.



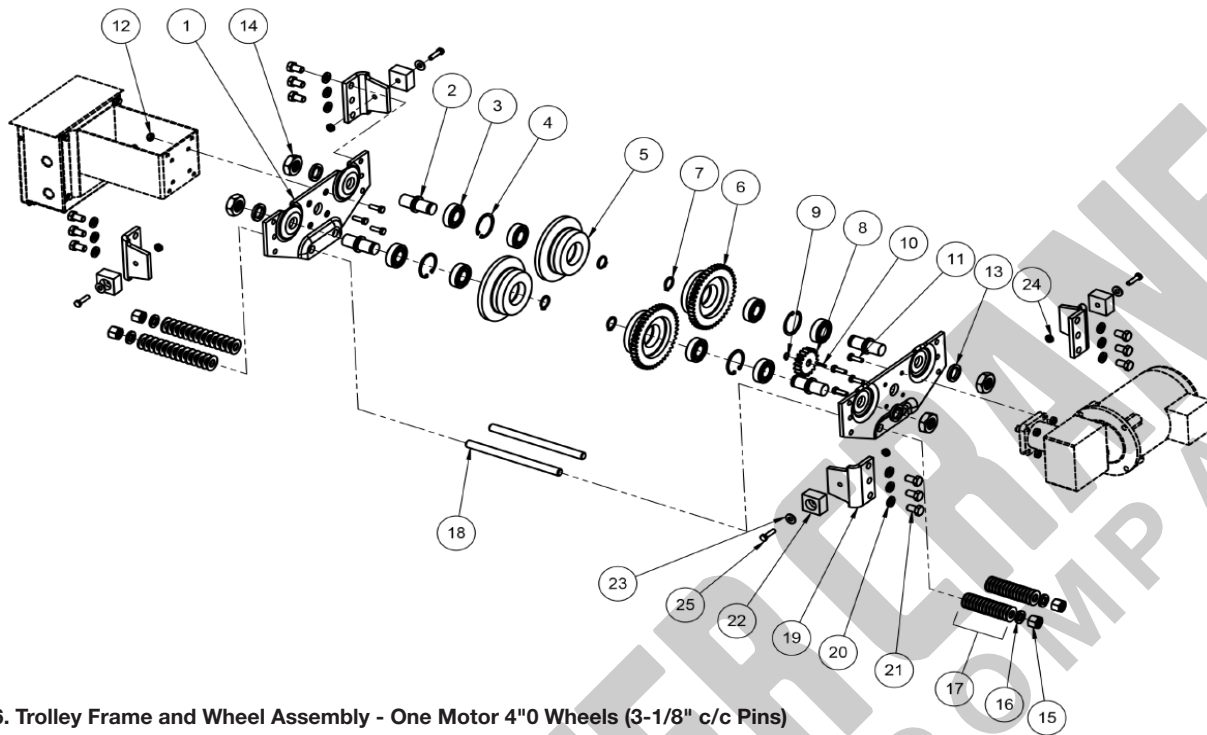


Figure 6. Trolley Frame and Wheel Assembly - One Motor 4"Ø Wheels (3-1/8" c/c Pins)

Ref. No.	Description	3-1/8" c/c Pins	
		Part Number	Qty. Req'd.
1	Plate Assembly - Side For 3" to 5" Flange Widths and Patented Track For 5-1/8" to 7-1/4" Flange Widths For 7-1/2" to 8-1/8" Flange Widths	SBT-3600 SBT-3601 SBT-3602	2 2 2
2	Shaft - Wheel	SBT-3606	4
3	Bearing - Ball	SBT-3607	8
4	Ring - Retaining	SBT-3608	4
5	Wheel - Plain (Except Patented Track) For Patented Track Only	SBT-3609 SBT-3610	2 2
6	Wheel - Geared (Except Patented Track) For Patented Track Only	SBT-3611 SBT-3612	2 2
7	Ring - Retaining	SBT-3613	4
8	Pinion - Motor	SBT-3614	1
9	Ring - Retaining	SBT-3616	1
10	Key - Motor Pinion	SBT-3617	1
11	Screw - Hex Cap	SBT-3618	8
12	Nut - Self-locking	SBT-3619	8
13	Lockwasher	SBT-3620	4
14	Nut - Hex Jam	SBT-3621	4
15	Nut - Hex Jam	SBT-3622	4
16	Lockwasher	SBT-3623	4
17	Washer - Spacer	SBT-3624	56
18	Pin - Suspension For 3" to 5" Flange Widths and Patented Track For 5-1/8" to 7-1/4" Flange Width For 7-1/2" to 8-1/8" Flange Width	SBT-3626 SBT-3627 SBT-3628	2 2 2
19	Drop Stop	SBT-3632	4
20	Lockwasher	SBT-3633	12
21	Bolt	SBT-3634	12
22	Bumper	SBT-3636	4
23	Washer	SBT-3637	4
24	Nut	SBT-3638	4
25	Bolt	SBT-3639	4



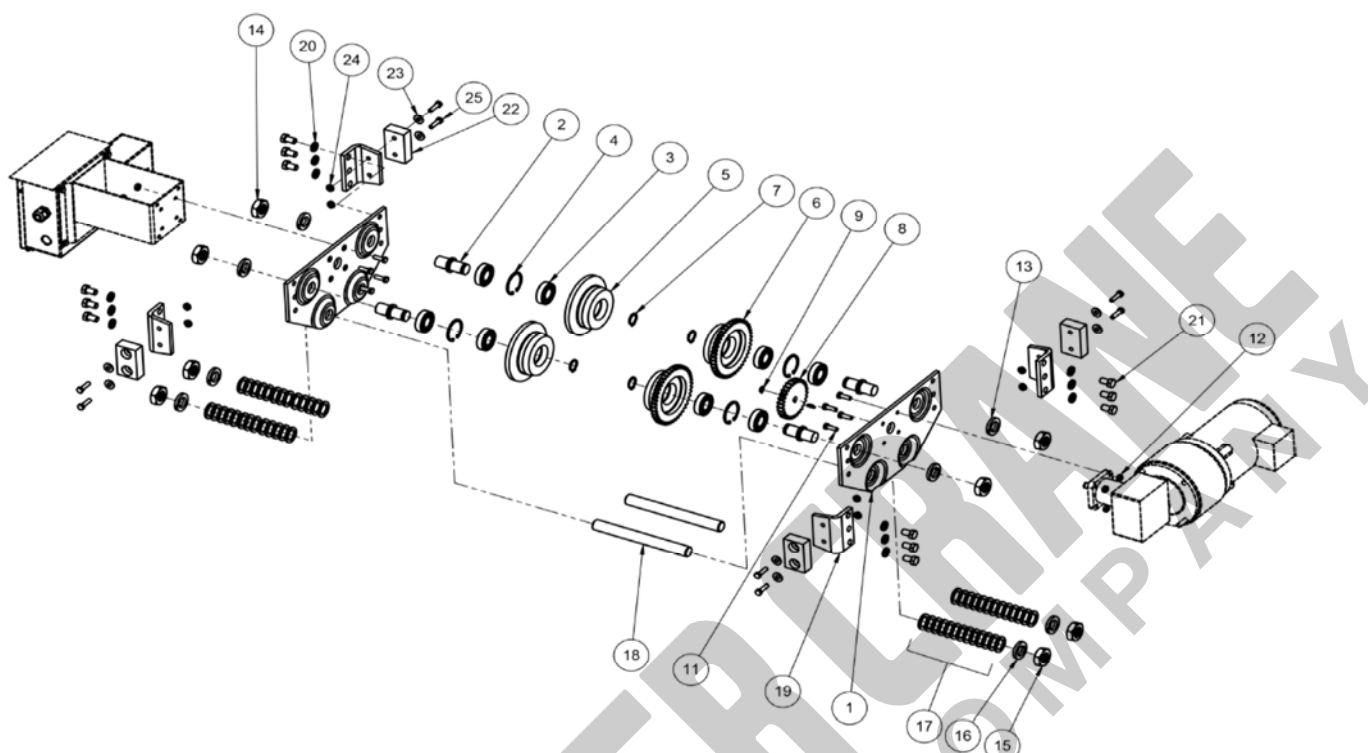


Figure 7. Trolley Frame and Wheel Assembly One Motor 4"0 Wheels (5" c/c Pins)

Ref. No.	Description	5" c/c Pins	
		Part Number	Qty. Req'd.
1	Plate Assembly - Side For 3-5/8" to 6" Flange Widths and Patented Track For 6-1/4" to 8-5/8" Flange Widths For 8-7/8" to 11-1/4" Flange Widths	SBT-3603	2
		SBT-3604	2
		SBT-3605	2
2	Shaft - Wheel	SBT-3606	4
3	Bearing - Ball	SBT-3607	8
4	Ring - Retaining	SBT-3608	4
5	Wheel - Plain (Except Patented Track) For Patented Track Only	SBT-3609	2
		SBT-3610	2
6	Wheel - Geared (Except Patented Track) For Patented Track Only	SBT-3611	2
		SBT-3612	2
7	Ring - Retaining	SBT-3613	4
8	Pinion - Motor	SBT-3615	1
9	Ring - Retaining	SBT-3616	1
10	Key- Motor Pinion	SBT-3617	1
11	Screw- Hex Cap	SBT-3618	8
12	Nut- Self-locking	SBT-3619	8
13	Lockwasher	SBT-3620	4
14	Nut - Hex Jam	SBT-3621	4
15	Nut - Hex Jam	SBT-3632	4
16	Lockwasher	SBT-3633	4
17	Washer - Spacer	SBT-3625	36
18	Pin - Suspension For 3-5/8" to 6" Flange Widths and Patented Track For 6-1/4" to 8-5/8" Flange Widths For 8-7/8" to 11-1/4" Flange Widths	SBT-3629	2
		SBT-3630	2
		SBT-3631	2
19	Drop Stop	SBT-3635	4
20	Lockwasher	SBT-3633	12
21	Bolt	SBT-3634	12
22	Bumper	SBT-3640	4
23	Washer	SBT-3641	8
24	Nut	SBT-3642	8
25	Bolt	SBT-3643	8

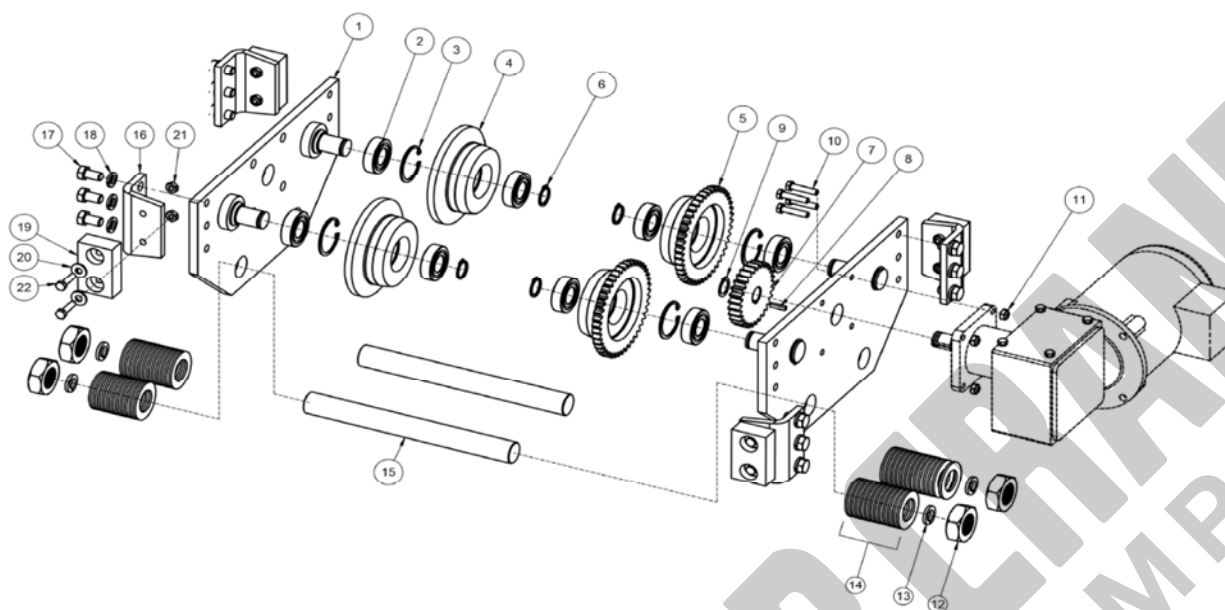


Figure 8. Trolley Frame and Wheel Assembly One Motor 4"0 Wheels (6" c/c Pins)

Ref. No.	Description	3-1/8" c/c Pins	
		Part Number	Qty. Req'd.
1	Plate Assembly - Side For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-3700 SBT-3701 SBT-3702	2 2 2
2	Bearing - Ball	SBT-3703	8
3	Ring - Retaining	SBT-3704	4
4	Wheel - Plain (Except Patented Track) For Patented Track Only	SBT-3705 SBT-3706	2 2
5	Wheel - Geared (Except Patented Track) For Patented Track Only	SBT-3707 SBT-3708	2 2
6	Ring - Retaining	SBT-3709	4
7	Pinion - Motor	SBT-3710	1
8	Key - Motor Pinion	SBT-3711	1
9	Ring - Retaining	SBT-3712	1
10	Screw - Hex Cap	SBT-3713	4
11	Nut - Self-locking	SBT-3714	4
12	Nut - Hex Jam	SBT-3715	4
13	Lockwasher	SBT-3716	4
14	Washer - Spacer	SBT-3717	40
15	Pin - Suspension For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-3718 SBT-3719 SBT-3720	2 2 2
16	Drop Stop (Except Patented Track) For Patented Track Only	SBT-3721 SBT-3722	4 4
17	Bolt	SBT-3723	12
18	Lockwasher	SBT-3724	12
19	Bumper	SBT-3725	4
20	Washer	SBT-3726	8
21	Nut	SBT-3727	8
22	Bolt	SBT-3728	8

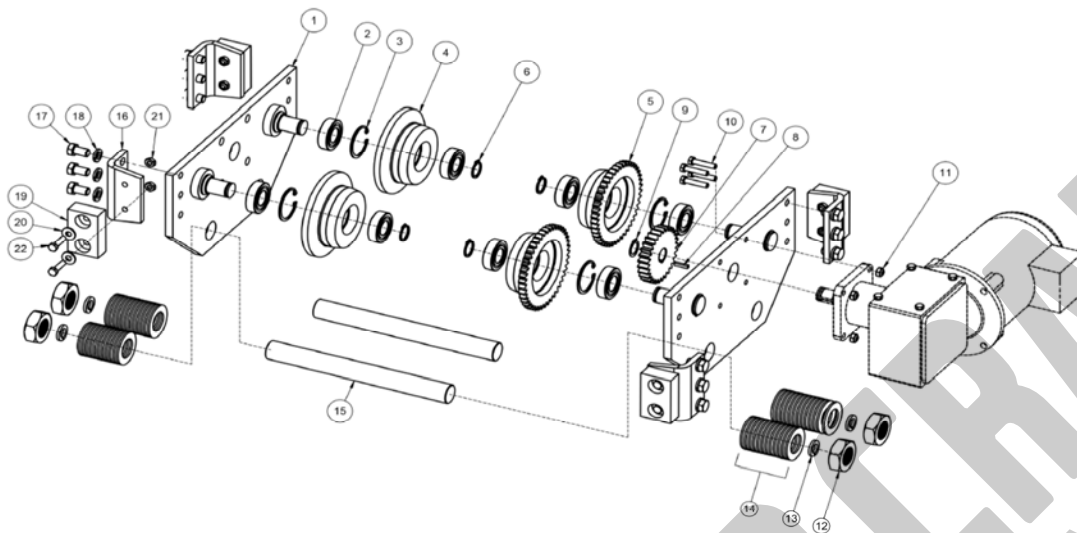


Figure 9. Trolley Frame and Wheel Assembly One Motor 6-1/4" Wheels

Ref. No.	Description	6-1/2" c/c Pins			
		1-1/4" c/c Pins		1-1/2" c/c Pins	
		Part Number	Qty. Req'd.	Part Number	Qty. Req'd.
1	Plate Assembly - Side For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-3800	2	SBT-3801	2
		SBT-3802	2	SBT-3803	2
		SBT-3804	2	SBT-3805	2
2	Bearing - Ball	SBT-3811	8	SBT-3811	8
3	Ring - Retaining	SBT-3813	4	SBT-3813	4
4	Wheel - Plain (Except Patented Track) For Patented Track Only	SBT-3815	2	SBT-3815	2
		SBT-3817	2	SBT-3817	2
5	Wheel - Geared (Except Patented Track) For Patented Track Only	SBT-3818	2	SBT-3818	2
		SBT-3820	2	SBT-3820	2
6	Ring - Retaining	SBT-3821	4	SBT-3821	4
7	Pinion - Motor	SBT-3823	1	SBT-3823	1
8	Key - Motor Pinion	SBT-3824	1	SBT-3824	1
9	Ring - Retaining	SBT-3825	1	SBT-3825	1
10	Screw - Hex Cap	SBT-3826	4	SBT-3826	4
11	Nut - Self-locking	SBT-3828	4	SBT-3828	4
12	Nut - Hex Jam	SBT-3829	4	SBT-3830	4
13	Lockwasher	SBT-3832	4	SBT-3831	4
14	Washer - Spacer	SBT-3835	40	SBT-3833	40
15	Pin - Suspension For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-3838	2	SBT-3839	2
		SBT-3840	2	SBT-3841	2
		SBT-3842	2	SBT-3843	2
16	Drop Stop (Except Patented Track) For Patented Track Only	SBT-3847	4	SBT-3847	4
		SBT-3848	4	SBT-3848	4
17	Bolt	SBT-3849	12	SBT-3849	12
18	Lockwasher	SBT-3850	12	SBT-3850	12
19	Bumper	SBT-3851	4	SBT-3851	4
20	Washer	SBT-3852	8	SBT-3852	8
21	Nut	SBT-3853	8	SBT-3853	8
22	Bolt	SBT-3854	8	SBT-3854	8

*Pinion shoulder away from side plate



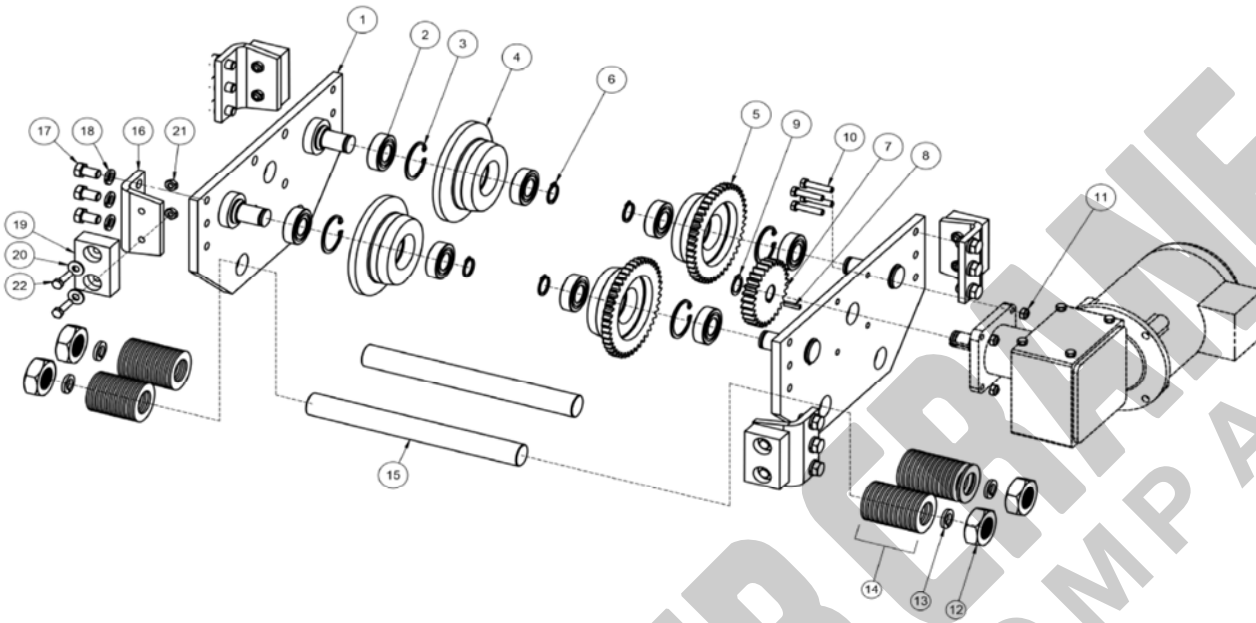


Figure 10. Trolley Frame and Wheel Assembly One Motor 8" Wheels

Ref. No.	Description	8" Wheels			
		9" c/c Pins		16" c/c Pins	
		Part Number	Qty. Req'd.	Part Number	Qty. Req'd.
1	Plate Assembly - Side For 6" to 8-1/2" Flange Widths and Patented Track For 8-5/8" to 11-1/8" Flange Widths For 11-1/4" to 13-3/4" Flange Widths	SBT-3806	2	SBT-3806	2
2	Bearing - Ball	SBT-3812	8	SBT-3812	8
3	Ring - Retaining	SBT-3814	4	SBT-3814	4
4	Wheel - Plain	SBT-3816	2	SBT-3816	2
5	Wheel - Geared	SBT-3819	2	SBT-3819	2
6	Ring - Retaining	SBT-3822	4	SBT-3822	4
7	Pinion - Motor	SBT-3823	1	SBT-3823	1
8	Key - Motor Pinion	SBT-3824	1	SBT-3824	1
9	Ring - Retaining	SBT-3825	1	SBT-3825	1
10	Screw - Hex Cap	SBT-3827	4	SBT-3827	4
11	Nut - Self-locking	SBT-3828	4	SBT-3828	4
12	Nut - Hex Jam	SBT-3831	4	SBT-3831	4
13	Lockwasher	SBT-3834	4	SBT-3834	4
14	Washer - Spacer	SBT-3837	44	SBT-3837	44
15	Pin - Suspension For 6" to 8-1/2" Flange Widths and Patented Track For 8-5/8" to 11-1/8" Flange Widths For 11-1/4" to 13-3/4" Flange Widths	SBT-3844	2	SBT-3844	2
		SBT-3845	2	SBT-3845	2
		SBT-3846	2	SBT-3846	2
16	Drop Stop (Right Hand) Drop Stop (Left Hand)	SBT-3855	4	SBT-3855	4
		SBT-3856	4	SBT-3856	4
17	Bolt	SBT-3857	12	SBT-3857	12
18	Lockwasher	SBT-3858	12	SBT-3858	12
19	Bumper	SBT-3859	4	SBT-3859	4
20	Washer	SBT-3860	8	SBT-3860	8
21	Nut	SBT-3861	8	SBT-3861	8
22	Bolt	SBT-3862	8	SBT-3862	8

*Pinion shoulder toward side plate

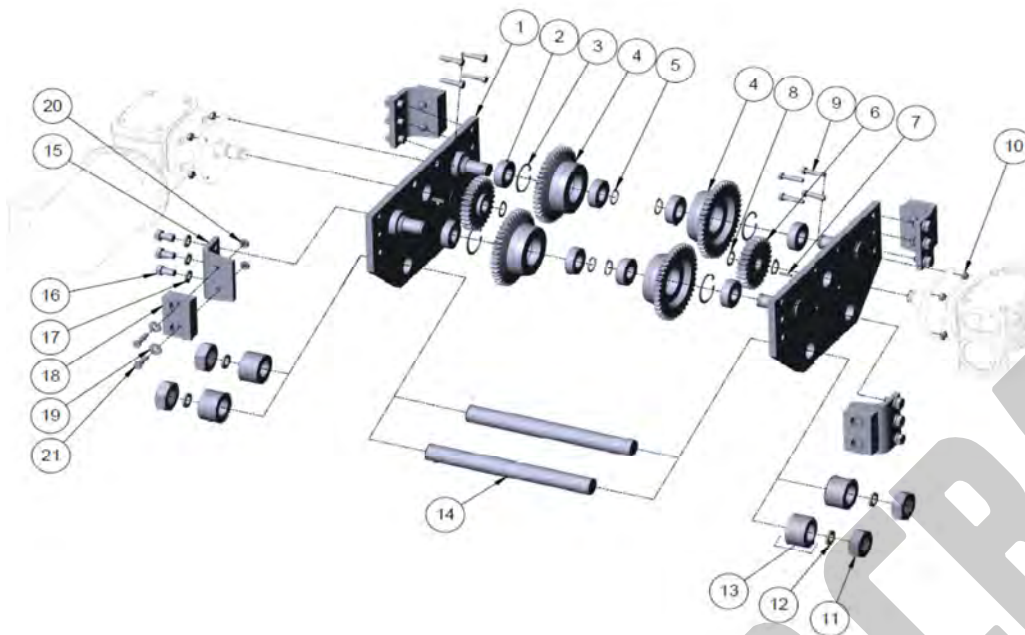


Figure 11. Trolley Frame and Wheel Assembly Two Motor 4"0 Wheels

Ref. No.	Description	6" c/c Pins	
		Part Number	Qty. Req'd.
1	Plate Assembly - Side For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-3900 SBT-3901 SBT-3902	2 2 2
2	Bearing - Ball	SBT-3903	8
3	Ring - Retaining	SBT-3904	4
4	Wheel - Geared (Except Patented Track) For Patented Track Only	SBT-3905 SBT-3906	4 4
5	Ring - Retaining	SBT-3907	4
6	Pinion - Motor	SBT-3908	2
7	Key - Motor Pinion	SBT-3909	2
8	Ring - Retaining	SBT-3910	2
9	Screw - Hex Cap	SBT-3911	8
10	Nut - Self-locking	SBT-3912	8
11	Nut - Hex Jam	SBT-3913	4
12	Lockwasher	SBT-3914	4
13	Washer - Spacer	SBT-3915	40
14	Pin - Suspension For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-3716 SBT-3717 SBT-3718	2 2 2
15	Drop Stop (Except Patented Track) For Patented Track Only	SBT-3719 SBT-3720	4 4
16	Bolt	SBT-3721	12
17	Lockwasher	SBT-3722	12
18	Bumper	SBT-3723	4
19	Washer	SBT-3724	8
20	Nut	SBT-3725	8
21	Bolt	SBT-3726	8

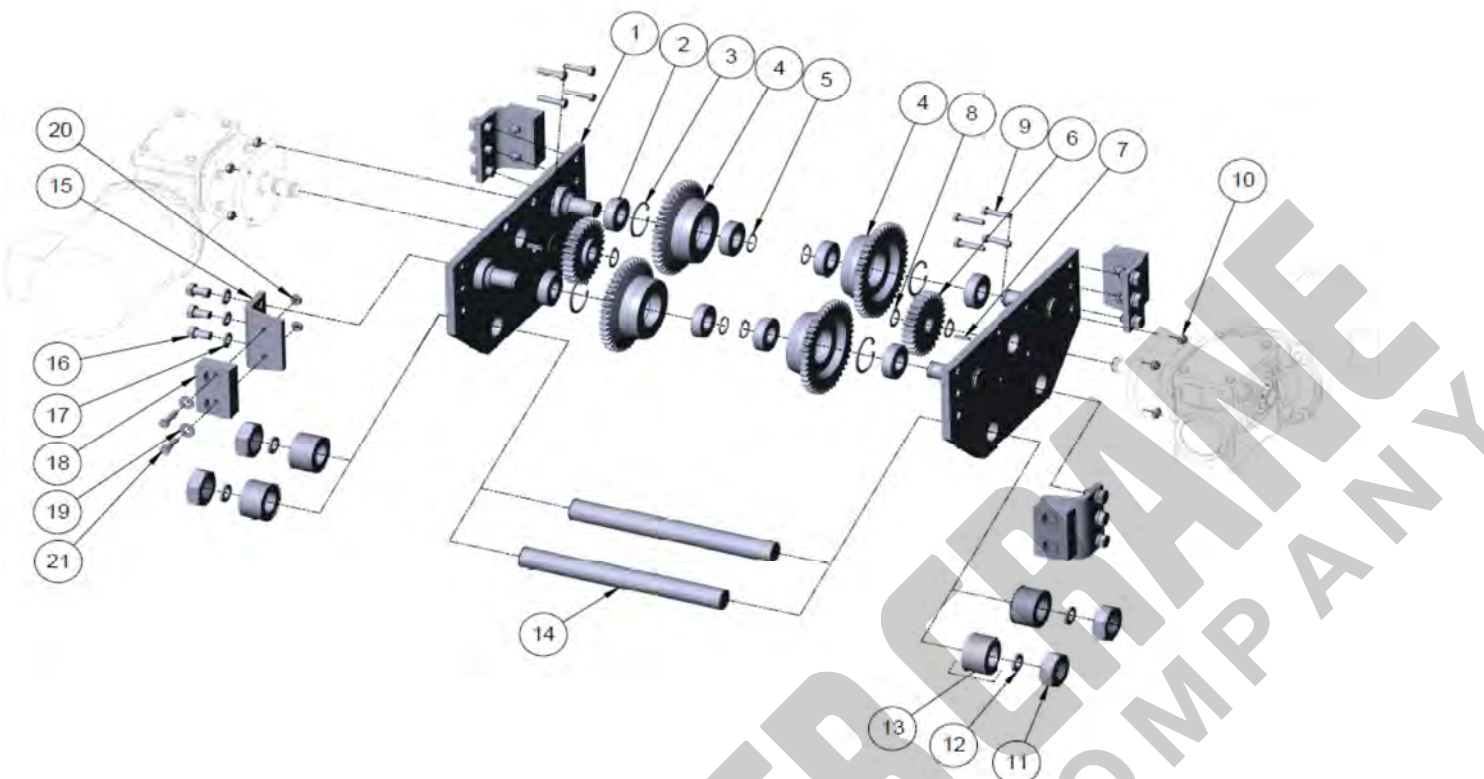


Figure 12. Trolley Frame and Wheel Assembly Two Motor 6-1/4" Wheels

Ref. No.	Description	6-1/2" Wheels			
		1-1/4" c/c Pins		1-1/2" c/c Pins	
		Part Number	Qty. Req'd.	Part Number	Qty. Req'd.
1	Plate Assembly - Side For 4" to 6-1/4" Flange Widths and Patented Track For 6-3/8" to 8-5/8" Flange Widths For 8-3/4" to 11" Flange Widths	SBT-4000	2	SBT-4001	2
2	Bearing - Ball	SBT-4011	8	SBT-4011	8
3	Ring - Retaining	SBT-4013	4	SBT-4013	4
4	Wheel - Geared (Except Patented Track) For Patented Track Only	SBT-4015	4	SBT-4015	4
5	Ring - Retaining	SBT-4018	4	SBT-4018	4
6	Pinion - Motor	SBT-4020	2	SBT-4020	2
7	Key - Motor Pinion	SBT-4021	2	SBT-4021	2
8	Ring - Retaining	SBT-4022	2	SBT-4022	2
9	Screw - Hex Cap	SBT-4023	8	SBT-4023	8
10	Nut - Self-locking	SBT-4025	8	SBT-4025	8
11	Nut - Hex Jam	SBT-4026	4	SBT-4027	4
12	Lockwasher	SBT-4029	4	SBT-4030	4
13	Washer - Spacer	SBT-4032	40	SBT-4033	40
14	Pin - Suspension For 6" to 8-1/2" Flange Widths and Patented Track For 8-5/8" to 11-1/8" Flange Widths For 11-1/4" to 13-3/4" Flange Widths	SBT-4035	2	SBT-4036	2
		SBT-4037	2	SBT-4038	2
		SBT-4039	2	SBT-4040	2
15	Drop Stop (Except Patented Track) For Patented Track Only	SBT-4044	4	SBT-4044	4
		SBT-4045	4	SBT-4045	4
16	Bolt	SBT-4046	12	SBT-4046	12
17	Lockwasher	SBT-4047	12	SBT-4047	12
18	Bumper	SBT-4048	4	SBT-4048	4
19	Washer	SBT-4049	8	SBT-4049	8
20	Nut	SBT-4050	8	SBT-4050	8
21	Bolt	SBT-4051	8	SBT-4051	8

*Pinion shoulder away from side plate

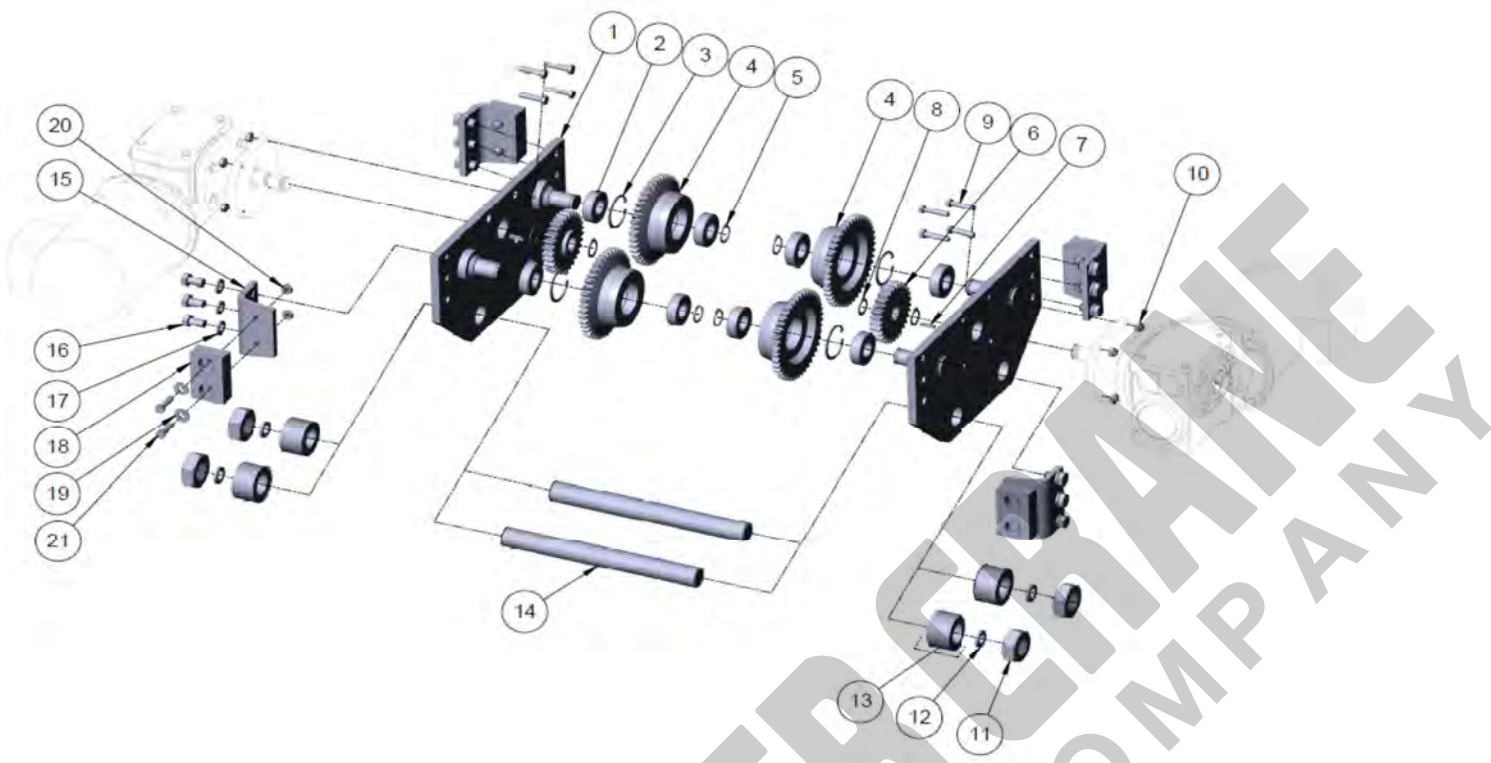


Figure 13. Trolley Frame and Wheel Assembly Two Motor 8" Wheels

Ref. No.	Description	8" Wheels			
		9" c/c Pins		16" c/c Pins	
		Part Number	Qty. Req'd.	Part Number	Qty. Req'd.
1	Plate Assembly - Side For 6" to 8-1/2" Flange Widths and Patented Track For 8-5/8" to 11-1/8" Flange Widths For 11-1/4" to 13-3/4" Flange Widths	SBT-4006	2	SBT-4006	2
		SBT-4007	2	SBT-4008	2
		SBT-4009	2	SBT-4010	2
2	Bearing - Ball	SBT-4012	8	SBT-4012	8
3	Ring - Retaining	SBT-4014	4	SBT-4014	4
4	Wheel - Geared	SBT-4016	4	SBT-4016	4
5	Ring - Retaining	SBT-4019	4	SBT-4019	4
6	Pinion - Motor	SBT-4020	2	SBT-4020	2
7	Key - Motor Pinion	SBT-4021	2	SBT-4021	2
8	Ring - Retaining	SBT-4022	2	SBT-4022	2
9	Screw - Hex Cap	SBT-4024	8	SBT-4024	8
10	Nut - Self-locking	SBT-4025	8	SBT-4025	8
11	Nut - Hex Jam	SBT-4028	4	SBT-4028	4
12	Lockwasher	SBT-4031	4	SBT-4031	4
13	Washer - Spacer	SBT-4034	44	SBT-4034	44
14	Pin - Suspension For 6" to 8-1/2" Flange Widths and Patented Track For 8-5/8" to 11-1/8" Flange Widths For 11-1/4" to 13-3/4" Flange Widths	SBT-4041	2	SBT-4041	2
		SBT-4042	2	SBT-4042	2
		SBT-4043	2	SBT-4043	2
15	Drop Stop (Right Hand) Drop Stop (Left Hand)	SBT-4052	2	SBT-4052	2
		SBT-4053	2	SBT-4053	2
16	Bolt	SBT-4054	12	SBT-4054	12
17	Lockwasher	SBT-4055	12	SBT-4055	12
18	Bumper	SBT-4056	4	SBT-4056	4
19	Washer	SBT-4057	8	SBT-4057	8
20	Nut	SBT-4058	8	SBT-4058	8
21	Bolt	SBT-4059	8	SBT-4059	8

*Pinion shoulder toward side plate



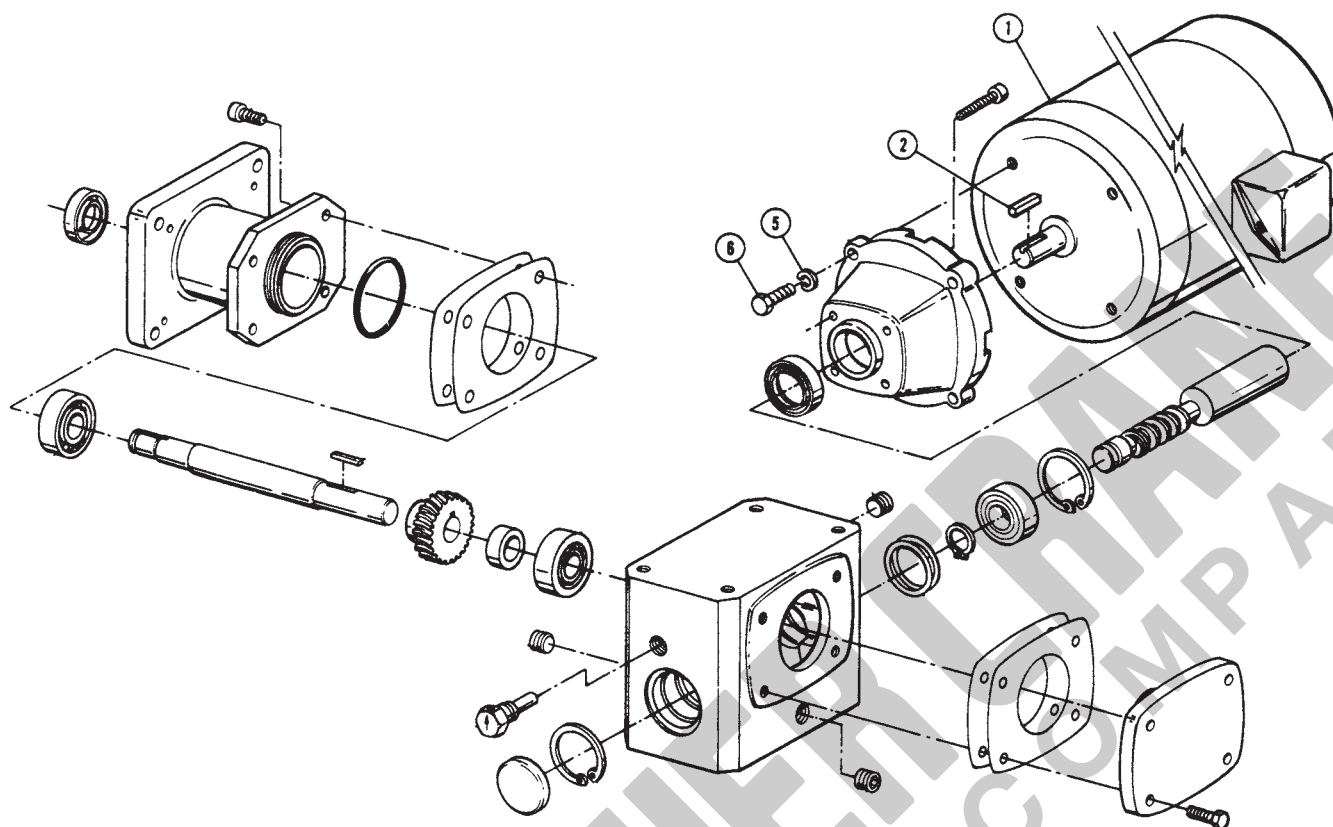


Figure 14. Motor and Gearbox Assembly (3-1/8" & 5" c/c Pins)

Notice: Five types of motor and gearbox assemblies have been used for trolleys with 3-1/8" & 5" c/c. When ordering replacement gearbox for 439076-xx gearbox, order new gearbox and motor.

Ordering Instructions: Furnish complete data from motor and gearbox nameplates with parts order. Replacement parts cannot be provided without this information.

Ref No.	Part Number	Description	Qty. Req'd
	SBT-4800	Motor and Gearbox Assembly - Complete	
1	SBT-4801	Motor (Includes Ref. No.2)	1
2	SBT-4802	Key - Motor (1/8 x 1/8 x 3/4)	1
	SBT-4803	Gearbox Assembly - Complete	1
5	SBT-4806	Lockwasher (3/8)	4
6	SBT-4807	Bolt - Hex Head (3/8 - 16 x 1)	4



TORQUE SPECIFICATIONS:

1/4"-20 MOUNTING BOLTS (#7) 10 LB-FT
3/8"-16 MOTOR BOLTS (#10) 23 LB-FT
1/4"-20 REDUCER SET SCREWS (#11) 7 LB-FT
#10-32 SET SCREWS (NOT USED)

NOTE:

USE LOCTITE 242 ON ALL BOLTS AND SETSCREWS

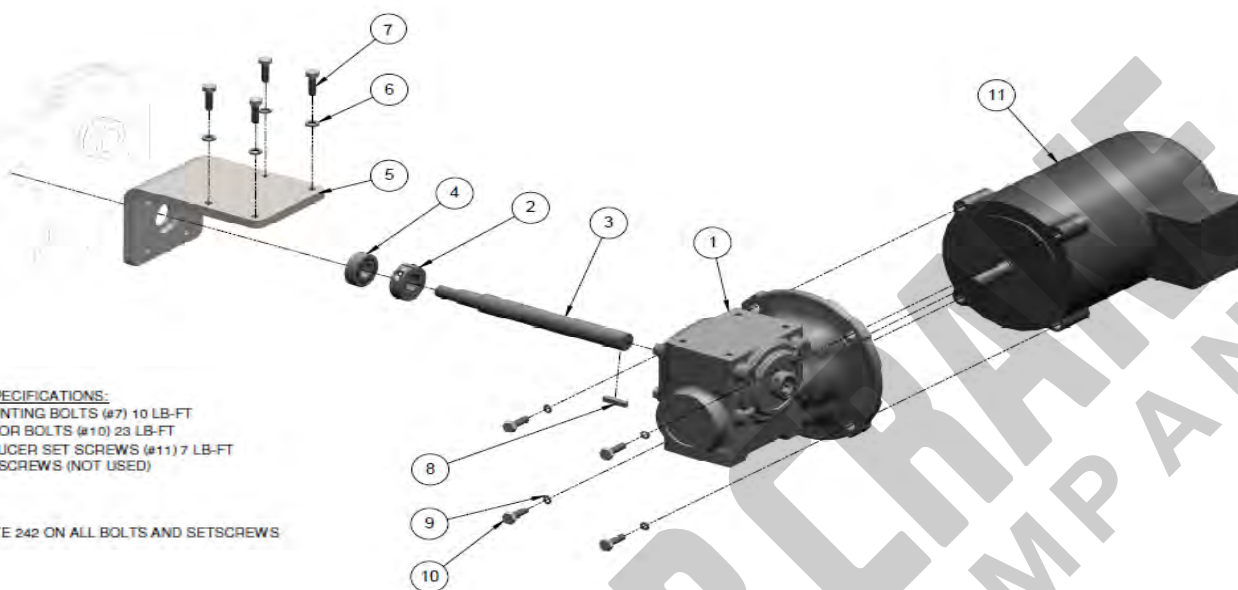


Figure 15. Motor and Gearbox Assembly (3-1/8" & 5" c/c Pins)

Ref No.	Part Number	Description	Qty. Req'd
	SBT-7500	Motor and Gearbox Assembly - Complete	1
	SBT-7501	Gearbox Reducer Kit	1
1	SBT-7502	Gearbox Reducer (includes Ref. No.8)	1
2	SBT-7503	Locking Collar	1
3	SBT-7504	Pinion Shaft	1
4	SBT-7505	Bearing	1
5	SBT-7506	Gearbox Mounting Bracket	1
6	SBT-7507	1/4" Lock Washer	4
7	SBT-7508	Grade-8, 1/4-20 x 7/8" Bolt	4
8	SBT-7509	Key - Reducer (3/16" x 3/16 x 15/16")	1
9	SBT-7510	3/8" Lock Washer	1
10	SBT-7511	3/8"-16 x 1" Bolt	1
11	SBT-7512	Motor	1

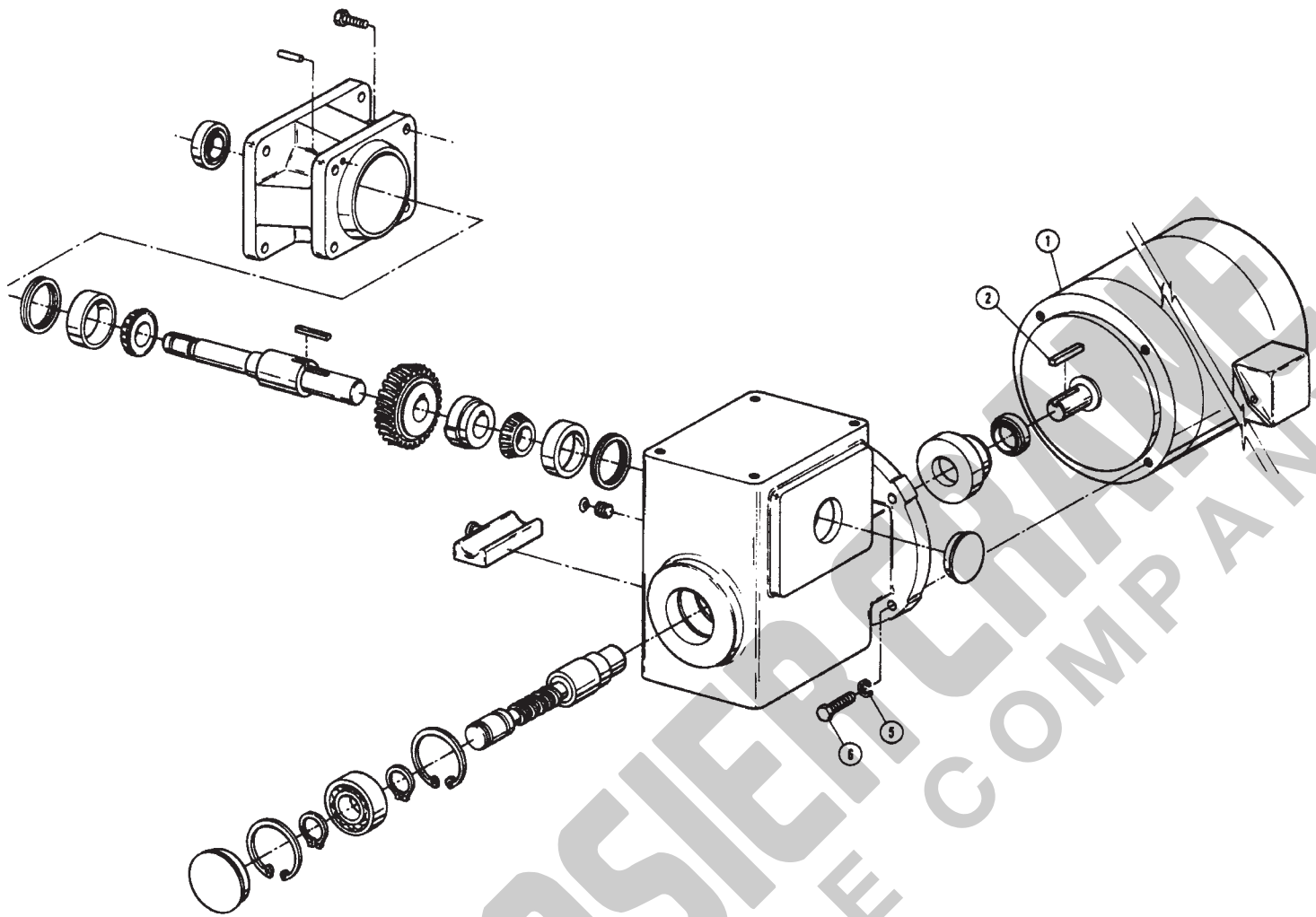
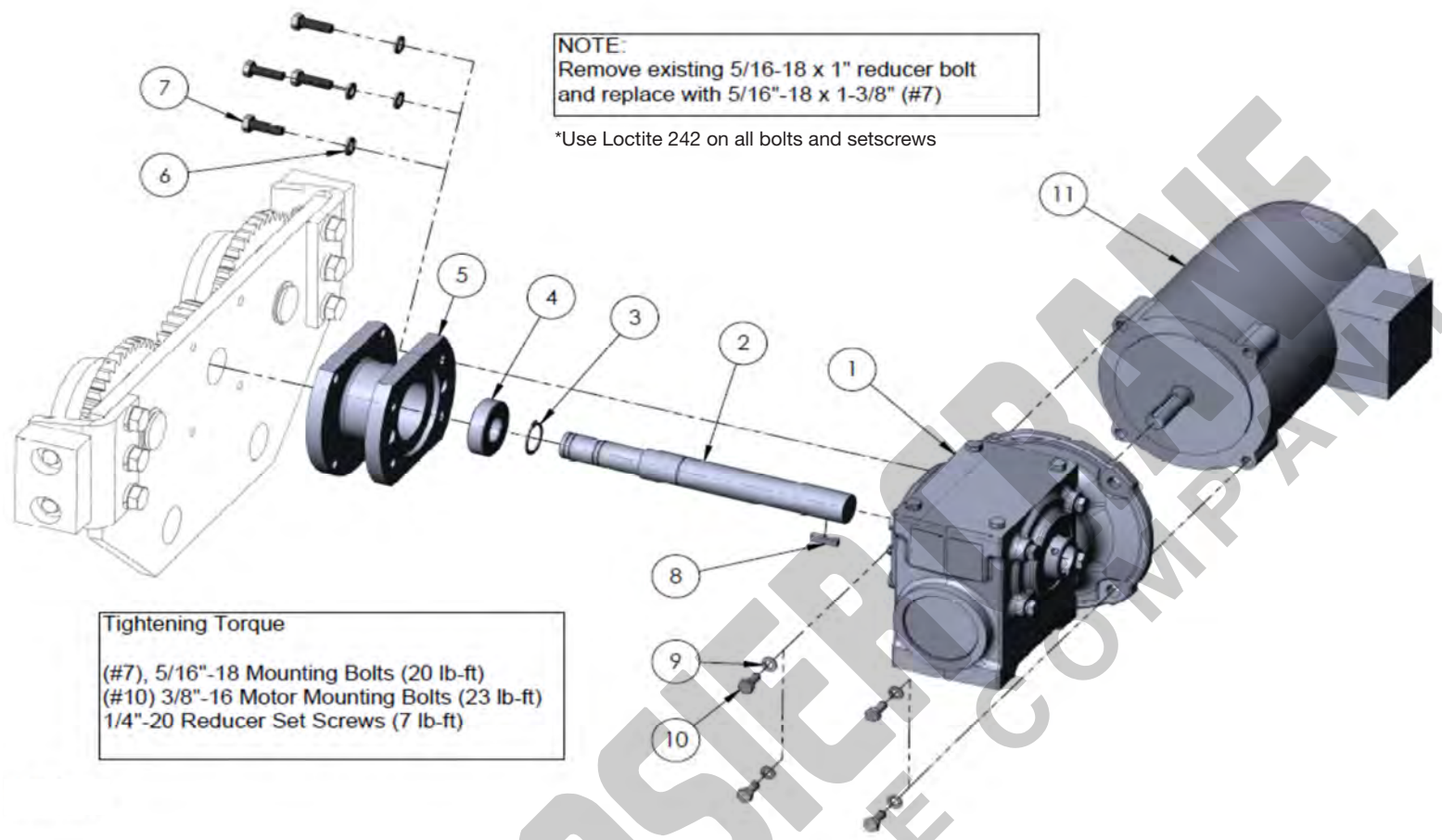


Figure 16. Motor and Gearbox Assembly (6", 9" & 16" c/c Pins)

Ordering Instructions: Furnish complete data from motor and gearbox nameplates with parts order. Replacement parts cannot be provided without this information.

Ref No.	Part Number	Description	Qty. Req'd
	SBT-4200	Motor and Gearbox Assembly - Complete	1
1	SBT-4201	Motor (Includes Ref. No.2)	1
2	SBT-4202	Key - Motor (3/16 x 3/16 x 1-1/4)	1
	SBT-4203	Gearbox Assembly - Complete	1
5	SBT-4206	Lockwasher (3/8)	4
6	SBT-4207	Bolt - Hex Head (3/8 - 16 x 7/8)	4





Tightening Torque
(#7), 5/16"-18 Mounting Bolts (20 lb-ft)
(#10) 3/8"-16 Motor Mounting Bolts (23 lb-ft)
1/4"-20 Reducer Set Screws (7 lb-ft)

Figure 17. Motor and Gearbox Assembly (6", 9" & 16" c/c Pins)

Ref No.	Part Number	Description	Qty. Req'd
	SBT-7600	Motor and Gearbox Assembly - Complete (Less items 12-15)	1
	SBT-7601	Gearbox Reducer Kit	1
1	SBT-7602	Gearbox Reducer (includes Ref. No.8)	1
2	SBT-7603	Pinion Shaft	1
3	SBT-7604	Retaining Ring	1
4	SBT-7605	Bearing	1
5	SBT-7606	Gearbox Mounting Bracket	1
6	SBT-7607	5/16" Lock Washer	4
7	SBT-7608	Grade-8, 5/16-28 x 1-3/8" Bolt	4
8	SBT-7609	Key - Reducer (1/4" x 0.22" x 1-1/2")	1
9	SBT-7610	3/8" Lock Washer	1
10	SBT-7611	3/8"-16 x 1" Bolt	1
11	SBT-7612	Motor	1



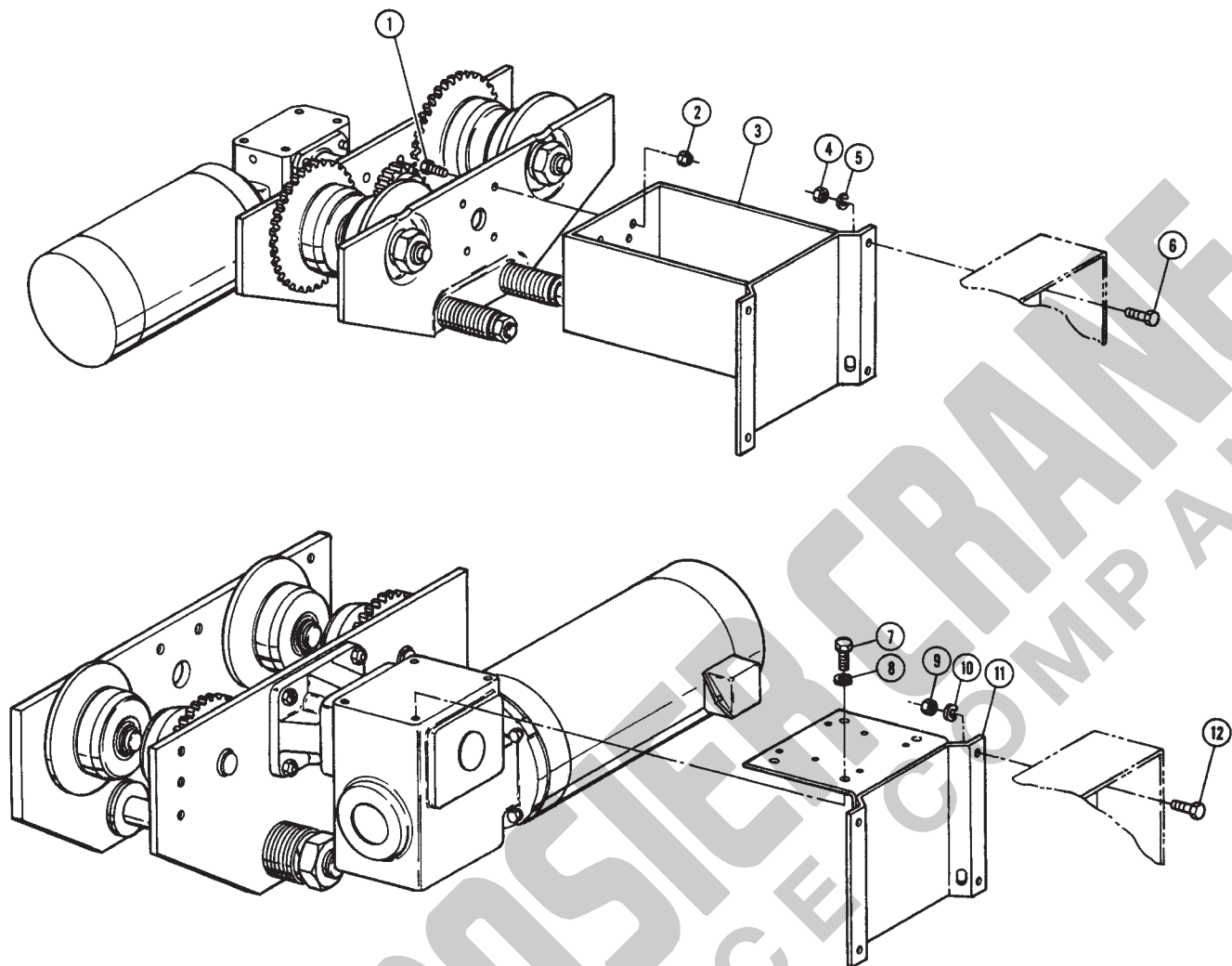


Figure 18. Electrical Enclosure Mountings

Ref No.	Part Number	Description	Qty. Req'd
For Trolleys with 3-1/8" and 5" c/c Pins:			
1	SBT-4300	Screw - Hex Cap	4
2	SBT-4301	Nut - Self Locking	4
3	SBT-4302	Mounting Bracket - Enclosure	1
4	SBT-4303	Nut - Hex	4
5	SBT-4304	Lockwasher	4
6	SBT-4305	Bolt - Hex Head	4
For Trolleys with 6", 9" and 16" c/c Pins:			
7	SBT-4306	Bolt - Hex Head	4
8	SBT-4307	Lockwasher	4
9	SBT-4303	Nut -Hex	4
10	SBT-4304	Lockwasher	4
11	SBT-4308	Mounting Bracket - Enclosure	1
12	SBT-4305	Bolt - Hex Head	4



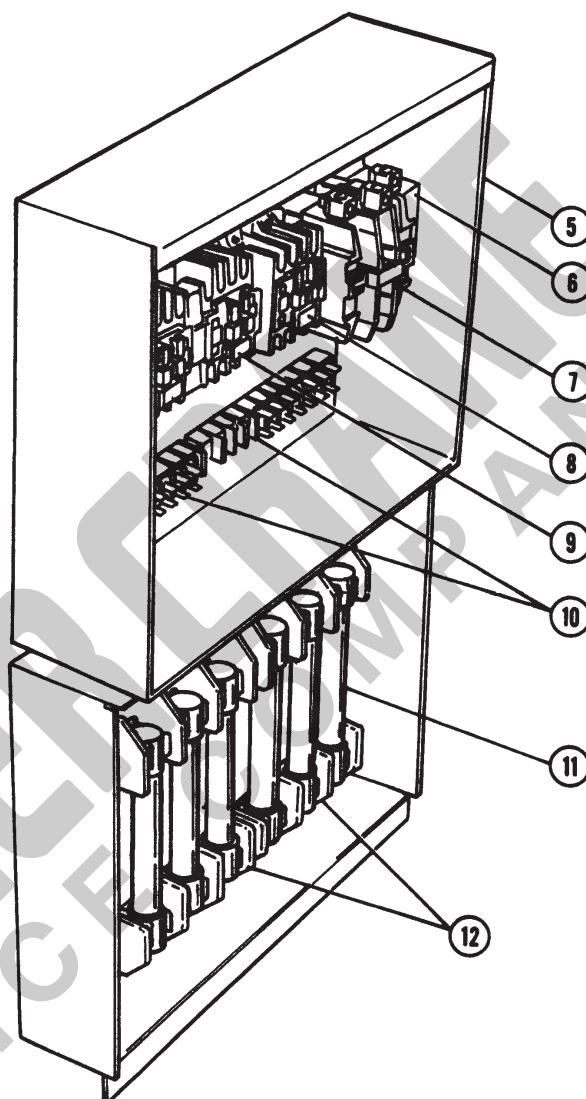
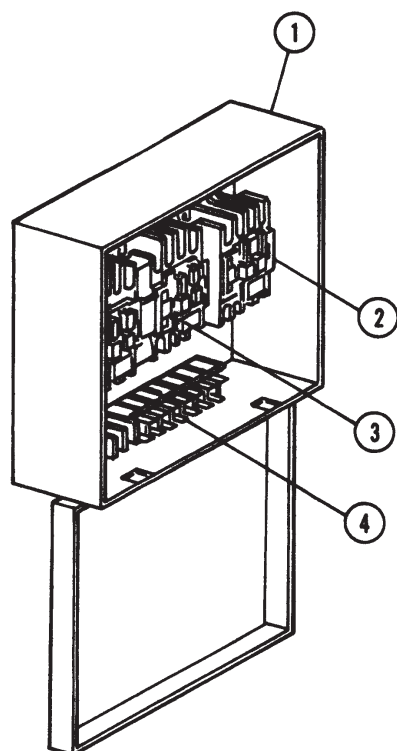
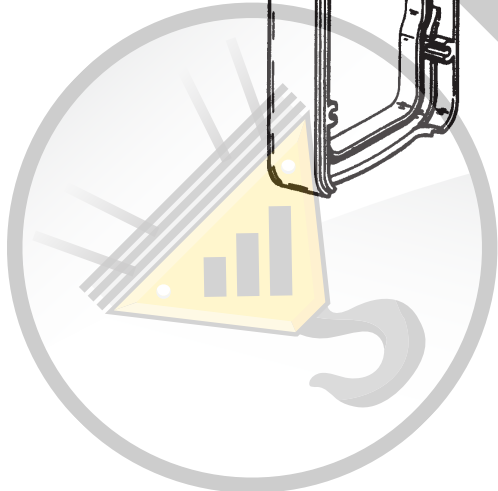


Figure 19. Electrical Enclosures





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HOOSIER CRANE
SERVICE COMPANY

NOTES





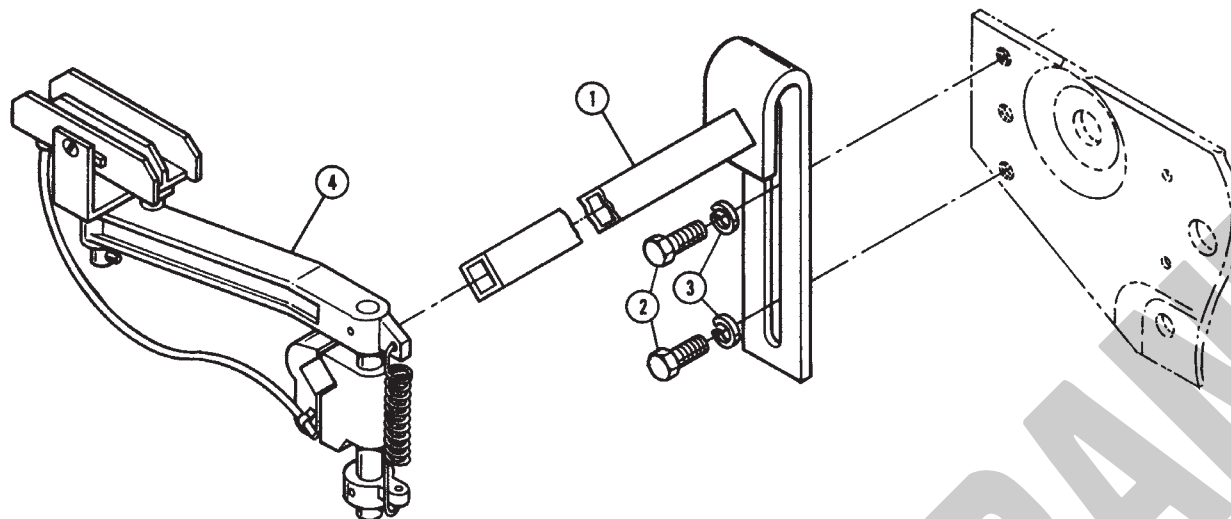


Figure 21. Current Collectors

Ref No.	Part Number	Description	Qty. Req'd
Collectors on One Side of Trolley Only:			
1	SBT-4600	Bracket Collector	1
2	SBT-4601	Bolt - Hex Head	2
3	SBT-4602	Lockwasher	2
4	SBT-4603	Collector	As Req'd
Collector on Both Sides of Trolley:			
1	SBT-4600	Bracket - Collector	2
2	SBT-4601	Bolt - Hex Head	4
3	SBT-4602	Lockwasher	4
4	SBT-4603	Collector	As Req'd

Ballast Resistors (Optional) No illustration

Supply Voltage and Trolley Motor Horsepower	Resistor Assembly (Including Enclosure)		Resistor	
	Part Number	Qty. Req'd.	Part Number	Qty. Req'd.
208-230 Volt				
1/6 HP	SBT-4700	1	SBT-4701	3
1/4 and (2) 1/6 HP	SBT-4702	1	SBT-4703	3
1/2, 3/4, 1, (2) 1/4 and (2) 1/2 HP	SBT-4704	1	SBT-4705	3
460 Volt				
1/6 HP	SBT-4706	1	SBT-4707	3
1/4 and (2) 1/6 HP	SBT-4708	1	SBT-4709	3
1/2, 3/4, 1 and (2) 1/4 HP	SBT-4700	1	SBT-4701	3
(2) 1/2 HP	SBT-4702	1	SBT-4703	3
575 Volt				
1/6, 1/4 and (2) 1/6 HP	SBT-4706	1	SBT-4707	3
1/2 and (2) 1/4 HP	SBT-4708	1	SBT-4709	3
3/4 and (2) 1/2 HP	SBT-4700	1	SBT-4701	3



RECOMMENDED SPARE PARTS

Certain parts of your trolley will, in time, require replacement under normal wear conditions. It is suggested that the following parts be purchased for your trolley as spares for future use.

Motor Pinion

One Set of Wheel Bearings One Set of Wheels

One Reversing Contactor

One Set of Fuses (If Required)

Note: When ordering parts always furnish Serial Number, Catalog Number, Motor Horsepower, Voltage, Phase, Frequency and Rated Load on which the parts are to be used.

PARTS AND SERVICES ARE AVAILABLE IN THE UNITED STATES AND IN CANADA

Parts for your hoist or trolley are available from your local authorized repair station. For the name of the nearest parts or service center, visit our website www.cmworks.com or call the Columbus McKinnon customer service department at (800) 888-0985.



HOOSIER CRANE
SERVICE COMPANY

WARRANTY

LIMITATION OF WARRANTIES, REMEDIES AND DAMAGES

INDEMNIFICATION AND SAFE OPERATION

Buyer shall comply with and require its employees to comply with directions set forth in instructions and manuals furnished by Seller and shall use and require its employees to follow such instructions and manuals and to use reasonable care in the use and maintenance of the Goods and any Replacement Parts. Buyer shall not remove or permit anyone to remove any warning or instruction signs on the Goods or Replacement Parts. In the event of personal injury or damage to property or business arising from the use of the Goods or Replacement Parts, Buyer shall within 48 hours thereafter give Seller written notice of such injury or damage. Buyer shall cooperate with Seller in investigating any such injury or damage and in the defense of any claims arising therefrom.

If Buyer fails to comply with this section or if any injury or damage is caused, in whole or in part, by Buyer's failure to comply with applicable federal or state laws, rules or regulations safety requirements, Buyer shall indemnify and hold Seller harmless against any claims, loss or expense for injury or damage arising from the use of the Goods and/or Replacement Parts.

CMCO Warranty (HOISTS)

- A. Columbus McKinnon Corporation ("Seller") warrants to the original end user ("Buyer") that, for a period of one (1) year from the date of Seller's delivery of the goods (collectively, the "Goods") to the carrier, the Goods will be free from defects in workmanship and materials. . In addition, Seller warrants to Buyer that, for a period of one (1) year from the date of their delivery by Seller to the carrier, any aftermarket or replacement parts, accessories or components purchased by Buyer with respect to any Goods (collectively, "Replacement Parts") will be free from defects in workmanship and materials.
- B. IN THE EVENT OF ANY BREACH OF ANY SUCH WARRANTY, SELLER'S SOLE OBLIGATION SHALL BE EXCLUSIVELY LIMITED TO, AT THE OPTION OF SELLER, REPAIR OR REPLACEMENT, F.O.B. SELLER'S POINT OF SHIPMENT, OF ANY GOODS OR REPLACEMENT PARTS THAT SELLER DETERMINES TO HAVE BEEN DEFECTIVE OR, IF SELLER DETERMINES THAT SUCH REPAIR OR REPLACEMENT IS NOT FEASIBLE, TO A REFUND OF THE PURCHASE PRICE UPON RETURN OF THE OR REPLACEMENT PARTS TO SELLER. NO CLAIM AGAINST SELLER FOR ANY BREACH OF (i) SUCH WARRANTY WITH RESPECT TO THE ELECTRICAL COMPONENTS OF ANY GOOD OR ANY REPLACEMENT PARTS, SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE (1) YEAR FROM THE DATE OF SELLER'S DELIVERY TO THE CARRIER AND (ii) SUCH WARRANTY WITH RESPECT TO THE MECHANICAL COMPONENTS OF ANY GOOD SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE (1) YEAR FROM THE DATE THE DATE ANY ALLEGED CLAIM ACCRUES. EXCEPT FOR THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES WITH RESPECT TO THE GOODS OR ANY REPLACEMENT PARTS, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUALITY AND/OR THOSE ARISING BY STATUTE OR OTHERWISE BY LAW OR FROM ANY COURSE OF DEALING OR USE OF TRADE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED

C. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY THIRD PARTY WITH RESPECT TO ANY GOOD OR REPLACEMENT PART, WHETHER IN CONTRACT, TORT OR OTHER THEORY OF LAW, FOR LOSS OF PROFITS OR LOSS OF USE, OR FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, DIRECT OR INDIRECT DAMAGES, HOWSOEVER CAUSED. SELLER'S MAXIMUM LIABILITY TO BUYER WITH RESPECT TO THE GOODS OR ANY REPLACEMENT PART SHALL IN NO EVENT EXCEED THE PRICE PAID BY BUYER FOR THE GOODS OR REPLACEMENT PART THAT ARE THE SUBJECT OF THE APPLICABLE CLAIM.

D. Seller shall not be liable for any damage, injury or loss arising out of the use of the Goods or any Replacement Part if, prior to such damage, injury or loss, such Goods or Replacement Parts are: (1) damaged or misused following Seller's delivery to the carrier; (2) not maintained, inspected, or used in compliance with applicable law and Seller's written instructions and recommendations; or (3) installed, repaired, altered or modified (a) with any part or accessory other than those supplied by Seller or (b) without compliance with such laws, instructions or recommendations.

E. This warranty is limited and provided only to the original end user. **Each Good and Replacement Part must be registered within sixty (60) days of receipt of each product to establish eligibility.** Please register at www.cmworks.com/hoist-warranty-registration or submit registration card via US mail.

F. Any action against Seller for breach of warranty, negligence or otherwise in connection with the electrical components of any Good must be commenced by Buyer within one (1) year after: (a) the date any alleged claim accrues; or (b) the date of delivery of the Goods to Buyer, whichever is earlier. Any action against Seller for breach of warranty, negligence or otherwise in connection with the mechanical components of any Good must be commenced by Buyer within one (1) year after the date any alleged claim accrues. . Any action against Seller for breach of warranty, negligence or otherwise in connection with any Replacement Part must be commenced by Buyer within one (1) year after: (y) the date any alleged claim accrues; or (z) the date of delivery of the Replacement Part to Buyer, whichever is earlier.

G. This warranty is contingent upon Buyer's proper maintenance and care of the Goods and/or Replacement Parts, and does not extend to normal wear and tear. Seller reserves the right, at its option, to void this warranty in the event of Buyer's use with the Goods and/or Replacement Parts of parts or accessories other than those supplied by Seller.

WARNING

Alterations or modifications of equipment and use of non-Seller replacement parts can lead to dangerous operation and injury.

TO AVOID INJURY:

- Do not alter or modify equipment.
- Do use only replacement parts manufactured by Seller.



USA: Ph: (800) 888.0985 • (716) 689.5400 • Fax: (716) 689.5644 • www.cmworks.com

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