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# Operating Instructions and Parts Manual
# ET-C Series Electric Trolley




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**Part No. M-262605**
Revision E 09/2015
ECR CN0071
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# 1.0 **Warranty and Service**

JET warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

**Warranty Period**
The general warranty lasts for the time period specified in the literature included with your product or on the official JET branded website.

- JET products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90 day limited warranty against manufacturer's defects.

**Who is Covered**
This warranty covers only the initial purchaser of the product from the date of delivery.

**What is Covered**
This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance. JET woodworking machinery is designed to be used with Wood. Use of these machines in the processing of metal, plastics, or other materials outside recommended guidelines may void the warranty. The exceptions are acrylics and other natural items that are made specifically for wood turning.

**Warranty Limitations**
Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

**How to Get Technical Support**
Please contact Technical Service by calling 1-800-274-6846. **Please note that you will be asked to provide proof of initial purchase when calling.** If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. JET has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the JET website.

**More Information**
JET is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the JET website.

**How State Law Applies**
This warranty gives you specific legal rights, subject to applicable state law.

**Limitations on This Warranty**
JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

JET SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

JET sells through distributors only. The specifications listed in JET printed materials and on official JET website are given as general information and are not binding. JET reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever. JET® branded products are not sold in Canada by JPW Industries, Inc.

**Product Listing with Warranty Period**

| |
|---|
| 90 Days – Parts; Consumable items |
| 1 Year – Motors; Machine Accessories |
| 2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories; Woodworking Machinery used for industrial or commercial purposes |
| 5 Year – Woodworking Machinery |
| Limited Lifetime – JET Parallel clamps; VOLT Series Electric Hoists; Manual Hoists; Manual Hoist Accessories; Shop Tools; Warehouse & Dock products; Hand Tools; Air Tools |

NOTE: JET is a division of JPW Industries, Inc. References in this document to JET also apply to JPW Industries, Inc., or any of its successors in interest to the JET brand.

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# 3.0 **Introduction**

This manual is provided by JET covering the safe operation and maintenance procedures for a JET ET-C Series Electric Trolley. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or JET. JET can also be reached at our web site: www.jettools.com.

**The ET-C Series Electric Trolleys comply with OSHA regulations and ANSI/ASME B30.11 and B30.17 standards.**

Record your purchase information here for quick reference:

| | | |
|---|---|---|
| Model No.: | Stock No.: | Serial No.: |
| Purchased From: | | Date Purchased: |
| Date Installed: | Installer: | |



# 4.0 IMPORTANT SAFETY INSTRUCTIONS

- Read and understand this entire manual before attempting assembly or operation. You should also be thoroughly familiar with all information in the owner's manual that accompanied your hoist.
- Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
- Replace the warning labels if they become obscured or removed.
- This trolley is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a trolley, do not use until proper training and knowledge have been obtained.
- Do not use this trolley for other than its intended use. If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
- Do not install this trolley where explosive hazards may exist.
- Beam must be properly installed and rated for anticipated loads. Do not install trolley on beams of unknown capacity.
- Do not install trolley on damaged or deformed beams.
- JET trolleys are designed to be used with hoists of the same rated capacity. Never use a hoist with a capacity greater than the capacity of the trolley.
- Never subject trolley to a side pull or load. Load must be centered directly under the hoist/trolley assembly.
- Make sure load is stable and secure before moving.
- Never lift load higher than is necessary to safely move it.
- Do not use to lift people, or loads over people. Warn others in the vicinity when lifting or transporting a load. Avoid swinging load and hook.
- Do not use in wet, damp or poorly lit locations.
- Do not exceed the rated capacity of the trolley.
- Maintain firm footing when operating the trolley.
- Always inspect the trolley for damage prior to use. If the trolley is damaged, do not use until it has been repaired or replaced.
- Leave all internal maintenance to a qualified JET service center.
- Do not operate this trolley while tired or under the influence of drugs, alcohol or any medication.

**Familiarize yourself with the following safety notices used in this manual:**

**⚠CAUTION** This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

**⚠WARNING** This means that if precautions are not heeded, it may result in serious injury or possibly even death.

## - - SAVE THESE INSTRUCTIONS - -

# 5.0 **Specifications**

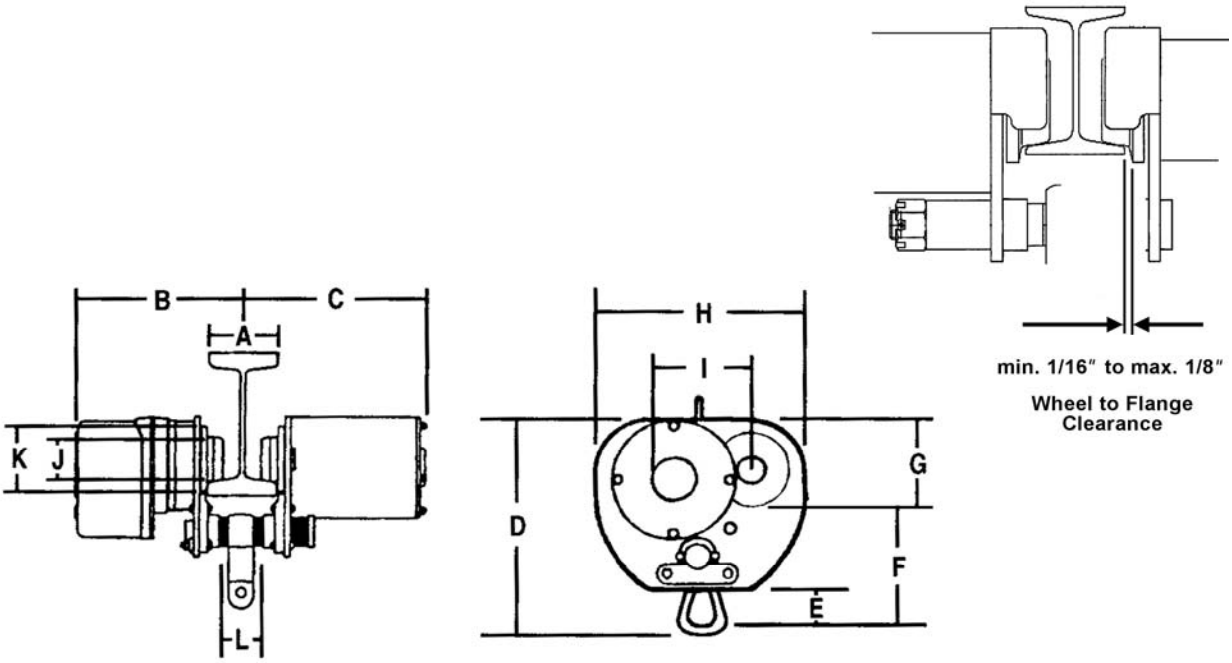



*Figure 1*

| Stock No. | Model | A (min.-max.) | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 262605 | 1/2ET-3C | 3-5 | 9 1/8 | 10 | 10 | 2 | 6 1/2 | 3 1/2 | 9 11/16 | 4 1/2 | 2 3/4 | 3 11/16 | 1 5/8 |
| 262610 | 1ET-3C | 3-5 | 9 1/8 | 10 | 10 | 2 | 6 1/2 | 3 1/2 | 9 11/16 | 4 1/2 | 2 3/4 | 3 11/16 | 1 5/8 |
| 262620 | 2ET-3C | 4-6 | 9 3/4 | 10 5/8 | 11 1/2 | 2 43/64 | 7 43/64 | 4 | 12 43/64 | 5 1/4 | 3 1/4 | 4 3/4 | 1 19/32 |
| 262630 | 3ET-3C | 4-6 | 10 | 12 27/32 | 14 5/32 | 3 | 9 5/32 | 5 | 12 7/16 | 4 1/4 | 4 | 6 | 1 9/16 |
| 262250 | 5ET-3C | 5-7 | 10 11/16 | 13 5/8 | 16 1/2 | 4 | 10 1/2 | 6 | 13 1/4 | 4 7/16 | 4 | 6 1/4 | 2 1/8 |
| 272705 | 1/2ET-1C | 3-5 | 9 1/8 | 10 | 10 | 2 | 6 1/2 | 3 1/2 | 9 11/16 | 4 1/2 | 2 3/4 | 3 11/16 | 1 5/8 |
| 272710 | 1ET-1C | 3-5 | 9 1/8 | 10 | 10 | 2 | 6 1/2 | 3 1/2 | 9 11/16 | 4 1/2 | 2 3/4 | 3 11/16 | 1 5/8 |
| 272720 | 2ET-1C | 4-6 | 9 3/4 | 10 5/8 | 11 1/2 | 2 43/64 | 7 43/64 | 4 | 12 43/64 | 5 1/4 | 3 1/4 | 4 3/4 | 1 19/32 |
| 272730 | 3ET-1C | 4-6 | 10 | 12 27/32 | 14 5/32 | 3 | 9 5/32 | 5 | 12 7/16 | 4 1/4 | 4 | 6 | 1 9/16 |
| 272750 | 5ET-1C | 5-7 | 10 11/16 | 13 5/8 | 16 1/2 | 4 | 10 1/2 | 6 | 13 1/4 | 4 7/16 | 4 | 6 1/4 | 2 1/8 |

| Stock No. | Model | Capacity (ton) | Beam Flange Width (in.) | Minimum Radius Curve (in.) | Travel Speed (FPM) | Motor | Duty Cycle Rating | Approx. Net Weight (lbs.) |
|---|---|---|---|---|---|---|---|---|
| 262605 | 1/2ET-3C | 1/2 | 3-5 | 43.3 | 39.36 | 3 Phase, 230/460V (prewired 460V) | 25% | 82 |
| 262610 | 1ET-3C | 1 | 3-5 | 43.3 | 39.36 | | 25% | 82 |
| 262620 | 2ET-3C | 2 | 4-6 | 59 | 39.36 | | 25% | 112 |
| 262630 | 3ET-3C | 3 | 4-6 | 59 | 39.36 | | 25% | 148 |
| 262250 | 5ET-3C | 5 | 5-7 | 78.75 | 39.36 | | 25% | 185 |
| 272705 | 1/2ET-1C | 1/2 | 3-5 | 43.3 | 39.36 | 1 Phase, 115/230V (prewired 230V) | 25% | 84 |
| 272710 | 1ET-1C | 1 | 3-5 | 43.3 | 39.36 | | 25% | 84 |
| 272720 | 2ET-1C | 2 | 4-6 | 59 | 39.36 | | 25% | 114 |
| 272730 | 3ET-1C | 3 | 4-6 | 59 | 39.36 | | 25% | 150 |
| 272750 | 5ET-1C | 5 | 5-7 | 78.75 | 39.36 | | 25% | 187 |

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

# 6.0 **Unpacking**

Open shipping container and check for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Trolley is assembled and running properly.

Compare the contents of your container with the following parts list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read the instruction manual thoroughly for assembly, maintenance and safety instructions.

## 6.1 **Contents of Shipping Container**

1 Electric Trolley
1 Cord holder with cable tie
12 Phillips Pan Head Screws, M5x12
12 Lock Washers, 5mm
1 Owner's Manual
1 Warranty Card

# 7.0 **Installation & Assembly**

The ET-C Series trolley is designed to run on standard "I" beams, wide-flanged "H" beams, or curved track with a minimum radius shown in the chart on page 5.

## 7.1 **Mount Trolley to Beam**

**⚠CAUTION The trolley is heavy; use an assistant or a lifting device to help stabilize it while you assemble it to the beam.**

1. Loosen the hex nuts (A, Figure 2) on the adjusting screw, and remove the adjusting screw.
2. Remove the two hex nuts (B, Figure 2) with the plate (C, Figure 2).
3. Slide out the suspension shaft with the spacers (D, Figure 2).
4. Assemble the trolley to the beam. The trolley must be installed on a beam with a minimum clearance (wheels to flange) of 1/16" to a maximum of 1/8" on each side of the beam (see Figure 1, page 5). Position the side plates (E, Figure 2) to achieve this measurement on your beam.
5. Re-install the suspension shaft, while using the spacers (D) to achieve the required width. Spacers **must** be moved in sets of two, placing equal numbers on both sides of the hoist hanger to maintain the centerline of the trolley. Place any extra spacers on the outside of the shaft, as shown in Figure 2.

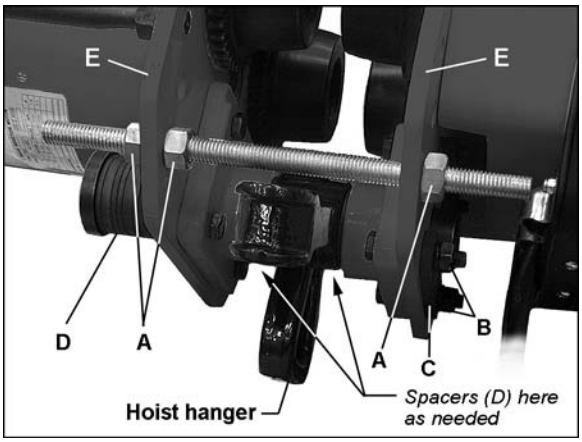



*Figure 2*

6. Re-install the plate (C) and two hex nuts (B), and tighten the hex nuts.
7. Reinstall the adjusting screw and hex nuts (A) and adjust to the proper width.
8. Double-check the wheel clearance on the beam, and make further adjustments if necessary.

## 7.2 **Power and Pendant Cords**

NOTE: A pendant cord is not supplied with the trolley, and must be purchased separately. If you need to change the voltage requirements on the trolley, it is more convenient to do that *before* installing a pendant cord. See "Voltage Conversion" on page 9.

1. Thread the cord holder (Figure 3) into the hole on the motor side plate and tighten the jam nut and lock washer. The ring on the cord holder should be positioned vertically.

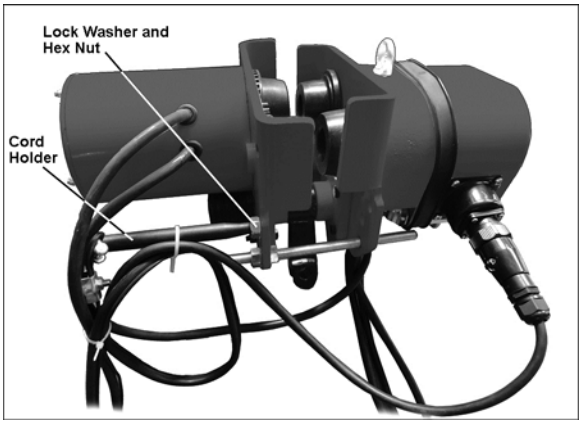



*Figure 3*

2. Insert the male plug of the pendant cord into the socket on the trolley. See Figure 4. Secure the connection by tightening the cover nut with your fingers.
3. Attach the pendant cord to the cord holder. The cord must be secured to the cord holder in a way that relieves strain on the connections. One method of doing this is to form a loop in the pendant cord and place the cable tie as shown in Figure 5. Do not tighten the cable tie yet.
4. Create sufficient slack in the pendant cord where it passes under the I-beam (Figure 6) so that the cord will not rub against the beam.
5. Tighten the cable tie to secure the pendant cord to the cord holder.

## 7.3 Mounting Your Hoist

This trolley has been designed to work with the JET C-Series Hoist. They can be connected so that one pendant cord and power cord will operate both trolley and hoist. Make sure the hoist has been set to the same voltage specifications as the trolley.

Make connections from the trolley to your hoist as follows:

1. Hang the hoist on the trolley hanger, using hook or lug mount. (See page 8 for instructions on installing the optional lug mount.) The hoist should be positioned so that the electrical socket on the trolley is on the same side as the sockets on the hoist, as shown in Figure 6.
2. Remove the power cord and pendant cord from the hoist.
3. Connect the two 4P and 7P plugs of the trolley cords into their appropriate sockets on the hoist.

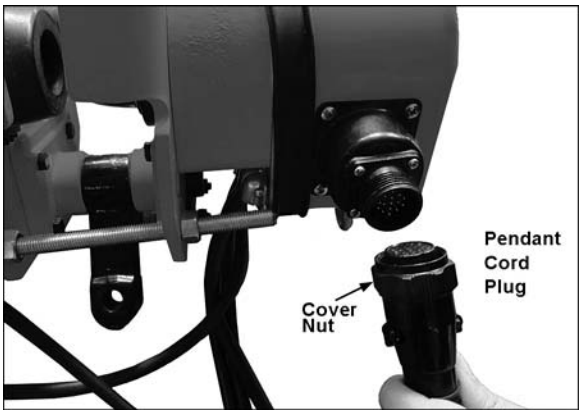



*Figure 4*

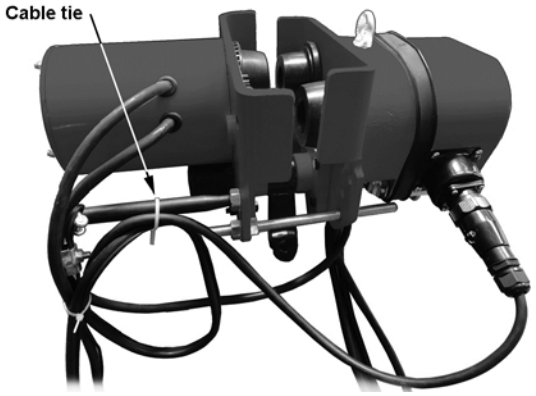



*Figure 5*

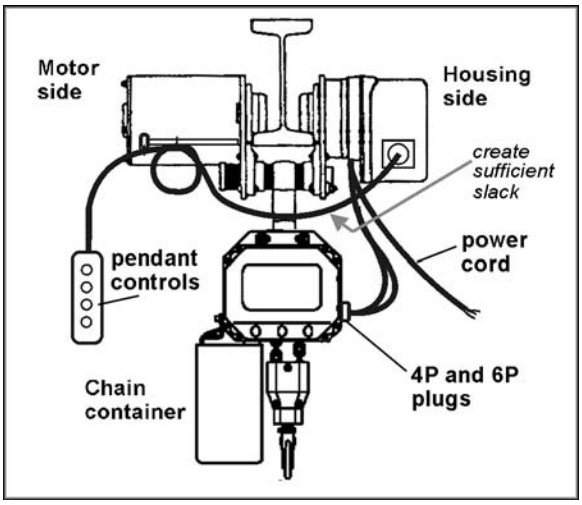



*Figure 6*

## 7.4 **Installing Lug Mount Accessory**

1. Assemble the side plates, hoist hanger and lug mounting shaft, as shown in Figure 7.
2. Install the hinge plates, lock washers and hex cap screw to secure the assembly.
3. On the electric hoist, remove the two screws, hook pin plate, hook pin, etc. (Figure 8)
4. Remove the top hook assembly from the hoist, and replace it with the lug mount accessory as shown in Figure 9. Re-install the hook pins, hook pin plates, screws and washers. Firmly tighten the screws.

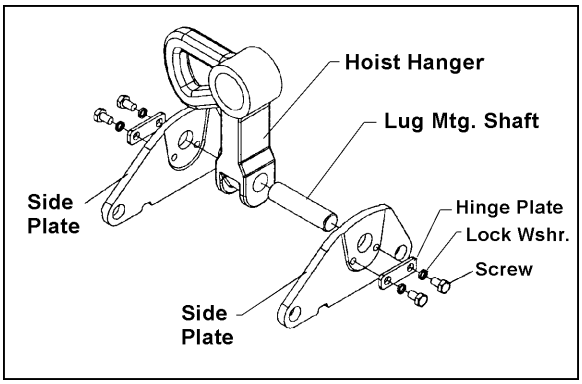



*Figure 7*

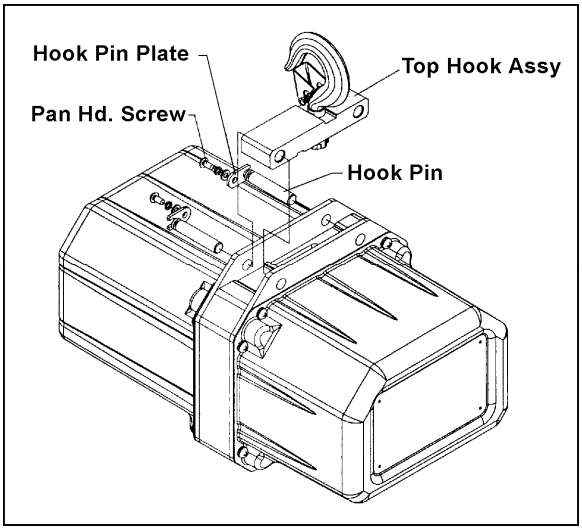



*Figure 8*

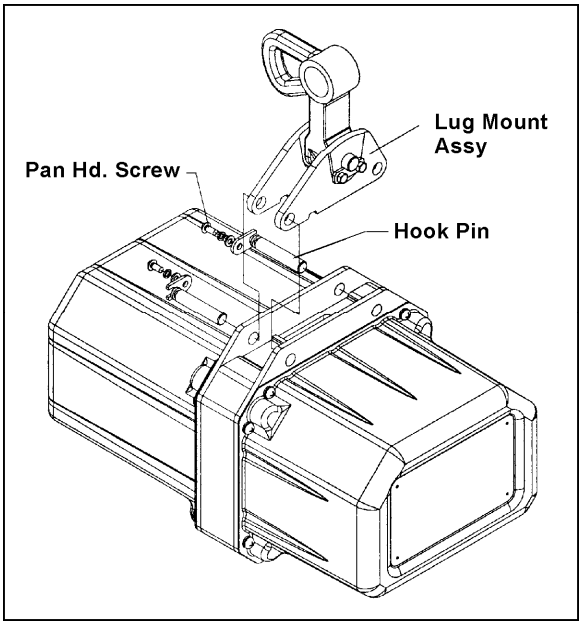



*Figure 9*

# 8.0 **Electrical Instructions**

**⚠WARNING Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.**

## 8.1 **Grounding**

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This machine's power cord must be fitted with an appropriate UL/CSA listed plug, or it can be "hard-wired" directly to a control panel. If hard-wired, make sure a disconnect is available for the operator.

If a plug is installed, it must have an equipment-grounding conductor and a grounding prong. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding connector. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Repair or replace damaged or worn cord immediately.

## 8.2 Voltage Conversion

The **single phase models (ET-1C)** are designed for 115 volt or 230 volt operation. They are pre-wired for 230 volt. The **three phase models (ET-3C)** are designed for 230 volt or 460 volt operation. They are pre-wired for 460V.

To switch voltage:

1. Disconnect trolley from power supply, and disconnect the pendant cord from the trolley.
2. Remove the two screws and lock washers on the underside of the housing (see Figure 10) and slide the protective band out of the way. Remove the housing.
3. Carefully pull the plug out of the current socket and insert it into the new socket (see Figure 10). Make sure the notch on the plug fully engages the socket.
4. Re-install the housing, re-position the protective band, and insert the screws and lock washers. Tighten the screws securely.

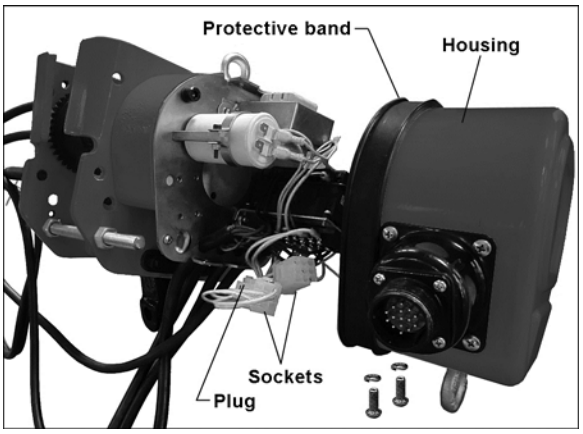



*Figure 10*

## 8.3 Inspecting Trolley Motion

1. Before closing the circuit breaker and testing the trolley, check that wiring has been complete. If the trolley cannot be observed when the circuit breaker is closed, station an observer within sight of the trolley to report any movement when power is applied to the trolley. Be prepared to disconnect power if trolley motor starts when the power is applied. The trolley must remain motionless when power is applied. Find and correct any problems before continuing.

Test the motion of the hoist also:

2. With no load on the load hook, press the UP button very briefly and observe hoist action. The hook should move upward. (Two speed models have a two-position UP button. Press the button only part way to operate lift motor at slow speed, press fully to operate at high speed.)
3. If no motion occurs when the UP button is pressed and the hoist is connected to a three phase power supply, the power supply wires are incorrectly positioned.
4. Switch any two of the three supply wires *at the power source.* **Do not attempt to rewire the hoist/trolley circuit or pendant controls for this problem.** Use the same safety precautions when reversing two of the supply wires as was used when the wires were originally connected.
5. Re-connect power and test hoist and trolley movement again without load. Run hoist to the complete lifting height to ensure limit switches are operating properly.

Refer to your hoist manual for more detailed instructions on operation and testing of the hoist.

## 8.4 Extension Cords

If an extension cord is necessary, make sure the cord rating is suitable for the amperage listed on the trolley's motor plate. An undersize cord will cause a drop in line voltage resulting in loss of power and overheating.

The chart in Figure 11 shows the correct size cord to use based on cord length and motor plate amp rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Recommended Gauges (AWG) of Extension Cords

| | **Extension Cord Length *** | | | | | |
|---|---|---|---|---|---|---|
| **Amps** | 25 feet | 50 feet | 75 feet | 100 feet | 150 feet | 200 feet |
| < 5 | 16 | 16 | 16 | 14 | 12 | 12 |
| 5 to 8 | 16 | 16 | 14 | 12 | 10 | NR |
| 8 to 12 | 14 | 14 | 12 | 10 | NR | NR |
| 12 to 15 | 12 | 12 | 10 | 10 | NR | NR |
| 15 to 20 | 10 | 10 | 10 | NR | NR | NR |
| 21 to 30 | 10 | NR | NR | NR | NR | NR |

*based on limiting the line voltage drop to 5V at 150% of the rated amperes.
*NR: Not Recommended.*

*Figure 11*

# 9.0 **Control Pendant Accessories**

Pendants with 4 buttons are for Lifting and Lowering, and 2-direction Trolley travel.

152411 Single Speed, 4 Button Control Pendant with 10’ Lift.
152416 Single Speed, 4 Button Control Pendant with 15’ Lift.
152421 Single Speed, 4 Button Control Pendant with 20’ Lift.
153431 Single Speed, 4 Button Control Pendant with 30’ Lift.

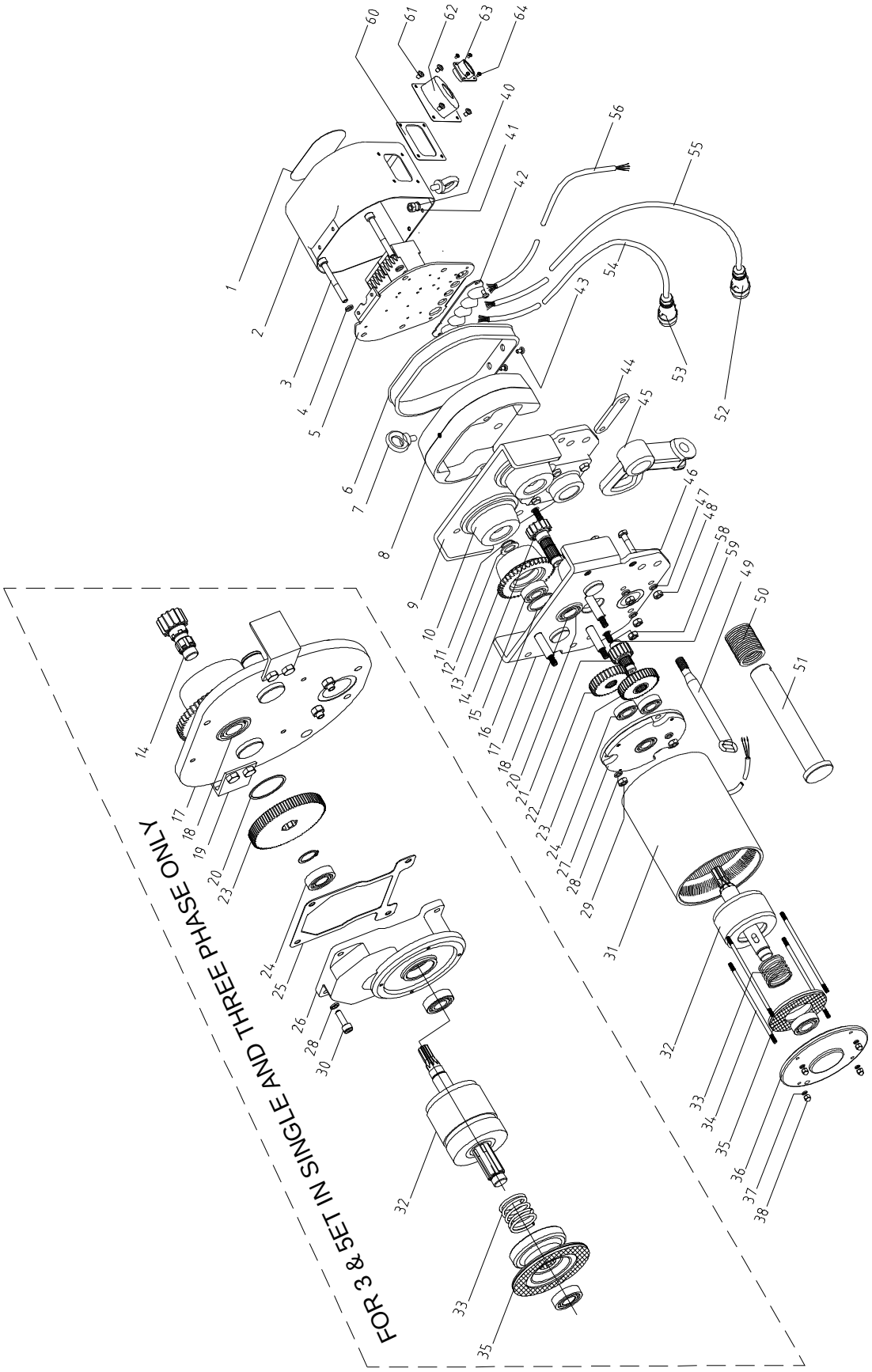
# 10.0 **Troubleshooting the ET-C Series Trolleys**

| **Trouble** | **Probable Cause** | **Remedy** |
|---|---|---|
| Trolley will not operate, or operates intermittently. | No incoming power, or low voltage. | Check trolley connections to power source. Make sure power source matches specifications on trolley name plate. If low voltage, have certified electrician check incoming power. |
| | Fuse blown or circuit breaker tripped. | Replace fuse/reset circuit breaker. |
| | Thermal overload protector has tripped; motor overheated. | See “Motor overheats” below. |
| | Conductors in pendant cord damaged. | Check for continuity in each conductor. If faulty, replace entire pendant cord. |
| | Motor damaged. | Have motor inspected and repaired/ replaced by a qualified service technician. |
| Trolley drifts excessively after stopping. | Grease or oil on the brake lining. | Open the trolley, disassemble the brake and clean the lining. |
| | Brake pad is worn or damaged. | Replace brake pad. |
| Hoist moves in wrong direction. | Two of the three power supply wires are switched. | Switch any two of the three supply wires. |
| Motor overheats. | Excessive load or too frequent use. | Operate within rated load and according to duty cycle rating. |
| | Brake is dragging. | Have brake repaired or replaced by a qualified service technician. |

# 11.0 **Replacement Parts**

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848, Monday through Friday (see our website for business hours, www.jettools.com). Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

### 11.1.1 **ET-C Series Trolley – Exploded View**



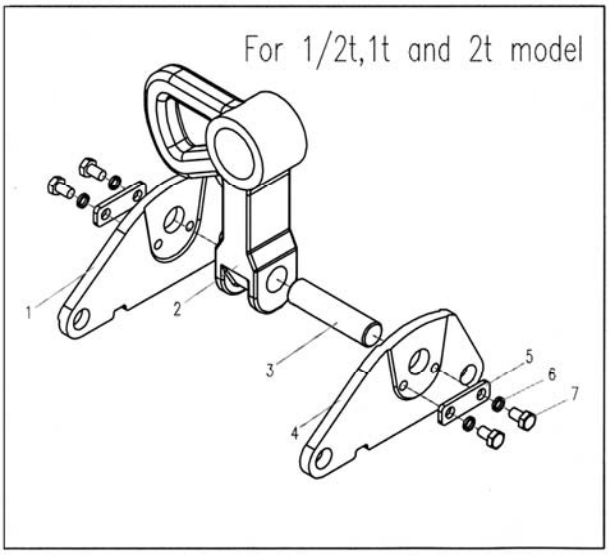
## 11.1.2 **ET-C Series Trolley – Parts List**

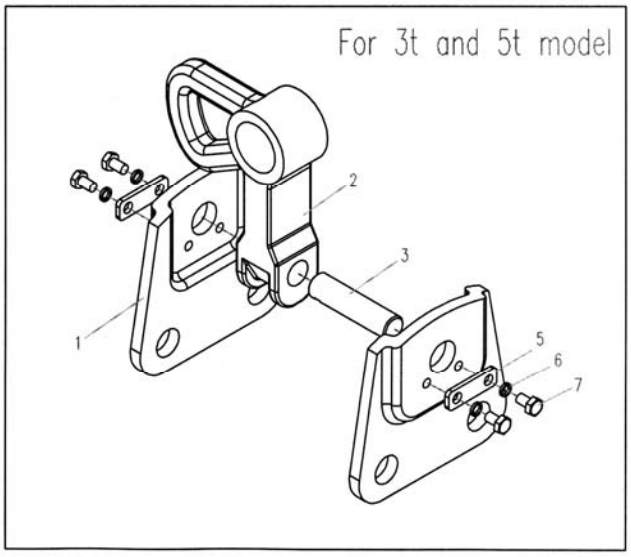
| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| 1 | LM000123 | Name Plate (1/2T, three phase) | | 1 |
| | LM000124 | Name Plate (1T, three phase) | | 1 |
| | LM000125 | Name Plate (2T, three phase) | | 1 |
| | LM000126 | Name Plate (3T, three phase) | | 1 |
| | LM000127 | Name Plate (5T, three phase) | | 1 |
| | LM000128 | Name Plate (1/2T, single phase) | | 1 |
| | LM000129 | Name Plate (1T, single phase) | | 1 |
| | LM000130 | Name Plate (2T, single phase) | | 1 |
| | LM000131 | Name Plate (3T, single phase) | | 1 |
| | LM000132 | Name Plate (5T, single phase) | | 1 |
| 2 | 1ET-3C-2G | Housing (1/2T,1T,2T,3T,5T) | | 1 |
| 3 | 1ET-3C-3 | Socket Head Cap Screw (1/2T,1T,2T,3T,5T) | M8x70 | 2 |
| 4 | 1ET-3C-4 | Lock Washer (1/2T,1T,2T,3T,5T) | 8mm | 7 |
| 5 | 1ET-3C-5 | Electrical Board (1/2T,1T,2T, three phase) | | 1 |
| | 3ET-3C-5 | Electrical Board (3T, 5T, three phase) | | 1 |
| | 1ET-1C-5 | Electrical Board (1/2T,1T,2T, single phase) | | 1 |
| | 3ET-1C-5 | Electrical Board (3T,5T, single phase) | | 1 |
| 6 | 1ET-3C-6 | Protective Band (1/2T,1T,2T,3T,5T) | | 1 |
| 7 | 1ET-3C-7 | Eye Bolt (1/2T,1T,2T,3T,5T) | M8x16 | 2 |
| 8 | 1ET-3C-8G | Balance Spacer (1/2T,1T,2T) | | 1 |
| | 3ET-3C-8G | Balance Spacer (3T,5T) | | 1 |
| 9 | 1ET-3C-9G | Plain Side Plate Assembly (1/2T,1T) | | 1 |
| | 2ET-3C-9G | Plain Side Plate Assembly (2T) | | 1 |
| | 3ET-3C-9G | Plain Side Plate Assembly (3T) | | 1 |
| | 5ET-3C-9G | Plain Side Plate Assembly (5T) | | 1 |
| 10 | 1ET-3C-10 | Plain Wheel (1/2T,1T) | | 2 |
| | 2ET-3C-10 | Plain Wheel (2T) | | 2 |
| | 3ET-3C-10 | Plain Wheel (3T) | | 2 |
| | 5ET-3C-10 | Plain Wheel (5T) | | 2 |
| 11 | 1ET-3C-11 | Circlip for shaft (1/2T,1T) | Ø17mm | 4 |
| | 2ET-3C-11 | Circlip for shaft (2T) | Ø 25mm | 4 |
| | 3ET-3C-11 | Circlip for shaft (3T) | Ø 30mm | 4 |
| | 5ET-3C-11 | Circlip for shaft (5T) | Ø 35mm | 4 |
| 12 | 1ET-3C-12 | Washer (1/2T,1T) | | 4 |
| | 2ET-3C-12 | Washer (2T) | | 4 |
| 13 | 1ET-3C-13 | Geared Wheel (1/2T,1T) | | 2 |
| | 2ET-3C-13 | Geared Wheel (2T) | | 2 |
| | 3ET-3C-13 | Geared Wheel (3T) | | 2 |
| | 5ET-3C-13 | Geared Wheel (5T) | | 2 |
| 14 | 1ET-3C-14 | Fifth Gear (1/2T,1T,2T) | | 1 |
| | 3ET-3C-14 | Fifth Gear (3T,5T) | | 1 |
| 15 | 1ET-3C-15 | Roller Bearing (1/2T,1T) | 6203-2Z | 4 |
| | 2ET-3C-15 | Roller Bearing (2T) | 6205-2Z | 4 |
| | 3ET-3C-15 | Roller Bearing (3T) | 6206-2Z | 4 |
| | 5ET-3C-15 | Roller Bearing (5T) | 6207-2Z | 4 |
| 16 | 1ET-3C-16 | Circlip for hole (1/2T,1T) | 40mm | 4 |
| | 2ET-3C-16 | Circlip for hole (2T) | 52mm | 4 |
| | 3ET-3C-16 | Circlip for hole (3T) | 62mm | 4 |
| | 5ET-3C-16 | Circlip for hole (5T) | 72mm | 4 |
| 17 | 1ET-3C-17G | Gear Side Plate Assembly (1/2T,1T) | | 1 |
| | 2ET-3C-17G | Gear Side Plate Assembly (2T) | | 1 |
| | 3ET-3C-17G | Gear Side Plate Assembly (3T) | | 1 |
| | 5ET-3C-17G | Gear Side Plate Assembly (5T) | | 1 |
| 18 | 1ET-3C-18 | Roller Bearing (1/2T,1T,2T) | 6004-2ZN | 1 |
| | 3ET-3C-18 | Roller Bearing (3T,5T) | 6205-2ZN | 1 |
| 19 | 3ET-3C-19 | Safety Block (3T) | | 4 |
| | 5ET-3C-19 | Safety Block (5T) | | 4 |

| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| 20 | 1ET-3C-20 | Roller Bearing w/Snap Ring (1/2T,1T,2T) | 42mm | 1 |
| | 3ET-3C-20 | Roller Bearing w/Snap Ring (3T,5T) | 52mm | 1 |
| 21 | 1ET-3C-21 | Third Gear (1/2T,1T,2T) | | 1 |
| 22 | 1ET-3C-22 | Fourth Gear (1/2T,1T,2T) | | 1 |
| 23 | 1ET-3C-23 | Second Gear (1/2T,1T,2T) | | 1 |
| | 3ET-3C-23 | Second Gear (3T,5T) | | 1 |
| 24 | 1ET-3C-24 | Roller Bearing (1/2T,1T,2T) | 6003-2Z | 4 |
| | 3ET-3C-24 | Roller Bearing (3T,5T) | 6004-2Z | 4 |
| 25 | 3ET-3C-25 | Gear Case Gasket (3T,5T) | | 1 |
| 26 | 3ET-3C-26G | Gear Case (3T,5T) | | 1 |
| 27 | 1ET-3C-27 | Flange (1/2T,1T,2T) | | 1 |
| 28 | 1ET-3C-28 | Lock Washer (1/2T,1T,2T,3T,5T) | 8mm | 4 |
| 29 | 1ET-3C-29 | Hex Nut (1/2T,1T,2T) | M8 | 3 |
| 30 | TS-1504051 | Socket Head Cap Screw (3T,5T) | M8x25 | 4 |
| 31 | 1ET-3C-31G | Motor Case Assembly (1/2T,1T,2T, three phase) | | 1 |
| | 3ET-3C-31G | Motor Case Assembly (3T,5T, three phrase) | | 1 |
| | 1ET-1C-31G | Motor Case Assembly (1/2T,1T,2T,single phase) | | 1 |
| | 3ET-1C-31G | Motor Case Assembly (3T,5T, single phase) | | 1 |
| 32 | 1ET-3C-32 | Rotor Assembly (1/2T,1T,2T three phrase) | | 1 |
| | 3ET-3C-32 | Rotor Assembly (3T,5T, three phrase) | | 1 |
| | 1ET-1C-32 | Rotor Assembly (1/2T,1T, 2T single phase) | | 1 |
| | 3ET-1C-32 | Rotor Assembly (3T,5T, single phase) | | 1 |
| 33 | 3ET-3C-33 | Brake Spring (1/2T,1T,2T,3T,5T) | | 1 |
| 34 | 1ET-3C-34 | Motor Stay Bolt (1/2T,1T,2T) | | 4 |
| | 3ET-3C-34 | Motor Stay Bolt (3T,5T) | | 4 |
| 35 | 3ET-3C-35 | Friction Pad Assembly (1/2T,1T,2T,3T,5T) | | 1 |
| 36 | 1ET-3C-36G | Motor End Plate (1/2T,1T,2T,3T,5T) | | 1 |
| 37 | 1ET-3C-37 | Lock Washer (1/2T,1T,2T,3T,5T) | 5mm | 4 |
| 38 | 1ET-3C-38 | Acorn Nut (1/2T,1T,2T,3T,5T) | M5 | 4 |
| 40 | 1ET-3C-40 | Lock Washer (1/2T,1T,2T,3T,5T) | 8mm | 1 |
| 41 | 1ET-3C-41 | Hex Nut (1/2T,1T,2T,3T,5T) | M8 | 1 |
| 42 | 1ET-3C-42 | Cable Press Plate (1/2T,1T,2T,3T,5T) | | 1 |
| 43 | 1ET-3C-43 | Phillips Pan Head Screw (1/2T,1T,2T,3T,5T) | M5x10 | 2 |
| 44 | 1ET-3C-44 | Plate Key (1/2T,1T) | | 1 |
| | 2ET-3C-44 | Plate Key (2T) | | 1 |
| | 3ET-3C-44 | Plate Key (3T) | | 1 |
| | 5ET-3C-44 | Plate Key (5T) | | 1 |
| 45 | 1ET-3C-45 | Hoist Hanger (1/2T,1T) | | 1 |
| | 2ET-3C-45 | Hoist Hanger (2T) | | 1 |
| | 3ET-3C-45 | Hoist Hanger (3T) | | 1 |
| | 5ET-3C-45 | Hoist Hanger (5T) | | 1 |
| 46 | 1ET-3C-46 | Hex Cap Screw (1/2T,1T) | M8x40 | 8 |
| | 2ET-3C-46 | Hex Cap Screw (2T) | M10x45 | 8 |
| | 3ET-3C-46 | Hex Cap Screw (3T) | M10x50 | 8 |
| | 5ET-3C-46 | Hex Cap Screw (5T) | M14x65 | 8 |
| 47 | 1ET-3C-47 | Lock Washer (1/2T,1T) | 8mm | 8 |
| | 2ET-3C-47 | Lock Washer (2T) | 10mm | 8 |
| | 3ET-3C-47 | Lock Washer (3T) | 10mm | 8 |
| | 5ET-3C-47 | Lock Washer (5T) | 14mm | 8 |
| 48 | 1ET-3C-48 | Hex Nut (1/2T,1T) | M8 | 8 |
| | 2ET-3C-48 | Hex Nut (2T) | M10 | 8 |
| | 3ET-3C-48 | Hex Nut (3T) | M10 | 8 |
| | 5ET-3C-48 | Hex Nut (5T) | M14 | 8 |
| 49 | 1ET-3C-49 | Cord Holder (1/2T,1T,2T,3T,5T) | | 1 |
| 50 | 1ET-3C-50 | Spacer (1/2T,1T) | | 16 |
| | 2ET-3C-50 | Spacer (2T) | | 16 |
| | 3ET-3C-50 | Spacer (3T) | | 16 |
| | 5ET-3C-50 | Spacer (5T) | | 16 |

| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| 51 | 1ET-3C-51 | Suspension Shaft (1/2T,1T) | | 1 |
| | 2ET-3C-51 | Suspension Shaft (2T) | | 1 |
| | 3ET-3C-51 | Suspension Shaft (3T) | | 1 |
| | 5ET-3C-51 | Suspension Shaft (5T) | | 1 |
| 52 | 1ET-3C-52A | Male Plug for 7-Pin (1/2T,1T,2T,3T,5T) | YD28K7TQPGB.5 | 1 |
| 53 | 1ET-3C-53A | Male Plug for 4-Pin (1/2T,1T,2T,3T,5T) | YD24K4TQPGB.5 | 1 |
| 54 | 1ET-3C-54 | Coupling Cable P (1/2T,1T,2T,3T,5T) | 1M | 1 |
| 55 | 1ET-3C-55 | Coupling Cable C (1/2T,1T,2T,3T,5T) | 1M | 1 |
| 56 | 1ET-3C-56 | Power Cord (1/2T,1T,2T,3T,5T) | 2M | 1 |
| 58 | 1ET-3C-58 | Hex Nut (1/2T,1T,2T) | M12 | 3 |
| | 3ET-3C-58 | Hex Nut (3T,5T) | M16 | 3 |
| 59 | 1ET-3C-59 | Threaded Shaft (1/2T,1T) | | 1 |
| | 2ET-3C-59 | Threaded Shaft (2T) | | 1 |
| | 3ET-3C-59 | Threaded Shaft (3T) | | 1 |
| | 5ET-3C-59 | Threaded Shaft (5T) | | 1 |
| 60 | 1ET-3C-60 | Seal Gasket (1/2T,1T,2T,3T,5T) | | 1 |
| 61 | TS-1533042 | Phillips Pan Head Machine Screw (1/2T,1T,2T,3T,5T)…M5X12 | | 4 |
| 62 | 1ET-3C-52 | Connector Case (1/2T,1T,2T,3T,5T) | | 1 |
| 63 | 1ET-3C-63 | Female Plug (1/2T,1T,2T,3T,5T) | YD28J15Z | 1 |
| 64 | 1ET-3C-64 | Phillips Pan Head Machine Screw (1/2T,1T,2T,3T,5T)…M3X14 | | 4 |

## 11.2.1 **Lug Mount Assembly (Optional) for SS-3C,SS-1C Hoists**




**For Electric Hoists in 1/2T, 1T and 2T**

| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| ..... | 1/2SS-3C-LMA..... | Lug Mount Assembly (1/2T) *(includes #1 and 3-7)* ..... | | |
| ..... | 1SS-3C-LMA..... | Lug Mount Assembly (1T) *(includes #1 and 3-7)* ..... | | |
| ..... | 2SS-3C-LMA..... | Lug Mount Assembly (2T) *(includes #1 and 3-7)* ..... | | |
| 1..... | 1/2SS-3C-116 ..... | Side Plate L.H. (1/2T) ..... | ..... | 1 |
| ..... | 1SS-3C-116 ..... | Side Plate L.H. (1T) ..... | ..... | 1 |
| ..... | 2SS-3C-116 ..... | Side Plate L.H. (2T) ..... | ..... | 1 |
| 2..... | 1ET-3C-45 ..... | Hoist Hanger (1/2T,1T)*..... | ..... | 1 |
| ..... | 2ET-3C-45 ..... | Hoist Hanger (2T)*..... | ..... | 1 |
| 3..... | 1/2SS-3C-118 ..... | Lug Mounting Shaft (1/2T,1T) ..... | ..... | 1 |
| ..... | 2SS-3C-118 ..... | Lug Mounting Shaft (2T) ..... | ..... | 1 |
| 4..... | 1/2SS-3C-119 ..... | Side Plate R.H. (1/2T)..... | ..... | 1 |
| ..... | 1SS-3C-119 ..... | Side Plate R.H. (1T) ..... | ..... | 1 |
| ..... | 2SS-3C-119 ..... | Side Plate R.H. (2T) ..... | ..... | 1 |
| 5..... | 3SS-3C-061 ..... | Hinge Plate..... | ..... | 2 |
| 6..... | 1/2SS-3C-012 ..... | Lock Washer ..... | 6mm..... | 4 |
| 7..... | 1/2SS-3C-120 ..... | Hex Head Cap Screw ..... | M6x10 ..... | 4 |

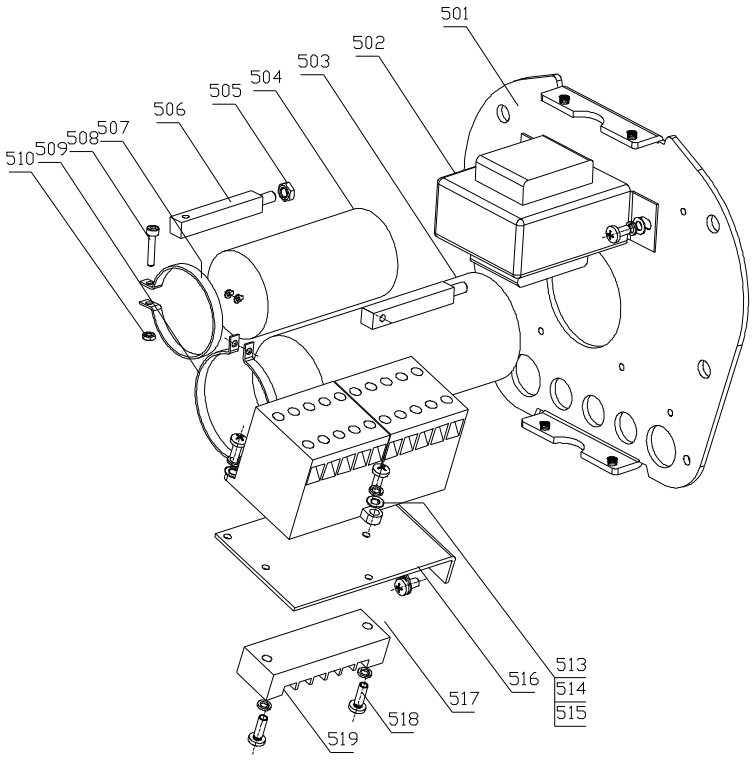
**For Electric Hoists in 3T and 5T**

| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| ..... | 3SS-3C-LMA..... | Lug Mount Assembly (3T) *(includes #1 and 3-7)* ..... | | |
| ..... | 5SS-3C-LMA..... | Lug Mount Assembly (5T) *(includes #1 and 3-7)* ..... | | |
| 1..... | 3SS-3C-116 ..... | Side Plate (3T) ..... | ..... | 2 |
| ..... | 5SS-3C-116 ..... | Side Plate (5T) ..... | ..... | 2 |
| 2..... | 3ET-3C-45 ..... | Hoist Hanger (3T)*..... | ..... | 1 |
| ..... | 5ET-3C-45 ..... | Hoist Hanger (5T)*..... | ..... | 1 |
| 3..... | 2SS-3C-118 ..... | Lug Mounting Shaft (3T) ..... | ..... | 1 |
| ..... | 5SS-3C-118 ..... | Lug Mounting Shaft (5T) ..... | ..... | 1 |
| 5..... | 3SS-3C-061 ..... | Hinge Plate..... | ..... | 2 |
| 6..... | 1/2SS-3C-012 ..... | Lock Washer ..... | 6mm..... | 4 |
| 7..... | 3SS-3C-120 ..... | Hex Head Cap Screw ..... | M6x12 ..... | 4 |

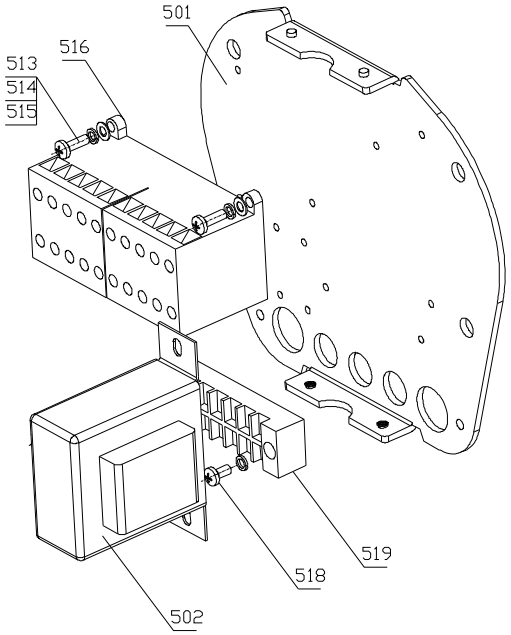
* Hoist Hanger comes pre-assembled to the electric trolley.

### 11.3.1 **ET-C Series Trolley Electrical Components – Exploded View**

SINGLE PHASE




THREE PHASE

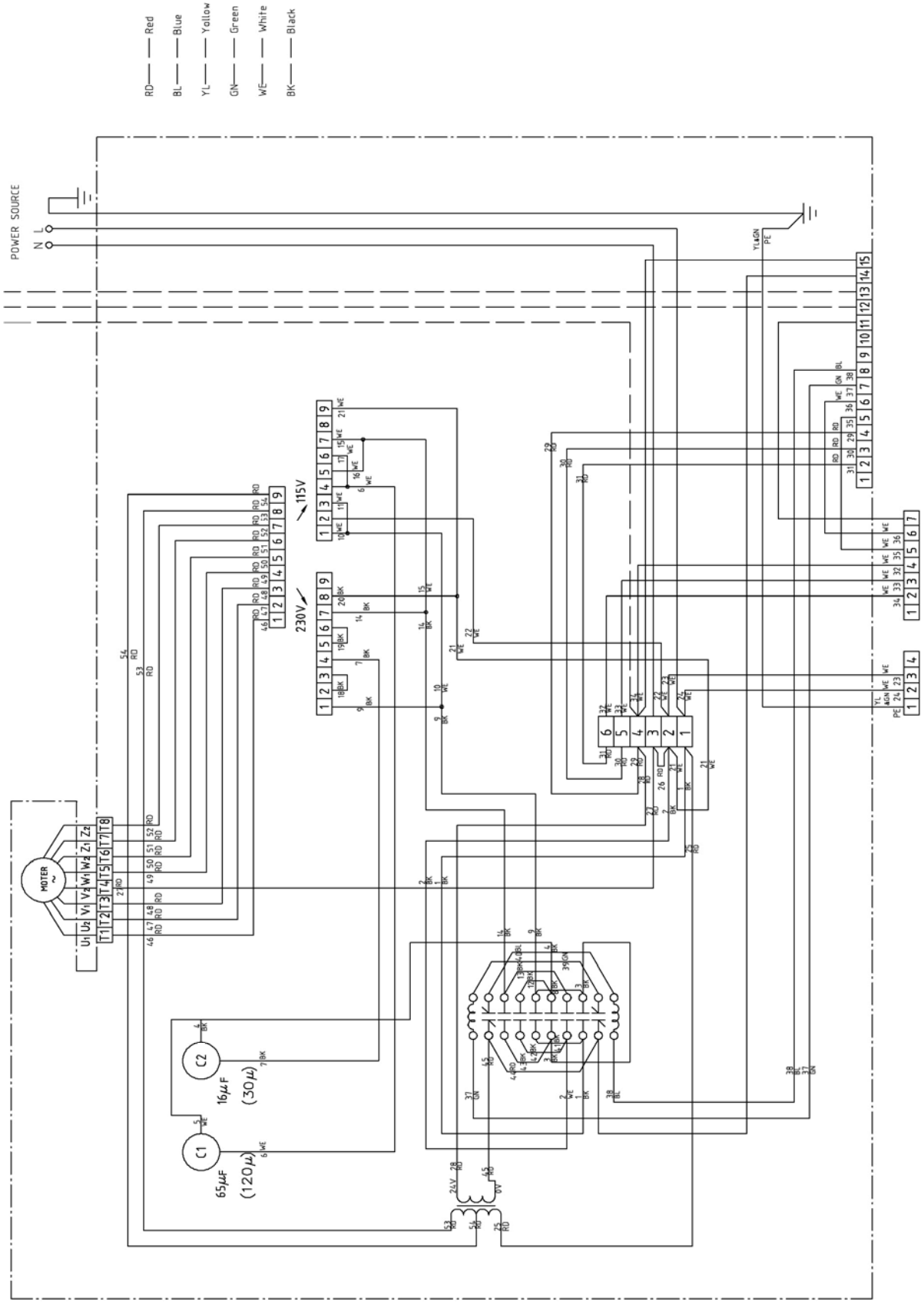


## 11.3.2 **ET-C Series Trolley Electrical Components – Parts List**

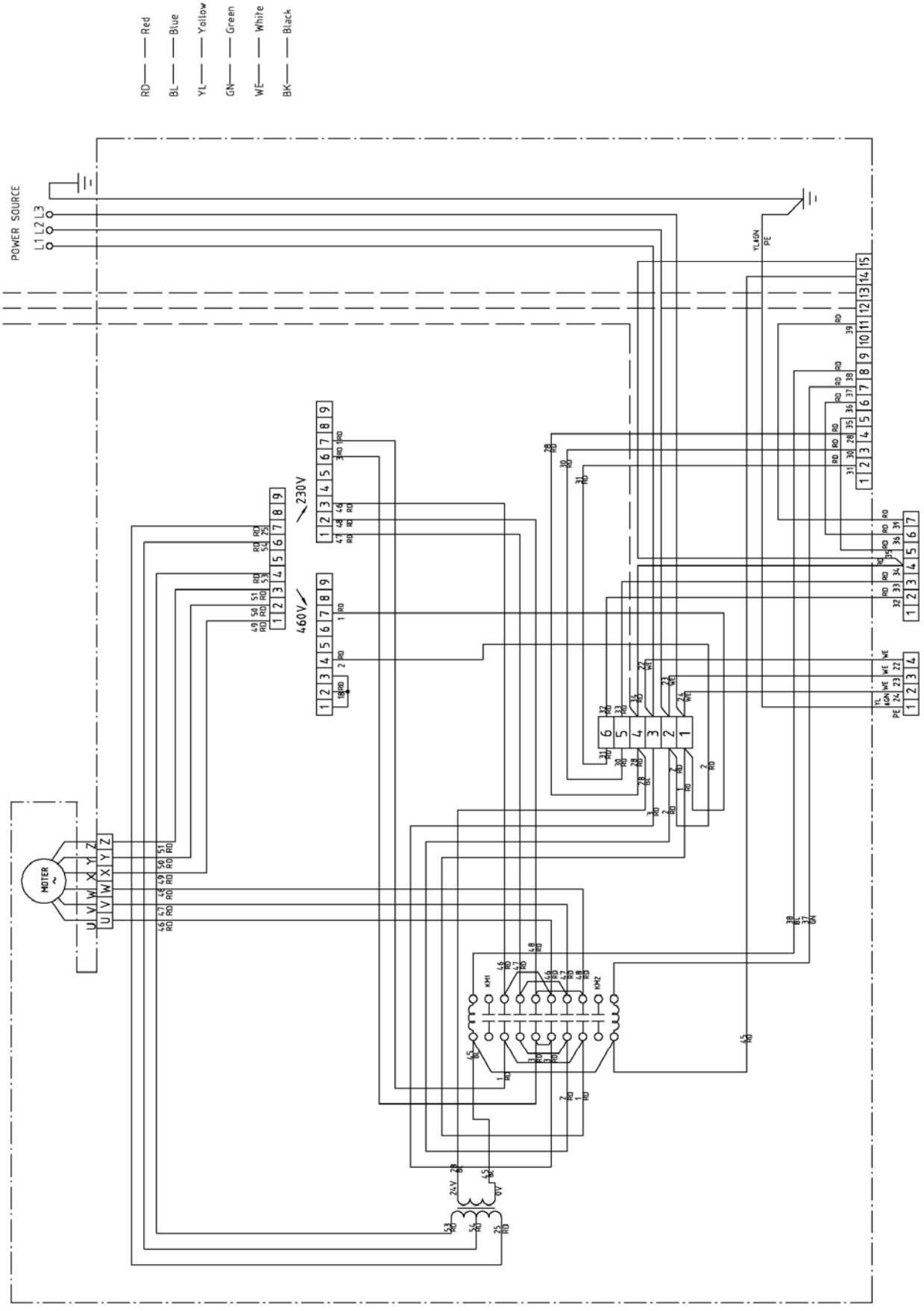
| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| 501 | 1ET-3C-501 | Electrical Component Board (3Ph) | | 1 |
| | 1ET-1C-501 | Electrical Component Board (1/2T,1T, 2T: 1Ph) | | 1 |
| | 3ET-1C-501 | Electrical Component Board (3T,5T: 1Ph) | | 1 |
| 502 | 1ET-3C-502 | Transformer (3Ph) | (460/230)/24V | 1 |
| | 1ET-1C-502 | Transformer (1Ph) | (230/115)/24V | 1 |
| 503 | 1ET-1C-503 | Capacitor (1/2T,1T,2T: 1Ph) | 65µF | 1 |
| | 3ET-1C-503 | Capacitor (3T,5T: 1Ph) | 120µF | 1 |
| 504 | 1ET-1C-504 | Capacitor (1/2T,1T,2T: 1Ph) | 16µF | 1 |
| | 3ET-1C-504 | Capacitor (3T,5T: 1Ph) | 30µF | 1 |
| 505 | TS-1541001 | Lock Nut (1Ph) | M4 | 2 |
| 506 | 1ET-1C-506 | Retainer Pin (1Ph) | | 2 |
| 507 | 1ET-1C-507 | Capacitor Holder (1/2T,1T,2T: 1Ph) | | 1 |
| 508 | TS-1501061 | Socket Head Cap Screw (1Ph) | M4x20 | 2 |
| 509 | 1ET-1C-509 | Capacitor Holder (1/2T,1T,2T: 1Ph) | | 1 |
| | 3ET-1C-509 | Capacitor Holder (3T,5T: 1Ph) | | 2 |
| 510 | TS-1541001 | Lock Nut (1Ph) | M4 | 2 |
| 513 | TS-1532032 | Pan Head Screw (3Ph) | M4x10 | 5 |
| | TS-1532032 | Pan Head Screw (1Ph) | M4x10 | 7 |
| 514 | TS-2361041 | Lock Washer (3Ph) | M4 | 7 |
| | TS-2361041 | Lock Washer (1Ph) | M4 | 9 |
| 515 | TS-1550021 | Flat Washer (3Ph) | M4 | 5 |
| | TS-1550021 | Flat Washer (1Ph) | M4 | 7 |
| 516 | 1ET-3C-516A | Contactor | VB6-30-01 | 1 |
| 517 | 1ET-1C-517 | Contactor Holder (1Ph) | | 1 |
| 518 | TS-1532032 | Pan Head Screw | M4x10 | 2 |
| 519 | 1ET-3C-519 | Terminal Board | | 1 |

# 12.0 **Electrical Connections – ET-C Series Trolleys**

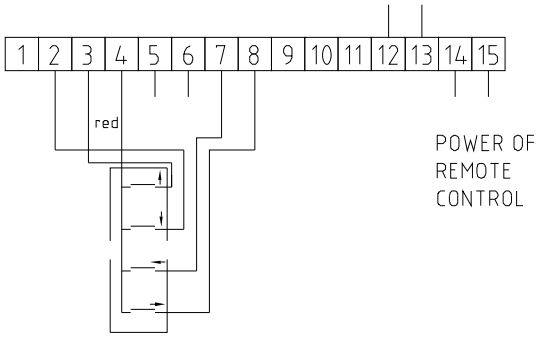
## 12.1.1 **ET-C Trolley SINGLE PHASE ONLY**



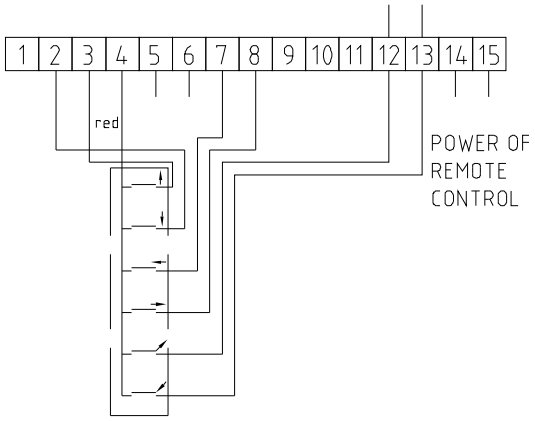
## 12.1.2 **ET-C Trolley – THREE PHASE ONLY**



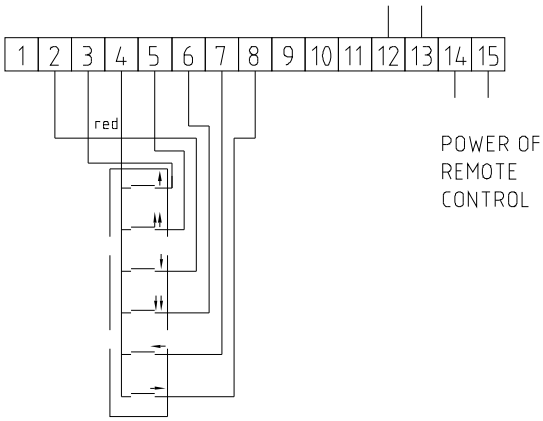
## 12.1.3 **Electrical Connections – Control Pendants**



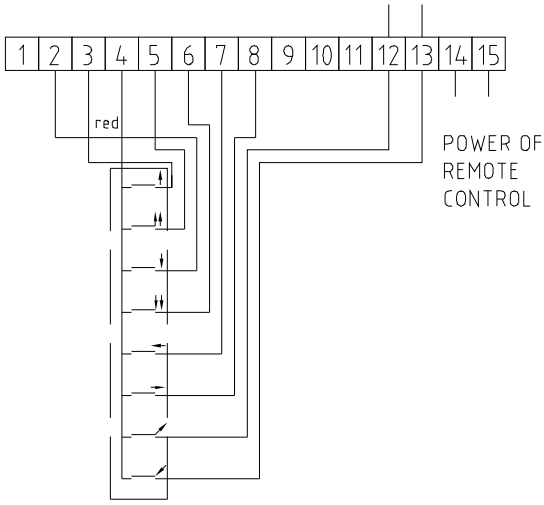

4-PUSHBUTTON WIRING DIAGRAM
FOR **SINGLE SPEED** HOISTS



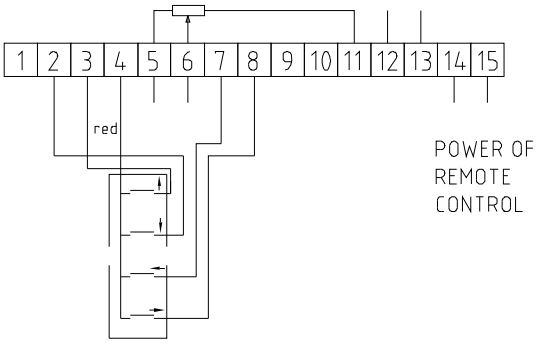

6-PUSHBUTTON WIRING DIAGRAM
FOR **SINGLE SPEED** HOISTS




4-PUSHBUTTON WIRING DIAGRAM
FOR **DUAL SPEED** HOISTS




6-PUSHBUTTON WIRING DIAGRAM
FOR **DUAL SPEED** HOISTS




4-PUSHBUTTON WIRING DIAGRAM
FOR **VFD** HOISTS