



TT1000 TROLLEY HOIST INSTRUCTIONS

REIMANN & GEORGER CORPORATION
HOISTING PRODUCTS
P/N 6102025

BUFFALO, NY
2/28/15

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PRE-HOISTING CHECKLIST

This checklist must be checked prior to each use of the machine. This checklist is to be used as a guideline in conjunction with the maintenance and inspection procedures outlined in this manual. The hoist and related equipment must be thoroughly inspected prior to each use and at least daily by a trained person. A “trained person” is one who has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding the safe operational procedures. If you do not have such a person in your organization, please contact Reimann & Georger Corporation, its distributors, or the factory, and they will assist you in providing such a “trained person.” Do not permit any person who is not fully trained to operate this trolley hoist. It is recommended that this checklist be maintained as a permanent record.

- Ensure a competent person has determined the structural deck can support the intended loads in hoisting and material handling.
- Ensure hoisting operation will clear all power lines and obstructions.
- Ensure that no hoisting will be done over an open doorway.
- Ensure all structural members of the hoist are free of defects and damage that may affect the integrity of the hoist.
- Inspect wire rope for signs of wear and damage. Replace defective wire rope immediately.
- Discuss work plan, personal protective equipment, and each crew member’s responsibility before starting to set-up.
- Ensure OSHA compliant fall protection is in place.
- Ensure hoisting area is secured from all unauthorized personnel.
- Ensure wire rope is reeved properly for two (2) parts of line for 1000 lbs. capacity.
- Ensure sheaves can rotate freely.
- Ensure bolt securing wire rope end loop to the drum flange is tight and in good condition.
- Ensure that at least three wraps of wire rope are on the winch drum at maximum travel.
- Ensure there is sufficient weight on the wire rope to maintain 10-20 lbs. of tension at all times.
- Ensure that each hoisting load will not exceed the 1000 lb. capacity limit.
- Ensure that all hoisting accessories such as forks, buckets, and slings are commercially manufactured, are in good condition, and have a rated load capacity.
- Capacity of slings decreases as the angle increases. Ensure slings have a capacity of at least 1000 lbs. and are in good condition.
- Ensure safety hook has a rated capacity of at least 1000 lbs. and is in good condition.
- Ensure safety latch on the hook does not support any load.
- Ensure all shackles have a rated capacity of at least 1000 lbs. and are in good condition.
- Ensure 1500 lbs. (680 kg.) of Reimann & Georger Corporation, approved ballast blocks are secured in the rear leg base with rope.
- Ensure the front frame cross tie is mounted to 2”x 6” lumber to distribute the load along the roof edge.

PRE-HOISTING CHECKLIST (continued)

- Ensure the operator fence is swung outward to its protective wing position and pinned in place.
- Ensure that the trolley rail is slightly lower at the rear leg to facilitate pulling in loads.
- Ensure power unit has been properly adjusted and maintained as described in the power unit manual.
- Operate hoist with no load to test hoisting operation, controls, and power unit.

INSPECTOR: _____ **DATE:** _____

1 SAFETY

1.1 INTRODUCTION

Your Reimann & Georger Corporation TT1000 Trolley Hoist has been engineered to provide lifting performance, long term economics and safety advantages that no other type can match. However, even a well-designed and well-built hoist can malfunction or become hazardous in the hands of an inexperienced and/or untrained user. Therefore, read this manual and related equipment manuals thoroughly before operating your hoist to provide maximum safety for all operating personnel, and to get the maximum benefit from your equipment.

1.2 SAFETY DEFINITIONS

A safety message alerts you to potential hazards which could injure you or others or cause property damage. The safety messages or signal words for product safety signs are **DANGER**, **WARNING**, and **CAUTION**. Each safety message is preceded by a safety alert symbol and is defined as follows:

DANGER: Indicates an imminently hazardous situation which, if not avoided, **will** cause death or serious injury. This safety message is limited to the most extreme situations.

WARNING: Indicates potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury. It may also be used to alert against unsafe practices and property-damage-only accidents.

1.3 POWER UNIT AND HOIST SAFETY LABELS

These labels warn you of potential hazards which could cause injury. Read them carefully. If a label comes off or becomes illegible, contact Reimann & Georger Corporation, for a free replacement.

1.4 TT1000 HOIST SAFETY RULES

1. Operators must be trained before operating this hoist. A trained person is one who has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding the safe operational procedures.
2. Prior to setting up the hoist there must be a plan of action outlining the work to be accomplished, individual responsibilities, personal protective equipment, and method of communication.
3. A good line of communication must be maintained between the hoist operator and the ground crew.
4. Follow the Pre-Hoisting Checklist before operating.
5. Use only Reimann & Georger Corporation, concrete filled ballast blocks or factory approved equal as counterweight in the hoist frame.
6. Ensure 1500 lbs. (680 kg.) of ballast blocks are secured properly in the rear leg base before operating the hoist. Tie ballast blocks to D-rings on rear leg assembly with rope. **No** human being shall **ever** be utilized as ballast.
7. Wear heavy leather gloves when handling wire rope.
8. Use OSHA compliant fall protection when handling loads at the roof edge.
9. Never use the hoist structure to anchor life lines, worker's harnesses or other attachments.
10. Hoist operator must stand behind the operator fence while the hoist is operating.
11. Hoisting area is to be clear of power lines. Consult power company before you work near power lines.

12. Hoisting area is to be kept clear of unauthorized personnel at all times. Place barricades or secure the area in such a manner that if there were an equipment failure, no personnel would be injured.
13. Keep out from under a raised load.
14. Never hoist over an open doorway.
15. Never exceed the Rated Load Capacity of 1000 lbs. The Rated Load Capacity is the maximum load which should ever be applied to the hoist. Rated Load Capacity is for straight line pull; avoid side loads.
16. Avoid sudden stops and shock loads.
17. All hoisting accessories such as forks, buckets and slings must be commercially manufactured.
18. All hooks, slings, shackles, and other hoisting accessories must be properly maintained and installed.
19. Secure load before lifting.
20. Tag lines shall be used to control all loads.
21. No person shall be allowed to ride on the hoist.
22. Do not climb the hoist; use only a step ladder. Do **not** use an extension ladder.
23. Check the hoist periodically during operation.
24. When using a hydraulic power unit, do not disconnect hydraulic hoses or fittings while power source is running.
25. Do not attempt to make adjustments while the hoist is being operated.
26. Keep all body parts clear of moving parts.
27. At end of operation, the hoist should be secured to prevent unauthorized use. Never assume you will find the hoist in the same condition in which you left it.
28. Do not weld or otherwise modify the hoist. Such alterations may weaken the structural integrity of the hoist.
29. Only trained personnel are authorized to do repairs.
30. Do not operate hoist when under the influence of drugs, alcohol, or medication.

2 SPECIFICATIONS

2.1 TECHNICAL DATA

The following specifications apply to the hoist assembly. Detailed specifications for the power units are in the separate manuals for these items.

Hoist capacity	1000 lbs. (454 kg.)
Hoist speed	150 feet/minute (45 meters/minute) with 2 parts of line 1000 lb. capacity 300 feet/minute (90 meters/minute) with 1 part of line 500 lb. capacity
Hoist cable supplied	200 ft. (60 m.) 3/16" cable
Hoist cable—maximum length*	350 ft. (105 m.)
Trolley track length	15 ft. (4.5 m.)
Overhangs roof	5 ft. (1.5 m.)
Front opening width	4-1/2 ft. (1.4 m.)
Maximum height under track	8 ft. (2.4 m.)
Total shipping weight	552 lbs. (250 kg.)
Power Units Available	
HV500	7-1/2 hp Briggs Vanguard gas engine
HH500	8 hp Honda gas engine
HE500	5 hp Baldor electric motor
Counterweight required	1500 lbs. (680 kg.)
Ballast blocks required	30
Ballast block weight (approximate)	50 lbs. (23 kg.)

* Consult factory for longer cable lengths.

2.2 NAMEPLATE AND SERIAL NUMBER TAG

It is important to identify your hoist completely and accurately whenever ordering spare parts or requesting assistance in service. The hoist has a product nameplate located on the trolley rail assembly. The label shows the model and serial numbers and capacity rating. The hoist label should appear as the sample nameplate shown in Figure 2-1. Record the model and serial numbers, and capacity rating for future reference.

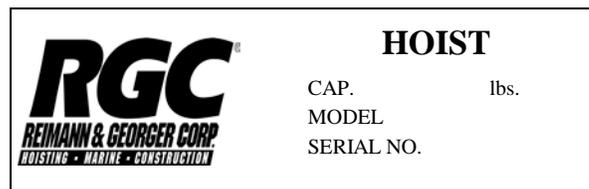


Figure 2-1.
Typical Hoist Product Nameplate

MODEL _____

SERIAL NUMBER _____

CAPACITY RATING _____

3 INSTALLATION AND SETUP

3.1 PRIOR TO SETUP



WARNING:

PRIOR TO SETTING UP THE HOIST THERE MUST BE A PLAN OF ACTION OUTLINING THE WORK TO BE ACCOMPLISHED, INDIVIDUAL RESPONSIBILITIES, PERSONAL PROTECTIVE EQUIPMENT, AND THE METHOD OF COMMUNICATION. FAILURE TO DO THIS CAN RESULT IN DEATH, SERIOUS PERSONAL INJURY OR EQUIPMENT FAILURE.



WARNING:

A COMPETENT PERSON MUST DETERMINE THAT THE STRUCTURAL DECK CAN SUPPORT THE INTENDED LOADS IN HOISTING AND MATERIAL HANDLING IN ADDITION TO THE WEIGHT OF THE COUNTERWEIGHT ON THE ROOF DECK. FAILURE TO DO THIS CAN RESULT IN DEATH, SERIOUS PERSONAL INJURY OR EQUIPMENT FAILURE.



WARNING:

ENSURE ALL STRUCTURAL MEMBERS OF THE HOIST ARE FREE OF DEFECTS AND DAMAGE THAT MAY AFFECT THE INTEGRITY OF THE UNIT.

1. Refer to Figure 3-3. Insert short hitch pin #6 through the trolley rail at point “B” (roughly midpoint on track) to prevent the trolley support #12 from rolling during transport and handling. This pin should remain in place until the power unit is ready to be installed on hoist as described in Section 3.4.
2. Hoist installation and setup cannot proceed until all necessary parts and equipment have been raised to the roof deck where the hoisting operations will be done. Use a hoist beam, swing beam, or freight elevator for this purpose.



WARNING:

ENSURE THE HOISTING AREA IS SECURED FROM ALL UNAUTHORIZED PERSONNEL. ENSURE THAT OSHA COMPLIANT FALL PROTECTION IS IN PLACE.

3. When raising the rear leg assembly to the roof, place it at least 25 feet from the roof edge.
4. When raising the front frame assembly to the roof, place it about 14 feet in front of the rear leg assembly but still at least 10 feet from the roof edge.
5. After raising the trolley rail to the roof, place it between the front and rear sections.



WARNING:

NEVER ASSEMBLE THE FRAME NEAR A ROOF EDGE. ANY ACCIDENT NEAR A ROOF EDGE CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH.

3.2 ASSEMBLING THE FRAME

1. Ensure the front frame and rear leg sections and the trolley rail section are placed in position for assembly well back from the roof edge as described in Section 3.1.

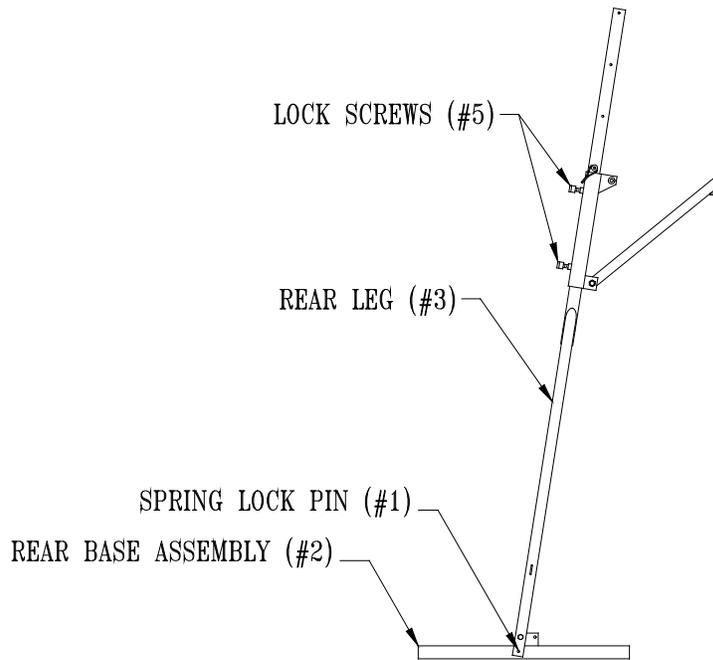


Figure 3-1.
Rear Leg Assembly

2. Refer to Figure 3-1. Remove the two spring lock pins #1 on the rear leg base #2 and raise the rear leg #3 to an upright position.
3. Lock the rear leg in the upright position by inserting the #1 spring lock pins through the holes on the bottom of the rear leg into the rear leg base.
4. Move the socket on rear leg #3 to its lowest position by releasing the #5 lock screws.

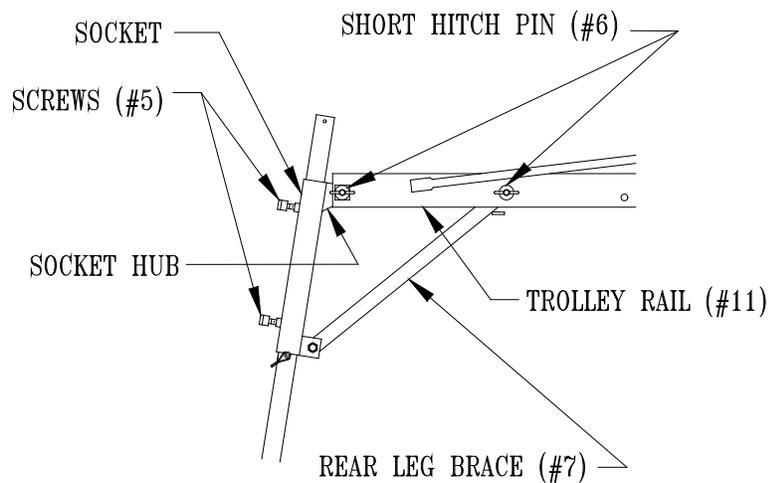


Figure 3-2.
Assembling Trolley Rail and Rear Leg Sections

5. Refer to Figure 3-2. Slide rear leg brace #7 into the rear of the trolley rail assembly #11.

6. Align the matching holes in the trolley rail assembly and the rear leg socket hub and attach with a short hitch pin #6.
7. Raise the trolley rail assembly on the rear leg to align the matching holes in the rear leg brace #7 and the trolley rail assembly. Insert short hitch pin #6 through the matching holes.

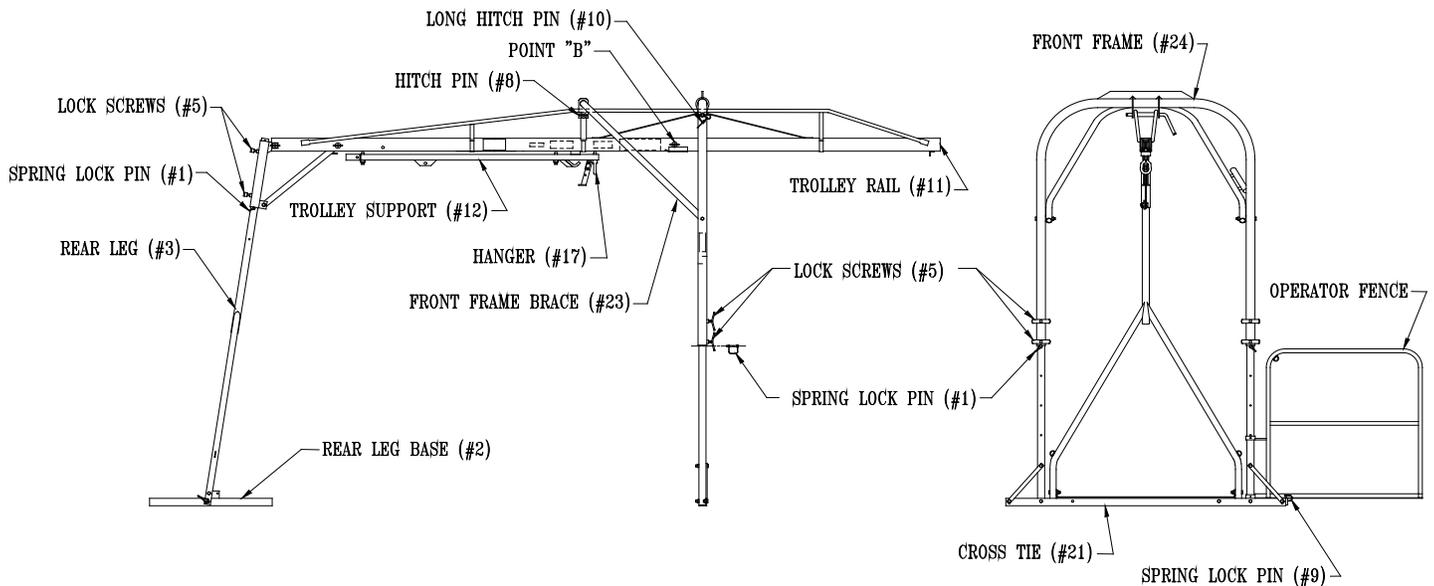


Figure 3-3.
Completed Frame Assembly

8. Refer to Figure 3-3. Raise the front frame brace #23 and tie temporarily to the top of the front frame assembly #24.
9. Release the spring lock pin holding the operator fence and raise front frame assembly to the upright position. Swing the operator fence 90° to help support the front frame during assembly.
10. Position the front frame assembly such that the trolley rail assembly front support is directly under the front frame.
11. Raise the trolley rail assembly and secure it to the front frame assembly by inserting hitch pin/hairpin #8 through the matching holes in the trolley rail assembly front support and the front frame pin tabs.
12. Untie front frame brace #23 and secure it to the trolley rail assembly with long hitch pin #10 through the matching holes in the trolley rail assembly rear support.
13. Insert spring lock pin #1 into the rear leg and lower rear leg socket to rest on pin. Tighten lock screws #5. If not using track at maximum working height, insert pin above socket on rear leg.
14. Raise the trolley rail assembly on the front frame legs until it is in the desired position (generally at maximum height). The trolley rail should be slightly lower at the rear leg to facilitate pulling in loads. Insert a spring lock pin #1 into each leg and lower the front frame to rest on pins. Tighten lock screws #5.
15. Swing the operator fence outward to its protective wing position on the left side of the front frame assembly and pin into place with #9 spring lock pin.
16. Carefully move the entire unit to the roof edge by carrying from the front frame and rear leg assembly. The front frame assembly should be as plumb (vertical) as possible, resting on a secure base several inches in from the roof edge. Holes are provided in cross tie #21 for fastening to a 2 x 6 plank.
17. Mount 30 ballast blocks (1500 lbs.) as counterweight on the rear leg base #2. Make sure it is properly nested. Tie the counterweight securely to the "D" rings on the rear leg assembly to prevent accidental removal. For equipment protection and safety of personnel, the counterweight ballast blocks must be prepared properly. Follow the detailed procedures given in Section 3.3.



WARNING:

ENSURE 1500 LBS. (680 KG.) OF REIMANN & GEORGER CORPORATION APPROVED BALLAST BLOCKS ARE SECURED PROPERLY IN THE REAR LEG BASE WITH ROPE BEFORE OPERATING THE HOIST. AN INADEQUATE COUNTERWEIGHT CAN CAUSE TOPPLING OF EQUIPMENT, RESULTING IN SERIOUS PERSONAL INJURY OR DEATH.

USE ONLY REIMANN & GEORGER CORPORATION BALLAST BLOCKS FILLED PROPERLY WITH CONCRETE OR FACTORY APPROVED EQUAL AS COUNTERWEIGHT.

18. Ensure that all lock screws are tightened and all lock pins are inserted.

3.3 BALLAST BLOCK ASSEMBLY

Before using the ballast blocks, they must be filled with the proper amount of concrete. Prepare the ballast blocks as follows:

1. Place the ballast block handle in the base section of the ballast weight. (This is the section without the filling hole.) This handle can stand upright by itself. Position top section of ballast block over base section, push down and snap into position. See Figure 3-4.
2. Place a funnel into the opening and pour a loosely mixed, flowing concrete into the box. Funnel may require slitting to fit opening of ballast block. Position ballast block on an angle to insure complete filling. See Figure 3-5.



WARNING:

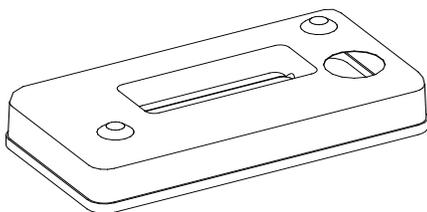
ENSURE BALLAST BLOCK IS COMPLETELY FILLED WITH CONCRETE. THE WEIGHT OF THE BALLAST BLOCK MAY VARY DUE TO THE INCONSISTENCY OF CONCRETE. USE A SCALE TO CONFIRM THE MINIMUM WEIGHT OF FIFTY POUNDS OF EACH BALLAST.



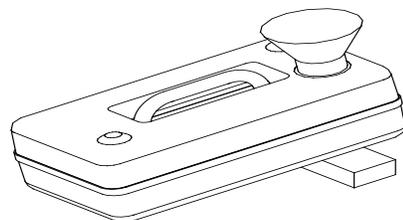
WARNING:

DO NOT USE MORTAR MIX. THIS WILL NOT GIVE THE REQUIRED MINIMUM BALLAST BLOCK WEIGHT OF 50 POUNDS.

3. Allow the concrete to set 10 minutes; then remove excess concrete from handle area to allow hand clearance. Wipe off top and base of box to allow nesting into the rear leg base.



**Figure 3-4.
Ballast Block Assembly**



**Figure 3-5.
Ballast Block Filling**

3.4 MOUNTING THE POWER UNIT TO THE HOIST

1. When lifting the power unit, the following precautions must be observed:
 - a. Be sure of your footing.
 - b. Bend your knees and lift with your legs.
 - c. Hold the equipment section close to your body when lifting.
2. When mounting the power unit, have four people lift the unit and slide the unit onto the trolley support. Pin the power unit to the trolley support at two places; use the spring lock pin in the rear trolley support hole and the hitch pin in the forward trolley support hole to attach the power unit support.



WARNING:

WHEN RAISING THE POWER UNIT, THIRTY (30) BALLAST BLOCKS (1500 LBS.) MUST BE SECURED IN THE REAR LEG BASE. FAILURE TO DO THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

ALWAYS STAND CLEAR OF THE SUSPENDED UNIT. THE OPERATOR ON THE ROOF MUST REMAIN BEHIND THE OPERATOR FENCE. FAILURE TO DO THIS CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH.

3.5 REEVING THE CABLE

1. Before reeving the cable, lower the block bumper from its shipping position on the trolley support. Remove the spring lock pin, lower the block bumper, and resecure with the same pin.
2. Ensure sheaves turn freely.
3. Refer to Figure 3-6. For reeving with two parts of a line, reeve the cable through block #13, then through block #19. Fasten the shackle and safety hook to the cable and attach safety hook to hanger #17.



WARNING:

NEVER CLIMB ON THE HOIST FRAME. THIS CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

ENSURE SHACKLE AND HOOK HAVE A RATED CAPACITY OF AT LEAST 1000 LBS. AND ARE IN GOOD CONDITION.

4. For single line operation, reeve the cable through block #13 and fasten the shackle and safety hook to cable.



WARNING:

NEVER EXCEED THE RATED LOAD CAPACITY OF 500 LBS. FOR SINGLE LINE OPERATION OR 1000 LBS. FOR DOUBLE LINE OPERATION. THE RATED LOAD CAPACITY IS THE MAXIMUM LOAD WHICH SHOULD EVER BE APPLIED TO THE HOIST. RATED LOAD CAPACITY IS FOR STRAIGHT LINE PULL; AVOID SIDE LOADS, SHOCK LOADS, AND SUDDEN STOPS.

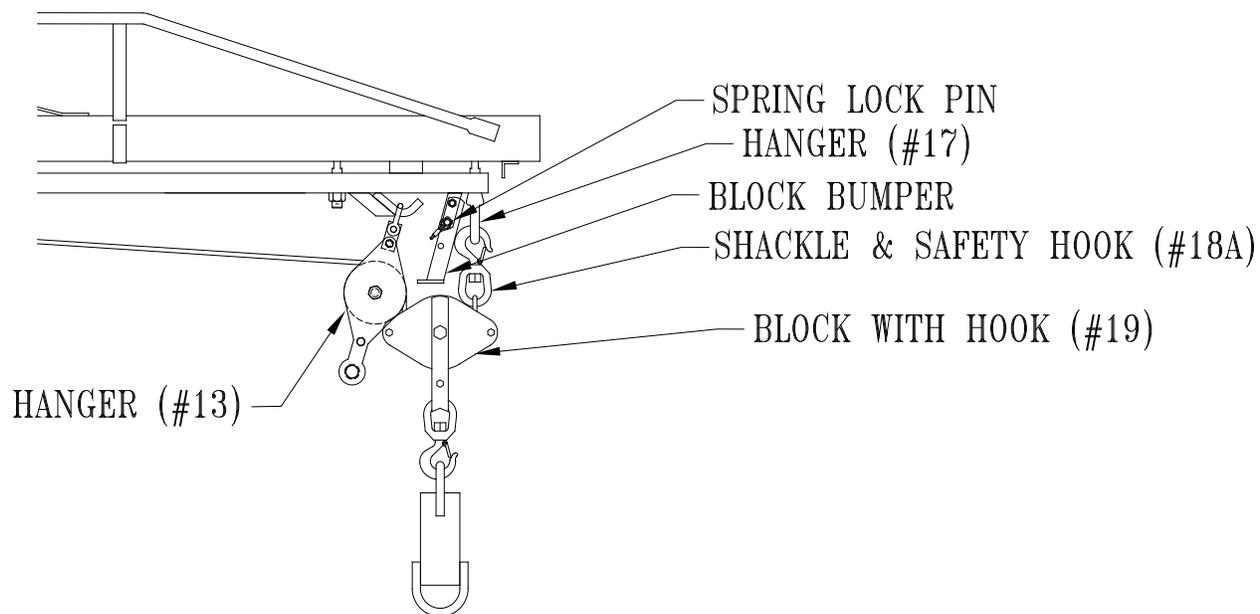


Figure 3-6
Reeving With Two Parts of Line

5. Before applying any load, inspect the cable for wear as detailed in Chapter 6.



WARNING:

USING A CABLE WHICH FAILS TO MEET THE STANDARDS OUTLINED IN CHAPTER 6 CAN CAUSE EQUIPMENT DAMAGE AND SERIOUS PERSONAL INJURY.

4 OPERATION

4.1 BEFORE OPERATING THE HOIST



WARNING:

ONLY TRAINED PERSONNEL SHALL OPERATE THIS EQUIPMENT. A TRAINED PERSON IS ONE WHO HAS READ AND THOROUGHLY UNDERSTANDS THIS INSTRUCTION MANUAL AND RELATED EQUIPMENT MANUALS AND, THROUGH TRAINING AND EXPERIENCE, HAS SHOWN KNOWLEDGE REGARDING THE SAFE OPERATIONAL PROCEDURES.



WARNING:

FOLLOW THE PRE-HOISTING CHECKLIST IN THE FRONT OF THIS MANUAL BEFORE OPERATING.

1. Read the safety labels provided with your hoist and power unit. These labels warn you of potential hazards that can cause serious injury. If a label comes off or becomes hard to read, contact Reimann & Georger Corporation for a replacement.
2. Before starting operation, you should thoroughly read your power unit instruction manual for complete safety, operating and maintenance information.



WARNING:

THE HOISTING OPERATION MUST BE CLEAR OF ALL ELECTRICAL LINES AND OBSTRUCTIONS TO PREVENT EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY. CONSULT POWER COMPANY BEFORE WORKING NEAR POWER LINES.

3. Hoisting area is to be kept clear of unauthorized personnel. Place barricades or secure the area in such a manner that if there were an equipment failure, no personnel would be injured.
4. Ensure that all hoisting accessories such as forks, buckets and slings are commercially manufactured, are in good condition, and have a rated load capacity. When using a sling, note that its capacity decreases as the angle increases.
5. Inspect all power unit tubes and fittings for leaks:
 - a. Inspect each tube for cracks, bulges, chemical attack, kinks or any other damage. Never stop any detected leak with your hand. Replace a damaged tube immediately.
 - b. Inspect each tube connection for leaks. Never tighten a tube connection under pressure..



WARNING:

LIQUID UNDER HIGH PRESSURE CAN PIERCE THE SKIN, CAUSING SERIOUS INJURY OR DEATH. IN CASE OF INJURY, GET IMMEDIATE MEDICAL ATTENTION.

6. Use caution when handling fuel for the power unit. Make sure the gas caps on the power unit and fuel can are properly tightened. Insure the fuel supply is at least 10 feet from the power unit before starting the engine.

4.2 RAISING AND LOWERING THE LOAD



WARNING:

ENSURE 1500 LBS. (680 KG.) OF REIMANN & GEORGER CORPORATION APPROVED BALLAST BLOCKS ARE SECURED PROPERLY IN THE REAR LEG BASE WITH ROPE BEFORE OPERATING THE HOIST. AN INADEQUATE COUNTERWEIGHT CAN CAUSE TOPPLING OF EQUIPMENT, RESULTING IN SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

USE ONLY REIMANN & GEORGER CORPORATION BALLAST BLOCKS FILLED PROPERLY WITH CONCRETE OR FACTORY APPROVED EQUAL AS COUNTERWEIGHT. THIS MACHINE IS NOT DESIGNED TO HAVE HUMAN BEINGS USED AS COUNTERWEIGHT. THIS IS AN ABSOLUTE MISUSE OF THE EQUIPMENT WHICH CAN RESULT IN SERIOUS INJURY OR DEATH.

1. When handling loads at the roof edge, insure all personnel are protected by OSHA compliant fall protection. The operator must remain behind the operator fence while using the hoist.



WARNING:

PERSONNEL MUST NEVER SECURE A SAFETY HARNESS LINE TO THE FRAME STRUCTURE.



WARNING:

FAILURE TO REMAIN BEHIND THE PROTECTIVE FENCE DURING HOIST OPERATION CAN LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

2. Before lifting, secure the load from shifting and insure the safety latch on the hook is not supporting any load. Use tag lines to control all loads. Never hoist over an open doorway.
3. Put the throttle in the slow position when starting and stopping the engine. This permits a warming and cooling period. Know how to stop your power unit quickly in case of emergency. Consult the engine manual for detailed operation of engine controls.
4. Close the choke to start a cold engine. Open choke slowly after engine starts. The choke must be open during normal operation or when starting a warm engine.
5. Start the engine and allow to warm up. Insure the valve control lever is in neutral. This lever is spring returned to neutral whenever the handle is released.



WARNING:

IF ENGINE OR MOTOR STALLS OR FAILS ON POWER UNIT, RELEASE CONTROL LEVERS IMMEDIATELY TO PREVENT LOAD FROM FALLING.

6. To raise a load increase the engine speed and pull the control lever up. Release the control lever when the load reaches the desired height. Pull the trolley support back and lowering the load onto the roof.
7. As additional layers of cable are wound onto the drum, the lifting speed increases but the lifting capacity decreases.



WARNING:

KEEP OUT FROM UNDER A RAISED LOAD.

8. To lower a load, raise the load and slide the trolley support to its forward position. Push the control lever down to lower the load.
9. When lowering the load, gradually decelerate the lowering speed as it nears the ground.



CAUTION:

THE WINCH DRUM MUST ALWAYS HAVE AT LEAST THREE TURNS OF WIRE ROPE WHEN THE LOAD IS AT THE LOWEST POINT OF TRAVEL.

10. Always raise and lower loads smoothly. Avoid sudden starts and stops.
11. Never allow anybody to ride on the hoist. Make a few “dry runs” (without load, but **with** ballast) to become familiar with operation, controls, and power unit and to test hoisting clearance. Always maintain 10-20 pounds of cable tension with a cable weight. Do NOT attempt to make any equipment adjustments during operation.

4.3 HAND SIGNALS

Hand signals have an important advantage over voice commands in high noise environments. Using hand signals ensures proper synchronization of actions between the roof personnel and the ground operator and can give immediate warning of a potentially unsafe condition. All persons must be familiar with hand signals. Use the hand signals as shown in Figures 4-1 through 4-5.



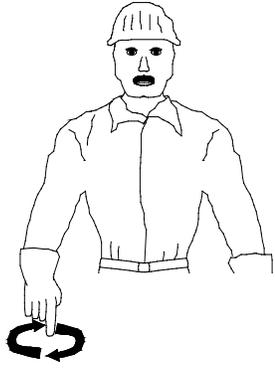
WARNING:

A GOOD LINE OF COMMUNICATION MUST BE MAINTAINED BETWEEN THE HOIST OPERATOR AND ALL PERSONNEL FOR SAFETY. ALL PERSONNEL MUST BE FAMILIAR WITH HAND SIGNALS.



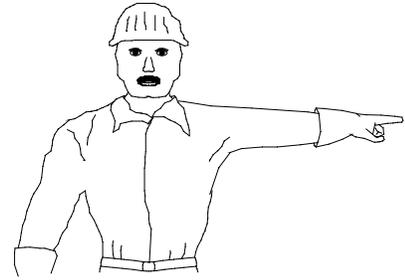
With forearm vertical, forefinger pointing up, move hand in small horizontal circle.

Figure 4-1.
“Raise Load” Signal



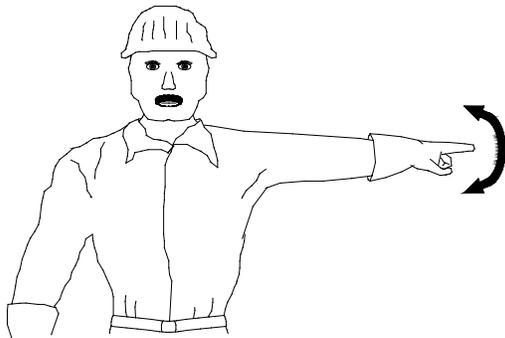
With arm extended downward, forefinger pointing down, move hand in small horizontal circle.

Figure 4-2.
“Lower Load” Signal



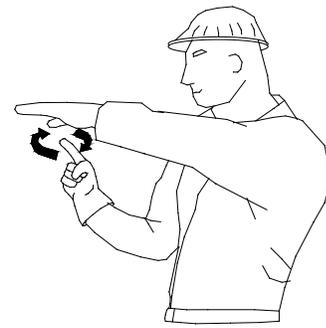
Arm extended, palm down, hold position rigidly.

Figure 4-3.
“Stop” Signal



Arm extended, palm down, move hand rapidly right and left.

Figure 4-4.
“Emergency Stop” Signal



Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (“Hoist Slowly” shown as example)

Figure 4-5.
”Move Slowly” Signal

5 DISASSEMBLY

5.1 PRIOR TO DISASSEMBLY



WARNING:

BEFORE DISASSEMBLING THE HOIST, READ AND FOLLOW ALL THE SAFETY RULES LISTED IN THE PRE-HOISTING CHECKLIST AND CHAPTER 1 OF THIS MANUAL AND IN THE POWER UNIT MANUAL. FAILURE TO DO THIS CAN LEAD TO EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.

5.2 REWINDING THE CABLE



WARNING:

WEAR HEAVY LEATHER GLOVES WHEN HANDLING WIRE ROPE. INSUFFICIENT HAND PROTECTION WHEN HANDLING WIRE ROPE CAN CAUSE SERIOUS PERSONAL INJURY.

1. Ensure that all lifting tension has been removed from the cable.
2. Run trolley support #10 to the extreme rear and insert hitch pin #12 into the rear hole of the rail.
3. Remove safety hook from hanger #20. Unfasten the shackle and safety hook from the cable.
4. Tie a safety line at least 5 feet long to the cable end to prevent any accidental drawing of the operator's hand into the winch during rewinding.
5. Start the power unit and operate the winch to rewind the cable first through block #22 and then through block #13. Insure that the cable is rewinding evenly on the drum.
6. As the cable end approaches the drum, handle the cable only by the safety line described in Step 4.
7. When the cable end reaches the winch, shut off the power unit and remove the safety line. Safely anchor the cable end for convenient access when preparing to lower the power unit to the deck or ground.
8. Return the block bumper to its shipping position by removing the spring lock pin, raising the block bumper, and resealing with the same pin.

5.3 REMOVING POWER UNIT FROM HOIST

When removing the power unit, have four people support the unit while unfastening it from the trolley support at two places as described in Section 3.4, Chapter 3. Carefully lower the unit to the deck observing the lifting precautions listed in Chapter 3.

5.4 DISASSEMBLING THE FRAME



WARNING:

NEVER DISASSEMBLE THE FRAME NEAR A ROOF EDGE. ANY ACCIDENT NEAR A ROOF EDGE CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH.

1. Ensure that the hoist is not supporting any load before proceeding.



WARNING:

ATTEMPTING DISASSEMBLY PROCEDURES WITH ANY WEIGHT SUSPENDED FROM THE TROLLEY SUPPORT CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.

2. Untie the rope securing the ballast blocks in the rear leg base. Remove the ballast blocks and place them where they will not impede dismantling procedures.
3. Remove the crosstie #5 from its 2"x 6" lumber mounting and unfasten the mounting from the supporting wall.
4. Move hoist assembly at least 10 feet away from the roof edge.
5. Release the spring lock pin holding the operator fence and swing the fence 90° to help support the front frame during disassembly.
6. Remove the hitch pin #12 that pins the rear leg brace to the trolley rail assembly.
7. Loosen lock screws #14 on front frame assembly. Raise the assembly off the spring lock pins in the front frame legs. Remove these pins and carefully lower the front frame assembly. Tighten lock screws #14.
8. Loosen lock screws #14 on rear leg socket. Raise the socket off the spring lock pin in the rear leg. Remove this pin and carefully lower the rear leg socket.
9. Unfasten the front frame brace from the trolley rail assembly by removing long hitch pin #19. Raise the front frame brace and tie it to the top of the front frame assembly #2.
10. Unfasten the trolley rail assembly from the front frame assembly by removing hitch pin/hairpin #28.
11. Unfasten the trolley rail assembly from the rear leg socket by removing hitch pin #12. Carefully lower the trolley rail assembly to the deck.
12. Remove the #16 spring lock pins from the holes on the bottom of the rear leg. Then lower the rear leg and reinstall these pins on the rear leg base.
13. Swing the operator fence inward to its shipping position between the front frame legs and pin into place with a spring lock pin.

5.5 REMOVING PARTS FROM DECK

When removing any parts from the deck, observe the following safety rules:

1. Use a hoist beam, swing beam or freight elevator to lower the disassembled parts of the hoist to the ground.
2. Safely secure the hoist parts on the transporting medium without overloading before lowering to the ground.



WARNING:

INADEQUATE SECURING OR OVERLOADING OF THE HOIST PARTS ON THE TRANSPORTING MEDIUM CAN CAUSE PARTS SPILLAGE IN TRANSIT. THIS CAN RESULT IN EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.

6 INSPECTION AND MAINTENANCE

6.1 GENERAL MAINTENANCE RULES

Maintenance information for the associated power units is in the separate specific manuals for these assemblies.

1. Proper maintenance of the hoist and related equipment consists of adhering to all the guidelines given in this chapter and in the Pre-Hoisting Checklist in the front of this manual. Proper maintenance is required to maintain the system in good condition, which is defined as each part being free of rust or other corrosion, bends, breaks, or other defects.
2. Review and follow all the safety rules given in Chapter 1 before attempting any maintenance.
3. Only authorized personnel should be allowed in the maintenance area. Authorized personnel are the trained people as defined below and their supervision. Place barricades or secure the area in such a manner that if there was an equipment failure, no personnel would be injured.
4. Repairs must be made only by trained personnel. A trained person is one who has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding the safe operational procedures.
5. All authorized maintenance personnel should be wearing, as a minimum, hard hats, safety glasses, and safety shoes.



WARNING:

WEAR HEAVY LEATHER GLOVES WHEN HANDLING WIRE ROPE. INSUFFICIENT HAND PROTECTION WHEN HANDLING WIRE ROPE CAN CAUSE SERIOUS PERSONAL INJURY.

6. Do not weld or otherwise modify the hoist. Such alterations may weaken the structural integrity of the hoist and invalidate your warranty.



WARNING:

DURING ANY ERECTION, MAINTENANCE, OR REPAIR PROCEDURES, DO NOT ATTEMPT ANY HOISTING. THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.



CAUTION:

EXCEPT FOR MAINTENANCE AND REPAIRS THAT CANNOT BE DONE OTHERWISE, BRING THE LOAD TO ITS LOWEST POSITION WHEN WORKING ON ANY PART OF THE HOIST. SHUT DOWN AND LOCK OUT THE POWER UNIT TO PREVENT ACCIDENTAL STARTUP. RELIEVE OR RENDER SAFE ALL THE POTENTIALLY HAZARDOUS ENERGY.



WARNING:

NEVER CLIMB THE HOIST TO DO MAINTENANCE. THIS CAN LEAD TO SERIOUS PERSONAL INJURY.

6.2 INITIAL INSPECTION

Hoist erection and dismantling must be done by trained personnel only as defined in Section 6.1. Each time after setting up the hoist and before placing it in service, all parts of the structure, power unit, and other equipment must be thoroughly inspected by trained personnel as described in the remainder of this chapter.

6.3 DAILY INSPECTION

It is important that all the maintenance procedures outlined in the Pre-Hoisting Checklist in the front of this manual be done daily. Details on inspecting the wire rope are given in Section 6.4.

All broken, worn or defective parts must be repaired or replaced before startup.

6.4 WIRE ROPE INSPECTION PROCEDURE

Inspect the wire rope prior to each use and at least daily for signs of wear, damage, or pinching. Inspect the entire wire rope working length. Thoroughly inspect the rope sections that pass over sheaves or drums, or that make opposing turns. Inspect wire rope and end attachments carefully. While inspecting, examine sheaves, guards, guides, drums, flanges, and other surfaces contacting wire rope during operation. Correct any condition harming the rope in use or other damage or worn surfaces at this time.

Remove or replace immediately wire rope with one or more of the following defects:

1. Corrosion
2. Broken wires:
 - (a) One or more valley breaks. A valley break is a wire break occurring in the valley between two adjacent strands.
 - (b) Six randomly distributed broken wires in one rope lay. A rope lay is the length of rope along which one strand makes a complete revolution around the rope. See Figure 6-1. Keeping the rope clean and wound evenly on the drum will increase its life and efficiency.

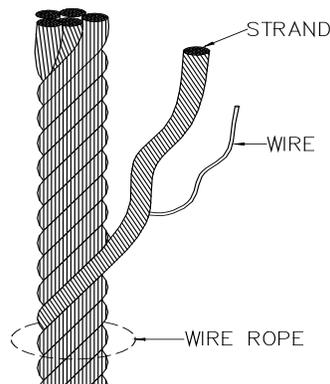


Figure 6-1.
Wire Rope Components

3. Abrasion: Scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
4. Kinking: Severe kinking, crushing, bird caging or other damage causing distortion of the rope structure. Bird caging is a bulging in the cable caused by the individual wires becoming untwisted. This untwisting of individual wires is usually caused by impact loading on the cable (such as a sudden stop).
5. Heat damage: Evidence of any heat damage caused by a torch or by contact with electrical wires.
6. Reduction of more than 3/64 inch from the nominal 1/4 inch diameter cable. Marked reduction in diameter indicates core deterioration.

7 TROUBLESHOOTING

The following chart is intended to assist with troubleshooting the TT1000 trolley hoist. While not all inclusive, the chart outlines the most common causes of a problem and the recommended course of action.

Troubleshooting guides for the associated HV500, HH500, AND HE500 power units are in the instruction manuals specifically for these assemblies.

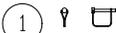
SYMPTOM	CAUSE AND CORRECTIVE ACTION
<p>Hoist drum operating slowly or not at all—power unit engine operating normally.</p>	<p>Hoses from power unit to drum leaking fluid in line or have a poor connection.</p> <p>Hydraulic system malfunctioning—refer to Troubleshooting chapter in power unit manual.</p>
<p>Hoist won't lift load or is lifting it very slowly.</p>	<p>Engine speed too slow—increase throttling.</p> <p>Load not moving freely—check for block or cable malfunctions.</p> <p>Too much cable on drum—hoisting capacity decreases as wire rope diameter increases.</p> <p>Hoist attempting to lift more than stated capacity of unit—check capacity rating and reduce load weight as needed.</p> <p>Hydraulic oil flow too high for load—consult power unit manual and reduce flow.</p> <p>Problem with hydraulics or related engine operation—refer to Troubleshooting chapter of the power unit manual for details.</p> <p>Gas engine out of adjustment—tune engine after consulting engine manufacturer</p> <p>Incorrect electric power source—check motor rating and consult a licensed electrician if necessary.</p>

8 PARTS LIST

The following parts list applies to the hoist assembly only. The parts lists for the power units are in the separate manuals for these items. Each item number on this parts list can be matched with the item number shown on the Figure 8-1 assembly drawing.

Item Number	Part Number	Quantity	Description
1	5800142	5	CLEVIS PIN SQUARED SNAP
2	0904129	1	REAR LEG BASE
3	0900208	1	REAR LEG
4	0904137	1	STAY WIRE BRACKET
5	5000214	6	LOCK SCREW
6	5800212	3	HITCH PIN 3-1/2"
7	0904127	1	REAR LEG BRACE
8	0904139	1	HANDLE PIN W/HAIR PIN
9	5800138	2	CLEVIS PIN ROUNDED SNAP
9A	0904370	1	BLOCK BUMPER
10	5800134	1	HITCH PIN 8"
11	0900039	1	TROLLEY RAIL
12	0900210	1	TROLLEY SUPPORT
13	0900110	1	TT1000 SINGLE BLOCK ASSY**
14	0900206	2	FRONT ADJUSTABLE LEG
15	5000057	1	CABLE WEIGHT **
16	0904215	2	TROLLEY ASSEMBLY KIT
17	0904220	1	HANGER TROLLEY ASSEMBLY
18	7310223	1	SAFETY HOOK **
18A	7300348	2	SHACKLE FOR HOOK **
19	7300222	1	BLOCK WITH HOOK **
20	0904160	2	FRONT BOTTOM BRACE
21	0904159	1	CROSS TIE
22	0900026	1	OPERATOR FENCE
23	0900203	1	FRONT TOP BRACE
24	0900202	1	FRONT FRAME
	0132000	30	BALLAST WEIGHTS

** ITEMS SHIPPED IN BLOCK CARTON

6		QUANTITY 3
10		QUANTITY 1
1		QUANTITY 5
9		QUANTITY 2

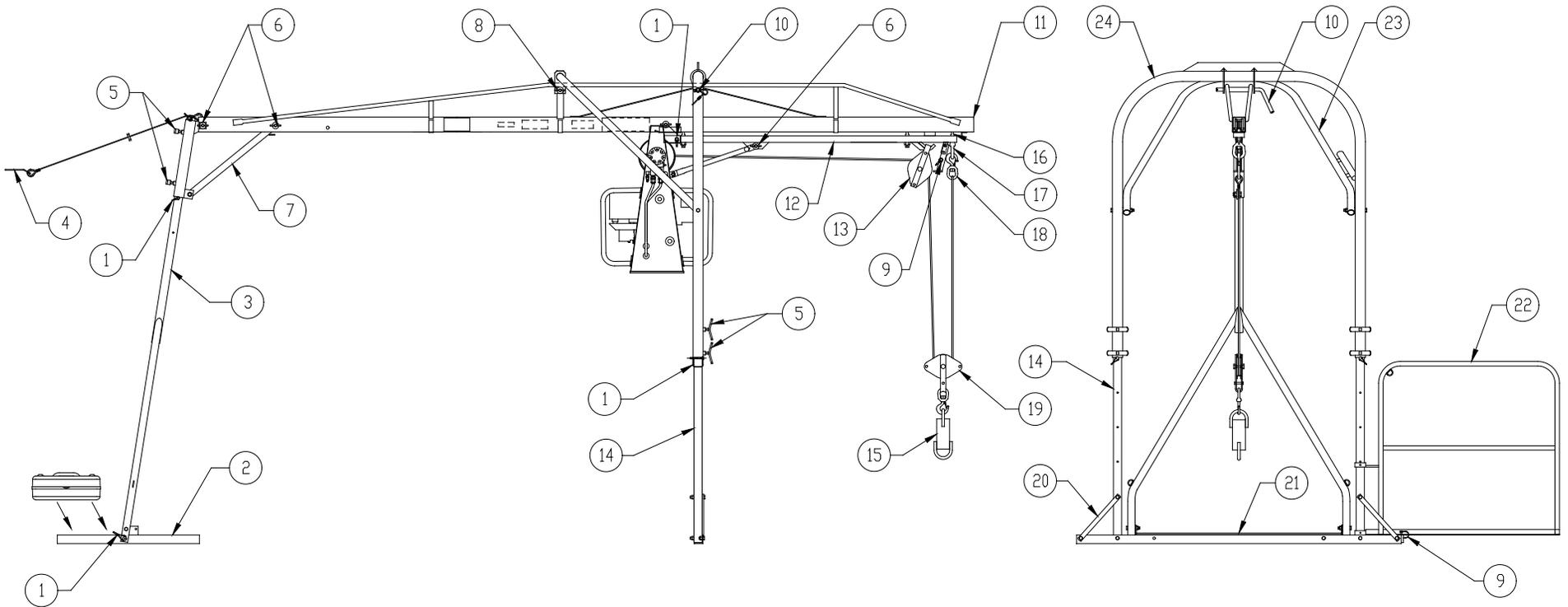


Figure 8-1.
TT1000 Assembly Drawing

LIMITED PRODUCT WARRANTY

**Reimann & Georger Corporation
Hoisting and Construction Products**

A. LIMITED WARRANTY

Reimann & Georger Corporation (the "Manufacturer") warrants to the original purchaser (the "Buyer") that all Reimann & Georger Hoisting and Construction products shall be free of defects in material and workmanship for a period of one (1) year from date of original purchase.

B. MANUFACTURER'S OBLIGATIONS

The Manufacturer's sole obligation under this Limited Warranty is the repair or, at the Manufacturer's discretion, the replacement of parts found to be defective. Parts and equipment must have authorization from the Manufacturer prior to return to the Manufacturer or repair by an authorized service person. Costs of transportation and other expenses connected with replacing or repairing parts are not covered under this Limited Warranty.

C. PARTS MANUFACTURED BY OTHERS

This Limited Warranty does not cover any parts manufactured by others. Such parts are subject to the warranty, if any, of their respective manufacturers, and are to be repaired only by a respective authorized service person for such parts. The Manufacturer shall have no obligation to undertake repairs of parts manufactured by others.

D. NO SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES

IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO THE BUYER OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL LOSSES OR DAMAGES CONNECTED WITH THE USE OF THE PRODUCT UNDER THIS LIMITED WARRANTY. SUCH DAMAGES FOR WHICH THE MANUFACTURER SHALL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOST TIME AND CONVENIENCE, LOSS OF USE OF THE PRODUCT, THE COST OF A PRODUCT RENTAL, COSTS OF GASOLINE, TELEPHONE, TRAVEL, OR LODGING, THE LOSS OF PERSONAL OR COMMERCIAL PROPERTY, AND THE LOSS OF REVENUE.

E. NO LIABILITY IN EXCESS OF PURCHASE PRICE

IN NO EVENT SHALL THE MANUFACTURER'S OBLIGATIONS UNDER THIS LIMITED WARRANTY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

F. NO EXTENSION OF STATUTE OF LIMITATIONS

ANY REPAIRS PERFORMED UNDER THIS WARRANTY SHALL NOT IN ANY WAY EXTEND THE STATUTES OF LIMITATIONS FOR CLAIMS UNDER THIS LIMITED WARRANTY.

G. WAIVER OF OTHER WARRANTIES

THE EXPRESS WARRANTIES SET FORTH IN THIS LIMITED WARRANTY ARE IN LIEU OF AND EXCLUDE ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

H. PROCEDURE FOR WARRANTY PERFORMANCE

If the product fails to perform to the Manufacturer's specifications, the Buyer must provide the Manufacturer with the applicable model and serial numbers, the date of purchase, and the nature of the problem.

I. ADDITIONAL EXCLUSIONS FROM THIS LIMITED WARRANTY. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:

1. Equipment which has been abused, damaged, used beyond rated capacity, or repaired by persons other than authorized service personnel.
2. Damage caused by acts of God which include, but are not limited to, hailstorms, windstorms, tornadoes, sandstorms, lightning, floods, and earthquakes.
3. Damage under conditions caused by fire or accident, by abuse or by negligence of the user or any other person other than the Manufacturer, by improper installation, by misuse, by incorrect operation, by "normal wear and tear", by improper adjustment or alteration, by alterations not completed by authorized service personnel, or by failure of product parts from such alterations.
4. Costs of repairing damage caused by poor or improper maintenance, costs of normally scheduled maintenance, or the cost of replacing any parts unless done as the result of an authorized repair covered by the one (1) year Limited Warranty.
5. Costs of modifying the product in any way once delivered to the Buyer, even if such modifications were added as a production change on other products made after the Buyer's product was built.

J. NO AUTHORITY TO ALTER THIS LIMITED WARRANTY

No agent, representative, or distributor of the Manufacturer has any authority to alter the terms of this Limited Warranty in any way.