



# MH500 MECHANICAL POWER DRIVE INSTRUCTIONS

**OBSOLETE**

REIMANN & GEORGER CORPORATION  
HOISTING PRODUCTS  
P/N 6102023

BUFFALO, NY  
8/11/99

## PRE-OPERATIVE CHECKLIST

This checklist must be checked prior to each use of the power drive. This checklist is to be used as a guideline in conjunction with the maintenance and inspection procedures outlined in this manual. The power unit and related equipment must be thoroughly inspected prior to each use 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 or its distributors and they will assist you in providing such a "trained person." Do not permit any person who is not fully trained to operate this power unit or the associated hoist. It is recommended that this checklist be maintained as a permanent record.

- Insure a competent person has determined the structural deck can support the intended loads in hoisting and material handling.
- Insure hoisting operation will clear all power lines and obstructions.
- Insure that no hoisting will be done over an open doorway.
- Discuss work plan, personal protective equipment, and each crew member's responsibility before starting to set-up.
- Insure OSHA compliant fall protection is in place.
- Insure hoisting area is secured from all unauthorized personnel.
- Insure all structural members of the hoist and power unit are free of defects and damage that may affect their integrity.
- Insure sheaves can rotate freely.
- Insure bolt securing wire rope end loop to the drum flange is tight and in good condition.
- Inspect wire rope for signs of wear, damage, or pinching. Replace if required.
- If using a TT-1000 hoist mounted power unit, insure wire rope is reeved for single part of line for 500 lbs. capacity or two (2) parts of line for 1000 lbs. capacity.
- If using a ground mounted power unit, insure wire rope is reeved ONLY for single part of line for 500 lbs. capacity.
- For a TT-1000 hoist mounted power unit, insure 1500 lbs. (680 kg.) of Reimann & Georger Corporation approved ballast blocks are secured in the rear leg base with rope.
- For a ground mounted power unit, insure 1500 lbs. (680 kg.) of Reimann & Georger Corporation approved ballast blocks are secured with rope in the rear leg base of the TT-1000 hoist and 1000 lbs. of ballast are secured on the ground mount brackets.
- Insure that the load will not exceed the 500 lb. or 1000 lb. limit for, respectively, one or two parts of line reeving.
- Insure that at least three wraps of wire rope are on the winch drum at maximum travel.
- Insure there is sufficient weight on the wire rope to maintain 10-20 lbs. of tension at all times.
- When using electric model, insure the power supply is compatible with the motor nameplate ratings.
- When using electric model, insure wiring is properly grounded.
- Operate hoist and power unit with no load to test hoisting operation and power unit controls.

**INSPECTOR:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
<b>1</b>	<b>SAFETY .....</b>	<b>1</b>
1.1	Introduction .....	1
1.2	Safety Definitions .....	1
1.3	Power Unit and Hoist Safety Labels.....	1
1.4	MH-500 Power Unit Safety Rules.....	1
<b>2</b>	<b>SPECIFICATIONS .....</b>	<b>3</b>
2.1	Technical Data.....	3
2.2	Nameplate and Serial Number Tag.....	3
<b>3</b>	<b>INSTALLATION AND SETUP .....</b>	<b>5</b>
3.1	Prior to Installation .....	5
3.2	Ballast Block Assembly.....	5
3.3	Mounting Power Unit onto Hoist .....	6
3.4	Mounting Power Unit on the Ground.....	6
<b>4</b>	<b>OPERATION.....</b>	<b>9</b>
4.1	Before Operating the Power Unit .....	9
4.2	Engine Pre-Start Checks .....	9
4.3	Electric Motor Pre-Start Checks .....	10
4.4	Operating the Controls .....	10
4.5	Preparing Power Unit for Shutdown .....	12
<b>5</b>	<b>INSPECTION AND MAINTENANCE .....</b>	<b>13</b>
5.1	General Maintenance Rules.....	13
5.2	Initial Inspection .....	13
5.3	Daily Inspection.....	14
5.4	Clutch Lever Adjustments .....	14
5.5	Dual Brake Adjustment .....	14
5.6	Belt Maintenance.....	15
5.7	Engine Maintenance .....	15
5.8	Wire Rope Inspection Procedure.....	15
<b>6</b>	<b>TROUBLESHOOTING .....</b>	<b>17</b>
<b>7</b>	<b>PARTS LIST .....</b>	<b>19</b>
	<b>LIMITED WARRANTY .....</b>	<b>21</b>

## LIST OF FIGURES

FIGURE	DESCRIPTION	PAGE
2-1	Typical Power Unit Product Nameplate.....	3
3-1	Ballast Block Assembly .....	6
3-2	Ballast Block Filling.....	6
5-1	Wire Rope Components .....	16
7-1	MH-500 Assembly Drawing .....	20

# 1 SAFETY

## 1.1 INTRODUCTION

Your Reimann & Georger Corporation MH500 power unit 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 power unit 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 power unit to provide maximum safety for all operating personnel, and to get the maximum benefit from your equipment.



### **WARNING:**

**WHEN THIS POWER DRIVE IS USED IN CONJUNCTION WITH THE TT1000 TROLLEY HOIST, DO NOT USE THE POWER DRIVE WITHOUT STUDYING BOTH THIS MANUAL AND THE TT1000 MANUAL. FAILURE TO DO THIS CAN LEAD TO MISUSE OF THE DRIVE AND/OR HOIST WITH RESULTING DAMAGE AND/OR PERSONAL INJURY.**

## 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 MH-500 POWER UNIT SAFETY RULES

1. Operators must be thoroughly trained before operating the power unit. 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. Always carry the power unit in its de-energized state.
3. Do not use the power unit if it shows any signs of damage.
4. Never use the power unit in an explosive atmosphere and/or near combustible material that could be ignited by a spark.
5. Inspect the cable for damage or wear prior to each use as described in Chapter 5.
6. Wear heavy leather gloves when handling wire rope. Insufficient hand protection when handling wire rope can cause personal injury.
7. When mounting the power unit on the hoist, insure 1500 lbs. (680kg.) of ballast blocks are secured properly in the rear leg base of the hoist. In a ground mounted application, insure 1500 lbs. (680 kg.) of ballast blocks are secured properly in the rear leg base of the hoist and 1000 lbs. (454 kg.) of ballast are secured properly on the ground mounted power unit before doing any hoisting.

8. Use only Reimann & Georger Corporation concrete filled ballast blocks or factory approved equal as counterweight for the hoist frame. A ground mounted power unit must use acceptable ballast material. **No** human being shall **ever** be used as ballast.
9. Never exceed the Rated Load Capacity of 1000 lbs. when the power unit is mounted on the hoist, or 500 lbs. when the power unit is ground mounted. The Rated Load Capacity is the maximum load that should ever be applied to the hoist. Rated Load Capacity is for straight line pull; avoid side loads.
10. When using a gas engine model:
  - a. Handle fuel with care. It is highly flammable. Use approved fuel container.
  - b. Never remove the fuel cap or add fuel to a running engine.
  - c. Exhaust fumes are deadly. Do not run the engine without proper ventilation.
11. When using an electric model:
  - a. The supply line for the electric motor must be installed and inspected by a certified electrician in accordance with local electrical codes.
  - b. The electric power drive installation must include a properly working ground fault circuit interrupter (G.F.C.I.).
12. Follow the Pre-Operative Checklist before using the equipment.
13. Do not operate the power unit when under the influence of drugs, alcohol, or medication.
14. A good line of communication must be maintained between the power unit operator and the rest of the crew. Walkie-talkies should be used wherever possible; at the very least, hand signals must be used. Hand signals are shown in Chapter 4 of the TT-1000 manual.
15. Avoid sudden stops and shock loads.
16. Check the power unit periodically during operation. Know how to stop the power unit quickly in case of emergency.
17. Do not adjust the power unit while it is being operated.
18. Only trained personnel are authorized to do repairs.
19. Keep all body parts clear of moving parts.
20. Always shut off the power unit when servicing it or when not in use.
21. At end of operation, the power unit should be secured to prevent unauthorized use. Never assume you will find the power unit in the same condition in which you left it.

## 2 SPECIFICATIONS

### 2.1 TECHNICAL DATA

The following specifications apply to the MH-500 power unit. Detailed specifications for the TT-1000 hoist are in the separate manual for this item.

Hoisting capacity:

With MH-500 mounted on hoist:	1000 lbs. (454 kg.) with two parts of line 500 lbs. (227 kg.) with single part of line
With MH-500 ground mounted:	500 lbs. (227 kg.)

Counterweight required:

With MH-500 mounted on hoist:	1500 lbs. (680 kg.)
With MH-500 ground mounted:	1000 lbs. (454 kg.) on ground mount brackets <b>and</b> 1500 lbs. (680 kg.) in hoist frame

Ballast block weight (approximate)

50 lbs. (23 kg.)

Ballast blocks required

20 for 1000 lb. counterweight  
30 for 1500 lb. counterweight

Hoist cable supplied

200 ft. 3/16" cable

Maximum cable length \*

350 ft.

Electric engines

3 hp Baldor motor, hoist or ground mounted models available

Gas engines:	5 hp Briggs	5.5 hp Honda	8 hp Briggs	8 hp Honda
Mounting Method	Ground Only	Ground Only	Hoist or Ground	Hoist or Ground
Number of cylinders	1	1	1	1
RPM maximum	3600	3900	3600	3900
Gear reduction	6:1	6:1	6:1	6:1
Engine oil capacity (pints)	1.25	1.1	2.75	2.3
Fuel tank capacity (quarts)	3	3.88	4	6.4
Oil type	10W-30	10W-30	10W-30	10W-30

\* Consult factory for longer cable lengths.

## 2.2 NAMEPLATE AND SERIAL NUMBER TAG

It is important to identify your power unit completely and accurately whenever ordering spare parts or requesting assistance in service. The power unit has a product nameplate that shows the model and serial numbers and capacity rating. The power unit 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 Power Unit Product Nameplate**

**MODEL** \_\_\_\_\_

**SERIAL NUMBER** \_\_\_\_\_

**CAPACITY RATING** \_\_\_\_\_

## 3 INSTALLATION AND SETUP

### 3.1 PRIOR TO INSTALLATION

1. Insure that the hoist frame assembling on the deck has been completed.
2. Insure that all structural members of the hoist are free of defects and damage that may affect the integrity of the unit.
3. Do not use the power unit if it shows any signs of damage.



#### **WARNING:**

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



#### **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:**

**PRIOR TO SETTING UP THE HOIST AND INSTALLING THE POWER UNIT, 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:**

**NEVER WORK NEAR A ROOF EDGE WHILE SETTING UP THE POWER UNIT. ANY ACCIDENT NEAR A ROOF EDGE CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH.**

4. The correct counterweight must be installed as described in Sections 3.3 and 3.4. Make sure it is properly nested. For equipment protection and safety of personnel, the counterweight ballast blocks for the hoist frame must be prepared properly as described in Section 3.2.
5. If mounting the power unit onto the hoist, refer to Section 3.3. If mounting the power unit on the ground, refer to Section 3.4.

### 3.2 BALLAST BLOCK ASSEMBLY

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

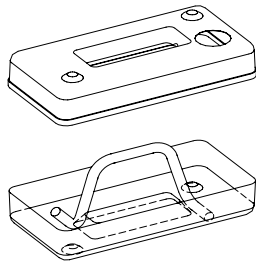
1. Place the ballast block handle in the base section of the ballast weight. (This is the section without the filling hole.) This handle can stand upright by itself. Position top section of ballast block over base section, push down and snap into position. See Figure 3-1.
2. Place a funnel into the opening 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 3-2.



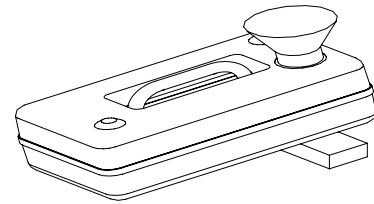
### **WARNING:**

**TO ACHIEVE THE REQUIRED BALLAST BLOCK WEIGHT OF 50 POUNDS, BE SURE TO FILL BLOCK COMPLETELY. THE WEIGHT OF THE BALLAST BLOCK MAY VARY DUE TO THE CONSISTENCY OF THE CONCRETE MIX. DO NOT USE MORTAR MIX. THIS WILL NOT GIVE THE REQUIRED MINIMUM BALLAST BLOCK WEIGHT OF 50 POUNDS. USE A SCALE TO DETERMINE THE WEIGHT OF THE BALLAST. THIS WILL ENSURE SAFE OPERATION IN ACCORDANCE WITH THESE INSTRUCTIONS. NEVER USE A HUMAN BEING AS BALLAST AS THE EQUIPMENT IS NOT DESIGNED FOR THE SAME AND CAN RESULT IN DEATH OR SERIOUS INJURY.**

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 of the hoist.



**Figure 3-1.  
Ballast Block Assembly**



**Figure 3-2.  
Ballast Block Filling**

### **3.3 MOUNTING POWER UNIT ONTO HOIST**

Refer to Chapter 3 of the TT-1000 manual for details on the following steps:

1. Insure that the ballast blocks have been assembled properly and the correct counterweight has been installed on the hoist.



### **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.**

2. Raise the power unit to the roof. Have four people lift the unit and slide the trolley support into the unit. Pin with the spring lock pin and use the hitch pin to attach the power unit support to the trolley support.
3. Reeve the cable for either one or two parts of line. **Never** exceed the rated load capacity of 500 lbs. for single line operation or 1000 lbs. for double line operation.

### **3.4 MOUNTING POWER UNIT ON THE GROUND**

1. Insure that the ballast blocks have been assembled properly and that 1500 lbs. (680 kg.) counterweight has been installed on the TT-1000 hoist frame on the roof. Secure these in the rear leg base with rope.
2. Bolt the mounting base brackets provided to the power unit frame.

3. Slide planks through the base brackets and load with 1000 lbs. (454 kg.) of ballast.
4. Secure ballast to ground mount brackets with rope.



**WARNING:**

**ENSURE 1500 LBS. (680 KG.) OF REIMANN & GEORGER CORPORATION APPROVED BALLAST BLOCKS ARE INSTALLED ON THE HOIST FRAME AND 1000 LBS. (454 KG.) OF BALLAST ARE INSTALLED ON THE GROUND MOUNT BRACKETS BEFORE OPERATING A GROUND MOUNTED POWER DRIVE. 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 IN THE HOIST FRAME.**

5. The ground mounted power unit can only be reeved with one part of line. Unwind enough cable from the winch to reeve it through block #13 on the hoist trolley track. Fasten the shackle and safety hook to the cable and return it to the ground. The return side of the line should be the side closest to the supporting wall to provide maximum ease and safety during loading and unloading on the roof. **Never** exceed the Rated Load Capacity of 500 lbs. in a ground mounted power unit installation.



**WARNING:**

**NEVER REEVE THE GROUND MOUNTED POWER UNIT WITH TWO PARTS OF LINE, AS THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.**



## 4 OPERATION

### 4.1 BEFORE OPERATING THE POWER UNIT



#### **WARNING:**

**ONLY TRAINED PERSONNEL SHALL OPERATE THE POWER UNIT. 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-OPERATIVE CHECKLIST IN THE FRONT OF THIS MANUAL BEFORE USING THE POWER UNIT.**

1. Read the safety labels provided with your 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 free replacement.
2. Before starting operation, you should thoroughly read your TT1000 instruction manual for complete safety, operating and maintenance information.
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.



#### **WARNING:**

**INSURE THE CORRECT BALLAST WEIGHT IS SECURED PROPERLY BEFORE OPERATING THE POWER UNIT AND HOIST. AN INADEQUATE COUNTERWEIGHT CAN CAUSE TOPPLING OF EQUIPMENT, RESULTING IN SERIOUS PERSONAL INJURY OR DEATH.**



#### **WARNING:**

**USE ONLY REIMANN & GEORGER CORPORATION APPROVED BALLAST BLOCKS FILLED PROPERLY WITH CONCRETE OR FACTORY APPROVED EQUAL AS COUNTERWEIGHT IN THE HOIST. USE ACCEPTABLE BALLAST MATERIAL IN A GROUND MOUNTED POWER UNIT. THESE MACHINES ARE 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.**

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



#### **WARNING:**

**USING A CABLE WHICH FAILS TO MEET THE STANDARDS DESCRIBED IN CHAPTER 5 CAN CAUSE EQUIPMENT DAMAGE AND SERIOUS PERSONAL INJURY.**

### 4.2 ENGINE PRE-START CHECKS

1. Check engine and gear reduction oil level. Follow manufacturer's recommendations in the engine manual concerning the type of oil to add if necessary.
2. Check the engine air cleaner and air intake screen for dirt or obstructions. Clean as required.

- Fill the fuel tank with clean fuel. See the engine manufacturer's specifications for fuel requirements.



**WARNING:**

**USE CAUTION WHEN HANDLING FUEL FOR THE POWER UNIT. MAKE SURE THE GAS CAPS ON THE POWER UNIT AND FUEL CAN ARE PROPERLY TIGHTENED. NEVER REMOVE THE FUEL CAP OR ADD FUEL TO A RUNNING ENGINE. INSURE THE FUEL SUPPLY IS AT LEAST 10 FEET FROM THE POWER UNIT BEFORE STARTING THE ENGINE. DO NOT RUN THE ENGINE WITHOUT PROPER VENTILATION.**

**4.3 ELECTRIC MOTOR PRE-START CHECKS**

- Insure power supply is compatible with motor nameplate ratings. If possible, the motor should be connected to a properly rated branch circuit to help minimize voltage drops during operation.



**WARNING:**

**THE ELECTRIC MOTOR SUPPLY LINE MUST BE INSTALLED AND INSPECTED BY A CERTIFIED ELECTRICIAN IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. THIS INSTALLATION MUST INCLUDE A PROPERLY WORKING GROUND FAULT CIRCUIT INTERRUPTER. (G.F.C.I.)**

- Insure that a licensed electrical contractor has been consulted to determine the proper wire size to suit your application. The following wire sizing chart is to be used ONLY as a guide.

**WIRE SIZING GUIDE  
FOR REFERENCE ONLY**

<b>Distance → Motor amps ↓</b>	50 feet	100 feet	150 feet	200 feet	250 feet	300 feet	350 feet	400 feet
5 amp	#12 awg	#12 awg	#10 awg	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg
7.5 amp	#12 awg	#12 awg	#10 awg	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg
10 amp	#12 awg	#10 awg	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg
12.5 amp	#12 awg	#10 awg	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg
15 amp	#10 awg	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg	#4 awg
17.5 amp	#10 awg	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg	#4 awg
20 amp	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg	#4 awg	#2 awg
22.5 amp	#10 awg	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg	#4 awg	#2 awg
25 amp	#8 awg	#8 awg	#6 awg	#6 awg	#4 awg	#4 awg	#2 awg	#2 awg

awg = American Wire Gauge  
amp = Motor Full Load Current  
feet = Distance From MAIN Breaker Box to Motor

- Insure that plastic zip ties are securing the electrical cords to protect the cords from abrasion, sharp objects, and other harm.

**4.4 OPERATING THE CONTROLS**



**WARNING:**

**WHEN OPERATING THE POWER UNIT, OBSERVE ALL SAFETY PRECAUTIONS IN RAISING AND LOWERING LOADS AS DESCRIBED IN THE TT-1000 MANUAL. KNOW HOW TO USE HAND SIGNALS. FAILURE TO DO THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.**

1. 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.
2. 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.
3. Start the engine and allow to warm up. To raise a load proceed as follows:
  - a. Engage the pawl on the drum sheave located directly above the clutch and brake levers. See Figure 7-1.
  - b. Increase the engine speed.
  - c. Raise the clutch handle, which engages the drive belt, disengages the brake, and raises the load. The clutch lever must be fully raised to completely engage the clutch. Never “ride” the clutch. This will cause belt wear and excessive heat. Additionally, the brake will not fully disengage, causing unnecessary stretch and wear. These conditions will lead to loss of hoisting performance and increased frequency of required brake rope adjustments.



**WARNING:**

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

- d. If the engine stalls when the clutch lever is raised with or without a load, see section 5.4 to determine how to adjust the clutch lever.
  - e. Use the provided stabilizer handle for better control.
  - f. Release the clutch handle when the load reaches the desired height.
4. 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.**

5. To lower a load, proceed as follows:
  - a. Disengage the pawl. If the pawl cannot be easily released because of pressure, raise the load slightly to release this pressure. The pawl can then be easily disengaged. Never engage the pawl when lowering.
  - b. Raise the load and slide trolley rail to the forward position.
  - c. Raise the brake handle to release the brake and lower the load. Lowering the brake lever will engage the brake ropes and stop the load. Applying downward force on the brake lever will increase braking ability and stop the load faster. Vary the handle position carefully to maintain a safe, controlled lowering speed. If the load drifts down, see section 5.5 to determine how to adjust the brake.



**WARNING:**

**DO NOT “JAM” ON THE BRAKE LEVER. THIS WILL CAUSE A SEVERE SHOCK LOAD WHICH CAN CAUSE EQUIPMENT DAMAGE OR PERSONAL INJURY.**

6. 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.**

7. Always raise and lower loads smoothly. Avoid sudden starts and stops.
8. 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.

**4.5 PREPARING POWER UNIT FOR SHUTDOWN**

At the end of operation, secure the equipment to prevent unauthorized use. Never assume you will find the equipment in the same condition that you left it. Proceed as follows:

1. Insert hitch pin #12 through the trolley rail rear hole to prevent the trolley support #10 from rolling forward.
2. Insure that all lifting tension has been removed from the cable.
3. Shut off power unit and take necessary action to prevent its unauthorized use.
4. If the hoist is being permanently disassembled, at the end of a project for example, follow the detailed disassembly procedures in the TT1000 manual.

## 5 INSPECTION AND MAINTENANCE

### 5.1 GENERAL MAINTENANCE RULES

Maintenance information for the associated TT-1000 hoist is in the separate TT-1000 manual.

1. Proper maintenance of the power unit and related equipment consists of adhering to all the guidelines given in this chapter and in the Pre-Operative 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 damage or functional 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.
6. Do not modify the power unit in any way. Such alterations may adversely affect power unit performance and invalidate your warranty.



#### **WARNING:**

**DURING ANY INSTALLATION, 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 OR POWER UNIT. 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.**



#### **WARNING:**

**NEVER ADJUST THE POWER UNIT WHILE IT IS BEING OPERATED. THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.**

### 5.2 INITIAL INSPECTION

Power unit installation and dismantling must be done by trained personnel only as defined in Section 5.1. Each time after setting up the power unit and before placing it in service, all parts of it must be thoroughly inspected by trained personnel as described in the remainder of this chapter.

### 5.3 DAILY INSPECTION

It is important that all the maintenance procedures outlined in the Pre-Operative Checklist in the front of this manual be done daily. All broken, worn or defective parts must be repaired or replaced before startup.

### 5.4 CLUTCH LEVER ADJUSTMENTS

The item numbers mentioned in this section are shown in Figure 7-1.

If the engine stalls when the clutch lever is raised with or without a load, check that both brake ropes are releasing as the clutch lever is raised. If the brakes are not releasing when the clutch lever is at the top of its stroke, the clutch needs adjustment. To do this, proceed as follows.

1. Remove the 1/4-20 x 2 3/4" bolt retaining the clutch sheave guard.
2. Remove the 1/2-13 locknut retaining the rod end #11 on the idler assembly #10.
3. Loosen the 1/2-24 hex nut below the rod end. Remove the rod end from the idler shaft and turn the rod end counterclockwise about five turns.
4. Reposition the rod end on the idler assembly and replace the retaining locknut. Check adjustment by raising the clutch lever. The top of the lever should be 1/2" below the top of the slot opening. Do NOT adjust with the engine running. Assemble by replacing guards.
5. The brake may require adjustment. Refer to section 5.5 if the brake will not hold the load or the brakes do not disengage.
6. After making adjustments, hoist a 50-lb. load to see if any further adjustments are needed.

### 5.5 DUAL BRAKE ADJUSTMENT

The item numbers mentioned in this section are shown in Figure 7-1.

For proper operation, the two brake ropes should hold the rated load when the handles are released.

The auxiliary brake handle is factory adjusted to provide a 1/8" gap between the brake lever and adjusting nut on the eyebolt #24. This insures that the main brake will release before the auxiliary brake as the brake lever is raised. If this 1/8" gap is not maintained, both brakes may release together, causing control difficulties in lowering.

If the load drifts down, tighten the nut to compress the brake spring #23 on each brake equally.

All the settings and adjustments for proper brake operation are made at the factory. If wear or parts replacement requires that a major adjustment be made, proceed as follows.

1. If the load continues to drift, move the brake rope end #42 from the outer hole to the inner hole on the brake actuator #45.
2. If the brake actuator lowers during operation due to brake rope stretch/wear, move the brake rope end #42 to the inner hole as described above.
3. If the brake rim is too hot to touch, reduce the lowering speed. Do NOT touch while in operation. Check the brake sheave periodically for excessive heat. If the heat persists, check the wearing surface of both brake ropes and determine if one is wearing more than the other.
4. If the main brake rope shows more wear, it is taking too much of the load. To compensate, increase the tension on the auxiliary brake by tightening and adjusting the nut on the brake spring #23 by one or two turns.

5. If the auxiliary brake rope shows more wear, loosen the adjusting nut on the brake spring #23 to relieve tension.

## 5.6 BELT MAINTENANCE

The item numbers mentioned in this section are shown in Figure 7-1.

Check belts regularly for wear or stretching. If a belt needs replacement, proceed as follows:

1. Remove the sheave guard 51/52 and the ratchet and pawl assembly #8.
2. Support the drum assembly #37 by tying it to the frame above to prevent it from dropping. Remove the 1/4-20 x 1/2 bolt retaining the shaft #7 on the belt side. Remove the 5/16 x 1" bolts fastening the bearings #3 to the frame (both ends). Drive the shaft (toward the brake rope) through the bearing until the 1" collar can be removed. Do not damage the internal threads on the shaft.
3. Remove the four (4) engine mounting bolts, slide the engine toward the brake ropes, and remove the belt.
4. Replace belt and reverse above procedure to assemble.

## 5.7 ENGINE MAINTENANCE

Engines and motors are guaranteed against defects by their respective manufacturers. Follow the manufacturer's instructions for proper lubrication and maintenance. The following table summarizes the type and frequency of maintenance required. For repairs, contact the nearest authorized service center.

TYPE OF MAINTENANCE	FREQUENCY OF SERVICE
Check and clean obstructions from engine air intake screen.	Daily
Check engine oil level—add if required.	Daily
Wash air filter pre-cleaner.	25 hrs.
Change engine oil. Do first oil change after 5 hours.	50 hrs.
Check air cleaner filter—replace if necessary.	100 hrs.
Lightly oil throttle cables	100 hrs.
Check, clean, and replace spark plug.	100 hrs.
Have cylinder head removed and cleaned (use unleaded fuel).	200 hrs.
Check ignition timing.	500 hrs.
Check valves and tappet clearances.	500 hrs.
Check fuel filter in line.	500 hrs.

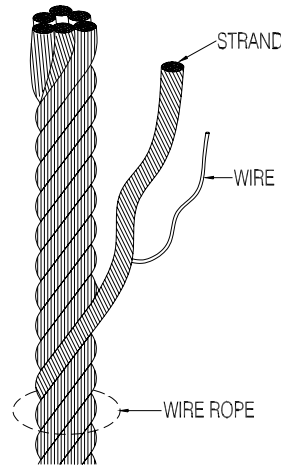
## 5.8 WIRE ROPE INSPECTION PROCEDURE

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 5-1. Keeping the rope clean and wound evenly on the drum will increase its life and efficiency.



**Figure 5-1.**  
**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.

## 6 TROUBLESHOOTING

The following chart is intended to assist with troubleshooting the MH500 power unit. While not all inclusive, the chart outlines the most common causes of a problem and the recommended course of action.

The troubleshooting guide for the associated TT1000 hoist is in the TT1000 instruction manual.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Power unit drum operating slowly or not at all—engine or electric motor operating normally.	<p>Brake dragging—adjust brake as described in section 5.5.</p> <p>Clutch belt dragging—chalk the “V” belt. Clutch lever adjustment may be required. Refer to section 5.4.</p>
Power unit won’t lift load or is lifting it very slowly.	<p>Engine speed too slow—increase throttling.</p> <p>Load not moving freely—check for block or cable malfunctions on hoist.</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>Belt slipping—may be worn or stretched/glazed. Replace or adjust. Check for clutch handle restriction and adjust as necessary as described in section 5.4.</p> <p>Broken belt, belt out of sheave groove—replace belt, position in sheave groove, and adjust belt guides as necessary. Refer to section 5.6.</p> <p>Brake dragging—brake must be released when raising load. Check adjustment as described in section 5.5.</p> <p>Gas engine out of adjustment—tune engine after consulting engine manufacturer.</p> <p>Inadequate electric power source leading to motor failure or blown fuses on low voltage—if the power source and motor rating are not compatible, consult a licensed electrician.</p>
Gas engine frozen.	No oil in crankcase—service at engine manufacturer service center or replace engine with equivalent.
Electric motor won’t start.	<p>Faulty switch—replace switch.</p> <p>Faulty centrifugal switch or burned out capacitor—follow warranty policy and have serviced by motor manufacturer.</p>



**CAUTION:**

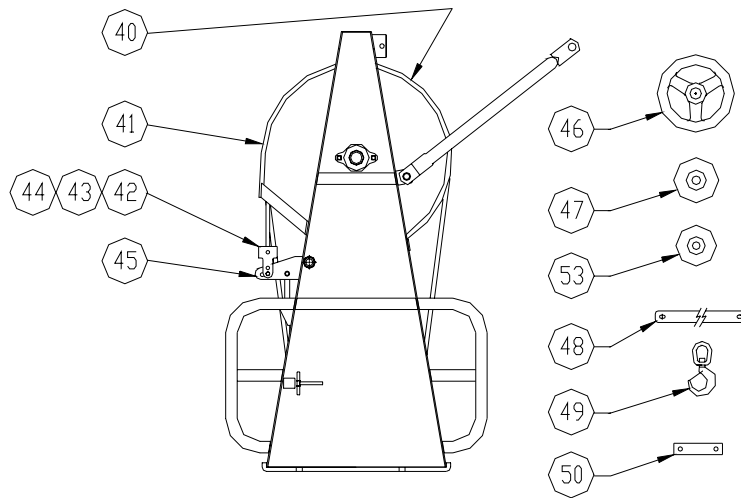
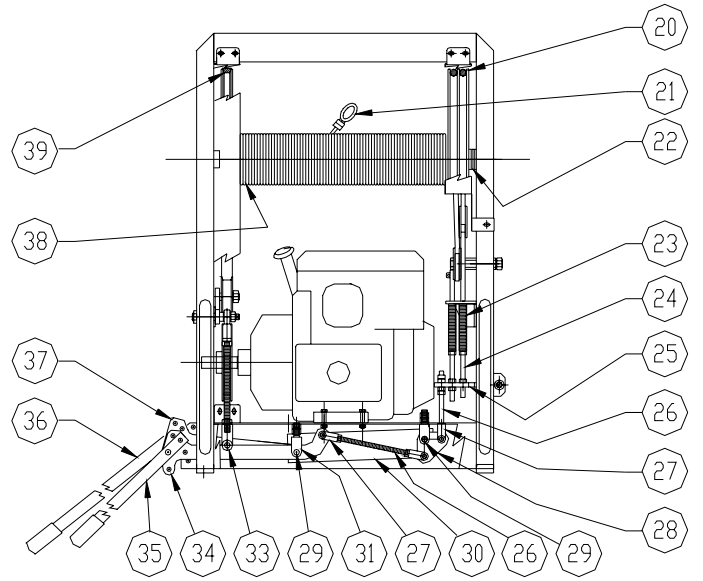
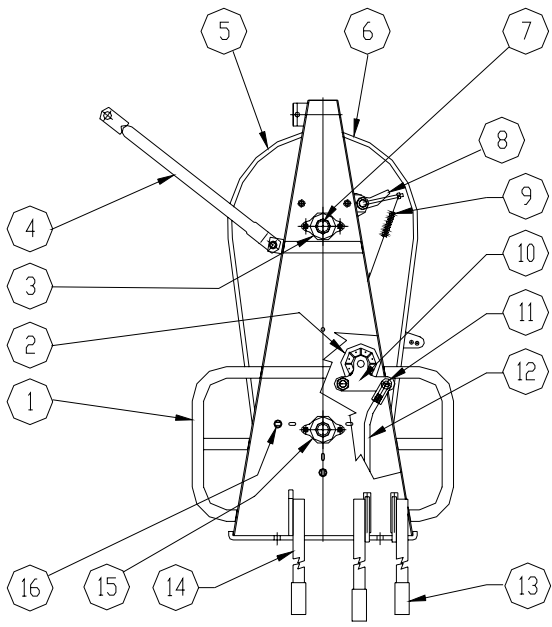
**IF THE PROBLEM WITH A GAS ENGINE OR ELECTRIC MOTOR IS NOT CERTAIN,  
ALWAYS FOLLOW THE MANUFACTURER'S WARRANTY POLICY BEFORE ANY OTHER  
REPAIR OR MAINTENANCE IS ATTEMPTED.**

## 7 PARTS LIST

The following parts list applies to the MH500 power unit only. The parts list for the TT1000 trolley hoist is in the separate manual for this item. Each item number on this parts list can be matched with the item number shown on the Figure 7-1 assembly drawing.

Item Number	Part Number	Quantity	Description
1	0900100	1	FRAME
2	7300140	1	IDLER
3	5100925	2	BEARING
4	0904019	1	HOIST SUPPORT
5	0904013	1	CLUTCH GUARD FRONT
6	0904014	1	CLUTCH GUARD BACK
7	0904044	1	SHAFT
8	0904001	1	PAWL ASSEMBLY
9	5800146	1	PAWL SPRING
10	0904018	1	IDLER ASSEMBLY
11	5804006	1	ROD END
12	0904005	1	ROD 1/2"
13	6400143	3	HANDLE GRIP 1"
14	0904035	1	OPERATOR HANDLE KIT
15	5100925	1	BEARING 8 HP
15	5101811	1	BEARING 5 HP
15	5104102	1	BEARING ELECTRIC
16	0904028	3	BELT GUIDE
20	0900117	2	BRAKE ROPE
21	7304212	1	3/16" WIRE ROPE 200 FEET
21	7304213	1	3/16" WIRE ROPE 100 FEET
22	5800115	3	FIBER WASHER
23	5800135	2	BRAKE SPRING
24	5800132	2	EYE BOLT
25	0904022	1	BRAKE LINKAGE
26	0904008	1	ROD KIT 3/8"
27	5800709	3	YOKE 3/8"
27	0904023	1	BRAKE PIVOT
29	0904027	1	BRAKE/CLUTCH PINS
30	0904024	1	TIE STRAPS (SET)
31	5800127	1	YOKE 1/2 MALE
32	0900712	1	YOKE 1/2 SPECIAL
33	5800711	1	YOKE 1/2 FEMALE
34	0904016	1	CLUTCH LEVER
35	0904041	1	EXTENSION HANDLE BRAKE

36	0904040	1	EXTENSION HANDLE CLUTCH
37	0904015	1	BRAKE LEVER
38	0900107	1	DRUM ASSEMBLY
39	6701251	1	BELT 5H740 8 HP
39	6701250	1	BELT 5H700 5 HP
39	6704104	1	BELT 5H690 ELECTRIC
40	0904011	1	BRAKE GUARD FRONT
41	0904012	1	BRAKE GUARD BACK
42	7300123	2	BRAKE ROPE END
43	7300124	2	BRAKE ROPE CLAMP
44	5800125	2	PIN AND COTTER PIN
45	0904017	1	BRAKE ACTUATOR
46	7300111	1	SHEAVE BK70 8 HP
47	7300153	1	SHEAVE BK40 5 HP
48	0904039	1	SLACK CABLE BAR
49	7314700	1	SWIVEL HOOK WITH LATCH
50	0904007	2	SPACER FOR 5 HP
51	0904118	1	GUARD SHEAVE 5 HP
52	0904119	1	GUARD SHEAVE 8 HP
53	7304101	1	SHEAVE BK34 ELECTRIC
	5500636	1	5.5 HP HONDA ENGINE
	5500155	1	5 HP BRIGGS ENGINE
	5500116	1	8 HP BRIGGS ENGINE
	5500629	1	8 HP HONDA ENGINE



**Figure 7-1.**  
**MH-500 Assembly Drawing**

## **LIMITED WARRANTY**

### **Reimann & Georger Corporation RGC CONSTRUCTION EQUIPMENT**

For one (1) year from purchase, Reimann & Georger Corporation, hereafter called the Corporation, will replace, or at its option, repair for the original purchaser, free of charge, any product or part thereof described in our RGC Construction Equipment product catalog, found upon examination by the Corporation to be defective in material or workmanship or both, provided that written notice is given to the Corporation at P.O. Box 681, Buffalo, New York 14240, within a reasonable time. The purchaser shall be responsible for all transportation charges and any cost of removing any part submitted for replacement under this warranty. **THERE IS NO OTHER EXPRESS WARRANTY.**

**IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE.** Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. **THIS IS THE EXCLUSIVE REMEDY AND LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.** 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.

In addition, the Corporation shall be relieved of its performance of the duties under this warranty if any defect of any warranted product is caused by damage (not resulting from defect) while in the possession of the consumer, or by unreasonable use (including failure to provide reasonable maintenance), or if such defect is attributable to an Act of God or such other event beyond the control of the Corporation. This warranty excludes any component of our product which is not manufactured by the Corporation.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.