



# PRO DRIVE E, G, & HG INSTRUCTIONS

For Serial Numbers C000100 thru E004999.

REIMANN & GEORGER CORPORATION  
HOISTING PRODUCTS  
P/N 6102076

BUFFALO, NY  
7/28/03

## PRE-HOISTING CHECKLIST

This checklist must be checked prior to each use of the PRO Drive. This checklist is to be used as a guideline in conjunction with the maintenance and inspection procedures outlined in this manual. The PRO Drive 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 PRO Drive. It is recommended that this checklist be maintained as a permanent record.

- 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 operation will clear all power lines and obstructions.
- Insure hoisting area is secured from all unauthorized personnel.
- Insure the track is securely tied to the roof to prevent track from slipping.
- Insure that both track shoes are resting on a firm level surface and both PRO Drive wheels are 3/8” off surface to prevent track slippage or uneven loading.
- Insure the load does not exceed the rated load capacity of the hoist model being used.
- Insure all structural members of the PRO Drive are free of defects and damage that may affect the integrity of the PRO Drive.
- Insure brake rope is not wet.
- Inspect wire rope for signs of wear and damage. Replace defective wire rope immediately.
- Insure that at least three wraps of wire rope are on the winch drum at maximum travel.
- Insure that the screw securing wire rope end loop to the brake sheave is tight and in good condition.
- Insure wire rope is reeved properly for either one (1) part of line for the PRO200 hoist or two (2) parts of line for the PRO400 hoist.
- Insure that track support has been properly installed for track lengths over 28 feet.
- Insure that the bottom of the track is away from the building 1/4 of the supported height plus the building overhang.
- Insure that all bolts and nuts are tightened securely.
- Insure all sheaves can rotate freely.
- Insure safety latch on the hook does not support any load.
- Insure PRO Drive has been properly maintained.
- Operate hoist with no load to test hoisting operation, controls, and PRO Drive.

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

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# 1 SAFETY

## 1.1 INTRODUCTION

Your Reimann & Georger Corporation PRO Drive 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 PRO Drive 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 that 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 a 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 PRO DRIVE SAFETY LABELS

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

## 1.4 PRO DRIVE SAFETY RULES

1. Operators must be trained before operating this PRO Drive. 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 PRO Drive there must be a plan of action outlining the work to be accomplished, individual responsibilities, personal protective equipment, and method of communication.
3. All personnel shall be protected by OSHA compliant fall protection where applicable.
4. Never use the hoist structure to anchor life lines, worker's harnesses or other attachments.
5. **Always** use safety footwear, safety glasses, and head protection devices.
6. A good line of communication must be maintained between the hoist operator and the roof crew.
7. 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.
8. Hoisting area is to be clear of power lines. Consult power company before you work near power lines.
9. Follow the Pre-Hoisting Checklist before operating.
10. Wear heavy leather gloves when handling wire rope.
11. Secure load before lifting.

12. Do not remove material from the platform until it has stopped completely.
13. Keep out from under a raised load.
14. Never stand in-line with the raising or lowering of the platform at either the top or bottom of the hoist track.
15. Never hoist over an open doorway.
16. Never exceed the Rated Load Capacity of 200 pounds for the PRO200 hoist, or 400 pounds for the PRO400 hoist. The Rated Load Capacity is the maximum load that should ever be applied to the hoist.
17. Avoid sudden stops and shock loads.
18. No person shall be allowed to ride on the hoist.
19. **NEVER** climb the track; use a ladder.
20. Check the hoist periodically during operation. Know how to stop the PRO Drive quickly in case of emergency.
21. Do not attempt to make adjustments while the PRO Drive is being operated.
22. If the engine or motor fails during operation, release control lever to prevent load from falling.
23. Keep all body parts clear of moving parts.
24. Do not operate PRO Drive when brake rope is wet.
25. Do not operate PRO Drive when under the influence of drugs, alcohol, or medication.
26. At end of operation, the PRO Drive should be secured to prevent unauthorized use. Never assume you will find the PRO Drive in the same condition in which you left it.
27. Do not weld or otherwise modify the PRO Drive. Such alterations may weaken the structural integrity of the hoist and will void your warranty.
28. Only trained personnel are authorized to do repairs.

## 2 SPECIFICATIONS

### 2.1 PRO DRIVE SPECIFICATIONS

MODEL	POWER SOURCE	ENGINE OIL CAP.	FUEL CAP.	PLUG GAP
<b>PRO Drive E</b>	1-1/2 HP, 110-220v, 60HZ (electric)	N/A	N/A	N/A
<b>PRO Drive G</b>	3.5HP Briggs & Stratton (gas)	2/3 qt. *	2 quarts	0.030
<b>PRO Drive HG</b>	4HP Honda (gas)	2/3 qt. *	2.6 quarts	0.028-0.031
Wire rope (all models)		5/32-in. diameter, 7 x 19 galvanized aircraft wire rope		

\*Note refer to Engine oil requirements Sec. 6.5 for oil requirements

### 2.2 COMPLETE SYSTEM SPECIFICATIONS

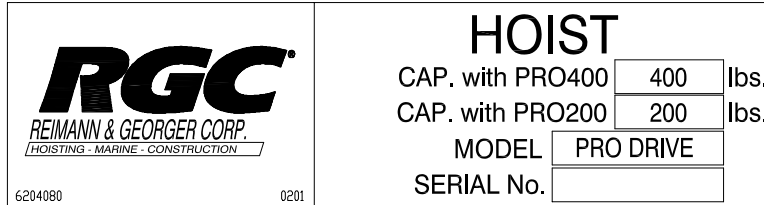
16 foot: Includes PRO Drive, Platform assembly, 16-foot aluminum Track with shoes.

28 foot: Includes PRO Drive, Platform assembly, 16-foot aluminum Track with shoes, additional 8 foot and 4 foot Track sections with splice plates.

44 foot: Includes PRO Drive, Platform assembly, 16 foot aluminum Track with shoes, additional 16 foot, 8 foot, and 4 foot track sections with splice plates, Telescoping track support.

### 2.3 NAMEPLATE AND SERIAL NUMBER TAG

It is important to identify your PRO Drive completely and accurately whenever ordering spare parts or requesting assistance in service. The PRO Drive has a product nameplate located on the side of the frame. The label shows the model number, serial number. The PRO Drive label should appear as the sample nameplate shown in Figure 2-1. Record the model and serial numbers for future reference.



**Figure 2-1.  
PRO Drive Product Nameplate**

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

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

### 3 INSTALLATION AND SETUP

#### 3.1 PRIOR TO SETUP

1. Insure all structural members of the PRO Drive are free of defects and damage that may affect the integrity of the unit.
2. Insure the hoisting area is secured from all unauthorized personnel.



**WARNING:**

**INSURE THAT OSHA COMPLIANT FALL PROTECTION IS IN PLACE.**



**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:**

**INSURE THAT ALL BOLTS AND NUTS ARE TIGHTENED SECURELY TO PREVENT EQUIPMENT DAMAGE AND/OR SERIOUS INJURY.**

4. Position the PRO Drive on the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cross ties from the bottom with the clamp on the 3<sup>rd</sup> cross tie. Note that the 2<sup>nd</sup> and 3<sup>rd</sup> cross ties are reinforced. The PRO Drive should be on the underside of the track. Center the PRO Drive between the track rails and lock in place by rotating the lock to the left. Insert the lock pin in the hole provided to prevent lock from loosening. Fasten the operator handle to the PRO Drive lever. When facing the PRO Drive from the rear or building side of the track, the PRO Drive handle is on your left. Details on PRO Drive startup are given in Chapter 4. The top of the PRO Drive should be level, with a 3/8" clearance under both wheels when set up properly. The engine may not operate correctly if it is not level.
5. Before reeving the hoist, read and thoroughly understand the detailed instructions provided with your platform hoist.



**WARNING:**

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



**WARNING:**

**USING DEFECTIVE WIRE ROPE CAN CAUSE EQUIPMENT DAMAGE, SERIOUS PERSONAL INJURY, OR DEATH.**



**WARNING:**

**MAKE SURE THAT BOTH TRACK SHOES ARE RESTING ON A FIRM, LEVEL SURFACE. THIS PREVENTS TRACK SLIPPAGE OR UNEVEN LOADING OF TRACK WHICH CAN CAUSE EQUIPMENT DAMAGE OR PERSONAL INJURY.**



## 4 OPERATION

### 4.1 BEFORE OPERATING THE PRO DRIVE



#### **WARNING:**

**A GOOD LINE OF COMMUNICATION MUST BE MAINTAINED BETWEEN THE HOIST OPERATOR AND THE ROOF CREW.**

1. 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.
2. Obey all safety labels provided on your PRO Drive and hoist. 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.
3. Follow the Pre-hoisting Checklist in the front of this manual before operating.
4. Never use the hoist structure to anchor lifelines, worker harnesses, or other attachments.
5. Always use safety footwear, safety glasses, and head protection devices.
6. Before lifting, insure the safety latch on the hook is not supporting any load. Never hoist over an open doorway.



#### **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.**

7. 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.
8. Inspect wire rope for damage, wear, or unraveling. Replace as necessary.
9. Check all hooks and sheaves. Replace as necessary.

### 4.2 PRO DRIVE STARTUP

#### 4.2.1 Gas Engine Startup

1. Handle fuel with care. It is highly flammable. Use approved fuel container. Fill tank outdoors in a well ventilated area on a bare surface. Make sure the gas caps on the engine and fuel can are properly tightened. Insure the fuel storage area is at least 10 feet from the hoist before starting the engine. Never remove the fuel cap or add fuel to a running or hot engine. Let the engine cool 2 minutes before fueling. **NEVER** lay PRO DRIVE down flat. Failure to keep unit in an upright position during use, transport, or storage will result in fuel and/or oil leakage from engine.
2. Check oil level in both the crankcase and reducer. Always add oil with the PRO Drive on the level. Follow manufacturer specifications on type and amount of oil to add. Refer to the manufacturer's instructions and to Chapter 6 of this manual.



**CAUTION:**

**GASOLINE ENGINES ARE SHIPPED WITHOUT OIL IN THE CRANKCASE. ATTEMPTING TO RUN THE ENGINE WITHOUT FILLING THE CRANKCASE AND REDUCER WITH OIL WILL CAUSE SERIOUS ENGINE DAMAGE AND MAY VOID THE WARRANTY.**

- 3. Check the engine air cleaner and air intake screen for dirt or obstruction. Clean as required.
- 4. Move choke control to choke or start position and move throttle to half throttle position to start a cold engine. Move choke control to run position slowly after engine starts and allow a warm up. The choke must be in the run position during normal operation or when starting a warm engine. Placing the throttle in the slow position before stopping the engine permits a cooling period.

**4.2.2 Electric Motor Startup**



**WARNING:**

**DO NOT USE IN WET CONDITIONS.**

- 1. The motor is rated at 1 1/2 HP, 110/220V, 60 cycles. It is wired at the factory for 110 volt, single phase service. Consult the nameplate for wiring changes required for 220 volt, single-phase service.
- 2. To protect the motor and get maximum motor efficiency, be sure the extension cords used conform to the following table:

0-50 ft. ....	12 gauge two wire and ground
50-150 ft. ....	10 gauge two wire and ground
150-250 ft. ....	8 gauge two wire and ground

NEVER use 16-gauge wire as an extension cord on a 1 1/2 HP motor.

**4.3 RAISING AND LOWERING THE LOAD**



**WARNING:**

**NEVER EXCEED THE RATED LOAD CAPACITY OF 200 POUNDS FOR THE PRO200 HOIST, OR 400 POUNDS FOR THE PRO400 HOIST. THE RATED LOAD CAPACITY IS THE MAXIMUM LOAD THAT SHOULD EVER BE APPLIED TO THE HOIST.**



**WARNING:**

**SECURE THE LOAD BEFORE LIFTING.**



**WARNING:**

**DO NOT OPERATE HOIST WHEN BRAKE ROPE IS WET**

- 1. Before operating install the operator handle using the provided spring lock.
- 2. Make a few “dry runs” (no load), to test hoisting operation, controls, and PRO Drive.



**WARNING:**

**NEVER STAND IN-LINE WITH THE RAISING OR LOWERING OF THE PLATFORM AT EITHER THE TOP OR BOTTOM OF THE HOIST TRACK.**

3. To raise the load, first advance the throttle to increase the engine speed. Then lift the operator handle slowly with a smooth upward motion. This automatically tightens the drive belt and releases the brake, permitting the platform to roll up the track.
4. When the platform reaches the top of the track, release the operator lever. This action stops the platform and automatically applies the brake, which holds the load and platform.



**WARNING:**  
**KEEP OUT FROM UNDER A RAISED LOAD.**



**WARNING:**  
**IF THE ENGINE OR MOTOR FAILS DURING OPERATION, RELEASE THE OPERATOR HANDLE TO PREVENT LOAD FROM FALLING.**

5. Do not allow the platform to jam against the spring stops on the top bracket. The drive belt may jam in the drum sheave, preventing the lowering of the platform.



**WARNING:**  
**DO NOT REMOVE MATERIAL FROM THE HOIST UNTIL IT HAS STOPPED COMPLETELY.**

6. Depress the operator handle to lower platform to the ground. **Lowering speed for SAFE operation should not exceed 50 feet/minute.** Continue to decelerate the platform as it nears the ground to prevent damage to platform or track. Do not allow the platform to strike the track shoes on reaching the bottom of the track.



**WARNING:**  
**AVOID SUDDEN BRAKING WHEN HANDLING A LOAD.**

7. Check the PRO Drive periodically during operation. Do not attempt to make adjustments during operation.



**WARNING:**  
**KEEP ALL BODY PARTS CLEAR OF MOVING PARTS.**

#### **4.4 PREPARING PRO DRIVE 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. Insure that all lifting tension has been removed from the wire rope.
2. Shut off PRO Drive and take necessary action to prevent its unauthorized use.
3. If the hoist is being permanently disassembled, at the end of a project for example, follow the detailed disassembly procedures in Chapter 5.

## 5 DISASSEMBLY

### 5.1 PRIOR TO DISASSEMBLY

1. Before disassembling the hoist, read and follow all the safety rules of this manual and related equipment used with PRO Drive. Failure to do this can lead to equipment damage and/or serious personal injury.
2. Insure that the platform is not supporting any load before proceeding.
3. Before dismantling, attach a tie rope to hold the platform in position at the base of the track.
4. Insure the track is securely tied to the roof with a rope fastened to a cross tie or top bracket to prevent track from slipping.
5. Check carefully for proximity of power lines or other overhead obstructions.



#### **WARNING:**

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

6. Tie a safety line at least 5 feet long to the wire rope end to prevent any accidental drawing of the operator's hand into the winch during rewinding.
7. Start the PRO Drive and **SLOWLY** lift the operator handle to rewind the wire rope. Insure that the wire rope is rewinding evenly on the drum. As the wire rope end approaches the drum, handle the wire rope only by the safety line.
8. When the wire rope end reaches the drum, release the operator handle, shut off the PRO Drive and remove the safety line. Anchor the wire rope end on the drum with a light rope or tape.
9. Remove the operator handle from the PRO Drive. Remove the lock pin from the hole provided and loosen the cross tie lock by rotating it to the right. Then remove the PRO Drive from the cross ties.



#### **WARNING:**

**NEVER LAY GAS POWERED PRO DRIVES DOWN. DOING SO CAN CAUSE GASOLINE AND ENGINE OIL TO LEAK FROM THE UNIT AND COULD CAUSE SERIOUS PERSONAL INJURY.**

## 6 INSPECTION AND MAINTENANCE

### 6.1 GENERAL MAINTENANCE RULES

1. Proper maintenance of the PRO Drive 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.
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.



#### **WARNING:**

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

5. 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.**



#### **WARNING:**

**EXCEPT FOR MAINTENANCE AND REPAIRS THAT CANNOT BE DONE OTHERWISE, SHUT DOWN AND LOCK OUT THE PRO DRIVE TO PREVENT ACCIDENTAL STARTUP.**



#### **WARNING:**

**NEVER CLIMB THE TRACK 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 PRO Drive, and other related 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 6.7.

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

## 6.4 OILING MECHANICAL PARTS

1. The main bearings are lubricated for life and need no attention. Oil all pivots and linkage joints occasionally.
2. Electric units require oiling the countershaft bearings occasionally.

## 6.5 ENGINE OIL REQUIREMENTS



### **CAUTION:**

**GASOLINE ENGINES ARE SHIPPED WITHOUT OIL IN THE CRANKCASE. ATTEMPTING TO RUN THE ENGINE WITHOUT FILLING THE CRANKCASE AND REDUCER WITH OIL WILL CAUSE SERIOUS ENGINE DAMAGE AND MAY VOID THE WARRANTY.**

### 6.5.1 Briggs & Stratton Engines

Before starting the engine, check and add oil according to the viscosity chart shown in your engine manual. Use a high quality detergent oil classified “For Service SF, SG, SH,” such as SAE 30 oil. Do NOT use special additives with recommended oils. Do NOT mix oil with gasoline.

Add oil and fill to overflowing as shown in your engine manual. Oil capacity is about 2/3 quart (21 ounces or 0.6 liter).

The gear reducer must also be filled with oil. To fill, pour SAE 30 oil into oil fill hole until it runs out the level check hole. Refer to the engine manual for details on filling the gear reducer.

After filling with or changing oil, start and run the engine at idle for 30 seconds. Shut engine off. Wait 30 seconds and check oil level.

### 6.5.2 Honda Engines

For both the engine and gear reducer, use Honda 4-stroke oil or an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer’s requirements for Service Classification SG, SF/CC, CD. SAE 10W-30 is recommended for general, all temperature use. Other viscosities shown on the chart in your engine manual may be used when the average temperature in your area is within the indicated range. The engine oil capacity is 0.6 liters (20 oz.). The gear reducer oil capacity is 0.15 liters (5 oz.).

The engine itself (**not** the PRO Drive frame) must be in the upright (level) position when filling and checking oil. Oil filling instructions are included in the Honda engine manual.



### **CAUTION:**

**HONDA ENGINES ARE EQUIPPED WITH AN OIL ALERT UNIT. FAILURE TO ADD THE PROPER AMOUNT OF OIL MAY RESULT IN THE ENGINE FAILING TO START. THE ENGINE MAY ALSO SHUT DOWN IF INCLINED DURING OPERATION.**

## 6.6 ENGINE MAINTENANCE

The engine is guaranteed against defects by its manufacturer. Follow the manufacturer's instructions for proper lubrication and maintenance. The following table summarizes the type and frequency of maintenance required. Follow the hourly or calendar intervals, whichever occurs first. For repairs, contact the nearest authorized service center.

TYPE OF MAINTENANCE	FREQUENCY OF SERVICE
Check oil level	Every 5 hours or daily
Change oil	After first 5 hours, then after every 50 hours or every season. Change oil every 25 hours when operating under heavy load or in high temperatures.
Change oil in gear reduction	100 hours or every season
Service air cleaner pre-cleaner if equipped, or air cleaner cartridge if not equipped with pre-cleaner.	25 hours or every season. Clean more often under dusty conditions or when airborne debris is present. Replace air cleaner parts if very dirty.
Service air cleaner cartridge if equipped with pre-cleaner.	100 hours or every season. Clean more often under dusty conditions or when airborne debris is present. Replace air cleaner parts if very dirty.
Clean cooling system.	100 hours or every season. Clean more often under dusty conditions or when airborne debris is present. Replace air cleaner parts if very dirty.
Inspect spark arrester, if equipped.	50 hours or every season.
Replace or clean spark plug.	100 hours or every season
Clean combustion chamber deposits.	100-300 hours.

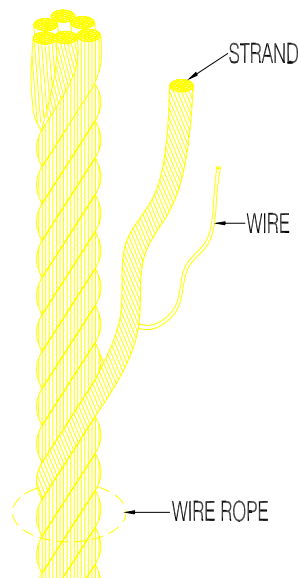
## 6.7 WIRE ROPE INSPECTION PROCEDURE

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.
- (c) Abrasion: Scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
- 3. Kinking: Severe kinking, crushing, bird caging or other damage causing distortion of the rope structure. Bird caging is a bulging in the wire rope caused by the individual wires becoming untwisted. This untwisting of individual wires is usually caused by impact loading on the wire rope (such as a sudden stop).
- 4. Heat damage: Evidence of any heat damage caused by a torch or by contact with electrical wires.
- 5. Reduction of more than 1/64 inch from a nominal 5/16-inch or less diameter wire rope.

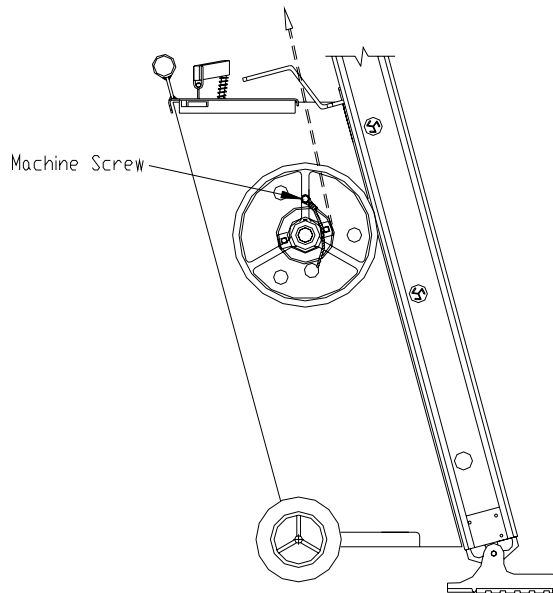


**Figure 6-1.**  
**Wire Rope Components**



## 6.8 REPLACING PRO DRIVE WIRE ROPE

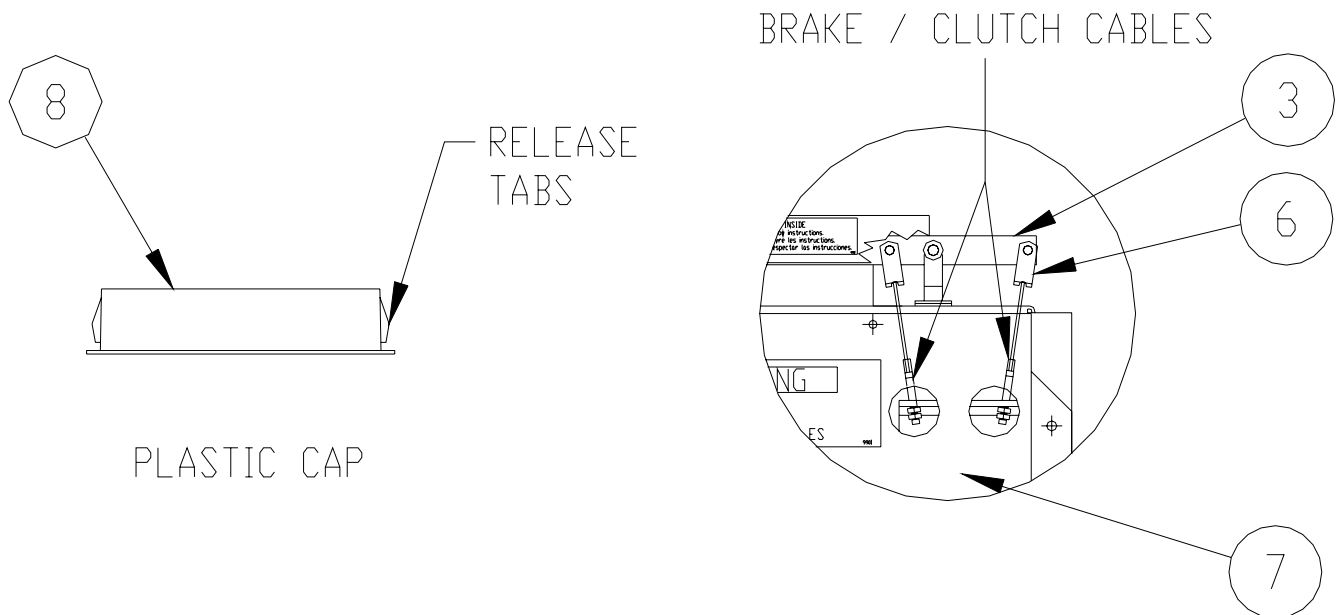
1. Refer to Figure 6-2. Each end of the wire rope is equipped with loops. The small loop is attached to the brake sheave by passing it through the hole and bending it back against the pull or load. It is snubbed over the web of the sheave and fastened to the sheave with the screw provided. The large loop is used for attaching loads with a shackle and hook. On platform units, the hook is mounted on the platform or top bracket, and the loop is slipped over the hook.



**Figure 6-2.**  
**PRO Drive Wire Rope Installation on Brake Sheave**

## 6.9 PRO DRIVE BRAKE/CLUTCH CABLE ADJUSTMENT

1. Refer to Figure 6-4. Before making any cable adjustments, ensure that the brake spring (B/N 11) compression measurement is correct as described in section 6.10.
2. Refer to Figure 6-3. Remove the two cable access round caps (B/N 8) from the drum guard (B/N 7) by depressing the cap release tabs located inside the guard.
3. Ensure the Operator Handle (B/N 1) is installed on the control lever (B/N 3) and held in position with the spring pin (B/N 2).
4. Ensure that both Brake/Clutch cables (B/N 6) are not tensioned. If they do not easily move with light finger pressure loosen the nuts at the bottom of each cable using two seven-sixteenths open-end wrenches and back off both of the upper nuts several turns.
5. Tighten the upper right nut until it just makes contact with the brake differential (B/N 9) then loosen one-quarter turn. While holding the top nut in position with a wrench, use a second wrench to tighten the bottom nut against the top nut.
6. Tighten the upper left nut until it just makes contact with the brake differential, then loosen one full turn. While holding the top nut in position with a wrench, use a second wrench to tighten the bottom nut against the top nut.
7. Replace both cable access round caps.

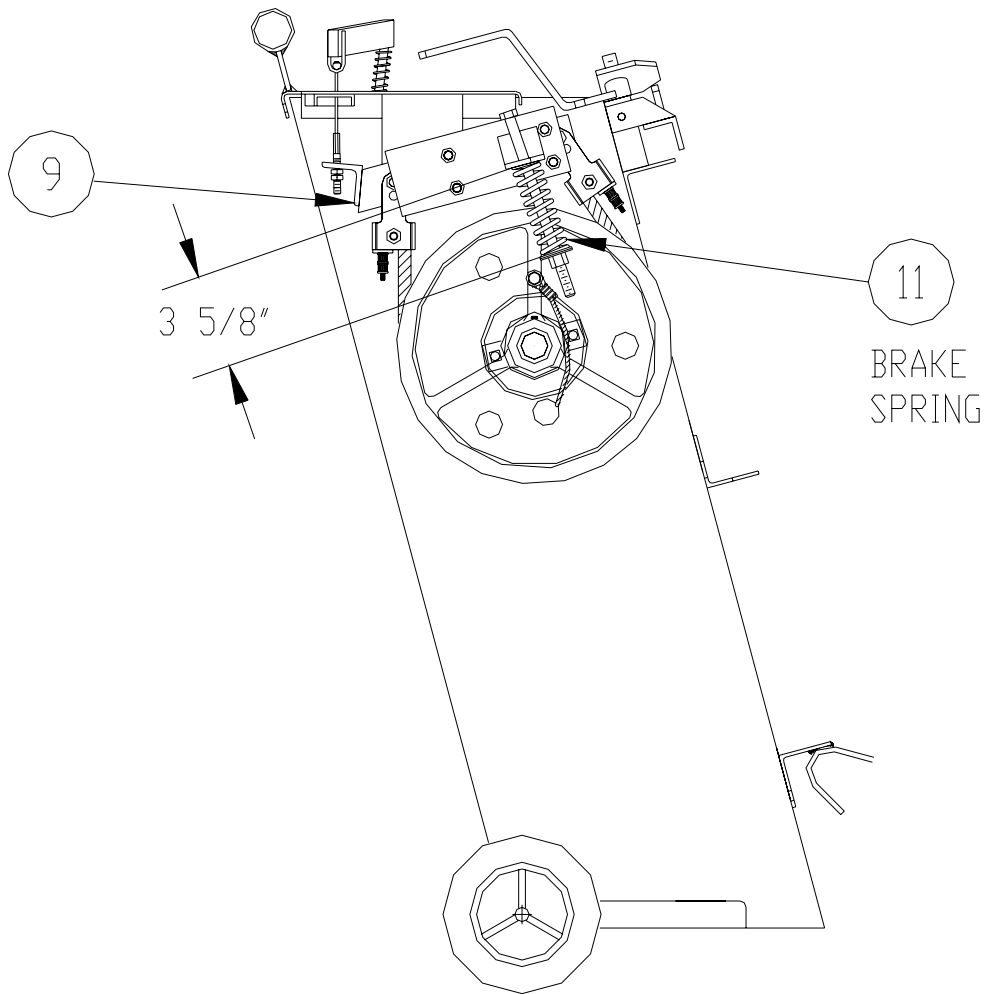


**Figure 6-3.**  
**PRO DRIVE BRAKE/CLUTCH CABLE ADJUSTMENT**

### 6.10 PRO DRIVE BRAKE ADJUSTMENT

1. Lower platform completely and shut off PRO DRIVE. Turn off gas supply, or disconnect from electric power supply.
2. Refer to Figure 6-3. Remove the two cable access round caps (B/N 8) from the drum guard (B/N 7) by depressing the cap release tabs located inside the guard.
3. Ensure that both Brake/Clutch cables (B/N 6) are not tensioned. If they do not easily move with light finger pressure loosen the nuts at the bottom of each cable using two seven-sixteenths open-end wrenches and back off both of the upper nuts several turns.

4. Refer to Figure 6-4. Measure the length of the compressed brake spring only (B/N 11), located on the back of the brake differential (B/N 9). The spring length should be three and five-eighths inches long.
5. If the spring requires length adjustment, use a nine-sixteenths open-end wrench on the bolt head and a nine-sixteenths deep socket on the locknut to turn the nut until spring is at it's correct length.
6. Readjust the Brake/Clutch cables as described in section 6.9 (Brake/Clutch Cable Adjustment).



**Figure 6-4.**  
**PRO DRIVE BRAKE ADJUSTMENT**

## 7 TROUBLESHOOTING

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

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Gas engine will not start	<p>Air filter clogged—replace filter</p> <ol style="list-style-type: none"> <li>1. Too much oil in crankcase—pistons can't come back down which can saturate air filter with oil.</li> <li>2. Tipping the engine, allowing oil to run up the relief tube.</li> <li>3. Air filter dirty after normal use.</li> </ol> <p>Clogged fuel line—replace fuel filter.</p> <p>Fuel shut off in OFF position—turn ON</p> <p>Engine switch in OFF position—turn ON</p> <p>Honda engine low oil trip—engine is positioned at an angle. Honda engine must be level to start. Check oil level.</p>
Electric motor will not start	<p>Blown fuse or tripped circuit breaker—replace or reset as required.</p> <p>Loose connections—check all plug and switch wiring connections</p>
PRO Drive won't lift load or is lifting it very slowly	<p>No oil in engine to build compression—must add oil. Check piston rings for compression.</p> <p>PRO Drive attempting to lift more than stated capacity of unit—check capacity rating and reduce load weight as needed</p> <p>Brake is dragging which may cause a “squealing” noise.</p> <p>Platform not moving freely—check for track obstructions or block and wire rope malfunctions</p> <p>Engine related problems—refer to beginning of this table. Reference to manufacturer's instruction manual may be necessary.</p> <p>On electric motors, extension cord too long which can cause reduced voltage input—shorter cord must be used</p> <p>Engine speed too slow—increase throttling.</p> <p>Too much wire rope on drum—hoisting capacity decreases as wire rope diameter increases.</p>
Engine stalls when operator handle is lifted.	Brake is releasing before clutch belt is tightened.
Platform will not lower.	Platform has been allowed to jam against the spring stops on the top bracket causing the drive belt to jam in the drum sheave—shut off the gas engine or electric motor. Then release the jammed belt by inserting a screwdriver between the belt and the sheave groove.

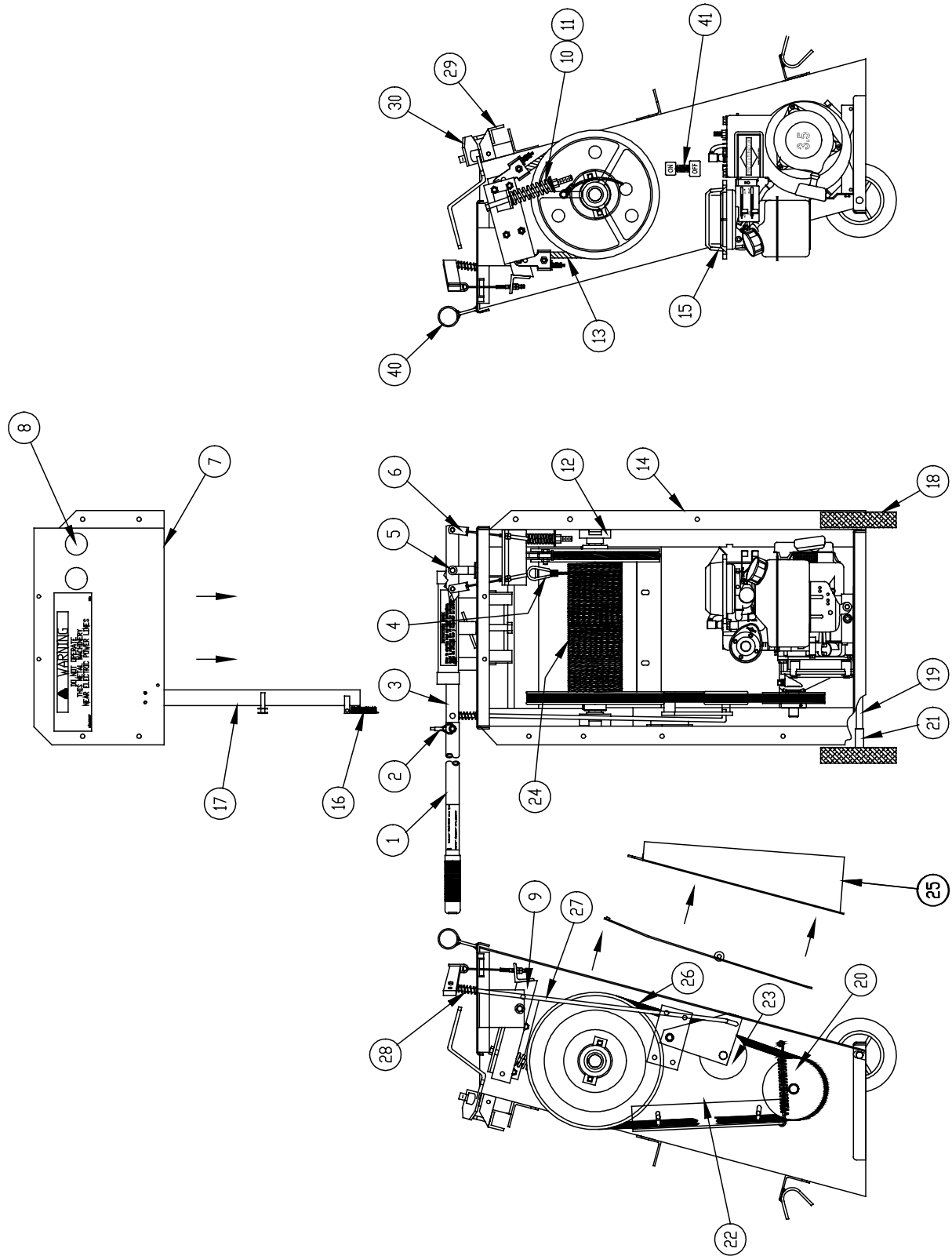
## 8 PARTS LISTS

Each item number on the following parts lists can be matched with the item number shown on the corresponding assembly drawing as indicated below.

### 8.1 PRO DRIVE G AND HG GAS MODELS

Refer to Figure 8-1.

Item Number	Part Number	Quantity	Description
1	0401309	1	OPERATOR HANDLE
2	5800138	2	CLEVIS PIN
3	0401350	1	LEVER
4	7304300	1	WIRE ROPE WITH FITTINGS
5	0401366	1	OPERATOR YOKE WITH HARDWARE
6	0401331	2	BRAKE/CLUTCH CABLE WITH HARDWARE
7	0401398	1	DRUM GUARD W/ DECAL & PLUGS
8	5803512	2	GUARD PLUG
9	0401360	1	BRAKE DIFFERENTIAL
10	5800661	1	INNER COMPRESSION SPRING
11	5803508	1	OUTER COMPRESSION SPRING
12	5100925	2	DRUM BEARING
13	0401395	1	BRAKE ROPE ASSEMBLY W/MTG HDWR
14	0401397	1	FRAME WITH DECALS
15	5500630	1	4HP HONDA ENGINE
	5500726	1	3.5HP BRIGGS & STRATTON ENGINE
	5504588	1	AIR FILTER (BRIGGS & STRATTON )
	5504508	1	AIR FILTER ( HONDA )
	0401344		ENGINE / MOTOR SPACER 3/8"
	0401345		ENGINE / MOTOR SPACER 5/16"
	0401348		ENGINE / MOTOR SPACER 1/8"
16	5803518	1	CLUTCH GUIDE SPRING
17	0401319	1	CLUTCH BELT GUIDE
18	7604130	2	WHEEL
19	0401340	1	AXLE
	5803522	2	PUSH CAP NUT
20	7300732	1	DRIVE SHEAVE
21	5803503	1	AXLE SPACER
22	0401329	1	DRIVE BELT GUIDE
23	0401341	1	IDLER & SHEAVE ASSEMBLY
24	0401346	1	DRUM & WIRE ROPE ASSEMBLY
25	0401371	1	DRIVE BELT GUARD
26	6701304	1	DRIVE BELT
27	0401342	1	IDLER LINKAGE
28	5803506	1	IDLER LINKAGE SPRING
29	0401365	1	CROSS TIE CLAMP
30	0404409	1	CROSS TIE LOCK
40	6403928	2	INSTRUCTION TUBE END CAP
41	5456275	1	TOGGLE SWITCH (HG ONLY)

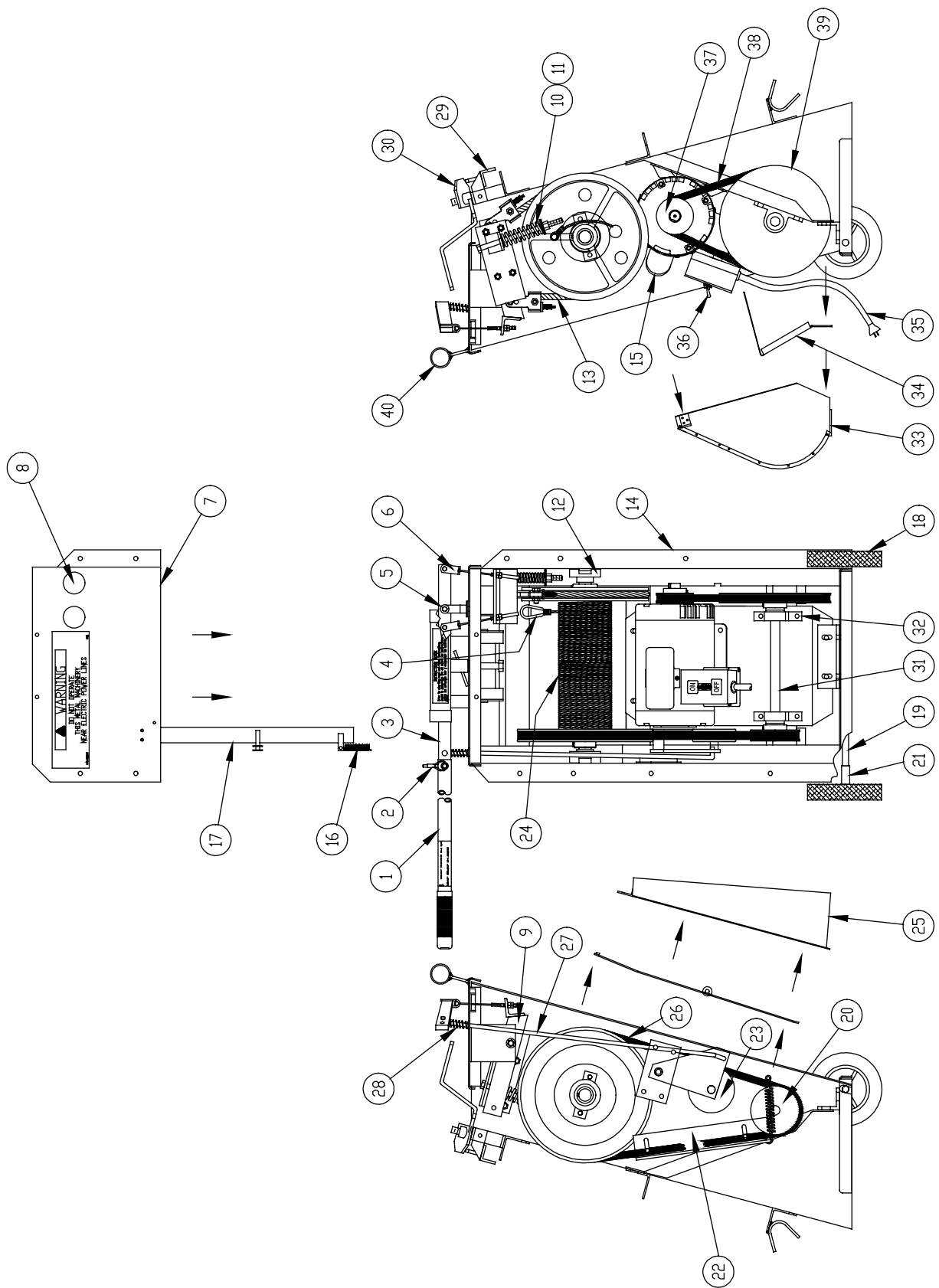


**Figure 8-1.**  
**PRO Drive Gas Assembly Drawing**

## 8.2 PRO DRIVE E ELECTRIC MODEL

Refer to Figure 8-2.

Item Number	Part Number	Quantity	Description
1	0401309	1	OPERATOR HANDLE
2	5800138	2	CLEVIS PIN
3	0401350	1	LEVER
4	7304300	1	WIRE ROPE WITH FITTINGS
5	0401366	1	OPERATOR YOKE WITH HARDWARE
6	0401331	2	BRAKE/CLUTCH CABLE WITH HARDWARE
7	0401398	1	DRUM GUARD W/ DECAL & PLUGS
8	5803512	2	GUARD PLUG
9	0401360	1	BRAKE DIFFERENTIAL
10	5800661	1	INNER COMPRESSION SPRING
11	5803508	1	OUTER COMPRESSION SPRING
12	5100925	2	DRUM BEARING
13	0401395	1	BRAKE ROPE ASSEMBLY W/MTG HDWR
14	0401397	1	FRAME WITH DECALS
15	0401374	1	1.5HP ELECTRIC MOTOR
	0401344		ENGINE / MOTOR SPACER 3/8"
	0401345		ENGINE / MOTOR SPACER 5/16"
	0401348		ENGINE / MOTOR SPACER 1/8"
16	5803514	1	CLUTCH GUIDE SPRING
17	0401319	1	CLUTCH BELT GUIDE
18	7604130	2	WHEEL
19	0401340	1	AXLE
	5803522	2	PUSH CAP NUT
20	7300153	1	DRIVE SHEAVE
21	5803503	1	AXLE SPACER
22	0401329	1	DRIVE BELT GUIDE
23	0401341	1	IDLER & SHEAVE ASSEMBLY
24	0401346	1	DRUM & WIRE ROPE ASSEMBLY
25	0401371	1	DRIVE BELT GUARD
26	6701305	1	DRIVE BELT
27	0401342	1	IDLER LINKAGE
28	5803506	1	IDLER LINKAGE SPRING
29	0401365	1	CROSS TIE CLAMP
30	0404409	1	CROSS TIE LOCK
31	0401370	1	COUNTER SHAFT
32	5100728	2	BEARING
33	0401372	1	ELECTRIC MOTOR GUARD
34	0401373	1	COUNTERSHAFT GUARD
35	5400173	1	POWER CORD
36	5401302	1	TOGGLE SWITCH
37	7300730	1	SHEAVE
38	6701303	1	BELT
39	7301302	1	SHEAVE
40	6403928	2	INSTRUCTION TUBE END CAP



**Figure 8-2.**  
**PRO Drive Electric Assembly Drawing**