OPERATION MANUAL

MULTIQUIP®

PRO SERIES
WALK-BEHIND TROWELS

(HONDA GASOLINE ENGINES)

Revision #0 (9/21/17)

Original Version

To find the latest revision of this publication, visit our website at: www.multiquip.com

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

PN: 13409

⚠ WARNING

Gasoline engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks.**
- **Cement and other masonry products.**
- **Arsenic and chromium from chemically treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: ALWAYS work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

⚠ WARNING

SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow the respiratory precautions mentioned above.

⚠ WARNING

RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.

PRO Series Walk-Behind Trowels

Training Checklist			
No.	**Description**	**OK?**	**Date**
1	Read operation manual completely.		
2	Machine layout, location of components, checking of engine oil level.		
3	Fuel system, refueling procedure.		
4	Operation of controls (machine not running).		
5	Safety controls, safety stop switch operation.		
6	Emergency stop procedures.		
7	Startup of machine, engine choke.		
8	Maintaining a hover.		
9	Maneuvering.		
10	Pitching.		
11	Concrete finishing techniques.		
12	Shutdown of machine.		
13	Lifting of machine (lifting bail).		
14	Machine transport and storage.		

DAILY PRE-OPERATION CHECKLIST

Daily Pre-Operation Checklist		✓	✓	✓	✓	✓	✓
1	Engine oil level						
2	Gearbox oil level						
3	Condition of blades						
4	Blade pitch operation						
5	Safety stop switch operation						

Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.

SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER, WARNING, CAUTION** or **NOTICE.**

SAFETY SYMBOLS

DANGER

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY.**

WARNING

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY.**

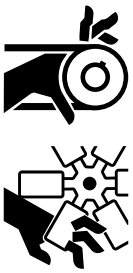
CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY.**

NOTICE

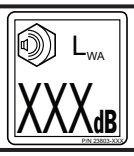
Addresses practices not related to personal injury.

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Rotating parts hazards
	Pressurized fluid hazards

DECALS

Decals associated with the operation of this equipment are defined below.

DECAL	DEFINITION
	**DANGER** Training This machine to be operated by qualified personnel only. Ask for training as needed.
	**DANGER** Inhalation Hazard **DO NOT** use this equipment in an enclosed area. The engine emits harmful levels of carbon monoxide which can cause severe bodily harm—even death!
	**DANGER** Lifting/Crush Hazard Keep persons clear from a lifted trowel. **DO NOT** stand beneath trowel. **DO NOT** lift trowel with pans attached.
	**WARNING** Read Manual To avoid injury, you must read and understand the operator's manual before using this machine.
	**WARNING** Belt Guard Hazard Keep hands and fingers clear from engine belts. Moving parts can cause injury. **DO NOT** remove guards.
	**WARNING** Rotating Blade Hazard Keep hands and fingers clear from engine fan blades. Moving parts can cut. **DO NOT** remove guards.
	**NOTICE** Noise Level Indicates value of sound pressure of equipment. Measured at operator's seat.
	**NOTICE** Protective Clothing Wear appropriate clothing while operating trowel.

GENERAL SAFETY

⚠ CAUTION

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.

- Avoid wearing jewelry or loose fitting clothes that may snag on the controls or moving parts as this can cause serious injury.
- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.

- **NEVER** operate this equipment under the influence of drugs or alcohol.

- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.
- No one other than the operator is to be in the working area when the equipment is in operation.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.

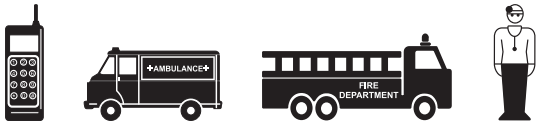
NOTICE

- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.

- **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **ALWAYS** know the location of the nearest **fire extinguisher.**

- **ALWAYS** know the location of the nearest **first aid kit.**

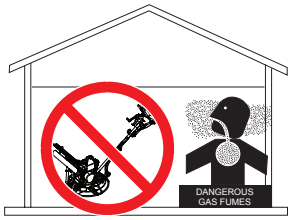
- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site.** Also, know the phone numbers of the nearest **ambulance, doctor** and **fire department.** This information will be invaluable in the case of an emergency.



TROWEL SAFETY

⚠ DANGER

- Engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.
- The engine of this equipment requires an adequate free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death.**

⚠ WARNING

- **ALWAYS** keep clear of rotating or moving parts while operating the trowel.

- **DO NOT** start or operate the trowel if the drive train will not disengage. Centrifugal force between the trowel and surface when starting can cause uncontrolled handle movement that can cause serious injury. The handle must not move while pulling the engine recoil starter.
- **NEVER** disconnect any **emergency or safety devices.** These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.

⚠ CAUTION

- **NEVER** stand on trowel during operation.
- **NEVER** lubricate components or attempt service on a running machine.
- **NEVER** place your feet or hands inside the guard rings while starting or operating this equipment.

NOTICE

- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.
- A safety manual for operating and maintenance personnel of concrete power trowels produced by the Association of Equipment Manufacturers (AEM) can be obtained for a fee by ordering through their website at www.aem.org.

  Order FORM PT-160

ENGINE SAFETY

⚠ WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.
- **NEVER** operate the engine with heat shields or guards removed.
- Keep fingers, hands hair and clothing away from all moving parts to prevent injury.

- **DO NOT** remove the radiator cap while the engine is hot. High pressure boiling water will gush out of the radiator and severely scald any persons in the general area of the trowel.
- **DO NOT** remove the coolant drain plug while the engine is hot. Hot coolant will gush out of the coolant tank and severely scald any persons in the general area of the trowel.

- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the trowel.

⚠ CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.

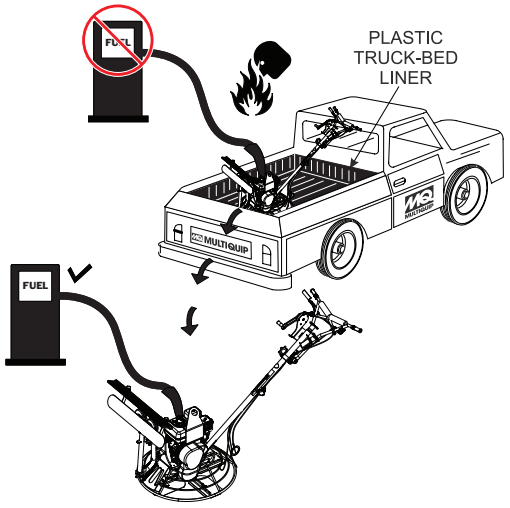
NOTICE

- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.

FUEL SAFETY

⚠ DANGER

- DO NOT add fuel to equipment if it is placed inside truck bed with plastic liner. Possibility exists of explosion or fire due to static electricity.



- **DO NOT** start the engine near spilled fuel or combustible fluids. Fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with **flammable** liquids.
- **DO NOT** fill the fuel tank while the engine is running or hot.
- **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.

TRANSPORTING SAFETY

⚠ CAUTION

- **NEVER** allow any person or animal to stand underneath the equipment while lifting.

NOTICE

- Some walk-behind trowels can be lifted or moved by two people utilizing lifting tubes or other special attachments. Generally, however, they must be lifted using lifting bales and cranes, hoists, or forklifts.
- **NEVER** transport trowel with float pans attached unless safety catches are used and are specifically cleared for such transport by the manufacturer.
- **NEVER** hoist the trowel more than three feet off the ground with float pans attached.
- Before lifting, make sure that the lifting bales are not damaged.
- Always make sure crane or lifting device has been properly secured to the lifting bales of the equipment.
- **ALWAYS** shutdown engine before transporting.
- **NEVER** lift the equipment while the engine is running.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- **DO NOT** lift machine to unnecessary heights.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope.

ENVIRONMENTAL SAFETY/DECOMMISSIONING

NOTICE

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unrepairable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement),be sure to follow rules below.

- **DO NOT** pour waste or oil directly onto the ground, down a drain or into any water source.
- Contact your country's Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.

- When the life cycle of this equipment is over, remove battery and bring to appropriate facility for lead reclamation. Use safety precautions when handling batteries that contain sulfuric acid.
- When the life cycle of this equipment is over, it is recommended that the trowel frame and all other metal parts be sent to a recycling center.

  Metal recycling involves the collection of metal from discarded products and its transformation into raw materials to use in manufacturing a new product.

  Recyclers and manufacturers alike promote the process of recycling metal. Using a metal recycling center promotes energy cost savings.

EMISSIONS INFORMATION

NOTICE

The gasoline engine used in this equipment has been designed to reduce harmful levels of carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx) contained in gasoline exhaust emissions.

This engine has been certified to meet US EPA Evaporative emissions requirements in the installed configuration.

Attempting to modify or make adjustments to the engine emmission system by unauthorized personnel without proper training could damage the equipment or create an unsafe condition.

Additionally, modifying the fuel system may adversely affect evaporative emissions, resulting in fines or other penalties.

Emission Control Label

The emission control label is an integral part of the emission system and is strictly controlled by regulation(s).

The label must remain with the engine for its entire life.

If a replacement emission label is needed, please contact your authorized Honda Engine Distributor.

Table 1. PRO Series Trowel Specifications		
Model	PRO36	PRO46
Number of Blades (Rotor)	4	
Number of Blades (Fresno)	1	
Ring Diameter	36 in. (914 mm)	46 in. (1,168 mm)
Rotor RPM (Dry Concrete)	60–115	60–130
Path Width	36 in. (914 mm)	46 in. (1,168 mm)
Shipping Weight	301 lb. (137 kg)	357 lb. (162 kg)
Gearbox Oil Capacity	57 oz. (1,686 ml)	
Gearbox Oil Type	Mobil SHC™ 634 Industrial Synthetic Gear Oil	

Table 2. Honda Engine Specifications		
Engine Model	Honda GX270UT2QA2	Honda GX340UT2QAP2
Trowel Model	PRO36	PRO46
Type	Air-Cooled 4-Stroke, Single-Cylinder, OHV, Horizontal Shaft, Gasoline Engine	
Bore × Stroke	3.0 in. × 2.3 in. (76 mm × 58 mm)	3.5 in. × 2.5 in. (89 mm × 64 mm)
Displacement	16 in^3 (262 cm^3)	24 in^3 (393 cm^3)
Max. Output	8.5 hp (6.3 kW) @ 3,600 rpm	10.7 hp (8.0 kW) @ 3,600 rpm
Fuel Tank Capacity	6.4 Quarts (6.1 Liters)	
Fuel	Unleaded Gasoline	
Oil Capacity	1.16 Quarts (1.1 Liters)	
Oil Type	4-Stroke API, SF or SG SAE 10W-30 General Use	
Speed Control Method	Centrifugal Mass Type	
Starting Method	Recoil Start	
Spark Plug Type	BPR5ES NGK	BPR6ES NGK
Spark Plug Gap	0.028–0.031 in. (0.7–0.8 mm)	
Dimensions (L × W × H)	15 × 16.9 × 16.6 in. (381 × 429 × 422 mm)	16 × 19.1 × 17.7 in. (406 × 485 × 450 mm)
Dry Net Weight	55 lb. (25 kg)	69 lb. (31.3 kg)

Table 3. PRO Series Trowel Noise and Vibration Emissions		
Model	PRO36	PRO46
Guaranteed ISO 11201:2010 Based Sound Pressure Level at Operator Station in dB(A)[a]	96	
Guaranteed ISO 3744:2010 Based Sound Power Level in dB(A)[b]	122	121
Hand-Arm Vibration Per ISO 5349-1:2001 in m/s^2 $\sum A(8)$	1.22	1.94

a. With an uncertainty factor K of 2.5 dB(A) included per Note 1 in section 7.2.1 of EN 12649::2008+A1:2011

b. With an uncertainty factor K of 1.5 dB(A) included per Note 1 in section 7.2.1 of EN 12649::2008+A1:2011

NOTES:

1. *Sound pressure and power levels are "A" weighted measures per ISO 3744:2010. They are measured with the operating condition of the machine which generates the most repeatable but highest values of the sound levels. Under normal circumstances, the sound level will vary depending on the condition of the material being worked upon.*
2. *The vibration level indicated is the vector sum of the RMS (root mean square) values of amplitudes on each axis, standardized to an 8-hour exposure period, and obtained using operating condition of the machine that generates the most repeatable but highest values in accordance with the applicable standards for the machine.*
3. *Per EU Directive 2002/44/EC, the daily exposure action value for hand/arm vibration is 2.5 m/s^2 $\sum A(8)$. The daily exposure limit value is 5 m/s^2 $\sum A(8)$.*

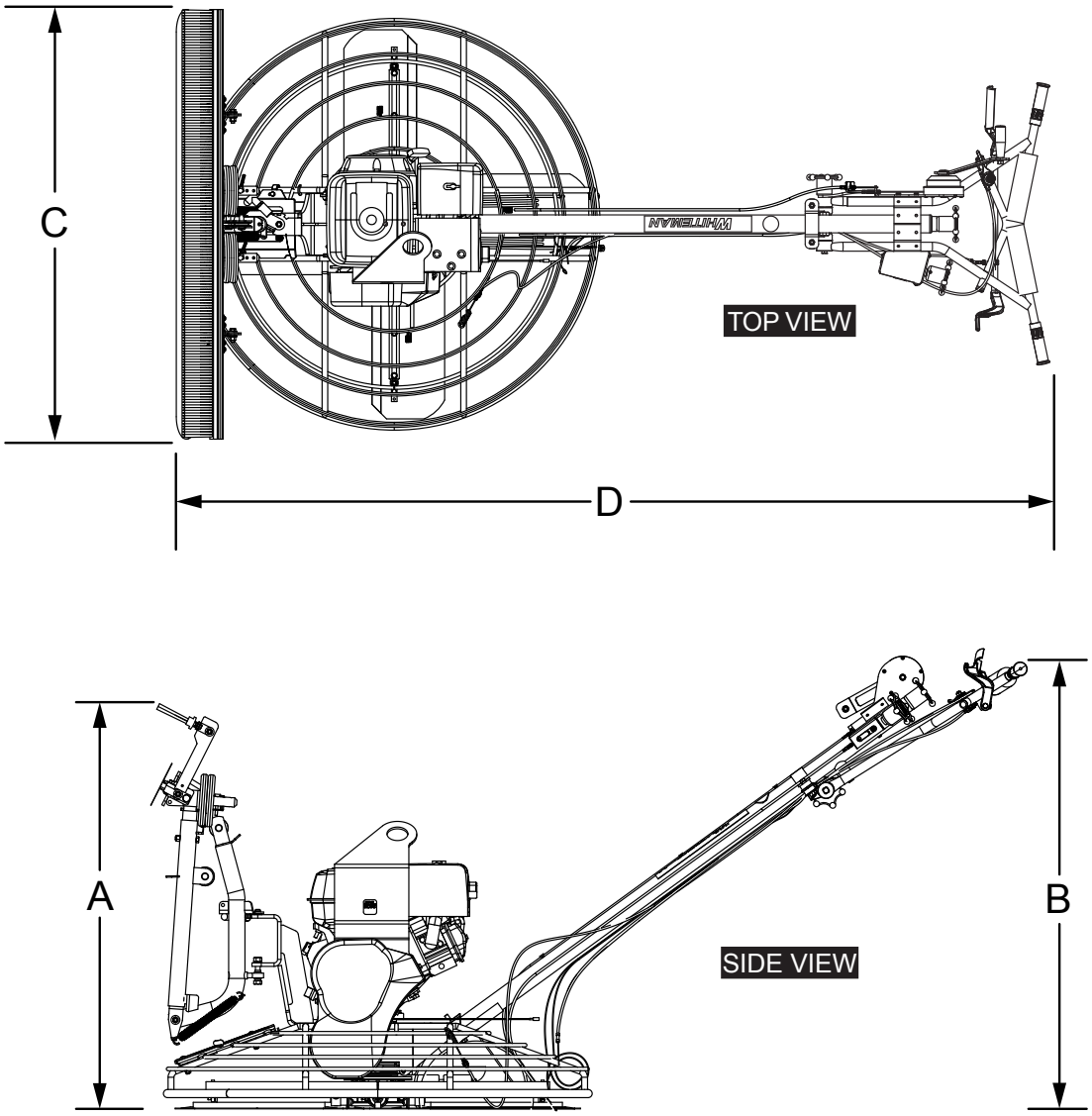


Figure 1. Dimensions

Table 4. PRO Series Trowel Dimensions		
Model	PRO36	PRO46
(A) Height (Fresno Brush)	31.7 in. (805 mm)	34.5 in. (876 mm)
(B) Height (Handle)	41.4 in. (1,052 mm)	41.1 in. (1,044 mm)
(C) Width (Ring Diameter)	36.5 in. (927 mm)	46 in. (1,168 mm)
(D) Length	70.5 in. (1,791 mm)	75.2 in. (1,910 mm)

INTENDED USE

Operate this trowel, its components, and tools in accordance with the manufacturer's instructions. Use of any other tools for stated operation is considered contrary to designated use. The risk of such use lies entirely with the user. The manufacturer cannot be held liable for damages as a result of misuse.

TROWEL FAMILIARIZATION

Read all safety instructions carefully. Safety instructions will be found throughout this manual and on the trowel. Keep all safety information in good, readable condition. Operators should be well trained on the operation and maintenance of the trowel.

This walk-behind trowel is designed for the floating and finishing of concrete slabs.

Walk around the trowel and take notice of all the major components (Figure 2)—the engine, blades, steering handle, gearbox, etc. Make sure there is always oil in the engine.

Before using your trowel, test it on a flat, watered-down section of finished concrete that is free of debris and other objects.

This trial test run will increase your confidence in using the trowel and will familiarize you with the trowel's controls. You will learn how the trowel handles under actual conditions.

ENGINE

These trowels are equipped with Honda gasoline engines (see Table 2) ranging from 8.5 to 10.7 horsepower. Refer to the engine owner's manual for instructions regarding the operation and maintenance of your engine. If the original manual is lost or damaged, please contact your nearest Multiquip dealer for a replacement.

INSTACLUTCH™ DRIVE SYSTEM

Power is transferred from the engine to the gearbox input shaft via a V-belt pulley drive system. The pulley engages an innovative InstaClutch™ system that immediately disengages the drive system when the operator releases the handle. The advanced friction clutch stops the unit within a quarter of a turn, even when running at full RPM. It also eliminates the need to throttle down during momentary work stoppages. The operator can safely resume operation without having to restart the engine.

GEARBOX

The gearbox is located beneath the engine and transfers power to the spider assembly. The gearbox controls the rotational speed of the trowel and is equipped with two shafts (input and output).

SPIDER

The vertical output shaft of the gearbox connects to a cast hub called the spider. The spider has four arms that extend outward, to which blades or other accessories are attached. As the gearbox output shaft rotates, so does the spider assembly.

BLADES

The blades of the trowel finish concrete as they are rotated around the surface. This trowel comes equipped with four combination blades, equally spaced in a radial pattern, attached to the vertical rotating shaft by means of the spider assembly.

GUARD RING

This unit is equipped with a safety guard ring to help prevent objects from coming into contact with the rotating blades while the trowel is in operation.

FRESNO BLADE

The fresno blade follows the path of the four combination blades and provides a smooth finish over large areas without the user having to walk out on the troweling surface. This trowel comes equipped with a single fresno screed blade (5 in./127 mm wide, 48 in./1,219 mm long) that is raised and lowered via a winch crank handle.

FRESNO BRUSH

The fresno brush follows the path of the fresno blade and four combination blades to provide a textured, decorative finish to the troweling surface. The fresno brush is designed to follow the path of the fresno blade in a floating, or loose, configuration. The floating configuration allows trowel operators to independently match the fresno brush to their troweling preference without the need to manually pitch the brush on each pass.

MECHANICAL BOOM

The mechanical boom is mounted in front of the trowel unit and supports the fresno brush, fresno blade, and optional plated weights. The boom raises and lowers the brush and blade via the hand crank winch, and can rotate 180° laterally, which is adjustable based on the operator's preference and troweling surface.

TRAINING

For proper training, please use the ***Training Checklist*** form located in the front of this manual. This checklist will provide an outline for an experienced operator to provide training to a new operator.

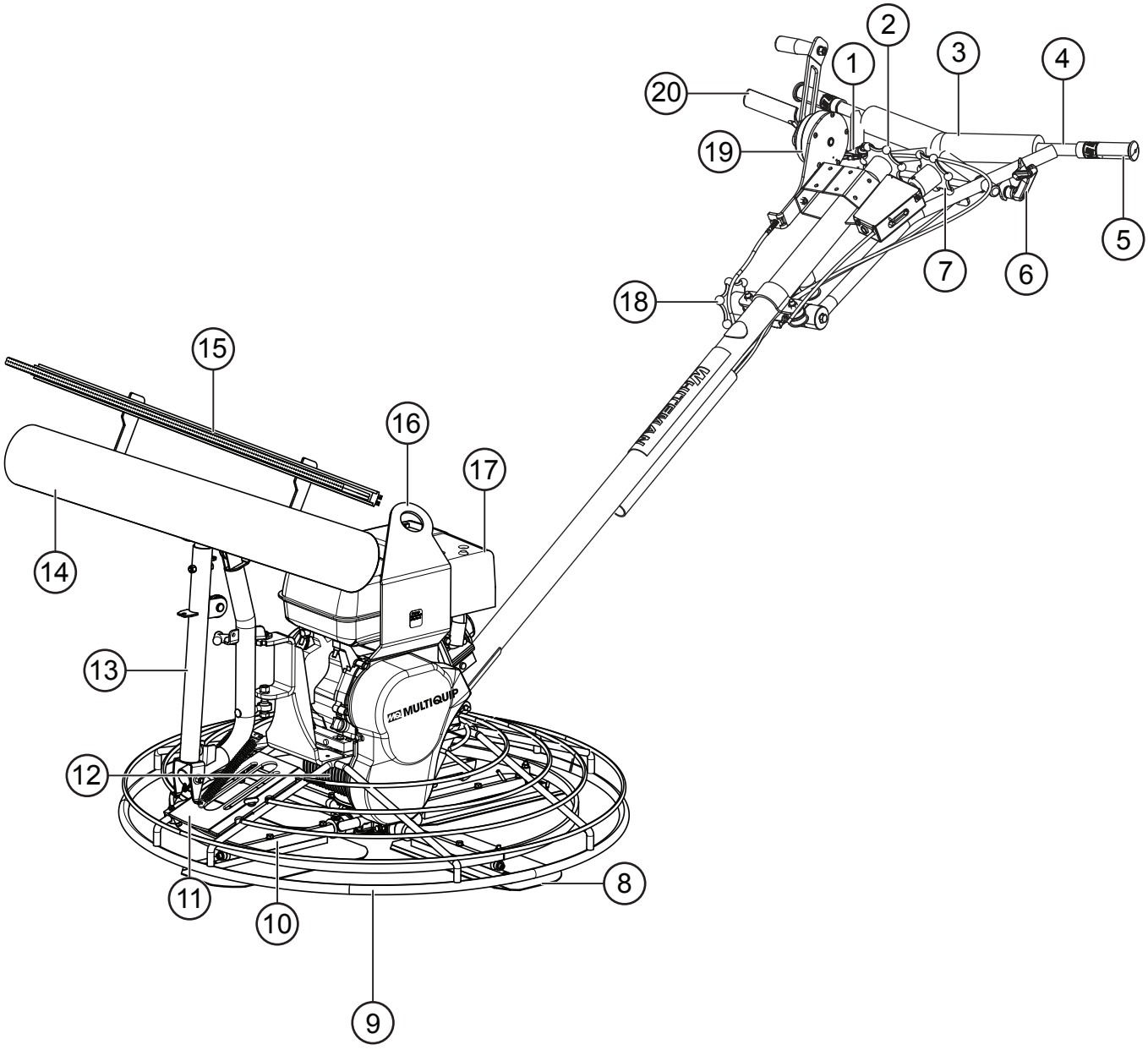


Figure 2. PRO Series Trowel Components

Figure 2 shows the location of the basic trowel components. Listed below is a brief explanation of each component.

1. **Throttle Lever** — Controls engine speed. Returns the engine to **idle** when released.
2. **Pitch Control Star Wheel (Combo Blades)** — Rotate the star wheel **clockwise** to pitch the blades upward. Rotate the star wheel **counterclockwise** to pitch the blades flat (no pitch).
3. **Handlebar Pad** — Foam rubber pad that protects the body when coming into contact with the handlebar.
4. **Vibratory Handlebar** — Rubber shock mounts/ isolators reduce trowel vibration.
5. **Hand Grips (2)** — **ALWAYS** place hands on **both** hand grips when maneuvering the trowel. Replace hand grips when they become worn or damaged.
6. **Left Clutch Lever** — The secondary clutch lever. Squeeze to engage the clutch and start blade rotation.
7. **Pitch Control Star Wheel (Fresno Blade)** — Rotate the star wheel **clockwise** to pitch the fresno blade upward. Rotate the star wheel **counterclockwise** to pitch the fresno blade flat (no pitch).
8. **Blades (4)** — Versatile combination blades should take care of most troweling needs.
9. **Guard Ring** — **NEVER** put hands or feet inside the guard ring while the engine is running.
10. **Trowel Arms (4)** — Combination blades attach here. In addition, float discs can be attached to the trowel arms that will allow the trowel to "float" on wet concrete.

NOTICE

NEVER operate the trowel with a bent, broken, or out-of-adjustment trowel arm. If the blades show uneven wear patterns, or some blades wear out faster than others, the trowel arm may need to be adjusted. Refer to the ***Maintenance*** section for more information.

11. **Access Panel** — Allows access to the blade area. **NEVER** run the trowel with the access panel removed.
12. **Gearbox** — Helical worm gear drive gearbox. Provides rotation of blades via engine interface. **ALWAYS** check the gearbox oil level (sight glass) prior to each use. Fill with Mobil SHC™ 634 gearbox oil as needed.
13. **Mechanical Boom** — Works in conjunction with the boom winch to raise or lower the fresno blade and brush. Rotates 180°. Removable weights provide added stability.
14. **Fresno Blade** — Large troweling blade attached to the mechanical boom arm provides a smooth finish over large areas without the need for the operator to walk on the troweling surface.
15. **Fresno Brush** — Large brush attached to the fresno blade provides a textured or decorative finish to the troweling surface. There are three different fresno brushes compatible with this unit, color-coded for texture (stiffness): black (soft), orange (medium), and green (stiff).
16. **Lifting Bail** — Attach a suitable lifting device to the lifting bail whenever lifting of the trowel is required.
17. **Engine** — Honda gasoline engine. Refer to Table 2 for engine specifications and Figure 3 for engine components.
18. **Handlebar Adjuster** — Change the angle or height of the handlebar by loosening the star wheel. Adjust the handlebar to the desired location and tighten the star wheel firmly to secure the handlebar in position.
19. **Boom Winch** — Mechanical device used to raise or lower the trowel boom arm. Rotating the crank handle **clockwise** will lower the boom arm, and rotating the handle **counterclockwise** will raise the boom arm.
20. **Right Clutch Lever** — The primary clutch lever. Squeeze to engage the clutch and rotate the blades.

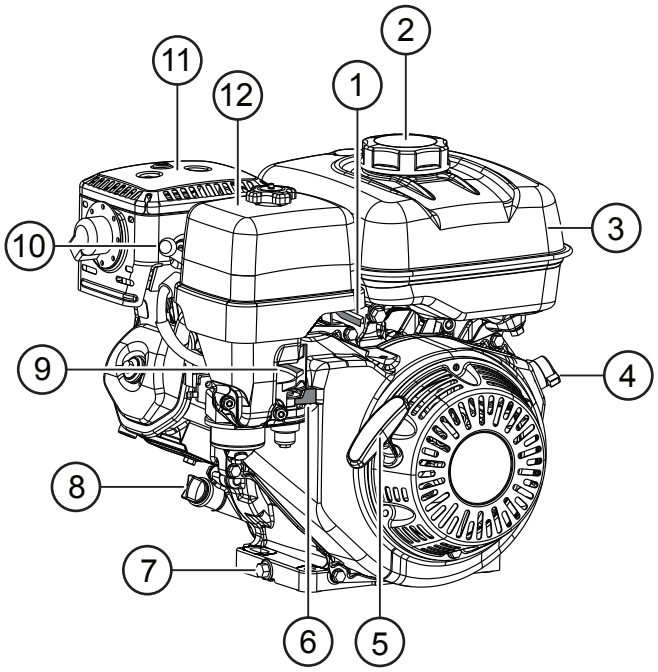


Figure 3. Honda Engine Components

INITIAL SERVICING

The Honda gasoline engine (Figure 3) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's engine manual for detailed operation and service instructions.

1. **Throttle Lever** — Adjusts engine RPM speed.
2. **Fuel Filler Cap** — Remove to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. **DO NOT** overfill.

DANGER

DO NOT fill the fuel tank while the engine is running or hot. In the event of a fuel spill, **DO NOT** start the engine until all fuel residue has been wiped up and the area surrounding the engine is dry. Fuel is **extremely flammable** and can ignite if it comes into contact with hot engine parts or sparks from the ignition system.

3. **Fuel Tank** — Holds up to 0.825 gallons (3.1 liters) of unleaded gasoline. Refer to the manufacturer's engine manual for additional information.
4. **Engine ON/OFF Switch** — **ON** position permits engine starting, **OFF** position stops the engine.

CAUTION

NEVER disable or disconnect the engine **ON/OFF** switch. It is provided for operator safety. Injury may result if it is disabled, disconnected, or improperly maintained.

5. **Recoil Starter** — Manual starting mechanism. Slowly pull the starter grip until resistance is felt, then pull briskly and smoothly to start the engine.
6. **Fuel Valve Lever** — Open to allow the flow of fuel, and close to prevent the flow of fuel.
7. **Oil Drain Bolt** — Remove to drain oil from the engine crankcase.
8. **Dipstick/Oil Filler Cap** — Remove to determine if engine oil is low. Add oil through this port as recommended in Table 5.
9. **Choke Lever** — Aids in starting a cold engine, or starting in cold weather conditions. The choke enriches the fuel mixture.
10. **Spark Plug** — Provides spark to the ignition system. Set the spark plug gap according to the engine manufacturer's instructions, and clean the spark plug once a week.
11. **Muffler** — Reduces noise and emissions. **NEVER** touch the muffler while it is hot.

WARNING

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.

12. **Air Cleaner** — Prevents dirt and other debris from entering the fuel system. Remove the wing nut on top of the air cleaner to gain access to the filter elements.

NOTICE

Operating the engine without an air filter, or with a damaged or worn air filter in need of replacement, will allow dirt to enter the engine, causing rapid engine wear.

UNPACKING THE HANDLE

The handle (Figure 4) is shipped in the folded, or stowed, position.

1. To place the folding upper handle in the operational position, turn the star wheel **counterclockwise** to release it from its folded/stowed position.
2. Pull back on the upper handle to place the handle in the operational position. Turn the star wheel **clockwise** to secure the handle firmly in place.

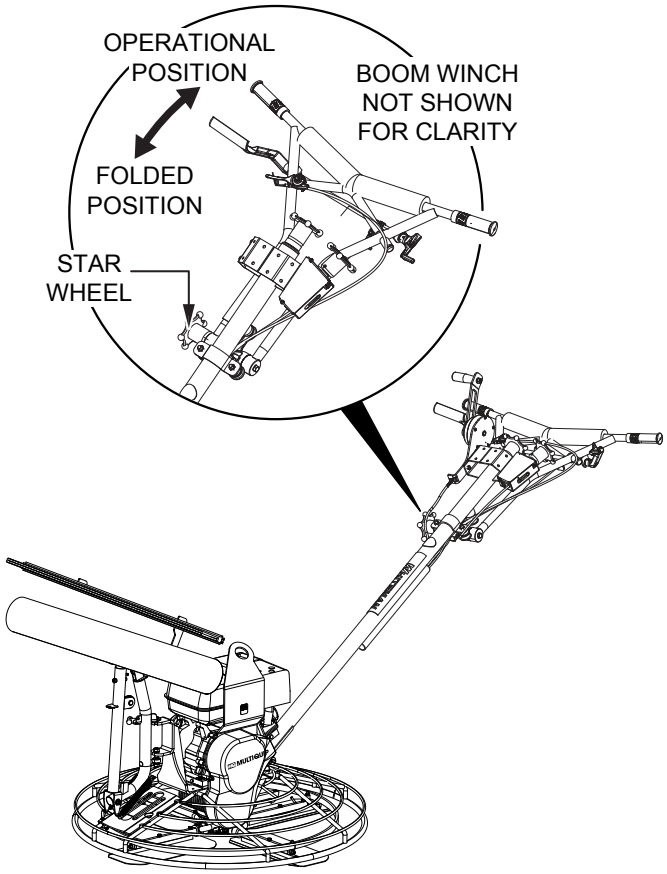


Figure 4. Unpacking The Handle

ASSEMBLY AND INSTALLATION

Some components must be installed before the trowel can be operated. This section provides general instructions on how to install these components.

Handle Tube Installation

Attach the main handle (tube) to the gearbox using the supplied hardware as shown in Figure 5.

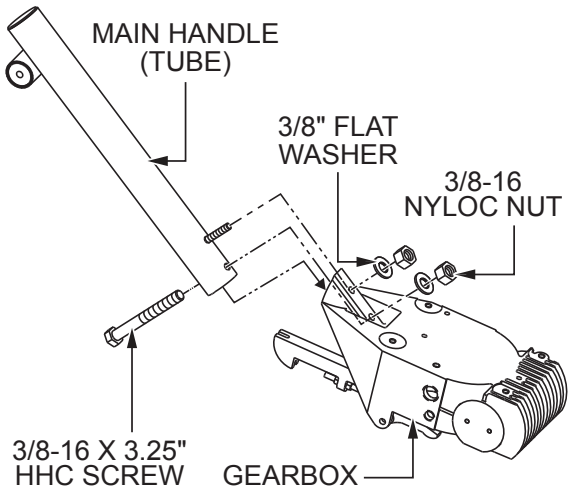


Figure 5. Handle Tube Installation

Vibratory Handlebar Adjustment

The vibratory handlebar is already attached to the main handle tube.

To adjust the height of the handlebar, loosen the star wheel (Figure 6), and move the handlebar to the desired position. Tighten the star wheel firmly to secure.

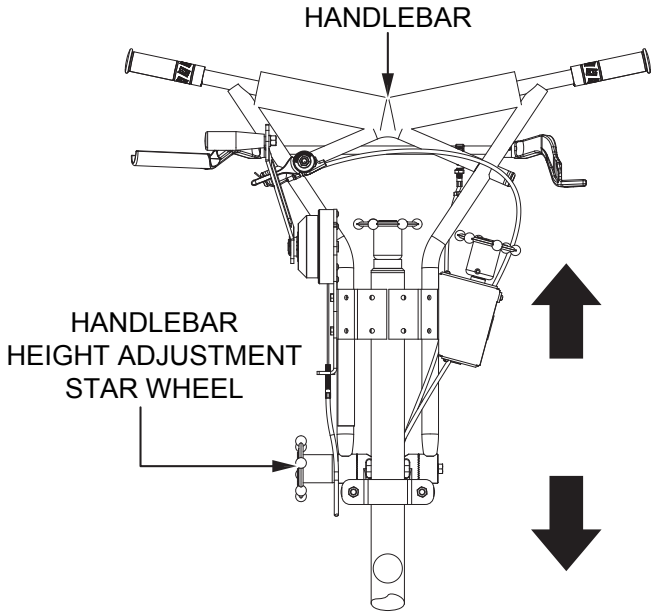


Figure 6. Handlebar Adjustment

Blade Pitch Cable Installation

1. Turn the star wheel **counterclockwise** to pitch the blades flat.This releases tension on the pitch cable (Figure 7).

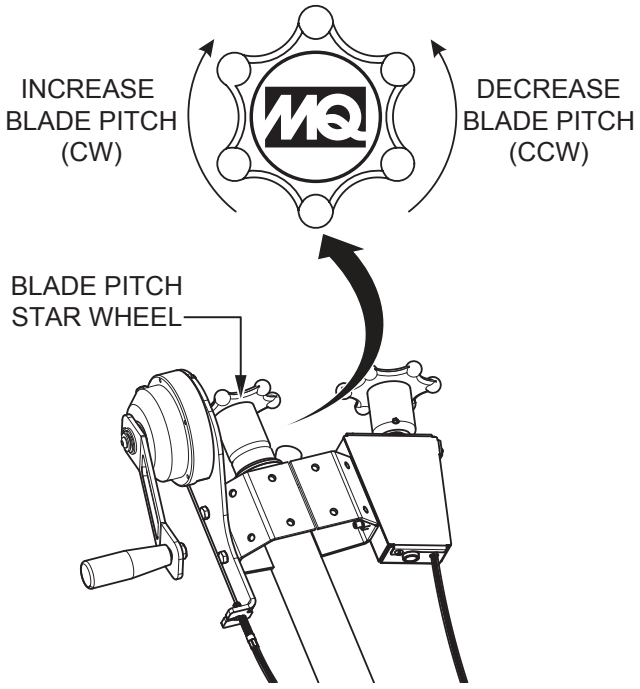


Figure 7. Blade Pitch Cable Adjustment

2. Remove brass set nut #1 from the end of the blade pitch cable (Figure 8).

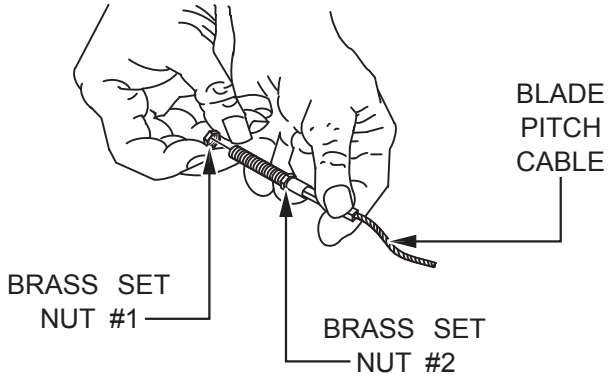


Figure 8. Blade Pitch Cable

3. Thread brass set nut #2 as far as possible towards the blade pitch cable (Figure 8).

4. Insert the blade pitch cable end through the yoke eyelet (Figure 9). Tighten brass set nut #1 by hand to remove all the slack from the cable.

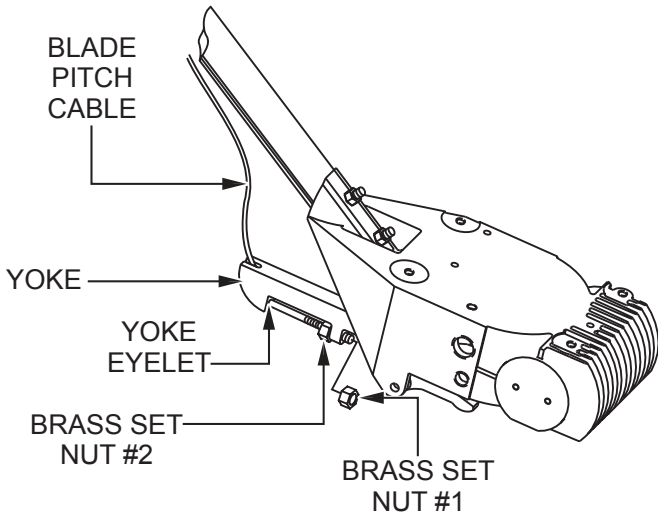


Figure 9. Cable Yoke Attachment

5. Tighten brass set nut #2 against the yoke boss to secure the cable in place.

6. Tighten brass set nut #1 against the yoke boss.

Throttle Cable Installation

1. Uncoil the throttle cable and housing.

2. Make sure the throttle cable is fed through the tube on the underside of the handle and secured to the upper handle and main tube with zip ties.

3. Place the throttle lever (Figure 10) in the **RUN** position.

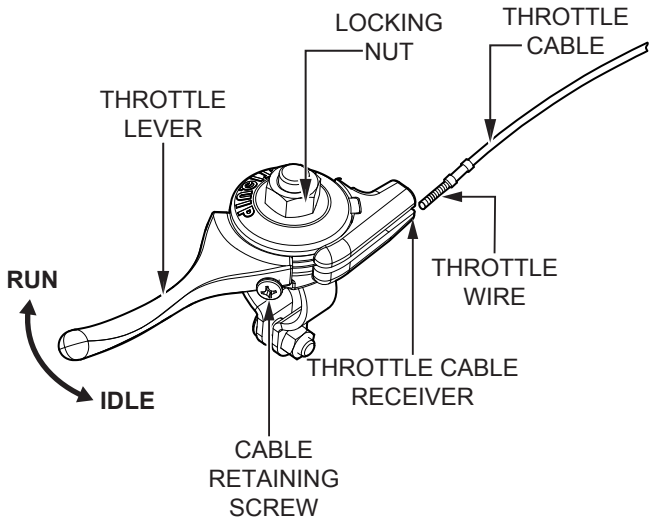


Figure 10. Adjusting Cable Tension

4. Loosen the cable housing clamp screw and the swivel stop screw (Figure 11).

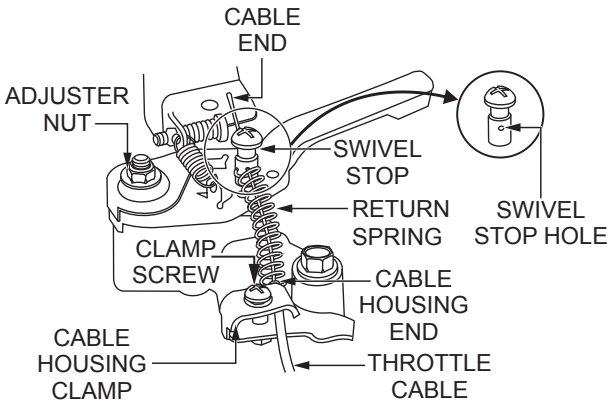


Figure 11. Throttle Cable Installation

5. Place the primary throttle return spring between the cable housing clamp and the swivel stop screw (Figure 11).
6. Feed the cable assembly through the cable housing clamp, return spring, and swivel stop hole, until the cable housing extends under the housing clamp to its far edge (Figure 11).
7. On the throttle lever, slightly loosen the locking nut and cable retaining screw (Figure 10).
8. Make sure the throttle cable is seated in the throttle cable receiver (Figure 10).
9. Route the throttle wire approximately 1/2 inch past the cable retaining screw (Figure 10). Tighten the cable retaining screw to secure the throttle wire.
10. Adjust cable tension as needed by loosening or tightening the locking nut and cable retaining screw on the throttle lever (Figure 10).

NOTICE

If the throttle lever does not return to the **neutral** position with the throttle backed off, loosen the adjusting nut 1/2 turn at a time, tighten, and recheck. Readjust throttle tension as necessary.

InstaClutch™ Cable Installation

1. Uncoil the free end of the clutch cable.
2. Make sure the clutch cable is attached to the torsion bar cable anchor and clutch cable support bracket (Figure 12).

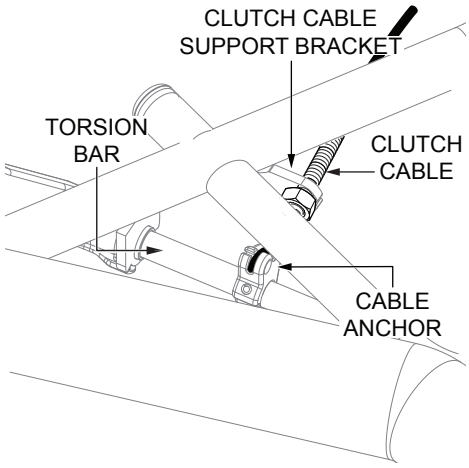


Figure 12. Clutch Cable Attachment (Torsion Bar Anchor and Support Bracket)

3. Make sure the clutch cable is fed along the underside of the upper handle tube and secured to the main tube with zip ties.
4. Using a 7/16" wrench, remove the three 1/4" retaining bolts that secure the clutch cover to the frame (Figure 13).

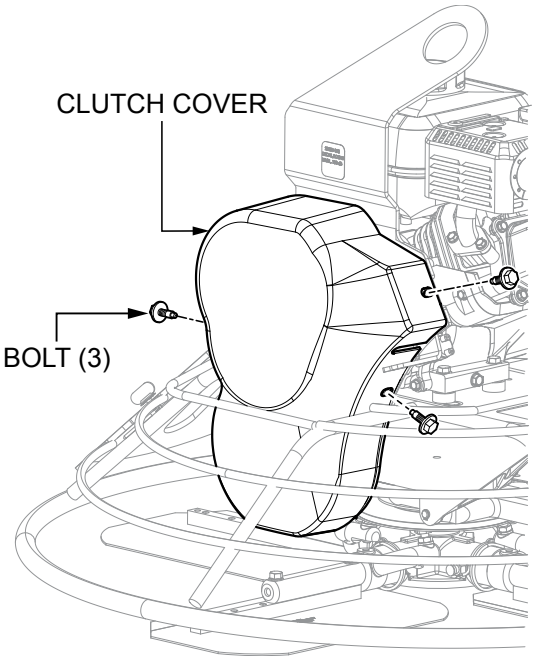


Figure 13. Clutch Cover Removal

5. Route the clutch cable **underneath** the **topmost** rung of the guard ring (Figure 14).

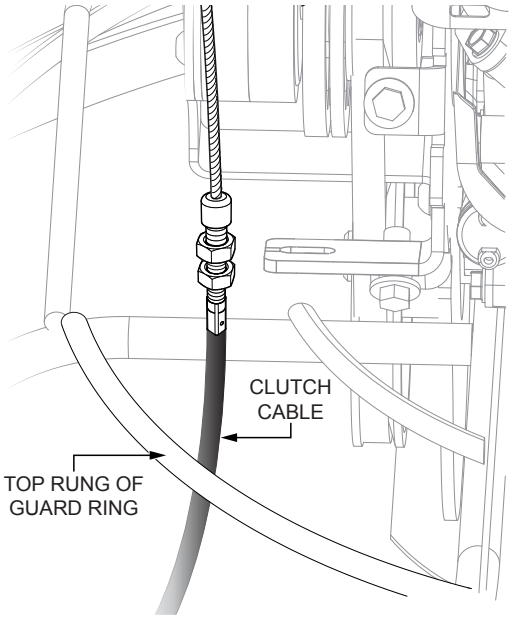


Figure 14. Clutch Cable Routing

6. Remove the 5/16" outer nut and rubber cap from the threaded end of the clutch cable (Figure 15).

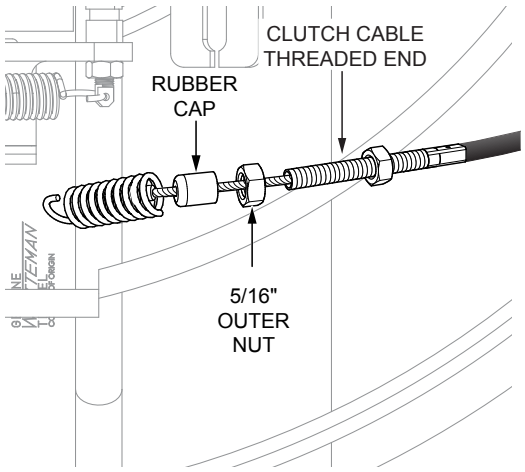


Figure 15. Outer Nut And Rubber Cap Removal

7. Adjust the 5/16" inner nut (Figure 16) until there is a distance of 7/8 inch from the threaded end of the clutch cable to the inner nut.

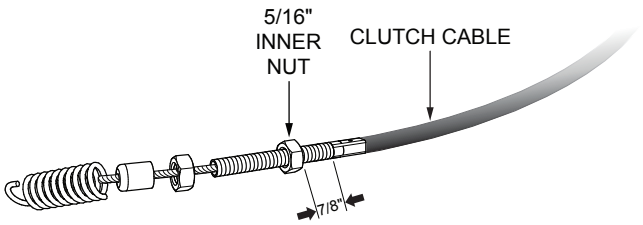


Figure 16. Inner Nut Adjustment

8. Insert the exposed cable into the cable slot on the clutch cable support bracket (Figure 17).

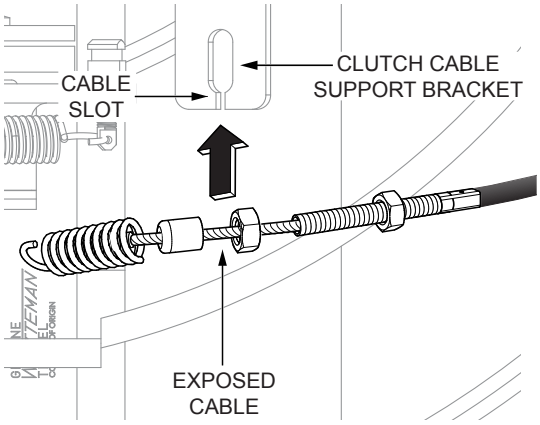


Figure 17. Clutch Cable Insertion

9. Connect the clutch cable to the clutch anchor by placing the clutch cable spring loop over the clutch anchor flats as shown in Figure 18. Use needle-nose pliers to slide the spring loop fully into the groove.

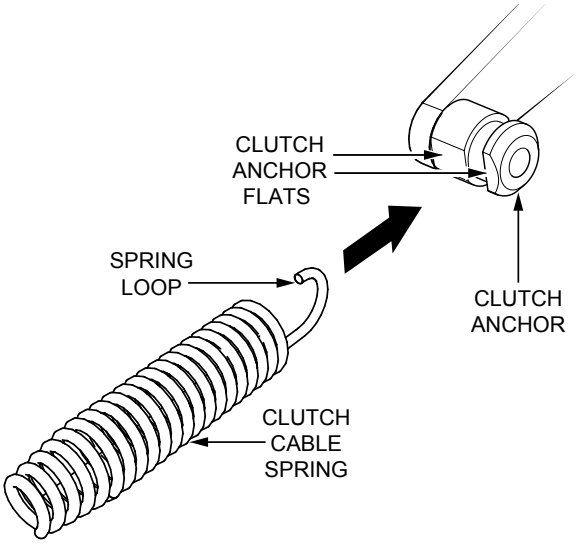


Figure 18. Spring Loop Attachment

10. Tighten the inner nut against the clutch cable support bracket until there is no slack in the cable between the threaded cable end and the clutch cable spring (Figure 19).

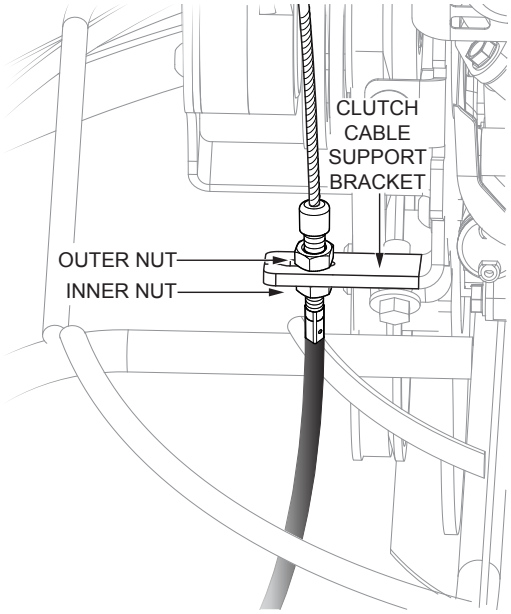


Figure 19. Secure Clutch Cable To Support Bracket

11. Using two 1/2" wrenches, tighten the inner nut and the outer nut securely against the clutch cable support bracket (Figure 19).

Boom Installation

Refer to Figure 20.

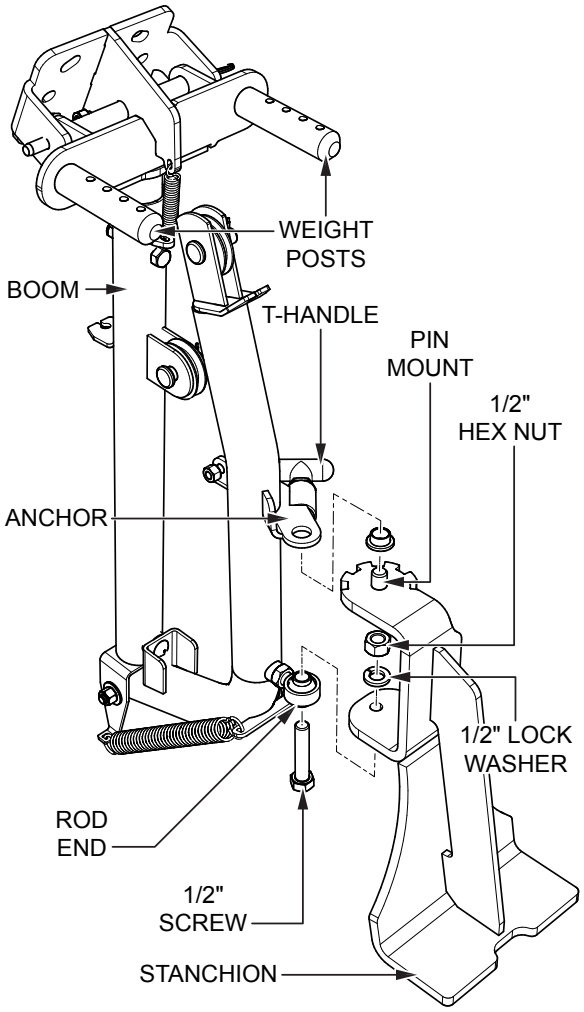


Figure 20. Boom Installation

1. Position the boom and weight posts as shown.
2. Remove the 1/2" screw, 1/2" lock washer, and 1/2" hex nut from the rod end of the boom and set them aside.
3. Pull and hold the T-handle to retract the locking pin.
4. While holding the T-handle, align and place the boom anchor onto the stanchion pin mount as shown.
5. Release the T-handle.
6. Insert the 1/2" screw up through the rod end of the boom.
7. Using a 3/4" wrench, secure the rod end to the stanchion with a 1/2" hex nut and lock washer. Do not overtighten.

Fresno Blade Installation

Refer to Figure 21.

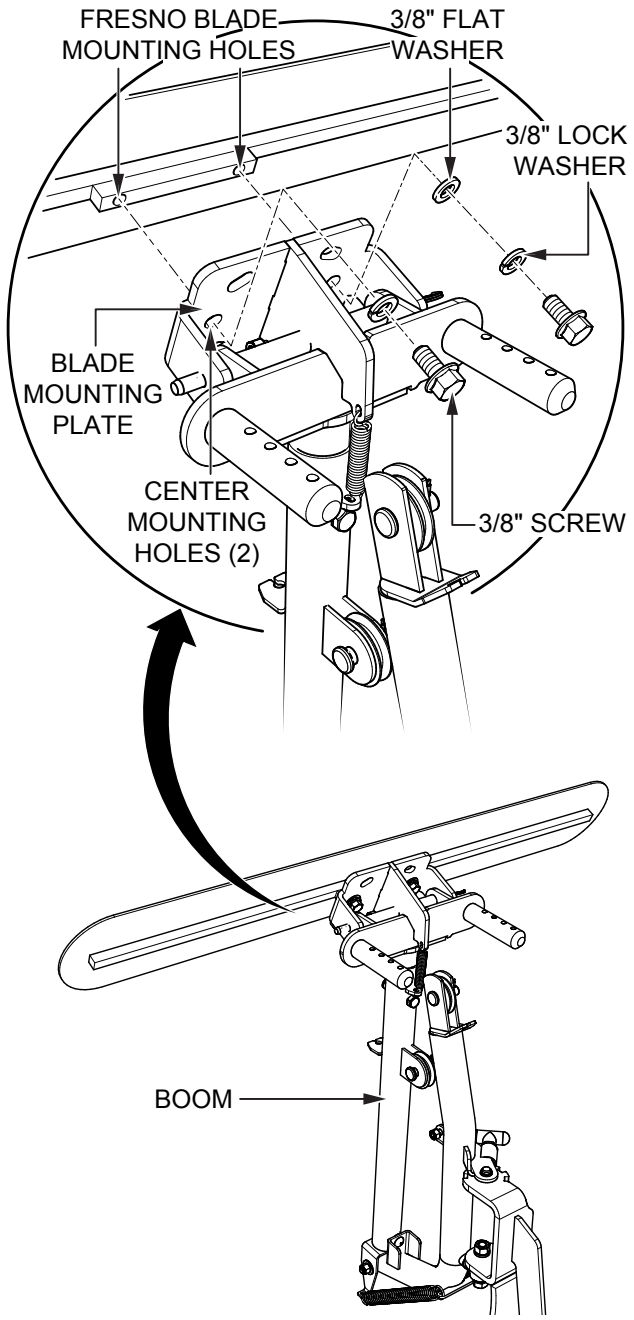


Figure 21. Fresno Blade Attachment

1. Align the two mounting holes on the fresno blade with the two center mounting holes on the boom blade mounting plate.
2. Using a 9/16" wrench, secure the fresno blade to the blade mounting plate with the two 3/8" screws, flat washers, and lock washers. Do not overtighten.

Brush Arm Attachment

Refer to Figure 22.

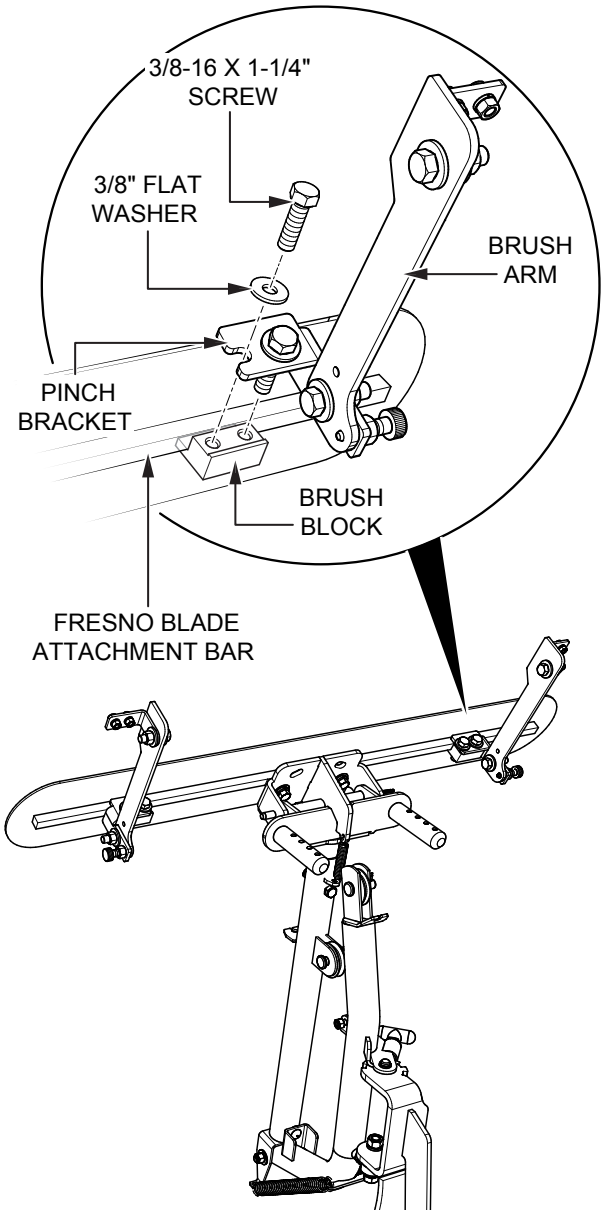


Figure 22. Brush Arm Attachment

1. Using a 9/16" wrench, slightly loosen the 3/8-16 × 1-1/4" screws (Figure 22) that secure the pinch bracket, brush block, and brush arm together.
2. Make sure there is enough separation between the pinch bracket and brush block to easily slide the brush block underneath the attachment bar on the fresno blade.
3. Once the brush block is positioned, tighten the existing screws on the pinch bracket.

NOTICE

Positioning of the fresno brush and brush arms relative to the fresno blade is determined by the operator.

Fresno Brush Installation

1. Using a 7/16" wrench, remove the two 1/4-20 × 3/4" screws, 1/4-20 hex nuts and 1/4" lock washers located at the top of each brush arm (Figure 23).

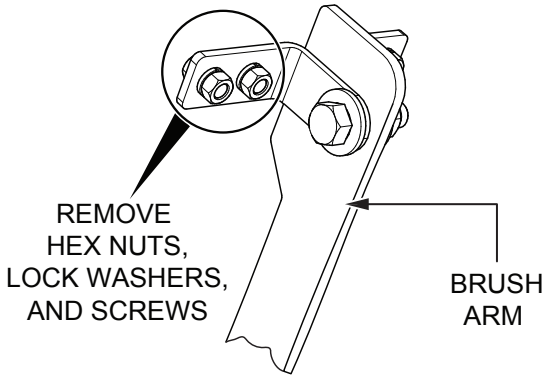


Figure 23. Brush Arm Hardware Removal

2. Slide the 1/4-20 × 1/2" screws that were removed in step 1 into the brush channel as shown in Figure 24.

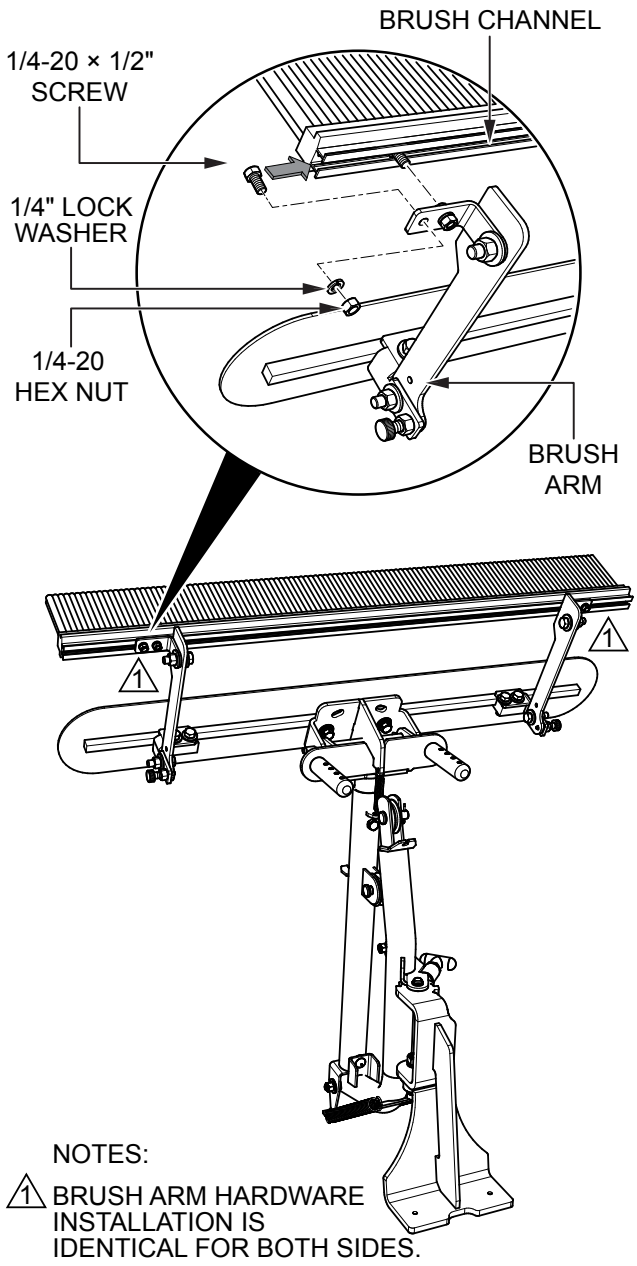


Figure 24. Fresno Brush Installation

3. Align the brush mounting hardware with the brush arm (Figure 24). Once correctly positioned, secure the brush arm to the brush channel by tightening the 1/4" hex nut. Repeat for the opposite side.

Weight Installation (Optional)

Refer to Figure 25.

NOTICE

The four weights are an optional feature. The use of the weights is determined by the operator. It is recommended to install equal weights on both sides of the weight posts.

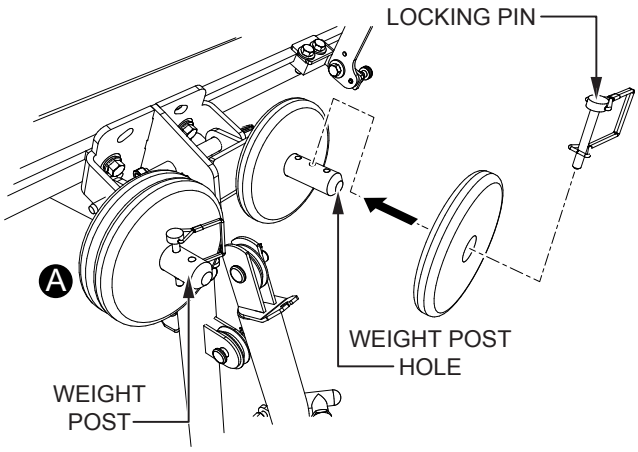


Figure 25. Weight Installation

1. Open the locking pin.
2. Place the weight(s) onto the weight posts and insert the locking pin into the weight post hole nearest the weight(s).
3. Close the locking pin.
4. A properly installed weight is shown in Figure 25**A**.

Fresno Brush Weight Installation (Optional)

Refer to Figure 26.

NOTICE

The six fresno brush weights are an optional feature. The use of the weights is determined by the operator. It is recommended that the weights be equal on both sides of the brush.

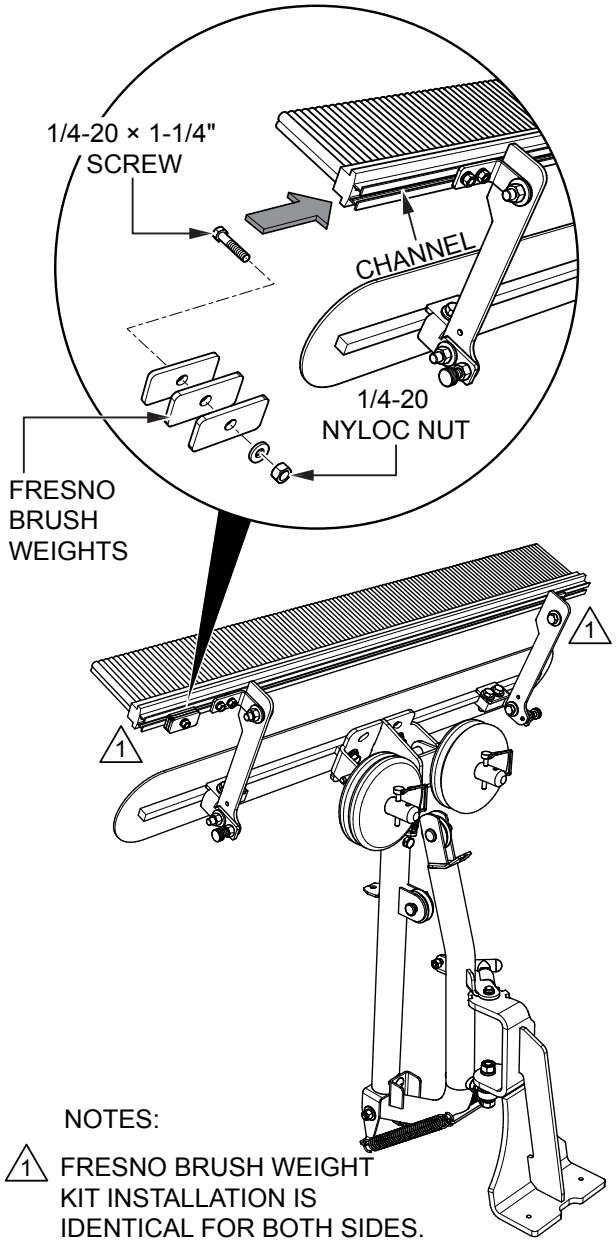


Figure 26. Fresno Brush Weight Installation

1. Slide the 1/4-20 x 1-1/4" screw into the brush channel.
2. Place the three brush weights onto the 1/4-20 x 1-1/4" screw.
3. Place the 1/4" flat washer and 1/4-20 nyloc nut onto the screw.
4. Using a 7/16" wrench, tighten the 1/4-20 nyloc nut securely.
5. Repeat on the opposite side.

Float Disc Installation (Optional)

Float discs, or pans, attach to the trowel blades and allow the trowel to "float" on wet concrete. The disc design allows early floating and easy movement from wet to dry areas. Float discs are also very effective for embedding large aggregates and surface hardeners.

Installing Float Discs with Z-Clips

Refer to Figure 27 when installing pans onto trowel blades using Z-clips.

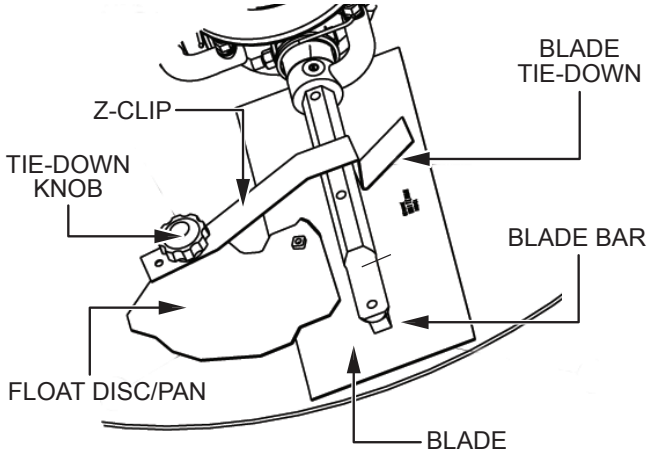


Figure 27. Float Disc Installation (Z-Clips)

1. Lift the trowel just enough to slide pans under the blades. Lower the trowel onto the pans with the blades adjacent to the Z-clips.
2. Rotate the blades into position under the Z-clips. Be sure to rotate the blades in the operational direction of travel, or use the engine to rotate the blades into position.
3. Secure the blade tie-downs to the far side of the Z-clip brackets with the tie-down knobs.
4. Make sure the blade edges are secured under the Z-clips, and the tie-downs are secured completely over the edges of the blade bar.

Installing Float Discs with Latch Pins

Refer to Figure 28 when installing pans onto trowel blades using latch pins.

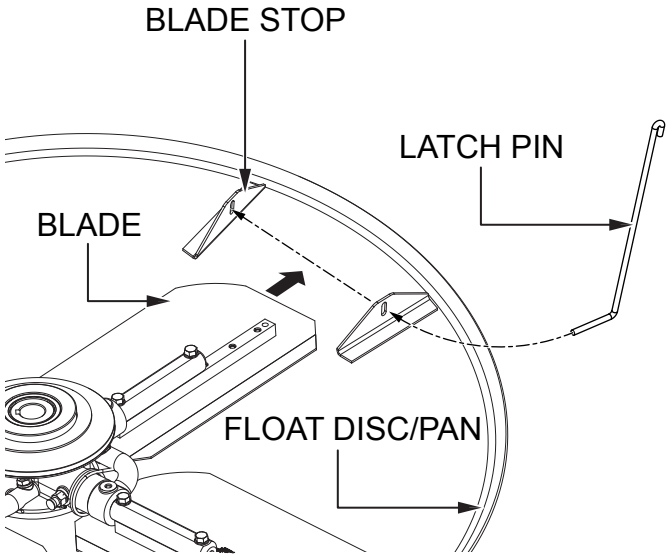


Figure 28. Float Disc Installation (Latch Pins)

1. Lift the trowel just enough to slide pans under the blades. Lower the trowel onto the pans with the blades between the blade stops.
2. Fit the blades between the blade stops. Be sure to rotate the blades in the operational direction of travel, or use the engine to rotate the blades into position.
3. Route the latch pins through the blade stop holes.

Make sure the blade edges are secured between the blade stops, and the latch pins are secured completely over the blades.

Fresno Blade Pitch Cable Installation

Refer to Figure 29.

1. Uncoil the clevis end of the fresno blade pitch cable.
2. Make sure the fresno blade pitch cable is attached to the fresno blade pitch bracket on the upper handle (Figure 29**A**).
3. Make sure the fresno blade pitch cable is routed along the main tube and secured with zip ties.
4. Route the clevis end of the fresno blade pitch cable around the engine and secure the cable to the boom arm with zip ties.

> ***NOTICE***
>
> Make sure the fresno blade pitch cable is clear of any moving parts on the trowel and moves freely before continuing. Re-route the fresno blade pitch cable if necessary.

5. Remove the 5/16" outer nut and rubber cap from the threaded end of the fresno blade pitch cable (Figure 29**C**).
6. Adjust the 5/16" inner nut until there is a distance of 7/8 inch from the threaded end of the fresno blade pitch cable to the inner nut (Figure 29**C**).
7. Insert the exposed cable into the cable anchor slot (Figure 29**C**).
8. Place the outer nut and rubber cap back onto the threaded end of the fresno blade pitch cable. Hand tighten the nut against the cable anchor (Figure 29**C**).
9. Once the threaded end of the fresno blade pitch cable is secure in the cable anchor, route the cable up to the pitch plate located at the top of the boom arm (Figure 29**D**).
10. Align the clevis end of the fresno blade pitch cable with the pitch plate mounting hole (Figure 29**D**).
11. Insert the 5/16-18 × 1" bolt through the clevis, and place the 5/16-18 lock nut onto the bolt (Figure 29**D**).
12. Using a 1/2" wrench, tighten the 5/16-18 lock nut.

Winch Cable Installation

Refer to Figure 29.

1. Uncoil the clevis end of the winch cable.
2. Make sure the winch cable is attached to the winch cable bracket on the upper handle (Figure 29**B**).
3. Make sure the winch cable is routed along the main tube and secured with zip ties.
4. Route the clevis end of the winch cable around the engine up to the boom cable anchor.

> ***NOTICE***
>
> Make sure the winch cable is clear of any moving parts on the trowel and moves freely before continuing. Re-route the winch cable if necessary.

5. Remove the 5/16" outer nut and rubber cap from the threaded end of the winch cable (Figure 29**C**).
6. Adjust the 5/16" inner nut until there is a distance of 7/8 inch from the threaded end of the winch cable to the inner nut (Figure 29**C**).
7. Insert the exposed cable into the cable anchor slot (Figure 29**C**).
8. Place the outer nut and rubber cap back onto the threaded end of the winch cable. Hand tighten the nut against the cable anchor (Figure 29**C**).
9. Once the threaded end of the winch cable is secured in the cable anchor, route the winch cable over the upper pulley wheel (Figure 29**E**), then over and under the lower pulley wheel (Figure 29**F**).
10. Align the clevis end of the winch cable with the boom mounting hole (Figure 29**G**).
11. Insert the 5/16-18 × 1" bolt through the clevis, and place the 5/16-18 lock nut onto the bolt (Figure 29**G**).
12. Using a 1/2" wrench, tighten the 5/16-18 lock nut.

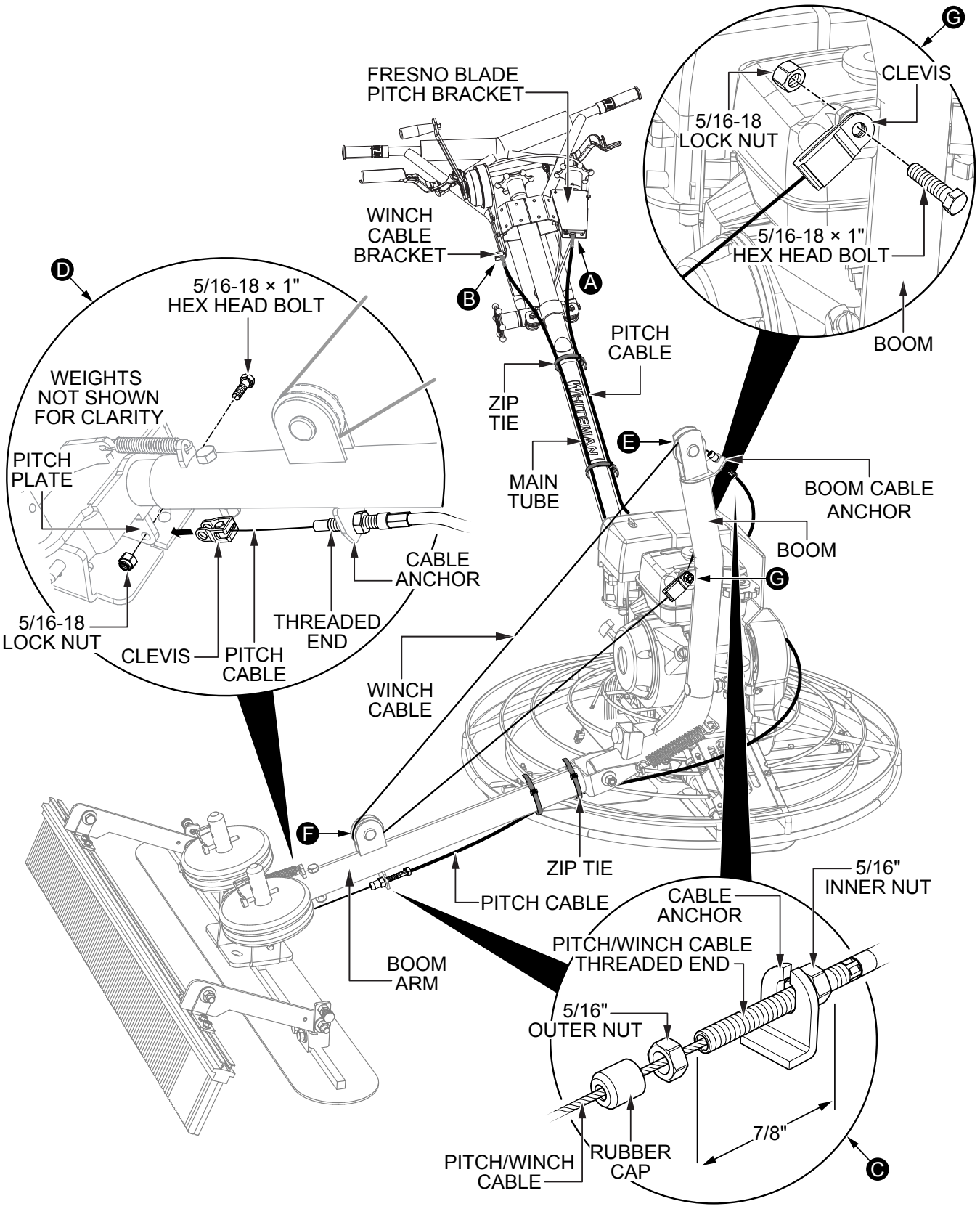


Figure 29. Fresno Blade Pitch Cable and Winch Cable Installation

ENGINE OIL

1. Place the trowel on secure, level ground with the engine **OFF**.
2. Remove the dipstick (Figure 30) from the engine oil filler hole and wipe it clean.

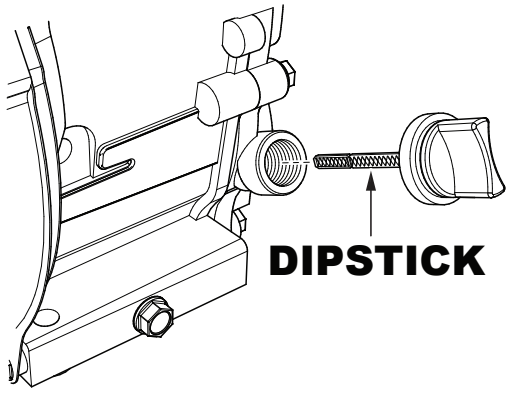


Figure 30. Engine Oil Dipstick

3. Reinsert the dipstick, then remove it again without screwing it into the filler neck. Check the oil level shown on the dipstick.
4. If the oil level is low (Figure 31), fill to the edge of the oil filler hole with the recommended oil type as listed in Table 5. Refer to Table 2 for maximum engine oil capacity.

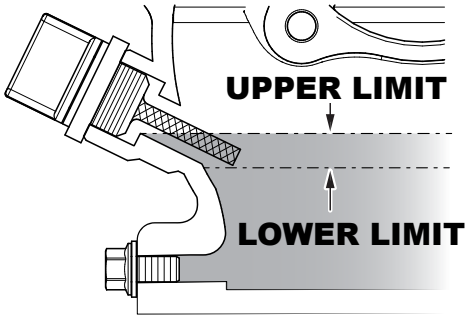


Figure 31. Engine Oil Dipstick (Oil Level)

Table 5. Oil Type

Season	Temperature	Oil Type
Summer	25°C or Higher	SAE 10W-30
Spring/Fall	25°C–10°C	SAE 10W-30/20
Winter	0°C or Lower	SAE 10W-10

FUEL

Remove the fuel filler cap and inspect the fuel level in the tank. If fuel is low, replenish with unleaded fuel.

DANGER

Motor fuels are **highly flammable** and can be dangerous if mishandled. **DO NOT** smoke while refueling. **NEVER** attempt to refuel while the engine is **running** or **hot!**

WARNING

ALWAYS use a strainer for filtration while refueling. **NEVER** top off fuel. **ALWAYS** wipe up any spilled fuel immediately.

GEARBOX OIL

1. Look at the sight glass on the side of the gearbox (Figure 32) to determine if gearbox oil is low. The correct oil level is to the halfway point on the sight glass.

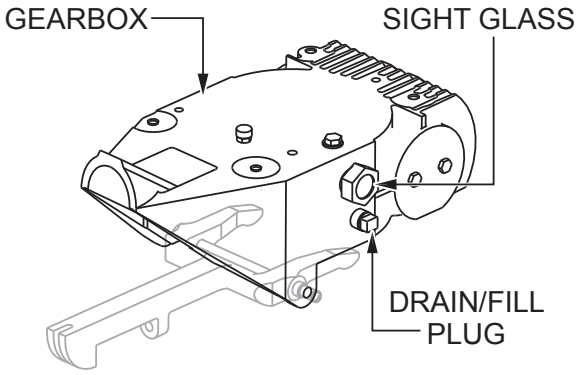


Figure 32. Gearbox Oil

2. If gearbox oil is low, remove the drain/fill plug (Figure 32) and fill with Mobil SHC™ 634 industrial synthetic gear oil until the correct oil level is reached. Replace the drain/fill plug when finished.
3. If there is too much oil in the gearbox, remove the drain/fill plug and allow the oil to seep out. Replace the plug once the correct oil level is reached.

V-BELT

1. Inspect the V-belt (Figure 33) to determine if it is frayed, peeling, full of tiny cracks, has pieces of rubber missing, or is otherwise damaged.

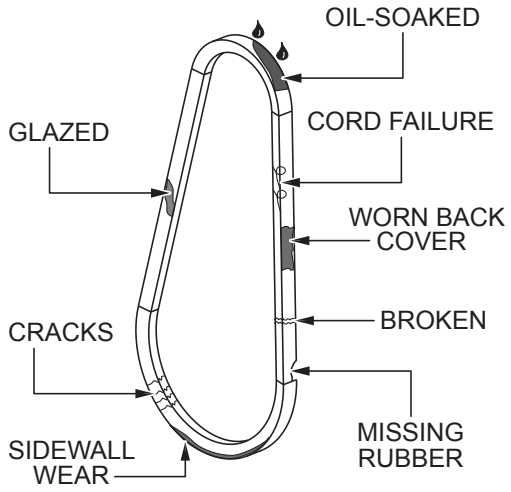


Figure 33. V-Belt Inspection

2. Inspect the V-belt (Figure 33) to determine if it is oil-soaked or glazed (a hard, shiny appearance on the sides of the belt). Either of these conditions can cause overheating of the belt, which may weaken the belt and increase the danger of it breaking.
3. Replace the V-belt immediately if any of the aforementioned wear conditions are observed.

BELT GUARD

Inspect the belt guard (Figure 34) for damage, and for loose or missing hardware.

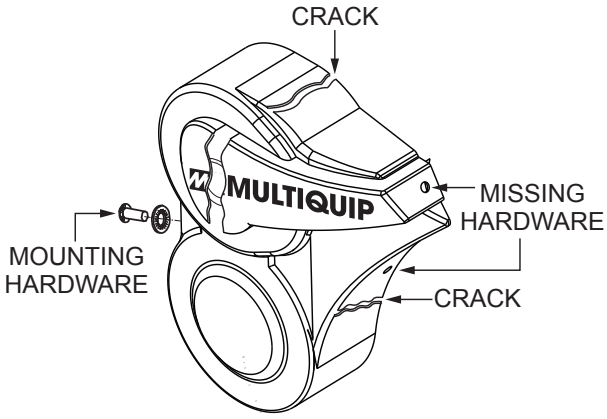


Figure 34. Belt Guard Inspection

BLADES

Inspect the trowel blades for wear or damage (Figure 35). If one blade is worn out while the others look new, there could be a blade pitch problem. Refer to the ***Maintenance*** section of this manual for the blade pitch adjustment procedure. Replace any worn or damaged blades immediately.

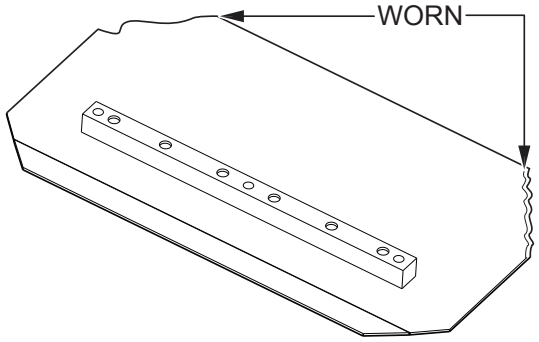


Figure 35. Blade Inspection

This section will assist the operator with the initial start-up and operation of the walk-behind trowel. **It is extremely important that this section be read carefully** before operating the trowel. **DO NOT** attempt to operate your trowel until this section is thoroughly understood.

BEFORE STARTING

NOTICE

DO NOT attempt to operate the trowel until the ***Safety***, ***General Information*** and ***Inspection*** sections of this manual have been read and thoroughly understood.

1. Clean the trowel, particularly the engine cooling air inlet. Remove all dirt and dust.
2. Inspect the engine air cleaner for dirt and dust. If the air cleaner is dirty, replace it with a new one.
3. Inspect the carburetor for external dirt and dust. Clean with dry compressed air as needed.
4. Inspect all fastening nuts and bolts for tightness.

LIFTING THE TROWEL

WARNING

Extra care should be taken when lifting the trowel. **Serious personal injury** or damage to the equipment can be caused by a dropped trowel.

WARNING

NEVER attempt to lift this machine alone. **NEVER** lift the trowel by the guard ring, as the trowel may rotate and cause injury.

ALWAYS make sure the handle is secure, and **use only the manufacturer's approved lifting point**. **The trowel may be lifted by the center lifting bail** using a crane or other device with adequate lifting capacity.

WARNING

NEVER lift the trowel to unnecessary heights. **NEVER** stand underneath the trowel while it is being lifted.

Lifting Bail

The lifting bail provides an optimal lift point for the trowel. When lifting the trowel onto a concrete slab, attach a chain or rope to the lifting bail. Make sure the capacity of the lifting device is adequate for the weight of the trowel.

Using a crane or forklift to lift the trowel (Figure 36) is **highly recommended**, and is perfectly safe for the trowel. **ALWAYS** use extra care when lifting the trowel off the ground.

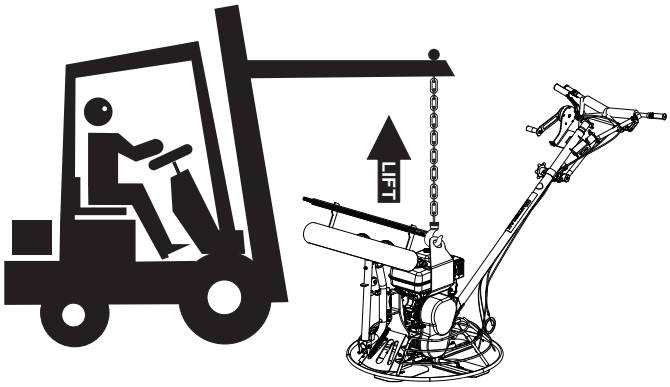


Figure 36. Lifting the Trowel

BOOM POSITIONING (LATERAL)

Refer to Figure 37.

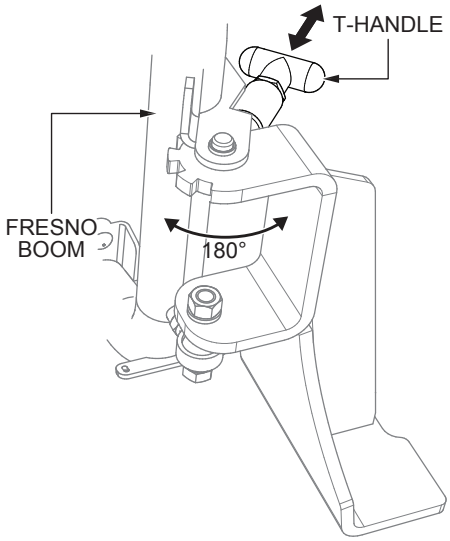


Figure 37. Boom Positioning (Lateral)

1. Pull the T-handle to release the boom from its locked position.
2. Place the boom arm in the desired position. The boom can be rotated up to 90° left or right.
3. Release the T-handle to lock the boom arm in position.

FRESNO BRUSH POSITIONING

Refer to Figure 38.

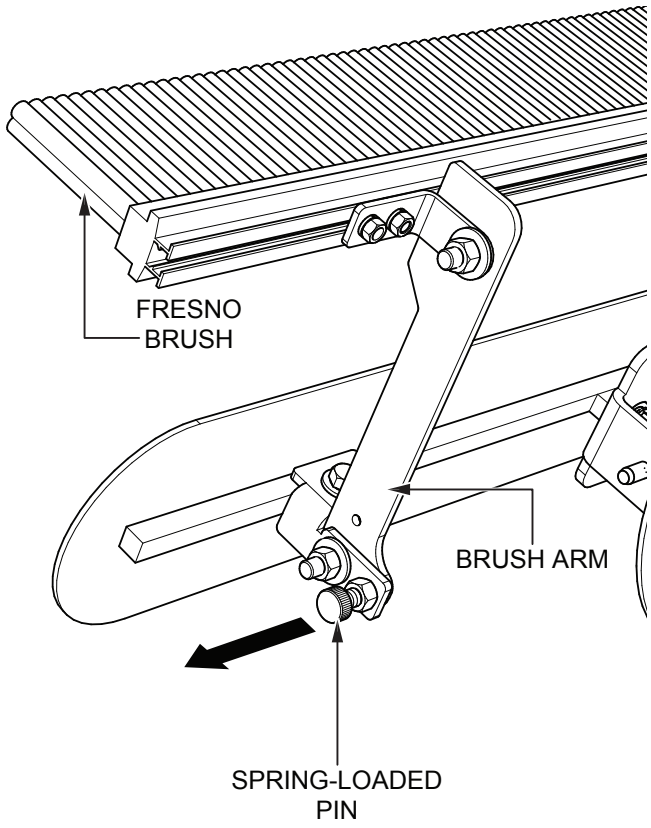


Figure 38. Fresno Brush Positioning

1. Pull the spring-loaded pins on the side of each brush arm to release the fresno brush.
2. Position the fresno brush as needed.
3. Release the spring-loaded pins to lock the fresno brush in position.

RAISING AND LOWERING THE BOOM

1. Make sure the fresno blade, fresno brush, and plated weights (if used) are in the correct position and properly secured before raising or lowering the boom.
2. Rotate the boom winch crank handle (Figure 39) **counterclockwise** to raise the boom, and **clockwise** to lower the boom.

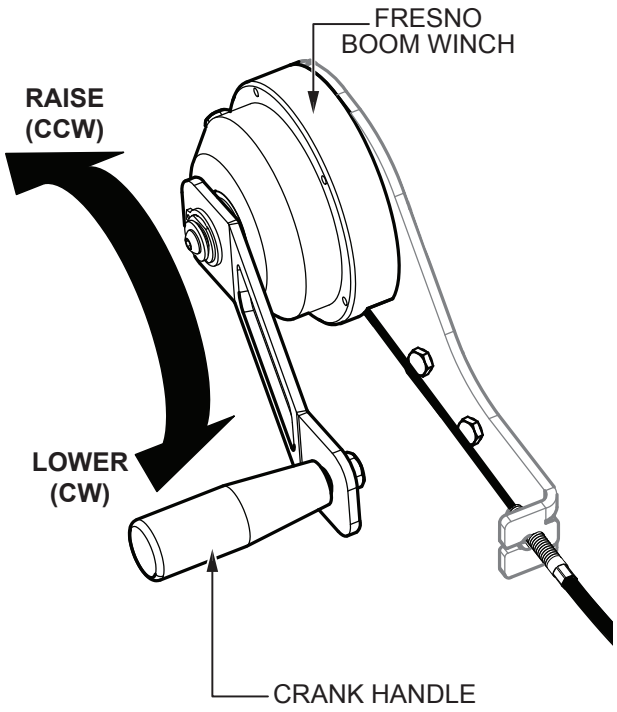


Figure 39. Boom Winch Crank Handle

STARTING THE ENGINE

1. Place the engine fuel valve lever in the **ON** position (Figure 40).

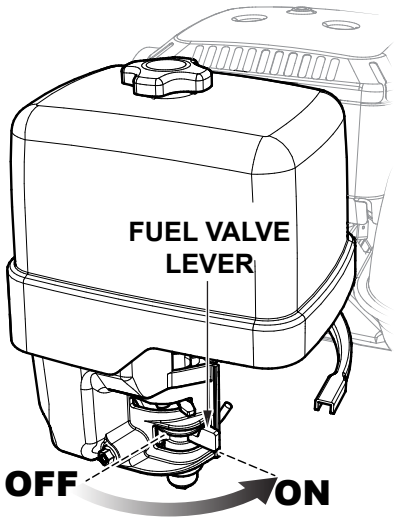


Figure 40. Engine Fuel Valve Lever (ON)

2. Place the engine ON/OFF switch in the **ON** position (Figure 41).

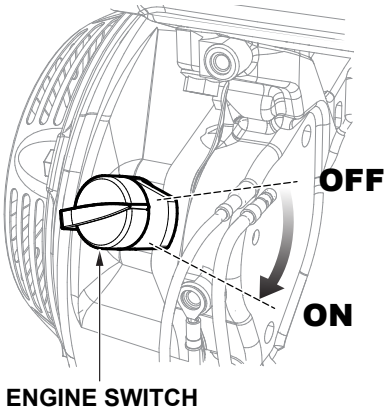


Figure 41. Engine ON/OFF Switch (ON)

3. Place the throttle lever in the **IDLE** position (Figure 42).

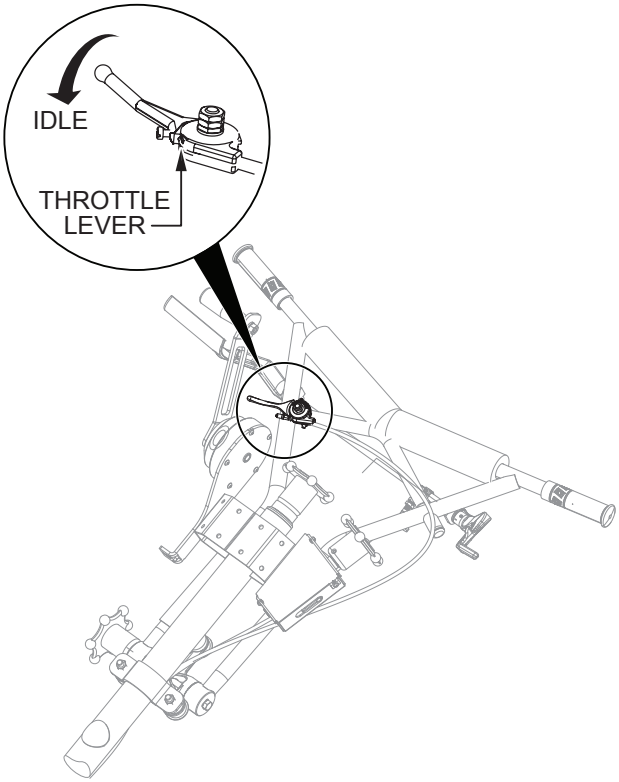


Figure 42. Throttle Lever (Idle)

4. If starting a cold engine, place the choke lever in the **CLOSED** position (Figure 43).

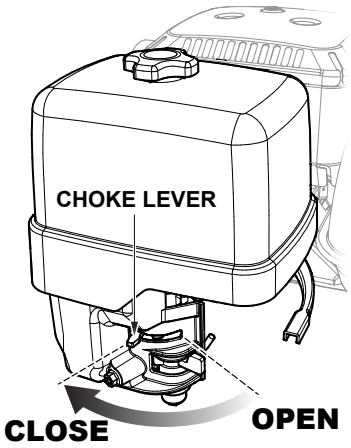


Figure 43. Choke Lever (Closed)

5. If starting a warm engine, place the choke lever in the **OPEN** position (Figure 44).

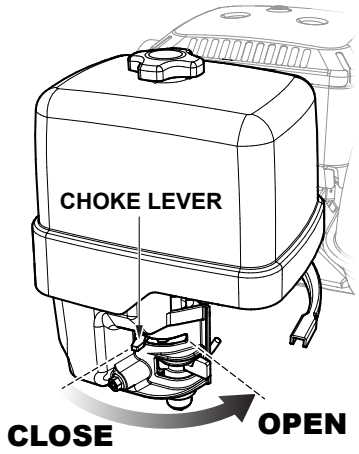


Figure 44. Choke Lever (Open)

6. Slowly pull the starter grip (Figure 45) until resistance is felt, then pull briskly and smoothly to start the engine. Gently return the starter grip to its original position.

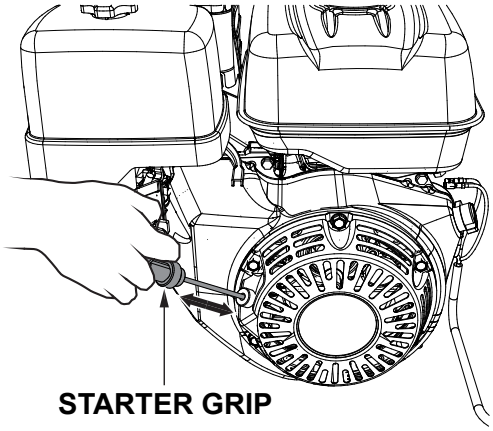


Figure 45. Starter Grip

7. If the engine has started, slowly return the choke lever to the **CLOSED** position (Figure 43). If the engine has not started, repeat steps 1 through 6.

8. Before operating the trowel, run the engine for several minutes and check for fuel leaks and loose components.

INSTACLUTCH™ OPERATION

1. With the engine running, stand in the operator's position (Figure 46) behind the trowel and grasp both hand grips securely.

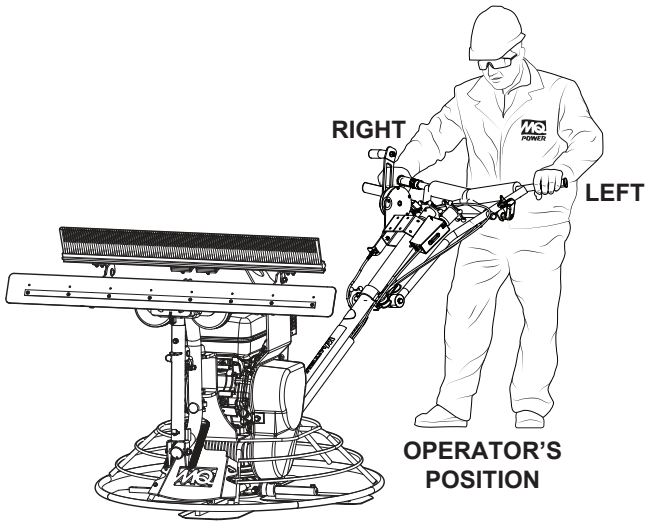


Figure 46. Operator's Position

> ***NOTICE***
>
> The operator must keep at least ***one hand on either grip at all times*** while operating the trowel.

2. With one hand on the **left-side** handgrip, move the throttle lever (Figure 47) from the **IDLE** position to the **RUN** position.

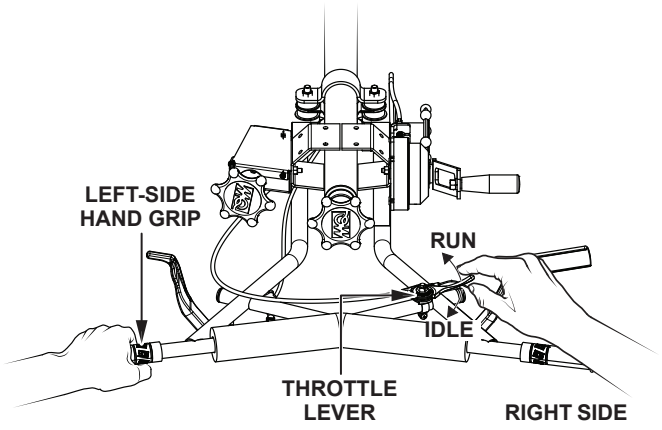


Figure 47. Throttle Lever

3. Firmly grasp the **left-side** handgrip, then **squeeze and hold the right-side** clutch lever (Figure 48) to engage the clutch.

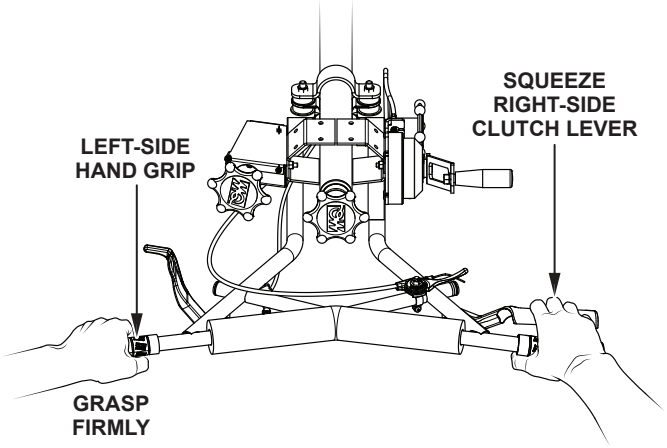


Figure 48. Engaging The Clutch

WARNING

Before engaging the clutch mechanism, **ALWAYS** maintain a firm grasp on the left-side hand grip with your left hand. **Failure to do so** can result in a runaway trowel, which can cause property damage and **SERIOUS INJURY TO THE OPERATOR OR BYSTANDERS**.

CAUTION

When engaging the clutch lever, make sure to keep hands clear of the clutch lever engagement path as shown in Figure 49 to avoid pinching and prevent bodily harm.

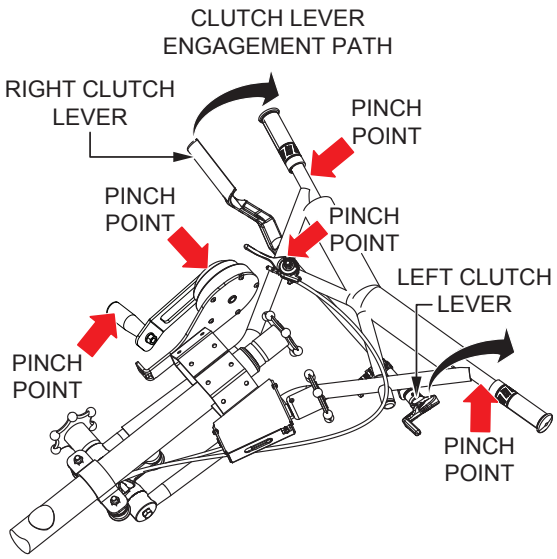


Figure 49. Pinch Points

4. Verify that the trowel blades are rotating.

PITCHING THE BLADES

Turn the star wheel **clockwise** to pitch the blades **upward** (Figure 50). Turn the star wheel **counterclockwise** to pitch the blades **flat** (no pitch).

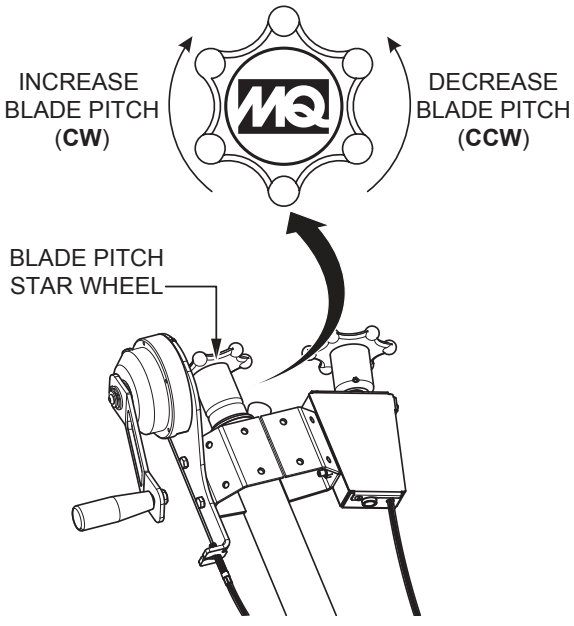


Figure 50. Pitching the Blades

MANEUVERING THE TROWEL

Figure 51 below illustrates a typical walk-behind trowel application.

1. Stand in the operator's position behind the handle. With secure footing and a firm grasp on the handle, slowly increase engine speed until the desired blade speed is obtained.
2. Practice maneuvering the trowel. The trick is to let the trowel do the work.
3. Continue to practice maneuvering the trowel as if finishing a slab of concrete. Practice edging and covering a large area.
4. An effective finishing technique is to work **backward or laterally**. **Be careful when moving backward or laterally** so that hazards are avoided. The best way to get accustomed to the trowel is repeated use.
5. After the initial troweling pass, bring the trowel to a clean troweled section.
6. Rotate the winch **clockwise** to lower the fresno blade and fresno brush onto the troweling surface.
7. Slowly walk backward or laterally to guide the trowel in a straight path. Make sure the fresno blade and fresno brush follow the path of the trowel. This will cover all footprints and troweling marks on wet surfaces.
8. Rotate the winch **counterclockwise** to raise the fresno blade and fresno brush at the end of the troweling path. If troweling laterally, rotate the boom to the opposite side before beginning a new pass.
9. Repeat steps 5–8 until the troweling surface is completely finished.

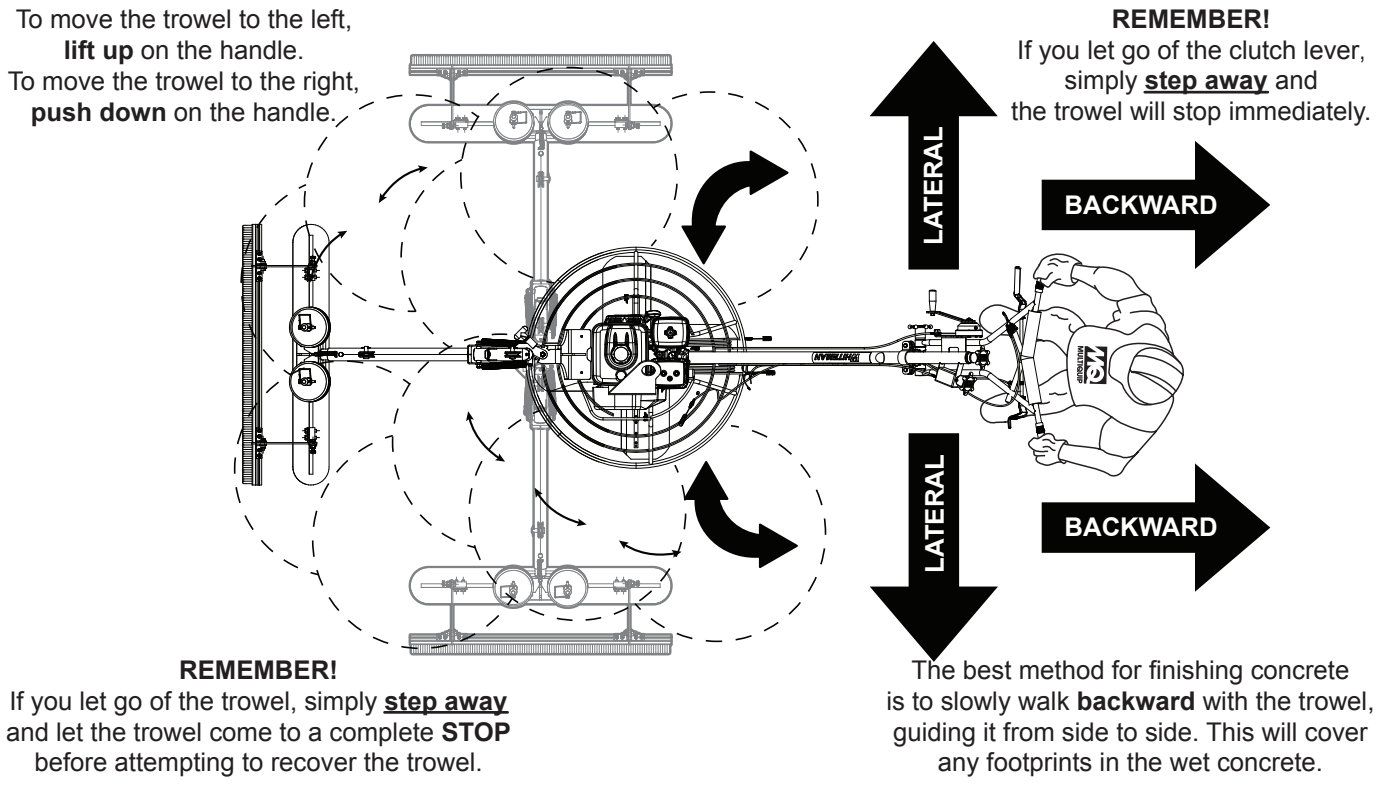


Figure 51. Maneuvering the Trowel

⚠ CAUTION

NEVER place your **hands** or **feet** inside the guard rings while starting or operating this equipment.

⚠ CAUTION

ALWAYS stay clear of **rotating** or **moving** parts while operating this equipment.

CONCRETE FINISHING TECHNIQUES

The instructions in this manual are provided as a basic guide to trowel operation, **not** a complete guide to concrete finishing. We suggest that all operators (experienced and novice) read "***Slabs on Grade***," published by the American Concrete Institute in Detroit, Michigan.

TROWEL SHUTDOWN

While maintaining control of the trowel with a firm grasp on the left-side hand grip:

1. Release the clutch lever and verify that the trowel blades have stopped rotating.
2. Return the throttle lever to the **IDLE** position (Figure 52) and let the engine run for three minutes at low speed.

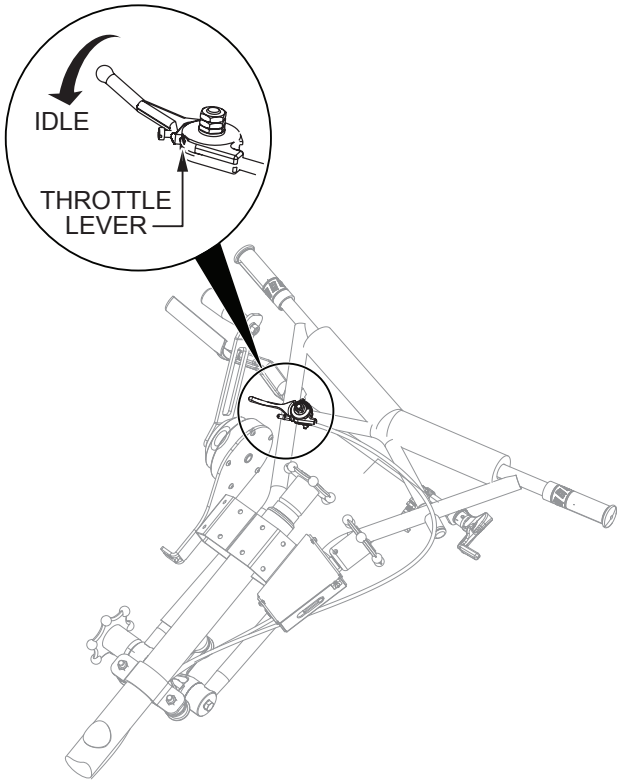


Figure 52. Throttle Lever (Idle)

3. Release the handle and place the engine ON/OFF switch in the **OFF** position (Figure 53).

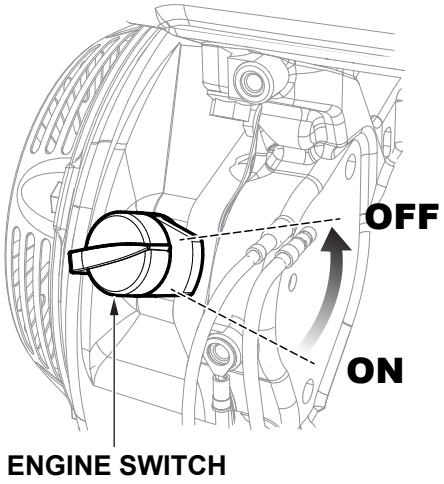


Figure 53. Engine ON/OFF Switch (OFF)

4. Place the fuel valve lever in the **OFF** position (Figure 54).

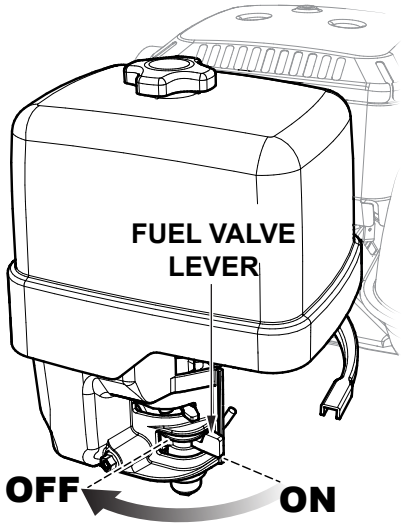


Figure 54. Fuel Valve Lever (OFF)

Trowel blades are essential for finishing concrete. The blades of this trowel were built to stringent quality standards from the finest steel.

Trowel blades should be replaced when they fail to finish concrete in a satisfactory manner. If replacement blades are needed, refer to your trowel's parts manual for part numbers and order from your Multiquip parts dealer or importer.

COMBO BLADES (STANDARD)

This trowel is equipped with combination float/finish blades (Figure 55), which provide optimum performance for both floating and finishing operations. These versatile blades should accomodate most troweling needs.

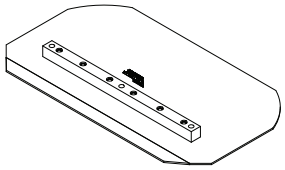


Figure 55. Combination Blade

FINISH BLADES (OPTIONAL)

Finish blades (Figure 56) are specifically designed for finishing operations, and provide premium surface finishing capability. Finish blades should **only** be used after the concrete has dried enough to prevent the trowel from sinking into the concrete when placed on it.

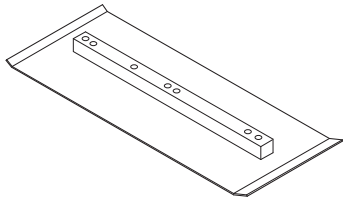


Figure 56. Finish Blade

CLIP-ON FLOAT BLADES (OPTIONAL)

Clip-on float blades (Figure 57) are easily installed onto existing finish blades for floating purposes. They are easily removed once floating is complete so that finishing can be started immediately.

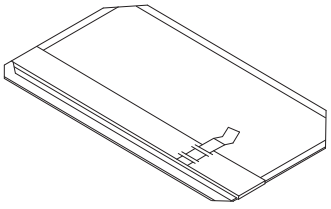


Figure 57. Clip-On Float Blade

FLOAT DISCS (OPTIONAL)

Float discs, or pans (Figure 53), attach to the spider assembly and allow the trowel to “float” on wet concrete. The disc design allows early floating and easy movement from wet to dry areas. Float discs are also very effective for embedding large aggregates and surface hardeners.

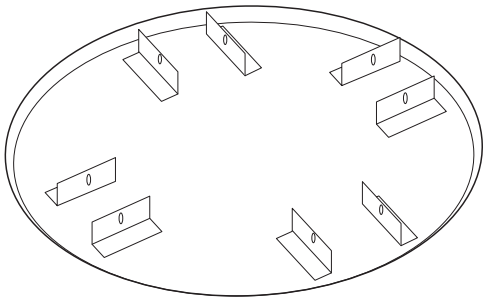


Figure 58. Float Disc/Pan

FRESNO BRUSHES

The fresno brush is a useful component for finishing concrete. It provides a textured or decorative look using the sides of the brush bristles, not the ends. There are three different fresno brushes compatible with this unit, color-coded for texture (stiffness): black (soft), orange (medium), and green (stiff).

Fresno brushes should be replaced when they fail to finish concrete in a satisfactory manner. If a replacement brush is needed, or a different concrete finish is desired, refer to the parts manual included with your trowel for part numbers, and order from your Multiquip parts dealer or importer.

TROWEL ARM ADJUSTMENT TOOL

If the trowel blades show uneven wear patterns, or some blades wear out faster than others, the trowel arms may need to be adjusted. A trowel arm adjustment tool (P/N 1817) is available for consistent adjustment of all trowel arms. See Figure 59.

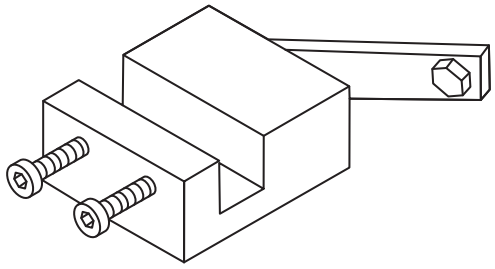


Figure 59. Trowel Arm Adjustment Tool

Table 6. Engine Maintenance Schedule						
Description (3)	**Operation**	**Before Each Use**	**First Month or 20 Hrs.**	**Every 6 Months or 100 Hrs.**	**Every Year or 300 Hrs.**	**Every 2 Years or 500 Hrs.**
Engine Oil	Check	X				
	Change		X	X		
Engine Oil Filter	Replace	Every 200 Hrs.				
Air Cleaner	Check	X				
	Clean			X (1)		
	Change					X (*)
Spark Plugs	Check/Adjust			X		
	Replace				X	
Spark Arrester	Clean			X		
Fuel Filter	Replace				X (2)	
Fuel Tube	Check	Every 2 years (replace if necessary) (2)				

* Replace the paper filter element only.

(1) Service more frequently when used in **dusty** areas.

(2) These components should be serviced by your service dealer unless you have the proper tools and are mechanically proficient. Refer to your engine shop manual for service procedures.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

Table 7. Trowel Maintenance Schedule					
Item	**Operation**	**Daily**	**Every 50–60 Hrs**	**Every 200–300 Hrs**	**Every 2000–2500 Hrs**
V-Belt	Check/Replace		X		
Relube Trowel Arms	Grease	X			
Blades	Check/Replace		X		
Trowel Arms	Remove/Clean			X	
Thrust Collar/Bushing	Remove/Clean			X	
Blade Arms	Adjust			X	
Arm Bushing	Remove/Replace				X
Wear Ring	Remove/Replace				X
Thrust Collar Bearing	Remove/Replace				X
Pitch Control Cable	Check				X
Clutch	Remove/Clean			X	

General maintenance practices are crucial to the performance and longevity of your trowel. This equipment requires routine cleaning, lubrication, and inspection of components for wear or damage.

Refer to Table 6 and Table 7 to schedule engine and trowel maintenance. The following maintenance procedures can prevent serious trowel malfunction or damage.

DANGER

NEVER use gasoline or low flash point solvents to clean the engine or any of its components. The possibility exists of **fire** or **explosion** which can damage the equipment and cause **severe bodily harm** or even **DEATH**.

WARNING

Some maintenance operations may require a running engine. **ALWAYS** make sure the maintenance area is well ventilated. Gasoline engine exhaust contains **poisonous** carbon monoxide gas that can result in **unconsciousness** and/or **DEATH** when inhaled.

CAUTION

NEVER attempt to service a hot engine. **ALWAYS** allow the engine to cool before servicing.

CAUTION

ALWAYS disconnect the spark plug wire from the spark plug and secure it **away** from the engine before performing trowel maintenance or adjustments.

ENGINE MAINTENANCE

Inspect the engine daily for cleanliness, any oil or fuel leakage, or loose fasteners.

Air Cleaner

CAUTION

ALWAYS wear personal protective equipment such as approved safety glasses, face shields, dust masks, or respirators when cleaning air filters with compressed air.

The engine air cleaner is equipped with a replaceable, high-density, paper element. Refer to Figure 60 for air cleaner maintenance.

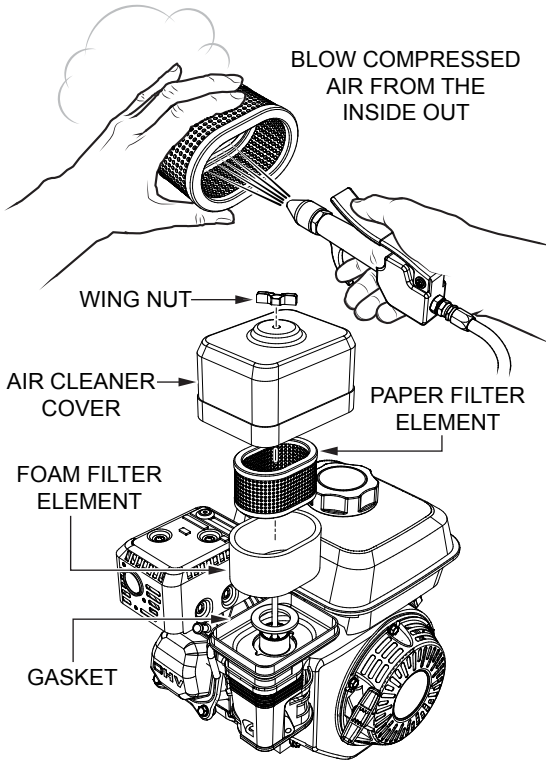


Figure 60. Air Cleaner Maintenance

1. Remove the air cleaner cover and foam filter element.
2. Tap the paper filter element several times on a hard surface to remove dirt, or blow compressed air, not exceeding 30 lb/in² (207 kPa, 2.1 kgf/cm²), through the filter element from the inside out. **NEVER** brush off dirt. Brushing will force dirt into the fibers. Replace the paper filter element if it is excessively dirty.

3. Clean the foam element in warm, soapy water or a **nonflammable** solvent. Rinse and dry thoroughly. Dip the element in clean engine oil and completely squeeze out the excess oil from the element before reinstalling.

NOTICE

Operating the engine with loose or damaged air cleaner components can allow unfiltered air into the engine, causing premature wear and failure.

Engine Oil

NOTICE

ALWAYS drain the engine oil while the oil is **warm**.

Refer to Figure 61.

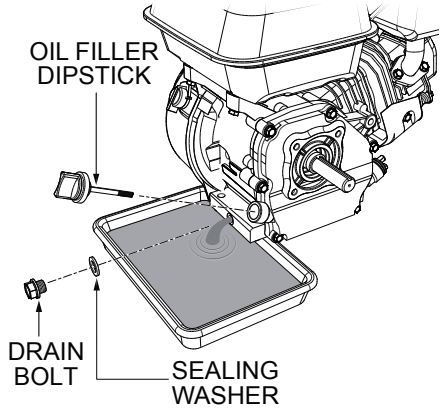


Figure 61. Draining Engine Oil

1. Remove the drain bolt and sealing washer, and allow the oil to drain into a suitable container.
2. Replace the engine oil with the recommended oil type listed inTable 5. For engine oil capacity, see Table 2. **DO NOT** overfill.
3. Reinstall the drain bolt with sealing washer and tighten securely.

Spark Plug

1. Remove the spark plug (Figure 62) and clean it with a wire brush if it is to be reused. Replace the spark plug if the insulator is cracked or chipped.

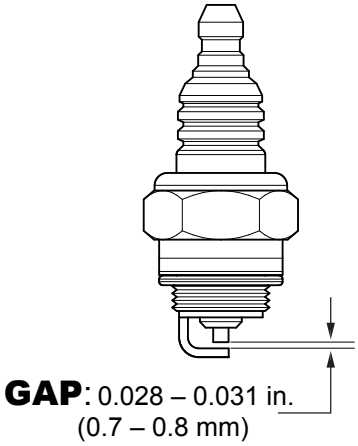


Figure 62. Spark Plug

2. Using a feeler gauge, adjust the spark plug gap (Figure 62). The gap should measure 0.028–0.031 inch (0.7–0.8 mm).
3. To prevent cross-threading, thread the spark plug into the cylinder hole by hand, then tighten securely.

Fuel Strainer

1. Thoroughly clean the area around the fuel tank cap.
2. Remove the fuel tank cap from the fuel tank.
3. Remove, inspect, and clean the fuel strainer (Figure 63) with solvent.

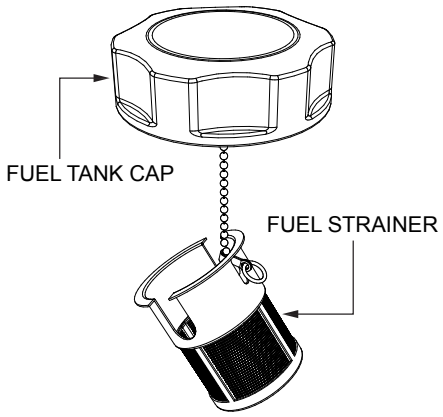


Figure 63. Fuel Strainer

Spark Arrester

1. Remove the 4 mm screws that secure the exhaust deflector to the muffler protector, then remove the exhaust deflector (Figure 64).

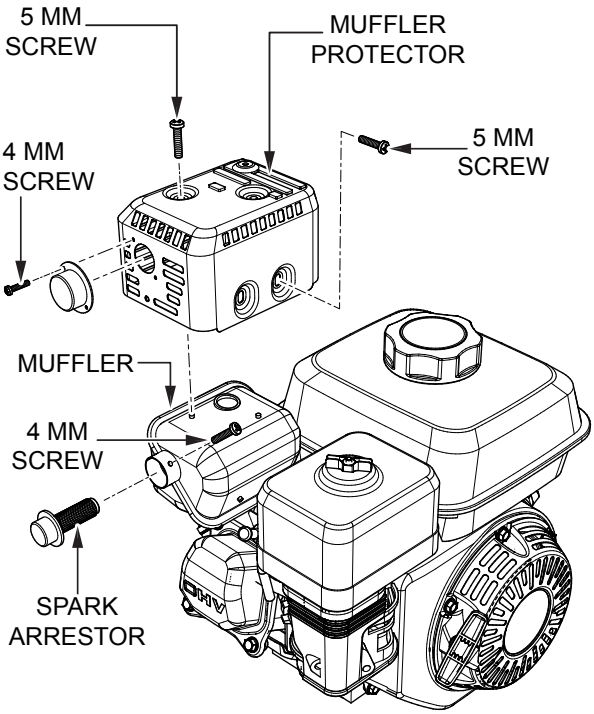


Figure 64. Spark Arrester Removal

2. Remove the 5 mm screws that secure the muffler protector to the muffler, then remove the muffler protector (Figure 64).
3. Remove the 4 mm screw securing the spark arrester to the muffler, then remove the spark arrester (Figure 64).
4. Carefully remove carbon deposits from the spark arrester screen with a wire brush (Figure 65).

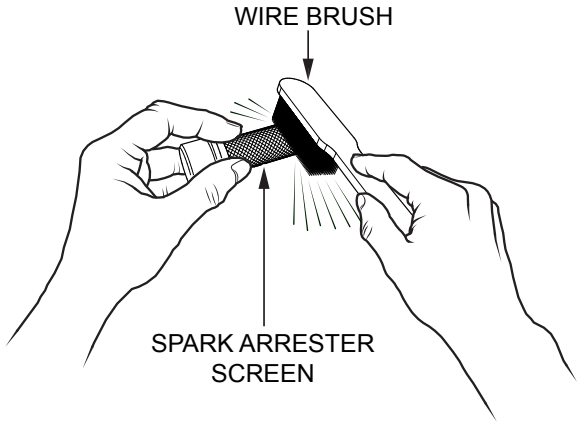


Figure 65. Cleaning The Spark Arrester

5. Replace the spark arrester if it is damaged (has breaks or holes).
6. Reinstall the spark arrester, muffler protector, and exhaust deflector in reverse order of disassembly.

> ***NOTICE***
>
> Refer to the manufacturer's engine manual supplied with your trowel for more detailed information about engine maintenance and troubleshooting.

TROWEL MAINTENANCE

Clean the trowel daily. Remove all dust and slurry buildup. Make sure lubrication is performed after any steam-cleaning.

Trowel Lubrication (Every 8 Hours)

Regular lubrication is required to maintain your trowel in optimal working condition. Perform the following lubrication procedure after **every 8 hours of use**.

1. Locate one of the Zerk grease fittings on the spider assembly (Figure 66). Remove the Zerk fitting cap and set it aside.

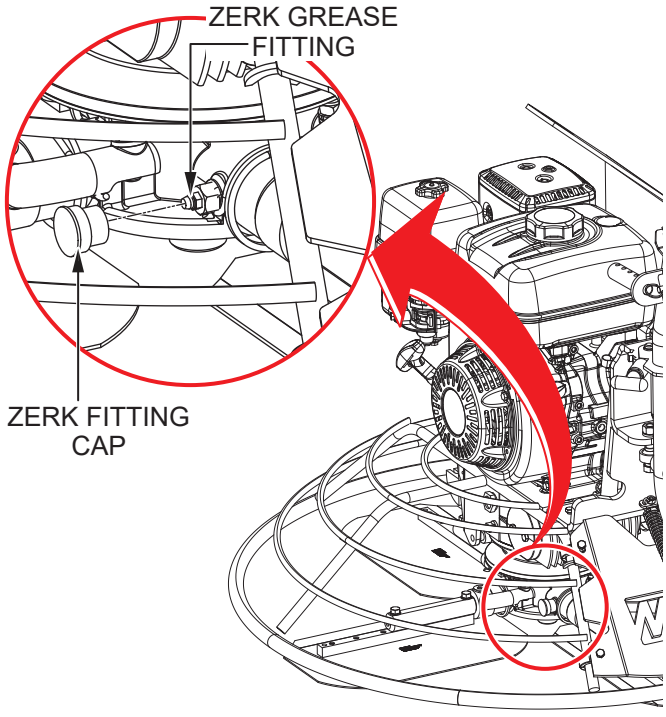


Figure 66. Spider Lubrication

2. Wipe the Zerk grease fitting clean to prevent abrasive material from entering the fitting during lubrication.
3. Lubricate the Zerk grease fitting with 1 to 1½ shots of multipurpose grade grease. DO NOT overgrease. Replace the Zerk fitting cap when finished.
4. Repeat steps 1–3 for the remaining grease fittings on the spider assembly.

Blade Pitch Adjustment

Perform maintenance adjustment of blade pitch using a bolt on the trowel arm lever (Figure 67). This bolt is the contact point of the trowel arm with the lower wear plate on the thrust collar. The goal of adjustment is consistent blade pitch and finishing quality.

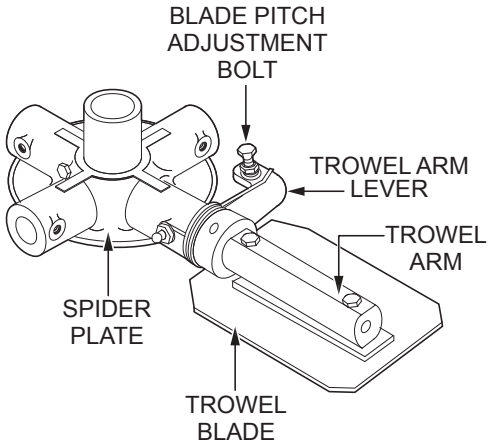


Figure 67. Blade Pitch Adjustment Bolt

Look for the following indications when determining if blade pitch adjustment is necessary:

- Are blades wearing out unevenly (e.g. one blade is completely worn out while the others look new)?
- Does the machine have a perceptible rolling or bouncing motion while in use?
- Does the guard ring rock up and down while the machine is in use?

Once it has been determined that blade pitch adjustment is necessary, do the following:

1. Place the trowel on a flat, level surface, with blocks under the main guard ring for support. Any uneven spots in the floor or debris under the trowel blades will cause an incorrect perception of adjustment. Ideally, a 5 ft. × 5 ft. (1.5 m × 1.5 m), 3/4-inch-thick, **flat** steel plate should be used.
2. Pitch the blades as flat as possible (Figure 68). The pitch adjustment bolts should barely contact (0.10 inch maximum clearance) the lower wear plate. All adjustment bolts should be spaced the same distance from the lower wear plate. If any one of the bolts does not make contact, adjustment is necessary.

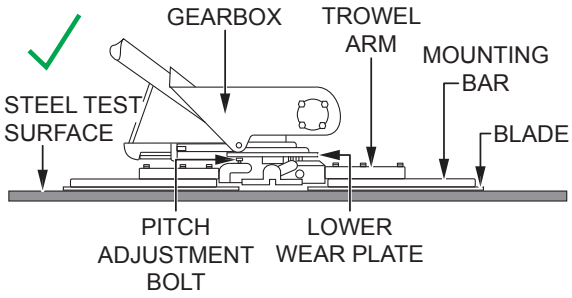


Figure 68. Blades Pitched Flat (Correct)

3. Adjust the "**high**" bolts **down** to the level of the bolt that is not touching, ***or*** adjust the "**low**" bolt **up** to the level of the higher ones. Whenever possible, adjust the "**low**" bolt **up** to the level of the rest of the bolts. This is the fastest method, but it may not always work. After adjustment, verify that the blades pitch correctly.

NOTICE

Incorrectly adjusted blades will often be unable to pitch flat. This can occur if the adjustment bolts are raised too high. Conversely, adjustment bolts that are too low will prevent the blades from being pitched high enough for finishing operations.

4. If the trowel still finishes poorly after blade pitch adjustment has been performed, blades, trowel arms, and trowel arm bushings may be suspect, and should be inspected for improper adjustment, wear, or damage.

5. Figure 69 illustrates incorrect spider plate alignment due to improper adjustment, worn spider bushings, or bent trowel arms.

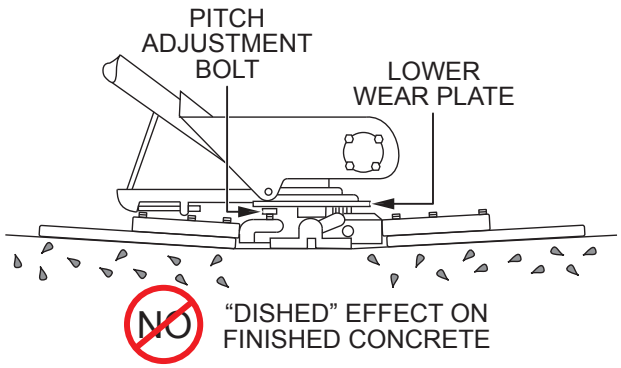


Figure 69. Blades Pitched Flat (Incorrect)

Spider Removal

Refer to Figure 70.

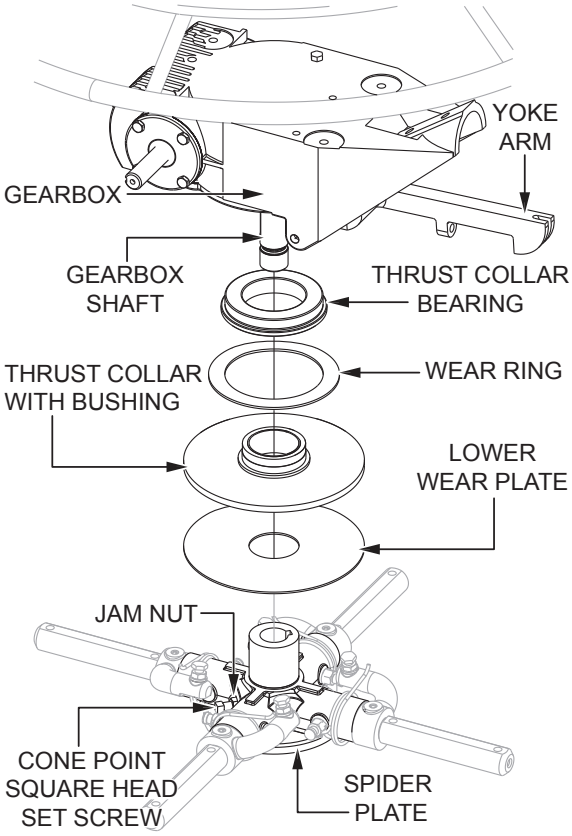


Figure 70. Spider Removal

1. Loosen the cone point square head set screw and attached jam nut on the side of the spider assembly.
2. Carefully lift the upper trowel/gearbox assembly off of the spider assembly. A light tap with a rubber mallet may be necessary to dislodge the spider from the main shaft of the gearbox.

Blade Replacement

It is recommended to replace **all** of the trowel blades at the same time. If only one or some of the blades are changed, the machine may wobble or bounce and will not finish concrete consistently.

NOTICE

Please note the orientation of each blade on the trowel arm before removing.

1. Place the trowel on a flat, level surface, with blocks under the main guard ring for support.
2. Remove the bolts and lock washers from each of the trowel arms, then remove the blades as shown in Figure 71.

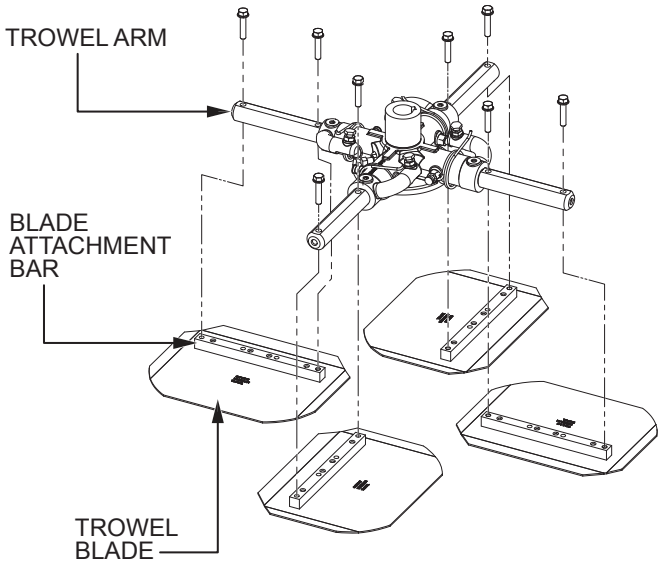


Figure 71. Blade Removal

3. Wire brush and remove all concrete and debris from all six sides of each of the four trowel arms. This is important to properly seat the new blades.
4. Install the new blades, maintaining the proper blade orientation as noted during removal. Secure with the bolts and washers that were removed earlier.

Trowel Arm Removal

Refer to Figure 72.

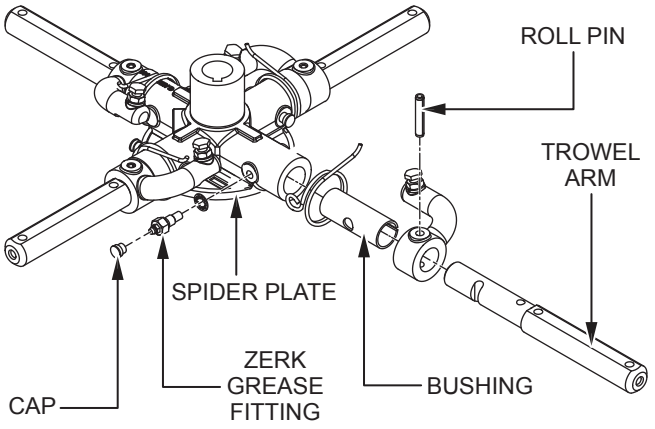


Figure 72. Trowel Arm Removal

1. Each trowel arm is held in place at the spider plate by a Zerk grease fitting (hex head bolt) and a roll pin. Remove the Zerk grease fitting and the roll pin from the spider plate.
2. Remove the trowel arm from the spider plate.
3. Carefully remove the trowel arm bushing and set it aside.
4. Examine the trowel arm bushing, and clean it if necessary. Replace the bushing if it is worn or out-of-round.

Trowel Arm Inspection

Trowel arms (Figure 73) can be damaged by rough handling such as dropping the trowel, or by striking exposed plumbing, rebar, or other objects while in operation.

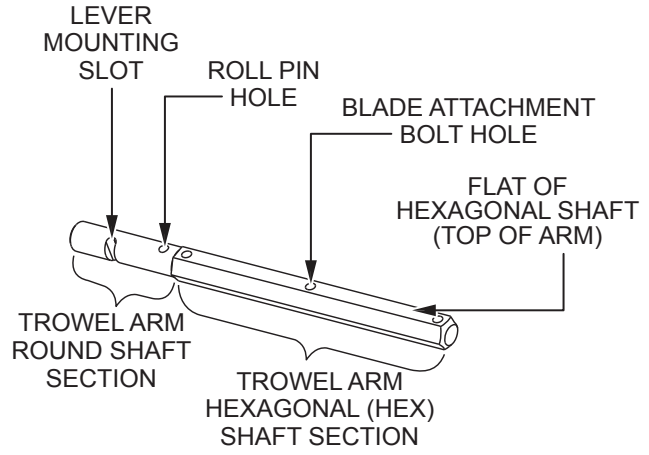


Figure 73. Trowel Arm

A bent trowel arm will prevent smooth, fluid rotation of the blades. If bent trowel arms are suspected, examine them for straightness as follows.

1. Place the trowel arm on a thick, steel plate, granite slab, or any other surface which is **true** and **flat** (Figure 74).

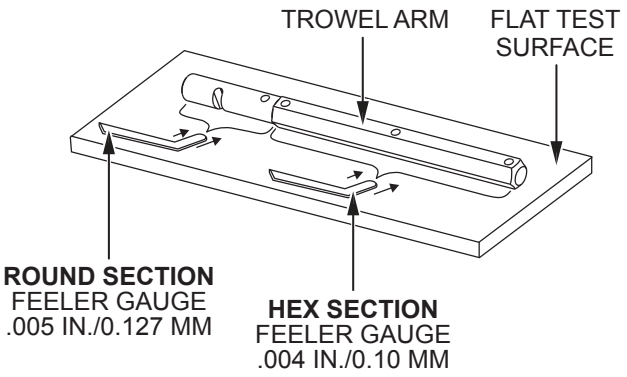


Figure 74. Trowel Arm Inspection

2. Check each of the six sides of the trowel arm hex section (Figure 74). A feeler gauge of .004 inch (0.1 mm) should not pass between the flat of the trowel arm and the test surface at any point along the length of the test surface.
3. As the flat hex section rests on the test surface, use a feeler gauge of .005 inch (0.127 mm) to check the clearance between the round shaft section and the test surface. Rotate the arm to each of the flat hex sections and check the clearance between the round shaft and the test surface. The clearance between the round shaft and the test surface should be identical for each hex section. See Figure 74.
4. Replace any bent or uneven trowel arms.

Trowel Arm Adjustment

The easiest and most consistent way to adjust a trowel arm is with the trowel arm adjustment tool (P/N 1817).

Once locked into the adjustment tool, each trowel arm bolt is adjusted until it contacts a stop on the fixture. This will consistently adjust all of the trowel arms, keeping the finisher as evenly pitched as possible.

The trowel arm adjustment tool comes with usage instructions and all the hardware necessary to perform this adjustment correctly.

Perform the following procedure to adjust trowel arms using the trowel arm adjustment tool:

1. Unscrew the locking bolts on the adjustment tool and place a trowel arm (with lever attached) into the fixture channel as shown in Figure 75.

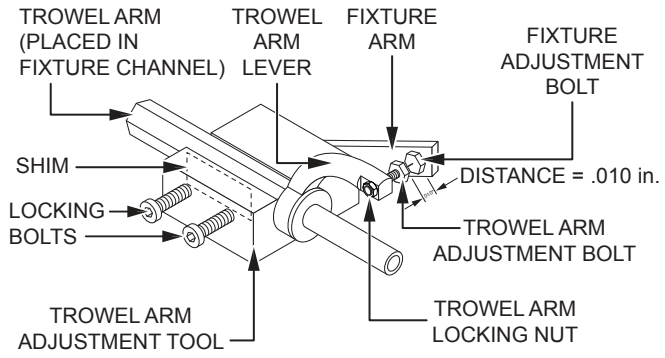


Figure 75. Trowel Arm Adjustment

2. Make sure the fixture arm is in the **UP** position (Figure 76).

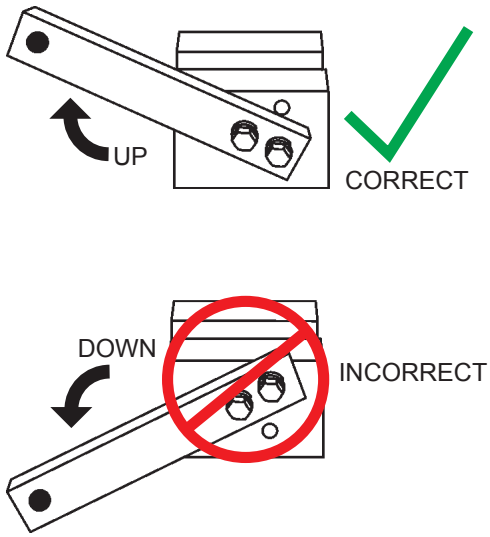


Figure 76. Fixture Arm Position (UP)

3. A thin shim may be required to cover the blade holes on the trowel arm (Figure 75). Be sure to align the trowel arm adjustment bolt with the fixture adjustment bolt.
4. Tighten the locking bolts (Figure 75) to secure the trowel arm in place.
5. Adjust the bolt distance shown in Figure 75 to match one of the arms. The other arms will be adjusted to match this distance.
6. Loosen the locking nut on the trowel arm lever, then turn the trowel arm adjusting bolt until it barely touches (.010") the fixture adjustment bolt. See Figure 75.
7. Once the correct adjustment is made, tighten the locking nut on the trowel arm to lock it in place (Figure 75).
8. Loosen the locking bolts on the adjustment tool, and remove the trowel arm.
9. Repeat steps 1–8 for the remaining trowel arms.

REASSEMBLY

1. Clean the wear plates and thrust collar, and examine the entire spider assembly. Use a wire brush to remove any concrete or rust buildup. Replace any spider components that are damaged or out-of-round.
2. Inspect the bronze trowel arm bushing, and clean it if necessary. Replace the bushing if it is damaged, worn, or out-of-round.
3. Reinstall the trowel arm bushing onto the trowel arm.
4. Repeat steps 2–3 for each trowel arm.
5. Make sure the spring tensioner is in the correct position to exert tension on the trowel arm.
6. Insert all trowel arms with levers (and bronze bushings already installed) into the spider plate. Align the grease holes on the bushings with the grease hole fittings on the spider plate.
7. Lock the trowel arms in place by tightening the Zerk grease fitting hex head bolts and jam nuts.
8. Reinstall the blades onto the trowel arms.
9. Install the stabilizer ring onto the spider assembly.
10. Reinstall the lower wear plate, thrust collar, and wear ring onto the spider shaft in reverse order of disassembly. **Make sure there is little or no lateral movement** between the thrust collar and the spider shaft.
11. Carefully lift the upper trowel/gearbox assembly, align it with the keyway on the spider shaft, and insert it into the spider assembly.

12. Reinstall the cone point square head set screw and jam nut, and tighten securely. Make sure the point of the set screw engages the groove in the gearbox main shaft.
13. Lubricate all grease points (Zerk fittings) with premium Lithum 12-based grease, conforming to NLG1 grade #2 consistency.

LONG-TERM STORAGE

Perform the following procedure when storing the trowel for more than 30 days.

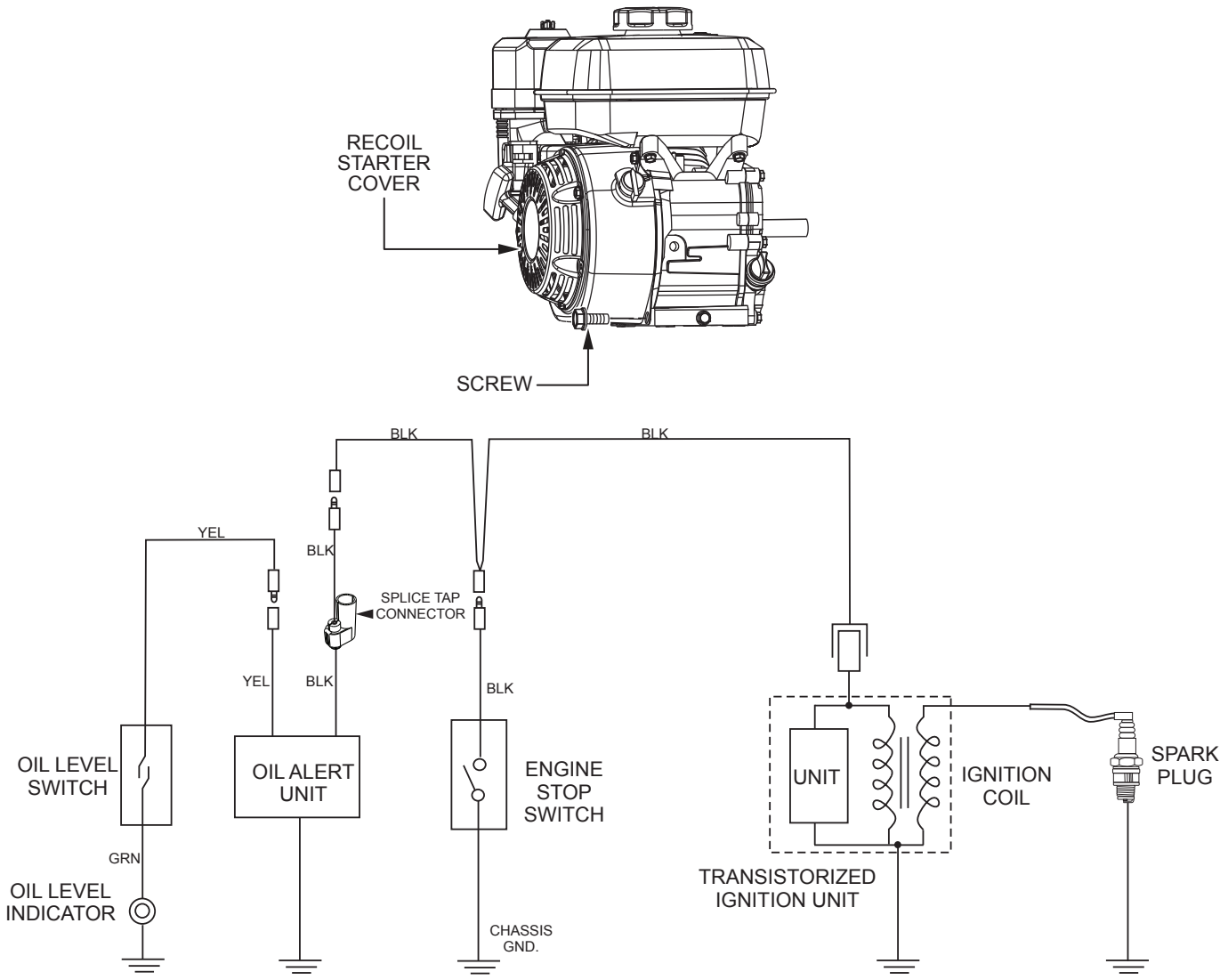
- Drain the fuel tank completely, or add STA-BIL® to the fuel.
- Run the engine until all gasoline in the carburetor is completely consumed.
- Completely drain the oil from the crankcase and refill with fresh oil.
- Remove the spark plug. Pour 5–10 cm^3 of SAE 30 oil into the cylinder. Turn the engine ON/OFF switch to the **ON** position for a few seconds to distribute the oil. Return the engine ON/OFF switch to the **OFF** position, and reinstall the spark plug.
- Clean off all external trowel components with a cloth.
- Cover the trowel and store it away from direct sunlight in a clean, dry location.

Troubleshooting (Engine)		
Symptom	**Possible Problem**	**Solution**
Difficult to start, fuel is available, but no spark at spark plug.	Spark plug bridging?	Check gap, insulation or replace spark plug.
	Carbon deposit on spark plug?	Clean or replace spark plug.
	Short circuit due to deficient spark plug insulation?	Check spark plug insulation, replace if worn.
	Improper spark plug gap?	Set to proper gap.
	Fuel reaching carburetor?	Check fuel line.
	Water in fuel tank?	Flush or replace fuel tank.
	Fuel filter clogged?	Replace fuel filter.
	Stuck carburetor?	Check float mechanism.
	Spark plug is red?	Check transistor ignition unit.
	Spark plug is bluish white?	If insufficient compression, repair or replace engine. If injected air leaking, correct leak. If carburetor jets clogged, clean carburetor.
	No spark present at tip of spark plug?	Check transistor ignition unit is broken, and replace defective unit. Check if voltage cord cracked or broken and replace. Check if spark plug if fouled and replace.
	No oil?	Add oil as required.
	Oil pressure alarm lamp blinks upon starting? (if applicable)	Check automatic shutdown circuit, "oil sensor". (if applicable)
Difficult to start, fuel is available, and spark is present at the spark plug.	ON/OFF switch is shorted?	Check switch wiring, replace switch.
	Ignition coil defective?	Replace ignition coil.
	Improper spark gap, points dirty?	Set correct spark gap and clean points.
	Condenser insulation worn or short circuiting?	Replace condenser.
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
Difficult to start, fuel is available, spark is present and compression is normal.	Wrong fuel type?	Flush fuel system, and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
	Choke open?	Close choke.
Difficult to start, fuel is available, spark is present and compression is low.	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings and/or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present at carburetor.	No fuel in fuel tank?	Fill with correct type of fuel.
	Fuel cock does not open properly?	Apply lubricant to loosen fuel cock lever, replace if necessary.
	Fuel filter/lines clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line.

Troubleshooting (Engine) - continued		
Symptom	**Possible Problem**	**Solution**
Weak in power, compression is proper and does not misfire.	Air cleaner dirty?	Clean or replace air cleaner.
	Improper level in carburetor?	Check float adjustment, rebuild carburetor.
	Defective spark plug?	Clean or replace spark plug.
	Improper spark plug?	Set to proper gap.
Weak in power, compression is proper but misfires.	Water in fuel system?	Flush fuel system and replace with correct type of fuel.
	Dirty spark plug?	Clean or replace spark plug.
	Ignition coil defective?	Replace ignition coil.
Engine overheats.	Spark plug heat value incorrect?	Replace with correct type of spark plug.
	Wrong type of fuel?	Replace with correct type of fuel.
	Cooling fins dirty?	Clean cooling fins.
	Intake air restricted?	Clear intake of dirt and debris. Replace air cleaner elements as necessary.
	Oil level too low or too high?	Adjust oil to proper level.
Rotational speed fluctuates.	Governor adjusted incorrectly?	Adjust governor.
	Governor spring defective?	Replace governor spring.
	Fuel flow restricted?	Check entire fuel system for leaks or clogs.
Recoil starter malfunctions. (if applicable)	Recoil mechanism clogged with dust and dirt?	Clean recoil assembly with soap and water.
	Spiral spring loose?	Replace spiral spring.
Starter malfunctions.	Loose, damaged wiring?	Ensure tight, clean connections on battery and starter.
	Battery insufficiently charged?	Recharge or replace battery.
	Starter damaged or internally shorted?	Replace starter.
Burns too much fuel.	Over-accumulation of exhaust products?	Check and clean valves. Check muffler and replace if necessary.
	Wrong spark plug?	Replace spark plug with manufacturer's suggested type.
Exhaust color is continuously "white".	Lubricating oil is wrong viscosity?	Replace lubricating oil with correct viscosity.
	Worn rings?	Replace rings.
Exhaust color is continuously "black".	Air cleaner clogged?	Clean or replace air cleaner.
	Choke valve set to incorrect position?	Adjust choke valve to correct position.
	Carburetor defective, seal on carburetor broken?	Replace carburetor or seal.
	Poor carburetor adjustment, engine runs too rich?	Adjust carburetor.
Will not start, no power with ON/OFF switch in "ON" position.	ON/OFF switch not activated ON?	Turn on ON/OFF Switch.
	ON/OFF switch/wiring defective?	Replace ON/OFF switch. Check wiring.
	Centrifugal stop switch not activated ON?	Turn on centrifugal stop switch.
	Centrifugal stop switch/wiring defective?	Replace centrifugal stop switch. Check wiring.

Troubleshooting (Walk-Behind Trowel)		
Symptom	**Possible Problem**	**Solution**
Engine running rough or not at all.	Engine ON/OFF Switch in "OFF" position or malfunctioning?	Make sure that the Engine ON/OFF Switch is ON or replace switch if necessary.
	Centrifugal ON/OFF Switch in "OFF" position or malfunctioning?	Place centrifugal stop switch in "ON" position. Check wiring. Replace switch if necessary.
	Fuel?	Look at the fuel system. Make sure there is fuel being supplied to the engine. Check to ensure that the fuel filter is not clogged.
	Ignition?	Check to ensure that the ignition switch has power and is functioning correctly.
	Loose wire connections	Check wiring. Replace or repair as necessary.
	Bad contacts in ON/OFF switch?	Replace ON/OFF switch.
Trowel bounces, rolls concrete, or makes uneven swirls in concrete.	Blades?	Make certain blades are in good condition, not excessively worn. Finish blades should measure no less than 2"" (50mm) from the blade bar to the trailing edge, combo blades should measure no less that 3.5"" (89mm). Trailing edge of blade should be straight and parallel to the blade bar.
	Pitch adjustment?	Check that all blades are set at the same pitch angle as measured at the spider. A field adjustment tool is available for height adjustment of the trowel arms. (Contact Parts Dept.)
	Bent trowel arms?	Check the spider assembly for bent trowel arms. If one of the arms is even slightly bent, replace it immediately.
	Spider?	Check fit of arms in spider. This can be done by moving the trowel arms up and down. If there is more than 1/8 inch (3.2 mm) of travel at the tip of the arm, the spider and arms should be replaced.
	Thrust collar?	Check the flatness of the thrust collar by rotating it on the spider. If it varies by more than 0.02 inch (0.5 mm) replace the thrust collar.
	Thrust collar bushing?	Check the thrust collar by rocking it on the spider. If it can tilt more than 3/32 inch (2.4 mm) - as measured at the thrust collar O.D., replace the thrust collar.
	Thrust bearing worn?	Check the thrust bearing to see that it is spinning freely. Replace if necessary.

Troubleshooting (Walk-Behind Trowel) - continued		
Symptom	**Possible Problem**	**Solution**
Machine has a perceptible rolling motion while running.	Main shaft?	The main output shaft of the gearbox assembly should be checked for straightness. The main shaft must run straight and cannot be more than 0.003"" (0.08 mm) out of round at the spider attachment point.
	Yoke?	Check to make sure that both fingers of the yoke press evenly on the wear cap. Replace yoke as necessary.
	Blade Pitch?	Check to ensure that each blade is adjusted to have the same pitch as all other blades. Adjust per maintenance section in manual.
Clutch slipping or sluggish response to engine speed change.	Worn V-belts?	Replace V-belt.
	Hand clutch out of adjustment?	Adjust per instructions in maintenance section of this manual.
	Worn or defective hand clutch parts?	Replace parts as necessary.
	Worn bearings in gearbox?	Rotate input shaft by hand. If shaft rotates with difficulty, check the input and output shaft bearings. Replace as necessary.
	Worn or broken gears in gearbox?	Verify that the gearbox shaft rotates when the input shaft is rotated. Replace both the worm and worm gear as a set.
Trowel blades do not rotate.	Defective clutch?	Replace clutch.
	Broken V-belt?	Replace V-belt.
	Defective ON/OFF switch?	Check and replace ON/OFF switch if necessary.
	Defective centrifugal ON/OFF switch?	Check and replace centrifugal ON/OFF switch if necessary.


RECOIL
STARTER
COVER
SCREW
BLK
BLK
YEL
BLK
SPLICE TAP
CONNECTOR
YEL
BLK
BLK
OIL LEVEL
SWITCH
OIL ALERT
UNIT
ENGINE
STOP
SWITCH
UNIT
IGNITION
COIL
SPARK
PLUG
GRN
OIL LEVEL
INDICATOR
CHASSIS
GND.
TRANSISTORIZED
IGNITION UNIT

OPERATION MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HAND WHEN CALLING

UNITED STATES

Multiquip Corporate Office

18910 Wilmington Ave.
Carson, CA 90746
Contact: mq@multiquip.com

Tel. (800) 421-1244
Fax (310) 537-3927

MQ Parts Department

800-427-1244
310-537-3700

Fax: 800-672-7877

Service Department

800-421-1244
310-537-3700

Warranty Department

800-421-1244
310-537-3700

Fax: 310-943-2249

Technical Assistance

800-478-1244

Fax: 310-943-2238

CANADA

Multiquip

4110 Industriel Boul.
Laval, Quebec, Canada H7L 6V3
Contact: infocanda@multiquip.com

Tel: (450) 625-2244
Tel: (877) 963-4411
Fax: (450) 625-8664

UNITED KINGDOM

Multiquip (UK) Limited Head Office

Unit 2, Northpoint Industrial Estate,
Globe Lane,
Dukinfield, Cheshire SK16 4UJ
Contact: sales@multiquip.co.uk

Tel: 0161 339 2223
Fax: 0161 339 3226

This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

The information and specifications included in this publication were in effect at the time of approval for printing. Illustrations, descriptions, references and technical data contained in this manual are for guidance only and may not be considered as binding. Multiquip Inc. reserves the right to discontinue or change specifications, design or the information published in this publication at any time without notice and without incurring any obligations.

Your Local Dealer is:

MULTIQUIP®

PN: 13409