

OPERATION AND PARTS MANUAL



WHITEMAN **EPOXY/M SERIES** **WALK-BEHIND TROWEL**

Revision #5 (10/06/10)

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publication, visit our website at:
www.multiquip.com



THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

P/N 10487



WARNING



CALIFORNIA — Proposition 65 Warning

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.

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MQ WHITEMAN — EPOXY/M SERIES

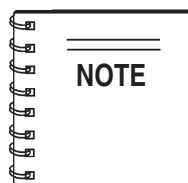
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**Specification and part number
are subject to change without
notice.**

PARTS ORDERING PROCEDURES

Ordering parts has never been easier! Choose from three easy options:

Effective:
January 1st, 2006

www.multiquip.com



Order via Internet (Dealers Only):

Order parts on-line using Multiquip's SmartEquip website!

- View Parts Diagrams
- Order Parts
- Print Specification Information



If you have an MQ Account, to obtain a Username and Password, E-mail us at: **parts@multiquip.com**.

To obtain an MQ Account, contact your District Sales Manager for more information.

Goto www.multiquip.com and click on

Order Parts to log in and save!

Use the **internet** and qualify for a **5% Discount** on *Standard orders* for all orders which include complete part numbers.*

Note: Discounts Are Subject To Change



Order via Fax (Dealers Only):

All customers are welcome to order parts via Fax.

Domestic (US) Customers dial:

1-800-6-PARTS-7 (800-672-7877)

Fax your order in and qualify for a **2% Discount** on *Standard orders* for all orders which include complete part numbers.*

Note: Discounts Are Subject To Change



Order via Phone: Domestic (US) Dealers Call:
1-800-427-1244

Non-Dealer Customers:

Contact your local Multiquip Dealer for parts or call 800-427-1244 for help in locating a dealer near you.



International Customers should contact their local Multiquip Representatives for Parts Ordering information.

When ordering parts, please supply:

- | | |
|---|--|
| <input type="checkbox"/> Dealer Account Number | <input type="checkbox"/> Specify Preferred Method of Shipment: |
| <input type="checkbox"/> Dealer Name and Address | <input checked="" type="checkbox"/> UPS/Fed Ex <input checked="" type="checkbox"/> DHL |
| <input type="checkbox"/> Shipping Address (if different than billing address) | <input checked="" type="checkbox"/> Priority One <input checked="" type="checkbox"/> Truck |
| <input type="checkbox"/> Return Fax Number | <input checked="" type="checkbox"/> Ground |
| <input type="checkbox"/> Applicable Model Number | <input checked="" type="checkbox"/> Next Day |
| <input type="checkbox"/> Quantity, Part Number and Description of Each Part | <input checked="" type="checkbox"/> Second/Third Day |

NOTICE

All orders are treated as *Standard Orders* and will ship the same day if received prior to 3PM PST.

WE ACCEPT ALL MAJOR CREDIT CARDS!



EPOXY/M SERIES TROWEL—TRAINING CHECKLIST

TRAINING CHECKLIST

This checklist will lists some of the minimum requirements for machine maintenance and operation. Please feel free to detach it and make copies. Use this checklist whenever a new operator is to be trained or it can be used as a review for more experienced operator's.

Training Checklist			
No.	Description	OK?	Date
1	Read Operator's Manual completely.		
2	Machine layout, location of components, checking of engine and hydraulic oil levels.		
3	Fuel system, refueling procedure.		
4	Operation of spray and lights.		
5	Operation of controls (machine not running).		
6	Safety controls, safety stop switch operation.		
7	Emergency stop procedures.		
8	Startup of machine, pre-heat, engine choke.		
9	Maintaining a hover.		
10	Maneuvering.		
11	Pitching.		
12	Matching blade pitch. Twin-Pitch™		
13	Concrete finishing techniques.		
14	Shutdown of machine.		
15	Lifting of machine (lift loops).		
16	Machine transport and storage.		

Operator _____ Trainee _____

COMMENTS:

EPOXY/M SERIES TROWEL— DAILY PRE-OPERATION CHECKLIST

DAILY PRE-OPERATION CHECKLIST

Daily Pre-Operation Checklist		✓	✓	✓	✓	✓	✓
1	Engine oil level.						
2	Hydraulic oil level.						
3	Radiator coolant level.						
4	Condition of blades.						
5	Blade pitch operation.						
6	Safety Stop Switch operation.						
7	Steering control operation.						

COMMENTS:

EPOXY/M SERIES TROWEL— SAFETY INFORMATION

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
A black silhouette of a person wearing a gas mask, with a cloud of gas or smoke around their head.	Lethal exhaust gas hazards
A black silhouette of an explosion with jagged lines radiating outwards.	Explosive fuel hazards
A black silhouette of a hand held over a flame, with wavy lines representing heat or fire.	Burn hazards
A black silhouette of a hand reaching towards a rotating gear or wheel, with motion lines indicating rotation.	Rotating parts hazards
A black silhouette of a person with a spray of fluid or gas erupting from their head area.	Pressurized fluid hazards

EPOXY/M SERIES TROWEL— SAFETY INFORMATION

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.



EPOXY/M SERIES TROWEL— SAFETY INFORMATION

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.



EPOXY/M SERIES TROWEL— SAFETY INFORMATION

NOTICE

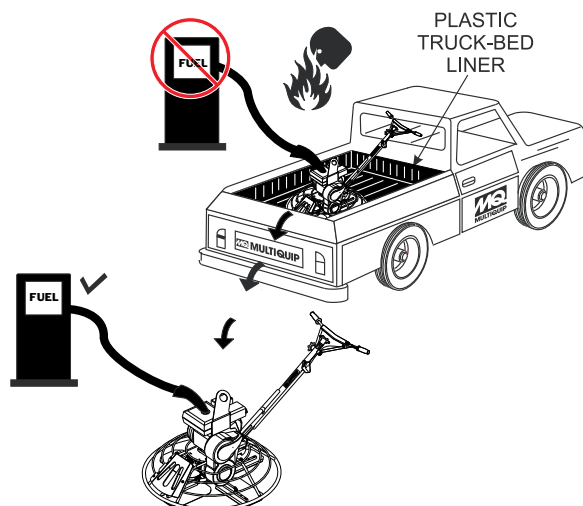
- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating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

EPOXY/M SERIES TROWEL— SAFETY INFORMATION

GENERATOR SAFETY

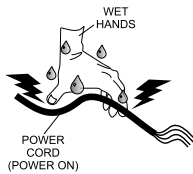
If using a generator to power trowel, refer to applicable generator manual safety information section.



ELECTRICAL SAFETY

DANGER

- **NEVER** let power cords or cables **lay in water**.
- **NEVER** use **damaged** or **worn** cables or cords when connecting equipment to generator. Inspect for cuts in the insulation.
- **NEVER** grab or touch a live power cord or cable with wet hands. The possibility exists of **electrical shock, electrocution or death**.
- Make sure power cables are securely connected. Incorrect connections may cause electrical shock and damage to the trowel.



NOTICE

- **ALWAYS** make certain that proper power or extension cord has been selected for the job.

ENVIRONMENTAL SAFETY

NOTICE

- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.



[illegible]

EPOXY/M SERIES TROWEL— OPERATION AND SAFETY DECALS

Machine Safety Decals

The J-Series walk-behind trowel is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. Figure 1 below illustrates these decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.

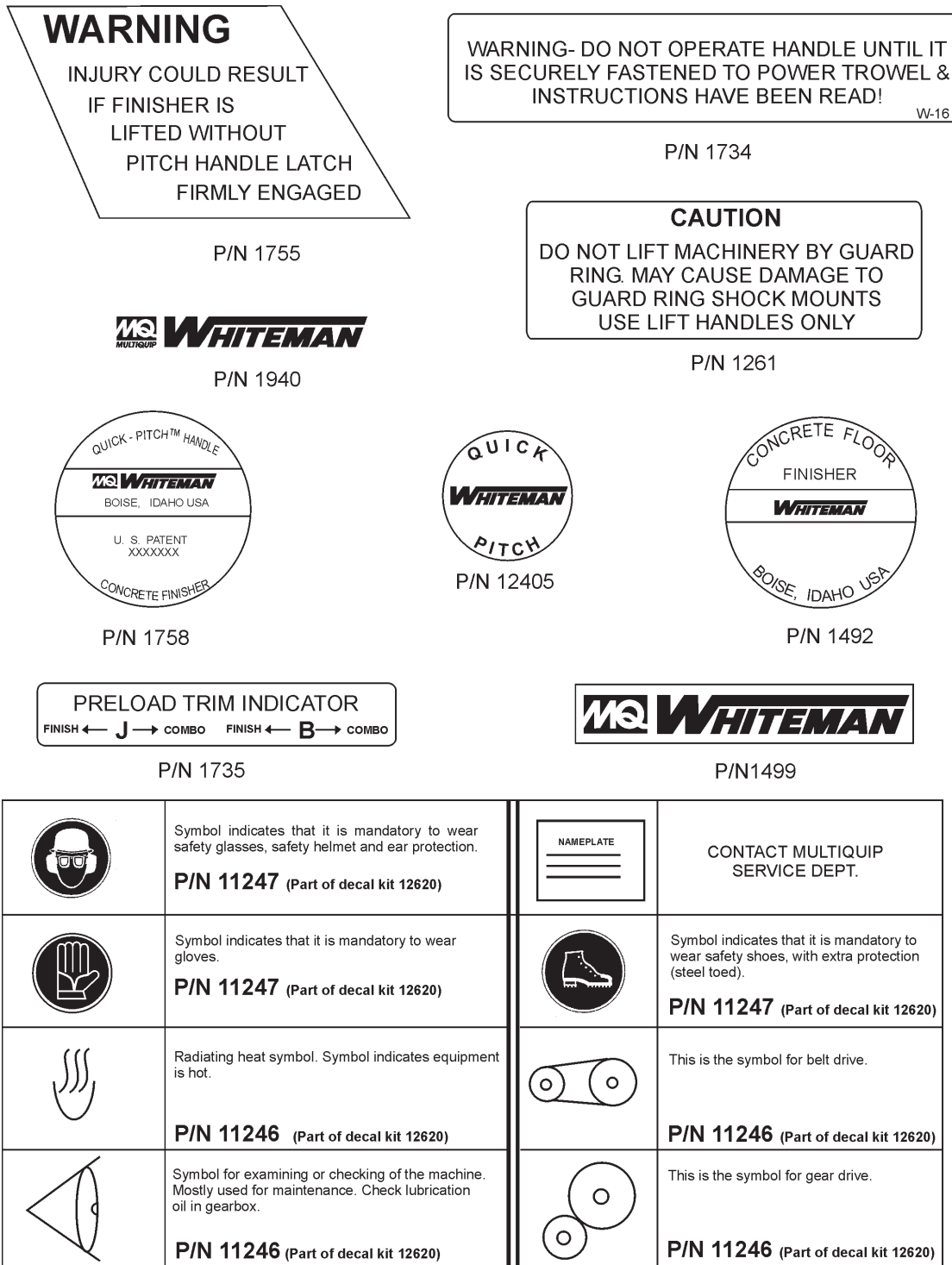


Figure 1. EPOXY/M Trowel Decals

EPOXY/M SERIES TROWEL— SPECIFICATIONS (TROWEL)

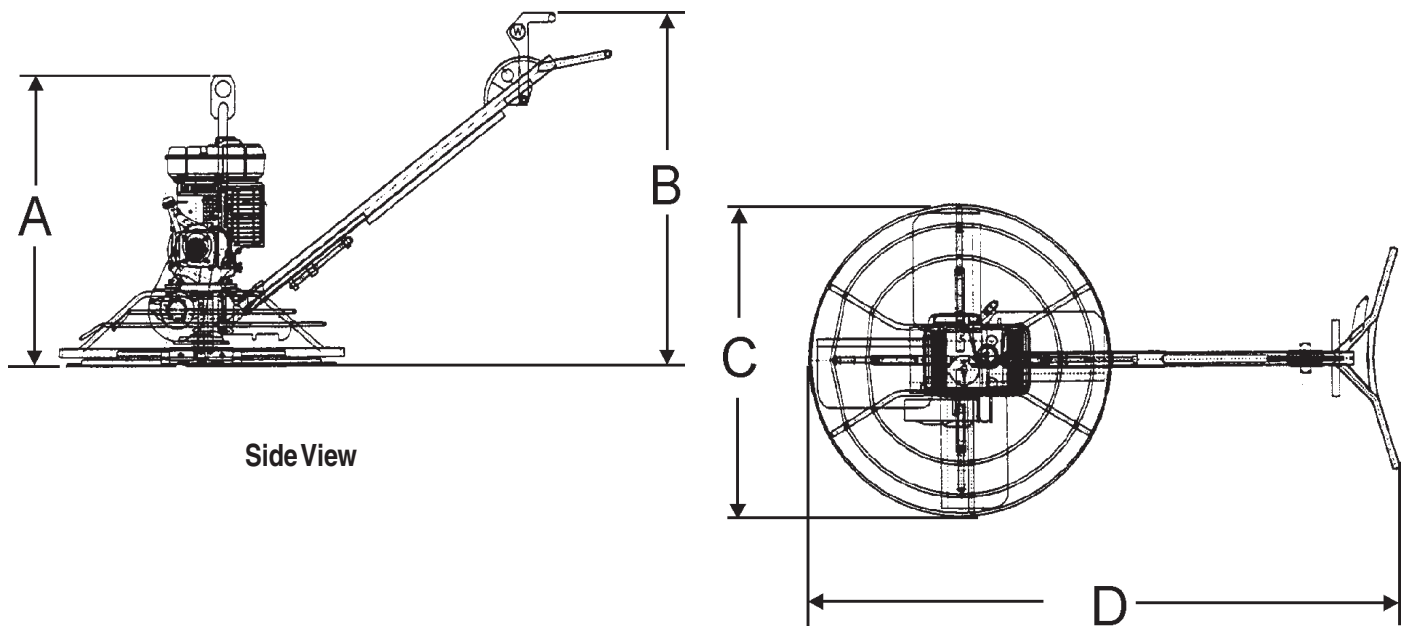


Figure 2. EPOXY/M SERIES Trowel Dimensions

Table 1. Epoxy Series Trowel Specifications	
A– Height (Lifting Hook)	36.7 in (931.6 mm)
B– Height (Engagement Lever)	41.4 in (1,044.2 mm)
C–Width	36.5 in. (927.1 mm)
D–Length	70.5 in. (1,789.4 mm)
Weight – Operating	150 lb. (330 kg.)
Sound Pressure	94 db
Vibration	2.0g (19.6 m/s ²)
Blade Speed (max)	129 rpm @ 4000
Blade Tip Speed	1,182 fpm (6.0 m/s)

NOTE:

1. Sound pressure is a weighted measure. Measured at the operators ear position while the walk-behind trowel is operating at full throttle on concrete in a manner most often experienced in “**normal**” circumstances. Sound pressure may vary depending upon the condition of the concrete. Hearing protection is always recommended.
2. The vibration level indicated is the maximum RMS (Root Mean Square) value obtained at the handle grip while operating the walk-behind trowel on curing concrete in a manner most often experienced in “**normal**” circumstances. Values were obtained from all three axes of motion. The values shown represent the maximum RMS value from these measurements.

Table 2. Specifications (Engine & Electric Motor)

	Model	HONDA GX-160QA2	Electric Motor
Engine/Electric Motor	Type	Air-cooled 4 stroke, Single Cylinder, OHV, Horizontal Shaft Gasoline Engine	N/A
	Bore X Stroke	2.7 in. x 1.8 in. (68 mm x 45 mm)	N/A
	Displacement	163 cc (9.9 cu-in)	N/A
	Max Output	5.0 H.P./3600 R.P.M.	1.0 HP
	Fuel Tank Capacity	Approx. 0.95 U.S. gallons (3.6 liters)	N/A
	Fuel	Unleaded Automobile Gasoline	N/A
	Lube Oil Capacity	.60 liters (0.63 qts)	N/A
	Speed Control Method	Centrifugal Fly-weight Type	N/A
	Starting Method	Recoil Start	N/A
	Input Voltage	12.0 x 14.4 x 13.2 in. (304 x 362 x 335 mm)	115/230 VAC Single Phase
Dimension (L x W x H)		33.1 lbs (15 Kg.)	TBD
Dry Net Weight			TBD

EPOXY/M SERIES TROWEL—GENERAL INFORMATION

EPOXY/M SERIES Walk-Behind Trowel Familiarization

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

Take a walk around the trowel. Take notice of all the major components (see Figure 3, pages 16 and 17) like the engine, blades, quick pitch control, air cleaner, centrifugal stop switch etc. Check that there is always oil in the engine.

Read all the 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.

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

This trial test run will increase your confidence in using the trowel and at the same time it will familiarize you with the trowel's controls. In addition you will understand how the trowel handles under actual conditions.

Engines

This trowel is available with a 5.0 HP **HONDA** gasoline engine. In addition, a 1.0 horsepower 115/230 VAC, single phase electric motor is also available. Refer to the engine owner's manual for instructions regarding the operation and maintenance of your engine. The engine manual is included with your trowel at the time of shipping from Whiteman. Please contact your nearest Multiquip Dealer for a replacement should the original manual disappear.

Drive System

Power is transferred from the engine or electric motor to the gearbox input shaft via a V-belt or pulley drive system. The pulley engages using either a centrifugal or manual clutch. See page 23.

Gearbox

The **gearbox** is located beneath the engine and transfers power to the **rotor** or **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 either 3 or 4 arms that extend outward that are used for attachment of blades or other accessories. Remember as the gearbox output shaft rotates so does the spider assembly.

Blades

The blades of the trowel finish the concrete as they are rotated around the surface. Blades are classified as **combination** (8 inches wide), **float** (10 or 8 inches wide), and **finish** (6 inches wide). This trowel comes equipped with either **three** or four **blades** per rotor equally spaced in a radial pattern and attached to vertical rotating shaft by means of a **spider assembly**.

Centrifugal Stop Switch

In the event of a trowel runaway condition (operator releases the handle), a **centrifugal stop switch**, **manual clutch** or **micro-switch** depending which trowel you have, will stop the engine and bring the trowel to a halt.



CAUTION

NEVER attempt to **lift** the trowel by yourself. **ALWAYS** get the assistance of another person to help lift the trowel or use a crane or lifting device to move the trowel.

Moving the EPOXY/M SERIES Walk-Behind Trowel

This walk-behind trowel is designed to be moved and handled in several ways. The easiest way to lift the trowel is to use the **auxiliary lifting tube** that is attached to the main handle. See page 24, Figure 19. When using the auxiliary tube, always use **two persons** to lift the trowel.

Some models have a **lifting bale** (option) installed. A strap or chain can be attached to the lifting bale, allowing a forklift or crane to lift the trowel up onto a slab of concrete. Use a lifting device of adequate lifting capacity to lift the trowel.

Training

For proper training, please use the "**TRAINING CHECKLIST**" located in the front of this manual (Page 6). This checklist will provide an outline for an experienced operator to provide training to a new operator

EPOXY/M SERIES TROWEL— CONTROLS AND COMPONENTS

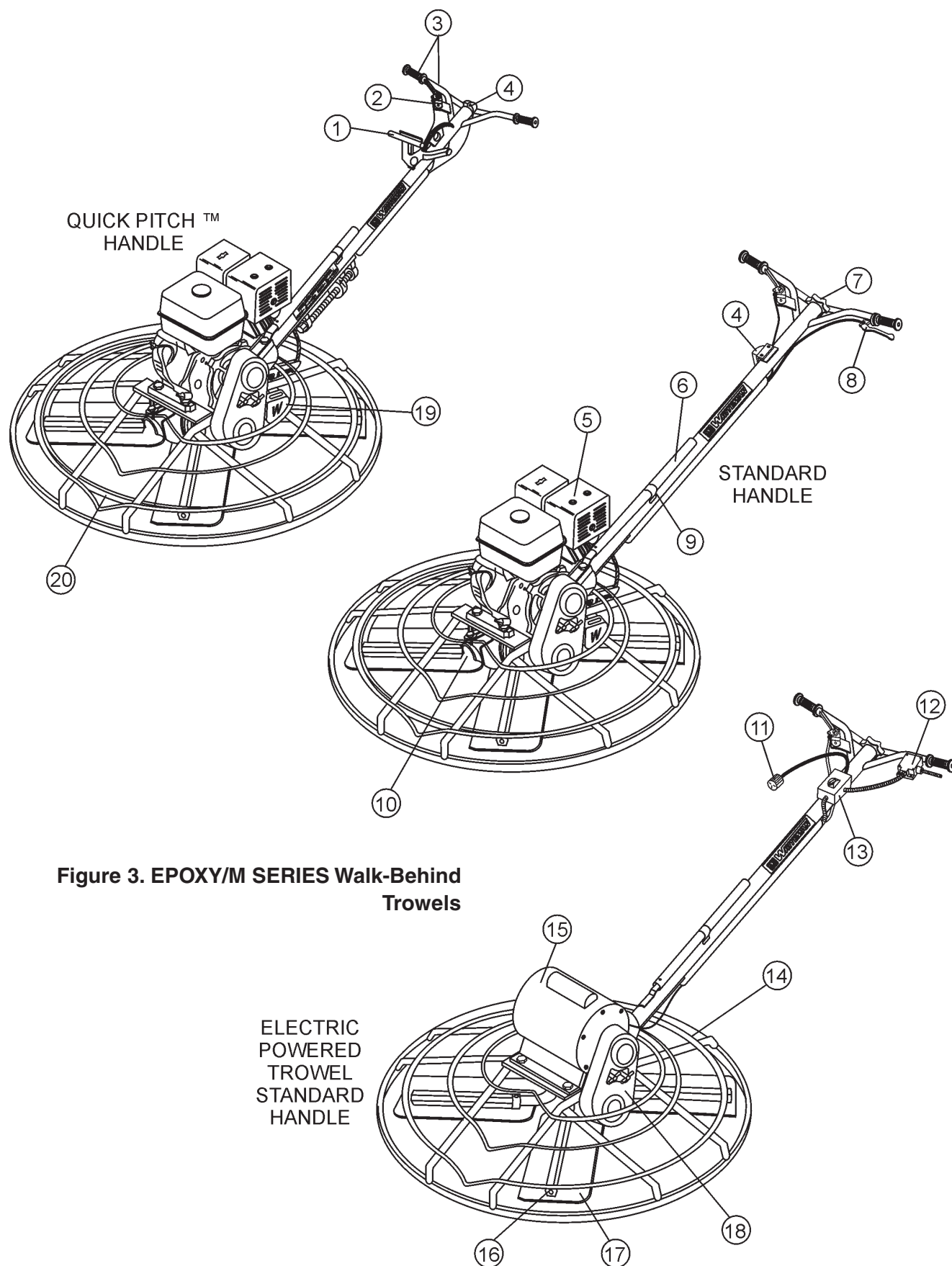


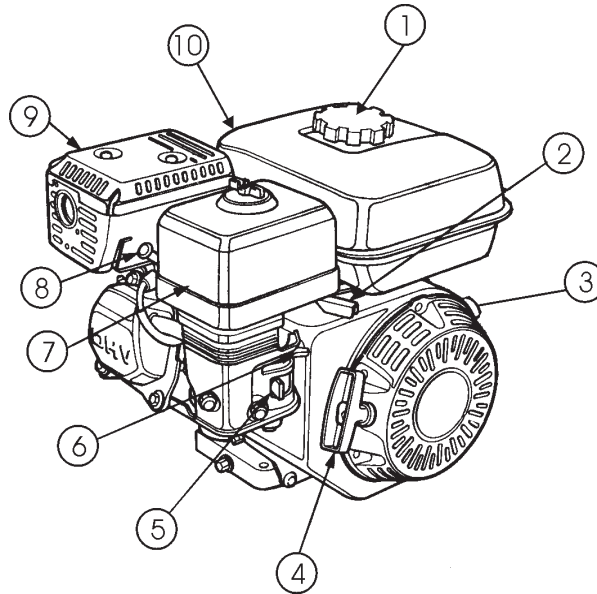
Figure 3. EPOXY/M SERIES Walk-Behind Trowels

EPOXY/M SERIES TROWEL— CONTROLS AND COMPONENTS

Figure 3 shows the location of the basic controls or components, for the EPOXY/M SERIES trowel. Listed below is a brief explanation of each control or component

1. **Quick Pitch™ Control Handle** – To adjust the pitch of the blades, grasp the handle then squeeze and either move the handle forward or backward to achieve the desired blade pitch.
2. **Throttle Control Lever** – Controls the speed of the engine. Move the hand lever towards the operator to increase engine speed (high), away from the operator to decrease engine speed (low).
3. **Hand Grip/Handle Bar** – When operating the trowel, place both hands on each grip to maneuver the trowel. Replace hand grips when they become worn or damaged.
4. **Centrifugal Kill Switch** – In the event the operator loses control of the trowel, this switch will shut-down the engine.
5. **Engine** – This trowel uses Honda, Robin and Briggs and Stratton type gasoline engines.
6. **Auxiliary Lifting Tube** - Use this tube to lift the trowel onto a slab. Tube is to be inserted into socket located in front of the gearbox.
7. **Pitch Control (standard models)** - Turn this "Star Wheel" clockwise for increase blade pitch, and counter-clockwise for decrease blade pitch.
8. **Clutch Lever** - Clutch engagement lever. When this lever is engaged, the blades will begin to rotate. May be used with either Quick Pitch™ or Standard handle.
9. **Main Tube** - When disassembling components inside the tube exercise extreme **CAUTION!** Tube is spring-loaded, severe injury could result if not disassembled correctly.
10. **Trowel Lifting Point** – Insert the auxiliary lifting tube here. See Figure 19.
11. **AC Power Plug (Electric Models Only)** – Insert this plug into an AC power source.
12. **Micro-Switch (Electric Models Only)** – In the event the operator loses control of the trowel, this micro-switch will shut-down the electric motor.
13. **Electric Switch Box (Electric Models Only)** – Provides AC power to the electric motor.
14. **Guard Ring- NEVER!** put hands or feet inside guard ring.
15. **Electric Motor (Electric Models Only)** – This trowel uses a 2 HP, 115/230 VAC single phase electric motor.
16. **Trowel Arm – 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. Use the trowel arm adjustment tool P/N 1817 to adjust the trowel arms.
17. **Blades** – This trowel is equipped with combination blades. These blades are versatile and should take care of most troweling needs. In addition float discs can be attached to the trowel arms that will allow the trowel to float on "wet" concrete.
18. **V-Belt Cover** – Remove this cover to gain access to the V-belt. **NEVER** operate the trowel with this cover removed.
19. **Weights** – The trowel may be equipped with two 10 lbs. weights. The weights may be removed to reduce the operating weight of the trowel.
20. **Stabilizer Ring** – Reduces trowel arm vibration. Helps stabilize trowel arm.

EPOXY/M SERIES TROWEL— BASIC ENGINE



HONDA engine shown.

Figure 4. Engine Controls and Components

INITIAL SERVICING

The engine (Figure 4) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturers engine manual for instructions & details of operation and servicing. The engine shown above is a **HONDA** engine, operation for other types of engines may vary somewhat.

1. **Fuel Filler Cap** – Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. **DO NOT** over fill.

DANGER



Adding fuel to the tank should be done only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill, **DO NOT** attempt to start the engine until the fuel residue has been completely wiped up, and the area surrounding the engine is dry.

2. **Throttle Lever** – Used to adjust engine RPM speed (lever advanced forward **SLOW**, lever back toward operator **FAST**).
3. **Engine ON/OFF Switch** – ON position permits engine starting, OFF position stops engine operations.
4. **Recoil Starter (pull rope)** – Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.

5. **Fuel Valve Lever** – **OPEN** to let fuel flow, **CLOSE** to stop the flow of fuel.
6. **Choke Lever** – Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.
7. **Air Cleaner** – Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter cannister to gain access to filter element.

NOTE

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

8. **Spark Plug** – Provides spark to the ignition system. Set spark plug gap to 0.6 - 0.7 mm (0.028 - 0.031 inch) Clean spark plug once a week.
9. **Muffler** – Used to reduce noise and emissions.

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.

10. **Fuel Tank** – Holds unleaded gasoline. For additional information refer to engine owner's manual.

EPOXY/M SERIES TROWEL — ASSEMBLY AND INSTALLATION

Assembly and Installation

Before the trowel can be put into operation there are some components that must be installed before the trowel can be used. This section explains how to install those components.

Handle Tube Installation (All Models)

1. Install the **handle tube** to the gearbox as shown in Figure 5. The mounting hardware should be contained in the shipping container.

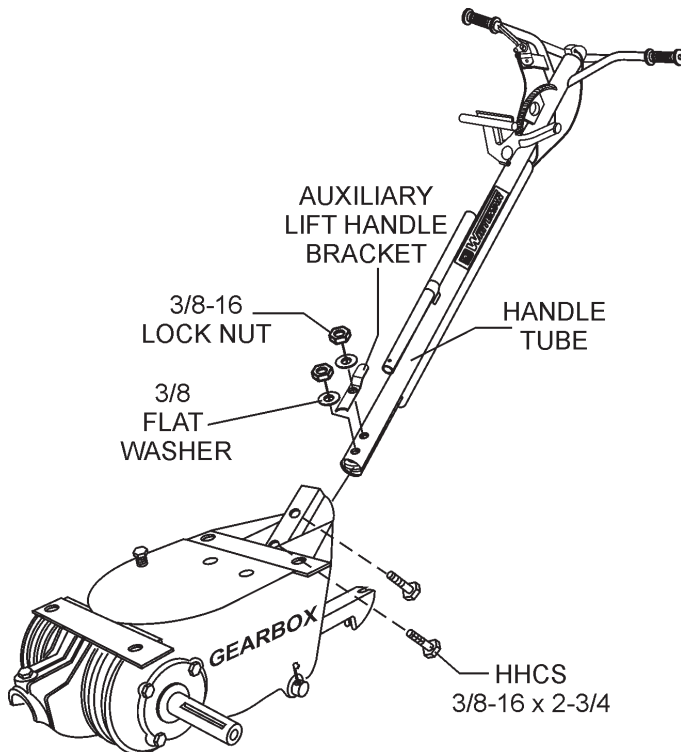


Figure 5. Handle Tube Installation

Quick Pitch™ Handle Installation (Quick Pitch Models Only)

CAUTION

The Quick Pitch™ handle is spring loaded, personal injury or damage could result from improper handling or installation. Be careful when installing this component.

NOTE

Considerable force may be required when moving the Quick Pitch™ **T-handle** forward or backward.

1. Grasp the Quick Pitch™ **T-handle** from the operator's position and squeeze the blade pitch adjustment trigger. Move the **T-handle** towards the engine as far as possible (Figure 6). This will compress the spring inside the handle tube. Allowing maximum exposure of the pitch cable.

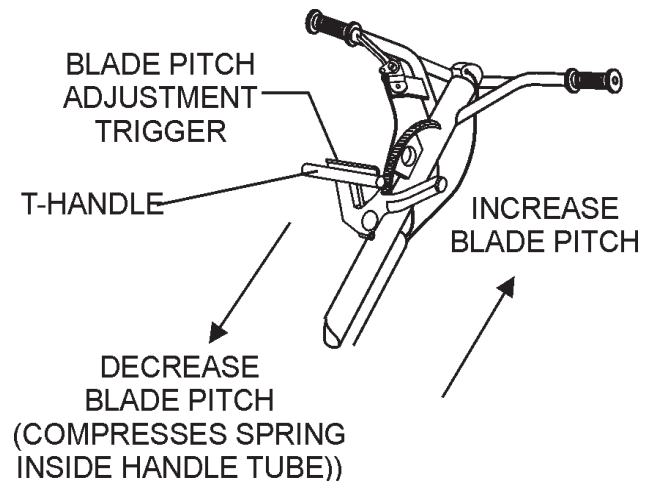


Figure 6. Blade Pitch T-Handle

2. Lock the spring in the compressed position, by releasing the blade pitch adjustment trigger.

EPOXY/M SERIES TROWEL — ASSEMBLY AND INSTALLATION

3. Remove one brass set nut from the Quick Pitch™ cable end as shown in Figure 7.
4. Thread the second brass set nut towards the cable as far as possible.

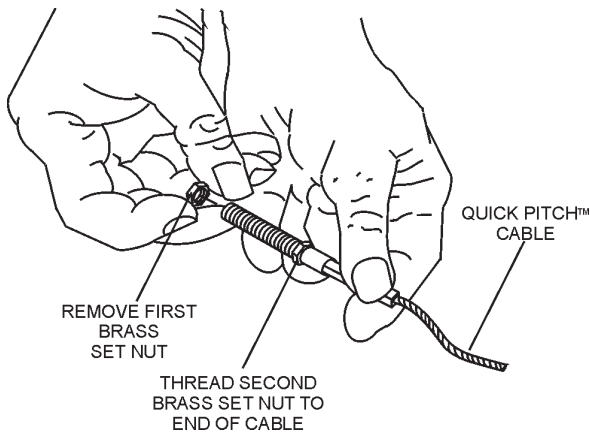


Figure 7. Quick Pitch™ Cable

5. Insert the cable end through the yoke eyelet (Figure 8). Tighten the first brass set nut by hand to remove all the slack from the cable.
6. Using a wrench, tighten the second brass set nut up against the yoke boss. This will lock the cable in place.
7. Use a wrench and finish tightening the first brass set nut up against the yoke boss.

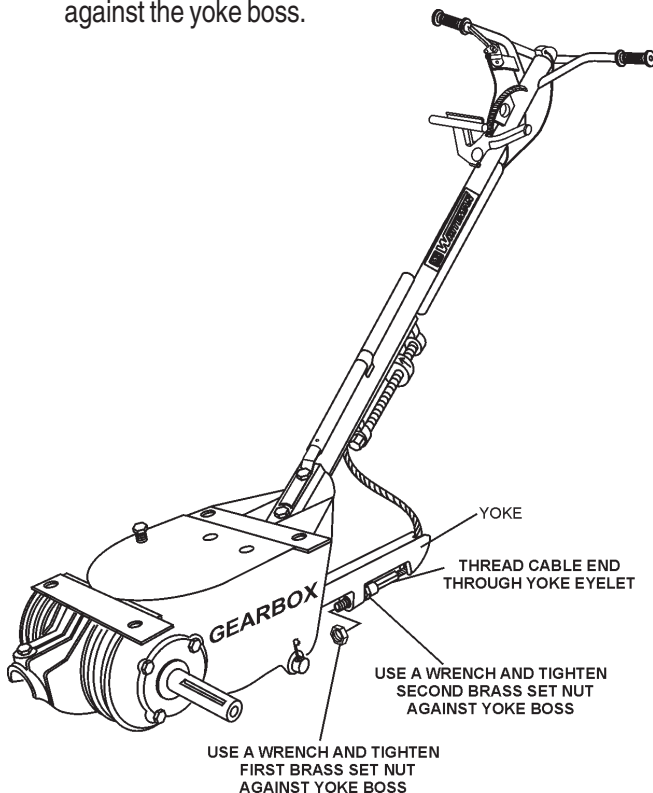


Figure 8. Cable Yoke Attachment

Pre-load Adjustment (Quick Pitch™ Models Only)

1. After the Quick Pitch™ handle has been installed on the trowel, spring pre-load adjustment will be required.
2. Locate the adjustment screw on the underside of the handle tube (Figure 9).

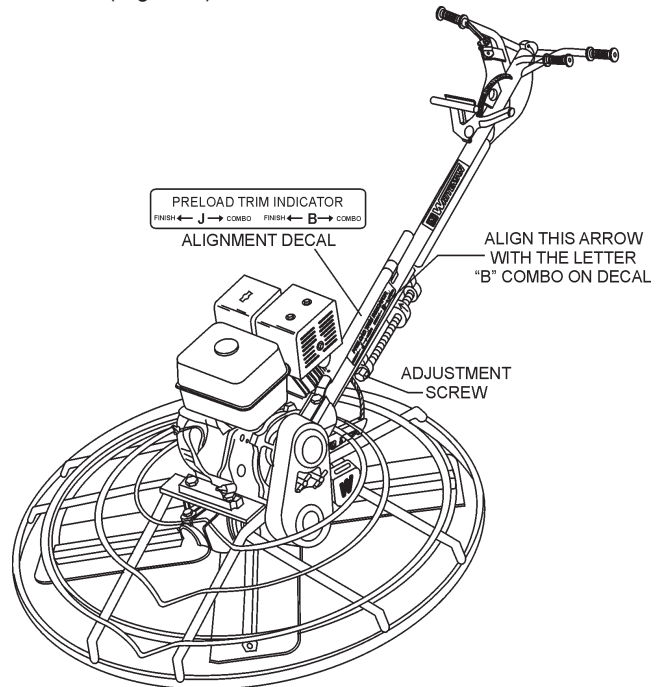


Figure 9. Cable/Yoke Attachment

3. A **decal** has been placed on the side of the handle tube to assist the user in the adjustment of the spring.
4. Align the **arrow** on the adjustment screw with the letter "**J**" **COMBO** on the **decal**. The letter "**J**" stands for J-Series Walk-Behind trowel.
5. Test the pitch control operation and adjust if necessary.

Throttle Cable Installation (Honda Engine)

1. Set the **throttle lever** (Figure 10) to the idle position by pushing it away from the operator's position towards the engine.

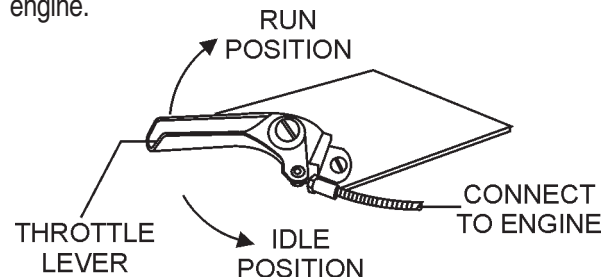


Figure 10. Throttle Lever

EPOXY/M SERIES TROWEL — ASSEMBLY AND INSTALLATION

2. On **ROBIN** engines, the **hook-on** the engine end of the throttle wire must be removed. Make the cut as shown in Figure 11. The **HONDA** engine will not require this modification to the throttle cable.

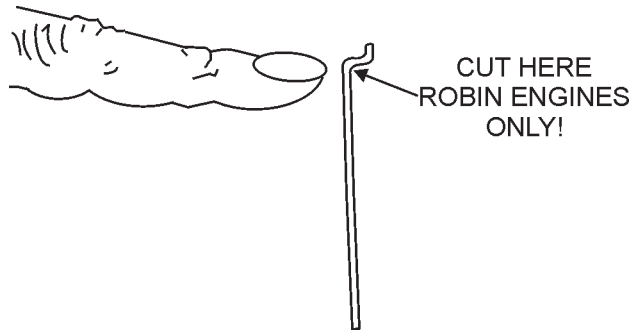


Figure 11. Throttle Wire Hook

3. Connect the throttle cable **hook-on** wire to the **HONDA** engine throttle lever as shown in Figure 12.

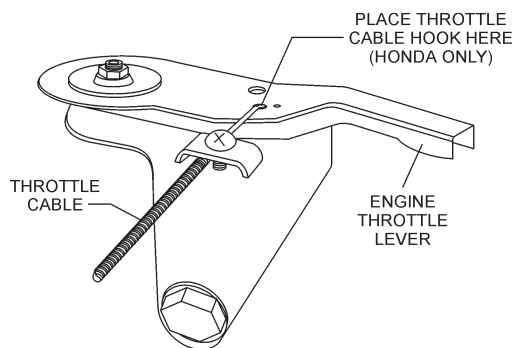


Figure 12. Throttle Cable Connection (HONDA)

4. Connect the throttle cable hook-on wire to the **ROBIN** engine throttle lever as shown in Figure 13.

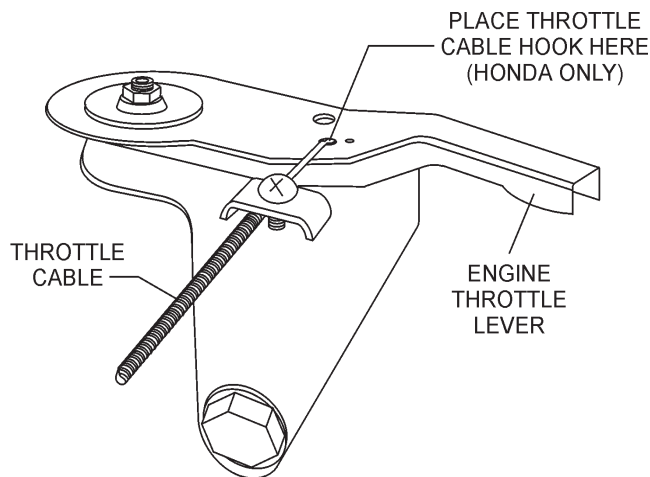


Figure 13. Throttle Cable Connection (ROBIN)

5. Connect the throttle cable to the engine. Keep in mind there should be a piece of wire installed on the trowel to show you where to route the throttle cable. When connecting the cable housing, make sure that no more than **1/4" (6.4mm)** of the cable housing protrudes past the housing clamp on the engine (Step 4).
6. After the cable has been installed on the engine, tighten the clamp on the throttle control, operator position of the handle to lock the throttle cable at the proper length.
7. These are general instructions. Installation of the throttle cable may vary for different engine configurations. Please look for more detailed instructions inside the box containing the handle. These more detailed instructions should provide adequate guidance for installing.

Safety Kill Wire

Locate the **RED** wire protruding from the handle tube (Figure 14) and connect it to the **RED** tail wire on the engine. Test the kill switch to insure proper operation.

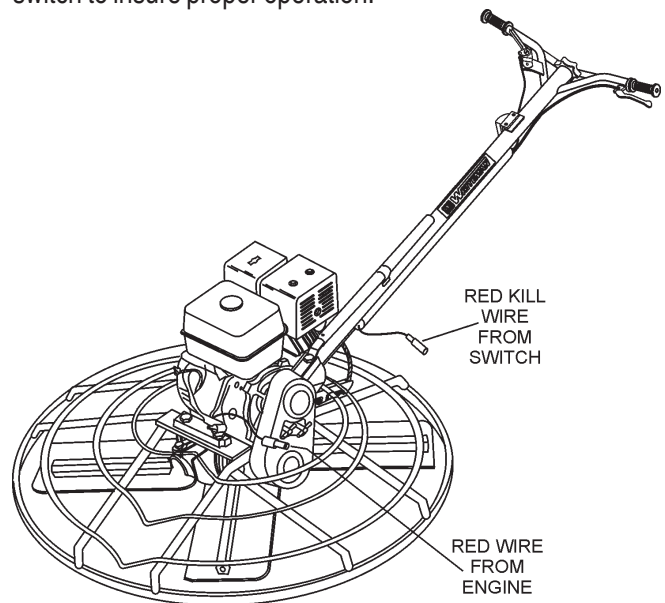


Figure 14. Engine Kill Wire Connection

Handle Height Adjustment

If handle height adjustment is desired, a handle wedge kit can be purchased for your trowel by ordering Part Number 2576 from your Multiquip dealer. These wedges are placed between the handle and the gearbox to adjust the operating height of the handle. This kit comes complete with wedges, new bolts and installation instructions. This will move your operating handle position up or down approximately 3" (76mm).

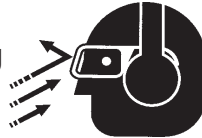
EPOXY/M SERIES TROWEL— PRE-INSPECTION

CAUTION

NEVER operate the trowel in a confined area or enclosed area structure that does not provide ample **free flow of air**.



ALWAYS wear approved eye and hearing protection before operating the trowel.



NEVER place hands or feet inside the guard rings while the engine is running. **ALWAYS** shut the engine down before performing any kind of maintenance service on the trowel.

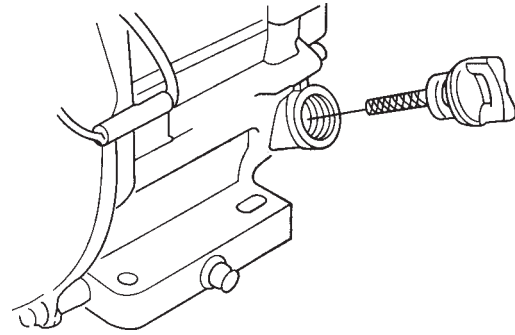
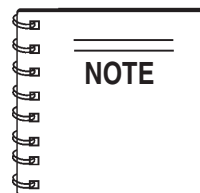


Figure 15. Engine Oil Dipstick (Removal)

3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
4. If the oil level is low (Figure 16), fill to the edge of the oil filler hole with the recommended oil type (Table 3). Maximum oil capacity is 400 cc.

It is recommended that the trowel's **kill switch** be used to stop the engine after every use. Doing this will verify that the switch is working properly and presents no danger to the operator.



Reference manufacturer engine manual for specific servicing instructions.

Before Starting

1. Read safety instructions at the beginning of manual.
2. Clean the **trowel**, removing dirt and dust, particularly the engine cooling air inlet, carburetor and air cleaner.
3. Check the air filter for dirt and dust. If air filter is dirty, replace air filter with a new one as required.
4. Check carburetor for external dirt and dust. Clean with dry compressed air.
5. Check fastening nuts and bolts for tightness.

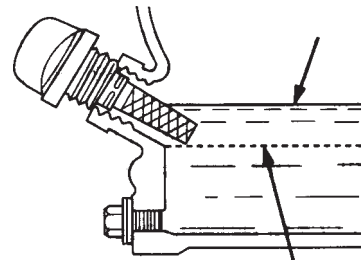


Figure 16. Engine Oil Dipstick (Oil Level)

Engine Oil Check

1. To check the engine oil level, place the trowel on secure level ground with the engine stopped.
2. Remove the filler dipstick from the engine oil filler hole (Figure 15) and wipe it clean.

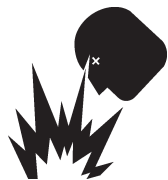
Table 3. Oil Type

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

EPOXY/M SERIES TROWEL— PRE-INSPECTION



Explosive Fuel



Fuel Check

Motor fuels are highly flammable and can be dangerous if mishandled. **DO NOT** smoke while refueling. **DO NOT** attempt to refuel the trowel if the engine is **hot!** or **running**.

1. Remove the gasoline cap located on top of fuel tank.
2. Visually inspect to see if fuel level is low. If fuel is low, replenish with unleaded fuel.
3. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel.

Gearbox Oil

1. Determine if the **gearbox** oil is low by removing the oil plug located on the side of the gearbox. This plug will be marked by the "**check**" decal. See Figure 17. The correct level of the lubrication oil should be to the bottom of the fill plug.

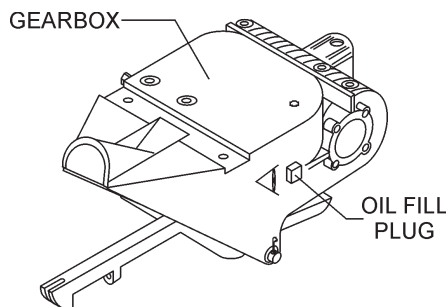


Figure 17. Gearbox

2. If lubrication oil begins to seep out as the drain plug is being removed, then it can be assumed that the gearbox has a sufficient amount of oil.
3. If lubrication oil does not seep out as the drain plug is being removed, fill with type ISO 680 (Whiteman P/N 10139) gearbox lubricant oil until the oil filler hole overflows.

V-belt Check

A worn or damaged V-belt can adversely affect the performance of the trowel. If a V-belt is defective or worn simply replace the V-belt as outlined in the maintenance section of this manual.

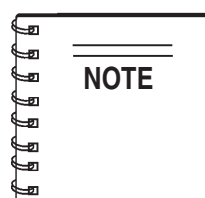
Blade Check

Check for worn or damaged blades. Check to see if one blade is worn out while the others look new. If this is the case there could be a blade pitch problem. Refer to the maintenance section of this manual for blade pitch adjustment procedure. Replace any worn blades.

CONTROLS

Safety Kill Switches

This trowel has been equipped with a safety kill switch or a hand operated clutch. Safety kill switches should be tested every time the engine is started.



NEVER! disable or disconnect the kill switch. It is provided for operator safety. Injury may result if it is disable, disconnected or improperly maintained.

Centrifugal Type Kill Switch

Located on the main handle tube is a red switch (Figure 18). The switching mechanism of this switch should operate freely and should **always** be kept in this condition. With the switch in the **OFF** position, the engine should not start or run. The purpose of this switch is to stop the engine in a runaway situation, (i.e.-the operator releasing the handle during operation).

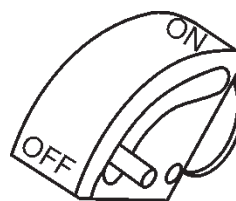


Figure 18. Centrifugal Kill Switch

Hand Clutch

Some finisher models are equipped with a **hand operated clutch**. These units are not equipped with a safety kill switch since the unit automatically stops rotating when the clutch lever is released. Clutch operation should be tested each time the machine is started.

DO NOT let the machine sit unused with the engine at high speed for an extended period of time. It will cause premature belt wear or may destroy the belt. Always set the engine speed to idle when the hand clutch is disengaged.

EPOXY/M SERIES TROWEL — INITIAL START-UP (GASOLINE ENGINE)



CAUTION

The trowel is **heavy** and **awkward** to move around. Use proper heavy lifting procedures and **DO NOT lift the trowel by the guard rings**.

Lifting the Trowel Onto a Slab.

Auxiliary Lifting Tube

Remove the auxiliary lifting tube located on top of the main handle. Insert the tube into the socket located on the opposite side of the gearbox (Figure 19) from the handle.

Make sure that the hole in the tube engages with the pin in the socket. With one person lifting from the main handle, and another lifting from the auxiliary lifting tube pick up the machine to move onto a slab.

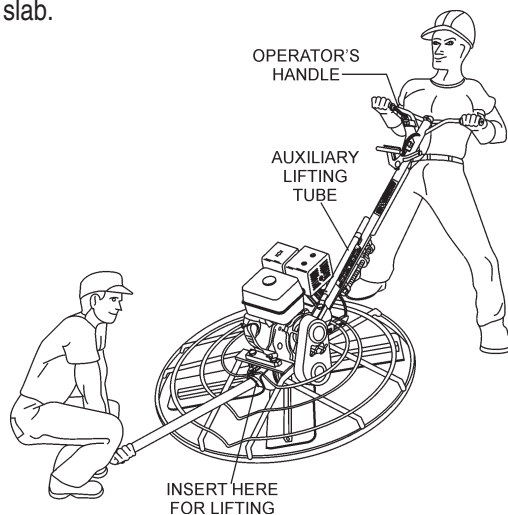


Figure 19. Lifting the Trowel



CAUTION

The trowel must be stabilized by the person carrying the **operator's handle** (Figure 19). If it is not stabilized properly the handle may swing around and **flip** the trowel, thus causing damage to the trowel and bodily injury.

Lifting Bale (Option)

The lift bale is optional on new trowels. It provides an optimal lift point for moving the trowel. **Lift bales** or **forklift** can be used to lift a trowel up onto a building with a crane. See "**Optional Equipment**" section in this manual for ordering information.

Using a **crane** to move a machine with a lift bale is highly recommended, and is perfectly safe for the machine. Extra care should be taken when lifting the machine off the ground, though. Serious damage to the machine or personal injury could be caused by dropping a trowel.

This section is intended to assist the operator with the initial start-up of the walk-behind trowel. It is extremely important that this section be read carefully before attempting to use the trowel in the field.

DO NOT use your trowel until this section is thoroughly understood.



CAUTION

DO NOT attempt to operate the trowel until the Safety, General Information and Inspection sections of this manual have been read and thoroughly understood. Depending on engine manufacturer, operating steps may vary. See engine manufacturer's operating manual. The following start-up procedure makes reference to a **HONDA 13 HP Engine (Manual Start)**.

Starting the Engine (HONDA engine)

1. Place the engine **fuel valve lever** (Figure 20) to the "ON" position.

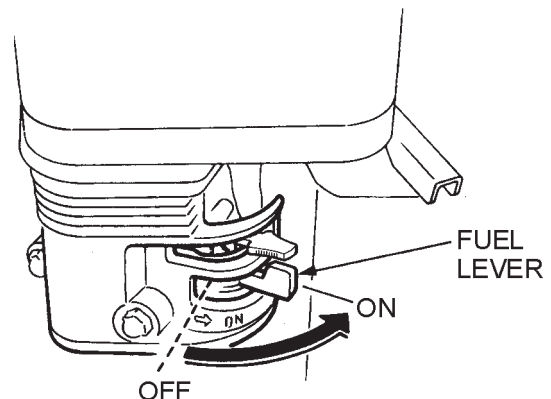


Figure 20. Engine Fuel Valve Lever

2. Place the trowel's **throttle lever** (Figure 21) to the "ON" position.

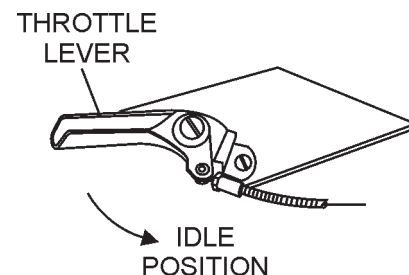


Figure 21. Throttle Lever (Idle Position)

EPOXY/M SERIES TROWEL — INITIAL START-UP (GASOLINE ENGINE)

- Place the **centrifugal kill switch** (Figure 22) in the "ON" position. For models that use this feature.

CAUTION

NEVER disable or disconnect the centrifugal kill switch. It is provided for the operators' safety and injury may result if it is disabled, disconnected or improperly maintained.

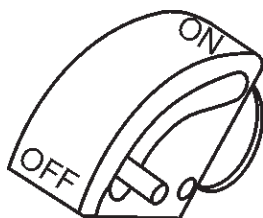


Figure 22. Centrifugal Kill Switch

- Place the **Choke Lever** (Figure 23) in the "OPEN" position

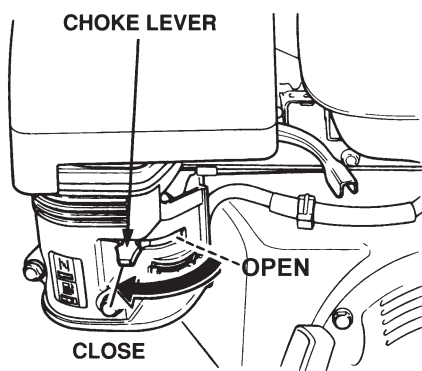


Figure 23. Engine Choke Lever

- Grasp the starter grip (Figure 24) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding to the compression point. Pull the starter grip briskly and smoothly for starting.

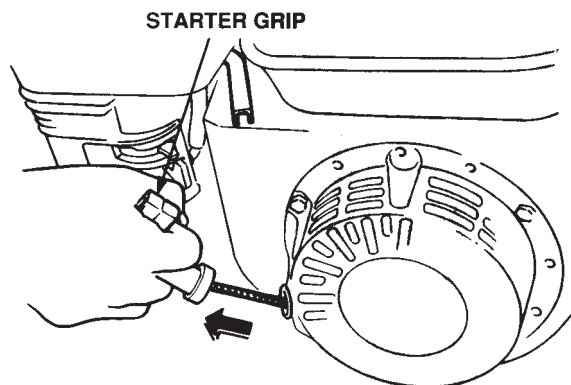


Figure 24. Starter Grip

- If the engine has started, slowly return the choke lever (Figure 23) to the **CLOSED** position. If the engine has not started repeat steps 1 through 5.
- Before the trowel is placed into operation, run the engine for several minutes. Check for fuel leaks, and noises that would associate with a loose guard ring and/or covers.
- To begin troweling, place the throttle lever (Figure 21) in the "RUN" position

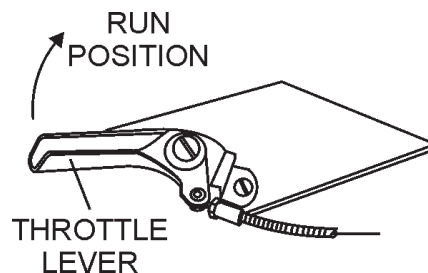


Figure 25. Throttle Lever (Run Position)

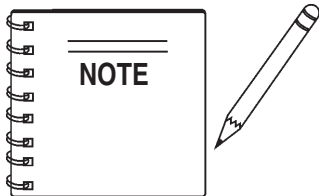
EPOXY/M SERIES TROWEL — INITIAL START-UP (ELECTRIC MOTOR)

Starting The Electric Motor (Single Phase 115/230 Volts)

The electric motor used on the B-Series trowel has two operating voltages:

- 115 VAC Single Phase, 2 Horsepower
- 230 VAC Single Phase, 2 horsepower

1. Lift the trowel onto the slab in the same manner as described on page 24 ("**Lifting the Trowel Onto a Slab**").
2. Connect one end of a **heavy duty extension cord** to the AC power plug on the trowel.
3. Connect the other end of the extension cord to an AC power source.



Make sure to connect the **correct** AC voltage (115 or 230 VAC) to the electric motor. Connecting an incorrect voltage could cause serious damage to the electric motor. The identification plate located on the motor will indicate the motor's voltage requirement.

4. Squeeze the micro-switch lever (Figure 26) to begin troweling. This lever will act an **emergency stop switch**. When this lever is released, voltage to the electric motor will be interrupted. When this lever is squeezed the voltage will resume. This can only be accomplished if the trowel's power **ON/OFF** switch is in the **ON** position.

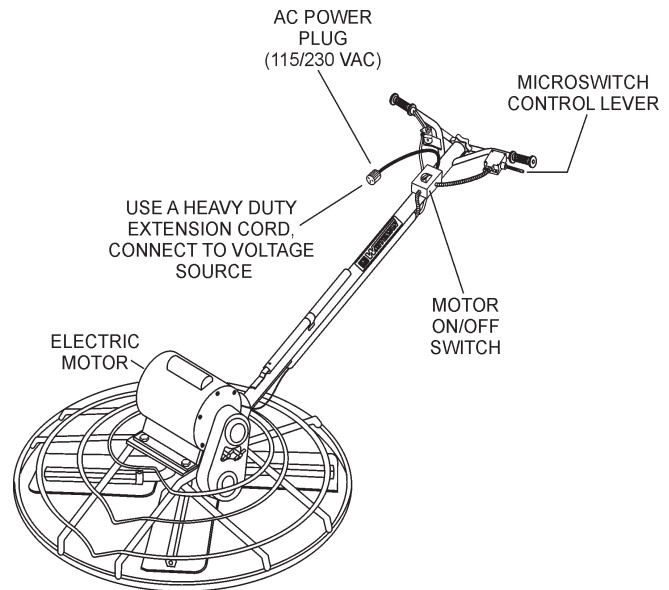
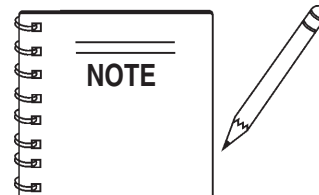


Figure 26. Electric Motor Trowel

Extension Cable

When electric power is to be provided to the trowel at some distance from the power source, extension cords are normally used. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the power source and point of use (trowel) is held to a minimum. Use the cable selection chart (Table 4) as a guide for selecting proper extension cable size.



At 115 VAC the motor should draw about 16.6 amps and at 230 VAC the motor should draw about 8.4 amps.

Table 4. Cable Selection (60 Hz, Single Phase Operation)

Current in Amperes	Load In Watts		Maximum Allowable Cable Length			
	At 120 Volts	At 240 Volts	#10 Wire	#12 Wire	#14 Wire	#16 Wire
2.5	300	600	1000 ft. (305 m)	600 ft. (183 m)	375 ft. (107 m)	250 ft. (76 m)
5	600	1200	500 ft. (152 m)	300 ft. (91 m)	200 ft. (61 m)	125 ft. (38 m)
7.5	900	1800	350 ft. (107 m)	200 ft. (61 m)	125 ft. (38 m)	100 ft. (30 m)
10	1200	2400	250 ft. (76 m)	150 ft. (45 m)	100 ft. (30 m)	
15	1800	3600	150 ft. (46 m)	100 ft. (30 m)	65 ft. (19 m)	
20	2400	4800	125 ft. (38 m)	75 ft. (22 m)	50 ft. (15 m)	
30	3600	7200	75 ft. (23 m)	50 ft. (15 m)	35 ft. (11 m)	
CAUTION: Equipment damage can result from low voltage.						

EPOXY/M SERIES TROWEL — OPERATION

The following steps are intended as a basic guide to machine operation, and are not to be considered a complete guide to concrete finishing. We suggest that all operators (experienced and novice) read "**Slabs on Grade**" published by the **American Concrete Institute, Detroit, Michigan**. Read the "Training" section of this manual for more information.

Pitching The Blades.

Quick Pitch Handle

1. To pitch the blades upwards using the "**Quick Pitch™**" **T-handle**, (Figure 27) simply squeeze the trigger lock and pull the **T-handle** towards the operator. Pushing the **T-handle** towards the engine will cause the blades

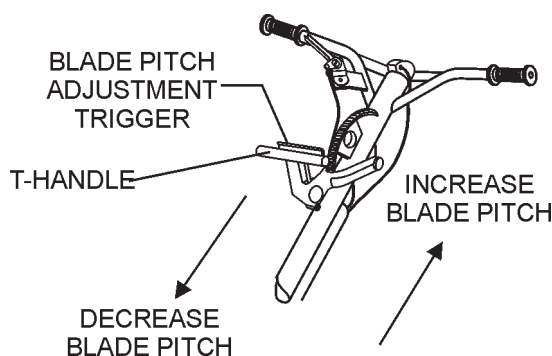


Figure 27. Quick Pitch™ T-Handle

Standard Handle

1. To pitch the blades upwards using the "**Standard**" handle, (Figure 28) simply turn the **star-wheel** clockwise. Turning the star wheel counter clockwise will cause the blades to lay flat.

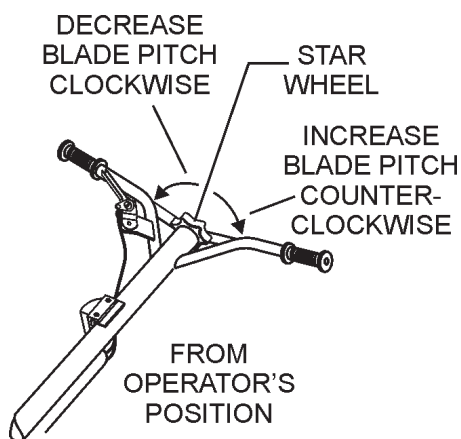


Figure 28. Standard Handle

Maneuvering the Trowel

1. Get into the operator's position behind the handle. With a secure foothold and a firm grasp on the handles slowly increase the engine speed until the desired blade speed is obtained.

If your trowel has a **hand clutch** (Figure 29), set your engine speed with the throttle, then pull on the hand clutch lever to start the blades turning. Adjust the blade speed after the hand clutch is fully engaged.

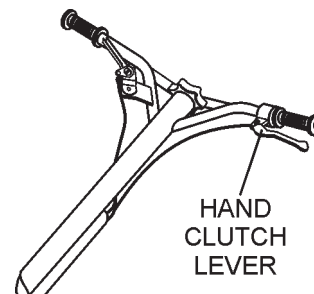


Figure 29. Hand Clutch Lever

If your trowel has an **electric motor**, Squeeze the micro-switch lever (Figure 30) to begin turning the blades. This lever will act as an **emergency stop switch**. When this lever is released, voltage to the electric motor will be interrupted. When this lever is squeezed the voltage will resume. This can only be accomplished if the trowel's power **ON/OFF** switch is in the **ON** position.

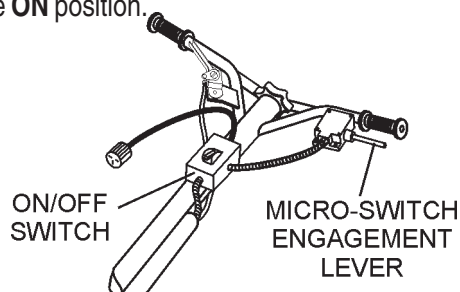


Figure 30. Micro-Switch Engagement Lever

2. To maneuver the trowel, gently lift up on or press down on the main trowel handle. To move the machine to the operator's left, **lift up** on the handle, to move machine to the right, **push down** on the handle.
3. The best method for finishing concrete is to slowly walk backwards (Figure 31) with the trowel, guiding the trowel from side to side. This will cover all footprints on wet concrete.
4. Remember that if you let go of the trowel, just step away and let the trowel come to a complete stop before trying to recover the trowel.

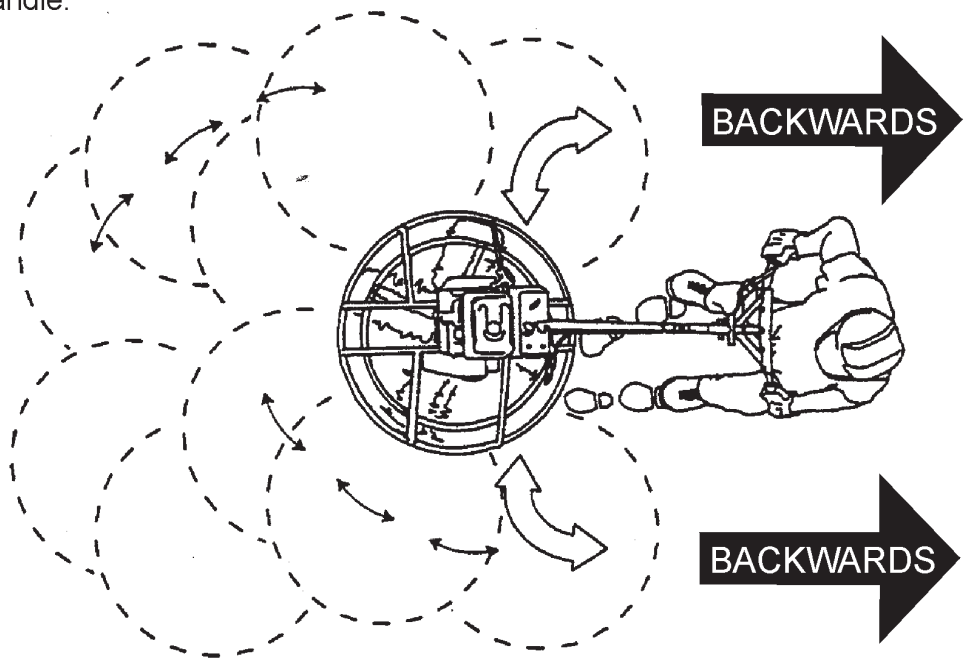
EPOXY/M SERIES TROWEL — OPERATION

Figure 31 below illustrates a typical walk-behind trowel application. Practice maneuvering the trowel. The trick is to let the trowel do the work.

Continue to practice maneuvering the trowel. Try to practice as if you were finishing a slab of concrete. Practice edging and covering a large area. Remember a good finishing technique is to work backwards. Be careful when moving backwards so that hazards can be avoided. The best way to get accustomed to the trowel is repeated use.

To move the trowel to the operator's left, **lift up** on the handle, to move the trowel to the right **push down** on the handle.

Remember! that if you let go of the trowel, just **step away** and let the trowel come to a complete **STOP** before trying to recover the trowel.



The best method for finishing concrete is to slowly walk **backwards** with the trowel, guiding the trowel from side to side. This will cover all footprints on wet concrete.

Figure 31. Maneuvering The Trowel

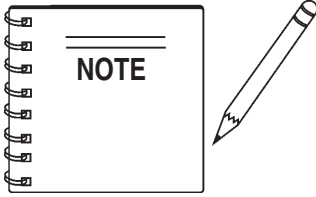
CAUTION

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

CAUTION

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

Blades



Blades should be changed when they fail to finish concrete in a satisfactory manner.

Blades are a vital part of finishing concrete. This Whiteman finisher has been designed to finish concrete and are built to stringent quality standards out of the finest trowel steel. If you need replacement blades, consult your parts list in this manual for part numbers and order them from your Multiquip parts dealer or importer.

Combo Blades

This trowel was equipped with combination **FLOAT/FINISH** (Figure 32) blades as original equipment. These blades have been designed for optimum performance in both the floating and finishing operations. These blades are versatile and should take care of most troweling needs.

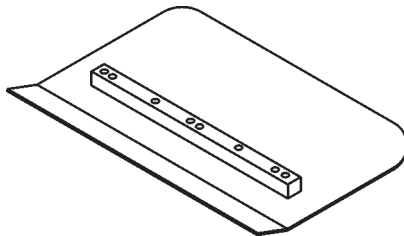


Figure 32. Combination Blade

Finish Blades (Optional)

These blades (Figure 33) have been specifically designed for finish operations with this trowel. They will provide a premium surface finishing capability from your trowel. They should only be used after the concrete has set to the point where the trowel does not sink into the concrete when placed on it.

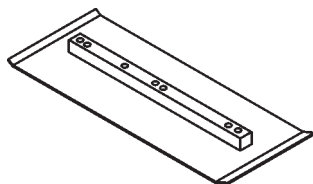


Figure 33. Finish Blade

Clip-On Float Blades (Optional)

These blades will clip (Figure 34) on to an existing installed blade, allowing your finisher to float on “wet” concrete so that the troweling operation can begin as early as possible. They are easily removable, so that after the floating operation, when the concrete is sufficiently cured, they can be removed to expose the finish blades for continued troweling.

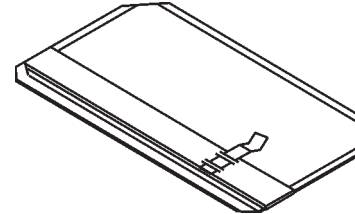


Figure 34. Clip-On Float Blade

Float Discs (Optional)

These round discs (Figure 35) attach to the spiders and allow the machine to “float” on “wet” concrete. The disc design allows early floating and easy movement from wet to dry areas. They are also very effective in embedding large aggregates and surface hardeners.

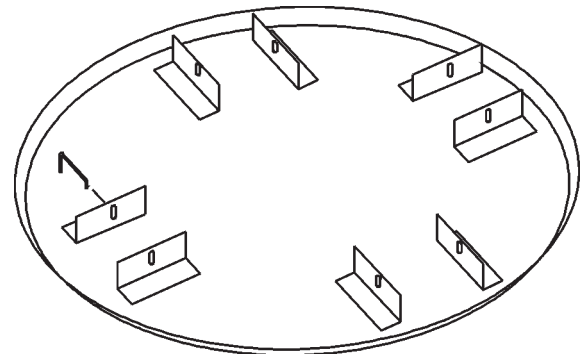


Figure 35. Float Disk

EPOXY/M SERIES TROWEL — OPTIONS

Grinding Attachments

Available grinding attachments are used for grinding surface imperfections or joints. These attachments allow greater utilization of your trowel. Figure 36 illustrates a typical grinding disk assembly, complete with hub and stone mounting plate.

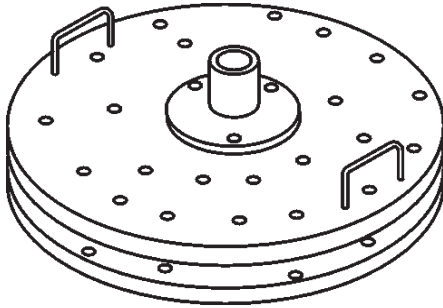


Figure 36. Grinding Disk

Trowel Arm Adjustment Tool

If blades show uneven wear patterns or some tend to wear out faster than others, the trowel arms may need to be adjusted. Whiteman makes a special tool (Figure 38) that will adjust all of the trowel arms consistently. The Trowel Arm Fixture P/N is 1817.

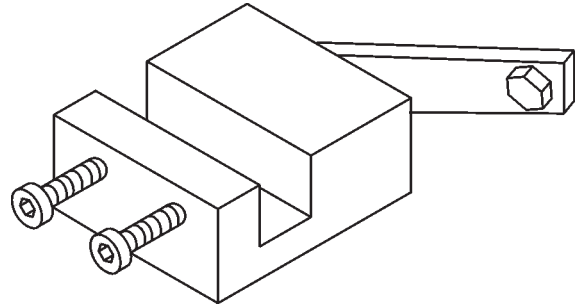


Figure 38. Trowel Arm Adjustment Fixture

Lifting Bale

There is a heavy duty, center balance type lifting bale (Figure 37) made specifically for your trowel. These bales are ideal for lifting and transporting your trowel. They are designed to lift the finisher and balance it on its center of gravity, providing great stability while lifting. This option is not available on electric trowel models.

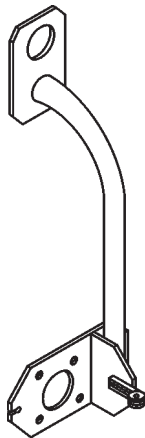
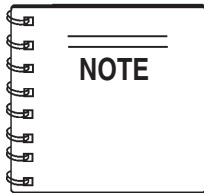


Figure 37. Lifting Bale

EPOXY/M SERIES TROWEL — MAINTENANCE



See the engine manual supplied with your machine for appropriate engine maintenance schedule and troubleshooting guide for problems.

At the front of the book (Page 7) there is a “**Daily Pre-Operation Checklist**”. Make copies of this checklist and use it on a daily basis.

CAUTION

ALWAYS allow the engine to cool before servicing. **NEVER** attempt any maintenance work on a **hot!** engine.



MAINTENANCE SCHEDULE

Daily (8-10 Hours)

1. Check the oil level in the engine crankcase and gear box, fill as necessary.

2. Check V-belt.

Weekly (50-60 Hours)

1. Relube arms, thrust collar and clutch
2. Replace blades if necessary.
3. Check and clean or replace the engine air filter as necessary.
4. Replace engine oil and filter as necessary, see engine manual.

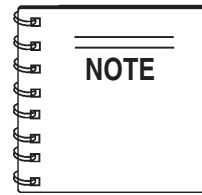
Monthly (200-300 Hours)

1. Remove, clean, reinstall and relube the arms and thrust collar. Adjust the blade arms.
2. Remove, clean, reinstall clutch

Yearly (2000-2500 Hours)

1. Check and replace if necessary the arm bushings, thrust collar bushings and shaft seals.
2. Check pitch control cables for wear.
3. Adjust blade speed.

Trowel Arm adjustment Procedure



The following procedure should be followed to adjust trowel arms when it becomes apparent that the trowel is finishing poorly or in need of routine maintenance.

A **level**, clean area to test the trowel prior to and after is essential. Any unlevel **spots** in the floor or debris under the trowel blades will give an incorrect perception of adjustment. Ideally, a 5 x 5" three-quarter inch thick **flat** steel plate should be used for testing.

1. To determine which blades need adjustment, place the trowel in the test area (three-quarter inch thick plate) and look for the following conditions:
 - Pitch the blades as flat as possible and look at the **adjustment bolts**. They should all barely make contact with the **lower wear plate** on the spider. If you can see that one of them is not making contact, some adjustment will be necessary.
 - Is the machine wearing out blades unevenly (i.e. one blade is completely worn out while the others look new)?

Figure 39 below illustrates a “**worn spider bushings or bent trowel arms**”. Check to see that adjustment bolt is barely touching (0.10" max. clearance) lower wear plate. All alignment bolts should be spaced the same distance from the lower wear plate.

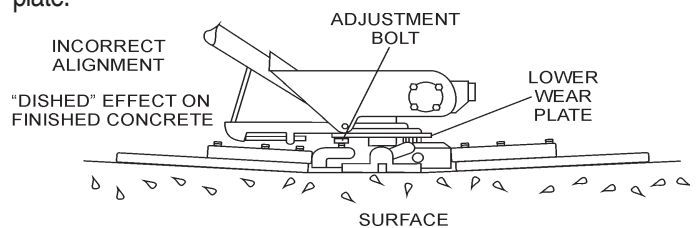


Figure 39. Worn Spider Plate

Figure 40 below illustrates the “**correct alignment**” for a spider plate (as shipped from the factory).

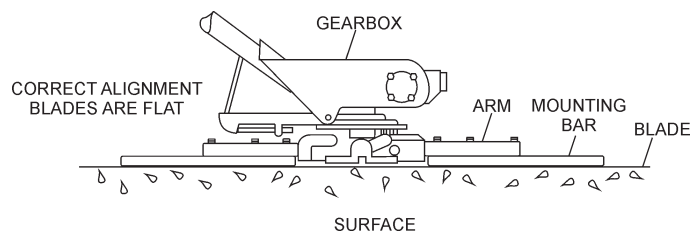


Figure 40. Correct Spider Plate Alignment

EPOXY/M SERIES TROWEL — MAINTENANCE

2. Start engine, and bring trowel blades up to full speed and look for the following conditions:

- Does the trowel have a perceived rolling or bouncing motion when in use?
- Look at the trowel while it is running, does the guard ring “rock up and down” relative to the ground?

Spider Removal

1. Once it is determined that an adjustment is required, remove the spider assembly from the gearbox shaft as follows:
 - a. Locate the cone point square head set screw (Figure 41) and attached jam nut found on the side of the spider assembly.

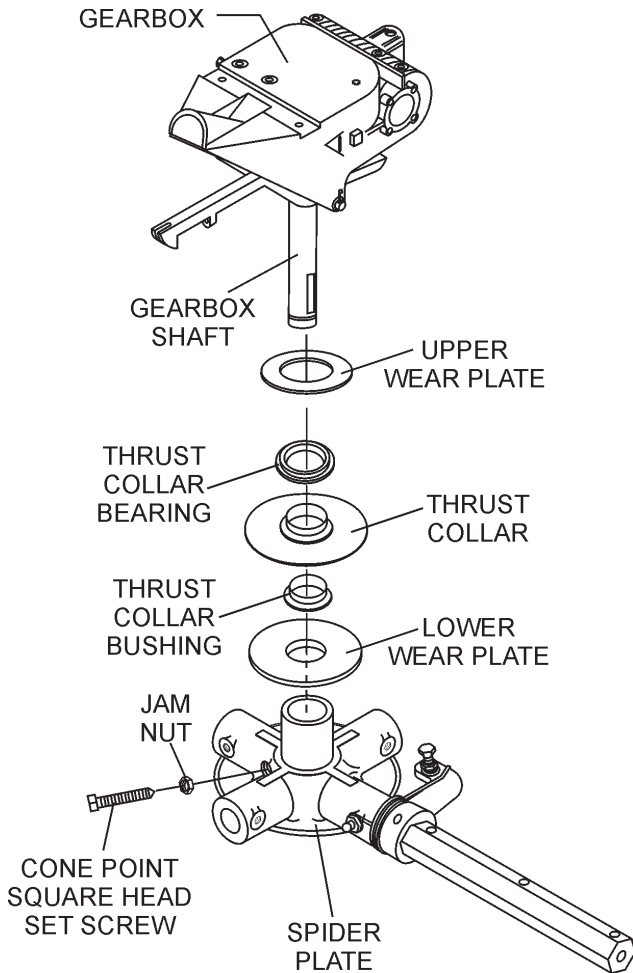


Figure 41. Spider/Gearbox Removal

- b. Loosen the jam nut and cone point square head set screw, and carefully lift the **upper trowel assembly** off of the spider assembly. A slight tap with a rubber mallet may be necessary to dislodge the spider from the main shaft of the gearbox.
- c. If the trowel is equipped with an outer stabilizer ring (Figure 42), remove the four bolts at the end of each spider arm.

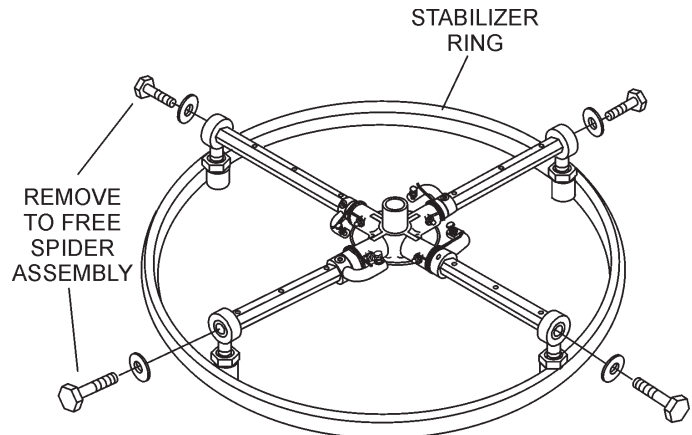


Figure 42. Stabilizer Ring

- d. Examine stabilizer ring for out of round or bends. If ring is damaged, replace ring. If ring is found to be correct with no damage, set aside.

Trowel Arm Removal

1. Each trowel arm is held in place at the spider plate by a hex head bolt (zerk grease fitting) and a roll pin. Remove both the hex head bolt and the roll pin (Figure 43) from the spider plate.
2. Remove the trowel arm from the spider plate.

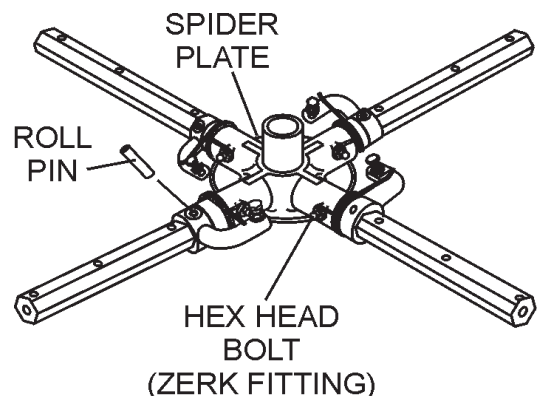


Figure 43. Removing Roll Pin and Zerk Grease Fitting

EPOXY/M SERIES TROWEL — MAINTENANCE

- Should the trowel arm inserts (bronze bushing) come out with the trowel arm, remove the bushing from the trowel arm and set aside in a safe place. If the bushing is retained inside the spider plate, carefully remove the bushing.
- Examine the bronze trowel arm bushing insert (Figure 44), clean if necessary. Replace bushing if out of round or worn.

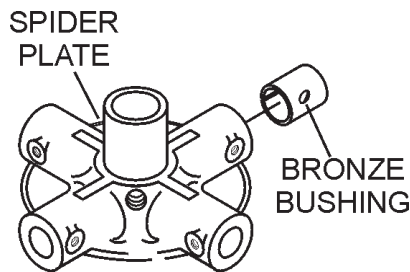


Figure 44. Bronze Bushings

Trowel Blade Removal

- Remove the trowel blades from the trowel arm by removing the three hex head bolts (Figure 45) from the trowel arm. Set blades aside.

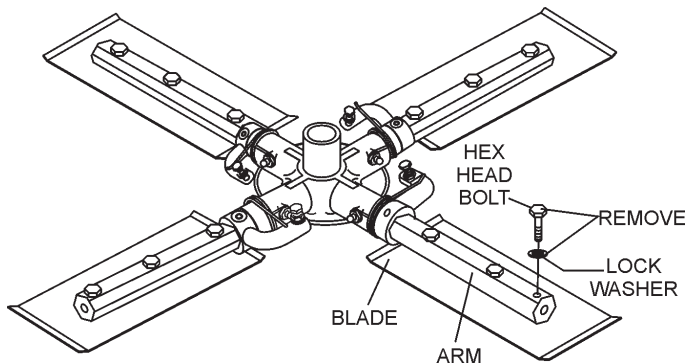


Figure 45. Trowel Blades

- Wire brush** any build-up of concrete from all six sides of the trowel arm. Repeat this for the remaining three arms.

Trowel Arm Flatness Test

- Using a piece of 3/4 inch thick steel plate or any surface which is **true** and **flat**, check all **six sides** of each trowel arm for flatness.
- Check each of the six sides of the trowel arm (hex section only) using a ten thousands of an inch (max.) feeler gauge (Figure 46) between the flat of the trowel arm and an **extremely flat** test surface.

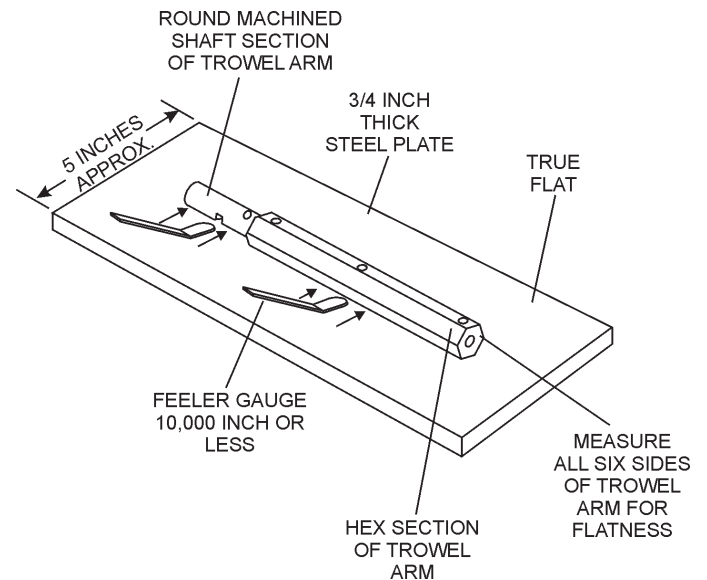
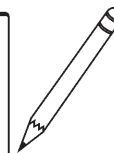
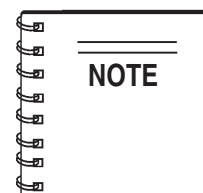


Figure 46. Trowel Arm Flatness Test

- If the trowel arm is found to be **uneven** or **bent**, replace the trowel arm. A bent trowel will not allow the trowel to operate in a smooth fluid rotation.
- Next, check each of the six sides of the round machined shaft section of the trowel arm. Each section should have the **same clearance** between the round of the trowel arm shaft and the test surface.



Trowel arms can be damaged by rough handling or by striking exposed plumbing or forms while in operation. **ALWAYS** look-out for objects which might cause damage to the trowel arms.

Trowel Arm Adjustment

Shown in Figure 47 is the adjustment fixture with a trowel arm inserted. As each trowel arm is locked into the fixture, the arm bolt is adjusted to where it contacts a stop on the fixture. This will consistently adjust all of the trowel arms, keeping the finisher as flat and evenly pitched as possible.

1. Locate the trowel arm adjustment tool P/N 1817. Set the adjustment tool for a clock-wise blade rotation, meaning the fixture arm is in the "UP" position.

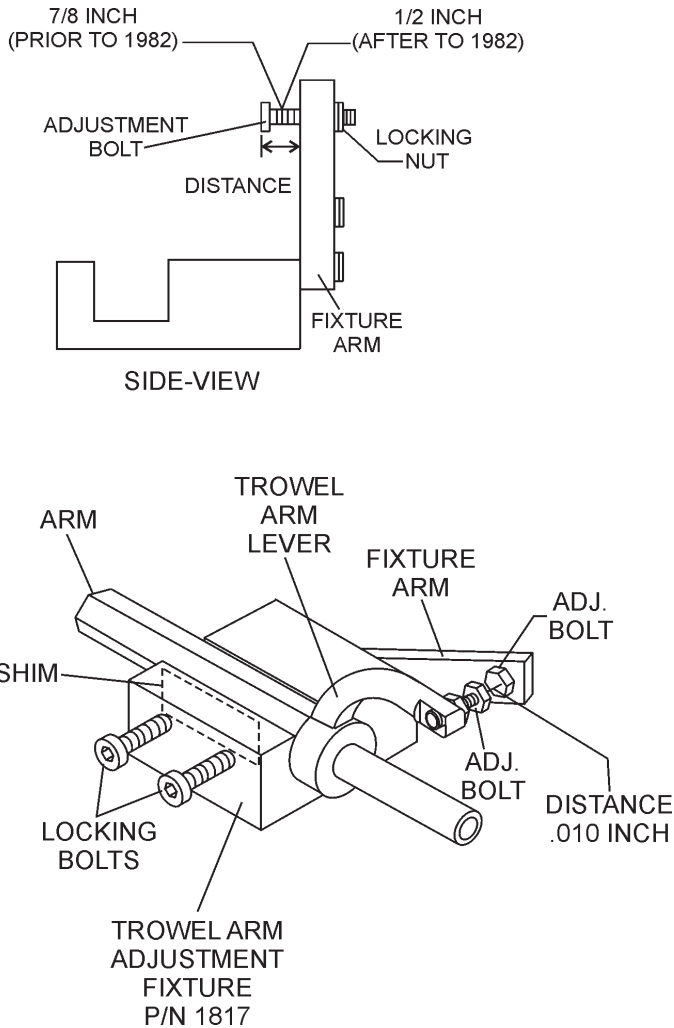


Figure 47. Trowel Arm Adjustment Tool

2. Trowels manufactured prior to June of 1982 require that the distance from the end of the adjusting bolt and the fixture arm must be 7/8" (Figure 47). Conversely, trowels manufactured after June of 1982 require that the distance from the end of the adjusting bolt and the fixture arm must be 1/2".

3. Un-screw the locking bolts on the adjustment tool, and place the trowel arm into the adjustment fixture channel as shown in Figure 47. A **thin shim** may be required to cover the blade holes on the trowel arm. Make sure to align the trowel adjustment bolt with the fixture adjustment bolt.
4. Using an allen wrench, tighten the locking bolts on the adjustment tool and securely lock the trowel arm in place.
5. Loosen the locking nut on the trowel arm lever, then turn the trowel arm adjusting bolt until it barely touches (.010") the adjusting bolt on the fixture.
6. After the correct adjustment has been made, tighten lock nut on trowel arm lever to lock in place.
7. Loosen locking bolts on adjustment fixture, and remove trowel arm from fixture.
8. Repeat steps 2-7 for the remaining trowel arms.

Re-Assembly

1. Clean and examine the upper/lower wear plates and thrust collar. Examine the entire spider assembly. Wire brush any concrete or rust build-up. If any of the spider components are found to be damaged or out of round, replace them.
2. Make sure that the bronze trowel arm bushing is not damage or out of round. Clean the bushing if necessary. If the bronze bushing is damage or worn, replace it.
3. Reinstall bronze bushing onto trowel arm.
4. Repeat steps 2 -3 for each trowel arm.
5. Make sure that the spring tensioner is in the correct position to exert tension on the trowel arm.
6. Insert all trowel arms with levers into spider plate (with bronze bushing already installed) using care to align grease hole on bronze bushing with grease hole fitting on spider plate.
7. Lock trowel arms in place by tightening the hex head zerk grease fitting and jam nut.
8. Re-install the blades back onto the trowel arms
8. Install stabilizer ring onto spider assembly.
9. Reinstall **lower wear plate**, **thrust collar** and **upper wear ring** in the **reverse order** that they were dis-assembled onto the spider shaft. Make sure that there is little or no lateral movement between the thrust collar and the spider shaft.

EPOXY/M SERIES TROWEL — MAINTENANCE

10. Carefully lift the **upper trowel assembly**, line up the keyway on gear box main shaft and insert into spider assembly
11. Reinstall square head cone point into spider plate and tighten in place. Tighten jam nut. Use care in making sure point of set screw engages groove in gear box main shaft.
12. Lubricate all grease points (zerk fittings) with premium "**Lithum 12**" based grease, conforming to NLG1 Grade #2 consistency.

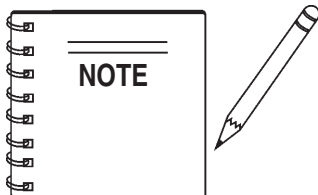
Testing

1. Place trowel in test area, start engine and test trowel for smoothness.
2. If trowel bounces has excessive vibration or does not run smoothly repeat alignment procedure.

Changing a Blade

Whiteman recommends that **all the blades be changed at the same time**. The machine may wobble or bounce if only some of the blades are changed at one time.

1. Place the machine on a flat, level surface. Adjust the blade pitch control to make the blades as flat as possible. Note the blade orientation on the trowel arm.



Before removing the blades, please note the orientation of the blade on the trowel arm.

1. Remove the three bolts and lock washers that secure the blade to the trowel arm. Remove the blade.
2. Using a wire brush, scrape all concrete particles and foreign debris from the trowel arm.
3. Install the new trowel blade onto the trowel arm. Make sure blade is installed correctly, maintaining the proper orientation for direction of rotation.
4. Reinstall the three bolts and lock washers that secure the blade to the trowel arm. Tighten all three bolts securely.
5. Repeat steps 1-4 for all remaining blades.

Hand Clutch Adjustment

Some trowels are equipped with a hand-operated clutch instead of an automatic centrifugal clutch. Two types of hand clutches have been installed. Both are belt-tightener type clutches. They operate by removing **slack** in the V-belt which then transmits power from the engine to the gearbox.

There are two reasons to adjust the hand clutch: 1) operator comfort; 2) initial belt stretch and break-in.

The easiest and most simple adjustment is to adjust the clutch cable housing using the adjustment nut (Figure 48) located on the clutch lever. Rotating the nut provides either more or less (depending upon the direction of rotation) clutch engagement.

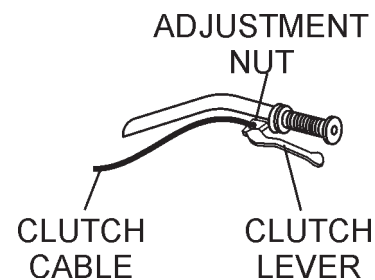


Figure 48. Trowel Arm Adjustment Tool

Hand Clutch Disengagement

1. Start the trowel as outlined in the "**Initial Start-up**" section in this manual. Move the throttle lever so that the engine is running about 1/4 to 1/3 of full speed.
2. Grip the trowel handle firmly and carefully engage the clutch by squeezing the clutch lever toward the handle with your left hand. After the trowel is stabilized and you feel comfortable with its operation, use your right hand to adjust the housing adjustment nut.
3. Rotating the nut so that it backs out of the lever housing increases the engagement and also the squeezing force required to keep it engaged.

Too much squeezing force may cause premature hand fatigue. Too little squeezing force may cause belt slippage and premature belt wear. Each operator should experiment with the adjustment to get the optimum combination of squeeze force and belt grip.

4. After initial break-in (approximately 8 hours) the above procedure should be repeated to attain optimum operator comfort and belt wear.
5. After considerable belt wear, the adjustments mentioned above may have a little or no effect on clutch engagement. If this is the case, the belt should be replaced.

EPOXY/M SERIES TROWEL — TROUBLESHOOTING

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 stop switch malfunction? (if applicable)	Make sure that the centrifugal stop switch is functioning when the operator is seated. 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 than 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.

EPOXY/M SERIES TROWEL — TROUBLESHOOTING

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.	Incorrect or no voltage being supplied to electric motor?	Check that the electric motor has the correct supply voltage.
	Power to electric motor?	Inspect power source and extension cord. Push reset button on electric motor. Make sure correct voltage is being supplied to motor.
	Broken V-belt?	Replace V-belt.
	Defective ON/OFF switch?	Check and replace ON/OFF switch if necessary.
	Defective electric motor?	Replace electric motor.

EPOXY/M SERIES TROWEL — TROUBLESHOOTING

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.

EPOXY/M SERIES TROWEL — TROUBLESHOOTING

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 key "ON". (if applicable)	ON/OFF device not activated ON?	Turn on ON/OFF device.
	Battery disconnected or discharged?	Check cable connections. Charge or replace battery.
	Ignition switch/wiring defective?	Replace ignition switch. Check wiring.

EPOXY/M SERIES TROWEL — EXPLANATION OF CODES IN REMARKS

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

NOTICE

The contents and part numbers listed in the parts section are subject to change **without notice**. Multiquip does not guarantee the availability of the parts listed.

SAMPLE PARTS LIST

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	12345	BOLT.....	1	INCLUDES ITEMS W/%
2%		WASHER, 1/4 IN.....		NOT SOLD SEPARATELY
2%	12347	WASHER, 3/8 IN....	1	MQ-45T ONLY
3	12348	HOSE		A/R ...MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

NO. Column

Unique Symbols — All items with same unique symbol

(@, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the “Remarks” column.

Duplicate Item Numbers — Duplicate numbers indicate multiple part numbers, which are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.

NOTICE

When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

PART NO. Column

Numbers Used — Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at the time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the “Remarks” Column.

QTY. Column

Numbers Used — Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the “Remarks” Column.

REMARKS Column

Some of the most common notes found in the “Remarks” Column are listed below. Other additional notes needed to describe the item can also be shown.

Assembly/Kit — All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

“INCLUDES ITEMS W/(unique symbol)”

Serial Number Break — Used to list an effective serial number range where a particular part is used.

Indicated by:

“S/N XXXXX AND BELOW”

“S/N XXXX AND ABOVE”

“S/N XXXX TO S/N XXX”

Specific Model Number Use — Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

“XXXXX ONLY”

“NOT USED ON XXXX”

“Make/Obtain Locally” — Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

“Not Sold Separately” — Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

EPOXY/M SERIES TROWEL — SUGGESTED SPARE PARTS

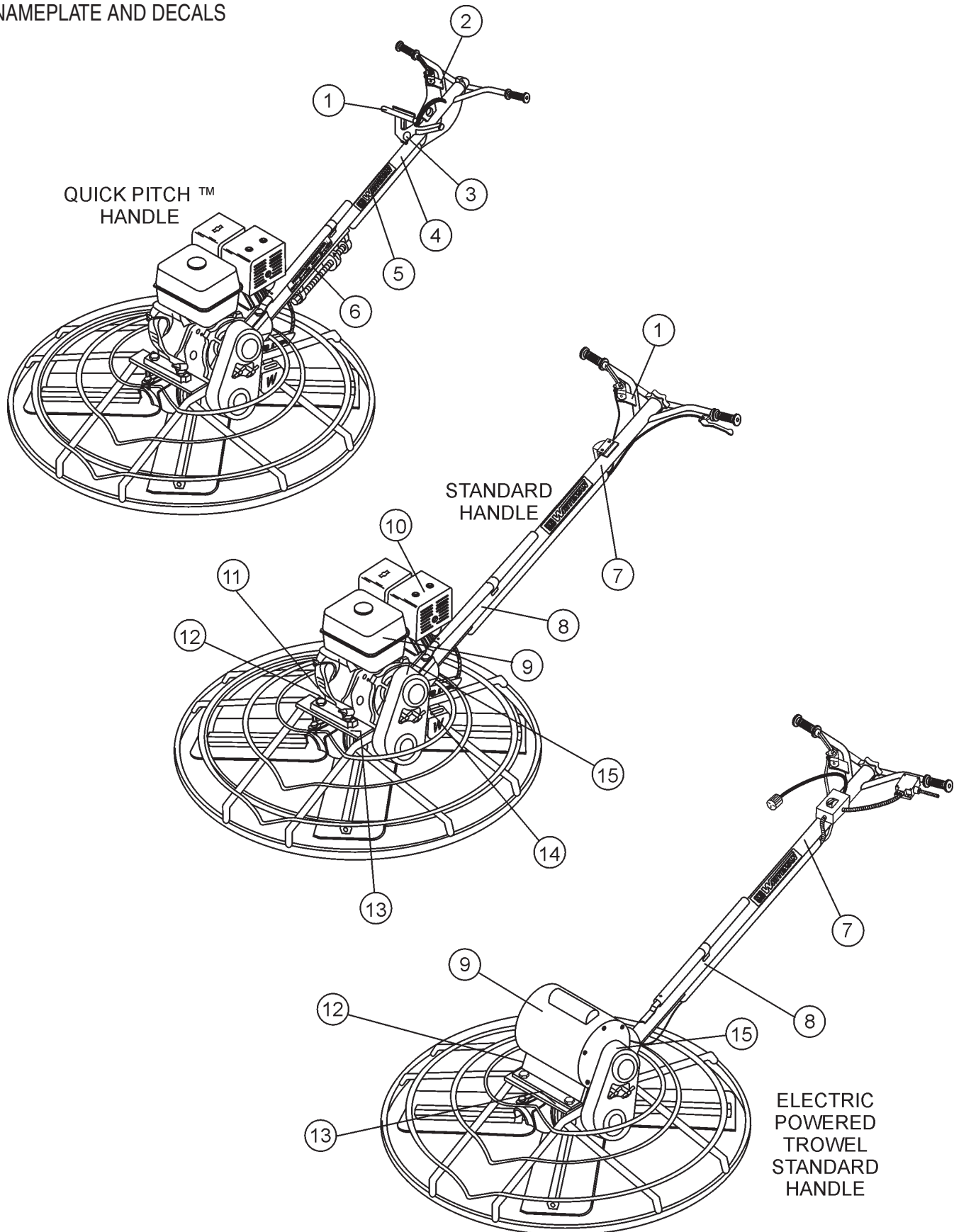
EPOXY/M SERIES TROWEL 1 TO 3 UNITS WITH HONDA GX160QA2 ENGINE.

1 to 3 Units

Qty.....	P/N	Description
3	0189	GRIP
2	1103	SAFETY SWITCH
2	1727	QUICK PITCH SAFETY SWITCH
1	1115	CABLE STANDARD HANDLE
1	1714	CABLE QUICK PITCH
1	0302	THROTTLE CABLE
4	1157 A	BUSHING
1	2826	ARM (9-3/4")
4	1162 A	LUBE CAP
4	1167 A	SCREW
4	1456	NUT
4	1875	WASHER
4	1322	SCREW
1	2614	GASKET KIT
1	2616	BEARING KIT
4	1247	RUBBER GROMMET
4	1245	SPACER
2	1390	BELT (A-26) HONDA
1	10968	THRUST COLLAR KIT
2	9807956846	SPARK PLUG HONDA
2	17620ZH7013	TANK CAP (HONDA)
2	17403ze1810	AIR CLEANER ELEMENT (HONDA)

EPOXY/M SERIES TROWEL — NAMEPLATE AND DECALS

NAMEPLATE AND DECALS



EPOXY/M SERIES TROWEL — NAMEPLATE AND DECALS

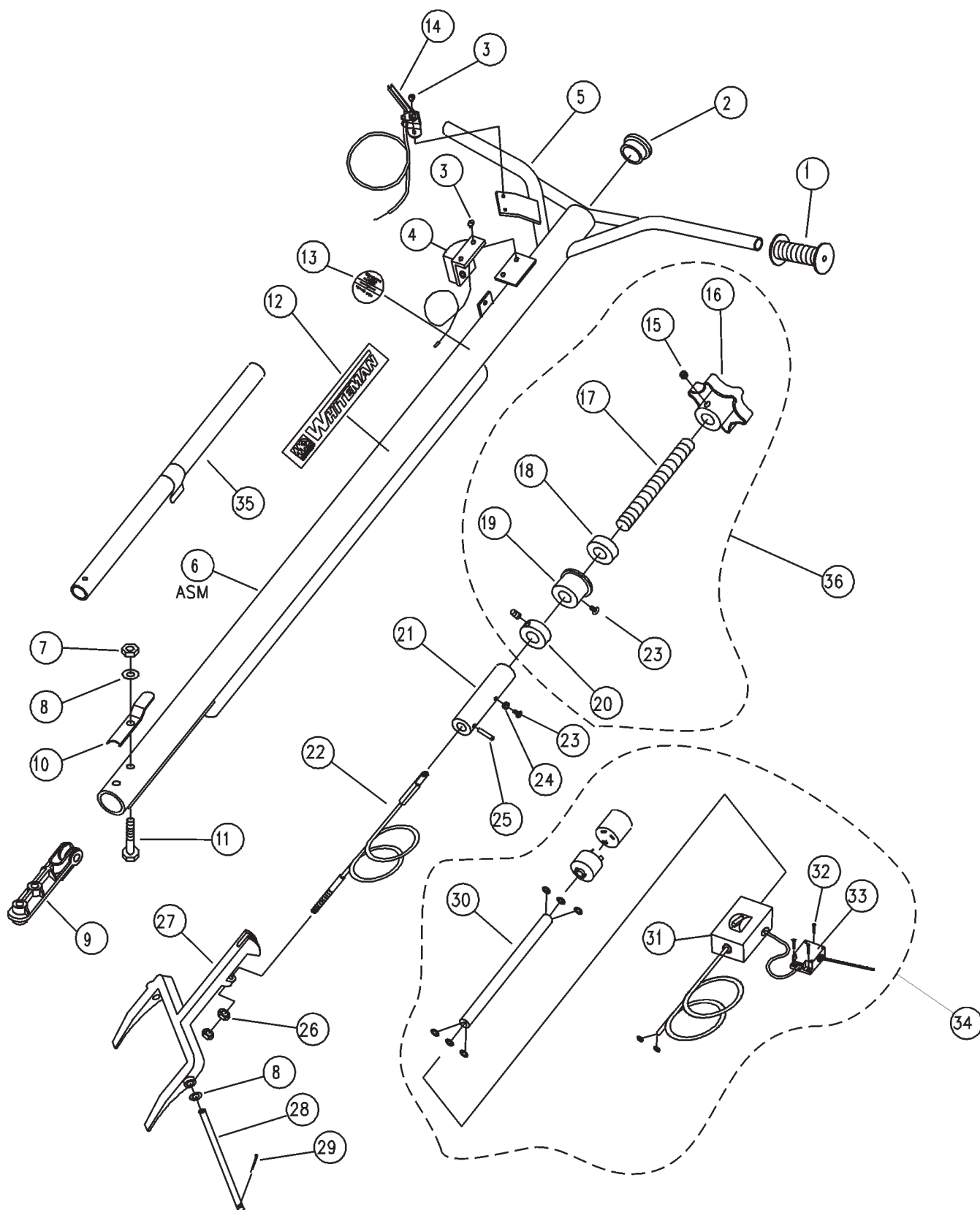
NAMEPLATE AND DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	1734	DECAL: WARNING DO NOT OPERATE	1	
2	1755	DECAL: WARNING PITCH HANDLE	1	
3	12405	DECAL: QUICK PITCH™ HANDLE INSERT	2	
4	1758	DECAL: QUICK PITCH™ HANDLE	2	
5	1499	DECAL: MQ WHITEMAN (LARGE)	1	
6	1735	DECAL: PRE-LOAD INDICATOR	1	
7	1492	DECAL: STANDARD HANDLE (FINISHER)	1	
8	1261	DECAL: DO NOT LIFT	1	
9	1147	DECAL: HELMET, FOOT AND GLOVE	1	
10*	11246	DECAL: HEAT	1	
11*	11246	DECAL: OIL CHECK	1	
12		NAMEPLATE	1	..... CONTACT MULTQUIP PARTS DEPT.
13	1940	DECAL: MQ WHITEMAN (SMALL)	1	
14*	11246	DECAL: GEAR DRIVE	1	
15*	11246	DECAL: BELT DRIVE	1	
	12620	KIT, DECAL REPLACEMENT	1	..... INCLUDES ITEMS W/*

SEE DECAL ILLUSTRATIONS ON PAGE 12

EPOXY/M SERIES TROWEL — STANDARD HANDLE ASSY.

STANDARD HANDLE ASSY.



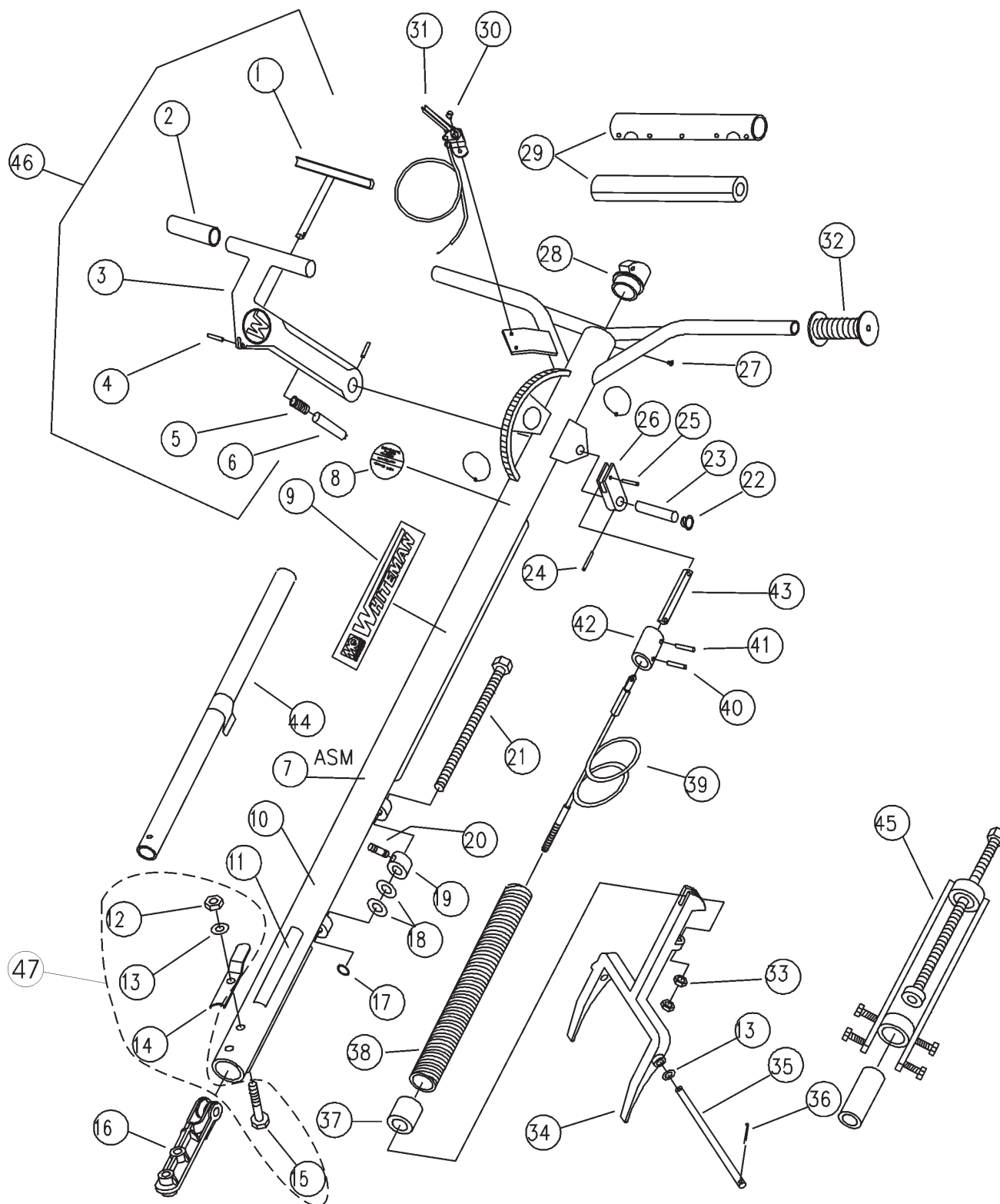
EPOXY/M SERIES TROWEL — STANDARD HANDLE ASSY.

STANDARD HANDLE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0189	HANDLE GRIP	2	
1	4634	HANDLE GRIP (ELECTRIC MODEL)	2	
2	1102	PLUG	1	
3	0304	RHMS 10-24X 1/4"	4	
4	1103	SAFETY SWITCH ASSY	1	
5	1101	HANDLE ONLY	1	
5	1907	HANDLE ONLY (ELECT. MODEL)	1	
5	9100	HANDLE ONLY EXPORT	1	
6	1100	HANDLE ASSY.	1	CONTACT UNIT SALES DEPT./ ACCESSORY ITEM
6	1921	HANDLE ASSY. ELECTRIC	1	
7	10133	LOCK NUT 3/8-16	2	
8	10136	FLAT WASHER 3/8"	4	
9	1117	SUPPORT BLOCK ASSY (PULLEY & PIN)	1	
10	0190 A	HOLDER	1	
11	1121	HHCS 3/8-16X2.3/4"	2	
12	1499	MQ-WHITEMAN DECAL	2	
13	1492	2.1/2" CHROME DECAL	1	
14	0302	THROTTLE CONTROL ASSY	1	
15#	0185	SHSS 3/8-16X3/8"	1	
16#	0280 B	HAND WHEEL	1	
17#	1478	TROWEL CONTROL SHAFT	1	
18#	0281	BEARING	1	
19#	1111	BEARING	1	
20#	3615	SET COLLAR (WITH SET SCREW)	1	
21	1113	SLIDE BLOCK & CABLE ASSY.	1	SLIDE BLOCK ONLY
22	1115	CONTROL CABLE ASSY.	1	47.25 INCHES LONG
22	9175	CONTROL CABLE ASSY.	1	EXPORT
23#	0786	BCHS 1/4-20X3/8" NY-LOC	2	
24	0786 A	SPACER	1	
25	1114	ROLL PIN 5/32 X1.3/8"	1	
26	1116	BRASS JAM NUT 5/16-18	2	
27	1150	YOKE ARM	1	
28	1151	ARM PIN	1	
29	0683	COTTER PIN 3/32X3/4"	2	
30*	2505	PIGTAIL ASSY (ELECT. MODEL)	1	
31*	01751	SWITCH BOX (ELECT. MODEL)	1	
32*	5044 A	FHMS 10-32X3/4" (ELECT. MODEL)	1	
33*	1268	MICRO SWITCH (ELECT. MODEL)	3	
34	1189	SWITCH CONDUIT ASSY (ELECT. MODEL) ...	1	INCLUDES ITEMS W/*
35		LIFT HANDLE ASSY.	1	NO LONGER AVAILABLE
36	1110	TROWEL CONTROL ASSY.	1	INCLUDES ITEMS W/#

EPOXY/M SERIETROWEL — QUICK PITCH™ HANDLE ASSY.

QUICK PITCH™ T-HANDLE ASSY.



EPOXY/M SERIES TROWEL — QUICK PITCH™ HANDLE ASSY.

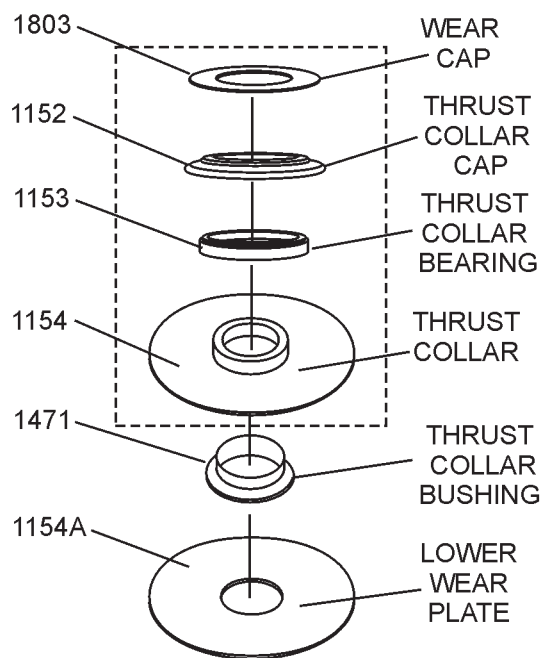
QUICK PITCH™ T-HANDLE ASSY.

NO.	PART NO.	PART NAME	QTY.	REMARKS
1*	1746	QUICK PITCH TRIGGER	1	
2*	1724	CONTROL HANDLE GRIP	2	
3*	1707	CONTROL HANDLE	1	INCLUDES ITEMS W/%
3%	1739	BUSHING	2	
3%	1734	WARNING DECAL	1	
4*	1729	ROLL PIN 3/16X1.1/4"	3	
5*	1706	LATCH RETURN SPRING	1	
6*	1745	LATCHING SHAFT	1	
7	1700	HANDLE ASSY COMPLETE	1	..... CONTACT UNIT SALES DEPT./ACCESSORY ITEM
8	1758	FINISHER HANDLE PATENT DECAL	1	
9	1499	WHITEMAN DECAL	2	
10	1701	HANDLE ONLY STANDARD	1	
10	1721	HANDLE ONLY EXPORT	1	
11	1735	PRE-LOAD DECAL	1	
12 #	10133	LOCK NUT 3/8-16	2	
13 #	10136	FLAT WASHER 3/8"	4	
14 #	0190 A	HOLDER	1	
15 #	1121	HHCS 3/8-16X2.3/4"	2	
16	1117	SUPPORT BLOCK ASSY	1	
17	1737	SNAP RING	1	
18	1733	HARDENED WASHER 1/2"X1/32"	2	
19	1718	PRE-LOAD ADJUSTMENT NUT	1	
20	1732	PRE-LOAD ADJUSTMENT PIN	1	
21	1717	PRE-LOAD ADJUSTMENT SCREW	1	
22	1719	PIVOT PLATE BUSHING	2	
23	1711	CONTROL SHAFT	1	
24	4568	ROLL PIN 3/16"X1"	1	
25	1731	ROLL PIN 1/4"X3/4"	1	
26	1708	SLIDE CONTROL ARM	1	
27	1743	PHSTS 1/4X1/2"	1	
28	1727	SAFETY SWITCH ASSY	1	
29	1730	HANDLE PAD & COVER	1	
30	0304	RHMS 10-24X1/4"	2	
31	0302	THROTTLE CABLE ASSY	1	
32	0189	HANDLE GRIP	2	
33	1116	BRASS JAM NUT 5/16-18	2	
34	1150	YOKE ARM	1	
35	1151	YOKE PIN	1	
36	0683	COTTER PIN 3/32"X3/4"	2	
37	1716	PRE-LOAD ADJUSTMENT BLOCK	1	..... STANDARD
37	1741	PRE-LOAD ADJUSTMENT BLOCK	1	..... EXPORT
38	1715	CONTROL BALANCE SPRING	1	
39	1714	CONTROL CABLE ASSY	1	..... STANDARD
39	9174	CONTROL CABLE ASSY	1	..... EXPORT
40	1757	ROLL PIN 3/16"X1.3/8"	1	
41	1726	ROLL PIN 1/4"X1.3/8"	1	
42	1712	CONTROL CABLE SLIDE BLOCK	1	
43	1709	CONTROL ARM CONNECTOR	1	
44		LIFT HANDLE ASSY	1	..... NO LONGER AVAILABLE
45	1749	TOOL ASSY FOR UNLOADING SPRING	1	
46	1754	T-HANDLE ASSY	1	..... INCLUDES ITEMS W/ *
47	2811	KIT HANDLE HARDWARE	1	..... INCLUDES ITEMS W/ #

EPOXY/M SERIES TROWEL — THRUST BEARING KIT ASSY.

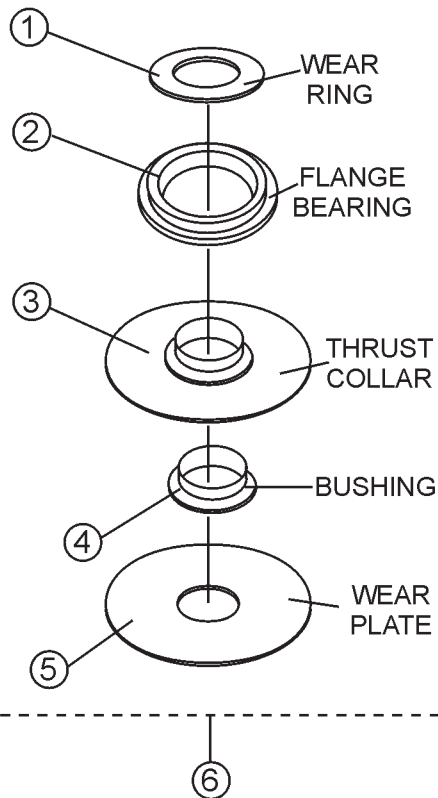
THRUST BEARING KIT ASSY.

OLD STYLE THRUST BEARING NO LONGER USED



THRUST BEARING KIT No. 10968

NEW STYLE THRUST BEARING



WHEN RE-ORDERING **MUST** USE
THRUST BEARING KIT P/N 10968.
OLD STYLE IS NOT AVAILABLE.

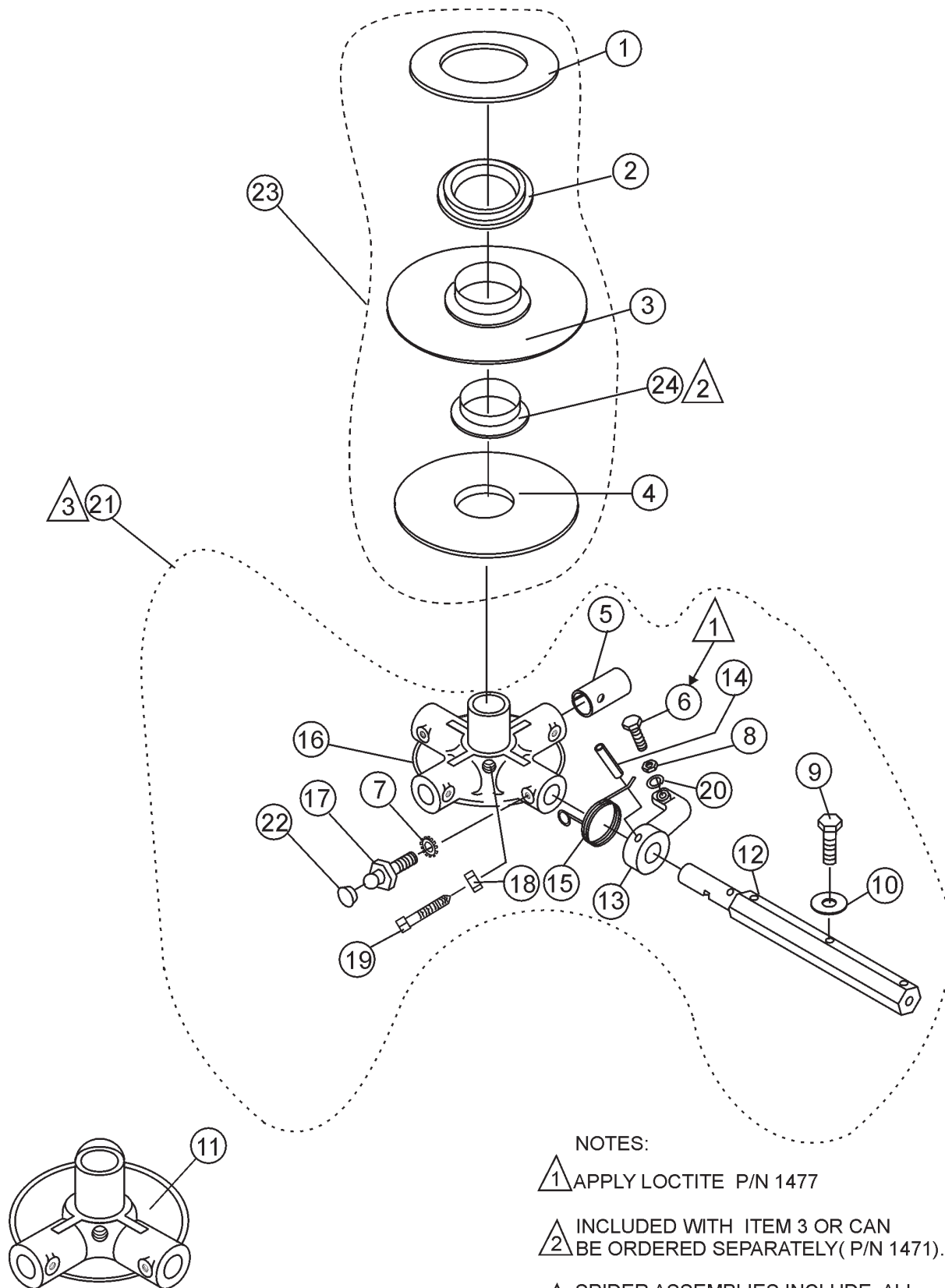
EPOXY/M SERIES TROWEL — THRUST BEARING KIT ASSY.

THRUST BEARING KIT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	12208	WEAR RING	1	
2*	12778	FLANGE BEARING	1	
3*	10793	THRUST COLLAR W/BUSHING	1	
4*	1471	BUSHING	1	
5*	1154 A	LOWER WEAR PLATE	1	
6	10968	THRUST BEARING KIT	1	INCLUDES ITEMS W/*

EPOXY/M SERIESTROWEL — 4-BLADE SPIDER ASSY.

4-BLADE SPIDER ASSY.



NOTES:

- 1 APPLY LOCTITE P/N 1477
- 2 INCLUDED WITH ITEM 3 OR CAN BE ORDERED SEPARATELY (P/N 1471).
- 3 SPIDER ASSEMBLIES INCLUDE ALL ITEMS WITHIN OUTLINE.

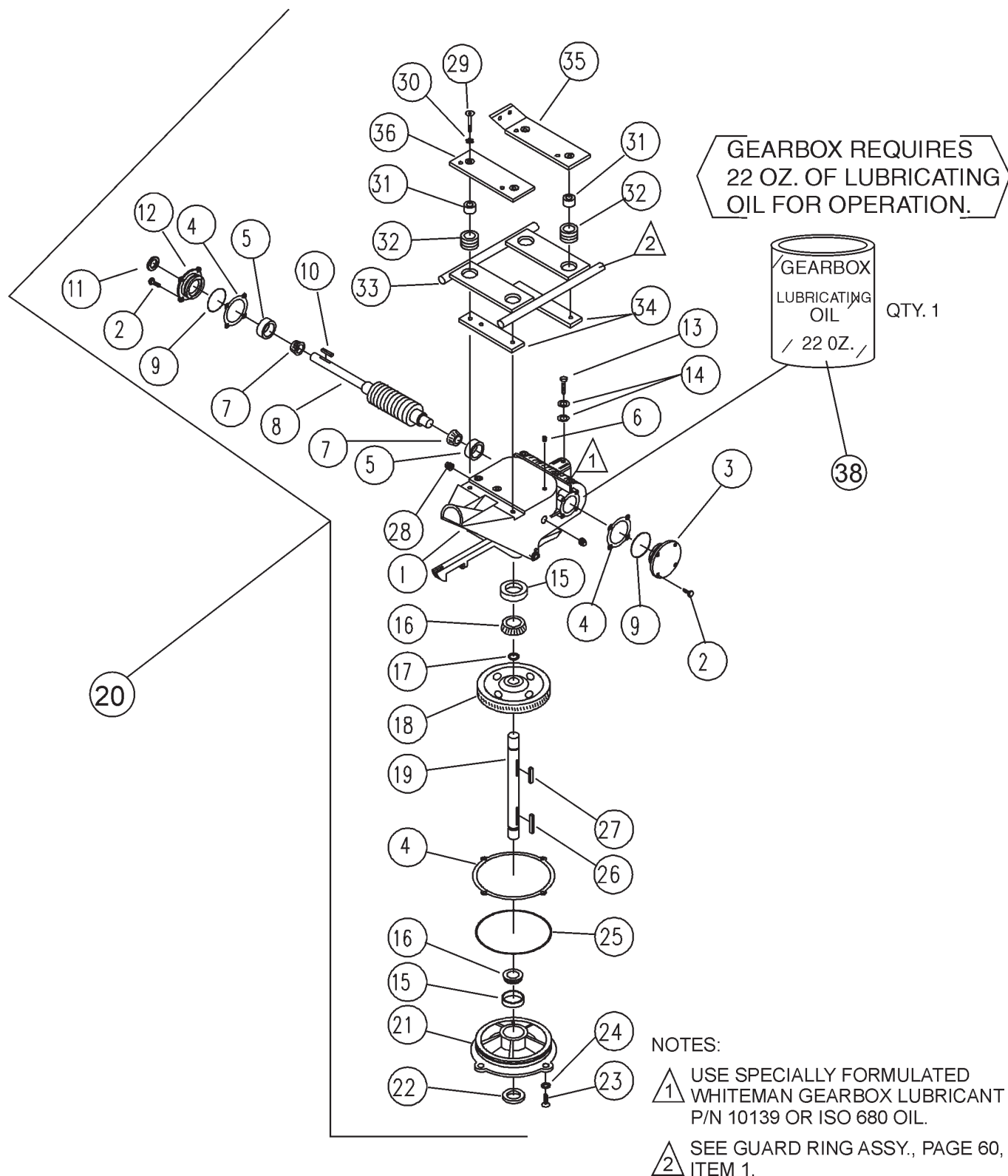
EPOXY/M SERIES TROWEL — 4-BLADE SPIDER ASSY.

4 BLADE SPIDER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	12208	WEAR RING	1	REPLACES P/N 1803
2*	12778	FLANGE BEARING	1	
3*	10793	THRUST COLLAR	1	INCLUDES ITEMS W/#
4*	1154 A	WEAR PLATE	1	
5\$	1157 A	BEARING INSERT	4	
6\$	0164 B	RADIUS HEAD 3/8- 16 x 1-1/4"	4	
7\$	1875	INT. SHKP. WASHER 3/8"	4	
8\$	1876	JAM NUT 3/8- 16	4	
9\$	0105	HHCS 5/16- 18 x 1-1/2"	8	
10\$	0161 C	LOCK WASHER 5/16"	8	
12	2830	TROWEL ARM 9-3/4"	4	
13\$	1163	TROWEL ARM LEVER	4	
14\$	4164	ROLL PIN 5/16 x 1-3/4"	4	
15\$	1316	SPRING (RIGHT HAND)	4	
16\$	1161	SPIDER PLATE ONLY	1	
17\$	1322	RETAINING SCREW ASSY.	4	
18\$	1456	HEX NUT 3/8-16	1	
19\$	12099	SHSS 3/8-16 x 1-1/2" CONE POINT	1	
20\$	0166 A	LOCK WASHER 3/8"	4	
21	1900	SPIDER PLATE ASSY. (4 BLADE/W 9-3/4" ARM)	1	INCLUDES ITEMS W/\$
22%\$	1162 A	LUBRA- CAP	4	
23	10968	THRUST BEARING KIT	1	INCLUDES ITEMS W/ *
24*#	1471	THRUST COLLAR BUSHING	1	

EPOXY/M SERIES TROWEL — GEARBOX AND ENGINE MOUNTS ASSY.

GEARBOX AND ENGINE MOUNTS ASSY.



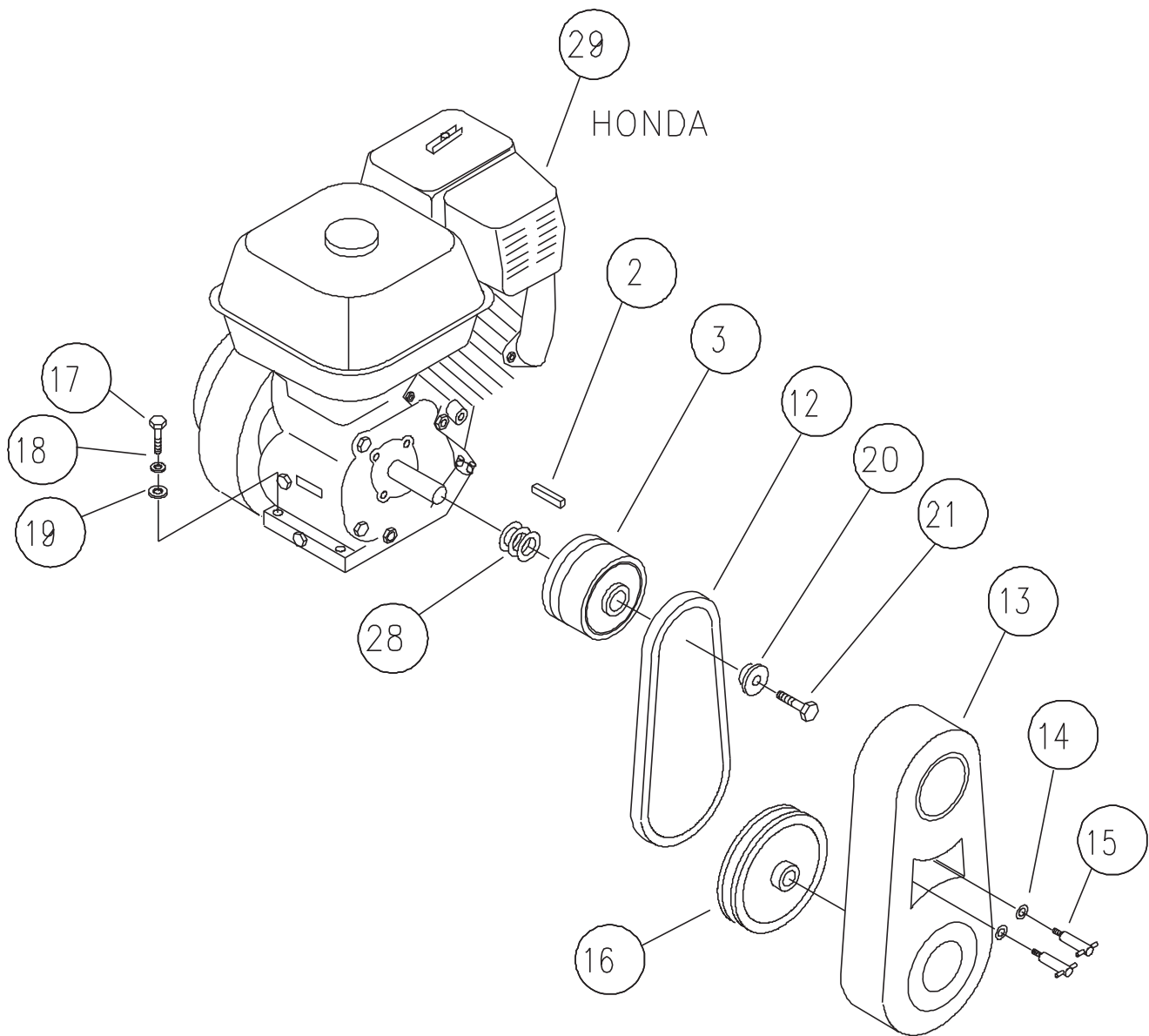
EPOXY/M SERIES TROWEL — GEARBOX AND ENGINE MOUNTS ASSY.

GEARBOX AND ENGINE MOUNTS ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1%	1131	GEAR CASE	1	
2%	0131 A	HHCS 1/4-20X3/4"	8	
3%	1136	END CAP	1	
4	2614	GASKET KIT		INCLUDES ITEMS W/*
5#%	0735 A	BEARING CUP	2	
6%	1132	AIR VENT	1	
7#%	0735	BEARING CONE	2	
8%	1906	WORM & COUNTER SHAFT	1	
9*%	2308	O-RING	2	
10	0627	SQUARE KEY 3/16X3/16X1.1/4"	1	
11%	0753	OIL SEAL	1	
12%	1133	FLANGE	1	
13	0655	HHCS 5/16-18X3/4	1	
14	0300 B	FLAT WASHER 5/16"	1	
15#%	0232 A	BEARING CUP	2	
16#%	0232	BEARING CONE	2	
17%	1138	RETAINING RING	1	
18%	1905	BRONZE GEAR 1 1/8 50 TEETH	1	
19%	2440	MAINSHAFT	1	
20	1920	GEARBOX ASSY	1	INCLUDES ITEMS W/%
21%	1145	COVER PLATE	1	
22*%	0254	OIL SEAL	1	
23%	1146	FHCS 5/16-18X1"	4	
24%	10235	EXT. SHKP. WASHER 5/16"	4	
25*%	1143	SEAL RING	1	
26	1238	WOODRUFF KEY#25	1	
27%	1139	WOODRUFF KEY#21	1	
28%	0121 A	SQUARE HEAD PIPE PLUG 3/8"	1	
29	1481	FHCS 3/8-16X1.3/4"	4	
29	9154	HHCS 3/8-16X1.3/4" (ELECTRIC)	4	
30	1480	C'SINK SHKP WASHER 3/8"	4	
30	0166 A	LOCK WASHER 3/8" (ELECTRIC)	4	
31	1245	SPACER	4	
32	1247	GROMMET (STATIONARY RING ONLY)	4	
33	2274	STATIONARY GUARD RING	1	
34	1816	PLATE	2	
35	1955	FRONT ENGINE MOUNT (ELECTRIC)	1	
35	1954	FRONT ENGINE MOUNT (GAS)	1	
36	1943	REAR ENGINE MOUNT (ELECTRIC)	1	
36	1942	REAR ENGINE MOUNT (GAS)	1	
37	2616	BEARING REPLACEMENT KIT	1	INCLUDES ITEMS W/#
38	10139	GEAR BOX OIL (20 OZ.)		

EPOXY/M SERIES TROWEL — 5.0 HP HONDA ENGINE

5.0 HP HONDA ENGINE



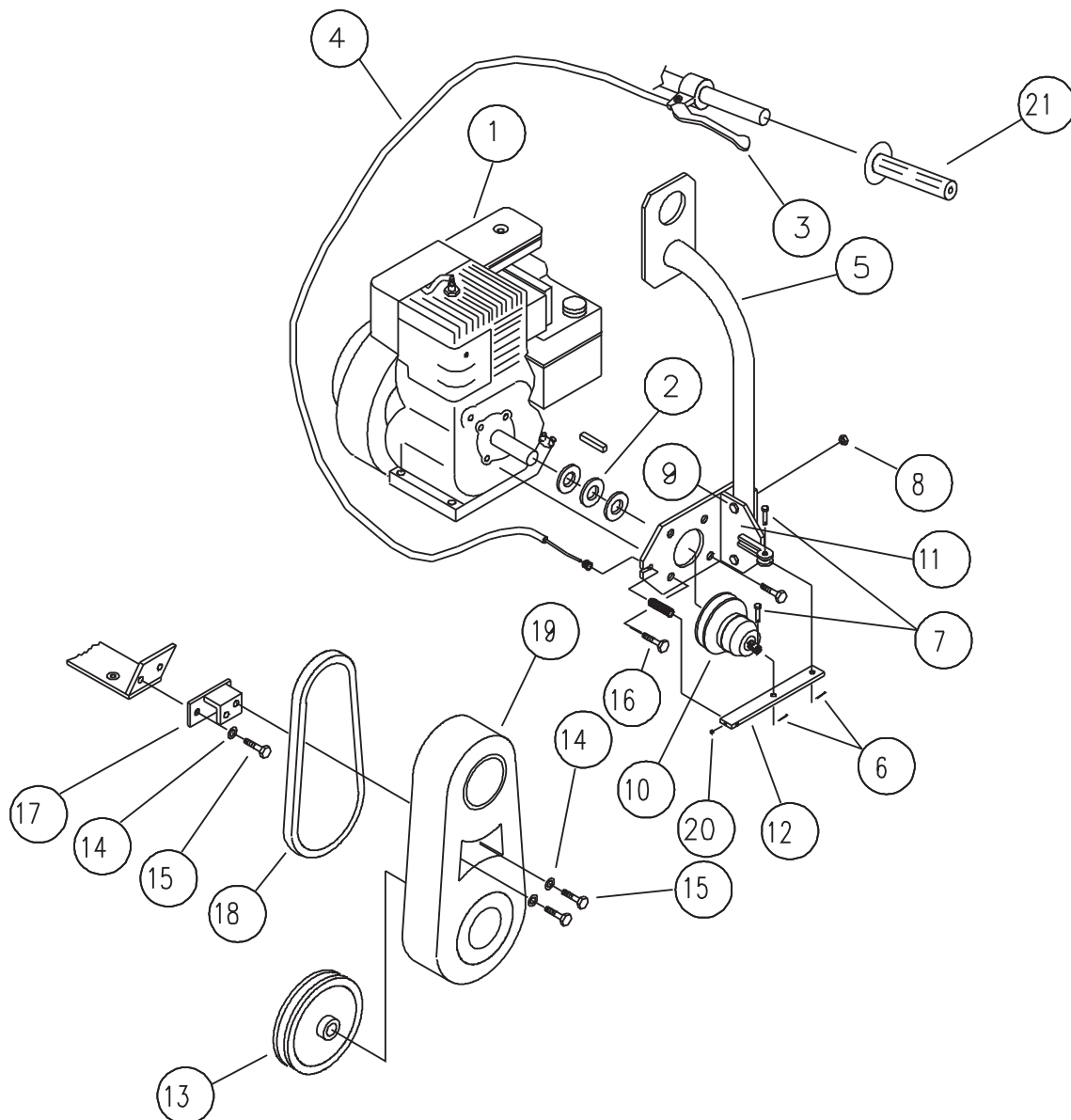
EPOXY/M SERIES TROWEL — 5.0 HP HONDA ENGINE

5.0 HP HONDA ENGINE

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	0627	SQUARE KEY 3/16 X 3/16X1.1/4"	1	
3	0255	AUTOMATIC CLUTCH ASSY. 3/4" BORE ...	1	INCLUDES ITEMS W/*
4*	21307	SPINDLE 3/4" BORE	1	REPLACES P/N 0256
5*	0251	CLUTCH HOUSING DRUM	1	
6*	0458	CLUTCH HOUSING DRUM BUSHING	1	
7*	B1766	WEIGHT, CLUTCH	1	REPLACES P/N 0454
8*	0855	SPRING	1	
9*	0253	CLUTCH EXPANSION PLATE	1	
10*	1868	SHSS 3/8-24X3/4"	1	
11*	0456	BELT RUNNER (BEARING)	1	
12	1390	BELT (A26)	1	
13	1335	BELT GUARD	1	
14	0181 B	LOCK WASHER 1/4"	2	
15	2577	T-BOLT 1/4-20	2	
16	0740	PULLEY	1	
17	10181	HHCS 5/16-24 x 1-1/4"	4	
18	0161 C	LOCK WASHER 5/16"	4	
19	0300 B	FLAT WASHER 5/16"	4	
20	1406	RETAINER	1	
21	1403	FHSCS 5/16-24 x 1-1/4"	1	
24	1391	HHCS 5/16-24 x 1-1/2"	4	
25	2742	THROTTLE MOUNT	1	
27	1393	FHSCS 3/8-24 x 1-1/2" ROBIN	1	
28	0939	SPACER (LIFTING BALE OPTIONAL)	3	
29	1386	ENGINE 5 HP HONDA, GX160K1QX2	1	

EPOXY/M SERIES TROWEL — HAND CLUTCH ASSY. - S/N 42036 AND BELOW

HAND CLUTCH ASSY.-S/N 42036 AND BELOW



S.N. 42036 AND BELOW

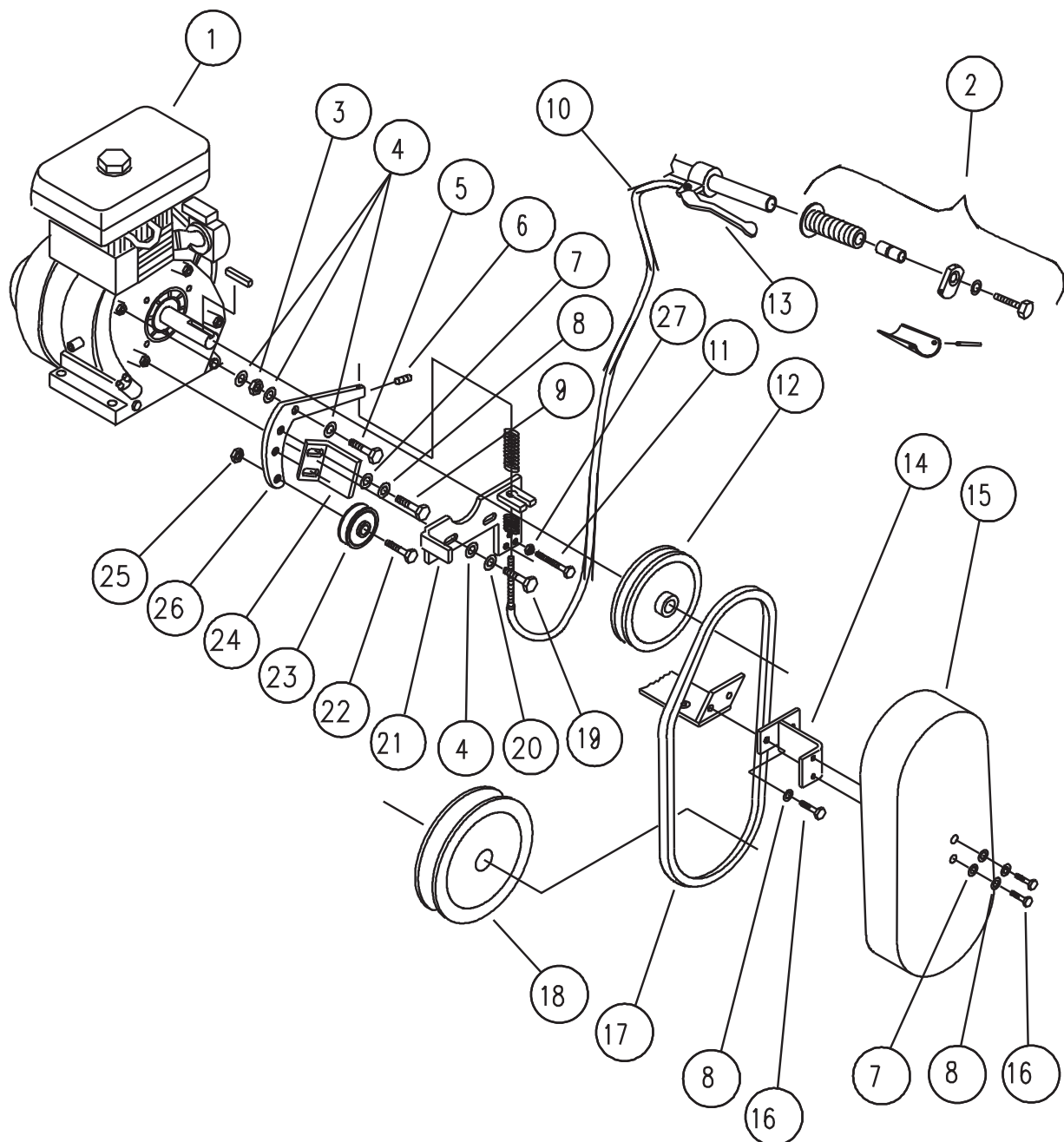
EPOXY/M SERIES TROWEL — HAND CLUTCH ASSY. - S/N 42036 AND BELOW

HAND CLUTCH ASSY.-S/N 42036 AND BELOW

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1		ENGINE 5HP HONDA	1	
2	0939	SPACER	3	
3	1512	HAND CLUTCH HAND LEVER	1	
4	10086	HAND CLUTCH CABLE ASSY	1	
5	C8202	LIFTING BALE ASSY	1	
6	5117	COTTER PIN 1/16"X1/2"	2	
7	5133	CLEVIS PIN 1/4"X7/8"	2	
8	1063	LOCK NUT 3/8-24	2	
9	0478	HHCS 3/8-24X2.1/4"	2	
10	2805	HAND CLUTCH 3/4" BORE	1	
11	10102	LIFT BRACKET PLATE	1	
12	10096	CLUTCH ARM	1	
13	0740	PULLEY	1	
14	0181 B	LOCK WASHER 1/4"	4	
15	4514	HHCS 1/4-20X5/8"	4	
16	1847	FHSCS 5/16-24X3/4"	4	
17	2865	BELT GUARD MOUNT	1	
18	1390	BELT (A26)	1	
19	2491	BELT GUARD	1	
20	10450	SHSS 10-32X1/4"	1	
21	2267	GRIP	1	

EPOXY/M SERIETROWEL — HAND CLUTCH ASSY.- S/N 42037 AND ABOVE

HAND CLUTCH ASSY.-S/N LJ42037 AND ABOVE



S.N. 42037 AND ABOVE

NOTES:



SEE GEARBOX AND ENGINE MOUNTS ITEM 36 PAGE 50.

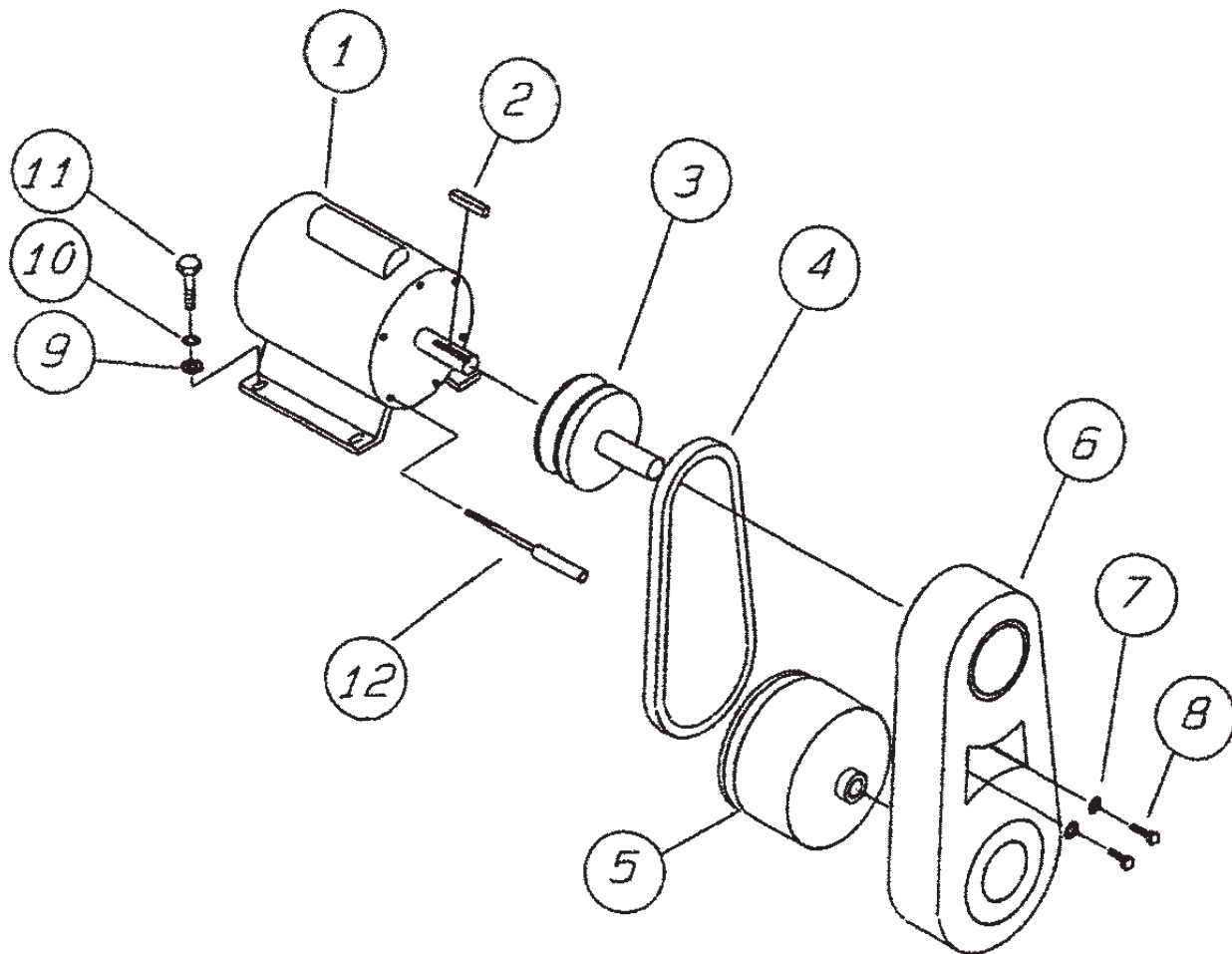
EPOXY/M SERIES TROWEL — HAND CLUTCH ASSY.- S/N 42037 AND ABOVE

HAND CLUTCH ASSY.-S/N 42037 AND ABOVE

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1		ENGINE 5 HP HONDA	1	
2	10036	CLUTCH ASSIST HANDLE ASSY	1	
3	6014 C	HEX FINISH NUT 5/16-24	1	
4	0300 B	FLAT WASHER 5/16"	5	
5	10181	HHCS 5/16-24X1.1/4"	1	
6	10450	SHSS 10-32X1/4"	1	
7	0948	FLAT WASHER 1/4"	4	
8	0181 B	LOCK WASHER 1/4"	6	
9	1579	HHCS 1/4-20 x 1/2"	2	
10	10936	HAND CLUTCH CABLE ASSY	1	
11	4538	HHCS 1/4-20X2.1/2"	1	
12	11043	PULLEY,ENGINE	1	
13	1512	HAND CLUTCH CONTROL LEVER	1	
14	10831	BELT GUARD MOUNT	1	
15	11046	BELT GUARD	1	
16	0730	HHCS 1/4-20X1"	4	
17	11044	BELT,(A28)	1	
18	11049	PULLEY,DRIVEN	1	
19	10229	HHCS 5/16-24X1"	2	
20	0161 C	LOCK WASHER 5/16"	2	
21	10897	CLUTCH BRACKET.	1	
22	1284	HHCS 3/8-16X1.1/2"	1	
23	10935	PULLEY,IDLER	1	
24	10740	BELT TENSIONING SHOE	1	
25	1456	HEX FINISH NUT 3/8-16	1	
26	10820	CLUTCH IDLER LEVER	1	
27	0949	HEX FINISH NUT 1/4-20	1	

EPOXY/M SERIES TROWEL — ELECTRIC MOTOR ASSY.

ELECTRIC MOTOR ASSY.



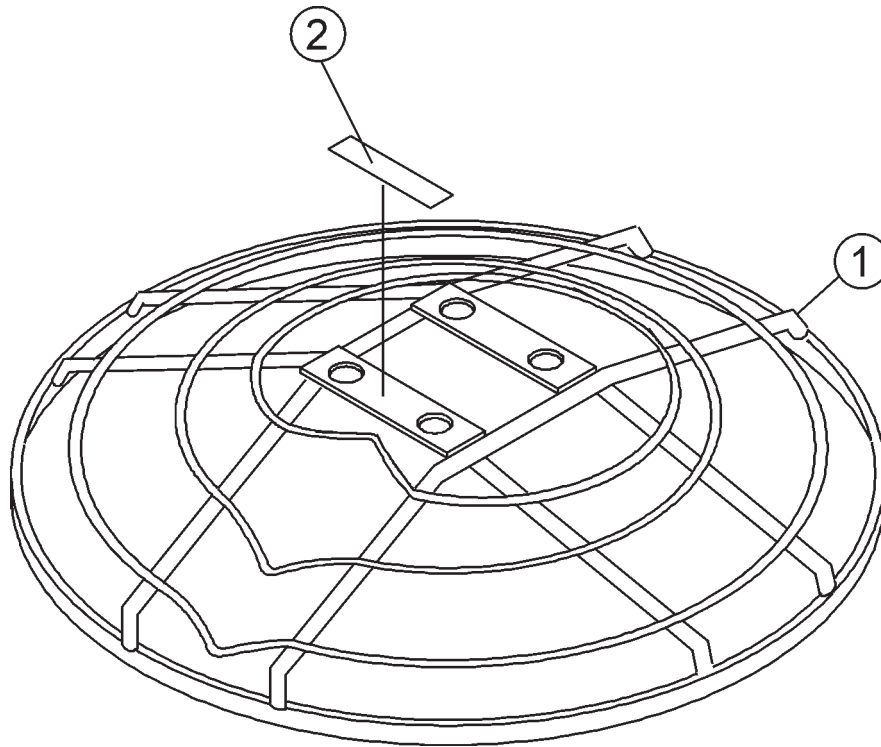
EPOXY/M SERIES TROWEL — ELECTRIC MOTOR ASSY.

ELECTRIC MOTOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	1908	ELECTRIC MOTOR 1HP, 60 CYCLE	1	
1	2749	ELECTRIC MOTOR 1HP, 50 CYCLE	1	
2	0627	SQUARE KEY 3/16X3/16X1.1/4"	1	
3	1909	CLUTCH ASM 5/8" BORE	1	
4	1922	BELT A22	1	
5	1910	PULLEY	1	
6	1923	BELT GUARD	1	
7	0181B	LOCK WASHER 1/4"	2	
8	4514	HHCS 1/4-20X5/8"	2	
9	0300B	FLAT WASHER 5/16"	4	
10	0161C	LOCK WASHER 5/16"	4	
11	4683	HHCS 5/16-18X5/8"	4	
12	2128	TORQUE ANCHOR ROD	1	

EPOXY/M SERIES TROWEL — GUARD RING ASSY.

GUARD RING ASSY.



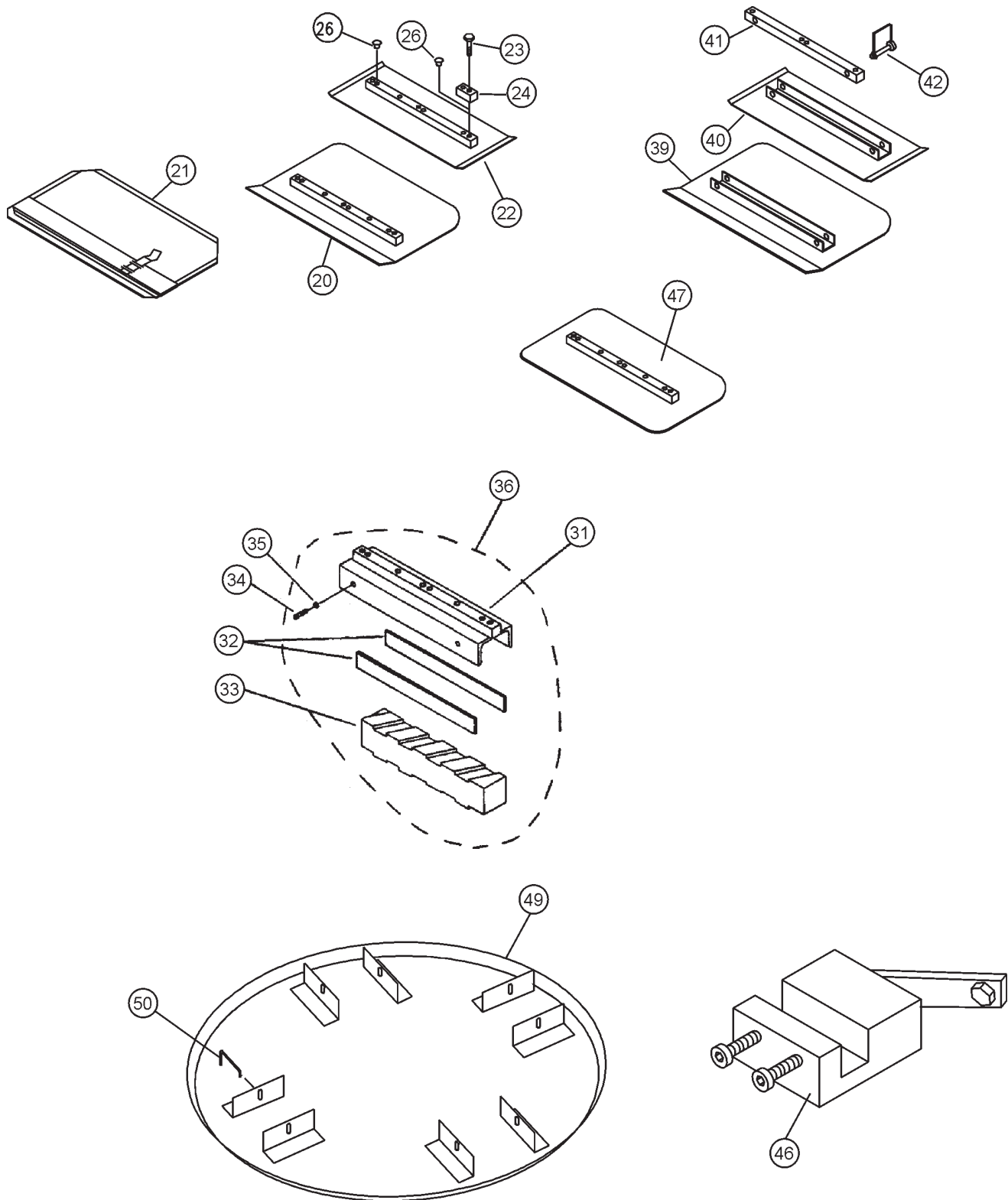
EPOXY/M SERIES TROWEL — GUARD RING ASSY.

GUARD RING ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	2278	STATIONARY GUARD RING	1	
2	1940	DECAL	1	

EPOXY/M SERIETROWEL — BLADES & ADJUSTMENT FIXTURE ASSY. (OPTIONS)

BLADES & ADJUSTMENT FIXTURE ASSY.



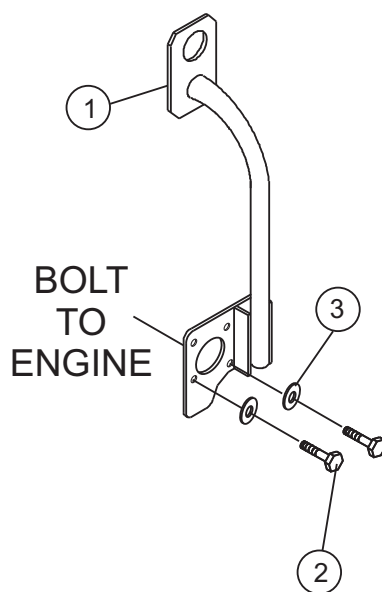
EPOXY/M SERIESTROWEL — BLADES & ADJUSTMENT FIXTURE ASSY. (OPTIONS)

BLADES & ADJUSTMENT FIXTURE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
20		COMBO FLOAT & FINISH BLADE	4	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
20		ENDURO COMBO FLOAT & FINISH BLADE	4	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
21		FLOAT BLADE	4	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
22		FINISH BLADE	4	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
22		ENDURO FINISH BLADE W/ROTATING	4	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
23	0202	HHCS 5/16-18X1" RING	4	
25	02274	GUARD RING	1	
26	1434	TROWEL LUG (FINISH BLADE ONLY)	4	
28	1869	SNAP PIN 1/4 X 1.3/4"	8	
29	1940	GUARD RING DECAL	1	
30	1817	FIELD TROWEL ARM ADJUSTER ASSY.	1	
31*	0987	GRINDING ATTACHMENT HOLDER	1	
32*	0988	LOCKING PLATE	2	
33*	S986	GRINDING ATTACHMENT STONE	1	
34*	0414	SHSS 5/16-18 X 3/4"	4	
35*	0106	JAM NUT 5/16-18 X 3/4"	4	
36	0985	GRINDING ATTACHMENT ASSY.	1	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
		.....		INCLUDES ITEMS W/*
39	1871	UNIVERSAL FIT COMBINATION BLADE	4	OPTIONAL
39	101871	ENDURO UNIVERSAL FIT COMBO BLADE	4	OPTIONAL
40	1872	UNIVERSAL FIT FINISH BLADE	4	OPTIONAL
40	101872	ENDURO FIT FINISH BLADE	4	OPTIONAL
41	1857	UNIVERSAL FIT MOUNTING BAR	4	OPTIONAL
42	2870	FLOAT DISK	1	
43	2935	FLOAT DISK LATCH PIN	4	

EPOXY/M SERIES TROWEL — LIFTING BALE ASSY. (OPTION)

LIFTING BALE ASSY. (OPTION)



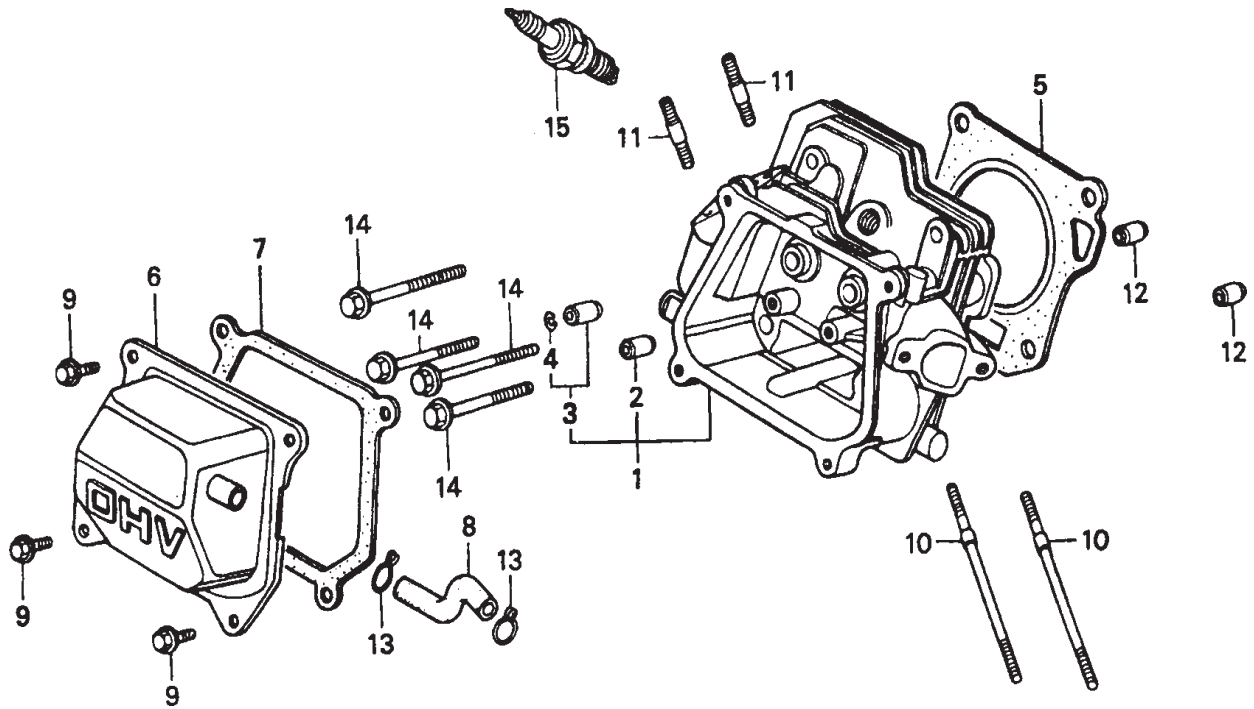
EPOXY/M SERIES TROWEL — LIFTING BALE ASSY. (OPTION)

LIFTING BALE ASSY. (OPTION)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1		LIFTING BALE ASSY	1	CONTACT UNIT SALES DEPT./ACCESSORY ITEM
2	10229	HHCS 5/16-24X1"	4	
3	0161 C	LOCK WASHER 5/16"	4	
4		LIFTING BALE ASSY	1	CONTACT UNIT SALES DEPT./ACCESSORY ITEM

HONDA GX160K1QA2 ENGINE — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.



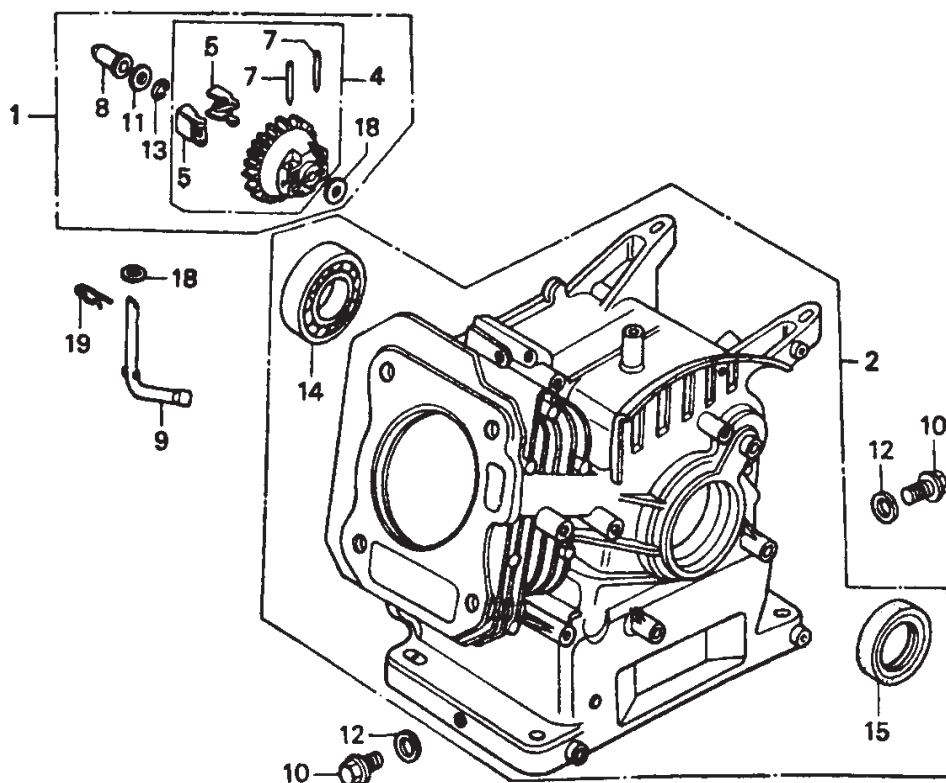
HONDA GX160K1QA2 ENGINE — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12210ZH8000	CYLINDER HEAD, COMP	1	INCLUDES ITEMS W/★
2★	12204ZE1306	GUIDE, IN. VALVE (OVER SIZE)	1	
3★	12205ZE1315	GUIDE, EX. VALVE (OS)	1	
4	12216ZE5300	CLIP, VALVE GUIDE	1	
5	12251ZF1800	GASKET, CYLINDER HEAD	1	
6	12310ZE1010	COVER COMP, HEAD	1	
7	12391ZE1000	GASKET, CYLINDER HEAD COVER	1	
8	15721ZH8000	TUBE, BREATHER	1	
9	90016ZE1000	BOLT, FLANGE 6X13	4	
10	90043ZE1020	BOLT, STUD 6X109	2	
11	90047ZE1000	BOLT, STUD 8X32	2	
12	9430110160	PIN A, DOWEL 10X16	2	
14	957230806000	BOLT, FLANGE 8X60	4	
15	9807956846	PLUG, SPARK (BPR6ES NGK)	1	
	9807956855	PLUG, SPARK (W20EPR-U ND)	1	

HONDA GX160K1QA2 ENGINE — CYLINDER BARREL ASSY.

CYLINDER BARREL ASSY.



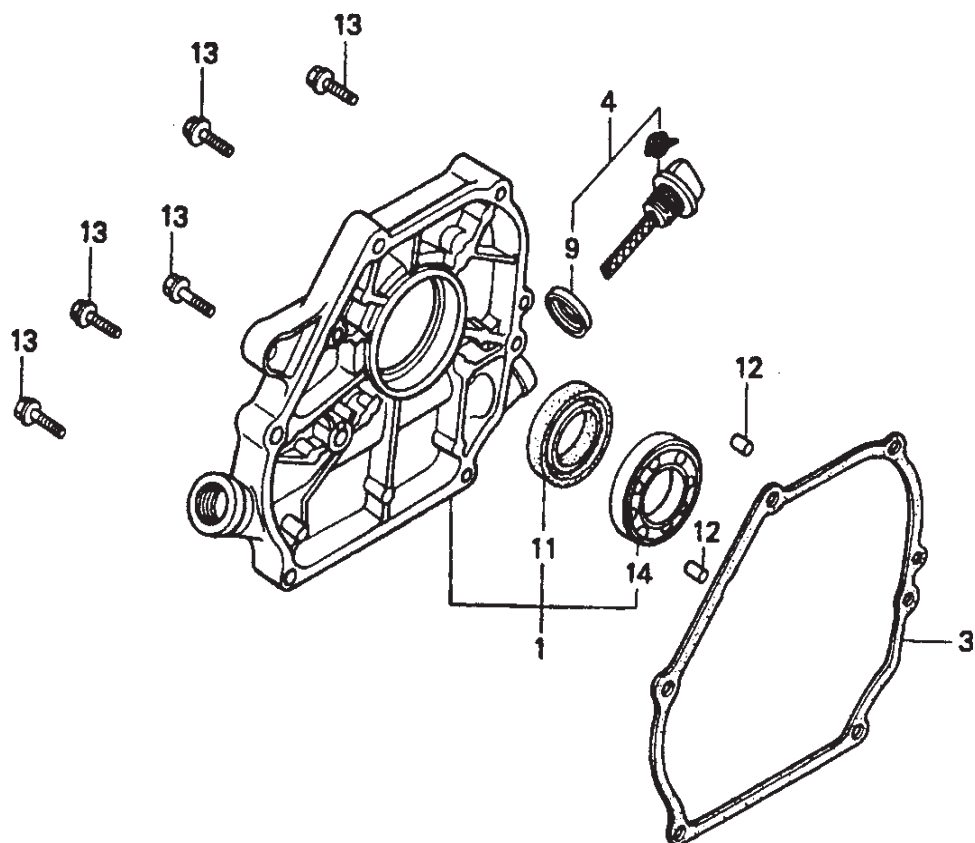
HONDA GX160K1QA2 ENGINE — CYLINDER BARREL ASSY.

CYLINDER BARREL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	06165ZE1000	GOVERNOR KIT	1	INCLUDES ITEMS W/★
2	12000ZH8010	CYLINDER BARREL ASSY.	1	INCLUDES ITEMS W/%
4★	16510ZE1000	GOVERNOR ASSY.	1	INCLUDES ITEMS/W#
5★#	16511ZE1000	WEIGHT, GOVERNOR	2	
7★#	16513ZE1000	PIN, GOVERNOR WEIGHT	2	
8★	16531ZE1000	SLIDER, GOVERNOR	1	
9	16541ZE1000	SHAFT, GOVERNOR ARM	1	
10	90131ZE1000	BOLT, DRAIN PLUG	2	
11★	90451ZE1000	WASHER, THRUST 6MM	1	
12	90601ZE1000	WASHER, DRAIN PLUG 10.2MM	2	
13★	90602ZE1000	CLIP, GOVERNOR HOLDER	1	
14%	91001ZF1003	BEARING, RADIAL BALL (6205)	1	
15%	91202883005	OIL SEAL 25X41X6	1	
18★	9410106800	WASHER, PLAIN, 6MM	2	
19	9425108000	PIN, LOCK, 8MM	1	

HONDA GX160K1QA2 ENGINE — CRANKCASE COVER ASSY.

CRANKCASE COVER ASSY.



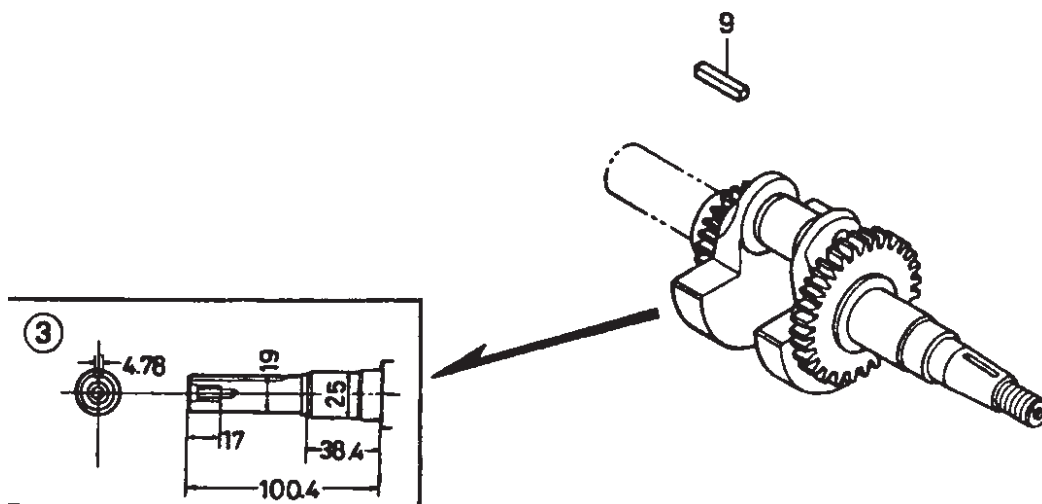
HONDA GX160K1QA2 ENGINE — CRANKCASE COVER ASSY.

CRANKCASE COVER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11300ZE1641	COVER ASSY, CRANKCASE (U TYPE)	1	INCLUDES ITEMS W/★
3	11381ZH8801	GASKET CASE COVER	1	
4	15600ZE1003	CAP ASSY, OIL FILLER	1	INCLUDES ITEMS W/#
5	15600ZG4003	CAP ASSY, OIL FILLER	1	INCLUDES ITEMS W/%
7	15620ZG4910	CAP, OIL FILLER	1	
8	15621896010	GASKET, OIL FILLER CAP	1	
9#	15625ZE1000	GASKET, OIL FILLER CAP	1	
10%	15625ZE1003	GASKET, OIL FILLER CAP	1	
11★	91202883005	OIL SEAL, 25X41X6	1	
12	9430108140	PIN A, DOWEL 8X14	2	
13	957010803200	BOLT, FLANGE 8X32	6	
14★	961006205010	BEARING, RADIAL BALL, 6205	1	

HONDA GX160K1QA2 ENGINE — CRANKSHAFT ASSY.

CRANKSHAFT ASSY.



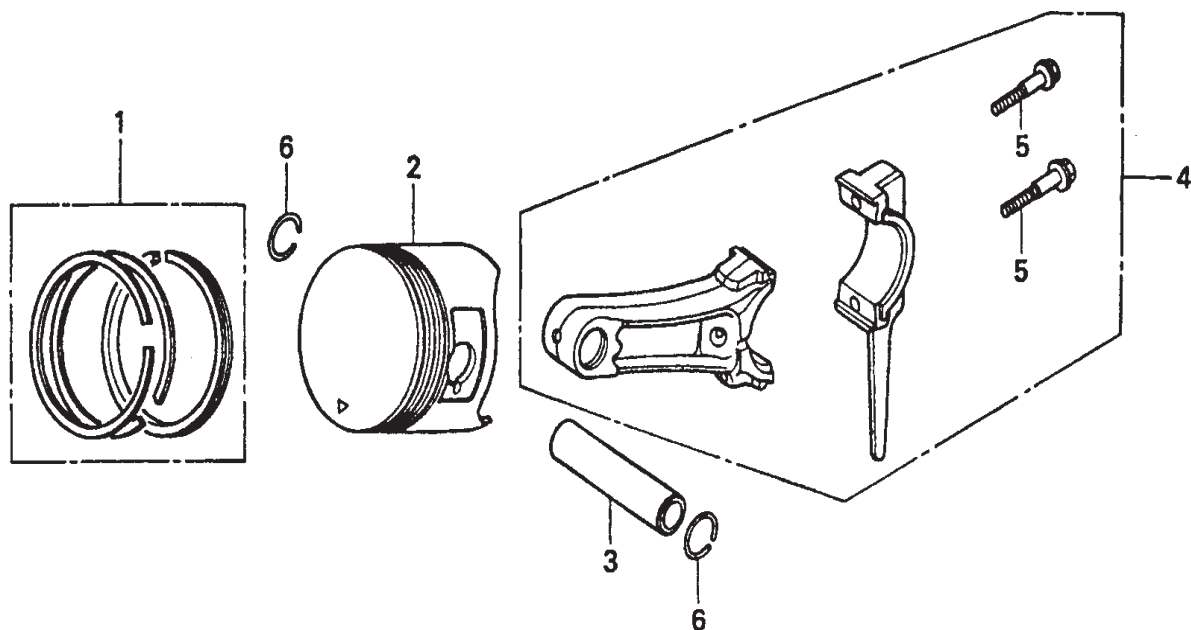
HONDA GX160K1QA2 ENGINE — CRANKSHAFT ASSY.

CRANKSHAFT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
3	13310ZE1601	CRANKSHAFT COMP.,(Q TYPE)	1	
9	90745ZE1600	KEY (4.78X4.78X38)	1	

HONDA GX160K1QA2 ENGINE — PISTON RINGS ASSY.

PISTON ASSY.



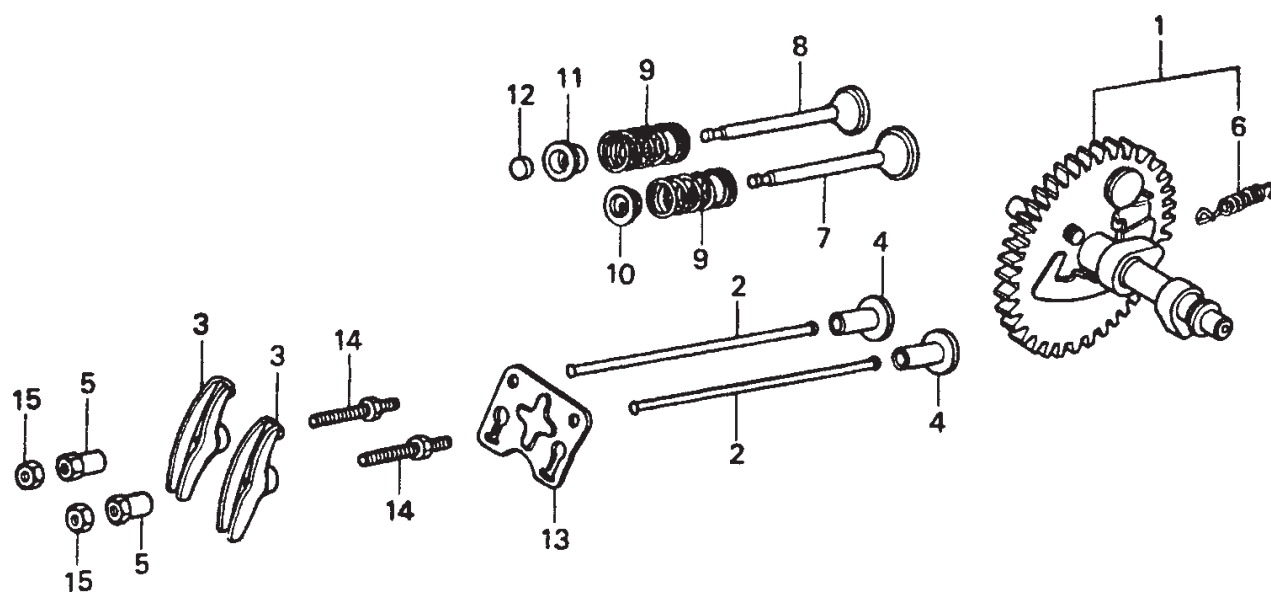
HONDA GX160K1QA2 ENGINE — PISTON RINGS ASSY.

PISTON RINGS ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	13010ZF1023	RING SET, PISTON (STD)	1	
	13011ZF1023	RING SET, PISTON (0.25)	1	
	13012ZF1023	RING SET, PISTON (0.50)	1	
	13013ZF1023	RING SET, PISTON (0.75)	1	
2	13101ZH8000	PISTON (STD)	1	
	13102ZH8000	PISTON (0.25)	1	
	13103ZH8000	PISTON (0.50)	1	
	13104ZH8000	PISTON (0.75)	1	
3	13111ZE1000	PIN, PISTON	1	
4	132A0ZE1000	ROD ASSY, CONNECTING	1	INCLUDES ITEMS W/★
5★	90001ZE1000	BOLT, CONNECTING ROD	2	
6	90551ZE1000	CLIP, PISTON PIN, 18MM	2	

HONDA GX160K1QA2 ENGINE — CAMSHAFT ASSY.

CAMSHAFT ASSY.



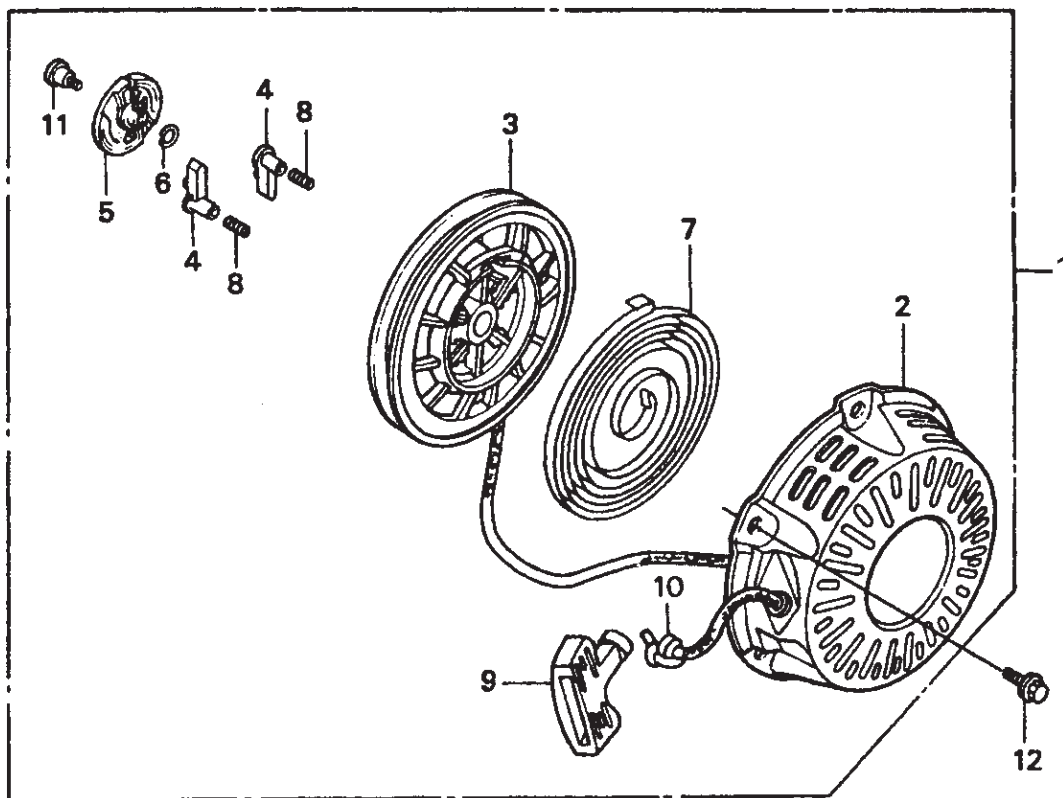
HONDA GX160K1QA2 ENGINE — CAMSHAFT ASSY.

CAMSHAFT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	14100ZE1812	CAMPSHAFT ASSY.	1	INCLUDES ITEMS W/★
2	14410ZE1010	ROD, PUSH	2	
3	14431ZE1000	ARM, VALVE ROCKER	2	
4	14441ZE1010	LIFTER, VALVE	2	
5	14451ZE1013	PIVOT, ROCKER ARM	2	
6★	14568ZE1000	SPRING, WEIGHT RETURN	1	
7	14711ZF1000	VALVE, IN.	1	
8	14721ZF1000	VALVE, EX.	1	
9	14751ZF1000	SPRING, VALVE	2	
10	14771ZE1000	RETAINER, IN. VALVE SPRING	1	
11	14773ZE1000	RETAINER, EX. VALVE SPRING	1	
12	14781ZE1000	ROTATOR, VALVE	1	
13	14791ZE1010	PLATE, PUSH ROD GUIDE	1	
14	90012ZE0010	BOLT, PIVOT	2	
15	90206ZE1000	NUT, PIVOT ADJUSTING	2	

HONDA GX160K1QA2 ENGINE — RECOIL STARTER ASSY.

RECOIL STARTER ASSY.



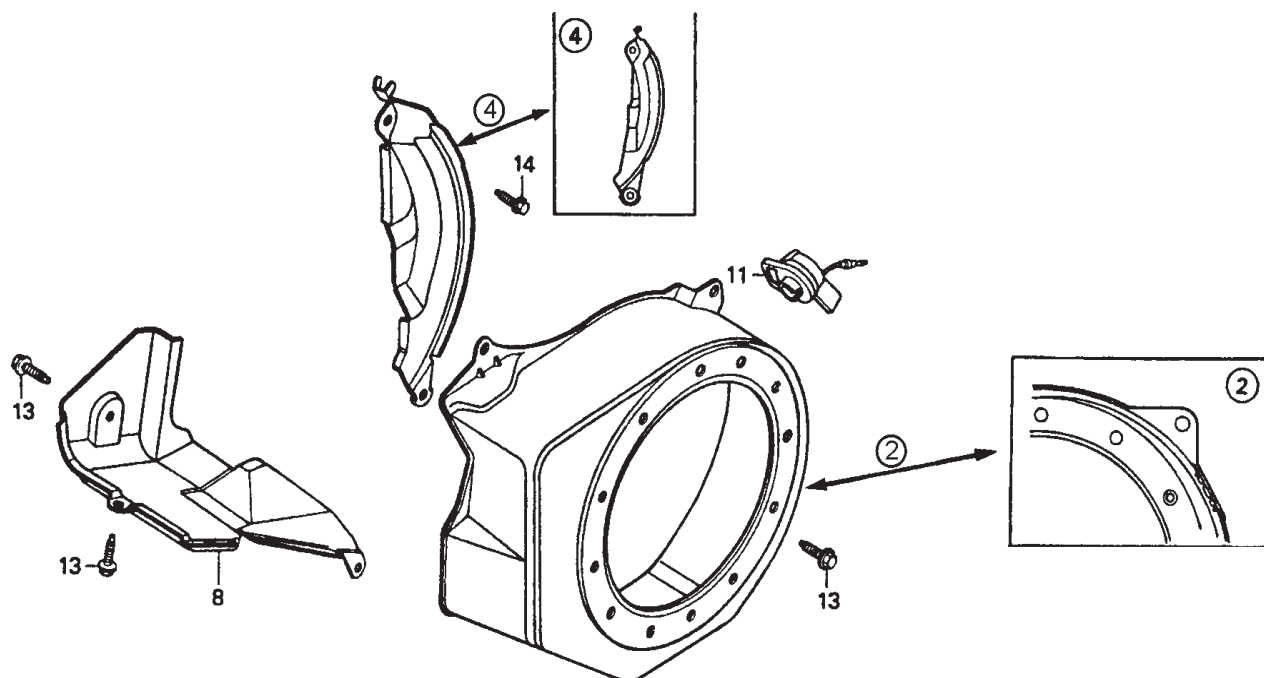
HONDA GX160K1QA2 ENGINE — RECOIL STARTER ASSY.

RECOIL STARTER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	28400ZH8013ZB	STARTER ASSY, RECOIL NH1(BLACK)	1	INCLUDES ITEMS W/★
2★	28410ZH8003ZB	CASE COMP., RECOIL STARTER	1	
3★	28420ZH8013	REEL, RECOIL STARTER	1	
4★	28422ZH8013	RATCHET, STARTER	2	
5★	28433ZH8003	GUIDE, RATCHET	1	
6★	28441ZH8003	SPRING, FRICTION	1	
7★	28442ZH8003	SPRING, RECOIL STARTER	1	
8★	28443ZH8003	SPRING, RETURN	2	
9★	28461ZH8003	KNOB, RECOIL STARTER	1	
10★	28462ZH8003	ROPE, RECOIL STARTER	1	
11★	90003ZH8003	SCREW, SETTING	1	
12	957010600800	BOLT, FLANGE 6X8	3	

HONDA GX160K1QA2 ENGINE — FAN COVER ASSY.

FAN COVER ASSY.



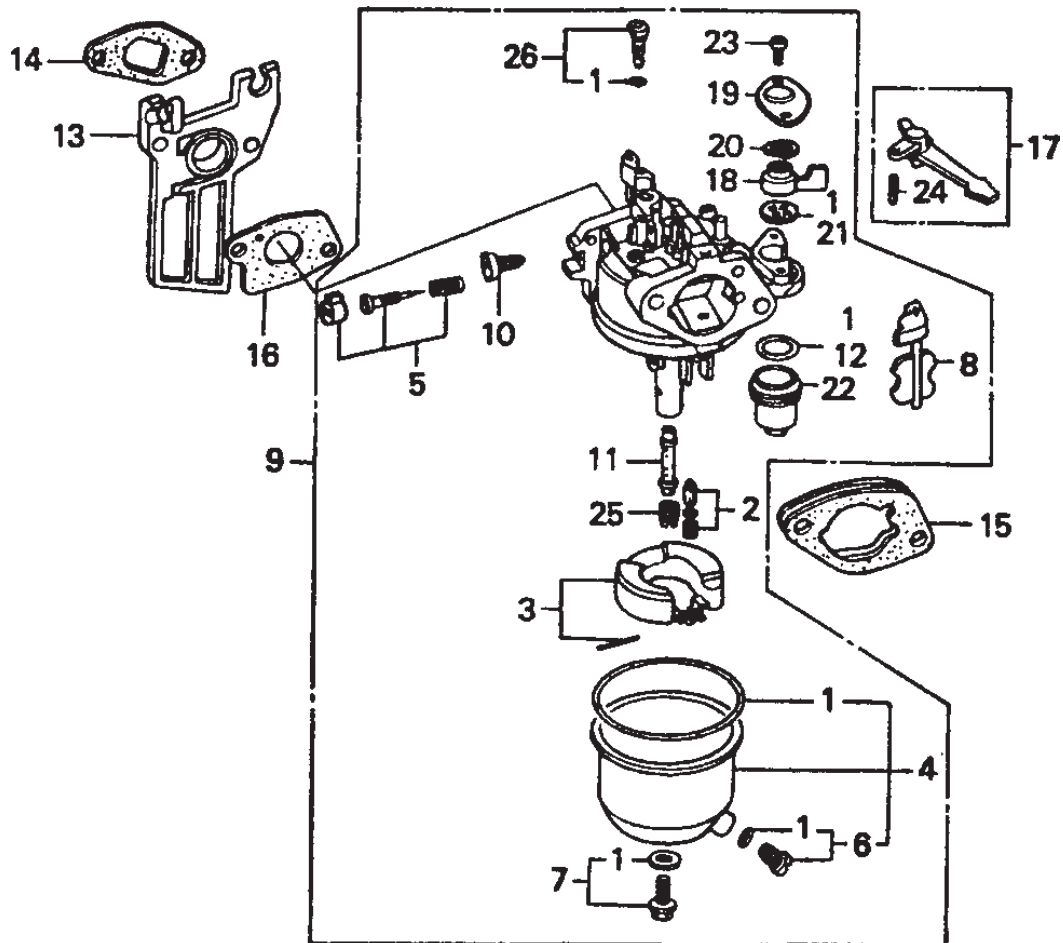
HONDA GX160K1QA2 ENGINE — FAN COVER ASSY.

FAN COVER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	19610ZE1000ZC	COVER COMP., FAN NH1(BLACK)	1	
4	19612ZH8000	PLATE, SIDE(STD)	1	
8	19630ZH8000	SHROUD COMP.	1	
11	36100ZE1015	SWITCH ASSY., ENGINE	1	
13	90013883000	BOLT, FLANGE 6X12	6	
14	90022888010	BOLT, FLANGE 6X20	1	

HONDA GX160K1QA2 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.



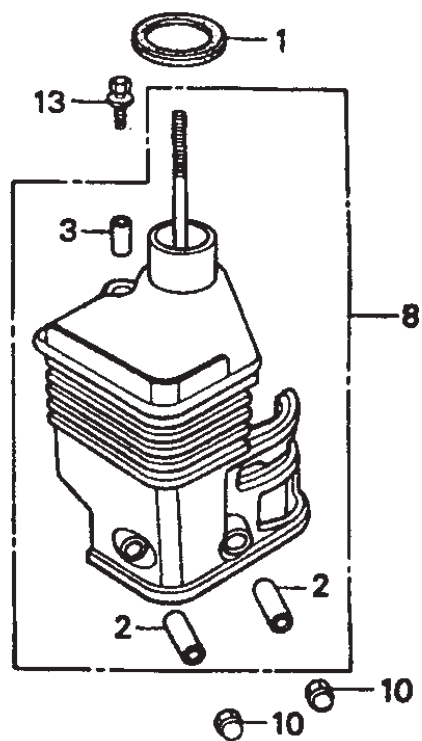
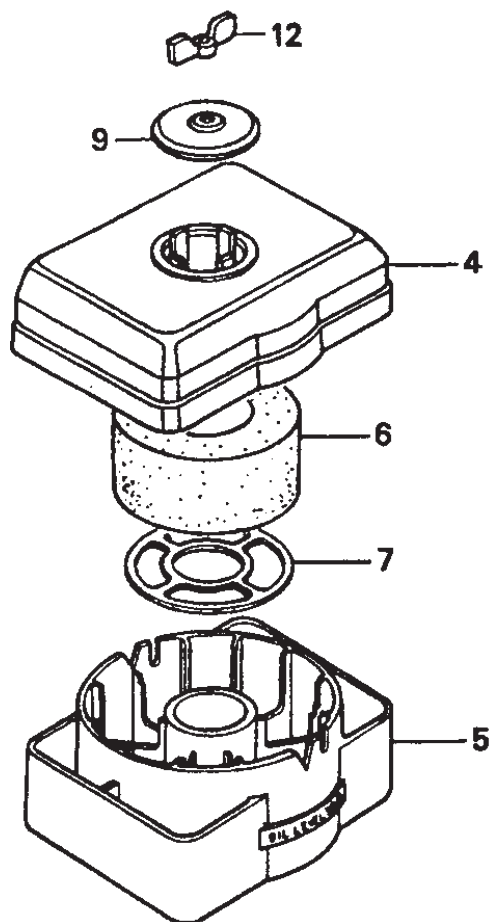
HONDA GX160K1QA2 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	16010ZE1812	GASKET SET	1	
2*	16011ZE0005	VALVE SET, FLOAT	1	
3*	16013ZE0005	FLOAT SET	1	
4*	16015ZE0831	CHAMBER SET, FLOAT	1	INCLUDES ITEMS W/%
5*	16016ZH7W01	SCREW SET	1	
6*%	16024ZE1811	SCREW SET DRAIN	1	
7*	16028ZE0005	SCREW SET B	1	
8*	16044ZE0005	CHOKE SET	1	
9	16100ZH8W61	CARBURETOR ASSY(BE65C B)	1	INCLUDES ITEMS W/*
10*	16124ZE0005	SCREW, THROTTLE STOP	1	
11*	16166ZH8W60	NOZZLE, MAIN	1	
12*	16955283000	GASKET, FULL STRAINER CUP	1	
13	162111ZE1000	INSULATOR CARBURETOR	1	
14	16212ZH8800	GASKET, INSULATOR	1	
15	16220ZE1020	SPACER COMP. CARBURETOR	1	
16	16221ZH8801	GASKET CARBURETOR	1	
17	16610ZE1000	LEVER COMP., CHOKE (STD)	1	INCLUDES ITEMS W/#
18*	16953ZE1406	LEVER VALVE	1	
19*	16954ZE1812	PLATE LEVER SETTING	1	
20*	16956ZE1811	SPRING, PETCOCK LEVER	1	
21*	16957ZE1812	GASKET, PETCOCK	1	
22*	16967ZE0811	CUP, FUEL STRAINER	1	
23*	93500030060H	SCREW, PAN 3X6	2	
24#	9430520122	PIN, SPRING 2X12	1	
25*	99101ZH70650	JET, MAIN #65	1	
	99101ZH70680	JET, MAIN #68	1	
	99101ZH70700	JET, MAIN #70	1	
26*	99204ZE00350	JET SET, PILOT #35	1	

HONDA GX160K1QA2 ENGINE — AIR CLEANER (OIL BATH) ASSY.

AIR CLEANER (OIL BATH) ASSY.



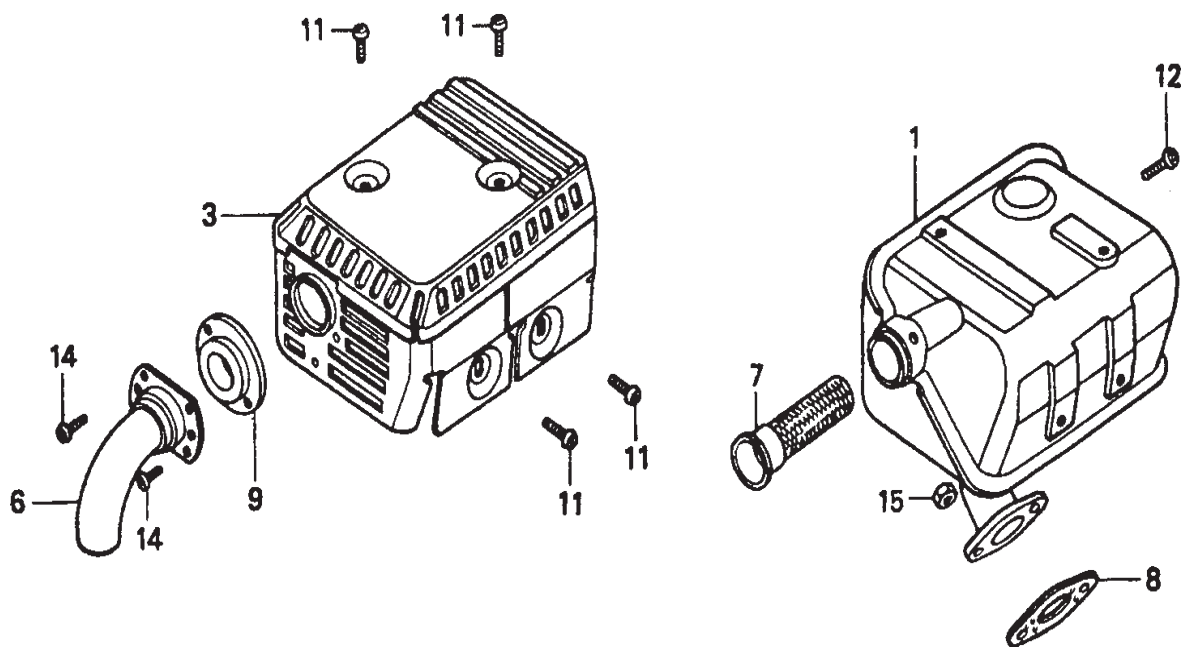
HONDA GX160K1QA2 ENGINE — AIR CLEANER (OIL BATH) ASSY.

AIR CLEANER (OIL BATH) ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	16271ZE1000	GASKET ELBOW	1	
2*	17238ZE7010	COLLAR AIR CLEANER	2	
3*	17239ZE1000	COLLAR B AIR CLEANER	1	
4	17401ZE1810	BODY CLEANER OIL BATH	1	
5	17402ZE1810	PAN CLEANER OIL OIL BATH	1	
6	17403ZE1810	AIR CLEANER ELEMENT OIL BATH	1	
7	17404841000	GRID AIR CLEANER	1	
8	17410ZE1020	ELBOW COMP. AIR CLEANER	1	INCLUDES ITEMS W/*
9	17421ZE1000	CAP CLEANER	1	
10	90201415000	NUT CAP 6MM	2	
12	90325044000	NUT WING TOOL BOX SETTING	1	
13	957010602000	BOLT FLANGE 6 x 20	1	

HONDA GX160K1 ENGINE — MUFFLER ASSY.

MUFFLER ASSY.



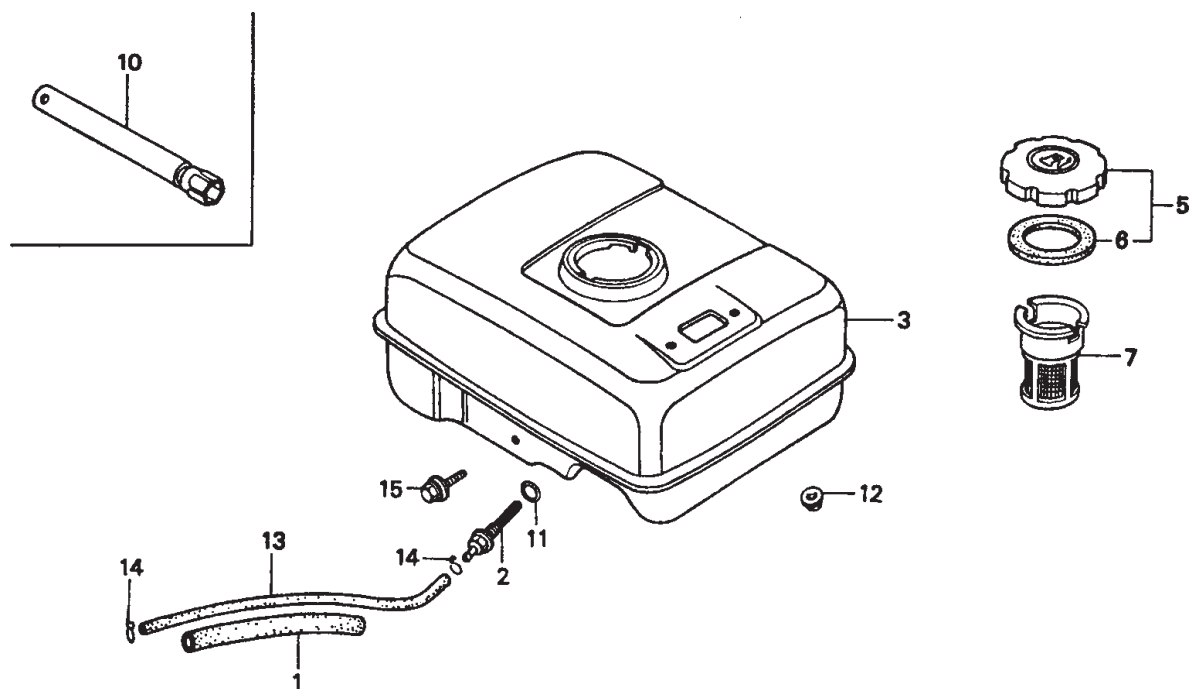
HONDA GX160K1 ENGINE — MUFFLER ASSY.

MUFFLER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	18310ZH8810	MUFFLER COMP.	1	
3	18320ZF1H01	PROTECTOR, MUFFLER	1	
6	18340ZE1010	DEFLECTOR COMP.	1	
7	18355ZE1000	ARRESTER, SPARK	1	
8	18381ZH8800	GASKET, MUFFLER	1	
9	18522ZE1000	GUIDE, MUFFLER	1	
11	90050ZE1000	SCREW, TAPPING 5X8	4	
12	90055ZE1000	SCREW, TAPPING 4X6	1	
14	90183671003	SCREW, TAPPING 4X8	2	
15	94001080000S	NUT, HEX (8MM)	2	

HONDA GX160K1QA2 ENGINE — FUEL TANK ASSY.

FUEL TANK ASSY.



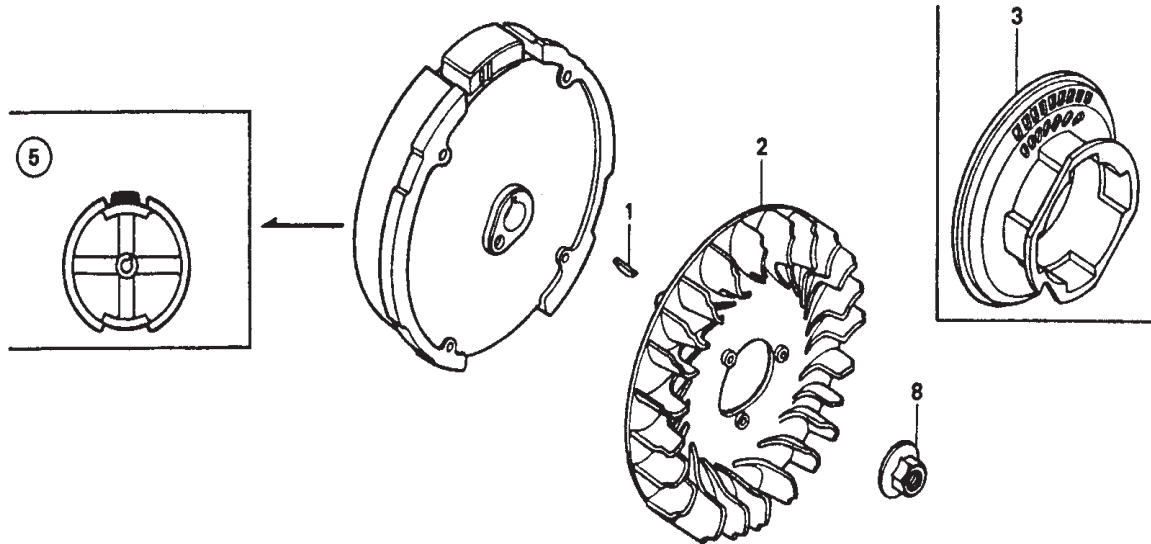
HONDA GX160K1QA2 ENGINE — FUEL TANK ASSY.

FUEL TANK ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	16854ZH8000	RUBBER, SUPPORTER	1	
2	16955ZE1000	JOINT, FUEL TANK	1	
3	17510ZE1020ZF	TANK COMP., FUEL NH1 (BLACK)	1	
5	17620ZH7013	CAP COMP., FUEL FILLER.....	1	INCLUDES ITEMS W/#
6#	17631ZH7003	GASKET, FUEL FILLER CAP	1	
7	17672ZE2W01	FILTER, FUEL	1	
10	89218ZE1000	WRENCH COMP., SPARK PLUG	1	
11	91353671003	O-RING (14MM) ARAI	1	
12	9405006000	NUT, FLANGE (6MM)	2	
13	950014500840M	BULK HOSE, FUEL (4.5X8000) (4.5X140)	1	
14	9500202080	CLIP, TUBE (B8)	2	
15	957010602500	BOLT, FLANGE (6X25)	1	

HONDA GX160K1QA2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.



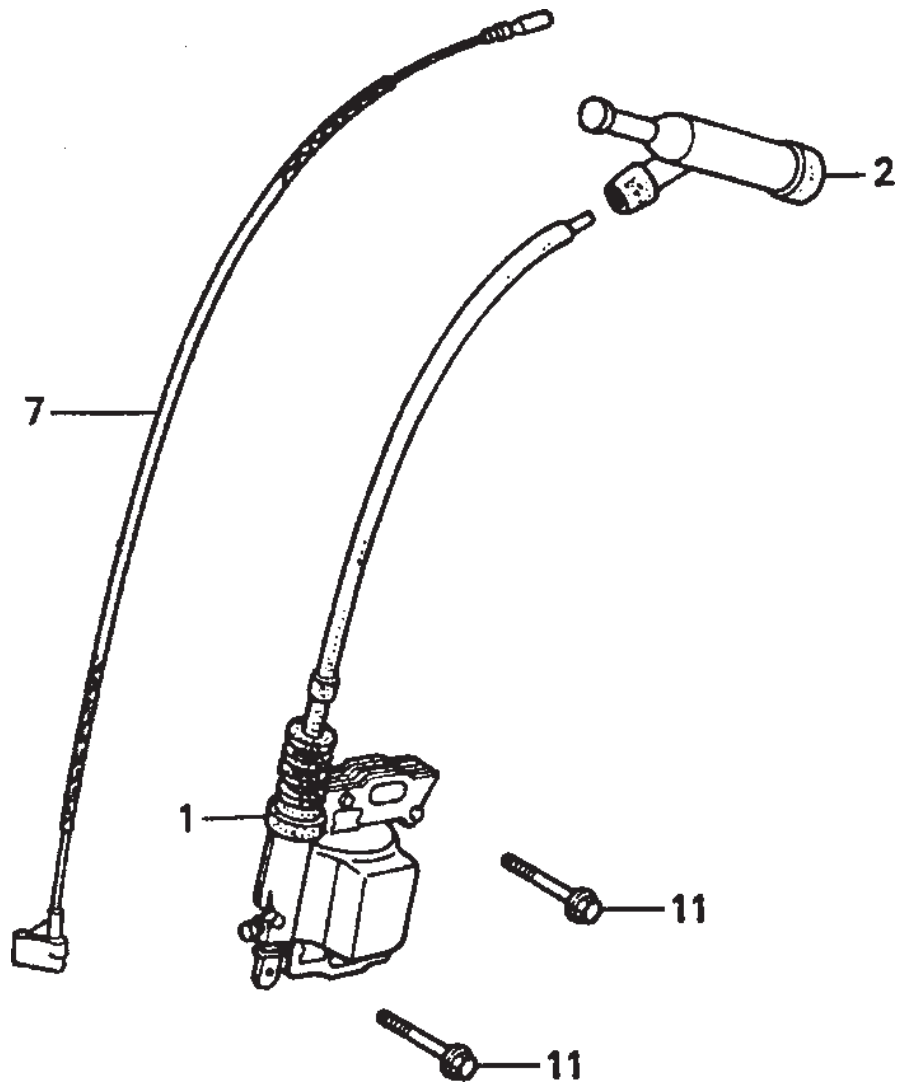
HONDA GX160K1QA2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	13331357000	KEY, SPECIAL WOOD RUFF, 25X18	1	
2	19511ZE1000	FAN, COOLING	1	
3	28450ZH8811	PULLEY COMP., STARTER	1	
5	31100ZE1000	FLYWHEEL COMP.	1	
	31100ZE1810	FLYWHEEL COMP., LAMP	1	
8	90201878003	NUT, SPECIAL, 14MM	1	

HONDA GX160K1QA2 ENGINE — IGNITION COIL ASSY.

IGNITION COIL ASSY.



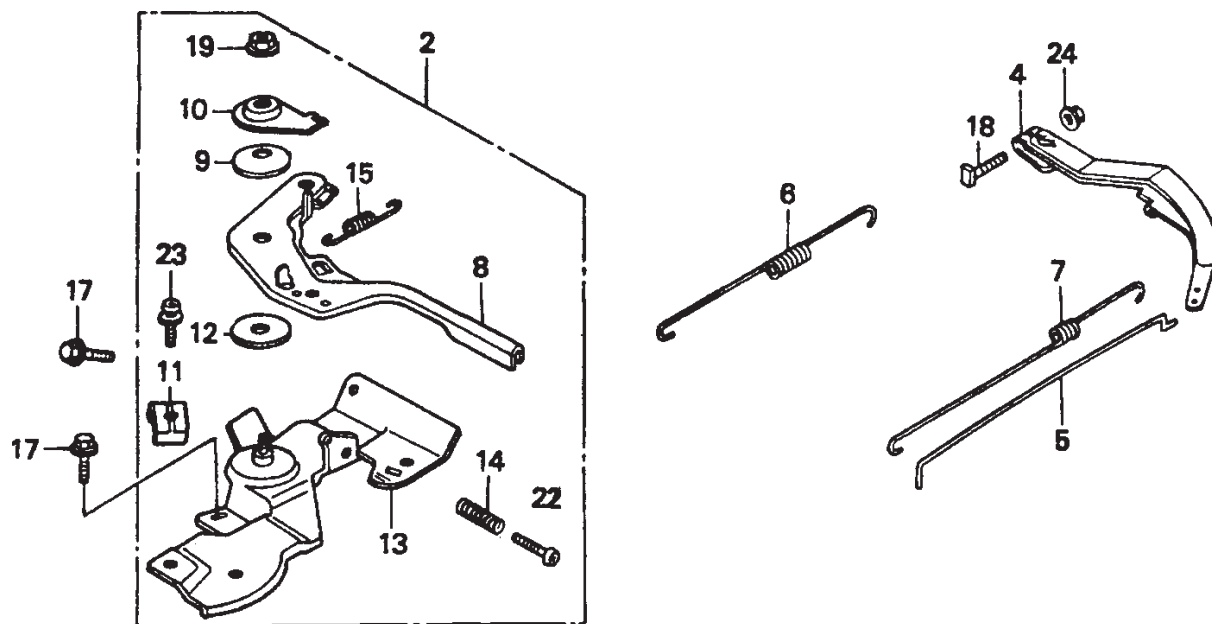
HONDA GX160K1QA2 ENGINE — IGNITION COIL ASSY.

IGNITION COIL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	30500ZE1033	COIL ASSY., IGNITION	1	
2	30700ZE1013	CAP ASSY., NOISE SUPPRESSOR	1	
7	36101ZE1010	WIRE, STOP SWITCH (370MM)	1	
11	90121952000	BOLT, FLANGE, 6X25	2	

HONDA GX160K1QA2 ENGINE — CONTROL ASSY.

CONTROL ASSY.



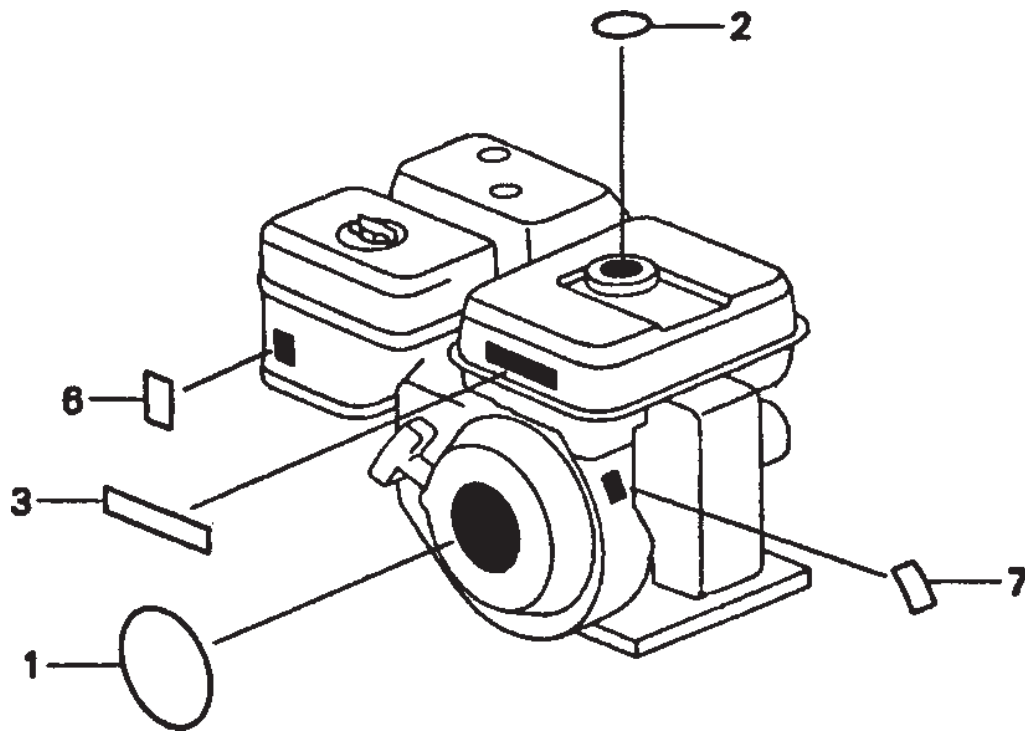
HONDA GX160K1QA2 ENGINE — CONTROL ASSY.

CONTROL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	16500ZH8821	CONTROL ASSY., REMOTE	1	INCLUDES ITEMS W/★
4	16551ZE0010	ARM, GOVERNOR	1	
5	16555ZE1000	ROD, GOVERNOR	1	
6	16561ZE1020	SPRING, GOVERNOR	1	
7	16562ZE1020	SPRING, THROTTLE RETURN	1	
8★	16571ZH8000	LEVER, CONTROL	1	
9★	16574ZE1000	SPRING, LEVER	1	
10★	16575ZH8000	WASHER, CONTROL LEVER	1	
11★	16576891000	HOLDER, CABLE	1	
12★	16578ZE1000	SPACER, CONTROL LEVER	1	
13★	16580ZH8811	BASE COMP., CONTROL	1	
14★	16584883300	SPRING, CONTROL ADJUSTING	1	
15★	16592ZE1810	SPRING, CABLE RETURN	1	
17	90013883000	BOLT, FLANGE (6X12)	2	
18	90015ZE5010	BOLT, GOVERNOR ARM	1	
19★	90114SA0000	NUT,SELF- LOCK (6MM)	1	
22★	93500050250H	SCREW, PAN (5X25)	1	
23★	938930501600	SCREW WASHER (5X16)	1	
24	9405006000	NUT, FLANGE, 6MM	1	

HONDA GX160K1QA2 ENGINE — LABEL ASSY.

LABEL ASSY.



HONDA GX160K1QA2 ENGINE — LABEL ASSY.

LABEL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	87521ZH8010	EMBLEM, INTERNAL	1	
2	87522ZE1810	MARK, CAUTION EXTERNAL	1	
3	87522ZH9000	LABEL, CAUTION	1	
6	87258ZE1810	MARK, CHOKE	1	
7	87530ZH8810	LABEL, SPECIFICATION EXTERNAL	1	

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HONDA GX160K1QA2 ENGINE — GASKET KIT ASSY.

GASKET KIT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
	06111ZH8405	GASKET KIT	1	INCLUDES ITEMS W/★
1★	11381ZH8801	GASKET, CASE COVER NON ASBEST	1	
2★	12251ZF1800	GASKET, CYLINDER HEAD	1	
3★	12391ZE1000	GASKET, CYLINDER HEAD COVER	1	
4★	16212ZH8800	GASKET, INSULATOR	1	
5★	16221ZH8801	GASKET, CARBURATOR	1	
6★	18381ZH8800	GASKET, MUFFLER	1	

TERMS AND CONDITIONS OF SALE — PARTS

PAYMENT TERMS

Terms of payment for parts are net 30 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The parts numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
 - a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable hereunder for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

Effective: February 22, 2006

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OPERATION AND PARTS 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. Tel. (800) 421-1244
Carson, CA 90746 Fax (800) 537-3927
Contact: mq@multiquip.com

Mayco Parts

800-306-2926 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Service Department

800-421-1244 Fax: 310-537-4259
310-537-3700

MQ Parts Department

800-427-1244 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Warranty Department

800-421-1244, Ext. 279 Fax: 310-537-1173
310-537-3700, Ext. 279

Technical Assistance

800-478-1244 Fax: 310-631-5032

MEXICO

MQ Cipsa

Carr. Fed. Mexico-Puebla KM 126.5 Tel: (52) 222-225-9900
Momoxpan, Cholula, Puebla 72760 Mexico Fax: (52) 222-285-0420
Contact: pmastretta@cipsa.com.mx

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Multiquip (UK) Limited Head Office

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Contact: sales@multiquip.co.uk

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Multiquip

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Laval, Quebec, Canada H7L 6V3 Tel: (877) 963-4411
Contact: jmartin@multiquip.com Fax: (450) 625-8664

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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.

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