

OPERATION AND PARTS MANUAL



***WHITEMAN* SERIES**

MODELS

WM70SH5C

WM70SH8C

**PLASTER AND MORTAR MIXER
(HONDA GX160/GX240 GASOLINE ENGINE)**

Revision #0 (06/07/11)

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



THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.



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.

SILICOSIS/RESPIRATORY WARNINGS

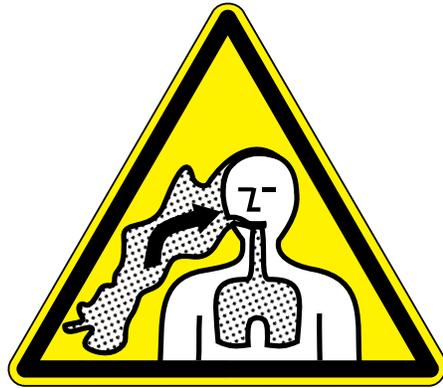
WARNING



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.

WM70SH5C/WM70SH8C

Mixer

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NOTICE

Specifications and part numbers are subject to change without notice.

PARTS ORDERING PROCEDURES

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

Effective:
January 1st, 2006

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- Print Specification Information



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Note: Discounts Are Subject To Change



Order via Fax (Dealers Only):

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Order via Phone: Domestic (US) Dealers Call:
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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 type="checkbox"/> Priority One <input checked="" type="checkbox"/> Truck |
| <input type="checkbox"/> Return Fax Number | <input type="checkbox"/> Ground |
| <input type="checkbox"/> Applicable Model Number | <input type="checkbox"/> Next Day |
| <input type="checkbox"/> Quantity, Part Number and Description of Each Part | <input 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!



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
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Rotating parts hazards

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.

- **ALWAYS** check the equipment for loosened threads or bolts before starting.

- **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.



SAFETY INFORMATION

MIXER SAFETY

DANGER

- **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.**



- **DO NOT** mix **flammable** or **explosive** substances.

WARNING

- **NEVER** place your hands inside the drum while starting or operating this equipment.
- **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.
- Before operating mixer, ensure that safety grate is in position and correctly fitted.



CAUTION

- **NEVER** lubricate components or attempt service on a running machine.

NOTICE

- **ALWAYS** keep the machine in proper running condition.
- **ALWAYS** ensure mixer is on level ground before mixing.
- Fix damage to machine and replace any broken parts immediately.
- **DO NOT** tip mixer onto drum mouth when the drum is rotating.
- Ensure the drum is rotating while filling and emptying the drum.
- **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.

ENGINE SAFETY (GASOLINE MODELS ONLY)

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.



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 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 mixer.



CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.
- Make certain the operator knows how to and is capable of turning the engine OFF in case of an emergency.



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.



SAFETY INFORMATION

FUEL SAFETY (GASOLINE MODELS ONLY)

DANGER

- **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.



GENERATOR SAFETY

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



ELECTRIC MOTOR SAFETY (ELECTRIC MODELS ONLY)

NOTICE

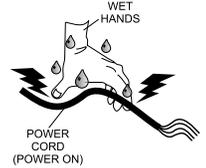
- Operate electric motor only at the specified voltage indicated on the nameplate.
- **DO NOT** spray water onto electric motor.
- **ALWAYS** disconnect AC power plug from power source before moving mixer.
- **ALWAYS** make sure the ON/OFF switch on the electric motor is in the OFF position when not in use and before inserting the mixer's power plug into an AC receptacle.



Power Cord/Cable 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 mixer.



CAUTION

- Ensure that cables and cords will not be tripped over or trapped underneath the mixer.

NOTICE

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

TRANSPORTING SAFETY

CAUTION

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

NOTICE

- **ALWAYS** make sure forklift forks are inserted into pockets (if applicable) as far as possible when lifting the mixer.
- **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.
- **DO NOT** lift machine to unnecessary heights.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope.
- **NEVER** tip the engine to extreme angles during lifting as it may cause oil to gravitate into the cylinder head, making the engine start difficult.

SAFETY INFORMATION

TOWING SAFETY

CAUTION

- Check with your local county or state safety towing regulations, in addition to meeting **Department of Transportation (DOT) Safety Towing Regulations**, before towing your mixer.
- In order to reduce the possibility of an accident while transporting the mixer on public roads, **ALWAYS** make sure the towing vehicle is mechanically sound and in good operating condition.
- **ALWAYS** shutdown engine before transporting.
- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow a mixer with defective hitches, couplings, chains, etc.
- Check the tire air pressure on both towing vehicle and mixer **Mixer tires should be inflated to 50 psi cold**. Also check the tire tread wear on the vehicle and mixer.
- **ALWAYS** make sure the mixer is equipped with a **safety chain**.
- **ALWAYS** properly attach mixer's safety chains to towing vehicle.
- The maximum speed for highway towing is **55 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **15 MPH** or less depending on type of terrain.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve towing.
- Avoid sharp turns to prevent rolling.
- Mixer should be adjusted to a level position at all times when towing.
- Raise and lock mixer wheel stand in up position when towing.
- Place **chock blocks** underneath wheel to prevent **rolling** while parked.

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.

SAFETY CHAIN CONNECTION

CAUTION

NEVER tow the mixer with the safety chain removed. The safety chain is intended to prevent complete separation of the mixer from the towing vehicle in the event of a tow bar failure.

TOW BAR TO MIXER CONNECTION

Reference Figure 1 for the installation of the safety chain.

1. Insert the tow bar through the round opening at the bottom of the mixer stand.

Align the hole on the tow bar with the hole on the mixer frame, and insert 1/2-inch bolt through tow bar and frame. Secure tow bar to frame with 1/2-inch nyloc nut. Tighten to 40 ft.-lbs.

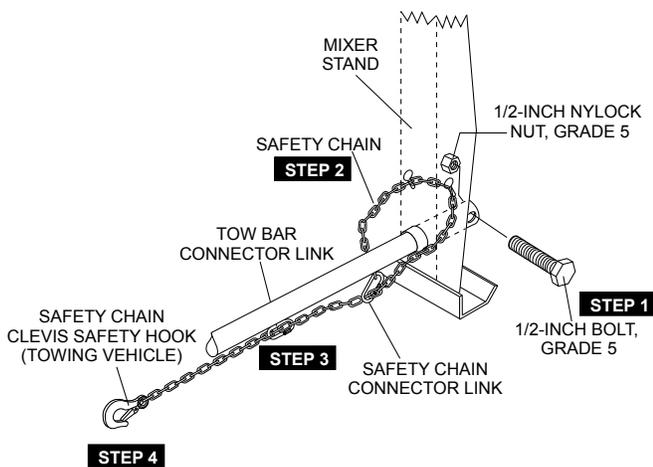


Figure 1. Tow Bar and Safety Chain Installation

2. Route the safety chain through the holes just above the tow bar, located on each side of the mixer stand. Loop the chain together and place under the tow bar. Secure the loop with the connector link.
3. Extend the safety chain along the length of the tow bar, looping it through the tow bar's connector link. Remove any excess chain slack.
4. Connect the free end of (connector link) the safety chain to the towing vehicle. Remember it is critical that the length of the chain be properly adjusted, to prevent the draw bar and the front of the mixer stand from dropping to the ground (contact) in the event the draw bar becomes disconnected from the towing vehicle.

CAUTION

DO NOT tow the mixer unless the mixing drum is completely empty. **ALWAYS** make sure the drum latch pin is fully engaged to the right (Figure 2) of the drum stop block. This will keep the drum from rotating.

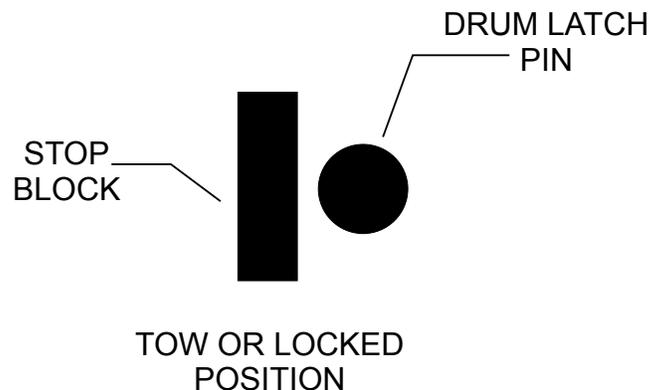


Figure 2. Drum Latch Pin (Tow or Locked Position)

SPECIFICATIONS

Table 1. Mixer Specifications	
Capacity	7.0 cu. ft (198 liters)
Bag Capacity	1-1/2 to 2-1/2 bags
Weight	788 lbs. (357 kg.)
Height W/Dump Handle	73 in. (185 cm.)
Discharge Height	21 in. (53 cm.)
Drive	V-Belt/Gear
Dump Action	Manual

Table 2. Engine Specifications		
Model	Honda GX160	HONDA GX240
Type	Air-cooled 4 stroke, Single Cylinder, OHV, Horizontal Shaft Gasoline Engine	Air-cooled 4 stroke, Horizontal Shaft Gasoline Engine
Bore X Stroke	2.70 in. X 1.80 in. (68 mm x 45 mm)	2.90 in. X 2.30 in. (73 mm x 58 mm)
Displacement	9.9 cu. in. (163 cc)	14.81 cu. in. (242 cc)
Max Output	4.8 H.P./3600 R.P.M.	7.1 H.P./3600 R.P.M.
Fuel Tank Capacity	Approx. 0.95 U.S. Gallons (3.6 Liters)	Approx. 1.59 U.S. Gallons (6 Liters)
Fuel	Unleaded Gasoline	Unleaded Gasoline
Lube Oil Capacity	0.63 qt. (0.6 liter)	1.16 qt. (1.1 liter)
Speed Control Method	Centrifugal Flyweight Type	Centrifugal Flyweight Type
Starting Method	Recoil Start	Recoil Start
Dimensions (L x W x H)	12.3 x 14.3 x 13.6 in. (312 x 362 x 346 mm)	15 X 17 X 16.6 in. (380 X 430 X 422 mm)
Dry Net Weight	40.8 lbs. (15 Kg.)	55.1 lbs. (25 Kg.)

NOTICE

In accordance with our established policy of constant improvement, we reserve the right to amend these specifications at any time without notice.

DIMENSIONS

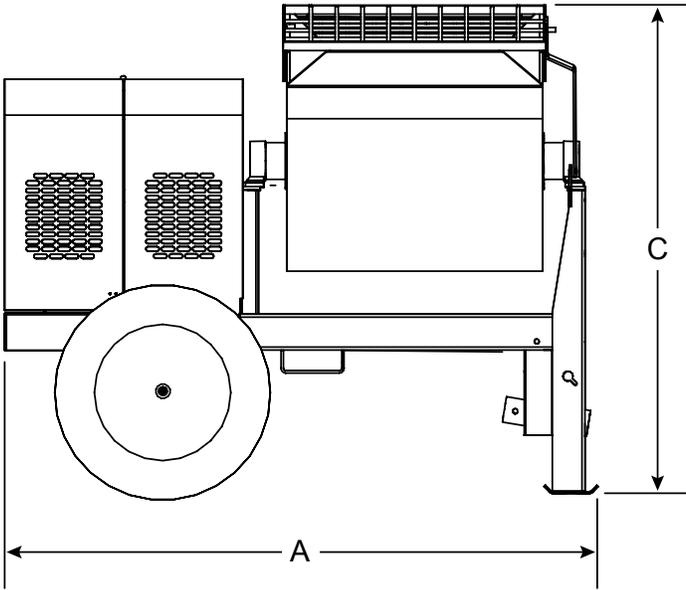


Table 3. Dimensions	
Description	Dimensions in. (cm)
Length (w/Tow Bar)	67 in. (170 cm)
Width	50 in. (127 cm)
Height	56 in. (142 cm)

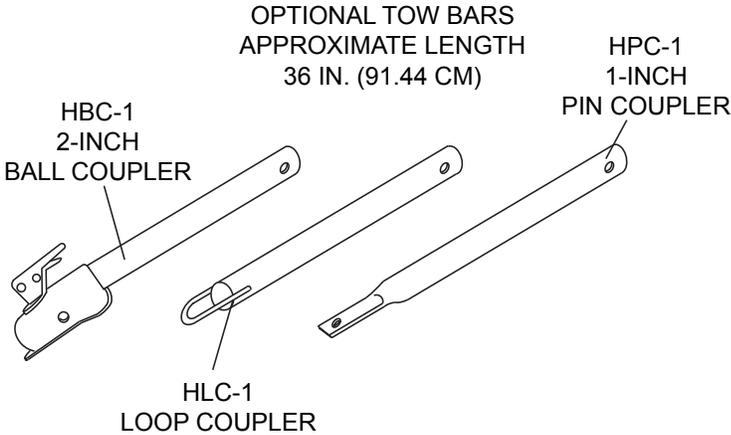
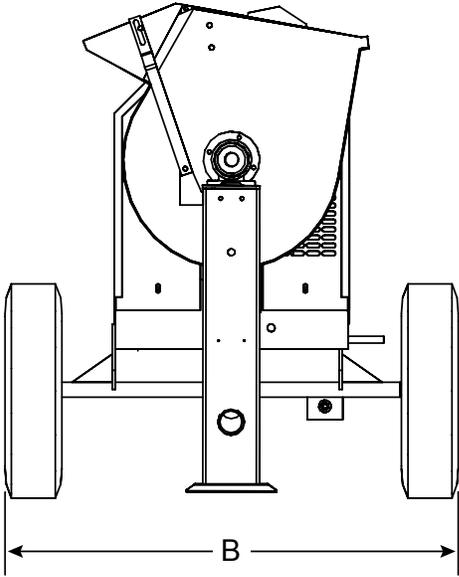


Figure 3. Dimensions

GENERAL INFORMATION

APPLICATION

The MQ Whiteman WM70SH5C/WM70SH8C mixer (drum capacity of 7.0 cu. ft./198 liters) is shipped completely assembled and has been factory tested and is ready for use.

This mixer is only intended for the production of plaster and mortar. The mixer must be used for its intended purpose and is not suitable for the mixing of flammable or explosive substances. The mixer must not be used in an explosive atmosphere. This mixer has a batch capacity between 2-1/2 and 3-1/2 bags.

POWER PLANTS

The WM70SH5C is powered by a Honda GX160 engine. The WM70SH8C is powered by a Honda GX240 air-cooled, 4-stroke gasoline engine. Refer to Table 2 for specific engine information.

HARDWARE

Check all hardware on the mixer before starting. Periodically inspect all hardware. Loose hardware can contribute to early component failure and poor performance. Use Table 4 as a general guideline when torquing of mixer hardware is required. Remember to keep all mixer hardware components tight.

Table 4. Hardware Torque Recommendations	
Hardware Diameter	Torque (ft-lbs)
5/16-inch x 18	14
3/8-inch x 16	24
3/8-inch x 24	37
1/2-inch x 13	39
1/2-inch x 13 (Grade 8)	90

ENGINE MAINTENANCE

For basic engine maintenance, refer to the engine maintenance section in this manual. For a more detailed engine maintenance, refer to the Honda Engine Owner's manual furnished with the engine.

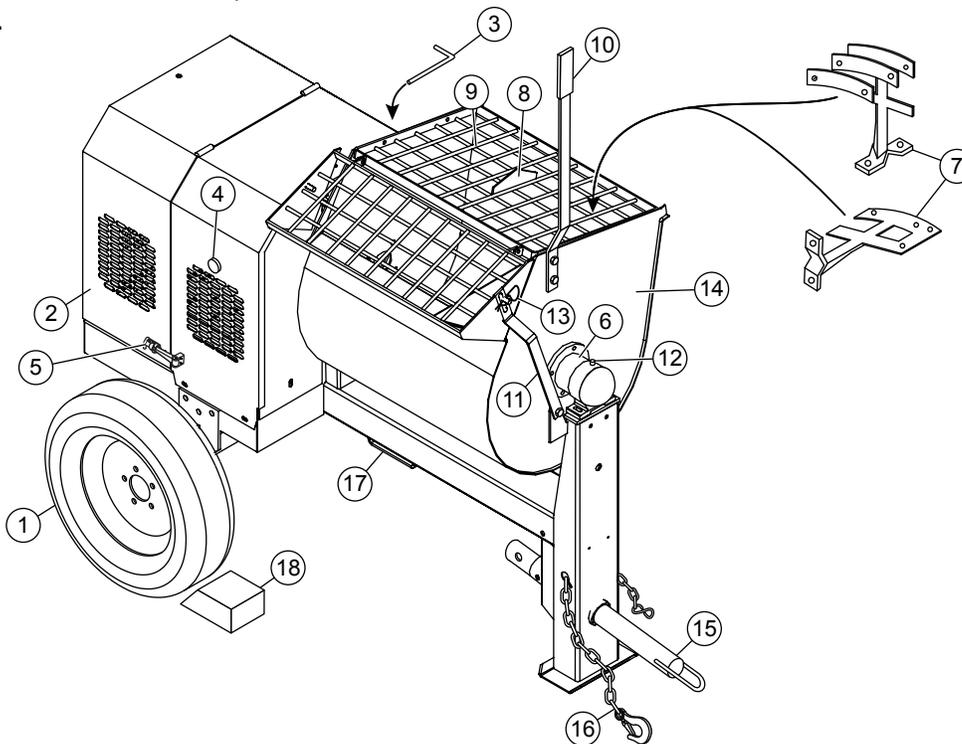


Figure 4. Mixer Components

COMPONENTS

Figure 4 illustrates the basic components and controls of the WM70SH5C/WM70SH8C mixer.

1. **Tires Ply** — The tire ply (layers) number is rated in letters. This mixer uses 13-inch 4-ply tires.
2. **Engine Cover** — Lift this cover to gain access to the engine compartment.
3. **Belt Slip Lever** — When starting, this lever should be move upward and to the left. For mixing, place the lever in the down position. See attached decal located adjacent to lever.
4. **ON/OFF Switch** — This switch is located on the side of the engine cover. When activated, it will shut down the engine.
5. **Latch** — Use this latch to secure the engine compartment cabinet.
6. **Drum Bearing** — There is a sealed bearing on each end of the mixing drum. Bearings are packed and sealed at the factory and require no further maintenance.
7. **Mixing Paddles** — Used in the mixing of material. This unit uses four different types of paddles to provide a fast uniform mix.
8. **Bag Cutter** — This feature allows compound mixing bags to be opened easily, therefore allowing the contents of the bag to fall directly into the mixing drum.
9. **Safety Grill** — Provided for operator safety. This safety grill is designed to keep hands and solid objects out of the mixing drum when in use. This grill should be closed at all times when mixer is in use. **DO NOT** remove the grill or grill opening bar. Keep the grill clean by washing it down daily.
10. **Dump Handle** — Pull this handle downward to dump the contents of the drum. Push the handle upward to return the drum to its vertical position.
11. **Safety Grill Lock Handle** — To prevent injury to hands and arms, the safety grill should **ALWAYS** be locked when the mixing of plaster or mortar is required. Also when transporting the mixer, the safety grill should be locked. The safety grill should only be unlocked when cleaning of the blades and drum is required.
12. **Pivot Point/Zerk Fitting** — There is a zerk grease fitting on each end of the mixing drum. These fittings lubricate the dumping mechanism. Lubricate both fittings at least twice a week.
13. **Dump Handle Release Pin** — Pull this pin outward (spring loaded) to release the drum, then pull down on the dump handle to place the drum in the dump position. When drum is in dump position, pin will automatically lock drum.
14. **Mixing Drum** — Mixing materials such as mortar, plaster are to be placed into this drum for mixing. Always clean the drum after each use.
15. **Tow Bar/Coupler** — This mixer uses a 2-inch coupler or pintle towbar.
16. **Safety Chain** — This mixer uses a 3/16-inch thick, 72-inches long, zinc-plated safety chain. **ALWAYS** connect the safety chain when towing.
17. **Forklift Pockets** — When lifting of the mixer is required, use these fork lift pockets to lift the mixer. Remember to insert the forks of the forklift a minimum of 24 inches into the lift pockets.
18. **Chock Blocks** — Place these blocks (not included as part of the mixer package) under each mixer wheel to prevent rolling.

INSPECTION

BEFORE STARTING

1. Read all safety instructions at the beginning of manual.
2. Clean the unit, 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.

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 6), fill to the edge of the oil filler hole with the recommended oil type (Table 5). Maximum oil capacity is 2.33 pints (1.09 liters).

NOTICE

Reference engine manufacturer's manual for specific servicing instructions.

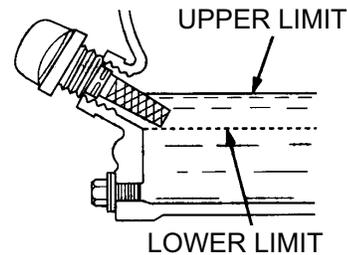


Figure 6. Engine Oil Dipstick (Oil Level)

Table 5. Oil Type

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

CAUTION



ALWAYS wear approved eye and hearing protection while operating the mixer.

CAUTION



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

ENGINE OIL CHECK

1. To check the engine oil level, place the unit on secure level ground with the engine stopped.
2. Remove the filler dipstick from the engine oil filler hole (Figure 5) and wipe it clean.

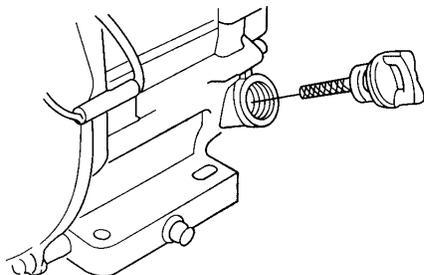


Figure 5. Engine Oil Dipstick (Removal)

FUEL CHECK

 **DANGER**



Motor fuels are highly flammable and can be dangerous if mishandled. **DO NOT** smoke while refueling. **DO NOT** attempt to refuel the mixer 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.

V-BELT CHECK

A worn or damaged V-belt can adversely affect the performance of the unit. 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 paddle blades. Make sure that all blades are adjusted properly. See blade adjustment procedure in this manual. Replace all defective or damaged blades immediately.

CONTROLS

Start/Stop Switches

This unit has been equipped with a start/stop switch, which should be tested every time the unit is started.

Grease Fittings (Dumping Mechanism)

Check the zerk grease fittings at each end of the mixing drum. These grease fittings lubricate the dumping mechanism. If the dumping handle is stiff or hard to move lubricate these fittings.

BASIC ENGINE

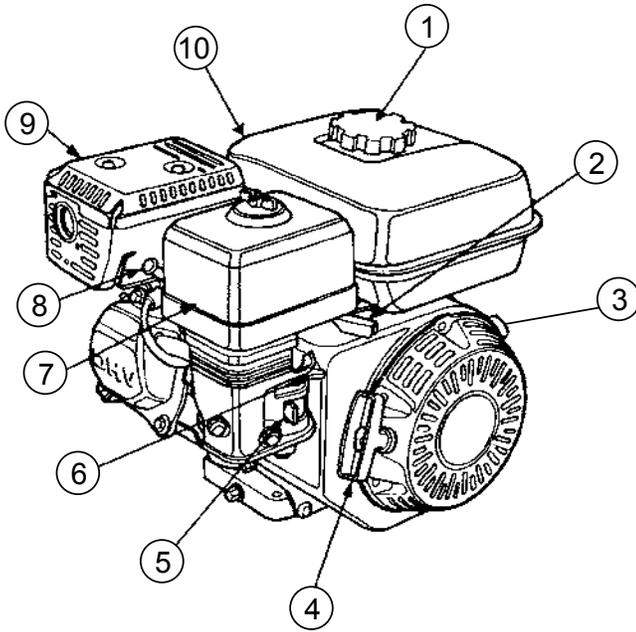


Figure 7. Engine Components

INITIAL SERVICING

The engine (Figure 7) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the engine manufacturer's manual for instructions and details of operation and servicing.

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.

NOTICE

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.

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.

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

PADDLE BLADE ADJUSTMENT

Adjust paddles as shown in Figure 8.

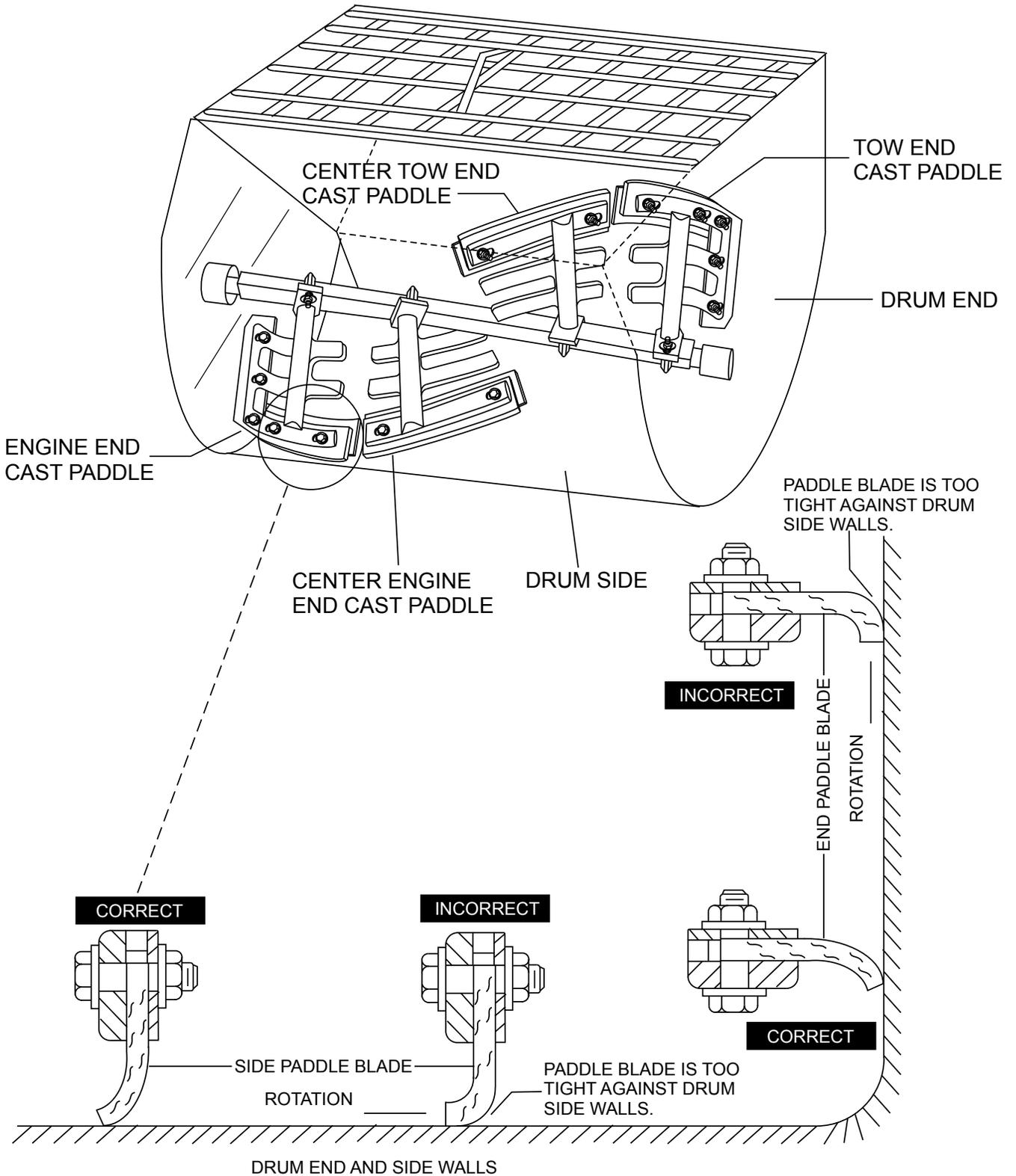


Figure 8. Paddle Blade Adjustment

START-UP

This section is intended to assist the operator with the initial start-up of the unit. It is extremely important that this section be read carefully before attempting to use the mixer in the field. **DO NOT** use your mixer until this section is thoroughly understood.



WARNING

Failure to understand the operation of the mixer could result in severe damage to the mixer or personal injury. See Figure 4 for the location of any control referenced in this manual.

CAUTION



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

The following steps outline the procedure for starting the engine.

1. Move the fuel shut-off lever (Figure 9) to the ON position.

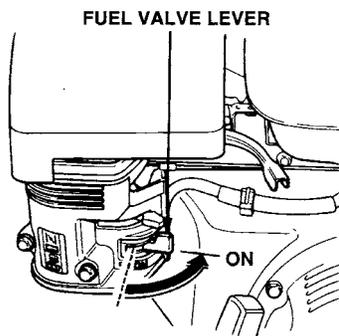


Figure 9. Fuel Shut-Off Lever

2. To start a cold engine, move the choke lever (Figure 10) to the CLOSED position.

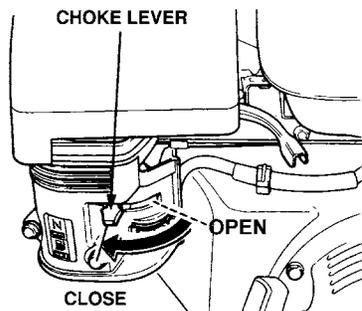


Figure 10. Choke Lever

3. Move the throttle lever (Figure 11) away from the slow position, about 1/3 of the way toward the fast position.

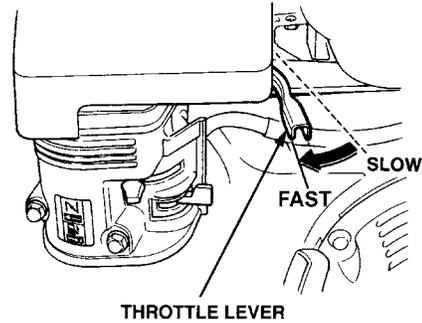


Figure 11. Throttle Lever

4. Turn the engine switch (Figure 12) to the ON position.

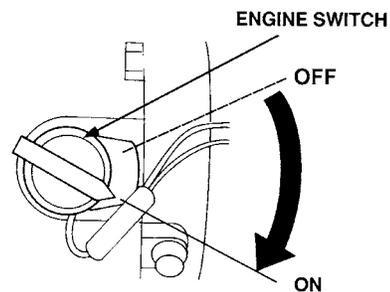


Figure 12. Engine On/Off Switch

5. The main start/stop switch located on the engine cover (Figure 13) is used to start and stop the engine. Pull this switch outward to start the engine.

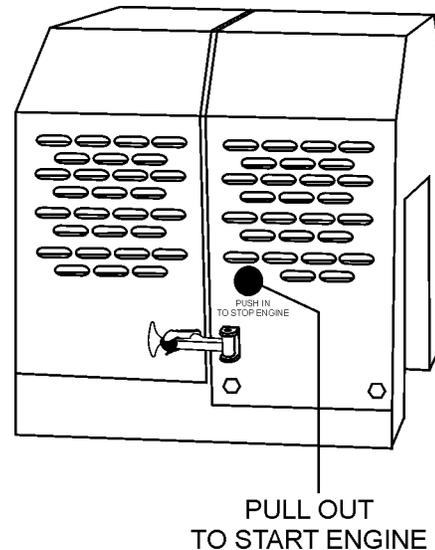


Figure 13. Start/Stop Switch

- Place the belt slip lever (Figure 14) in the START/STOP (disengaged) position.

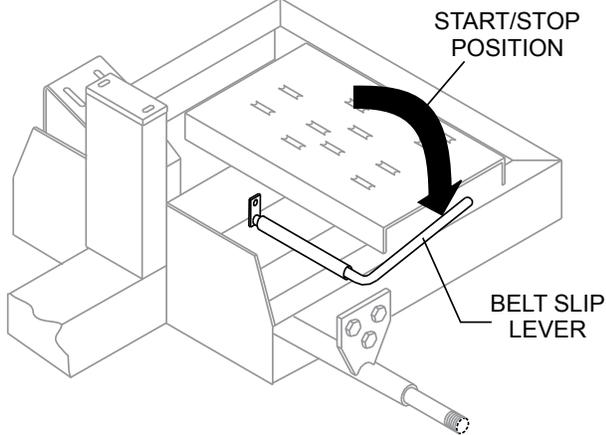


Figure 14. Belt Slip Lever (Start/Stop Position)

CAUTION

 Make certain the drum lock pin (Figure 15 and Figure 16) is placed to the **RIGHT** (when viewing the mixer from the towpole end) of the drum stop block which is welded to the front side of the drum. Also make sure lock pin is fully engaged (locked). This will prevent the drum from tipping.

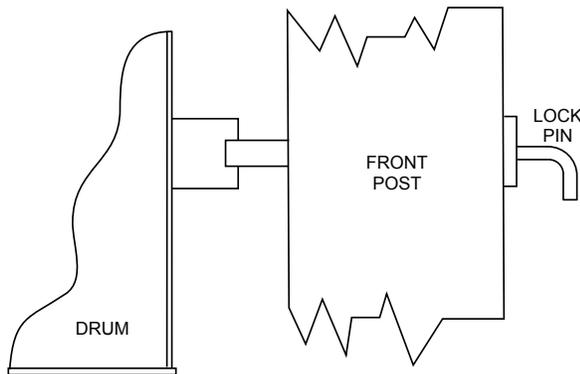


Figure 15. Drum Lock Pin (Side-View)

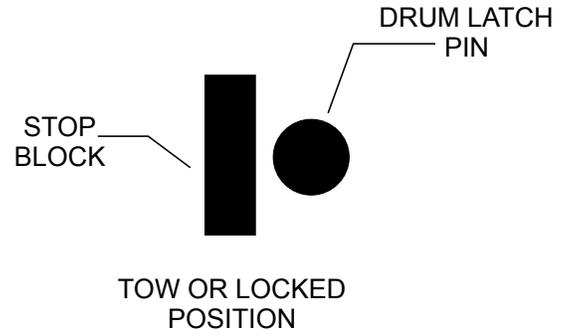


Figure 16. Drum Lock Pin (Right Position)

- Pull the starter grip (Figure 17) lightly until you feel resistance, then pull briskly. Return the starter grip gently.

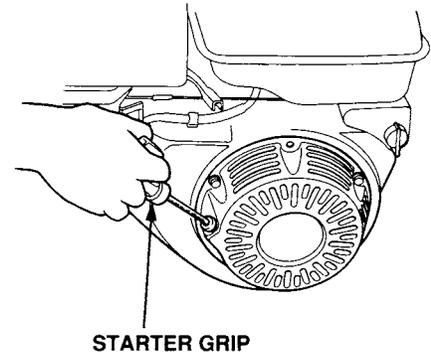


Figure 17. Starter Grip

- Place the belt slip lever (Figure 18) in the mix position. This will tilt the engine placing tension on the V-belts enabling the shaft to rotate.

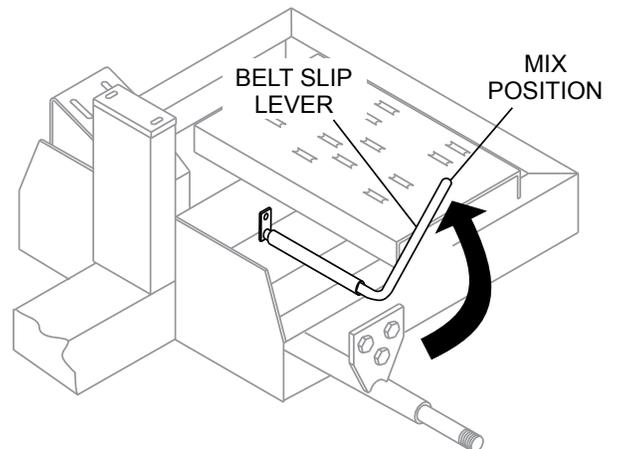


Figure 18. Belt Slip Lever (Mix Position)

MIXING/DUMPING

1. The paddle shaft inside the drum should be rotating at this time.
2. Add a small amount water to the mixing drum.
3. Lift the mixing bag compound onto the steel safety grate over the bag cutter and let the contents fall into the drum. Add more water if desired and mix compound to desired consistency.
4. When charging, mixing, or dumping a batch of plaster or mortar the drum lock pin should be placed to the left (when viewing the mixer from the towpole end) of the drum stop block which is welded to the front side of the drum. See Figure 19.

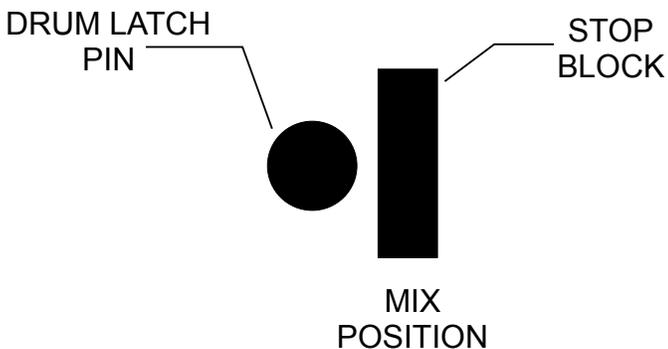


Figure 19. Drum Lock Pin (Left Position)

This will allow the operator to use both hands on the drum handle during dumping. Please note that when the lock pin is placed to the left, the drum will be maintained in the vertical position as the paddles rotate. To discharge the material the operator should hold the dump handle with both hands and rotate the drum to discharge the desired amount of material.

WARNING

Be sure to stand clear of the dump handle (Figure 20) when the mixer is operational. Any binding of material between the mixer blades and the drum will cause the dump handle to quickly move and could cause bodily harm.

STAND CLEAR OF DUMP HANDLE.
HANDLE KICK-BACK IS POSSIBLE.



Figure 20. Stand Clear of Dump Handle

STOPPING THE MIXER

1. Place the belt slip lever in the start/stop position (Figure 14).
2. Push the main start/stop switch (Figure 13) inward to stop the engine.
3. Turn the fuel shut-off valve to the OFF position.
4. Disconnect the spark plug.
5. Clean mixer as referenced in the maintenance section of this manual.

NOTICE

It is recommended that the mixer's Start/Stop 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.

DANGER

NEVER disable or disconnect the start/stop switch. It is provided for operator safety. Serious Injury may result if it is disabled, disconnected or improperly maintained.

MAINTENANCE (ENGINE)

Use Table 6 as a general maintenance guideline when servicing your engine. For more detail engine maintenance information, refer to the engine owner's manual supplied with your engine.

Table 6. Engine Maintenance Schedule							
DESCRIPTION (3)	OPERATION	BEFORE	FIRST MONTH OR 10 HRS.	EVERY 3 MONTHS OR 25 HRS.	EVERY 6 MONTHS OR 50 HRS.	EVERY YEAR OR 100 HRS.	EVERY 2 YEARS OR 200 HRS.
Engine Oil	Check	X					
	Change		X				
Air Cleaner	Check	X					
	Change			X (1)			
All Nuts and Bolts	Re-tighten if necessary	X					
Spark Plugs	Check/Clean				X		
	Replace						X
Cooling Fins	Check				X		
Spark Arrester	Clean					X	
Fuel Tank	Clean					X	
Fuel Filter	Check					X	
Idle Speed	Check/ Adjust					X (2)	
Valve Clearance	Check/ Adjust						X (2)
Fuel Lines	Check	Every 2 years (replace if necessary) (2)					

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

(2) These items should be serviced by your service dealer, unless you have the proper tools and are mechanically proficient. Refer to the HONDA Shop Manual for service procedures.

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

MAINTENANCE (ENGINE)

Perform the scheduled maintenance procedures as defined by Table 6 and below:

DAILY

- Thoroughly remove dirt and oil from the engine and control area. Clean or replace the air cleaner elements as necessary. Check and retighten all fasteners as necessary. Check the gearbox for oil leaks. Repair or replace as needed.

WEEKLY

- Remove the fuel filter cap and clean the inside of the fuel tank.
- Remove or clean the filter at the bottom of the tank.
- Remove and clean the spark plug (Figure 21), then adjust the spark gap to 0.024 ~0.028 inch (0.6~0.7 mm). This unit has electronic ignition, which requires no adjustments.

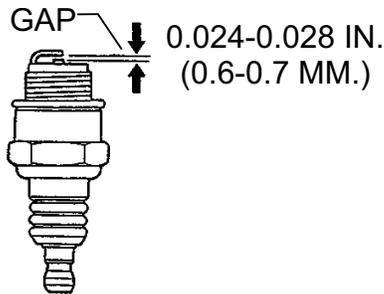


Figure 21. Spark Plug Gap

ENGINE OIL

- Drain the engine oil when the oil is warm as shown in Figure 22.
- Remove the oil drain bolt and sealing washer and allow the oil to drain into a suitable container.
- Replace engine oil with recommended type oil as listed in Table 5. For engine oil capacity, see Table 2 (Engine Specifications). **DO NOT** overfill.
- Install drain bolt with sealing washer and tighten securely.

5.

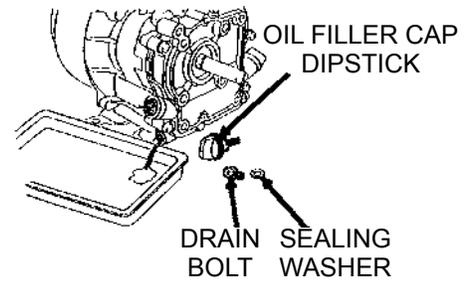


Figure 22. Engine Oil (Draining)

ENGINE AIR CLEANER

- Remove the air cleaner cover and foam filter element as shown in Figure 23.
- Tap the paper filter element (Figure 23) several times on a hard surface to remove dirt, or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kgf/cm²)] through the filter element from the air cleaner case side. **NEVER** brush off dirt. Brushing will force dirt into the fibers. Replace the paper filter element if it is excessively dirty.
- Clean foam element in warm, soapy water or nonflammable solvent. Rinse and dry thoroughly. Dip the element in clean engine oil and completely squeeze out the excess oil from the element before installing.

! DANGER

DO NOT use gasoline as a cleaning solvent to avoid creating the risk of fire or an explosion.

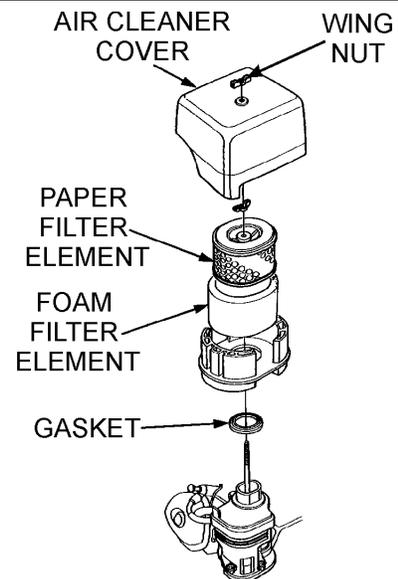


Figure 23. Engine Air Cleaner

MAINTENANCE (MIXER)

DRUM HEAD SEALS

There is 1 set of drum head seals (Figure 24) that will require lubrication. Lubricate the grease fitting for each drum seal every 40 hours of operation using any grade lithium base grease. Apply grease until visible inside of mixing drum (over grease). This will purge seal system of contamination.

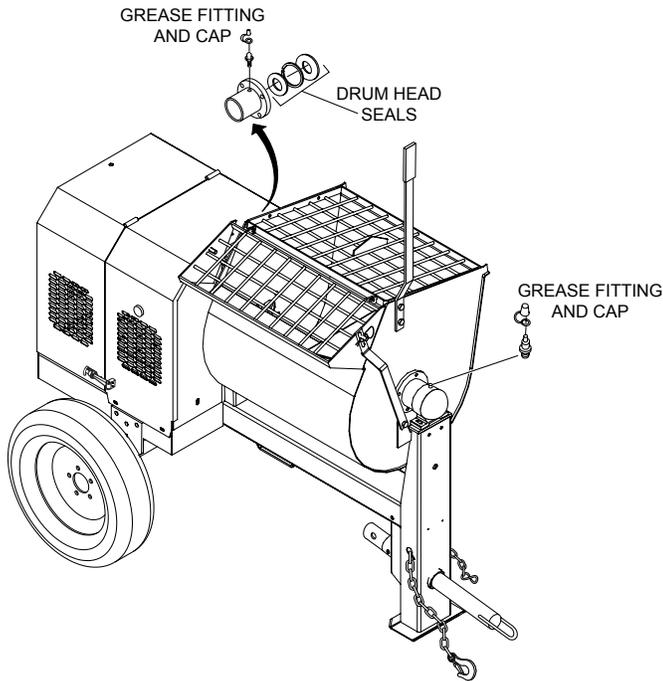


Figure 24. Grease Fittings (Drum Head Seals)

DRUM BEARING BRACKET LUBRICATION

There is 1 set of drum bearing brackets (Figure 25) that will require lubrication. These brackets are intended to make the drum rotate freely. Lubricate the grease fitting for each drum bearing bracket every month or when the drum becomes difficult to position using multi-purpose grade grease.

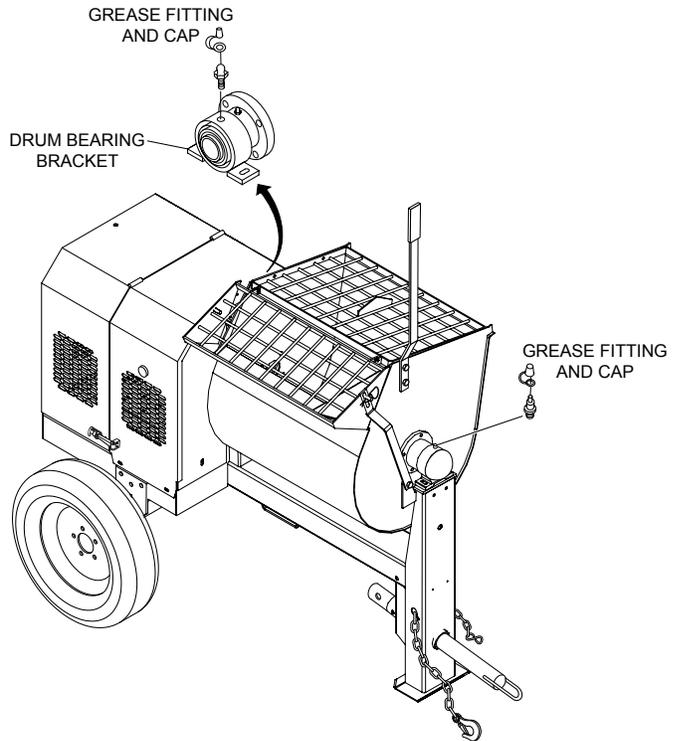


Figure 25. Grease Fittings (Dumping Mechanism)

CAUTION

Failure to lubricate the drum bearing grease fittings periodically will cause the dumping mechanism to stiffen, making the mixing drum hard to dump.

BALL SOCKET AND CLAMP FACE MAINTENANCE

1. If the towing vehicle is equipped with a ball socket, smear socket periodically with multi-purpose grease. This will keep the ball socket well lubricated.
2. Periodically oil pivot points and clamp face surfaces of coupler with SAE 30 WT. motor oil.
3. When parking or storing your mixer. Keep the coupler off the ground so dirt will not build up in the ball socket.

COUNTERSHAFT BEARING LUBRICATION

There is 1 set of countershaft bearings (Figure 26) that will require lubrication. Lubricate the grease fitting for each countershaft bearing every 40 hours of operation using any grade lithium base grease.

MAINTENANCE (MIXER)

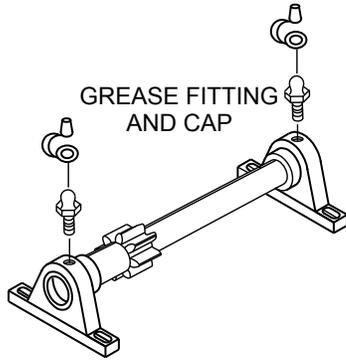


Figure 26. Grease Fittings (Countershaft)

WHEEL BEARINGS

1. After every 3 months of operation, remove the hub dust cap and inspect the wheel bearings (Figure 27). Once a year, or when required, disassemble the wheel hubs remove the old grease and repack the bearings forcing grease between rollers, cone and cage with a good grade of high speed wheel bearing grease (never use grease heavier than 265 A.S.T.M. penetration (“No. 2.”).

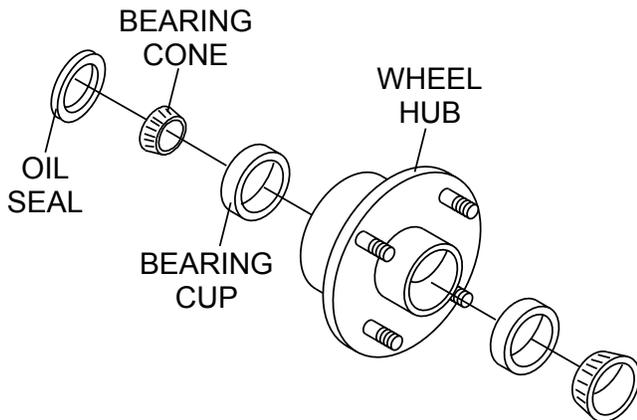


Figure 27. Wheel Hub and Bearings

2. Fill the wheel hub (Figure 27) with grease to the inside diameter of the outer races and also fill the hub grease cap. Reassemble the hub and mount the wheel. Then tighten the adjusting nut, at the same time turn the wheel in both directions, until there is a slight bind to be sure all the bearing surfaces are in contact.

Then back-off the adjusting nut 1/6 to 1/4 turn or to the nearest locking hole or sufficiently to allow the wheel to rotate freely within limits of .001” to .010” end play. Lock the nut at this position. Install the cotter pin and dust cap, and tighten all hardware.

MAIN GEAR AND DRIVE PINION ALIGNMENT

1. Disconnect the spark plug wire (gasoline engines). If mixer is equipped with an electric motor remove power cord from AC power receptacle. In addition make sure the clutch engagement lever is disengaged to relieve V-belt tension.
2. The countershaft and drive pinion are mounted on a slotted base. To align drive pinion with main gear, loosen the pillow block mounting bolts and move them until the necessary alignment has been made. Remember gears must be paralleled aligned not skewed.
3. Using your hand, slightly move (rock) the drive pulley back and forth to determine the amount of backlash. Insert feeler gauge between gears to determine backlash distance. Backlash should range between 0.007- 0.012 inches (Figure 28).

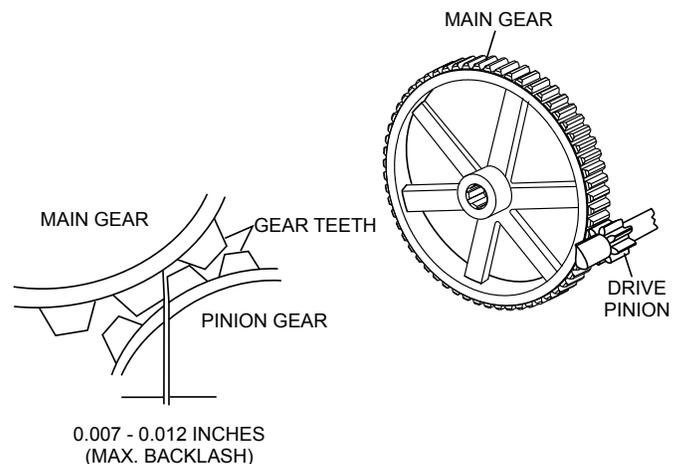


Figure 28. Drive Pinion and Main Gear (Backlash)

MAINTENANCE (MIXER)

INSPECT TOOTH CONTACT BETWEEN MAIN GEAR AND DRIVE PINION

1. Coat 3 or 4 teeth at 3 different positions on the main gear with yellow paint.
2. Rotate the drive pulley in both directions.
3. Inspect the tooth pattern.
4. If gear teeth are not contacting properly (Figure 29), adjust pillow block to correct the problem.

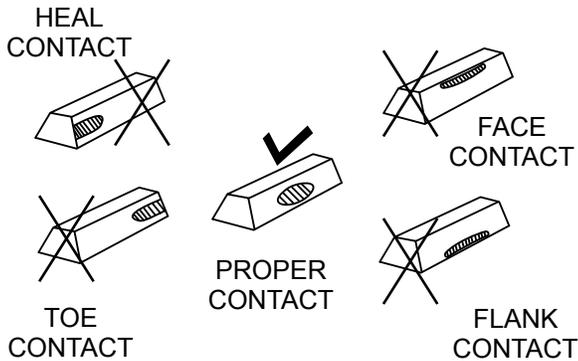


Figure 29. Gear Teeth Alignment

GEAR LUBRICATION

The surface of the pinion and main gear (Figure 30) should be very lightly greased.

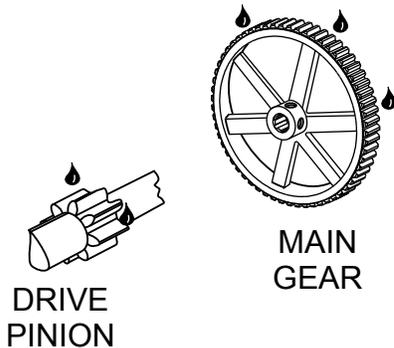


Figure 30. Pinion and Bull Gear Lubrication

NOTICE

Grease main and pinion gears every 250 hours of operation. **Avoid over-greasing.** Excess grease will accumulate contaminants and cause premature wear.

TIRES/WHEELS/LUG NUTS

Tires and wheels are a very important and critical components of the trailer. When specifying or replacing the trailer wheels it is important the wheels, tires, and axle are properly matched.

WARNING

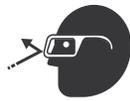


DO NOT attempt to repair or modify a wheel. **DO NOT** install an inter-tube to correct a leak through the rim. If the rim is cracked, the air pressure in the inter-tube may cause pieces of the rim to explode (break-off) with great force and can cause serious eye or bodily injury.

Tires Wear/Inflation

Tire inflation pressure is the most important factor in tire life. Pressure should be checked cold before operation. **DO NOT** bleed air from tires when they are hot. Check inflation pressure weekly during use to insure the maximum tire life and tread wear.

WARNING



ALWAYS wear safety glasses when removing or installing force fitted parts. Failure to comply may result in serious injury.

Table 7 (Tire Wear Troubleshooting) will help pinpoint the causes and solutions of tire wear problems.

MAINTENANCE (MIXER)

Table 7. Tire Wear Troubleshooting			
Wear Pattern		Cause	Solution
	Center Wear	Over Inflation	Adjust pressure to particular load per tire manufacturer
	Edge Wear	Under Inflation	Adjust pressure to particular load per tire manufacturer.
	Side Wear	Loss of chamber or overloading	Make sure load does not exceed axle rating. Align wheels.
	Toe Wear	Incorrect toe-in	Align wheels.
	Cupping	Out of balance	Check bearing adjustment and balance tires.
	Flat Spots	Wheel lockup and tire skidding	Avoid sudden stops when possible and adjust brakes.

Lug Nut Torque Requirements

It is extremely important to apply and maintain proper wheel mounting torque. Be sure to use only the fasteners matched to the cone angle of the wheel. Proper procedure for attachment of the wheels is as follows:

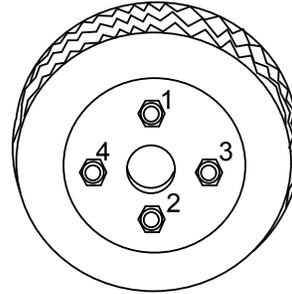
1. Start all wheel lug nuts by hand.
2. Torque all lug nuts in sequence. See Figure 31. **DO NOT** torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Figure 31.

Table 8. Tire Torque Requirements			
Wheel Size	First Pass FT-LBS	Second Pass FT-LBS	Third Pass FT-LBS
12"	20-25	35-40	50-65
13"	20-25	35-40	50-65
14"	20-25	50-60	90-120
15"	20-25	50-60	90-120
16"	20-25	50-60	90-120

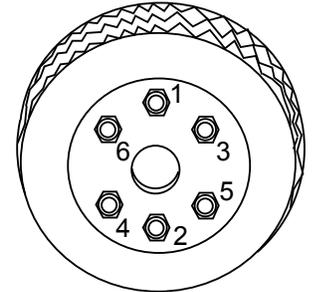
NOTICE

NEVER use an pneumatic air gun to tighten wheel lug nuts.

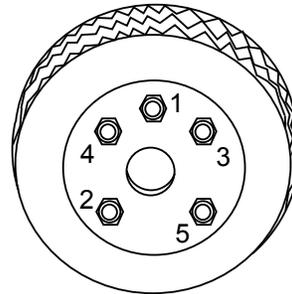
3. After first road use, retorque all lug nuts in sequence. Check all wheel lug nuts periodically.



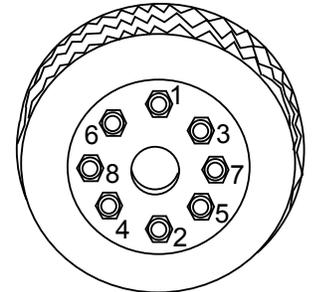
4-LUG NUTS



6-LUG NUTS



5-LUG NUTS



8-LUG NUTS

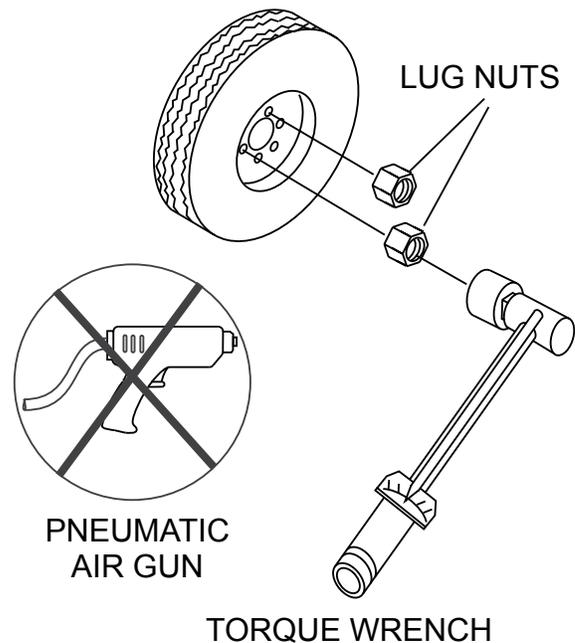


Figure 31. Wheel Lug Nuts Tightening Sequence

MAINTENANCE (MIXER)

SUSPENSION

The rigid type axle and associated hardware (Figure 32) should be periodically inspected for signs of excessive wear, elongation of bolt holes, and loosening of fasteners. Replace all damaged parts immediately.

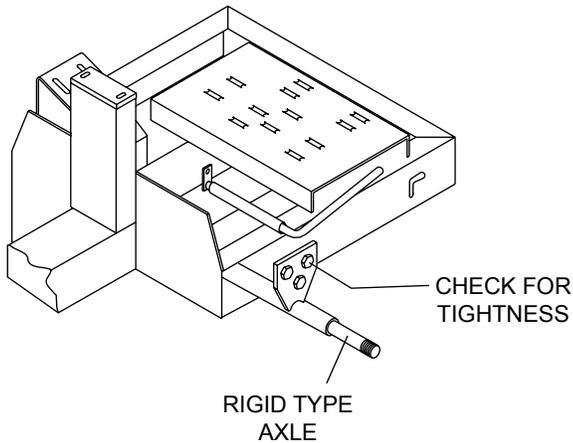


Figure 32. Axle Support Components

MIXER CLEANING

1. **ALWAYS** disconnect the spark plug wire (gasoline engines) before cleaning the inside of the drum. If mixer is equipped with an electric motor remove power cord from AC power receptacle. In addition make sure the clutch engagement lever is dis-engaged.
2. Make sure the rear section of the safety grate is connected to the mixing drum.
3. At the end of each day's operation, place mixer drum in an upright position and spray inside of tub immediately with water to prevent lumps of dried mortar or plaster from forming and contamination of future batches, **DO NOT** allow a buildup of materials to form on the blades or anywhere inside the drum.
4. Rotate mixer to dump position and remove debris.
5. Thoroughly clean the entire mixer, wheels, cabinet and frame.
6. **NEVER** pour or spray water over the engine or electric motor (Figure 33).

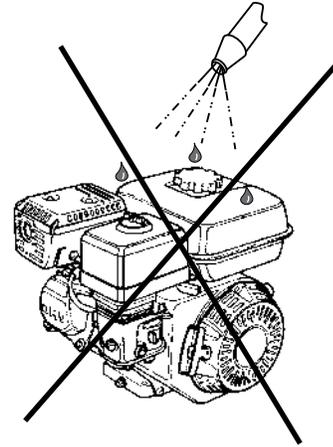


Figure 33. No Spraying of Water

WARNING

When rotating the mixing drum from the dump position to the upright position, keep hands clear of safety grate. The possibility exists of hands or fingers being crushed (Figure 34).

CRUSH HAZARD AREA. KEEP HANDS AND FINGERS CLEAR OF SAFETY GRATE AT ALL TIMES.

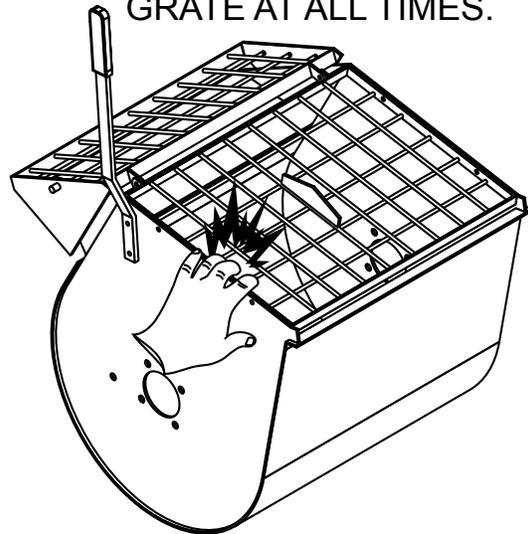


Figure 34. Safety Grate (Crush Hazard)

7. When cleaning of the entire mixer is done, return mixing drum to an upright position.

MIXER STORAGE

For storage of the mixer for over 30 days, the following is recommended:

- Drain the fuel tank completely, or add STA-BIL to the fuel.
- Run the engine until the fuel is completely consumed.
- Completely drain used oil from the engine crankcase and fill with fresh clean oil, then follow the procedures described in the engine manual for engine storage.
- Clean the entire mixer and engine compartment.
- Place the mixing drum in the down position (mouth facing downward).
- Cover the mixer and place it a clean dry area, that is protected from harsh elements.

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?
Ignition coil defective?		Replace ignition coil.
Improper spark gap, points dirty?		Set correct spark gap and clean points.
Condenser insulation worn or short circuiting?		Replace condenser.
Spark plug wire broken or short circuiting?		Replace defective spark plug wiring.
Difficult to start, fuel is available, spark is present and compression is normal.	Wrong fuel type?	Flush fuel system, and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
	Choke open?	Close choke.
Difficult to start, fuel is available, spark is present and compression is low.	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings and/or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present at carburetor.	No fuel in fuel tank?	Fill with correct type of fuel.
	Fuel cock does not open properly?	Apply lubricant to loosen fuel cock lever, replace if necessary.
	Fuel filter/lines clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line.

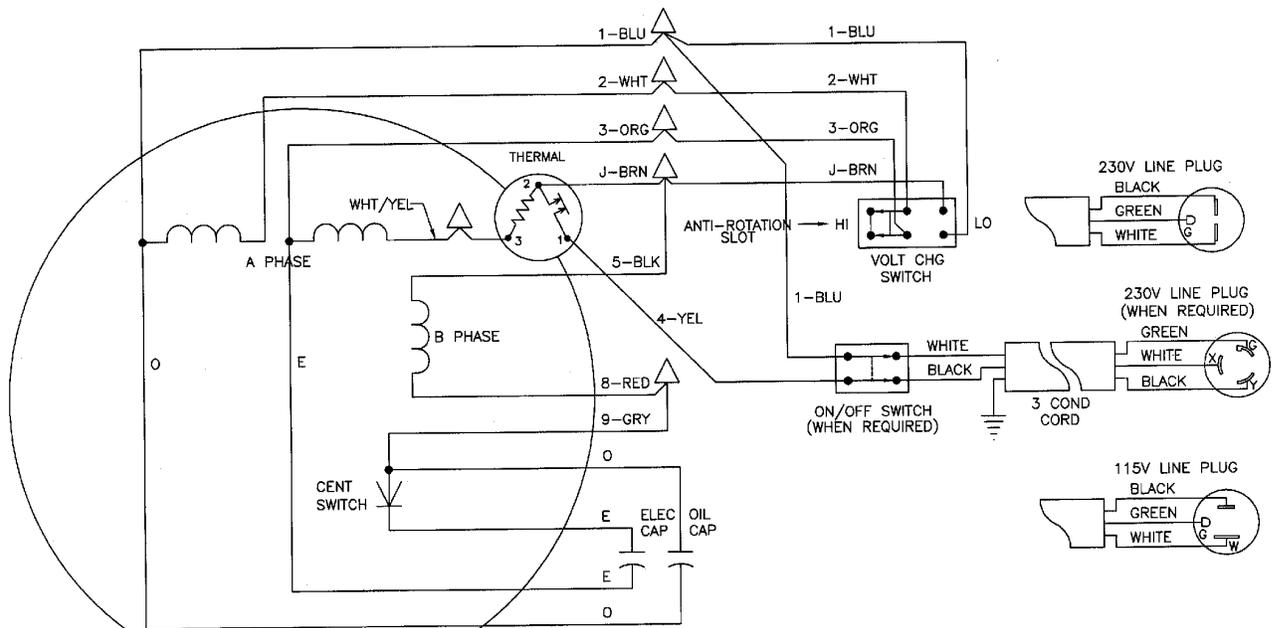
TROUBLESHOOTING

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.

TROUBLESHOOTING

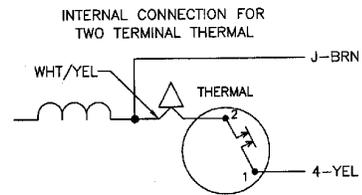
Mixer Troubleshooting		
Blades will not rotate.	Worn or defective V-belt?	Replace V-belt.
	Adjustment lever mis-aligned?	Check position of adjustment lever. Adjust if necessary.
Material leaking from drum ends.	Worn or defective paddle shaft seals?	Replace seals.
Drum difficult to discharge (tilt)	Defective or worn drum support brackets?	Apply grease to bracket or replace.
	Blades adjusted too tight.	Adjust blades until they almost touch side walls of drum.

WIRING DIAGRAM



NOTES:

1. CONNECTIONS ARE SHOWN FOR CCW ROTATION FACING END OPPOSITE SHAFT EXTENSION (STD). FOR CW ROTATION, INTERCHANGE 5 AND 8 LEADS.
2. MULTIPLE CAPACITORS ARE CONNECTED IN PARALLEL UNLESS OTHERWISE SPECIFIED.
3. USE 2PDT VOLTAGE CHANGE SWITCH. CONTACTS ARE SHOWN IN HIGH VOLT POSITION. VIEW IS FROM TERMINAL SIDE.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.



EXPLANATION OF CODE IN REMARKS COLUMN

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.

SUGGESTED SPARE PARTS

WM70SH5C/WM70SH8C PLASTER AND MORTAR MIXER WITH HONDA GX160/GX240 ENGINE

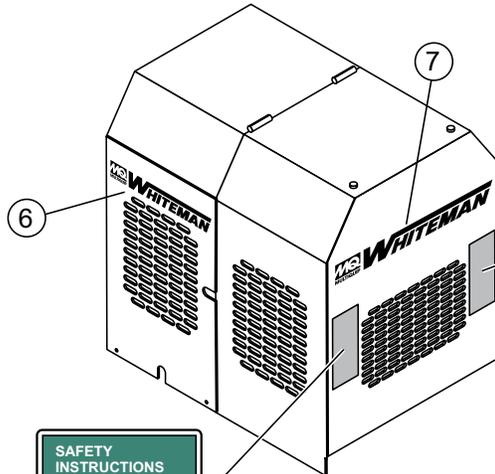
1 to 3 units

Qty.	P/N	Description
6	505834	V-BELT
2	EM914288	OIL SEAL, AXLE
4	EM903113	BEARING, CONE, AXLE
4	EM903112	BEARING, CUP, AXLE
2	20654-001	SEAL, PADDLE SHAFT (BLACK)
2	530029	RING, RETENTION
2	20104-002	SEAL, SHAFT URETHANE (YELLOW)
3	17210ZE2515	ELEMENT, AIR CLEANER (GX240)
3	17210ZE1822	ELEMENT, AIR CLEANER (GX160)
3	9807956846	SPARK PLUG
1	28462ZE2W11	ROPE, RECOIL STARTER (GX240)
1	28462ZH8003	ROPE, RECOIL STARTER (GX160)
1	17620ZH7023	CAP, FUEL TANK (GX240)
1	17620Z4H020	CAP, FUEL TANK (GX160)
2	EM203010	KIT, WIPER BLADES (STEEL DRUM)

NOTICE

Part numbers on this Suggested Spare Parts list may supersede/replace the part numbers shown in the following parts lists.

NAMEPLATE AND DECALS



INSTRUCTIONS DE SÉCURITÉ

1. Lire le manuel du propriétaire avant d'opérer.
2. Garder les personnes non autorisées et non formées loin de la machine lorsqu'elle est en marche.
3. S'assurer que tous les dispositifs de sécurité sont en place avant d'allumer cette machine.
4. S'assurer que le moteur est éteint et le fil de la bougie est débranché avant de nettoyer la machine.
5. Garder les mains et les doigts loin des objets mobiles.
6. Ne pas opérer la machine dans un endroit clos, une ventilation adéquate est nécessaire.
7. Ne jamais laisser la machine sans surveillance lorsqu'elle est en marche.
8. Toujours arrêter le moteur et laisser le moteur refroidir avant d'ajouter du carburant ou de l'huile de moteur.

SAFETY INSTRUCTIONS

1. Read owner's manual before operating.
2. Keep unauthorized and untrained people away from machine during operation.
3. Make sure all safety devices are in place before this machine is started.
4. Make sure engine is turned off and spark plug wire is disconnected before cleaning the machine.
5. Keep hands and fingers away from moving objects.
6. Do not operate machine in an enclosed area, proper ventilation is required.
7. Never leave machine unattended when operating.
8. Always stop engine and allow engine to cool before adding fuel or oil.

AVERTISSEMENT/WARNING

Pour éviter les blessures, vous DEVEZ lire et comprendre le manuel de l'opérateur avant d'utiliser la machine. To avoid injury you MUST read and understand operator's manual before using this machine.

Conter la grille, les garde et les parties de sécurité en place. Arrêter le moteur ou le moteur électrique avant l'inspection ou l'entretien. Keep safety grates, guards and doors in place. Shut off engine or electric motor before inspection or maintenance.

Les pièces mobiles peuvent couper et écraser. ARRÊTER le moteur ou le moteur électrique avant de mettre les mains dans les endroits dangereux. Moving parts can cut and crush. SHUT OFF engine or electric motor before placing hands in danger areas.

Cette machine ne doit être opérée que par du personnel qualifié. Demander une formation au besoin. This machine to be operated by qualified personnel only. Ask for training as needed.

AVERTISSEMENT/WARNING

Se tenir éloigné du levier de vidage. Le Choc de retour du levier est possible. Stand clear of dump handle handle kick-back is possible.

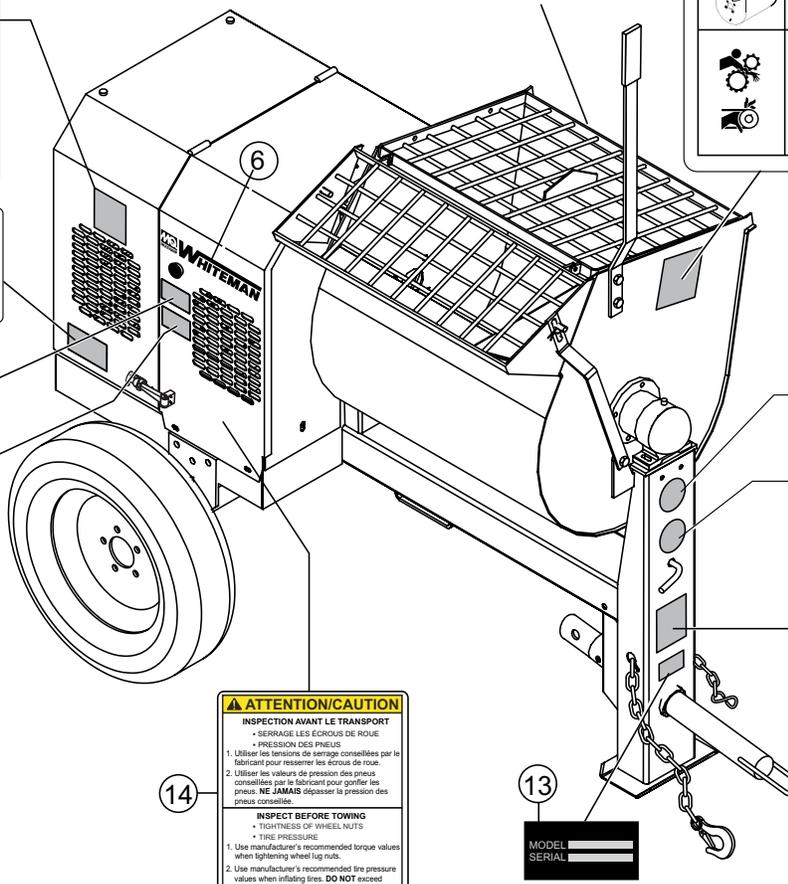
Porter un masque de protection Contre la poussière, une protection Pour la tête, les oreilles et les yeux lors De l'utilisation de cet équipement. Wear appropriate dust mask head, hearing and Eye protection when operating this equipment.

Zone de danger d'écrasement. Garder les Mains et les doigts loin de la grille de Sécurité en tout temps. Crush hazard area keep hands and fingers Clear of safety grate at all times.

Les pièces mobiles peuvent couper et Ecraser. Ne pas opérer avec la garde retirée. Suivre les procédures de verrouillage. Avant tout entretien. Moving parts can crush and cut. Do not operate with guard removed Follow lockout procedure before servicing.

CIP520934

WHITEMAN



1 **PUSH TO STOP**

2 **POUSSER POUR ARRÊTER**

DANGER

L'essence est hautement inflammable. NE PAS fumer dans les alentours de l'équipement. Une étincelle ou une explosion pourrait résulter des vapeurs de carburant ou si du carburant est répandu sur un moteur chaud. Gasoline is highly flammable. 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!

ATTENTION/CAUTION

INSPECTION AVANT LE TRANSPORT

- SERRAGE DES ÉCROUS DE ROUE
- PRESSION DES PNEUS

1. Utiliser les tensions de serrage conseillées par le fabricant pour resserrer les écrous de roue.
2. Utiliser les valeurs de pression des pneus conseillées par le fabricant pour gonfler les pneus. NE JAMAIS dépasser la pression des pneus conseillée.

INSPECT BEFORE TOWING

- TIGHTNESS OF WHEEL NUTS
- TIRE PRESSURE

1. Use manufacturer's recommended torque values when tightening wheel lug nuts.
2. Use manufacturer's recommended tire pressure values when inflating tires. DO NOT exceed recommended tire pressure.

10 **POUDRE REVÊTEMENT**

11 **POWDER COATED**

ATTENTION/CAUTION

POSITION DU VERROU DE LA CUVE
NON MARCHÉ DE L'ÉQUIPEMENT POUR COMMENCER LA PÉRIODE DE TRAVAIL DE LA CUVE
DRUM LOCK POSITIONING
SEE OPERATOR MANUAL FOR PROPER DRUM LOCK POSITIONING

LEGENDE

● — REPRÉSENTE LA DOUPLE DE SÉCURITÉ
MALAVAGE TRANSPORT

LEGEND

● — REPRESENTS LOCK PIN
— REPRESENTS DRUM STOP BLOCK

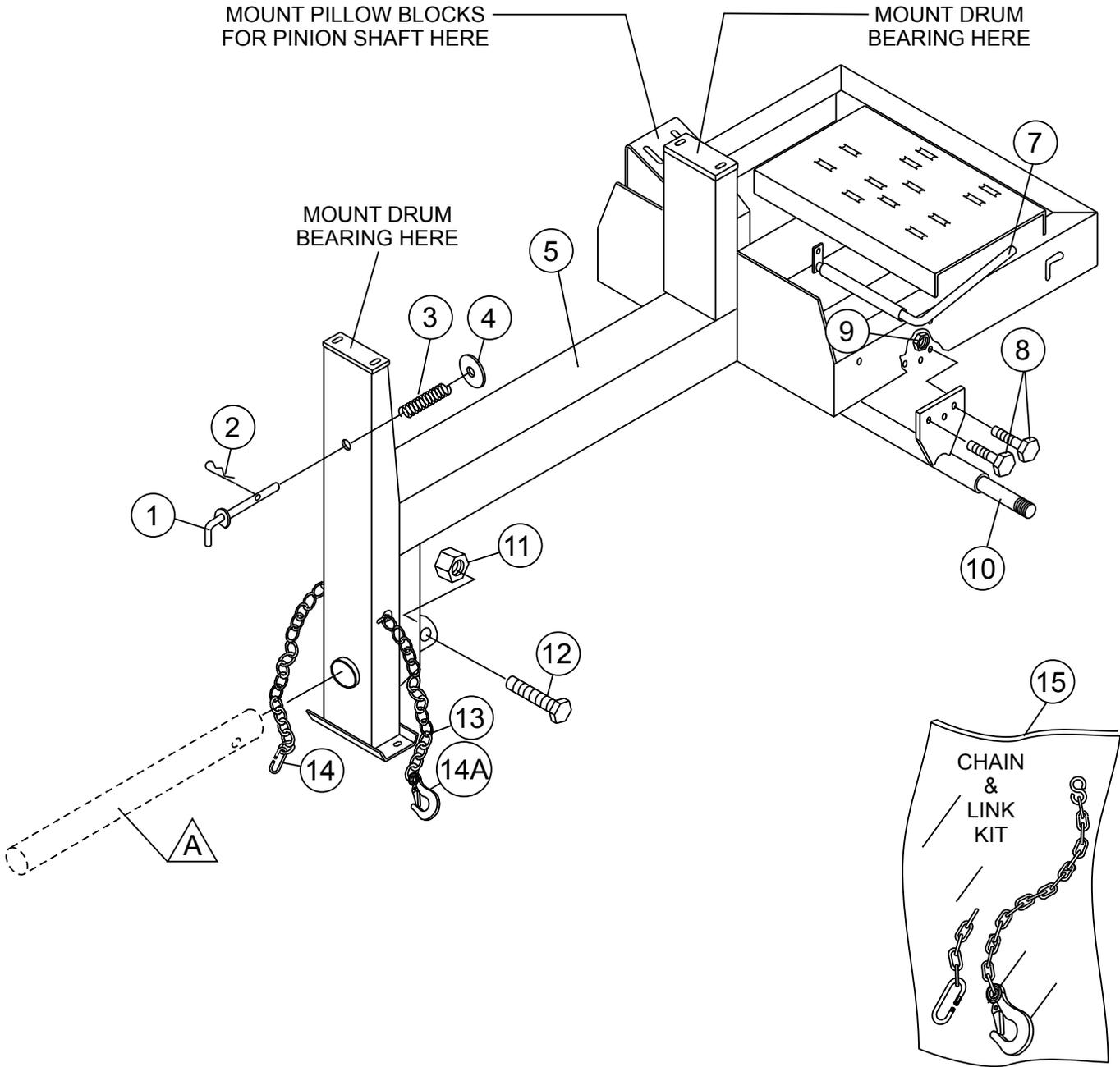
MIX TOW

13 **MODEL SERIAL**

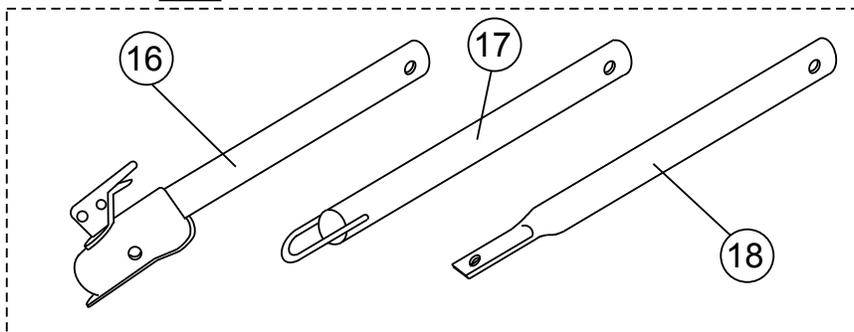
NAMEPLATE AND DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	EM948630	DECAL, PUSH TO STOP (ENGLISH)	1	
2	CIP520932	DECAL, PUSH TO STOP (FRENCH)	1	
3	CIP520933	DECAL, DO NOT SMOKE	1	
4	CIP520938	DECAL, READ MANUAL, CRUSH HAZARD	1	
5	CIP520935	DECAL, SAFETY INSTRUCTIONS (ENGLISH)	1	
6	515275	DECAL, WHITEMAN LOGO	1	
8	CIP520922	DECAL, SAFETY INSTRUCTIONS (FRENCH)	1	
9	CIP520934	DECAL, HANDLE KICK BACK, SAFETY GRATE, CRUSH HAZARD	1	
10	CIP520915	DECAL, POWDER COATED (FRENCH)	1	
11	13118	DECAL, POWDER COATED (ENGLISH)	1	
12	CIP520936	DECAL, DRUM LOCK POSITIONING	1	
13		NAMEPLATE	1CONTACT MQ PARTS DEPT.
14	CIP520937	DECAL, INSPECT BEFORE TOWING	1	

FRAME ASSY.



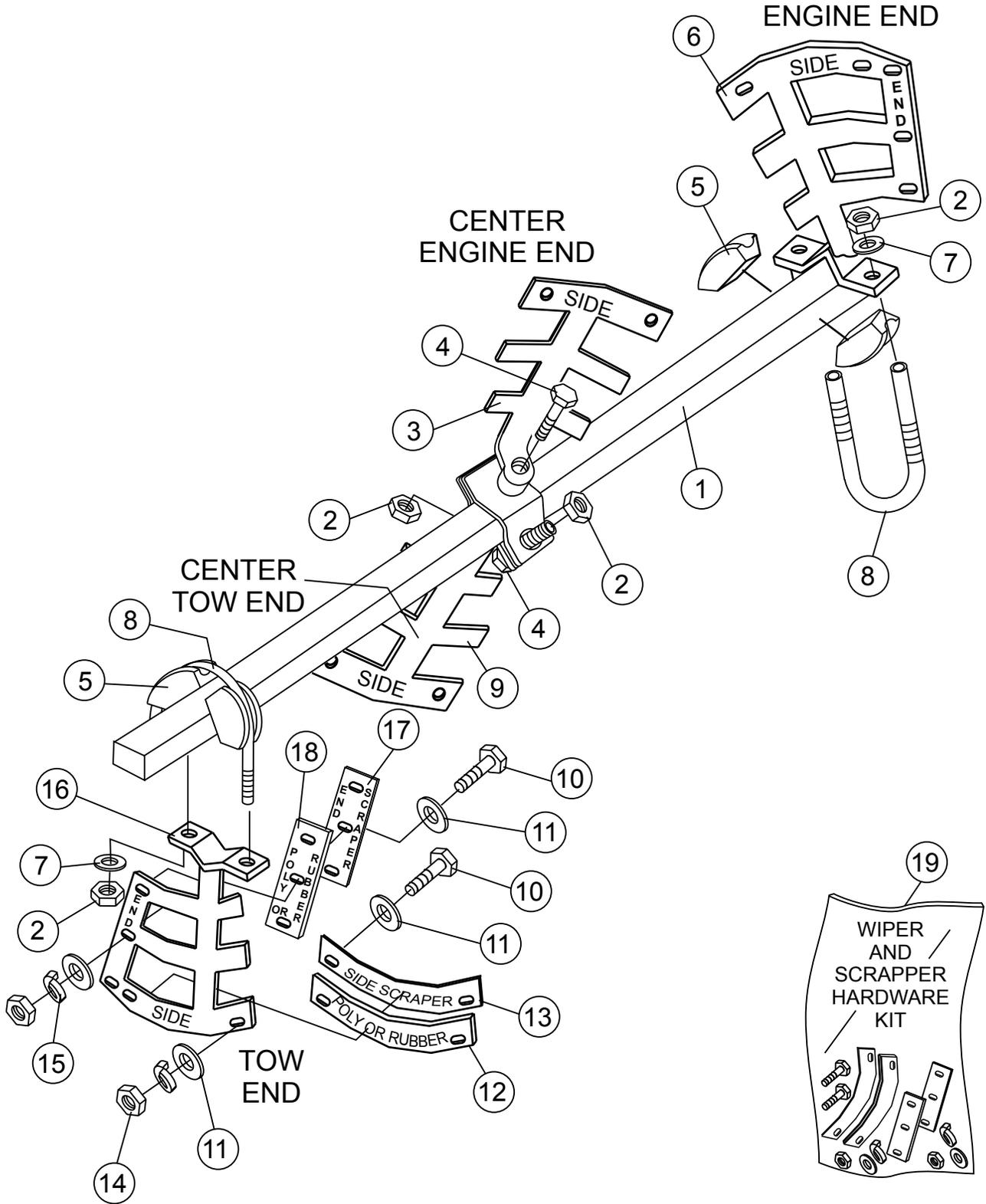
A OPTIONAL TOW BARS



FRAME ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	514842	LOCK PIN UNIT	1	
2	491692	COTTER PIN	1	
3	530023	SPRING LOCKING PIN	1	
4	507444	WASHER, FLAT 3/4"	1	
5	520619	MAIN FRAME	1	
7	514836	HANDLE, CLUTCH ENGAGE	1	
8	EM963692	BOLT 1/2" UNC 1-1/2"	6	
9	492584	NUT, LOCK 1/2"	6	
10	514802	AXLE, UNIVERSAL	1	
11	10176	LOCK NUT 1/2" NC	1	
12	EM124	BOLT 1/2"-13 X 4 G5	1	
13@		SAFETY CHAIN	1	
14@	01004	CONNECTOR LINK	1	
14A@	516580	CLEVIS SAFETY HOOK	1	
15	13363KIT	CHAIN AND LINK KIT.....	1.....	INCLUDES ITEMS W/@
16	HBC-1	BALL HITCH 2-INCH.....	1.....	CONTACT UNIT SALES
17	HLC-1	LOOP HITCH.....	1.....	CONTACT UNIT SALES
18	HPC-1	PIN HITCH 1-INCH.....	1.....	CONTACT UNIT SALES

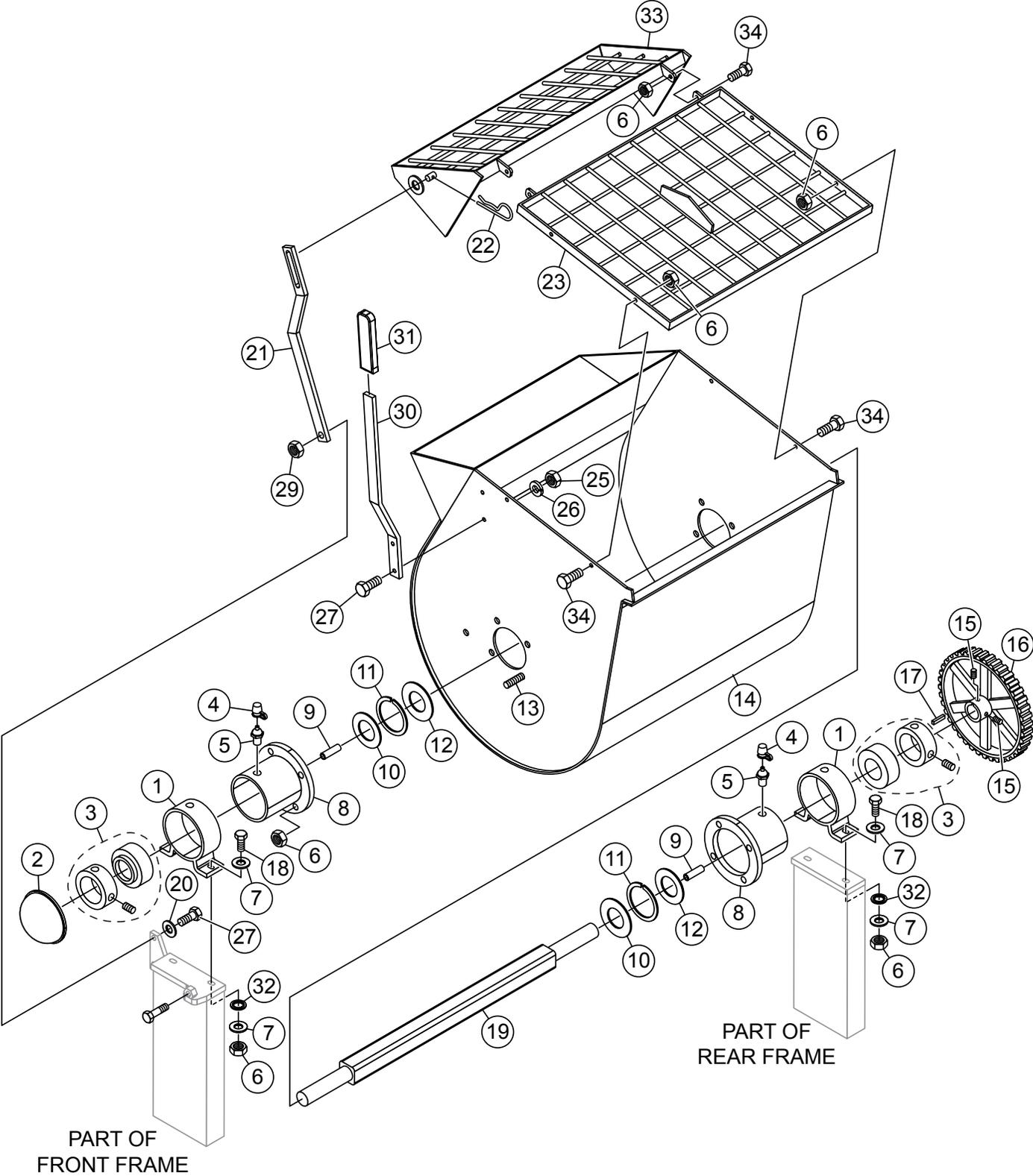
PADDLE SHAFT ASSY.



PADDLE SHAFT ASSY.

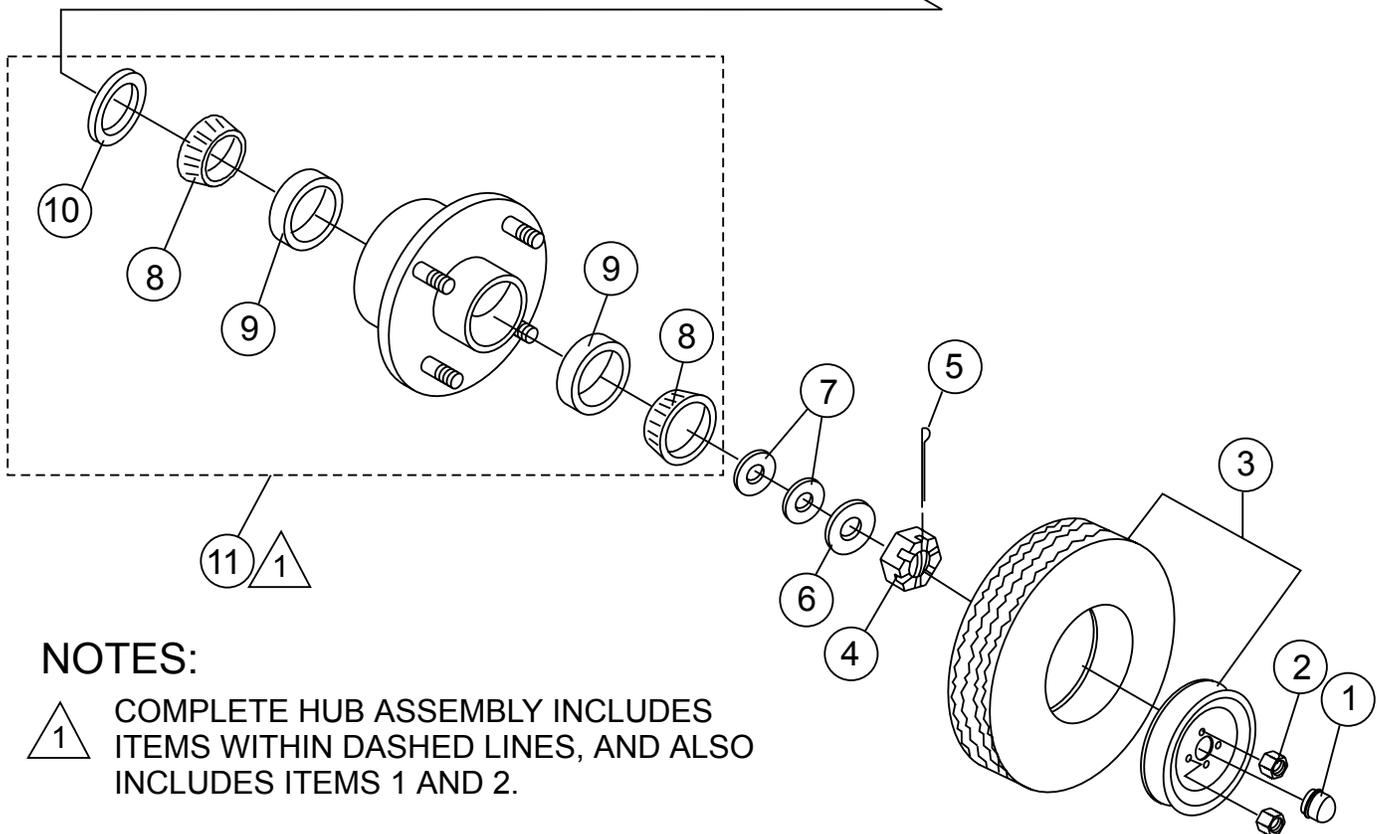
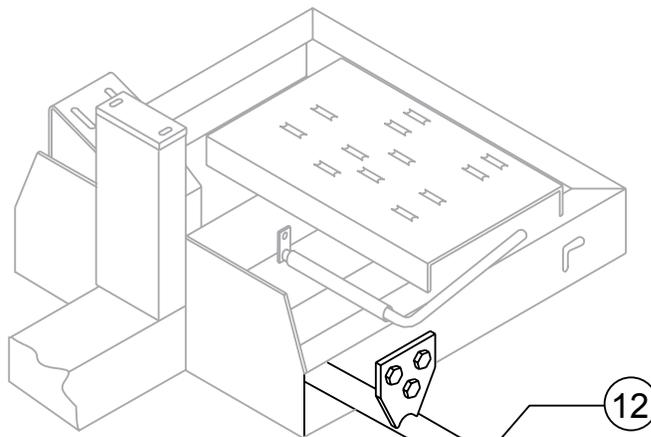
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	514752	PADDLE SHAFT	1	
2	492584	NUT, LOCK 1/2"	6	
3	EM202896	PADDLE ARM, CENTER ENGINE END	1	
4	492399	BOLT, 1/2 X 3	2	
5	EM200292	INSERT, PADDLE ARM	4	
6	EM202898	PADDLE ARM, ENGINE END	1	
7	504322	WASHER, FLAT 1/2"	6	
8	EM200297	U-BOLT, END PADDLES	2	
9	EM202897	PADDLE ARM, CENTER TOW END	1	
10@#	492367	SCREW, HHC 5/16-18 X 1-3/4 G5	14	
11@#	EM923023	WASHER, FLAT 5/16"	28	
12@	EM202929	BLADE, SIDE, RUBBER	4	
13@#	EM202928	BLADE, SIDE, SCRAPPER	4	
14@#	2105164	NUT, HEX 5/16" NC G5	14	
15@	EM923343	WASHER, LOCK 5/15"	14	
16	EM202899	PADDLE ARM, TOW END	1	
17@#	EM202927	BLADE ,SCRAPPER END	4	
18@	EM202926	BLADE, RUBBER END	4	
19	EM203010	KIT, WIPERS, SCRAPPERS & HARDWARE	1	INCLUDES ITEMS W/@

STEEL TUB ASSY.



PART OF
FRONT FRAME

PART OF
REAR FRAME



NOTES:



COMPLETE HUB ASSEMBLY INCLUDES ITEMS WITHIN DASHED LINES, AND ALSO INCLUDES ITEMS 1 AND 2.

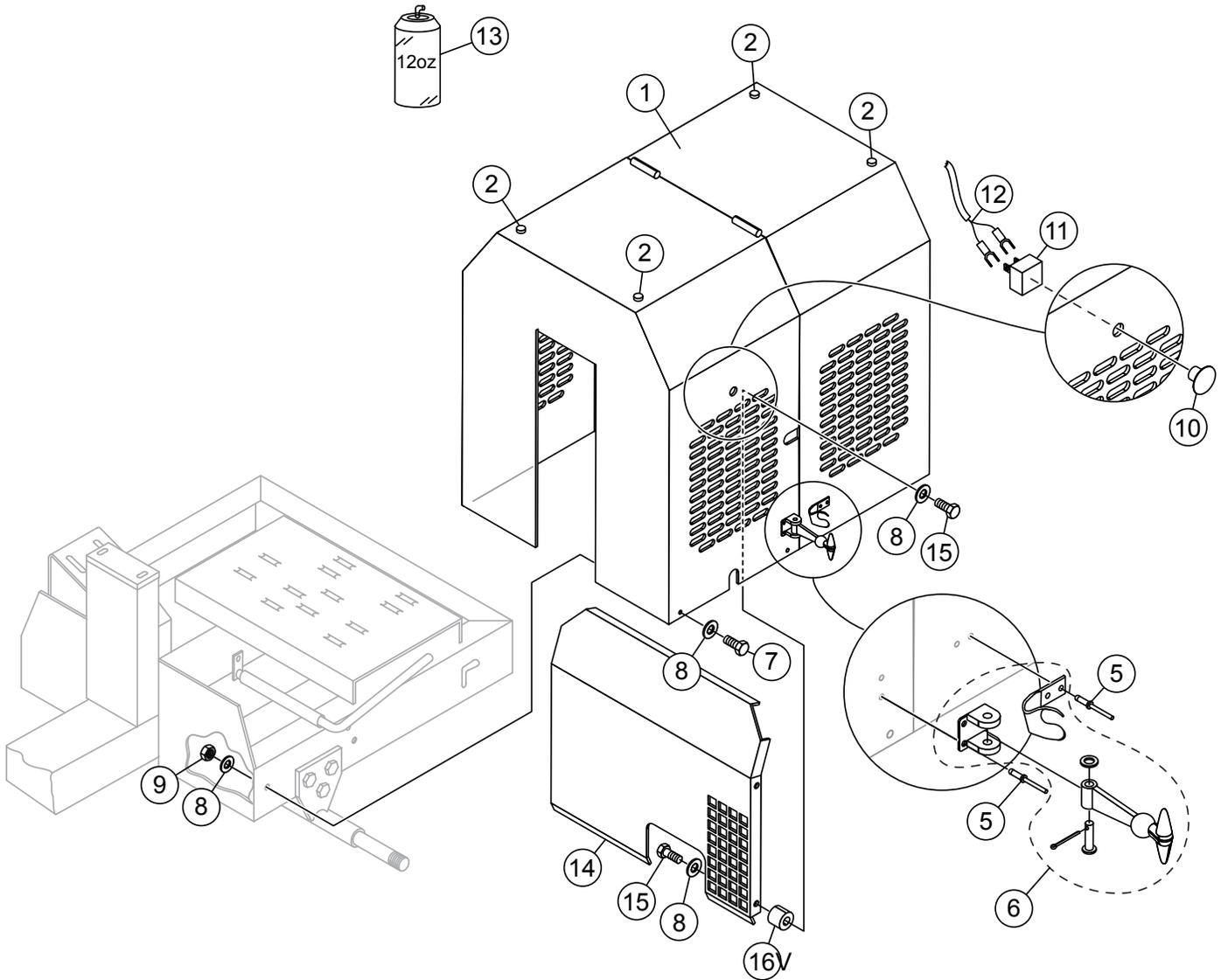
AXLE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1#	3469	DUST CAP	2	
2#	8115	LUG NUTS	8	
3	3005	TIRE AND RIM, CARLISE	2	
4	8164	CASTLE NUT 1"	2	
5	491688	COTTER PIN 1/8" X 1-1/2'	2	
6	EM511159	WASHER, FLAT, .087" THICKNESS	2	
7	EM501299	WASHER, FLAT, .135" THICKNESS	1	
8#	EM903113	BEARING CONE	4	
9#	EM903012	BEARING CUP	4	
10#	EM914288	OIL SEAL	2	
11	EM941306	HUB ASSY., 4-BOLT	2.....	INCLUDES ITEMS W/ #
12	514802	AXLE, UNIVERSAL	1	

ENGINE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	EM969013	NUT 3/8" NC G5	8	
2	506488	FLAT WASHER 3/8	8	
3	EM905016	PILLOW BLOCK BEARING	2	
4	492378	BOLT 3/8" NC X 1-3/4" G5	4	
5	490957	RING, RETENTION	1	
6	513868	PINION GEAR	1	
7	500214	KEY, 1/4" X 30 MM	1	
8	EM502226	PINION SHAFT	1	
9	492057	PULLEY (LARGE)	1	
10	505084	KEY, 1/4" X 55 MM	1	
11	492467	SET SCREW, 5/16" NC 3/8"	4	
12	505834	V-BELT, A-37	2	GX160UT1HX2
12	505834	V-BELT, A-36	2	GX240UT1HA2
13	503117	BOLT, 3/8" NC X 3" G5	1	
14	501019	SQ. KEY 3/16" X 45 MM 4.8 HP	1	GX160UT1HX2
14	90745ZE2600	SQ. KEY 6.3 X 6.3 X 43 MM 7.1 HP	1	GX240UT1HA2
15	492367	BOLT 5/16" NC X 1-3/4" G5	4	GX160UT1HX2
15	492378	BOLT 3/8" NC X 1-3/4" G5	4	GX240UT1HA2
16	GX160UT1HX2	ENGINE, HONDA 4.8 HP	1	
16	GX240UT1HA2	ENGINE, HONDA 7.1 HP	1	
17	515040	BELT RETAINER BAR	1	
18	492055	PULLEY, (SMALL), 4.8 HP	1	GX160UT1HX2
18	EM901074	PULLEY, (SMALL), 7.1HP	1	GX240UT1HA2
22	492597	WASHER, FLAT 5/16"	6	GX160UT1HX2
22	492598	WASHER, FLAT 3/8"	6	GX240UT1HA2
23	492623	WASHER, LOCK 5/16"	4	GX160UT1HX2
23	492624	WASHER, LOCK 3/8"	4	GX240UT1HA2
24	492553	NUT, HEX 5/16"	4	GX160UT1HX2
24	492554	NUT, HEX 3/8"	4	GX240UT1HA2
25	492600	WASHER, FLAT 1/2"	1	
26	505084	SQ. KEY, 1/4" X 55 MM	1	
27	492394	BOLT 1/2" NC X 1-1/2" G5	1	
28	EM102014	SPRING, EXTENSION	1	
29	EM203098	SPRING CLIP	1	
30	492313	BOLT 3/8" NC X 1-1/2" G5	3	
31	EM507713	ARM, IDLER	1	GX160UT1HX2
31	EM507491	ARM, IDLER	1	GX240UT1HA2
32	EM959080	ROD-END	2	
33	492584	NUT, HEX 1/2"	1	
34	492574	NUT, HEX 3/8" NF G5	2	
35	492476	SET SCREW, 5/16" NC 3/4"	1	
36	EM901515	PULLEY, IDLER	1	
37	515299	ROD	1	GX160UT1HX2
37	515045	ROD	1	GX240UT1HA2

CABINET ASSY.



CABINET ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	520620	CABINET, ENGINE W/DECALS	1.....	INCLUDES ITEMS W/@
2	EM505186	BUMPER, STICK ON	4	
5	503723	POP RIVET	10	
6@	491010	LATCH ASSY., COMPLETE	2	
7	EM963610	CAPSCREW 3/8" NC X 1-1/4" G8	4	
8	3019092	WASHER, FLAT 3/8"	12	
9	EM969013	NUT NYLOCK	4	
10	29174-001	KNOB, MUSHROOM	1	
11	29173-001	SWITCH, PUSH-PULL	1	
12	504135C	WIRE HARNESS	1	
13	EM974007	PAINT, SPRAY 12 OZ. TRAFFIC RED	1	
14	520560	GUARD	1	
15	EM963055	HEX HEAD CAPSCREW	8	
16	520561	SPACER	4	

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

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.
Carson, CA 90746
Contact: mq@multiquip.com

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

Service Department

800-421-1244
310-537-3700

Fax: 310-537-4259

Technical Assistance

800-478-1244

Fax: 310-943-2238

MQ Parts Department

800-427-1244
310-537-3700

Fax: 800-672-7877
Fax: 310-637-3284

Warranty Department

800-421-1244
310-537-3700

Fax: 310-943-2249

MEXICO

MQ Cipsa

Carr. Fed. Mexico-Puebla KM 126.5
Momoxpan, Cholula, Puebla 72760 Mexico
Contact: pmastretta@cipsa.com.mx

Tel: (52) 222-225-9900
Fax: (52) 222-285-0420

CANADA

Multiquip

4110 Industriel Boul.
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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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