

# PARTS AND OPERATION MANUAL

# STOW

A DIVISION OF MULTIQIP INC.

## PLASTER/MORTAR MIXER

**MS30H (Steel-Gasoline)**

**MS30E (Steel-Electric)**

**Effective S/N SEC55001**

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Revision #4 (08/10/06)



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# **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.

# TABLE OF CONTENTS

Here's How To Get Help ..... 3  
 Table Of Contents ..... 4  
 Parts Ordering Procedures ..... 5  
 Safety Messages Alert Symbols ..... 6-7  
 Rules For Safe Operation ..... 8-10  
 Operation and Safety Decals ..... 11  
 Specifications ..... 12  
 General Information ..... 13

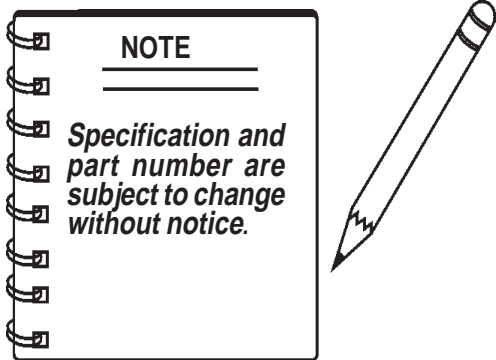
## MQ-STOW — Plaster/Mortar Mixer

Basic Engine Components ..... 14  
 Electric Motor ..... 15-16  
 Controls ..... 17  
 Towing Guidelines ..... 18  
 Safety Chain Connection ..... 19  
 Trailer Safety Guidelines ..... 20-21  
 Paddle Blade Adjustment ..... 22  
 Pre-Inspection ..... 23-24  
 Initial Start-up ..... 25-27  
 Maintenance ..... 28  
 Troubleshooting (Engine) ..... 29-30  
 Troubleshooting (Mixer/Motor) ..... 31  
 Electric Motor Wiring Diagram ..... 32  
 Explanation Of Codes In Remarks Column ..... 34  
 Suggested Spare Parts ..... 35  
 Nameplate and Decals ..... 36-37  
 Honda Engine Assembly ..... 38-39  
 Electric Motor Assembly ..... 40-41  
 Steel Tub Assembly ..... 42-43  
 Paddle Shaft Assembly ..... 44-45  
 Axle Assembly ..... 46-47  
 Frame Assembly ..... 48-49  
 Engine Cover Assembly ..... 50-51

## HONDA GX240K1HA2 ENGINE

Air Cleaner Assembly ..... 52-53  
 Camshaft Assembly ..... 54-55  
 Carburetor Assembly ..... 56-57  
 Control Assembly ..... 58-59  
 Crankcase Cover Assembly ..... 60-61  
 Crankshaft Assembly ..... 62-63  
 Cylinder Barrel Assembly ..... 64-65  
 Cylinder Head Assembly ..... 66-67  
 Fan Cover Assembly ..... 68-69  
 Flywheel Assembly ..... 70-71  
 Muffler Assembly ..... 72-73  
 Fuel Tank Assembly ..... 74-75  
 Ignition Coil ..... 76-77  
 Piston Assembly ..... 78-79  
 Recoil Starter ..... 80-81  
 Gear Reduction Assembly ..... 82-83  
 Label Assembly ..... 84-85

Terms and Conditions Of Sale — Parts ..... 86



# MS-20 MIXER — SAFETY MESSAGE ALERT SYMBOLS

## FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

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.

### NOTE

This Owner's Manual has been developed to provide complete instructions for the safe and efficient operations of the **MQ STOW mortar** and **plaster** mixer. Refer to the engine manufacturers instructions for data relative to its safe operation.

**Before using this mixer, ensure that the operating individual has read and understands all instructions in this manual.**

## SAFETY MESSAGE ALERT SYMBOLS

The three (3) 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 three words: **DANGER**,



**DANGER:** You **WILL** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.



**WARNING:** You **CAN** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.



**CAUTION:** You **CAN** be injured if you

Potential hazards associated with operation of the mixer will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

## HAZARD SYMBOLS



Engine exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



### Explosive Fuel



Gasoline is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **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 approved containers, in well-ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.



### Burn Hazards



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

# MS-20 MIXER — SAFETY MESSAGE ALERT SYMBOLS



## Accidental Starting



**OFF** **ALWAYS** place the ON/OFF switch in the OFF position, disconnect the spark plug lead before servicing the engine or equipment. Ground the lead to prevent sparks that could ignite a fire.



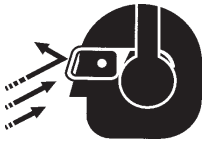
## Respiratory Hazard



**ALWAYS** wear approved respiratory protection.



## Sight and Hearing hazard

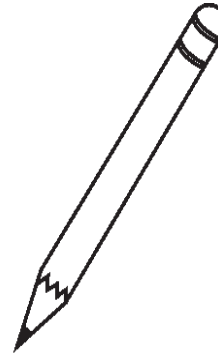
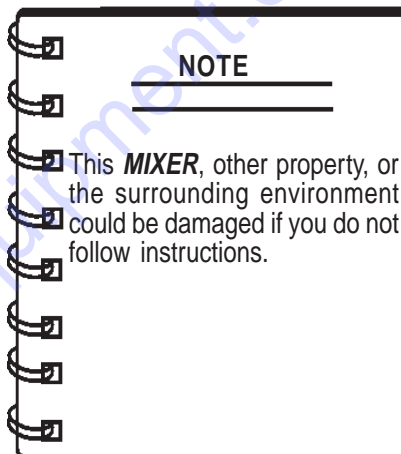


**ALWAYS** wear approved **eye** and **hearing** protection.



## Equipment Damage Messages

Other important messages are provided throughout this manual to help prevent damage to your concrete saw, other property, or the surrounding environment.



# MS30H/MS30E MIXER — RULES FOR SAFE OPERATION

## CAUTION:



Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the MS30H/MS30E mortar and plaster mixers:

### GENERAL SAFETY

- **DO NOT** operate or service this equipment before reading this entire manual.



- This equipment should not be operated by persons under 18 years of age.

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.

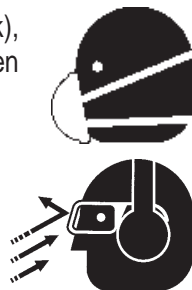


- **NEVER** operate this equipment under the influence of drugs or alcohol.



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

- **ALWAYS** wear proper respiratory (mask), hearing and eye protection equipment when operating the mixer.



- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.

- Manufacture does not assume responsibility for any accident due to equipment modifications.

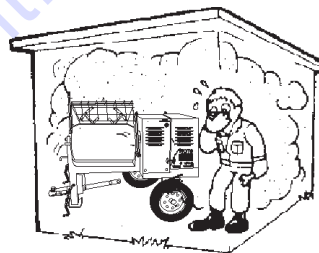
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

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



- **High Temperatures** – Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with **hot!** components can cause serious burns.

- The engine section of this mixer requires an adequate free flow of cooling air. **NEVER** operate the mixer in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious damage to the mixer or engine and may cause injury to people. Remember the mixer's engine gives off **DEADLY** carbon monoxide gas.



- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.

- **ALWAYS** use extreme caution when working with **flammable** liquids. When refueling, **stop the engine** and allow it to cool. **DO NOT smoke** around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.



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



## MS30H/MS30E MIXER — RULES FOR SAFE OPERATION

- Stop the engine when leaving the mixer unattended.
- Block the unit when leaving or when using on a slope.
- Maintain this equipment in a safe operating condition at all times.
- **ALWAYS** stop the engine before servicing, adding fuel and oil.
- **NEVER** Run engine without air filter. Severe engine may occur.
- **ALWAYS** service air cleaner frequently to prevent carburetor malfunction.
- **ALWAYS** be sure the operator is familiar with proper safety precautions and operations techniques before using mixer.
- **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.
- **DO NOT** operate this equipment unless all guards and safety devices are attached and in place.
- **CAUTION** must be exercised while servicing this equipment. Rotating and moving parts can cause injury if contacted.
- When towing, an adequate safety chain must be fastened to the frame, refer to page 19.
- Keep all *inexperienced* and *unauthorized* people away from the equipment at all times.
- Unauthorized equipment modifications will void all warranties.
- Check all fasteners periodically for tightness. Also check towing tongue bolt, lock nut and wheel lug nuts for wear.
- Stop the engine and disconnect the spark plug before allowing anybody's hands in the mixing drum.
- **NEVER** pour or spray water over the engine or electric motor.
- **ALWAYS** stand clear of dump handle when mixer is in operation. Any binding of material between the mixer blades and drum will cause drum and handle to quickly move in the discharge position.
- Depending on type of mixer, test the **ON/OFF** switch for either the gasoline engine or electric motor before operating. The purpose of these switches is to shut down the engine or motor of the mixer.
- Refer to the *HONDA Engine Owner's Manual* for engine technical questions or information recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

### Transporting

- **ALWAYS** shutdown engine before transporting.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Drain fuel when transporting mixer over long distances or bad roads.

### Maintenance Safety

- **NEVER** lubricate components or attempt service on a running mixer.
- **ALWAYS** allow the mixer a proper amount of time to cool before servicing.
- Keep the mixer in proper running condition.
- Fix damage to the mixer immediately and always replace broken parts.
- 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.



# MS30H/MS30E MIXER — RULES FOR SAFE OPERATION

## Emergencies

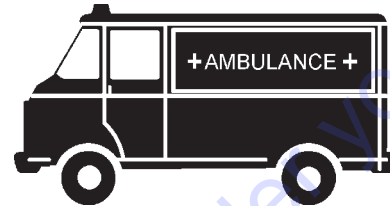
■ **ALWAYS** know the location of the nearest *fire extinguisher*.



■ In emergencies *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.



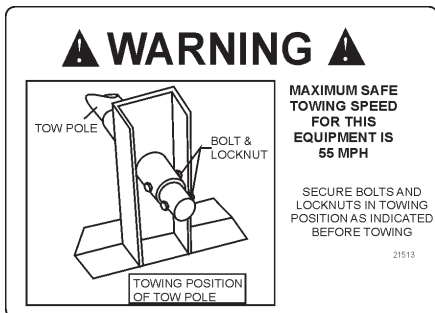
■ **ALWAYS** know the location of the nearest *first aid kit*.



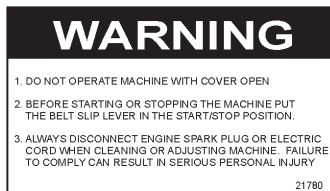
# MS30H/MS30E MIXER — OPERATION AND SAFETY DECALS

## Machine Safety Decals

The MQ STOW mortar and plaster mixer 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.



P/N 21513-001



P/N 21780-001



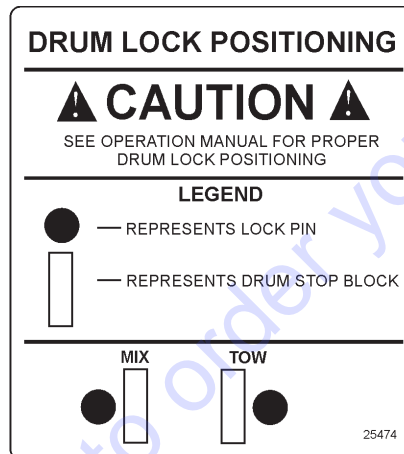
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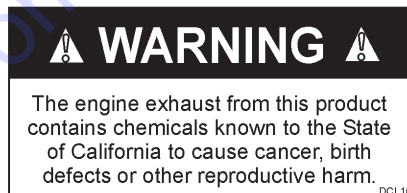
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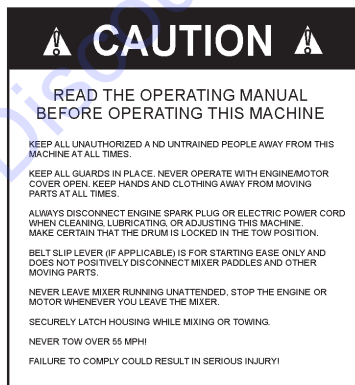
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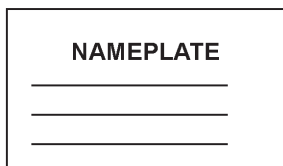
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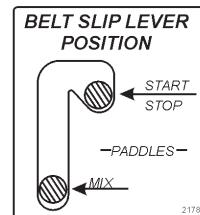
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TBD



CONTACT MULTQUIP PARTS DEPT.



P/N 21781-001

Figure 1. Mixer Operation and Safety Decals

# MS30H/MS30E MIXER — SPECIFICATIONS

## Table 1. MS30H/MS30E Mixer Specifications

Capacity	9.0 cu. ft (198 liters)
Bag Capacity	2-1/2 to 3-1/2 bags
Weight MS30H	650 lbs. (294 kg.)
Weight MS30E	639 lbs. (290 kg.)
Length w/Tow Bar x W x H	64 x 55.5 x 56 in. (162 x 141 x 142 cm.)
Height W/Dump Handle	75 in. (191 cm.)
Discharge Height	25 in. (63 cm.)
Drive	V-Belt/Gear
Dump Action	Manual

## Table 2. Specifications (Engine & Electric Motor)

	Model	HONDA GX240K1HA2	BALDOR 35LYS733
Engine/Electric Motor	Type	Air-cooled 4 stroke, 90 V-Twin Cylinder, OHV, Horizontal Shaft Gasoline Engine	2.0 HP, 115/230, Single Phase Electric Motor
	Bore X Stroke	2.90 in. X 2.30 in. (73 mm x 58 mm)	N/A
	Displacement	14.81 cc	N/A
	Max Output	8.0 H.P./3600 R.P.M.	2.0 H.P./1725 RPM
	Fuel Tank Capacity	Approx. 1.59 U.S. Gallons (6 Liters)	N/A
	Fuel	Unleaded Gasoline	N/A
	Lube Oil Capacity	2-1/3 pints	N/A
	Speed Control Method	Centrifugal Fly-weight Type	N/A
	Starting Method	Recoil Start	N/A
Dimensions (L x W x H)	14.0 x 16.9 X 16.1 in. (355 X 430 X 410 mm)	15.56 x 8.93 X 8.56 in. (395 X 226 X 217 mm)	
Dry Net Weight	55.1 lbs. (25 Kg.)	Approx. 25 lbs. (11 Kg.)	

# MS30H/MS30E MIXER — GENERAL INFORMATION

## GENERAL

The MQ STOW Model MS30H (Honda GX240K1) gasoline engine) and MS30E (electric motor) plaster and mortar mixers are shipped completely assembled and have been factory tested.

The drum batch capacity of these mixers is between 3.5 and 4.0 bags. With proper care, they will give continuous service year-after-year.

These mixers can be powered by either gasoline or electric motors. The shaft of the engine or electric motor is connected to a drive belt pulley which is attached to a main gear. As the main gear rotates it causes the paddle shaft to rotate.

## BEFORE STARTING

Before starting the engine, read the engine owners manual and thoroughly understand the safety information.

Check the items listed below:

## OIL LEVELS

Be sure to check the oil levels in the engine and engine reduction unit before starting the unit (gasoline model only).

## 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 the torque chart below as a general guideline and keep all hardware tight:

<u>HARDWARE DIA</u>	<u>TORQUE (LB./FT.)</u>
5/16" - 18	24
3/8" - 24	37
1/2" - 13	39
1/2" - 13 (Grade 8)	90

## GASOLINE ENGINE CARE

For care and operation of the gasoline engine, refer to the engine manufacturer's operating instructions furnished with the engine. We recommend draining and refilling the engine crankcase at least every thirty hours of operation. Check the engine oil level daily.

## GASOLINE MIXER OFF/ON SWITCH

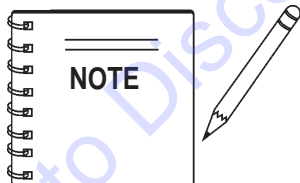
This feature is on gasoline engine mixers only. Located on the side of the engine cover. The purpose of this switch is to start and stop the mixer in normal operation.

## ELECTRIC MOTOR MIXER OFF/ON SWITCH

This feature is on electric motor mixers only. This switch is located on top of the motor. Lift the engine cover to gain access to this switch. The purpose of this switch is to start and stop the mixer in normal operation. **NEVER** use the electric motor in an explosive environment.

## ENGINE THROTTLE AND CHOKE CONTROLS

Please refer to the engine owners manual for specific instructions.



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

# MS30H/MS30E MIXER — BASIC ENGINE COMPONENTS

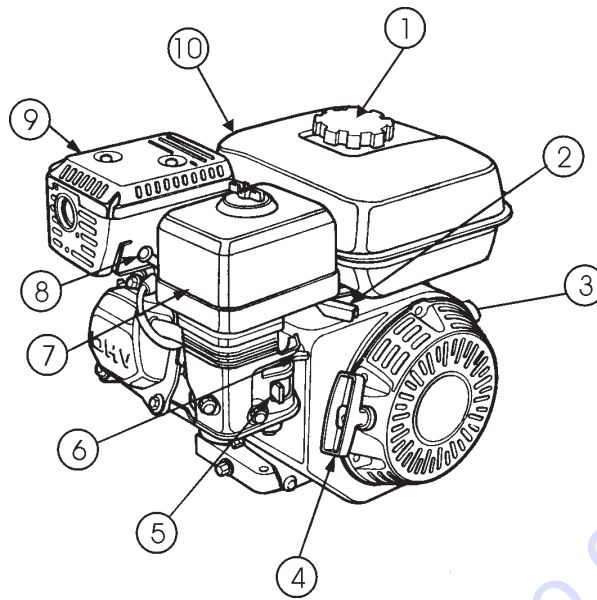


Figure 2. Engine Controls and Components

## INITIAL SERVICING

The engine (Figure 2) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's Engine manual for instructions & 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.



### WARNING

Adding fuel to the tank should be accomplished 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 canister 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.

# MS30H/MS30E MIXER — ELECTRIC MOTOR

## Electric Motor

For maintenance care and operation of the electric motor, refer to your electric motor instruction booklet furnished with the motor.

Protect the electric motor from dust as much as possible and keep ventilating openings clean.

## CAUTION:



- **DO NOT** spray water at any time on the *electric motor*.
- **DO NOT** operate electric motor in a explosive environment.

The electric motor used in this mixer is a single-phase 1.5 HP motor. The input voltage requirement for this motor is either 115 or 230 VAC only.

## Electric Motor Connection

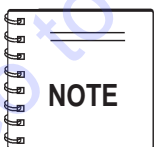
A 12 inch electrical cable (Figure 2) with a pigtail at one end is provided with the electrical motor for hookup to a power source. Table 1. shows the required NEMA connector for the desired motor horsepower rating. In addition, Table 2 also shows the matching NEMA approved connector for the required extension cord.

**ALWAYS**, make certain that the power source required for the electric motor is *correct* and always use the correct NEMA configuration plug. **Failure** to supply the correct voltage to the motor can severely damage the motor.

The motor supplied is wired for 115 VAC grounded operation. Make certain that the correct size grounded (3-wires) extension cord is used. See Table 4.

Motors can burn out when the line voltage falls 10% below the voltage rating of the motor. Failure to use proper voltage will cause the motor to overheat and actuate the overload switch.

If overload protection should actuate because of improper voltage or any other malfunction, turn the main switch on the motor to the "OFF" position and correct the problem, press the reset switch button, and turn the main switch to the "ON" position.



It is strongly recommended that all electrical wiring be done by a **licensed electrician**. Special attention should be given to the electric switch as well as the over-and-under voltage protection devices as per regulations set forth in the local electrical safety code handbook.

## Electric Motor Voltage Switch

1. **ALWAYS** make certain the motor switch is "OFF" and the power cord has been disconnected from the power source.
2. Remove the voltage lock-out bolt (Figure 3). Change the position of the **voltage change toggle switch** from 115 VAC to 230 VAC. The mixer is factory wired for 115 VAC operation.
3. Replace the voltage lock-out bolt.
4. **Important!**, when changing the input voltage to the motor from 115 to 230 VAC the **plug** on the motor power cord must also be changed. See Table 3.

Table 3. Electric Motor Wiring Information

Motor Horsepower Rating	115-230 VAC - Single Phase	
	NEMA Plug Connector	Mating NEMA Receptacle Connector
1.5 HP (115 VAC)	L5-20P P/N EM940537	L5-20R P/N EM940538
1.5 HP (230 VAC)	L6-20P P/N 940539	L6-20R P/N 940540

Table 4. Recommended Extension Cord Sizes

Model	Motor	Voltage	50 ft. (15.24 m)	75 ft. (22.86 m)	100 ft. (30.48 m)	200 ft. (60.96 m)
MS30E (Electric)	1.5 HP	115	No. 12	No. 10	No. 8	No. 6
		230	No. 14	No. 12	No. 12	No. 8



# MS30H/MS30E MIXER — ELECTRIC MOTOR

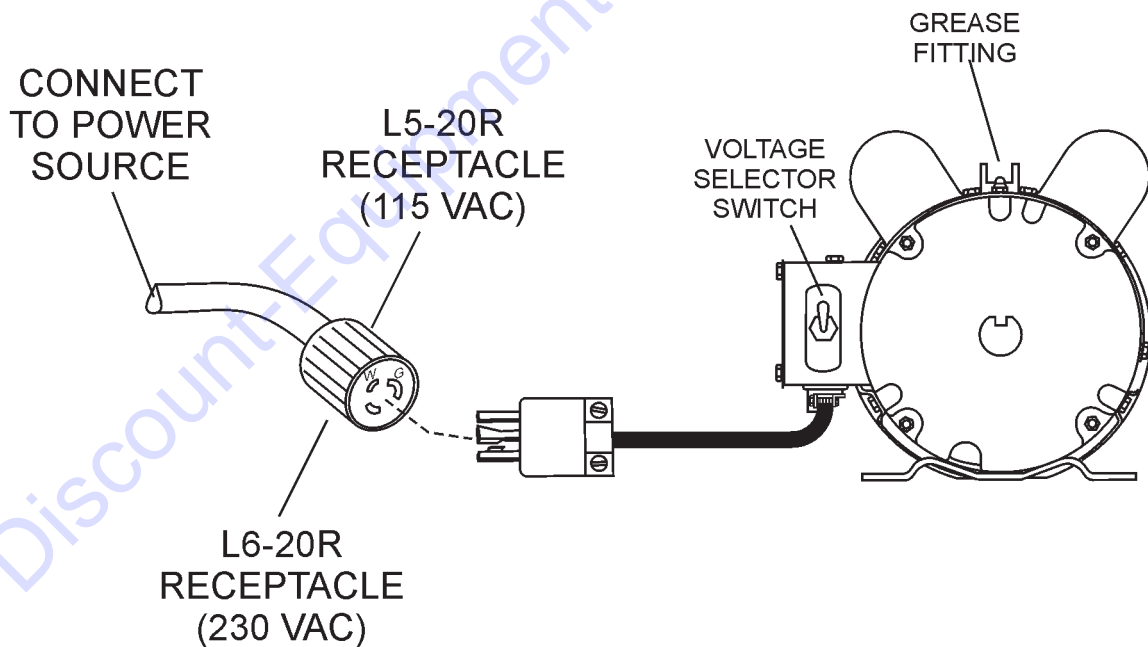
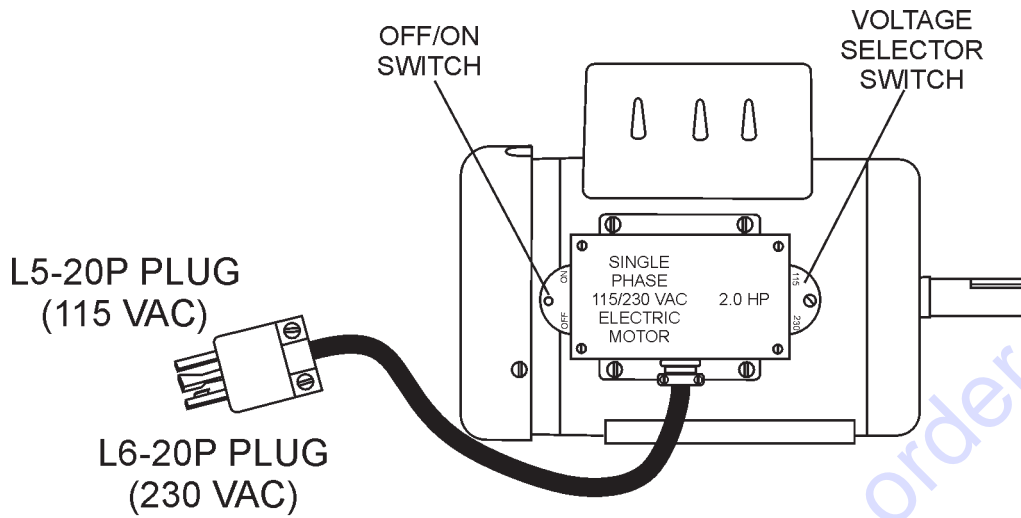
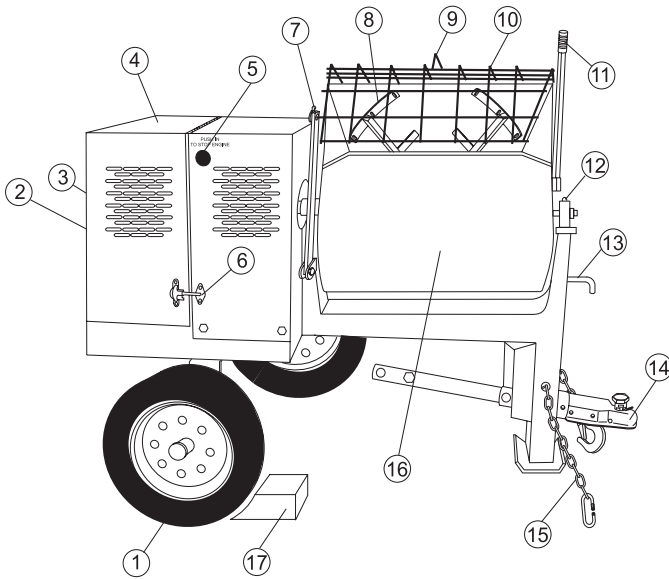


Figure 3. Single Phase Electric Motor with 18 inch Pigtail Cable

## MS30H/MS30E MIXER — CONTROLS



**Figure 4. Mixer Components**

Figure 4 illustrates the basic components and controls of the MS30H/MS30E 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 (electric)** — This switch is provided on mixers with electric motors. To gain access to this switch, lift the engine cover. When activated it will shut down the electric motor.
5. **ON/OFF Switch (gasoline)** — This switch is provided on mixers with **gasoline** engines only and is located on the side of the engine cover. When activated it will shut down the engine.
6. **Latch** — Use this latch to secure the engine compartment cabinet.
7. **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 un-locked when cleaning of the blades and drum is required.
8. **Mixing Paddles** — Used in the mixing of material. This unit uses four different types of paddles to provide a fast uniform mix.
9. **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.
10. **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.
11. **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.
12. **Pivot Point/Zerk Fitting** — There is, on each end of the mixing drum a zerk grease fitting. 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. **Tow Bar/Coupler** — This mixer uses a 2-inch coupler or pintle
15. **Safety Chain** — This mixer uses a 3/16-inch thick, 72-inches long zinc-plated safety chain. **ALWAYS** connect the safety chain when towing.
16. **Steel Mixing Drum** — Mixing materials such as mortar, plaster are to be placed into this drum for mixing. Always clean the drum after each use.
17. **Chock Blocks** — Place these blocks (not included as part of the mixer package) under each mixer wheel to prevent rolling.

# MS30H/MS30E MIXER — TOWING GUIDELINES

## Towing Safety Precautions

### CAUTION :



- Check with your county or state safety towing regulations department before towing your *mortar and plaster mixer*.

To reduce the possibility of an accident while transporting the mixer on public roads, always make sure that the trailer and the towing vehicle are in good operating condition and both units are mechanically sound.

The following list of suggestions should be used when towing the mixer:

- Make sure that the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR).
- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow the mixer with defective hitches, couplings, chains etc.
- **CHECK** the tire air pressure on both the towing vehicle and the trailer. Also check the tire tread wear on both vehicles.
- **ALWAYS** make sure the trailer section of the mixer is equipped with a "Safety Chain".
- **ALWAYS** attach mixer's safety chain to the frame of the towing vehicle.
- Remember in most cases the maximum speed unless otherwise posted for highway towing is **55 MPH**, however before towing your mixer, check your local state, and county vehicle towing requirements. Recommended off-road towing is not to exceed **10 MPH** or less depending on type of terrain.
- Place *chocked blocks* underneath wheel to prevent **rolling**, while parked.
- Inflate tires to correct pressure, inspect tires for cuts, and excessive wear. See Table 4 (Tire Wear Troubleshooting).
- Check wheel mounting lug nuts with a **torque wrench**. Torque wheel lug nuts as described in the "**Lug Nut Torque Requirements**", Table 6.
- Check tightness of suspension hardware (nuts and bolts).

- Avoid sudden stops and starts. This can cause skidding, or jackknifing. Smooth, gradual starts and stops will improve gas mileage.
- Avoid sharp turns to prevent rolling.
- **DO NOT** transport mixer with fuel in the fuel tank.

### CAUTION :



If the trailer coupler is deformed replace entire coupler. **NEVER** tow the pump with a defective trailer coupler. There exist the possibility of the trailer separating from the towing vehicle.

#### Mixer Trailer Vehicle Connection

1. Check the vehicle hitch ball, and trailer coupler for signs of wear or damage. Replace any parts that are worn or damaged before towing.
2. Use only the 2-inch ball diameter with a towing capability of 5,000 lbs. (2,268 kg) as indicated on the trailer's coupler. Use of any other ball diameter will create an extremely dangerous condition which can result in separation of the coupler and ball or ball failure.
3. Be sure the coupler is secured to the hitch ball and the lock lever is down (locked).
4. Attach safety chains as shown in Figure 5. Remember to **cross** the safety chains underneath the towpole of the mixer.
5. After towing for about 50 miles recheck the entire towing system for tightness.

#### Recommended Maintenance

1. Smear ball socket and clamp face with chassis grease. Periodically oil pivot points and wear surfaces of coupler with SAE 30 W motor oil.
2. When parking or storing the mixer, keep the coupler off the ground so dirt and other debris will not build up in the ball socket.

# MS30H/MS30E MIXER — SAFETY CHAIN CONNECTION

## CAUTION

### Always Tow with a Safety Chain

**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.

Reference Figure 5 for the installation of the **safety chain**.

### Tow Bar to Mixer Connection

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 nylock nut. Tighten to 40 ft.-lbs.

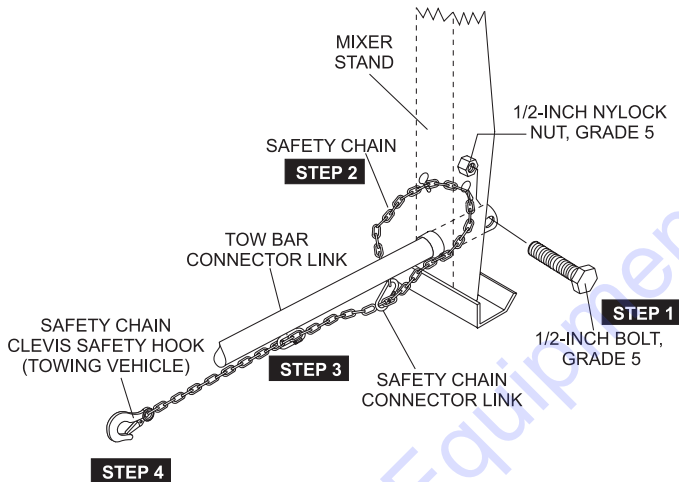


Figure 5. Mixer Safety Chain and Coupler

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 (clevis safety hook) 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 the ground (contact) in the event the draw bar becomes disconnected from the towing vehicle.

## CAUTION

### Drum Safety when Towing

**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 6) of the drum stop block. This will keep the drum from rotating.

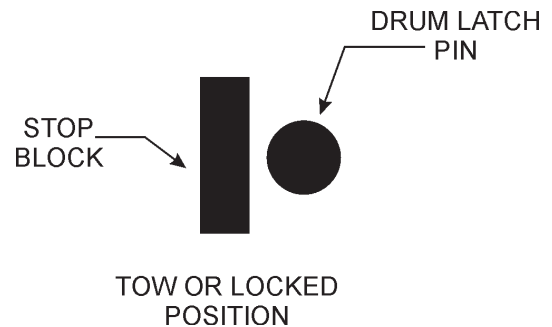


Figure 6. Drum Latch Pin (Tow or Locked Position)

# MS30H/MS30E MIXER — TRAILER SAFETY GUIDELINES

## Tires/Wheels/Lug Nuts

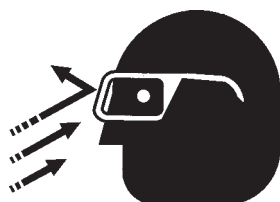
Tires and wheels are a very important and critical components of the trailer. When specifying or replacing the trailer wheels it is important the wheels, tires, and axle are properly matched.

### CAUTION :



**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

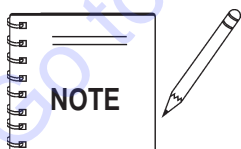
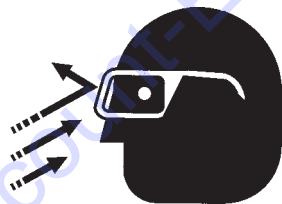
air pressure in the inter-tube may cause pieces of the rim to explode (break-off) with great force and can cause serious eye or bodily injury.



## 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.

Table 5 (Tire Wear Troubleshooting) will help pinpoint the causes and solutions of tire wear problems.



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

TABLE 5 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 & tire skidding.	Avoid sudden stops when possible and adjust brakes.

## Suspension

The rigid type axle and associated hardware (Figure 7) should be periodically inspected for signs of excessive wear, elongation of bolt holes, and loosening of fasteners. Replace all damaged parts immediately.

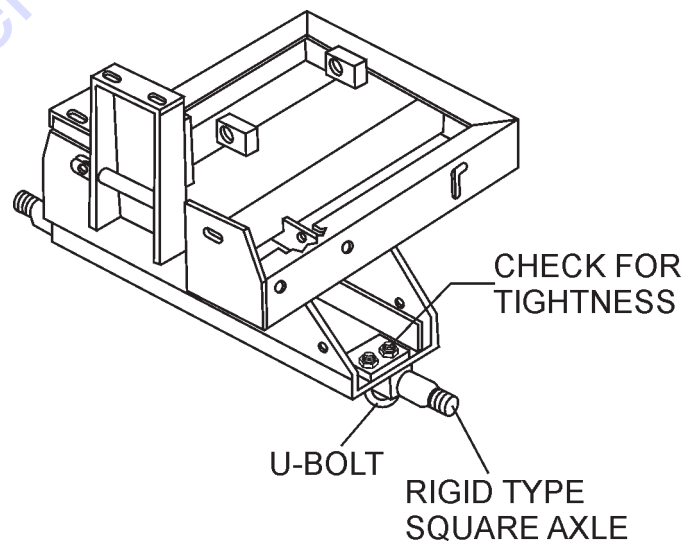


Figure 7. Axle Support Components

# MS30H/MS30E MIXER — TRAILER SAFETY GUIDELINES

## Lug Nut Torque Requirements

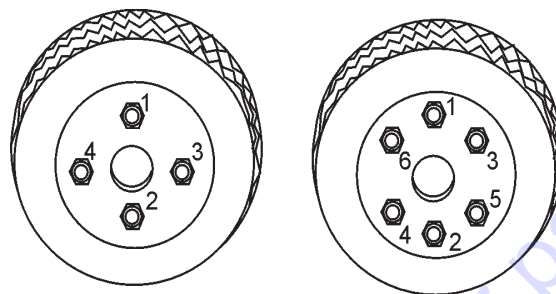
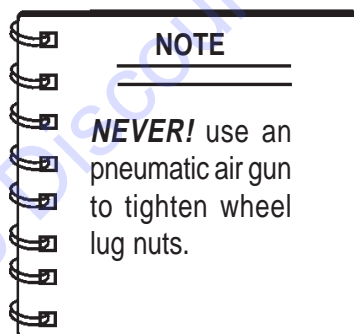
It is extremely important to apply and maintain proper wheel mounting torque on the trailer. Be sure to use only the fasteners matched to the cone angle of the wheel. Proper procedure for attachment of the wheels is as follows:

1. Start all wheel lug nuts by hand.
2. Torque all lug nuts in sequence. See Figure 8. **DO NOT** torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Table 6.

**Table 6. Tire Torque Requirements**

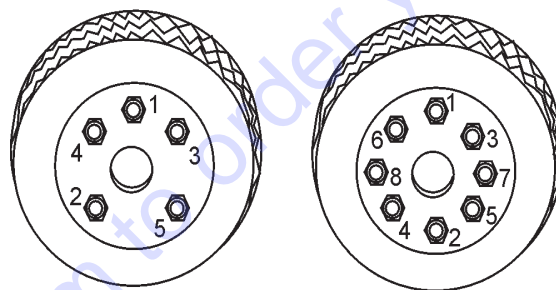
Wheel Size	First Pass FT-LBS	Second Pass FT-LBS	Third Pass FT-LBS
12"	20-25	35-40	50-65
13"	20-25	35-40	50-65
14"	20-25	50-60	90-120
15"	20-25	50-60	90-120
16"	20-25	50-60	90-120

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

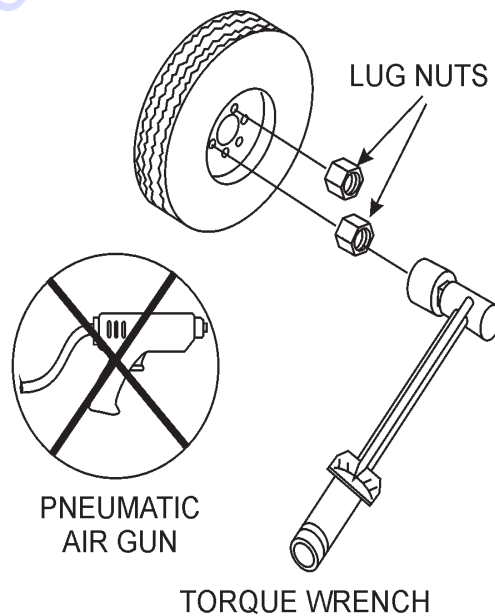


Figure 8. Wheel Lug Nuts Tightening Sequence



# MS30H/MS30E MIXER — PADDLE BLADE ADJUSTMENT

Adjust paddles as shown in Figure 9.

## STEEL DRUM

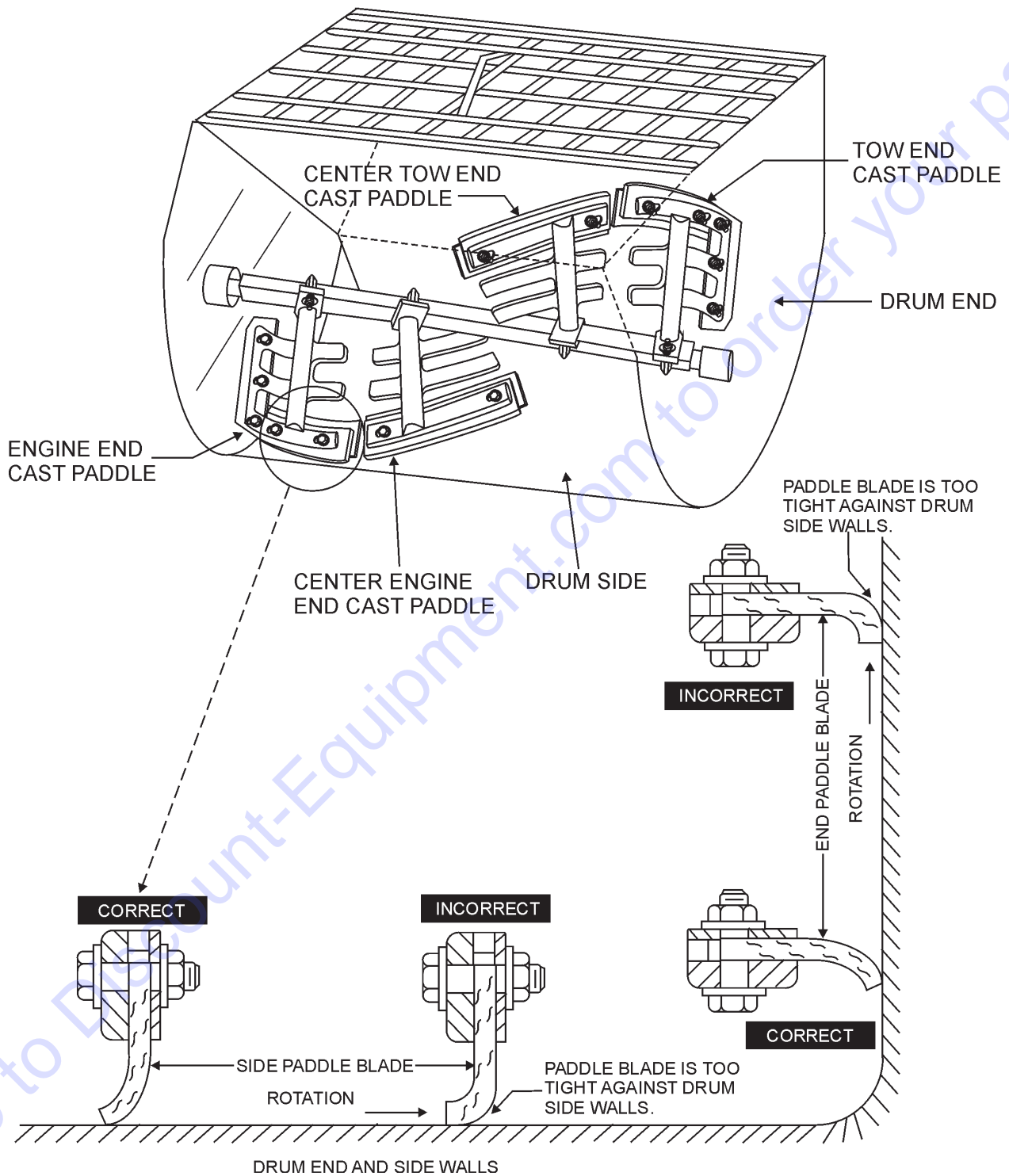


Figure 9. Paddle Blade Adjustment, Steel Drum

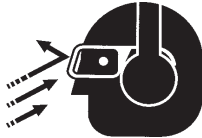
## CAUTION



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



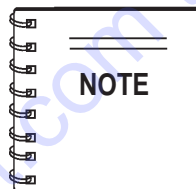
**ALWAYS** wear approved eye and hearing protection before operating the mixer.



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



It is recommended that the mixer'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.



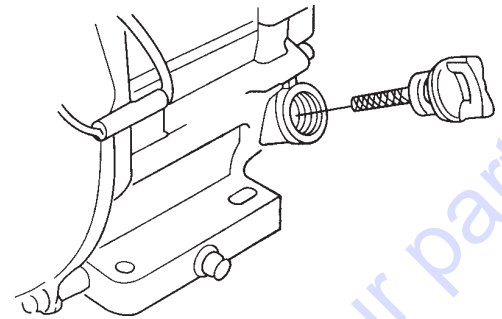
Reference manufacturer engine manual for specific servicing instructions.

## Before Starting

1. Read safety instructions at the beginning of manual.
2. Clean the **mixer**, 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.

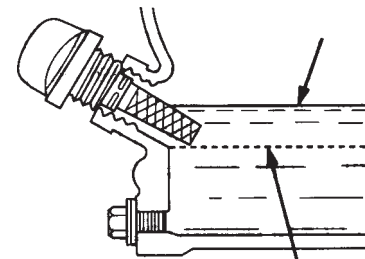
## Engine Oil Check

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 10) and wipe it clean.



**Figure 10. 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 11), fill to the edge of the oil filler hole with the recommended oil type (Table 7). Maximum oil capacity is 400 cc.



**Figure 11. Engine Oil Dipstick (Oil Level)**

**Table 7. 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



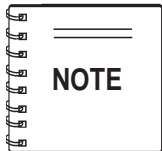
## Explosive Fuel



### Fuel Check

If your mixer has a gasoline engine, determine if the engine fuel is low. If fuel is low, remove the fuel filler cap and fill with **unleaded** gasoline. 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.



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

### V-belt Check

A worn or damaged V-belt can adversely affect the performance of the mixer. 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 on page 22. Replace all defective or damaged blades immediately.

### Controls

#### Start/Stop Switches

This mixer has been equipped with a start/stop switch for both the gasoline and electric motor mixers. These switches should be tested every time the engine or motor is started.

### Lubricants

#### Engine Oil

1. Remove the engine oil dipstick from its holder.
2. Determine if the engine oil is low, add correct amount of engine oil to bring oil level to a normal safe level.

#### Grease Fittings (Zerk)

1. 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.

## MS30H/MS30E MIXER — INITIAL START-UP

This section is intended to assist the operator with the initial start-up of the MS-30H (gasoline) or MS30E (electric) mixer. 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.

### CAUTION:



Failure to understand the operation of the MS30H/MS30E mixers could result in severe damage to the mixer or personal injury.

See Figure 4 (Page 17) for the location of any control referenced in this manual.

### Starting (gasoline only)

The following steps outline the procedure for starting the engine. Depending on the type of engine employed in the mixer the steps may vary slightly. If your mixer has an electric motor disregard this section.

1. Move the fuel shut-off lever (Figure 12) to the **ON** position.

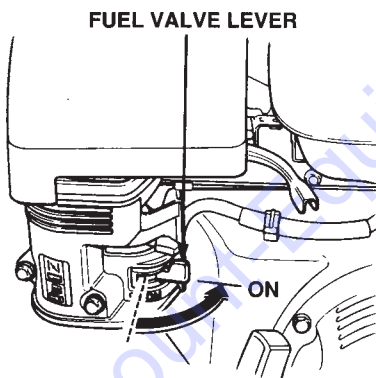


Figure 12. Fuel Shut-OFF Lever

2. To start a cold engine, move the choke lever (Figure 13) to the **CLOSED** position.

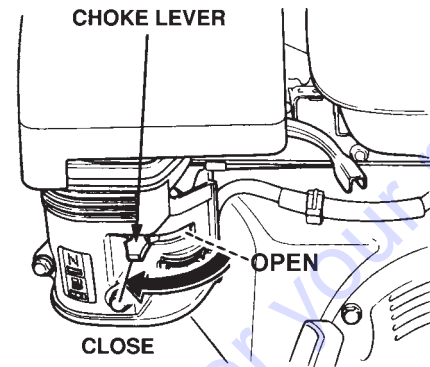


Figure 13. Choke Lever

3. Move the throttle lever (Figure 14) away from the slow position, about 1/3 of the way toward the fast position.

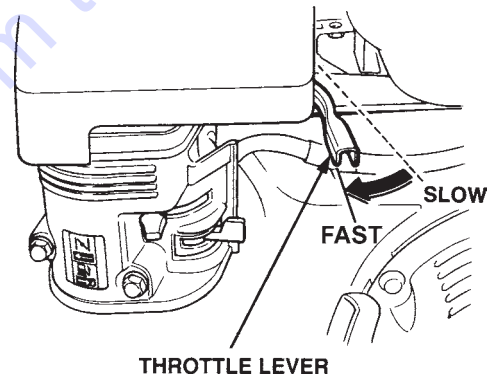


Figure 14. Throttle Lever

# MS30H/MS30E MIXER — INITIAL START-UP

- Turn the engine switch (Figure 15) to the ON position.

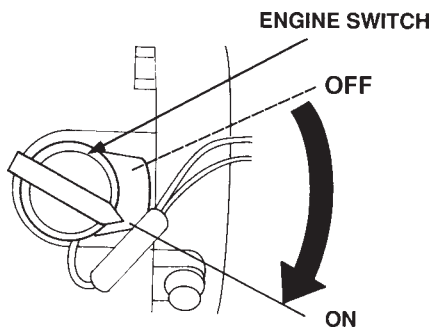


Figure 15. Engine ON/OFF Switch

- Located on the engine cover is the main **start/stop** switch (Figure 16). Pull this switch outward to start the engine.

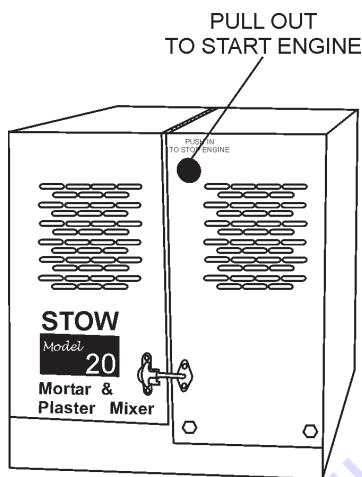


Figure 16. Start/Stop Switch (gasoline)

- Place the belt slip lever (Figure 17) in the **START/STOP** position.

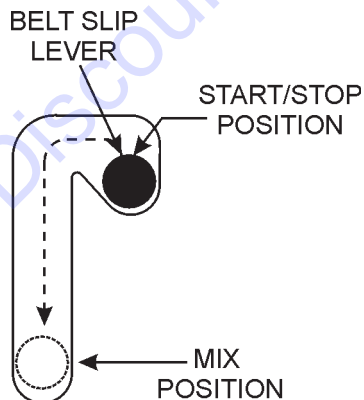
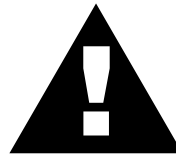


Figure 18. Belt Slip Lever (Start/Stop Position)

## CAUTION:



from tipping.

Make certain the **drum lock pin** (Figures 18 and 19) 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

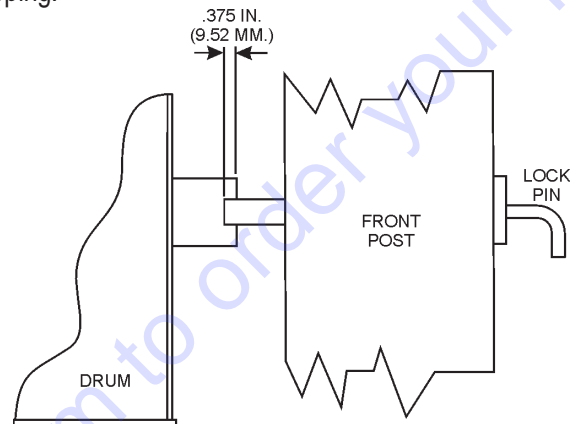


Figure 19. Drum Lock Pin (Side-View)

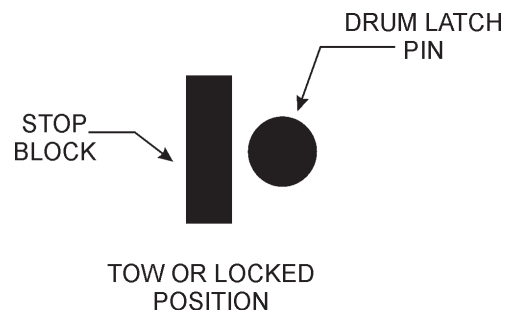


Figure 19. Drum Lock Pin (Right Position)

- Pull the **starter grip** (Figure 20) lightly until you feel resistance, then pull briskly. Return the starter grip gently.

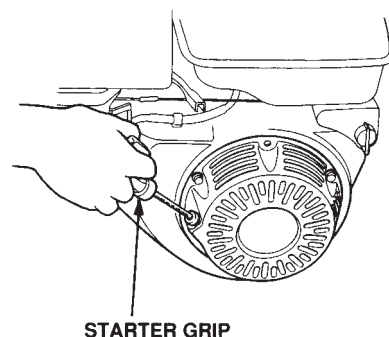


Figure 20. Starter Grip

- Place the belt slip lever (Figure 21) in the *mix* position. This will tilt the engine placing tension on the V-belts enabling the shaft to rotate.

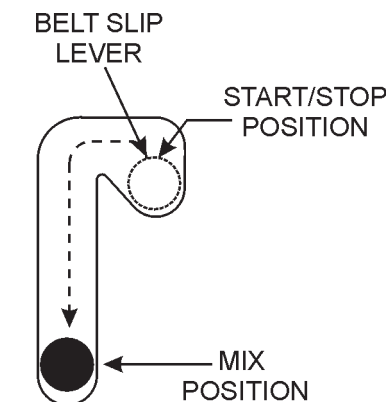


Figure 21. Belt Slip Lever (Mix Position)

### Starting (electric only)

- Using an adequate size extension cord (see Table 4), connect one end of the extension cord to the plug on the electric motor, connect the other end to the power source. Make sure the motor is configured for the proper operating voltage.
- Set the electric motor's **ON/OFF** switch (Figure 3) to the **ON** position.

### Mixing Dumping

- The paddle shaft inside the drum should be rotating at this time.
- Lift the mixing bag compound onto the steel grate over the bag cutter and let the contents fall into the drum.
- Add water, and mix compound to desired consistency.
- 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 22.

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 only rotate in a clockwise direction. When the dump handle is released, the drum will return to an upright position.

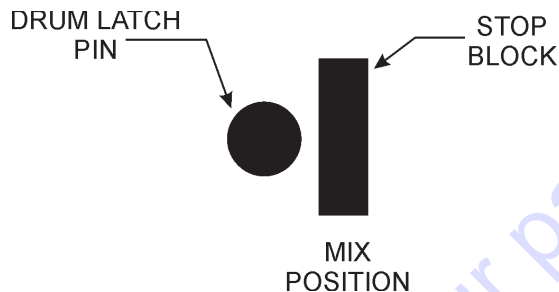
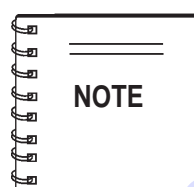


Figure 22. Drum Lock Pin (Left Position)



Be sure to stand clear of the **dump handle** when the mixer is operational. Any binding of material between the mixer blades and the drum will cause the drum handle to move to the discharge position, thus causing bodily harm.

### Starting (electric only)

- Using an adequate size extension cord (see Table 4), connect one end of the extension cord to the plug on the electric motor, connect the other end to the power source. Make sure the motor is configured for the proper operating source.
- Set the electric motor's **ON/OFF** switch (Figure 3) to the **ON** position.

### STOPPING THE MIXER (gasoline)

- Place the **belt slip lever** in the **start/stop** position.
- Push the main **start/stop** switch (Figure 8) inward to stop the engine.
- Turn the fuel shut-off valve to the **OFF** position.
- Disconnect the spark plug.
- Clean drum of all debris and foreign matter.

### STOPPING THE MIXER (electric)

- Place the electric motor's **start/stop** switch (Figure 3) in the **OFF** position.
- Disconnect the electric motor's extension cord from its power source.
- Clean drum of all debris and foreign matter



## WHEEL BEARINGS

After every 3 months of operation, remove the hub dust cap and inspect the wheel bearings. 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.") Fill the wheel hub 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.

## DRUM HEAD SEAL CARE

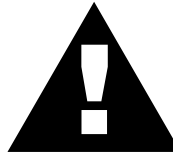
Grease every 40 hours of operation using any grade **#1 lithium base grease**. Apply grease until visible inside of mixing tub (over grease). This will purge the seal system of contamination.

## PADDLE SHAFT BEARINGS

The paddle shafts in the MQ STOW mixers rotate in sealed ball bearings, which require no additional lubrication as they are packed and sealed at the factory.

There is, on each end of the mixing drum, an **zerk grease fitting**. Oil these fittings two or three times each week as they lubricate the dumping mechanism of the mixing drum.

## CAUTION:



**Failure** to lubricate the zerk grease fittings two or three times a week will cause the dumping mechanism to stiffen, making the mixer hard to dump.

## BEARING BRACKET

Grease the bearing bracket every month.

## GEAR ALIGNMENT

The countershaft and drive pinion are mounted on a slotted base. To align gears, loosen the pillow block mounting bolts and move them until the necessary alignment has been made.

## GEAR LUBRICATION

The surface of the pinion and bull gear should be very lightly greased every **250 hours**. **IMPORTANT! avoid over-greasing. Excess grease will accumulate contaminates and cause premature wear.**

## CLEANING

**ALWAYS** disconnect the spark plug wire before cleaning the inside of the drum.

**NEVER** pour or spray water over the gasoline engine or electric motor.

For consistent performance, long life and high quality mixing, **thoroughly clean** the mixer **inside** and **out** at the end of each day's operation. To prevent lumps of dried mortar from forming and contamination of future batches, do not allow a buildup of materials to form on the blades or anywhere inside the drum.

## MS30H/MS30E MIXER — TROUBLESHOOTING (ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the diagnosis based on the **Engine, Mixer** and **Electric Motor** Troubleshooting (Tables 8, 9 and 10) information shown below and on the proceeding pages.

If the problem cannot be remedied, please leave the unit just as it is and consult or company's service department.

TABLE 8. ENGINE TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Poor starting	Inspect carburetor to see if fuel is reaching it?	Check fuel line
	No Fuel?	Add Fuel
	Water in fuel tank?	Flush or replace fuel tank.
	Fuel filter clogged?	Replace fuel filter
	Stuck carburetor?	Check float mechanism.
	Spark plug is red?	Spark plug is fouled. Check transistor ignition unit.
	Spark plug is blue-white?	Insufficient compression, injected air leaking. Carburetor jets are clogged (overflow).
	No spark present at tip of spark plug?	Transistor ignition unit broken, high voltage cord cracked or broken. Start/Stop switch broken. Replace spark plug if fouled.
	No oil?	Add oil as required.
	Oil pressure alarm lamp blinks upon starting?	Check Automatic shutdown circuit "oil sensor".
Insufficient power output "no compression"	Engine will not turn over?	Replace cylinder and piston and if necessary axel joint.
	Cylinder head connecting bolts loose?	Tighten cylinder head connecting bolts.
	Cylinder head gasket damaged?	Replace cylinder head gasket.
	Malfunction of valve seat?	Re-seat valves.
	Spark plug is loose?	Replace spark plug.
	Worn piston rings?	Replace piston rings.
Insufficient power output "compression"	Malfunction in air-cleaner system, air filter clogged?	Clean or replace air filter.
	Air leaking in from interface between carburetor and cylinder head?	Tighten bolts between carburetor and cylinder head. Replace cylinder head gasket.
	Malfunction in fuel system?	Clean or replace fuel filter. Clean or replace carburetor. Check carburetor float.

# MS30H/MS30E MIXER — TROUBLESHOOTING (ENGINE)

**TABLE 8. ENGINE TROUBLESHOOTING (CONTINUED)**

<b>SYMPTOM</b>	<b>POSSIBLE PROBLEM</b>	<b>SOLUTION</b>
Insufficient power output "compression" and overheats	Malfunction in cooling fan?	Check or replace cooling fan.
	Air in-take filter clogged?	Clean or replace air in-take filter.
Burns to much fuel	Over accumulation of exhaust products?	Clean and check valves. Check muffler, replace if necessary.
	Wrong spark plug?	Replace spark plug with manufactures suggested type spark plug.
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 has not been set to the correct position?	Adjust choke valve to the correct position.
	Carburetor defective, seal on carburetor broken?	Replace carburetor or seal.
	Poor carburetor adjustment "engine runs too rich?"	Adjust carburetor.

# MS30H/MS30E MIXER — TROUBLESHOOTING (MIXER/MOTOR)

**TABLE 9. MIXER TROUBLESHOOTING**

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
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.

**TABLE 10. ELECTRIC MOTOR TROUBLESHOOTING**

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Blades will not rotate.	No voltage to motor?	Check power source.
	Defective extension cord?	Replace extension cord.
	Defective motor ON/OFF switch?	Replace switch.
	Defective motor windings?	Repair windings or replace windings.

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\* Part Number:

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Description:	<input type="text"/>
Part Number:	<input type="text"/>
Quantity:	<input type="text"/>
Notes:	<input type="text"/>

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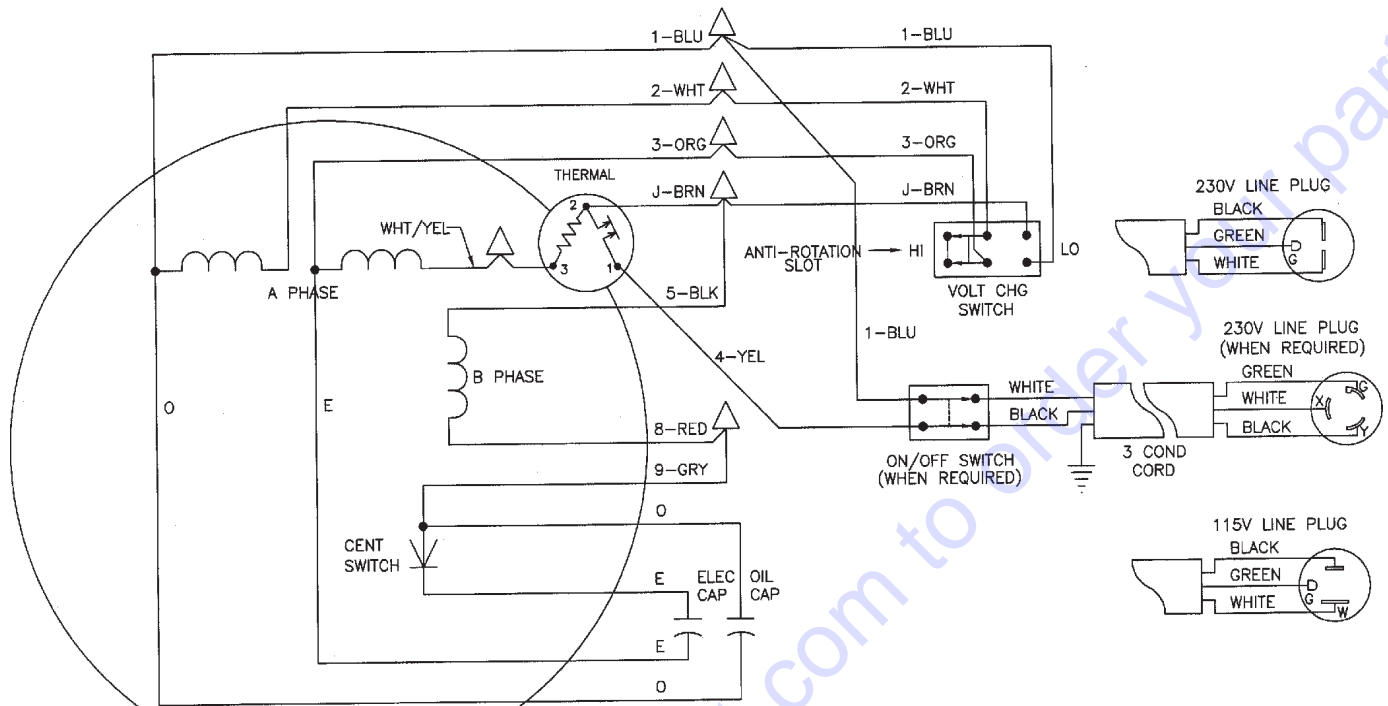
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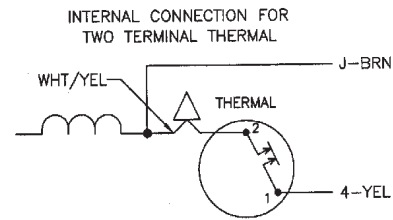
We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto, Power Blanket, Nifty Lift, Atlas Copco, Chicago Pneumatic, Allmand, Miller Curber, Skyjack, Lull, Skytrak, Tsurumi, Husquvarna Target, Stow, Wacker, Sakai, Mi-T-M, Sullair, Basic, Dynapac, MBW, Weber, Bartell, Bennar Newman, Haulotte, Ditch Runner, Menegotti, Morrison, Contec, Buddy, Crown, Edco, Wyco, Bomag, Laymor, EZ Trench, Bil-Jax, F.S. Curtis, Gehl Pavers, Heli, Honda, ICS/PowerGrit, IHI, Partner, Imer, Clipper, MMD, Koshin, Rice, CH&E, General Equipment, Amida, Coleman, NAC, Gradall, Square Shooter, Kent, Stanley, Tamco, Toku, Hatz, Kohler, Robin, Wisconsin, Northrock, Oztec, Toker TK, Rol-Air, APT, Wylie, Ingersoll Rand / Doosan, Innovatech, Con X, Ammann, Mecalac, Makinex, Smith Surface Prep, Small Line, Wanco, Yanmar

# MS30H/MS30E MIXER — WIRING DIAGRAM (ELECTRIC MOTOR)



**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.



**Figure 22. Electric Motor Wiring Diagram**





# EXPLANATION OF CODE IN REMARKS COLUMN

How to read the marks and remarks used in this parts book.

## Section 1: Items Found In the “Remarks” Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

## Section 2: Items Found In the “Remarks” Column

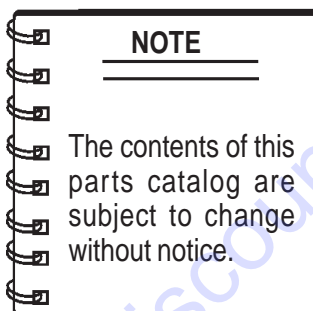
Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

## Section 3: Items Found In the “Items Number” Column

All parts with same symbol in the number column, \*, #, +, %, or ■, belong to the same assembly or kit.

Note: If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.



## MS30H/MS30E MIXER — SUGGESTED SPARE PARTS

### **MS30H/MS30E MIXER 1 TO 3 UNITS WITH HONDA GX240K1HA2 ENGINE**

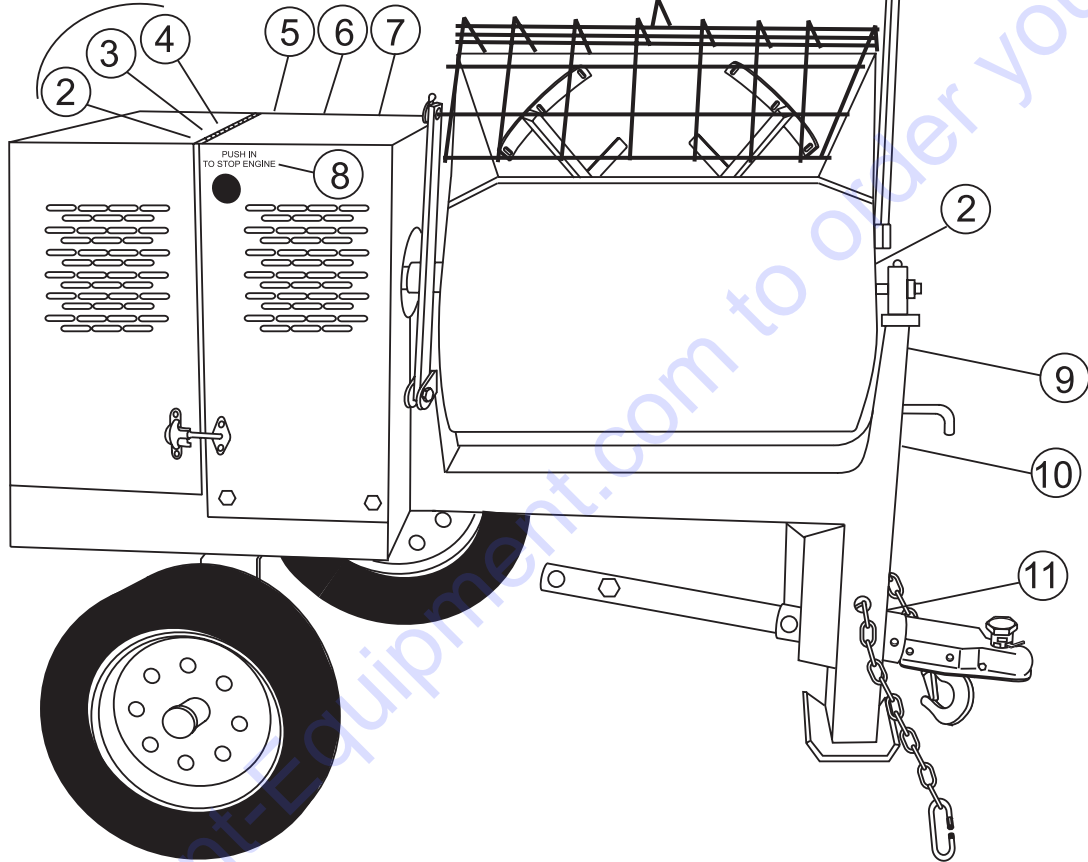
Qty.	P/N	Description
2	491010	RUBBER LATCH ASSY.
1	503640	V-BELT, HONDA 8.0 HP
1	491112	V-BELT, ELECTRIC MOTOR
1	25647-503	WIPER KIT
2	3065	SEAL, AXLE
1	29173-001	STOP SWITCH
3	9807956846	SPARK PLUG HONDA 8.0 HP
3	17210ZE2505	ELEMENT, AIR HONDA 8.0 HP
1	28462ZE2W11	ROPE, RECOIL STARTER

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# MS30H/MS30E MIXER — NAMEPLATE AND DECALS

NAMEPLATE AND DECALS.

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## MS30H/MS30E MIXER — NAMEPLATE AND DECALS

NAMEPLATE AND DECALS.

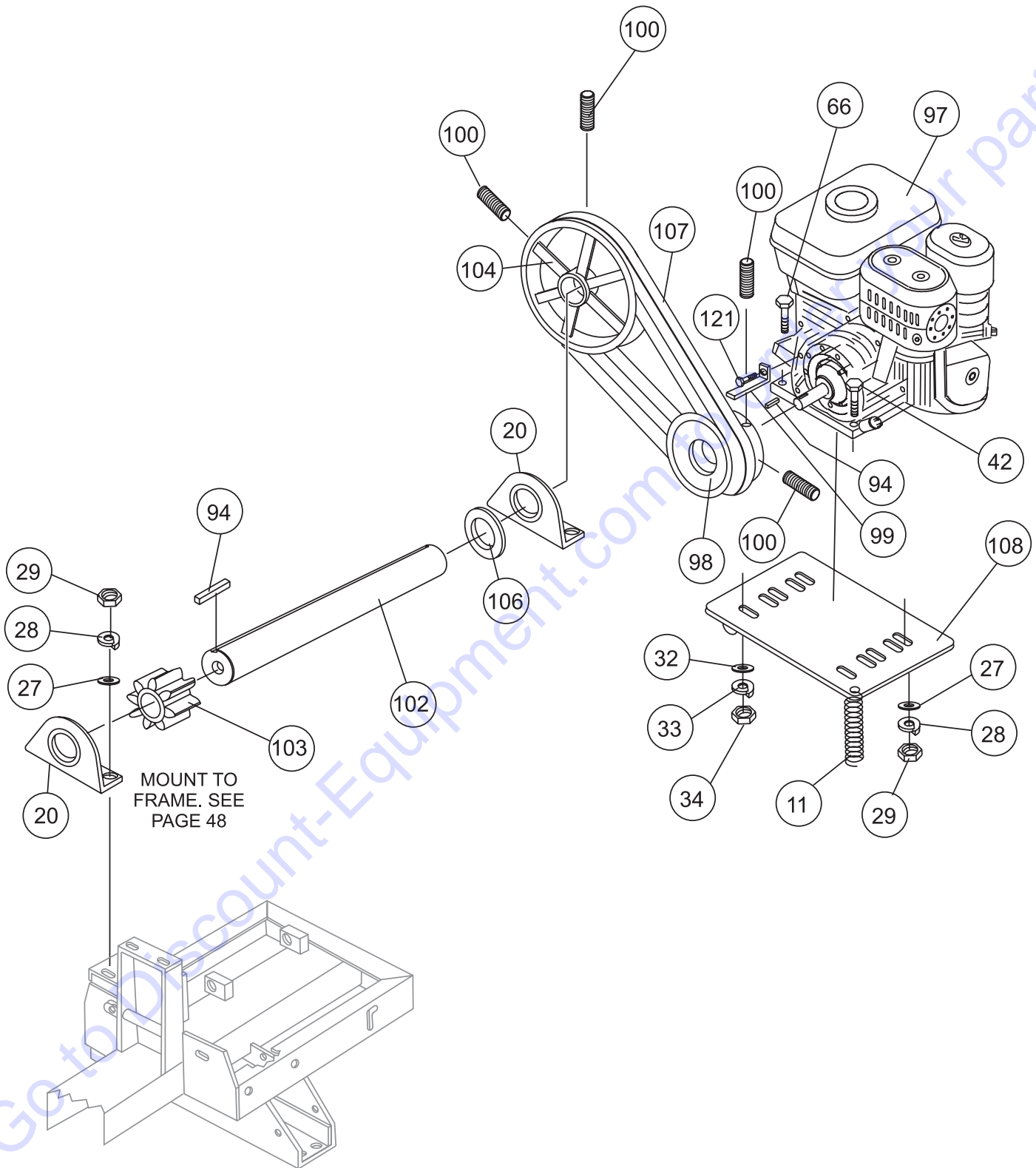
<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2*	TBD	DECAL: STOW (MULTIQUIP)	2	
3*	21780-001	DECAL: WARNING	1	
4*	DCL160	DECAL: PROP. 65	1	
5*	TBD	DECAL: KEEP COVER CLOSED	1	
6*	TBD	DECAL: CAUTION READ	1	
7*	21781-001	DECAL: BELT SLIP LEVER	1	
8*	25259-001	DECAL: WARNING GRATE	1	
9*	TBD	DECAL: PUSH IN STOP	1	
10		DECAL: NAMEPLATE .....	1	..... CONTACT DISCOUNT-EQUIPMENT
11*	25474-001	DECAL: CAUTION, DRUM LOCK	1	
12*	21513-001	DECAL: WARNING TOW POLE	1	
13	DCLMS20	KIT, DECAL .....	1	..... INCLUDES ITEMS W/*

SEE DECAL ILLUSTRATIONS ON PAGE 11.

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# MS30H/MS30E MIXER — HONDA ENGINE ASSY.

HONDA ENGINE ASSY.





# MS30H/MS30E MIXER — HONDA ENGINE ASSY.

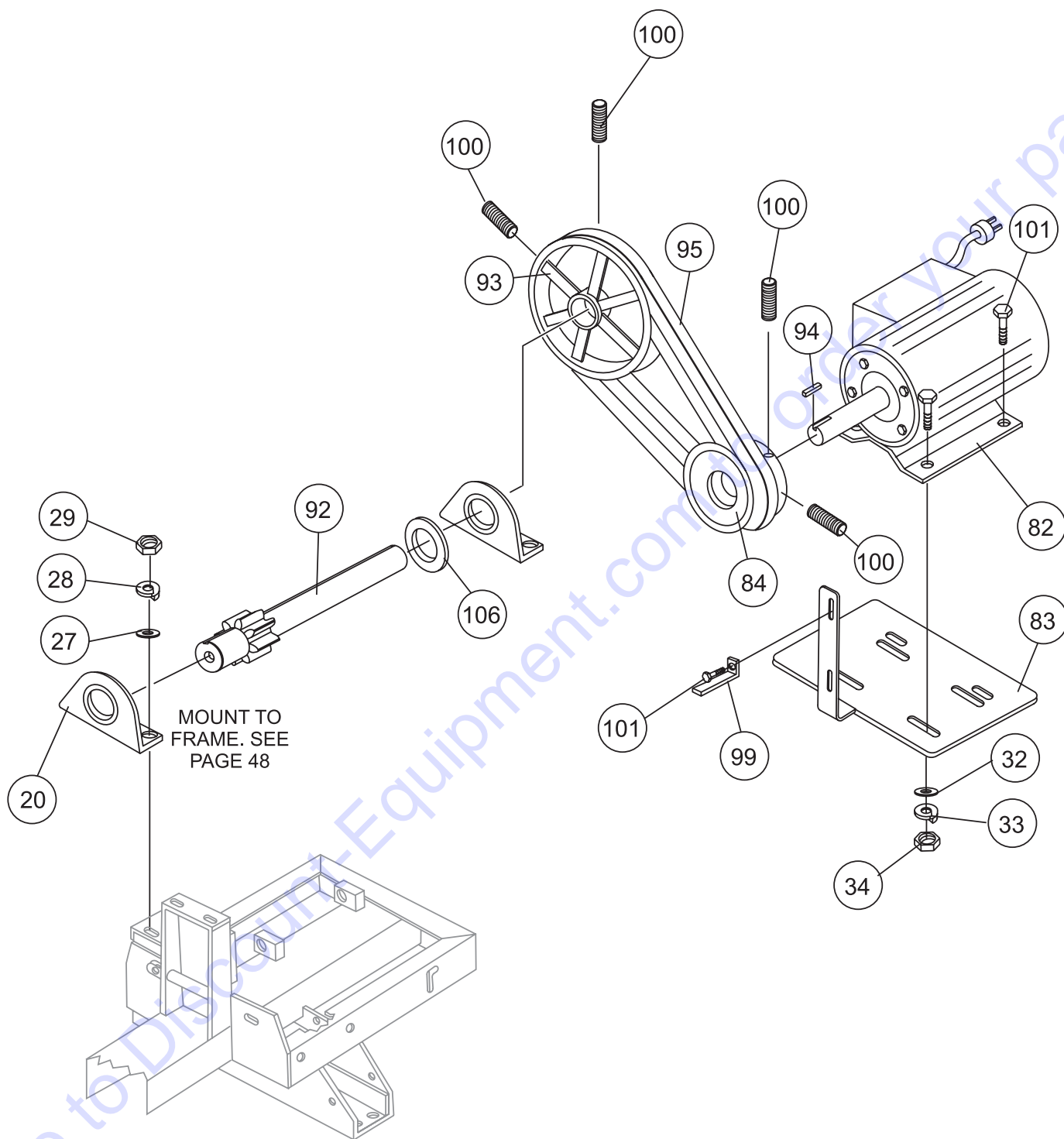
HONDA ENGINE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
11	20559-001	POWER MOUNT SPRING	1	
20	20178-001	PILLOW BLOCK BEARING	2	
27	07030-006	FLAT WASHER 3/8	44	
28	07029-006	LOCK WASHER 3/8	50	
29	07033-006	HEX NUT 3/8-16	50	
32	07030-005	FLAT WASHER 5/16	6	
33	07029-005	LOCK WASHER 5/16	6	
34	07033-005	HEX NUT 5/16-18	6	
42	06501-014	CAP SCREW 3/8-16 x 1-3/4	4	
66	06500-016	CAP SCREW 5/16 - 18 x 2 .....	2	B & S 7.0 HP
94	10057-032	SQUARE KEY 1/4 x 1-1/2	3	
97	GX240K1HA2	ENGINE- 8 H.P. HONDA .....	1	REPLACES 21922-401
99	24975-001	BELT RETAINER BAR	1	
98	505205	DRIVE PULLEY	1	
100	12969-008	SOCKET SET SCREW 5/16-18	4	
102	20019-001	PINION SHAFT	1	
103	20022-001	PINION GEAR	1	
104	492077	DRIVEN PULLEY	1	
106	07030-016	FLAT WASHER	AR	
107	07055-041	V-BELT .....	2	HONDA, B & S
108	20771-354	ENGINE MOUNT	1	
121	06500-010	CAP SCREW 5/16- 18 x 1-1/4	1	

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# MS30H/MS30E MIXER — ELECTRIC MOTOR ASSY. (ELECTRIC)

ELECTRIC MOTOR ASSY.



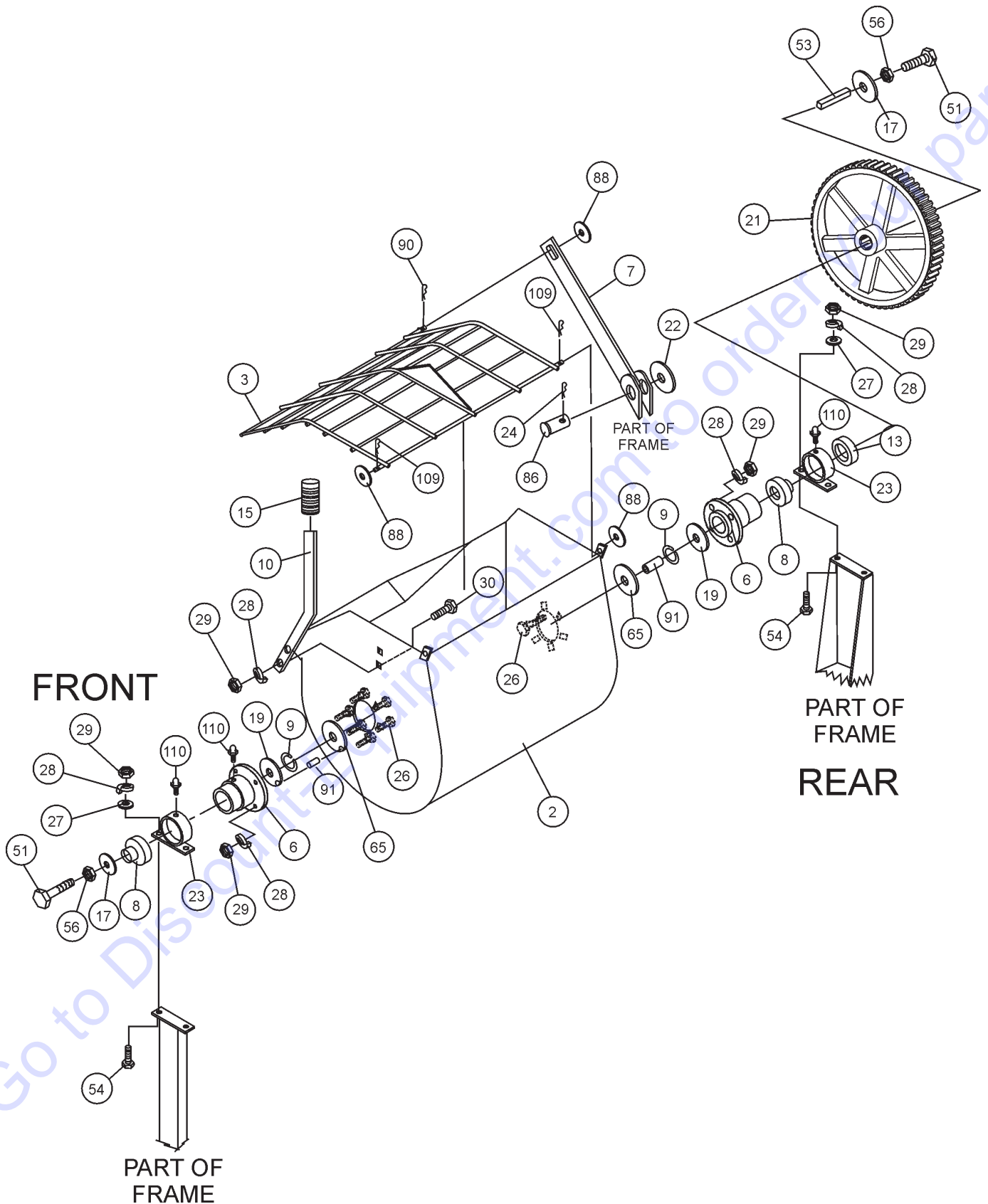
## MS30H/MS30E MIXER — ELECTRIC MOTOR ASSY. (ELECTRIC)

### ELECTRIC MOTOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
20	20178-001	PILLOW BLOCK	2	
27	07030-006	FLAT WASHER 3/8	40	
28	07029-006	LOCK WASHER 3/8	50	
29	07033-006	HEX NUT 3/8-16	50	
32	07030-005	FLAT WASHER 5/16	6	
33	07029-005	LOCK WASHER 5/16	6	
34	07033-005	HEX NUT 5/16-18	6	
82	493206	MOTOR & CONTROL ASSY.	1	
83	20250-352	MOTOR MOUNT UNIT	1	
84	502213	DRIVE PULLEY	1	
92	20216-001	PINION & SHAFT	1	
93	530088	DRIVEN PULLEY	1	
94	10057-032	SQUARE KEY 1/4 x 1-1/2	2	
95	491112	V-BELT	2	
99	24975-001	BELT RETAINER BAR	1	
100	12969-008	SOCKET SET SCREW 5/16-18	4	
101	06500-008	CAP SCREW 5/16-18 x 1	5	

# MS30H/MS30E MIXER — STEEL TUB ASSY.

STEEL TUB ASSY.



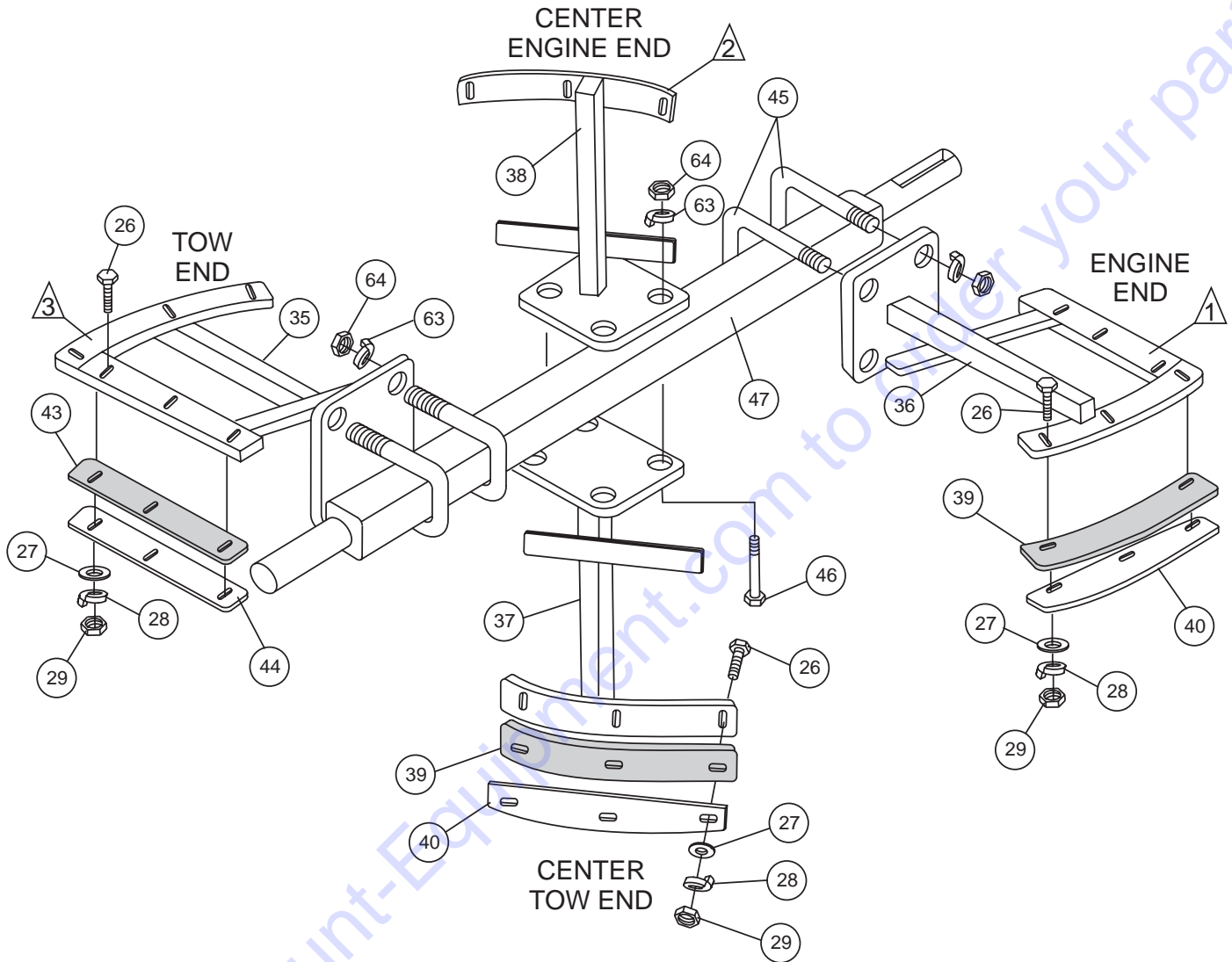
## MS30H/MS30E MIXER — STEEL TUB ASSY

### STEEL TUB ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	29283-351	DRUM	1	
3	29212-351	GRATE	1	
6	20657-001	TRUNNION HUB	2	
7	27127-003	LIFT BAR	2	
8	20561-001	SEALED BEARING	2	
9	20655-001	RETAINING RING	2	
10	25492-001	DRUM HANDLE	1	
13	20211-001	MAIN GEAR SPACER	1	
15	21380-001	DRUM HANDLE GRIP	1	
17	18937-003	SPECIAL WASHER	2	
19	20654-001	SHAFT SEAL	2	
21	20472-001	MAIN GEAR	1	
22	08602-006	FLAT WASHER 3/8	12	
23	20576-501	DRUM BEARING ASSY.	2	
24	13698-062	HITCH PIN	1	
26	17985-010	CARRIAGE BOLT 3/8-16 x 1-1/4	22	
27	07030-006	FLAT WASHER 3/8	40	
28	07029-006	LOCK WASHER 3/8	50	
29	07033-006	HEX NUT 3/8-16	50	
51	06505-012	CAP SCREW 5/8 -11 x 1-1/2	2	
53	10057-034	SQUARE KEY 3/8 x 2	1	
54	17985-012	CARRIAGE BOLT 3/8 - 16 x 1-1/2	4	
56	07033-010	HEX NUT 5/8-11	1	
65	20104-001	SHAFT SEAL	2	
86	08326-007	CLEVIS PIN	1	
88	07030-008	FLAT WASHER 1/2	3	
90	13698-010	HITCH PIN	1	
91	07594-012	ROLL PIN 3/16 x 3/4	2	
109	07028-055	COTTER PIN 5/32 x 1	2	
110	07745-001	GREASE FITTING	3	

# MS30H/MS30E MIXER — PADDLE SHAFT ASSY.

PADDLE SHAFT ASSY.



NOTES:

- ① WHEN ORDERING SCRAPER AND WIPER (SHORT) SEE ITEMS 43 AND 44 **TOW END.**
- ② WHEN ORDERING SCRAPER AND WIPER (LONG) SEE ITEMS 39 AND 40 **CENTER TOW END.**
- ③ WHEN ORDERING SCRAPER AND WIPER (LONG) SEE ITEMS 39 AND 40 **ENGINE END.**



## MS30H/MS30E MIXER — PADDLE SHAFT ASSY.

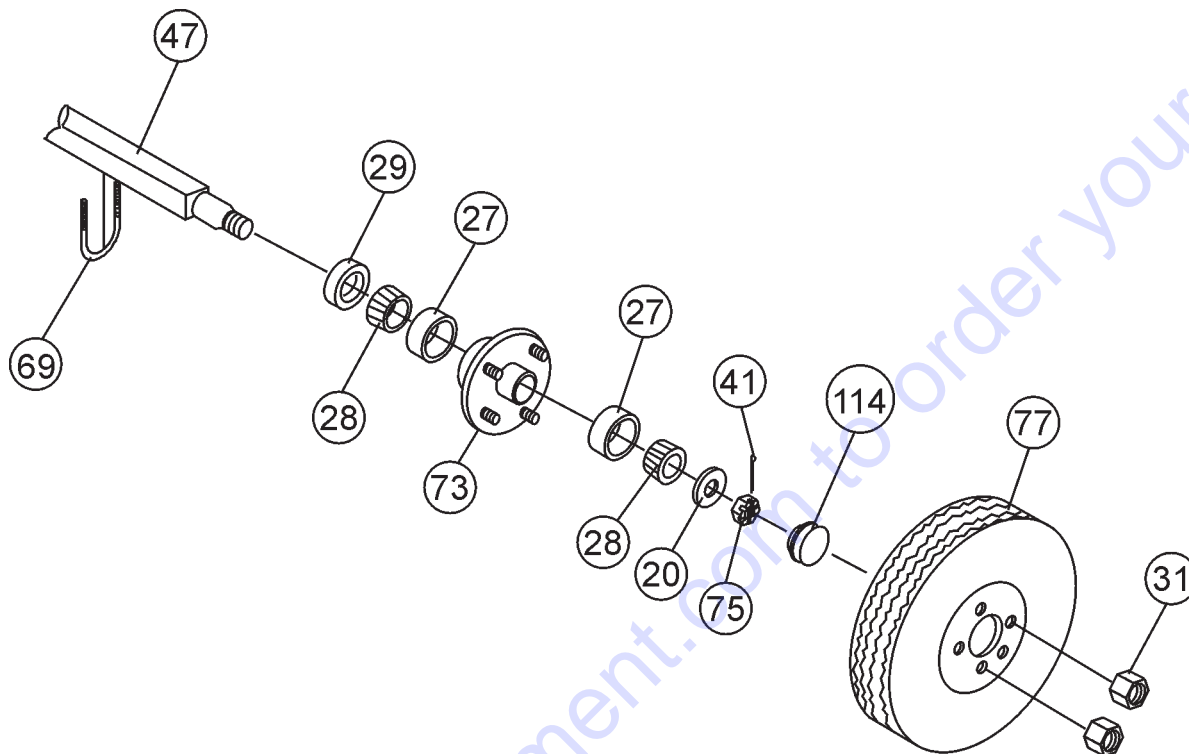
PADDLE SHAFT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
26*	17985-010	CARRIAGE BOLT 3/8-16 x 1-1/4	22	
27*	07030-006	FLAT WASHER 3/8	44	
28*	07029-006	LOCK WASHER 3/8	50	
29*	07033-006	HEX NUT 3/8-16	50	
35*	29263-505	PADDLE ASSY. TOW POLE END	1	
36*	29263-508	PADDLE ASSY. ENGINE END	1	
37*	29263-506	PADDLE ASSY. CNT. TOW END	1	
38*	29263-507	PADDLE ASSY. CTN. ENG. END	1	
39*#	20726-001	WIPER LONG	4	
40*	20725-001	SCRAPER LONG	4	
43*#	20048-001	WIPER SHORT	2	
44*	20111-001	SCRAPER SHORT	2	
45	29059-002	U-BOLT PADDLE MNT.	4	
46	06513-026	CAP SCREW 1/2 -20 x 3-1/4	4	
47	29063-351	PADDLE SHAFT SQ	1	
63	07029-108	LOCK WASHER 1/2 GRADE 8	16	
64	07037-108	HEX NUT 1/2-20 GRADE 5	6	
	29285-504	PADDLE KIT .....	1	INCLUDES ITEMS W/*
	25647-503	WIPER KIT .....	1	INCLUDES ITEMS W/#

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# MS30H/MS30E MIXER — AXLE ASSY.

AXLE ASSY.



# MS30H/MS30E MIXER — AXLE ASSY.

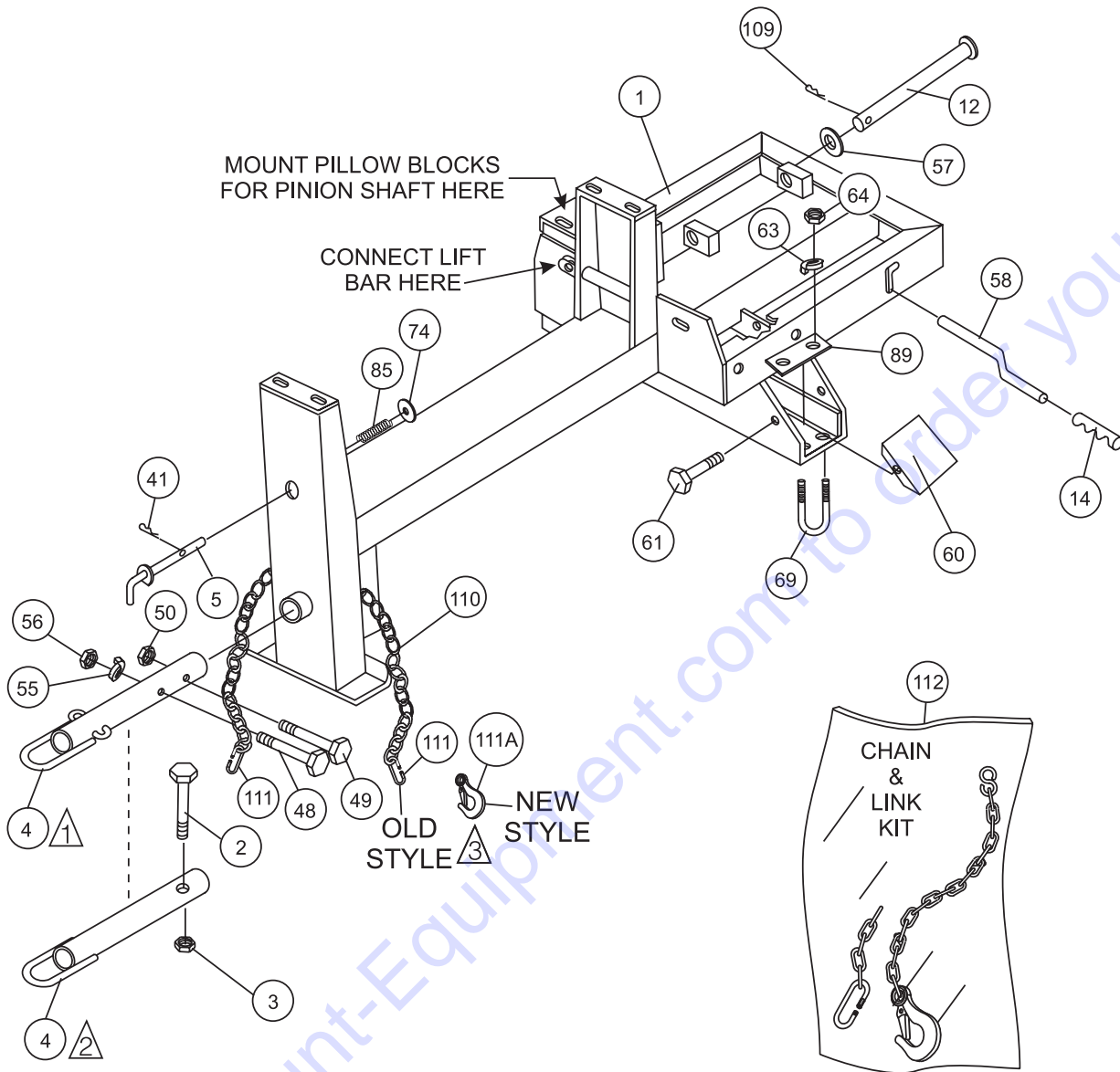
AXLE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
20	507444	AXLE WASHER	2	
27*	EM903012	BEARING CUP	2	
28	EM903113	BEARING CONE	2	
29	3065	SEAL	2	
31	8115	WHEEL NUT	10	
41	0183	COTTER PIN 5/32 x 1-1/2	3	
47	530032	AXLE	1	
69	500617	U-BOLT AXLE MNT.	2	
73	EM941306	HUB ASSY. ....	2	INCLUDES ITEM W/*
75	502246	SLOTTED HEX NUT 1-20	2	
77	3005	WHEEL & TIRE ASSY. -12"	2	
114	3469	DUST COVER	2	

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# MS30H/MS30E MIXER — FRAME ASSY.

FRAME ASSY.



**NOTES:**

- ① BALL HITCH TOW POLE WITH 1-1/2" ID USE P/N 27071-351 UP TO SERIAL NUMBER "SEC"
- ① PINTLE TOW POLE WITH 1-1/2" ID USE P/N 26149-351 UP TO SERIAL NUMBER "SEC"
- ② BALL HITCH TOW POLE WITH 2" ID USE P/N HBC-1 STARTING WITH SERIAL NUMBER "SED"
- ② PINTLE TOW POLE WITH 2" ID USE P/N HLC-1 STARTING WITH SERIAL NUMBER "SED"
- ③ QUANTITY OF ITEM 111, CONNECTOR LINK, CHANGED FROM 2 TO 1 IN JANUARY 2006. ITEM 111A, CLEVIS SAFETY HOOK, REPLACES DISCONTINUED CONNECTOR LINK.

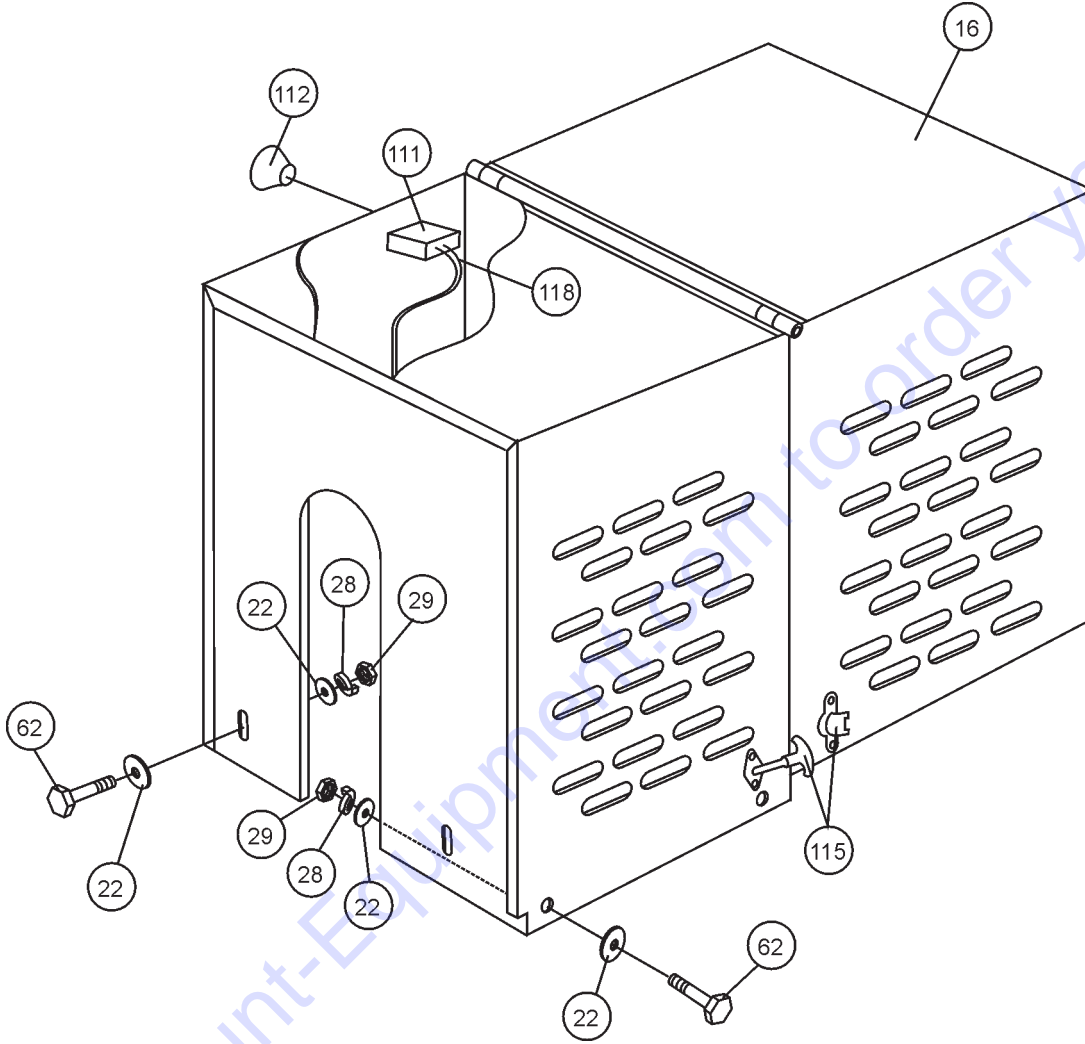
# MS30H/MS30E MIXER — FRAME ASSY.

FRAME ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	29016-351	MAIN FRAME UNIT	1	
2	3215	BOLT 1/2 x 13 x 3-1/2	1	
3	10176	NUT, NYLOCK 1/2-13	1	
4	27071-351	BALL HITCH TOW POLE 1-1/2" ID .....	1	UP TO S/N SEC
4	26149-351	PINTLE TOW POLE 1-1/2" ID .....	1	UP TO S/N SEC
4	HBC-1	BALL HITCH TOW POLE 2" ID .....	1	STARTING AT S/N SEE
4	HLC-1	PINTLE TOW POLE 2" ID .....	1	STARTING AT S/N SEE
		.....		CONTACT UNIT SALES
5	20567-352	LOCK PIN UNIT	1	
12	29277-351	ENGINE MOUNT SHAFT	1	
14	20278-001	CLUTCH HANDLE GRIP	1	
41	07028-057	COTTER PIN 5/32 x 1-1/2	3	
48	06505-028	CAP SCREW 5/8 -11 x 3-1/2	1	
49	06505-024	CAP SCREW 5/8 -11 x 3	1	
50	07418-010	LOCK NUT 5/8 NYLOCK	1	
55	07029-010	LOCK WASHER 5/8	3	
56	07033-010	HEX NUT 5/8-11	1	
57	07030-010	FLAT WASHER 5/8	3	
58	22856-001	BELT SLIP LEVER	1	
60	28986-001	TRANSOM COVER	2	
61	22538-001	THD. ROLLING SCREW 1/4-20 x 1/2	4	
63	TBD	LOCK WASHER 1/2 GRADE 8	16	
64	492589	HEX NUT 1/2-20 GRADE 5	6	
69	500617	U-BOLT AXLE MNT.	2	
74	07030-012	FLAT WASHER 3/4	1	
85	25398-001	SPRING- LOCKING PIN	1	
89	29242-001	PLATE	2	
109	07028-055	COTTER PIN 5/32 x 1	2	
110#		SAFETY CHAIN	1	
111#	01004	CONNECTOR LINK .....	2	BEFORE JANUARY 2006
111#	01004	CONNECTOR LINK .....	1	AFTER JANUARY 2006
111A#	516580	CLEVIS SAFETY HOOK .....	1	AFTER JANUARY 2006
112	13363KIT	CHAIN AND LINK KIT .....	1	INCLUDES ITEMS W/#

# MS30H/MS30E MIXER — ENGINE COVER ASSY.

CABINET ASSY.





## MS30H/MS30E MIXER — ENGINE COVER ASSY.

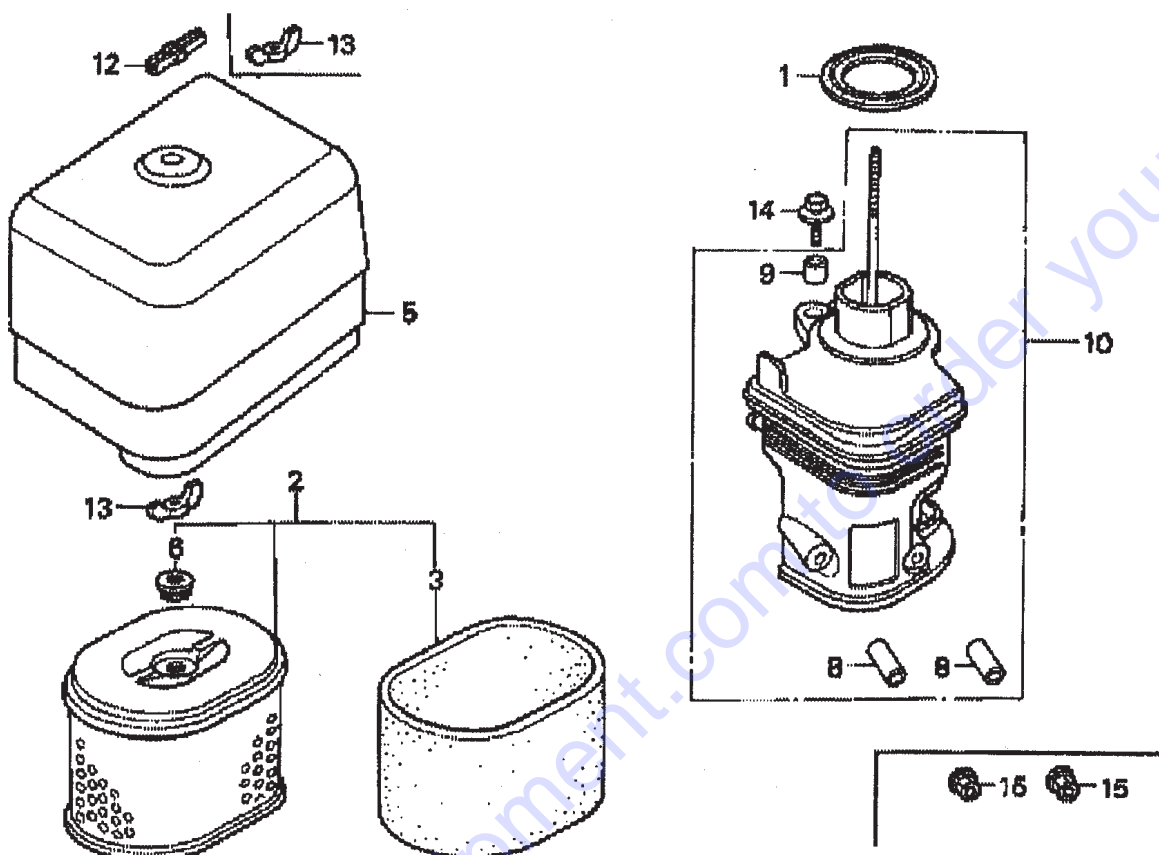
### ENGINE COVER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
16	29280-502	ENGINE HOUSE ASSY.	1	
22	08602-006	FLAT WASHER 3/8	12	
28	07029-006	LOCK WASHER 3/8	50	
29	07033-006	HEX NUT 3/8-16	50	
62	06501-008	CAP SCREW 3/8 - 16 x 1	12	
111	29173-001	STOP SWITCH	1	
112	29174-001	RED KNOB	1	
115	491010	LATCH ASSY.	2	
118	23342-523	WIRE ASSY. GROUND LEAD .....	1	HONDA, B & S

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# HONDA GX240K1HA2 ENGINE — AIR CLEANER ASSY.

AIR CLEANER ASSY.



## HONDA GX240K1HA2 ENGINE — AIR CLEANER ASSY.

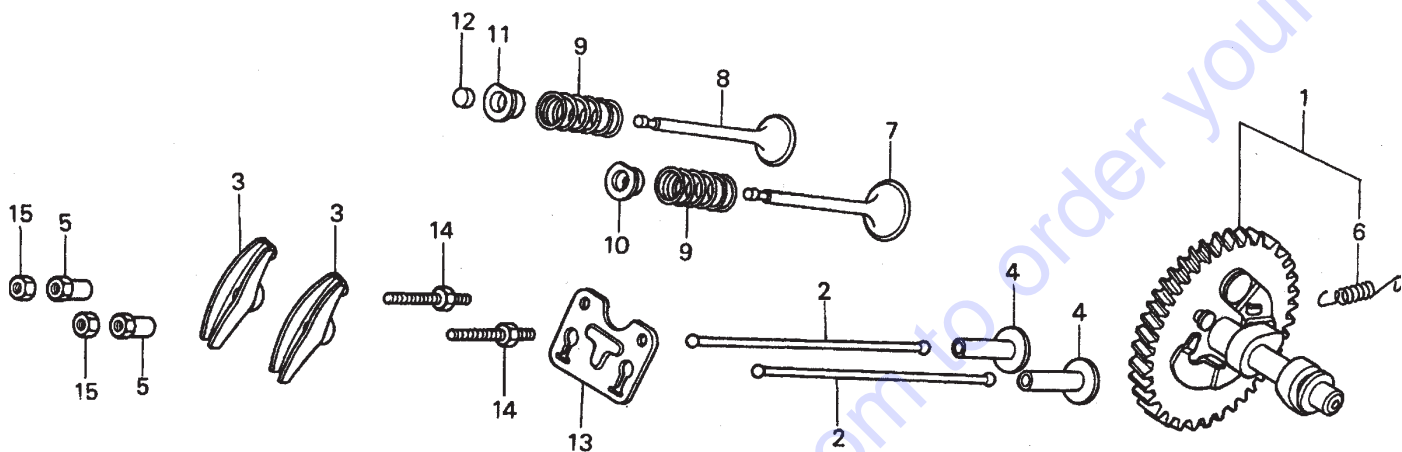
AIR CLEANER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	16271ZE2000	GASKET, ELBOW .....	1 .....	INCLUDES ITEM W/*
2	17210ZE2505	ELEMENT, AIR CLEANER, DUAL	1	
3*	17218ZE2505	FILTER, OUTER	1	
5	17231ZH9820	COVER, AIR CLEANER	1	
6	17232891000	GROMMET, AIR CLEANER	1	
8#	17238ZE2310	COLLAR, AIR CLEANER	2	
9#	17239ZE1000	COLLAR B, AIR CLEANER	1	
10	17410ZE2020	ELBOW COMP., AIR CLEANER .....	1 .....	INCLUDES ITEM W/#
12	90203ZA0800	WINGNUT 6MM	1	
13	90325044000	WINGNUT, TOOL BOX SETTING	2	
14	90009ZE2003	BOLT- WASHER 6 X 22	1	
15	9405006000	NUT, FLANGE 6MM	2	

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# HONDA GX240K1HA2 ENGINE — CAMSHAFT ASSY.

CAMSHAFT ASSY.



# HONDA GX240K1HA2 ENGINE — CAMSHAFT ASSY.

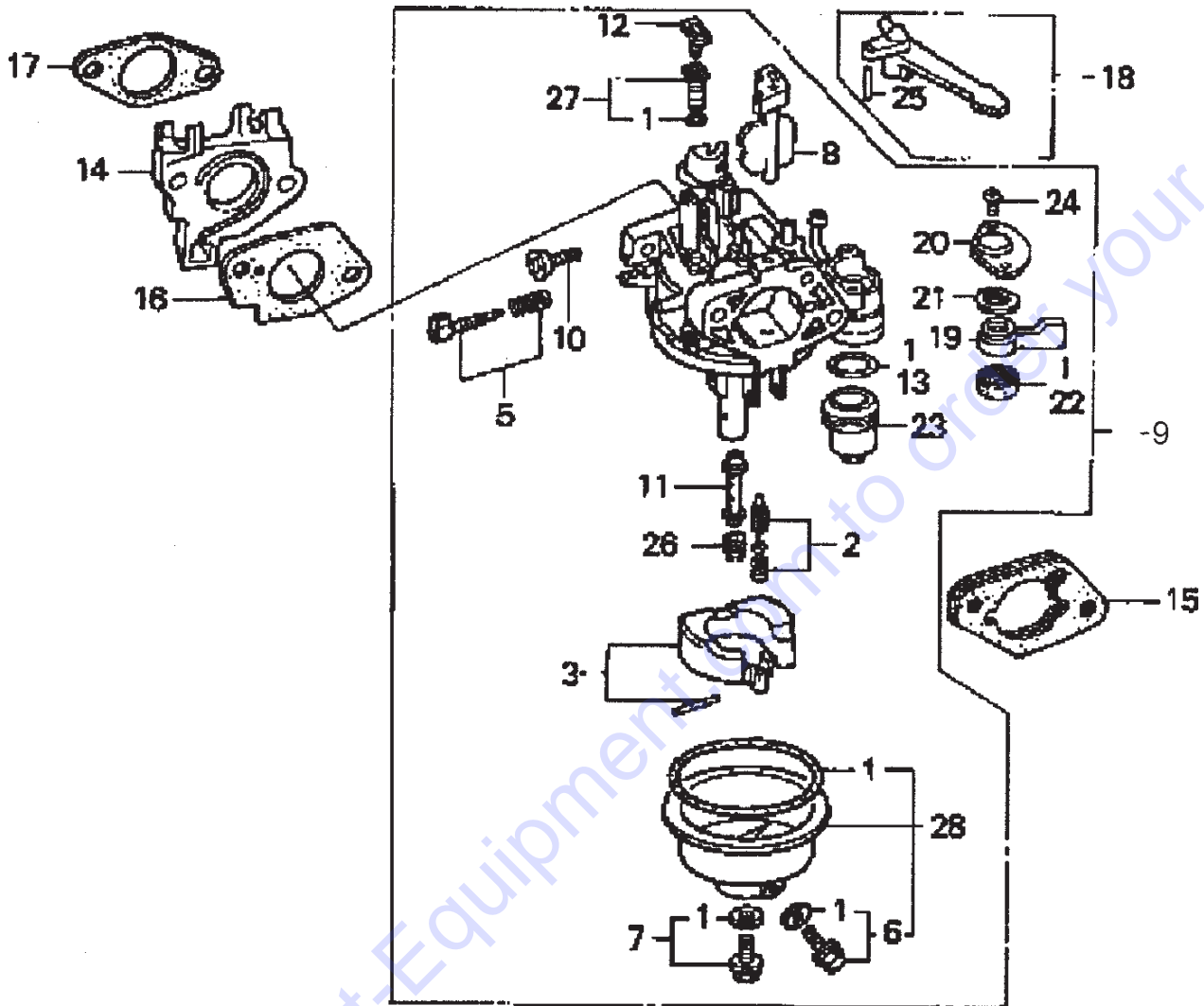
## CAMSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	14100ZE2W01	CAMSHAFT ASSY. ....	1	INCLUDES ITEM W/*
1	14100ZE2306	CAMSHAFT	1	
2	14410ZE2013	ROD PUSH	2	
3	14431ZE2010	ARM VALVE ROCKER	2	
4	14441ZE2000	LIFTER VALVE	2	
5	14451ZE1013	PIVOT ROCKER ARM	2	
6*	14568ZE1000	SPRING, WEIGHT RETURN	1	
7	14711ZE2000	VALVE, IN.	1	
8	14721ZE2000	VALVE, EX.	1	
9	14751ZE2003	SPRING, VALVE	2	
10	14771ZE2000	RETAINER, IN. VALVE SPRING	1	
11	14773ZE2000	RETAINER, EX. VALVE SPRING	1	
12	14781ZE2000	ROTATOR, VALVE	1	
13	14791ZE2010	PLATE, PUSH ROD GUIDE	1	
14	90012ZE0010	BOLT, PIVOT 8MM	2	
15	90206ZE1000	NUT, PIVOT ADJ.	2	

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# HONDA GX240K1HA2 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.





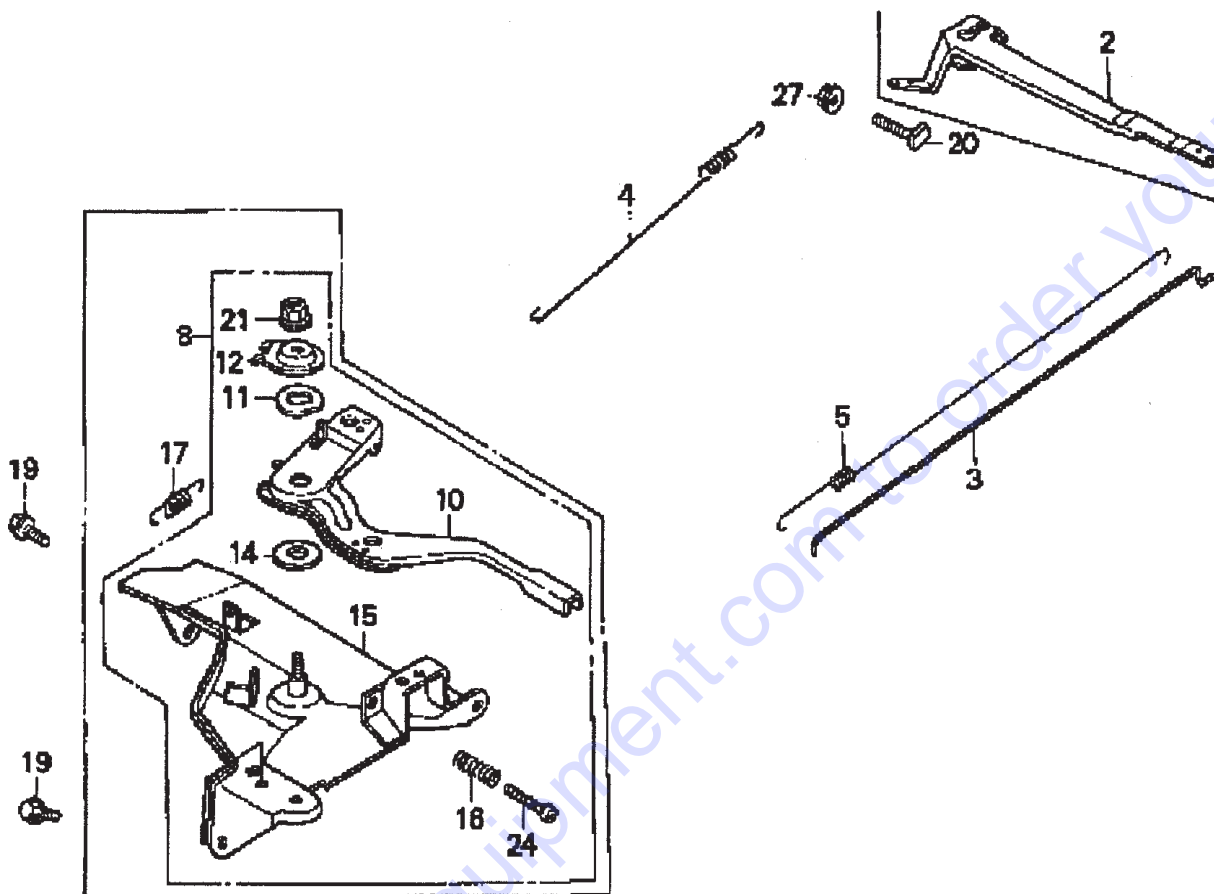
# HONDA GX240K1HA2 ENGINE — CARBURETOR ASSY.

## CARBURETOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*+	16010ZE2812	GASKET SET	1	
2*	16011ZA0931	VALVE SET, FLOAT	1	
3*	16013ZA0931	FLOAT SET	1	
5*	16016ZHW01	SCREW SET	1	
6*+	16024ZE1811	SCREW SET, DRAIN	1	
7*+	16028ZE0005	SCREW SET B	1	
8*	16028ZE2005	CHOKE SET	1	
9*	16100ZE2W71	CARBURETOR ASSY.....	1	..... INCLUDES ITEMS W/*
10*	16124ZE0005	SCREW, THROTTLE STOP	1	
11*	16166ZE2W70	NOZZLE, MAIN	1	
12*	16172ZE3W10	COLLAR, SET	1	
13*	16173001004	O-RING	1	
14	16211ZE2000	INSULATOR, CARB.	1	
15	16220ZA0702	SPACER COMP., CARB.	1	
16	16221ZA0800	GASKET, CARBURETOR	1	
17	16223ZA0800	GASKET, INSULATOR	1	
18	16610ZE1000	LEVER COMP., CHOKE, STD.	1	
19*	16953ZE1812	LEVER, VALVE	1	
20*	16954ZE1811	PLATE, LEVER SETTING	1	
21*	16956ZE1811	SPRING, VALVE LEVER	1	
22*	16957ZE1812	GASKET, VALVE	1	
23*	16967ZE0811	CUP, FUEL STRAINER	1	
24*	93500030060H	SCREW, PAN 3 X 6	2	
25	9430520122	PIN, SPRING 2 X 12	1	
26*	99101ZH70820	JET, MAIN #82, OPTIONAL	1	
26*	99101ZH70850	JET, MAIN #85, OPTIONAL	1	
26*	99101ZH70880	JET, MAIN #88	1	
27*	99204ZE20400	JET SET, PILOT #40	1	
28*	16015ZE8005	CHAMBER SET, FLOAT .....	1	..... INCLUDES ITEMS W/+

# HONDA GX240K1HA2 ENGINE — CONTROL ASSY.

CONTROL ASSY.



## HONDA GX240K1HA2 ENGINE — CONTROL ASSY.

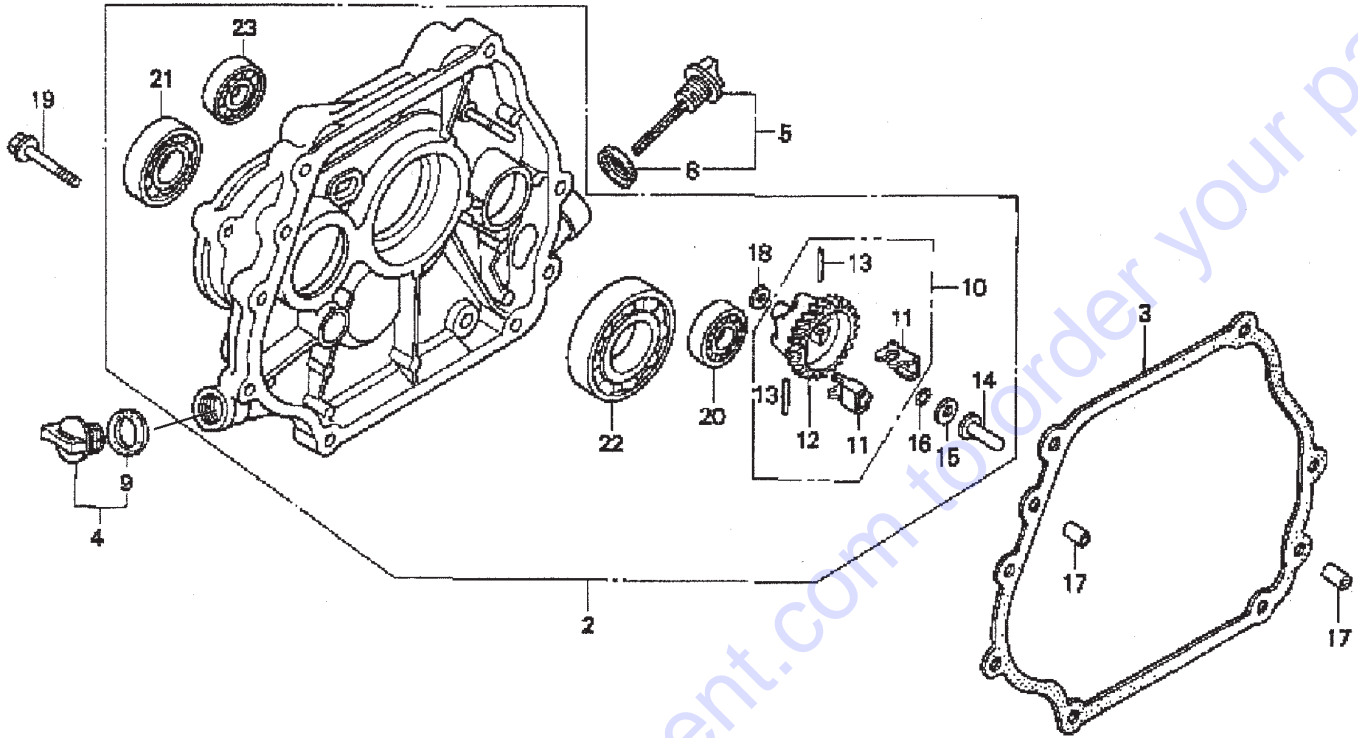
### CONTROL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	16551ZE2000	ARM, GOVERNOR	1	
3	16555ZE2000	ROD, GOVERNOR	1	
4	16561ZE2000	SPRING, GOVERNOR	1	
5	16571ZE2000	SPRING, THROTTLE RETURN	1	
8	16570ZE2W00	CONTROL ASSEMBLY .....	1	INCLUDES ITEMS W/*
10*	16571ZE2W00	LEVER, CONTROL	1	
11*	16574ZE1000	SPRING, LEVER	1	
12*	16575ZE2W00	WASHER, CONTROL LEVER	1	
14*	16578ZE1000	SPACER, CONTROL LEVER	1	
15*	16581ZE2W00	BASE, CONTROL	1	
16*	16584883300	SPRING, CONTROL ADJUSTING	1	
19	90013883000	BOLT, FLANGE (6 X 12) (CT200)	2	
20	90015ZE5010	BOLT, GOVERNOR ARM	1	
21*	90114SA0000	NUT, SELF- LOCK (6MM)	1	
24*	93500050280A	SCREW, PAN (5 X 28)	1	
27	9405006000	NUT, FLANGE	1	

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# HONDA GX240K1HA2 ENGINE — CRANKCASE COVER ASSY.

CRANKCASE COVER ASSY.



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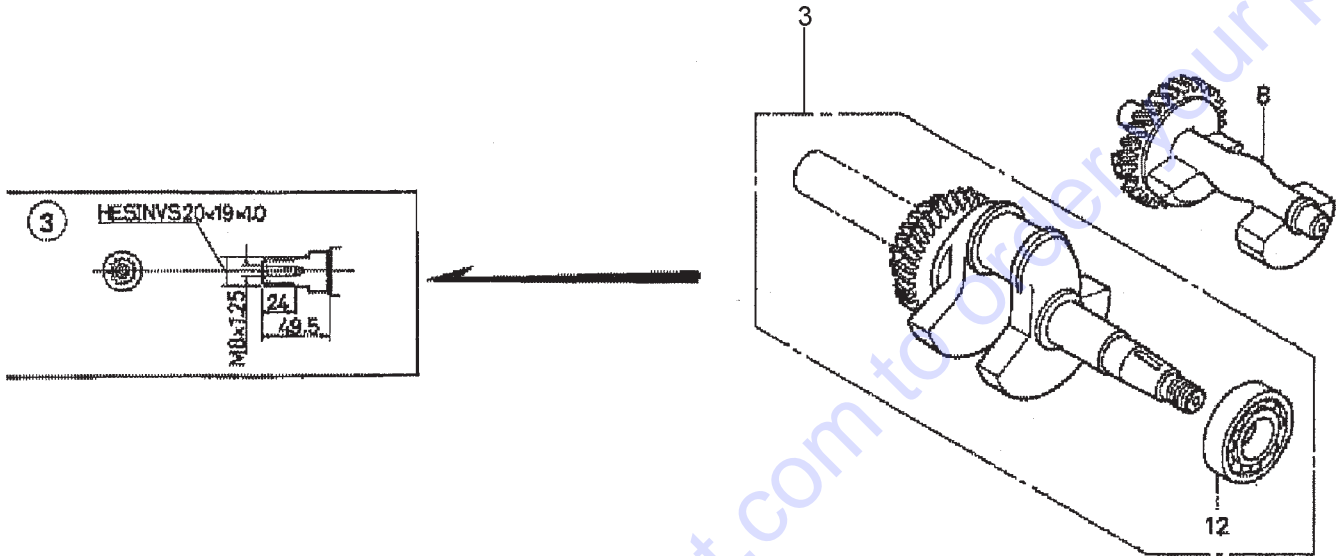
# HONDA GX240K1HA2 ENGINE — CRANKCASE COVER ASSY.

## CRANKCASE COVER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	11400ZE2621	COVER ASSY., CRANKCASE ..... (H-TYPE) (BALANCER)	1 .....	INCLUDES ITEMS W/*
3	11381ZE2801	GASKET, CASE COVER	1	
4	15600ZG4003	CAP ASSY., OIL FILLER .....	1 .....	INCLUDES ITEMS W/#
5	15600735003	CAP ASSY., OIL FILLER .....	1 .....	INCLUDES ITEMS W/%
8%	15625ZE1003	GASKET, OIL FILLER CAP	1	
9#	15625ZE1003	GASKET, OIL FILLER CAP	1	
10	16510ZE2811	GOVERNOR ASSEMBLY (BALANCER) .....	1 .....	INCLUDES ITEMS W/+
11*+	16511ZE2000	WEIGHT, GOVERNOR	2	
12*+	16512ZE2811	HOLDER, GOVERNOR WEIGHT	1	
13*+	16513ZE2000	PIN, GOVERNOR WEIGHT	2	
14*	16531ZE2000	SLIDER, GOVERNOR	1	
15*	90473147000	WASHER (6 X 16)	1	
16*	90602ZE1000	CLIP, GOVERNOR HOLDER	1	
17	90701HC4000	PIN, DOWEL (8 X 12)	2	
18*	9410106800	WASHER, PLAIN (6MM)	1	
19	957010803500	BOLT, FLANGE (8 X 35)	7	
20*	961006202000	BEARING, RADIAL BALL (6202)	1	
21*	961006204000	BEARING, RADIAL BALL (6204)	1	
22*	961006206000	BEARING, RADIAL BALL (6206)	1	
23*	961006302000	BEARING, RADIAL BALL (6302)	1	

# HONDA GX240K1HA2ENGINE — CRANKSHAFT ASSY.

CRANKSHAFT ASSY.



## HONDA GX240K1HA2ENGINE — CRANKSHAFT ASSY.

### CRANKSHAFT ASSY.

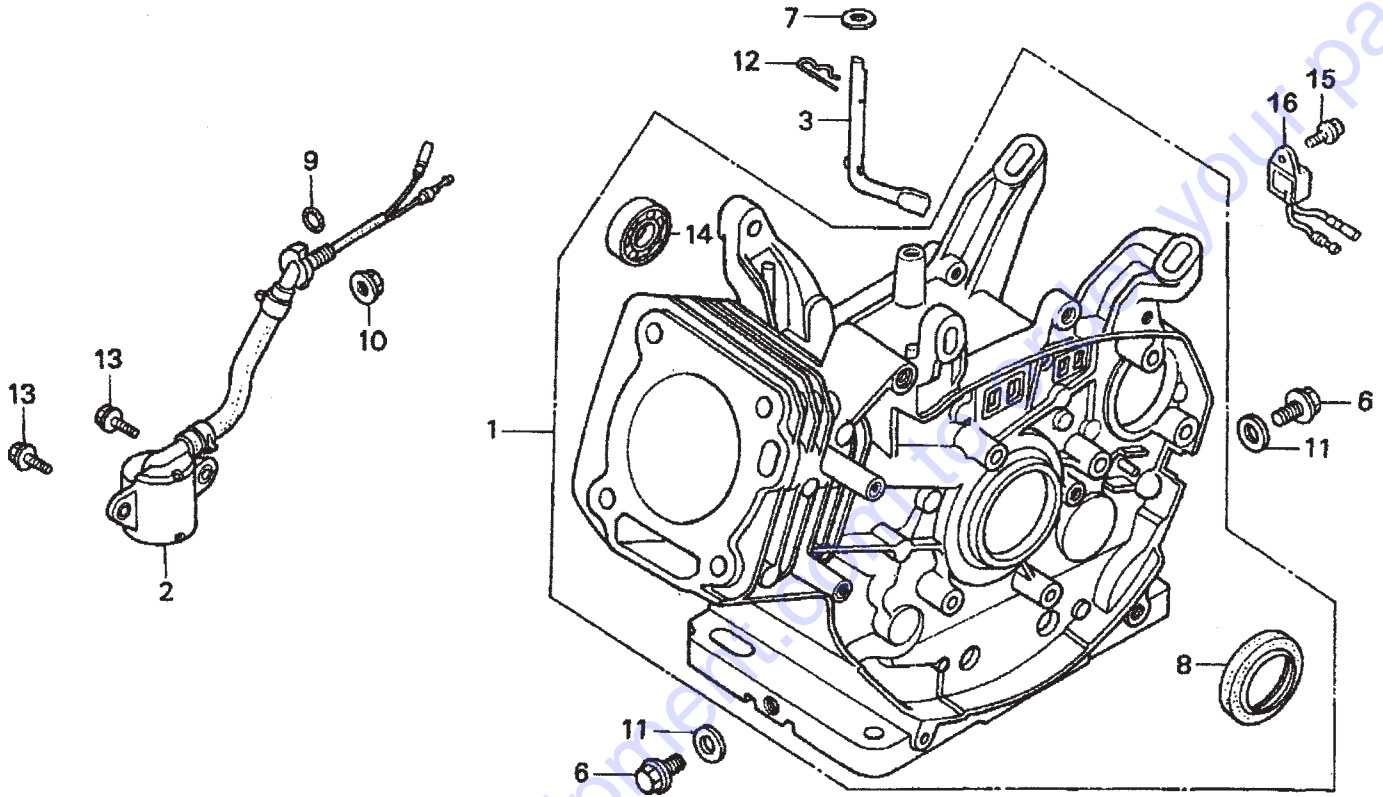
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
3	13320ZE2611	CRANKSHAFT (L-TYPE)	1	
8	13351ZE2010	WEIGHT BALANCER	1	INCLUDES ITEM W/*
12*	961006206000	BEARING, RADIAL BALL (6206)	1	

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# HONDA GX240K1HA2 ENGINE — CYLINDER BARREL ASSY.

CYLINDER BARREL ASSY.



# HONDA GX240K1HA2 ENGINE — CYLINDER BARREL ASSY.

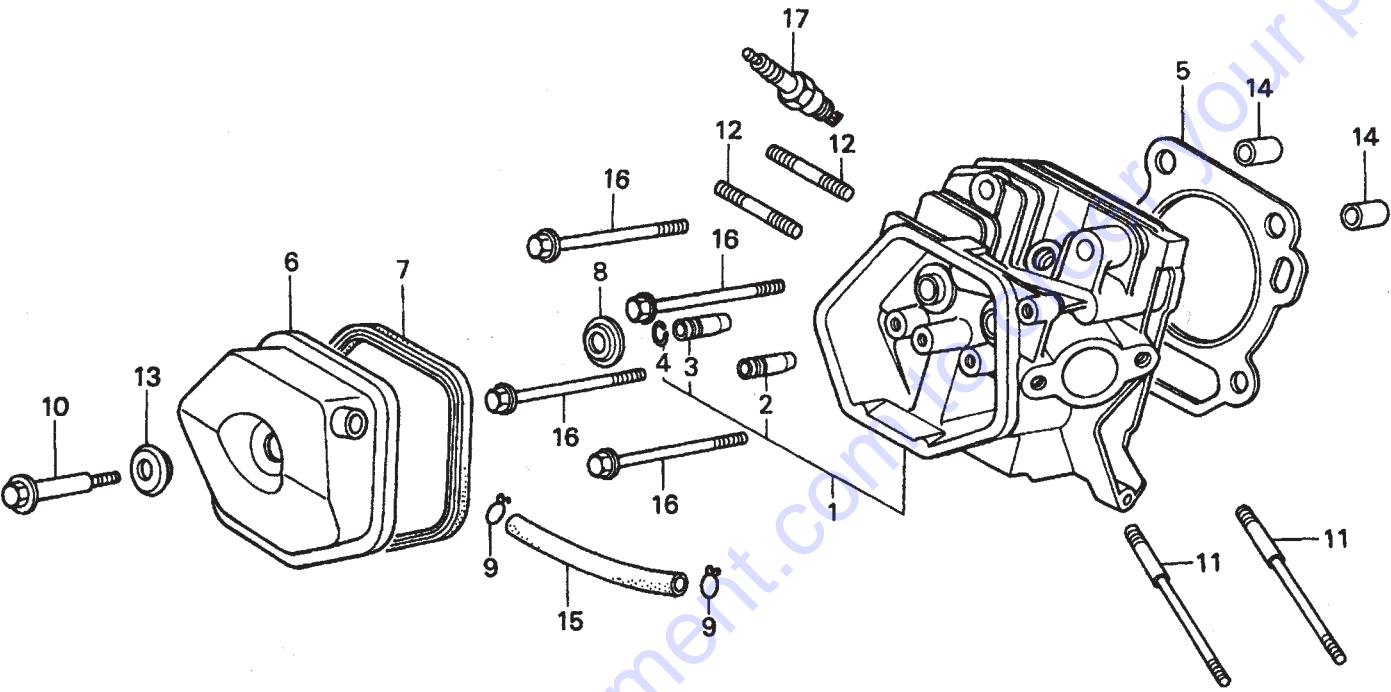
## CYLINDER BARREL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12000ZE2834	CYLINDER ASSY., BALANCER + OIL ALERT	1	INCLUDES ITEMS W/*
2	15510ZE2043	SWITCH ASSY., OIL LEVEL	1	
3	16541ZE2010	SHAFT, GOVERNOR ARM	1	
6	90131896650	BOLT, DRAIN PLUG	2	
7	90446KE1000	WASHER 8.2 X17X0.8	1	
8*	91201890003	OIL SEAL 30X46X8	1	
9	91353671003	O-RING 14MM ARAI	1	
10	9405010000	NUT FLANGE 10MM	1	
11	9410912000	WASHER, DRAIN PLUG 12MM	2	
12	9425110000	PIN, LOCK 10MM	1	
13	957010601200	BOLT, FLANGE 6X12	2	
14*	961006202000	BEARING, RADIAL BALL 6202	1	
15	90013883000	BOLT, FLANGE 6X12 CT200	1	
16	34150ZH7003	ALERT UNIT, OIL	1	

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# HONDA GX240K1HA2 ENGINE — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.



# HONDA GX240K1HA2 ENGINE — CYLINDER HEAD ASSY.

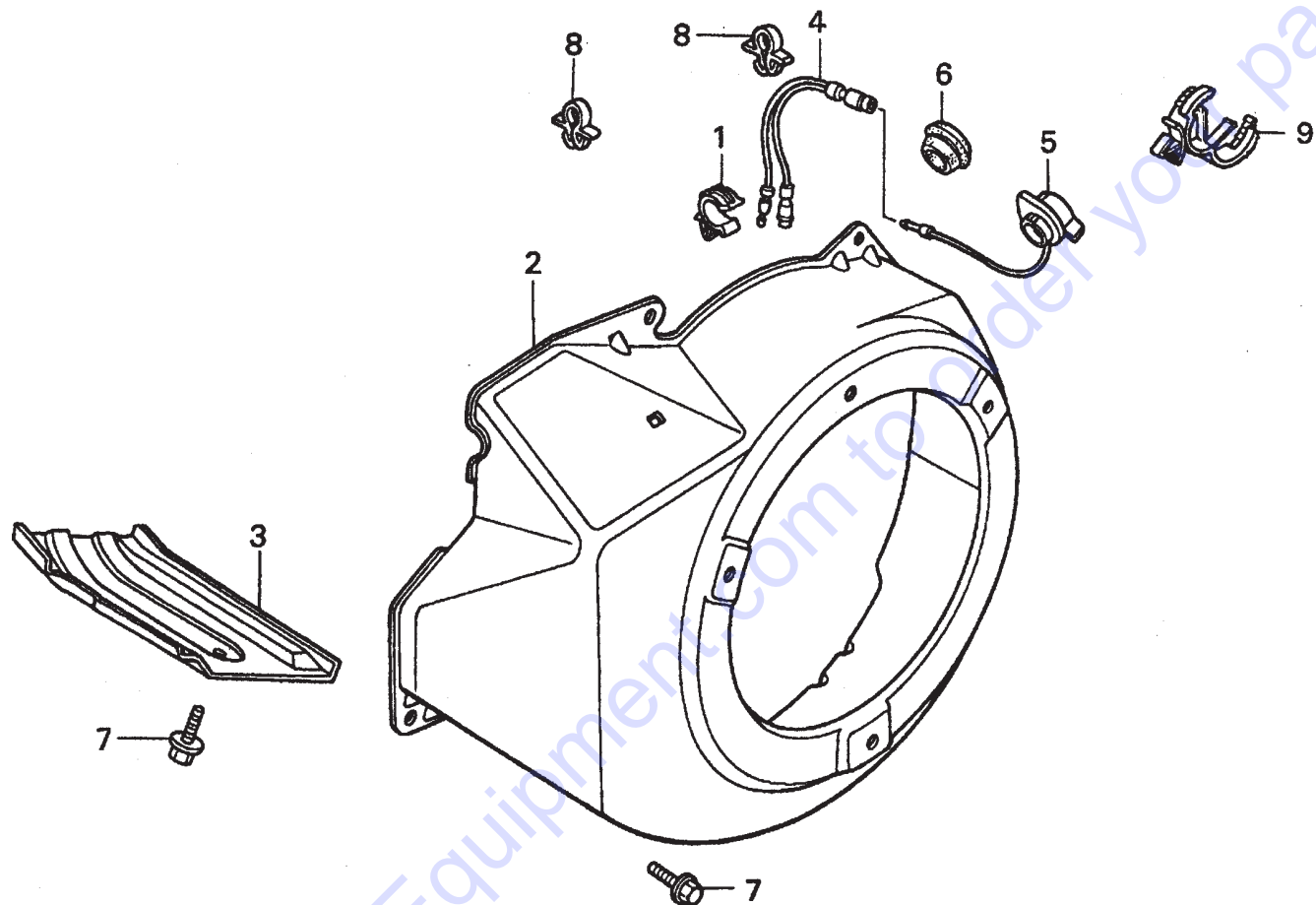
## CYLINDER HEAD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12200ZH9000	CYLINDER HEAD COMP. ....	1	INCLUDES ITEMS W/*
2*	12204ZE2306	GUIDE, VALVE, OS, OPTIONAL	1	
3*	12205ZE2305	GUIDE, EX. VALVE, OS, OPTIONAL	1	
4*	12216ZE2300	CLIP, VALVE GUIDE	1	
5	12251ZE2800	GASKET, CYLINDER HEAD	1	
6	12310ZE2020	COVER COMP., HEAD	1	
7	12391ZE2020	GASKET, CYLINDER HEAD COVER	1	
8	14775ZE2010	SEAT, VALVE SPRING	1	
10	90014ZE2000	BOLT, HEAD COVER	1	
11	90042ZE2000	BOLT, STUD 8X123	2	
12	90047ZE2000	BOLT, STUD 8X47	2	
13	90441ZE2010	WASHER COMP., HEAD COVER	1	
14	9430112200	PIN A, DOWEL 12X20	2	
15	950051100130M	BULK HOSE, VACUUM 11X1000, 11X100	1	
16	957011008000	BOLT, FLANGE 10X80	4	
17	9807956846	SPARK PLUG, BPR6ES, NGK	1	
17	9807956855	SPARK PLUG, W20EPR-U, DENSO	1	

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# HONDA GX240K1HA2 ENGINE — FAN COVER ASSY.

FAN COVER ASSY.



## HONDA GX240K1HA2 ENGINE — FAN COVER ASSY.

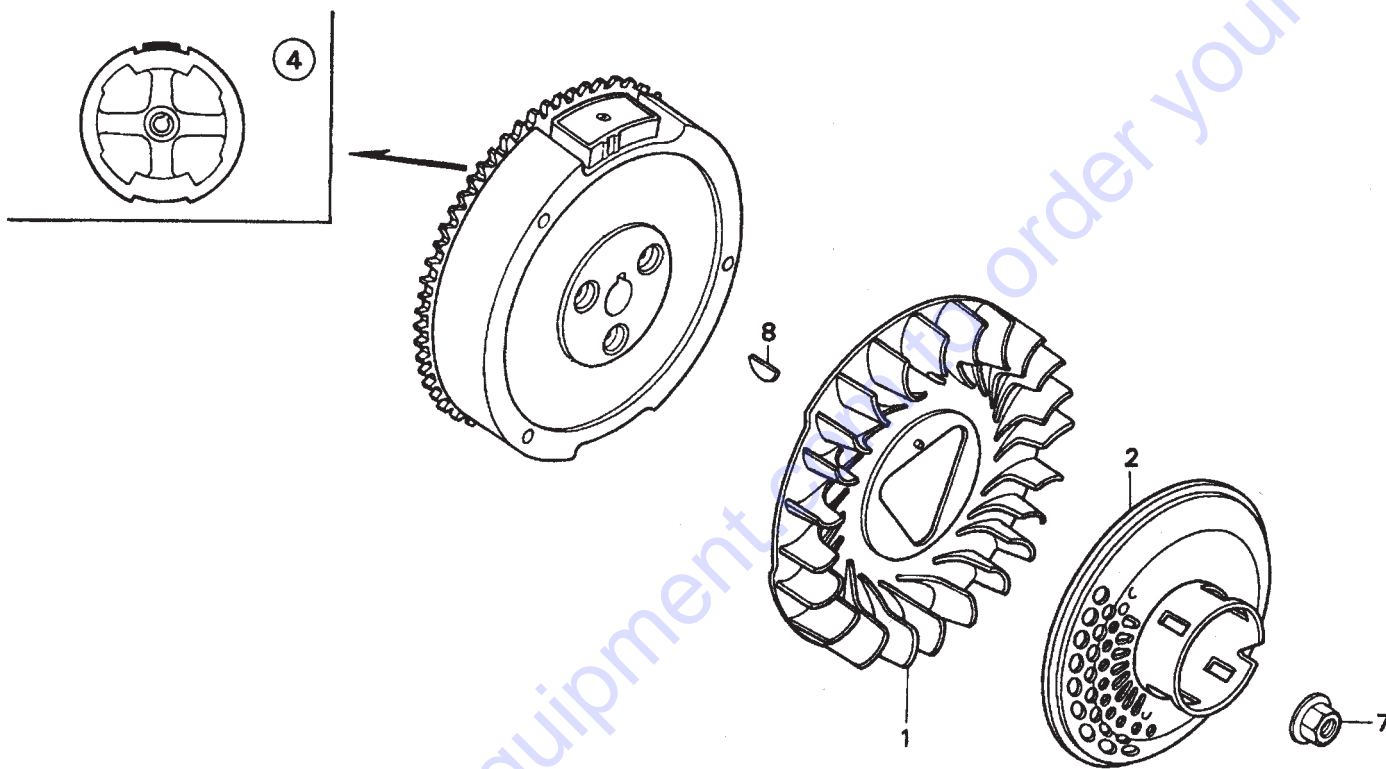
FAN COVER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	16731ZE2003	CLIP, TUBE	1	
2	19610ZE2010ZC	COVER COMP., FAN *NH1* BLACK	1	
3	19631ZE2D00	SHROUD	1	
4	32197ZH8003	SUB-HARNESS	1	
5	36100ZE1015	SWITCH ASSY., ENGINE STOP	1	
7	90013883000	BOLT, FLANGE 6X12, CT200	6	
9	90684ZA0601	CLIP, WIRE HARNESS	1	

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# HONDA GX240K1HA2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.



## HONDA GX240K1HA2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.

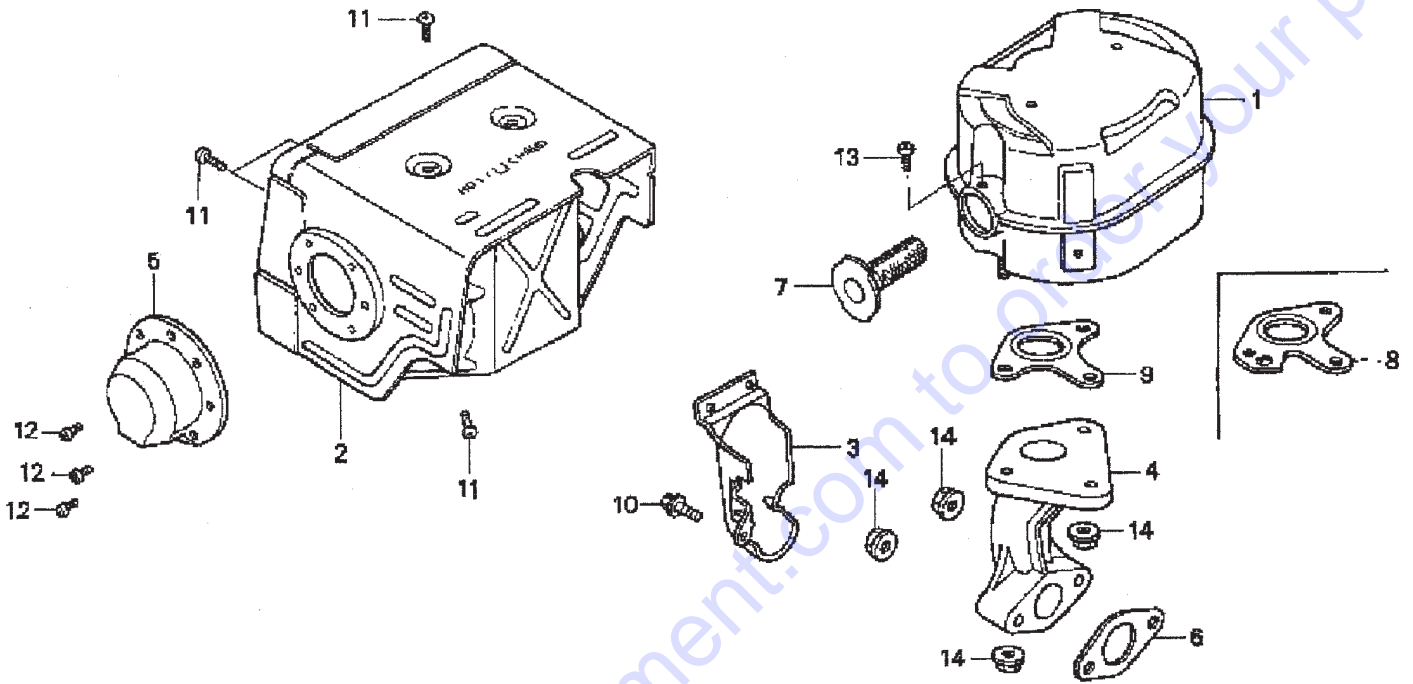
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	19511ZE2000	FAN, COOLING	1	
2	28450ZE2W11	PULLEY COMP., STARTER, SCREEN GRID	1	
4	31100ZE2010	FLYWHEEL COMP.	1	
7	90201ZE3V00	NUT, SPECIAL 16MM	1	
8	90741ZE2000	KEY, SPECIAL WOODRUFF 25X18	1	

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# HONDA GX240K1HA2 ENGINE — MUFFLER ASSY.

MUFFLER ASSY.



## HONDA GX240K1HA2 ENGINE — MUFFLER ASSY.

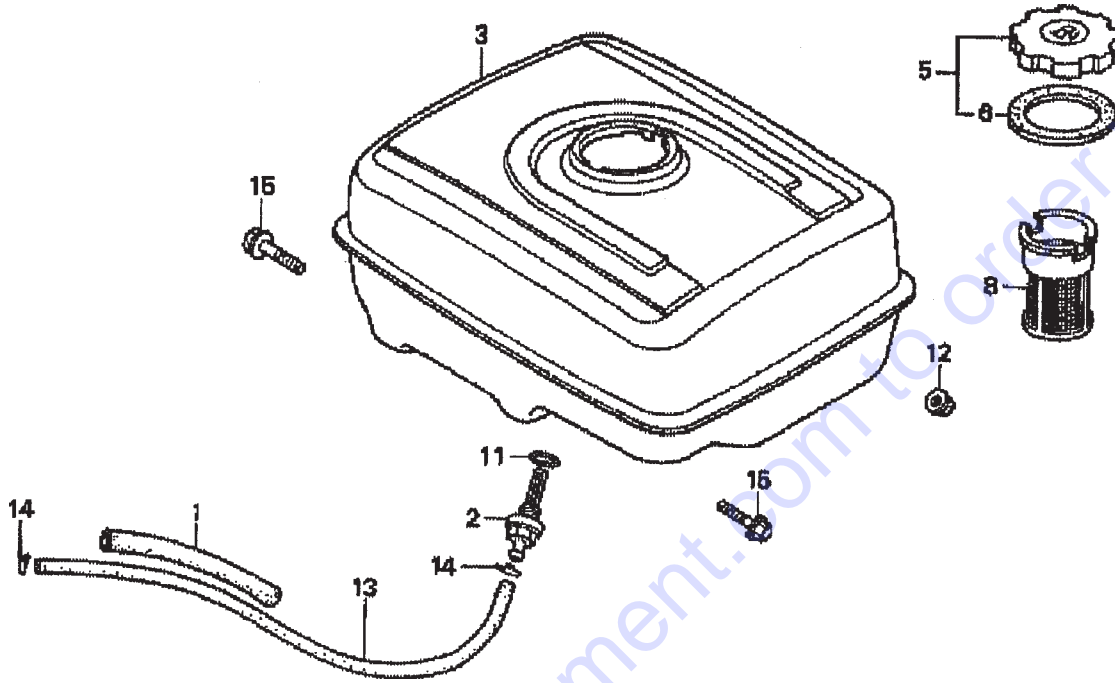
### MUFFLER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	18310ZE2W00	MUFFLER	1	
2	18320ZE2W01	PROTECTOR, MUFFLER	1	
3	18323ZE2W00	PROTECTOR, EX. PIPE	1	
4	18330ZE2W00	PIPE, EX.	1	
5	18331ZE2810	CAP, MUFFLER	1	
6	18333ZE3800	GASKET, EX. PIPE	1	
7	18355ZE2010	ARRESTER, SPARK	1	
8	18381ZE2W10	GASKET, MUFFLER (ARRESTER)	1	
9	18381ZE2800	GASKET, MUFFLER	1	
10	90013883000	BOLT, FLANGE (6 X 12) (CT200)	1	
11	90050ZE1000	SCREW, TAPPING (5 X 8)	6	
12	90055ZE1000	SCREW, TAPPING (4 X 6)	3	
13	90050ZE1000	SCREW, TAPPING (5 X 8) (OPTIONAL)	1	
14	9405008000	NUT, FLANGE (8MM)	5	

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# HONDA GX240K1HA2 ENGINE — FUEL TANK ASSY.

FUEL TANK ASSY.



## HONDA GX240K1HA2 ENGINE — FUEL TANK ASSY.

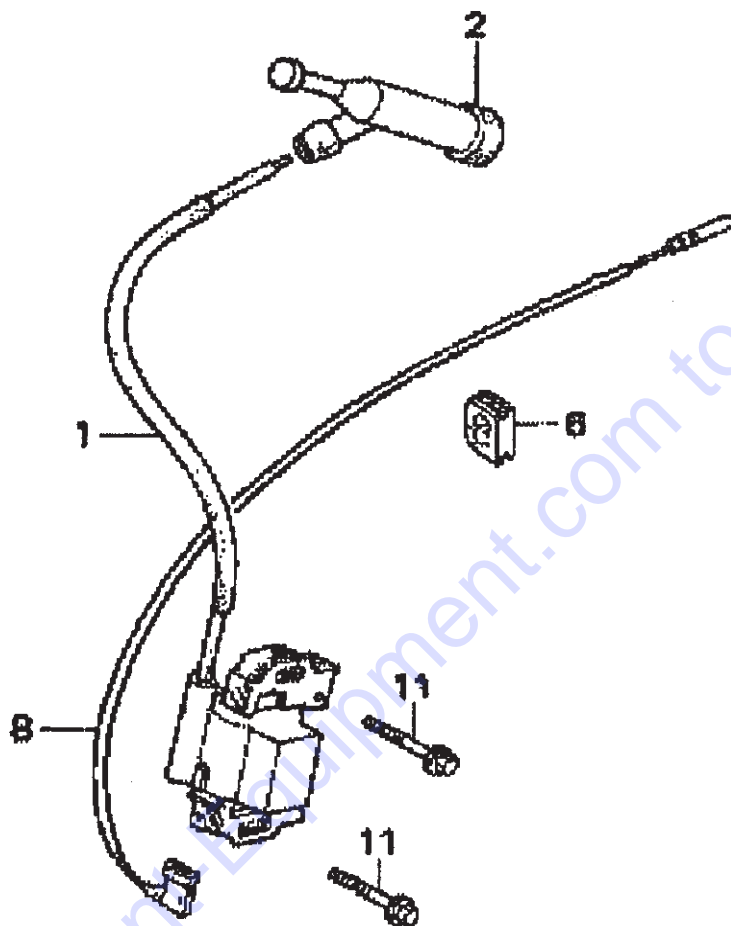
### FUEL TANK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	16854ZH8000	RUBBER SUPPORTER 107MM	1	
2	16955ZE1000	JOINT, FUEL TANK	1	
3	17510ZE2010ZD	TANK COMP., FUEL *NH1*, BLACK	1	
5	17620ZH7023	CAP COMP., FUEL FILLER .....	1	INCLUDES ITEMS W/*
6*	17631ZH7003	GASKET, FUEL FILLER CAP	1	
8	17672ZE2W01	FILTER, FUEL	1	
11	91353671003	O-RING 14MM, ARAI	1	
12	9405008000	NUT, FLANGE 8MM	2	
13	950014500360M	BULK HOSE, FUEL 4.5X3000, 4.5X222	1	
14	9500202080	CLIP, TUBE, B8	2	
15	957010802500	BOLT, FLANGE 8X25	2	

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# HONDA GX240K1HA2ENGINE — IGNITION ASSY.

IGNITION COIL ASSY.



## HONDA GX240K1HA2ENGINE — IGNITION ASSY.

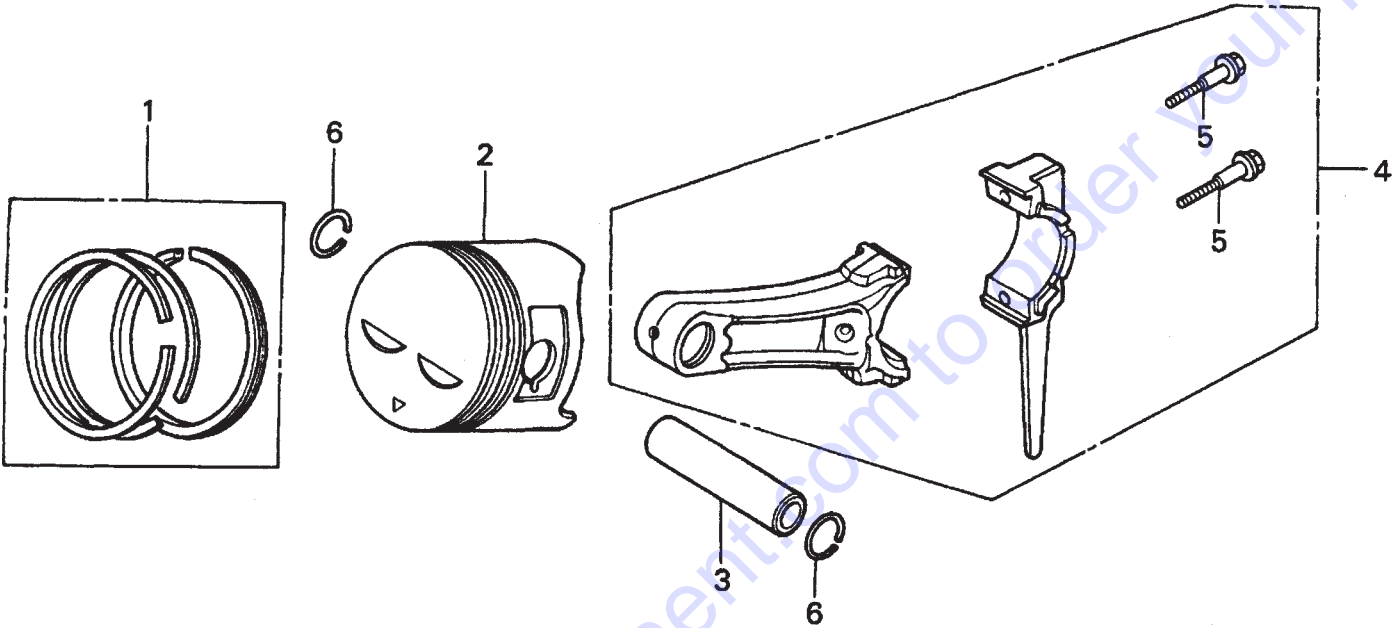
### IGNITION COIL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	30500ZE2023	COIL ASSY., IGNITION	1	
2	30700ZE1013	CAP ASSY., NOISE SUPPRESSOR	1	
6	31512ZE2000	GROMMET, WIRE	1	
8	36101ZE1010	WIRE, STOP SWITCH 370MM	1	
11	90015883000	BOLT, FLANGE 6X28	2	

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# HONDA GX240K1HA2 ENGINE — PISTON ASSY.

PISTON ASSY.



# HONDA GX240K1HA2 ENGINE — PISTON ASSY.

PISTON ASSY.

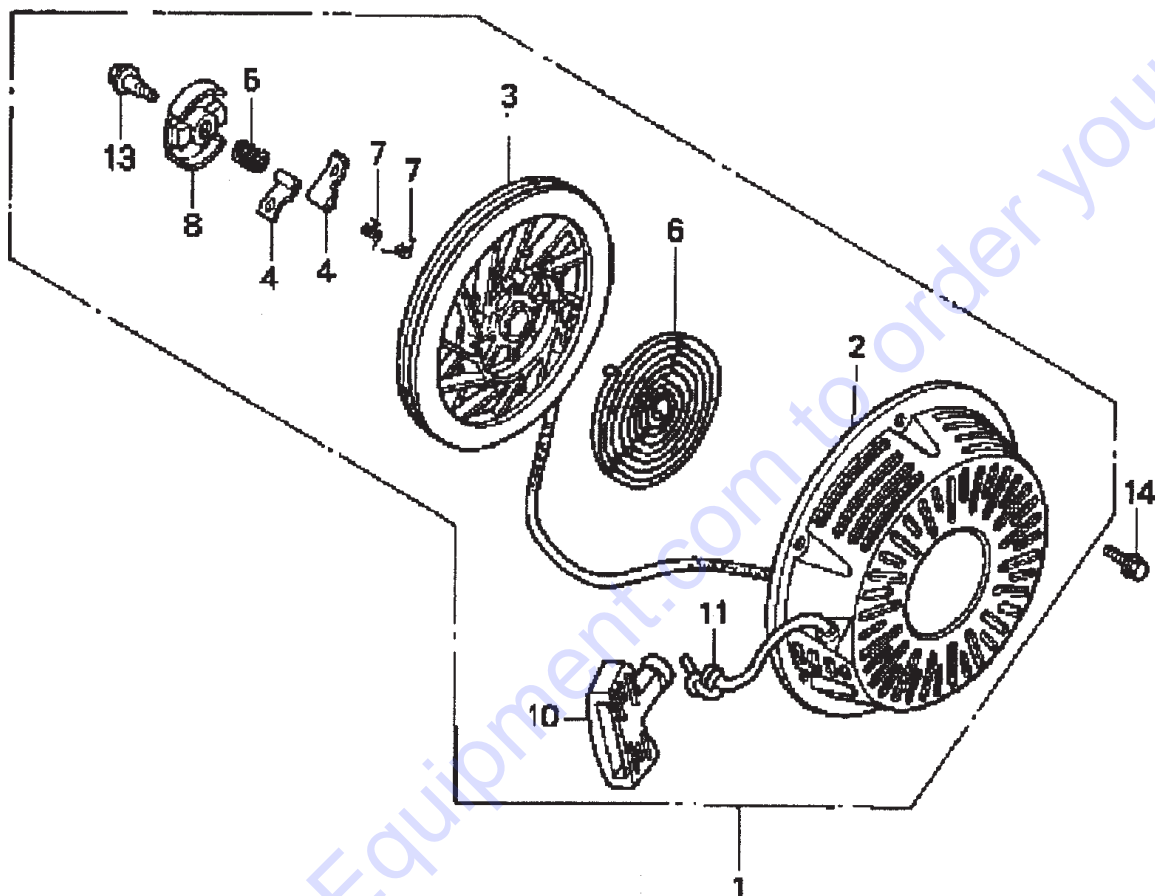
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	13010ZE2013	RING SET, PISTON, STD.	1	
1	13011ZE2013	RING SET, PISTON, OS 0.25, OPTIONAL	1	
1	13012ZE2013	RING SET, PISTON, OS 0.50, OPTIONAL	1	
1	13013ZE2013	RING SET, PISTON, 0.75, OPTIONAL	1	
2	13101ZE2W00	PISTON, STANDARD	1	
2	13102ZE2W00	PISTON, OS 0.25, OPTIONAL	1	
2	13103ZE2W00	PISTON, OS 0.50, OPTIONAL	1	
2	13104ZE2W00	PISTON, 0.75, OPTIONAL	1	
3	13111ZE2000	PIN, PISTON	1	
4	13200ZE2000	ROD ASSY., CONNECTING STANDARD .....	1	INCLUDES ITEMS W/*
4	13200ZE2305	ROD ASSY., CONNECTING, US 0.25, OPT.	1	
5*	90001ZE8000	BOLT, CONNECTING ROD	2	
6	90551ZE1000	CLIP, PISTON PIN 18MM	2	

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# HONDA GX240K1HA2 ENGINE — RECOIL STARTER ASSY.

RECOIL STARTER ASSY.



## HONDA GX240K1HA2 ENGINE — RECOIL STARTER ASSY.

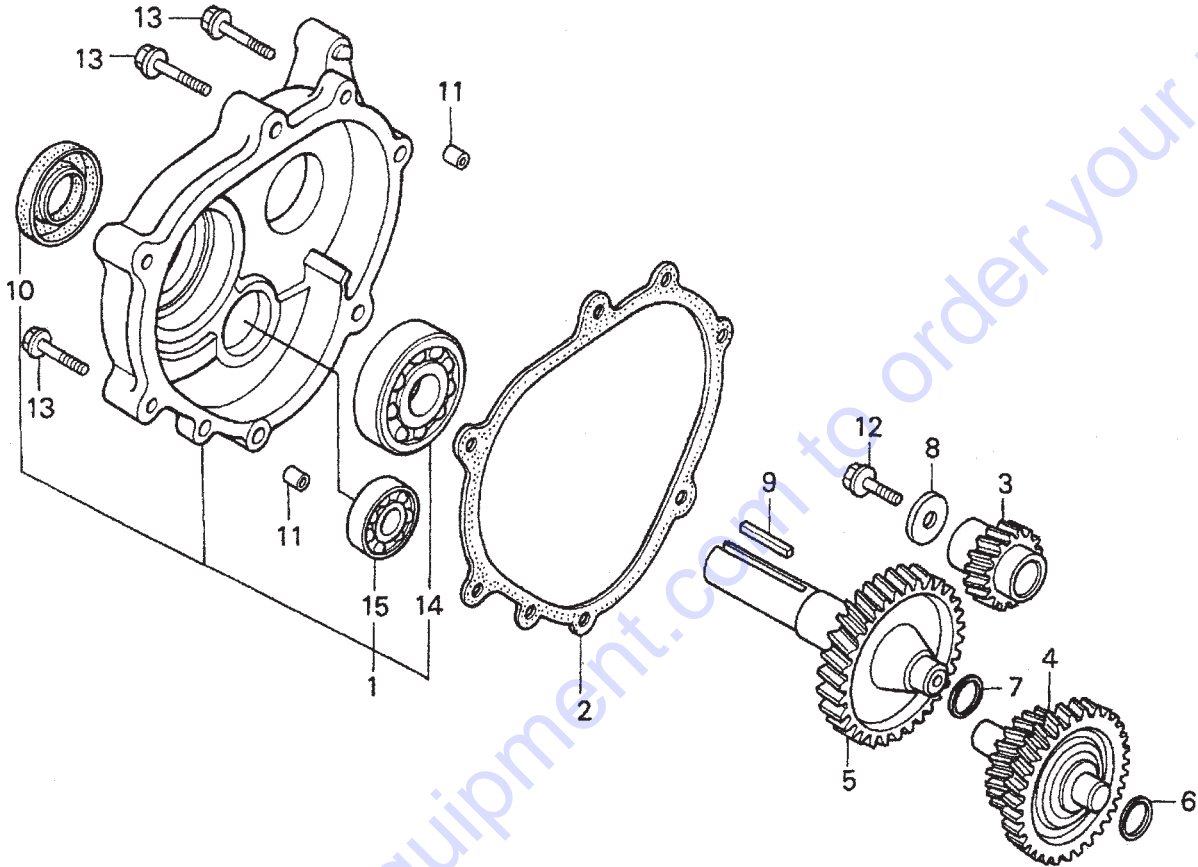
### RECOIL STARTER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	28400ZE2W01ZB	STARTER ASSY., RECOIL *NH1*, BLK .....	1 .....	INCLUDES ITEMS W/*
2*	28410ZE2W01ZB	CASE COMP., RECOIL STARTER *NH1*, BLK	1	
3*	28421ZE2W01	PULLEY, RECOIL STARTER	1	
4*	28422ZE2W01	RATCHET, STARTER	2	
5*	28441ZE2W01	SPRING, FRICTION	1	
6*	28442ZE2W01	SPRING, STARTER RETURN	1	
7*	28443ZE2W01	SPRING RATCHET	2	
8*	28444ZE2W01	RETAINER, SPRING	1	
10*	28461ZE2W02	GRIP, STARTER	1	
11*	28462ZE2W11	ROPE, RECOIL STARTER	1	
13*	90004ZE2W01	SCREW, CENTER	1	
14	90008ZE2003	BOLT, FLANGE 6X10	3	

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# HONDA GX240K1HA2 ENGINE — GEAR REDUCTION ASSY.

GEAR REDUCTION ASSY.



## HONDA GX240K1HA2 ENGINE — GEAR REDUCTION ASSY.

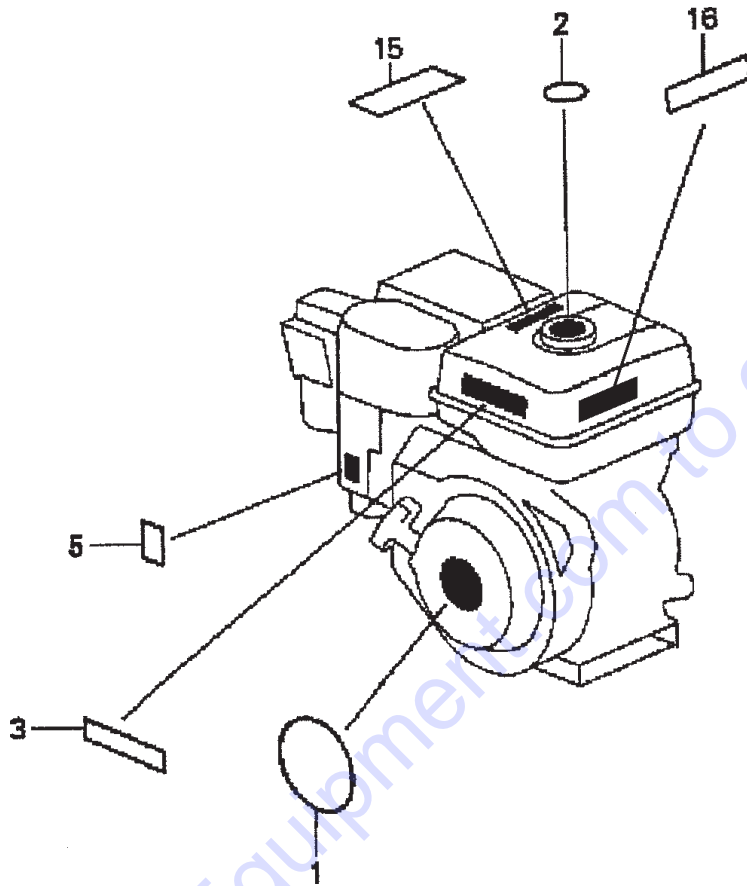
### GEAR REDUCTION ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11500ZE2620	COVER ASSY, REDUCTION CASE .....	1 .....	INCLUDES ITEMS W/
2	11521ZE2800	GASKET, CHAIN CASE COVER	1	
3	22103ZE2620	GEAR, PRIMARY DRIVE (17T)	1	
4	23220ZE2621	COUNTERSHAFT	1	
5	23710ZE2621	SHAFT, P.T.O. (H- TYPE)	1	
6	90401ZE2620	SHIM A (OPTIONAL)	AR	
7	90402ZE2620	SHIM B (OPTIONAL)	AR	
8	90473842000	WASHER (8MM)	1	
9	90745ZE2600	KEY (6.3 X 6.3 X 43)	1	
10	91201890003	OIL SEAL (30 X 46 X 8)	1	
11	9430108140	PIN A, DOWEL ( 8 X 14)	2	
12	957010802500	BOLT, FLANGE (8 X 25)	1	
13	957010804000	BOLT, FLANGE (8 X 40)	6	
14	961006206000	BEARING, RADIAL BALL (6206)	1	
15	961006302000	BEARING, RADIAL BALL (6302)	1	

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# HONDA GX240K1HA2 ENGINE — LABEL ASSY.

LABEL ASSY.



## HONDA GX240K1HA2 ENGINE — LABEL ASSY.

### LABELS ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	87521ZE2W01	EMBLEM, INTERNAL	1	
2	87522ZE1810	MARK, CAUTION, EXTERNAL	1	
3	87522ZH9000	LABEL, CAUTION	1	
5	87528ZE2810	MARK, CHOKE, EXTERNAL	1	
15	87586ZH7W00	LABEL, FUEL CAUTION	1	
16	87532ZH8810	MARK, OIL ALERT	1	

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