

OPERATION AND PARTS MANUAL



MODEL GA3.6H Series

GA-3.6HZ

GA3.6H

GA3.6HA

**Portable Generators
(HONDA GASOLINE ENGINE)**

Revision #0 (11/01/05)

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.



WARNING



CALIFORNIA — Proposition 65 Warning

Gasoline engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

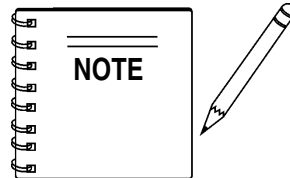
Multiquip GA-3.6H Series AC Portable Generators

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Specification and part number are subject to change without notice.

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Choose from three easy options:**



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

Note: Discounts Are Subject To Change



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Note: Discounts Are Subject To Change



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

Non-Dealer Customers:

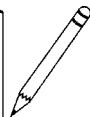
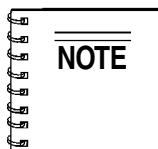
Contact your local Multiquip Dealer for parts or call 800-427-1244 for help in locating a dealer near you.



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

When ordering parts, please supply:

- | | |
|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Dealer Account Number <input type="checkbox"/> Dealer Name and Address <input type="checkbox"/> Shipping Address (if different than billing address) <input type="checkbox"/> Return Fax Number <input type="checkbox"/> Applicable Model Number <input type="checkbox"/> Quantity, Part Number and Description of Each Part | <ul style="list-style-type: none"> <input type="checkbox"/> Specify Preferred Method of Shipment: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Fed Ex/UPS <input checked="" type="checkbox"/> DHL <input type="checkbox"/> Priority One <input checked="" type="checkbox"/> Truck <input type="checkbox"/> Ground <input type="checkbox"/> Next Day <input type="checkbox"/> Second/Third Day |
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Unless otherwise indicated by customer, all orders are treated as *Standard Orders* and will ship within 24 hours. We will make every effort to ship *Air Shipments* the same day the order is received, if received prior to 2PM PST. *Stock Orders* must be noted on fax or web order form.

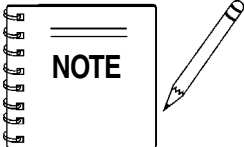
WE ACCEPT ALL MAJOR CREDIT CARDS!



GA-3.6H Series — 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.



This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the **MQ Model GA-3.6 Series Portable Generators**. Refer to the engine manufacturers instructions for data relative to its safe operation.

Before using these generators, 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 these directions.

WARNING

You **CAN** be **KILLED** or **SERIOUSLY INJURED** if you **DO NOT** follow these directions.

CAUTION

You **CAN** be **INJURED** if you **DO NOT** follow these directions.

HAZARD SYMBOLS

Potential hazards associated with the operation of the **MQ GA-3.6H Series Portable Generators** will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

WARNING

Lethal Exhaust Gas Hazards

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.



WARNING

Explosive Fuel Hazards

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.

WARNING

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.



WARNING

Respiratory Hazards

ALWAYS wear approved **respiratory** protection when required.



GA-3H/GA-3HA — SAFETY MESSAGE ALERT SYMBOLS

CAUTION

Rotating Parts Hazards

NEVER operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.



CAUTION

Equipment Damage Hazards

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

CAUTION

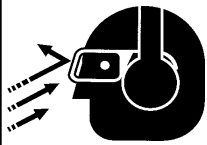
Accidental Starting Hazards

ALWAYS place the power source, circuit breakers or **ON/OFF** switch in the **OFF** position, when the generator is not in use, unless connected to transfer switch.



CAUTION

Eye and Hearing Hazards



ALWAYS wear approved eye and hearing protection.

GA-3.6H Series — RULES FOR SAFE OPERATION

DANGER

Read this manual!

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 GA-3.6H Series Portable Generator:

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



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

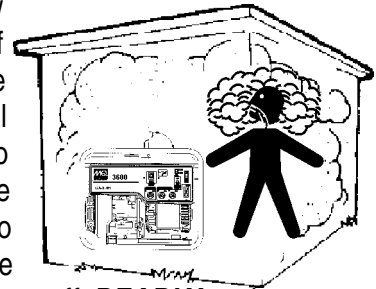
■ Manufacturer does not assume responsibility for any accident due to equipment modifications.

■ **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 generators.



■ The engine section of this generators requires an adequate free flow of cooling air. **NEVER** operate the generator 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 generator or engine and may cause injury to people. Remember the generator's engine gives off **DEADLY** carbon monoxide gas.

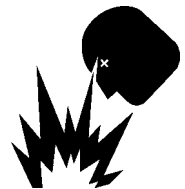


■ **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.

■ **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 generators in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death**.



■ **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.

GA-3.6H Series — RULES FOR SAFE OPERATION

- **ALWAYS** be sure the operator is familiar with proper safety precautions and operation techniques before using generators.
- **NEVER** leave the generators unattended, turn off engine when unattended.
- Unauthorized equipment modifications will void all warranties.
- **ALWAYS** ensure generators are on level ground before use.
- **DO NOT** place hands or fingers inside generators engine compartment when engine is running.
- **NEVER** run engine without air cleaner. Severe engine damage may occur.
- **NEVER** change or adjust the engine speed which has been set at the factory prior to shipping.



Power Cord Safety

- **NEVER** let power cables or cords *lay in water*.
- **NEVER stand in water** while AC power from the generators is being transfer to a load.
- **NEVER** use a defective or frayed power cable. Check the cable for cuts in the insulation.
- **NEVER** use a extension cord that is frayed or damaged where the insulation has been cut.
- **ALWAYS** make certain that proper power or extension cord has been selected for the job See Table 4.

Grounding Safety

- **ALWAYS** make sure that electrical circuits are properly *grounded* per the **National Electrical Code** (NEC) and local codes before operating generator. Severe *injury* or *death!* by electrocution can result from operating an ungrounded generator.
- **ALWAYS** make sure the generators are properly grounded to a suitable earth ground (**GROUND ROD**). See installation in this manual.
- **NEVER** use *gas piping* as an electrical ground.

Maintenance Safety

- **NEVER** lubricate components or attempt service on a running machine.
- **High Temperatures** – Always stop engine and allow the engine to cool before adding fuel, oil or performing service and maintenance functions. Contact with **hot!** components can cause serious burns. 
- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and replace any broken parts immediately.
- **ALWAYS** replace any worn or damaged warning decals.
- **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.
- The electrical voltage required to operate the generators can cause severe injury or even death through physical contact with live circuits. Turn all circuit breakers **OFF** before performing maintenance on the generator.
- 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.
- Removing the engine oil drain plug while the engine is hot will result in hot oil to gush out of the oil drain plug, therefore causing severe scalding to any persons in the general area of the generator. 

DANGER-ELECTROCUTION HAZARDS

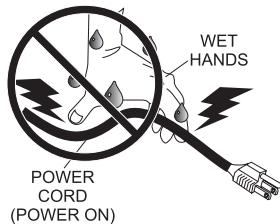
During operation of this generation, there exists the possibility of **electrocution, electrical shock or burn**, which can cause **severe bodily harm** or even **DEATH!**



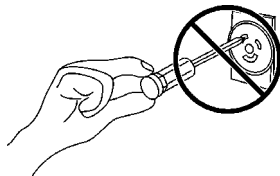
To avoid these hazards:

NEVER use **damaged** or **worn** cables when connecting equipment to the generator. Make sure power connecting cables are securely connected to the generator's output receptacles, incorrect connections may cause damage to the generators and electrical shock.

NEVER grab or touch a live power cord with wet hands, the possibility exist of electrical shock, electrocution, and even **death!**

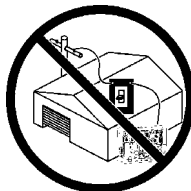


NEVER insert any objects into the output receptacles during operation. This is extremely dangerous.



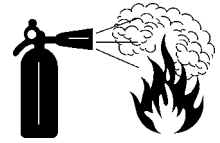
ALWAYS turn-off the generators and place all circuit breakers in the **"OFF"** position when contact with the output receptacles is required. There exist the possibility of **electrocution, electrical shock or burn, which can cause severe bodily harm or even death!**

Backfeed to a utility system can cause **electrocution** and or property damage. **NEVER** connect the generators to a building's electrical system without a transfer switch or other approved device. All installations should be performed by a **licensed electrician** in accordance with all applicable laws and electrical codes. Failure to do so could result in electrical shock or burn causing serious injury or even death!



Emergencies

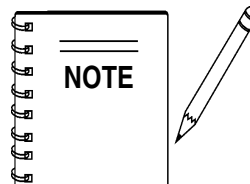
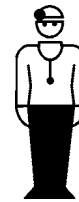
■ **ALWAYS** know the location of the nearest **fire extinguisher**.



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



■ 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.



In keeping with Multiquip's policy of constantly improving its products, the specifications quoted herein are subject to change without prior notice.

GA-3.6H Series— SPECIFICATIONS (GENERATOR/ENGINE)

Table 1. Specifications

MODEL		GA-3.6H/GA-3.6HA/GA-3.6HZ
60 Hz Generator	Type	2-pole, Brushless Type Revolving Field
	Max. Output	3600 Watts
	Rated Voltage	120/240 V
	Max./Cont. Amps @ 120V	30/26.6
	Max./Cont. Amps @ 240V	15/13.3
	Main Circuit Breaker	2-Pole 13.5 Amps
	Phase	Single Phase
	Frequency	60 Hz
	Rated Speed	3600 RPM
	Power Factor	100%
	Fuel Tank Capacity	Approx. 5.0 U.S. Gallons (19 Liters)
Dry Net Weight		170 lbs. (74 Kg.) GA3.6H/GA3.6HA 178 lbs. (81 Kg.) GA3.6HZ

Table 2. ENGINE SPECIFICATIONS

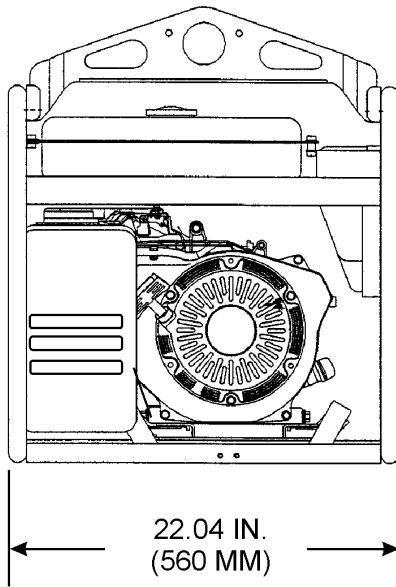
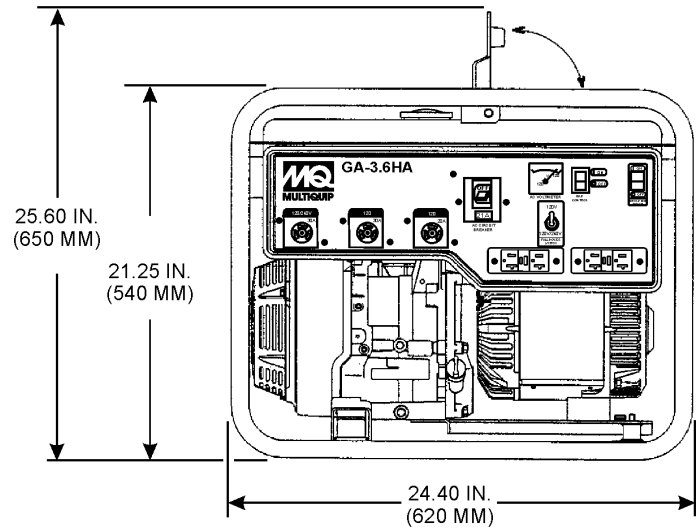
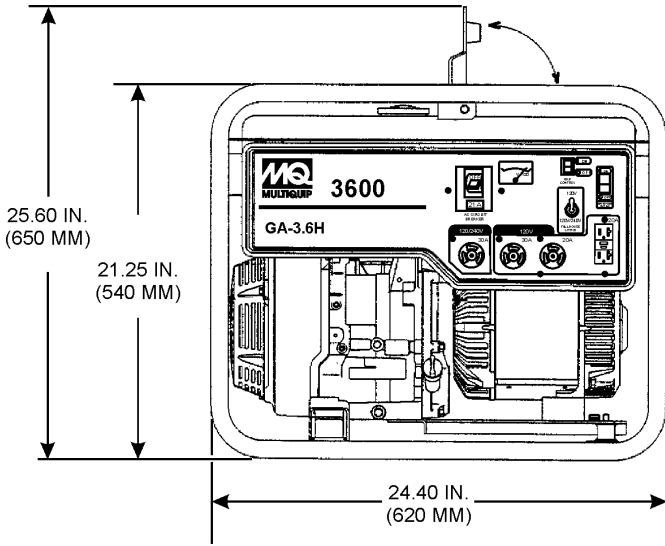
Model		HONDA GX240K1EDN2
Engine	Type	Air-cooled 4 stroke, Single Cylinder, OHV, Horizontal Shaft Gasoline Engine
	Bore X Stroke	2.90 in. X 2.30 in. (73 mm x 58 mm.)
	Displacement	14.81 cc
	Max Output	8.0 H.P./3600 R.P.M.
	Fuel	Unleaded Automobile Gasoline
	Lube Oil Capacity	2.33 pints
	Speed Control Method	Centrifugal Fly-weight Type
	Starting Method	Recoil Start
	Dimension (L x W x H)	14.0 x 16.9 X 16.1 in. (355 X 430 X 410 mm.)
Dry Net Weight	55.1 lbs (25 Kg.)	

Effects of Altitude and Heat

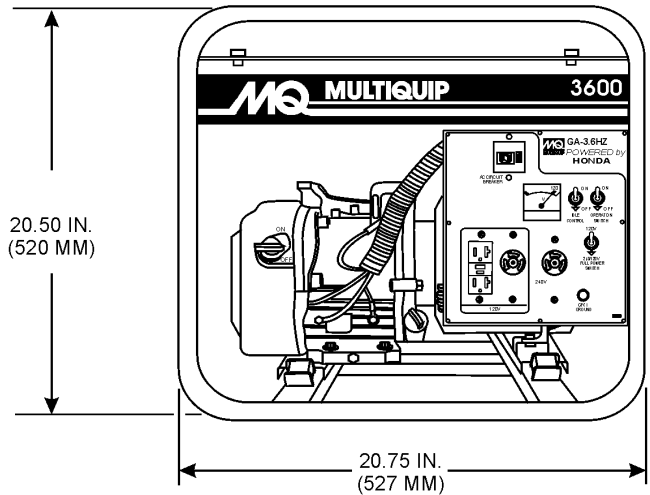
The maximum output of the engines listed above are applicable to supplying electrical power for continuous service at ambient conditions in accordance with SAE Test cord J607. The above ambient conditions are at standard sea level, with a barometric reading of 29.92 inches and a temperature of 60 degrees fahrenheit.

Generally, the engine's output power will decrease 3-1/2% for each 1000 feet of altitude above sea level, and 1% for each 10° F Fahrenheit above the standard temperature of 60° F

GA-3.6H Series— DIMENSIONS



GA-3.6H AND GA-3.6HA



GA-3.6HZ

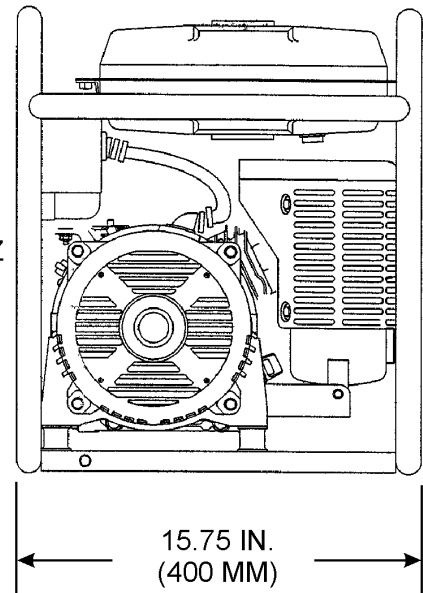


Figure 2. Dimensions

WARNING

Before connecting this generators to any building's electrical system, a licensed electrician must install an isolation (transfer) switch.

Serious injury or death may result without this transfer switch.

GA-3.6H Series Familiarization

Generator

The Multiquip GA-3.6H series generators have been designed as a portable dual purpose power source for 60 Hz (single phase) lighting facilities, power tools, submersible pumps and other industrial and construction machinery.

These generators are mounted on rubber vibration isolators that have a steel base backplate which is attached to the protective steel pipe carrying frame. The protective carrying frame is made of steel tubing and fully wraps around the generators to protect against damage. See Figures 2A through 2E for the basic controls and indicators for the GA-3.6H Series generators.

These portable generators are supplied with a electrical **control box**. To reduce vibration caused by the engine, the control box is also placed on rubber isolators.

Control Box

The control box is provided with the following:

- NEMA L14-20R, twist-lock receptacle, 125/250V, 20 amps.
- NEMA L5-20R, twist-lock receptacle, 125V, 20 amps.
- NEMA L6-30R, twist-lock receptacle, 250V, 30 amps. (GA-3.6HZ only)
- NEMA L5-30R, twist-lock receptacle, 125V, 30 amps.
- NEMA 5-20R, GFCI duplex receptacle, 125V, 20 amps (GA-3.6HA has two).
- 13.5 amp main circuit breaker.
- AC Voltmeter
- G.F.C.I. Ground Terminal (GA-3.6HZ only)
- Full Power Switch
- Idle Control Switch
- Operation Switch

Excitation System

The GA-3.6H series generators use a magnet attached to a flywheel to produce AC voltage from a lamp coil beneath the flywheel. As the magnetic passes the coil it produces approximately 19-22 AC volts.

This voltage (19-22 VAC) is then sent to the control box that contains three rectifying diodes:

- Excitation (diode 1)
- Battery (diode 2)
- Slow Down (diode 3)

The AC voltage will pass through the excitation diode that converts the voltage to DC power.

This DC power is then sent to the excitation windings housed within the main windings commonly called the "stator".

This voltage is then transferred into the rotor through induction. The rotor contains two diodes within it which rectify the DC voltage and send it out through the main windings, as AC voltage.

Alternator

The alternator, a brushless revolving-field type, is permanently aligned to the engine through rigid coupling.

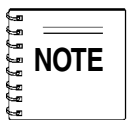
Engine

These generators are powered by a 8.0 HP, air-cooled, 4-stroke **HONDA** gasoline engine. Reference Table 2, for engine specifications.

Single Phase Load — 60 Hz

Always be sure to check the nameplate on the generators and equipment to insure the wattage, amperage and frequency requirements are satisfactorily supplied by the generators for operating the equipment.

Generally, the wattage listed on the nameplate of the equipment is its rated output. Equipment may require 130—150% more wattage than the rating on the nameplate, as the wattage is influenced by the efficiency, power factor and starting system of the equipment.



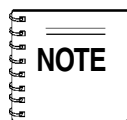
If wattage is not given on the equipment's name plate, approximate wattage may be determined by multiplying nameplate voltage by the nameplate amperage.

$$\text{WATTS} = \text{VOLTAGE} \times \text{AMPERAGE}$$

The power factor of this generators is 1.0 See Table 3 below when connecting loads.

Table 3. Power Factor By Load

Type Of Load	Power Factor
Single-phase induction motors	0.4 - 0.75
Electric heaters, incandescent lamps	1.0
Fluorescent lamps, mercury lamps	0.4 - 0.9
Electronic devices, communication equipment	1.0
Common power tools	0.8



When using a combination of dual receptacles, total load **should not exceed** the rated capacity of the generator.

To determine the running wattage for your load, multiply the running wattage as indicated by steps 1, 2, and 3 below:

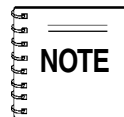
1. **INCANDESCENT LOADS**
Lights, heaters and similar appliances.
Total the running wattage and multiply by 1.
Example:
29 light bulbs @ 100W each = 2.9 KW
use a 3 KW generator.
2. **SMALL MOTORS**
Drills and other small power tools.
Total the running wattage and multiply by 2.
Example:
A 1 inch drill runs at 1 KW
use a 2 KW generator.
3. **LARGE MOTORS**
Submersible pumps, table saws etc.
Total the running wattage and multiply by 3.
Example:
A conveyor belt runs at 8 KW
use a 24 KW generator.

CAUTION

Motors and motor-driven equipment draw much greater current for starting than during operation. **Always** use an adequate size **extension cable** which can carry the required load.

Extension Cables

When electric power is to be provided to various tools or loads at some **distance** from the generator, extension cords are normally used. **Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generators and point of use (load) is held to a minimum.** Use the cable selection chart (Table 3) as a guide for selecting proper cable size.



The idle control device is operated at a minimum load capacity of 100W. If the load capacity is less than 100W, place the idle control switch in the **OFF** position.

GA-3.6H Series— CONTROLS AND INDICATORS

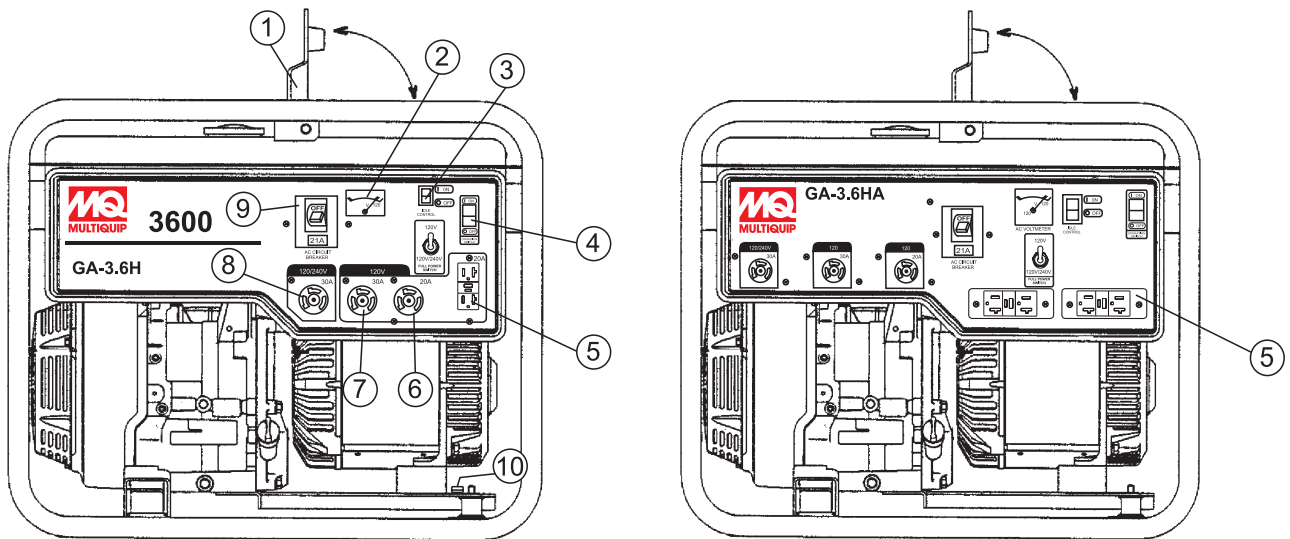
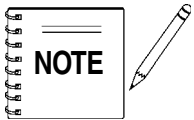


Figure 2A. Generators Components

1. **Lifting Bail Eye** – Attach a rope or chain to this lifting eye when lifting of the generators is required. Never stand underneath the generators while it is being lifted. Place lifting eye in down position when not in use.
2. **AC-Voltmeter** – This voltmeter indicates (with a mark) the rated 60 Hz (single-phase) output voltage. In addition the voltmeter can also be used as a diagnostic tool. If the voltmeter indicator (needle) is below the rated voltage, engine problems may exist (low/high RPM's). To prevent damage to the generators or power tools turn the generators **OFF** and consult your authorized Multiquip service dealer.
3. **Idle Control Switch** – The generators are provided with an automatic idle control device for noise suppression and reduced fuel consumption. The automatic idle control automatically engages under a no-load condition. With the automatic idle control switched "**ON**", the engine revolutions will automatically drop to about 2600 rpm (low-speed operation) within 3 seconds after the load stops. When the operation is resumed, the engine speed is automatically increased to about 3600 rpm (high-speed operation) as soon as the load is connected.
4. **Operation Switch** – Place this *rocker* switch in the "**ON**" position (up) for normal operation. To turn-off the generators, place the operation switch in the "**OFF**" position (down).
5. **GFCI Duplex Receptacle** – NEMA 5-20R, GFCI receptacle will provide 120V, 20 amps. (GA-3.6HA has two.)
6. **120V Output Receptacle** – NEMA L5-20R twist-lock receptacle will provide 120V, 20 amps, 60 Hz.
7. **120V Output Receptacle** – NEMA L5-30R twist-lock receptacle will provide 120V, 30 amps, 60 Hz.
8. **120V/240V Output Receptacle** – NEMA L14-30R twist-lock receptacle will provide (120V, 50 amps, or 240V, 25 amps, 60 Hz.)
9. **Main Breaker** – This 2-pole circuit breaker (120/240V, 13.5 amps) protects the generators from short circuiting or overloading. When starting the generators **always** have the circuit breaker placed in the "**OFF**" position.
10. **Ground** – This ground connection point should be connect to a good earth ground (ground rod). GA-3.6H and GA3.6HA models only



Model GA3.6HZ shown. Location of Full Power Switch for Models GA3.6H and GA-3.6HA, is on front control panel.

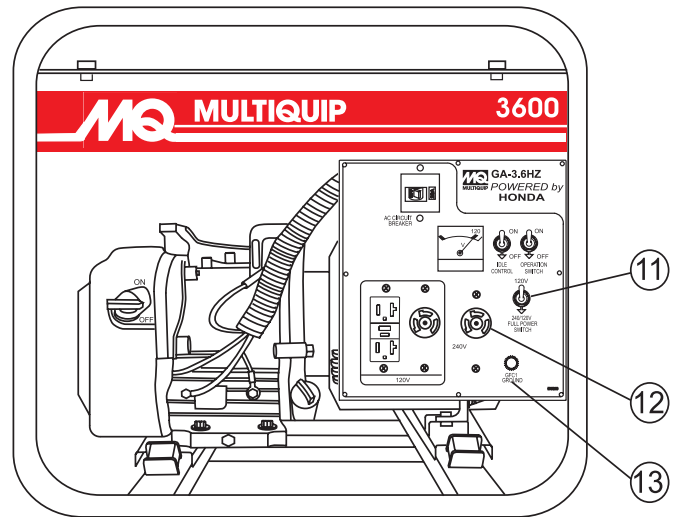


Figure 2B. Generators Components

11. **Full Power Switch** – The generators are provided with a full power switch. Figures 2C and 2D show simplified wiring diagrams of the dual voltage system.

When the full power switch is in the 120 volt (up) position, you can access the **full rated power** of the generators at 120 volts from the GFCI duplex receptacle and the 120V twist-lock receptacle, or a combination of both receptacles as long as the total load does not exceed the generating set capacity.

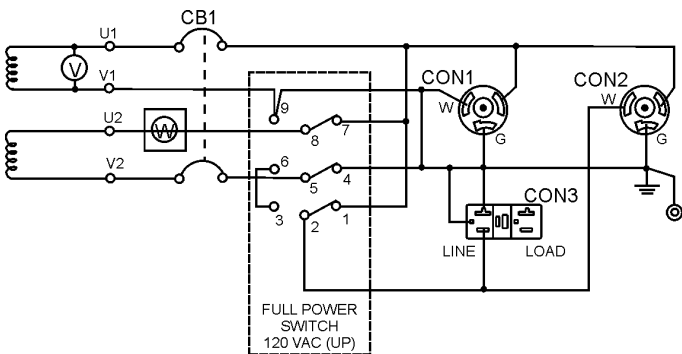
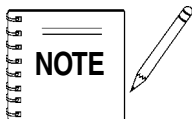


Figure 3C. 120V Full Power Switch Simplified Diagram (Up Position)



When the **full power switch** is in the 120V position, the 240V twist-lock receptacle **cannot be used**.

When the switch is in the 240 volt (down) position, you can access **half of the rated power** of the generating set at 120 volts from the GFCI duplex receptacle and up to half of the rated power of the set at 120 volts from 120V twist-lock receptacle; or full rated power of the set at 240 volts from the 240V twist-lock receptacle.

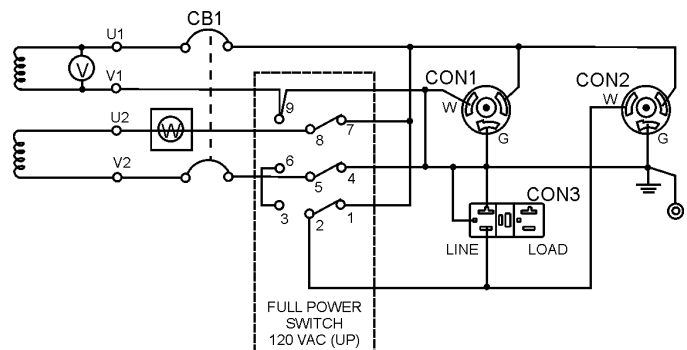
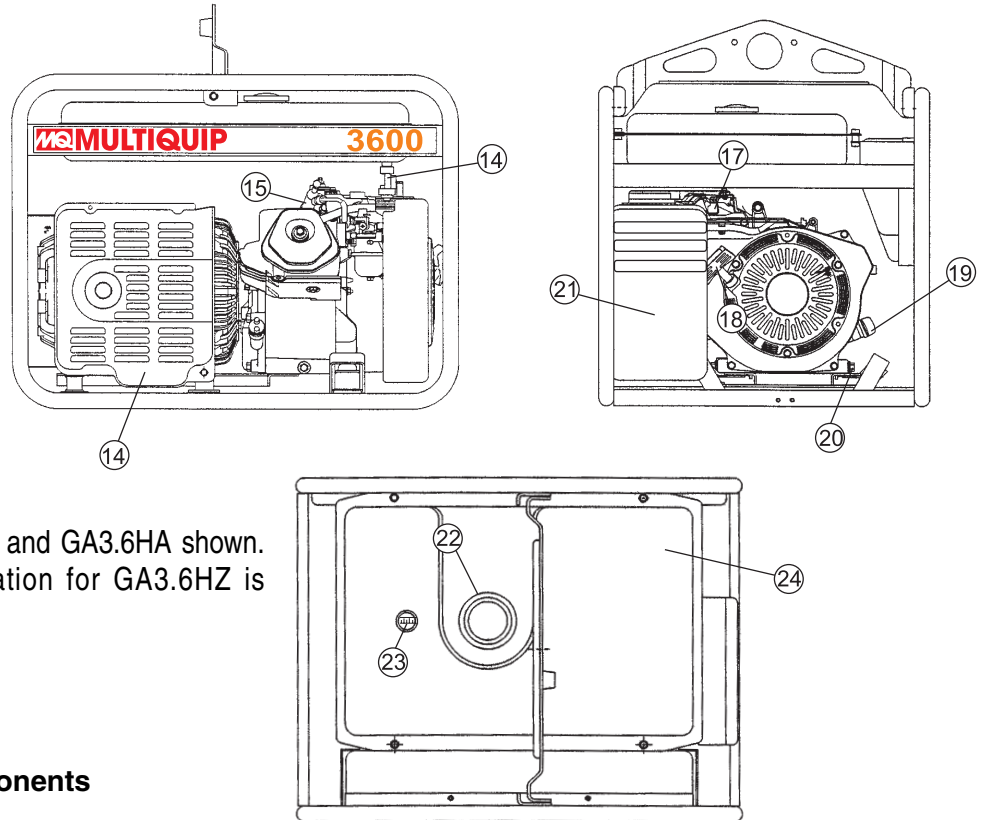


Figure 3D. 120/240V Full Power Switch Simplified Diagram (Down Position)

12. **120V Output Receptacle** – NEMA L6-20R twist-lock receptacle will provide 240V, 20 amps, 60 Hz. GA-3.6HZ only.
13. **GFCI Ground** – This ground connection point should be connected to a good earth ground (ground rod). Applies to GA3.6HZ only.

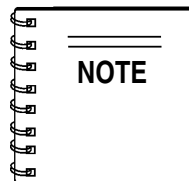
GA-3.6H Series— CONTROLS AND INDICATORS



Models GA3.6H and GA3.6HA shown. Component location for GA3.6HZ is similar.

Figure 2E. Generators Components

14. **Fuel Cock Lever** – Turn this lever **downward** to **start** (down) the flow of fuel into the carburetor. Turn **upward** to **stop** (up) the flow of fuel.
15. **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.
16. **Muffler/Heat Shield** – Used to reduce noise and emissions. **NEVER** touch this **heat shield** when the generator/welder is in use. Always allow time for the generators to cool down before performing maintenance.
17. **Choke Lever** – Used for starting the engine. **Close** the choke lever when starting a cold engine or in cold weather conditions. The choke enriches the fuel mixture. **Open** the choke lever if starting a warm engine or in warm weather conditions.
18. **Recoil Starter (pull rope)** – Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
19. **Engine Oil Filler Cap** – Remove this cap/dipstick when the adding of engine oil is required. See Table 4 for recommended type engine oil.
20. **Engine Oil Drain Plug** – Remove this drain plug when draining of the oil from the engine crankcase is required. Fill with recommended type oil as listed in Table 4.
21. **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. **NEVER** run the engine without an air cleaner.
22. **Fuel Tank Cap** – Remove this cap to add unleaded gasoline to the fuel tank. **Replenish** with **clean unleaded** gasoline. Make sure cap is tightened securely. **DO NOT** over fill.
23. **Fuel Gauge** – This gauge is located on top of the fuel tank. Read this gauge to determine when fuel is **low**.
24. **Fuel Tank** – Fuel tank capacity is 5 gallons (19 liters).



This **HONDA** engine is equipped with a low oil shutdown capability. A built in sensor will automatically turn off the engine should the oil level fall below a safe operating condition. Make sure the generators is placed on level ground. Placing the generators on level ground will ensure that the low oil sensor will function properly.

GA-3.6H Series — GENERATOR REFUELING

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. If generators is placed in a truck bed with a plastic liner, **REMOVE** generators from truck bed and place on ground (Figure 3) to refuel. This possibility exist of *fire* or *explosion* due to static electricity.

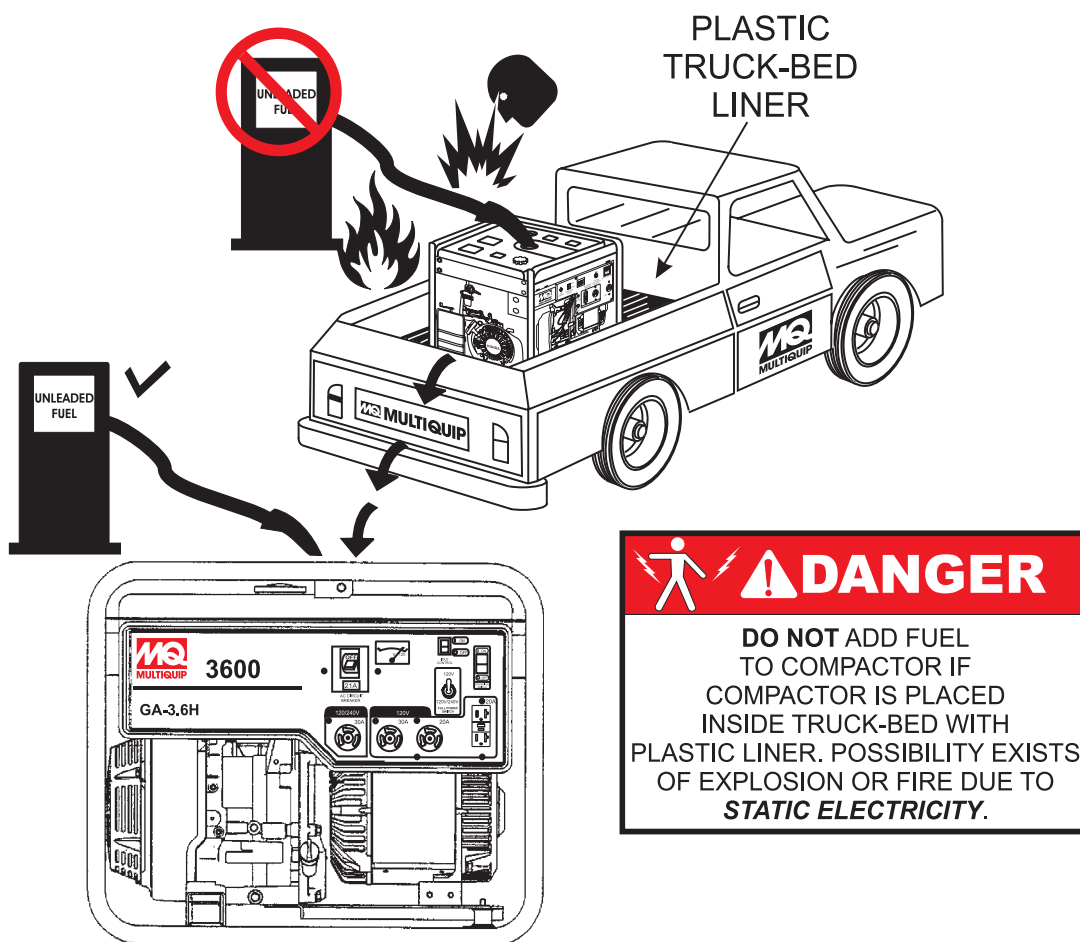



Figure 3. Generators Refueling


Outdoor Installation

Install the generator/welder in a area that is free of **debris**, **bystanders**, and **overhead obstructions**. Make sure the generators is on secure level ground so that it cannot slide or shift around. Also install the generators in a manner so that the exhaust will not be discharged in the direction of nearby homes.

The installation site must be relatively free from moisture and dust. All electrical equipment should be protected from excessive moisture. Failure to do will result in deterioration of the insulation and will result in short circuits and grounding.

Foreign materials such as dust, sand, lint and abrasive materials have a tendency to cause excessive wear to engine and alternator parts.


 **CAUTION**




Pay close attention to ventilation when operating the generators inside tunnels and caves. The engine exhaust contains noxious elements.

Mounting

The generators should always be mounted on a flat level surface to isolate vibration of the generators when it is running. **DO NOT** place the generators on slopes, the possibility exists that the generators could slide.

 **CAUTION**



An electric shock is apt to happen when vibrators are used. Pay close attention to handling when operating vibrators and always use rubber boots and gloves to insulate the body from a short circuit.

Indoor Installation

Exhaust gases from gasoline engines are extremely poisonous. Whenever an engine is installed indoors the exhaust fumes must be vented to the outside. The engine should be installed at least two feet from any outside wall. Using an exhaust pipe which is too long or too small can cause excessive back pressure which will cause the engine to heat excessively and possibly burn the valves.

Eliminate the danger of deadly carbon monoxide gas. Remember that exhaust fumes from any gasoline engine are very poisonous if discharged in a closed room, but harmless if allowed to mix with the outside air. If the generators is installed indoors, you must make provisions for venting the engine exhaust to the outside of the building.

Generators Grounding

To guard against electrical shock and possible damage to the equipment, it is important to provide a good **EARTH** ground. Always use the ground terminal on the generators to ground the generator. Ground the generators from its ground connector so that the resistance to ground is 500 ohms or less.

Article 250 (Grounding) of the National Electrical Code (NEC) provides guide lines for proper grounding and specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

NEC articles 250-64(b) and 250-66 set the following grounding requirements:

1. Use one of the following wire types to connect the generators to earth ground.
 - a. Copper - 10 AWG (5.3 mm²) or larger.
 - b. Aluminum - 8 AWG (8.4 mm²) or larger.
2. When grounding the generators (Figure 3) connect the ground cable between the lock washer and the nut on the generators and tighten the nut fully. Connect the other end of the ground cable to earth ground.
3. NEC article 250-52(c) specifies that the earth ground rod should be buried a minimum of 8 ft. into the ground.

GA-3.6H Series — INSTALLATION

Connecting the Ground

The nut and ground terminal on the generators should always be used to connect the generators to a suitable ground. The ground cable should be #8 size wire minimum.

At the generator, connect the terminal of the ground cable between the lock washer and the nut (Figure 4) and tighten the nut fully. Connect the other end of the ground cable to a suitable earth ground (ground rod).

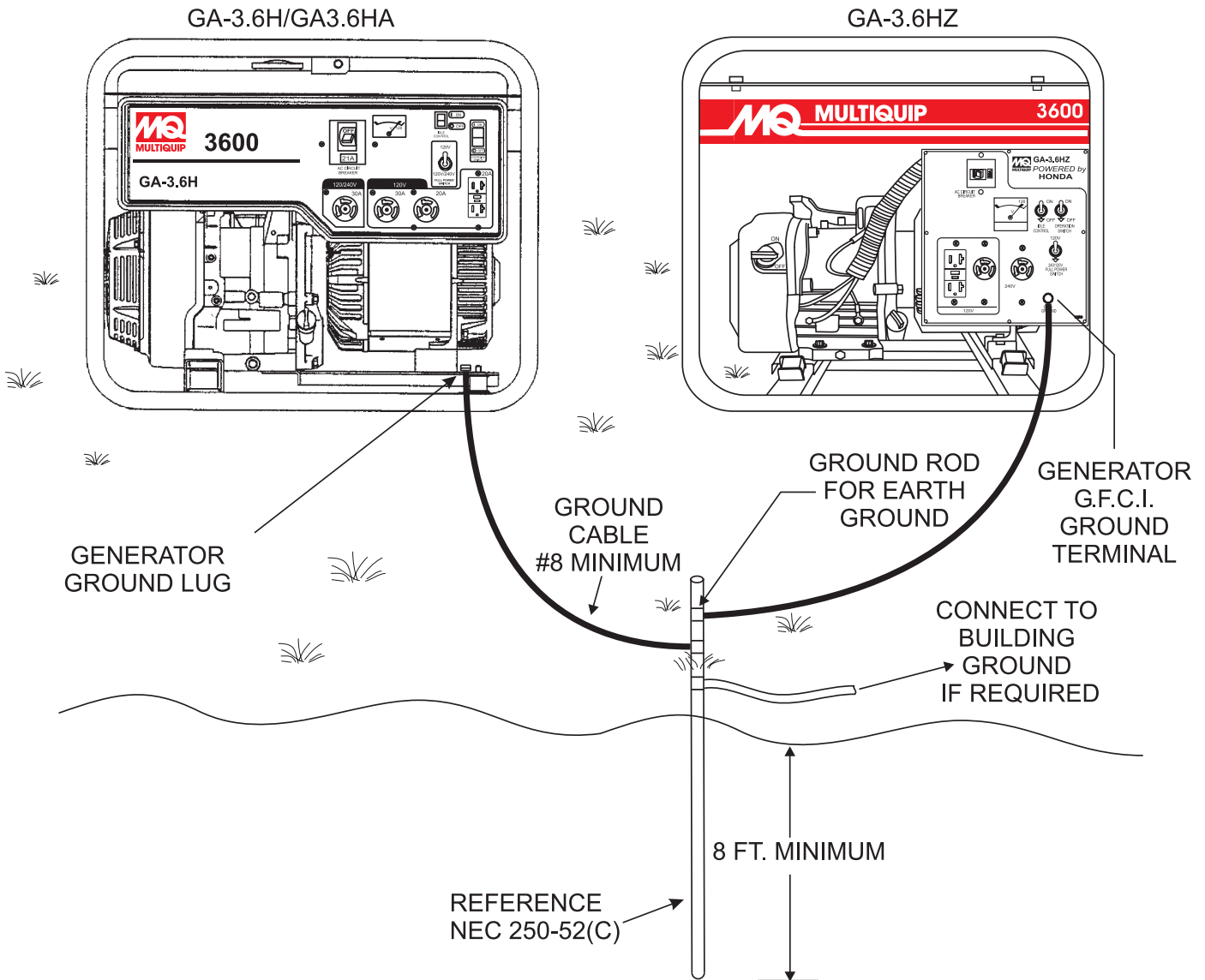


Figure 4. Generators Grounding

General Inspection Prior to Operation

Ground Power Tools

When using power tools or electrical equipment requiring AC power from the generator, make sure connecting (power tool) cable has a ground as shown in Figure 5.

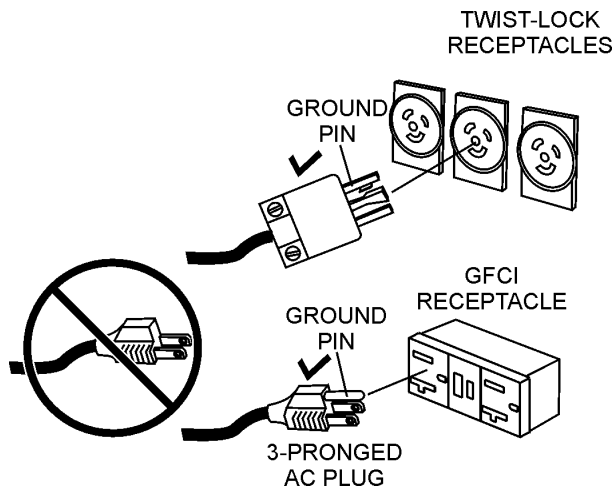
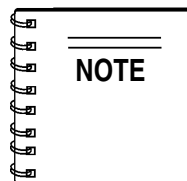


Figure 5. Ground Cables/Plugs

Extension Cable

When electric power is to be provided to various tools or loads at some distance from the generator, extension cords are normally used. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generators and point of use (load) is held to a minimum. Use the cable selection chart (Table 3) as a guide for selecting proper cable size.



Never! use power tools or equipment that do not have a ground capability, the possibility exists of **electrocution, electrical shock or burn**, which can cause **severe bodily harm** or even **DEATH!**

Main Circuit Breaker

To protect the generators from an overload always place the main circuit breaker in the "OFF" position prior to starting the engine.

Table 3. Cable Selection (60 Hz, Single Phase Operation)

Current in Amperes	Load In Watts	Maximum Allowable Cable Length			
	At 120 Volts	#10 Wire	#12 Wire	#14 Wire	#16 Wire
2.5	300	1000 ft.	600 ft.	375 ft.	250 ft.
5	600	500 ft.	300 ft.	200 ft.	125 ft.
7.5	900	350 ft.	200 ft.	125 ft.	100 ft.
10	1200	250 ft.	150 ft.	100 ft.	
15	1800	150 ft.	100 ft.	65 ft.	
20	2400	125 ft.	75 ft.	50 ft.	

CAUTION: Equipment damage can result from low voltage.

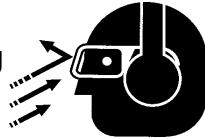
GA-3H/HA Series — PRE-INSPECTION (ENGINE)

CAUTION

NEVER operate the generators 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 generator.



Before Starting

1. Read safety instructions at the beginning of manual.
2. Clean the generator, 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 generators on secure level ground with the engine stopped.
2. Remove the filler dipstick from the engine oil filler hole (Figure 6) and wipe clean.

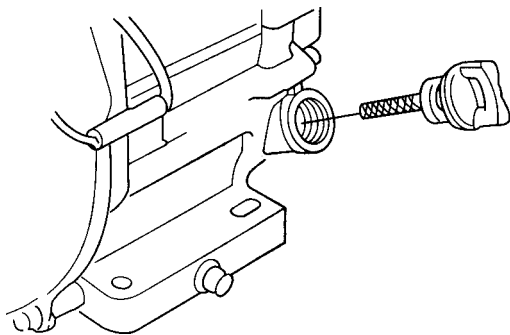


Figure 6. Engine Oil Dipstick (Removal)

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 7), fill to the edge of the oil filler hole with the recommended oil type (Table 4). Maximum oil capacity is 1.16 quarts (1.1 liters)

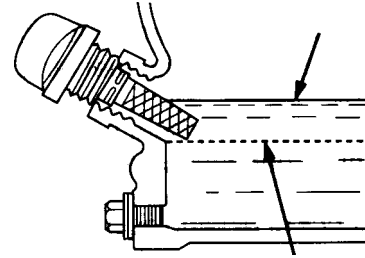


Figure 7. Engine Oil Dipstick (Oil Level)

Table 4. 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

DANGER EXPLOSIVE FUEL

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



Fuel Check

1. Close the fuel cock before filling the fuel tank.
2. Remove the fuel cap located on top of fuel tank.
3. Read the fuel gauge located on top of the fuel tank (Figure 8) to determine if the fuel level is low. If fuel is low, replenish with *clean unleaded fuel*.

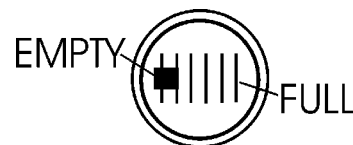


Figure 8. Fuel Gauge

4. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. **DO NOT** fill the tank beyond capacity. Wipe up any spilled fuel *immediately!*

GA-3.6H Series— INITIAL START-UP (ENGINE)

CAUTION

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



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

Before Starting the Engine

1. Be sure to **disconnect all electrical loads** from the generators prior to starting the engine.
2. **NEVER** start the engine with the main circuit breaker in the "ON" position. Always place this circuit breakers (Figure 9) in the **OFF** position before starting.

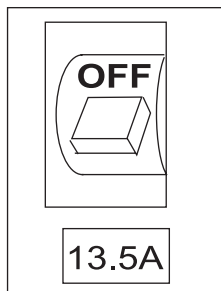


Figure 9. Main Circuit Breaker (OFF Position)

Starting the Engine

1. Place the engine **fuel valve lever** (Figure 10) to the "ON" position."

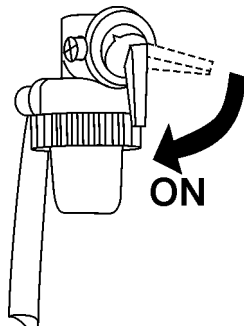


Figure 10. Engine Fuel Valve Lever (ON Position)

2. Place the **choke lever** (Figure 11) in the "CLOSED" position if starting a **cold** engine.

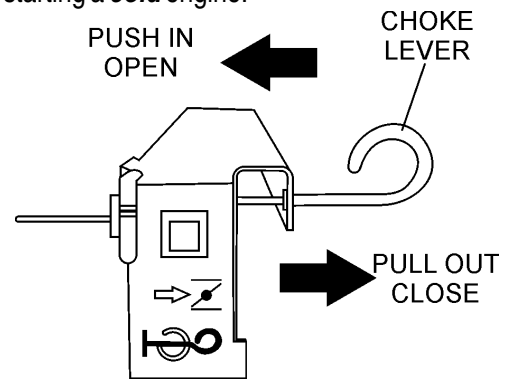


Figure 11. Choke Lever

3. Place the **choke lever** (Figure 11) in the "OPEN" position if starting a **warm engine** or the **temperature is warm**.
4. Place the **generator's operation switch** (Figure 12) in the "ON" position.

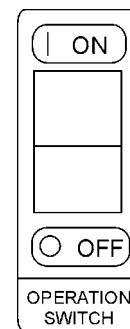


Figure 12. Generator Operation Switch (ON)

5. Grasp the starter grip (Figure 13) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding to the compression point. Pull the starter grip briskly and smoothly for starting.

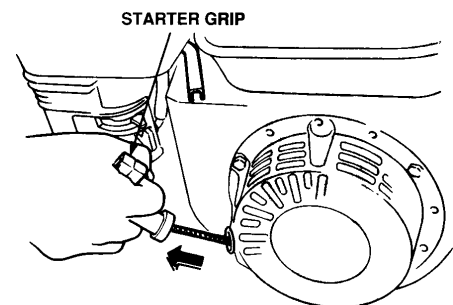


Figure 13. Starter Grip

CAUTION

DO NOT pull the starter rope all the way to the end.
DO NOT release the starter rope after pulling. Allow it to rewind as soon as possible.

GA-3.6H Series— INITIAL START-UP/GENERATOR OPERATION

- If the engine has started, slowly return the choke lever (Figure 11) to the "OPEN" position. If the engine has not started repeat steps 1 through 5.
- Before the generator is placed into operation, run the engine for 3-5 minutes. Check for abnormal smells, fuel leaks, and noises that would associate with loose components.
- Place the *idle control switch*** (Figure 14) in the "OFF" (down) position. This will allow the engine speed to run at speed about 3600 RPM's

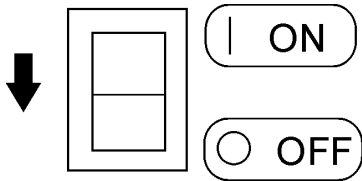


Figure 14. Idle Control Switch (Off)

NOTE Placing the *idle control switch* in the **OFF** position (Figure 14) allows the engine to operate at a maximum speed of about 3600 RPM's. When the idle control switch is placed in the up position (**ON**) (Figure 15), the generators will run at idle speed (2200 RPM's) until a load is applied, at that time the engine speed will increase to 3600 RPM's as long as the load is being applied. When the load is not in use, the engine speed will drop back to the idle mode after about 3 seconds.

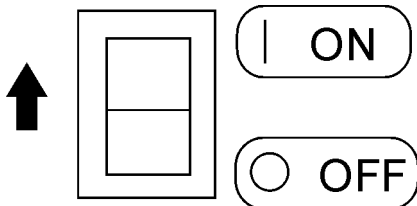


Figure 15. Idle Control Switch (On)

60 Hz Operation

- Place main circuit breaker (Figure 16) in the **ON** position.

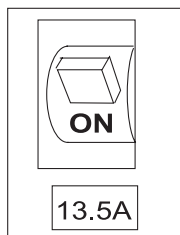


Figure 17. Main Circuit Breaker (ON)

- Place the full power switch (Figure 17) in the 120V position (up).

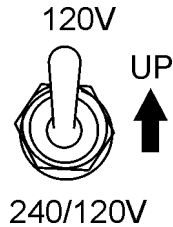


Figure 17. Full Power Switch 120 V Position (Up)

NOTE When the *full power switch* is in the 120 V position, the 240V twist-lock receptacle cannot be used.

- Read the *voltmeter* on the front panel of the generator (Figure 18) and verify that 120 VAC is present at the 120V twist-lock and GFCI duplex receptacles. For additional verification of voltage, an external voltmeter can be used to measure the output voltage as shown in Figure 18.

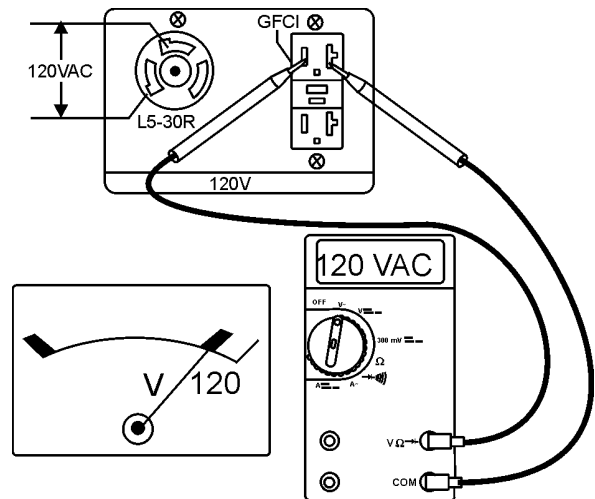


Figure 18. 120 V and GFCI Receptacles

- Place the full power switch (Figure 19) in the 240V position (down).

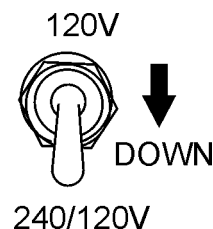


Figure 19. Full Power Switch 240/120 V Position (Down)

GA-3.6H Series— GENERATOR OPERATION/SHUTDOWN

5. Read the **voltmeter** on the front panel of the generator (Figure 20) and verify that 240 VAC is present at the 240V twist-lock receptacle. Using an external voltmeter verify that 120V is present at the 120V twist-lock and GFCI duplex receptacles.

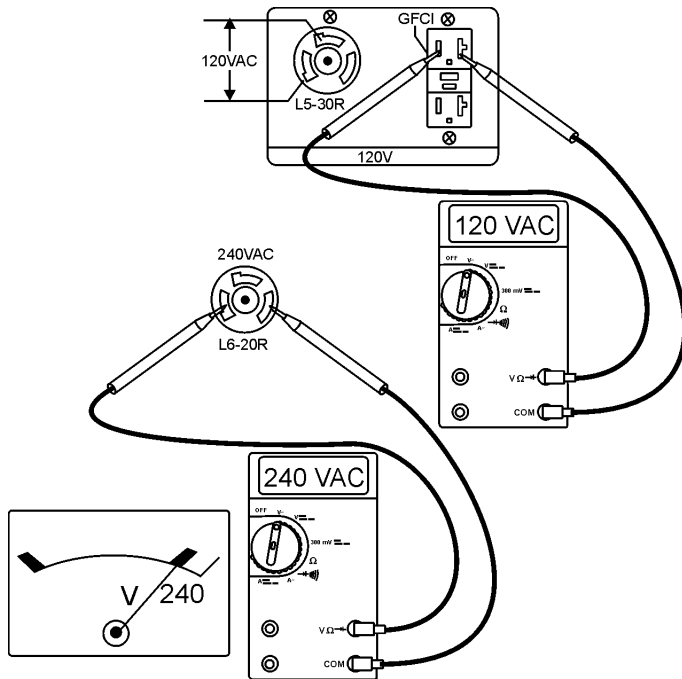
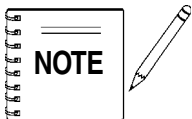
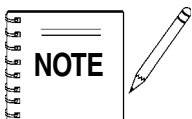


Figure 20. 60 Hz Output Receptacles



When the full power switch is in the 240 volt (down) position, you can take up to **half of the rated power** of the generating set at 120 volts from the GFCI duplex receptacle and up to half of the rated power of the set at 120 volts from the 120V twist-lock receptacle; or full rated power of the genset at 240 volts from the 240V twist-lock receptacle.



When using a combination of dual receptacles, total load should not exceed the rated capacity of the generator.

Connecting the Load

1. If small wattage power tools are required, connect them to the 60 Hz output receptacles at this time.

Stopping the Engine

1. Place the main circuit breaker (Figure 21) in the **OFF** position.

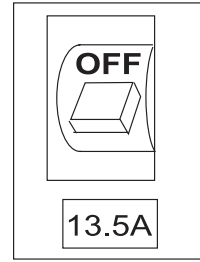


Figure 21. Main Circuit Breakers (Off)

2. Place the **idle control switch** (Figure 22) in the **OFF** position.

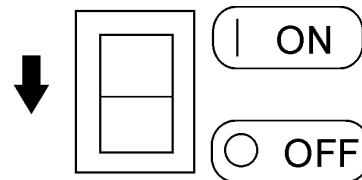


Figure 22. Idle Control Switch (Off)

3. Let the engine run at idle with no load for 2-3 minutes.
4. To shut-down the engine, place the generator's operation switch (Figure 23) in the **OFF** position.

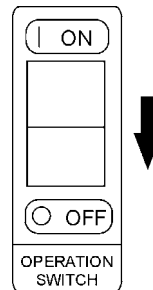


Figure 23. Generator Operation Switch (Off)

5. Place the engine **fuel valve lever** (Figure 24) to the "OFF" position."

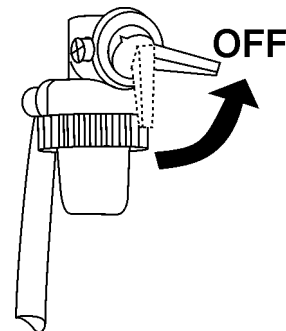


Figure 24. Engine Fuel Valve Lever (OFF Position)

6. Remove all **loads** from the generator.

GA-3.6H Series— PREPARATION FOR LONG TERM STORAGE

Generators Storage

For storage of the generating set for over 30 days, the following is required:

- Drain the fuel tank completely, or add STA-BIL to the fuel.
- Run the engine until the gasoline in the carburetor is completely consumed.
- Completely drain the oil from the crankcase and refill with fresh oil.
- Remove the spark plug, pour 2 or 3 cc of SAE 30 oil into the cylinder and crank slowly to distribute the oil.
- Slowly rotate the engine a few times with the starter Rope and install a new plug.
- Pull out the starter rope slowly and stop at the compression point.
- Clean all external parts of the generating set with a cloth.
- Cover the generating set and store in a clean, dry place.

GA-3.6H Series— MAINTENANCE (ENGINE)

Use Table 5 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 5. 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 & Bolts	Re-tighten If Necessary	X					
Spark Plug	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 ROBIN Shop Manual for service procedures.

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

GA-3.6H Series— MAINTENANCE (ENGINE)

Maintenance

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 25), 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.

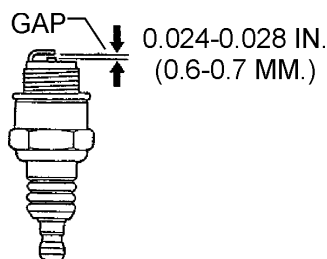


Figure 25. Spark Plug Gap

ENGINE OIL

- Drain the engine oil when the oil is **warm** as shown in Figure 26.
- 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 4. For engine oil capacity, see Table 2 (engine specifications). **DO NOT** overfill.
- Install drain bolt with sealing washer and tighten securely.

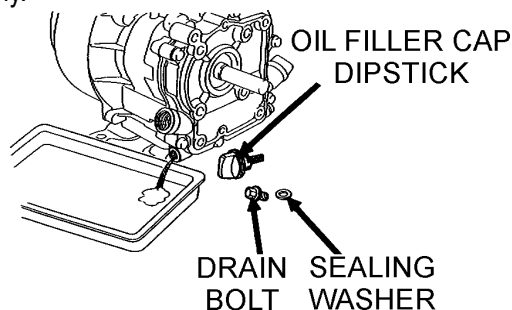


Figure 26. Engine Oil (Draining)

! DANGER

DO NOT use gasoline as a cleaning solvent, because that would create a risk of fire or explosion.



ENGINE AIR CLEANER

- Remove the air cleaner cover and foam filter element as shown in Figure 27.
- 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.

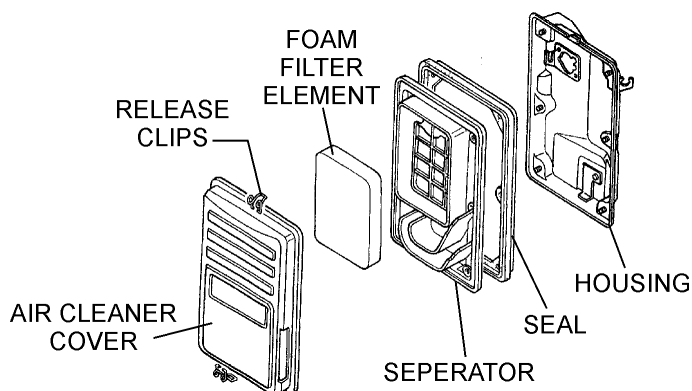
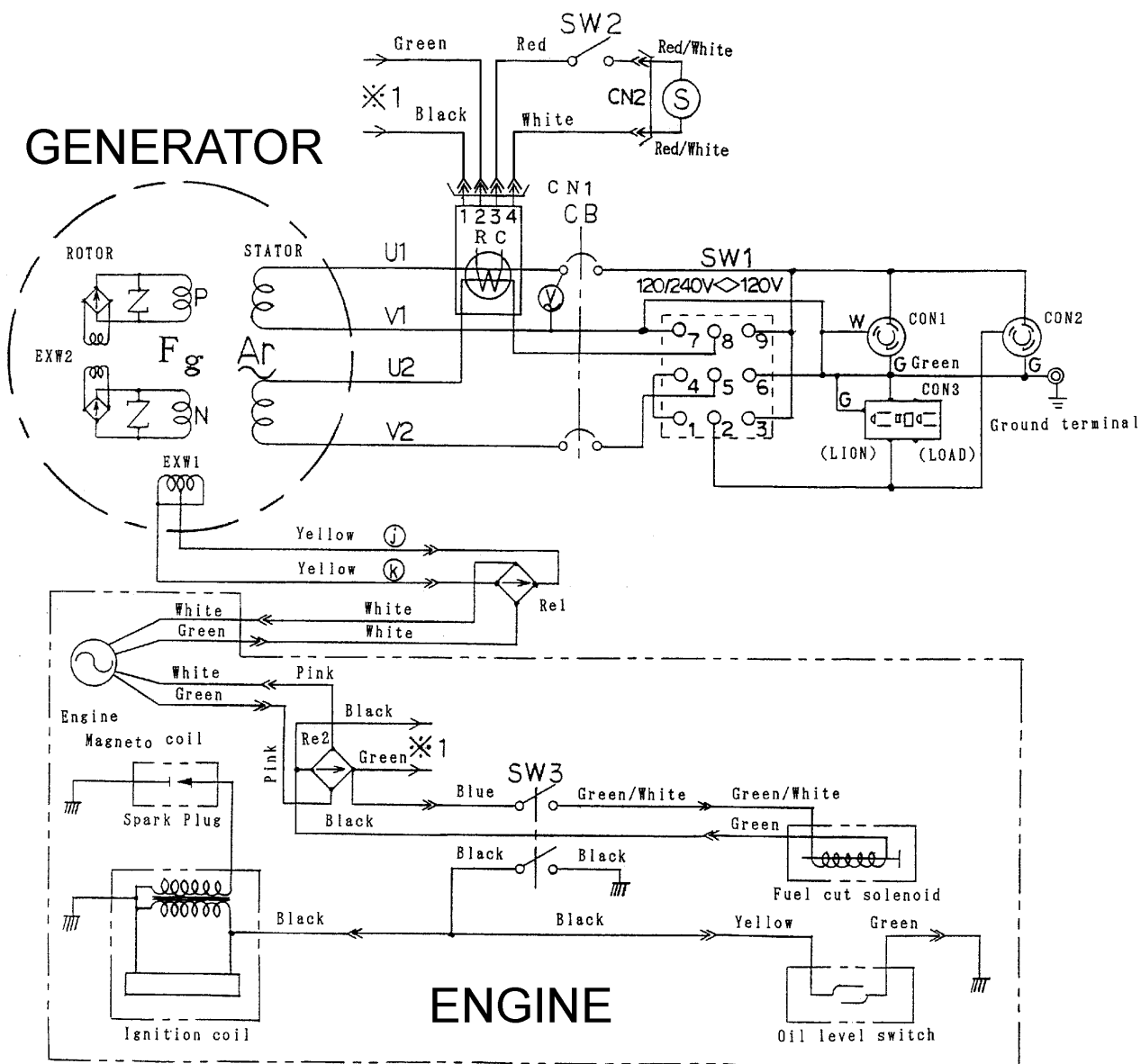


Figure 27. Engine Air Cleaner

GA-3.6H Series — WIRING DIAGRAM (3.6HZ)

GA-3.6HZ WIRING DIAGRAM



COLOR CODE			
WIRE COLOR	WIRE COLOR	WIRE COLOR	WIRE COLOR
B	BLACK	R	RED
L	BLUE	W	WHITE
BR	BROWN	Y	YELLOW
G	GREEN	LB	LIGHT BLUE
GR	GRAY	LG	LIGHT GREEN
V	VIOLET	O	ORANGE
P	PINK		



CONNECTOR ARRANGEMENT
(VIEW AT WINDING SIDE)

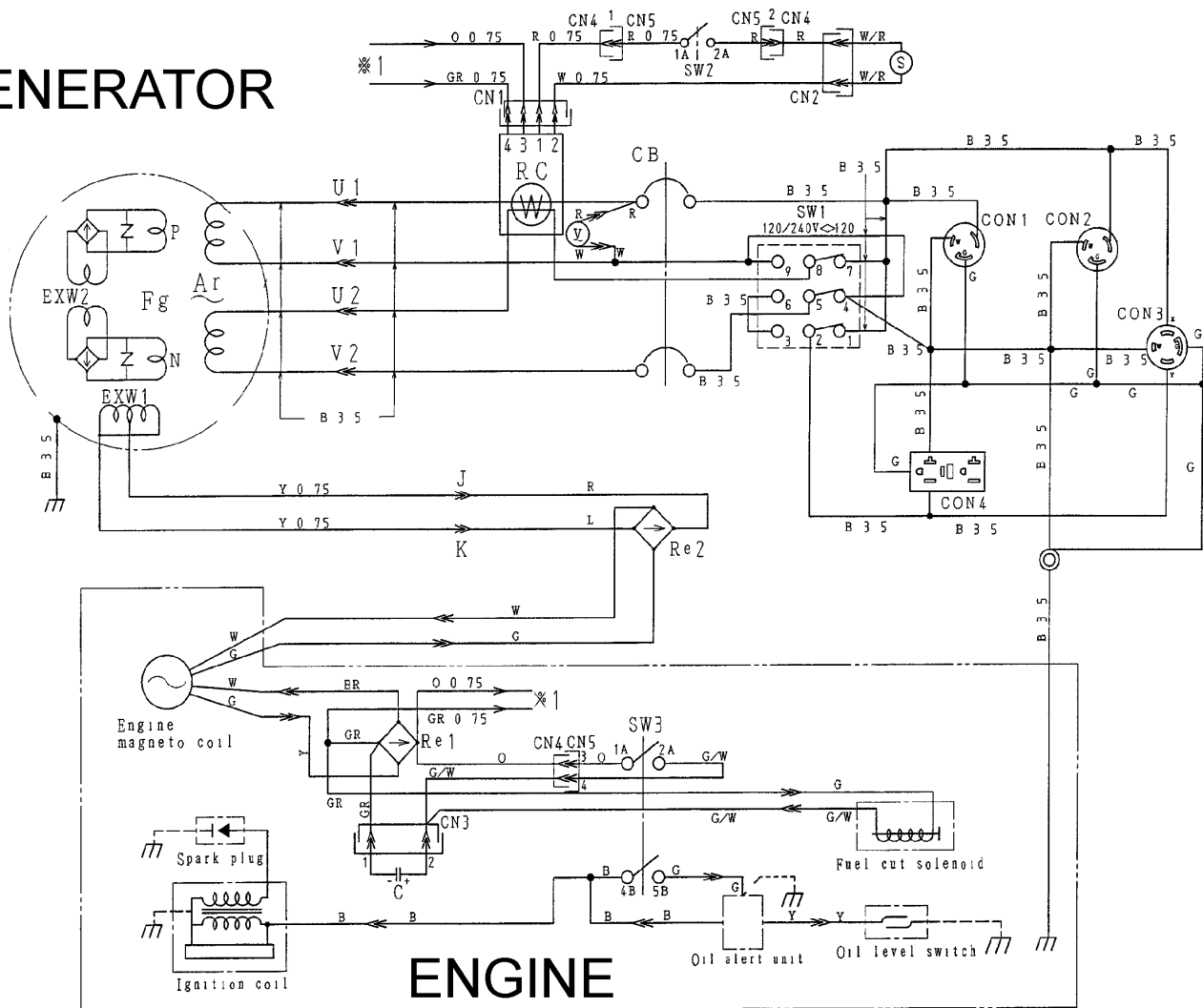
SYMBOL	DESIGNATION
Ar	ARMATURE WINDING
Fg	FIELD WINDING
Ex W1	EXCITATION WINDING
Ex W2	EXCITATION WINDING
V	AC VOLTMETER 120/240V
RE 1, 2	RECTIFIER
CB	CIRCUIT BREAKER 25A @ 240, 50A @ 120
CON 1	RECEPTACLE L5-30R 30A, 125V
CON 2	RECEPTACLE L6-20R 20A, 250V
CON 3	RECEPTACLE 5-20R GFCI 20A, 125V
SW1	FULL POWER SWITCH
SW2	IDLE CONTROL SWITCH
SW3	OPERATION SWITCH
RC	IDLE CONTROL DEVICE
S	IDLE CONTROL SOLENOID

Figure 28. Generator Wiring Diagram (GA-3.6HZ)

GA-3.6H Series—WIRING DIAGRAM (3.6H)

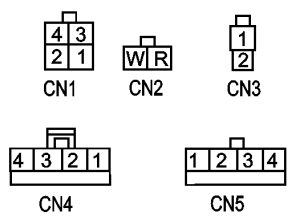
GA-3.6H WIRING DIAGRAM

GENERATOR



ENGINE

COLOR CODE			
WIRE COLOR		WIRE COLOR	
B	BLACK	R	RED
L	BLUE	W	WHITE
BR	BROWN	Y	YELLOW
G	GREEN	LB	LIGHT BLUE
GR	GRAY	LG	LIGHT GREEN
V	VIOLET	O	ORANGE
P	PINK		



CONNECTOR ARRANGEMENT
(VIEW FROM INSERTING WIRE SIDE)

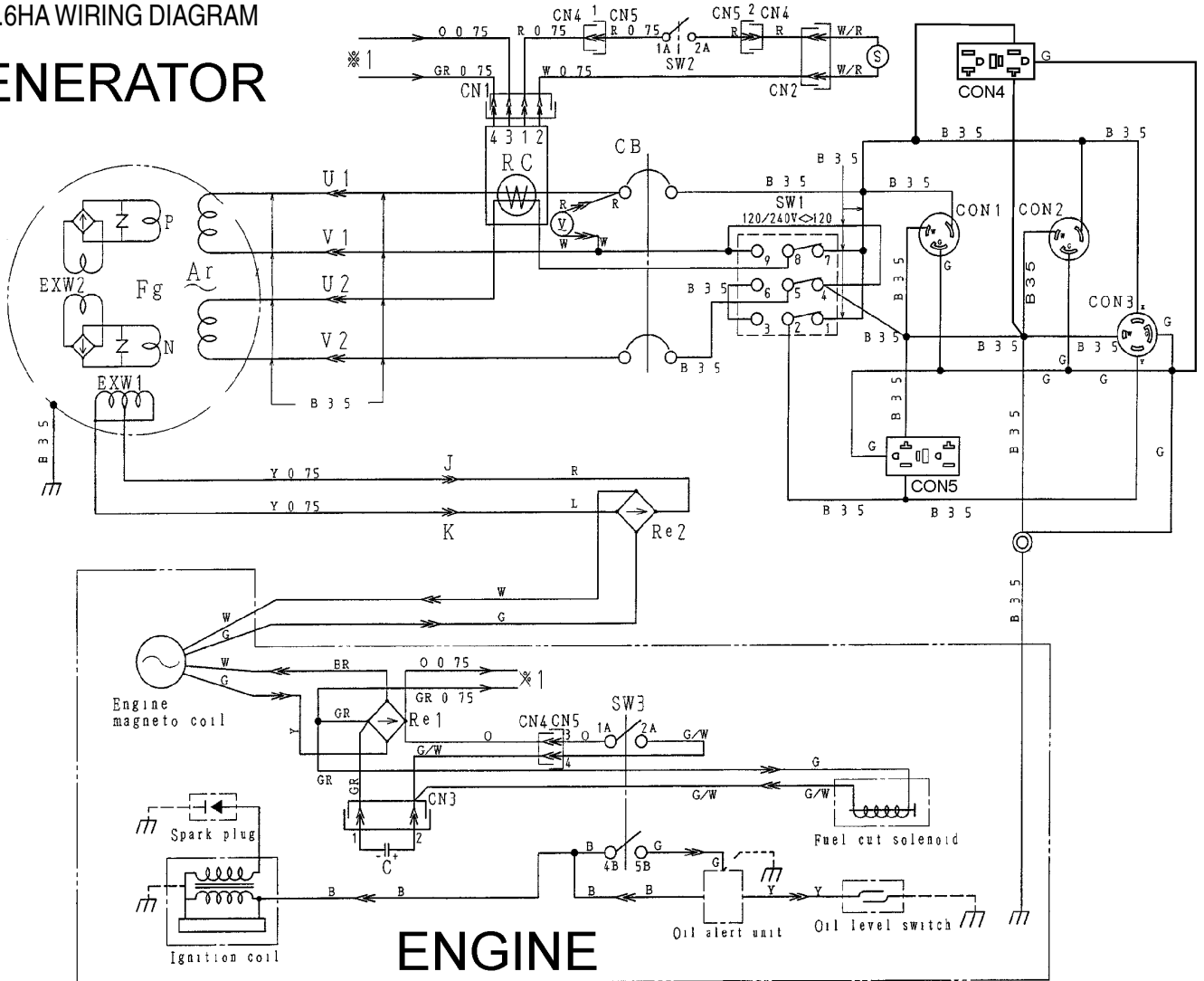
SYMBOL	DESIGNATION
Ar	ARMATURE WINDING
Fg-P, N	ROTOR ASSEMBLY
Ex W1	EXCITATION WINDING
Ex W2	EXCITATION WINDING
V	AC VOLTMETER 120/240V
RE 1, 2	RECTIFIER
CB	CIRCUIT BREAKER 25A @ 240, 37.5A @120
CON 1	RECEPTACLE L5-20R 20A, 125V
CON 2	RECEPTACLE L5-30R 30A 125V
CON 3	RECEPTACLE L14-30R 30A, 125/250V
CON 4	RECEPTACLE 520R GFCI 20A, 125V
SW1	FULL POWER SWITCH
SW2	IDLE CONTROL SWITCH
SW3	OPERATION SWITCH
RC	IDLE CONTROL DEVICE
S	IDLE CONTROL SOLENOID
C	CAPACITOR

Figure 29. Generator Wiring Diagram (GA-3.6H)

GA-3.6HA — WIRING DIAGRAM (GENERATOR)

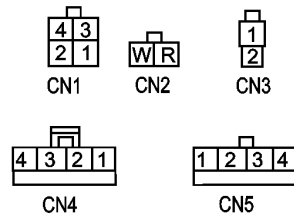
GA-3.6HA WIRING DIAGRAM

GENERATOR



ENGINE

COLOR CODE			
WIRE COLOR		WIRE COLOR	
B	BLACK	R	RED
L	BLUE	W	WHITE
BR	BROWN	Y	YELLOW
G	GREEN	LB	LIGHT BLUE
GR	GRAY	LG	LIGHT GREEN
V	VIOLET	O	ORANGE
P	PINK		



CONNECTOR ARRANGEMENT
(VIEW FROM INSERTING WIRE SIDE)

SYMBOL	DESIGNATION
Ar	ARMATURE WINDING
Fg-P, N	ROTOR ASSEMBLY
Ex W1	EXCITATION WINDING
Ex W2	EXCITATION WINDING
V	AC VOLTMETER 120/240V
RE 1, 2	RECTIFIER
CB	CIRCUIT BREAKER 25A @ 240, 50A @ 120
CON 1	RECEPTACLE L5-20R 20A, 125V
CON 2	RECEPTACLE L5-30R 30A 125V
CON 3	RECEPTACLE L14-30R 30A, 125/250V
CON 4,5	RECEPTACLE 520R GFCI 20A, 125V
SW1	FULL POWER SWITCH
SW2	IDLE CONTROL SWITCH
SW3	OPERATION SWITCH
RC	IDLE CONTROL DEVICE
S	IDLE CONTROL SOLENOID
C	CAPACITOR

Figure 30. Generators Wiring Diagram (GA-3.6HA)

GA-3.6H Series—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 Troubleshooting (Table 6) and

Generator Troubleshooting (Table 7) information shown below and on the proceeding page. If the problem cannot be remedied, please leave the unit just as it is and consult our company's business office or service plant.

TABLE 6. 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 axle 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.

GA-3.6H Series—TROUBLESHOOTING (ENGINE)

TABLE 6. ENGINE TROUBLESHOOTING (CONTINUED)

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Insufficient power output "compression" and overheats	Malfunction in blower?	Check or replace blower.
	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 continously "WHITE"	Lubricating oil is wrong viscosity?	Replace lubricating oil with correct viscosity.
	Worn rings?	Replace rings
Exhaust color is continously "BLACK"	Air cleanner 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.

GA-3.6H Series—TROUBLESHOOTING (GENERATOR)

TABLE 7. GENERATOR TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Low voltage	Engine speed too low?	Raise engine speed to rated RPM.
Low voltage. Engine speed normal 3650 RPM (unloaded), 2500 RPM (idle)	AC voltmeter not working?	Replace AC voltmeter.
	Control box internal wiring malfunction?	Check control box wiring.
	Defective ignition coil?	Check red and green ignition wires. Replace ignition wires if necessary.
	Rotor winding malfunction?	Check or replace rotor.
	Stator winding malfunction?	Check or replace stator.
	Breaker malfunction?	Check or replace CB1.
Voltage output too high.	Engine speed too high?	Lower engine speed to rated RPM.
Voltage output too high. Engine speed normal 3650 RPM (unloaded), 2500 RPM (idle)	Control box internal wiring malfunction	Check control box wiring.
Circuit breaker will not turn on "NO LOAD"	Defective circuit breaker?	Replace circuit breaker.
Circuit breaker will turn on "LOADED" but trips immediately.	Overload?	Reduce load or replace breaker.
	Load circuit is shorted?	Check load circuit for short.
Does not accelerate from low to high "NO LOAD"	Stuck solenoid?	Check solenoid.
Does not accelerate from low to high "LOAD ACTIVE"	Control box internal wiring defective?	Check control box wiring.
Does not decelerate no "VOLTAGE OUTPUT".	Defective rotor windings?	Check or replace rotor.
	Defective solenoid?	Check or replace solenoid.
	Defective idle control device?	Check or replace idle control device.
	Defective solenoid?	Check or replace idle control device.
Does not decelerate but has "VOLTAGE OUTPUT".	Control box wiring malfunction?	Check control box wiring, replace any defective components.
	Defective solenoid?	Check or replace solenoid.
	Idle control device malfunction?	Check or replace idle control device.

GA-3.6H Series— 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.

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.

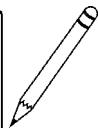
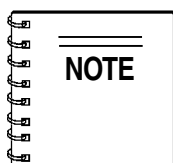
Sample Parts List:

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 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.



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 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”

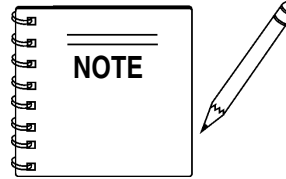
“Make/Obtain Locally” - Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

“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.

GA-3.6H Series— SUGGESTED SPARE PARTS

GA-3.6H Series 1 TO 3 UNITS WITH HONDA GX240K1EDN2 ENGINE

1 to 3 Units

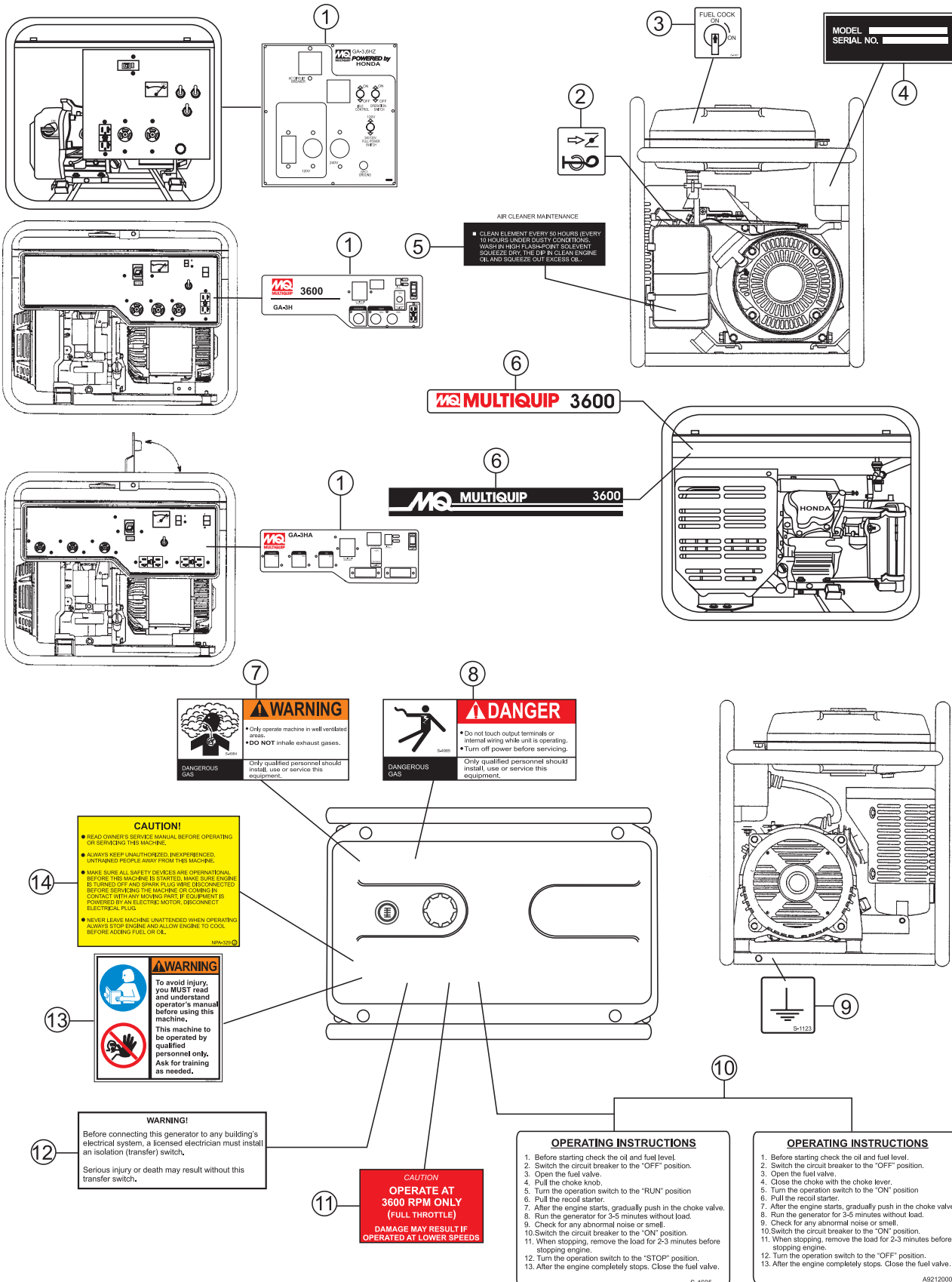


Part numbers on this Suggested Spare Parts List may supersede/replace the P/N shown in the text pages of this book.

<u>Qty.</u>	<u>P/N</u>	<u>Description</u>
1	0810106004	CAP FUEL TANK (GA3.6HZ)
1	A9924800014	CAP FUEL TANK (GA3.6H/3.6HA)
1	A9924800004	FILTER FUEL
1	7895419004	RUBBER SUSPENSION
4	1725419214	RUBBER SUSPENSION
3	9807955846	SPARK PLUG
1	34150ZH7003	ALERT UNIT, OIL
2	28462ZE2W11	ROPE, RECOIL
3	17211899000	ELEMENT AIR CLEANER

GA-3.6H Series— NAMEPLATE AND DECALS

NAMEPLATE AND DECALS



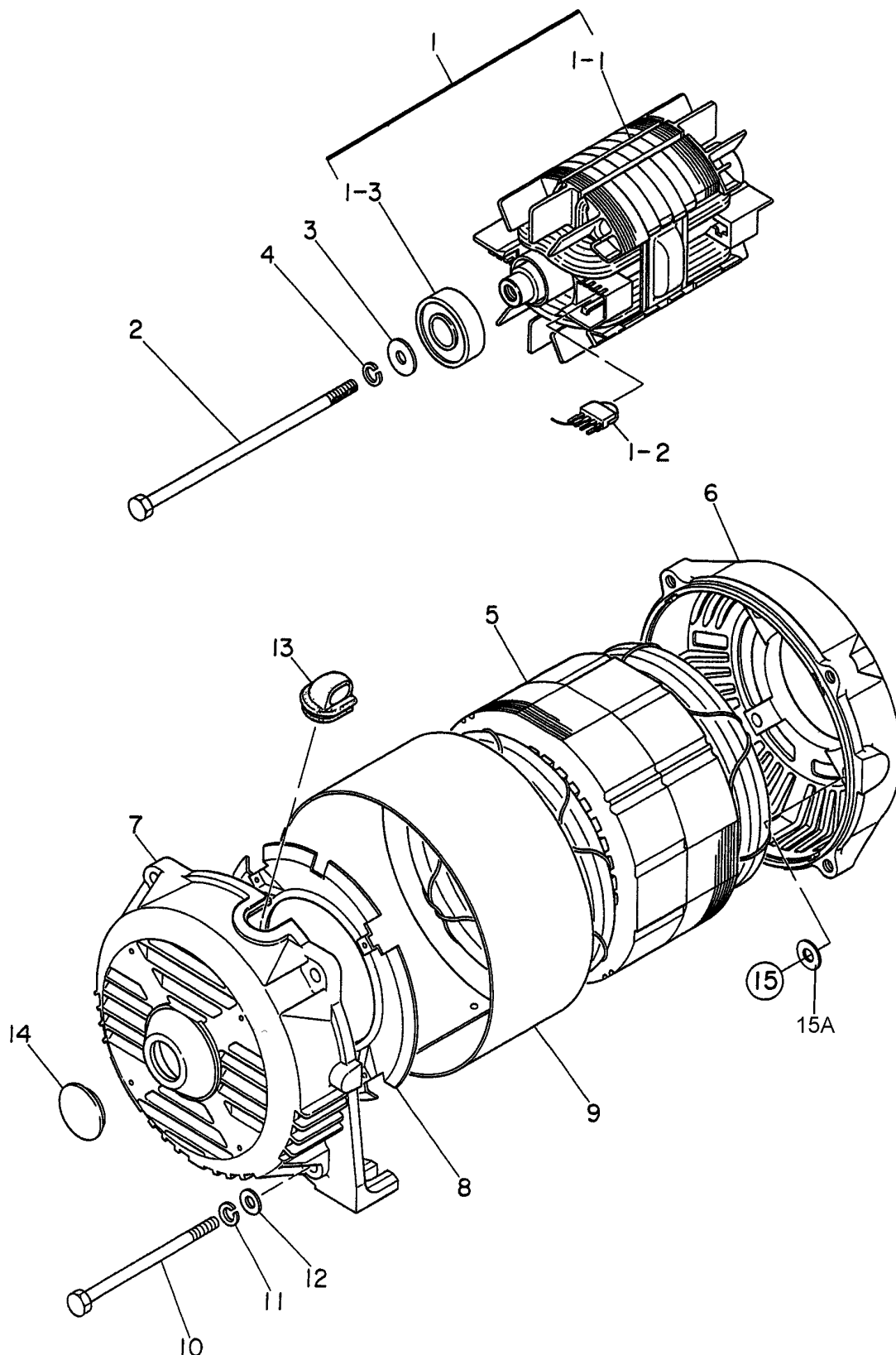
GA-3.6H Series — NAMEPLATE AND DECALS

NAMEPLATE AND DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7910501222	DECAL; CONTROL PANEL	1	GA-3.6HZ ONLY
1	A3511200002	DECAL; CONTROL PANEL	1	GA-3.6H ONLY
1	A3511200402	DECAL; CONTROL PANEL	1	GA3.6HA ONLY
2	87528898620	DECAL; CHOKE	1	REPLACES P/N 0600500047
3	1980680004	DECAL; FUEL COCK	1	S-3704
4		NAMEPLATE	1	CONTACT MQ PARTS DEPT.
5	87533ZC0630	DECAL; AIR CLEANER	1	REPLACES P/N 0600500045
6	7910631002	DECAL; MQ MULTIQUIP 3600	1	GA-3.6HZ ONLY
6	A3561000003	DECAL; MQ MULTIQUIP 3600	1	GA-3.6H & GA3.6HA ONLY
7	8700611804	DECAL; WARNING DANGEROUS GAS	1	S-4984
8	8700611904	DECAL; DANGER ELECTRICAL SHOCK HAZ.	1	S-4985
9	0800628504	DECAL; GROUND	1	S-1123
10	7900638004	DECAL; OPERATING INSTRUCTIONS	1	GA-3.6HZ ONLY S-4605
10	A9521200104	DECAL; OPERATING INSTRUCTIONS	1	GA-3.6H & GA3.6HA ONLY
11	7900636004	DECAL; CAUTION OPER. AT 3600 RPM ONLY	1	S-4461
12	0820610404	DECAL; WARNING TRANSFER SWITCH	1	S-3627
13	35137	DECAL; WARNING READ MANUAL	1	GA-3.6H & GA3.6HA ONLY
14	0820610304	DECAL; WARNING READ MANUAL	1	GA-3.6HZ ONLY

GA-3.6H Series— GENERATOR ASSY.

GENERATOR ASSY.



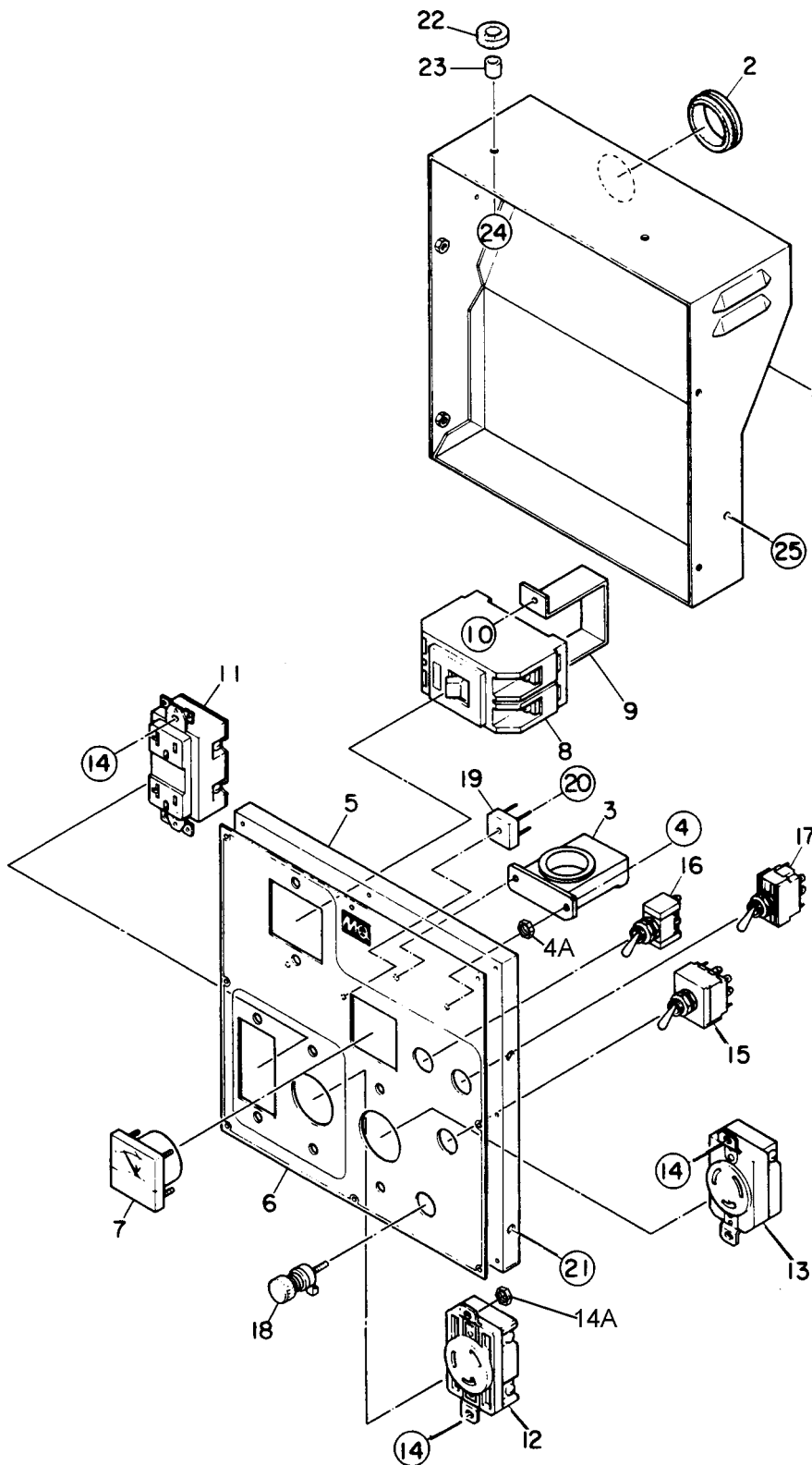
GA-3.6H Series— GENERATOR ASSY.

GENERATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7911002003	ROTOR ASSY.	1	INCLUDES ITEMS W/* GA-3.6HZ ONLY
1	7901002403	ROTOR ASSY.	1	INCLUDES ITEMS W/* GA-3.6H/GA3.6HA ONLY
1-1*		FIELD ASSY.	1	NOT SOLD SEPERATELY
1-2*	0601823207?	RECTIFIER, D3SB60	2	GA-3.6HZ ONLY
1-2*	0601823213	RECTIFIER, D3SB80	2	GA-3.6H & GA3.6HA ONLY
	0771706304	SURGE ABSORBER,	2	TNR15G431K GA-3.6HZ ONLY
	0601822637	SURGE ABSORBER,	2	TNR96431K GA-3.6H/GA3.6HA ONLY
1-3*	0071706304	BEARING, 6304 2RU NYCM	1	
2	7901017004	SET BOLT, ROTOR	1	
3	0801086104	SET WASHER, BEARING	1	
4	0040010000	SPRING WASHER	1	
5	7911344003	ARMATURE ASSY.	1	GA-3.6HZ ONLY
5	A5135000103	ARMATURE ASSY.	1	GA-3.6H & GA3.6HA ONLY
6	7901315502	END BRACKET	1	
7	7871315022	END BRACKET	1	
8	7875021513	GUIDE PANEL, AIR	1	GA-3.6HZ ONLY
8	7875021523	GUIDE PANEL, AIR	1	GA-3.6H & GA3.6HA ONLY
9	7871331003	COVER	1	
10	7901316004	SET BOLT, STATOR	4	
11	0040008000	WASHER, LOCK	4	
12	0041208000	WASHER, FLAT	4	
13	7871329514	GROMMET	1	
14	0601851760	CAP, 0B-13	1	
15	0013608020	HEX, HEAD BOLT	4	
15A	0040008000	SPRING WASHER	4	

GA-3.6H Series — CONTROL BOX ASSY. (GA-3HZ)

CONTROL BOX ASSY. (GA3.6HZ)



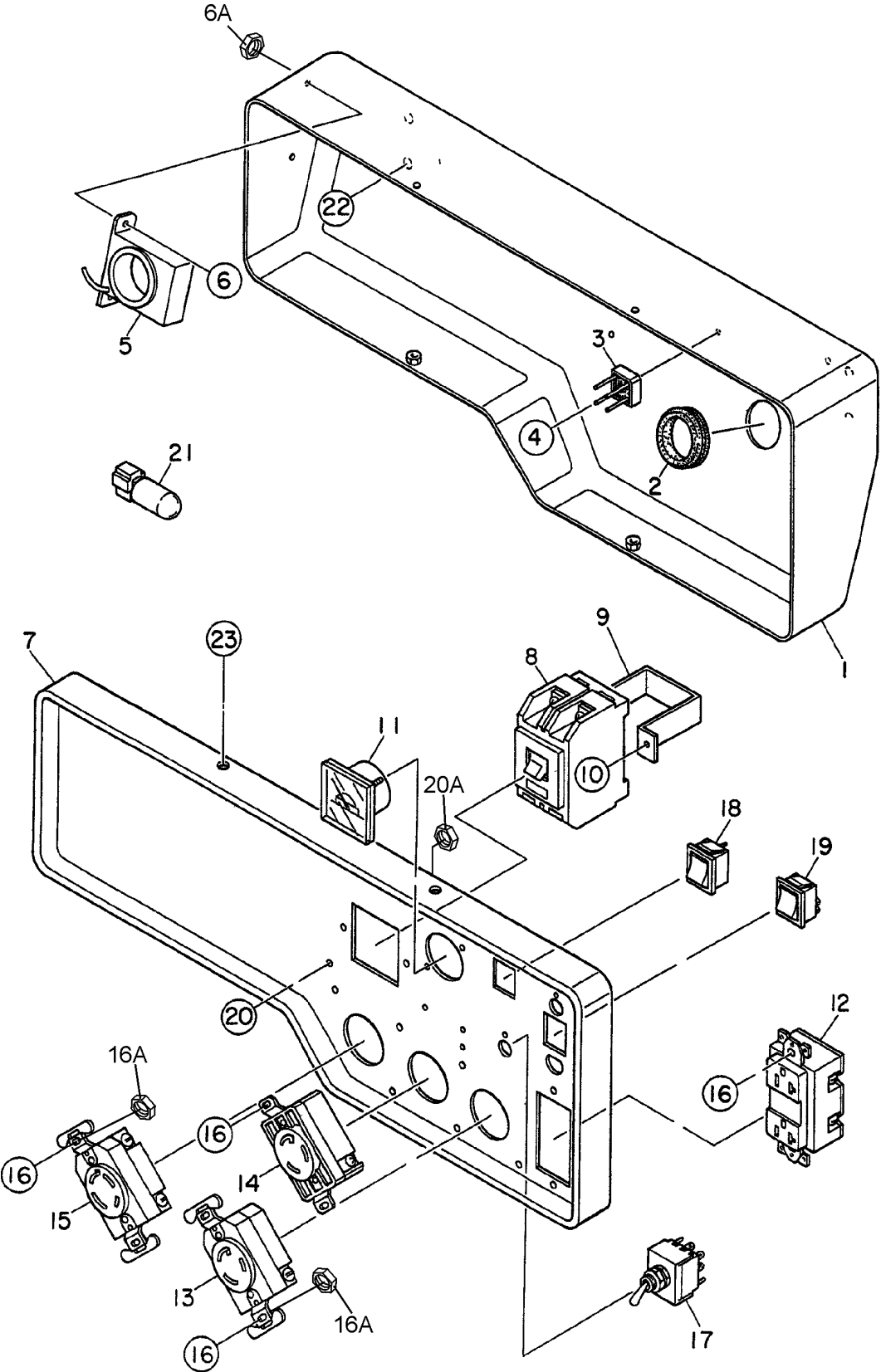
GA-3.6H Series — CONTROL BOX ASSY. (GA-3HZ)

CONTROL BOX ASSY. (GA3.6HZ)

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7911811403	CONTROL BOX	1	
2	0601850102	GROMMET, G3	1	
3	0601823853	SLOW DOWN UNIT, ND-80	1	
4	0027104010	MACHINE SCREW	2	
4A	0207004010	HEX. NUT	2	
5	7911821413	CONTROL PANEL	1	
6	7910501212	NAMEPLATE, N5431B	1	S/N 2975451 AND BELOW
6	7910501222	NAMEPLATE, N-5431C	1	S/N 2975452 AND ABOVE
7	0601800258	AC VOLTMETER, 8283:0-120V.0-240V	1	
8	0601805327	CIRCUIT BREAKER, KM-2:265V,13.5A	1	
9	4341817004	BRACKET, CIRCUIT BREAKER	1	
10	0027104010	MACHINE SCREW	2	
11	0601812597	RECEPTACLE, 5-20R, GF5352 (GFCI)	1	
12	0601811035	RECEPTACLE, L5-30R,125V,30A	1	
13	0601811032	RECEPTACLE, L6-20R, 250V,20A	1	
14	0027104010	MACHINE SCREW	6	
14A	0207004000	HEX. NUT	6	
15	0601830737	FULL POWER SWITCH, ET1330D12	1	
16	0601830727	IDLE CONTROL SWITCH, ET115A12	1	
17	0601830738	OPERATION SWITCH, ET210K12	1	
18	0601815109	GROUND TERMINAL, T-381	1	
19	0601823204	RECTIFIER, S5VB60	2	
20	0027103020	MACHINE SCREW	2	
21	0017105010	HEX. HEAD BOLT	4	
22	0805088004	RUBBER CUSHION	2	
23	0805088304	COLLAR	2	
24	0017106020	HEX. HEAD BOLT	2	
25	0017106016	HEX. HEAD BOLT	1	

GA-3.6H Series — CONTROL BOX ASSY. (GA-3H)

CONTROL BOX ASSY. (GA-3H)



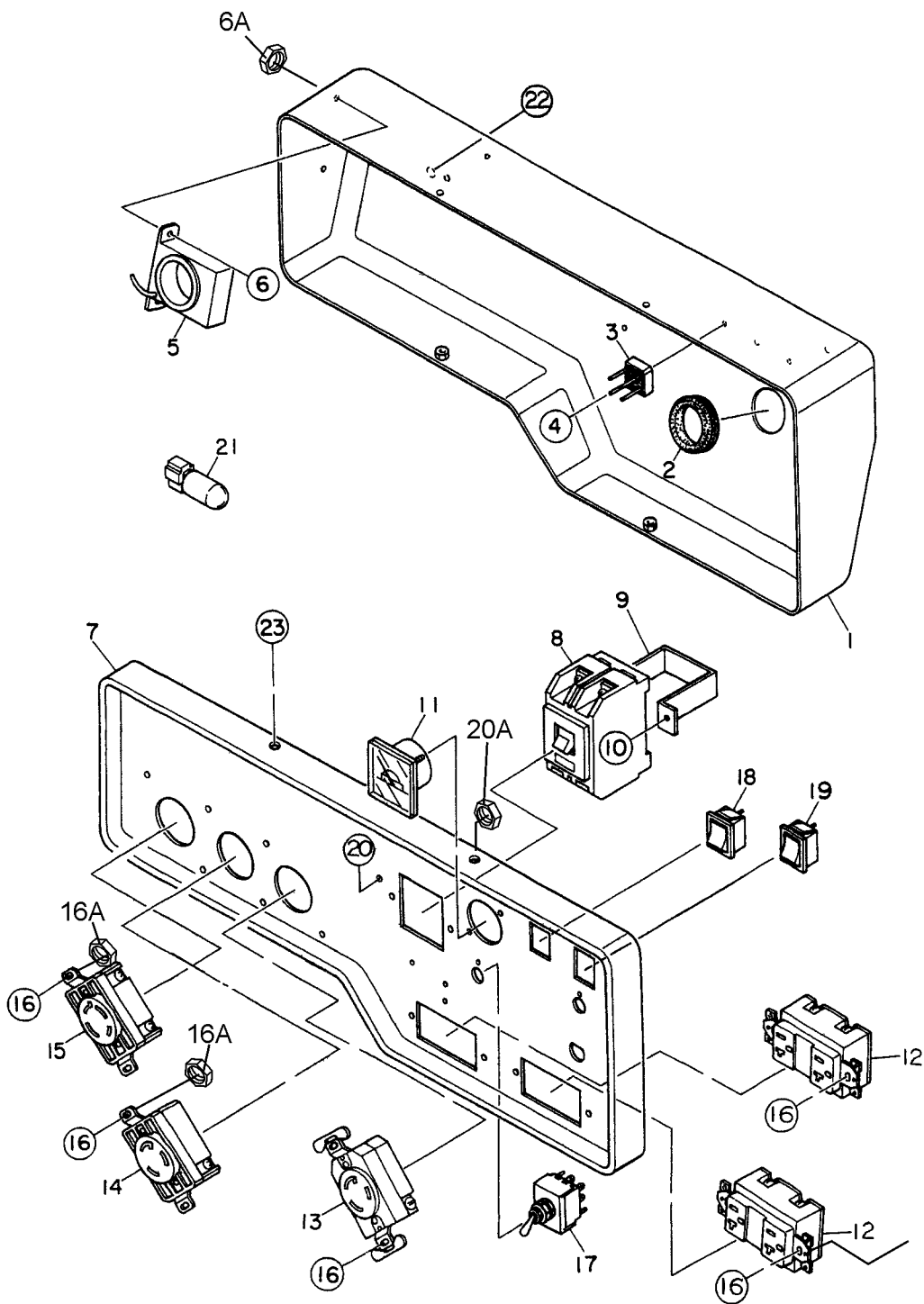
GA-3.6H Series — CONTROL BOX ASSY. (GA-3H)

CONTROL BOX ASSY. (GA-3H)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	A3214000003	CONTROL BOX	1	
2	0601850102	GROMMET, G-3	1	
3	0601823204	RECTIFIER, S5VB60	2	
4	0027103012	MACHINE SCREW	2	
5	0601823853	SLOW DOWN UNIT, ND-80	1	
6	0027104010	MACHINE SCREW	2	
6A	0207004000	HEX, NUT	2	
7	A3224000003	CONTROL PANEL	1	
8	0601804819	CIRCUIT BREAKER, KM-2 21A	1	
9	4341817004	BRACKET, CIRCUIT BREAKER	1	
10	0021004010	MACHINE SCREW	2	
11	0601806819	AC VOLTMETER, DE450-011 0~120/240V	1	
12	0601812598	RECEPTACLE, 5-20R	1	
13	0601812592	RECEPTACLE, L5-20R	1	
14	0601811035	RECEPTACLE, LS-30R	1	
15	0601812529	RECEPTACLE, L14-30R	1	
16	0021004010	MACHINE SCREW	8	
16A	0207004000	HEX, NUT	8	
17	0601830737	FULL POWER SWITCH, ET-330D12	1	
18	0601831620	IDLE CONTROL SWITCH, C1550WA	1	
19	0601831620	OPERATION SWITCH, C1550WA	1	
20	0021004015	MACHINE SCREW	1	
20A	0207004000	HEX, NUT	1	
21	A3262800004	CAPACITOR ASSY., VR1H102MHA, 50V 1000 μ F	1	
22	0017106016	HEX, HEAD BOLT	4	
23	0017105010	HEX, HEAD BOLT	4	

GA-3.6H Series — CONTROL BOX ASSY. (GA-3.6HA)

CONTROL BOX ASSY. (GA-3.6HA)



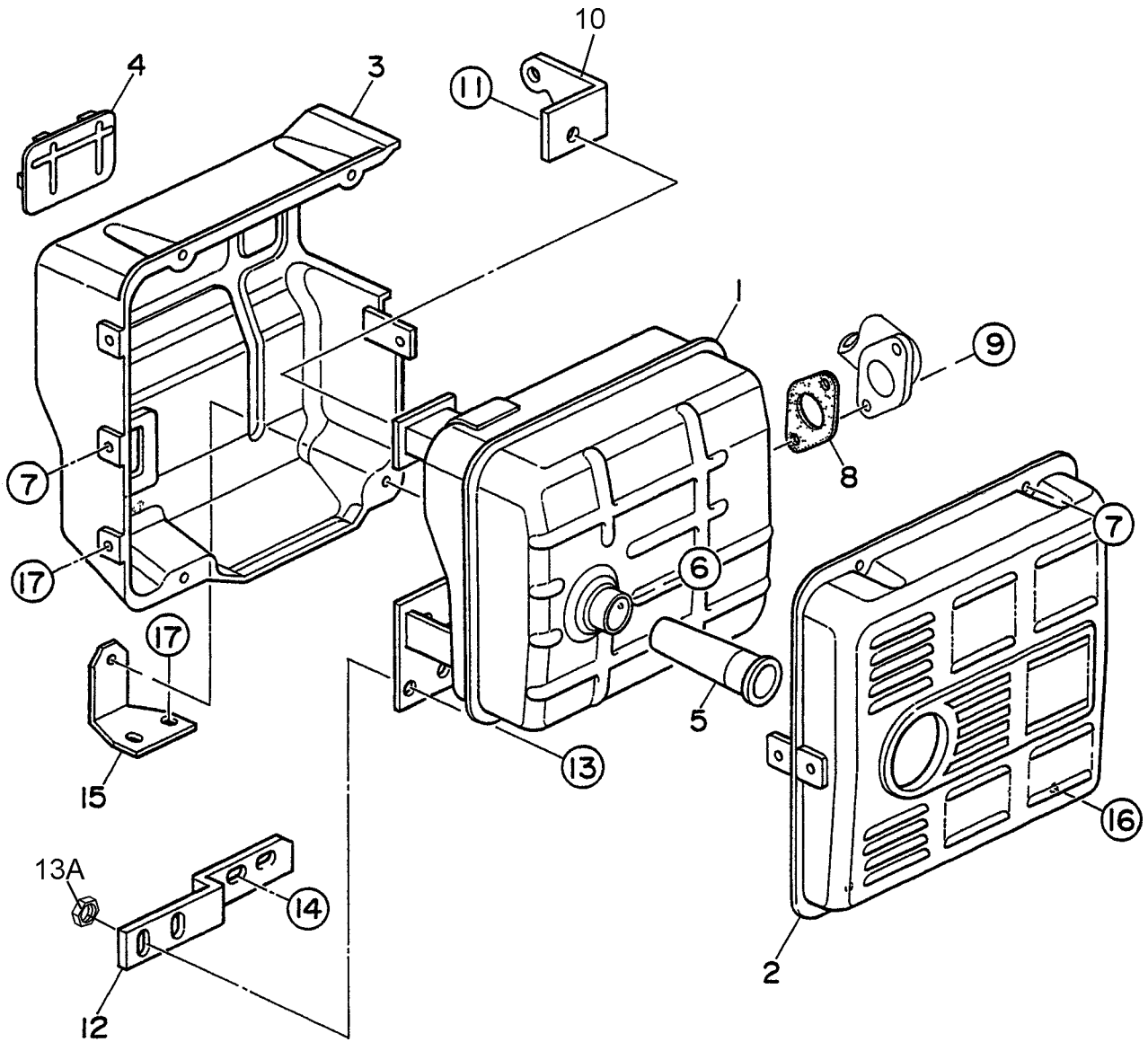
GA-3.6H Series — CONTROL BOX ASSY. (3.6HA)

CONTROL BOX ASSY. (3.6HA)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	A3214000103	CONTROL BOX	1	
2	0601850102	GROMMET, G-3	1	
3	0601823204	RECTIFIER, S5VB60	2	
4	0027103012	MACHINE SCREW	2	
5	0601823853	SLOW DOWN UNIT, ND-80	1	
6	0027104010	MACHINE SCREW	2	
6A	0207004000	HEX, NUT	2	
7	A3224000103	CONTROL PANEL	1	
8	0601805327	CIRCUIT BREAKER, KM-2 13.5A	1	
9	4341817004	BRACKET, CIRCUIT BREAKER	1	
10	0021004010	MACHINE SCREW	2	
11	0601806819	AC VOLTMETER, DE450-011 0~120/240V	1	
12	0601812598	RECEPTACLE, 5-20R	2	
13	0601812592	RECEPTACLE, L5-20R	1	
14	0601811035	RECEPTACLE, LS-30R	1	
15	0601814010	RECEPTACLE, L14-20R	1	
16	0021004010	MACHINE SCREW	8	
16A	0207004000	HEX, NUT	8	
17	0601830737	FULL POWER SWITCH, ET-330D12	1	
18	0601831620	IDLE CONTROL SWITCH, C1550WA	1	
19	0601831620	OPERATION SWITCH, C1550WA	1	
20	0021004015	MACHINE SCREW	1	
20A	0207004000	HEX, NUT	1	
21	A3262800004	CAPACITOR ASSY., VR1H102MHA, 50V 1000 μ F	1	
22	0017106016	HEX, HEAD BOLT	4	
23	0017105010	HEX, HEAD BOLT	4	

GA-3.6H Series— MUFFLER ASSY.

MUFFLER ASSY.



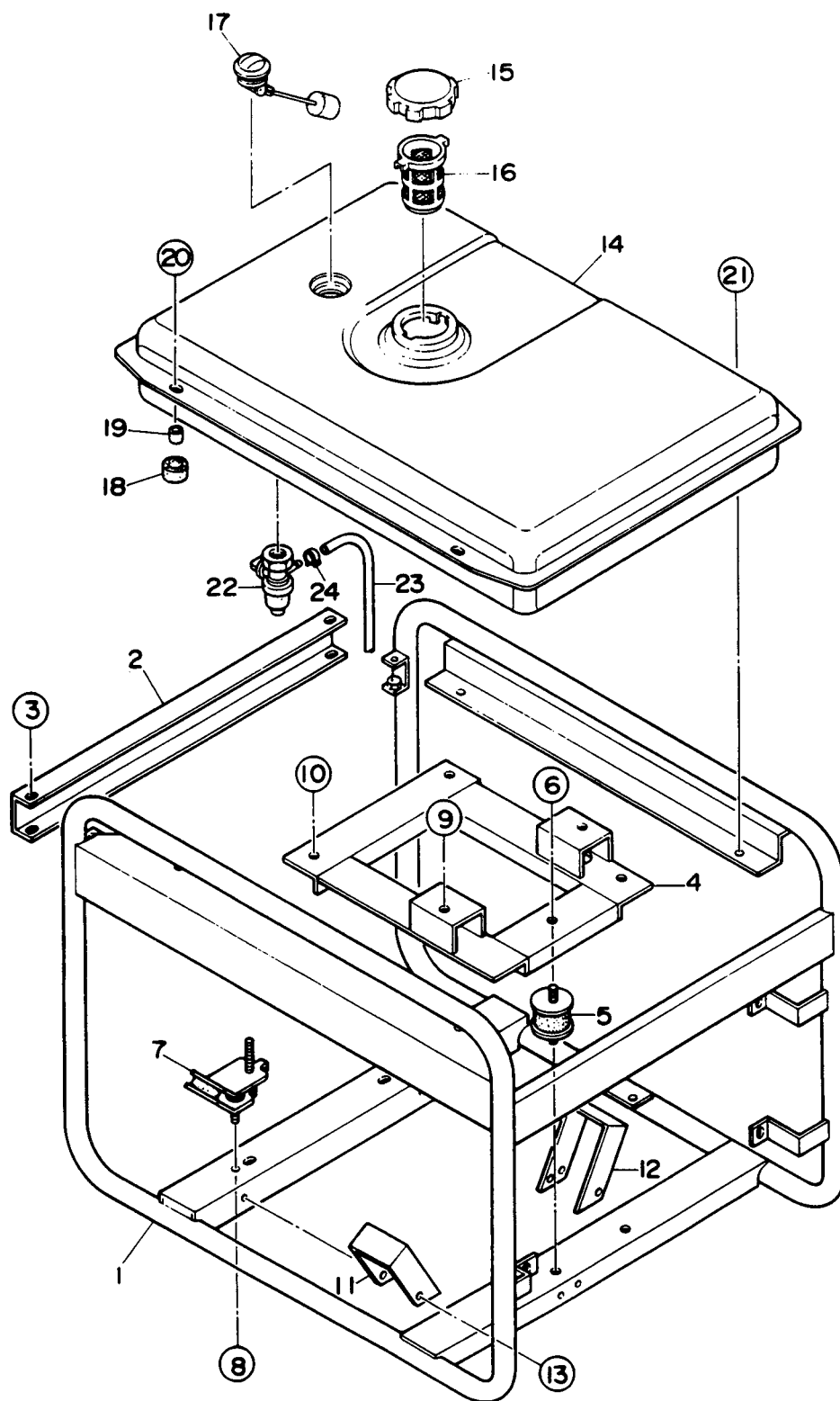
GA-3.6H Series— MUFFLER ASSY.

MUFFLER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7912310003	MUFFLER	1	
2	18320ZB4000	PROTECTOR	1	REPLACES P/N 0602302001
3	18325ZB4000	PROTECTOR	1	REPLACES P/N 0602302002
4	18329ZB4000	SEAL	2	REPLACES P/N 0602302003
5	18355ZB4630	ARRESTOR, SPARK	1	REPLACES P/N 0602313060
6	90183671003	TAPPING SCREW	1	REPLACES P/N 0602322060
7	0017106012	BOLT HEX HEAD	5	
8	18333ZB4800	GASKET	1	REPLACES P/N 0602320175
9	957000802000	HEX HEAD BOLT	2	REPLACES P/N 0602322061
10	7915461004	BRACKET	1	
11	0017108020	BOLT HEX HEAD	1	
12	7915460004	BRACKET	1	
13	0017108025	BOLT HEX HEAD	2	
13A	0207008000	HEX NUT	2	
14	0017108020	BOLT HEX HEAD	1	
15	7915469004	BRACKET	1	
16	0017106020	BOLT HEX HEAD	1	
17	0017106012	BOLT HEX HEAD	4	

GA-3.6H Series — PIPE FRAME ASSY. (GA-3HZ)

PIPE FRAME ASSY. (GA3.6HZ)



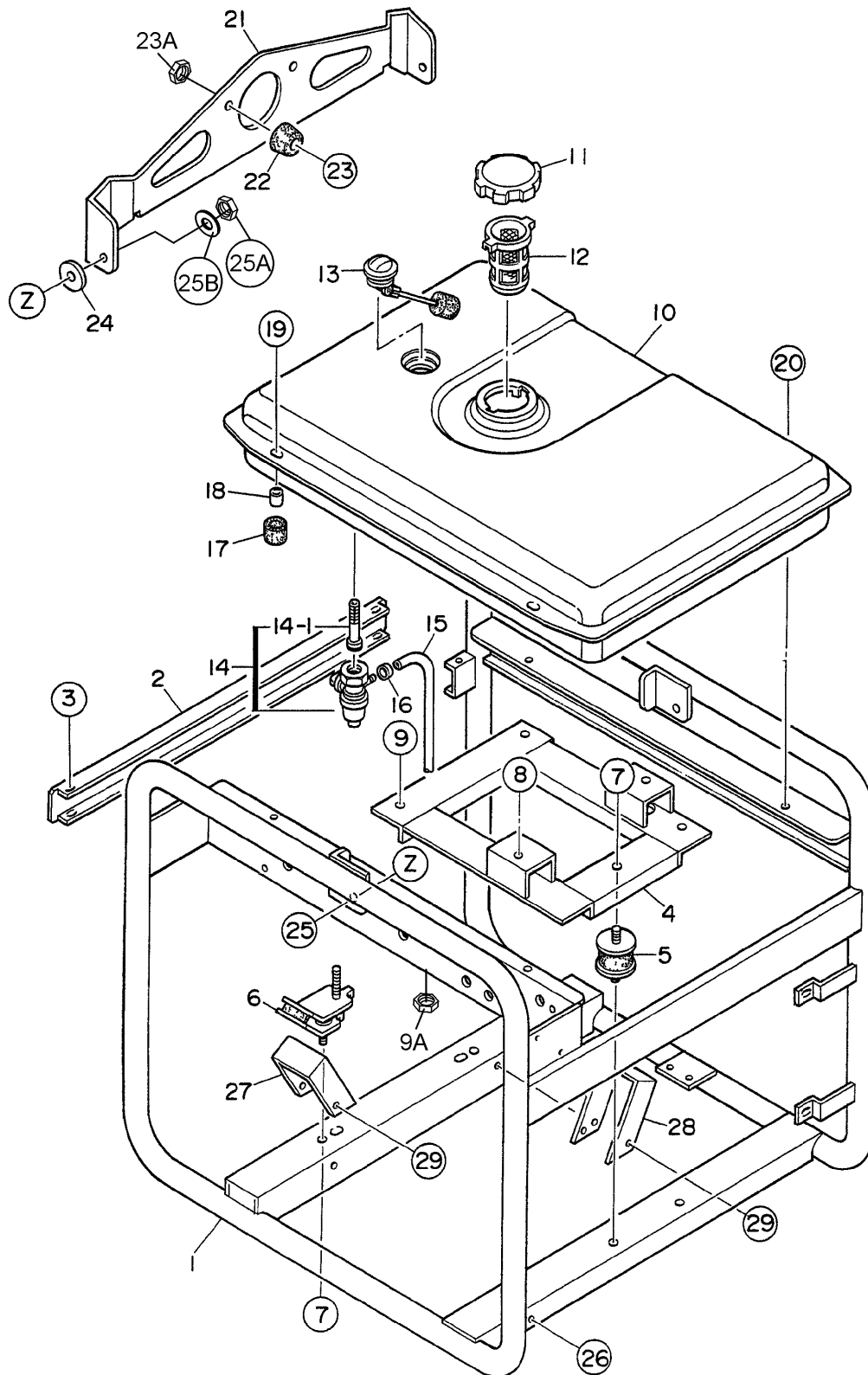
GA-3.6H Series — PIPE FRAME ASSY. (GA-3HZ)

PIPE FRAME ASSY. (GA3.6HZ)

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7915412002	PIPE FRAME	1	
2	7915415004	BRACKET	1	
3	0017106016	HEX. HEAD BOLT	4	
4	7915443003	BASE	1	
5	7895419004	RUBBER SUSPENSION	2	
6	0207008000	HEX. NUT	4	
7	1725419214	RUBBER SUSPENSION	2	
8	0207008000	HEX. NUT	4	
9	0017108040	HEX. HEAD BOLT	2	
10	0017108040	HEX. HEAD BOLT	2	
	0207008000	HEX. NUT	2	
11	7915455103	COVER	1	
12	7915455003	COVER	1	
13	0017106016	HEX. HEAD BOLT	6	
14	7905512002	FUEL TANK	1	
15	0810106004	CAP,FUEL TANK	1	
16	0810107103	FUEL FILTER	1	
17	0602125031	FUEL GAUGE	1	
18	7855525514	RUBBER CUSHION	2	
19	7855525604	GCOLLAR	2	
20	0017108030	HEX. HEAD BOLT	2	
21	0017108020	HEX. HEAD BOLT	2	
22	0605511087	FUEL COCK	1	
23	0605513140	HOSE	1	
24	0605515096	HOSE BAND	2	

GA-3.6H Series— PIPE FRAME ASSY. (GA-3.6H/GA3.6HA)

PIPE FRAME ASSY. (GA3.6H/GA3.6HA)



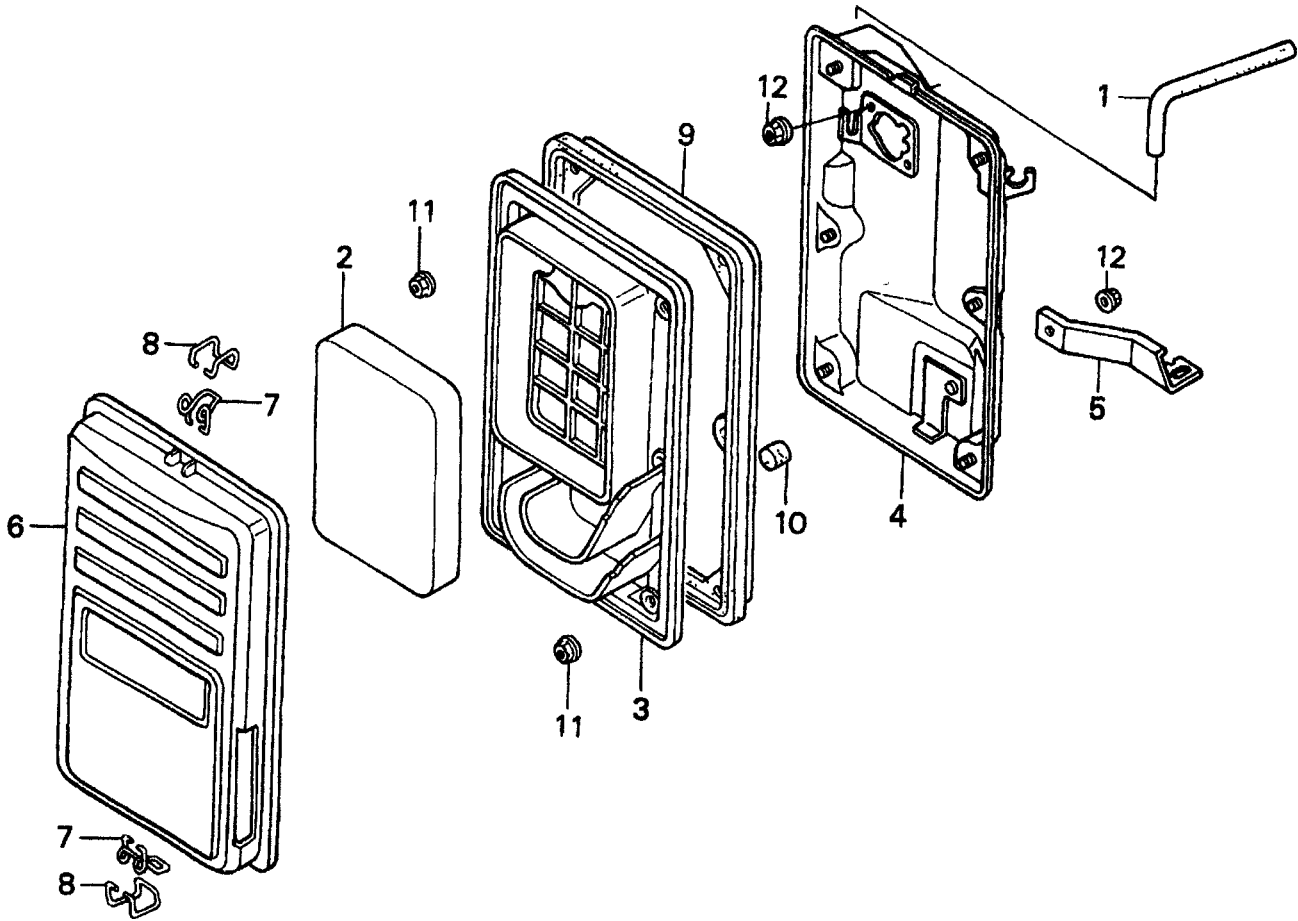
GA-3.6H Series— PIPE FRAME ASSY. (GA-3.6H/GA3.6HA)

PIPE FRAME ASSY. (GA3.6H/GA3.6HA)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	A3417000002	PIPE FRAME	1	GA-3.6H ONLY
1	A3417000202	PIPE FRAME	1	GA-3.6HA ONLY
2	A3417100004	BRACKET	1	
3	0017106016	HEX, HEAD BOLT	4	
4	7915443003	BASE	1	
5	7895419004	RUBBER SUSPENSION	2	
6	1725419214	RUBBER SUSPENSION	2	
7	0207008000	HEX, NUT	8	
8	0017108030	HEX, HEAD BOLT	2	
9	0017108040	HEX, HEAD BOLT	2	
9A	0207008000	HEX, NUT	2	
10	7905512002	FUEL TANK	1	
11	A9924800014	CAP, FUEL TANK	1	
12	A9924800004	FUEL FILTER	1	
13	0602125034	FUEL GAUGE	1	
14	16950ZB4015	FUEL STRAINER	1	REPLACES P/N 0605510068
14-1	16952ZB4005	SCREEN SET, HONDA	1	REPLACES P/N 0605510069
15	950014521040	HOSE, HONDA	1	REPLACES P/N 0605513146
16	9500202080	HOSE BAND, HONDA	2	REPLACES P/N 0605515178
17	7855525514	RUBBER CUSHION	2	
18	7855525604	COLLAR	2	
19	011208030	BOLT HEX HEAD	2	
20	0017108020	BOLT HEX HEAD	2	
21	A9117200103	HANGER	1	
22	0601850097	STOPPER, 30029	1	
23	0021008025	MACHINE SCREW	1	
23A	0207008000	HEX, NUT	1	
24	A931110004	PLASTIC WASHER	2	GA-3.6H
24	0601851116	PLASTIC WASHER	2	GA-3.6HA
25	0011308025	HEX, HEAD BOLT	2	
25A	0037908000	HEX, NUT	2	
25B	0042108000	PLAIN WASHER	2	
26	0019206016	HEX, HEAD BOLT	1	
27	7915455103	COVER	1	
28	7855455003	COVER	1	
29	0017106016	HEX, HEAD BOLT	6	

HONDA GX240K1EDN2 ENGINE — AIR CLEANER ASSY.

AIR CLEANER ASSY.



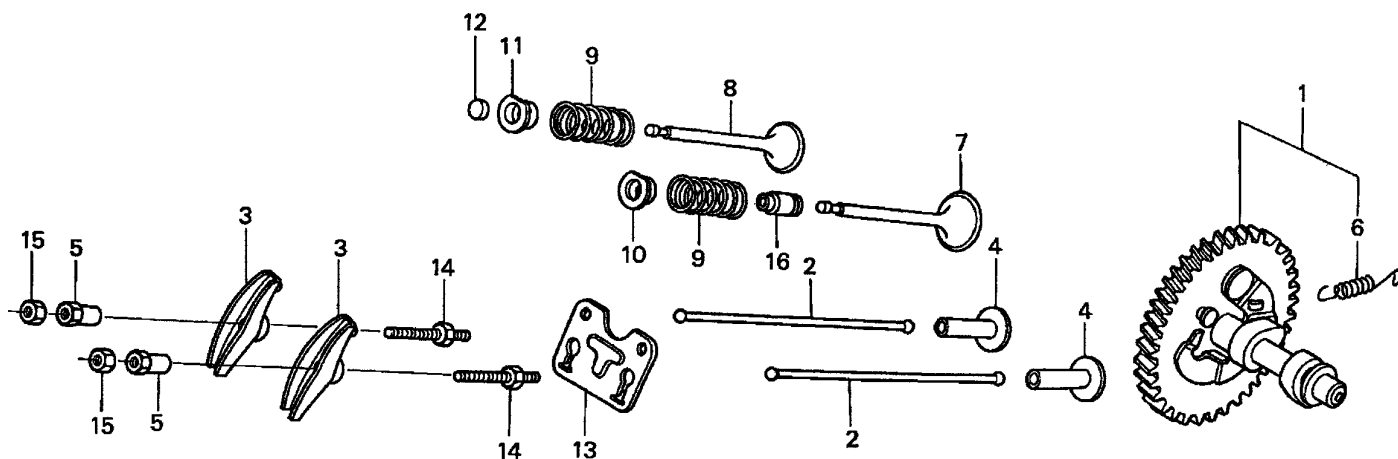
HONDA GX240K1EDN2 ENGINE — AIR CLEANER ASSY.

AIR CLEANER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	15721ZB4000	TUBE BREATHER	1	
2	17211899000	ELEMENT, AIR CLEANER	1	
3	17212ZB4003	SEPARATOR, AIR CLEANER	1	
4	17220ZB4003	HOUSING, AIR CLEANER	1	
5	17222ZC2000	STAY, AIR CLEANER	1	
6	17231899000	COVER, AIR CLEANER	1	
7	17235899000	CLIP A, AIR CLEANER WIRE	2	
8	17236899000	CLIP B, AIR CLEANER WIRE	2	
9	17252899000	SEAL, AIR CLEANER	1	
10	17367413690	FILTER, DRAIN TUBE	1	
11	9405005000	NUT, FLANGE (5MM)	6	
12	9405006000	NUT, FLANGE (6MM)	3	

HONDA GX240K1EDN2 ENGINE — CAMSHAFT ASSY.

CAMSHAFT ASSY.



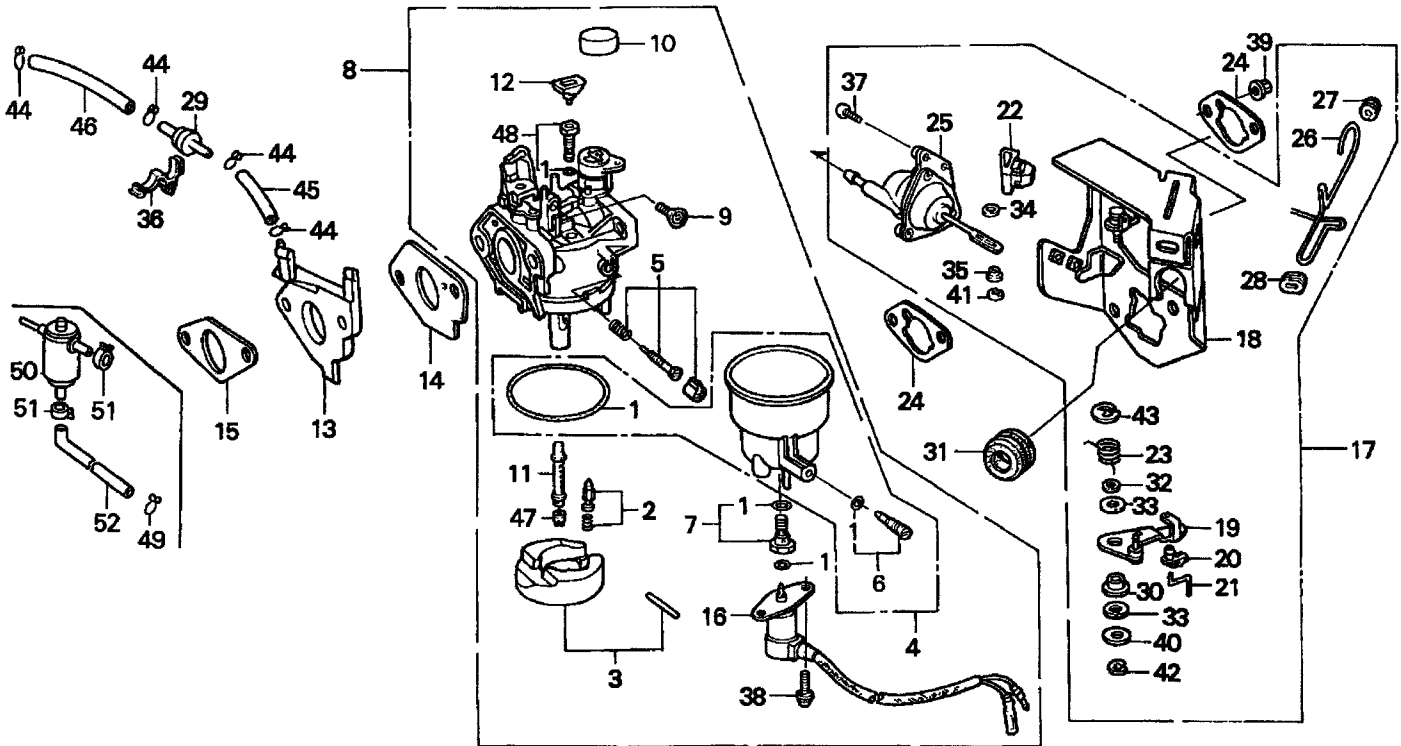
HONDA GX240K1EDN2 ENGINE — CAMSHAFT ASSY.

CAMSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	14100ZE2W00	CAMSHAFT ASSY.	1	INCLUDES ITEMS/W* USE UP TO S/N 3620688
1	14100ZE2W01	CAMSHAFT ASSY.	1	INCLUDES ITEMS/W* USE FROM S/N 3620689
1	14100ZE2306	CAMSHAFT ASSY.	1	INCLUDES ITEMS/W* USE UP TO S/N 4730487
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	
16	12209ZE8003	SEAL, VALVE STEM	1	USE FROM S/N 3620689

HONDA GX240K1EDN2 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.



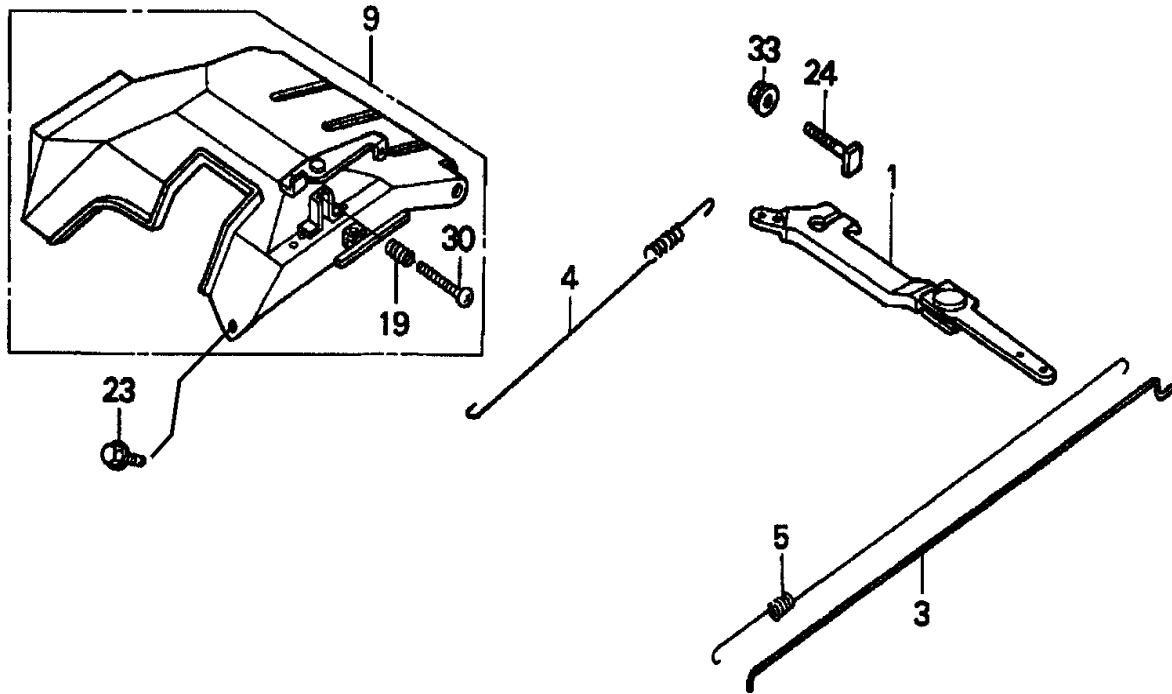
HONDA GX240K1EDN2 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	16010ZE3701	GASKET SET	1	
2*	16011ZA0931	VALVE SET, FLOAT	1	
3*	16013ZA0931	FLOAT SET	1	
4*	16015ZA0931	CHAMBER SET, FLOAT	1	
5*	16016ZH7W01	SCREW SET	1	
6*	16024124760	SCREW SET, DRAIN	1	
7*	16028ZA0931	SCREW SET B	1	
8	16100ZE2F01	CARBURETOR ASSY. (BE72C)	1	INCLUDES ITEMS W/*
9*	16124ZE0005	SCREW, THROTTLE STOP	1	
10*	16148141881	CAP, CHOKE LEVER DUST	1	
11*	16166ZE2015	NOZZLE, MAIN	1	
12*	16172ZE3W10	COLLAR, SET	1	
13	16211ZE2700	INSULATOR, CARBURETOR	1	
14	16221ZA0800	GASKET, CARBURETOR	1	
15	16223ZA0800	GASKET, INSULATOR	1	
16*	16230ZE3701	VALVE ASSY., SOLENOID	1	
17	16260ZE2722	STAY ASSY., MANUAL CHOKE	1	INCLUDES ITEMS W/#
18#	16261ZE2702	STAY, SOLENOID	1	
19#	16262ZE2711	LEVER, CHOKE	1	
20#	16263ZA0000	JOINT, ROD	1	
21#	16264ZE2701	ROD, CHOKE	1	
22#	16265ZE2721	STOPPER, CHOKE ROD	1	
23#	16268ZE2721	SPRING, MANUAL CHOKE	1	
24	16269ZA0800	GASKET, AIR CLEANER	2	
25#	16400ZE2703	DIAPHRAGM ASSY.	1	
26#	16611ZE2711	ROD, CHOKE CONTROL	1	
27#	16613893000	GROMMET, CHOKE ROD	1	
28#	16615893000	GUIDE, CHOKE ROD	1	
29	36135ZF6D41	VALVE, DASHPOT CHECK	1	
30#	53149964003	BUSH, ARM PIVOT	1	
31	88911MJ3000	GROMMET, FENDER	1	
32#	90431ZE2700	WASHER, CHOKE LEVER	1	
33#	90432ZE2700	SEAL, CHOKE LEVER	2	
34#	90433ZE2700	WASHER, THRUST (2.7X8)	1	
35#	90434ZE2700	COLLAR, LEVER	1	
36	90650SD9003	CLIP, WIRE HARNESS	1	
37#	93500050120A	SCREW, PAN (5X12)	2	
38	938920501208	SCREW, WASHER (5X12)	2	
39	9405006000	NUT, FLANGE (6MM)	2	
40#	9410305000	WASHER, PLAIN (5MM)	1	
41#	9454002010	E-RING (2MM)	1	
42#	9454004010	E-RING (4MM)	1	
43#	9454007010	E-RING (7MM)	1	
44	9500202070	CLIP, TUBE (B7)	4	
45	950053500810M	BULK HOSE, VACUUM (3.5X8000) (3.5X75)	1	
46	950053500810M	BULK HOSE, VACUUM (3.5X8000) (3.5X130)	1	
47	99101ZH80750	JET, MAIN (#75) (OPTIONAL)	1	
47	99101ZH80780	JET, MAIN (#78) (OPTIONAL)	1	
47*	99101ZH80800	JET, MAIN (#80)	1	
48*	99204ZE00450	JET SET, PILOT (#45)	1	

HONDA GX240K1EDN2 ENGINE — CONTROL ASSY.

CONTROL ASSY.



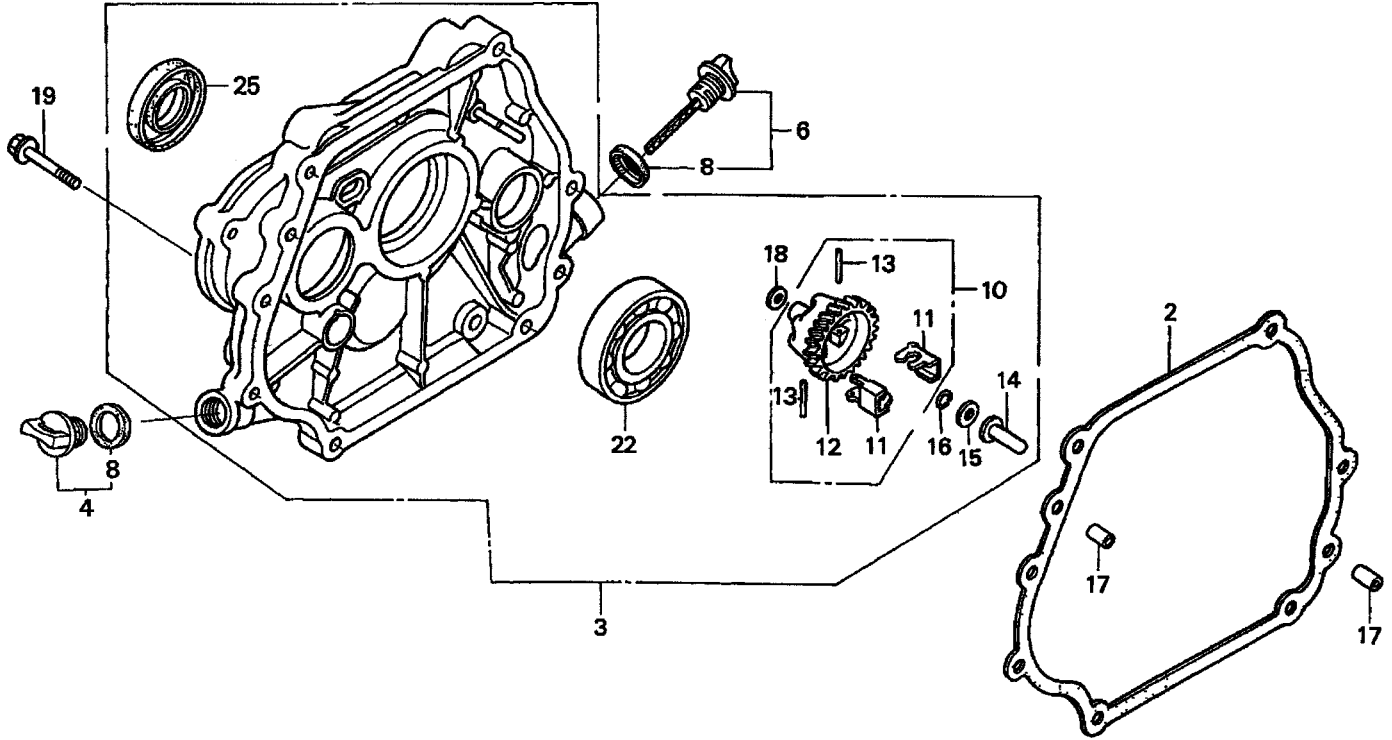
HONDA GX240K1EDN2 ENGINE — CONTROL ASSY.

CONTROL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	16550ZE2700	ARM, GOVERNOR	1	
3	16555ZE2000	ROD, GOVERNOR	1	
4	16561ZE2000	SPRING, GOVERNOR	1	
5	16562ZE2700	SPRING, THROTTLE RETURN	1	
9	16570ZE2701	CONTROL ASSY.	1	... INCLUDES ITEMS W/*
19*	16584883300	SPRING, CONTROL ADJUSTING	1	
23	90013883000	BOLT, FLANGE (6X12) (CT200)	2	
24	90015ZE5010	BOLT, GOVERNOR ARM	1	
30*	93500050350A	SCREW, PAN (5X35)	1	
33	9405006000	NUT, FLANGE (6MM)	1	

HONDA GX240K1EDN2 ENGINE — CRANKCASE COVER ASSY.

CRANKCASE COVER ASSY.



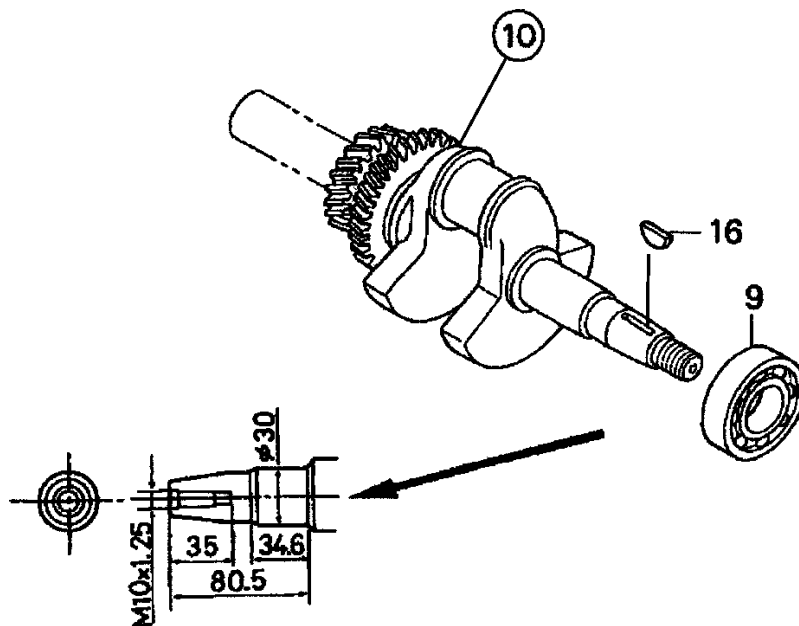
HONDA GX240K1EDN2 ENGINE — CRANKCASE COVER ASSY.

CRANKCASE COVER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	11381ZE2801	GASKET, CASE COVER	1	
3	11300ZE2000	COVER ASSY., CRANKCASE (S-TYPE)	1	INCLUDES ITEMS W/* USE UP TO S/N 4211335
3	11300ZE2020	COVER ASSY., CRANKCASE	1	INCLUDES ITEMS W/*
4	15600ZG4003	CAP ASSY., OIL FILLER	1	INCLUDES ITEMS W/%
6	15600735003	CAP ASSY., OIL FILLER	1	INCLUDES ITEMS W/+
8%+	15625ZE1003	GASKET, OIL FILLER CAP	2	
10*	16510ZE2000	GOVERNOR ASSY.	1	INCLUDES ITEMS W/#
11*#	16511ZE2000	WEIGHT, GOVERNOR	2	
12*#	16512ZE2000	HOLDER, GOVERNOR WEIGHT	1	
13*#	16513ZE2000	PIN, GOVERNOR WEIGHT	2	
14*	16531ZE2000	SLIDER, GOVERNOR	1	USE UP TO S/N 4211335
14*	16531Z0A000	SLIDER, GOVERNOR	1	
15*	90473147000	WASHER, (6X6)	1	USE UP FROM S/N 4211336
16*	90602ZE1000	CLIP, GOVERNOR HOLDER	1	
17	90701HC4000	PIN, DOWEL (8X12)	2	
18*	9410106800	WASHER, PLAIN (6MM)	1	
19	957010803500	BOLT, FLANGE (8X35)	7	
22*	961006202000	BEARING, RADIAL BALL (6206)	1	
25*	92102ZE3004	OIL SEAL (35X52X8)	1	

HONDA GX240K1EDN2 ENGINE — CRANKSHAFT ASSY.

CRANKSHAFT ASSY.



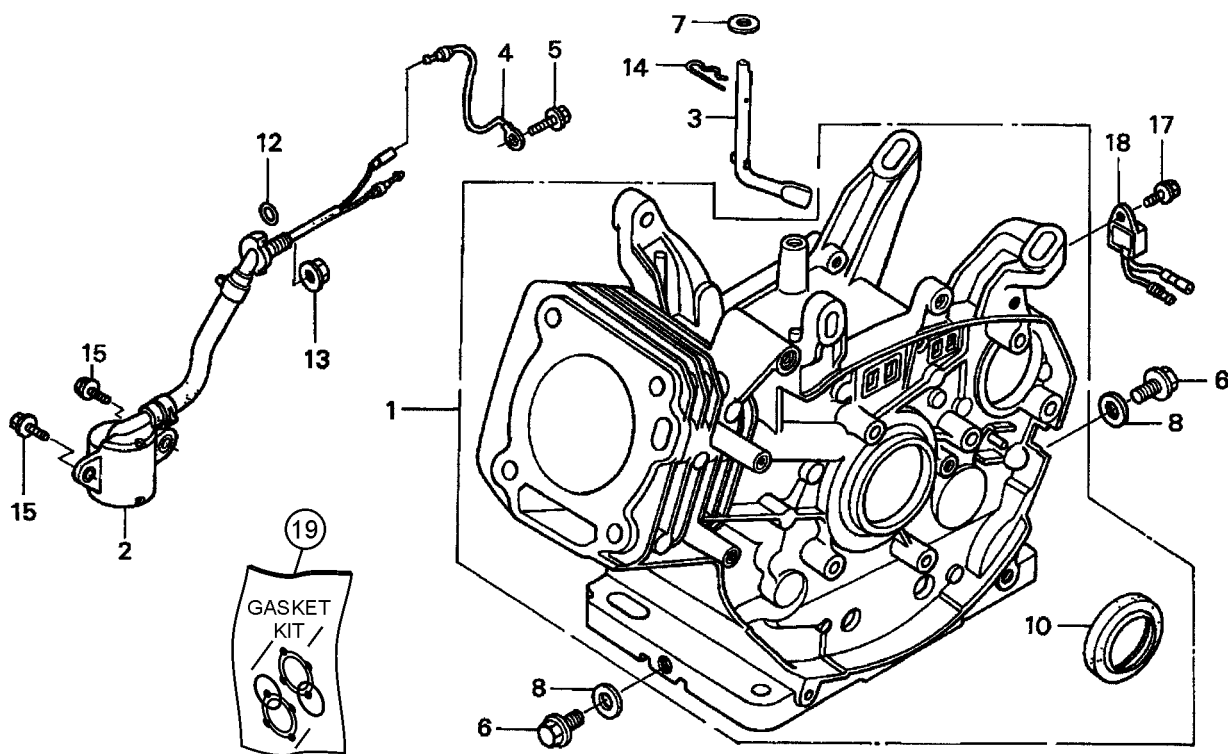
HONDA GX240K1EDN2 ENGINE — CRANKSHAFT ASSY.

CRANKSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
9	961006206000	BEARING, RADIAL BALL (6206)	1	
10	13310ZE2701	CRANKSHAFT (E-TYPE)	1	
16	90741ZE2000	KEY, SPECIAL WOODRUFF (25X18)	1	

HONDA GX240K1EDN2 ENGINE — CYLINDER BARREL ASSY.

CYLINDER BARREL ASSY.



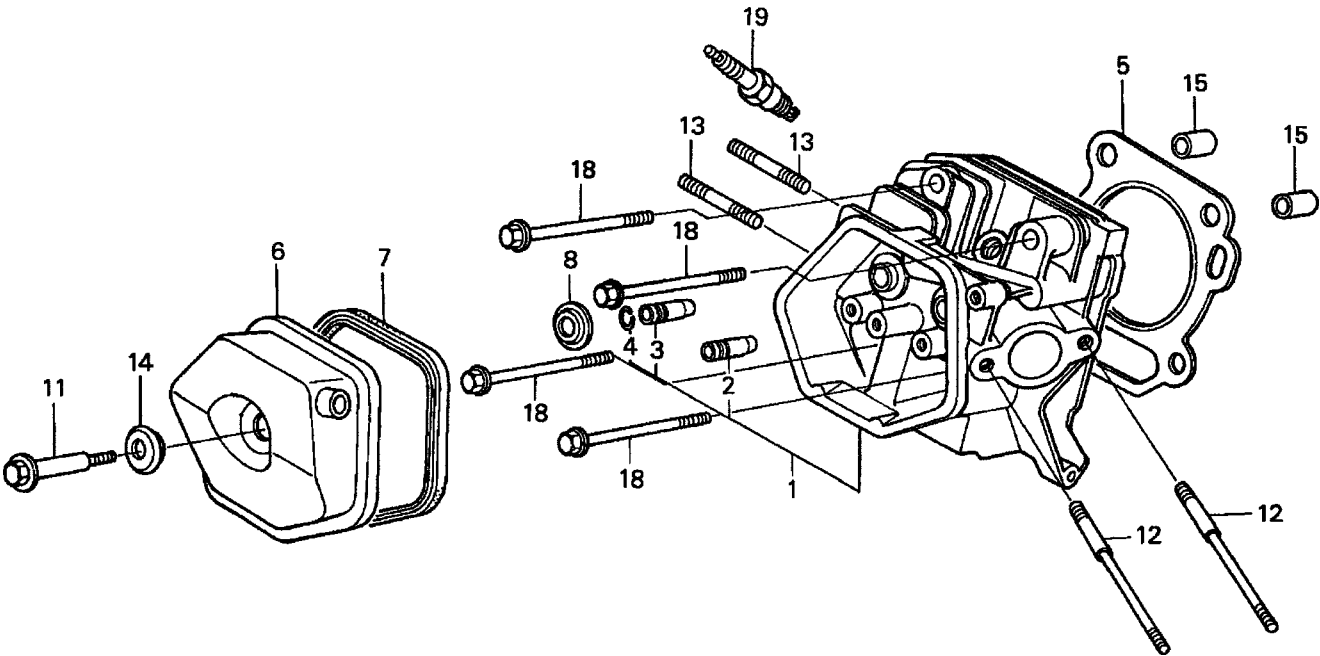
HONDA GX240K1EDN2 ENGINE — CYLINDER BARREL ASSY.

CYLINDER BARREL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12000ZE2815	CYLINDER ASSY. (ALERT)	1	INCLUDES ITEMS W/*
2	15510ZE2043	SWITCH ASSY., OIL LEVEL	1	
3	16541ZE2010	SHAFT, GOVERNOR ARM	1	
4	31161ZE2000	WIRE, GROUND	1	
5	90013883000	BOLT, FLANGE (6X12) (CT200)	1	
6	90131896650	BOLT, DRAIN PLUG	2	
7	90446KE1000	WASHER (8.2X17X0.8)	1	
8	9410912000	WASHER DRAIN PLUG 12 MM	1	
10*	91201890003	OIL SEAL (30X46X8)	1	
12	91353671003	O-RING (13.5X1.5) (ARAI)	1	
13	9405010000	NUT, FLANGE (10 MM)	1	
14	9425110000	PIN, LOCK (10 MM)	1	
15	957010601200	BOLT FLANGE (6X12)	2	
17	90013883000	BOLT FLANGE (6X12)	2	USE FROM ENGINE S/N 3684579
18	34150ZH7003	ALERT UNIT, OIL	1	USE FROM ENGINE S/N 3684579
19	06111ZE2408	GASKET KIT	1	USE UP TO S/N 4045100

HONDA GX240K1EDN2 ENGINE — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.



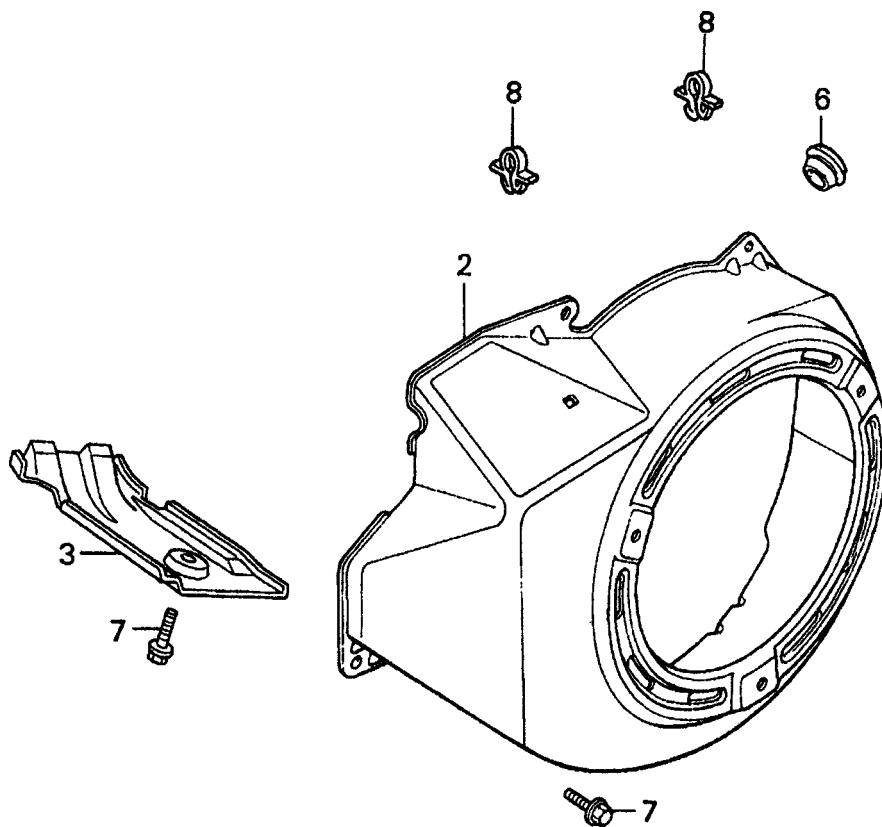
HONDA GX240K1EDN2 ENGINE — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12200ZH9405	CYLINDER HEAD	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, HEAD	1	
8	14775ZE2010	SEAT, VALVE SPRING	1	
11	90014ZE2000	BOLT, HEAD COVER	1	
12	90042ZE2700	BOLT, STUD (8X98)	2	
13	90047ZE2000	BOLT, STUD	2	USE UP TO S/N 3844352
13	92900080320E	BOLT, STUD (8X32)	2	
14	90441ZE2010	WASHER, HEAD COVER	1	
15	9430112200	PIN A, DOWEL (12X20)	2	
18	957011008000	BOLT, FLANGE (10X80)	4	
19	9807955846	SPARK PLUG (BPR5ES) (NGK) (OPTIONAL)	1	
19	9807955855	SPARK PLUG (W16EPR-U) (DENSO)	1	

HONDA GX240K1EDN2 ENGINE — FAN COVER ASSY.

FAN COVER ASSY.



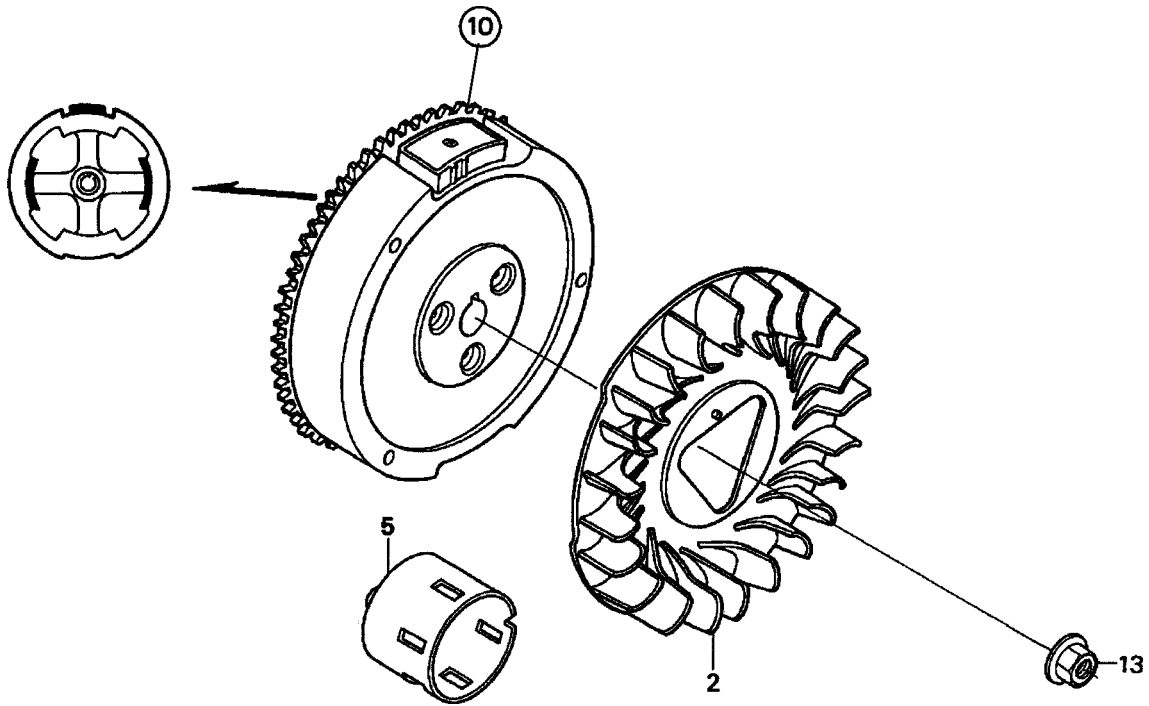
HONDA GX240K1EDN2 ENGINE — FAN COVER ASSY.

FAN COVER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	19610ZE2700ZD	COVER, FAN *NH1* (BLACK)	1	
3	19631ZE2D00	SHROUD	1	
6	81329567020	GROMMET, DRAIN HOLE	1	
7	90013883000	BOLT, FLANGE (6X12) (CT200)	6	
8	90654SA4003	CLIP, WIRE HARNESS (6MM) (WHITE)	2	

HONDA GX240K1EDN2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.



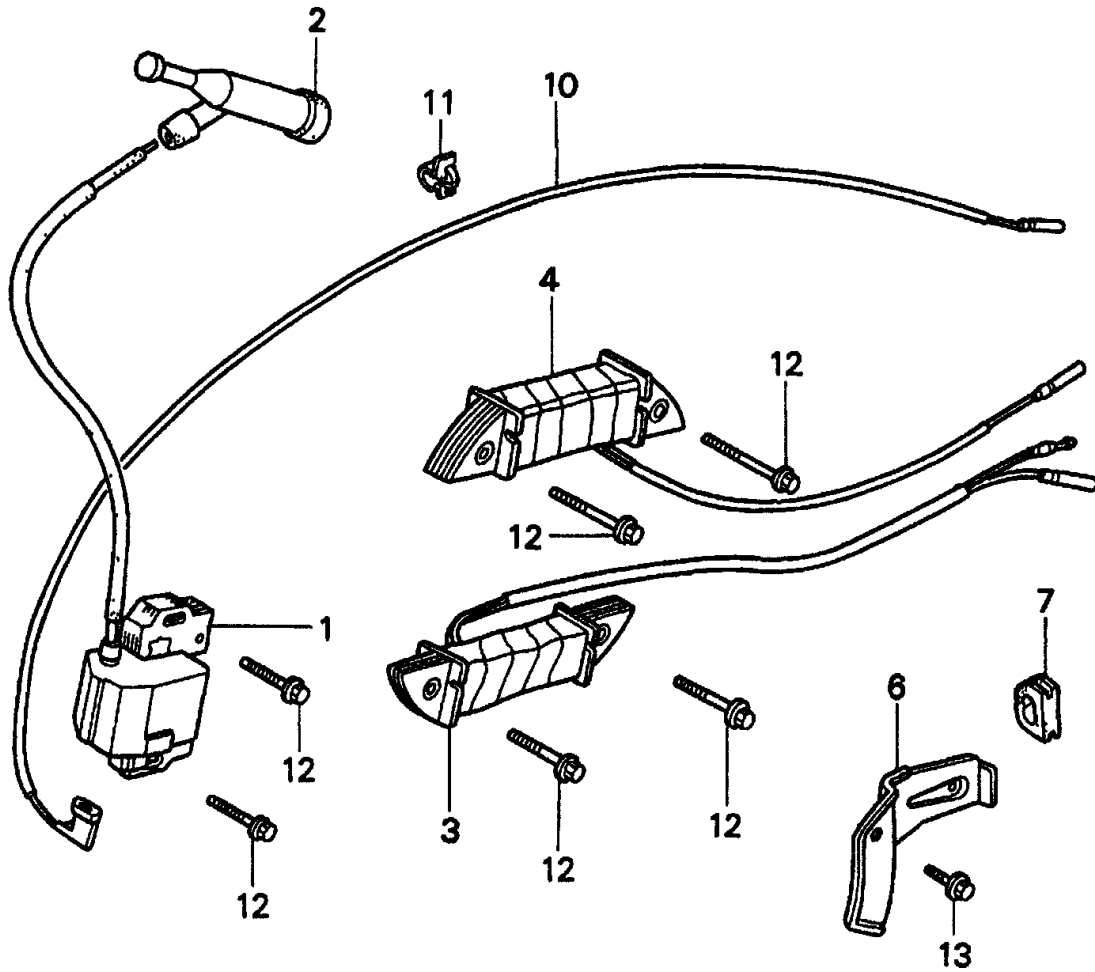
HONDA GX240K1EDN2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
2	19511ZE2000	FAN, COOLING	1	
5	28451ZE2W01	PULLEY STARTER	1	
10	31100ZE2812	FLYWHEEL, LAMP	1	
13	90201ZE3790	NUT, SPECIAL 16MM	1	USE UP TO S/N 3467138
13	90201ZE3V00	NUT, SPECIAL 16MM	1	USE FROM TO S/N 3467139

HONDA GX240K1EDN2 ENGINE — IGNITION COIL ASSY.

IGNITION COIL ASSY.



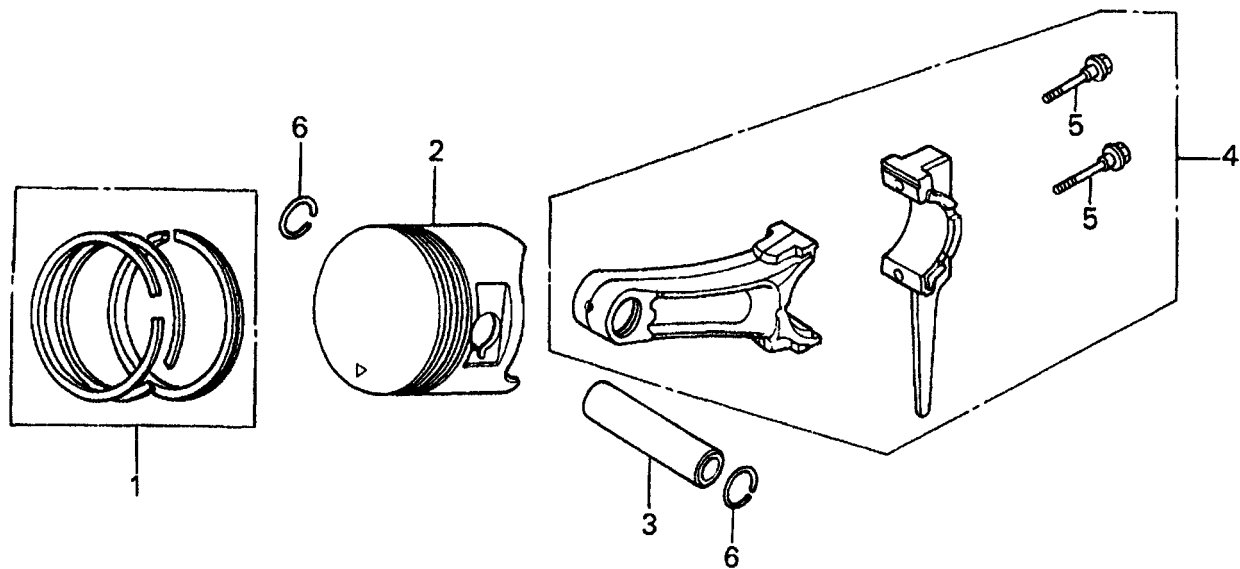
HONDA GX240K1EDN2 ENGINE — IGNITION COIL ASSY.

IGNITION COIL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	30500ZF6W02	COIL ASSY., IGNITION	1	
2	30700ZE1013	CAP ASSY., NOISE SUPPRESSOR	1	
3	31510ZE1811	COIL ASSY., LAMP (12V/25W)	1	
4	31510ZE3003	COIL ASSY., LAMP (12V/25W)	1	
6	31511ZE2000	CLAMP, WIRE	1	
7	31512ZE2000	GROMMET, WIRE	1	
10	36101ZE2701	WIRE, STOP SWITCH (470MM)	1	
11	36103ZE1000	HOLDER, STOP SWITCH WIRE	1	
12	90015883000	BOLT, FLANGE (6X28)	6	
13	90013883000	BOLT, FLANGE (6X12) (CT200)	1	

HONDA GX240K1EDN2 ENGINE — PISTON ASSY.

PISTON ASSY.



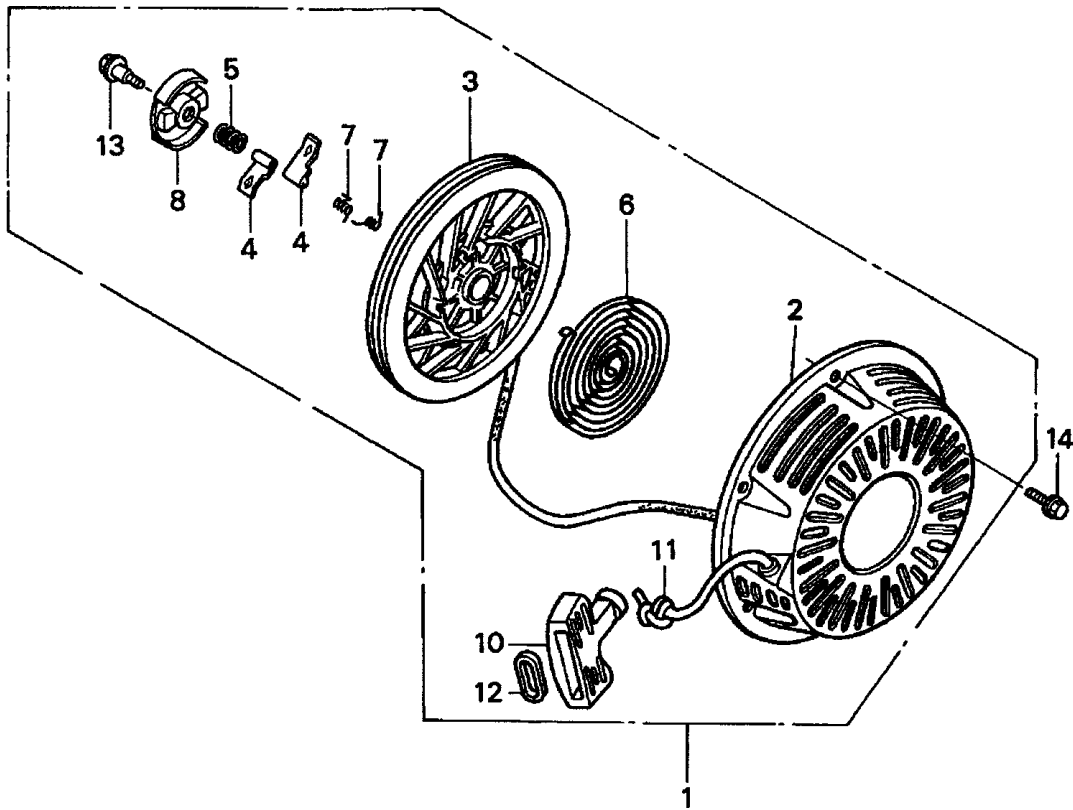
HONDA GX240K1EDN2 ENGINE — PISTON ASSY.

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	USE UP TO S/N 4081304
1	13011ZE2013	RING SET, PISTON (OS 0.25, OPTIONAL)	1	USE UP TO S/N 4081304
1	13012ZE2013	RING SET, PISTON (OS 0.50, OPTIONAL)	1	USE UP TO S/N 4081304
1	13013ZE2013	RING SET, PISTON (0.75, OPTIONAL)	1	USE UP TO S/N 4081304
2	13101ZE2W00	PISTON (STD)	1	
2	13102ZE2W00	PISTON (OS 0.25, OPTIONAL)	1	
2	13103ZE2W00	PISTON (OS 0.50, OPTIONAL)	1	
2	13104ZE2W00	PISTON (OS 0.75, OPTIONAL)	1	
3	13111ZF6000	PIN, PISTON	1	
4	13200ZE2010	ROD ASSY., CONNECTING (STD)	1	INCLUDES ITEMS W/*
5*	90001ZE8000	BOLT, CONNECTING ROD	2	
6	90551ZE1000	CLIP, PISTON PIN (18MM)	2	

HONDA GX240K1EDN2 ENGINE — RECOIL STARTER ASSY.

RECOIL STARTER ASSY.



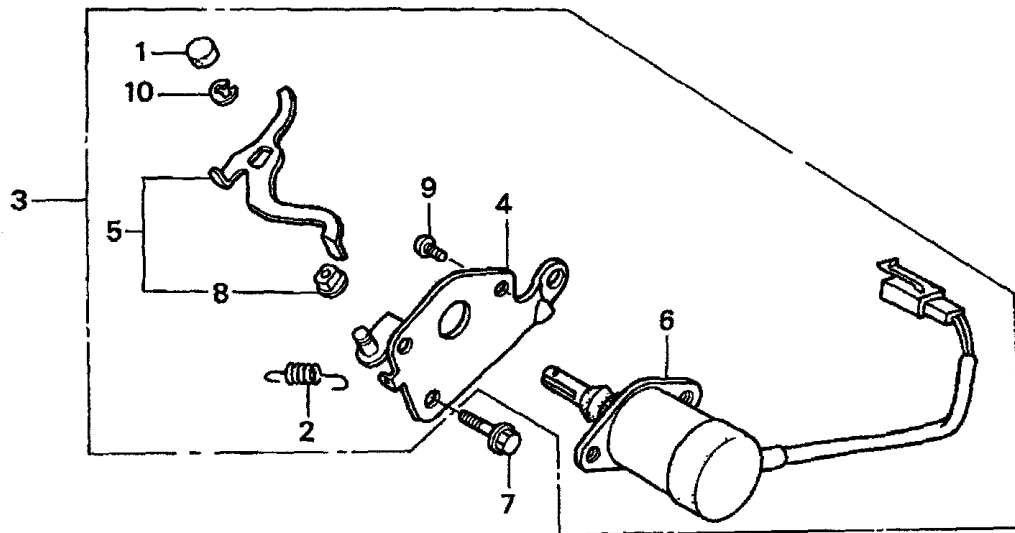
HONDA GX240K1EDN2 ENGINE — RECOIL STARTER ASSY.

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* (BLACK)	1	INCLUDES ITEMS W/*
2*	28410ZE2W01ZB	CASE, RECOIL STARTER *NH1* (BLACK)	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	
9*	28445ZE2W01	HOLDER, SPRING	1	
10*	28461ZE2W02	GRIP, STARTER	1	
11*	28462ZE2W01	ROPE, RECOIL STARTER	1	USE UP TO S/N 3793540
11*	28462ZE2W11	ROPE, RECOIL STARTER	1	USE FROM S/N 3793541
12*	28469ZE2W01	GRIP, REINFORCEMENT	1	USE UP TO S/N 3793540
13*	90004ZE2W01	SCREW, CENTER	1	
14	90008ZE2003	BOLT, FLANGE (6X10)	3	

HONDA GX240K1EDN2 ENGINE — SOLENOID ASSY.

SOLENOID ASSY.



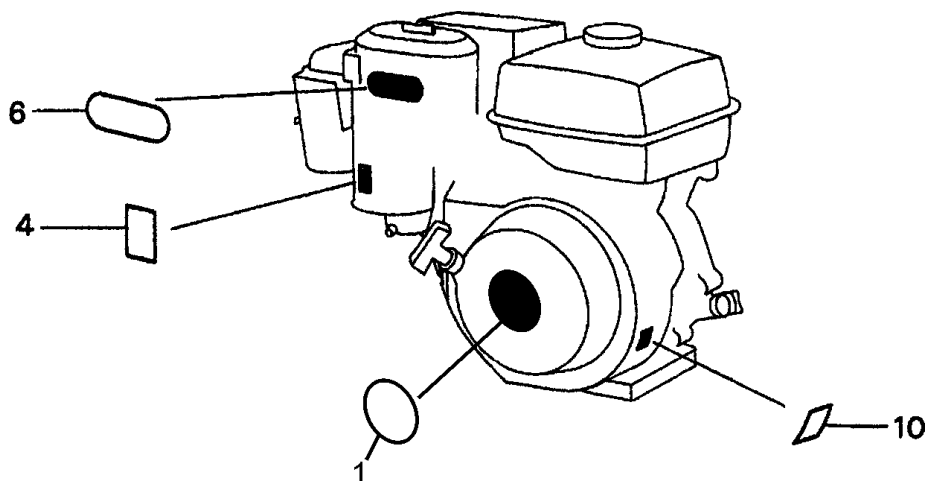
HONDA GX240K1EDN2 ENGINE — SOLENOID ASSY.

SOLENOID ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	16252ZA1010	CAP, CHOKE LEVER	1	
2*	16268893000	SPRING, CHOKE RETURN	1	
3	16270ZB4010	AUTO-THROTTLE	1	INCLUDES ITEMS W/*
4*	16271ZB4000	STAY, SOLENOID THROTTLE	1	
5*	16273ZB4000	LEVER, SOLENOID THROTTLE	1	
6*	36160ZB4003	SOLENOID ASSY.	1	
7*	90013883000	BOLT, FLANGE (6X12) (CT200)	1	
8*	91502ZB4701	BUSH, AUTO-THROTTLE LEVER	1	
9*	93500050080A	SCREW, PAN (5X8)	2	
10*	9454004018	E-RING 4MM	1	

HONDA GX240K1EDN2 ENGINE — LABELS ASSY.

LABELS ASSY.



HONDA GX240K1EDN2 ENGINE — LABELS ASSY.

LABELS ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	87521ZE2W01	EMBLEM	1	
4	87528898620	MARK, CHOKE	1	
6	87533ZC0630	MARK, AIR CLEANER	1	
10	87594ZB4A00	MARK, OIL CAUTION	1	

PAYMENT TERMS

Terms of payment for parts are net 10 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.

OPERATION & PARTS MANUAL

HERE'S HOW TO GET HELP

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

UNITED STATES

Multiquip Corporate Office

18910 Wilmington Ave. Tel. (800) 421-1244
Carson, CA 90746 Fax (800) 537-3927
Contact: mq@multiquip.com

Mayco Parts

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

Service Department

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

MQ Parts Department

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

Warranty Department

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

Technical Assistance

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

MEXICO

MQ Cipsa

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

CANADA

Multiquip

4110 Industriel Boul. Tel: (450) 625-2244
Laval, Quebec, Canada H7L 6V3 Fax: (450) 625-8664
Contact: jmartin@multiquip.com

UNITED KINGDOM

Multiquip (UK) Limited Head Office

Hanover Mill, Fitzroy Street, Tel: 0161 339 2223
Ashton-under-Lyne, Fax: 0161 339 3226
Lancashire OL7 0TL
Contact: sales@multiquip.co.uk

BRAZIL

Multiquip

Av. Evandro Lins e Silva, 840 - grupo 505 Tel: 011-55-21-3433-9055
Barra de Tijuca - Rio de Janeiro Fax: 011-55-21-3433-9055
Contact: cnavarro@multiquip.com.br, srentes@multiquip.com.br

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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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