

PARTS AND OPERATION MANUAL

MULTIQUIP **Model GA-6RZR2** **A.C. GENERATOR**

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Revision #5 (09/16/05)



MULTIQUIP INC.

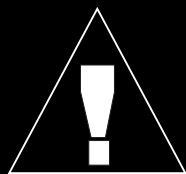
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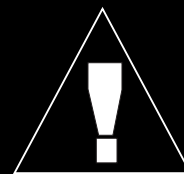
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WARNING



CALIFORNIA — Proposition 65 Warning

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

HERE'S HOW TO GET HELP

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

PARTS DEPARTMENT

800-427-1244 or 310-537-3700

FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE

800-478-1244 or 310-537-3700

FAX: 310- 537-4259

WARRANTY DEPARTMENT

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FAX: 310- 537-1173

MAIN

800-421-1244 or 310-537-3700

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NOTE

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

PARTS ORDERING PROCEDURES

- Dealer account number
- Dealer name and address
- Shipping address (if different than billing address)
- Return fax number
- Applicable model number
- Quantity, part number and description of each part
- Specify preferred method of shipment:
 - UPS Ground
 - UPS Second Day or Third Day*
 - UPS Next Day*
 - Federal Express Priority One (please provide us with your Federal Express account number)*
 - Airborne Express*
 - Truck or parcel post

**Normally shipped the same day the order is received, if prior to 2PM west coast time.*

Earn Extra Discounts when you order by FAX!

All parts orders which include complete part numbers and are received by fax qualify for the following extra discounts:

| <u>Number of line items ordered</u> | <u>Additional Discount</u> |
|-------------------------------------|----------------------------|
| 1-9 items | 3% |
| 10+ items** | 5% |

Get special freight allowances when you order 10 or more line items via FAX! **

- UPS Ground Service at no charge for freight
- PS Third Day Service at one-half of actual freight cost

No other allowances on freight shipped by any other carrier.

**Common nuts, bolts and washers (all items under \$1.00 list price) do not count towards the 10+ line items.

DISCOUNTS ARE SUBJECT TO CHANGE

Fax order discount and UPS special programs revised June 1, 1995

**Extra Fax Discount
for Domestic USA
Dealers Only**

**Up to 5%
extra savings!**

**UPS
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For faxed orders only

**Now! Direct TOLL-FREE access
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Toll-free nationwide:

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CAUTION:



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

The following safety guidelines should always be used when operating the GA-6RZR2RGenerator:

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.
- This generator is a source of potentially **LETHAL** high voltage. Never permit unqualified personnel-especially children to operate the generator.
- 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.
- This generator is equipped with a **ground terminal** for your protection. Always complete the grounding path from the generator to an external grounding source.
- **NEVER** operate this generator, or handle any electrical equipment while standing in **water, while bare foot, while hands are wet, or in the rain**. *Electrical shock could occur causing severe bodily harm or even death.*
- Keep electrical cords in good condition. Worn, bare or frayed wiring can cause electrical shock, leading to *bodily harm or even death*.
- This generator 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 and may cause injury to people.
- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing generator.

- Provide adequate ventilation when operating the generator. **DO NOT** operate the generator in any enclosed or narrow space. The generator's gasoline engine gives off **DEADLY** carbon monoxide gas.
- **NEVER** operate the generator in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe *bodily harm or even death*.
- Always make sure that the generator is secure on level ground so that it cannot slide or shift around, endangering workers. Also keep the immediate area free of bystanders.
- When using a concrete vibrator or a similar device that is immersed in a water based solution, make sure the device is equipped with short circuit protection.
- Always use rubber boots and gloves when operating a concrete vibrator or similar device.
- Use adequate size connecting cable for extension.
- Maintain electrical cords in good condition and frequently replace the entire cable of the concrete vibrator with a new one.
- **High Temperatures** – Allow the machine and engine to cool before adding fuel or performing service and maintenance functions. Contact with *hot* components can cause serious burns.

Emergencies

- Always know the location of the nearest **fire extinguisher** and **first aid kit**. Know the location of the nearest telephone. Also know the phone numbers of the nearest **ambulance, doctor** and **fire department**. This information will be invaluable in the case of an emergency.

Maintenance Safety

- **NEVER** lubricate components or attempt service on a running machine.
- Always allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source

OPERATION AND SAFETY DECALS

Machine Safety Decals

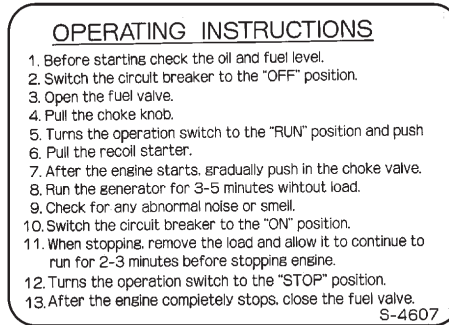
The GA-6RZR2 portable generator is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. The illustration below shows these decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.



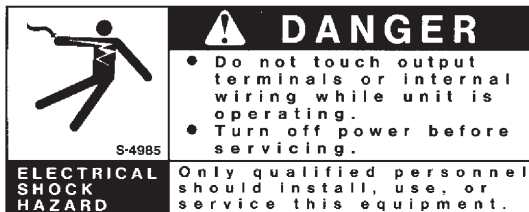
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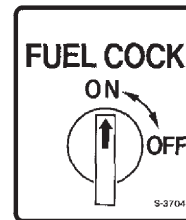
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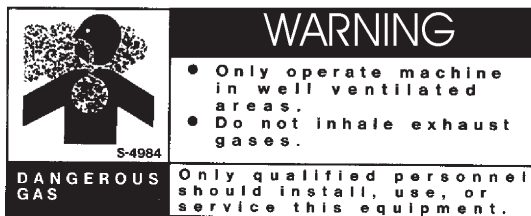
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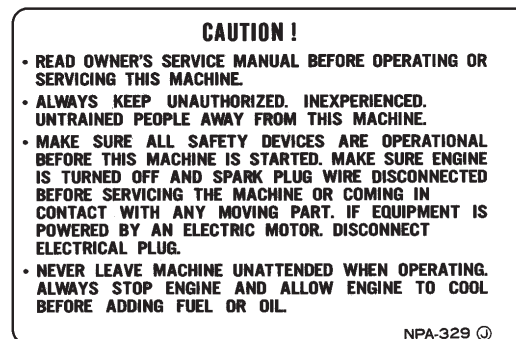
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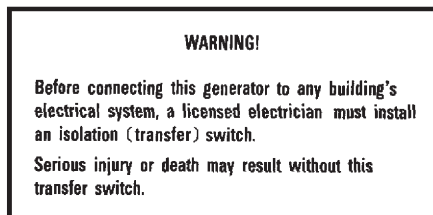
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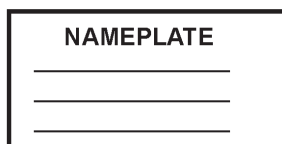
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P/N 0820610404



CONTACT MULTIQUIP SERVICE DEPT.



P/N 0800628504

Table 1. Specifications

| MODEL | | GA-6RZR2 |
|--------------------|---------------------------|---|
| | Type | 2-pole, Brushless Type Revolving Field |
| 60 Cycle Generator | Max. Output | 5500 Watts |
| | Rated Output (continuous) | 5000 Watts |
| | Rated Voltage | 120/240 V |
| | Rated Current | 21 Amps |
| | Phase | Single Phase (4-wire) |
| | Frequency | 60 Hz |
| | Rated Speed | 3600 RPM |
| | Power Factor | 100% |
| Engine | Model | ROBIN EH-34YD |
| | Type | Air-cooled 4 stroke OVH 90 V- Twin horizontal shaft gasoline engine |
| | Bore X Stroke | 1-3.31 in. X 2.40 in. |
| | Displacement | 20.62 cc |
| | Max Output | 11 H.P./3600 R.P.M. |
| | Fuel Tank Capacity | Approx. 5 U.S. Gallons |
| | Fuel | Unleaded Automobile Gasoline |
| | Lube Oil Capacity | 2-17/32 pints |
| | Speed Control Method | Centrifugal Fly-weight Type |
| | Starting Method | Recoil Start |
| Dimension (LXWXH) | | 630 X 625 X 480 mm |
| Dry Net Weight | | 176 lbs (80 Kg.) |

Effects of Altitude and Heat

The maximum output of the engine listed above is 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 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

WARNING:



Before connecting this generator 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-6RZR2 FAMILIARIZATION

Generator

The Multiquip Model GA-6RZR2 generator has been designed as a portable lightweight power source for 60 Hz (single-phase) vibrators, lighting facilities, power tools, submersible pumps and other industrial and construction machinery.

This generator is powered by a **ROBIN** gasoline engine. The alternator, a brushless revolving-field type, is permanently aligned to the engine through rigid coupling.

The generator is 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 generator to protect against damage.

This portable generator is 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 has the following: (all outputs are 60 Hz, single phase)

- One 120V output receptacle.
- One 240V output receptacle.
- One 120V output receptacle (GFI protected).
- One main 21 amp circuit breaker.
- AC Voltmeter
- Idle Control Switch
- Full Power Switch
- Operation Switch

Excitation System

All GA-series generators use a magnet attached to a flywheel to produce AC voltage from a lamp coil beneath the flywheel. As the magnet 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.

Engine

The four-cycle air-cooled ROBIN gasoline engine is designed to meet every performance requirement of this generator. Reference Table 1, page 8 for engine specifications.

Figure 1 (page 10) shows the basic controls and indicators for the GA-6RZR2 generator.

NOTE

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

GA-6RZR2 — CONTROLS AND INDICATORS

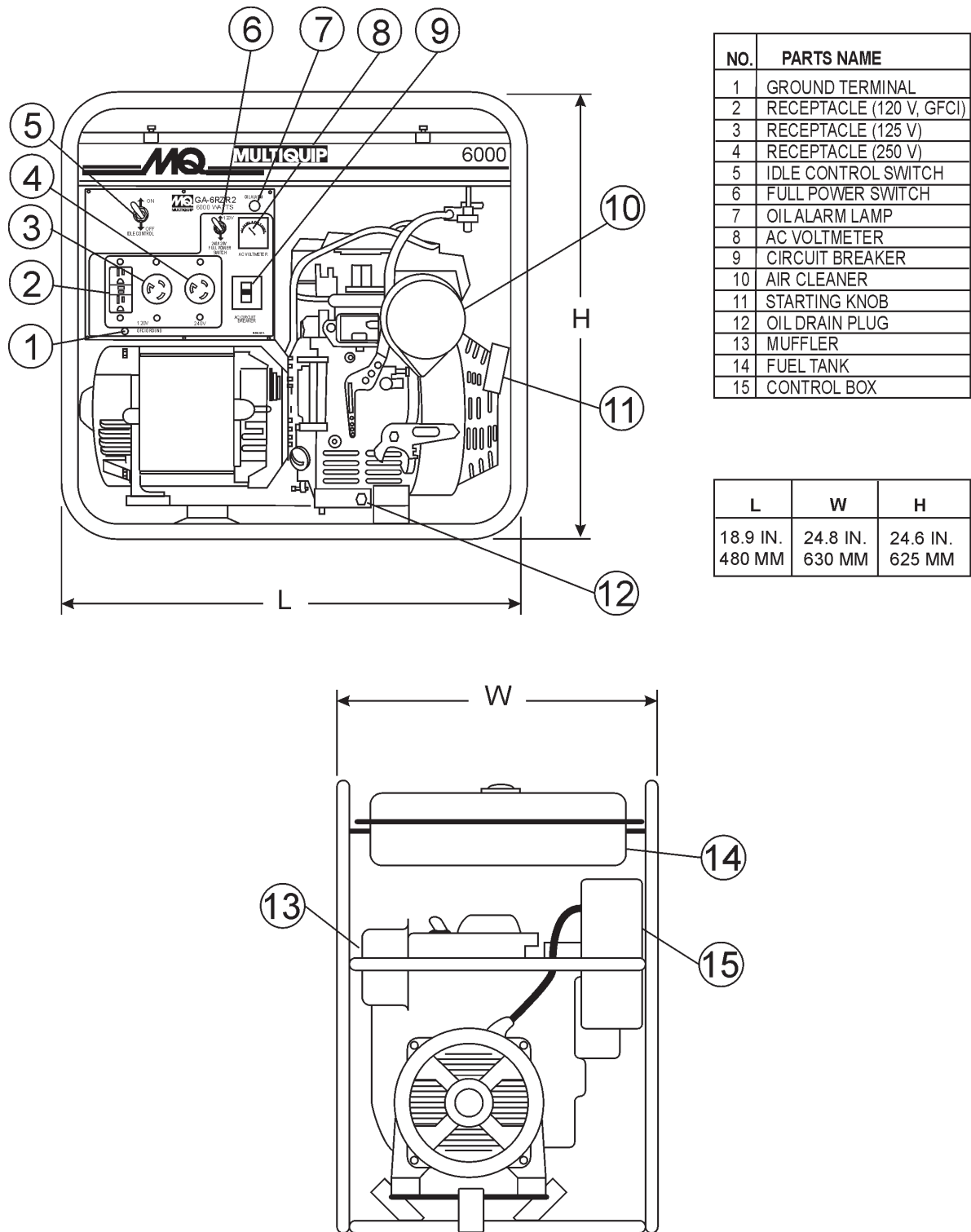


Figure 1. Controls and Indicators

Outdoor Installation

Install the generator in a location where it will not be exposed to rain or sunshine. Make sure that the generator is on secure level ground so that it cannot slide or shift around. Also install the generator 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 so 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, not only to the engine parts, but also to the alternator parts.

CAUTION :



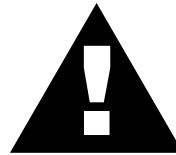
Pay close attention to ventilation when operating the generator inside confined areas. The engine exhaust contains noxious elements.

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 generator is installed indoors, you must make provisions for venting the engine exhaust to the outside of the building.

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.

General Inspection Prior to Operation

This generator has been thoroughly inspected and accepted prior to shipment from the factory. However, be sure to check for damaged parts or components, or loose nuts and bolts, which could have occurred in transit.

Circuit Breaker

To protect the generator from an overload, a 2-pole 21 amp circuit breaker is provided on the control box. Make sure to switch this circuit breaker to the "OFF" position prior to starting the engine.

Ground

The nut and ground terminal on the generator should always be used to connect the generator to a suitable ground. The ground path should be of #8 size wire.

Connect the terminal of the ground wire between the lock washer and the nut and tighten the nut fully. Connect their end of the wire to a suitable ground.

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 generator and point of use (load) is held to a minimum. Use the cable selection chart (Table 2) as a guide for selecting proper cable size.

Table 2. Cable Selection (60 Hz, single phase operation)

| Current in Amperes | Load In Watts | | Maximum Allowable Cable Length | | | |
|---|-----------------|-----------------|--------------------------------|----------|----------|----------|
| | At 120 Volts | At 240 Volts | #10 Wire | #12 Wire | #14 Wire | #16 Wire |
| 2.5 | 300 | 600 | 1000 ft. | 600 ft. | 375 ft. | 250 ft. |
| 5 | 600 | 1200 | 500 ft. | 300 ft. | 200 ft. | 125 ft. |
| 7.5 | 900 | 1800 | 350 ft. | 200 ft. | 125 ft. | 100 ft. |
| 10 | 1200 | 2400 | 250 ft. | 150 ft. | 100 ft. | |
| 15 | 1800 | 3600 | 150 ft. | 100 ft. | 65 ft. | |
| 20 | 2400 | 4800 | 125 ft. | 75 ft. | 50 ft. | |
| CAUTION: Equipment damage can result from low voltage. | | | | | | |

Lubrication Oil

Fill the engine crankcase with lubricating oil through the filler hole, but do not overfill. Make sure the generator is level. With the dipstick inserted all the way, but without being screw into the filler hole, verify that the oil level is maintained between the two notches on the dipstick.

The oil listed in Table 3 is recommended to ensure better engine performance. Use class SC or higher grade motor oil.

NOTE

This ROBIN 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 generator is placed on level ground. Placing the generator on level ground will ensure that the low oil sensor will function properly.

Fuel

Close the fuel cock before filling the tank. Fill the fuel tank with clean and fresh unleaded gasoline. Do not fill the tank beyond capacity.

Pay attention to the fuel tank capacity when replenishing fuel. Refer to the fuel tank capacity listed on page 8 Specification Table1.

The fuel tank cap must be closed tightly after filling.

Handle fuel in a safety container. If the container does not have a spout, use a funnel.

CAUTION :



Never fill the fuel tank while the engine is running or in the dark. Gasoline spillage on a hot engine can cause a fire or explosion. If gasoline spillage occurs, wipe up the spilled gasoline completely to prevent fire hazards.

Table 3. Recommended Motor Oil

| Temperature Range | Type Oil |
|----------------------------------|-----------------------|
| 104° F ~ 23° F (40° C ~ -5°C) | SAE 30 |
| 23° F ~ 5° F (-5° C ~ -15°C) | SAE 20 or SAE 10W-30 |
| Below 5° C (-15°) | SAE 10W or SAE 10W-30 |

CAUTION :



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

Power Outlets

The generator has the following 120/240 volt 60 Hz (single-phase) receptacles.

- Single Phase
 - One Duplex NEMA (GFCI) 5-20R (120V, 20 Amp)
 - One Twist Lock NEMA L5-30R (120V, 30 Amp)
 - One Twist Lock NEMA L6-20R (240V, 20 Amp)

Main Circuit Breaker (2-Pole 120/240V 60 Hz)

This 2-pole 21 amp breaker protects the generator from short circuiting or overloading from the 120/240V 60 Hz single phase load.

Idle Control Switch

This unit is provided with an automatic idle control 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 2500 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.

Fuel Gauge

The fuel gauge is located on the fuel tank and allows easy monitoring of the fuel level.

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 generator or power tools turn the generator OFF and consult your authorized Multiquip service dealer.

Operation Switch

This switch must be in the ON position (up) for normal operation.

Start Switch

Push this switch to start the engine (electric start only). If a recoil starter is used, pull the starter rope to start the engine. Make sure the operation switch is in the ON position (up), otherwise engine will not start.

Full Power Switch

The unit is provided with a full power switch. Figures 2 and 3 show simplified wiring diagrams of the dual voltage system.

When the full power switch is in the 120 volt (up) position, you can take up **full rated power** of the generator at 120 volts from the single duplex receptacle, single locking type 120 volt receptacle, or a combination of these receptacles as long as the total load does not exceed the generating set capacity.

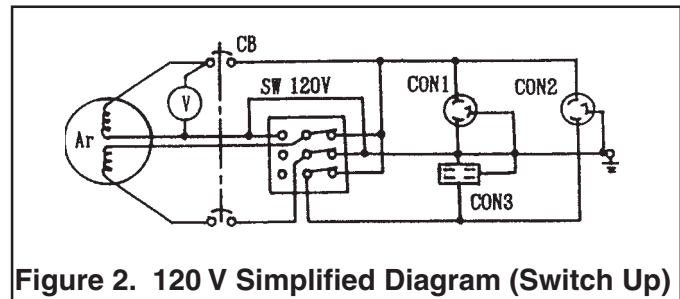


Figure 2. 120 V Simplified Diagram (Switch Up)

NOTE

When the full power switch is in the 120 volt position, the locking type 240 volt receptacle cannot be used.

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 duplex receptacle and up to half of the rated power of the set at 120 volts from the locking type 120 volt receptacle; or full rated power of the set at 240 volts from the locking type 240 volt receptacle.

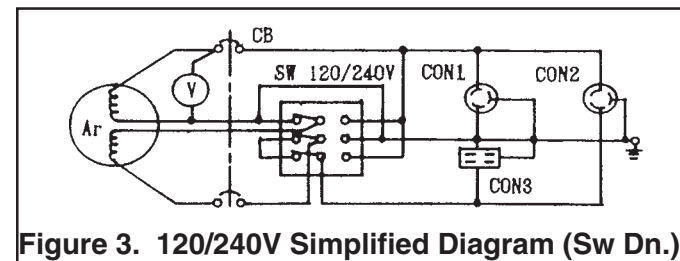


Figure 3. 120/240V Simplified Diagram (Sw Dn.)

Single Phase Load

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

NOTE

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

WATTS = VOLTAGE x AMPERAGE

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.

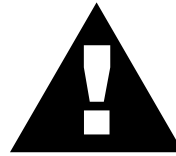
Total the running wattage and multiply by 3.

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.

An inadequate size connecting cable which cannot carry the required load can cause a voltage drop which can burn out the appliance or tool and overheat the cable.

The idle control is operated at minimum load capacity of 100W. If the load capacity is less than 100W, throw the idle control switch to the OFF position.

GA-6RZR2— OPERATING INSTRUCTIONS

Before Starting

1. Be sure to disconnect the electrical load and switch the main circuit breaker to the "OFF" position prior to starting the engine.
2. Never start the engine with the main circuit breaker "ON".
3. Check the lubricating oil level prior to starting the engine. Make sure the generator is level. The oil level must be maintained between two notches on the dipstick.
4. When there is not enough lubricating oil, fill the crankcase with high grade motor oil. Use a high quality detergent oil classified SC, SD or SE. (See Table 3 on page 13)

CAUTION:



- NEVER start the engine when the oil level is below the lower mark on the dipstick.
- Check the fuel level on the fuel gauge. When fuel is low, fill the fuel tank with clean fresh unleaded automotive gasoline.
- If gasoline spillage occurs, completely wipe up the spilled gasoline.

Starting

1. Open the fuel cock located below the fuel tank. The fuel starts to flow when the fuel cock lever is turned downward.
2. Place the idle control switch in the "ON" (up) position.
3. Close the choke. Adjust the opening of the choke valve according to operating conditions. When the engine is warm or the air temperature is high, close the choke valve halfway or open it all the way.
4. Confirm that the main circuit breaker on the generator control box is "OFF".
5. Set the operation switch to the "ON" position and grasp the starting rope and slowly pull it out. The resistance becomes hardest at a certain position, corresponding to the compression point. Rewind the rope a little from that point and pull out sharply.
6. If the engine fails to start, repeat the procedure.

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.

Warm up

1. When the engine starts, open the choke slowly.
2. Run the engine at low speed for 3 minutes without load until the engine warms up.
3. Turn the idle control switch to the "OFF" (down) position and check the voltage by referring to the voltmeter on the control box.

CAUTION:



DO NOT change the engine speed control lever which has been set at the factory prior to shipping.

1. Check the generator for abnormal noise and smells. Then connect the load to the receptacles of the generator.
2. Switch the main circuit breaker to the "ON" position and turn the idle control switch to the "ON" (down) position for normal (load) engine operation.

Operation

Check the voltage by referring to the voltmeter on the control box. When the voltmeter indicates 120 volts, 120 volts from the 120V receptacles and 240 volts from the 240V receptacle can be obtained at the same time. Refer to Figure 1, Controls and Indicators, item 8 on page 10.

Stopping the Engine

CAUTION:



NEVER stop the engine suddenly while running at high speeds.

1. Remove the load from the generator. Place the circuit breaker in the "OFF" position. Refer to Figure 1, item 9 on page 10. Run the engine (no-load) with the idle control switch set to the ON position for three to five minutes, then stop the engine.
2. Turn the START/STOP switch to the "STOP" position.
3. Close the fuel cock.

General Inspection

At least daily or prior to each use, the generating set should be cleaned and inspected for deficiencies. Check for loose, missing or damaged nuts, bolts or other fasteners. Also check for fuel or oil leaks.

Engine Side (Refer to the Engine Instruction Manual)

Check Oil Level

Check the crankcase oil level prior to each use, or when the fuel tank is filled. Make sure the generating set is level. The oil level must be between the two notches on the dipstick.

Changing Oil

Change oil after the first 20 hours of operation. Drain and refill the engine crankcase every 50 operating hours or once a week thereafter. Drain crankcase oil into a suitable container while engine is still warm. Replace the drain plug tightly. Add oil through the filler hole.

Air Cleaner

Every 50 hours: Remove air cleaner element (std. or heavy duty types), and wash in kerosene or liquid detergent and hot water. Wrap foam element in a cloth and squeeze dry. Wipe heavy duty paper element dry with toweling. Saturate element with kerosene; squeeze excess from foam element. Wipe excess from heavy duty paper element.

Service Daily

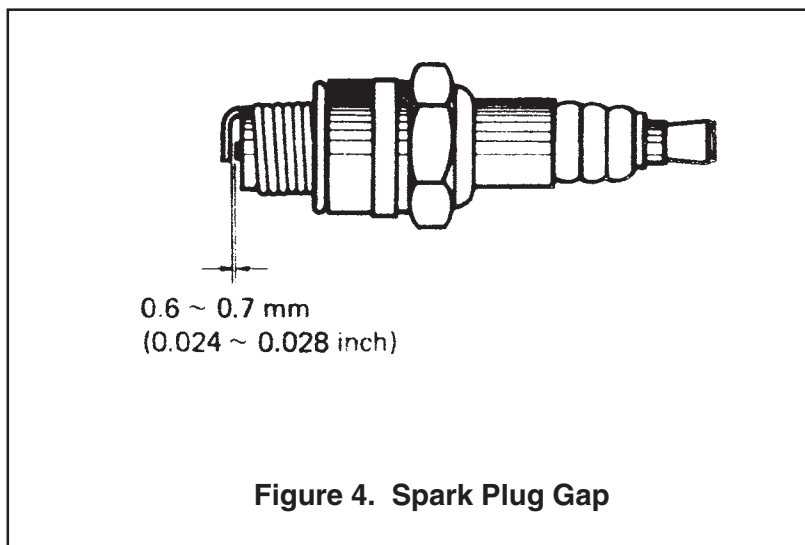
If engine is operating in very dusty and dry grass conditions. A clogged air cleaner will result in high fuel consumption, loss of power and excessive carbon buildup in the combustion chamber.

Cleaning the Fuel Strainer

Clean the fuel strainer if it contains dust or water. Remove dust or water in the strainer cap and wash it in gasoline. Securely fasten the fuel strainer cap so that fuel will not leak. Check the fuel strainer every 200 hours of operation or once a month.

Spark Plug

Remove carbon build-up on the spark plug (Figure 4) with a wire brush. Set the spark plug gap to 0.6—0.7mm (0.024-0.028 inch). Tighten with a spark plug socket wrench. Clean the spark plug every 50 operating hours or once a week.



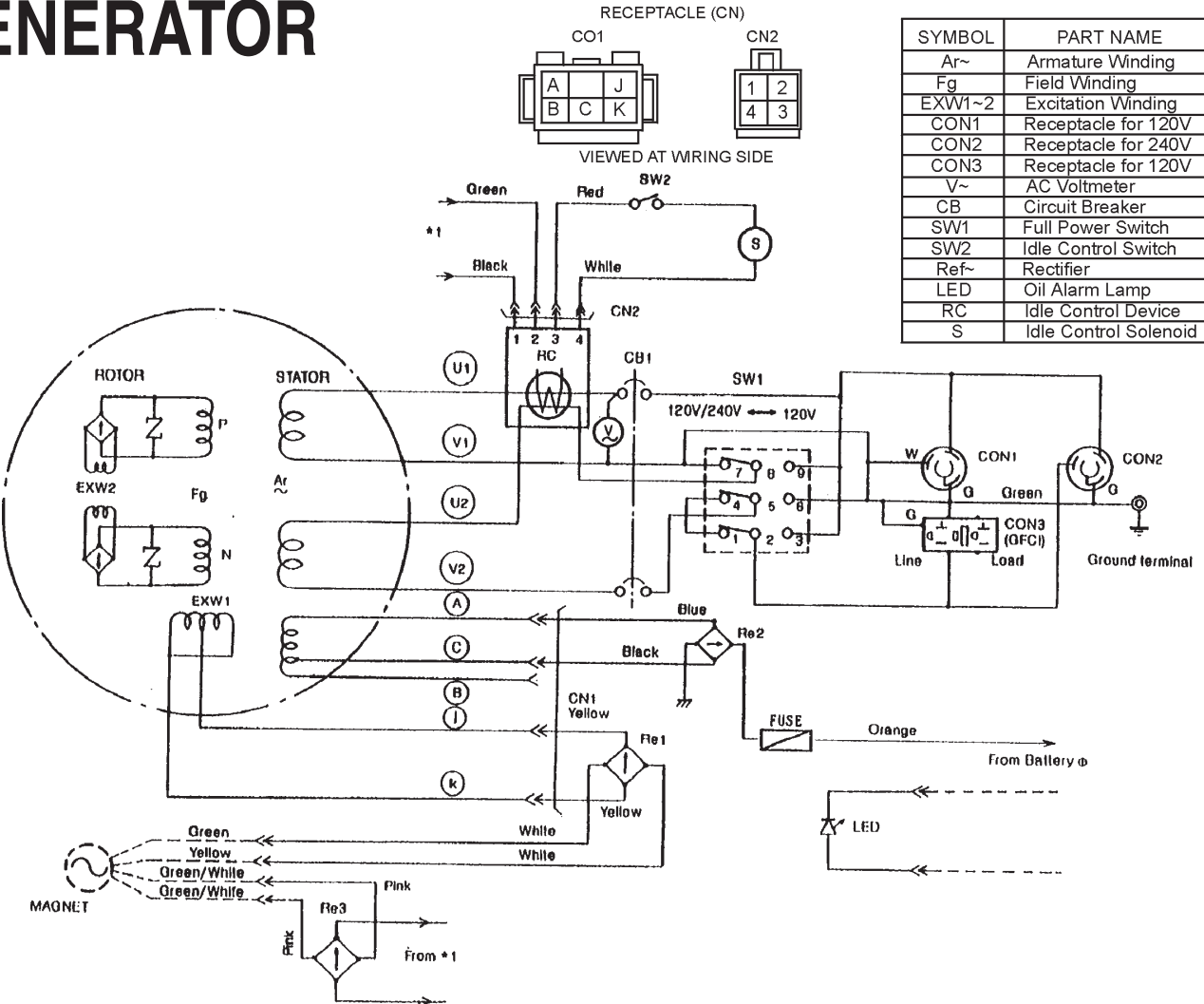
GA-6RZR2— PREPARATION FOR LONG -TERM STORAGE

Generator Storage

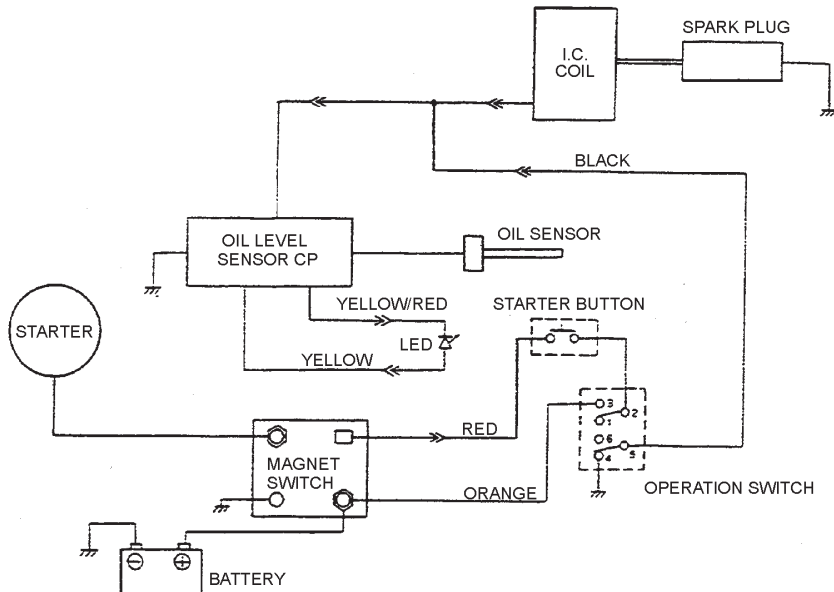
For storage of the generating set for over 30 days, the following is required:

- Drain the fuel tank completely.
- 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.

GENERATOR



ENGINE



GA-6RZR2—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 4) 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 4. 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. |
| | Malfuction of valve seat? | Re-seat valves. |
| | Spark plug is loose? | Replace spark plug. |
| | Worn piston rings? | Replace piston rings. |
| Insufficient power output "compression" | Malfuction 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. |
| | Malfuction in fuel system? | Clean or replace fuel filter. Clean or replace carburetor. Check carburetor float. |

GA-6RZR2—TROUBLESHOOTING (ENGINE)

TABLE 4. ENGINE TROUBLESHOOTING (CONTINUED)

| SYMPTOM | POSSIBLE PROBLEM | SOLUTION |
|--|---|---|
| Insufficient power output "compression" and overheats | Malfunction in cooling fan? | Check or replace cooling fan. |
| | Air in-take filter clogged? | Clean or replace air in-take filter. |
| Burns to much fuel | Over accumulation of exhaust products? | Clean and check valves. Check muffler, replace if necessary. |
| | Wrong spark plug? | Replace spark plug with manufactures suggested type spark plug. |
| Exhaust color is 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-6RZR2—TROUBLESHOOTING (GENERATOR)

Practically all generator 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 Generator Troubleshooting (Table 5) information shown below and on the preceding 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 5. 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. |
| | Leakage breaker malfunction? | Check or replace CB1. |
| | Full power switch malfunction? | Check full power switch and full power switch circuit. |
| 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. |
| | Bad Idle control switch? | Check or replace idle control switch. |
| Does not accelerate from low to high "LOAD ACTIVE" | Idle control switch malfunction? | Check or replace idle control switch. |
| | Idle control device malfunction? | Check or replace idle control device. |
| | Control box internal wiring defective? | Check control box wiring. |

GA-6RZR2—TROUBLESHOOTING (GENERATOR)

TABLE 5. GENERATOR TROUBLESHOOTING (CONTINUED)

| SYMPTOM | POSSIBLE PROBLEM | SOLUTION |
|---|----------------------------------|---|
| 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-6RZR2— EXPLANATION OF CODE IN REMARKS COLUMN

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

Items Found In the “Remarks” Column

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

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

Items Found In the “Items Number” Column

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

NOTE

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

NOTE

The contents of this catalog are subject to change without notice.

GA-6RZR2—SUGGESTED SPARE PARTS

GA-6RZR2 WITH ROBIN EH-34DS ENGINE

1 to 5 Units

| Qty. | P/N | Description |
|------|------------|-----------------------|
| 1 | 0601804819 | CIRCUIT BREAKER |
| 1 | 0601812597 | RECEPTACLE, GFCI |
| 1 | 0601811035 | RECEPTACLE, 125V, 30A |
| 1 | 0601811032 | RECEPTACLE, 250V, 20A |
| 3 | 0601823204 | RECTIFIER |
| 2 | 0642009000 | STRAINER, FUEL |
| 2 | 0810107103 | FILTER, FUEL |
| 1 | 0810106004 | CAP, FUEL TANK |
| 5 | 2462360107 | ELEMENT, AIR CLEANER |
| 5 | 0650140100 | SPARK PLUG |

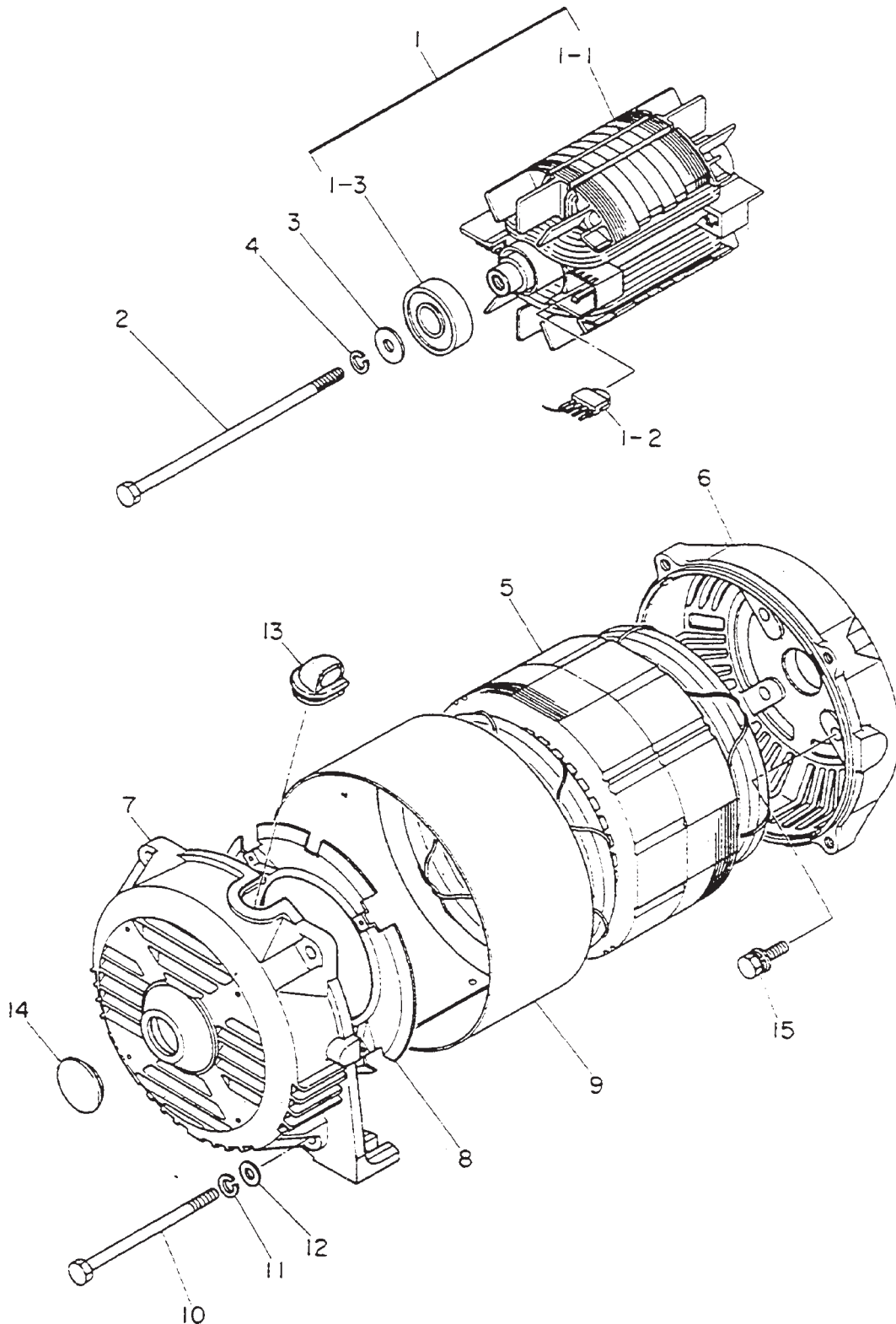
5 to 10 Units

| Qty. | P/N | Description |
|------|------------|------------------------|
| 2 | 0601804819 | CIRCUIT BREAKER |
| 2 | 0601812597 | RECEPTACLE, GFCI |
| 2 | 0601811031 | RECEPTACLE, 125V, 30A |
| 2 | 0601811032 | RECEPTACLE, 250V, 20A |
| 6 | 0601823204 | RECTIFIER |
| 4 | 0642009000 | STRAINER, FUEL |
| 4 | 0810107103 | FILTER, FUEL |
| 3 | 0810106004 | CAP, FUEL TANK |
| 2 | 3015419004 | SUSPENSION RUBBER |
| 4 | 7855419014 | SUSPENSION RUBBER |
| 10 | 2462360107 | ELEMENT, AIR CLEANER |
| 5 | 0650140100 | SPARK PLUG |
| 1 | 0601823853 | SLOW DOWN UNIT |
| 1 | 0601800258 | AC VOLMETER |
| 2 | 0601830737 | FULL POWER SWITCH |
| 2 | 0601830727 | IDLE CONTROL SWITCH |
| 1 | 0602123555 | OIL ALARM LAMP |
| 1 | KS31101301 | OIL LEVEL SENSOR ASSY. |
| 1 | 2467820121 | IGNITION COIL |
| 1 | 2476231500 | CARBURETOR ASSY. |

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

GA-6RZR2— GENERATOR ASSY.

GENERATOR ASSY.



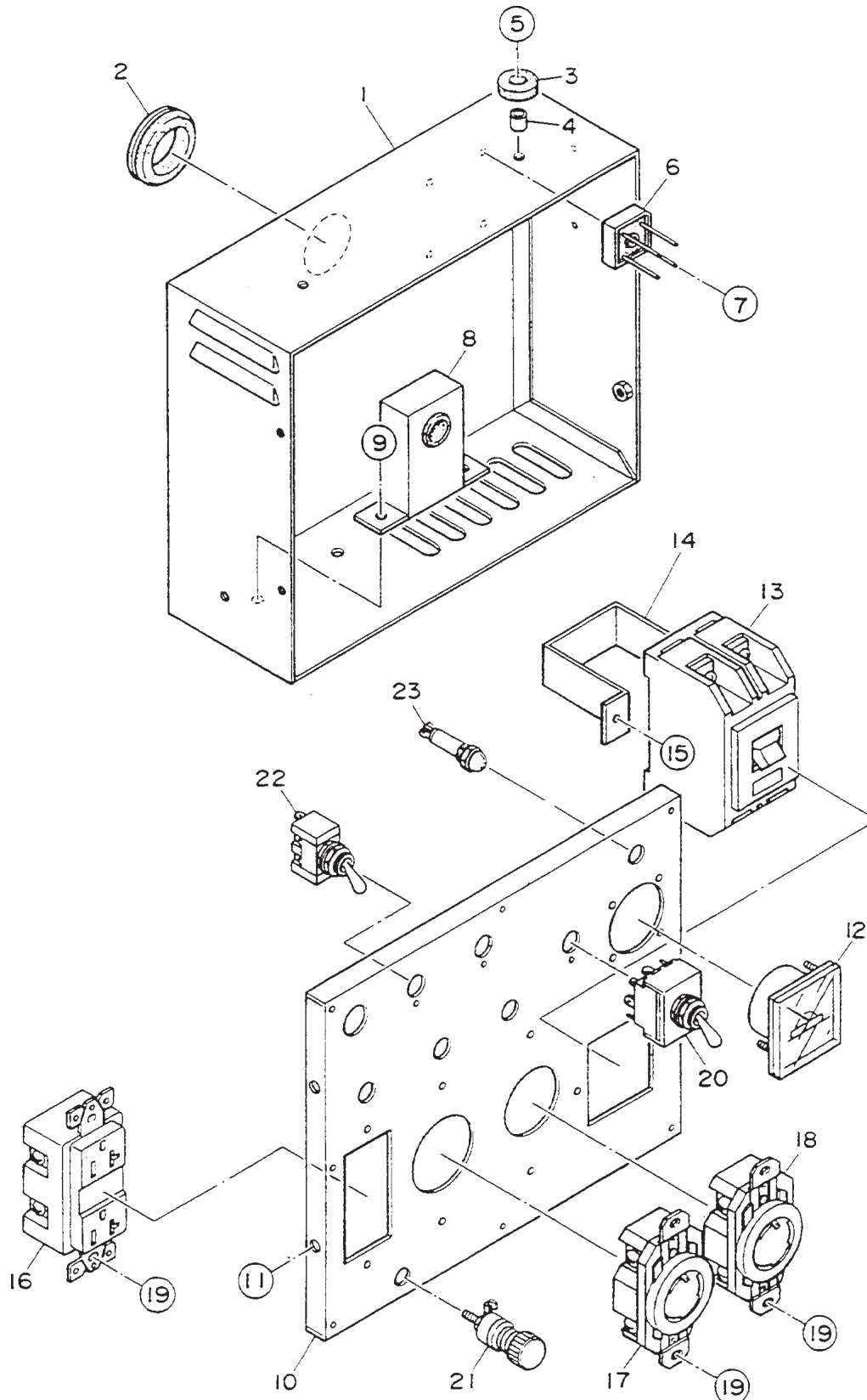
GA-6RZR2— GENERATOR ASSY.

GENERATOR ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|---------------------|-------------|--------------------|
| 1 | 7901000503 | ROTOR ASSY..... | 1 | INCLUDES ITEMS W/* |
| 1-1* | 7871080003 | FIELD COIL | 1 | |
| 1-2* | 0601823207 | RECTIFIER..... | 2 | D3SB60,S |
| | 0601822638 | SURGE ABSORBER..... | 2 | TNR15G431K |
| 1-3* | 0071706304 | BEARING..... | 1 | 6304 2RUNYCM |
| 2 | 7871017004 | SET BOLT, ROTOR | 1 | |
| 3 | 0801086104 | SET WASHER, BEARING | 1 | |
| 4 | 0040010000 | SPRING WASHER | 1 | |
| 5 | 7901340603 | ARMATURE ASSY. | 1 | |
| 6 | 7901315202 | END BRACKET | 1 | |
| 7 | 7871315022 | END BRACKET | 1 | |
| 8 | 7875021513 | GUIDE PANEL, AIR | 1 | |
| 9 | 7871331003 | COVER | 1 | |
| 10 | 7871344204 | SET BOLT, STATOR | 4 | |
| 11 | 0040008000 | SPRING WASHER | 4 | |
| 12 | 0041208000 | PLAIN WASHER | 4 | |
| 13 | 7871329514 | GROMMET | 1 | |
| 14 | 0601851760 | CAP | 1 | |
| 15 | 0017108020 | HEX. HEAD BOLT | 4 | |

GA-6RZR2—CONTROL BOX ASSY.

CONTROL BOX ASSY.



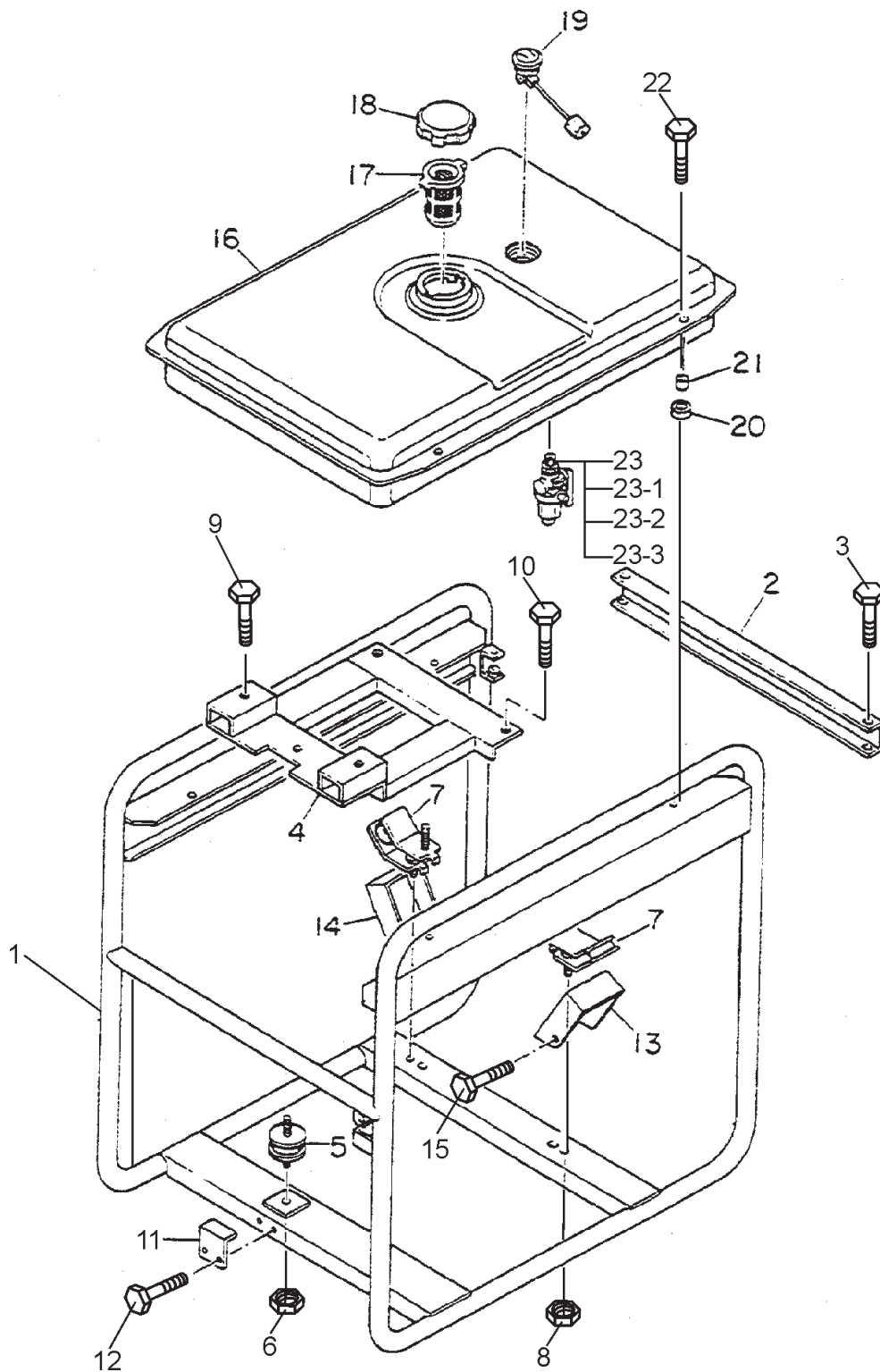
GA-6RZR2— CONTROL BOX ASSY.

CONTROL BOX ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|---------------------------|-------------|---------------------|
| 1 | 7901810303 | CONTROL BOX | 1 | |
| 2 | 0601850102 | GROMMET | 1 | G-3 |
| 3 | 0805088004 | RUBBER CUSHION | 2 | |
| 4 | 0805088304 | COLLAR | 2 | |
| 5 | 0017106020 | HEX. HEAD BOLT | 2 | |
| 6 | 0601823204 | RECTIFIER | 2 | S5VB60 |
| 7 | 0027103020 | MACHINE SCREW | 2 | |
| 8 | 0601823853 | SLOW DOWN UNIT | 1 | ND-80 |
| 9 | 0027104010 | MACHINE SCREW | 2 | |
| | 003000400 | HEX. NUT | 2 | REPLACES 0038404000 |
| 10 | 7911820413 | CONTROL PANEL | 1 | |
| 11 | 5585 | HEX. HEAD BOLT | 4 | REPLACES 0017105010 |
| 12 | 0601800258 | AC VOLTMETER | 1 | 0~120V, 0~240V |
| 13 | 0601804819 | CIRCUIT BREAKER | 1 | KM-2 21A |
| 14 | 4341817004 | BRACKET CIRCUIT BREAKER | 1 | |
| 15 | 0027504010 | MACHINE SCREW | 2 | |
| 16 | 0601812597 | RECEPTACLE | 1 | 5-20R, GF-5352 |
| 17 | 0601811035 | RECEPTACLE | 1 | L5-30R, 125V 30A |
| 18 | 0601811032 | RECEPTACLE | 1 | L6-20R, 250V 20A |
| 19 | 0027504010 | MACHINE SCREW | 6 | |
| | 003000400 | HEX. NUT | 6 | REPLACES 0038404000 |
| 20 | 0601830737 | FULL POWER SWITCH | 1 | ET330D12 |
| 21 | 0601815109 | GROUNDING TERMINAL | 1 | T -381 |
| 22 | 0601830727 | IDLE CONTROL SWITCH | 1 | ET115A12 |
| 23 | 0602123555 | OIL ALARM LAMP | 1 | 06-106PR |

GA-6RZR2— PIPE FRAME ASSY.

PIPE FRAME ASSY.



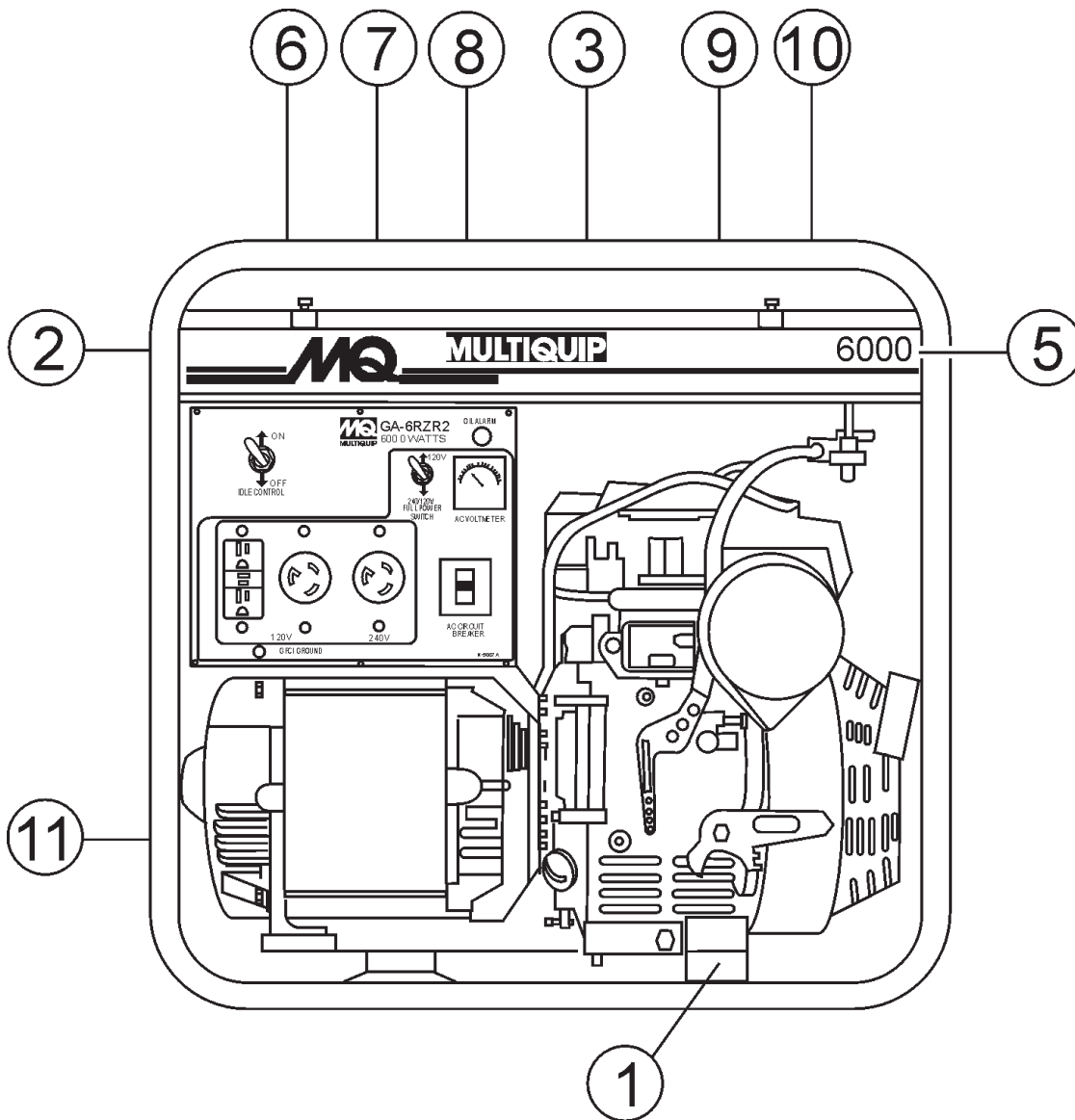
GA-6RZR2— PIPE FRAME ASSY.

PIPE FRAME ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|---------------------|-------------|---|
| 1 | 7905412202 | PIPE FRAME | 1 | |
| 2 | 7905414104 | BRACKET | 1 | |
| 3 | 0017106016 | HEX. HEAD BOLT | 4 | |
| 4 | 7905442103 | BASE | 1 | |
| 5 | 3015419004 | RUBBER SUSPENSION | 1 | |
| 6 | 0023808000 | HEX. NUT | 2 | REPLACES 0038408000 |
| 7 | 1665419004 | RUBBER SUSPENSION | 2 | |
| 8 | 020108060 | HEX. NUT | 4 | REPLACES 0207008000 |
| 9 | 011208030 | HEX. HEAD BOLT | 2 | |
| | 0023808000 | HEX. NUT | 2 | |
| 10 | 0017108040 | HEX. HEAD BOLT | 2 | |
| | 002308000 | HEX. NUT | 2 | REPLACES 0038408000 |
| 11 | 7905456014 | STOPPER | 1 | |
| 12 | 0017106016 | HEX. HEAD BOLT | 2 | |
| 13 | 7915455003 | COVER | 1 | |
| 14 | 7915455103 | COVER | 1 | |
| 15 | 0017106016 | HEX. HEAD BOLT | 1 | |
| 16 | 7905512102 | FUEL TANK | 1 | |
| 17 | 0810107103 | FUEL FILTER | 1 | |
| 18 | 0810106004 | CAP | 1 | |
| 19 | 0602125031 | FUEL GAUGE | 1 | |
| 20 | 7855525514 | RUBBER CUSHION | 4 | |
| 21 | 7855525604 | COLLAR | 4 | |
| 22 | 0017108030 | HEX. HEAD BOLT | 4 | |
| 23 | 0642009000 | FUEL STRAINER | 1 | INCLUDES ITEMS W/#, REPLACES 0605510025 |
| | 0521070042 | JOINT | 1 | REPLACES 0605512561 |
| 23-1# | 0642000220 | SCREEN | 1 | |
| 23-2# | 0642000230 | RUBBER PACKING | 1 | |
| 23-3# | 0642001910 | CUP | 1 | |

GA-6RZR2 — NAME PLATE AND DECALS

NAME PLATE AND DECALS

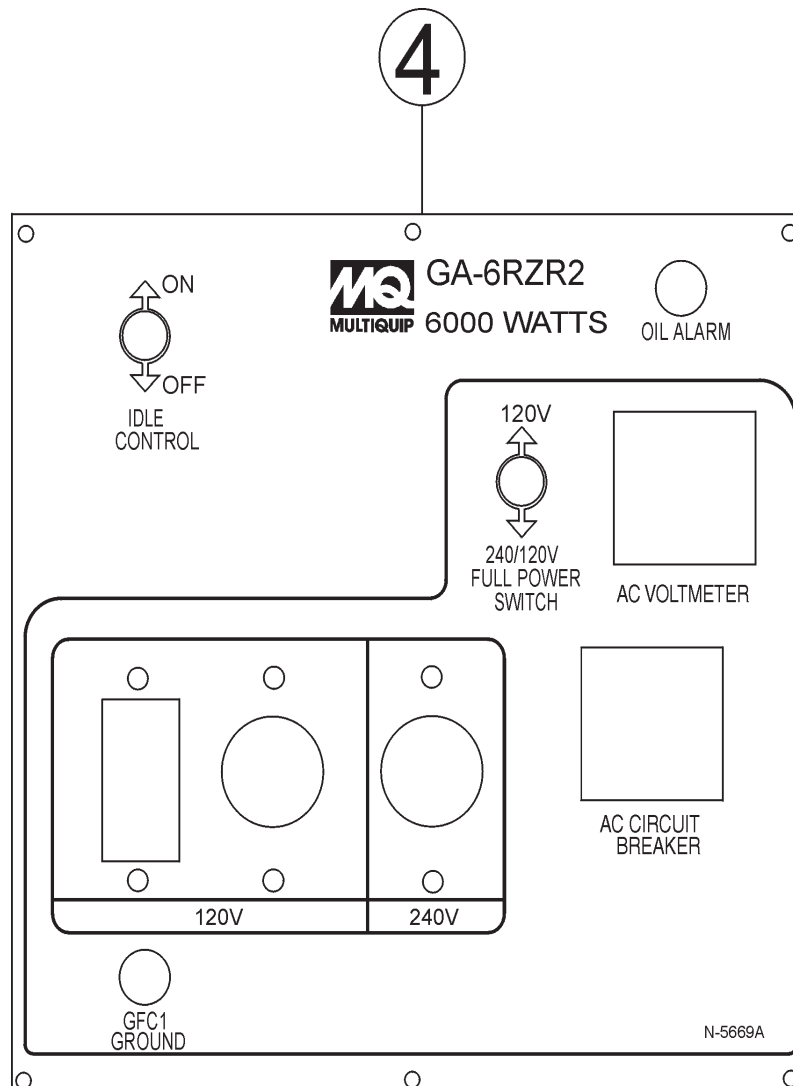


GA-6RZR2 — NAME PLATE AND DECALS

NAME PLATE AND DECALS

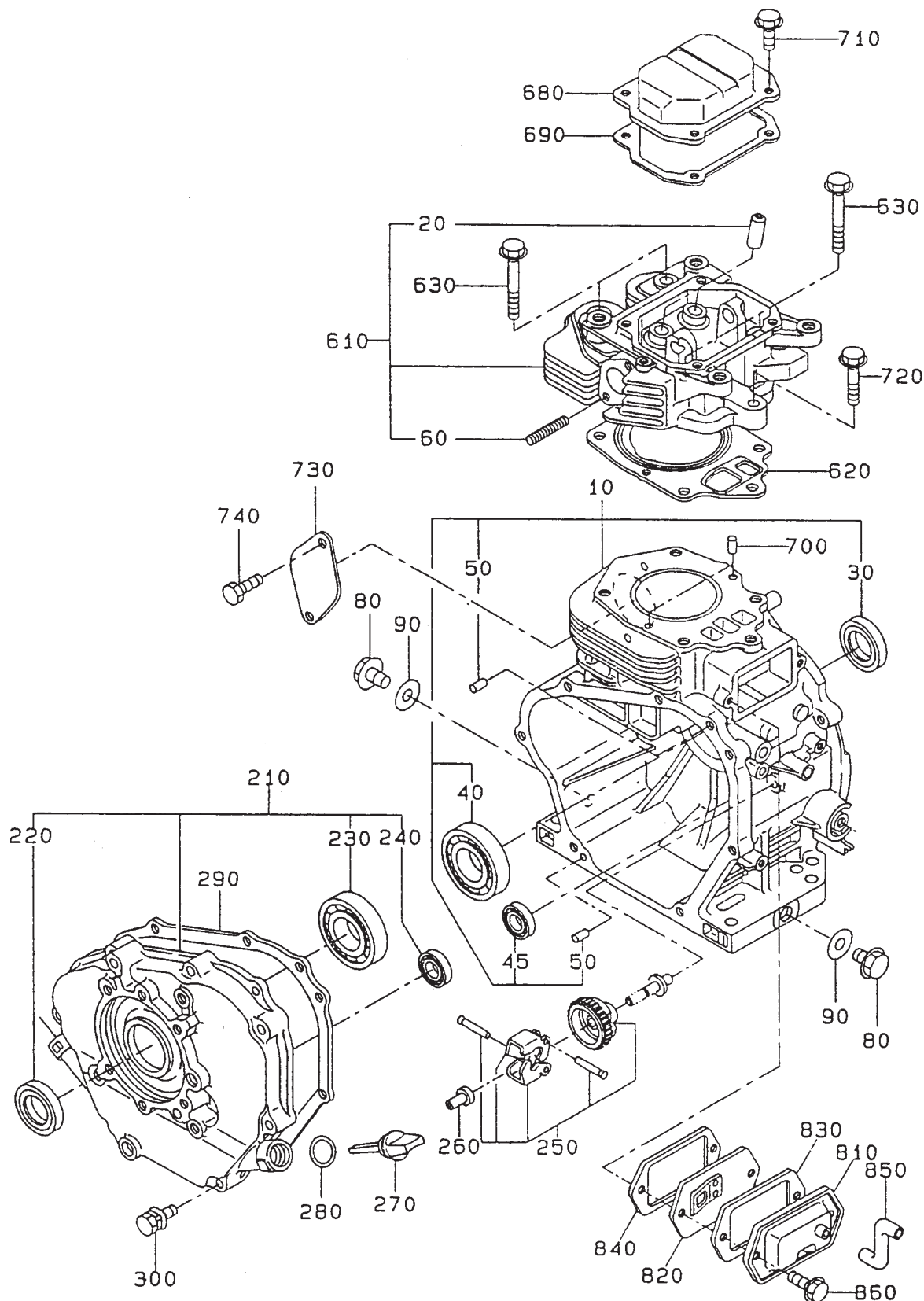
| NO | PART NO | PART NAME | QTY. | REMARKS |
|-----|------------|----------------------------------|------|--|
| 1* | 0800628504 | DECAL : GROUND | 1 | S-1123 |
| 2* | 1980680004 | DECAL : FUEL COCK | 1 | S-3704 |
| 3* | 7900638204 | DECAL : OPERATING INSTRUCTIONS | 1 | S-4605 |
| 4* | 7900501102 | DECAL : MQ GA-6RZR2 | 1 | N-5669A |
| 5* | 7900631402 | DECAL : MQ 6000 | 1 | S-5179 |
| 6* | 920203290 | DECAL : CAUTION | 1 | NPA-329 |
| 7* | 0820610404 | DECAL : WARNING | 1 | |
| 8* | 7900636004 | DECAL : OPERATE AT 3600 RPM ONLY | 1 | S-4461 |
| 9* | 8700611804 | DECAL : WARNING | 1 | S-4984 |
| 10* | 8700611904 | DECAL : DANGER | 1 | S-4985 |
| 11 | | PLATE, SERIAL NO. | 1 | CONTACT MQ SERVICE DEPT. W/MODEL & S/N |
| | DCLGA6RZR2 | KIT, DECAL | 1 | INCLUDES ITEMS W/* |

SEE DECAL ILLUSTRATIONS ON PAGE 7.



ROBIN EH-34 ENGINE — CRANKCASE ASSY.

CRANKCASE ASSY.



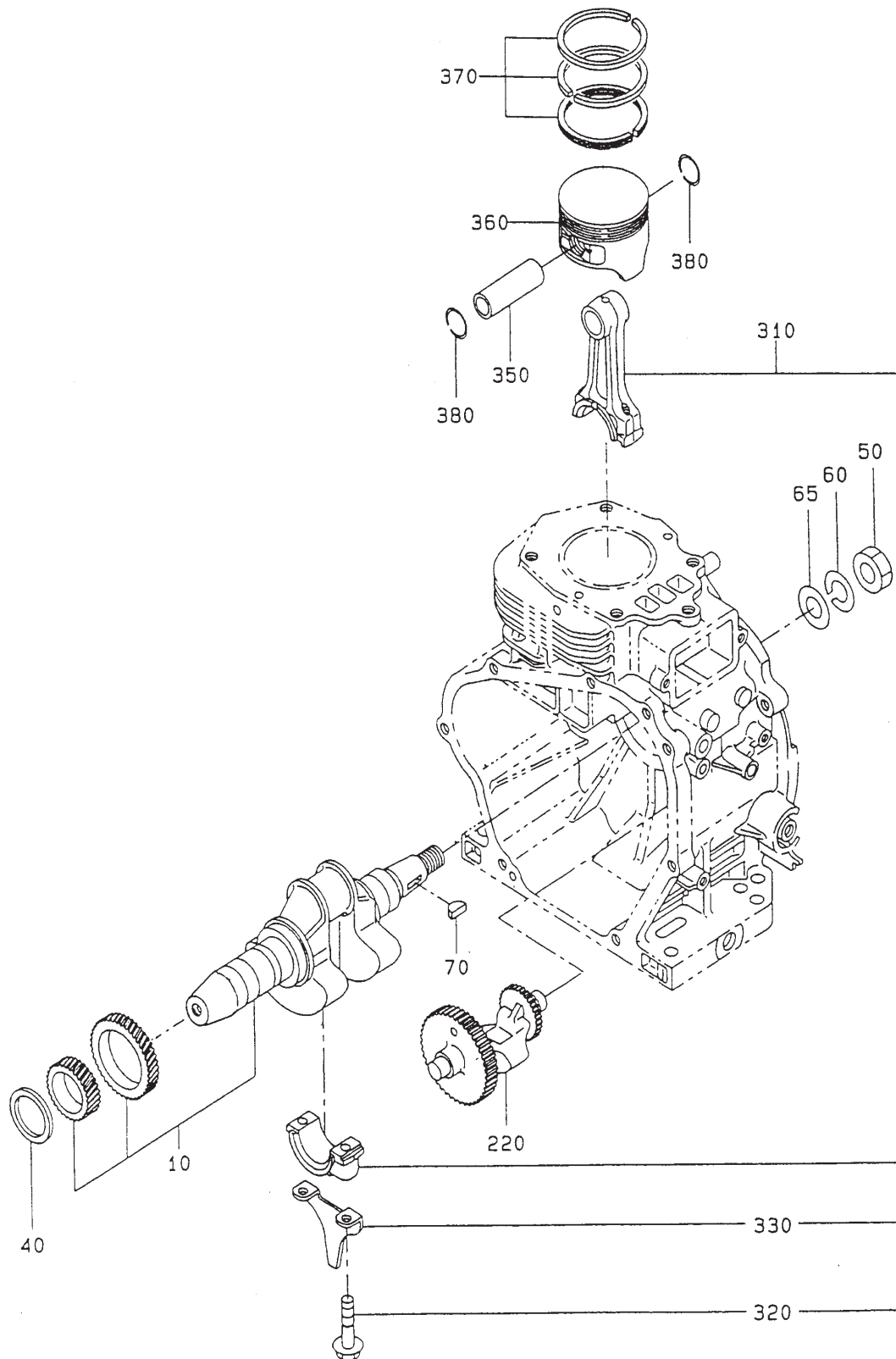
ROBIN EH-34 ENGINE — CRANKCASE ASSY.

CRANKCASE ASSY.

| NO | PART NO | PART NAME | QTY. | REMARKS |
|------|------------|--------------------------|------|--|
| 10 | 2471010221 | CRANKCASE CP | 1 | INCLUDES ITEMS W/* |
| 20+ | 2461420203 | VALVE GUIDE | 2 | OVER SIZE |
| 30* | 0440350090 | OIL SEAL | 1 | 35X48X8 |
| 40* | 040006207 | BALL BEARING | 1 | BB6207C3 REPLACES 0600350010 |
| 45* | 0600150010 | BALL BEARING | 1 | BB6202C3 |
| 50* | 0310060020 | DOWEL PIN | 2 | |
| 60+ | 0105080430 | STUD | 2 | |
| 80 | 0401140030 | PLUG | 2 | |
| 90 | 0211140020 | GASKET | 2 | |
| 210 | 2461100141 | MAIN BEARING COVER | 1 | INCLUDES ITEMS W/# |
| 220# | 0440350090 | OIL SEAL | 1 | 35X48X8 |
| 230# | 040006207 | BALL BEARING | 1 | BB6207C3 REPLACES 0600350010 |
| 240# | 0600150010 | BALL BEARING | 1 | BB6202C3 |
| 250 | 2464500101 | GOVERNOR GEAR CP | 1 | |
| 260 | 2054190103 | GOVERNOR SLEEVE | 1 | |
| 270 | 2246360107 | OIL GAUGE | 1 | REPLACES 2246360103 |
| 280 | 0213200010 | GASKET | 1 | |
| 290% | 2461510103 | GASKET, BEARING COVER | 1 | |
| 300 | 0011308400 | BOLT AND WASHER ASSY. | 7 | |
| 610 | 2471300301 | CYLINDER HEAD CP | 1 | INCLUDES ITEMS W/+ REPLACES 2471300131 |
| 620% | 2471500113 | GASKET, HEAD | 1 | |
| 630 | 0110100040 | FLANGE BOLT | 4 | |
| 680 | 2461550102 | ROCKER COVER UN | 1 | |
| 690% | 2461600203 | GASKET, ROCKER COVER | 1 | |
| 700 | 0310060020 | DOWEL PIN | 2 | |
| 710 | 0110060020 | FLANGE BOLT | 4 | |
| 720 | 0110100020 | FLANGE BOLT | 1 | |
| 730 | 2241710103 | BLIND COVER | 1 | |
| 740 | 0016508120 | BOLT | 2 | |
| 810 | 2461430101 | BREATHER COVER CP | 1 | |
| 820 | 2461440101 | BREATHER PLATE CP | 1 | |
| 830 | 2461600603 | GASKET, BREATHER COVER | 1 | |
| 840 | 2461600703 | GASKET, BREATHER PLATE | 1 | |
| 850 | 2461080103 | RUBBER PIPE | 1 | |
| 860 | 0110060030 | FLANGE BOLT | 2 | |
| 960 | 2479900207 | GASKET SET | 1 | INCLUDES ITEMS W/% REPLACES 2479900107 |

ROBIN EH-34 ENGINE — CRANKSHAFT & PISTON ASSY.

CRANKSHAFT & PISTON ASSY.



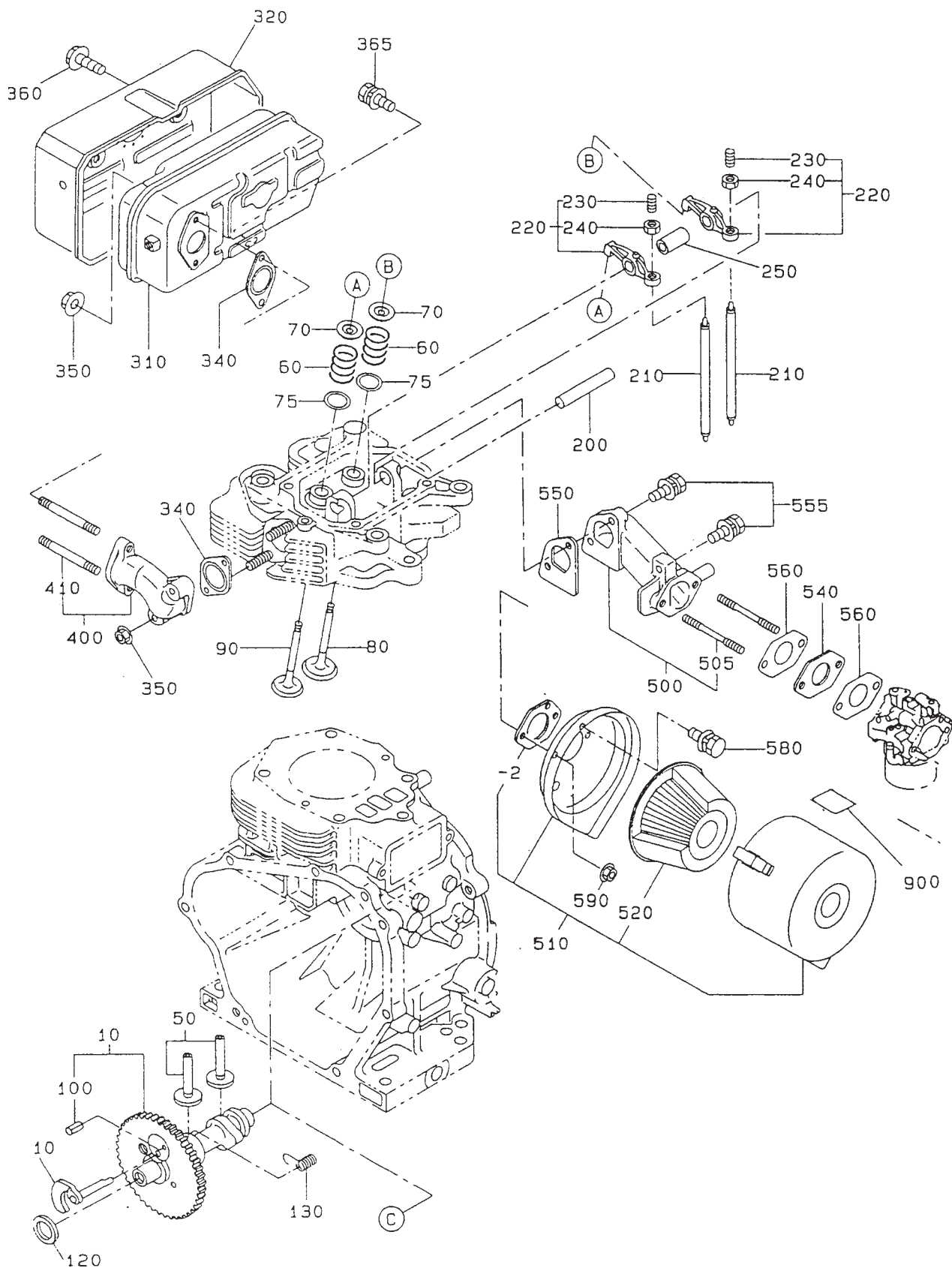
ROBIN EH-34 ENGINE — CRANKSHAFT & PISTON ASSY.

CRANKSHAFT & PISTON ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|---------------------------|-------------|----------------------|
| 10 | 2462070201 | CRANKSHAFT CP | 1 | |
| 40 | 0230350160 | SPACER | 1 | SELECTIVE ASSY T=0.6 |
| | 0230350170 | SPACER | 1 | SELECTIVE ASSY T=0.8 |
| | 0230350180 | SPACER | 1 | SELECTIVE ASSY T=1.0 |
| 50 | 0021818000 | NUT | 1 | |
| 60 | 0032018000 | SPRING WASHER | 1 | |
| 65 | 0031018000 | WASHER | 1 | |
| 70 | 0053205401 | WOODRUFF KEY | 1 | |
| 220 | 2462410223 | BALANCER SHAFT | 1 | |
| 310 | 2462250100 | CONNECTING ROD ASSY. | 1 | INCLUDES ITEMS W/* |
| 320* | 2462300103 | CONNECTING ROD BOLT | 2 | |
| 330* | 2462310113 | OIL SCRAPER | 1 | |
| 350 | 2462330103 | PISTON PIN | 1 | |
| 360 | 2472340113 | PISTON | 1 | STD. |
| | 2472340213 | PISTON | 1 | OVER SIZE 0.25MM |
| | 2472340313 | PISTON | 1 | OVER SIZE 0.50MM |
| 370 | 2472350117 | PISTON | 1 | STD. |
| | 2472350217 | PISTON | 1 | OVER SIZE 0.25MM |
| | 2472350317 | PISTON | 1 | OVER SIZE 0.50MM |
| 380 | 0565210020 | CLIP, PISTON PIN | 2 | |

ROBIN EH-34 ENGINE — INTAKE EXHAUST ASSY.

INTAKE EXHAUST ASSY.



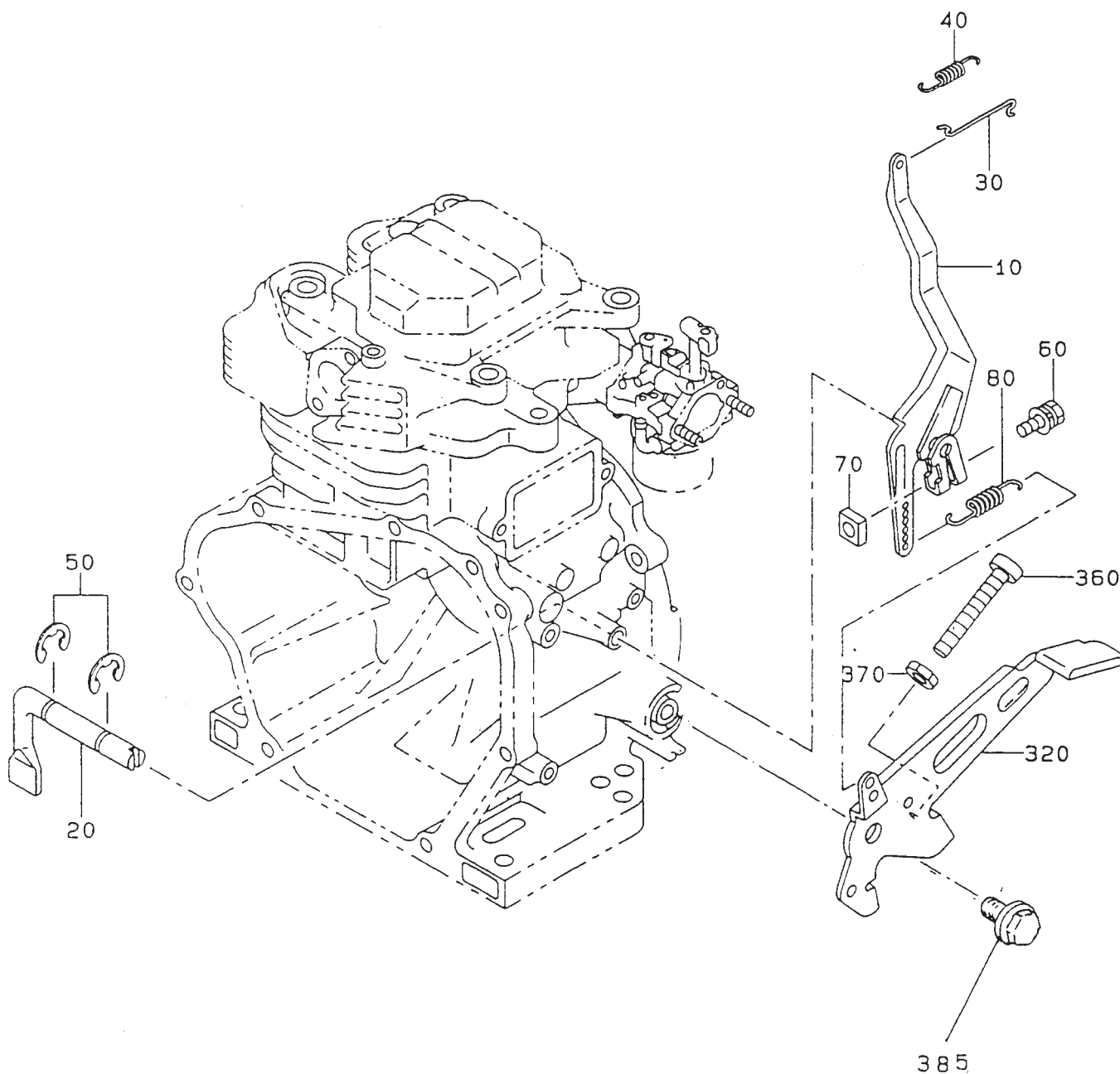
ROBIN EH-34 ENGINE — INTAKE EXHAUST ASSY.

INTAKE EXHAUST ASSY.

| NO | PART NO | PART NAME | QTY. | REMARKS |
|--------|------------|----------------------------|------|----------------------|
| 10 | 2463170101 | CAMSHAFT CP | 1 | INCLUDES ITEMS W/# |
| 50 | 2463330103 | TAPPET | 2 | |
| 60 | 2463360103 | VALVE SPRING | 2 | |
| 70 | 2463370113 | SPRING RETAINER | 2 | |
| 75 | 0200200010 | WASHER | 2 | |
| 80 | 2463341103 | INTAKE VALVE | 1 | REPLACES 2463340103 |
| 90 | 2463350103 | EXHAUST VALVE | 1 | |
| 100# | 0051904100 | SPRING PIN | 1 | |
| 110 | 2463620101 | RELEASE LEVER CP | 1 | |
| 120 | 0230220050 | SPACER | 1 | SELECTIVE ASSY T=0.6 |
| | 0230220060 | SPACER | 1 | SELECTIVE ASSY T=0.7 |
| | 0230220070 | SPACER | 1 | SELECTIVE ASSY T=0.8 |
| 130 | 2463670103 | RETURN SPRING | 1 | |
| 200 | 2393500103 | ROCKER SHAFT | 1 | |
| 210 | 2463530111 | PUSH ROD CP | 2 | |
| 220 | 2463610110 | ROCKER ARM ASSY. | 2 | INCLUDES ITEMS W/+ |
| 230+ | 0149080021 | ADJUSTING SCREW | 2 | |
| 240+ | 0170080090 | NUT | 2 | |
| 250 | 2463612003 | SPACER, ROCKER SHAFT | 1 | REPLACES 2463612013 |
| 310 | 2463010121 | MUFFLER CP | 1 | |
| 320 | 2463420121 | MUFFLER COVER CP | 1 | |
| 340 | 2463520103 | GASKET, MUFFLER | 2 | |
| 350 | 0110060050 | FLANGE NUT | 4 | REPLACES 0180080010 |
| 360 | 0110060010 | FLANGE BOLT | 3 | |
| 365 | 0011108160 | BOLT AND WASHER ASSY. | 1 | |
| 400 | 2463400101 | EXHAUST PIPE CP | 1 | INCLUDES ITEMS W/% |
| 410% | 0105080360 | STUD | 2 | |
| 500 | 2463300101 | INTAKE PIPE CP | 1 | INCLUDES ITEMS W/■ |
| 505■ | 0105060230 | STUD | 1 | |
| 510 | 2543260210 | AIR CLEANER ASSY. | 1 | INCLUDES ITEM W/* |
| 510-2* | 2343600308 | PACKING | 1 | |
| 520* | 2343260707 | ELEMENT SET | 1 | |
| 540 | 2463290103 | INSULATOR | 1 | |
| 550 | 2463600113 | GASKET, IN. PIPE | 1 | |
| 555 | 0011308300 | BOLT AND WASHER ASSY. | 3 | |
| 560 | 2343590203 | GASKET 2, INSULATOR | 2 | |
| 580 | 0016606120 | BOLT AND WASHER ASSY. | 1 | REPLACES 0011006120 |
| 590 | 0023706000 | FLANGE NUT | 2 | REPLACES 0023806000 |
| 900 | 0732000150 | LABEL, SHUTTER | 1 | |

ROBIN EH-34 ENGINE — GOVERNOR ASSY.

GOVERNOR ASSY.



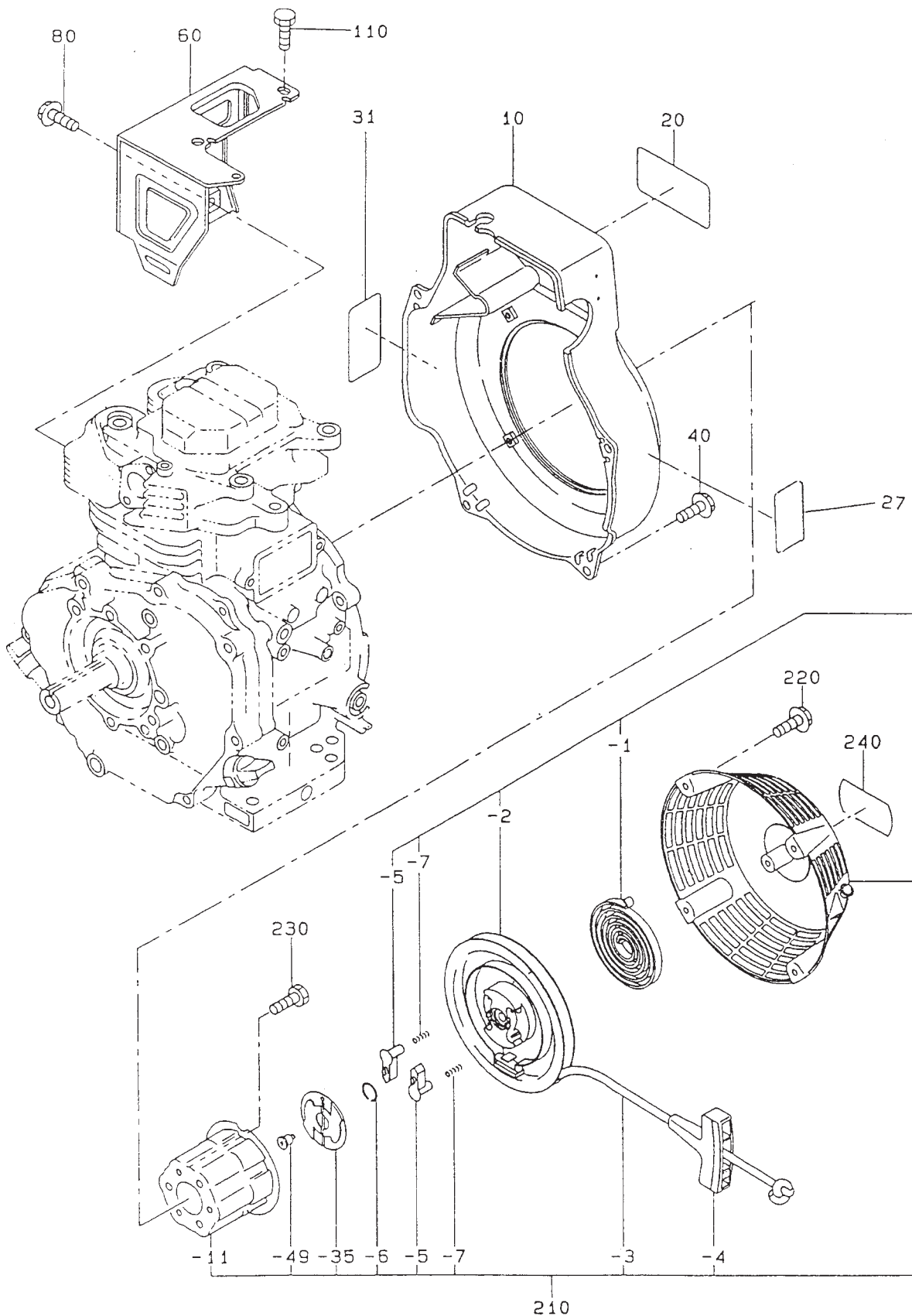
ROBIN EH-34 ENGINE — GOVERNOR ASSY.

GOVERNOR ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|-----------------------|-------------|----------------|
| 10 | 2464230401 | GOVERNOR LEVER CP | 1 | |
| 20 | 2464220113 | GOVERNOR SHAFT | 1 | |
| 30 | 2344270301 | GOVERNOR ROD CP | 1 | |
| 40 | 2464280113 | ROD SPRING | 1 | |
| 50 | 0031306000 | CLIP | 2 | |
| 60 | 0011406250 | BOLT AND WASHER ASSY. | 1 | |
| 70 | 0186060020 | NUT | 1 | |
| 80 | 2464250123 | GOVERNOR SPRING | 1 | |
| 320 | 2464330111 | SPEED CONTROL CP | 1 | |
| 360 | 0043105350 | SCREW, PANHEAD | 1 | |
| 370 | 0022705000 | NUT | 1 | |
| 385 | 0011008160 | BOLT & WASHER ASSY. | 1 | |

ROBIN EH-34 ENGINE — COOLING & RECOIL STARTER ASSY.

COOLING & RECOIL STARTER ASSY.



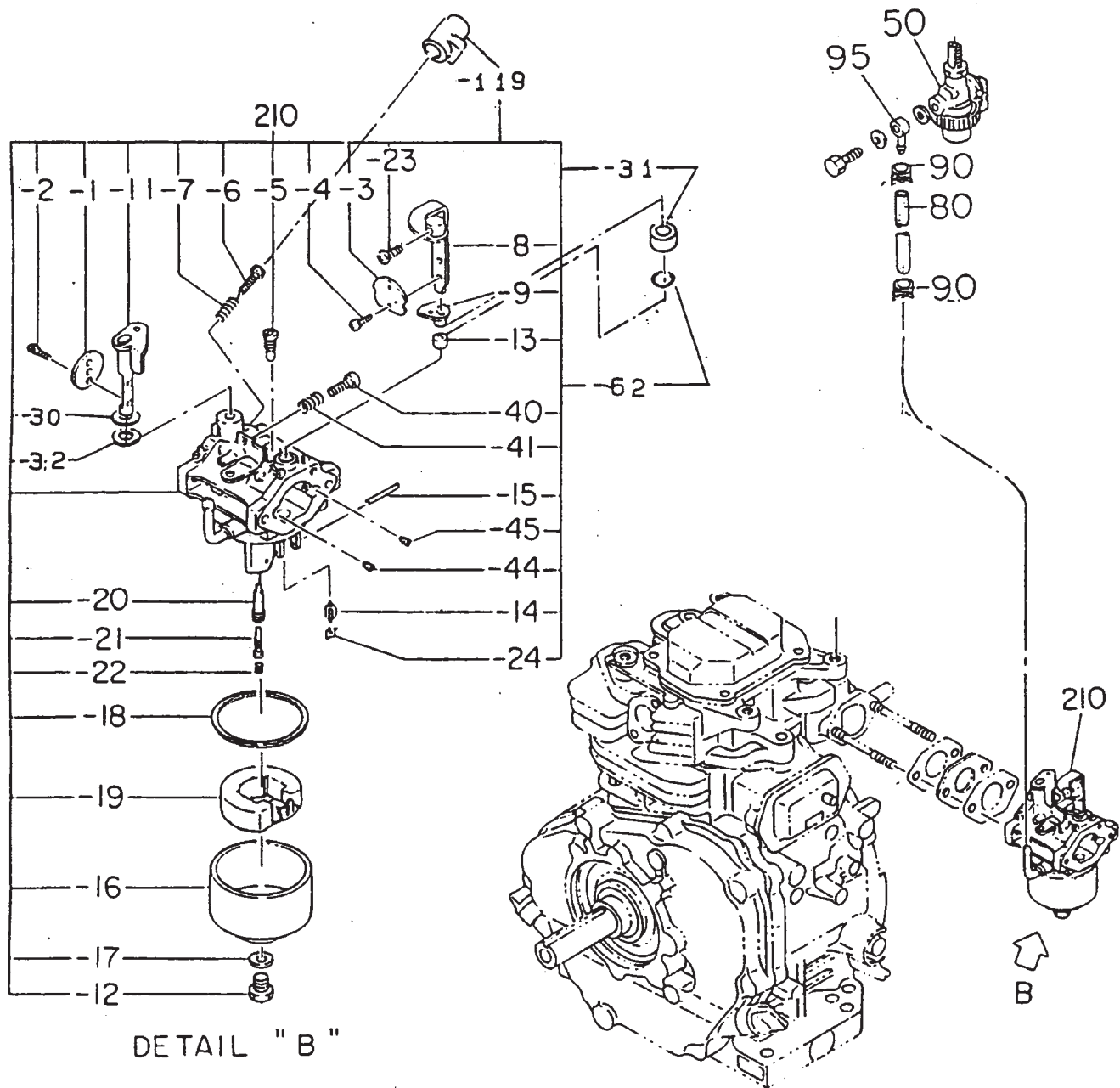
ROBIN EH-34 ENGINE — COOLING & RECOIL STARTER ASSY.

COOLING & RECOIL STARTER ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|---------------------------|-------------|---------------------|
| 10 | 2465120301 | BLOWER HOUSING CP | 1 | |
| 20 | 2479170303 | LABEL, TRADE MARK | 1 | |
| 27 | 0732003900 | LABEL, WARNING | 1 | |
| 31 | 2479520103 | LABEL, EMISSION CONT | 1 | |
| 40 | 0110060010 | FLANGE BELT | 4 | |
| 60 | 2465270112 | CYLINDER BAFFLE UN | 1 | |
| 80 | 0110060050 | FLANGE BOLT | 2 | REPLACES 0110060010 |
| 110 | 0016510160 | BOLT | 2 | |
| 210 | 2465020120 | RECOIL STARTER ASSY. | 1 | INCLUDES ITEMS W/ * |
| 210-1* | 2465011508 | SPIRAL SPRING | 1 | |
| 210-2* | 2465012008 | REEL | 1 | |
| 210-3* | 2355011008 | STARTER ROPE | 1 | |
| 210-4* | 2365010108 | STARTER KNOB | 1 | |
| 210-5* | 2465012508 | RATCHET | 2 | |
| 210-6* | 2465013008 | FRICTION SPRING | 1 | |
| 210-7* | 2275013508 | RETURN SPRING | 2 | |
| 210-11* | 2465014708 | STARTER PULLY | 1 | |
| 210-35* | 2465016008 | RATCHET GUIDE | 1 | |
| 210-49* | 2275015208 | SET SCREW | 1 | |
| 220 | 0110060050 | FLANGE BOLT | 4 | REPLACES 0110060010 |
| 230 | 0016508120 | BOLT | 3 | |
| 240 | 0732004350 | LABEL, OHV MARK | 1 | |

ROBIN EH-34 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.



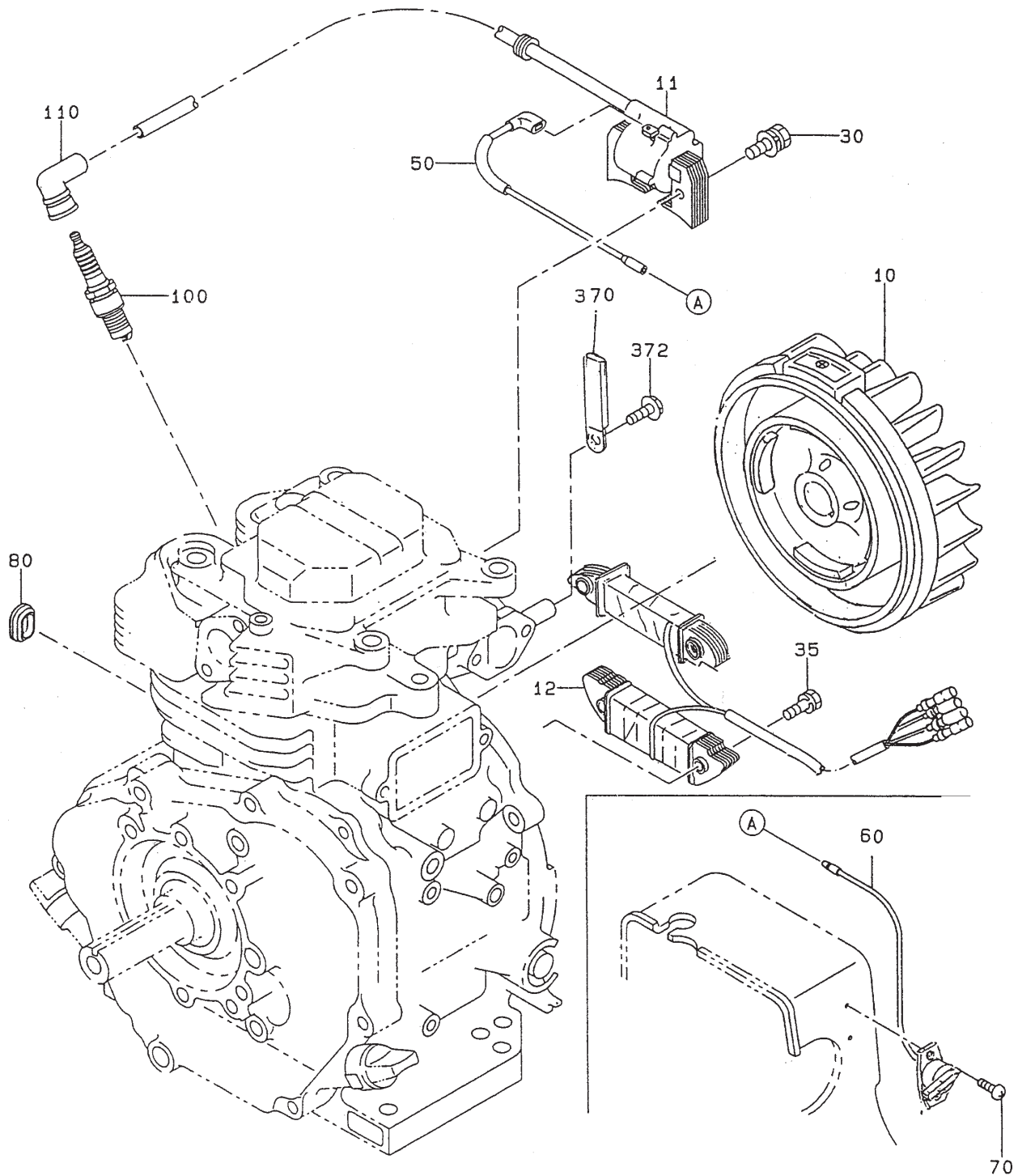
ROBIN EH-34 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.

| NO | PART NO | PART NAME | QTY. | REMARKS |
|----------|------------|--------------------------|------|----------------------------|
| 50 | 0642009000 | FUEL STRAINER ASSY. | 1 | FOR COMPONENTS SEE PAGE 31 |
| 80 | 0851060230 | RUBBER PIPE | 1 | REPLACES 0851060000 |
| 90 | 0561110020 | HOSE CLAMP | 2 | |
| 95 | 0521070042 | BANJO | 1 | |
| 210 | 2476231500 | CARBURETOR ASSY..... | 1 | INCLUDES ITEMS W/ * |
| 210-1* | 2136253508 | THROTTLE VALVE | 1 | |
| 210-2* | 2096235108 | SCREW | 2 | |
| 210-3* | 2346252508 | CHOKE VALVE | 1 | |
| 210-4* | 2376245108 | SCREW | 1 | |
| 210-5* | 2476242008 | PILOT JET | 1 | |
| 210-6* | 2466243608 | PILOT SCREW | 1 | |
| 210-7* | 2096244508 | SPRING | 1 | |
| 210-8* | 2346252008 | LEVER ASSY., CHOKE | 1 | |
| 210-9* | 2396256008 | RING | 1 | |
| 210-11* | 2466253108 | THROTTLE SHAFT, ASSY. | 1 | |
| 210-12* | 2246254408 | BOLT | 1 | |
| 210-13* | 2266255008 | RING | 1 | |
| 210-14* | 2246231208 | NEEDLE VALVE ASSY. | 1 | |
| 210-15* | 2146251508 | PIN | 1 | |
| 210-16* | 2246255208 | FLOAT CHAMBER BODY | 1 | |
| 210-17* | 2076234508 | INSERT WASHER | 1 | |
| 210-18* | 2066254008 | CHAMBER PACKING | 1 | |
| 210-19* | 2346250608 | FLOT ASSY. | 1 | |
| 210-20* | 2466244108 | MAIN NOZZLE | 1 | |
| 210-21* | 2466242508 | GUIDE HOLDER | 1 | |
| 210-22* | 2466240208 | MAIN JET | 1 | |
| 210-24* | 2246256908 | CLIP | 1 | |
| 210-32* | 1066239208 | SEAL | 1 | |
| 210-40* | 2466243508 | ADJUST SCREW | 1 | |
| 210-41* | 2096244508 | SPRING | 1 | |
| 210-60* | 1566235108 | PACKING | 1 | |
| 210-61* | 2476255008 | CAP, CHOKE | 1 | |
| 210-62* | 2366268008 | SEAL | 1 | |
| 210-119* | 2466255108 | CAP | 1 | |

ROBIN EH-34 ENGINE — ELECTRIC COIL ASSY. AND SPARK PLUG

ELECTRIC COIL ASSY. AND SPARK PLUG



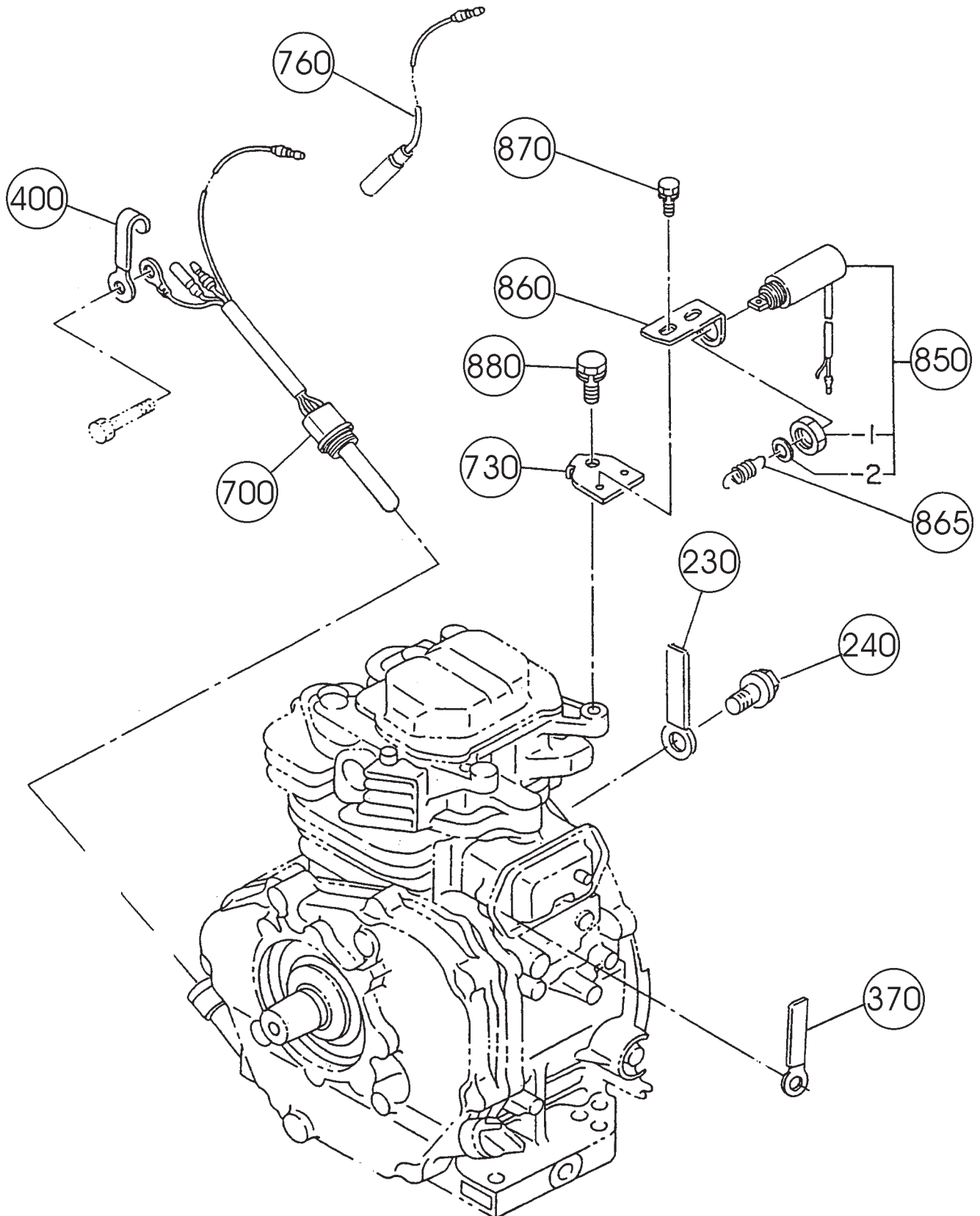
ROBIN EH-34 ENGINE — ELECTRIC COIL ASSY. AND SPARK PLUG

ELECTRIC COIL ASSY. AND SPARK PLUG

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|-----------------------|-------------|---------------------|
| 10 | 2467720401 | FLYWHEEL CP | 1 | |
| 11 | 2467820121 | IGNITION COIL CP | 1 | |
| 12 | 2467920301 | CHARGE COIL CP | 1 | |
| 30 | 0011406300 | BOLT AND WASHER ASSY. | 2 | |
| 35 | 0043506200 | SCREW & WASHER ASSY. | 4 | |
| 50 | 2467310301 | WIRE 3 CP | 1 | |
| 60 | 0669900217 | SWITCH ASSY. | 1 | REPLACES 0660000360 |
| 70 | 0150040090 | TAPPING SCREW | 2 | |
| 80 | 2267550103 | GROMMET | 1 | |
| 100 | 0650140100 | SPARK PLUG | 1 | B-6ES |
| 110 | 0655000051 | SPARK PLUG CAP | 1 | |
| 370 | 0566000250 | CLAMP | 2 | |
| 372 | 0110060010 | FLANGE BOLT | 1 | |

ROBIN EH-34 ENGINE — OIL LEVEL SENSOR & SOLENOID ASSY.

OIL LEVEL SENSOR & SOLENOID ASSY.



ROBIN EH-34 ENGINE — OIL LEVEL SENSOR & SOLENOID ASSY.

OIL LEVEL SENSOR & SOLENOID ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|-------------------------|-------------|--------------------------------|
| 230 | 2467550201 | CLAMP CP | 1 | |
| 240 | 0043106080 | SCREW, PANHEAD | 1 | |
| 370 | 0566000250 | CLAMP CP | 1 | |
| 400 | 0566000260 | CLAMP | 3 | |
| 700 | KS31101301 | OIL LEVEL SENSOR ASSY. | 1 | |
| 730 | 2467600501 | BRACKET, SOLENOID, 1 CP | 1 | |
| 760 | 2467311801 | WIRE 18 CP | 1 | |
| 850 | 2277550100 | SOLENOID ASSY. | 1 | |
| 850-1* | | NUT, HEX | 1 | CANNOT BE PURCHASED SEPERATELY |
| 850-2* | | WASHER, LOCK | 1 | CANNOT BE PURCHASED SEPERATELY |
| 860 | 2467600701 | BRACKET, SOLENOID, 2 CP | 1 | |
| 865 | 2347820203 | SPRING, SOLENOID | 1 | |
| 870 | 0011106100 | BOLT AND WASHER ASSY. | 2 | |
| 880 | 0011310200 | BOLT AND WASHER ASSY. | 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.

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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 listed in the parts price book 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 5 working days from notification, pending instructions. If a reply is not received within 5 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.

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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 \$20.00 to \$50.00 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 here under 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.

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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. A part 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.

PARTS AND OPERATION MANUAL

HERE'S HOW TO GET HELP

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ON-HAND WHEN CALLING*

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800-427-1244 or 310-537-3700

FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE

800-478-1244 or 310-537-3700

FAX: 310- 537-4259

WARRANTY DEPARTMENT

888-661-4279, or 310-661-4279

FAX: 310- 537-1173

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800-421-1244 or 310-537-3700

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