

PARTS AND OPERATION MANUAL

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MQ POWER DCA-60SSI2 PORTABLE GENERATOR (Standard)

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PARTS LIST NO. M1870300034

Revision #0(10/23/00)



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WARNING



CALIFORNIA — Proposition 65 Warning

Diesel 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

800/835-2551 or 310/537-3700

FAX: 310/638-8046

WARRANTY DEPARTMENT

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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:

Number of line items ordered	Additional Discount
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
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RULES FOR SAFE OPERATION

CAUTION:



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

The following safety guidelines should always be used when operating the DCA-60SSI2 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.



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

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

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

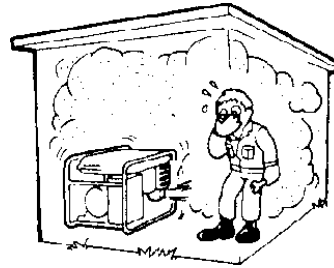
- Always check the machine for loosened threads or bolts before starting.

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



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

- The engine of 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 or engine and may cause injury to people. The generator engine gives off **DEADLY** carbon monoxide gas.



CAUTION:



- 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.

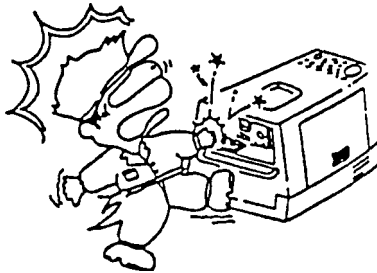
- **NEVER** operate the generator in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe *bodily harm or even death*.

- Topping-off to filler port is dangerous, as it tends to spill fuel.



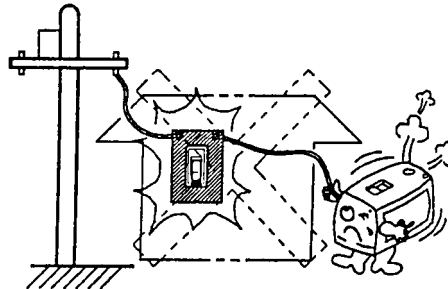
RULES FOR SAFE OPERATION

CAUTION:



■ **NEVER** touch output terminals during operation. This is extremely dangerous. Always stop the machine when contact with the output terminals is required.

CAUTION:



■ **Never** connect the generator to house wiring. This is illegal and very dangerous. Electrical shock could occur causing damage to the generator and bodily harm even death.

CAUTION:



■ **Never** use damaged or worn cables when connecting power tools or equipment to the generator. Make sure power connecting cables are securely connected to the generator's output terminals, insufficient tightening of the terminal connections may cause damage to the generator and electrical shock.

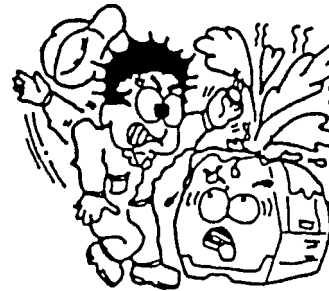
CAUTION:



DO NOT touch or open any of the below mentioned components while the generator is running. Always allow sufficient time for the engine and generator to cool before performing maintenance.

Radiator

1. **Radiator Cap** - Removing the radiator cap while the engine is hot will result in high pressurized, boiling water to gush out of the radiator, causing severe scalding to any persons in the general area of the generator.



2. **Coolant Drain Plug** - Removing the coolant drain plug while the engine is hot will result in hot coolant to gush out of the coolant drain plug, therefore causing severe scalding to any persons in the general area of the generator.
3. **Engine Oil Drain Plug** - 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.

RULES FOR SAFE OPERATION

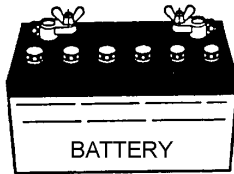
Battery

CAUTION:



Never over fill the battery with water above the upper limit.

The battery contains acids that can cause injury to the eyes and skin. To avoid eye irritation, always wear safety glasses. Use well insulated gloves when picking up the battery. Use the following guidelines when handling the battery:



1. **DO NOT** drop the battery. There is the possibility of risk that the battery may explode.
2. **DO NOT** expose the battery to open flames, sparks, cigarettes etc. The battery contains combustible gases and liquids. If these gases and liquids come in contact with a flame or spark, an explosion could occur.
3. Always keep the battery charged. If the battery is not charged a buildup of combustible gas will occur.
4. Always keep battery charging and booster cables in good working condition. Repair or replace all worn cables.
5. Always recharge the battery in an open air environment, to avoid risk of a dangerous concentration of combustible gases.
6. In case the battery liquid (dilute sulfuric acid) comes in contact with **clothing or skin**, rinse skin or clothing immediately with plenty of water.
7. In case the battery liquid (dilute sulfuric acid) comes in contact with your **eyes**, rinse eyes immediately with plenty of water, then contact the nearest doctor or hospital, and seek medical attention.

- **NEVER** Run engine without air filter. Severe engine damage may occur.
- Always service air cleaner frequently to prevent carburetor malfunction.
- Always disconnect the battery before performing service on the generator.
- Always be sure the operator is familiar with proper safety precautions and operations techniques before using generator.
- Always store equipment properly when not in use. Equipment should be stored in a clean, dry location out of the reach of children.
- **DO NOT** leave the generator running in the manual mode unattended.
- **DO NOT** allow unauthorized people to operate this equipment.
- Always read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.
- Refer to the ***Isuzu Engine Owner's Manual*** for engine technical questions or information.

Loading and Unloading (Crane)

- Before lifting, make sure the generator's lifting hook is secure and that there is no apparent damage to the generator itself (loose screws, nuts and bolts). If any part is loose or damaged, please take corrective action before lifting.
- Always drain fuel prior to lifting.
- Always make sure crane or lifting device has been properly secured to the hook of guard frame on generator.
- **NEVER** lift the machine while the engine is running.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- When lifting the generator, always use the balanced center-point suspension hook and lift straight upwards.
- **NEVER** allow any person or animal to stand underneath the machine while lifting.
- When loading the generator on a truck, be sure to use the front and back frame bars as a means to secure the generator during transport.

RULES FOR SAFE OPERATION

Transporting

- Always shutdown engine before transporting.
- Tighten fuel tank cap securely.
- Drain fuel when transporting generator over long distances or bad roads.
- Always tie-down the generator during transportation by securing the generator.
- If generator is mounted on a trailer, make sure trailer complies with all local and state safety transportation laws. See page 10 for basic towing procedures.

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**.

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, coolant, fuel, and fuel filters.
- **DO NOT** use plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil, coolant or fuel directly onto the ground, down a drain or into any water source.

DCA-60SSI2 — TOWING RULES FOR SAFE OPERATION

Towing Safety Precautions

CAUTION :



Check with your county or state safety towing regulations department before towing your generator.

To reduce the possibility of an accident while transporting the generator on public roads, always make sure the trailer (Figure 1) that supports the generator and the towing vehicle are in good operating condition and both units are mechanically sound.

The following list of suggestions should be used when towing your generator:

- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR).
- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow a trailer with defective hitches, couplings, chains etc.
- Check the tire air pressure on both towing vehicle and trailer. Also check the tire tread wear on both vehicles.
- **ALWAYS** make sure the trailer is equipped with a "Safety Chain".
- **ALWAYS** attach trailer's safety chain to bumper of towing vehicle.
- **ALWAYS** make sure the vehicle and trailer directional, backup, brake, and trailer lights are connected and working properly.
- The maximum speed for highway towing is **45 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **10 MPH** or less depending on type of terrain.
- Place *chocked blocks* underneath wheel to prevent **rolling**, while parked.
- Place *support blocks* underneath the trailer's bumper to prevent **tipping**, while parked.
- Use the trailer's hand winch to adjust the height of the trailer, then insert locking pin to lock wheel stand in place, while parked.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve gas mileage.
- Avoid sharp turns to prevent rolling.
- Remove wheel stand when transporting.
- **DO NOT** transport generator with fuel in tank.

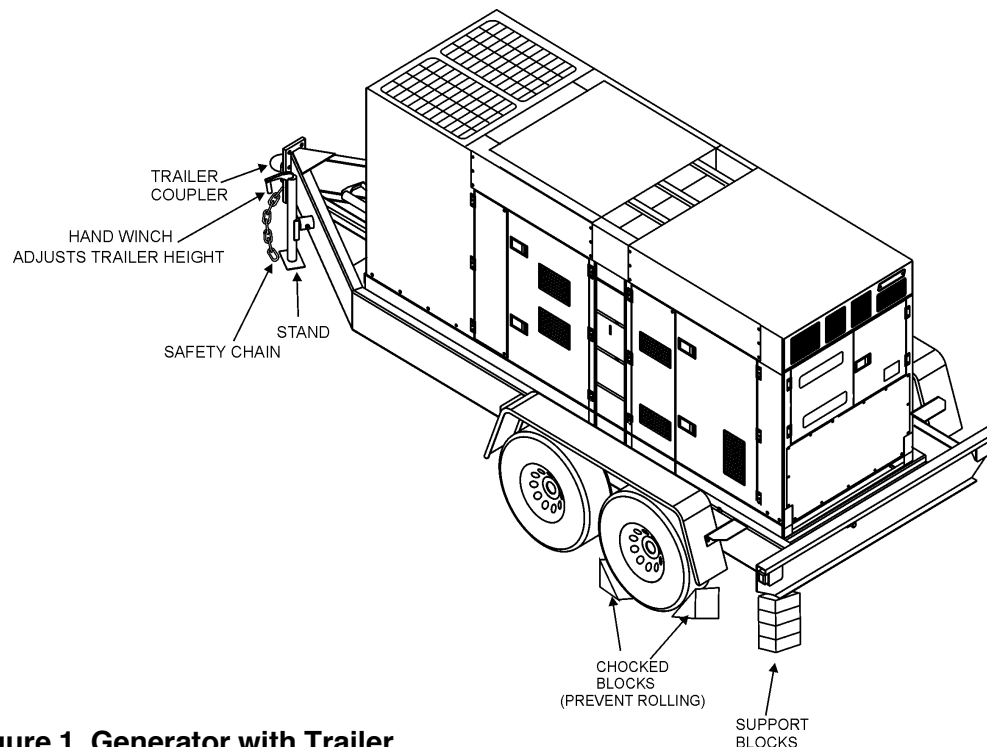


Figure 1. Generator with Trailer

DCA-60SSI2 — GENERATOR DECALS

The DCA -100SSJU generator is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. The illustration below and on the preceding pages show the decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.

OPERATING PROCEDURES

Manual Starting

1. Check the engine oil, coolant, and fuel levels. Replenish if necessary.
2. Place all Generator Circuit Breakers in the "OFF" position and close all doors.
3. Check that the Voltage select switch (or the Voltage change-over board) is present at desired voltage.
(In case of generator having multiple voltage ratings.)
4. Set the Engine speed switch to the "LOW" position.
5. Turn the Auto-Off/Reset-Manual switch to the "Manual" position to start the engine. If the engine fails to start in the specified number of attempts, the overcrank lamp will indicate and the Auto-Off/Reset-Manual switch must be returned to the "Off/Reset" position before proceeding.
6. When the engine is ready for starting during cold weather operating conditions, push the Intake heater button for approximately 30 seconds. Start engine using the Auto-Off/Reset-Manual switch to the "Manual" position. As soon as the engine starts, release the button.
If the engine still does not start, utilize the water heater until water is warm. (If additional water heater is supplied.)
7. After starting, allow the engine to run for 1 or 2 minutes to warm-up. At temperatures below freezing, this time period must be extended to 2 to 4 minutes.
8. When the engine starts, immediately check for abnormal noise, vibration, fluid leakage or any indication of a problem. Check the control panel gauges. If all is normal, let the engine remain at the "Low" position for a short time, depending on the ambient conditions, warm up.
9. After sufficient warm-up time has elapsed, set the Engine speed switch to the "High" position and the unit is ready for operation.
10. Check the NO-Load speed as shown in the table below.
60Hz operation—Approx. 50 Hz (1500rpm)
11. Adjust the Voltage Regulator to the specified voltage.

Manual Stopping

1. Place the Generator Circuit Breakers in the "OFF" position.
2. Set the Engine speed switch to the "LOW" position, and allow the unit to cool for a few minutes.
3. Turn the Auto-Off/Reset-Manual switch, to the "Off/Reset" position.

Auto Starting/Stopping

1. With the Auto/Manual switch in the Auto position, the Auto Starting/Stopping controller monitors remote start contacts. Closure of the remote start contacts will begin engine cranking. When the contacts are opened cranking will stop or if running the engine will stop. All functions of the Automatic shutdown System work as in Manual Starting/stopping.
2. For cold weather conditions utilize the water heater until water is warm. If the engine still does not start, please operate as in Manual Starting.

Emergency Stopping

1. Place the Generator Circuit Breakers in the "OFF" position.
2. Turn the Auto-Off/Reset-Manual switch to the "Off/Reset" position.

M35200010

P/N M3552000103

SAFETY INSTRUCTIONS

Improper operation of this machine can cause severe injury or death.

- Read the instruction manual carefully before operating or servicing.

This machine should only be operated by a person with sufficient knowledge and skill to ensure safe operation.

High voltage circuits are located inside the output terminal cover and control panel.

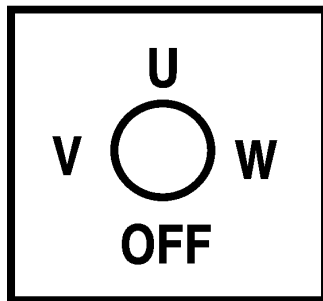
- Close the cover and control panel before operating.

Moving parts and hot surfaces are contained within the enclosure.

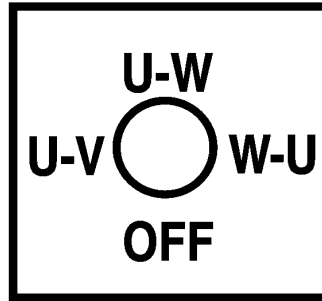
- Close all doors and lock them before operating.

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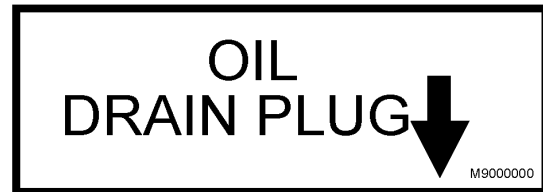
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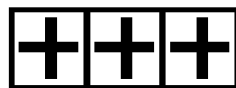
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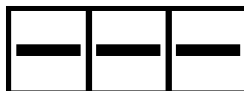
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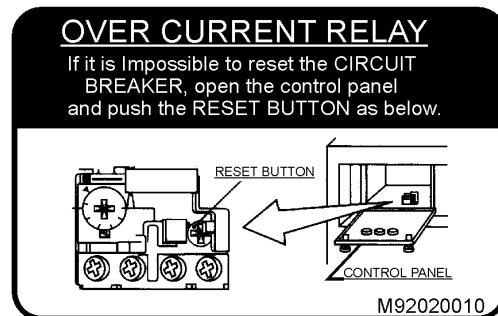
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P/N M9500300004



P/N M9520200104



P/N M9500500104

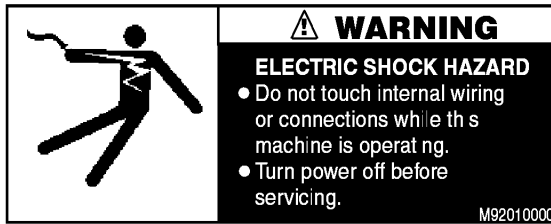


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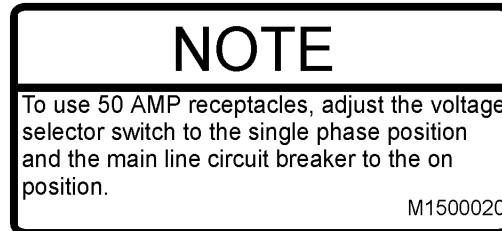
DCA-60SSI2 — GENERATOR DECALS



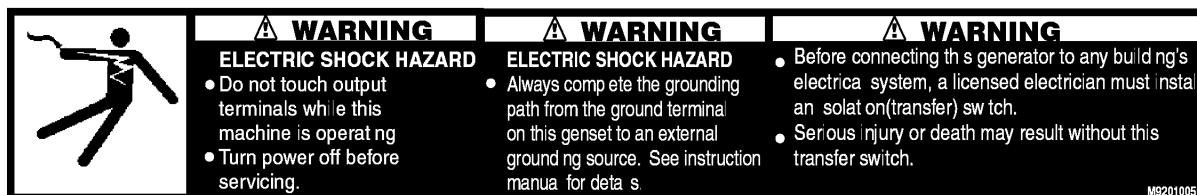
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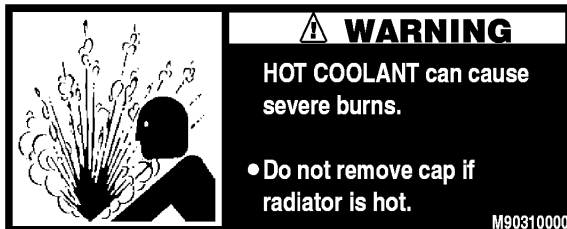
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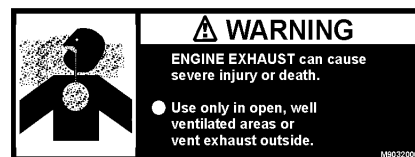
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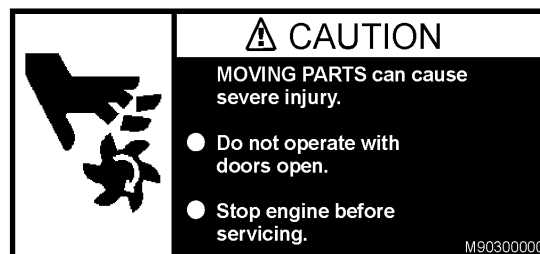
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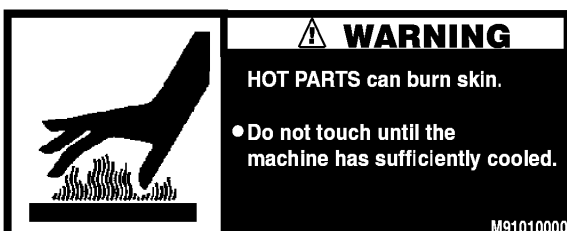
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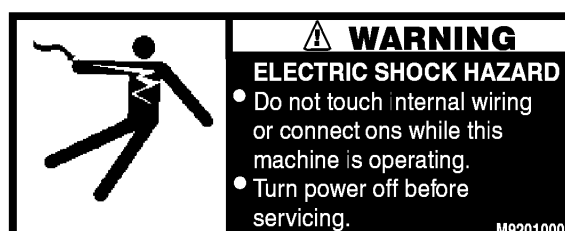
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P/N M9520100004

DCA-60SSI2 — SPECIFICATIONS

Table 1. Specifications		
Generator Specifications		
Model	DCA-60SSI2	
Type	Revolving field, self ventilated, open protected type synchronous generator	
Armature Connection	Star with Neutral	Zig Zag
Phase	3	Single
Standby Output	72 KVA (57.6 KW)	41.5KW
Prime Output	60 KVA (48 KW)	34.6KW
Voltage	240V or 480V	240/120V
Frequency	60 Hz	
Speed	1800 rpm	
Power Factor	0.8	1
Aux. AC Power	Single Phase, 60 Hz	
Voltage	120 V	
Output	4.8 KW (2.4 KW x 2)	
Engine Specifications		
Model	ISUZU A-6BG1	
Type	4 Cycle, water-cooled, direct injection	
No. of Cylinders	6 cylinders	
Bore x Stroke	4.1 in. x 4.9 in. (105 mm x 125 mm)	
Rated Output	77HP/1800 rpm	
Displacement	396 cu. in. (6494 cc)	
Starting	Electric	
Coolant Capacity	7.8 gal. (29.5 liters)	
Lube Oil Capacity	5.1 gal. (19.3 liters)	
Fuel Consumption	3.9 gal. (14.9L)/hr at full load	3.0 gal. (11.4L)/hr at 3/4 load
	2.4 gal. (9.1L)/hr at 1/2 load	1.9 gal. (7.2L)/hr at 1/4 load
Battery	12V- 100AH x 2	
Fuel	#2 Diesel Fuel	

DCA-60SSI2 — GENERAL INFORMATION

DCA-60SSI2 FAMILIARIZATION

Generator

The MQ Power Model DCA-60SSI2 is a 48 kW **generator** that is designed as a high quality portable (requires a trailer for transport) power source for telecom sites, lighting facilities, power tools, submersible pumps and other industrial and construction machinery.

Engine Operating Panel

The "Engine Operating Panel" is provided with the following:

- Tachometer
- Water Temperature Gauge
- Oil Pressure Gauge
- Charging Ammeter Gauge
- Engine Throttle Lever
- Panel Light
- Panel Light Switch
- Oil Pressure and WaterTemp. Indicator lights

Generator Control Panel

The "Generator Control Panel" is provided with the following:

- Output Voltage Adjustment Knob
- Frequency Meter (Hz)
- AC Ammeter (Amps)
- AC Voltmeter (Volts)
- Ammeter Change-Over Switch
- Voltmeter Change-Over Switch

Output Terminal Panel

The "Output Terminal Panel" is provided with the following:

- Three 120/240V output receptacles, 50 amp
- Two 120V input receptacles, 20 amp
- 3 Load Circuit Breakers 240V @50 amps
- 2 Load GFCI Circuit Breakers 120V@ 20amps

Control Box

The "Control Box" is provided with the following:

- Main Circuit Breaker 150 amps
- Over-Current Relay

Open Delta Excitation System

The DCA-60SSI2 generator is equipped with the state of the art "**Open-Delta**" excitation system. The open delta system consist of an electrically independent winding wound among stationary windings of the AC output section.

There are four leads: A, B, C and D. During light loads, the power to the **Automatic Voltage Regulator** (AVR) is supplied from the leads parallel connections of B&C. When loads increase, the AVR switches and accepts power from leads A&D. The output of leads A&D increase proportionally with load. This of adding the voltages to each phase provides better voltage response during heavy loads.

The connections of the AVR to the AC output windings are for sensing only. No power is required from these windings.

The open-delta design provides virtually unlimited excitation current, offering maximum motor starting capabilities. The excitation does not have a "**fixed ceiling**" and responds according the demands of the required load.

Engine

The **DCA-60SSI2** is powered by a 4 cycle, water cooled, Isuzu A-6BG1**diesel** engine. This engine is designed to meet every performance requirement for the generator. Reference Table 1, page13 for engine specifications.

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

The basic controls and indicators for the DCA-60SSI2 generator are addressed on the following pages.

Mechanical Governor System

The mechanical governor system control the RPM of the engine. When the engine demands increase or decrease, the mechanical governor system regulates the frequency variation to $\pm 1.5\%$. The electronic governor option increases frequency variation to $\pm .25\%$.

DCA-60SSI2 — MAJOR COMPONENTS

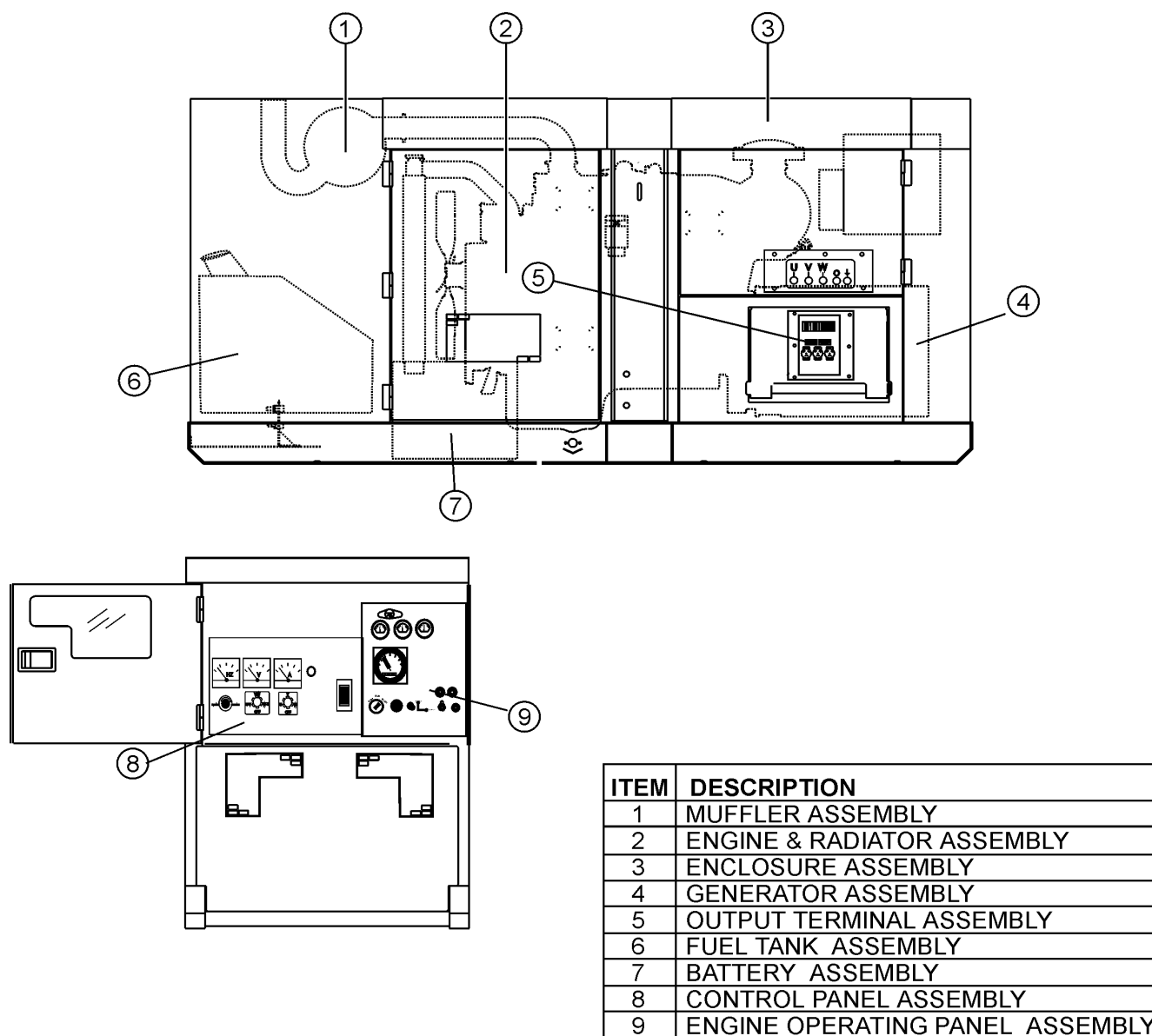


Figure 2. Major Components

DCA-60SSI2 — DIMENSIONS (TOP, SIDE AND FRONT)

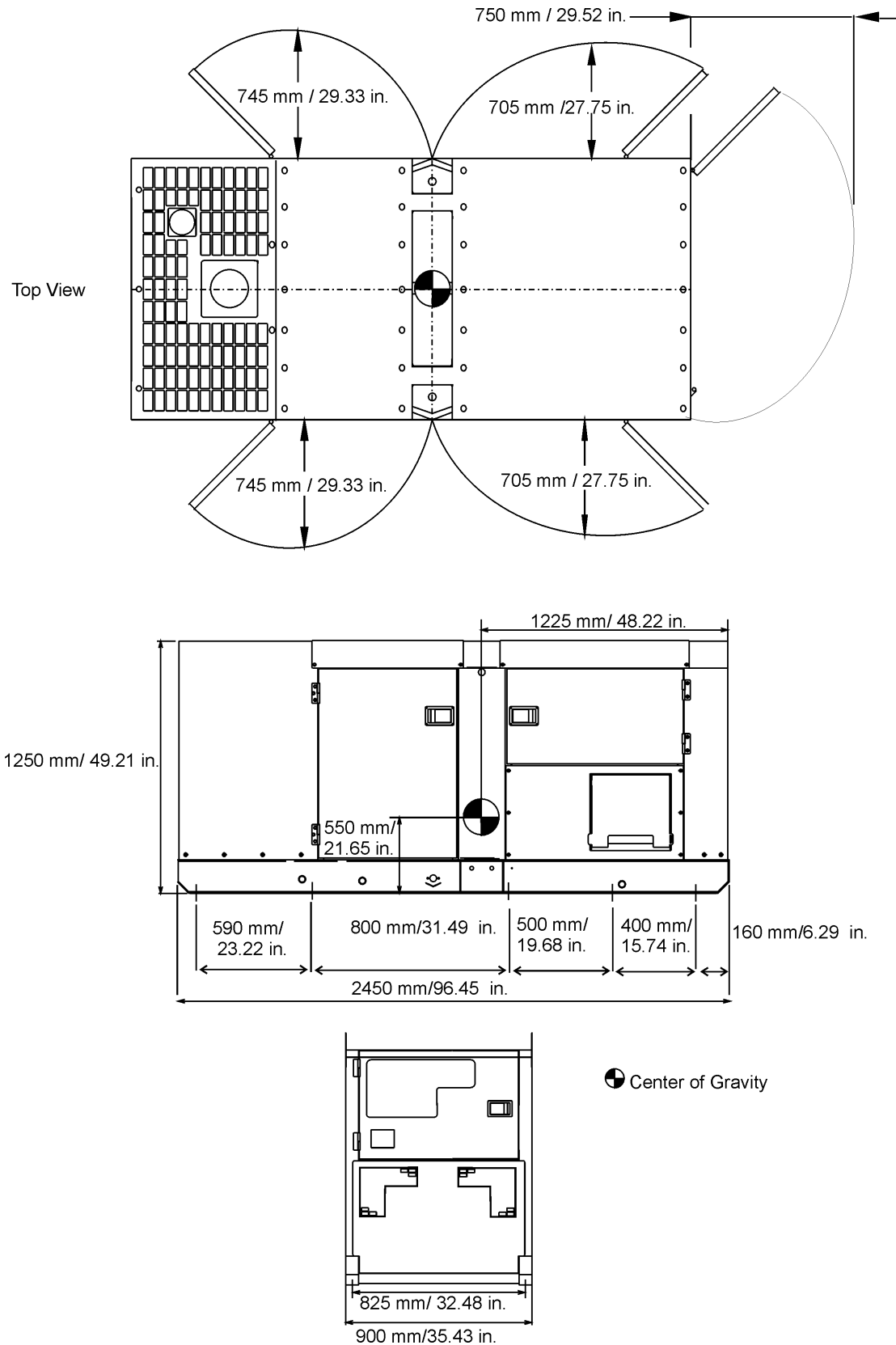
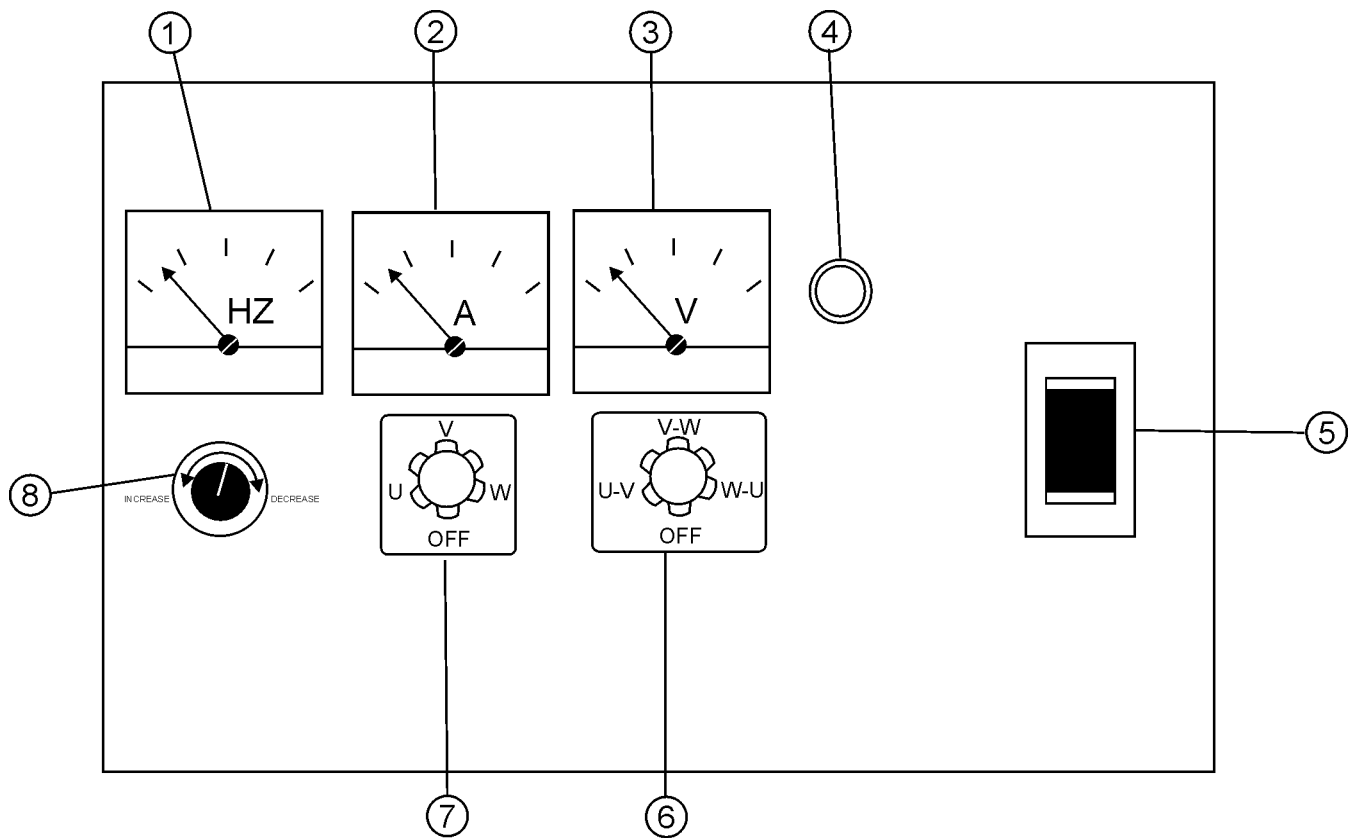


Figure 3. Dimensions

NOTE PAGE

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DCA-60SSI2 — CONTROL PANEL



NO	ITEM
1	FREQUENCY METER
2	AC AMMETER
3	AC VOLTMETER
4	PILOT LAMP
5	MAIN CIRCUIT BREAKER
6	VOLTMETER CHANGE-OVER SWITCH
7	AMMETER CHANGE-OVER SWITCH
8	VOLTAGE REGULATOR

Figure 4. Control Panel

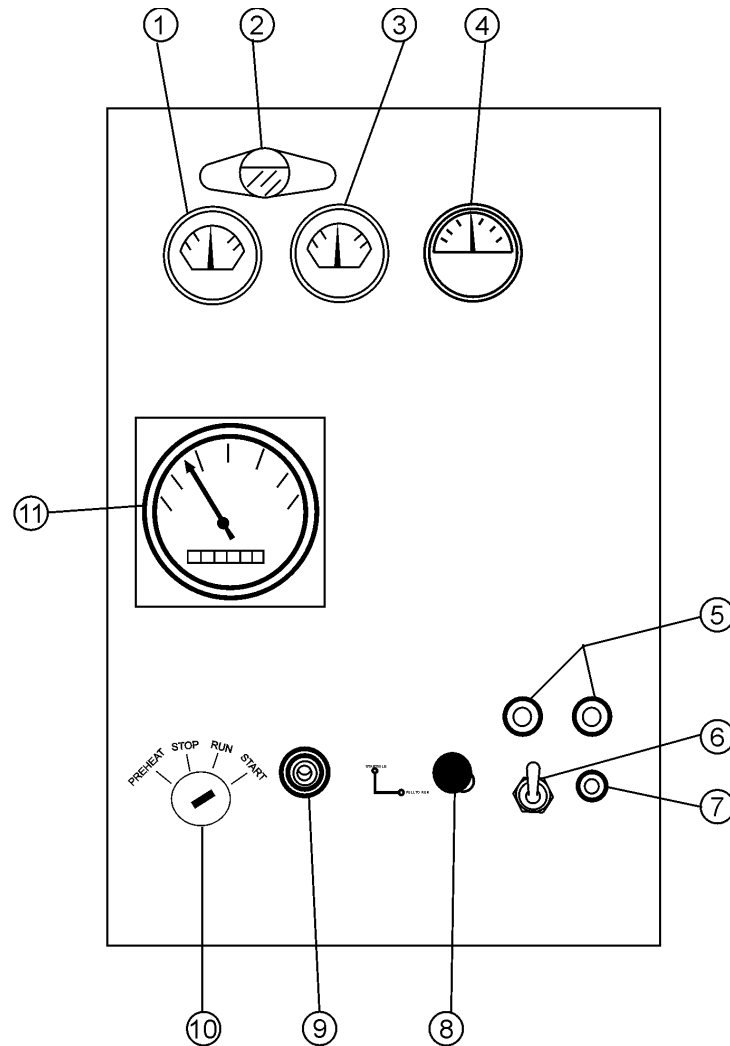
DCA-60SSI2 — CONTROL PANEL

The definitions below describe the controls and functions of the DCA-60SSI2 " **Control Panel** " (Figure 4).

1. **Frequency Meter** – Indicates the output frequency in hertz (Hz). Normally 60 Hz $\pm$ 1 Hz .
2. **AC Ammeter** – Indicates the amount of current the load is drawing from the generator.
3. **AC Voltmeter** – Indicates the single phase output voltage present at the UNV terminals.
4. **Pilot Lamp** - This lamp indicates the load is not properly set. Readjust the load, or use the voltmeter change-over switch to adjust phase position.
5. **Main Circuit Breaker** – This three-pole, 150 amp main breaker is provided to protect the UNV voltage output terminals from overload.
6. **Voltmeter Change-Over Switch** – This switch allows the AC voltmeter to indicate phase to phase voltage between any two phases of the output terminals or to be switched off.
7. **Ammeter Change-Over Switch** – This switch allows the AC ammeter to indicate the current flowing to the load connected to any phase of the output terminals, or to be switched off.
8. **Voltage Regulator Control** – Allows manual adjustment of the generator's output voltage.

Go Back

DCA-60SSI2 — ENGINE OPERATING PANEL



NO	ITEM
1	OIL PRESSURE GAUGE
2	PANEL LIGHT
3	WATER TEMPERATURE GAUGE
4	CHARGING AMMETER
5	INDICATOR LIGHTS
6	PANEL LIGHT SWITCH
7	LAMP CHECK SWITCH
8	ENGINE THROTTLE LEVER
9	PREHEAT INDICATOR
10	STARTER SWITCH
11	TACHOMETER

Figure 5. Engine Operating Panel

DCA-60SSI2 — ENGINE OPERATING PANEL

The definitions below describe the controls and functions of the DCA-60SSI2 "**Engine Operating Panel**" (Figure 5).

1. **Oil Pressure Gauge** – Normal operation should be about 25 psi. When starting the generator the oil pressure may read a bit higher, but after the engine warms up the oil pressure should return to normal.
2. **Panel light** - Normally used in dark places or at night. When activated, panel will luminate. When the generator is not in use, turn the panel light switch to the 'OFF' position.
3. **Water Temperature Gauge** – During normal operation this gauge should read between 165° to 215°.
4. **Charging Ammeter Gauge** – Indicates the current being supplied by the engine's alternator which provides current for generator's control circuits and battery charging system.
5. **Indicator Lights** - These lights indicate if the oil pressure or water temperature is at dangerous levels and will shut off the engine. The oil pressure indicator will initially light at start-up, but will go off once the pressure rises.
6. **Panel light switch**- When activated, will turn on control panel light.
7. **Lamp Check Switch** - This is used to check the indicator lights. Turn on the engine, then press this to check the bulbs. If they don't light, replace the bulbs.
8. **Engine Throttle Lever** - Pull or push this lever to change the speed of the engine when a load is applied.
9. **Pre-Heat Indicator** – Under cold conditions, turn the starter key to preheat. Once the indicator lights, the engine is ready to start.
10. **Starter Switch** - Turn this to start, stop, and preheat the engine.
11. **Tachometer** – Indicates engine speed in RPM's for 60 Hz operation. This meter should indicate 1800 RPM's when the engine is at full speed and a load is applied. In addition, a built in hour meter will record the number of operational hours that the generator has been in use.

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DCA-60SSI2 — OUTPUT TERMINAL PANEL

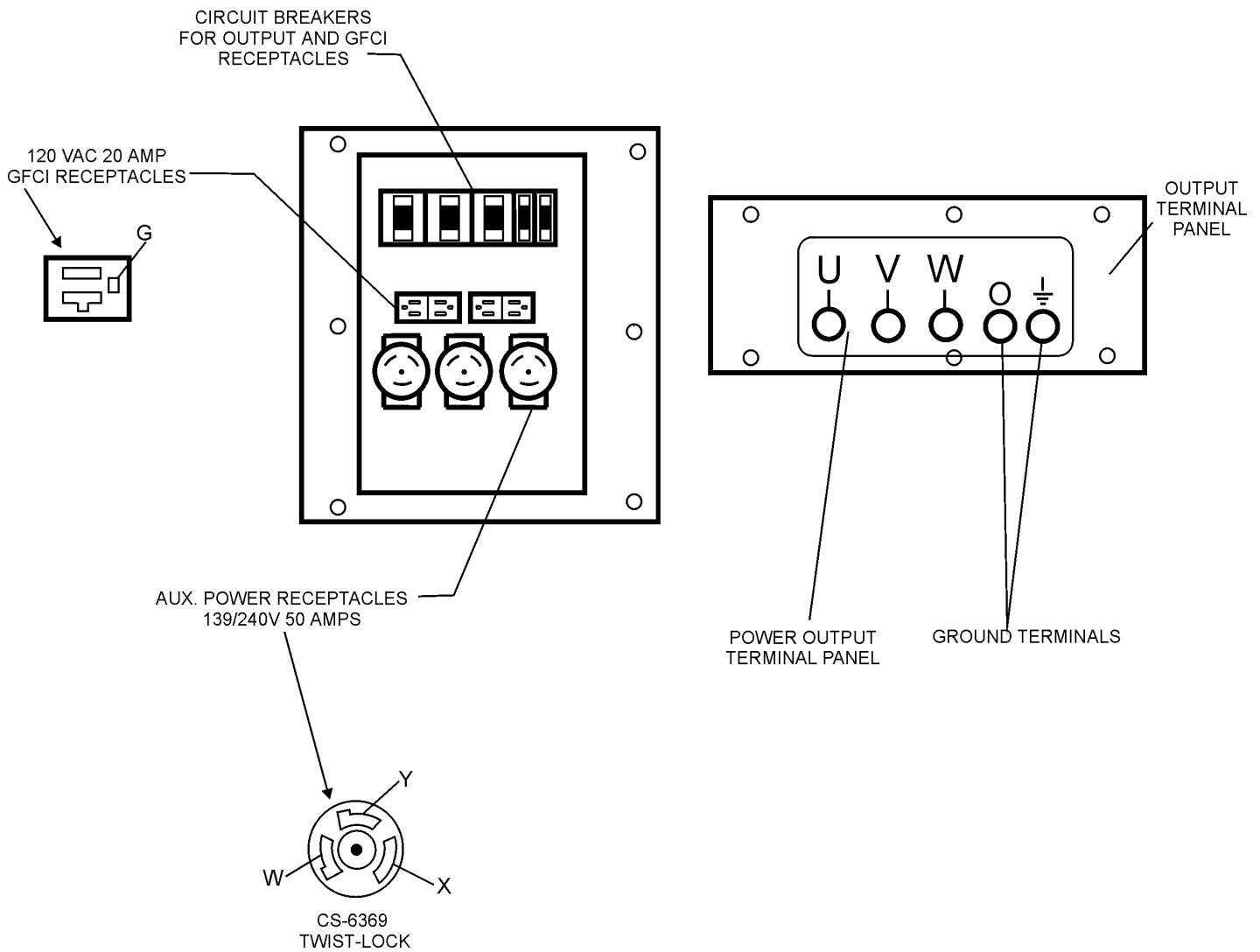


Figure 6. Output Terminal Panel

DCA-60SSI2 — OUTPUT TERMINAL VOLTAGE SELECTION

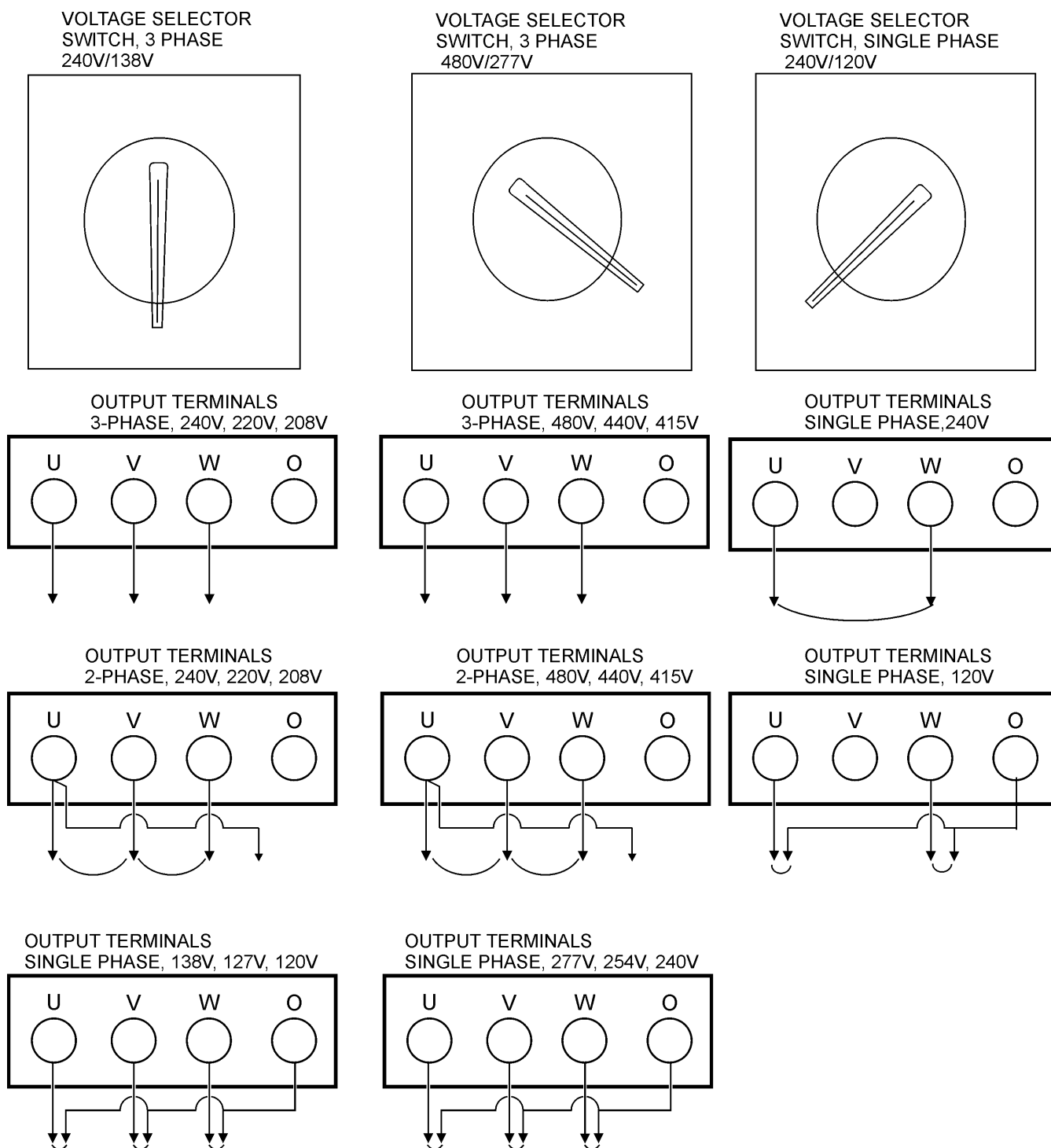


Figure 7. Output Terminal Voltage Selection

DCA-60SSI2 — INSTALLATION

Outdoor Installation

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

CAUTION :

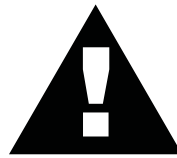


Pay close attention to ventilation when operating the generator inside tunnels and caves. The engine exhaust contains noxious elements. Engine exhaust must be routed to a ventilated area.

Indoor Installation

Exhaust gases from diesel 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.

CAUTION :



An electric shock may 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 electrical shock.

Generator Grounding

To guard against electrical shock and possible damage to the equipment, it is important to provide a good **EARTH** ground.

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.

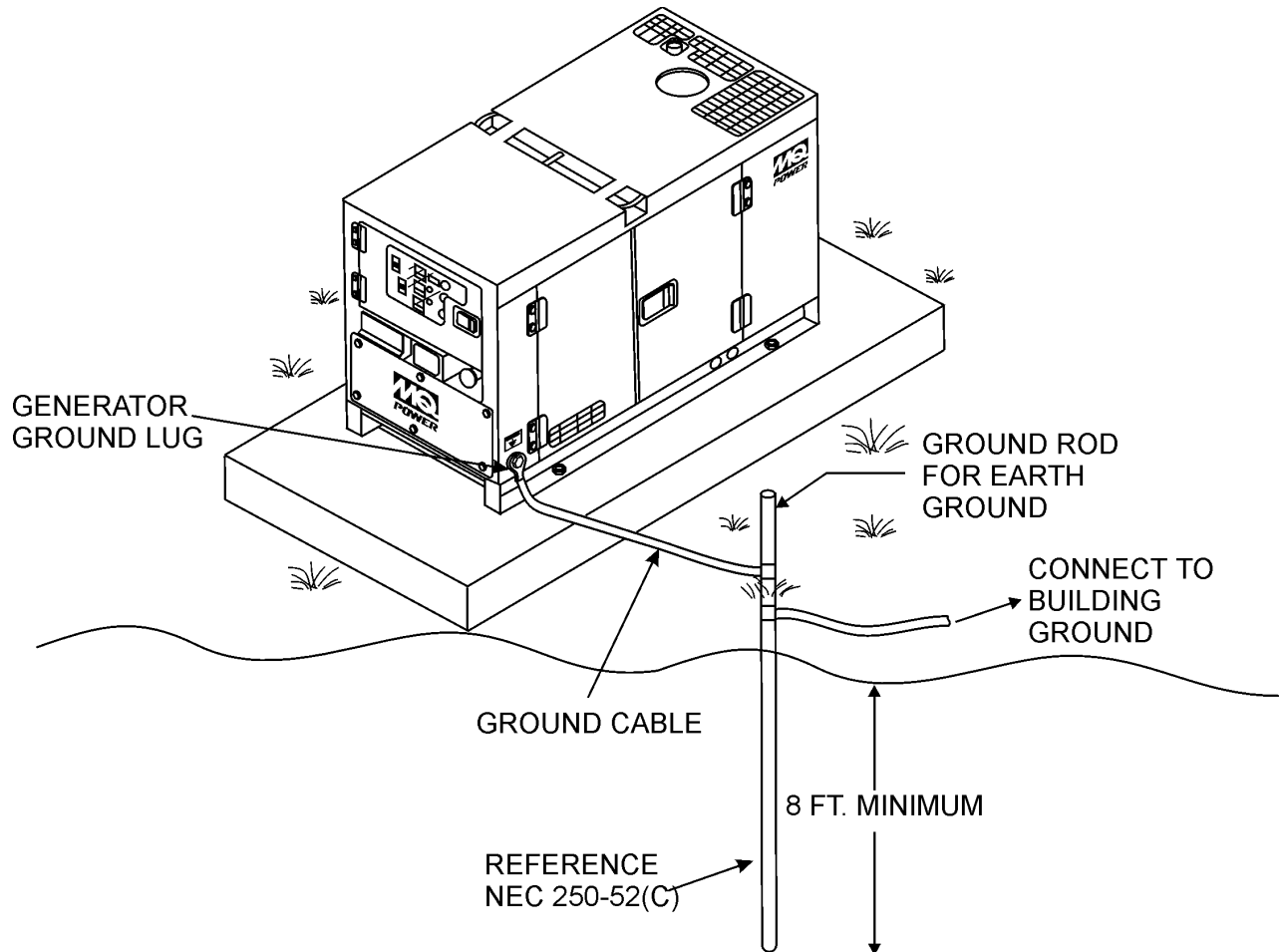
NEC articles 25064(b) a and 250-66 set the following grounding requirements:

1. Use one of the following wire types to connect the generator 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 generator (Figure 8) connect the ground cable between the lock washer and the nut on the generator 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.

NOTE

When connecting the generator to any buildings electrical system **ALWAYS** consult with a licensed electrician.

DCA-60SSI2 — INSTALLATION



[Back to prev. page](#)

Figure 8. Typical Generator Grounding Application

DCA-60SSI2 — PRE-SETUP

General Inspection Prior to Operation

The DCA-60SSI2 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.

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 Guide (Table 2) as a guide for selecting proper cable size.

Circuit Breakers

To protect the generator from an overload, a 3-pole, 150 amp, **main** circuit breaker is provided to protect the UNV output terminals from overload. In addition two single-pole, 20 amp **GFCI** circuit breakers are provided to protect the GFCI receptacles from overload. Three 50 amp **load** circuit breakers have also been provided to protect the load side of the generator from overload. Make sure to switch **ALL** circuit breakers to the "OFF" position prior to starting the engine.

NOTE

ALWAYS consult with a licensed electrician for correct extension cord wire 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.						

DCA-60SSI2 — PRE-SETUP

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 (Figure 9) on the dipstick. See Table 3 for proper selection of engine oil.

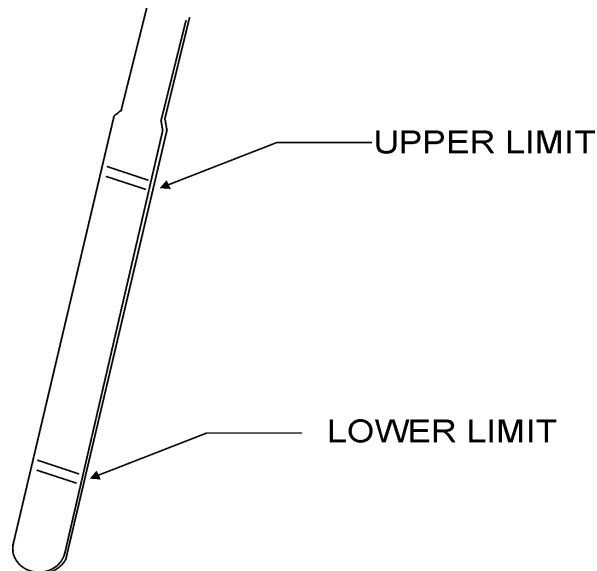


Figure 9. Engine Oil Dipstick

When checking the engine oil, be sure to check if the oil is clean and viscous. If the oil is not clean, drain the oil by removing the oil drain plug, and refill with the specified amount of oil as outlined in the **suzu Engine Owner's Manual**.

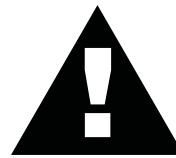
Fuel

Fill the fuel tank with clean and fresh **diesel fuel**. **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 13, Specification Table 1.

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. Wipe up any spilled fuel immediately.

CAUTION:



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

Coolant

Use only drinkable tap water. If hard water or water with many impurities is used, the inside of the engine and radiator may become coated with deposits and cooling efficiency will be reduced.

An anticorrosion additive added to the water will help prevent deposits and corrosion in the cooling system. See the engine manual for further details.

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

DCA-60SSI2 — PRE-SETUP**CAUTION :**

When adding coolant or antifreeze to the radiator, do not remove the radiator cap until the unit has completely cooled.

Day-to-day addition of coolant is done from the reserve tank. When adding coolant to the radiator, **DO NOT** remove the radiator cap until the unit has completely cooled. See Table 4 for engine, radiator, and reserve tank coolant capacities. Make sure the coolant level in the reserve tank is always between the "H" and the "L" markings.

Table 4. Coolant Capacity

Engine and Radiator	7.8 Gal. (29.5 Liter)
Reserve Tank	.95 Gal. (1 Liter)

Operation in Freezing Weather

When operating in freezing weather, be certain the proper amount of antifreeze (Table 5) has been added.

Table 5. Anti-Freeze Operating Temperatures

Vol % Anti-Freeze	Freezing Point		Boiling Point	
	°C	°F	°C	°F
40	-24	-12	106	222
50	-37	-34	108	226

NOTE

When the anti-freeze is mixed with water, the anti-freeze mixing ratio must be less than 50%.

Cleaning the Radiator

The engine may overheat if the radiator fins become overloaded with dust or debris. Periodically clean the radiator fins with compressed air. Cleaning inside the machine is dangerous, so clean only with the engine turned off and the battery disconnected.

Air Cleaner

Periodic cleaning/replacement is necessary. Inspect it in accordance with the **Isuzu Engine Owner's Manual**.

Fan Belt Tension

A slack fan belt may contribute to overheating, or to insufficient charging of the battery. Inspect the fan belt for damage and wear and adjust it in accordance with the **Isuzu Engine Owner's Manual**.

The fan belt tension is proper if the fan belt bends 7 to 10 mm (Figure 10) when depressed with the thumb as shown below.

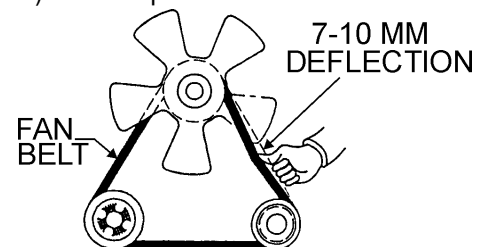


Figure 10. Fan Belt Tension

CAUTION :

Never place hands near the belts or fan while the generator set is running.

Battery

This unit is of negative ground. **DO NOT** connect in reverse. Always maintain battery fluid level between the specified marks. Battery life will be shortened, if the fluid level is not properly maintained. Add only distilled water when replenishment is necessary.

The battery is sufficiently charged if the specific gravity of the battery fluid is 1.28 (at 68 °F). If the specific gravity should fall to 1.245 or lower, it indicates the battery is discharged and needs to be recharged or replaced.

Check to see whether the battery cables are loose. Poor contact may result in poor starting or malfunctions. Always keep the terminals firmly tightened. Coating the terminals with a thin film of grease will help inhibit corrosion.

Battery Cable Installation

ALWAYS be sure the battery cables (Figure 11) are properly connected to the battery terminals as shown below. The **RED** cable is connected to the positive terminal of the battery, and the **BLACK** cable is connected to the negative terminal of the battery.

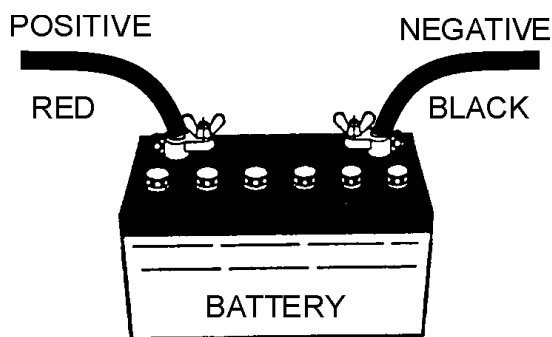


Figure 11. Battery Connections

CAUTION :

Inadequate battery connections may cause poor starting of the generator, and create other malfunctions.

Wiring

Inspect the entire generator for bad or worn electrical wiring or connections. If any wiring or connections are exposed (insulation missing) replace wiring immediately.

Piping and Hose Connection

Inspect all piping, oil hose, and fuel hose connections for wear and tightness. Tighten all hose clamps and check hoses for leaks.

If any hose (fuel or oil) lines are defective replace them immediately.

CAUTION :

If the battery cable is connected incorrectly, electrical damage to the generator will occur. Pay close attention to the polarity of the battery when connecting the battery.

When connecting battery do the following:

1. **DO NOT** connect the battery cables to the battery terminals when the **Off/Manual/Auto** switch is in either the manual or auto position (ON). **ALWAYS** make sure that the Off/Manual/Auto switch is in the OFF position when connecting the battery.
2. Place a small amount of grease around both battery terminals. This will ensure a good connection and will help prevent corrosion around the battery terminals.

DCA-60SSI2 — LOAD APPLICATION

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.

When the voltage selector switch is in single phase (240/120V position), place the AC voltmeter change-over switch to the U-W position and the AC ammeter change over-switch to the U or W position to read the output.

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.

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

The power factor of this generator is 1.0. See Table 6. below when connecting loads.

Table 6. Power Factor By Load

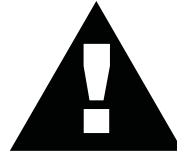
Type Of Load	Power Factor
Single-phase induction motors	0.4 - 0.75
Electric heaters, incandescent lamps	1.0
Fluorescent lamps, mercury lamps	0.4 - 0.9
Electronic devices, communication equipment	1.0
Common power tools	0.8

Three Phase Load

When calculating the power requirements for 3-phase power use the following equation:

$$\text{KVA} = \frac{\text{VOLTAGE} \times \text{AMPERAGE} \times \sqrt{3}}{1000}$$

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.

- When connecting a resistance load such as an incandescent lamp or electric heater, a capacity of up to the generating set's rated output (kW) can be used.
- When connecting a fluorescent or mercury lamp, a capacity of up to the generating set's rated output (kW) multiplied by 0.6 can be used.
- When connecting an electric drill or other power tools, pay close attention to the required starting current capacity.

If wattage is not available on the equipment, approximate wattage may be determined by multiplying the nameplate voltage by the nameplate amperage for three-phase:
 $\text{WATTS} = 1.732 \times \text{VOLTAGE} \times \text{AMPERAGE}$

CAUTION:



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.

NOTE

If output (kVA) is not given on the equipment nameplate, approximate output may be determined by multiplying voltage by amperage by $\sqrt{3}$

DCA-60SSI2 — GENERATOR START-UP PROCEDURE

WARNING:



The engine's exhaust contains harmful emissions. **ALWAYS** ventilate the exhaust when operating inside tunnels, excavations or buildings. Direct exhaust away from nearby personnel.

Before Starting Engine

1. 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.
2. When there is not enough lubricating oil, fill the crankcase with high grade motor oil. Use a high quality detergent oil classified CC or higher (See Table 3 on page 27).
3. Check the coolant level in the radiator and subtank. Replenish with antifreeze as necessary. Always maintain the coolant level between the **FULL** and **LOW** markings on the coolant container. Be sure that the radiator cap is fastened securely.
4. Check the fuel level on the fuel gauge. If fuel is low, fill the fuel tank with clean fresh unleaded automotive diesel. If diesel spillage occurs, completely wipe up the spilled fuel immediately.

Before Starting

Generator and Control Panel

CAUTION:



NEVER start the engine with the **main**, **GFCI** or **load** circuit breakers in the **ON** position.

1. Be sure to disconnect the electrical load and switch the **main**, **load** and **G.F.C.I.** circuit breakers (Figure 12) to the "OFF" position prior to starting the engine.

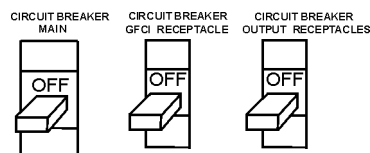


Figure 12. Main, GFCI and Load Circuit Breakers

2. Connect the load to the UNV terminals as shown in Figure 13. These terminals can be found on the output terminal panel, (see page 22 Figure 6). To gain access to the output terminals lift the UNV cover. Tighten terminal nuts securely to prevent load wires from slipping out.

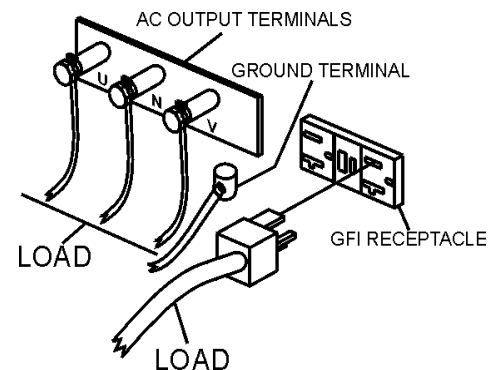


Figure 13. UNV Terminal Lugs (Load)

3. Connect the negative battery cable (BLACK) to the negative post on the battery (Figure 14).

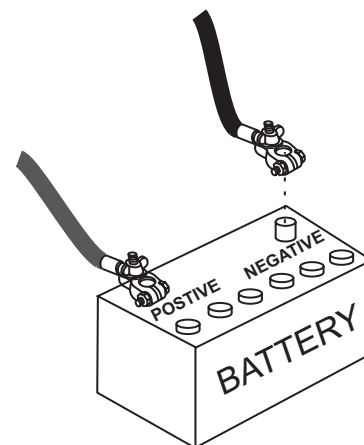


Figure 14. Battery Connections

DCA-60SSI2 — GENERATOR START-UP PROCEDURE

4. Close all engine enclosure doors (Figure 15).

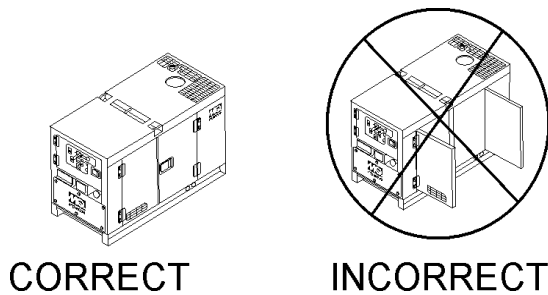


Figure 15. Engine Enclosure Doors

5. Check the voltage selection switch (Figure 16) is at the desired voltage.

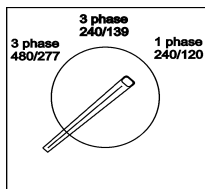


Figure 16. Voltage Selection Switch

6. Check to see if the engine throttle lever (Figure 17) is pushed in.

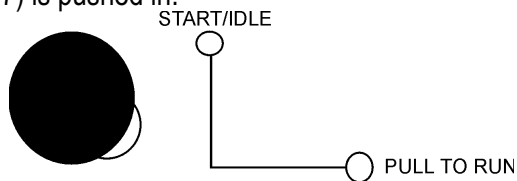


Figure 17. Engine Throttle Lever

7. Turn the starter switch to 'PREHEAT' (Figure 18) until the indicator light turns on. The oil pressure indicator light will initially turn on, but should turn off once the pressure rises.

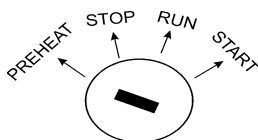


Figure 18. Key Switch (Preheat)

8. Once the preheat indicator lights, turn the key to 'START' (Figure 19). After the engine cranks, release the key to 'RUN'.

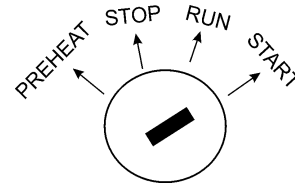


Figure 19. Starter Switch (Start)

9. Pull the engine throttle lever and turn left until the lever sets on the knob (Figure 20).

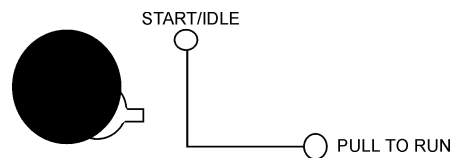


Figure 20. Engine Throttle Lever (Up)

10. The generator's frequency meter (Figure 21) displays the 60 cycle output frequency in **HERTZ**.

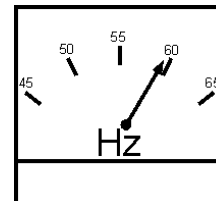


Figure 21. Frequency Meter (Hz)

11. The generator's voltage meter (Figure 22) displays the 120 VAC in **VOLTS**. If the voltage is not within the specified frequency tolerance, use the voltage adjustment control knob (Figure 23) to increase or decrease the desired voltage.

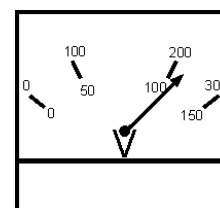


Figure 22. Voltage Meter (Volts)

DCA-60SSI2 — GENERATOR START-UP PROCEDURE

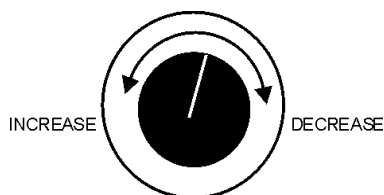


Figure 23. Voltage Adjust Control Knob

12. The ammeter (Figure 24) will indicate zero amps with no load applied. When a load is applied, this meter will indicate the amount of current that the load is drawing from the generator's alternator.

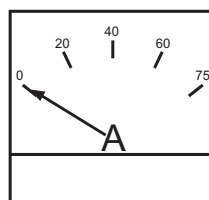


Figure 24. Ammeter (No Load)

13. The engine oil pressure gauge (Figure 25) will indicate the oil pressure (kg/ cm²) of the engine. Under normal operating conditions the oil pressure is approximately 25 psi.

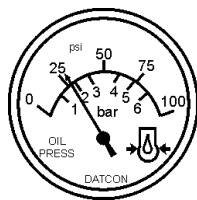


Figure 25. Oil Pressure Gauge

14. The coolant temperature gauge (Figure 26) will indicate the coolant temperature. Under normal operating conditions the coolant temperature is between 165 and 215 degrees fahrenheit.

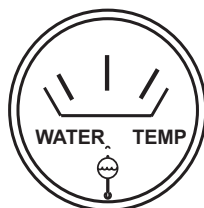


Figure 26. Coolant Temperature Gauge

15. The charging ammeter (Figure 27) will indicate if the battery is properly charged.



Figure 27. Charging Ammeter

16. The tachometer (Figure 28) will indicate the speed of the engine when the generator is operating. Under normal operating conditions this speed is approximately 1800 RPM's.

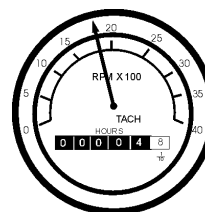


Figure 28. Engine Tachometer

17. Turn the MAIN, GFCI and LOAD circuit breakers to their ON position (Figure 29).

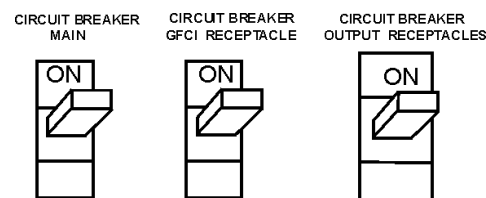


Figure 29. Main and GFCI Circuit Breakers

18. Observe the generator's ammeter (Figure 30) and verify it reads the anticipated amount of current with respect to the load. The ammeter will only display a current reading if the load is in use.

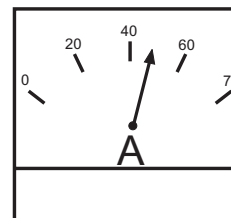


Figure 30. Ammeter (Load)

19. The generator will run until manually stopped or an abnormal condition occurs.

DCA-60SSI2 — GENERATOR SHUT-DOWN PROCEDURE

ENGINE SHUTDOWN

To shutdown the generator, use the following procedure:

1. Switch both the MAIN, GFCI and LOAD circuit breakers (Figure 31) to the "OFF" position.

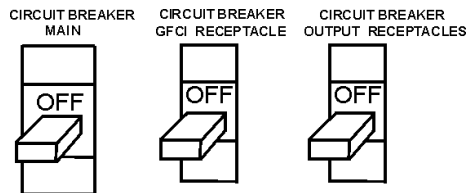


Figure 31. Main, GFCI and Load circuit breakers

2. Turn to the right and press in the engine throttle lever (Figure 32).

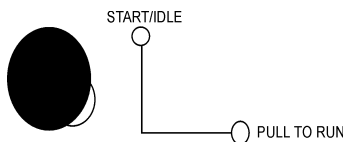


Figure 32. Engine Throttle Lever

3. Let the engine cool by running it for 3-5 minutes with no load applied.
4. Turn the key switch to 'STOP' (Figure 33).

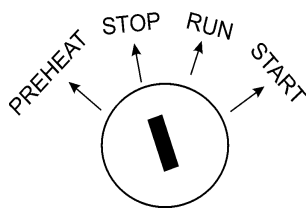


Figure 33. Key Switch (OFF)

5. Remove the load from the UNV terminal strip.

EMERGENCY STOP

1. To stop the engine in the event of an emergency, switch the MAIN, GFCI and LOAD circuit breakers to 'OFF' position.
2. Turn the key switch to 'STOP'.

NOTE PAGE

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DCA-60SSI2 — MAINTENANCE

General Inspection

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, Fuel, Oil and Coolant (Refer to the Engine Instruction Manual)

Air Cleaner

Every 50 hours: Remove air cleaner element and clean heavy duty paper element with kerosene, or foam element with liquid detergent and hot water. Wrap foam element in a cloth and squeeze dry. For heavy duty paper element, wipe excess kerosene with towel

Fuel Addition

Add diesel fuel (the grade may vary according to season and locations). Always pour through the mesh filter.

Removing Water from the Tank

After prolonged use, water and other impurities accumulate in the bottom of the tank. Occasionally remove the drain cock and drain the contents. During cold weather, the greater the empty volume inside the tank, the easier it is for water to condense. This can be reduced by always keeping the tank as full as possible.

Air Removal

If air enters the fuel injection system of a diesel engine, starting becomes impossible. After running out of fuel, or after disassembling the fuel system, bleed the system according to the following procedure.

To restart after running out of fuel, turn the key switch to the "START" position for 15-30 seconds. Try again, if needed. This unit is equipped with an automatic air bleeding system.

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 diesel. 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.

Check Oil Level

Check the crankcase oil level prior to each use, or when the fuel tank is filled. Insufficient oil may cause severe damage to the engine. Make sure the generator is level. The oil level must be between the two notches on the dipstick as shown in page 27, Figure 9.

Generator Storage

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

- Drain the fuel tank completely.
- Completely drain the oil from the crankcase and refill with fresh oil.
- Clean all external parts of the generator with a cloth.
- Cover the generating set and store in a clean, dry place.

DCA-60SSI2 — MAINTENANCE

INSPECTION / MAINTENANCE		10 Hrs DAILY	250 Hrs	500 Hrs	1000 Hrs
ENGINE	Check Engine Fluid Levels	X			
	Check Air Cleaner	X			
	Check Battery Acid Level	X			
	Check Fan Belt Condition	X			
	Check for Leaks	X			
	Check for Loosening of Parts	X			
	Replace Engine Oil and Filter * ¹		X		
	Clean Air Filter		X		
	Drain Bottom of Fuel Tank		X		
	Clean Unit, Inside and Outside		X		
	Change Fuel Filter * ²			X	
	Clean Radiator and Check Coolant Protection Level			X	
	Replace Air Filter Element				X
	Change Corrosion Resistor				X
	Check all Hoses and Clamps				X
	Clean Inside of Fuel Tank				X
GENERATOR	Measure Insulation Resistance Over 3M ohms		X		

*¹ Replace engine oil and filter at 100 hours, first time only.

*² Replace fuel filter at 250 Hours, first time only.

DCA-60SSI2 — TROUBLESHOOTING (ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use the tables shown for

diagnosis based on the Engine Troubleshooting (Table 7). If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 7. ENGINE TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine does not start.	No fuel?	Replenish fuel.
	Air in the fuel system?	Bleed system.
	Water in the fuel system?	Remove water from fuel tank.
	Fuel pipe clogged?	Clean fuel pipe.
	Fuel filter clogged?	Clean or change fuel filter.
	Excessively high viscosity of fuel or engine oil at low temperature?	Use the specified fuel or engine oil.
	Fuel with low cetane number?	Use the specified fuel.
	Fuel leak due to loose injection pipe retaining nut?	Tighten nut.
	Incorrect injection timing?	Adjust.
	Fuel cam shaft worn?	Replace.
	Injection nozzle clogged?	Clean injection nozzle.
	Injection pump malfunctioning?	Repair or replace.
	Seizure of crankshaft, camshaft, piston, cylinder liner or bearing?	Repair or replace.
	Compression leak from cylinder?	Replace head gasket, tighten cylinder head bolt, glow plug and nozzle holder.
	Improper valve timing?	Correct or replace timing gear.
	Piston ring and liner worn?	Replace.
	Excessive valve clearance?	Adjust.
Starter does not run.	Battery discharged?	Charge battery.
	Starter malfunctioning?	Repair or replace.
	Key switch malfunctioning?	Repair or replace.
	Wiring disconnected?	Connect wiring.

DCA-60SSI2 — TROUBLESHOOTING (ENGINE)

TABLE 7. ENGINE TROUBLESHOOTING (CONTINUED)

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine revolution is not smooth.	Fuel filter clogged or dirty?	Clean or change.
	Air cleaner clogged?	Clean or change.
	Fuel leak due to loose injection pipe retaining nut?	Tighten nut.
	Injection pump malfunctioning?	Repair or replace.
	Incorrect nozzle opening pressure?	Adjust.
	Injection nozzle stuck or clogged?	Repair or replace.
	Fuel over flow pipe clogged?	Clean.
	Governor malfunctioning?	Repair.
Either white or blue exhaust gas is observed.	Excessive engine oil?	Reduce to the specified level.
	Piston ring and liner worn or stuck?	Repair or replace.
	Incorrect injection timing?	Adjust.
	Deficient compression?	Adjust top clearance.
Either black or dark gray exhaust gas is observed.	Overload?	Lessen the load.
	Low grade fuel used?	Use the specified fuel.
	Fuel filter clogged?	Clean or change.
	Air cleaner clogged?	Clean or change.
	Deficient nozzle injection?	Repair or replace the nozzle.
Deficient output.	Incorrect injection timing?	Adjust.
	Engine's moving parts seem to be seizing?	Repair or replace.
	Uneven fuel injection?	Repair or replace the injection pump.
	Deficient nozzle injection?	Repair or replace the nozzle.
	Compression leak?	Replace head gasket, tighten cylinder head bolt, glow plug and nozzle holder.

DCA-60SSI2 — TROUBLESHOOTING (GENERATOR/ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use the tables shown for diagnosis based on the Engine and Radiator Troubleshooting (Table8). If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 8. ENGINE & GENERATOR TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine fails to start and starter does not rotated.	Dead battery?	Replace battery.
	Defective starter switch?	Replace switch.
	Fuse F5 burned out?	Replace fuse.
Engine fails to start and starter rotates.	Broken pre-heat circuit?	Check pre-heat circuit.
	No fuel?	Add fuel.
	Defective wiring?	Check wiring.
Engine starts and remains at low speed.	Clogged fuel strainer?	Clean or replace.
	Clogged air cleaner?	Clean or replace.
	Disconnected wiring?	Check and repair wiring.
Engine speed rises and no voltage is present n AC power source.	No voltage present in AC power source?	Replace rectifier (RE1).
	Defective rotor?	Replace rotor.
	Defective voltmeter?	Replace voltmeter.
	Disconnected wiring?	Check and repair wiring.
	Layer short-circuit in armature winding?	Replace armature.
Engine speed rises and AC power voltage is too low or cannot be used.	Defective circuit breaker (protector)?	Replace circuit breaker (protector).
	Layer short-circuit, broken wires in armature winding?	Repair or replace armature.
Engine speed rises and battery discharges too soon.	Defective engine regulator?	Replace regulator.
	Defective wiring?	Repair or replace wiring.
Engine speed rises and engine seems overloaded.	Defective alternator?	Repair or replace alternator.
	Damaged alternator bearing?	Replace alternator bearings.

NOTE PAGE

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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.

DCA-60SSI2 — SUGGESTED SPARE PARTS***DCA-60SSI2 W/ISUZU 6BG1 DIESEL ENGINE
1 TO 3 UNITS***

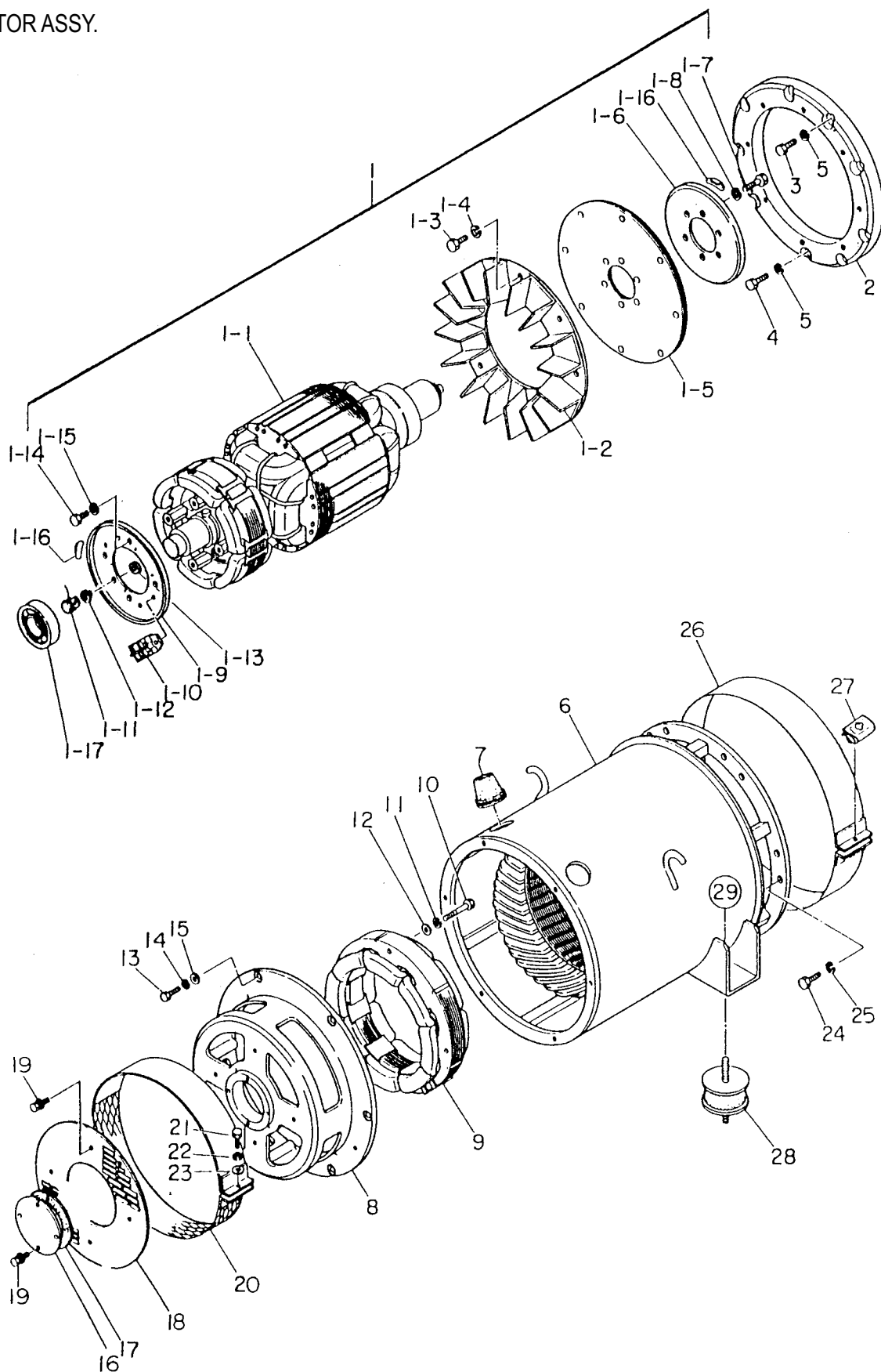
<u>Qty.</u>	<u>P/N</u>	<u>Description</u>
1	0601805869	CIRCUIT BREAKER
1	0601820671	AUTOMATIC VOLTAGE REGULATOR
1	0601840073	RHEOSTAT VOLTAGE REGULATOR
1	0601840121	KNOB REHOSTAT
1	0602013901	RADIATOR HOSE, UPPER
1	0602013160	RADIATOR HOSE, LOWER
5	1878100753	OIL FILTER
5	X132400240	FUEL FILTER
5	0602040193	ELEMENT, AIR
1	0602122200	UNIT OIL PRESSURE
1	0602123204	UNIT WATER PRESSURE
1	0601810244	BULB, ALARM LAMP
1	0601808507	TRANSDUCER WATT METER
1	8972322520	FAN BELT
1	1823100080	STARTER SWITCH
3	KEYISUZUF	KEY, STARTER SWITCH

NOTE

**Part number on this Suggested Spare
Parts list may supercede/replace the
P/N shown in the text pages of this
book.**

DCA-60SSI2 --- GENERATOR ASSY.

GENERATOR ASSY.

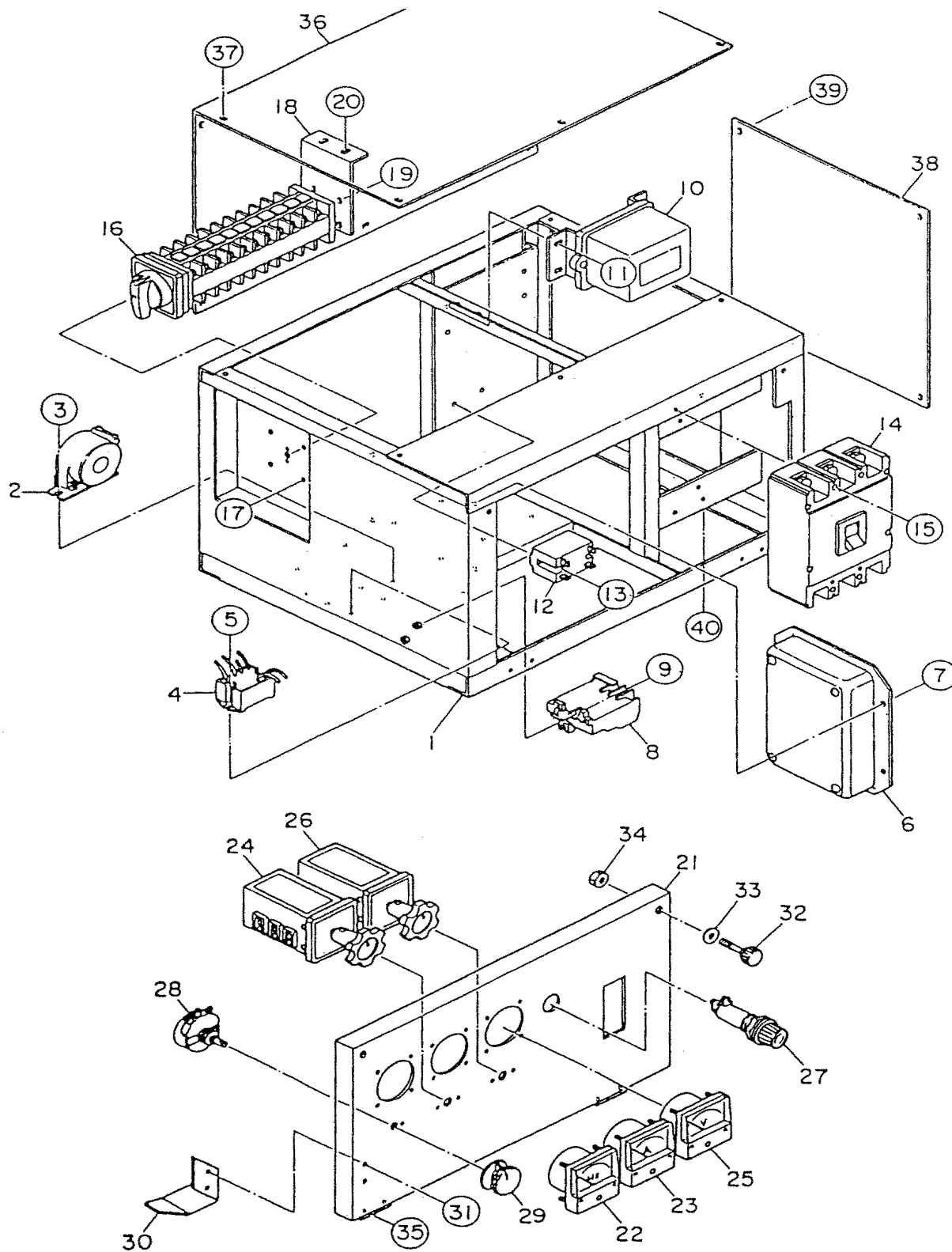


DCA-60SSI2 --- GENERATOR ASSY.

GENERATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8081000312	ROTOR ASSY.	1	
1-1		FIELD ASSY.	1	
1-2	8051070003	FAN	1	
1-3	0012110035	HEX. HEAD BOLT	8	
1-4	030210250	LOCK WASHER	8	REPLACES 0042510000
1-5	8041611004	COUPLING DISK	4	
1-6	8041015003	BALANCING PLATE	1	
1-7	0010310025	HEX. HEAD BOLT	6	REPLACES 0010310025
1-8	030210250	LOCK WASHER	6	REPLACES 0042510000
1-6	8001026013	SET PLATE RECTUFER	1	
1-10	0601821349	RECTIFIER	2	PT3610
1-11	0601822601	SURGER ABSORBER	1	ERZM14JK621A
1-12	8001020004	INSULATOR WASHER	1	
1-13	8001020504	INSULATOR WASHER	1	
1-14	0010108000	LOCK WASHER	4	
1-16	0601000209	BALANCING WEIGHT KIT	1	
1-17	0071906310	BEARING	1	6310DDU
2	8051614003	COUPLING RING	1	
3	8051653004	REAMER BOLT	2	
4	012010030	HEX. HEAD BOLT	7	REPLACES 0012110030
5	0042510000	LOCK WASHER	9	REPLACES 0042510000
6	8081340503	STRATOR ASSY.	1	
7	0845041604	GROMMET	2	
8	8041315202	END BRACKET	1	
9	8041350013	FIELD ASSY. EXCITER	1	
10	0010308065	HEX. HEAD BOLT	4	
11	0042608000	LOCK WASHER	4	
12	031108160	PLAIN WASHER	6	REPLACES 0041208000
13	0010108025	HEX. HEAD BOLT	6	
14	0040008000	LOCK WASHER	6	
15	0041208000	PLAIN WASHER	6	
16	8041310024	COVER, BEARING	1	
17	8041310014	GASKET, BEARING	1	
18	8041331014	COVER, END BRACKET	1	
19	0105050616	HEX. HEAD BOLT	8	REPLACES 0017106012
20	8001333003	COVER, END BRACKET	1	
21	0010106030	HEX. HEAD BOLT	1	
22	0040006000	LOCK WASHER	1	
23	952404470	PLAIN WASHER	1	REPLACES 0041206000
24	0105091025	HEX. HEAD BOLT	6	REPLACES 0010310025
25	030210250	LOCK WASHER	6	REPLACES 0042510000
26	8051332014	COVER, FAN	1	
27	020106050	NUT	1	REPLACES 0600815000
28	0605000010	RUBBER SUSPENSION	2	
29	0030012000	HEX. NUT	4	
	0040012000	LOCK WASHER	4	

Full View

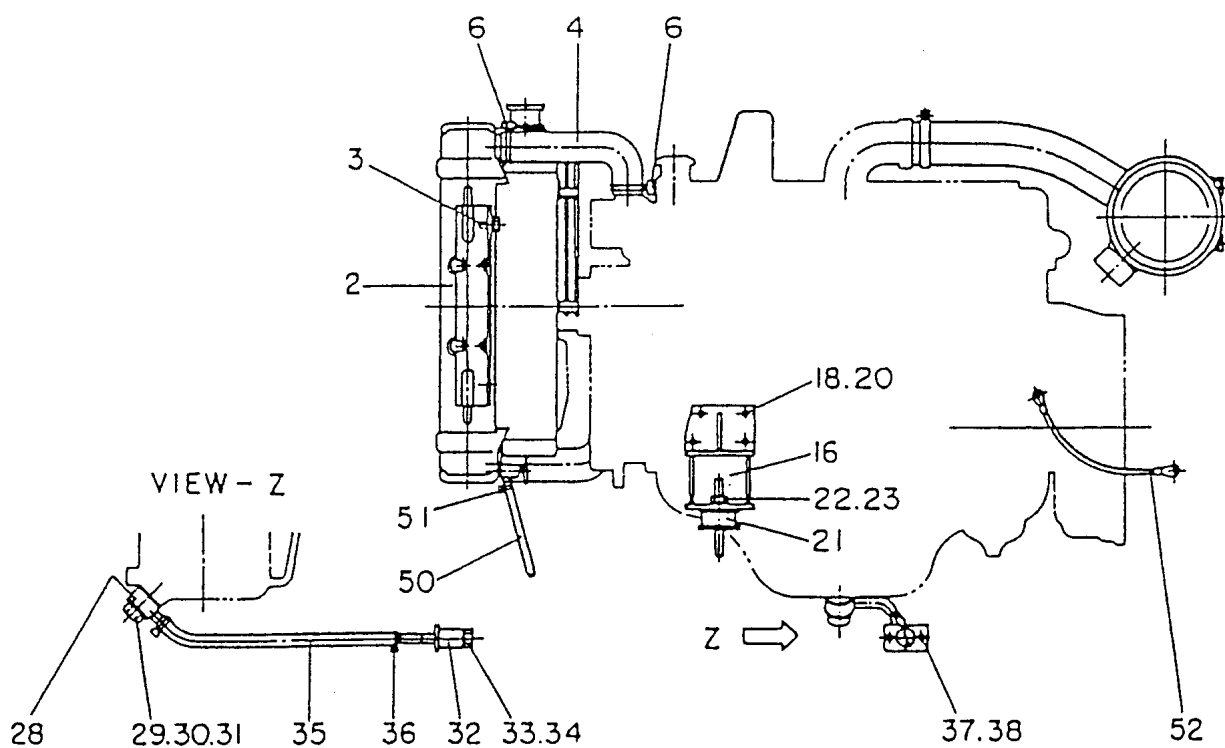
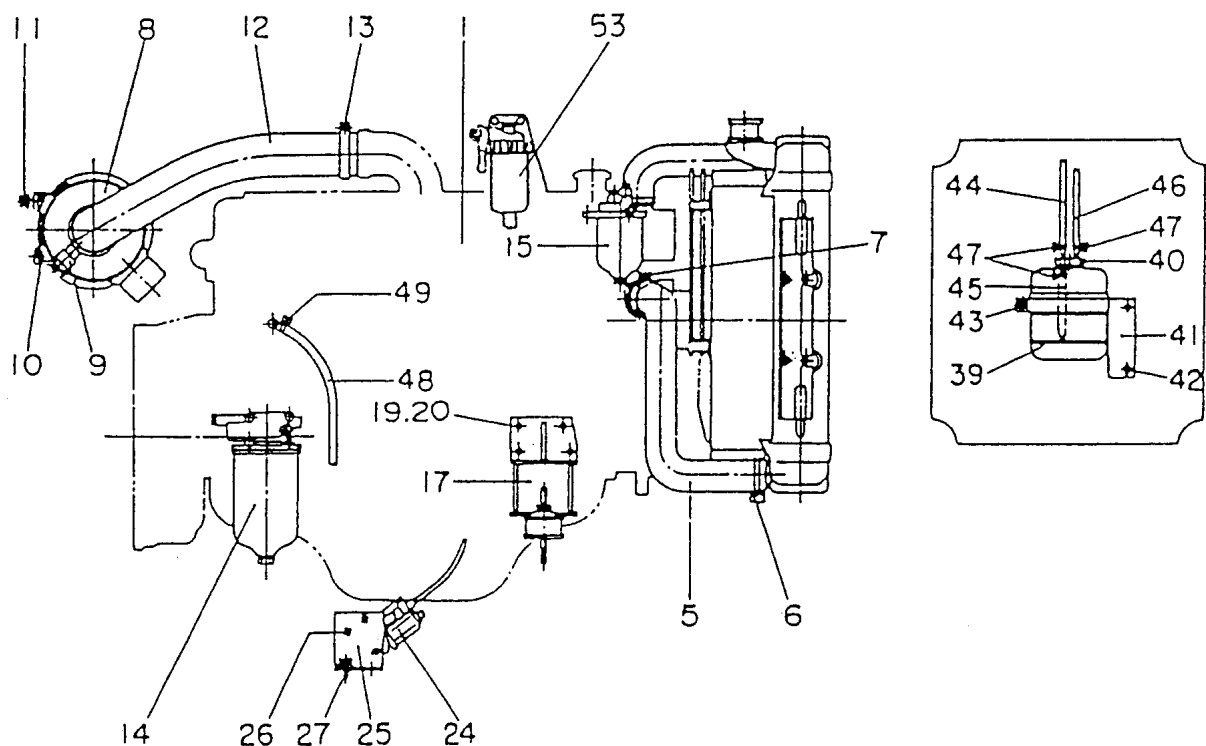
DCA-60SSI2 --- CONTROL BOX ASSY.**CONTROL BOX ASSY.**

DCA-60SSI2 --- CONTROL BOX ASSY.**CONTROL BOX ASSY.**

NO.	PART NO.	ITEM	QTY.	REMARKS
1	B4214000002	CONTROL BOX	1	
2	0601801143	CURRENT TRANSFORMER, AMMETER	3	CT-3.5MR 100/5A
3	0027104010	MACHINE SCREW	6	
4	0601823860	RELAY UNIT	2	MSA9013
5	0027104016	MACHINE SCREW	4	
6	0601820671	AUTOMATIC VOLTAGE REGULATOR	1	NTA5A2DB
7	0027105012	MACHINE SCREW	4	
8	0601820892	OVER CURRENT RELAY	1	THN20HZKP
9	0027104016	MACHINE SCREW	4	
10	0602200405	EMERGENCY RELAY	1	ISUZU 1825500730
11	0027106016	MACHINE SCREW	4	
12	0601823706	RELAY	1	HE1AAHE1112 DC24V
13	0027104016	MACHINE SCREW	2	
14	0601805869	CIRCUIT BREAKER	1	NY203A 150AT
15	0021004020	MACHINE SCREW	4	
	0040004000	LOCK WASHER	4	
	031104080	PLAIN WASHER	4	REPLACES 0041204000
16	M1923100004	SELECTOR SWITCH	1	REPLACES 8010153104
17	0020004010	MACHINE SCREW	4	REPLACES 0021104010
18	8051839504	BRACKET, SELECTOR SWITCH	1	
19	0021003010	MACHINE SCREW	4	
20	0017106016	HEX. HEAD BOLT	2	
	020106050	HEX. NUT	2	REPLACES 0030006000
21	7451822513	CONTROL PANEL	1	
22	0601800460	FREQUENCY METER	1	PAK60 220V 45~65Hz
23	0601800784	AC AMMETER	1	PSK60 0~100A ~200A
24	0601801040	CHANGE-OVER SWITCH, AMMETER	1	SL2AS
25	0601800212	AC VOLTMETER	1	REPLACES 0601800217 PCK60 0~600V
26	0601801041	CHANGE-OVER SWITCH, VOLTMETER	1	SL2VS
27	0601810072	PILOT LAMP	1	LP132DC 220V
	0601810261	BULB	1	T13
28	0601840073	VOLTAGE REGULATOR	1	RA20A2SE102BJ 2W 1k OHM
29	0601840121	KNOB	1	
30	3331824003	STOPPER, CONTROL PANEL	1	
31	0027105016	MACHINE SCREW	2	
	0030005000	HEX. NUT	2	
32	0845056404	SET SCREW	2	
33	031108160	PLAIN WASHER	2	REPLACES 0041208000
34	020108060	HEX. NUT	2	REPLACES 0030008000
35	0027105010	MACHINE SCREW	4	
36	8081814503	COVER	1	
37	0017106016	HEX. HEAD BOLT	11	
38	8081814604	SIDE PANEL	1	
39	0017106016	HEX. HEAD BOLT	4	
40	011208025	HEX. HEAD BOLT	4	REPLACES 0017108025

DCA-60SSI2 ENGINE AND RADIATOR ASSY.

ENGINE AND RADIATOR ASSY.



DCA-60SSI2 ENGINE AND RADIATOR ASSY.

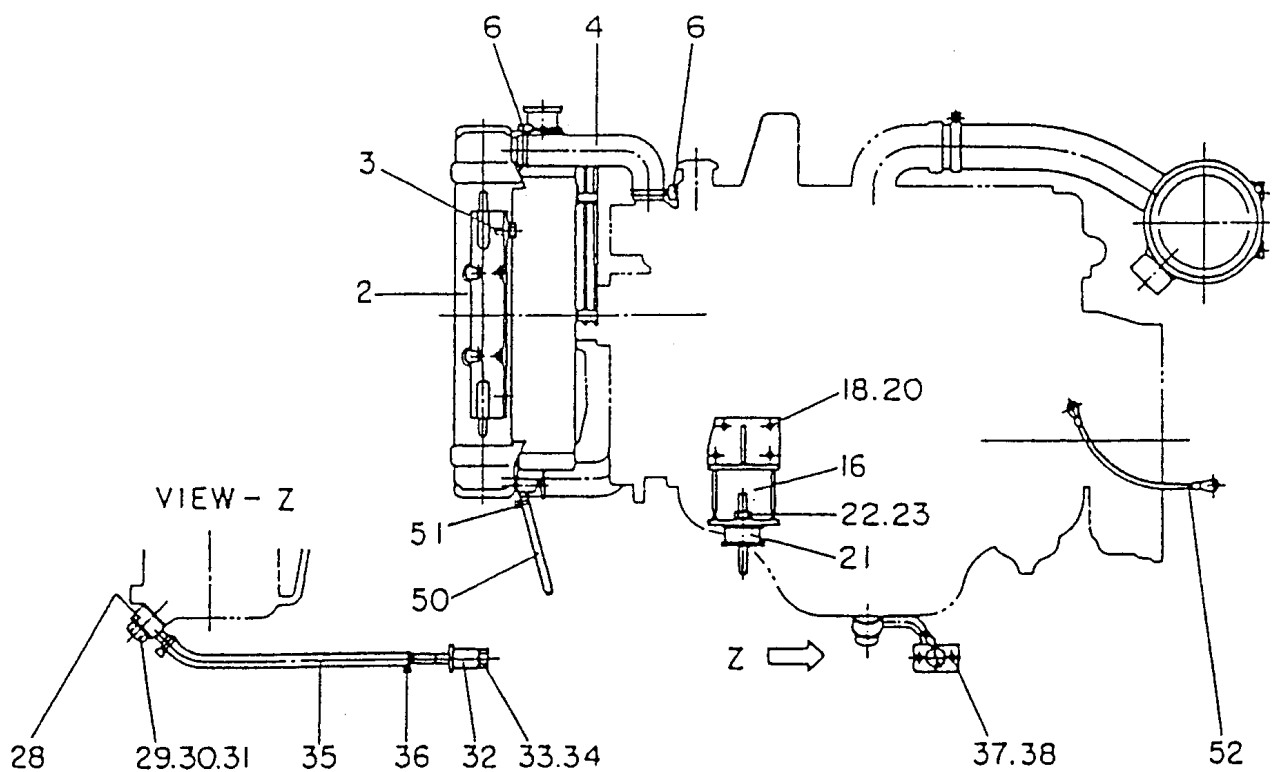
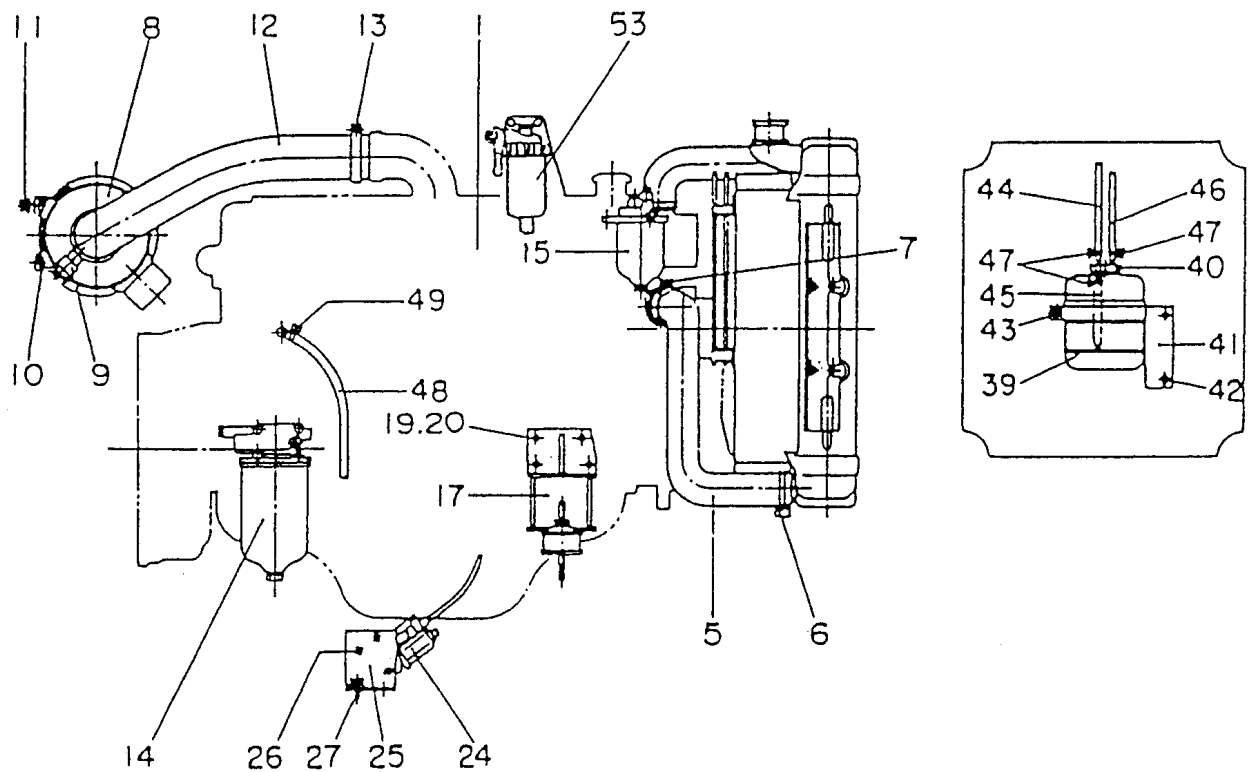
ENGINE AND RADIATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	B4924200114	ENGINE	1	ISUZU A6BG1
2	0602010802	RADIATOR	1	H190110003
3	011008020	HEX. HEAD BOLT	6	REPLACES 0017108020
4	0602013901	RADIATOR HOSE, UPPER	1	
5	0602013160	RADIATOR HOSE, LOWER	1	
6	0602014302	HOSE BAND	3	
7	0602014303	HOSE BAND	1	
8	0602040090	AIR CLEANER	1	FWG088006
	0602040193	ELEMENT, AIR CLEANER	1	P104972
9	0602040690	DUST INDICATOR	1	RBX002252
10	0602040598	BAND, AIR CLEANER	2	
11	011008020	HEX. HEAD BOLT	4	REPLACES 0017108020
12	7452032303	HOSE, AIR CLEANER	1	
13	0605515008	HOSE BAND	2	
14	1878100751	ELEMENT, OIL FILTER	1	REPLACES 0602041106
15	X132400240	FUEL FILTER	1	REPLACES 1132400791
16	3345112403	ENGINE FOOT	1	
17	3345112503	ENGINE FOOT	1	
18	0105091025	HEX. HEAD BOLT	7	REPLACES 0010710025
19	0030610000	HEX. NUT	1	
20	0040010000	LOCK WASHER	8	
21	0605000009	RUBBER SUSPENSION	2	
22	0040012000	LOCK WASHER	4	
23	039312000	HEX. NUT	4	REPLACES 0030112000
24	1819001931	ENGINE STOPPER	1	REPLACES 1819000161
25	7452215104	BRACKET, ENGINE STOPPER	1	
26	0027106016	MACHINE SCREW	3	
27	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
28	7452051104	DRAIN JOINT	1	
29	0805013704	PACKING	1	OIL PAN SIDE

Full View

DCA-60SSI2 ENGINE AND RADIATOR ASSY.

ENGINE AND RADIATOR ASSY.



DCA-60SSI2 ENGINE AND RADIATOR ASSY.

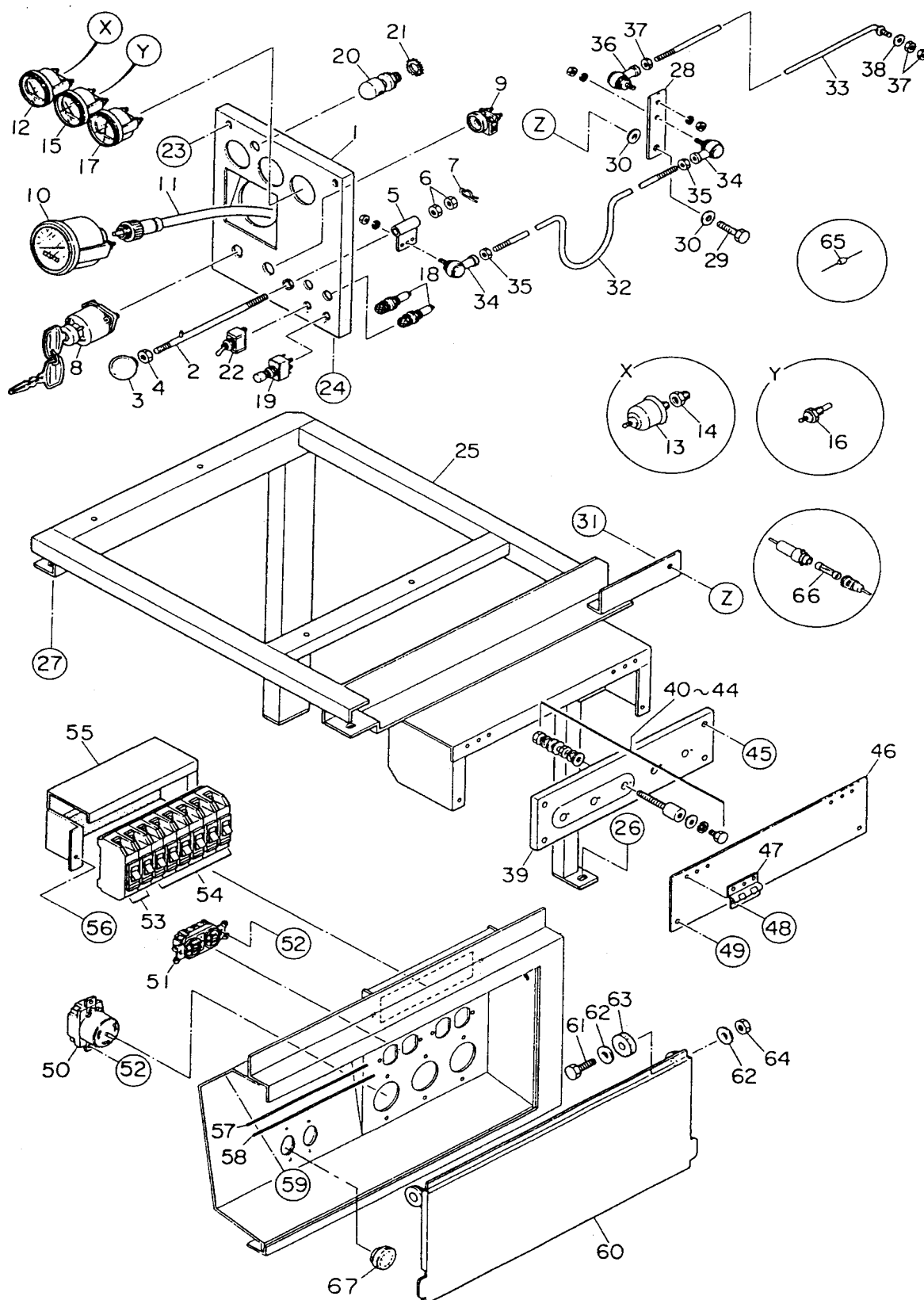
ENGINE AND RADIATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
30	0805014204	PACKING	1	
31	3362054104	JOINT BOLT	1	
32	3362051003	DRAIN JOINT	1	
33	0802024004	PACKING	1	
34	0802010204	PLUG	1	
35	7452052104	DRAIN HOSE	1	
36	0605515158	HOSE BAND	2	
37	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
38	020108060	HEX. NUT	2	REPLACES 0030008000
39	0845031303	RESERVE TANK	1	
40	0802081104	CAP, RESERVE TANK	1	
41	7452082504	BRACKET, RESERVE TANK	1	
	0229200460	RUBBER SEAL	1	
42	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
43	011606025	HEX. HEAD BOLT	1	REPLACES 0017106025
44	0199500470	HOSE	1	
45	0199500175	HOSE	1	
46	019360200	HOSE	1	
47	0605515013	HOSE BAND	4	
48	0193100950	HOSE	1	
49	0605515007	HOSE BAND	1	
50	0193800850	HOSE	1	
51	0605515019	HOSE BAND	1	
52	7452220404	EARTH CABLE	1	
53	8970209410	FILTER	1	REPLACES 9581541441

Full View

DCA-60SSI2 --- ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.



DCA-60SSI2 --- ENGINE OPERATING PANEL ASSY.

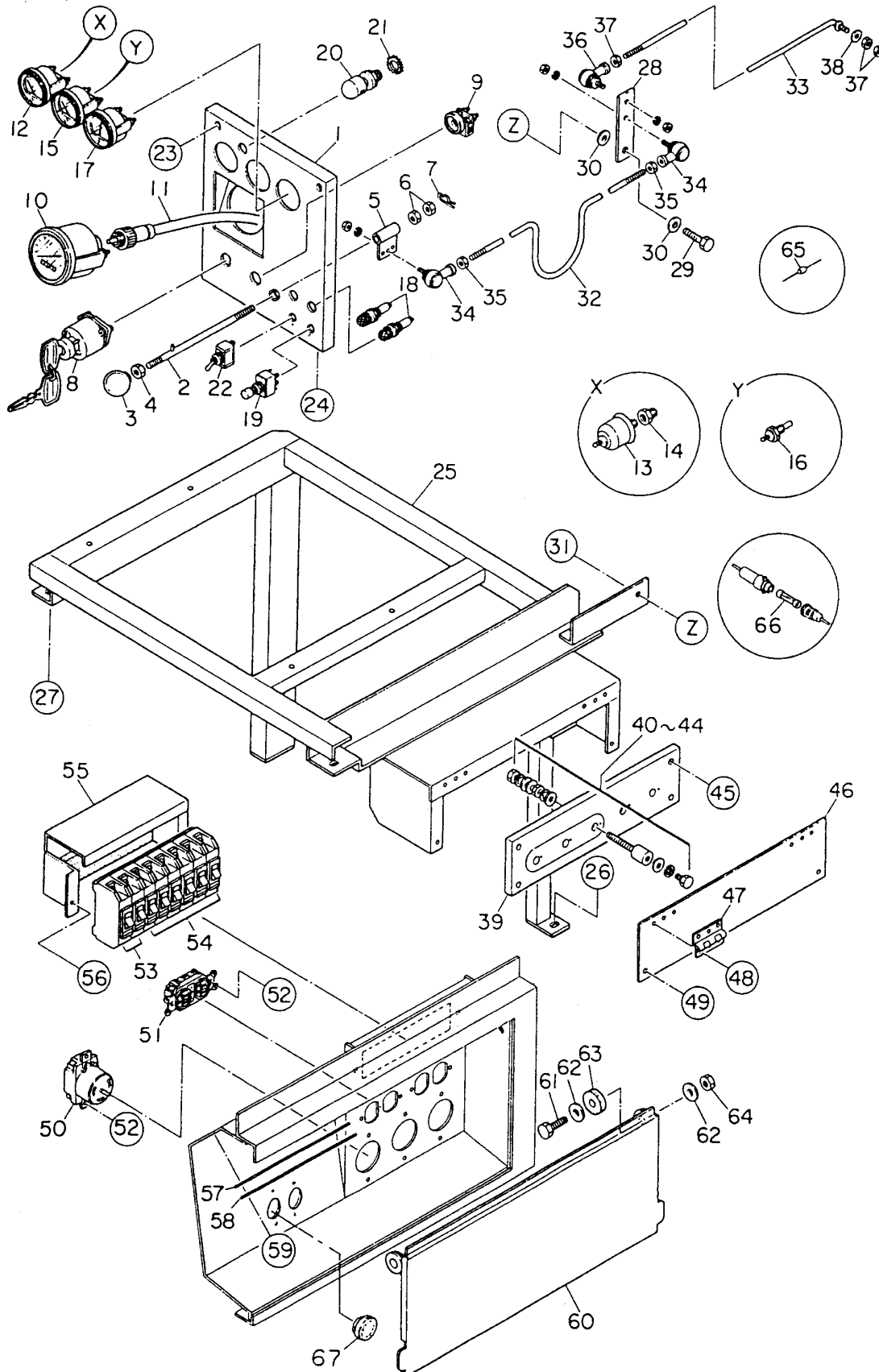
ENGINE OPERATING PANEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7452111103	OPERATING PANEL	1	
2	7452142014	SLIDE BAR	1	
3	0601840190	KNOB	1	REPLACES 0805012904
4	020108060	HEX. NUT	1	REPLACES 0036003000
5	7452140504	BRACKET, GOVERNOR ROD	1	
6	020108060	HEX. NUT	2	REPLACES 0030008000
7	0605010503	SNAP PIN	1	
8	1823100080	STARTER SWITCH	1	REPLACES 06021000004
	KEYISUZUF	KEY, STARTER SWITCH	1	
9	1814020031	PREHEAT LAMP	1	REPLACES 9825300430
10	0602120054	TACHOMETER	1	25000KX4110
11	0602120154	CABLE, TACHOMETER	1	621000KA6710L=1150
12	0602122060	OIL PRESSURE GAUGE	1	4200KX1410
13	0602122200	UNIT, OIL PRESSURE	1	53000AC0101
14	9099022380	STREET SOCKET	1	REPLACES 0603306350
15	0602123061	WATER TEMPERATURE GAUGE	1	51400KA1200
16	0602123204	UNIT, WATER TEMPERATURE	1	41400KA1200
17	0602121052	CHARGING AMMETER GAUGE	1	43000KV0300
18	0602103091	ALARM LAMP	2	REPLACES 0602103090
	0601810244	BULB	2	
19	0601830420	SWITCH. LAMP CHECK	1	SB61A
20	0601810120	PANEL LIGHT	1	DL31000
	0601810214	BULB	1	REPLACES 0601810201
21	0040520000	TOOTHED LOCK WASHER	1	
22	0601830710	SWITCH, PANEL LIGHT	1	S301T
23	011008040	HEX. HEAD BOLT	2	REPLACES 0010008040
	0040008000	LOCK WASHER	2	
	031108160	PLAIN WASHER	2	REPLACES 0041208000
24	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
25	8085312103	SUPPORT LEG	1	
26	0017110025	HEX.HEAD BOLT	2	
27	011208025	HEX. HEAD BOLT	2	REPLACES 0017108025
	020108060	HEX. NUT	2	REPLACES 0030008000
28	7452183004	LINK, GOVERNOR ROD	1	

Full View

DCA-60SSI2 --- ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.



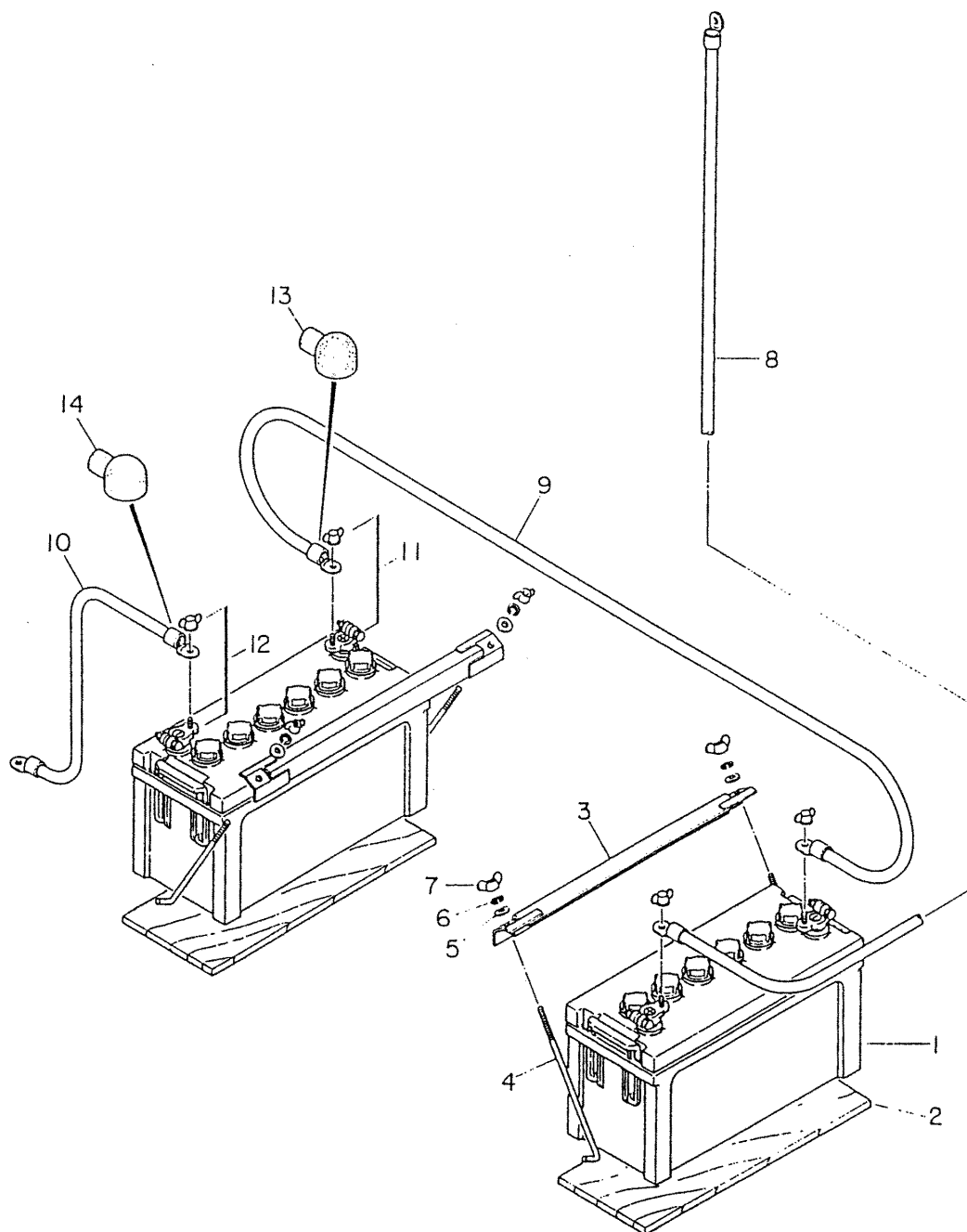
DCA-60SSI2 --- ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
29	0105091025	HEX. HEAD BOLT	1	REPLACES 0010010025
30	031110160	PLAIN WASHER	2	REPLACES 0041210000
31	020310080	HEX. NUT	1	REPLACES 0030010000
32	7452182014	GOVERNOR ROD	1	
33	7452152004	GOVERNOR ROD	1	
34	0602180106	BALL JOINT	2	
35	020108060	HEX. NUT	2	REPLACES 0030008000
36	0602180108	BALL JOINT	1	
37	020106050	HEX. NUT	3	REPLACES 0030006000
38	952404470	PLAIN WASHER	1	REPLACES 0041206000
39	8111860103	SET BOARD, OUPUT TERMINAL	1	
40	0801830204	OUTPUT TERMINAL	5	
41	0801830704	HEX. HEAD BOLT	5	
42	0039312000	HEX. NUT	10	
43	0040012000	LOCK WASHER	15	
44	0041412000	PLAIN WASHER	20	
45	011208030	HEX. HEAD BOLT	5	REPLACES 0017108030
46	8081865504	COVER, OUTPUT TERMINAL	1	
47	0605010051	HINGE	2	
48	0027103016	MACHINE SCREW	12	
	0207003000	HEX. NUT	6	
49	0017106016	HEX. HEAD BOLT	2	
50	0601811034	RECEPTACLE	2	REPLACES 0601812565 CA6369
51	0601812597	RECEPTACLE	2	REPLACES 0601812598 GF53OEM125V 20A
52	0027103010	MACHINE SCREW	10	
	0207003000	HEX. NUT	10	REPLACES 0030003000
	S8413	PLAIN WASHER	10	REPLACES 0041203000
53	0601804887	CIRCUIT BREAKER	2	REPLACES 0601805313 KM51 265V 20A
54	0601805840	CIRCUIT BREAKER	3	KM52 265V 50A
55	8081816303	BRACKET, CIRCUIT BREAKER	1	
	0222100200	RUBBER SHEET	1	
56	0017106016	HEX. HEAD BOLT	2	
57	8085182004	RUBBER COVER	1	
59	011206020	HEX. HEAD BOLT	6	REPLACES 0017106020
60	8081865303	COVER, RECEPTACLE	1	
61	12212045	HEX. HEAD BOLT	2	REPLACES 0010012045
62	031112230	PLAIN WASHER	4	REPLACES 0041612000
63	0805009804	RUBBER WASHER	2	
64	0030012000	HEX. NUT	2	
65	0601820015	RECTIFER	4	IS2762
66	0601802133	FUSE	1	5A
67	0601851780	GROMMET	2	S/N3700638~

DCA-60SSI2 --- BATTERY ASSY.

BATTERY ASSY.



DCA-60SSI2 --- BATTERY ASSY.

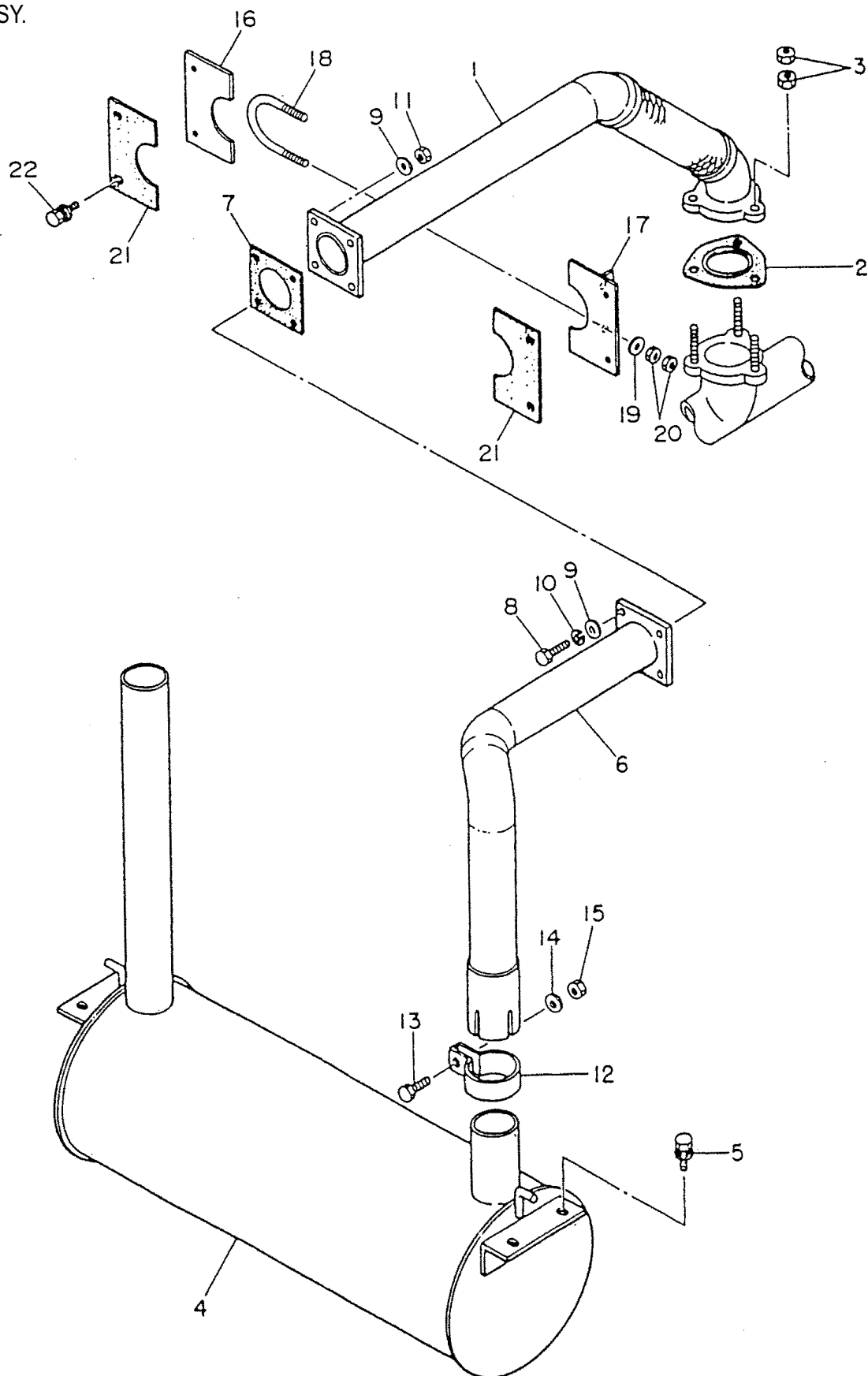
BATTERY ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0168409541	BATTERY	2	95E41R
2	0805003904	BATTERY SHEET	2	
3	0805004004	BATTERY BAND	2	
4	0805002904	BATTERY BOLT	4	
5	031108160	PLAIN WASHER	4	REPLACES 0041208000
6	0040008000	LOCK WASHER	4	
7	0037808000	WING NUT	4	
8	0215260065	BATTERY CABLE	1	
9	0211160180	BATTERY CABLE	1	
10	0215860100	BATTERY CABLE	1	
11	0602220310	TERMINAL ASSY (+)	2	
	020800800	WING NUT	2	
12	0602220311	TERMINAL ASSY (-)	2	
	0208008000	WING NUT	2	
13	0845040414	TERMINAL CAP	2	
14	0845041304	TERMINAL CAP	2	

Full View

DCA-60SSI2 --- MUFFLER ASSY.

MUFFLER ASSY.



DCA-60SSI2 --- MUFFLER ASSY.

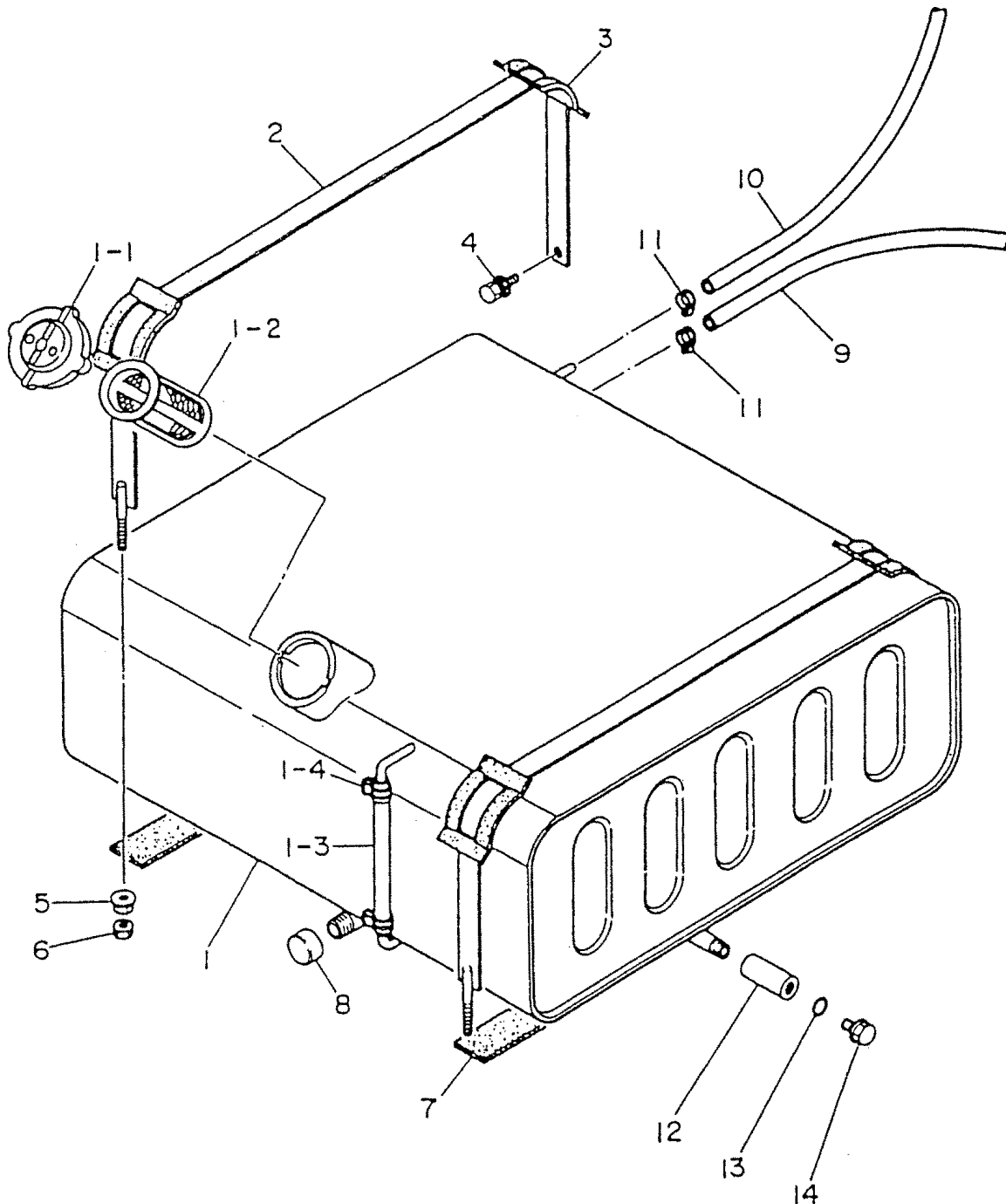
MUFFLER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8082330303	EXHAUST PIPE	1	
2	1141450690	GASKET	1	REPLACES 9221160010
3	9091103100	HEX. NUT	6	REPLACES 9091103100
4	3802311122	MUFFLER	1	
5	012210020	HEX. HEAD BOLT	4	REPLACES 0017110020
6	7452330303	EXHAUST PIPE	1	
7	B4334200404	GASKET	1	
8	011008035	HEX. HEAD BOLT	4	REPLACES 0010108035
9	031108160	PLAIN WASHER	4	REPLACES 0041208000
10	0040008000	LOCK WASHER	4	
11	0030008000	HEX. NUT	4	
12	1382320003	PIPE BAND	1	
13	011208030	HEX. HEAD BOLT	1	REPLACES 0010008030
14	031108160	PLAIN WASHER	1	REPLACES 0041208000
15	020108060	HEX. NUT	1	REPLACES 0030008000
16	3342354104	COVER	1	
17	3342354004	COVER	2	
18	3342328104	PIPE CLAMPER	1	
19	031108160	PLAIN WASHER	2	REPLACES 0041208000
20	020108060	HEX. NUT	4	REPLACES 0030008000
21	3342359004	COVER SHEET	2	
22	011208025	HEX. HEAD BOLT	4	REPLACES 0017108025

Full View

DCA-60SSI2 --- FUEL TANK ASSY.

FUEL TANK ASSY.



DCA-60SSI2 --- FUEL TANK ASSY.

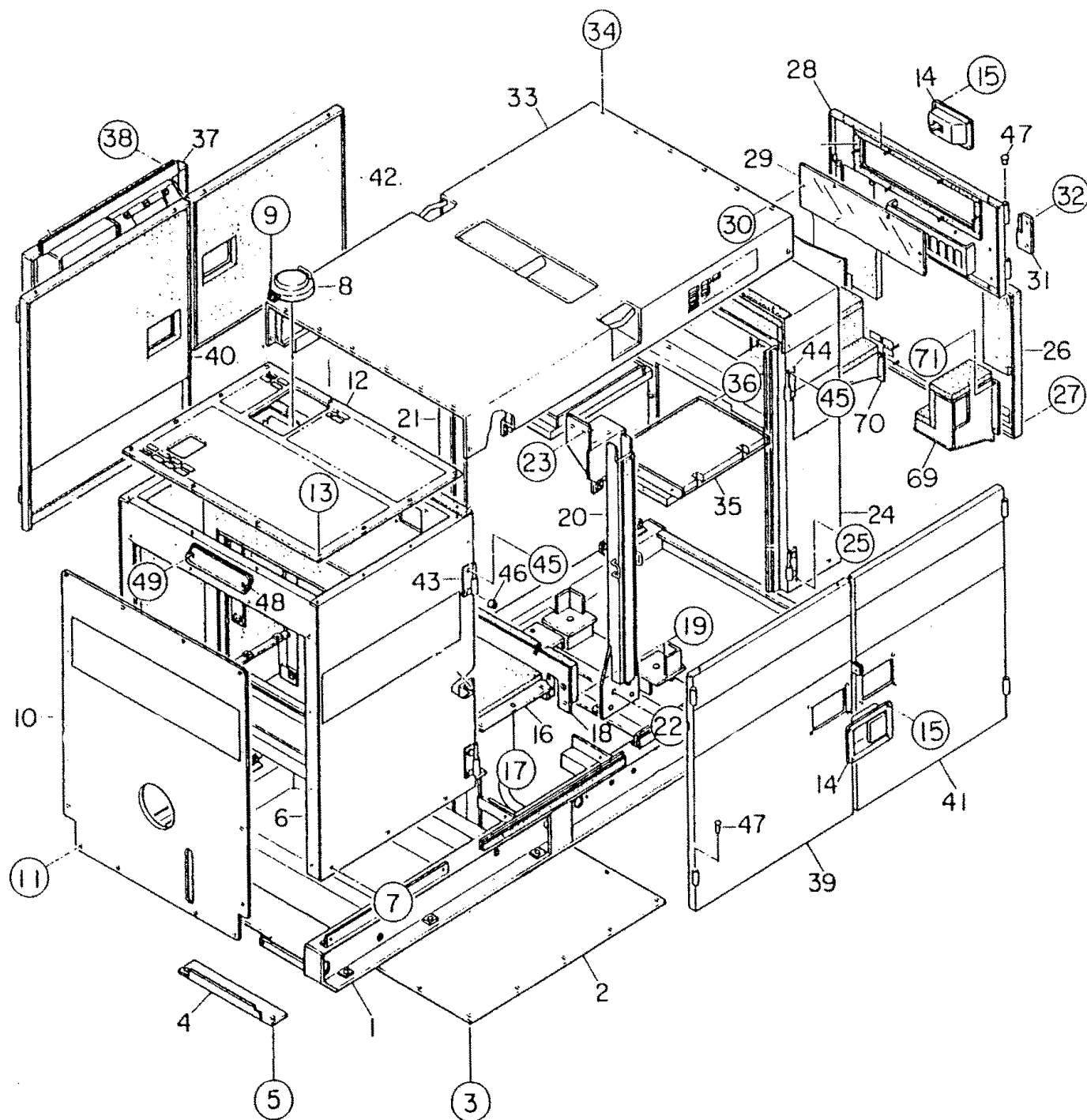
FUEL TANK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7455510303	FUEL TANK	1	
1-1	0810105004	CAP, FUEL TANK	1	
1-2	0810105400	FUEL FILTER	1	
1-3	0193100255	FUEL GAUGE HOSE	1	
1-4	0605515079	HOSE BAND	2	
2	7455523304	TANK BAND	2	
3	0805003414	PAD, TANK BAND	4	
4	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
5	0207008000	HEX. NUT	2	REPLACES 0207008000
6	020108060	HEX. NUT	2	REPLACES 0030008000
7	0222100200	TANK SHEET	4	
8	0131906000	CAP	1	
9	0191301150	SUCTION HOSE	1	
10	0191300670	RETURN HOSE	1	
11	0605515109	HOSE BAND	4	
12	0845047504	DRAIN JOINT	1	
13	0150000018	O RING	1	
14	0802011104	PLUG	1	

Full View

DCA-60SSI2 --- ENCLOSURE ASSY.

ENCLOSURE ASSY.



DCA-60SSI2 --- ENCLOSURE ASSY.

ENCLOSURE ASSY.

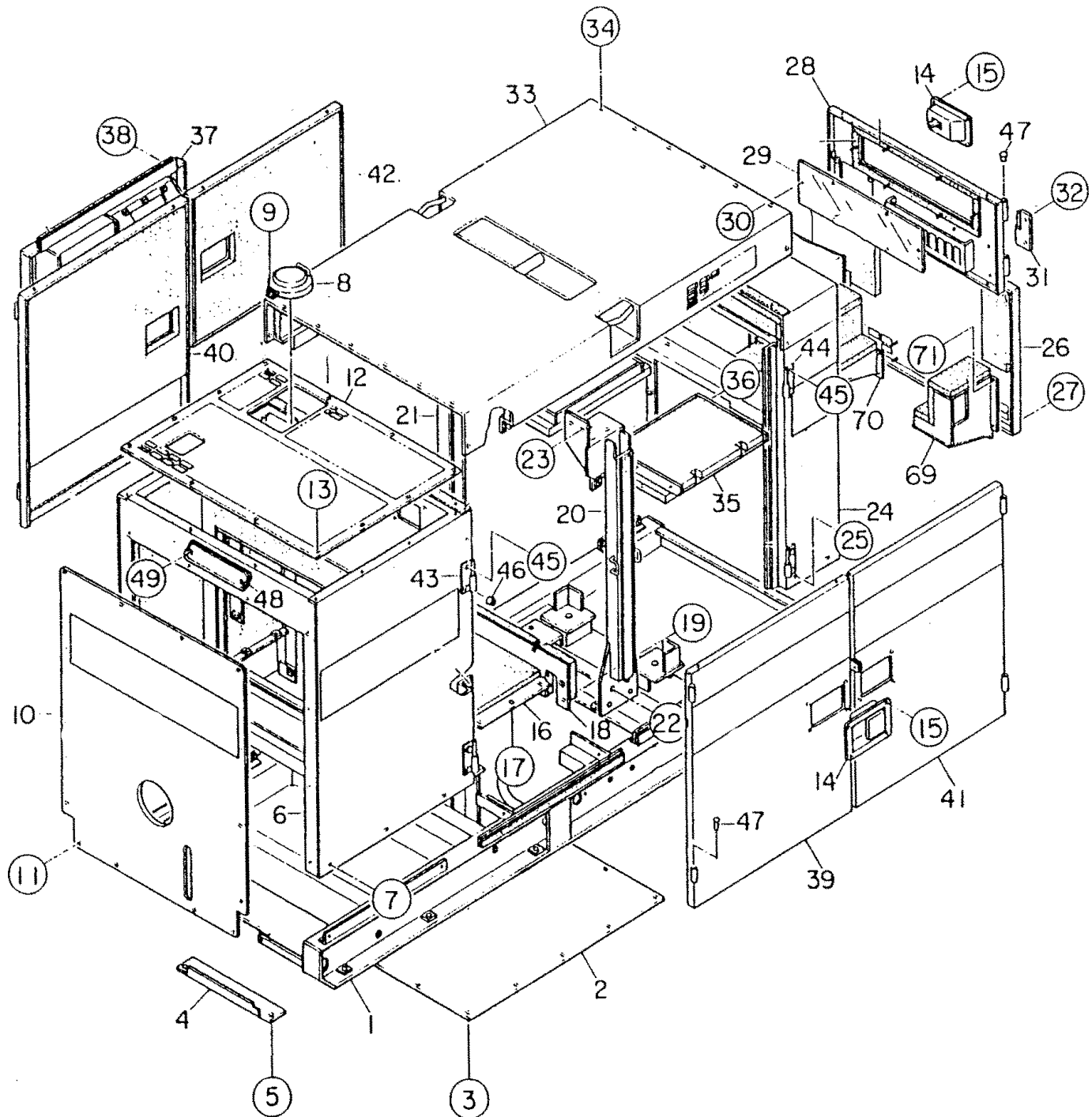
<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	7455111122	BASE	1	
2	8085116004	FLOOR PANEL	1	
3	011008020	HEX. HEAD BOLT	12	REPLACES 0017108020
4	7455116504	COVER	1	
5	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
6	7455121022	FRONT FRAME	1	
	7455109203	ACOUSTIC SHEET	1	
7	011008020	HEX. HEAD BOLT	6	REPLACES 0017108020
8	0800251201	FILLER COVER	1	
9	0027106016	MACHINE SCREW	2	
10	7455125503	COVER, FRONT FRAME	1	
	7455109304	ACOUSTIC SHEET	1	
11	011008020	HEX. HEAD BOLT	16	REPLACES 0017108020
12	7455125304	COVER, FRONT FRAME	1	
13	011008020	HEX. HEAD BOLT	12	REPLACES 0017108020
14	0825007362	DOOR HANDLE	5	S/N 3700001 TO 3700637
	B9114000002	DOOR HANDLE	5	S/N3700638~
15	0027106016	MACHINE SCREW	20	REPLACES 0221806015
16	7455125104	COVER, FRONT FRAME	1	
	7455109404	ACOUSTIC SHEET	1	
17	011008020	HEX. HEAD BOLT	6	REPLACES 0017108020
18	7455125704	COVER, FRONT FRAME	1	
	7455109504	ACOUSTIC SHEET	1	
19	011008020	HEX. HEAD BOLT	4	REPLACES 0017108020
20	B4434300003	CENTER FRAME	1	
21	B4434300103	CENTER FRAME	1	
22	0010114040	HEX. HEAD BOLT	8	
	020114110	HEX. NUT	1	REPLACES 0030014000
	031114260	PLAIN WASHER	9	REPLACES 0041214000
23	012012030	HEX. HEAD BOLT	10	REPLACES 0010112030
	0040012000	LOCK WASHER	10	
	031112230	PLAIN WASHER	10	REPLACES 0041212000
24	B444000102	REAR FRAME	1	S/N3700001 TO 3700637
	B4444000112	REAR FRAME	1	S/N3700638~
	7455109613	ACOUSTIC SHEET	1	
25	011008020	HEX. HEAD BOLT	4	REPLACES 0041212000
26	B4444300203	COVER, REAR FRAME	1	
	7455109713	ACOUSTIC SHEET	1	

ADD THE FOLLOWING DIGITS AFTER THE PART NUMBER
WHEN ORDERING ANY PAINTED PANEL TO
INDICATE COLOR OF UNIT:
1-ORANGE 5 -BLACK
2-WHITE 6 -CATERPILLAR YELLOW
3 -SPECTRUM GRAY 7 -CATO GOLD
4 -SUNBELT GREEN 8 -RED

THE SERIAL NUMBER MAY BE REQUIRED.

DCA-60SSI2 --- ENCLOSURE ASSY.

ENCLOSURE ASSY.



DCA-60SSI2 --- ENCLOSURE ASSY.

ENCLOSURE ASSY.

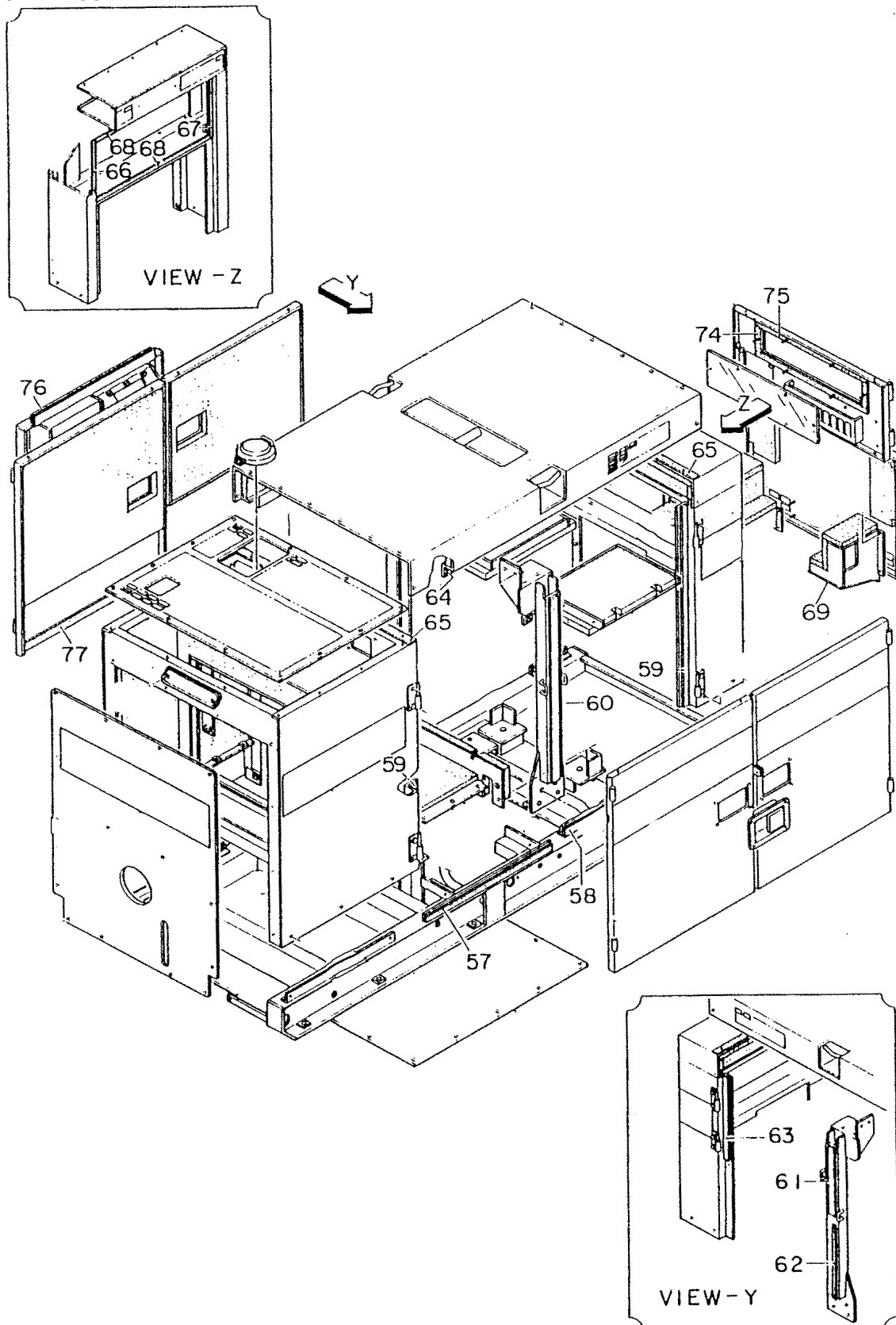
<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
27	011008040	HEX.HEAD BOLT	8	REPLACES 0010108040
	0040008000	LOCK WASHER	8	
	031108160	PLAIN WASHER	8	REPLACES 0041208000
28	B4444200203	DOOR, REAR FRAME	1	S/N3700001 TO 3700637
	B4444200213	DOOR, REAR FRAME	1	S/N3700638~
29	3805147104	WINDOW PLATE	1	
30	0021006020	MACHINE SCREW	6	
	020106050	HEX. NUT	6	REPLACES 0030006000
	0040006000	LOCK WASHER	6	
	952404470	PLAIN WASHER	6	REPLACES 0041206000
31	M9110100304	HINGE	2	REPLACES 0845047204
32	011208025	HEX. HEAD BOLT	4	REPLACES 0017108025
33	7455161012	ROOF PANEL	1	
	7455109803	ACOUSTIC SHEET	1	
34	011008020	HEX. HEAD BOLT	16	REPLACES 0017108020
35	7455165004	GUIDE PANEL, AIR	2	
	7455109904	ACOUSTIC SHEET	2	
36	011008020	HEX. HEAD BOLT	8	REPLACES 0017108020
37	8085181212	SPLASHER PANEL	1	S/N3700001 TO 3700637
	8085181222	SPLASHER PANEL	1	S/N3700638
38	0010108055	HEX. HEAD BOLT	6	
	0040008000	LOCK WASHER	6	
39	B4454000703	SIDE DOOR	1	S/N3700001 TO 3700637
	B4454000713	SIDE DOOR	1	S/N3700638~
	B4494100104	ACOUSTIC SHEET	1	
40	B4454000803	SIDE DOOR	1	S/N3700001 TO 3700637
	B4454000813	SIDE DOOR	1	S/N3700638~
	B4494100204	ACOUSTIC SHEET	1	
41	B4454001003	SIDE DOOR	1	S/N3700001 TO 3700637
	B4454000913	SIDE DOOR	1	S/N3700638~
	B4494300204	ACOUSTIC SHEET	1	
42	B4454001003	SIDE DOOR	1	S/N3700001 TO 3700637
	B4454001013	SIDE DOOR	1	S/N3700638~
	B4494300304	ACOUSTIC SHEET	1	
43	0845046904	HINGE	4	
44	0845047004	HINGE	4	
45	011208025	HEX. HEAD BOLT	16	REPLACES 0017108025
46	0601850097	RUBBER CUSHION	8	
47	0845031504	CAP	10	
48	0600500090	EMBLEM	2	
49	0021106020	MACHINE SCREW	4	
69	B4444800004	DUCT	1	
	7455109713	ACOUSTIC SHEET	1	
70	B4444800104	DUCT	1	
	7455109713	ACOUSTIC SHEET	1	
71	0207006000	HEX. NUT	10	

ADD THE FOLLOWING DIGITS AFTER THE PART NUMBER
WHEN ORDERING ANY PAINTED PANEL TO
INDICATE COLOR OF UNIT:
1-ORANGE 5 -BLACK
2-WHITE 6 -CATERPILLAR YELLOW
3 -SPECTRUM GRAY 7 -CATO GOLD
4 -SUNBELT GREEN 8 -RED

THE SERIAL NUMBER MAY BE REQUIRED.

DCA-60SSI2 --- RUBBER SEAL ASSY.

RUBBER SEAL ASSY.



DCA-60SSI2 --- RUBBER SEAL ASSY.

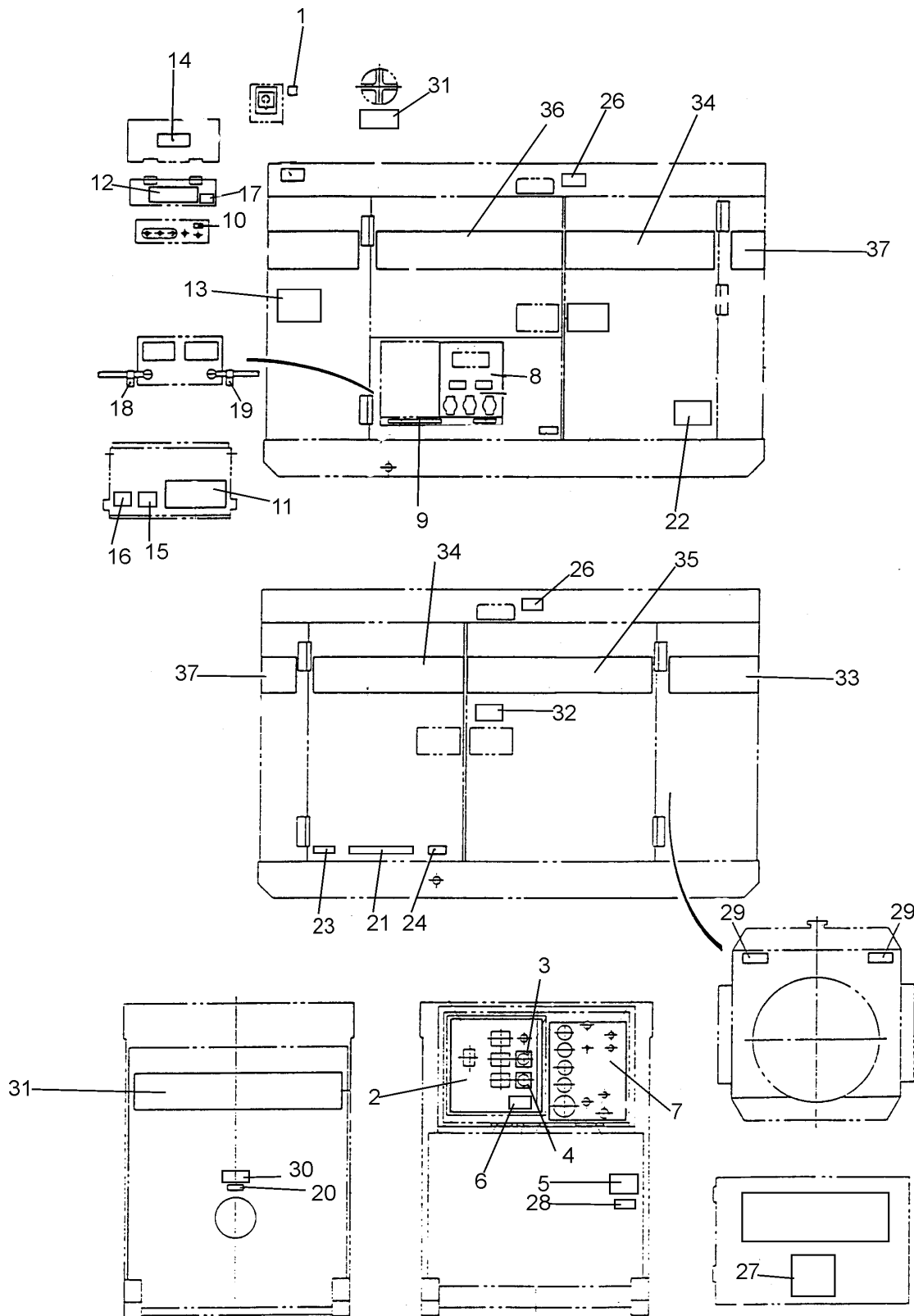
RUBBER SEAL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
57	0229200668	RUBBER SEAL	2	
58	0228900665	RUBBER SEAL	1	
59	0228900890	RUBBER SEAL	3	
60	0228900890	RUBBER SEAL	1	
61	0228900555	RUBBER SEAL	1	
62	0228800335	RUBBER SEAL	1	
63	0228900555	RUBBER SEAL	1	
64	0228901465	RUBBER SEAL	2	
65	0229200900	RUBBER SEAL	2	
66	0228800365	RUBBER SEAL	1	
67	0228800325	RUBBER SEAL	1	
68	0228800780	RUBBER SEAL	2	
74	0228100120	RUBBER SEAL	2	
75	0228100560	RUBBER SEAL	1	
76	0228900670	RUBBER SEAL	2	

Full View

DCA-60SSI2 --- DECALS

DECAL ASSY.



DCA-60SSI2 --- DECALS

DECAL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	B9521100504	DECAL; CAUTION	1	B92110050
2	B4551005902	DECAL; CONTROL PANEL	1	B45100590
3	0800520904	PLATE; AMMETER CHANGE-OVER SWITCH	1	N2438
4	0800520804	PLATE; VOLTAGE CHANGE-OVER SWITCH	1	N2439
5	B9521100404	DECAL; SAFETY INSTRUCTION	1	B92110040
6	B9531100604	DECAL; WARNING	1	B93110060
7	3340670002	DECAL; OPERATING PANEL	1	S2361A
8	8050670113	DECAL; RECEPTABLE & CIRCUIT BREAKER	1	S3349A
9	B1551001604	DECAL; NOTE	1	B15100160
10	0840614104	DECAL; GROUND MARK	1	S2635
11	0840619904	DECAL; CAUTION	1	S2731
12	0840627103	DECAL; CABLE JOINING	1	S3245
13	B9531100604	DECAL; WARNING	1	B93110060
14	B9511100404	DECAL; WARNING	1	B91110040
15	B9531100504	DECAL; WARNING	1	B93110050
16	9511100304	DECAL; WARNING	1	B91110030
17	0800689404	DECAL; +	1	S2090
18	0800689504	DECAL; -	1	S2091
19	1320620904	DECAL; DIESEL FUEL	1	S1756
20	1320610603	DECAL; WATER, OIL	1	S1760
21	6360610304	DECAL; WATER	1	S1880
22	6360620004	DECAL; FUEL DRAIN PLUG	1	S1883
23	6360620204	DECAL; OIL DRAIN PLUG	1	S1885
24	0840627304	DECAL; WARNING	1	S3247
25	1320621504	DECAL; SUPPORT HOOK	2	S2257
26	0840625902	DECAL; MQ	1	S3057
27	B9504200004	DECAL; WARNING	1	B90420000
28	B9504000404	DECAL; WARNING	2	B90400040
29	B9504100104	DECAL; WARNING	1	B90410010
30	B9504000304	DECAL; CAUTION	1	B90400030
31	B4561100003	STRIPE	1	
32	7450630703	STRIPE	1	REPLACES B4561100103
33	7450630703	STRIPE	1	REPLACES B4561100103
34	B4561100403	STRIPE	2	
35	B4561100503	STRIPE	1	
36	B4561100604	STRIPE	1	
37	B4561100304	STRIPE	2	

Full View

Effective: July 1, 2000**TERMS AND CONDITIONS OF SALE — PARTS****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 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.

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 \$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.

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. 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.

[illegible]

PARTS AND OPERATION MANUAL

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

800/835-2551 or 310/537-3700

FAX: 310/638-8046

WARRANTY DEPARTMENT

800/835-2551 or 310/537-3700

FAX: 310/638-8046

MAIN

800/421-1244 or 310/537-3700

FAX: 310/537-3927

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PARTS DEPARTMENT:

800-427-1244
FAX: 800-672-7877

SERVICE DEPARTMENT:

800-835-2551
FAX: 310-638-8046