

OPERATION AND PARTS MANUAL



WHISPERWATT™ SERIES MODEL DCA-600SSV 60 Hz GENERATOR

PARTS LIST NO. C4874303204

Revision #0 (07/13/07)

**THIS MANUAL MUST ACCOMPANY
THE EQUIPMENT AT ALL TIMES.**



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.

If you believe that your vehicle has a defect that could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Multiquip at 1-800-421-1244.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Multiquip.

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to <http://www.nhtsa.dot.gov>; or write to:

Administrator
NHTSA
1200 New Jersey Avenue S.E.
Washington, DC 20590

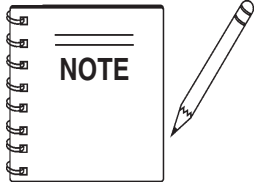
You can also obtain information about motor vehicle safety from
<http://www.safecar.gov>.

**MQ Power DCA-600SSV
60 Hz AC Generator**

- California Proposition 65 Warning 2
- Reporting Safet Defects 3
- Table of Contents 4
- Parts Ordering Procedures 5
- Specifications 6
- Dimensions (Top, Side, Front) 7
- Safety Alert Messages Symbols 8-9
- Rules for Safe Operation 10-13
- Generator Decals 14-17
- Installation 18-19
- General Information 20
- Major Components 21
- Generator Control Panel 22-23
- Engine Operating Panel 24-25
- Output Terminal Panel Familiarization 26-28
- Load Application 29
- Generator Outputs 30
- Generator Outputs/Gauge Reading 31
- Output Terminal Panel Connections 32-33
- Pre Setup 34-38
- Generator Start-up Procedure (Manual MPEC) 39-41
- Generator Start-up Procedure (Auto MPEC) 42
- Generator Shutdown Procedure 43
- Maintenance (Engine) 44-47
- Maintenance (Trailer) 48-50
- Trailer Wiring Diagram 51-52
- Generator Wiring Diagram 53
- Generator Wiring Diagram (Main Breaker) 54
- Engine Wiring Diagram 55-56
- Engine Troubleshooting 57-58
- Generator Troubleshooting 59
- Engine Contoller Troubleshooting (MPEC) 60
- Troubleshooting Diagnostic Lamp 61
- Explanation of Codes in Remarks Column 62
- Suggested Spare Parts 63

COMPONENT DRAWINGS

- Generator Assembly 64-67
- Control Box Assembly 68-73
- Engine Radiator Assembly 74-77
- Engine Operating Panel Assembly 78-79
- Output Terminal Assembly 80-83
- Battery Assembly 84-85
- Muffler Assembly 86-87
- Fuel Tank Assembly 88-89
- Enclosure #1 Assembly 90-93
- Enclosure #2 Assembly 94-97
- Enclosure #3 Assembly 98-99
- Enclosure (Rubber Seals) 100-101
- Nameplate and Decals 102-105
- Terms and Conditions Of Sale — Parts 106



Specification and part number are subject to change without notice.

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

Effective:

Order via Internet (Dealers Only):

Order parts on-line using Multiquip's SmartEquip website!

- View Parts Diagrams
- Order Parts



If you have an MQ Account, to obtain a Username and Password, E-mail us at parts@multiquip.com.

To obtain an MQ Account, contact your

Goto www.multiquip.com and click on **Order Parts** to log in and save!

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

Note: Discounts Are Subject To Change



Order via Fax (Dealers Only):

All customers are welcome to order parts via Fax.
Domestic (US) Customers dial:

Fax your order in and qualify for a **2% Discount** on *Standard orders* for all orders which include

Note: Discounts Are Subject To Change



Order via Phone: Domestic (US) Dealers Call:

Non-Dealer Customers:

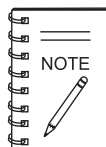
Contact your local Multiquip Dealer for parts or call 800-427-1244 for help in



International Customers should contact their local Multiquip Representatives for

When ordering parts, please supply:

- | | |
|---|--|
| <input type="checkbox"/> Dealer Account Number | <input type="checkbox"/> Specify Preferred Method of Shipment: |
| <input type="checkbox"/> Dealer Name and Address | ✓ UPS/Fed Ex ✓ DHL |
| <input type="checkbox"/> Shipping Address (if different than billing address) | ■ Priority One ✓ Truck |
| <input type="checkbox"/> Return Fax Number | ■ Ground |
| <input type="checkbox"/> Applicable Model Number | ■ Next Day |



All orders are treated as *Standard Orders* and will ship the same day if received prior

WE ACCEPT ALL MAJOR CREDIT CARDS!



DCA-600SSV — SPECIFICATIONS

Table 1. Generator Specifications

Model	DCA-600SSV
Type	Revolving field, self ventilated, open protected type synchronous generator
Armature Connection	Star with Neutral
Phase	3
Standby Output	660 KVA (528 KW)
Prime Output	600 KVA (480 KW)
Voltage — 1Ø	120, 127, 139, 240, 254, and 277V
Voltage — 3Ø	208, 220, 240, 416, 440, and 480V
Frequency	60 Hz
Speed	1800 rpm
Power Factor	0.8
Aux. AC Power	Single Phase, 60 Hz
Aux. Voltage/Output	120 VAC/ 4.8 Kw (2.4 kW x 2)
Dry Weight	16,369 lbs. (7,425 kg.)
Total Weight	17,659 lbs. (8,010 kg.)

Table 2. Engine Specifications

Model	VOLVO PENTA TAD1642GE	
Type	4 cycle, water-cooled, direct injection, turbo-charged with air to air after cooler	
No. of Cylinders	6 cylinders	
Bore x Stroke	5.67 in. x 6.50 in. (144 mm x 165 mm)	
Rated Output	713 HP / 1800 rpm	
Displacement	948 cu. in. (16,120 cc)	
Starting	Electric 24 VDC	
Coolant Capacity	24.6 gal. (93 liters)	
Lube Oil Capacity	12.7 gal. (48 liters)	
Fuel Type	#2 Diesel Fuel	
Fuel Tank Capacity	129 gal. (490 liters)	
Fuel Consumption	33.1 gal. (125.2 L)/hr at full load	24.2 gal. (91.7 L)/hr at 3/4 load
	17.3 gal. (65.4 L)/hr at 1/2 load	10.5 gal. (39.6 L)/hr at 1/4 load
Battery	12V-200 Ah x 2	

DCA-600SSV — DIMENSIONS (TOP, SIDE AND FRONT)

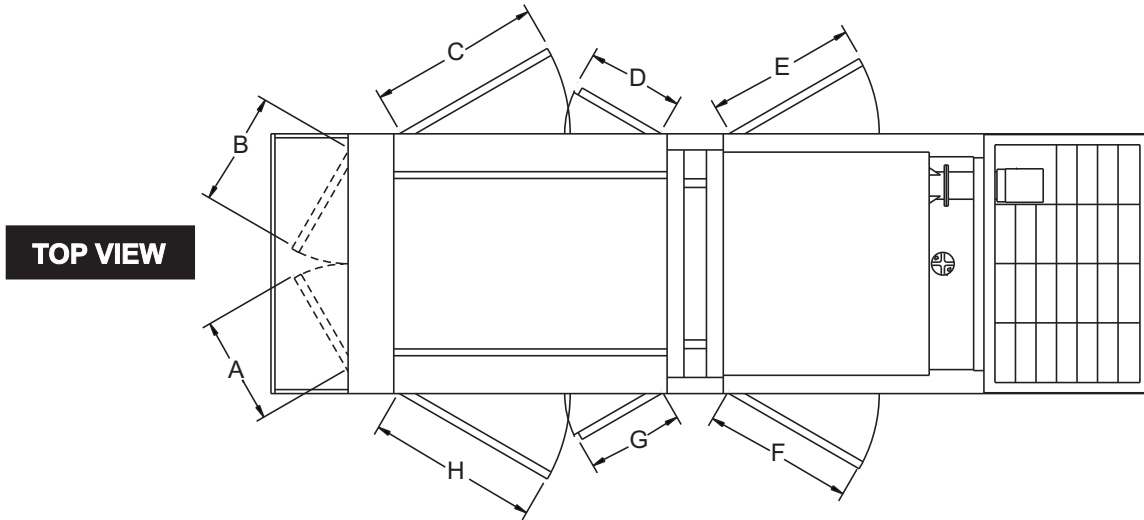


Figure 1. Dimensions

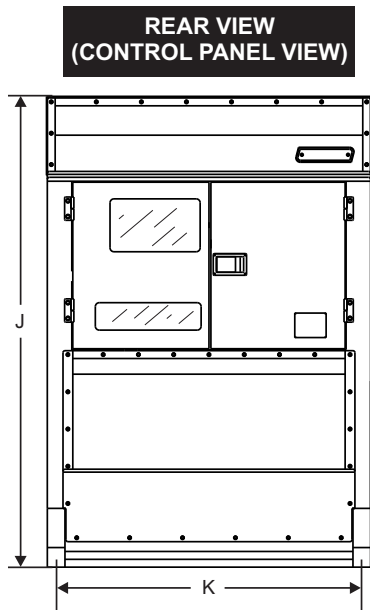
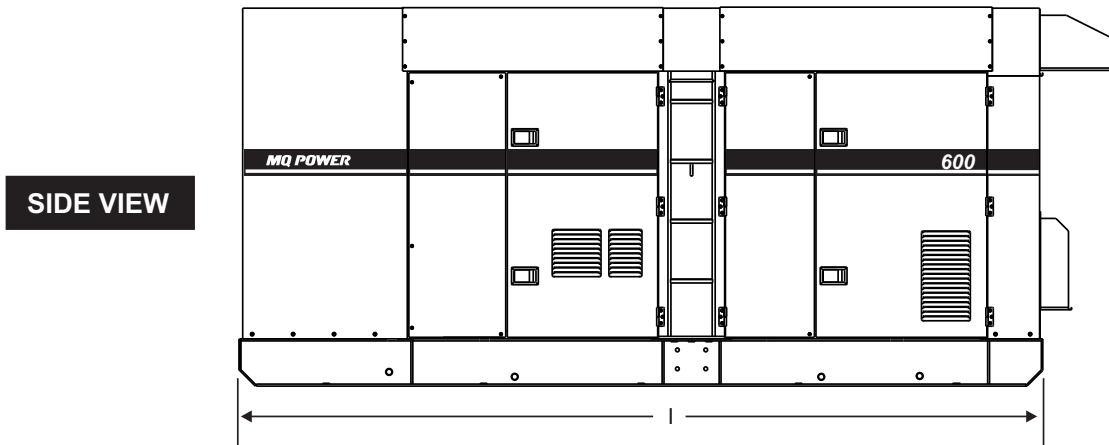
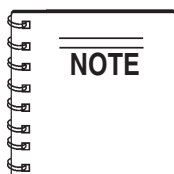


TABLE 3. DIMENSIONS			
Reference Letter	Dimension in. (mm.)	Reference Letter	Dimension in. (mm.)
A	26.97 in. (685 mm.)	G	17.32 in. (440 mm.)
B	27.36 in. (695 mm.)	H	39.37 in. (1,000 mm.)
C	39.37 in. (1,000 mm.)	I	185.04 in. (4,700 mm.)
D	17.32 in. (440 mm.)	J	78.9 in. (2,005 mm.)
E	38.98 in. (990 mm.)	K	65 in. (1,651 mm.)
F	38.98 in. (990 mm.)		

DCA-600SSV — SAFETY MESSAGE ALERT SYMBOLS

FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.



This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the MQPower *Model DCA-600SSV WHISPERWATT™ GENERATOR*.

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

SAFETY MESSAGE ALERT SYMBOLS

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The Safety Messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING**, or **CAUTION**.

DANGER

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

WARNING

You **COULD** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.

CAUTION

You **CAN** be injured if you do not follow directions

HAZARD SYMBOLS

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

WARNING - LETHAL EXHAUST GASES



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

WARNING - EXPLOSIVE FUEL



Gasoline is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot.

DO NOT overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.

WARNING - BURN HAZARDS



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

DANGER - ELECTROCUTION HAZARDS

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



DCA-600SSV — SAFETY MESSAGE ALERT SYMBOLS

WARNING - ROTATING PARTS



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

CAUTION - RESPIRATORY HAZARDS



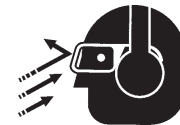
ALWAYS wear approved **respiratory** protection.

CAUTION - ACCIDENTAL STARTING



ALWAYS place the **Engine ON/OFF** switch in the **OFF** position and remove the ignition key when the pump is not in use.

CAUTION - SIGHT AND HEARING HAZARDS



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

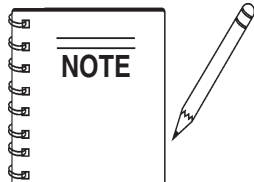
CAUTION - OVER-SPEED CONDITIONS



NEVER tamper with the factory settings of the engine governor or settings. Personal injury and damage to the engine or equipment can result if operating in speed ranges above maximum allowable.

CAUTION - EQUIPMENT DAMAGE MESSAGES

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



This generator, other property, or the surrounding environment could be damaged if you do not follow instructions.

DCA-600SSV — RULES FOR SAFE OPERATION

DANGER - READ THIS MANUAL!

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

The following safety guidelines should always be used when operating the **DCA-600SSV Whisperwatt™ Generator**.

General Safety:

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



The operator **MUST BE** familiar with proper safety precautions and operations techniques before using generator.

- 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 or 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. Unauthorized equipment modification will void all warranties.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.

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

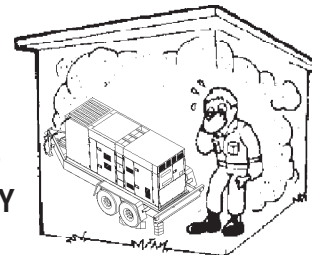
- **NEVER** operate the generator in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death**.

- **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 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.



- **DO NOT** place hands or fingers inside generator engine compartment when engine is running.
- **NEVER** run engine without air filter. Severe engine damage may occur.
- **DO NOT** leave the generator running in the **manual mode** unattended.
- Refer to the **VOLVO Engine Owner's Manual** for engine technical questions or information.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.

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.

The following safety recommendations should also be followed:

- **ALWAYS** make sure generator is properly grounded.
- **NEVER** use gas piping as an electrical ground.
- **ALWAYS** make sure that electrical circuits are properly **grounded** per the **National Electrical Code** (NEC) and local codes before operating generator. Severe **injury** or **DEATH!** by electrocution can result from operating an ungrounded generator.
- **ALWAYS** be sure to use the ground terminal (green wire) when connecting a load to the U, V, and W output terminal lugs.

Electrical Safety

- **ALWAYS** have a qualified electrician perform the generator wiring installation.
- **ALWAYS** make sure generator installation is accordance with the **National Electrical Code** (NEC) and local codes before operating generator.
- **NEVER** use a defective or frayed power cable. Check the cable for cuts in the insulation.
- **NEVER** use a extension cord that is frayed or damaged where the insulation has been cut.
- **ALWAYS** make certain that proper extension cord has been selected for the job. See Table 5.
- **NEVER** power cables or cords **lay in water**.
- **NEVER** **stand in water** while AC power from the generator is being transfer to a load.



DANGER - ELECTROCUTION HAZARDS

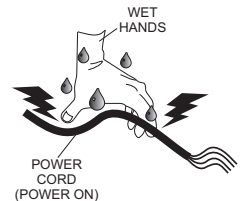
During operation of this generator, there exists the possibility of **electrocution, electrical shock or burn**, which can cause **severe bodily harm** or even **DEATH!**



To avoid these hazards:

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

NEVER grab or touch a live power cord with wet hands.



NEVER touch output terminals during operation. This is extremely dangerous. **ALWAYS** stop the machine and place the circuit breaker in the **OFF** position when contact with the output terminals is required.



Backfeed to a utility system can cause **electrocution** and or property damage. **DO NOT** connect to any building's electrical system except through an approved device or after building main switch is opened. **ALWAYS** have a licensed electrician perform the installation



DCA-600SSV— RULES FOR SAFE OPERATION

Maintenance Safety

- The electrical voltage required to operate the generator can cause severe injury or even death through physical contact with live circuits. Turn all circuit breakers **OFF** before performing maintenance on the generator.
- **NEVER** lubricate components or attempt service on a running machine.
- **ALWAYS** disconnect the **NEGATIVE battery terminal** before performing service on the generator.
- Follow all Battery Safety Guidelines listed in this manual when handling or servicing the generator.
- **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.
- **ALWAYS** service air cleaner frequently to prevent engine malfunction.

WARNING - BURN HAZARDS

To prevent burns, **DO NOT** touch or open any of the below mentioned components while the engine is running or immediately after operations. Always allow sufficient time for the engine and generator to cool before performing maintenance.

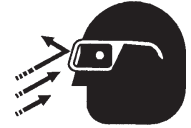


- **Radiator Cap** - Removing the radiator cap while the engine is hot will result in high pressurized, boiling water to gush out of the radiator, causing severe scalding to any persons in the general area of the generator.
- **Coolant Drain Plug** - Removing the coolant drain plug while the engine is hot will result in hot coolant gushing out of the coolant drain plug, therefore causing severe scalding to any persons in the general area of the generator.
- **Engine Oil Drain Plug** - Removing the engine oil drain plug while the engine is hot will result in hot oil gushing out of the oil drain plug, therefore causing severe scalding to any persons in the general area of the generator.

Battery Safety

Use the following guidelines when handling the battery:

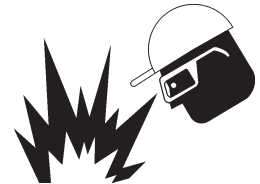
- The battery contains acids that can cause injury to the eyes and skin. To avoid eye irritation, **always** wear safety glasses.
- Use well insulated gloves when picking up the battery.



DANGER - EXPLOSION HAZARDS

The risk of an explosion exists when performing service on the battery. To avoid **severe injury** or **DEATH**:

- **DO NOT** drop the battery. There is the possibility of risk that the battery may explode.
- **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.



- **ALWAYS** keep the battery charged. If the battery is not charged a buildup of combustible gas will occur.
- **ALWAYS** keep battery charging and cables in good working condition. Repair or replace all worn cables.
- **ALWAYS** recharge the battery in a vented air environment, to avoid risk of a dangerous concentration of combustible gases.
- In case the battery liquid (dilute sulfuric acid) comes in contact with **clothing or skin**, rinse skin or clothing immediately with plenty of water.
- In case the battery liquid (dilute sulfuric acid) comes in contact with your **EYES**, rinse eyes immediately with plenty of water and contact the nearest doctor or hospital to seek medical attention.

DCA-600SSV — RULES FOR SAFE OPERATION

Towing & Transporting Safety

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

The following list of safety precautions should be followed when towing your generator:

CAUTION - FOLLOW TOWING REGULATIONS

Check with your local county or state safety towing regulations, in addition to meeting **Department of Transportation (DOT) Safety Towing Regulations**, before towing your generator.

- **ALWAYS** shutdown engine before transporting.
- Tighten both fuel tank caps securely.
- If generator is mounted on a trailer, make sure trailer complies with all local and state safety transportation laws. Follow the listed **Towing & Transporting Safety** guidelines for basic towing techniques.
- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating."
- **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. **Trailer tires should be inflated to 50 psi cold.** 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 chains to towing vehicle properly.
- **ALWAYS** make sure the vehicle and trailer directional, backup, brake, and trailer lights are connected and working properly.
- DOT Requirements include the following:
 - Connect and test electric brake operation.
 - Secure portable power cables in cable tray with tie wraps.

- The maximum speed for highway towing is **55 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **15 MPH** or less depending on type of terrain.
- Place **chock blocks** underneath wheel to prevent **rolling**, while parked.
- Use the trailer's swivel jack to adjust the trailer height to a level position while parked.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve towing.
- Avoid sharp turns.
- Trailer should be adjusted to a level position at all times when towing.
- Raise and lock trailer wheel stand in up position when transporting.
- The maximum speed for highway towing is **55 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **15 MPH** or less depending on type of terrain.
- Place **support blocks** underneath the trailer's bumper to prevent **tipping**, while parked.
- Avoid sharp turns to prevent rolling.
- **DO NOT** transport generator with fuel in tank.

Emergencies

- **ALWAYS** know the location of the nearest **fire extinguisher**.
- **ALWAYS** know the location of the nearest and **first aid kit**.
- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site**, in case of emergencies.
- **ALWAYS** have easy access to the phone numbers of the nearest **Ambulance, Doctor** and **Fire Department**. This information will be invaluable in the case of an emergency.



DCA-600SSV — GENERATOR DECALS

Machine Safety Decals

The DCA-600SSV generator is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. The illustrations below and on the preceding pages shows the decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.



P/N B9511100204

ALARM, OIL FILTER
S-4512

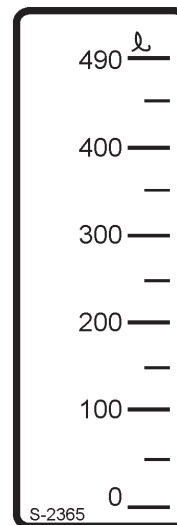
P/N0840655604

STOP BUTTON
S-878

P/N 0800686004



P/N 0966810000



P/N 0840607104

ニユナフ ノホフナヤ
FUEL INLET
S-1344

P/N 0800688404

ニユナフ マユヤフナヤ
FUEL OUTLET
S-1345

P/N 0800688504

CAUTIONS AGAINST OIL AND FUEL INFILTRATION!

Should oil or fuel infiltrate into the internal sound-absorbing materials, it will cause trouble.
Strictly observe the following to keep the machine interior constantly clean:

FUEL

Feed : Exercise care not to spill oil.

Air vent : Apply a piece of cloth or similar material to safegaurd against fuel infiltration.

Filter cleaning:

When detaching the filter for cleaning, apply a piece of cloth or similar material to prevent fuel from dripping.

Oil

Feed : Exercise care not to spill oil.

Filter cleaning:

When detaching the filter for cleaning, apply a piece of cloth or similar material to prevent oil from dripping.

Denyo Co., Ltd. S-544A

P/N 0800615102

Figure 2. Generator Decals

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.

B92110040

P/N B9521100404

ENGINE SPEED
S-4452

P/N 9039208704


HIGH

LOW
S-4451

P/N 9039208694

WHISPERWATT 600  **MQ POWER CORP.**
WHISPERWATT 600
600 KVA AC GENERATOR
MODEL DCA-600SSK
C56110090

TERMINAL COVER STOPPER



WHEN COVER IS CLOSE OR MOVING

WHEN COVER IS OPEN

S-4516

P/N 0840655704

COOLING WATER

Be sure to operate this machine with its radiator cap completely secured. Replace the cap with a new one when damaged or deformed.

S-961

P/N 0800689204

Precautions on handling the oil drain pump

(1) Handling procedures

Connect an oil-discharging hose to the the "OUT" side of the pump and turn on the battery switch. Remove the plug from the pump and feed priming oil. Then, turn on the pump main body switch and drain oil from the oil pan.

(2) Precautions

1. Operate the pump only after feeding a sufficient amount of priming oil; do not idle the pump. Use the priming oil of the same kind with that to be pumped up.
2. The rating of the pump is 25 minutes.
Do not operate the pump continuously over that value.
3. Always keep the main body switch OFF unless replacing oil.

S-2570

P/N 0840611903

Figure 2. Generator Decals

DCA-600SSV — GENERATOR DECALS



P/N 08006 89404

WATER • OIL CHECK AND F LL DA ILY
C05100040

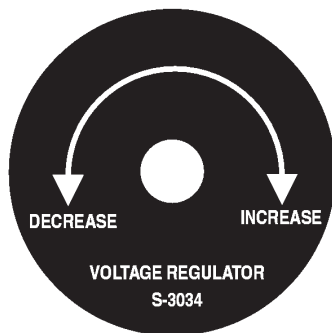
P/N C0551000404

PANEL LIGHT
SWITCH
S-3033

P/N 0840624604



P/N 08006 89504

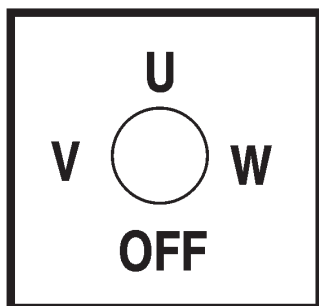


P/N 0840624804

BATTERY SWITCH

DON'T TURN THE SWITCH
OFF DURING OPERATION
C05100050

P/N C0551000704



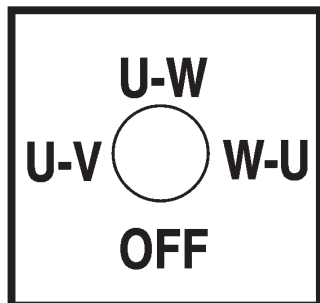
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PREHEAT LAMP
S-3036

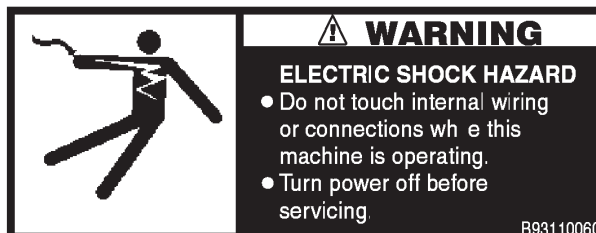
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CIRCUIT
BREAKER
S-3031

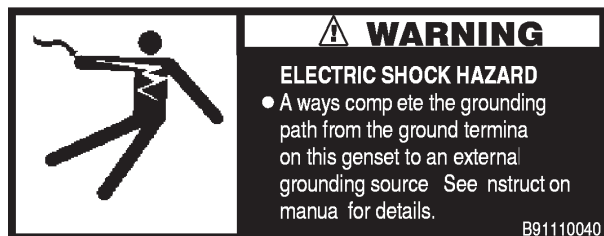
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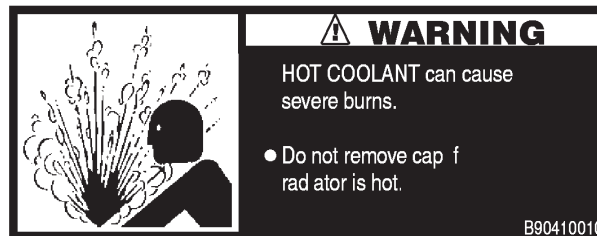
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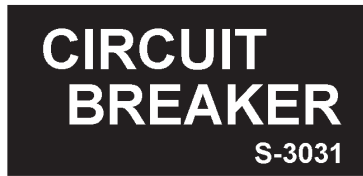
SUPPORT HOOK

Never use it for lifting the unit.
Use the LIFT HOOK on the roof for lifting.

S-2257

P/N 13206 21504

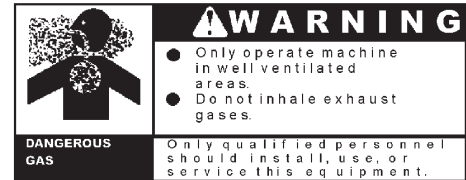
Figure 2. Generator Decals



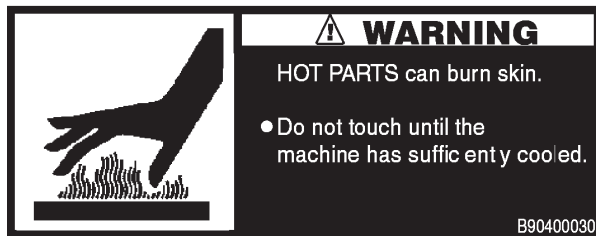
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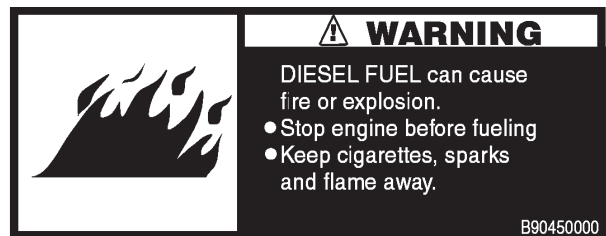
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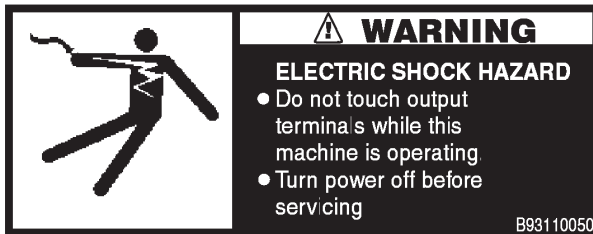
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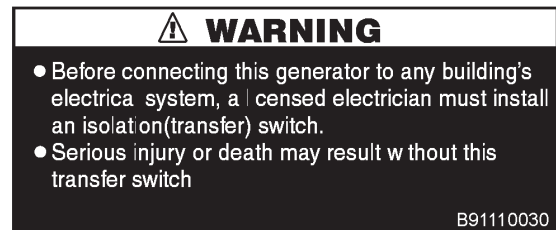
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P/N B9504500004



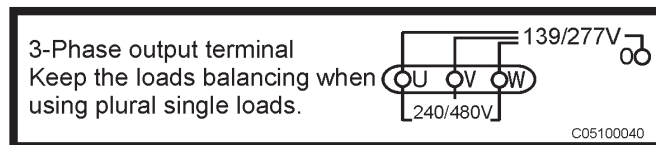
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P/N 6360620004

Figure 3. Generator Decals

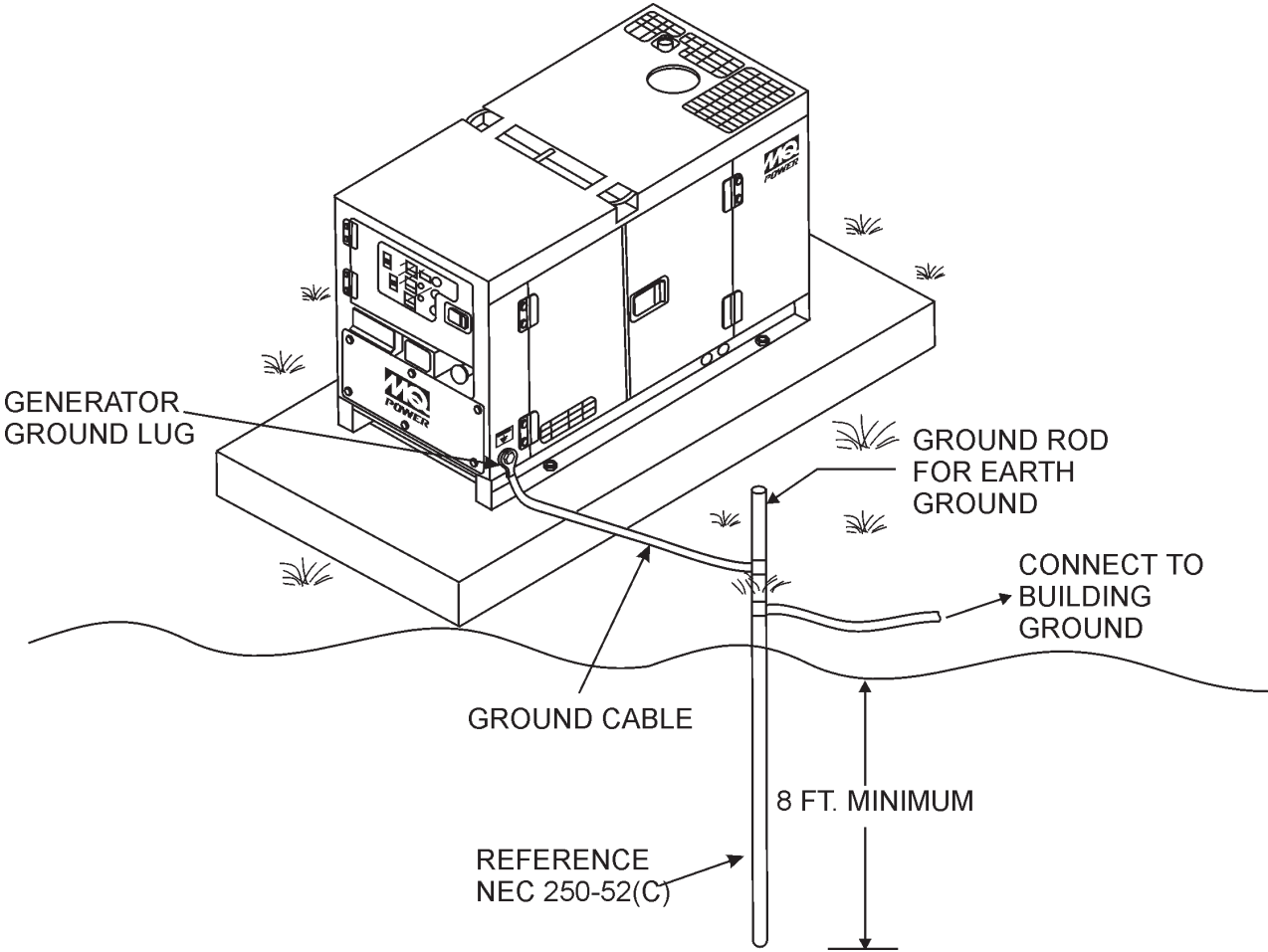


Figure 4. Typical Generator Grounding Application

Outdoor Installation

Install the generator in a area that is free of **debris**, **bystanders**, and **overhead obstructions**. Make sure 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 will result in deterioration of the insulation and will result in short circuits and grounding.

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

CAUTION - EXHAUST HAZARD

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.

Mounting

The generator must be mounted on a solid foundation (such as concrete) and set firmly on the foundation to isolate vibration of the generator when it is running. The generator must set at least 6 inches above the floor or grade level (in accordance to NFPA 110, Chapter 5-4.1). **DO NOT** remove the metal skids on the bottom of the generator. They are to resist damage to the bottom of the generator and to maintain alignment.

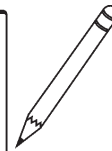
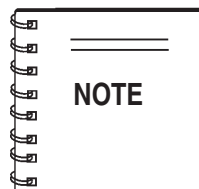
Generator Grounding

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 250-64(b) 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 4) 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.



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

DCA-600SSV Whisperwatt™ Series Familiarization

Generator

The MQ Power Model DCA-600SSV is a 528 kW **generator** (Figure 5) 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/Hour Meter Gauge
- Water Temperature Gauge / Water Temp. Alarm Lamp
- Oil Pressure Gauge / Oil Pressure Alarm Lamp
- Charging Alarm Lamp
- Fuel Level Gauge / Low Fuel Warning Alarm Lamp
- Pre-Heat Button / Pre-Heat Lamp
- Air Filter Alarm Lamp
- Engine Speed Switch
- Battery Switch
- Emergency Stop Button

Generator Control Panel

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

- Frequency Meter (Hz)
- AC Ammeter (Amps)
- AC Voltmeter (Volts)
- Ammeter Change-Over Switch
- Voltmeter Change-Over Switch
- Voltage Regulator
- Panel Light/Panel Light Switch
- 3-Pole, 1,600 amp Main Circuit Breaker
- Engine Control Unit (Computer Controlled)
- "Control Box" (Located Behind Gen. Control Panel)
 - Automatic Voltage Regulator
 - Current Transformer
 - Over-Current Relay
 - Voltage Rectifier
 - Starter Relay
 - Voltage Change-over Board

Output Terminal Panel

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

- Three 120/240V output receptacles (CS-6369), 50A
- Three auxilliary circuit breakers, 50A
- Two 120V output receptacles (GFCI), 20A
- Two GFCI circuit breakers, 20A
- Four output terminal boards (3Ø power)
- Ground terminal
- Battery Charger (Optional)
- Water Heater (Optional)

Open Delta Excitation System

The DCA-600SSV 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 connections of the open delta A, B, C and D. During steady state loads, the power from the voltage regulator is supplied from the parallel connections of A to B, A to D, and C to D. These three phases of the voltage input to the voltage regulator are then rectified and are the excitation current for the exciter section.

When a heavy load, such as a motor starting or a short circuit occurs, the automatic voltage regulator (AVR) switches the configuration of the open delta to the series connection of B to C. This has the effect of adding the voltages of each phase to provide higher excitation to the exciter section and thus better voltage response during the application of 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-600SSV** is powered by a 4 cycle, water cooled, turbocharged **VOLVO Model PENTA TAD1642GE Diesel Engine**. This engine is designed to meet every performance requirement for the generator. Reference Table 2 for engine specifications.

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

Electronic Governor System

The electric governor system controls the RPMs of the engine. When the engine demand increases or decreases, the governor system regulates the frequency variation to $\pm 0.25\%$.

Extension Cables

When electric power is to be provided to various tools or loads at some distance from the generator, extension cords are normally used. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generator and point of use (load) is held to a minimum. Use the cable selection chart (Table 6) as a guide for selecting proper extension cable size.

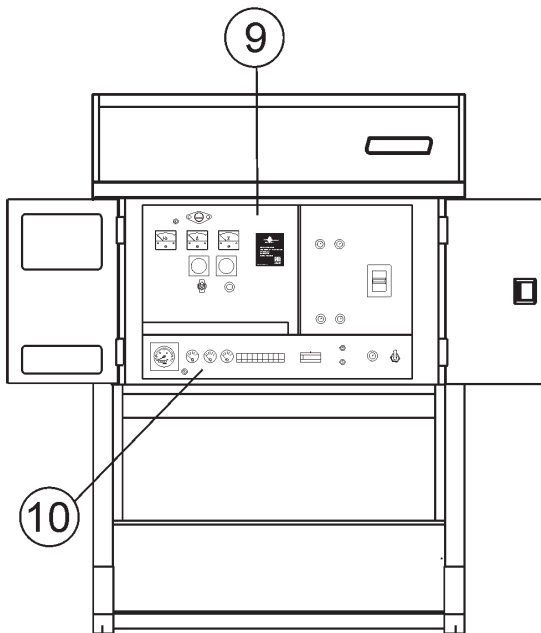
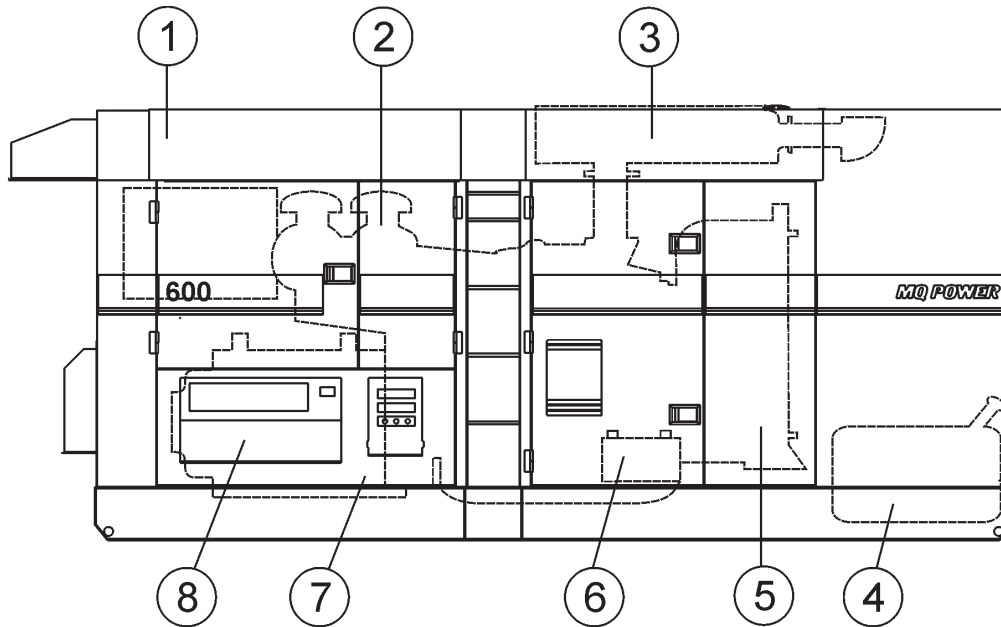


Table 4. Generator Major Components

ITEM NO.	DESCRIPTION
1	Enclosure Assembly
2	Air Cleaner Assembly
3	Muffler Assembly
4	Fuel Tank Assembly
5	Engine and Radiator Assembly
6	Battery Assembly
7	Generator Assembly
8	Output Terminal Assembly
9	Generator Control Panel Assembly
10	Engine Operating Panel Assembly

Figure 5. Major Components

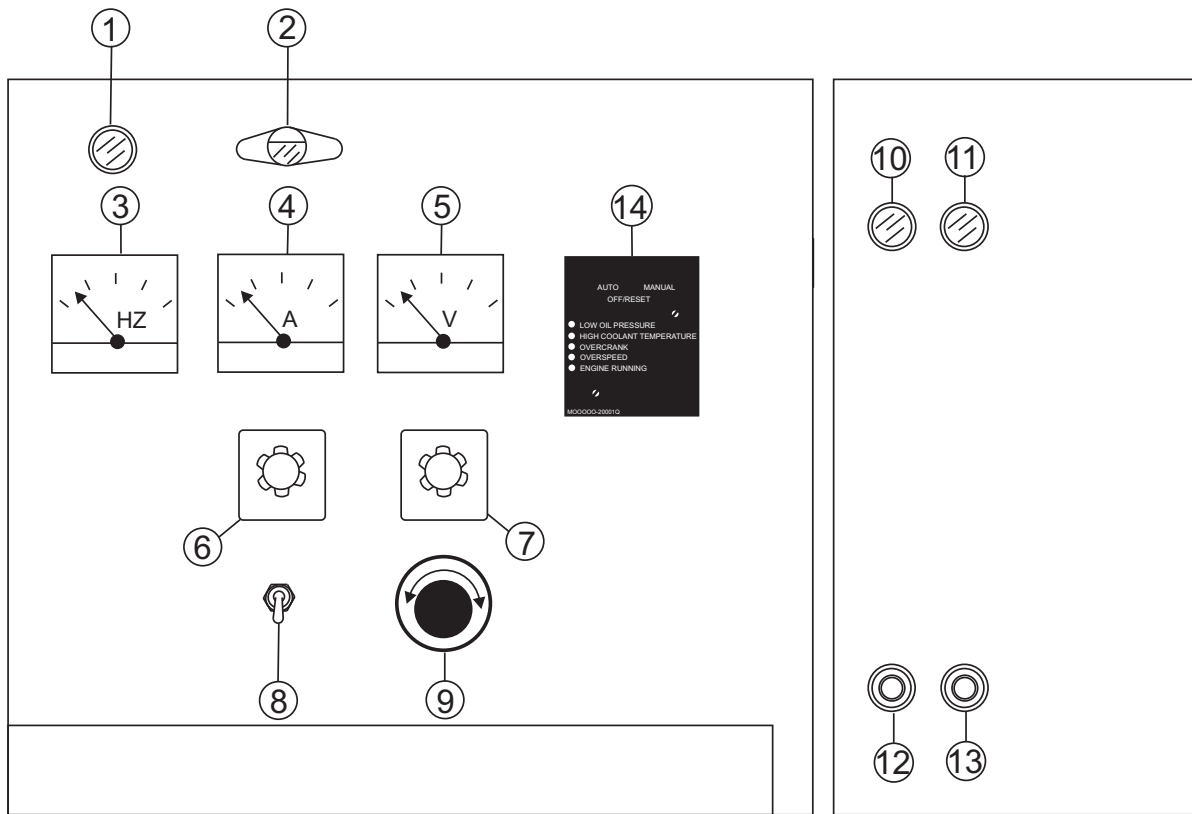


Figure 6. Generator Control Panel

The definitions below describe the controls and functions of the DCA-600SSV " **Control Panel** " (Figure 6).

1. **Pilot Lamp** – Indicates that the generator is working properly.
2. **Panel Light** – Normally used in dark areas or at night time. When activated, panel lights will illuminate. When lit this light will make it easier to read the meters and gauges. When the generator is not in use be sure to turn the panel light switch to the **OFF** position.
3. **Frequency Meter** – Indicates the output frequency in hertz (Hz). Normally 60 Hz \pm 1 Hz .
4. **AC Ammeter** – Indicates the amount of current the load is drawing from the generator.
5. **AC Voltmeter** – Indicates the single phase output voltage present at the **UVWO** terminals. .
6. **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.
7. **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
8. **Panel Light Switch** – When activated, this switch will turn on the luminate the control panel.
9. **Voltage Regulator Control** – Allows manual adjustment of the generator's output voltage

10. **Circuit Breaker OFF Lamp** – When the circuit breaker ON switch is placed in the OFF position this lamp will be turned OFF.
11. **Circuit Breaker ON Lamp** – When the circuit breaker ON switch is placed in the ON position this lamp will be turned ON.
12. **Circuit Breaker OFF Switch** – Press this switch to place the 1600 amp circuit breaker in the open (OFF) position.
13. **Circuit Breaker ON Switch** – Press this switch to place the 1600 amp circuit breaker in the closed (ON) position.
14. **Auto On/Off Engine Controller (MPEC)** – This controller has a vertical row of status LED's (inset), that when lit, indicates that an engine malfunction (fault) has been detected. When a fault has been detected the engine controller will evaluate the fault and all major faults will shutdown the generator. During **cranking cycle**, The MPEC will attempt to crank the engine for 10 seconds before disengaging.



During **cranking cycle**, The MPEC will attempt to crank the engine for 10 seconds before disengaging. If the engine does not engage (start) by the third attempt, the engine will be shutdown by the engine controller's "Over Crank Protection" mode. If the engine engages at a speed (RPM's) that is not safe, the controller will shutdown the engine by initializing the "**Over Speed Protection**" mode.

Also the MPEC will shutdown the generator in the event of low oil pressure, high coolant temperature, low coolant level, and loss of magnetic pickup. These conditions can be observed by monitoring the LED status indicators on the front of the MPEC module.

- A. **Off/Manual/Auto Switch** – This switch controls the running of the generator. If this switch is left in the "OFF" position, the generator will not run. When this switch is set to the **manual** position, the generator will start immediately.

If the generator is to be connected to a building's AC power source via an automatic transfer switch (isolation), place the switch in the **AUTO** position. In this position, should an outage occur, the automatic transfer switch (ATS) will start the generator automatically via the generator's auto-start contacts connected to the ATS's start contacts. Please refer to your ATS installation manual for further instructions for the correct installation of the auto-start contacts of the generator to the ATS.

- B. **Low Oil Pressure** – Indicates the engine pressure has fallen below 15 psi. The oil pressure is detected using variable resistive values from the oil pressure sending unit. This is considered a **major** fault and will shut down the generator.
- C. **High Coolant Temperature** – Indicates the engine temperature has exceeded 215°F. The engine temperature is detected using variable resistive values from the temperature sending unit. This is considered a **major** fault and will shut down the generator.
- D. **Overcrank Shutdown** – Indicates the unit has attempted to be started a pre-programmed number of times, and has failed to start. The number of cycles and duration are programmable. Typical programmable start settings is 3 cycles with a 10 second duration. This is considered a **major** fault and will shut down the generator.
- E. **Overspeed Shutdown** – Indicates that the engine is running at an unsafe speed. This is considered a **major** fault.
- F. **Engine Running** – Indicates that engine is running at a safe operating speed.

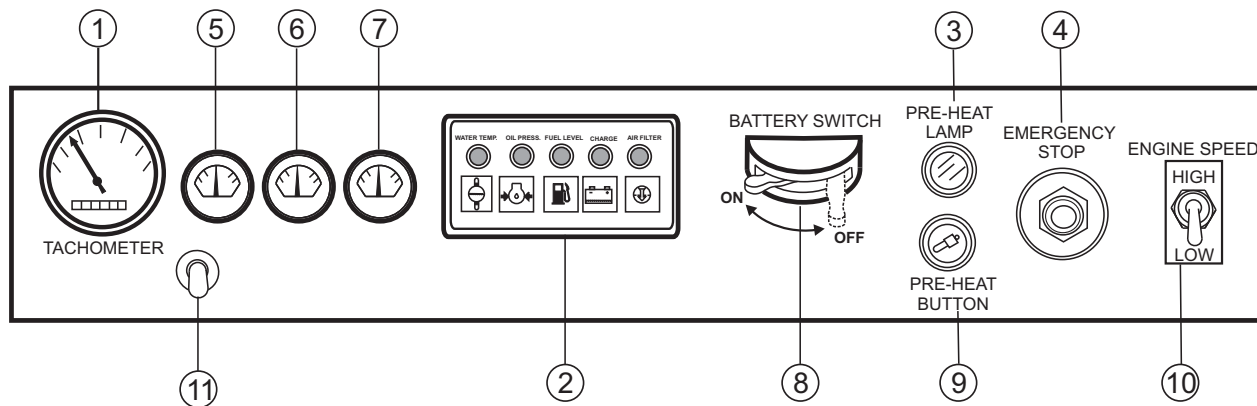


Figure 7. Engine Operating Panels

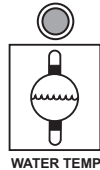
DCA-600SSV — ENGINE OPERATING PANEL

The definitions below describe the controls and functions of the DCA-600SSV " **Engine Operating Panels** " (Figure 7).

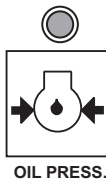
1. **Tachometer** – Indicates engine speed in RPM's for 60 Hz operation. This meter should indicate 1800 RPM's when the rated load is applied. In addition a built in hour meter will record the number of operational hours that the generator has been in use.

2. **Engine Warning Display (LED) Module** – This module display's the following engine failures:

A. **Overheat Lamp** – This lamp goes ON when the cooling water temperature rises abnormally. If the lamp goes ON during normal operation of the generator, the emergency shutdown device will stop the engine automatically.



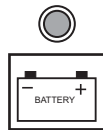
B. **Low Oil Pressure Lamp** – During normal operation of the generator this lamp should remain **OFF**. When the Auto-OFF/Reset-Manual switch is set to the "Manual" position to start the engine, the lamp will illuminate. After the oil pressure rises after start-up the lamp will go **OFF**. If this lamp is ever illuminated (ON) during normal operation of the generator, the emergency shutdown device will stop the engine automatically.



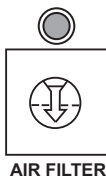
C. **Low Fuel Level Lamp** – When this lamp is **ON**, it is time to stop the engine and add fuel. Remember to let the engine cool before adding fuel.



D. **Charge Lamp** – This lamp goes **ON** when the electrical charging system is not working properly.



E. **Clogged Air Filter Lamp** – This lamp goes **ON** when the air filter is clogged. If this lamp goes **ON** during normal operation of the generator, stop the engine and replace the air filter.



3. **Pre-Heat Lamp** – Indicates that the glow plugs of the diesel engine are hot and the engine is ready to be started.

4. **Emergency Stop Button** – Push this button inward to stop the engine in the event of an emergency. **DO NOT** use this button as a normal means of stopping the engine.

5. **Oil Pressure Gauge** – During normal operation this gauge be should read in the "GREEN" zone. When starting the generator the oil pressure mar read a little bit higher, but after the engine warms up the oil pressure should return to the green zone.

6. **Water Temperature Gauge** – During normal operation this gauge be should read in the "GREEN" zone.

7. **Fuel Level Gauge** – Indicates amount of diesel fuel remaining.

8. **Battery Switch** – This switch should be set to the **ON** position during normal operation. When the engine has been stop, place this switch in the **OFF** position. **DO NOT** turn this switch during normal operation, it could cause damage to the electrical equipment.

9. **Preheat Switch** – Press on to heat glow plugs in cold weather conditions.

10. **Engine Speed Switch** – This switch changes the engine speed from idle to normal.

11. **Hour Meter Switch** - Press this pushbutton switch to activate hour meter. Indicates the number hours equipment has been in operational use.

DCA-600SSV — OUTPUT TERMINAL FAMILIARIZATION

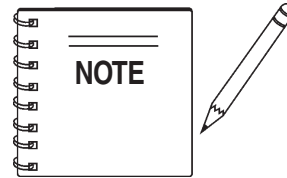
Output Terminal Familiarization

The “**Output Terminal Panel**” (Figure 8) is provided with the following:

- Three 240/139V output receptacles, 50 amp
- Three AUX. circuit breakers 240V @50 amps
- Two 120V GFCI receptacles, 20 amp
- Two (2) GFCI circuit breakers 120V@ 20 amps
- Eight (16) output terminal lugs

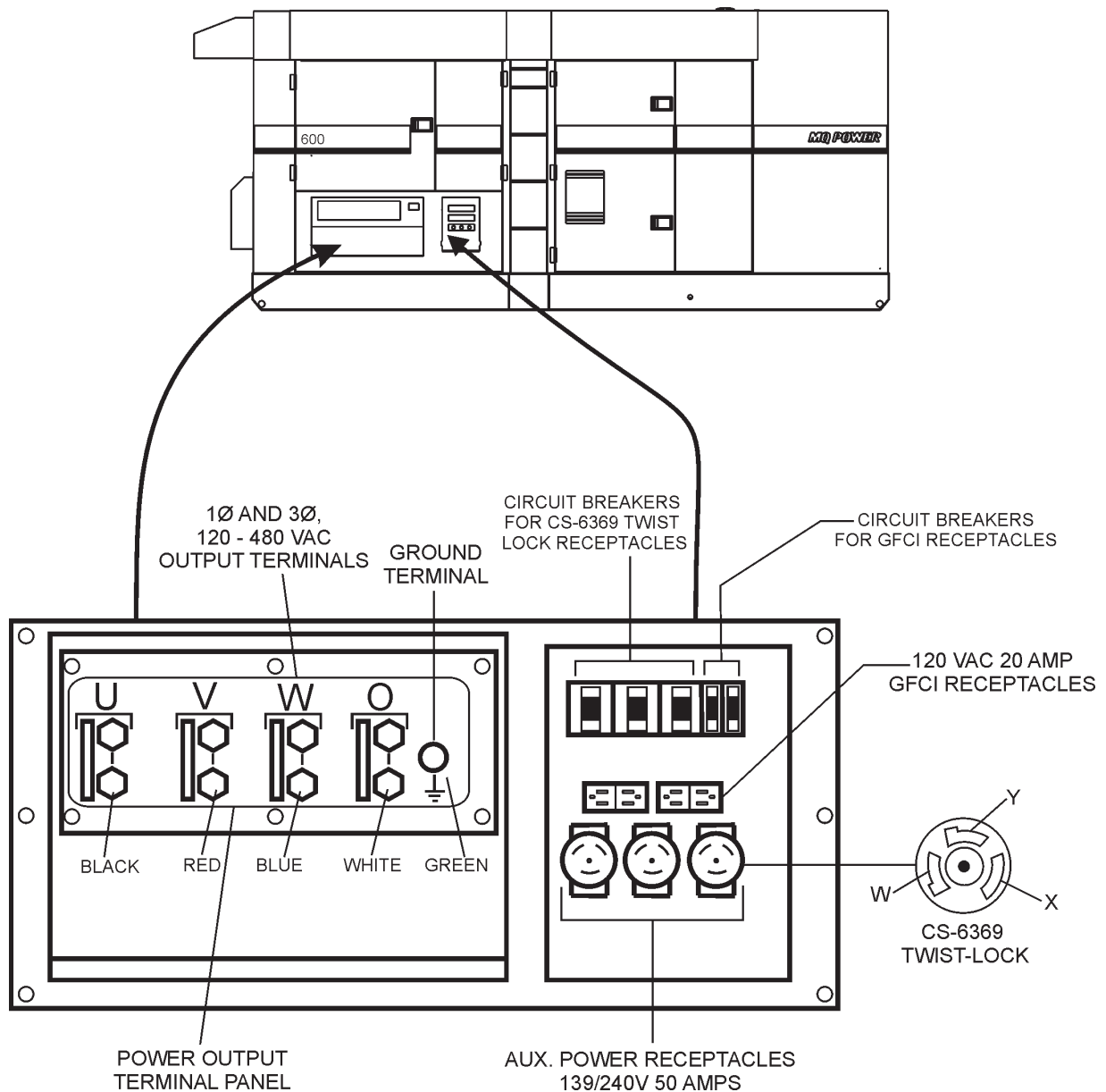
Output Terminal Panel

Shown below (Figure 8) is the **Output Terminal Panel**, lift up on the cover to gain access to receptacles and terminal lugs.



Terminal legs "O" and "Ground" are considered *bonded grounds*.

Figure 8. Output Terminal Panel



DCA-600SSV — OUTPUT TERMINAL PANEL FAMILIARIZATION

120 VAC GFCI Receptacles

There are two 120 VAC, 20 amp GFCI (Duplex Nema 5-20R) receptacles provided on the output terminal panel. These receptacles can be accessed in **any voltage change-over board** position. Each receptacle is protected by a 20 amp circuit breaker. These breakers are located directly above the GFCI receptacles. Remember the load output (current) of both GFCI receptacles is dependent on the load requirements of the UVWO terminals.

Pressing the **reset** button resets the GFCI receptacle after being tripped. Pressing the "**Test Button**" (See Figure 9) in the center of the receptacle will check the GFCI function. Both receptacles should be tested at least once a month.

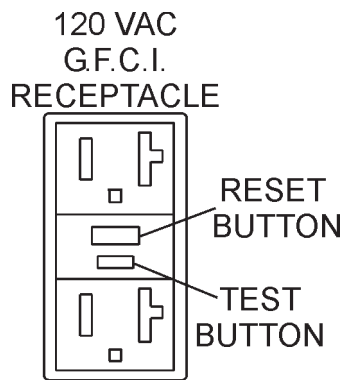


Figure 9 G.F.C.I. Receptacle

Twist Lock Dual Voltage 240/139 VAC Receptacles

There are three 240/139 VAC, 50 amp auxiliary twist-lock (CS-6369) receptacles (Figure 10) provided on the output terminal panel. These receptacles can be accessed in **any voltage change-over board** position.

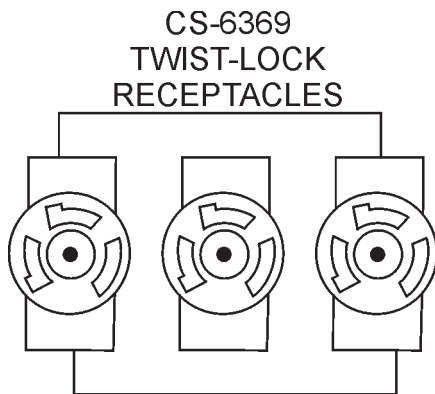


Figure 10. 240/139 VAC Twist-Lock Auxiliary Receptacles

Each auxiliary receptacle is protected by a 50 amp circuit breaker. These breakers are located directly above the GFCI receptacles. Remember the load output (current) on all three receptacles is dependent on the load requirements of the UVWO terminals.

Turn the **voltage regulator control knob** (Figure 11) on the control panel to obtain the desired voltage. Turning the knob clockwise will **increase** the voltage, turning the knob counter-clockwise will **decrease** the voltage.



Figure 11. Voltage Regulator Control Knob

DCA-600SSV — OUTPUT TERMINAL PANEL FAMILIARIZATION

Connecting Loads

Loads can be connected to the generator by the **UVWO** terminal lugs or the convenience receptacles. (See Figure 12). Make sure to read the operation manual before attempting to connect a load to the generator.

To protect the UVWO output terminals from overload, a 3-pole, 1,600 amp, **main** circuit breaker is provided. Make sure to switch **ALL** circuit breakers to the "OFF" position prior to starting the engine.

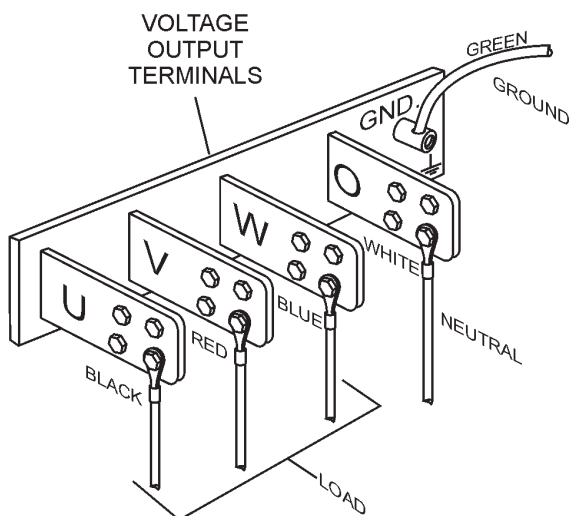
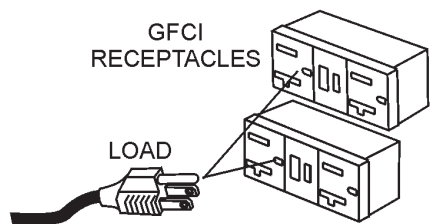
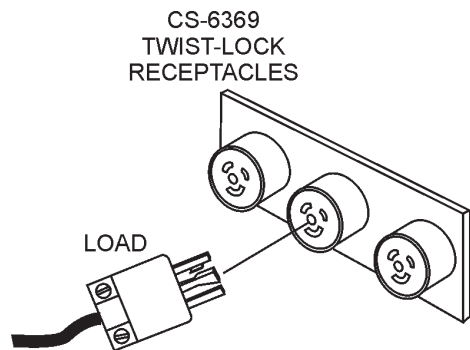


Figure 12. Connecting Loads

Over Current Relay

An **over current relay** (Figure 13) is connected to the main circuit breaker. In the event of an overload, both the circuit breaker and the over current relay may trip. If the circuit breaker can not be reset, the **reset button** on the over current relay must be pressed. The over current relay is located in the control box.

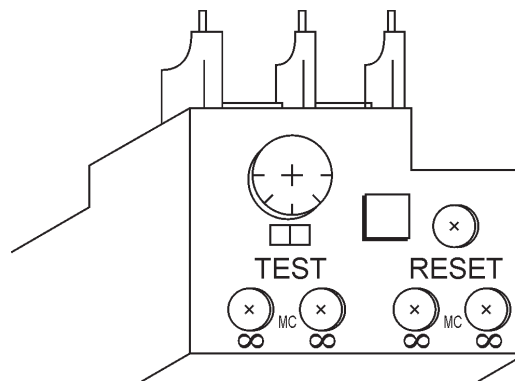


Figure 13. Over Current Relay

Maximum Power Output (KW)

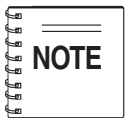
The entire load connected to the UVWO output terminal lugs, duplex and auxiliary receptacles must not exceed 528 kW in standby or 480 kW in prime output.

DCA-600SSV—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.



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

The power factor of this generator is 0.8. See Table 5 below when connecting loads.

Table 5. 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

Table 6. Cable Selection (60 Hz, Single Phase Operation)

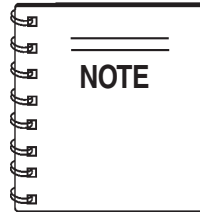
Current in Amperes	Load In Watts		Maximum Allowable Cable Length			
	At 120 Volts	At 240 Volts	#10 Wire	#12 Wire	#14 Wire	#16 Wire
2.5	300	600	1000 ft.	600 ft.	375 ft.	250 ft.
5	600	1200	500 ft.	300 ft.	200 ft.	125 ft.
7.5	900	1800	350 ft.	200 ft.	125 ft.	100 ft.
10	1200	2400	250 ft.	150 ft.	100 ft.	
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.

Three Phase Load

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

$$KVA = \frac{VOLTAGE \times AMPERAGE \times 1.732}{1000}$$



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. See Table 5.

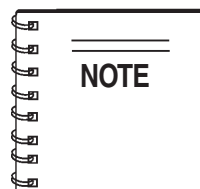
- When connecting a resistance load such as an incandescent lamp or electric heater, a capacity of up to the generating set's rated output (kW) can be used.
- When connecting a fluorescent or mercury lamp, a capacity of up to the generating set's rated output (kW) multiplied by 0.6 can be used.
- When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

When connecting ordinary power tools, a capacity of up to the generating set's rated output (kW) multiplied by 0.8 can be used.



DANGER - ELECTRICAL SYSTEM HAZARDS

Before connecting this generator to any building's electrical system, a **licensed electrician** must install an **isolation (transfer) switch**. Serious damage to the building's electrical system may occur without this transfer switch.



If 3Ø load (kVA) is not given on the equipment nameplate, approximate 3Ø load output may be determined by multiplying voltage by amperage by 1.732.

DCA-600SSV — GENERATOR OUTPUTS

Generator Output Voltages

A wide range of voltages are available to supply voltage for many different applications. Voltages are selected by applying jumpers (6) to the **voltage change-over board** (Figure 15). To obtain some of the voltages as listed in Table 7 (see below) will require a fine adjustment using the **voltage regulator** (VR) **control knob** located on the control panel.

Voltage Change-Over Board

The **voltage change-over board** (Figure 14) is located on the control box, behind the generator control panel. This board has been provided for ease of voltage selection.

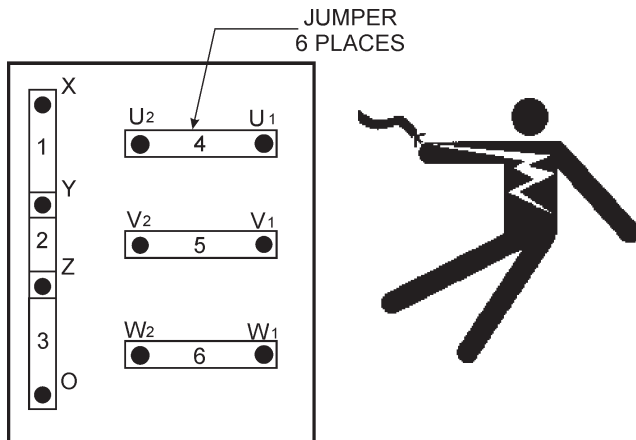


Figure 14. Voltage Change-Over Board
240V Configuration

Maximum Amps

Table 8 shows the **maximum** amps the generator can provide. **DO NOT** exceed the maximum amps as listed.

Table 8. Maximum Amps	
Model:	DCA600SSV
Rated Voltage	Maximum Amps
Single Phase 120 Volt	1333.3 amps (4 wire)
Single Phase 240 Volt	666.7 amps (4 wire)
Three Phase 240 Volt	1443.4 amps
Three Phase 480 Volt	721.7 amps

⚠ DANGER - CHANGING JUMPER PLATES

NEVER attempt to place jumper plates on the voltage change-over board while the generator is in operation. There exists the possibility of electrocution, electrical shock or burn, which can cause severe bodily harm or even death!

Table 7. Generator Available Voltages

Three-Phase	208V	220V	240V	416V	440V	480V
Single-Phase	120V	127V	139V	240V	254V	277V

DCA-600SSV — GENERATOR OUTPUTS/GAUGE READING

How to Read the AC Ammeter and AC Voltage Gauges.

The AC ammeter and AC voltmeter gauges are controlled by the AC ammeter and AC voltmeter change-over switches.

Both of these switches are located on the generator control panel and **DO NOT** effect the generator output. They are provided to help observe how much power is being supplied, produced at the UVWO terminals lugs.

Before taking a reading from either gauge, configure the voltage change-over board which produces the desired output voltage. When the voltage change-over board is jumpered for 3Ø, 240V operation (See Figure 15).

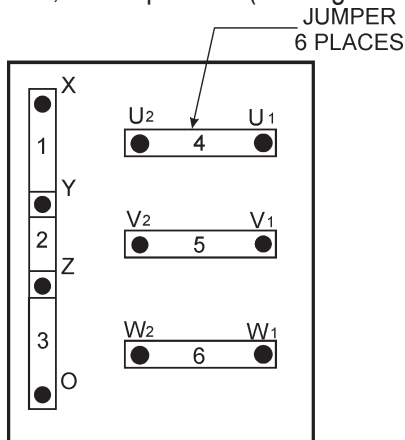


Figure 15. Voltage Change-Over Board
240V/3Ø Configuration

AC Voltmeter Gauge Reading

Place the **AC Voltmeter Change-Over Switch** (Figure 16) in the W-U position and observe the phase to phase voltage reading between the W and U terminals as indicated in the **AC Voltmeter Gauge** (Figure 17).

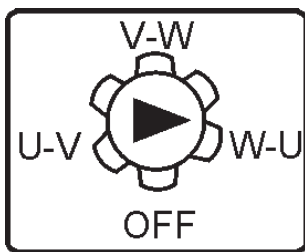


Figure 16. AC Voltmeter
Change-Over Switch

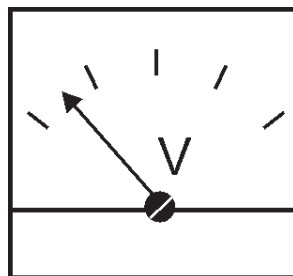


Figure 17 AC Voltmeter
Gauge
(Volt reading on W-U Lug)

AC Ammeter Gauge Reading

Place the **AC Ammeter Change-Over Switch** (Figure 18) in the U position and observe the current reading (load drain) on the U terminal as indicated in the **AC Ammeter Gauge** (Figure 19). This process can be repeated for terminals V and W.

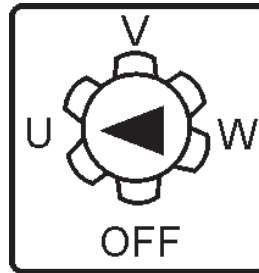


Figure 18. AC Ammeter
Change-Over Switch

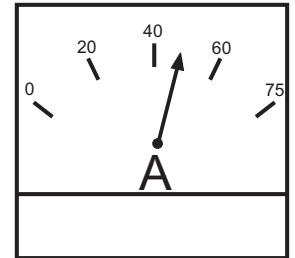
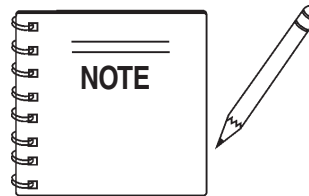


Figure 19. AC Ammeter
(Amp reading on U lug)



The **ammeter** and **voltmeter** gauges will only show a reading when the **Output Terminal Lugs** are connected to a load and in use.

DCA-600SSV — OUTPUT TERMINAL PANEL CONNECTIONS

UVWO Terminal Output Voltages

Various output voltages can be obtained using the UVWO output terminal lugs. The voltages at the terminals are dependent on the placement of the jumpers plates (6) on the **Voltage Change-Over Board** and the adjustment of the **Voltage Regulator Control Knob**.

Remember the voltage change-over board determines the **range** of the output voltage and can be configured in two different positions that provide 6 different output voltages at the UVWO output terminals. The generator is shipped from the factory in the 240V configuration. The voltage regulator (VR) allows the user to increase or decrease the selected voltage.

3Ø-240V UVWO Terminal Output Voltages

1. Jumper the voltage change-over board for 240V operation as shown in Figure 20.

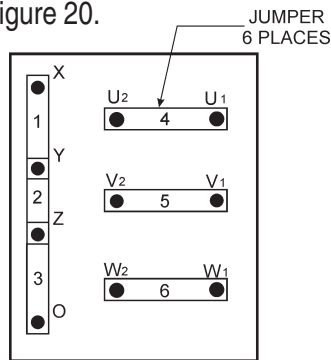


Figure 20. Voltage Change-Over Board 240V Configuration

2. Connect the load wires to the UVWO terminals as shown in Figure 21.

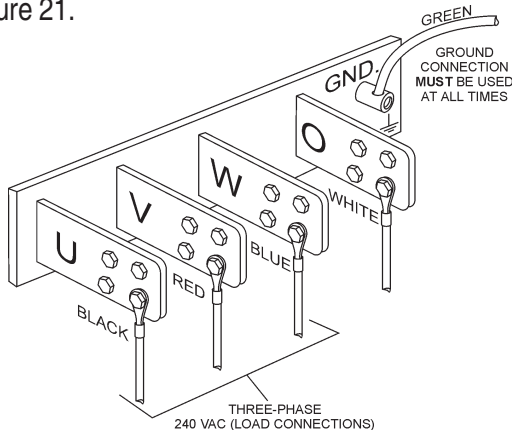


Figure 21. UVWO Terminal Lugs 3Ø-240V Connections

3. Turn the voltage regulator knob (Figure 23) clockwise to increase voltage output, turn counterclockwise to decrease voltage output. Use voltage regulator adjustment knob whenever fine tuning of the output voltage is required

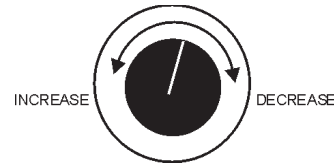


Figure 22. Voltage Regulator Knob

1Ø-240V UVWO Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 240V operation as shown in Figure 20 .
2. Connect the load wires to the UVWO terminals as shown in Figure 23.

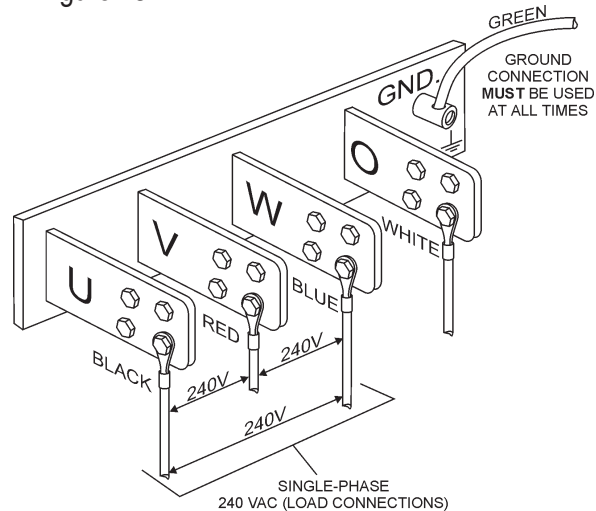


Figure 23. UVWO Terminal Lugs 1Ø-240V Connections

1Ø-139V UVWO Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 240V operation as shown in Figure 20.
2. Connect the load wires to the UVWO terminals as shown in Figure 24.

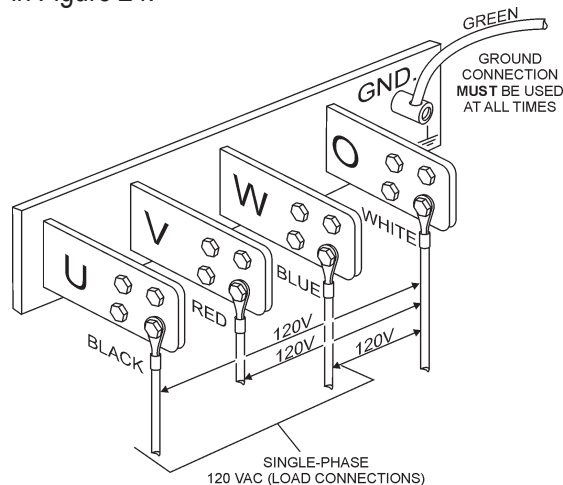


Figure 24. UVWO Terminal Lugs 1Ø-120V Connections

DCA-600SSV — OUTPUT TERMINAL PANEL CONNECTIONS

3Ø-480V UVW Terminal Output Voltages

1. Jumper the voltage change-over board for 480V operation as shown in Figure 25. This configuration uses 6 jumper plates in 3 different positions. Remember there are 2 jumper plates at every position. Every jumper plate **must** be used.

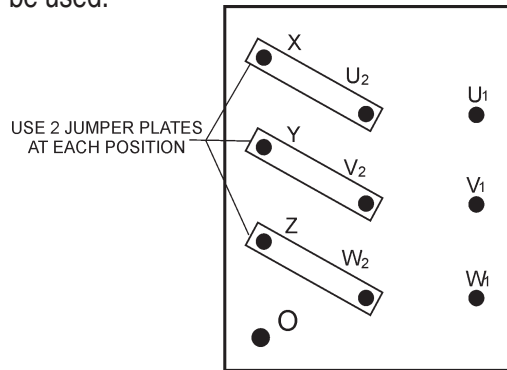


Figure 265 Voltage Change-Over Board 480V Configuration

2. Connect the load wires to the UVW terminals as shown in Figure 26.

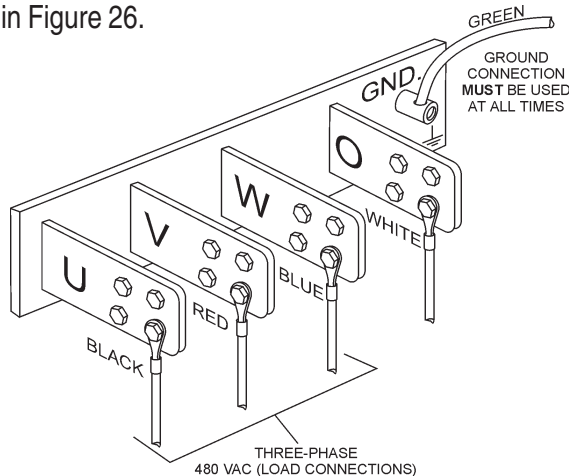
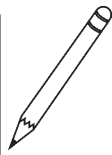
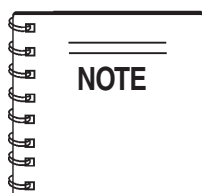


Figure 26. UVW Terminal Lugs 3Ø-480V Connections



ALWAYS make sure that the connections to the UVW terminals are **secure** and **tight**. The possibility of arcing exists, that could cause a fire.

1Ø-480V UVW Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 480V operation as shown in Figure 25.
2. Connect the load wires to the UVW terminals as shown in Figure 27.

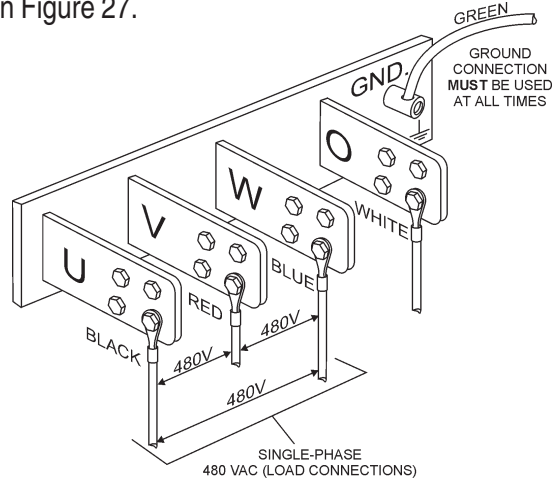


Figure 27. UVW Terminal Lugs 1Ø-480V Connections

1Ø-277V UVW Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 480V operation as shown in Figure 25.
2. Connect the load wires to the UVW terminals as shown in Figure 28.

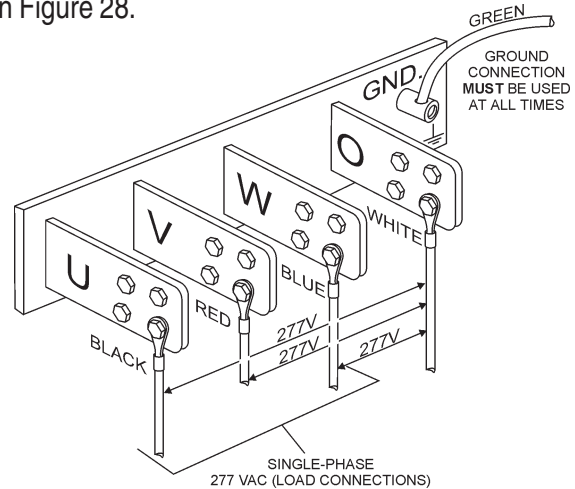


Figure 28. UVW Terminal Lugs 1Ø-277V Connections

! DANGER - UVW OUTPUT TERMINALS

NEVER attempt to connect a load to the **UVW** output terminals while the generator is operating. The possibility exists of serious injury, electrical shock, electrocution even death.



Circuit Breakers

To protect the generator from an overload, a 3-pole, 1600 amp, **main** circuit breaker is provided to protect the UVWO 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 auxiliary receptacles from overload. Make sure to switch **ALL** circuit breakers to the "OFF" position prior to starting the engine.

Lubrication Oil

Fill the engine crankcase with lubricating oil through the filler hole, but **DO NOT** overfill. Make sure the generator is level. Also verify that the oil level is maintained between the two notches (Figure 29) on the dipstick. See Table 9 for proper selection of engine oil.

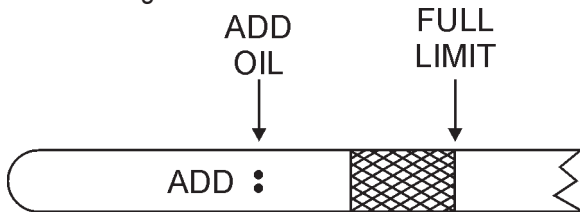


Figure 29. Engine Oil Dipstick

When checking the engine oil, be sure to check if the oil is clean. 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 **Volvo Engine Owner's Manual**. Oil should be warm before draining.

Other types of motor oils may be substituted if they meet the following requirements:

- API Service Classification CH-4
- API Service Classification CG-4
- API Service Classification CF-4
- ACEA Specification E3
- ACEA Specification E2

Table 9. Recommended Motor Oil

Temperature Range	Type Oil
14°F ~ 50°F (-10°C ~ 10°C)	SAE 10W
32°F and above (0°C and above)	SAE30 or SAE 10W-30

Fuel Check

! DANGER - EXPLOSION/FIRE HAZARDS

Fuel spillage on a **hot** engine can cause a **fire** or **explosion**. If fuel spillage occurs, wipe up the spilled fuel completely to prevent fire hazards. **NEVER** smoke around or near the generator.



REFILLING THE FUEL SYSTEM

! CAUTION - REFUELING THE GENERATOR

ONLY properly trained personnel who have read and understand this section should refill the fuel tank system.

The DCA600SSV series generators may (if equipped with a trailer or skid) have a **double fuel tank system** (Figure 30), which consists of an **internal** generator fuel tank, and a **trailer mounted** fuel tank. It is also possible the generator can be equipped with a **skid mounted** fuel tank (Figure 32). The skid type fuel system does not use the internal generator fuel tank.

Use the instructions in this section that applies to your type of fuel tank system.

ALWAYS fill the fuel tank with clean and fresh **#2 diesel fuel**. **DO NOT** fill the fuel tanks beyond their capacities.

Pay attention to the fuel tank capacity when replenishing fuel. 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.

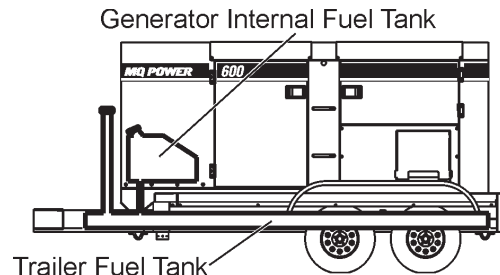


Figure 30. Double Fuel Tank System

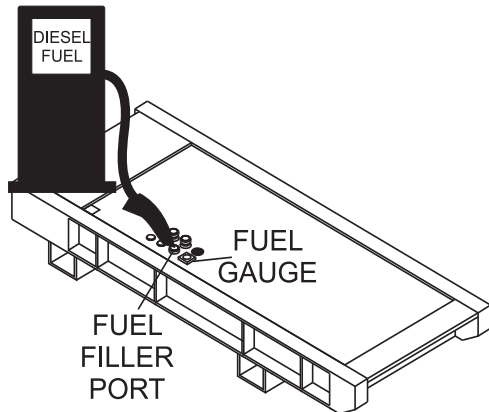


Figure 31. Skid Type Fuel Tank System

Refueling Procedure:

! WARNING - RESPIRATORY HAZARDS

Diesel fuel and its vapors are dangerous to your health and the surrounding environment. Avoid skin contact and/or inhaling fumes.

- Level Tanks** – make sure fuel cells are level with the ground. Failure to do so will cause fuel to spill from the tank before reaching full capacity. See Figure 32.

! CAUTION - REFUELING THE GENERATOR

ALWAYS place trailer on firm level ground before refueling to prevent spilling and maximize the amount of fuel that can be pumped into the tank.

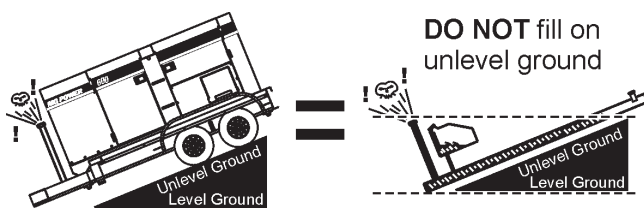


Figure 32. Only Fill on Level Ground

- Trailer Fuel Tank First** – The trailer fuel tank is the primary fuel tank and holds a larger capacity of fuel. The fuel in the trailer will be filtered and sent to the engine. **ALWAYS** fill trailer fuel tank (Figure 33) first.

! CAUTION - TRAILER FUEL TANK

ALWAYS! fill trailer tank *first* with #2 diesel fuel, before filling secondary internal tank.

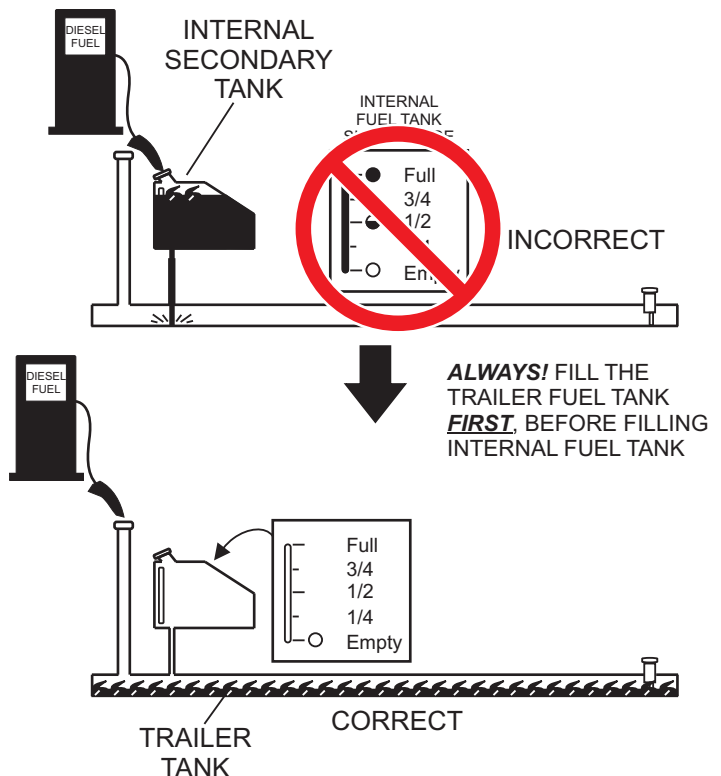


Figure 33. Fuel Tank Filling Order

NOTE **ONLY!** use #2 diesel fuel when refueling.

NOTE Fuel from the secondary inner tank will eventually drain into the primary trailer tank.

3. **NEVER overfill trailer fuel tank** – It is important to read the trailer fuel gauge when filling trailer fuel tank. **DO NOT** wait for fuel to rise in filler neck. See Figure 34.

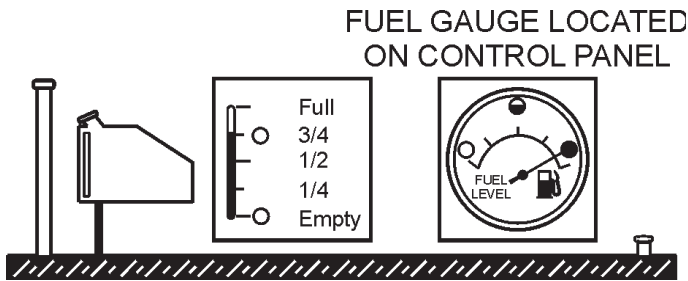


Figure 34. Full Trailer Tank

5. Figure 36 below reflects a full fuel system.

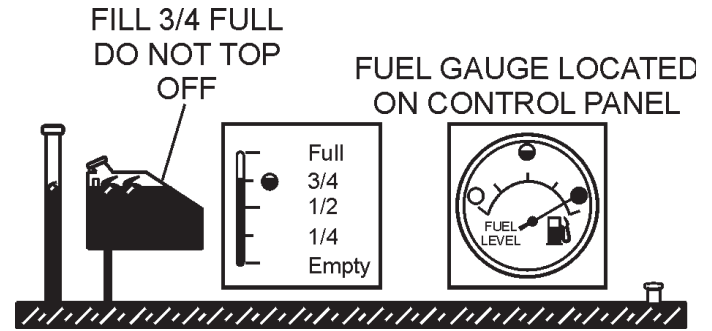


Figure 36. Full Fuel System

CAUTION - REFUELING THE GENERATOR

DO NOT OVER-FILL fuel system. Leave room for fuel expansion. Fuel expands when heated (Figure 36).

6. Fuel from the engine return line will drain into the secondary internal fuel tank. This fuel will eventually drain into the primary trailer tank in order to return to the engine.

CAUTION - REFUELING SECONDARY FUEL TANK

It is recommended to only fill the internal secondary tank to 3/4 full in order to allow for fuel return, fuel expansion, and to avoid spillage. See Figure 37 for fuel expansion.

4. Once the trailer tank is full, the **secondary inner tank** can be filled (See Figure 35). Notice how the trailer filler tube level rises when the internal tank is filled.

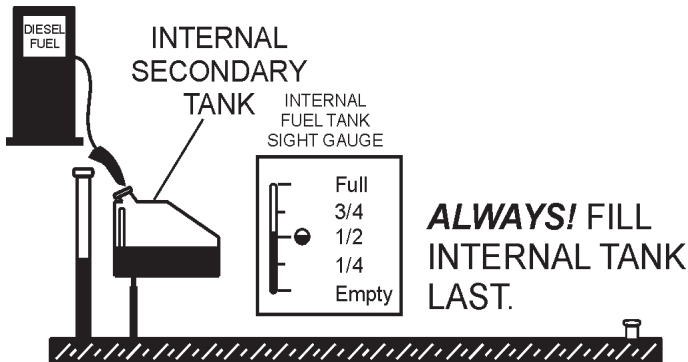


Figure 35. Filling Secondary Internal Fuel Tank

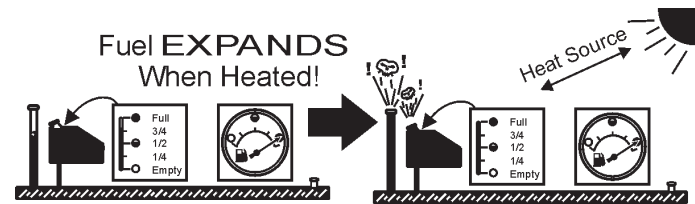


Figure 37. Fuel Expansion


Coolant (Ethylene Glycol [Green] / Water — 50/50 mix)

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.

! WARNING - BURN HAZARDS

If adding coolant/antifreeze mix to the radiator, **DO NOT** remove the radiator cap until the unit has completely cooled. The possibility of **hot!** coolant exists which can cause severe burns.



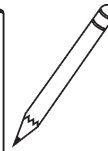
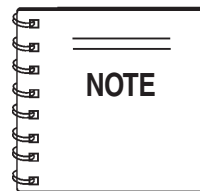
Day-to-day addition of coolant is done from the recovery tank. When adding coolant to the radiator, **DO NOT** remove the radiator cap until the unit has completely cooled. See Table 10 for engine and radiator, coolant capacities. Make sure the coolant level in the recovery tank is always between the "H" and the "L" markings.

Table 10. Coolant Capacity	
Engine and Radiator	24.6 Gal. (93.0 Liters)
Reserve Tank	2 Quarts (1.9 Liters)

Operation Freezing Weather

When operating in freezing weather, be certain the proper amount of antifreeze (Table 11) has been added.

Table 11. 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



When the antifreeze is mixed with water, the antifreeze 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 **negative** battery terminal disconnected.

Air Cleaner

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

The fan belt tension is proper if the fan belt bends 10 to 15 mm (Figure 38) when depressed with the thumb as shown below.

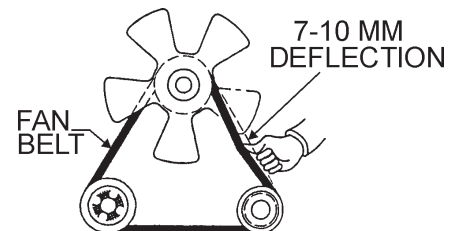
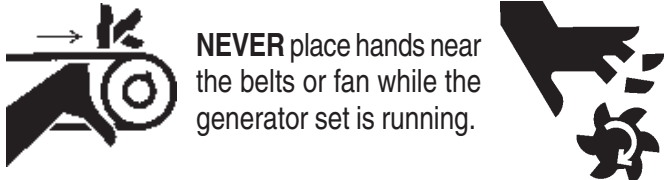


Figure 38. Fan Belt Tension

! CAUTION - ROTATING PARTS

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 are not properly maintained. Add only distilled water when replenishment is necessary.

DO NOT over fill. 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 an approved battery terminal treatment compound. Replace battery with only recommended type battery.

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 that the battery is dead and needs to be recharged or replaced.

Battery Cable Installation

ALWAYS be sure the battery cables (Figure 39) 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.

! CAUTION - BATTERY SERVICING SAFETY

ALWAYS disconnect the negative terminal **FIRST** and reconnect negative terminal **LAST**.

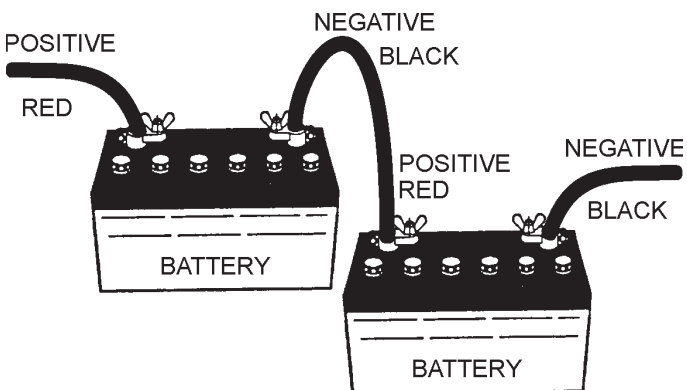
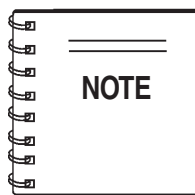


Figure 39. Battery Connections

When connecting battery do the following:

1. **NEVER** connect the battery cables to the battery terminals when the **ignition** switch is in either the **Pre-Heat, RUN, or START** position. **ALWAYS** make sure that the ignition switch is in the **STOP** position when connecting the battery.
2. Place a small amount of battery terminal treatment compound around both battery terminals. This will ensure a good connection and will help prevent corrosion around the battery terminals.



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.

! CAUTION - BATTERY SERVICING SAFETY

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

Alternator

The polarity of the alternator is negative grounding type. When an inverted circuit connection takes place, the circuit will be in short circuit instantaneously resulting the alternator failure.

DO NOT put water directly on the alternator. Entry of water into the alternator leads an electrolyte corrosion causing an alternator failure.

Before charging the battery with an external electric source, be sure to disconnect the battery cables.

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**.

DCA-600SSV — GEN. START-UP PROCEDURE (MANUAL)

BEFORE STARTING

CAUTION - LETHAL EXHAUST HAZARD

The engine's exhaust contains harmful emissions. **ALWAYS have adequate ventilation when operating.** Direct exhaust away from nearby personnel.

If applicable perform the following:

- Apply commercial power to the internal battery charger receptacle (to ensure good starting) via commercial power. An external power cord will be required. This capability is an **option**.
- Apply commercial power to the jacket water heater receptacle (not necessary for warm climates) via commercial power. An external power cord will be required. This capability is an **option**.

Generator and Control Panel

WARNING - STARTING THE GENERATOR

NEVER! manually start the engine with the **main**, **GFCI** or **auxiliary** circuit breakers in the **ON** (closed) position.

1. Press the **main** circuit breaker "OFF" switch (Figure 40).

MAIN CIRCUIT
BREAKER
OFF SWITCH

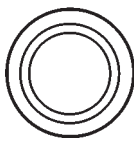


Figure 40. Main Circuit Breaker OFF Switch

2. Verify that the **main** circuit breaker "OFF" lamp (Figure 41) is lit (ON).

MAIN CIRCUIT
BREAKER
OFF LAMP



Figure 41. Main Circuit Breaker OFF Lamp

3. Place the **G.F.C.I.** and **aux.** circuit breakers (Figure 42) in the "OFF" position prior to starting the engine.

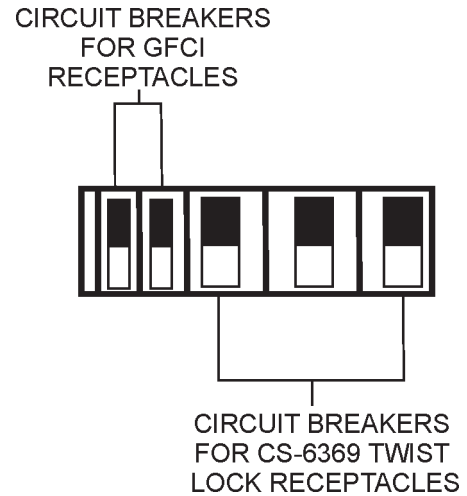


Figure 42. GFCI and Auxiliary Circuit Breakers (OFF)

4. Connect the load to the **UVWO** terminals or **auxiliary receptacles** as shown in Figure 43. These load connection points can be found on the output terminal panel. To gain access to the UVWO terminals or other power receptacles, unlock the access cover and lift the door.
5. Tighten the UVWO terminal nuts securely to prevent load wires from slipping out.

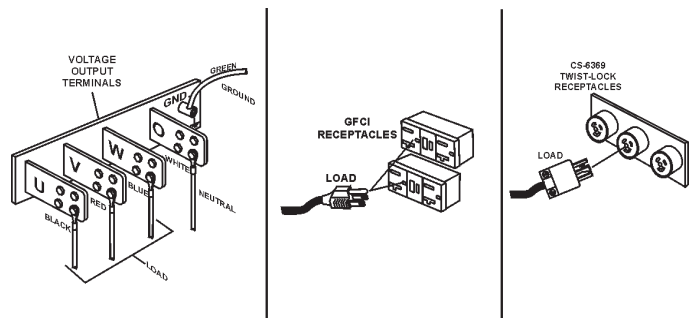
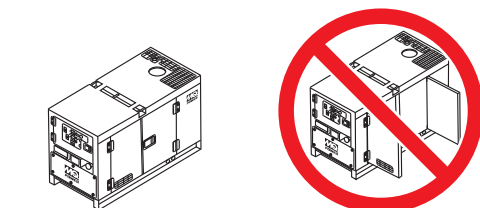


Figure 43. Load Connections

6. Close all engine enclosure doors (Figure 44).



CORRECT INCORRECT

Figure 44. Engine Enclosure Doors

DCA-600SSV— GENERATOR START-UP PROCEDURE (MANUAL)

7. Set the **battery ON/OFF switch** (Figure 45) to the “ON” position.

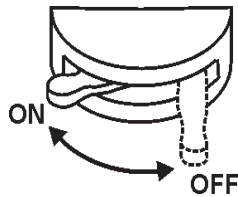


Figure 45. Battery ON/OFF Switch

8. Press and hold the engine preheat button (Figure 46) until the preheat lamp is lit (ON).

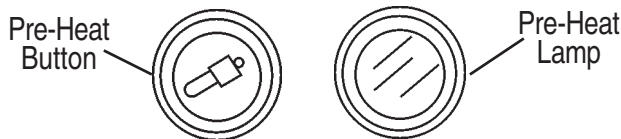


Figure 46. Pre-Heat Button/ Lamp

9. Place the engine speed switch in the “LOW” position (Figure 47).

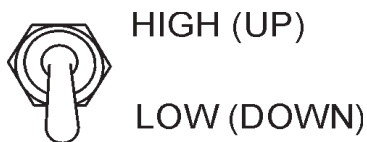


Figure 47. Engine Speed Switch (Low)

10. Place the Auto-Off/Reset-Manual switch in the “Manual” position to start the engine (Figure 48). Once the engine starts, let the engine run for 1-2 minutes. Listen for any abnormal noises.



Figure 48. Auto-Off/Reset-Manual Switch

11. Once the engine is warm and the engine is running properly, place the engine speed switch in the “HIGH” position (Figure 49).

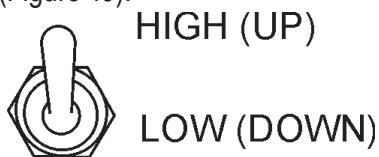


Figure 49. Engine Speed Switch (High)

12. Verify that the “Engine Running” status LED on the MPEC unit (Figure 50) is “ON” (lit) after the engine has been started.



Figure 50. Engine Running LED (ON)

13. The generator's frequency meter (Figure 51) should be displaying the 60 cycle output frequency in HERTZ.

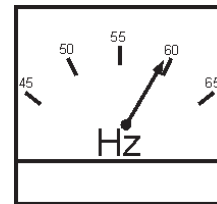


Figure 51. Frequency Meter (Hz)

14. The generator's AC-voltmeter (Figure 52) will display the generator's output in VOLTS.

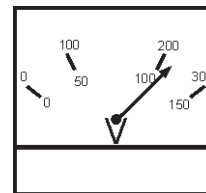


Figure 52. AC Voltmeter

15. If the voltage is not within the specified tolerance, use the voltage adjustment control knob (Figure 53) to increase or decrease the desired voltage.



Figure 53. Voltage Adjust Control Knob

DCA-600SSV— GENERATOR START-UP PROCEDURE (MANUAL)

16. The ammeter (Figure 54) will indicate zero amps with no load applied. When a load is applied, the ammeter will indicate the amount of current that the load is drawing from the generator.

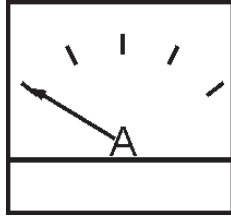


Figure 54. Ammeter (No Load)

17. The engine oil pressure gauge (Figure 55) will indicate the oil pressure (kg/cm²) of the engine. Under normal operating conditions the oil pressure is approximately



Figure 55. Oil Pressure Gauge

18. The **coolant temperature gauge** (Figure 56) will indicate the coolant temperature. Under normal operating conditions the coolant temperature should be between 167 and 203 degrees Fahrenheit (**Green Zone**).

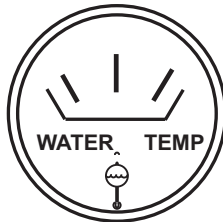


Figure 56. Coolant Temperature Gauge

19. The **tachometer gauge** (Figure 57) will indicate the speed of the engine when the generator is operating. Under normal operating conditions this speed is approximately 1800 RPM's.

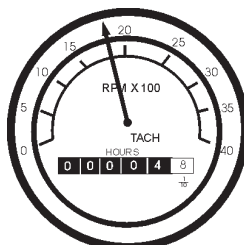


Figure 57. Engine Tachometer Gauge

20. Press the **main** circuit breaker “ON” switch (Figure 58).

MAIN CIRCUIT
BREAKER
ON SWITCH



Figure 58. Main Circuit Breaker ON Switch

21. Verify that the **main** circuit breaker “ON” lamp (Figure 59) is lit (**ON**).

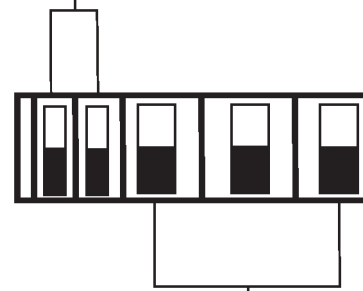
MAIN CIRCUIT
BREAKER
ON LAMP



Figure 59. Main Circuit Breaker ON Lamp

22. Place the **G.F.C.I.** and **aux.** circuit breakers (Figure 60) in the “OFF” position prior to starting the engine.

CIRCUIT BREAKERS
FOR GFCI
RECEPTACLES



CIRCUIT BREAKERS
FOR CS-6369 TWIST
LOCK RECEPTACLES

Figure 60. GFCI and Auxiliary Circuit Breakers (ON)

DCA-600SSV — GENERATOR START-UP PROCEDURE (AUTO MODE)

23. Observe the generator's ammeter (Figure 61) and verify it reads the anticipated amount of current with respect to the load. The ammeter will only display a current reading if a load is in use.

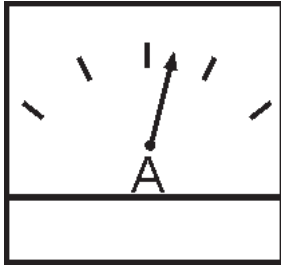


Figure 61. Ammeter (Load)

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

! DANGER - ELECTRICAL SYSTEM HAZARDS

Before connecting this generator to any building's electrical system, a **licensed electrician** must install an **isolation (transfer) switch**. Serious damage to the building's electrical system may occur without this transfer switch.



! CAUTION - BACKUP GENERATOR USE

When connecting the generator to a isolation (transfer) switch, **ALWAYS** have power applied to the generator's internal battery charger. This will ensure that the engine will not fail due to a dead battery.

! WARNING - AUTO MODE MAINTENANCE

When running the generator in the **AUTO** mode, remember the generator can start up at any time without warning. **NEVER** attempt to perform any maintenance when the generator is in the auto mode.

! CAUTION - ENGINE SPEED SWITCH

The **Engine Speed Switch** must be set to the "**High**" position when running in the **Auto-Start** mode. Failing to set the switch in the proper position can result in damage to your generator when it turns on.

When starting generator in **AUTO** mode use the "**Manual Start-up**" procedure except where noted (see below).

1. Perform steps 1 through 4 in the **Before Starting** section (page 38) as outlined in the **Manual Starting Procedure**.
2. Set the **battery ON/OFF switch** (Figure 62) to the "ON" position.

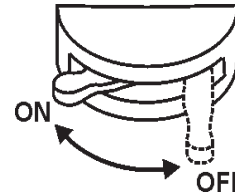
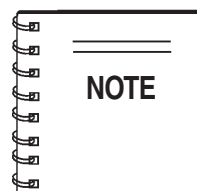


Figure 62. Battery ON/OFF Switch



When the generator is set in the "**AUTO**" mode, the generator will **automatically start** in the event of commercial power falling below a prescribed level by means of a contact closure that is generated automatically by a transfer switch.

3. Set the engine speed switch (Figure 63) to the "**High**" position.



Figure 63. Engine Speed Switch (High)

4. Place the Off/Manual/Auto switch (Figure 64) on the MPEC unit to the **AUTO** position.



Figure 64. Off/Manual Auto Switch (AUTO)

5. Press the circuit breaker **ON Switch** (Figure 58).
6. Verify that the circuit breaker on lamp (Figure 59) is lit.
7. Continue operating the generator as outlined in the **Manual Start-up** procedure (start at step 10).

DCA-600SSV — GENERATOR SHUT-DOWN PROCEDURE

! WARNING - SHUTTING DOWN THE GENERATOR

NEVER stop the engine suddenly except in an emergency.

Normal Shutdown Procedure

To shutdown the generator use the following procedure:

1. Place both the **GFCI** and **AUX** circuit breakers as shown in Figure 42 to the **OFF** position.
2. Place the engine speed switch (Figure 65) in the **“LOW”** (down) position.



Figure 65. Engine Speed Switch (Low)

3. Let the engine cool by running it at low speed for 3-5 minutes with no load applied.
4. Place the **MPEC Control Switch** (Figure 66) in the **OFF/RESET** position.



Figure 66. MPEC Control Switch (Off/Reset)

5. Press the **main** circuit breaker **“OFF”** switch (Figure 40).
6. Verify that the **main** circuit breaker **“OFF”** lamp (Figure 41) is lit (**ON**).
7. Verify that the **all** status LED on the MPEC display are **OFF** (not lit).
8. Remove all loads from the generator.
9. Inspect entire generator for any damage or loosening of components that may have occurred during operation.

Emergency Shutdown Procedure

1. **PUSH** inward the emergency stop button located on the **engine operating panel** (Figure 67) to turn off the generator in the event of an emergency.



Figure 67. Emergency Stop Button

TABLE 14. 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		
	Check Fuel Filter/Water Separator Bowl	X			
	Clean Unit, Inside and Outside		X		
	Change Fuel Filter			X	
	Clean Radiator and Check Coolant Protection Level*2			X	
	Replace Air Filter Element * 3			X	
	Check all Hoses and Clamps * 4				X
	Clean Inside of Fuel Tank				X
GENERATOR	Measure Insulation Resistance Over 3M ohms		X		
	Check Rotor Rear Support Bearing			X	

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

*2 Add "Supplemental Coolant Additives (SCA'S)" to recharge the engine coolant.

*3 Replace primary air filter element when restriction indicator shows a vacuum of 625 mm (25 in. H₂O).

*4 If blowby hose needs to be replaced, ensure that the slope of the blowby hose is at least a 1/2 inch per foot, with no sags or dips that could collect moisture and/or oil.

General Inspection

Prior to each use, the generator should be cleaned and inspected for deficiencies. Check for loose, missing or damaged nuts, bolts or other fasteners. Also check for fuel, oil, and coolant leaks. Use Table 14 as a general maintenance guideline **Engine Side** (Refer to the Engine Instruction Manual)

Air Cleaner

Every 250 hours: Remove air cleaner element (Figure 68) and clean the heavy duty paper element with light spray of compressed air. Replace the air cleaner as needed.

Air Cleaner with Dust Indicator

This indicator (Figure 65) is attached to the air cleaner. When the air cleaner element is clogged, air intake restriction becomes greater and the dust indicator signal shows **RED** meaning the element needs changing or service. After changing the air element, press the dust indicator button to reset the indicator.

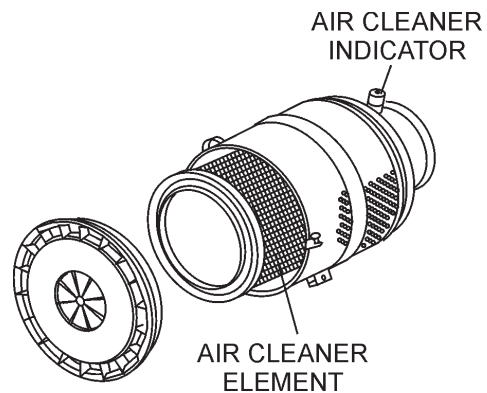
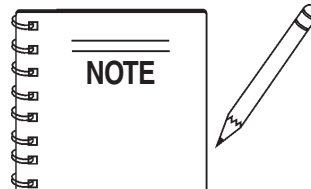


Figure 68. Air Cleaner/Indicator



The air filter should not be changed until the indicator reads "**RED**". Dispose of old air filter it may not be cleaned or reused.

Service Daily

If the engine is operating in very **dusty** or **dry grass** conditions, a clogged air cleaner will result. This can lead to a loss of power, excessive carbon buildup in the combustion chamber and high fuel consumption. Change air cleaner more **frequently** if these conditions exist.

Fuel Addition

Add diesel fuel (the grade may vary according to season and locations).

Removing Water from the Fuel Tank

After prolonged use, water and other impurities accumulate in the bottom of the tank. Occasionally inspect the fuel tank for water contamination and drain the contents if required.

During cold weather, the more empty volume inside the tank, the easier it is for water to condense. This can be reduced by keeping the tank full with diesel fuel.

Cleaning Inside the Fuel Tank

Drain the fuel inside the fuel tank completely. Using a spray washer (Figure 69) wash out any deposits or debris that have accumulated inside the fuel tank.

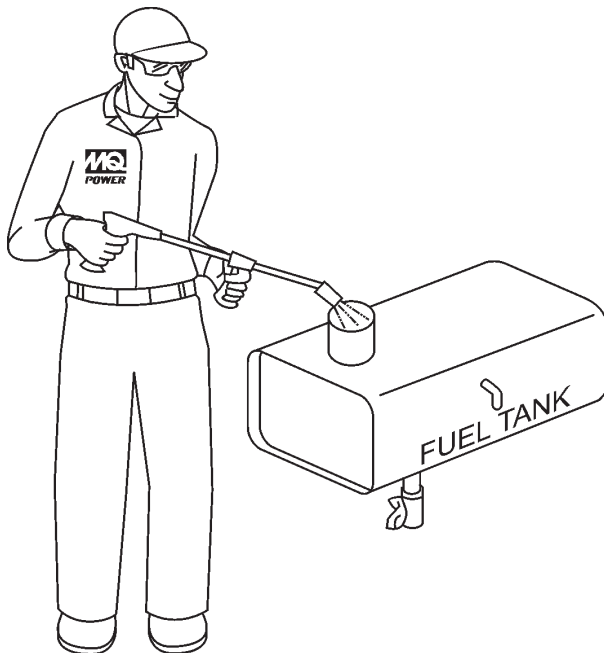


Figure 69. Fuel Tank Cleaning

Fuel Tank Inspection

In addition to cleaning the fuel tank, the following components should be inspected for wear:

- **Rubber Suspension** – look for signs of wear or deformity due to contact with oil. Replace the rubber suspension if necessary.
- **Fuel Hoses** – inspect nylon and rubber hoses for signs of wear, deterioration and hardening.
- **Fuel Tank Lining** – inspect the fuel tank lining for signs of excessive amounts of oil or other foreign matter.

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.

Replacing Fuel Filter

- Replace the fuel filter cartridge with new one every 500 hours or so.
- Loosen the drain plug at the lower top of the fuel filter. Drain the fuel in the fuel body together with the mixed water. **DO NOT** spill the fuel during disassembly.
- Vent any air

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. See the **VOLVO Engine Manual** for details.

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

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 Figure 29.

Replacing Oil Filter

- Remove the old oil filter.
- Apply a film of oil to the gasket on the new oil filter.
- Install the new oil filter.
- After the oil cartridge has been replaced, the engine oil will drop slightly. Run the engine for a while and check for leaks before adding more oil if needed. Clean excessive oil from engine.

Flushing Out Radiator and Replacing Coolant

- Open both cocks located at the crankcase side and at the lower part of the radiator and drain coolant. Open the radiator cap while draining. Remove the overflow tank and drain.
- Check hoses for softening and kinks. Check clamps for signs of leakage.
- Tighten both cocks and replace the overflow tank.
- Replace with coolant as recommended by the engine manufacturer.
- Close radiator cap tightly.
- Flush the radiator by running clean tap water through radiator until signs of rust and dirt are removed. **DO NOT** clean radiator core with any objects, such as a screwdriver.

! WARNING - BURN HAZARDS

Allow engine to **cool** when flushing out radiator. Flushing the radiator while hot could cause serious burns from water or steam.



Radiator Cleaning

- The radiator (Figure 70) should be sprayed (cleaned) with a high pressure washer when excessive amounts of dirt and debris have accumulated on the cooling fins or tube. When using a high pressure washer, stand at least 5 feet (1.5 meters) away from the radiator to prevent damage to the fins and tube.

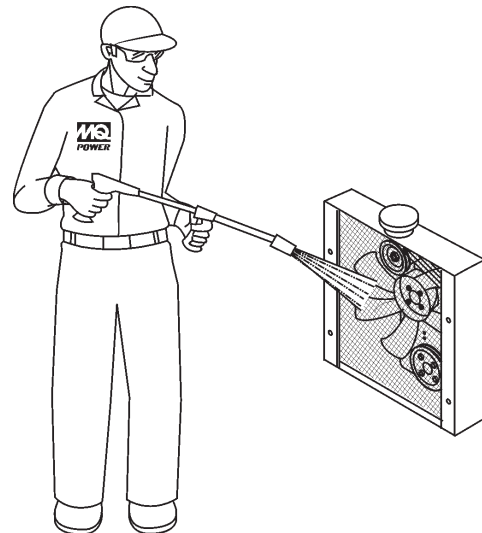


Figure 70. Air Cleaner/Indicator

Generator Storage

For long term storage of the generator the following is recommended:

- Fill the fuel tank completely. Treat with a fuel stabilizer if necessary.
- Completely drain the oil from the crankcase and refill if necessary with fresh oil.
- Clean the entire generator, internal and external.
- Cover the generating set and store in a clean, dry place.
- Disconnect the battery.
- Make sure engine coolant is at proper level.
- If generator is mounted on a trailer, jack trailer up and place on blocks so tires do not touch the ground or block and completely remove the tires.

Jacket Water Heater and Internal Battery Charger 120 VAC Input Receptacles (OPTIONAL)

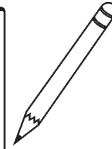
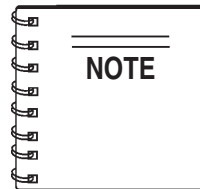
This generator can be optionally equipped with two 120 VAC, 20 amp input receptacles located on the output terminal panel.

The purpose of these receptacles is to provide power via commercial power to the *jacket water heater* and *internal battery charger*.

These receptacles will **ONLY** function when commercial power has been supplied to them (Figure 71). To apply commercial power to these receptacles, a power cord of adequate size will be required (See Table 6).

When using the generator in *hot* climates there is no reason to apply power to jacket water heater. However, if the generator will be used in *cold* climates it is always a good idea to apply power to the jacket water heater at all times. To apply power to the jacket water heater simply apply power to the jacket water heater receptacle via commercial power using an power cord of adequate size.

If the generator will be used daily, the battery should normally not require charging. If the generator will be idle (not used) for long periods of time, apply power to the battery charger receptacle via commercial power using an power cord of adequate size.



To ensure adequate starting capability, **always** have power applied to the generator's *internal battery charger*.

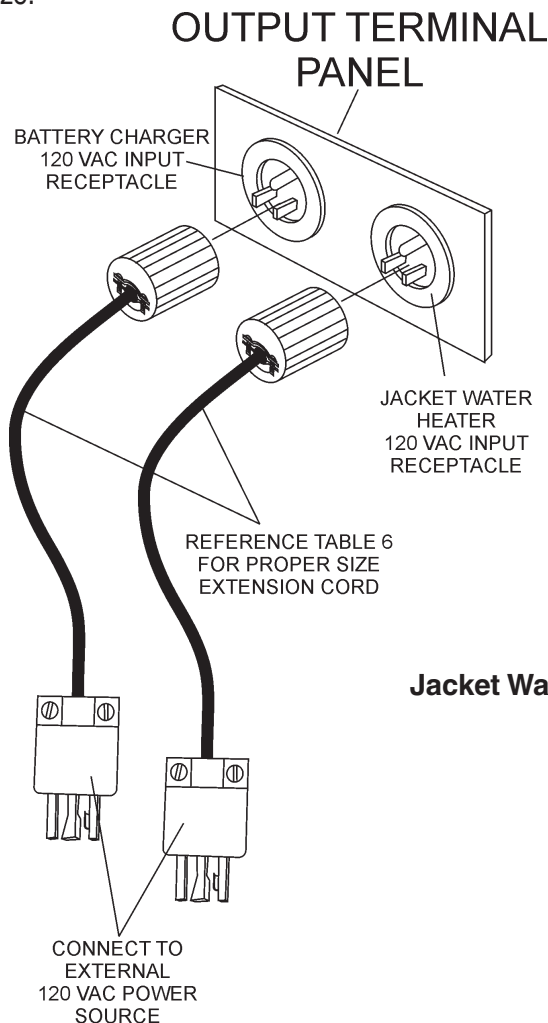


Figure 71. Battery Charger & Jacket Water Heater Power Connections

DCA-600SSV —TRAILER BRAKES MAINTENANCE

Electric Brakes

Electrically actuated brakes (Figure 72) are similar to hydraulic brakes. The basic difference is that hydraulic brakes are actuated by an electromagnet. Listed below are some of the advantages that electric brakes have over hydraulic brakes:

- Brake system can be manually adjusted to provide the corrected braking capability for varying road and load conditions.
- Brake system can be modulated to provide more or less braking force, thus easing the brake load on the towing vehicle.
- Brake system has very little lag time between the time the vehicle's brakes are actuated and the trailer's brakes are actuated.
- Brake system can provide an independent emergency brake system.

Remember in order to properly synchronize the tow vehicle's braking to the trailer's braking, can only be accomplished by road testing. Brake lockup, grabbiness or harshness is due to lack of synchronization between the tow vehicle and the trailer being towed or under-adjusted brakes.

Before any brake synchronizations adjustments can be made, the trailer brakes should be burnished-in by applying the brakes 20-30 times with approximately a 20 m.p.h. decrease in speed, e.g. 40 m.p.h. to 20 m.p.h. Allow ample time for brakes to cool between application. This allows the brake shoes to slightly be seated into the brake drum surface.

Figure 72. displays the major electric brake components that will require inspection and maintenance. Please inspect these components as required. See Table 15. Electric Brake Troubleshooting.

Magnets For All Electric Brakes

To make certain an electrically-operated braking system will function properly, you must have your dealer inspect the magnets at least once a year, or each 12,000 miles. See the brake manual for wear and current inspection instructions.

Brake Controller

The electric brake controller is part of the tow vehicle and is essential in the operation of the electric brakes on the trailer. The brake controller is not the same as the safety breakaway brake system that may be equipped on the trailer.

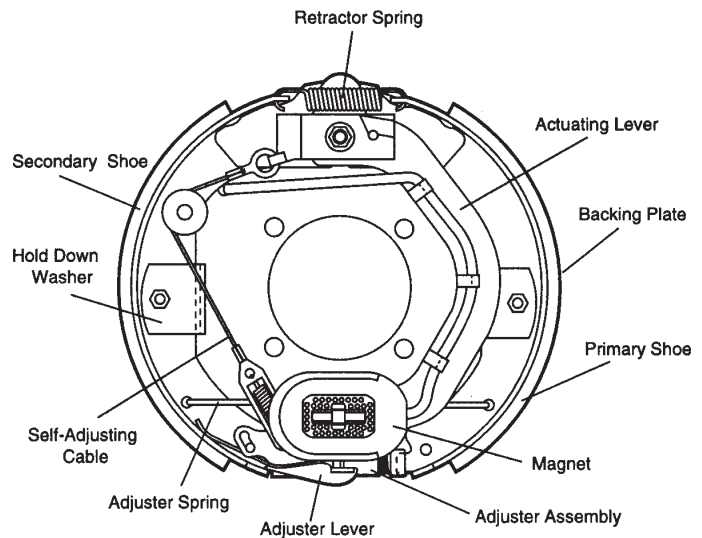


Figure 72. Electric Brake Components

Brake Drums (or discs), Linings, and Hoses

Brake drums or discs must not have cracks longer than one half the width of the friction area. Linings must not be loose, soaked with oil or grease or be dangerously thin. Mechanical parts must be in place, not broken or missing. Check that all air hoses connected to the brake chambers are not worn or cut due to rubbing.

Air Leaks

Always check for brake air leaks before towing the trailer. **NEVER** tow the trailer with an brake air leak problem. The possibility exists of brake failure.

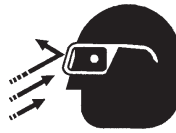
Table 15. Electric Brake Troubleshooting		
Symptom	Possible Cause	Solution
No Brakes or Intermittent Brakes	Any open circuits or broken wires?	Find and correct.
	Any short circuits?	Find and correct.
	Faulty controller?	Test and correct.
	Any loose connections?	Find and repair.
	Ground wire secure?	Find and secure.
Weak Brakes or Brakes Pull to One Side	Grease or oil on magnets or linings?	Clean or replace.
	Connections corroded?	Clean and correct cause of corrosion.
	Brake drums scored or grooved?	Machine or replace.
	Brakes synchronized?	Correct.
Locking Brakes	Brake components loose, bent or broken?	Replace components.
	Brake drums out-of-round?	Replace.
Noisy Brakes	System lubricated?	Lubricate.
	Brake components correct?	Replace and correct.
Dragging Brakes	Bearings of the wheel adjusted?	Adjust.

Tires/Wheels/Lug Nuts

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

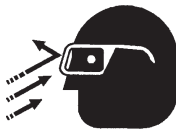
CAUTION - EYESIGHT HAZARD

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



CAUTION - REPAIRING TRAILER WHEELS

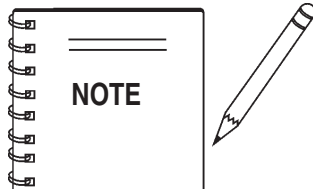
DO NOT attempt to repair or modify a wheel. **DO NOT** install in inner tube to correct a leak through the rim. If the rim is cracked, the air pressure in the inner tube may cause pieces of the rim to explode (break off) with great force and cause serious eye or bodily injury.



Tire Wear/Inflation

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

Table 16 (Tire Wear Troubleshooting) will help pinpoint the causes and solutions of tire wear problems.



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

WEAR PATTERN		CAUSE	SOLUTION
	Center Wear	Over Inflation.	Adjust pressure to particular load per tire manufacturer.
	Edge Wear	Under Inflation.	Adjust pressure to particular load per tire manufacturer.
	Side Wear	Loss of camber or overloading.	Make sure load does not exceed axle rating. Align wheels.
	Toe Wear	Incorrect toe-in.	Align wheels.
	Cupping	Out-of-balance.	Check bearing adjustment and balance tires.
	Flat Spots	Wheel lockup & tire skidding.	Avoid sudden stops when possible and adjust brakes.

Suspension

Torsion axle systems, the suspension takes place inside the square tube which is filled with highly resilient rubber. It attaches directly to the trailer frame using brackets which are an integral part of the axle assembly (See Figure 70 below).

Visually inspect the mounting hardware **every 6,000** miles for signs of excessive wear, elongation of bolt holes, and loosening of fasteners. Replace all damaged parts immediately. Torque torsion axle mounting hardware as recommended by manufacturer.

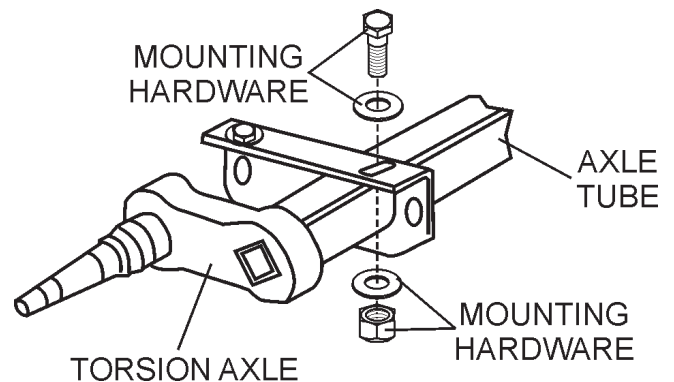


Figure 70. Major Suspension Components

Lug Nut Torque Requirements

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

1. Start all wheel lug nuts by hand.
2. Torque all lug nuts in sequence. See Figure 71. **DO NOT** torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Table 17.
3. After first road use, retorque all lug nuts in sequence. Check all wheel lug nuts periodically.

Table 17. Tire Torque Requirements

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

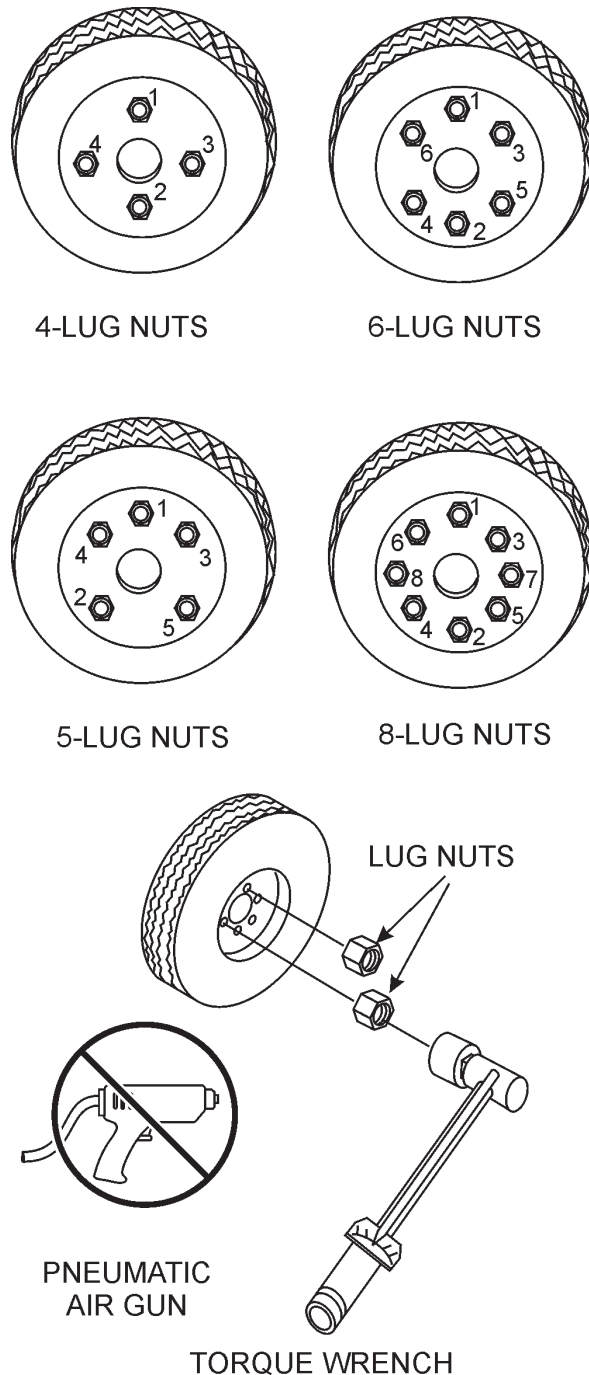
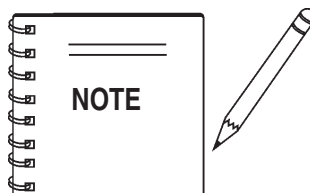


Figure 71. Wheel Lug Nuts Tightening Sequence



NEVER use an pneumatic air gun to tighten wheel lug nuts. Use a **torque wrench** to tighten lug nuts.

DCA-600SSV — TRAILER-WIRING DIAGRAM

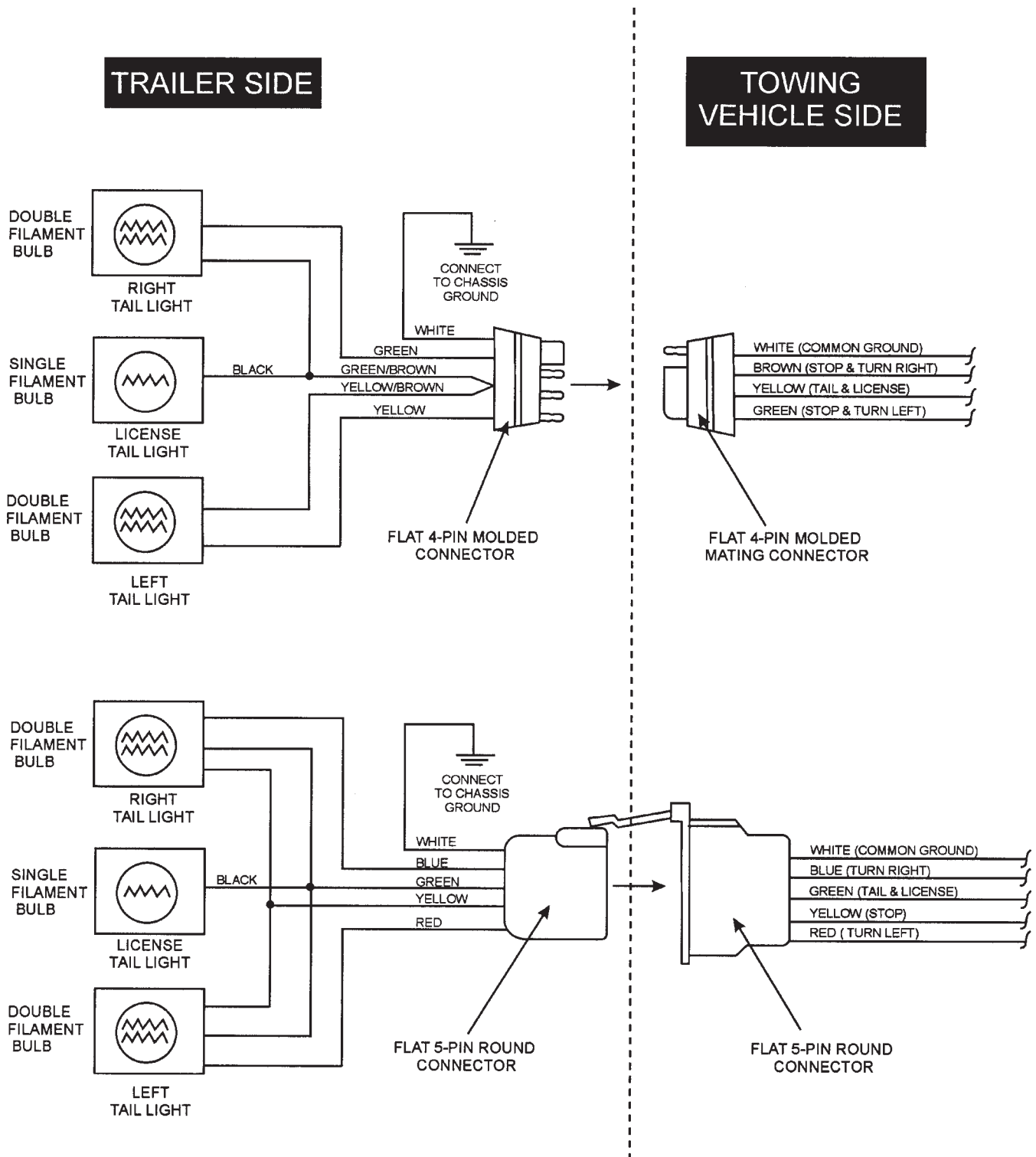


Figure 72. Trailer Wiring Diagram (5-Pin)

TYPICAL 7 POLE TRAILER WIRE DIAGRAM

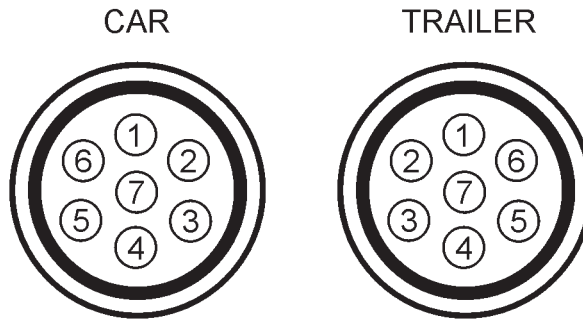


TABLE 19. TRAILER WIRE DIAGRAM

POLE	DESCRIPTION	COLOR
1 / L	LEFT TURN	YELLOW
2 / 54G	REVERSE	BLACK
3 / 31	EARTH	WHITE
4 / R	RIGHT TURN	GREEN
5 / 58R	SERVICE BRAKES	BLUE
6 / 54	STOP LAMP	RED
7 / 58L	TAIL LAMPS	BROWN

Figure 73. Trailer Wiring Diagram (7-Pin)

DCA-600SSV — GENERATOR WIRING DIAGRAM

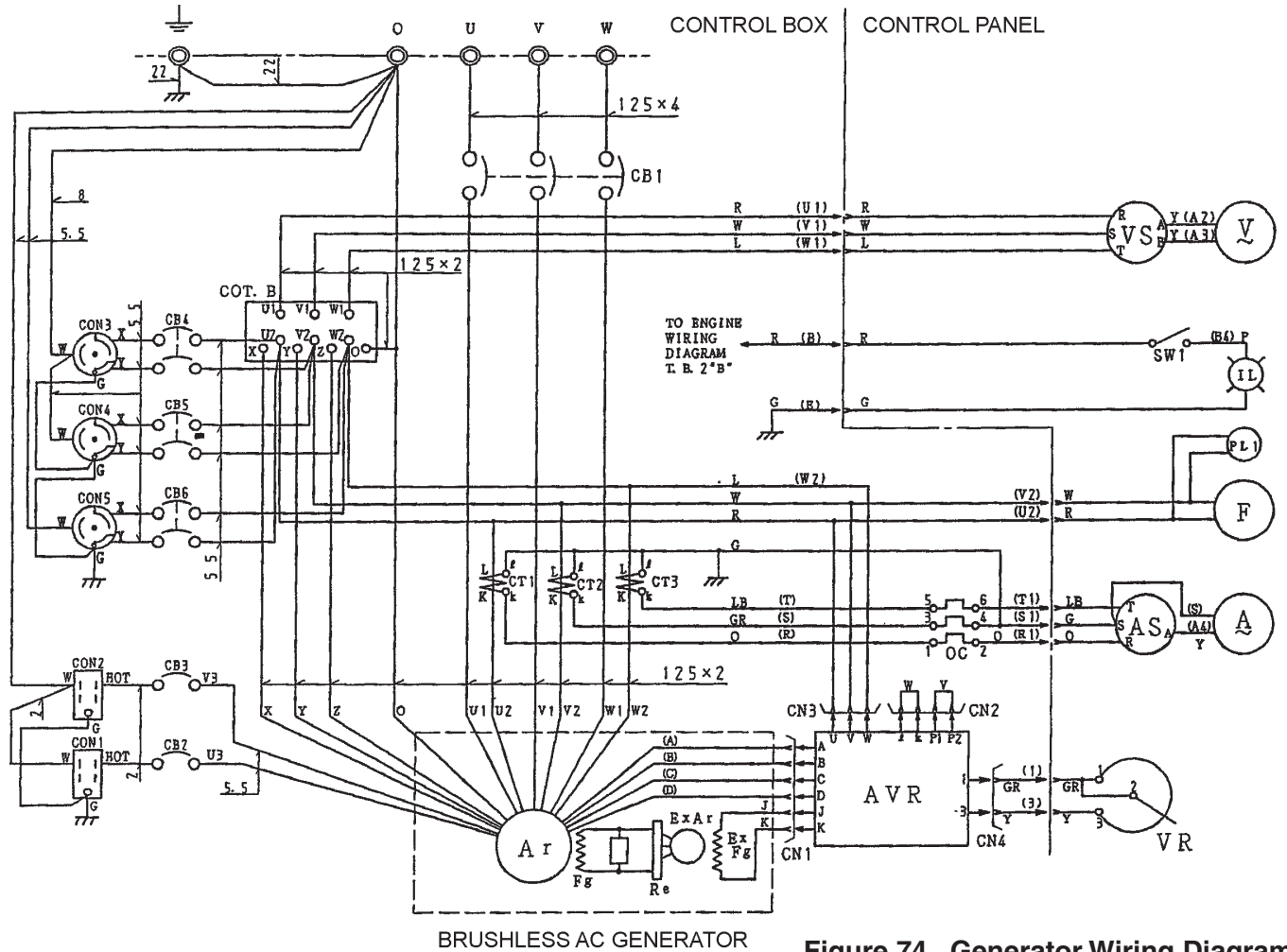


Figure 74. Generator Wiring Diagram

AVR CONNECTOR

1 2 3 A J C B K D CN 1	1 2 3 4 2 K P 1 P 2 CN 3
1 2 3 U V W CN 3	1 2 1 3 CN 4

(VIEW FROM INSERTING WIRE SIDE)

CONTROL BOX SIDE

1 2 3 4 E W 1 V 1 U 1 B 1 1 U 2 3 1 V 2	3 2 1 R 1 S 1 T 1
--	----------------------

CONTROL PANEL SIDE

CONNECTOR (VIEW FROM INSERTING WIRE SIDE)

4 3 2 1 U 1 V 1 W 1 E U 2 1 V 2 3 B	1 2 3 R 1 S 1 T 1
--	----------------------

SETTING FOR OUTPUT VOLTAGE

(240V)

X U₂ U₁

Y V₂ V₁

Z W₂ W₁

○ COT.B

(480V)

X U₂ U₁

Y V₂ V₁

Z W₂ W₁

○ COT.B

WIRE SIZE TABLE

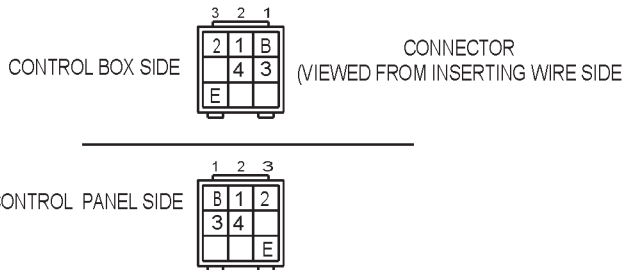
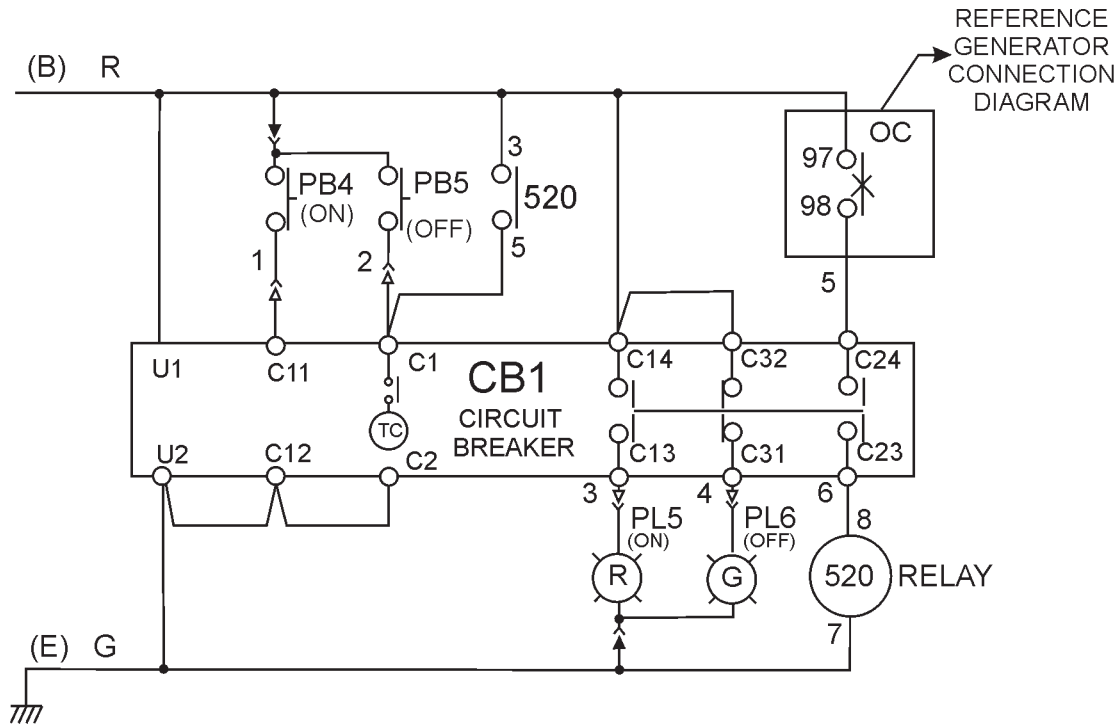
125: 125mm ²
100: 100mm ²
38: 38mm ²
60: 60mm ²
22: 22mm ²
14: 14mm ²
8: 8mm ²
5: 5mm ²
2: 2mm ²

COLOR CODE

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

MARK	NAME
Ar	MAIN GENERATOR ARMATURE WINDING
Fg	MAIN GENERATOR FIELD WINDING
ExAr	EXCITER ARMATURE WINDING
ExFg	EXCITER FIELD WINDING
AVR	AUTOMATIC VOLTAGE REGULATOR
VR	VOLTAGE REGULATING RHEOSTAT
Re	RECTIFIER
CT1~3	CURRENT TRANSFORMER (400/5A)
C B 1	CIRCUIT BREAKER (1600A)
OC	OVER CURRENT RELAY
COT. B	VOLTAGE CHANGE-OVER BOARD
AS	AMMETER CHANGE-OVER SWITCH
A	AC AMMETER (0~400, 800A)
VS	VOLTMETER CHANGE-OVER SWITCH
V	AC VOLTMETER (0~600V)
F	FREQUENCY METER (45~65HZ)
PI1	PILOT LAMP
CB2. 3	AUX. CIRCUIT BREAKER (20A)
CB4~6	AUX. CIRCUIT BREAKER (50A)
CON1. 2	AUX POWER RECEPTACLE (20A)
CON3~5	AUX POWER RECEPTACLE (50A)
IL	PANEL LIGHT
SW1	PANEL LIGHT SWITCH

DCA-600SSV — GENERATOR WIRING DIAGRAM (MAIN BREAKER)



WIRE SIZE	COLOR CODE			
	CODE/ WIRE COLOR			
125: 125 mm ²	B	BLACK	R	RED
100: 100 mm ²	L	BLUE	W	WHITE
80: 80 mm ²	BR	BROWN	Y	YELLOW
22: 22 mm ²	G	GREEN	LB	LIGHT BLUE
14: 14 mm ²	GR	GRAY	LG	LIGHT GREEN
8: 8 mm ²	V	VIOLET	O	ORANGE
5.5: 5.5 mm ²	P	PINK		
NO MARK WIRE SIZE: 1.25 mm ²				

SYMBOL	DESIGNATION
PB4	CIRCUIT BREAKER (ON) SWITCH
PB5	CIRCUIT BREAKER (OFF) SWITCH
PL5	CIRCUIT BREAKER (ON) LAMP
PL6	CIRCUIT BREAKER (OFF) LAMP

Figure 75. Main Circuit Breaker Wiring Diagram

DCA-600SSV — ENGINE WIRING DIAGRAM

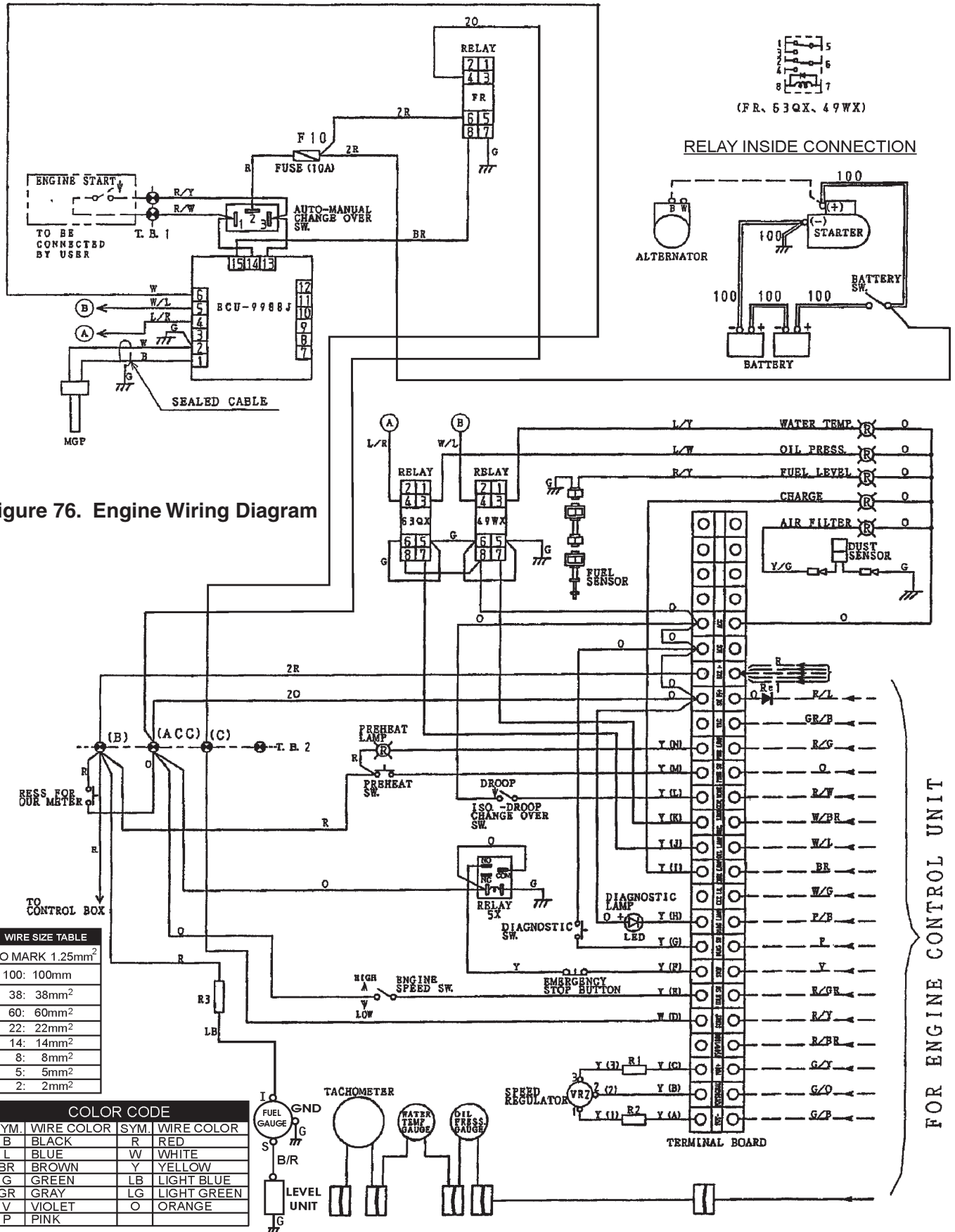


Figure 76. Engine Wiring Diagram

DCA-600SSV — TROUBLESHOOTING (ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use Table 18 (Engine Troubleshooting) as a basic guideline for troubleshooting the engine. If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 18. 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-600SSV — TROUBLESHOOTING (ENGINE)

TABLE 18. 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-600SSV — TROUBLESHOOTING (GENERATOR)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use Table 19 shown below for diagnosis of the Generator. If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 19. GENERATOR TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
No Voltage Output	AC Voltmeter defective?	Check output voltage using a voltmeter.
	Is wiring connection loose?	Check wiring and repair.
	Is AVR defective?	Replace if necessary.
	Defective Rotating Rectifier?	Check and replace.
Low Voltage Output	Is engine speed correct?	Turn engine throttle lever to "High".
	Is wiring connections loose?	Check wiring and repair.
	Defective AVR?	Replace if necessary.
High Voltage Output	Is wiring connections loose?	Check wiring and repair.
	Defective AVR?	Replace if necessary.
Circuit Breaker Tripped	Short Circuit in load?	Check load and repair.
	Over current?	Confirm load requirements and reduce.
	Defective circuit breaker?	Check and replace.
	Over current Relay actuated?	Confirm load requirement and replace.

DCA-600SSV — TROUBLESHOOTING (ENGINE CONTROLLER)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use Table 20 (Engine Controller Troubleshooting) as a basic guideline for troubleshooting the Microprocessor Engine Controller unit (MPEC). If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 20. ENGINE CONTROLLER TROUBLESHOOTING (MPEC)

Sympton	Possible Cause	Solution
Low oil pressure light is on.	Low oil level?	Fill oil level.
	Oil pressure sending unit failure?	Replace oil pressure sending unit.
	Time delay malfuntion in Controller?	Refer to dealer.
	Wire shorted?	Inspect/repair wire.
Low coolant level light is on.	Low coolant level?	Fill coolant level.
	Sending unit failure?	Replace sending unit.
	Low battery voltage?	Replace/charge battery.
High coolant temperature light is on.	Fan belt tension incorrect?	Tighten/replace fan belt.
	Air flow is not circulation through radiator?	Clean/repair radiator grill.
	Doors open?	Close doors.
	Exhaust leaking?	Replace/repair gaskets or faulty part.
	Generator being overloaded?	Check/reduce load.
	Thermostat failure?	Replace thermostat.
	Air intake blocked?	Clear all air intakes.
	Temperature switch failure?	Replace temperature switch.
Overcrank light is on.	No or low Fuel?	Fill fuel level.
	Controller needs to be calibrated?	Refer to dealer.
Overspeed light is on.	RPM engine speed too high?	Adjust RPM.
	Governor actuator needs to be adjusted?	Adjust governor actuator.
	Governor controller needs to be adjusted?	Adjust governor controller.
	Engine Controller needs to be calibrated?	Refer to dealer.
Loss of MPU light(s) or on.	Magnetic pick up out of adjustment?	Adjust magnetic pick up.
	Magnetic pick up dirty?	Clean magnetic pick up.

DCA-600SSV—TROUBLESHOOTING (DIAGNOSTIC LAMP)

The engine controller of this generator diagnoses problems that arise from the engine control system and the engine itself. The malfunction can be determined by examining the flashing pattern of the diagnostic lamp (Figure 79) located in the control box.

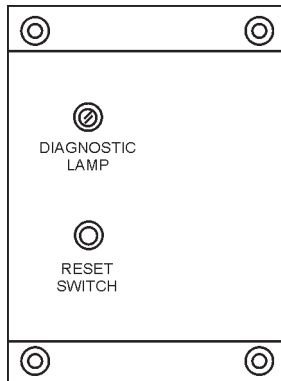


Figure 79. Diagnostic Panel

Method of Operation

1. Normally, the diagnostic lamp will be **dimly** lit when the **MPEC Control Switch** is placed in the **MANUAL** position.
2. If engine trouble occurs, the diagnostic lamp will be **brightly** lit as long as the control switch is left in the manual position.
3. The diagnostic lamp will indicate an error code via a flashing pattern on the lamp. This pattern will become visible once the the reset button on the control box has been pushed and released. The error code consists of a series of flashes by the lamp. The error codes are defined as follows:

Example Error Code 1.

Figure 80 displays the error code for **low radiator coolant**.

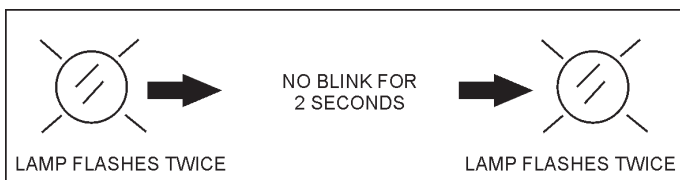


Figure 80. Error Code Low Radiator Coolant

Example Error Code 2.

Figure 81 displays the error code for **high temp intake**.

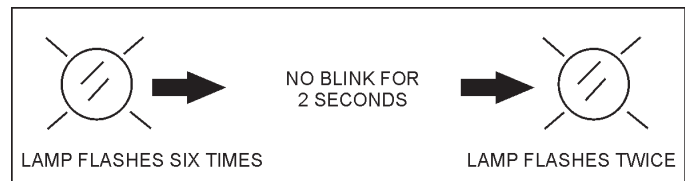
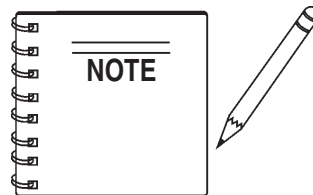


Figure 81. Error Code High Temperature Intake



The error code will flash each time the reset button is pressed and released until the problems have been corrected.

4. In a situation where several engine malfunctions occur simultaneously, the code for each malfunction will flash one after another in succession.
5. After all engine related malfunctions have been diagnosed and corrected, and the generator is operating in a normal manner the following code (Figure 82) should be displayed once the reset button is pressed and released

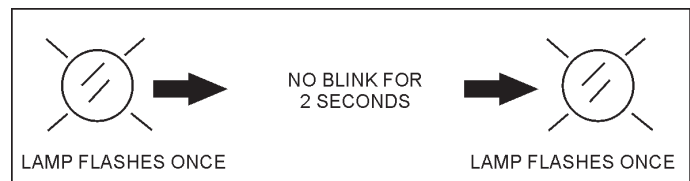
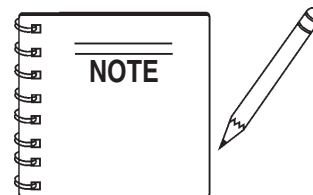
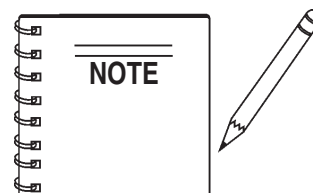


Figure 82. Normal Operating Code



For a complete understanding of error codes and troubleshooting procedures, refer to the enclosed engine instruction manual.



When the **MPEC Control Switch** is placed in the **AUTO** position, the same error codes will apply. Codes will not be active until the unit is activated.

DCA-600SSV— EXPLANATION OF CODE IN REMARKS COLUMN

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

The contents and part numbers listed in the parts section are subject to change **without notice**. Multiquip does not guarantee the availability of the parts listed.

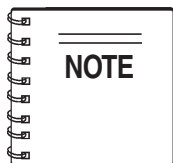
Sample Parts List:

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	12345	BOLT	1	INCLUDES ITEMS W/*
2*		WASHER, 1/4 IN.		NOT SOLD SEPARATELY
2*	12347	WASHER, 3/8 IN.	1	MQ-45T ONLY
3	12348	HOSE	A/R..	MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

NO. Column

Unique Symbols - All items with same unique symbol (*, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the “Remarks” column.

Duplicate Item Numbers - Duplicate numbers indicate multiple part numbers are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.



When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

PART NO. Column

Numbers Used - Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the “Remarks” Column.

QTY. Column

Numbers Used - Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the “Remarks” Column.

REMARKS Column

Some of the most common notes found in the “Remarks” Column are listed below. Other additional notes needed to describe the item can also be shown.

Assembly/Kit - All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

“INCLUDES ITEMS W/(unique symbol)”

Serial Number Break - Used to list an effective serial number range where a particular part is used.

Indicated by:

“S/N XXXXX AND BELOW”

“S/N XXXX AND ABOVE”

“S/N XXXX TO S/N XXX”

Specific Model Number Use - Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

“XXXXX ONLY”

“NOT USED ON XXXX”

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

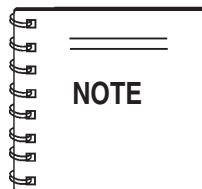
“Not Sold Separately” - Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

DCA-600SSV — SUGGESTED SPARE PARTS

DCA-600SSV w/SA6D170AE-1 VOLVO ENGINE

1 to 3 Units

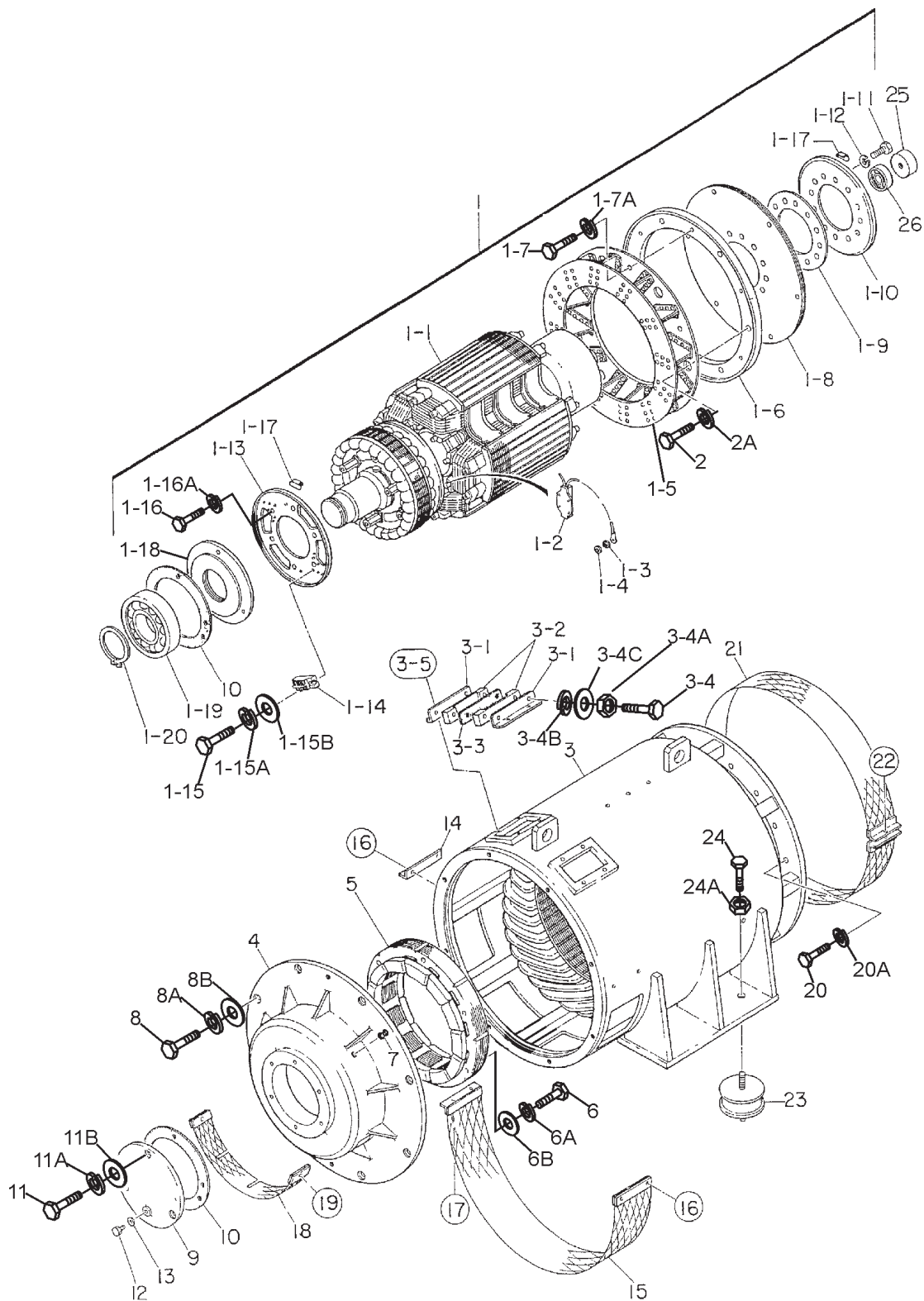
Qty.	P/N	Description
20	6125817032	AIR FILTER, INNER & OUTER
30	6003117111	FUEL FILTER
30	6002111231	OIL FILTER
2	6004111030	CARTRIDGE, CORROSION RESISTOR
1	0601810575	PILOT LAMP, ENGINE TROUBLE
1	0601810576	PILOT LAMP, ENGINE TROUBLE
1	0412222568	ENGINE FAN BELT
1	6008155390	SWITCH STARTER UP TO S/N 3698616
3	615	KEY SET, STARTER SWITCH (2) UP TO S/N 3698616
2	0602122281	OIL SWITCH
1	6995621691	RADIATOR HOSE (UPPER)
1	6162639650	RADIATOR HOSE (LOWER)
1	0605505030	FUEL CAP
1	0601820625	AUTOMATIC VOLTAGE REGULATOR
1	0601805313	CIRCUIT BREAKER, 265V, 20A
1	0601805840	CIRCUIT BREAKER, 265V, 50A
1	0601802525	HANDLE, MAIN CURRENT BREAKER
1	0601840073	VOLTAGE REGULATOR (RHEOSTAT)
2	0601840121	KNOB, VOLTAGE REGULATOR
1	0601810072	PILOT LAMP
2	0601810261	BULB PILOT LAMP
1	23S0311150M	CAP, RADIATOR
1	0602122203	UNIT OIL PRESSURE
1	0602123206	UNIT, WATER TEMPERATURE
1	0602121052	CHARGING AMMETER
1	ECU9988N600/800	ECU ENGINE CONTROLLER S/N 3698617~



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

DCA-600SSV — GENERATOR ASSY.

GENERATOR ASSY.



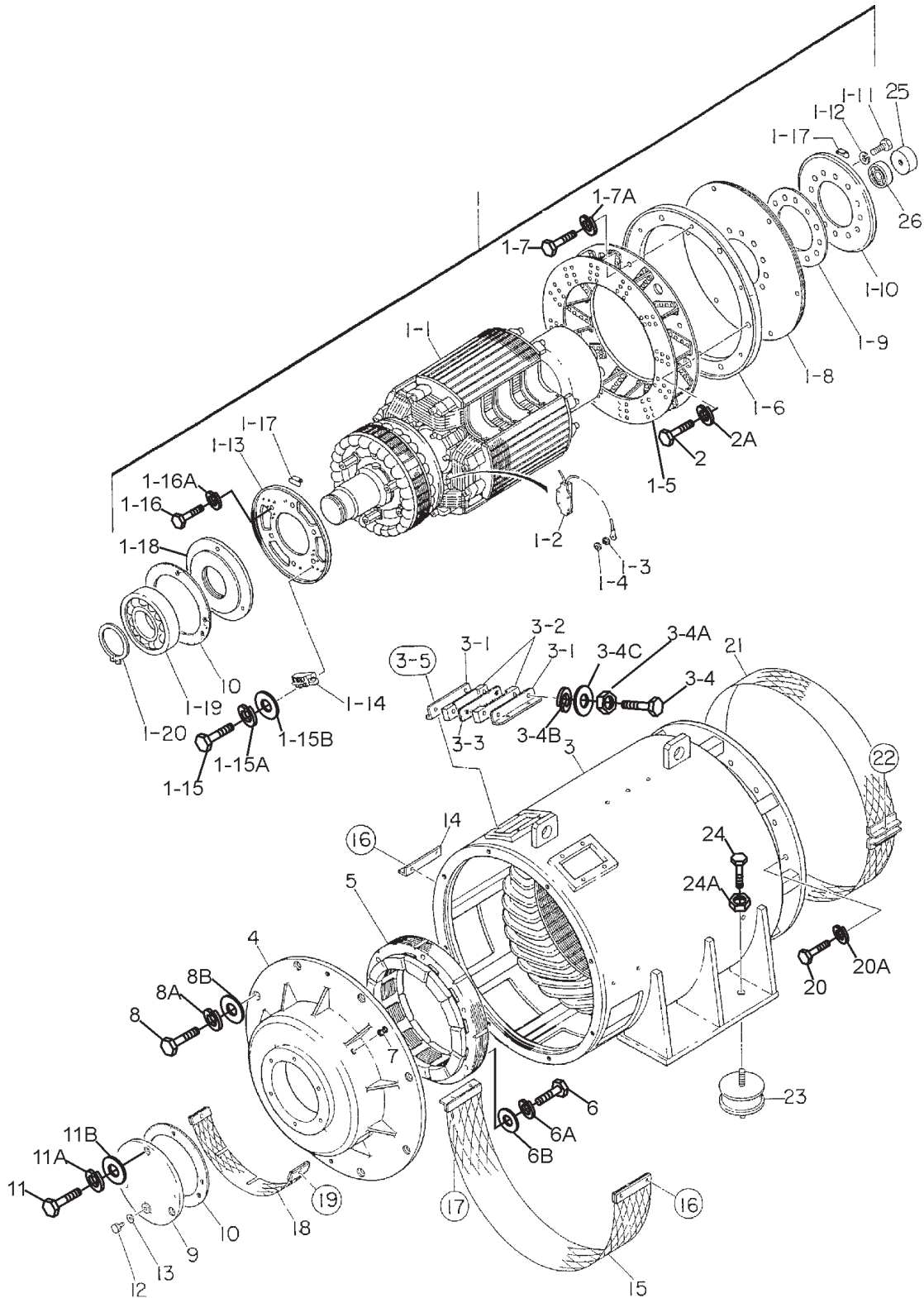
DCA-600SSV — GENERATOR ASSY.

GENERATOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	4100100202	ROTOR ASSY.....	1	NOT SOLD SEPARETLY
1-1		FIELD ASSY	1	
1-2	0601842366	RESISITOR	2	
1-3	8171020004	INSULATOR WASHER	6	
1-4	8171020504	INSULATOR WASHER	6	
1-5	8461070002	FAN	1	
1-6	8461614003	COUPLING RING	1	
1-7	0010312025	HEX. HEAD BOLT	6	
1-8	0042512000	COUPLING DISK ASSY	1	
1-9	4163100004	WASHER, COUPLING HUB	1	
1-10	8461015003	BALANCING PLATE	1	PURCHASE ITEM 1-17 AS A SET
1-11	0012120055	HEX. HEAD BOLT	12	
1-12	0042620000	SPRING WASHER	12	
1-13	8461026023	SET PLATE, RECTIFIER	1	
1-14	0601823282	RECTIFIER	2	
1-15	0018205020	HEX. SOCKET SHCS	4	
1-15A	0040005000	SPRING WASHER	4	
1-15B	0041205000	PLAIN WASHER	4	
1-16	0010112020	HEAD HEX. BOLT	6	
1-16A	0010112000	WASHER, LOCK	6	
1-17	0601000209	BALANCING WEIGHT KIT	1	
1-18	7431014003	BEARING FLANGE	1	
1-19	0072906321	BEARING	1	
1-20	0080000105	SNAP RING	1	
2	0343207250	HEX. HEAD BOLT	6	
2A	0043607000	WASHER, LOCK	6	
3	C4130100203	STATOR ASSY.	1	
3-1	7431323003	CLAMPER	4	
3-2	7431323123	CLAMPER	4	
3-3	7431323204	CLAMPER	2	
3-4	0061310080	HEX. HEAD BOLT	4	
3-4A	0030010000	HEX. NUT	4	
3-4B	0040010000	WASHER, LOCK	8	
3-4C	0041210000	WASHER, FLAT	4	
3-5	0017110020	HEX. HEAD BOLT	8	
4	8461315002	END BRACKET	1	
5	C4137000003	FIELD ASSY. EXCITER	1	
6	0012110075	HEX. HEAD BOLT	6	
6A	0042610000	WASHER, LOCK	6	
6B	0041210000	WASHER, FLAT	6	
7	0845044904	GROMMET	1	
8	0016316045	HEX. HEAD BOLT	8	
8A	0040016000	WASHER, LOCK	8	
8B	0041216000	WASHER, FLAT	8	

DCA-600SSV — GENERATOR ASSY. (CONT.)

GENERATOR ASSY.



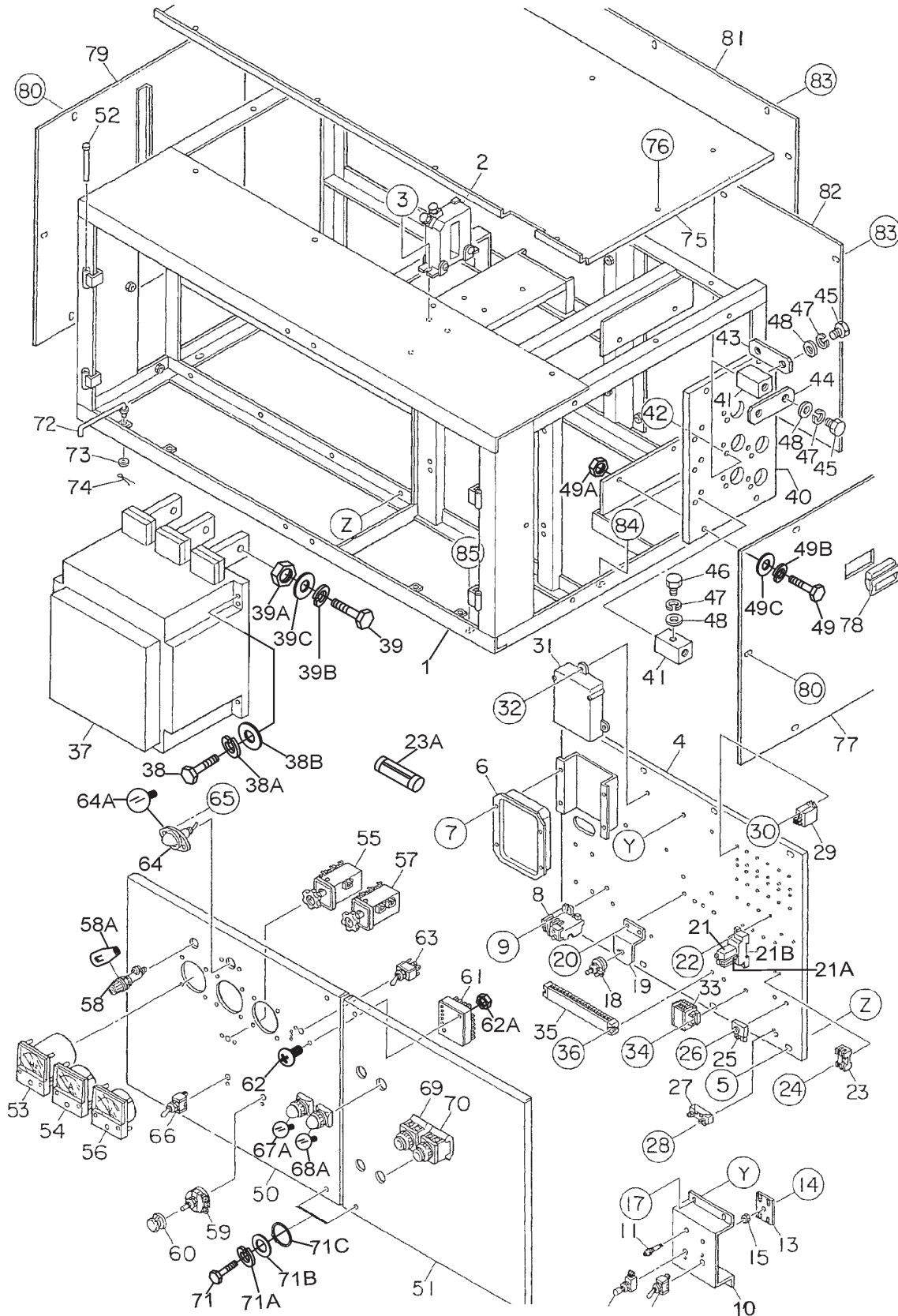
DCA-600SSV — GENERATOR ASSY. (CONT.)

GENERATOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
9	7431310003	COVER, BEARING	1	
10	8461312004	GASKET, BEARING	2	
11	0016308095	HEX. HEAD BOLT	3	
11A	0040008000	SPRING WASHER	3	
11B	0041208000	PLAIN WASHER	3	
12	0010110016	HEX. HEAD BOLT	1	
13	0803000104	PACKING	1	
14	8461335003	BRACKET, COVER	1	
15	8461334003	COVER, STATOR	1	
16	0017106012	HEX. HEAD BOLT	4	
17	0017106050	HEX. HEAD BOLT	2	
18	8461333003	COVER, EXCITOR	1	
19	0017106012	HEX. HEAD BOLT	2	
20	0343206170	HEX. HEAD BOLT	16	
20A	0043606000	SPRING WASHER	16	
21	8461332003	COVER, FAN	1	
22	0017106050	HEX. HEAD BOLT	1	
23	0605000012	RUBBER SUSPENSION	4	
24	0030020000	HEX. NUT	8	
24A	0040020000	SPRING WASHER	8	
25	C3164701404	SPACER, BEARING	1	
26	0070506208	BEARING	1	

DCA-600SSV — CONTROL BOX ASSY.

CONTROL BOX ASSY.



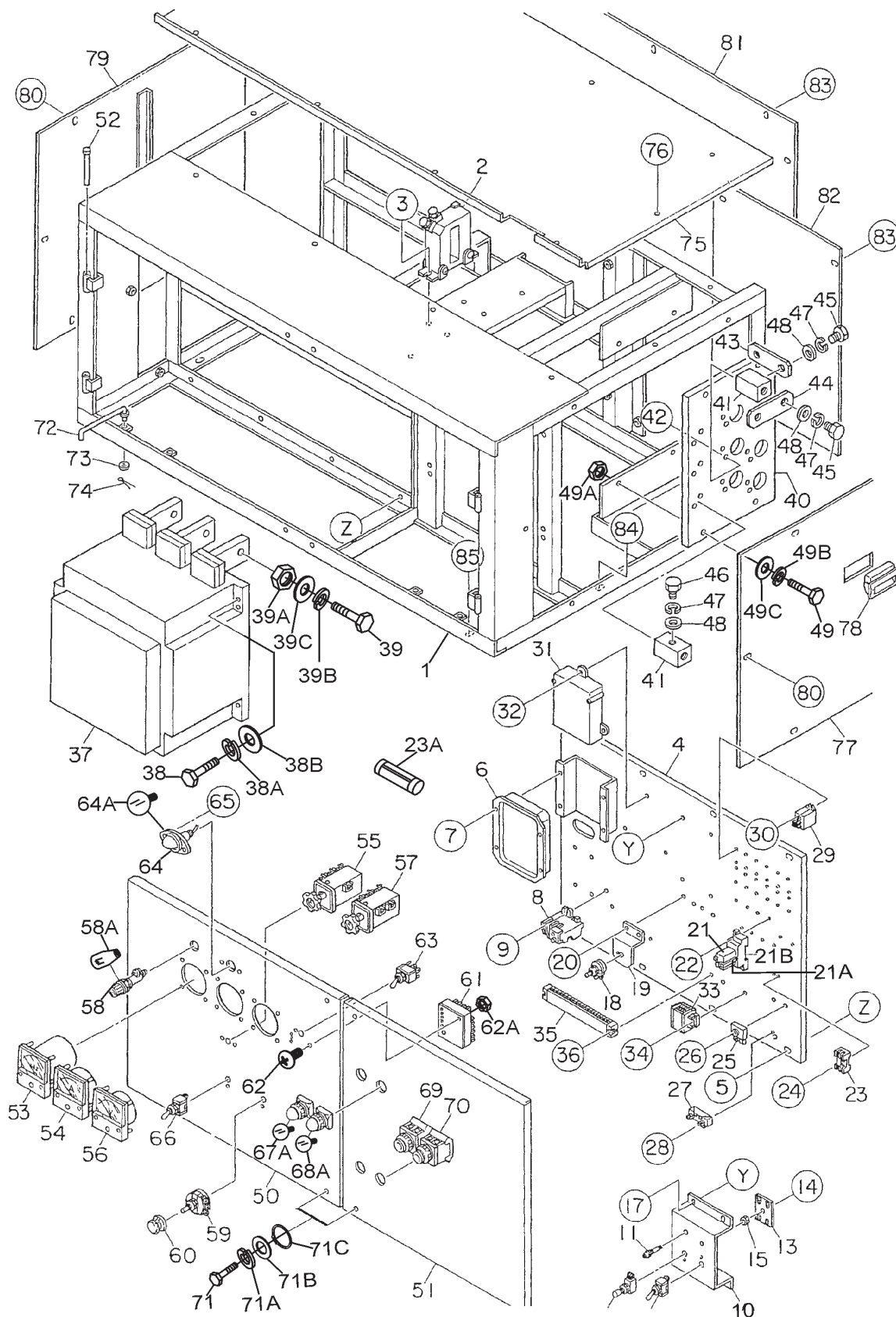
DCA-600SSV — CONTROL BOX ASSY.

CONTROL BOX ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4214001602	CONTROL BOX	1	
2	0601806153	CURRENT TRANSFORMER, AMMETER	3	
3	0017108020	HEX. HEAD BOLT	6	
4	C4261506003	SET PANEL, ELECTRIC PARTS	1	
5	0017108030	HEX. HEAD BOLT	8	
6	0601820658	AUTOMATIC VOLTAGE REGULATOR	1	
7	0027105015	MACHINE SCREW	4	
8	0601820892	OVER CURRENT RELAY	1	
9	0027104015	MACHINE SCREW	2	
10	C4261601904	SWITCH BRACKET	1	
11	0601810575	DIAGNOSTIC LAMP	1	
12	0601831205	RESET SWITCH	1	
13	C3267600004	RESISTOR SWITCH	1	
14	0027105020	MACHINE SCREW	1	
15	003006000	HEX. NUT	1	
16	0601830710	CHANGE-OVER SWITCH	1	
17	0017106016	HEX. HEAD BOLT	4	
18	0601840227	RHEOSTAT (HIGH IDLE SPEED REGULATOR)	1	
19	C3262600004	BRACKET	1	
20	0017106016	HEX. HEAD BOLT	2	
21	0601827655	RELAY	4	
21A	0601823109	SOCKET	4	
21B	0601824400	HOLDER	4	
22	0027104015	MACHINE SCREW	8	
23	0601802149	FUSE	1	
23A	0601802211	HOLDER, FUSE	1	
24	0027103020	MACHINE SCREW	2	
25	0601823240	RECTIFIER	1	
26	0027105020	MACHINE SCREW	1	
27	0601842461	RESISTOR	1	
28	0027103020	MACHINE SCREW	1	
29	0601828533	RELAY	1	
30	0027104016	MACHINE SCREW	2	
31	0602202691	CONTROLLER	1	
32	0017106016	HEX. HEAD BOLT	3	
33	0601815402	TERMINAL BOARD	1	
34	0027104020	MACHINE SCREW	2	
35	0601815941	TERMINAL BOARD	1	
36	0027104020	MACHINE SCREW	2	
37	0601807516	CIRCUIT BREAKER, 1600 AMPS	1	
38	0015308045	HEX. SOCKET HEAD CAP SCREW	8	
38A	0042508000	SPRING WASHER	8	
38B	0041208000	PLAIN WASHER	8	
39	0010114055	HEX. HEAD BOLT	12	
39A	0030014000	HEX. NUT	12	
39B	0040014000	SPRING WASHER	12	

DCA-600SSV — CONTROL BOX ASSY. (CONT.)

CONTROL BOX ASSY.



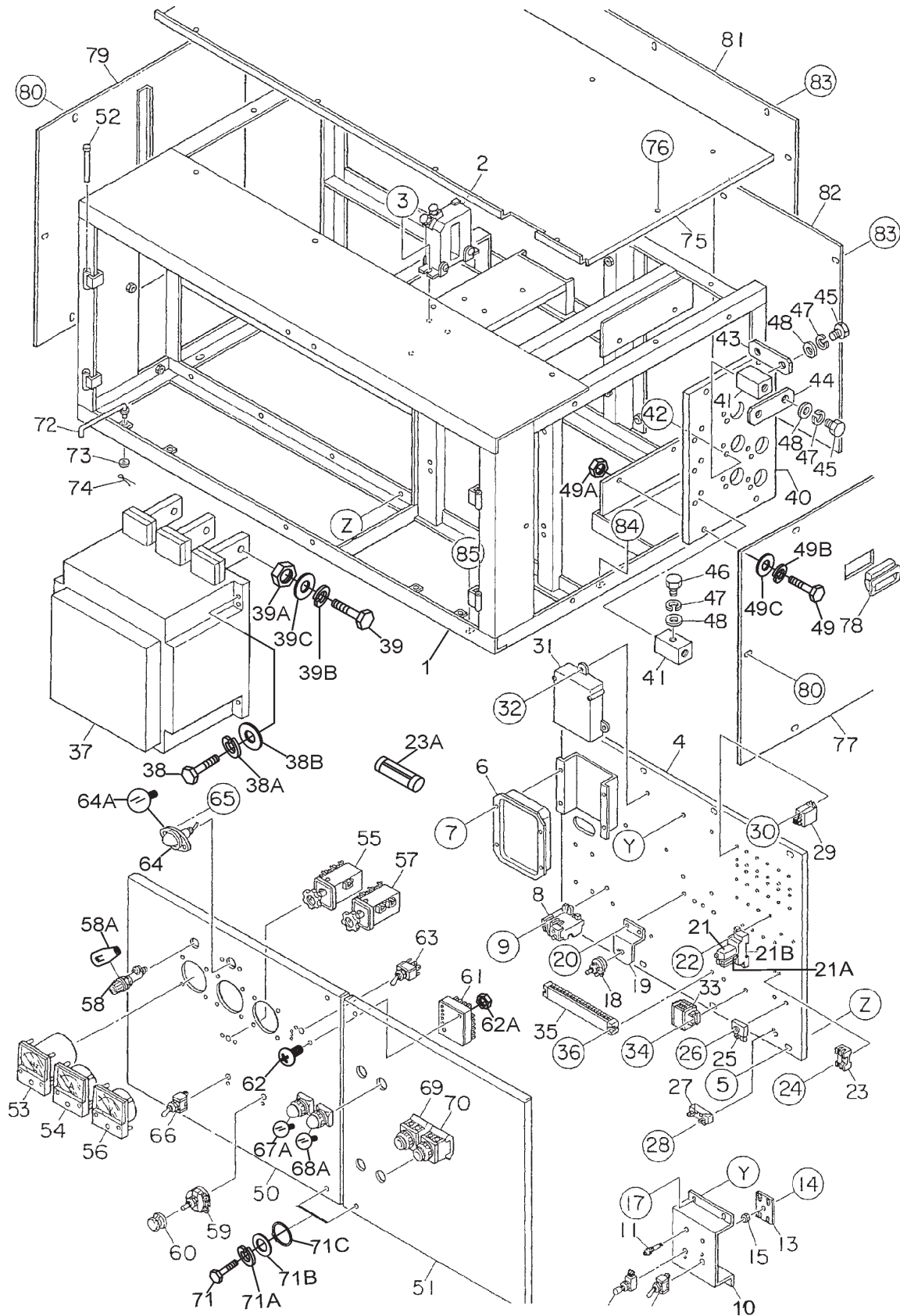
DCA-600SSV — CONTROL BOX ASSY. (CONT.)

CONTROL BOX ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
39-C	0041214000	PLAIN WASHER	24	
40	7431861113	CHANGE-OVER BOARD, VOLTAGE	1	
41	7431852104	CHANGE TERMINAL	10	
42	0017108035	HEX. HEAD BOLT	20	
43	7971852504	TERMINAL PLATE	7	
44	7431853104	CHANGE PLATE	6	
45	0801832504	HEX. HEAD BOLT	17	
46	0801830904	HEX. HEAD BOLT	3	
47	0040020000	SPRING WASHER	20	
48	0041420000	PLAIN WASHER	20	
49	0010110040	HEX. HEAD BOLT	4	
49A	0030010000	HEX. NUT	4	
49B	0040010000	SPRING WASHER	4	
49C	0041210000	PLAIN WASHER	4	
50	C4224004203	CONTROL PANEL	1	
51	C4225000213	CONTROL PANEL	1	
52	0605011211	PIN	4	
53	0601800480	FREQUENCY METER, 220V	1	
54	0601800736	AC AMMETER	1	
55	0601801040	CHANGE-OVER SWITCH, AMMETER	1	
56	0601800252	AC VOLTMETER, 600V	1	
57	0601801041	CHANGE-OVER SWITCH, VOLTMETER	1	
58	0601810072	PILOT LAMP	1	
58A	0601810261	BULB	1	
59	0601840073	RHEOSTAT (VOLTAGE REGULATOR)	1	
60	0601840121	KNOB	1	
61	0602202640	ENGINE CONTROLLER	1	
62	0027104040	MACHINE SCREW	2	
62A	0207004000	HEX. NUT	2	
63	0601830765	SWITCH	1	
64	0601810161	PANEL LIGHT	1	
64A	0601810214	BULB	1	
65	0207004000	HEX. NUT	2	
66	0601830710	SWITCH, PANEL LIGHT	1	
67	0601810476	OFF LAMP, CIRCUIT BREAKER	1	
67A	0601810235	BULB	1	
68	0601810467	ON LAMP, CIRCUIT BREAKER	1	
68A	0601810235	BULB	1	
69	0601830498	CIRCUIT BREAKER RESET SWITCH	1	
70	0601831224	CIRCUIT BREAKER SWITCH	1	
71	C9221100004	HEX. HEAD BOLT	4	
71A	0040008000	SPRING WASHER	4	
71B	0041208000	PLAIN WASHER	4	
71C	0080200007	SNAP RING	4	
72	3871824004	STOPPER, CONTROL PANEL	2	
73	0041206000	PLAIN WASHER	2	

DCA-600SSV — CONTROL BOX ASSY. (CONT.)

CONTROL BOX ASSY.



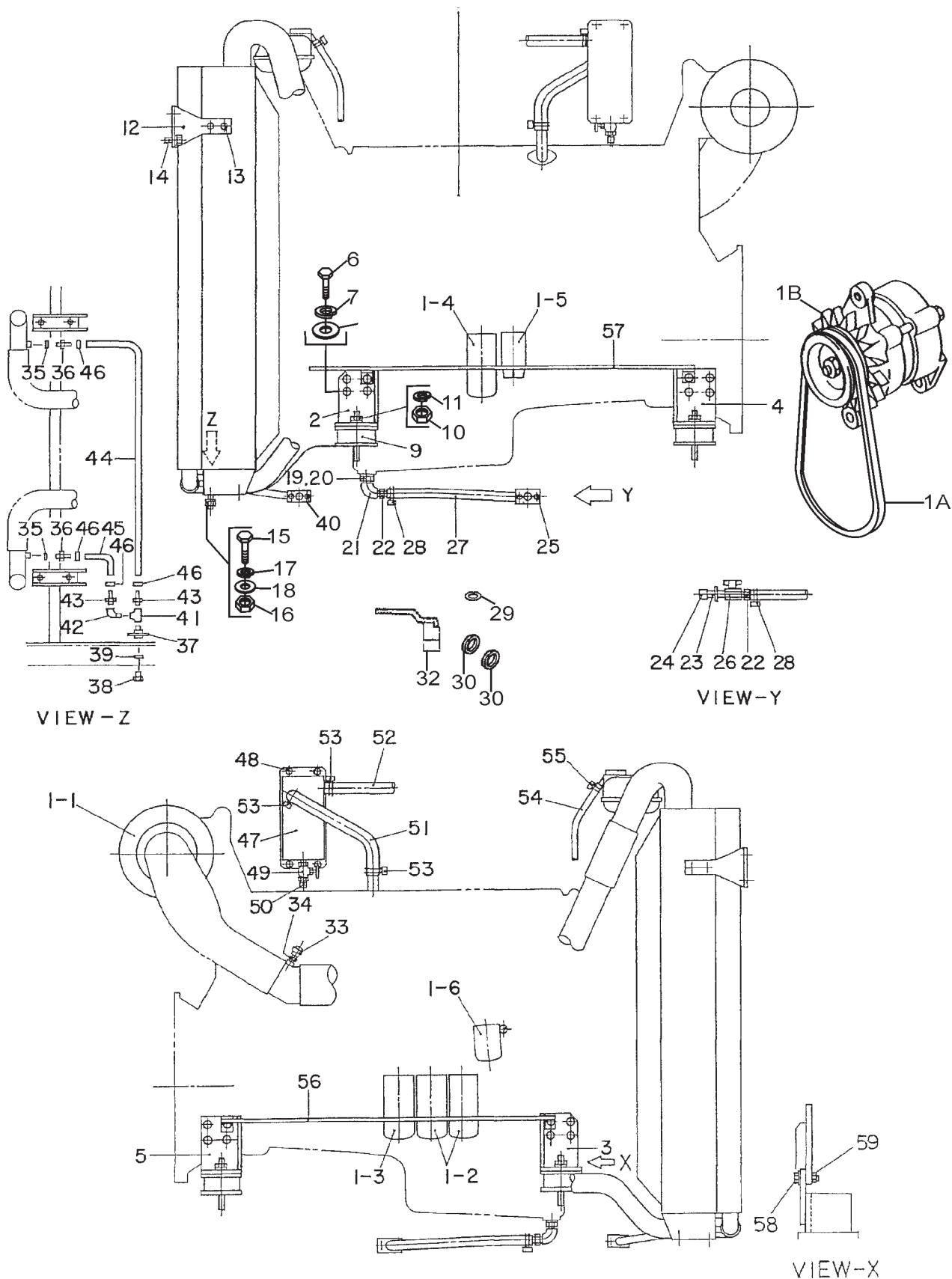
DCA-600SSV — CONTROL BOX ASSY. (CONT.)

CONTROL BOX ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
74	0605010502	SNAP PIN	2	
75	8481814503	COVER, CONTROL BOX	1	
76	0017108020	HEX. HEAD BOLT	10	
77	C4214300904	SIDE PANEL, CONTROL BOX	1	
78	0601850349	EMBEDDED PULLS	1	
79	C4214301004	SIDE PANEL, CONTROL BOX	1	
80	0017108020	HEX. HEAD BOLT	12	
81	C4214400404	PANEL, CONTROL BOX	1	
82	8481825304	PANEL, CONTROL BOX	1	
83	0017108020	HEX. HEAD BOLT	15	
84	0017110030	HEX. HEAD BOLT	5	
85	0017108020	HEX. HEAD BOLT	3	

DCA-600SSV — ENGINE AND RADIATOR ASSY.

ENGINE AND RADIATOR ASSY.



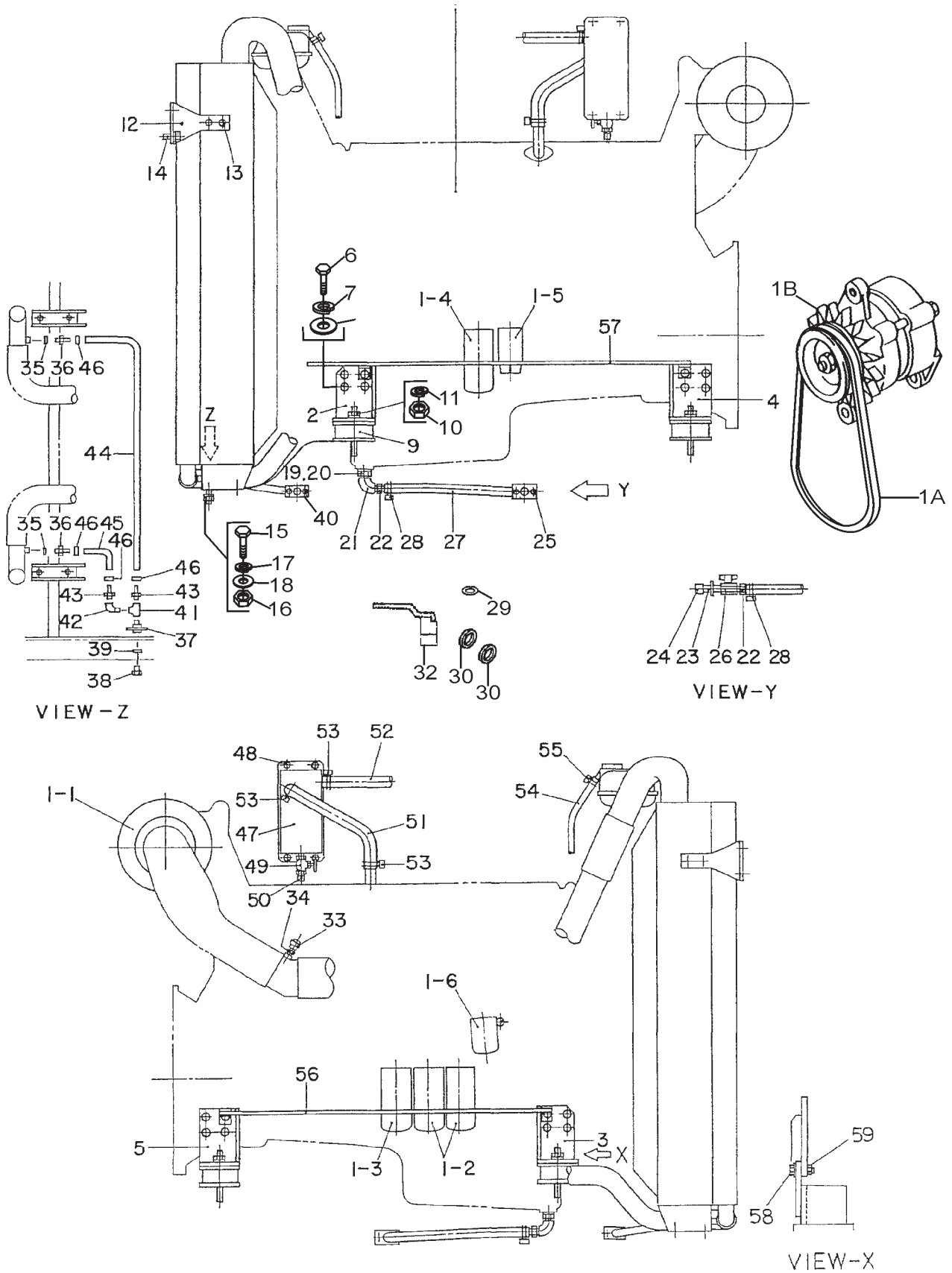
DCA-600SSV — ENGINE AND RADIATOR ASSY.

ENGINE AND RADIATOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4924200284	ENGINE & RADIATOR SET	1	TAD1642GE
1A	0602015240	BELT, FAN	1	
1B	0602015241	BELT, ALTERNATOR	1	
1-1	0602046623	ELEMENT, AIR CLEANER	1	
1-2	0602041278	CARTRIDGE, OIL FILTER, FULL-FLOW	2	
1-3	0602041276	CARTRIDGE, OIL FILTER, BY-PASS	1	
1-4	0602042562	CARTRIDGE, FUEL FILTER	1	
1-5	0602042768	CARTRIDGE, FUEL FILTER, PRE-FILTER	1	
1-6	0602045161	CARTRIDGE, CORROSION RESISTOR	1	
2	C4304200804	ENGINE FOOT	1	
3	C4304200704	ENGINE FOOT	1	
4	C4304201004	ENGINE FOOT	1	
5	C4304200904	ENGINE FOOT	1	
6	0013616040	HEX. HEAD BOLT	16	
7	0040016000	SPRING WASHER	16	
8	0041216000	PLAIN WASHER	16	
9	0605000012	RUBBER SUSPENSION	4	
10	0030020000	HEX. NUT	8	
11	0040020000	SPRING WASHER	8	
12	C4311100604	BRACKET, RADIATOR	2	
13	0017108025	HEX. HEAD BOLT	4	
14	0017110025	HEX. HEAD BOLT	4	
15	0010112035	HEX. HEAD BOLT	4	
16	0030012000	HEX. NUT	4	
17	0040012000	SPRING WASHER	4	
18	0041212000	PLAIN WASHER	8	
19	6452025504	DRAIN JOINT	1	
20	0802024004	PACKING	1	
21	0130008000	ELBOW JOINT	1	
22	0602022294	HOSE JOINT	2	
23	C0321200004	DRAIN JOINT	1	
24	C0321300004	CAP	1	
25	0019208025	HEX. HEAD BOLT	2	
26	0603325017	VALVE	1	
27	0265801000	DRAIN HOSE	1	
28	0605515074	HOSE BAND	2	
29	0602012342	PACKING	1	
30	0603306592	ADAPTER	1	
31	0603306869	ADAPTER	1	
32	0602012071	VALVE	1	
33	0602040666	INDICATOR, AIR CLEANER	1	
34	0602046007	NIPPLE	1	
35	0845035004	PACKING	2	
36	0845500304	NIPPLE	2	
37	B1368701103	DRAIN JOINT	1	
38	0802011104	PLUG	1	

DCA-600SSV — ENGINE AND RADIATOR ASSY. (CONT.)

ENGINE AND RADIATOR ASSY.



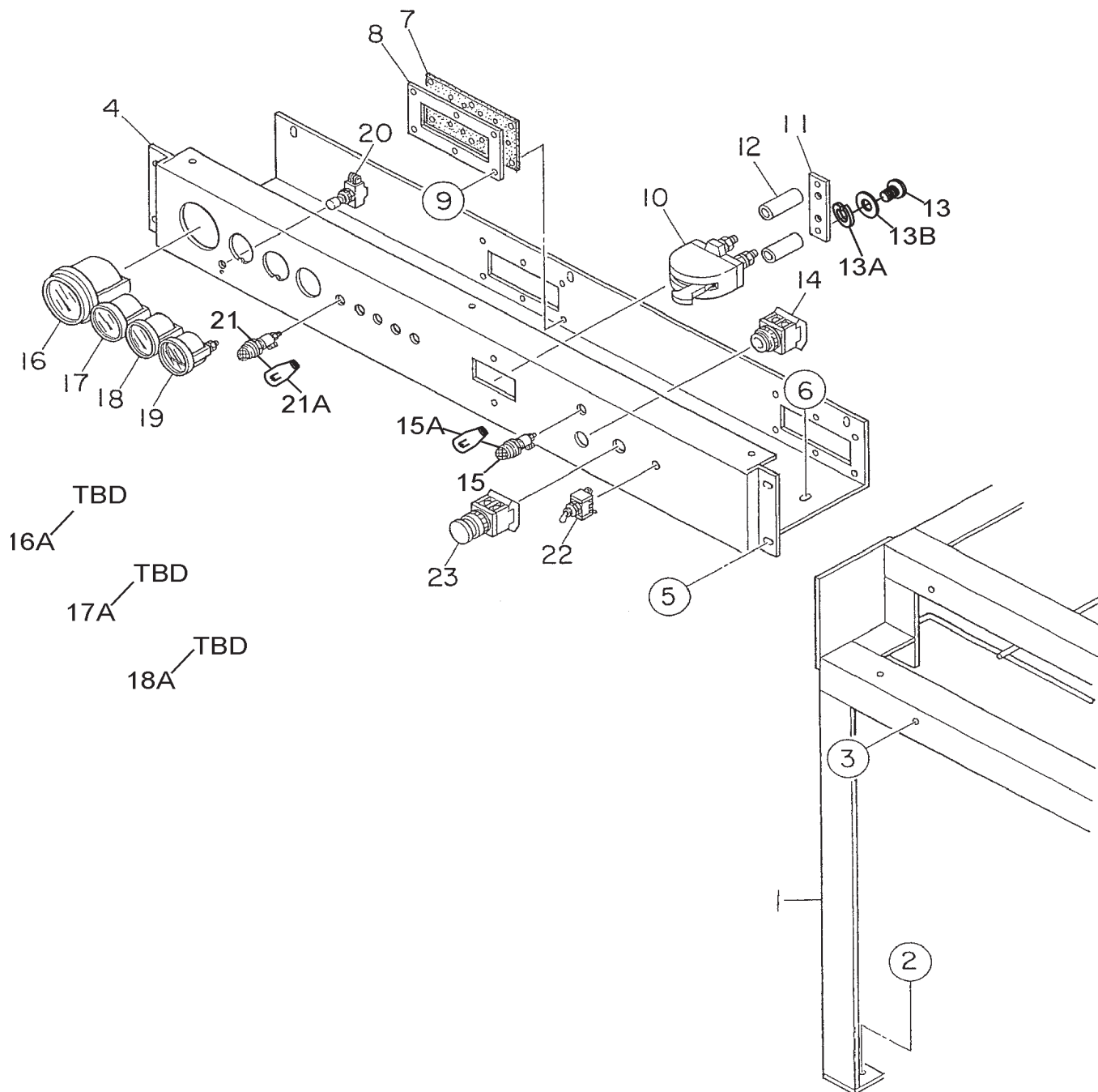
DCA-600SSV — ENGINE AND RADIATOR ASSY. (CONT.)

ENGINE AND RADIATOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
39	0150000018	O RING	1	
40	0019206025	HEX. HEAD BOLT	2	
41	0130404000	T-JOINT	1	
42	0130204000	STREET ELBOW	1	
43	0602022291	HOSE JOINT	2	
44	C4322600004	DRAIN HOSE	1	
45	C4322600104	DRAIN HOSE	1	
46	0605515073	HOSE BAND	4	
47	C4324100303	BREATHER TANK	1	
48	0019208025	HEX. HEAD BOLT	4	
49	0603325011	VALVE	1	
50	0602022293	HOSE JOINT	1	
51	0268800680	BREATHER HOSE	1	
52	0268801560	BREATHER HOSE	1	
53	0605515138	HOSE BAND	4	
54	0191302200	OVERFLOW HOSE	1	
55	0605515109	HOSE BAND	1	
56	C4358300704	CLAMPER ROD	1	
57	C4358300604	CLAMPER ROD	1	
58	0012310030	HEX. HEAD BOLT	2	
59	0207010000	HEX. HEAD BOLT	2	

DCA-600SSV — ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.



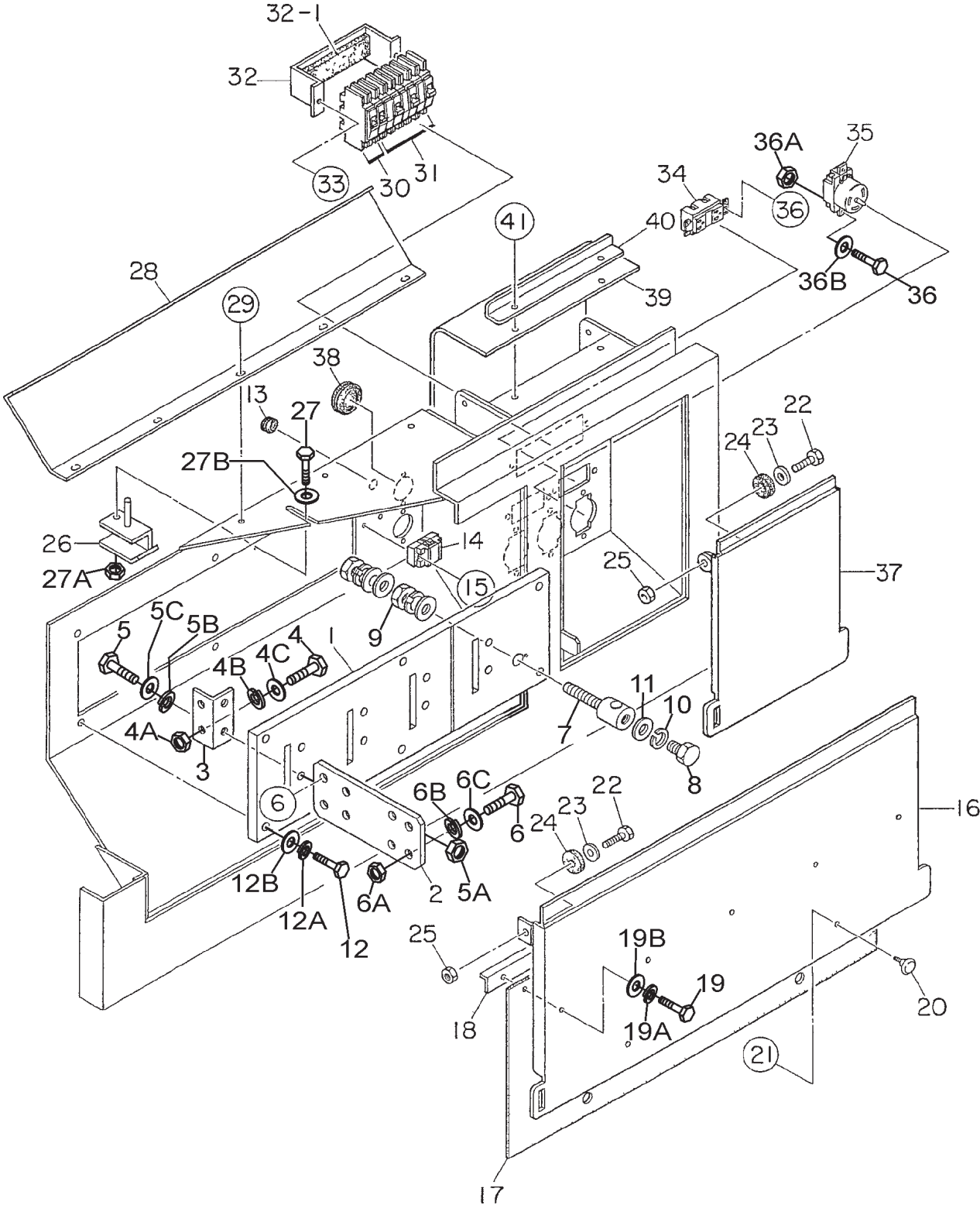
DCA-600SSV — ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4484002102	SUPPORT LEG	1	
2	0017112030	HEX. HEAD BOLT	4	
3	0017110030	HEX. HEAD BOLT	2	
4	C4352102203	OPERATING PANEL	1	
5	0017108020	HEX. HEAD BOLT	4	
6	0017108020	HEX. HEAD BOLT	6	
7	8085182004	RUBBER COVER	2	
8	8085183004	SET FRAME, RUBBER COVER	2	
9	0017106020	HEX. HEAD BOLT	12	
10	0602101012	BATTERY SWITCH	1	
11	0805008804	SET PLATE, BATTERY SWITCH	1	
12	0805008704	STAY, BATTERY SWITCH	1	
13	0021008070	MACHINE SCREW	2	
13A	0040008000	SPRING WASHER	2	
13B	0041208000	PLAIN WASHER	2	
14	0601830448	PREHEAT BUTTON	1	
15	0602103090	PREHEAT LAMP	1	
15A	0601810244	BULB	1	
16	0602120023	TACHOMETER	1	
16A	0602129120	MOUNT KIT	1	
17	0602122026	OIL PRESSURE GAUGE	1	
17A	0602122026	MOUNT KIT	1	
18	0602123023	WATER TEMPERATURE GAUGE	1	
18A	0602129121	MOUNT KIT	1	
19	0602125055	FUEL GAUGE	1	
20	0601831570	SWITCH, HOUR METER	1	
21	0602103090	ALARM LAMP	5	
21A	0601810244	BULB	5	
22	0601830710	CHANGE-OVER SWITCH, SPEED	1	
23	0601831954	EMERGENCY STOP BUTTON	1	

DCA-600SSV — OUTPUT TERMINAL ASSY.

OUTPUT TERMINAL ASSY.



DCA-600SSV — OUTPUT TERMINAL ASSY.

OUTPUT TERMINAL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4231700603	SET BOARD, OUTPUT TERMINAL	1	
2	7521860504	OUTPUT TERMINAL	4	
3	7521850504	BRACKET, OUTPUT TERMINAL	4	
4	0010112040	HEX. HEAD BOLT	8	
4A	0030012000	HEX. NUT	8	
4B	0040012000	SPRING WASHER	8	
4C	0041212000	PLAIN WASHER	16	
5	0010112045	HEX. HEAD BOLT	8	
5A	0030012000	HEX. NUT	8	
5B	0040012000	SPRING WASHER	8	
5C	0041212000	PLAIN WASHER	16	
6	0010112040	HEX. HEAD BOLT	24	
6A	0030012000	HEX. NUT	24	
6B	0040012000	SPRING WASHER	24	
6C	0041212000	PLAIN WASHER	48	
7	0801830404	TERMINAL	1	
8	0801830904	HEX. HEAD BOLT	1	
9	0039320000	HEX. NUT	2	
10	0040020000	SPRING WASHER	3	
11	0041420000	PLAIN WASHER	4	
12	0019112050	HEX. HEAD BOLT	6	
12A	0042312000	SPRING WASHER	6	
12B	0042412000	PLAIN WASHER	6	
13	0601850275	GROMMET	1	
14	0601815324	TERMINAL BOARD	1	
15	0027104020	MACHINE SCREW	2	
16	C4237101304	COVER, OUTPUT TERMINAL	1	
17	7971867114	RUBBER SHEET	1	
18	7521865804	SET PLATE, RUBBER SHEET	2	
19	0019106020	HEX. HEAD BOLT	5	
19A	0042306000	SPRING WASHER	5	
19B	0042406000	PLAIN WASHER	5	
20	0605010660	KNOB	2	
21	0207006000	HEX. NUT	2	
22	0019112040	HEX. HEAD BOLT	4	
23	0042412000	PLAIN WASHER	8	
24	0805009804	STAY RUBBER	4	
25	0030012000	HEX. NUT	4	
26	7521865603	STOPPER	1	
27	0019108030	HEX. HEAD BOLT	1	
27A	0030008000	HEX. NUT	1	
27B	0041208000	PLAIN WASHER	2	
28	C4237100504	COVER	1	
29	0017108020	HEX. HEAD BOLT	5	
30	0601808803	CIRCUIT BREAKER, 20A	2	
31	0601808804	CIRCUIT BREAKER, 50A	3	

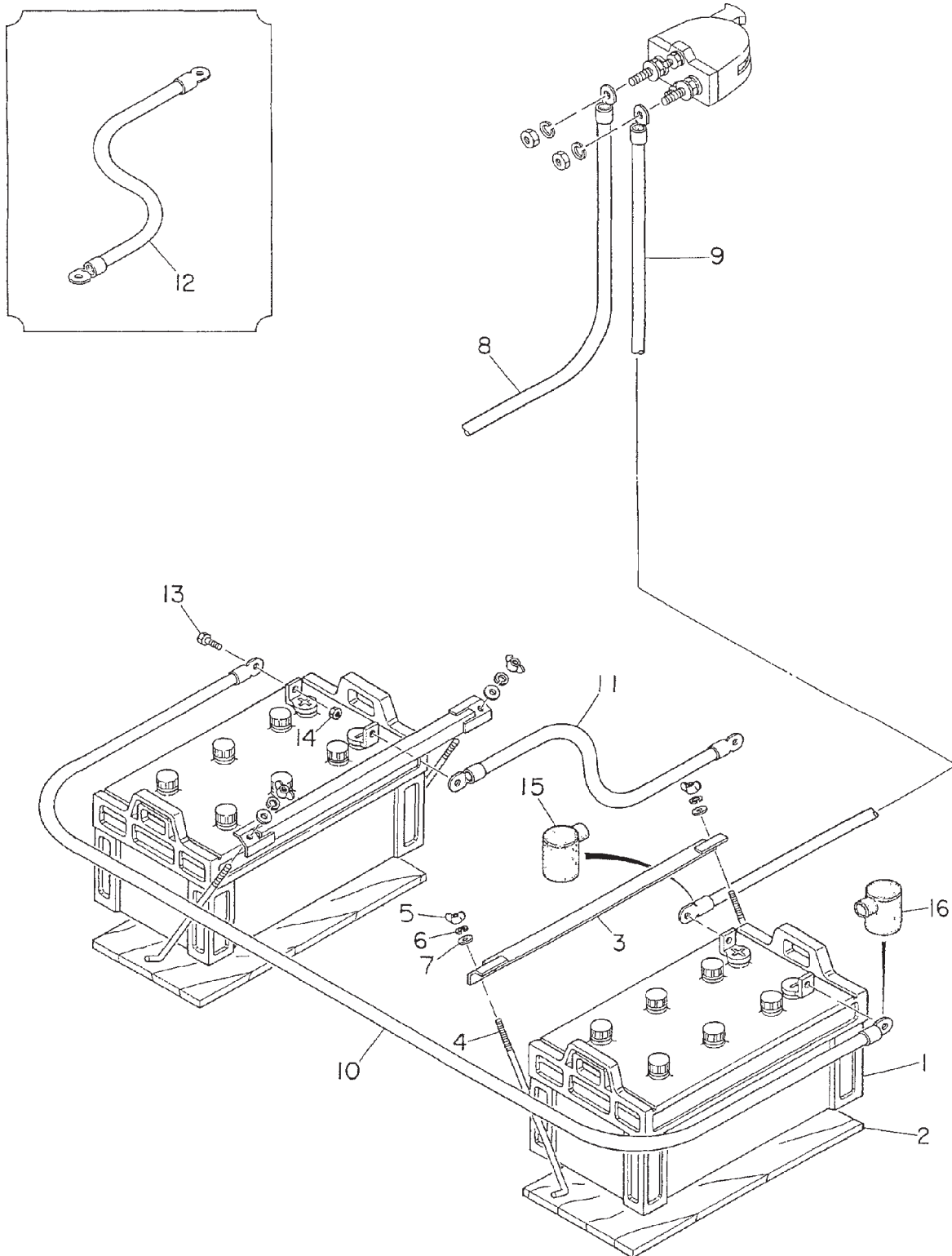
DCA-600SSV — OUTPUT TERMINAL ASSY. (CONT.)

OUTPUT TERMINAL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
32	C3261600704	BRACKET, CIRCUIT BREAKER	1	
32-1	0221200150	RUBBER CUSHION	1	
33	0017106030	HEX. HEAD BOLT	2	
34	0601812598	RECEPTACLE	2	
35	0601812565	RECEPTACLE	3	
36	0027104015	MACHINE SCREW	10	
3-A	0030004000	HEX. NUT	10	
36B	0041204000	PLAIN WASHER	10	
37	C4237101203	COVER	1	
38	06061851780	GROMMET	2	
39	C4237102804	COVER	1	
40	C4237400804	BRACKET	1	
41	0017106016	HEX. HEAD BOLT	2	

DCA-600SSV — BATTERY ASSY.

BATTERY ASSY.

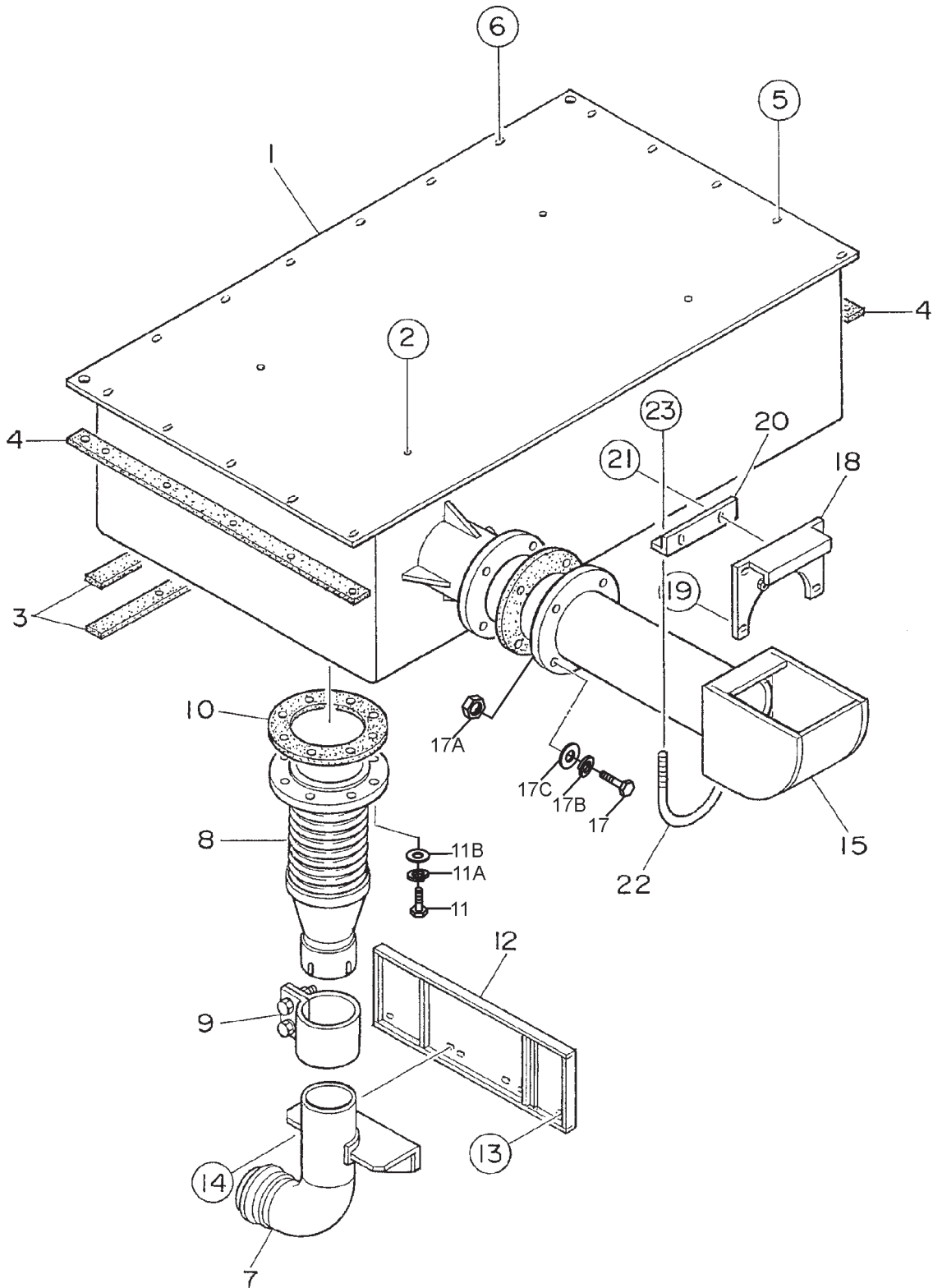


BATTERY ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0168719052	BATTERY	2	
2	C9109100704	BATTERY SHEET	2	
3	0805007804	BATTERY BAND	2	
4	0805006504	BATTERY BOLT	2	
5	0037808000	WING NUT	4	
6	0040008000	SPRING WASHER	4	
7	0041208000	PLAIN WASHER	4	
8	C5347600504	BATTERY CABLE	4	
9	C4347601704	BATTERY CABLE	1	
10	7432280504	BATTERY CABLE	1	
11	C4347601904	BATTERY CABLE	1	
12	C4347601804	EARTH CABLE	1	
13	0347010030	HEX. HEAD BOLT	4	
14	0208110000	HEX. NUT	4	
15	0845040114	TERMINAL CAP (+)	2	
16	0845041004	TERMINAL CAP (-)	2	

DCA-600SSV — MUFFLER ASSY.

MUFFLER ASSY.

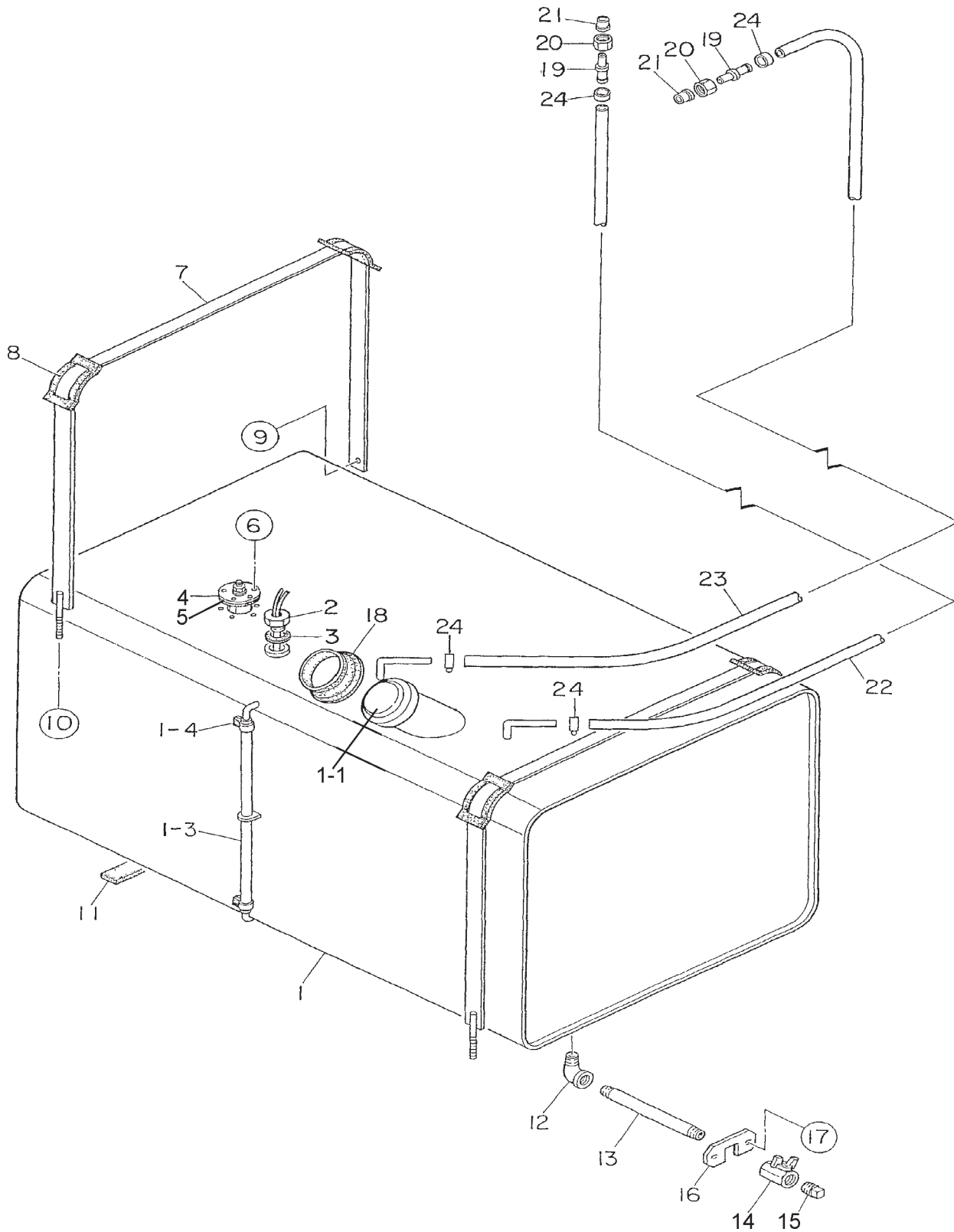


MUFFLER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4331100802	MUFFLER	1	
2	0019210020	HEX. HEAD BOLT	4	
3	C4334200904	PACKING	2	
4	C4334200904	PACKING	2	
5	0019210030	HEX. HEAD BOLT	10	
6	0019208020	HEX. HEAD BOLT	6	
7	C4334000903	EXHAUST PIPE	1	
8	C4334001003	EXHAUST PIPE	1	
9	0602325009	SEAL CLAMP	1	
10	C4334200504	GASKET	1	
11	0010116050	HEX. HEAD BOLT	8	
11A	0040016000	SPRING WASHER	8	
11B	0041216000	PLAIN WASHER	8	
12	C4484100004	COVER	1	
13	0012310025	HEX. HEAD BOLT	2	
14	0012310030	HEX. HEAD BOLT	4	
15	C4334103603	OUTLET PIPE	1	
16	C3334200704	GASKET	1	
17	0010112050	HEX. HEAD BOLT	4	
17A	0030012000	HEX. NUT	4	
17B	0040012000	SPRING WASHER	4	
17C	0041212000	PLAIN WASHER	8	
18	C4331301204	COVER	1	
19	0019208025	HEX. HEAD BOLT	4	
20	C4331400204	BRACKET	1	
21	0019210020	HEX. HEAD BOLT	2	
22	0603320132	U BOLT	1	
23	0207310000	HEX. NUT	2	

DCA-600SSV — FUEL TANK ASSY.

FUEL TANK ASSY.

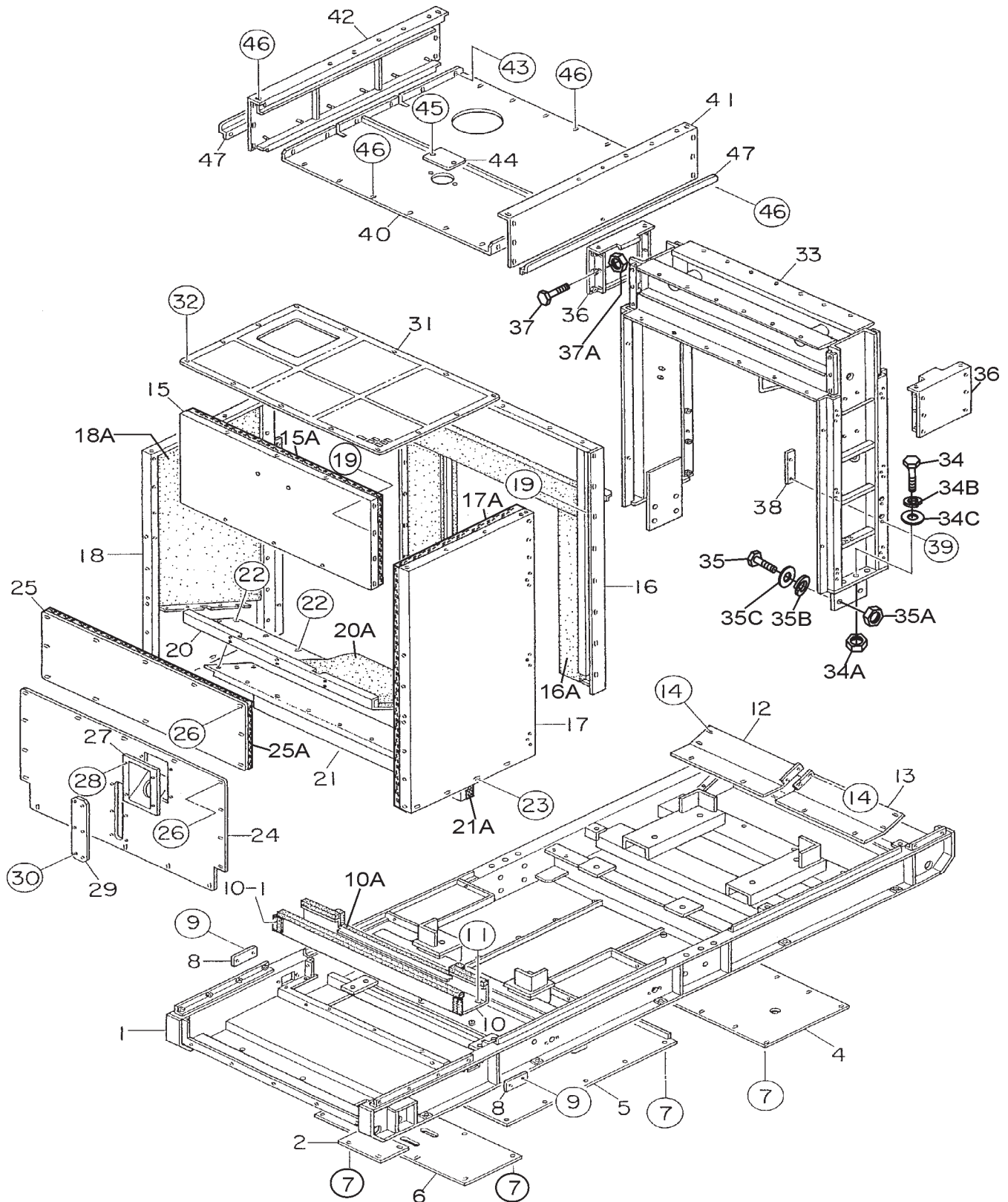


FUEL TANK ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4364002203	FUEL TANK	1	
1-1	0845500104	CAP, FUEL TANK	1	
1-2	0810105400	FUEL FILTER	1	
1-3	0264100505	HOSE, FUEL GAUGE	1	
1-4	0605515079	HOSE BAND	2	
2	0605503023	FUEL SENSOR	1	
3	0802120604	PACKING	1	
4	C2924300034	FUEL SENDER	1	
5	E1924300184	GASKET	1	
6	0022905015	MACHINE SCREW	5	
7	8225523104	TANK BAND	2	
8	0805003414	PAD, TANK BAND	4	
9	0017108020	HEX. HEAD BOLT	2	
10	0207308000	SELF-LOCKING NUT	2	
11	0222100600	TANK SHEET	6	
12	0130206000	STREET ELBOW, 1/2	1	
13	0134306220	DRAIN PIPE	1	
14	0603325026	VALVE	1	
15	0132006000	PLUG	1	
16	C1367700304	LOCK PLATE	1	
17	0019208025	HEX. HEAD BOLT	2	
18	0845039604	RUBBER SEAL	1	
19	C4367200004	JOINT PIPE	2	
20	0603303071	NUT	2	
21	0603302071	SLEEVE	2	
22	0191403400	SUCTION HOSE	1	
23	0191403800	RETURN HOSE	1	
24	0605515073	HOSE BANK	4	

DCA-600SSV — ENCLOSURE #1 ASSY.

ENCLOSURE #1 ASSY.



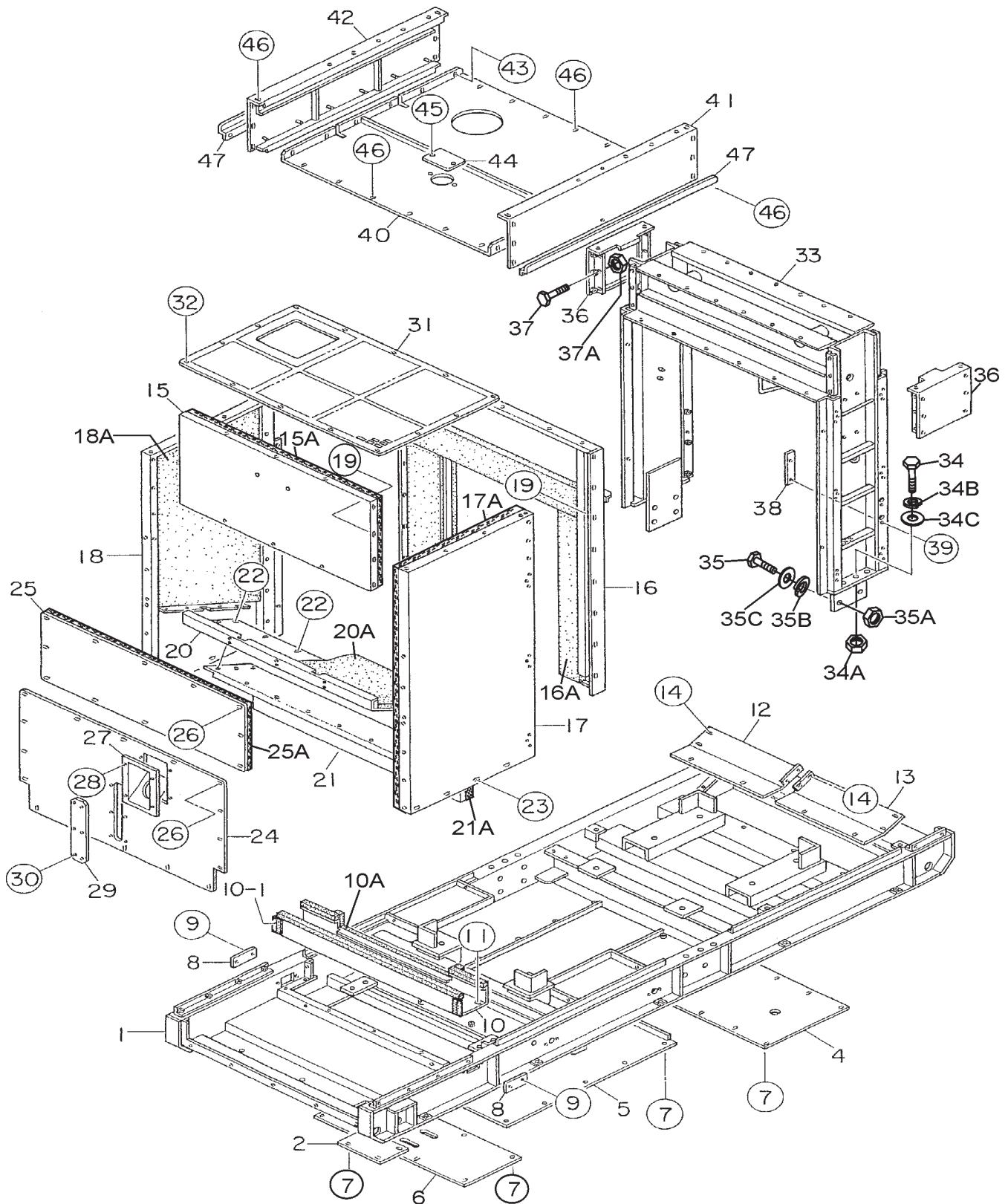
DCA-600SSV — ENCLOSURE #1 ASSY.

ENCLOSURE #1 ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4414003302	BASE	1	
2	3875116304	FLOOR PANEL	1	
3	0019208020	HEX. HEAD BOLT	4	
4	C4414100204	FLOOR PANEL	1	
5	C4414100304	FLOOR PANEL	1	
6	C4414100404	FLOOR PANEL	1	
7	0019208020	HEX. HEAD BOLT	32	
8	C4414400104	COVER	2	
9	0019208020	HEX. HEAD BOLT	4	
10	C4414200003	GUIDE PANEL, AIR	1	
10A	C4494000004	ACOUSTIC SHEET	1	
10-1	0314500110	RUBBER SEAL	2	
11	0019208020	HEX. HEAD BOLT	9	
12	C4414600504	GUIDE PANEL, AIR	1	
13	C4414600604	GUIDE PANEL, AIR	1	
14	0017108020	HEX. HEAD BOLT	10	
15	C4424005003	FRONT FRAME	1	
15A	C4494102803	ACOUSTIC SHEET	1	
16	C4424005303	FRONT FRAME	1	
16A	C4494102803	ACOUSTIC SHEET	1	
17	C4424005502	FRONT FRAME	1	
17A	C4494102803	ACOUSTIC SHEET	1	
18	C4424005402	FRONT FRAME	1	
18A	C4494102803	ACOUSTIC SHEET	1	
19	0019208020	HEX. HEAD BOLT	24	
20	C4424300903	GUIDE PANEL, AIR	1	
20A	4494102803	ACOUSTIC SHEET	1	
21	C4424301003	GUIDE PANEL, AIR	1	
21A	C4494102803	ACOUSTIC SHEET	1	
22	0019208020	HEX. HEAD BOLT	19	
23	0019210025	HEX. HEAD BOLT	8	
24	C4424204803	COVER, FROM FRAME	1	
25	C4424204704	COVER, FROM FRAME	1	
25A	C4494102204	ACOUSTIC SHEET	1	
26	0019208020	HEX. HEAD BOLT	28	
27	0845042703	FILLER BRACKET	1	
28	0019208020	HEX. HEAD BOLT	4	
29	C4424204604	COVER	1	
30	0019206016	HEX. HEAD BOLT	6	
31	C4424206703	COVER, FRONT FRAME	1	
32	0019208020	HEX. HEAD BOLT	14	
33	C4434001402	CENTER FRAME	1	
34	0010120065	HEX. HEAD BOLT	6	
34A	0030020000	HEX. NUT	6	
34B	0040020000	SPRING WASHER	6	
34C	0041220000	PLAIN WASHER	12	

DCA-600SSV — ENCLOSURE #1 ASSY. (CONT.)

ENCLOSURE #1 ASSY.



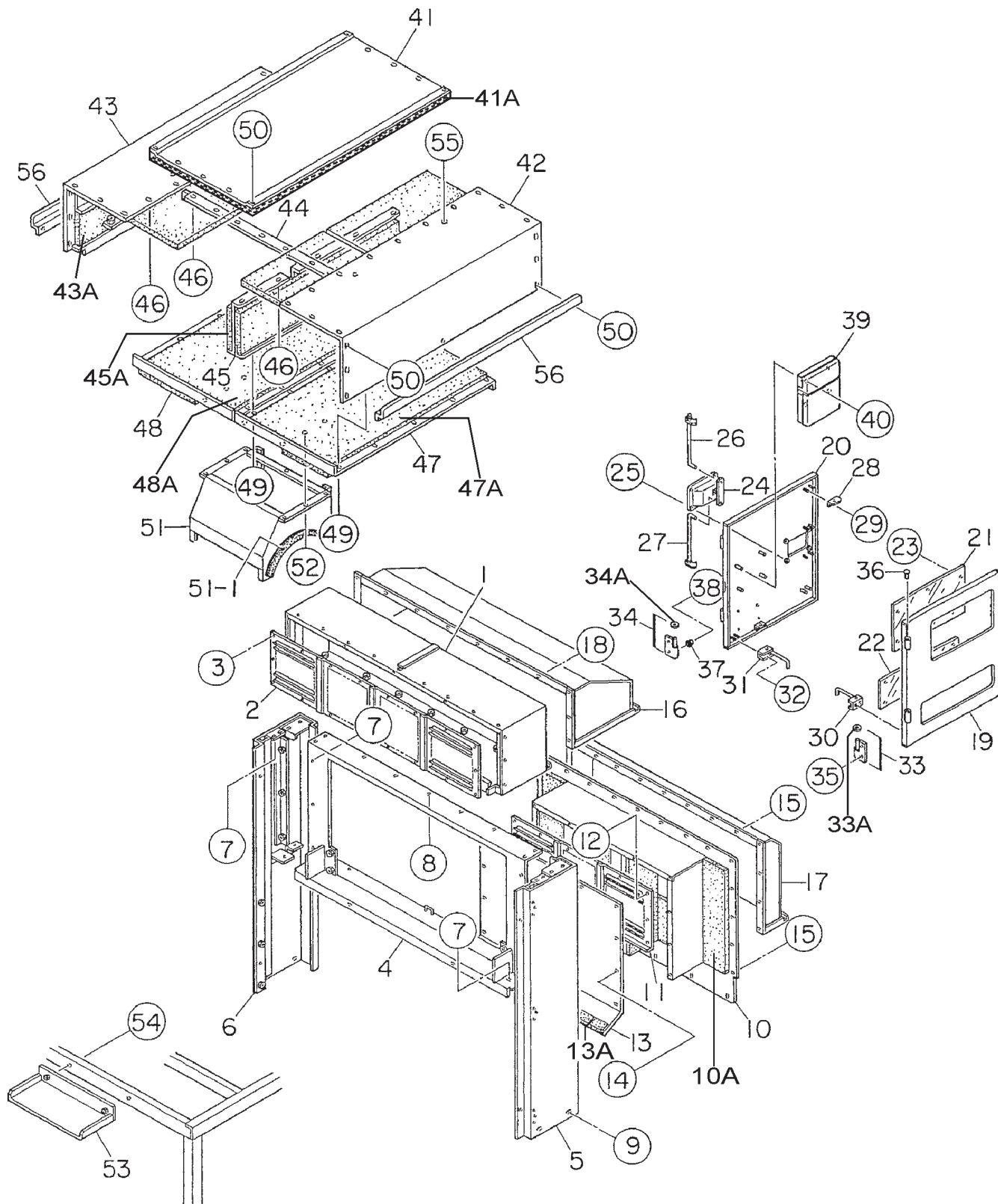
DCA-600SSV — ENCLOSURE #1 ASSY. (CONT.)

ENCLOSURE #1 ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
35	0010120065	HEX. HEAD BOLT	8	
35A	0030020000	HEX. NUT	8	
35B	0040020000	SPRING WASHER	8	
35C	0041220000	PLAIN WASHER	16	
36	C4434200103	COVER	2	
37	0017108020	HEX. HEAD BOLT	12	
37A	0207008000	HEX. NUT	12	
38	C2367700404	COVER	1	
39	0019208020	HEX. HEAD BOLT	2	
40	C4464102903	ROOF PANEL	1	
41	C4464103003	ROOF PANEL	1	
42	C4464103103	ROOF PANEL	1	
43	0207108000	HEX. NUT	12	
44	8452023004	COVER	1	
45	0019208020	HEX. HEAD BOLT	2	
46	0019208020	HEX. HEAD BOLT	32	
47	C4464502404	GUTTER	2	

DCA-600SSV — ENCLOSURE #2 ASSY.

ENCLOSURE #2 ASSY.

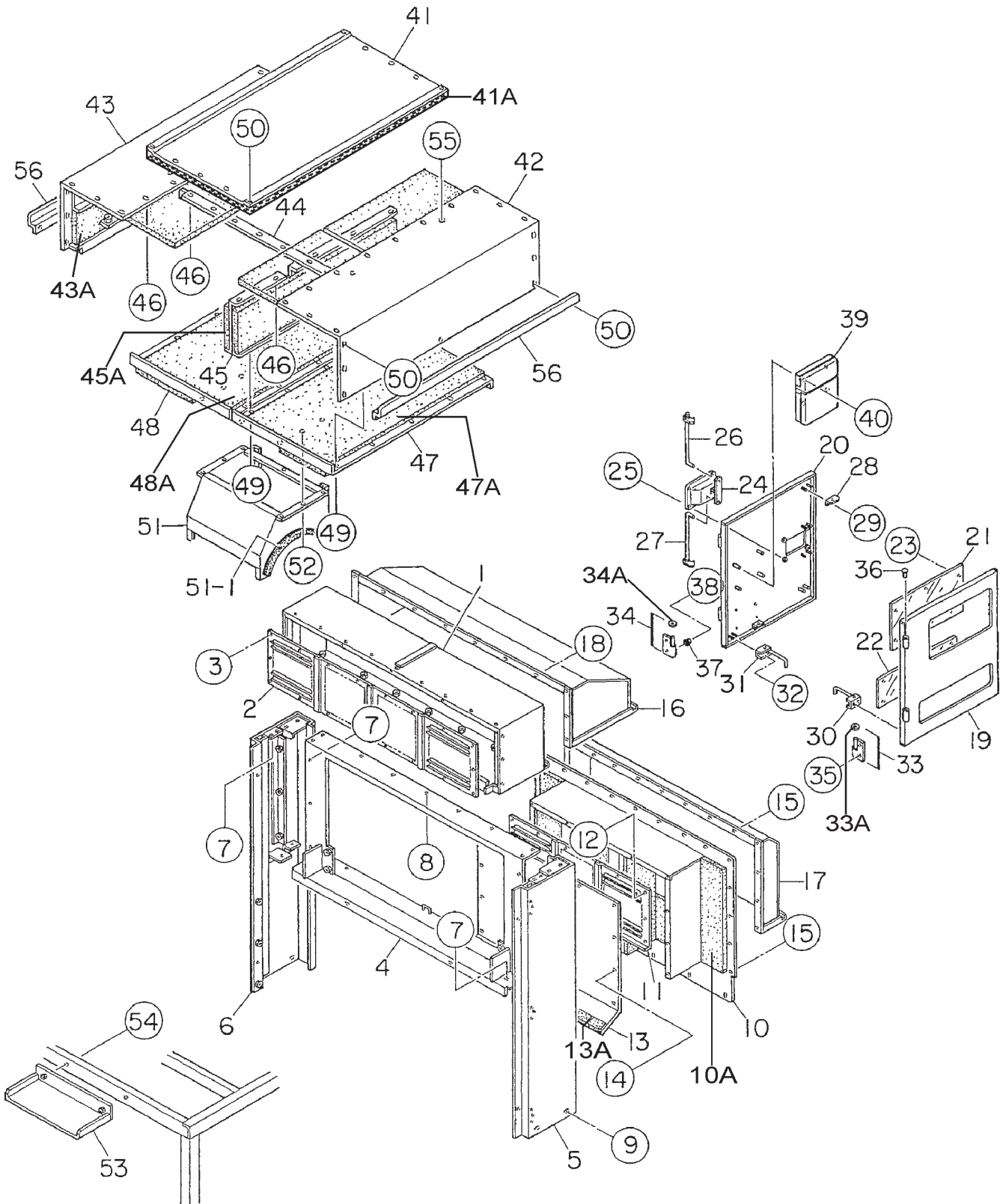


ENCLOSURE #2 ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4444001303	REAR FRAME	1	
2	3875151004	LOUVER PANEL	1	
3	0207106000	HEX. NUT	21	
4	C4444000103	REAR FRAME	1	
5	C4444000203	REAR FRAME	1	
6	C4444000303	REAR FRAME	1	
7	0017110025	HEX. HEAD BOLT	18	
8	0017108020	HEX. HEAD BOLT	5	
9	0019210025	HEX. HEAD BOLT	4	
10	7975155003	COVER, REAR FRAME	1	
10A	3875944104	ACOUSTIC SHEET	1	
11	3875151104	LOUVER PANEL	1	
12	0207006000	HEX. NUT	16	
13	C4444301204	DUCT COVER	1	
13A	8495946104	ACOUSTIC SHEET	1	
14	0017108020	HEX. HEAD BOLT	17	
15	0019208020	HEX. HEAD BOLT	23	
16	C4444300703	VISOR	1	
17	3875165803	VISOR	1	
18	0019208020	HEX. HEAD BOLT	12	
19	7975143003	DOOR, REAR FRAME	1	
20	C4444201503	DOOR , REAR FRAME	1	
21	3875147204	WINDOW PLATE	1	
22	3875147304	WINDOW PLATE	1	
23	0207306000	SUPER LOCK NUT	12	
24	B9114000102	DOOR HANDLE	1	
25	0021806015	MACHINE SCREW	4	
26	7975146004	DOOR ROD	1	
27	7975146104	DOOR ROD	1	
28	0845050704	STAY	4	
29	0207106000	HEX. NUT	8	
30	0805011304	STOPPER, DOOR	1	
31	0805011204	STOPPER, DOOR	1	
32	0207106000	HEX. NUT	4	
33	0845047104	HINGE	2	
33A	0845045004	WASHER	2	
34	0845047204	HINGE	2	
34A	0845045004	WASHER	2	
35	0019208020	HEX. HEAD BOLT	6	
36	0845031504	CAP	4	
37	0601850097	STOPPER	2	
38	0025408025	MACHINE SCREW	2	
39	0600800320	MANUAL PACK	1	
40	0207106000	HEX. NUT	4	
41	C4464202303	ROOF PANEL	1	
41A	C4494501604	ACOUSTIC SHEET	1	

DCA-600SSV — ENCLOSURE #2 ASSY. (CONT.)

ENCLOSURE #2 ASSY.



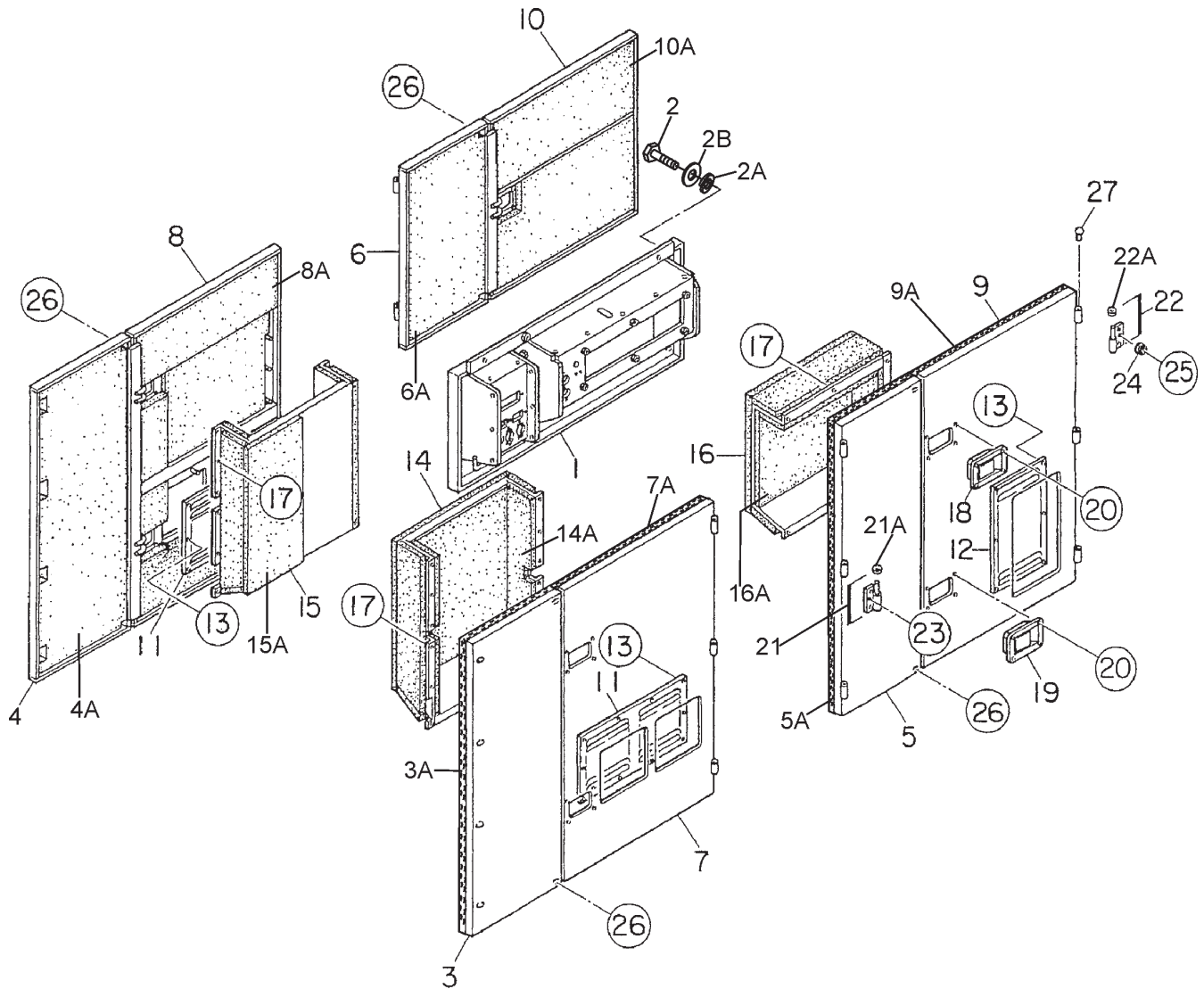
DCA-600SSV — ENCLOSURE #2 ASSY. (CONT.)

ENCLOSURE #2 ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
42	C4464202403	ROOF PANEL	1	
42A	C4494501604	ACOUSTIC SHEET	1	
43	C4464202503	ROOF PANEL	1	
43A	C4494501604	ACOUSTIC SHEET	1	
44	C4464501804	GUTTER	1	
45	C4464502304	PANEL	1	
45A	C4494501604	ACOUSTIC SHEET	1	
46	0207008000	HEX. NUT	26	
47	C4464502204	COVER, ROOF PANEL	1	
47A	C4494501704	ACOUSTIC SHEET	1	
48	C4464502104	COVER, ROOF PANEL	1	
48A	C4494501704	ACOUSTIC SHEET	1	
49	0017108020	HEX. HEAD BOLT	20	
50	0019208020	HEX. HEAD BOLT	32	
51	C4374200503	COVER, AIR CLEANER	1	
51-1	0310000520	RUBBER SEAL	1	
52	0017108020	HEX. HEAD BOLT	8	
53	C3374200104	COVER, AIR CLEANER	1	
54	0017108020	HEX. HEAD BOLT	2	
55	0019210025	HEX. HEAD BOLT	4	
56	C4464502504	GUTTER	2	

DCA-600SSV — ENCLOSURE #3 ASSY.

ENCLOSURE #3 ASSY.

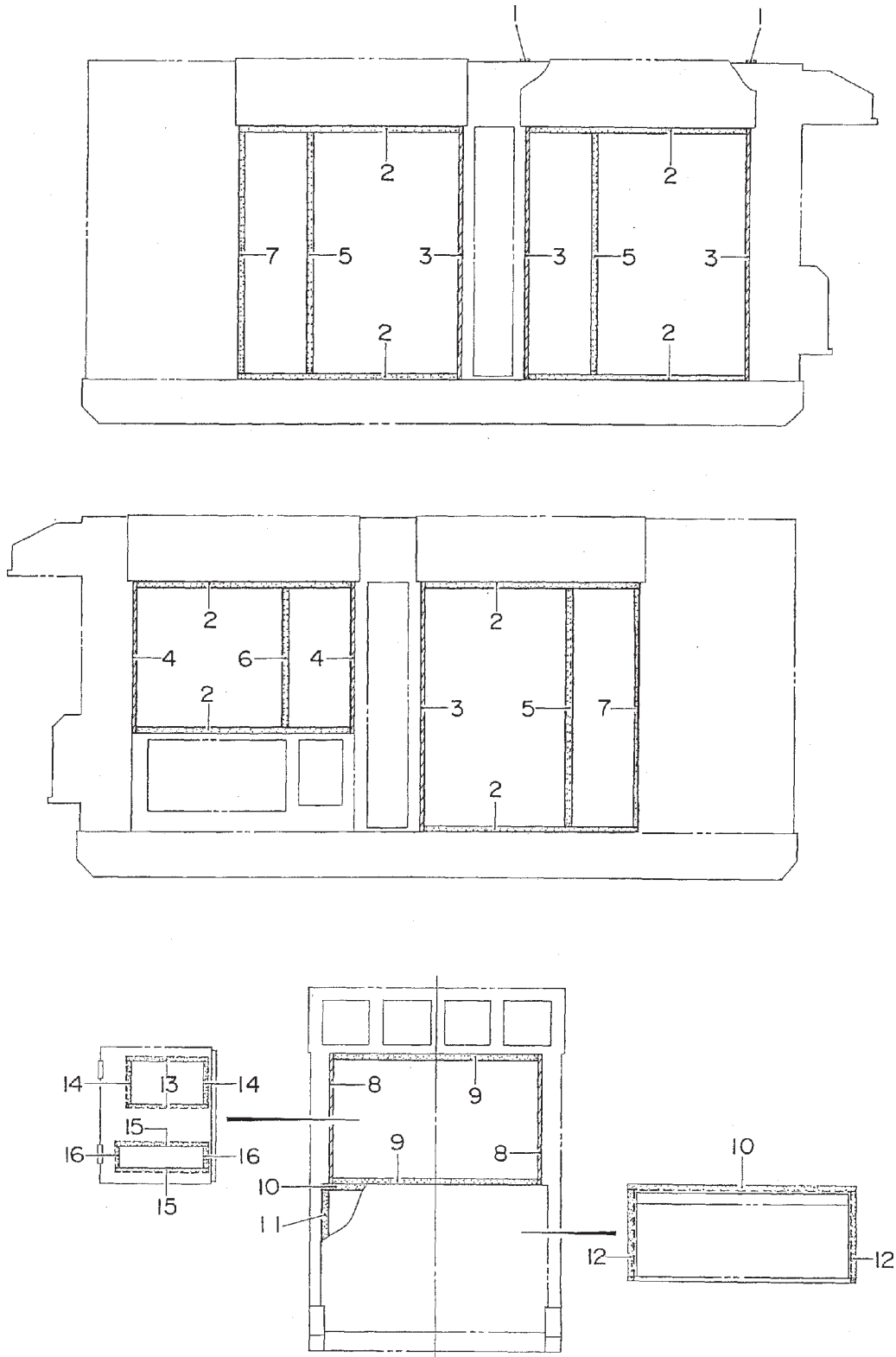


ENCLOSURE #3 ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	C4454206003	SPLASHER PANEL	1	
2	0019110070	HEX. HEAD BOLT	6	
2A	0042310000	SPRING WASHER	6	
2-B	0042410000	PLAIN WASHER	6	
3	C4454102803	SIDE PANEL	1	
3A	C4494409504	ACOUSTIC SHEET	1	
4	C4454102903	SIDE PANEL	1	
4A	C4494409404	ACOUSTIC SHEET	1	
5	C4454103003	SIDE PANEL	1	
5A	C4494409304	ACOUSTIC SHEET	1	
6	C4454103103	SIDE PANEL	1	
6A	C4494409204	ACOUSTIC SHEET	1	
7	C4454004103	SIDE DOOR	1	
7A	C4494408604	ACOUSTIC SHEET	1	
8	C4454004203	SIDE DOOR	1	
8A	C4494408704	ACOUSTIC SHEET	1	
9	C4454004303	SIDE DOOR	1	
9A	C4494408804	ACOUSTIC SHEET	1	
10	C4454004403	SIDE DOOR	1	
10A	C4494409104	ACOUSTIC SHEET	1	
11	3875151204	LOUVER PANEL	2	
12	7975151004	LOUVER PANEL	1	
13	0207106000	HEX. NUT	28	
14	C4454301904	DUCT	1	
14A	C4494408904	ACOUSTIC SHEET	1	
15	C4454302004	DUCT	1	
15A	C4494409604	ACOUSTIC SHEET	1	
16	C4453402104	DUCT	1	
16A	C4494409004	ACOUSTIC SHEET	1	
17	0207106000	HEX. NUT	35	
18	B9114000002	DOOR HANDLE	4	
19	0825007362	DOOR HANDLE	3	
20	0021806015	MACHINE SCREW	28	
21	0845046904	HINGE	8	
21A	0845045004	WASHER	8	
22	0845047004	HINGE	8	
22A	0845045004	WASHER	8	
23	0019208020	HEX. HEAD BOLT	37	
24	0601850097	STOPPER	11	
25	0025408025	MACHINE SCREW	11	
26	0019208070	HEX. HEAD BOLT	16	
27	0845031504	CAP	16	

DCA-600SSV — RUBBER SEAL ASSY.

RUBBER SEAL ASSY.



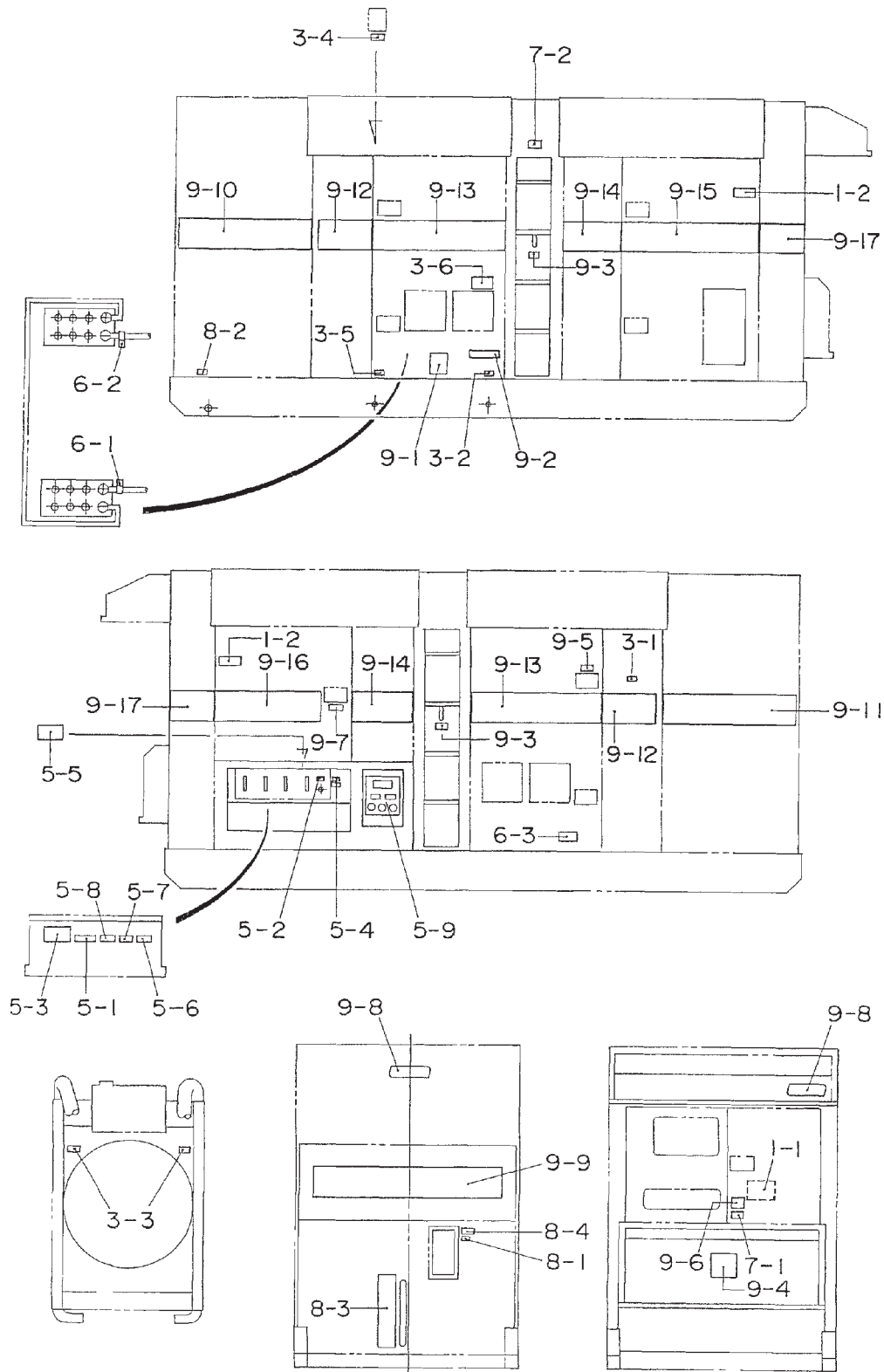
DCA-600SSV — RUBBER SEAL ASSY.

RUBBER SEAL ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0229201650	RUBBER SEAL	2	
2	0228901440	RUBBER SEAL	8	
3	0228901670	RUBBER SEAL	4	
4	0228901020	RUBBER SEAL	2	
5	0228901610	RUBBER SEAL	3	
6	0228900960	RUBBER SEAL	1	
7	0228801610	RUBBER SEAL	2	
8	0228800860	RUBBER SEAL	2	
9	0228801380	RUBBER SEAL	2	
10	0229201490	RUBBER SEAL	2	
11	0229200780	RUBBER SEAL	2	
12	0229200595	RUBBER SEAL	2	
13	0228100500	RUBBER SEAL	2	
14	0228100270	RUBBER SEAL	2	
15	0228100580	RUBBER SEAL	2	
16	0228100140	RUBBER SEAL	2	

DCA-600SSV — NAMEPLATE AND DECALS

NAME PLATE AND DECALS



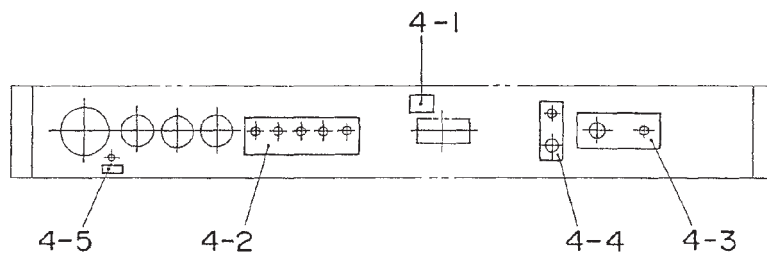
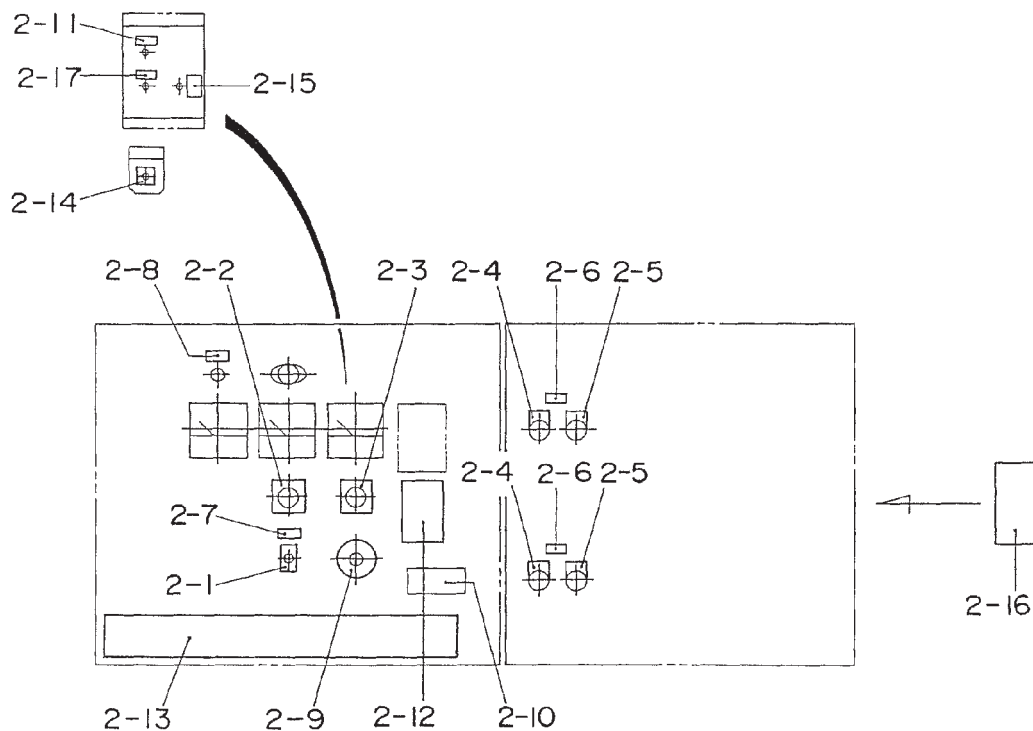
DCA-600SSV — NAMEPLATE AND DECALS

NAME PLATE AND DECALS

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1-1	C3551002303	DECAL: HANDLING PROCEDURES	1	
1-2	C9522100003	DECAL: CAUTION	2	
2-1	0800520100	PLATE: ON-OFF	1	
2-2	0800520904	PLATE: AMMETER CHANGE-OVER SWITCH	1	
2-3	0800520814	PLATE: VOLTMETER CHANGE-OVER SWITCH	1	
2-4	0800564004	DECAL: OFF	2	
2-5	0800565004	DECAL: ON	2	
2-6	0840624504	DECAL: CIRCUIT BREAKER	2	
2-7	0840624604	DECAL: PANEL LIGHT SWITCH	1	
2-8	0840624704	DECAL: PILOT LAMP	1	
2-9	0840624804	DECAL: VOLTAGE REGULATOR	1	
2-10	B9531100604	DECAL: WARNING ELECTRIC SHOCK HAZARD	1	
2-11	C3551001004	DECAL: DIAGNOSTIC LAMP	1	
2-12	C3551003204	DECAL: CAUTION ECU	1	
2-13	C4561101903	DECAL: WHISPERWATT 600	1	
2-14	C9502400004	DECAL: HIGH IDLE SPEED	1	
2-15	C9521007004	DECAL: ISO-DROOP CHANGE-OVER SWITCH	1	
2-16	C9521203003	DECAL: SETTING FOR OUTPUT VOLTAGE	1	
2-17	Z0110001504	DECAL: RESET	1	
3-1	6360610304	DECAL: WATER	1	
3-2	6360620204	DECAL: OIL DRAIN PLUG	1	
3-3	B9504000404	DECAL: WARNING MOVING PARTS	2	
3-4	B9504100104	DECAL: WARNING HOT COOLANT	1	
3-5	C6551002704	DECAL: COOLING WATER DRAIN PLUG	1	
3-6	C4551003103	DECAL: AIR BLEEDING PROCEDURE	1	
4-1	C0551000504	DECAL: BATTERY SWITCH	1	
4-2	C4551002804	DECAL: ALARM LAMP	1	
4-3	C4551002904	DECAL: EMERGENCY & ENGINE SPEED	1	
4-4	C4551003004	DECAL: PREHEAT	1	
4-5	C4551003204	DECAL: HOUR METER	1	
5-1	C0551000404	DECAL: 3-PHASE OUTPUT TERMINAL	1	
5-2	0840614104	DECAL: GROUND	1	
5-3	0840619904	DECAL: DANGER HIGH VOLTAGE	1	
5-4	9039209064	DECAL: START CONTACT	1	
5-5	0840655704	DECAL: TERMINAL COVER STOPPER	1	
5-6	B9511100304	DECAL: WARNING	1	
5-7	B9511100404	DECAL: WARNING ELECTRIC SHOCK HAZARD	1	
5-8	B9531100504	DECAL: WARNING ELECTRICK SHOCK HAZARD	1	
5-9	C4551001703	DECAL: RECEPTACLE & CIRCUIT BREAKER	1	
6-1	0800689404	DECAL: +	1	
6-2	0800689504	DECAL: -	1	
6-3	C9505300004	DECAL: CAUTION	1	

DCA-600SSV — NAMEPLATE AND DECALS (CONT.)

NAME PLATE AND DECALS



DCA-600SSV — NAMEPLATE AND DECALS (CONT.)

NAME PLATE AND DECALS

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
7-1	B9504200004	DECAL: WARNING ENGINE EXHAUST	1	
7-2	B9511100204	DECAL: CAUTION HOT SURFACES	1	
8-1	1320620904	DECAL: DIESEL FUEL	1	
8-2	6360620004	DECAL: FUEL DRAIN PLUG	1	
8-3	0840607104	DECAL: FUEL GAUGE	1	
8-4	B9504500004	DECAL: WARNING DIESEL FUEL	1	
9-1	0800615102	DECAL: CAUTION AGAINST OIL AND	1	
9-2	1320610603	DECAL: WATER OIL	1	
9-3	1320621504	DECAL: SUPPORT HOOK	2	
9-4	0840625902	DECAL: MQ	1	
9-5	B9504000304	DECAL: CAUTION HOT PARTS	1	
9-6	B9521100404	DECAL: SAFETY INSTRUCTIONS	1	
9-7	B9531100604	DECAL: WARNING ELECTRIC SHOCK HAZARD	1	
9-8	0600500090	EMBLEM	2	
9-8A	0021106016	MACHINE SCREW	4	
9-9	C4561101603	STRIPE	1	
9-10	C4561102503	STRIPE	1	
9-11	C4561102303	STRIPE	1	
9-12	C4561102204	STRIPE	2	
9-13	C4561102604	STRIPE	2	
9-14	C4561102104	STRIPE	2	
9-15	C4561102403	STRIPE	1	
9-16	C4561102003	STRIPE	1	
9-17	C4561102704	STRIPE	2	

PAYMENT TERMS

Terms of payment for parts are net 10 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The parts numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
 - a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable 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. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

OPERATION AND PARTS MANUAL

HERE'S HOW TO GET HELP

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

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Multiquip Corporate Office

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Carson, CA 90746 Fax (800) 537-3927
Contact: mq@multiquip.com

Mayco Parts

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

Service Department

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

MQ Parts Department

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

Warranty Department

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

Technical Assistance

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

MEXICO

MQ Cipsa

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

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Laval, Quebec, Canada H7L 6V3 Fax: (450) 625-8664
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This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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