PARTS AND OPERATION MANUAL

MQ POWER MODEL DCA-600SSK WHISPERWATT™ GENERATOR

(STANDARD)

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PARTS LIST NO. C4872300124
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Revision #3 (06/24/03)

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PARTS DEPARTMENT:
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FAX: 800-672-7877
SERVICE DEPARTMENT:
800-835-2551
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WARNING

CALIFORNIA — Proposition 65 Warning

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

HERE'S HOW TO GET HELP

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

PARTS DEPARTMENT
800-427-1244 or 310-537-3700
FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT
800-421-1244
FAX: 310- 537-4259

TECHNICAL ASSISTANCE
800-478-1244
FAX: 310- 631-5032

WARRANTY DEPARTMENT
888-661-4279, or 310-661-4279
FAX: 310- 537-1173

MQ Power DCA-600SSK AC Generator

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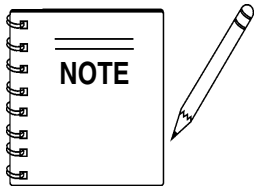

Specification and part number are subject to change without notice.

When ordering parts, please supply the following information:

- ❒ **Dealer account number**
- ❒ **Dealer name and address**
- ❒ **Shipping address (if different than billing address)**
- ❒ **Return fax number**
- ❒ **Applicable model number**
- ❒ **Quantity, part number and description of each part**
- ❒ **Specify preferred method of shipment:**
  - ✓ FedEx or UPS Ground
  - ✓ FedEx or UPS Second Day or Third Day
  - ✓ FedEx or UPS Next Day
  - ✓ Federal Express Priority One
  - ✓ DHL
  - ✓ Truck

Note: Unless otherwise indicated by customer, all orders are treated as "Standard Orders", and will ship within 24 hours. We will make every effort to ship "Air Shipments" the same day that the order is received, if prior to 2PM west coast time. "Stock Orders" must be so noted on fax or web forms.

Here's how to get help...

Please have the model and serial number on hand when calling.

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

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

Service Department
800-478-1244 — Fax: 310-537-4259
310-537-3700

MQ Power Service Department
800-835-2551 — Fax: 310-638-8046
310-537-3700

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

Multiquip's Main Phone Numbers
800-421-1244 — Fax: 310-537-3927
310-537-3700

Place Your Parts Order Via Web or Fax For Even More Savings!

Extra Discounts!

All parts orders which include complete part numbers and are received by our automated web parts order system, or by fax qualify for the following extra discounts:

Ordered via	Standard orders	Stock orders ($750 list and above)
Fax	3%	10%
Web	5%	10%

*Special freight allowances when you order 10 or more line items via Web or Fax!***

FedEx Ground Service ***at no charge for freight***

No other allowances on freight shipped by any other carrier.

NOTE: DISCOUNTS ARE SUBJECT TO CHANGE

MULTIQUIP INC.
18910 WILMINGTON AVENUE
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310-537-3700 • 800-421-1244
FAX: 310-537-3927
E-MAIL: mq@multiquip.com
WWW: multiquip.com

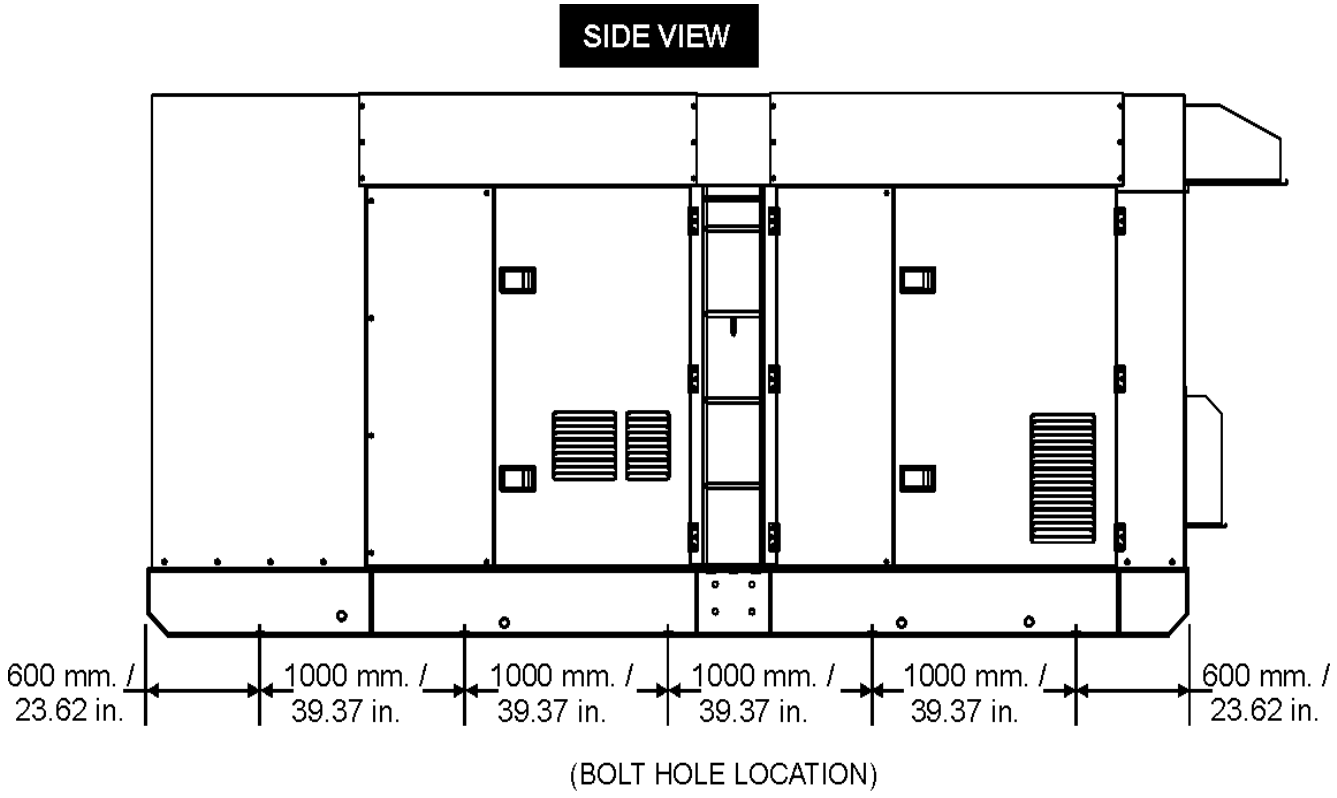
Direct TOLL-FREE access to our Parts Department:

Toll-free nationwide — 800-427-1244

Table 1. Generator Specifications	
Model	DCA-600SSK
Type	Revolving field, self ventilated, drip proof, single bearing
Armature Connection	Star with Neutral
Phase	3
Standby Output	528 KW (660KVA)
Prime Output	480 KW (600 KVA)
Voltages — 1Ø	120,127,139,240,254,277 (Adjustable)
Voltages — 3Ø	208,220,240,416,440,480 (Reconnectable)
Power Factor	0.8
Frequency	60 Hz
Frequency Regulation: No load to full load	Isochronous under varying loads from no load to 100% rated load
Frequency Regulation: Steady State	±25% of mean value for constant loads from no load to full load
Insulation	Class F
Sound Level dB(A) Full load at 23 feet	75
Dimensions Approx. (L x W x H)	153 x 56 x 71 in. (389 x 142 x 180 mm.)
Dry Net Weight	9,172 lbs. (4,160 kg.)

Table 2. Engine Specifications		
Model	KOMATSU SA6D170AE-1	
Type	direct injection, turbo-charged with after-cooler	
No. of Cylinders	6 cylinders	
Bore x Stroke	6.8 in. x 6.8 in. (170 mm x 170 mm)	
Rated Output	688 HP/1800 rpm	
Displacement	1411.5 cu. in. (23150 cc)	
Starting	Electric	
Coolant Capacity	28.9 gal. (109.4 liters)	
Lube Oil Capacity	31.4gal. (118.8 liters)	
Fuel Consumption	33.9gal(128.3L)/hr at **full load**	26.7 (101.1L)/hr at **3/4 load**
	17.4gal(65.9L)/hr at **1/2 load**	10.6gal/(40.1L)/hr at **1/4 load**
Battery	12V- 200 AH x 3	
Fuel	#2 Diesel Fuel	

NOTE PAGE



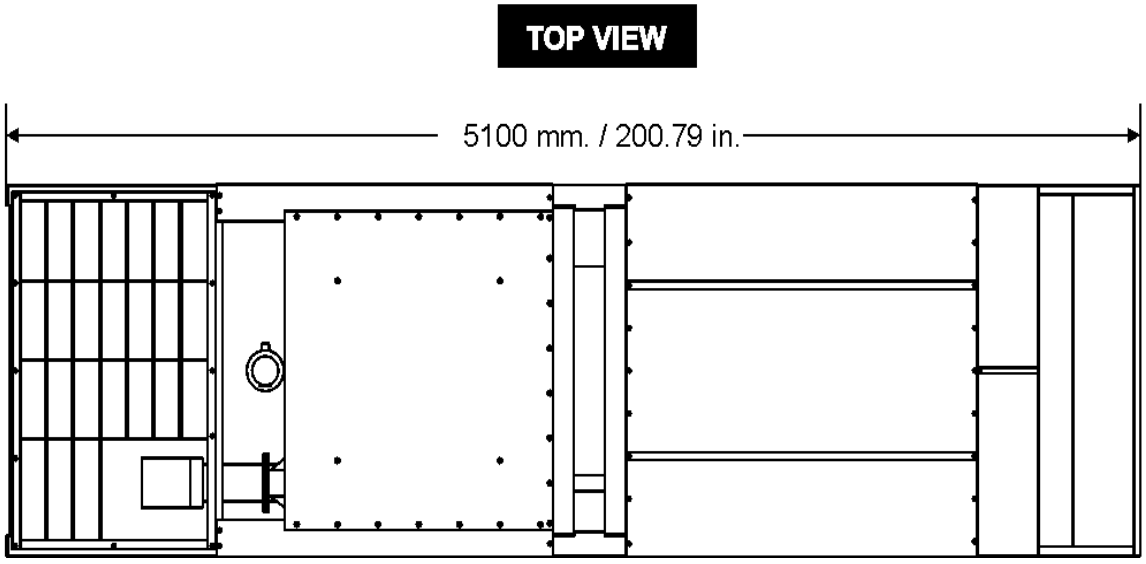
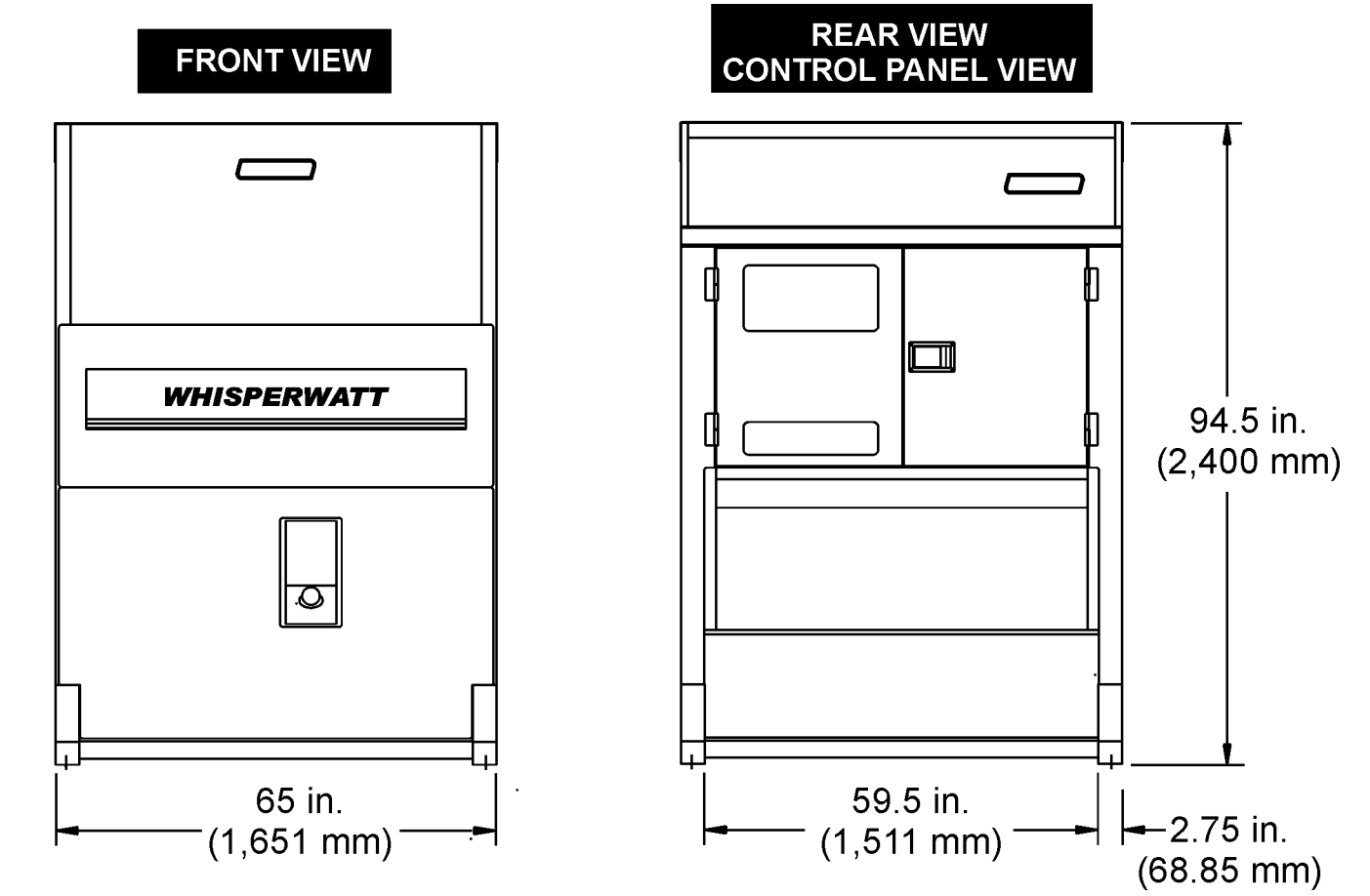


Figure 1. Dimensions

DCA-600SSK — DIMENSIONS (FRONT , REAR AND DOORS)



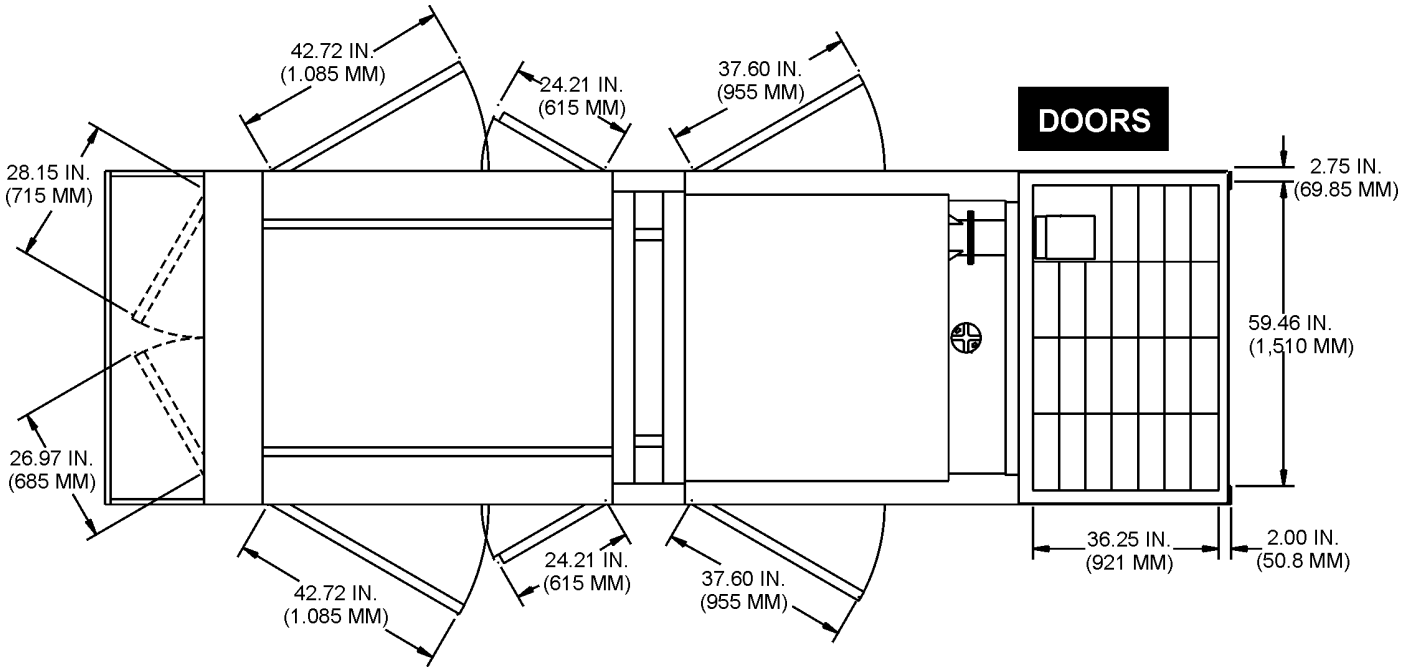
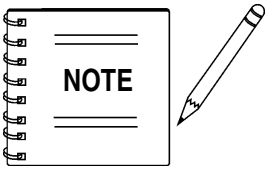


Figure 2. Dimensions

DCA-600SSK — SAFETY MESSAGE ALERT SYMBOLS

FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

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



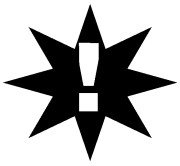
This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the MQ Power ***Model DCA-600SSK WHISPERWATT™ GENERATOR.*** **Before using this GENERATOR, ensure that the operating individual has read and understands all instructions in this manual.**

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 **CAN** be **KILLED** or SERIOUSLY injured if you **DO NOT** follow directions.



CAUTION: You **CAN** be injured if you **DO NOT** follow directions.

Potential hazards associated with the DCA-600SSK generator operation will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

HAZARD SYMBOLS

Rotating Parts

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

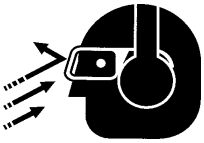
Accidental Starting

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

Over-Speed Conditions

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

Sight and Hearing Hazard



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

Respiratory Hazard

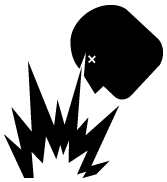
ALWAYS wear approved ***respiratory*** protection when required.

HAZARD SYMBOLS

Lethal Exhaust Gases

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

Explosive Fuel



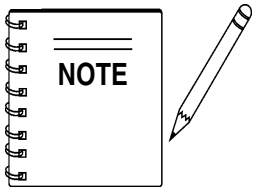
Diesel fuel is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact 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**

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.

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.

CAUTION:

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

The following safety guidelines should always be used when operating the **DCA-600SSK Generator**:

GENERAL SAFETY

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

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

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

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

■ **NEVER** operate this equipment under the influence 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.

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

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

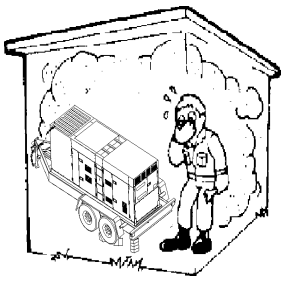
■ **ALWAYS** check the machine for loosened threads or bolts before starting.

■ **NEVER** 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.



■ **ALWAYS** make sure generator is properly grounded to a suitable eartg ground.

■ **NEVER** use gas piping as an electrical ground.

■ **DO NOT** place hands or fingers inside generator engine compartment when engine is running.

■ **ALWAYS** make sure generator installation is accordance with ***national and local electrical codes***.

■ **ALWAYS** have a qualified electrician perform the generator wiring installation.

■ **NEVER** let power cables or cords ***lay in wate***r.

■ **NEVER** ***stand in water*** while AC power from the generator is being transfer to a load.

■ **NEVER** use a defective or frayed power cable. Check the cable for cuts in the insulation.

■ **NEVER** use a extension cord that is frayed or damaged where the insulation has been cut.

■ **ALWAYS** make certain that proper extension cord has been selected for the job See Table 6.

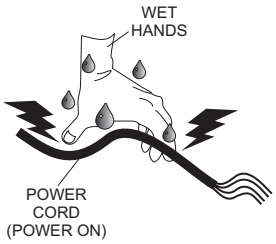
■ The electrical voltage required to operate the generator can cause severe injury or even death through physical contact with live circuits. Turn all circuit breakers **OFF** before performing maintenance on the generator.

- **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 the operator is familiar with proper safety precautions and operations techniques before using generator.
- **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.
- **ALWAYS** read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.

DANGER:

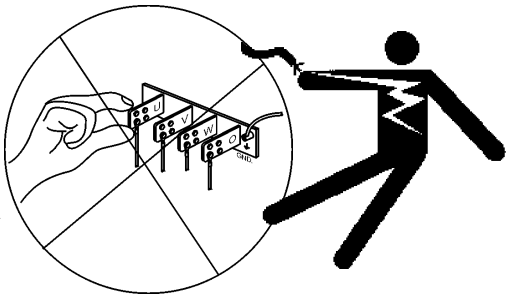
NEVER use ***damaged*** or ***worn*** cables when connecting equipment to the generator. Make sure power connecting cables are securely connected to the generator's output terminals, insufficient tightening of the terminal connections may cause damage to the generator and electrical shock.

DANGER:



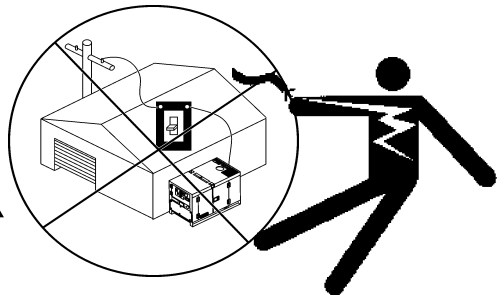
NEVER grab or touch a live power cord with wet hands , the possibility exists of electrical shock, electrocution, and even ***death!***

DANGER:



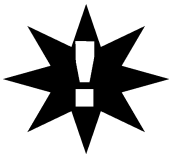
- **NEVER** touch output terminals during operation. This is extremely dangerous. **ALWAYS** stop the generator and place the ***main*** circuit breaker in the "**OFF**" position when contact with the output terminals is required. There exists the possibility of ***electrocution, electrical shock or burn, which can cause severe bodily harm or even death***!

DANGER:



- 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

CAUTION:



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

Radiator

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

Maintenance Safety

- **NEVER** lubricate components or attempt service on a running machine.
- **ALWAYS** allow the machine a proper amount of time to cool before servicing.

- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and always replace broken parts.

- **NEVER** Run engine without air filter. Severe engine damage may occur.
- **ALWAYS** service air cleaner frequently to prevent engine malfunction.
- **ALWAYS** disconnect the ***negative*** *battery terminal* before performing service on the generator.
- **ALWAYS** be sure the operator is familiar with proper safety precautions when operating the generator set.
- **ALWAYS** store equipment properly when not in use.
- **DO NOT** leave the generator running in the ***manual mode*** unattended.
- **DO NOT** allow ***unauthorized personnel*** to operate this equipment.
- **ALWAYS** read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.
- Refer to the ***Komatsu Engine Manual*** for engine technical questions or information.

DANGER:

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.

Generator Grounding

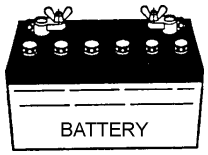
To guard against electrical shock and possible damage to the equipment, it is important to provide a good **EARTH** ground.

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.

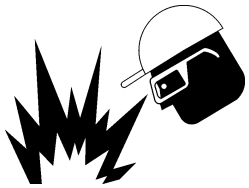
ALWAYS be sure to use the ground terminal (green wire) when connecting a load to the UVWO output terminals.

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. Use the following guidelines when handling the battery:



1. **DO NOT** drop the battery. There is the possibility of risk that the battery may explode.
2. **DO NOT** expose the battery to open flames, sparks, cigarettes etc. The battery contains combustible gases and liquids. If these gases and liquids come in contact with a flame or spark, an explosion could occur.



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

Transporting

- **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. See next page "***Towing Safety Precautions***" for basic towing techniques.

Towing Safety Precautions

CAUTION:

Conform to ***Department of Transportation*** (**DOT**) ***Safety Towing Regulations*** before towing generator.

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 suggestions should be used when towing your generator:

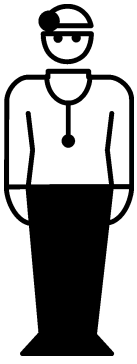
- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR) of 18,000 lbs.
- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow a trailer with defective hitches, couplings, chains etc.
- Check the tire air 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.
- The maximum speed for highway towing is **45 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **10 MPH** or less depending on type of terrain.
- Place ***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.
- DOT Requirements include the following:
  - Connect and test electric brake operation.
  - Secure portable power cables in cable tray with tie wraps.

Emergencies

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

- **ALWAYS** know the location of the nearest and ***first aid kit.***

- In emergencies ***always*** know the location of the nearest phone or ***keep a phone on the job site***. Also know the phone numbers of the nearest ***ambulance***, ***doctor*** and ***fire department***. This information will be invaluable in the case of an emergency.



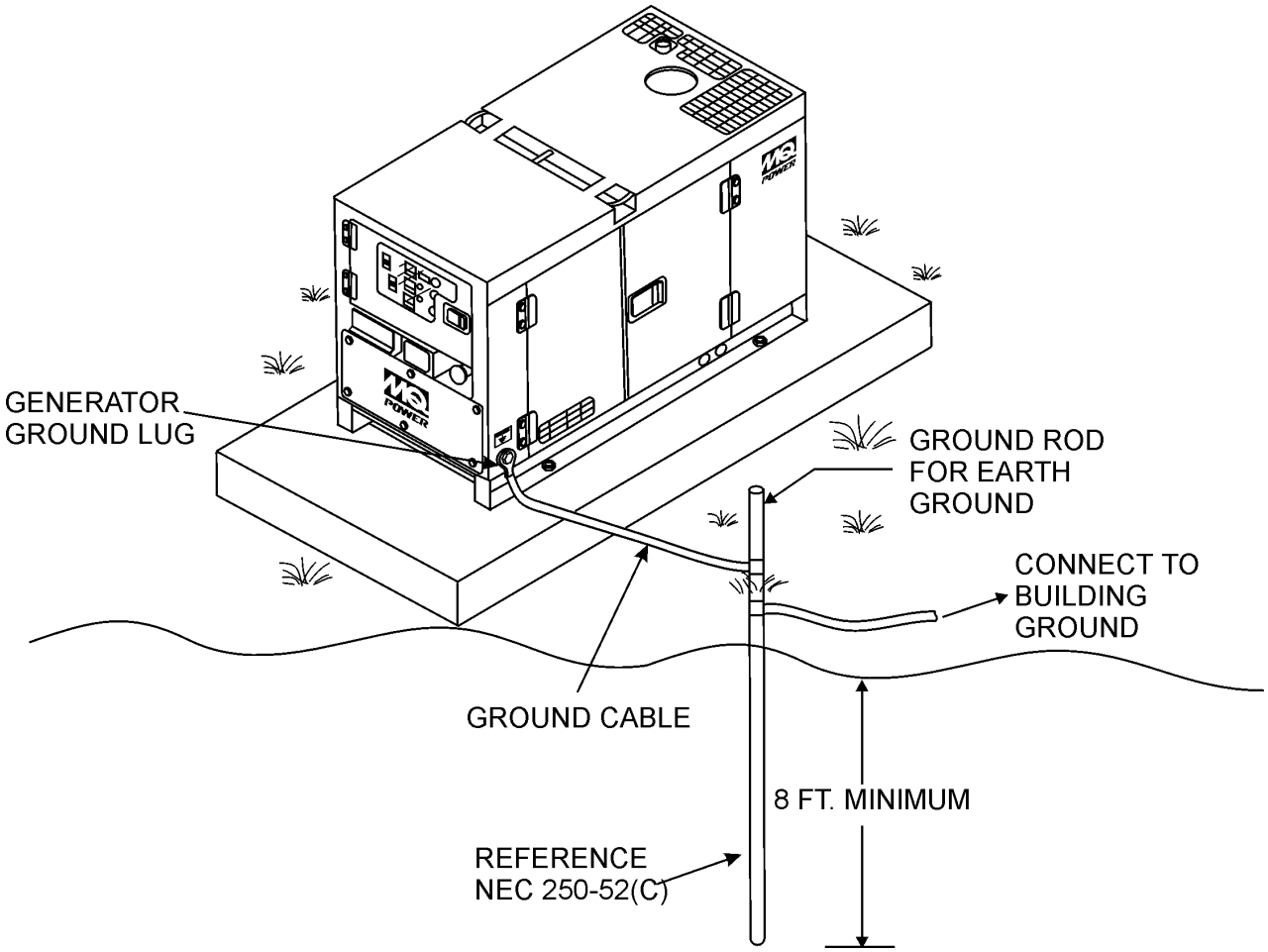


Figure 3. Typical Generator Grounding Application

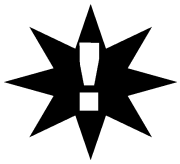
Outdoor Installation

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:



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.

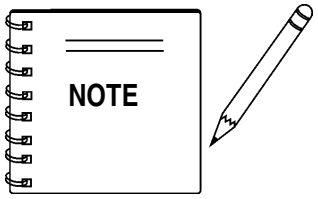
Generator Grounding

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 mm^2) or larger.
   b. Aluminum - 8 AWG (8.4 mm^2) or larger.
2. When grounding the generator (Figure 3) 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 aminimum of 8 ft. into the ground.



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

Towing Safety Precautions

CAUTION:

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

To reduce the possibility of an accident while transporting the generator on public roads, always make sure the trailer (Figure 4) that supports the generator and the towing vehicle are in good operating condition and both units are mechanically sound.

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

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

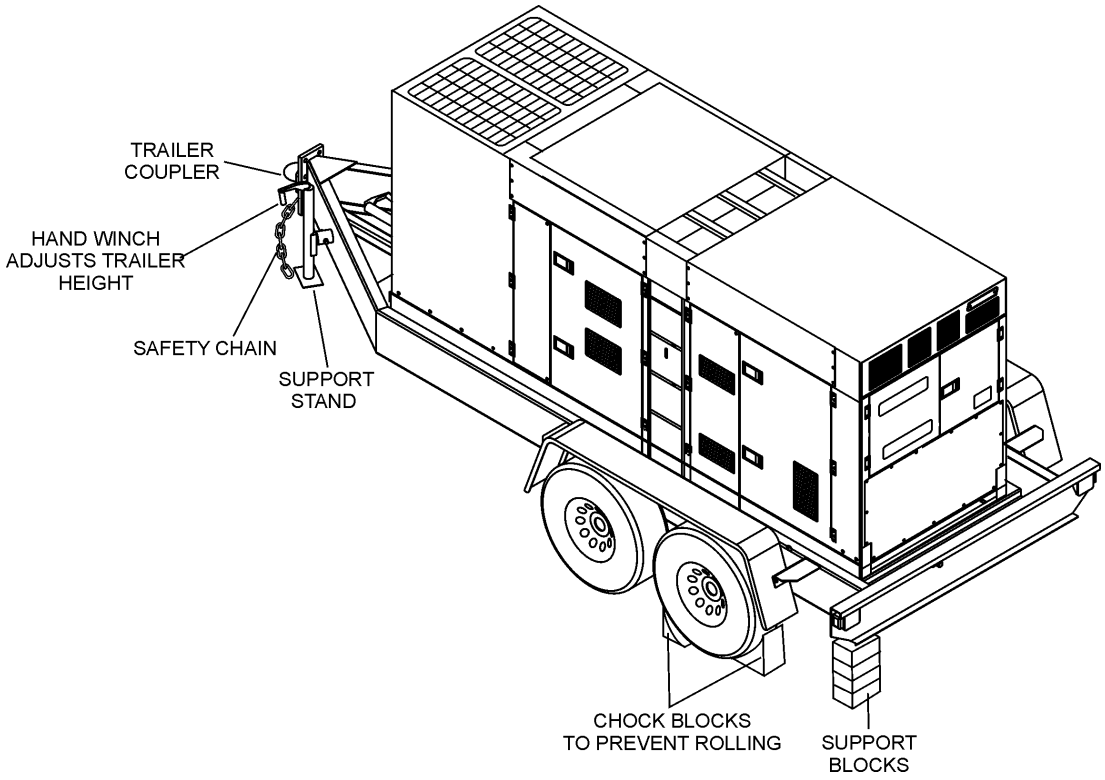
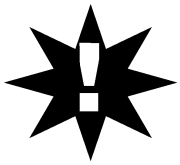


Figure 4. Generator and Trailer

CAUTION:



ALWAYS make sure the trailer is in good operating condition. Check the tires for proper inflation and wear. Also check the wheel lug nuts for proper tightness.

Explanation of Chart:
This section is intended to provide the user with trailer service and maintenance information. The service and maintenance guidelines referenced in this section apply a wide range of trailers. Remember periodic inspection of the trailer will ensure safe towing of the equipment and will prevent damage to the equipment and personal injury.

It is the purpose of this section to cover the major maintenance components of the trailer. The following trailer components will be discussed in this section:

- Brakes
- Tires
- Lug Nut Torquing
- Suspension
- Electrical
- Brake Troubleshooting Tables

Use the following definitions when reading Table 3.

1. **Fuel Cell -** Provides an adequate amount of fuel for the equipment in use. Fuel cells must be empty when transporting equipment.
2. **Braking System** - System employed in stopping the trailer. Typical braking systems are electric, surge, hydraulic, hydraulic-surge and air.
3. **GVWR-** Gross Vehicle Weight Rating (GVWR), is the maximum number of pounds the trailer can carry, including the fuel cell (empty).
4. **Frame Length -** Measurement is from the ball hitch to the rear bumper (reflector).
5. **Frame Width -** Measurement is from fender to fender
6. **Jack Stand -** Trailer support device with maximum pound requirement from the tongue of the trailer.
7. **Coupler -** Type of hitch used on the trailer for towing.
8. **Tire Size -** Indicates the diameter of the tire in inches (10,12,14, etc.), and the width in millimeters (175,185,205, etc.). The tire diameter must match the diameter of the tire rim.
9. **Tire Ply -** The tire ply (layers) number is rated in letters; 2-ply,4-ply,6-ply, etc.
10. **Wheel Hub -** The wheel hub is connected to the trailer's axle.
11. **Tire Rim -** Tires mounted on a tire rim. The tire rim must match the size of the tire.
12. **Lug Nuts -** Used to secure the wheel to the wheel hub. Always use a torque wrench to tighten down the lug nuts. See Table 17 and Figure 67 for lug nut tightening and sequence.
13. **Axle -** Indicates the maximum weight the axle can support in pounds, and the diameter of the axle expressed in inches. Please note that some trailers have a double axle. This will be shown as 2-6000 lbs., meaning two axles with a total weight capacity of 6000 pounds.
14. **Suspension -** Protects the trailer chassis from shocks transmitted through the wheels. Types of suspension used are leaf, Q-flex, and air ride.
15. **Electrical -** Electrical connectors (looms) are provided with the trailer so the brake lights and turn signals can be connected to the towing vehicle.
16. **Application -** Indicates which units can be employed on a particular trailer.

Table 3. Trailer Specifications

MODEL	APPLICATION	FUEL CELL	BRAKE SYSTEM	GVWR	FRAME LENGTH	FRAME WIDTH	JACK STAND
TRLR-10W	SDW225, SGW250,TLW300	NO	NO	1,900 LBS. 862 Kg.	96 inches 2.43 meters	50 inches 1.27 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-10	DCA10, TLG12, DCA-15	NO	NO	1,900 LBS. 862 Kg.	96 inches 2.43 meters	50 inches 1.27 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-10XF	DCA10, TLG-12, DCA15, TLW-300	52 Gallons 197 Liters	NO	1,900 LBS. 862 Kg.	96 inches 2.43 meters	50 inches 1.27 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-225W	WELDERS, DA7000SS	NO	NO	2,200 LBS. 998 Kg.	85 inches 2.43 meters	42 inches 1.06 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-BLW400	BLW-400	NO	ELECTRIC	2,700 LBS. 1,224 Kg.	W/MAST 154 in. 3.19 meters W/O 124 in. 3.14 meters	55 inches 1.40 meters (78 inches TALL) 1.98 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-50X	DCA-25	NO	NO	2,700 LBS. 1,224 Kg.	124 inches 3.14 meters	55 inches 1.40 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-50XF	DCA-25	41 Gallons 155 Liters	NO	2,700 LBS. 1,224 Kg.	124 inches 3.14 meters	55 inches 1.40 meters	800 LBS. (363 Kg.) FULL TILT WHEEL
TRLR-70W	DCA-45, -60, 70	NO	SURGE	7,000 LBS. 3,175 Kg.	186 inches 4.72 meters	77 inches 1.95 meters	2,000 LBS. (907 Kg.) FLAT PAD
TRLR-70X	DCA-45, -60, 70	OPT	SURGE	7,000 LBS. 3,175 Kg.	138 inches 3.50 meters	66 inches 1.67 meters	2,000 LBS. (907 Kg.) FLAT PAD
TRLR-70XF	DCA-45, -60, 70	53 Gallons 201 Liters	SURGE	7,000 LBS 3,175 Kg.	138 inches 3.50 meters	66 inches 1.67 meters	2,000 LBS. (907 Kg.) FLAT PAD
TRLR-100XF	DCA-100, 125	150 Gallons 568 Liters	HYDRAULIC SURGE	7,000 LBS. 3,175 Kg.	190 inches 4.82 meters	76 inches 1.93 meters	2,000 LBS. (907 Kg.) FLAT PAD
TRLR-85/125	DCA-85, 100, 125	145 Gallons 549 Liters	HYDRAULIC	10,000 LBS. 4,536 Kg.	186 inches 4.72 meters	77 inches 1.95 meters	2,000 LBS. (907 Kg.) FLAT PAD
TRLR-150XF	DCA-150, 180	200 Gallons 757 Liters	HYDRAULIC SURGE	11,160 LBS. 5,062 Kg.	204 inches 5.18 meters	84 inches 2.13 meters	5,000 LBS. (2,268 Kg.) FLAT PAD
TRLR-220XF	DCA-220	250 Gallons 946 Liters	HYDRAULIC SURGE	14,000 LBS. 3,175 Kg.	222 inches 3.63 meters	83 inches 2.10 meters	5,000 LBS. (2,268 Kg.) FLAT PAD
TRLR-300XF	DCA-300	250 Gallons 946 Liters	HYDRAULIC SURGE	18,000 LBS. 8,165 Kg.	238 inches 6.04 meters	83 inches 2.10 meters	5,000 LBS. (2,268 Kg.) FLAT PAD
TRLR-400XF	DCA-400	350 Gallons 1, 324 Liters	ELECTRIC	18,000 LBS. 8,165 Kg.	238 inches 6.04 meters	83 inches 2.10 meters	5,000 LBS. (2,268 Kg.) FLAT PAD
TRLR-600XF	DCA-600, 800	550 Gallons 2,082 Liters	AIR	30,000 LBS. 13,607 Kg.	384 inches 9.75 meters	96 inches 2.43 meters	5,000 LBS. (2,268 Kg.) FLAT PAD
TRLR-800SX	DCA-600, 800	550 Gallons 2,082 Liters	AIR	30,000 LBS. 13,607 Kg.	384 inches 9.75 meters	96 inches 2.43 meters	5,000 LBS. (2,268 Kg.) FLAT PAD

Table 3. Specifications (Con't)							
MODEL	**COUPLER**	**TIRES**	**WHEELS**	**AXLE**	**HUBS**	**SUSPENSION**	**ELECTRICAL**
TRLR-10W	2" BALL CLASS 2 ADJUSTABLE	175-13C	13"X4.50"	2200# 2X2	5 LUG	3 LEAF	4 WIRE LOOM W/ 4 POLE FLAT
TRLR-10	2"BALL CLASS 2 ADJUSTABLE	175-13C	13"X4.5"	2200#2X2	5 LUG	3 LEAF	4 POLE FLAT
TRLR-10XF	2"BALL CLASS 2 ADJUSTABLE	175-13C	13"X4.5"	2200#2X2	5 LUG	3 LEAF	4 POLE FLAT
TRLR-225W	2"BALL CLASS 2 ADJUSTABLE	175-13B	13X4.5"	2200#2X2	5 LUG	Q FLEX	4 POLE FLAT
TRLR-BLW 400	2"BALL CLASS 2 ADJUSTABLE	175-13C	13 X 4.5"	2200#2X2	5 LUG	3 LEAF	4 POLE FLAT
TRLR-50X	2" BALL CLASS	B78-13LRC	13"X4.50"	3,500 lbs. 2-3/8"	5 LUG	4 LEAF	4 POLE RUBBER FLAT
TRLR-50XF	2" BALL CLASS	B78-13LRC	13"X4.50"	3,500 lbs. 2-3/8"	5 LUG	4 LEAF	4 POLE RUBBER FLAT
TRLR-70W	2" BALL CLASS 3" ADJUSTABLE	205-14C BIAS (4)	14"X5"	3,500 lbs. 3"	5 LUG	5 LEAF	4 POLE RUBBER FLAT
TRLR-70X	2" BALL CLASS 3" ADJUSTABLE	205-14C BIAS (4)	14"X5"	3,500 lbs. 3"	5 LUG	5 LEAF	4 POLE RUBBER FLAT
TRLR-70XF	2" BALL CLASS 3" ADJUSTABLE	205-14C BIAS (4)	14"X5"	3,500 lbs. 3"	5 LUG	5 LEAF	4 POLE RUBBER FLAT
TRLR-100XF	ADJUSTABLE 2-5/6 OPT 3" EYE	205-15C BIAS (4)	14"X5.5"	3,500 lbs. 3"	5 LUG	5 LEAF	4 WIRE LOOM
TRLR-85/125	ADJUSTABLE 2-5/6 OPT 3" EYE	ST225/75R15D RADIAL (4)	14"x6"	(2)-6,000 lbs.	6 LUG	7 LEAF	4 WIRE LOOM
TRLR-150XF	3" BALL EYE	750-16 E BIAS (4)	16"X7"	(2)-6,000 lbs.	8 LUG	7 LEAF	4 WIRE LOOM
TRLR-220XF	3" EYE ADJUSTABLE	ST235/85R16E RADIAL(4)	16"X7"	(2)-7,000 lbs.	8 LUG	Q FLEX	4 WIRE LOOM
TRLR-300XF	3" EYE ADJUSTABLE	ST235/85R16E RADIAL(6)	16"X7"	(2)-6,000 lbs.	8 LUG	Q FLEX	4 WIRE LOOM
TRLR-400XF	3" EYE ADJUSTABLE	ST235/85R16E RADIAL(6)	16"X7"	(3)-7,000 lbs.	8 LUG	Q FLEX	4 WIRE LOOM
TRLR-600XF	5TH WHEEL	ST215/75R17.5H RADIAL (8)	16"X7"	(3)-10,000 lbs.	8 LUG	7 LEAF	6 WIRE LOOM
TRLR-800AR	5TH WHEEL	ST215/75R17.5H RADIAL (8)	16"X7"	(3)-10,000 lbs.	8 LUG	AIR-RIDE	6 WIRE LOOM

Machine Safety Decals

The DCA-600SSK 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.

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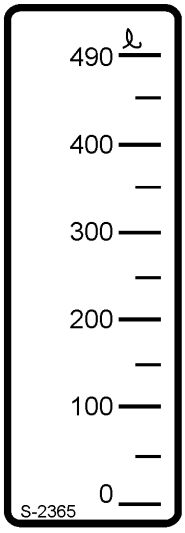
P/N0840655604

P/N 0800686004

P/N 0966810000



P/N 0840607104

P/N 0800688404

P/N 0800688504

P/N 0800615102

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

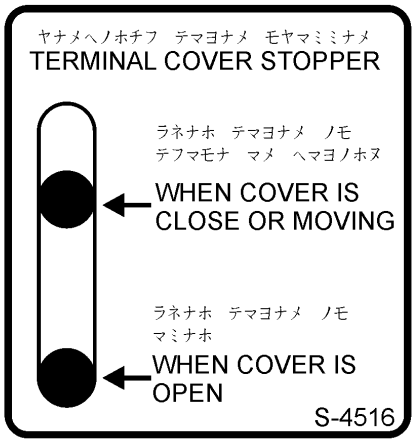
WHISPERWATT 600

MQ POWER

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

ENGINE SPEED
S-4452

P/N 9039208704



P/N 0840655704

P/N 9039208694

テママフノホヌ ラチヤナメ **COOLING WATER**

ツナ モユメナ ヤマ マミナメチヤナ ヤネノモ ヘチテネノホナ ラノヤネ ノヤモ
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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.

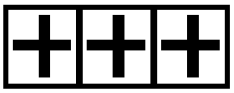
(2) Precautions

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

DCA-600SSK — OPERATION AND SAFETY DECALS



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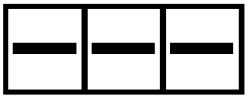

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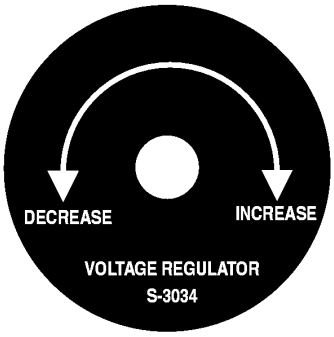

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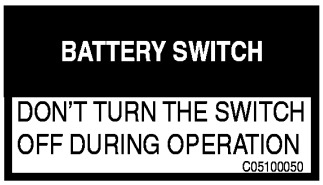

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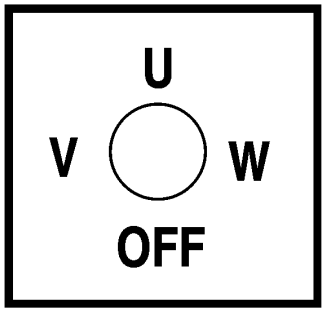

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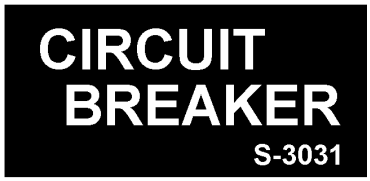

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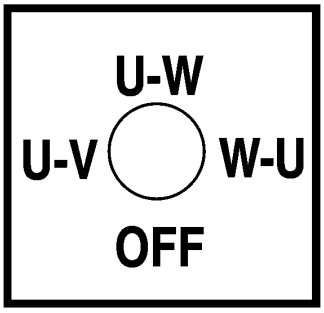

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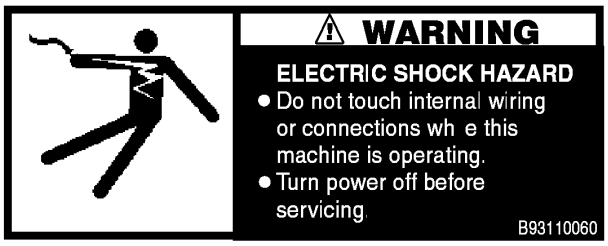

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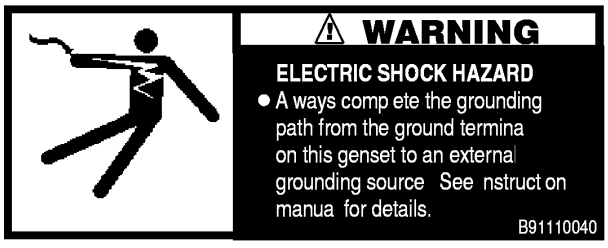

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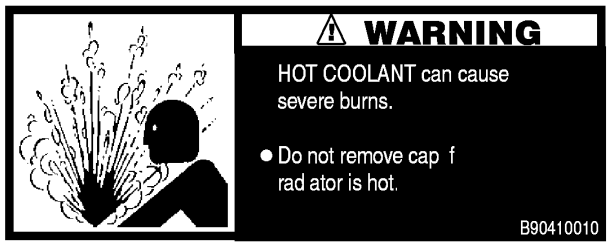

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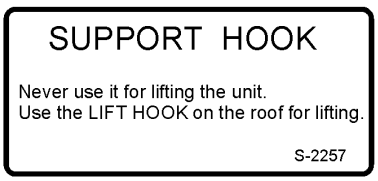

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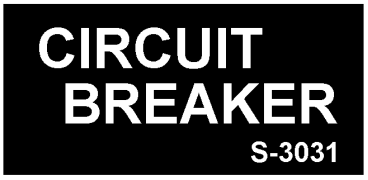

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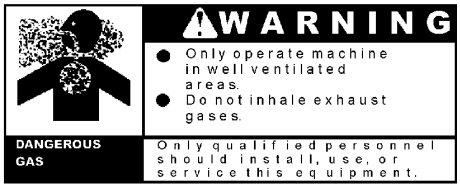

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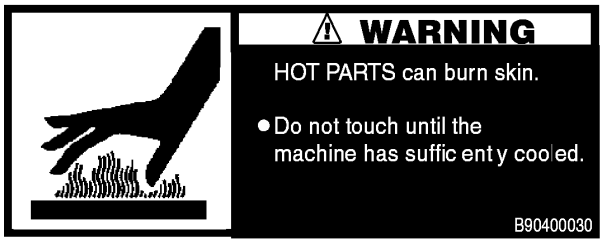

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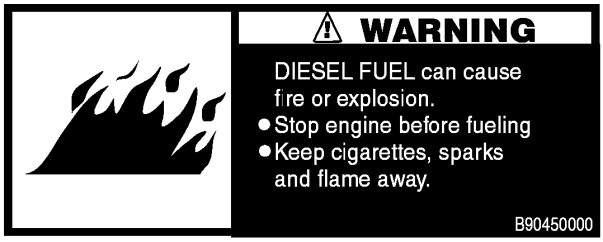

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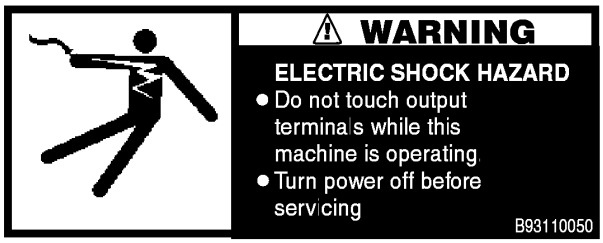

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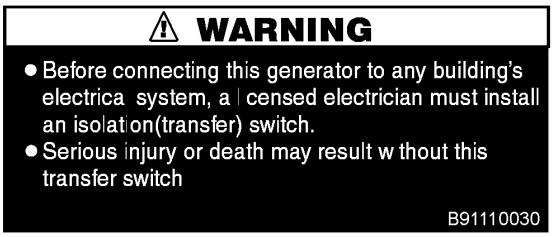

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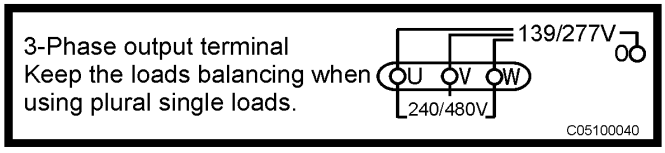

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DCA-600SSK FAMILIARIZATION

Generator

The MQ Power Model DCA-600SSK is a 528 kW ***generator*** that has been 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 Control Panel

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

- Tachometer
- Water Temperature Gauge
- Oil Pressure Gauge
- Charging Ammeter Gauge
- Engine Warning Lamp Module
- Throttle Lever (Up to S/N 3698616)
- Ignition Switch (Up to S/N 3698616)
- Engine Speed Switch (S/N 3698617~)
- Pre-Heat Button (S/N 3698617~)
- Pre-Heat Lamp
- Emergency Stop Button
- Battery Switch

Generator Control Panel

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

- Output Voltage Adjustment Knob
- Frequency Meter (Hz)
- AC Ammeter (Amps)
- AC Voltmeter (Volts)
- Ammeter Change-Over Switch
- Voltmeter Change-Over Switch
- Panel Light
- Panel Light Switch
- MPEC Module (S/N 3698617~)
- Pilot Lamp

Microprocessor Controlled Alarm System

The DCA-600SSK generator is equipped with various alarms and LED status indicators. These alarms and status indicators are provided to add safety to the generator when operating under normal conditions. The DCA-600SSK generator is designed to shutdown in the event of low oil, high coolant temperature, low battery and other operation conditions that may cause severe damage to the generator.

Open Delta Excitation System

The DCA-600SSK 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 up to the horsepower of the engine.

Engine

The **DCA-600SSK** is powered by a 4 cycle, water cooled, turbocharged KOMATSU Model SA6D170AE-1 diesel engine. This engine is designed to meet every performance requirement for the generator. Reference Table 2 for engine specifications.

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

The basic controls and indicators for the DCA-600SSK generator are addressed on the following pages.

Electronic Governor System

The electronic governor system is made up of two parts, an electronic controller that monitors frequency variation as the load increases and decreases, and an electronic actuator that controls the engine throttle. The frequency is regulated at ±0.25 to help protect sensitive equipment.

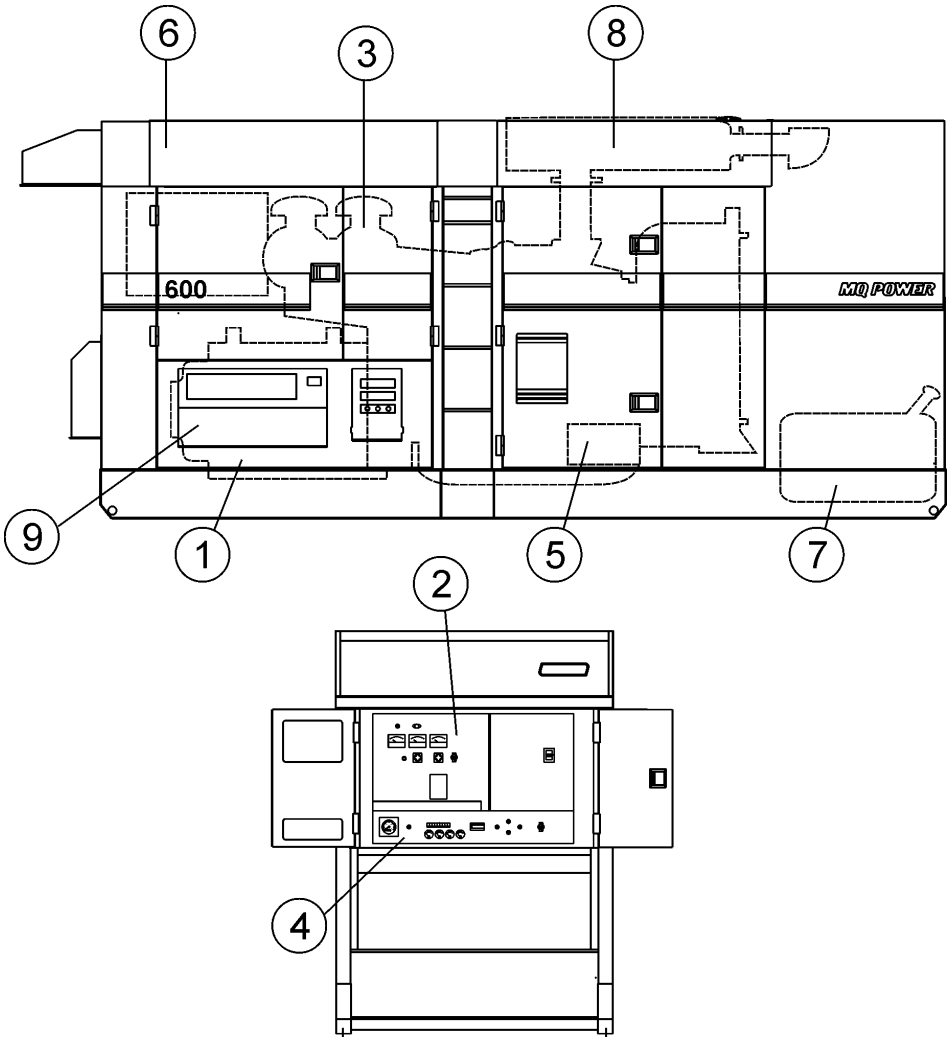
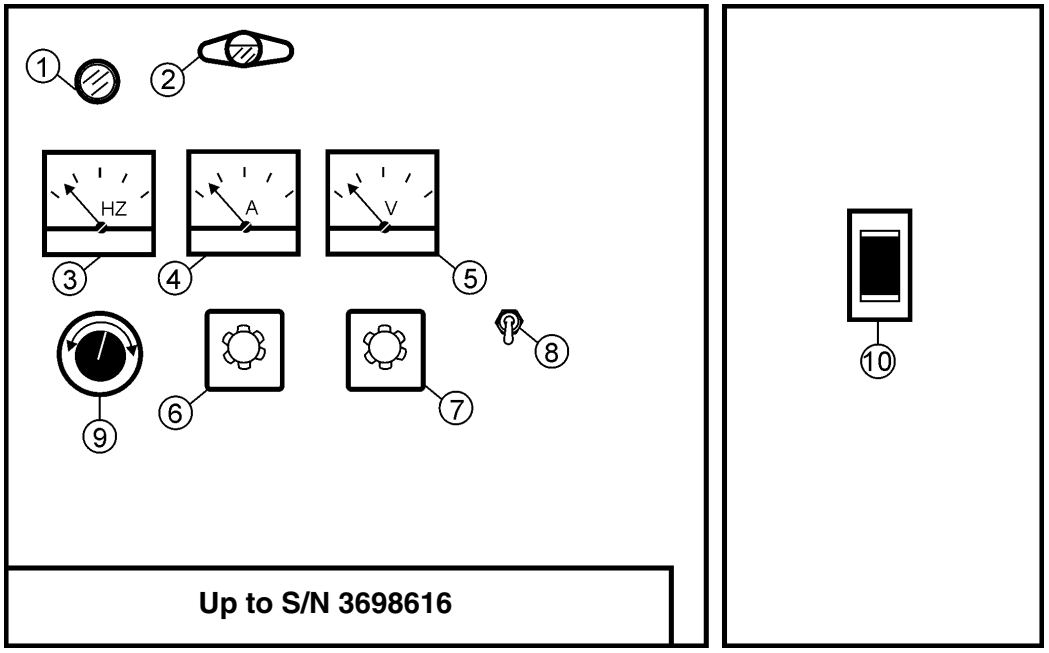


Table 4. Generator Major Components	
ITEM NO.	**DESCRIPTION**
1	Generator Assembly
2	Generator Control Panel Assembly
3	Engine and Radiator Assembly
4	Engine Operating Panel Assembly
5	Battery Assembly
6	Enclosure Assembly
7	Fuel Tank Assembly
8	Muffler Assembly
9	Output Terminal Assembly



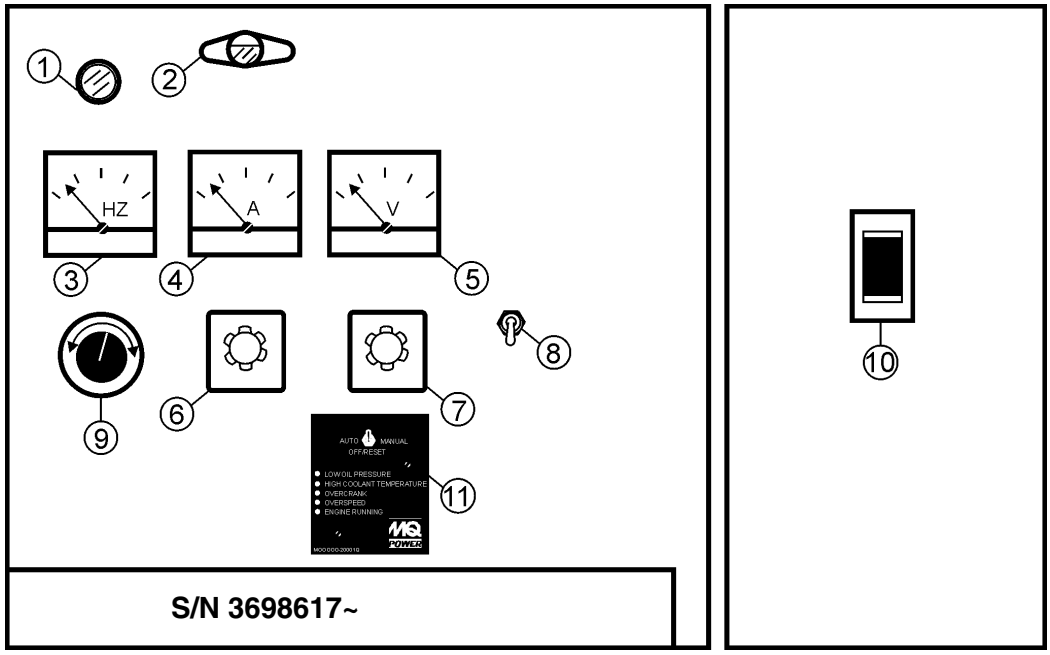


Figure 6. Generator Control Panel

The definitions below describe the controls and functions of the DCA-600SSK " ***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 **OF**F position.
3. **Frequency Meter –** Indicates the output frequency in hertz (Hz). Normally 60 Hz ±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. **Main Circuit Breaker –** This three-pole, 1600 amp main breaker is provided to protect the UVWO voltage output terminals from overload.
11. **MPEC – Microprocessor Engine Control Module –** (MPEC) has a vertical row of status LED's (inset), that when lit, indicate that an engine malfunction (fault), has been detected. When a fault has been detected the MPEC will evaluate the fault and if the fault is major will shutdown the generator.

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 a transfer switch (isolation), place the switch in the ***auto*** position. In this position the generator will monitor the AC line output from the building's power source. The generator will engage when commercial power falls below a preset level.

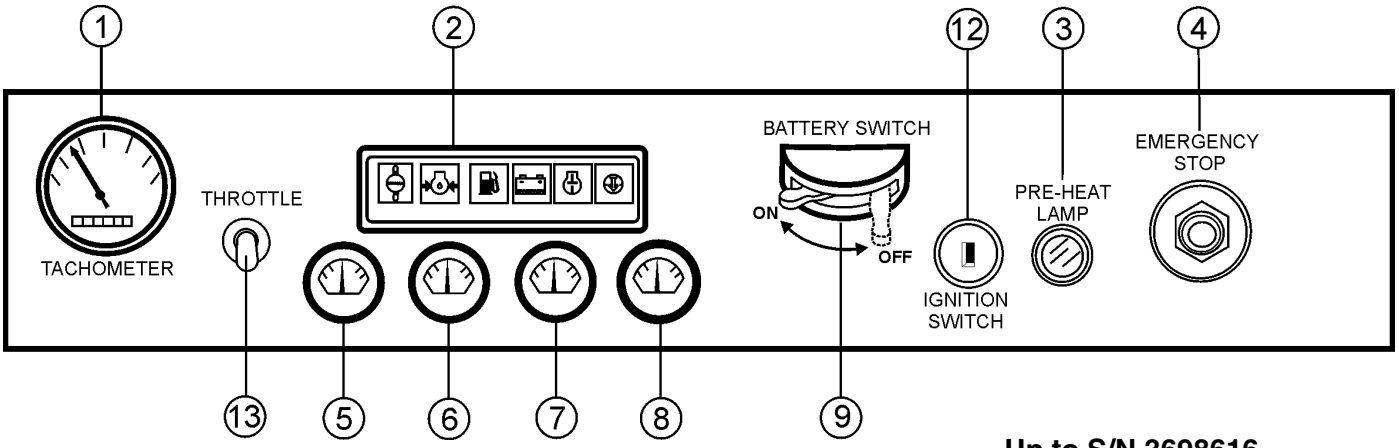
B. Low Oil Pressure – Indicates the engine pressure has fallen below 15 psi. The oil pressure is detected using variable resistive values from the oil pressure sending unit. This is considered a ***major*** fault and will shut down the generator.

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.

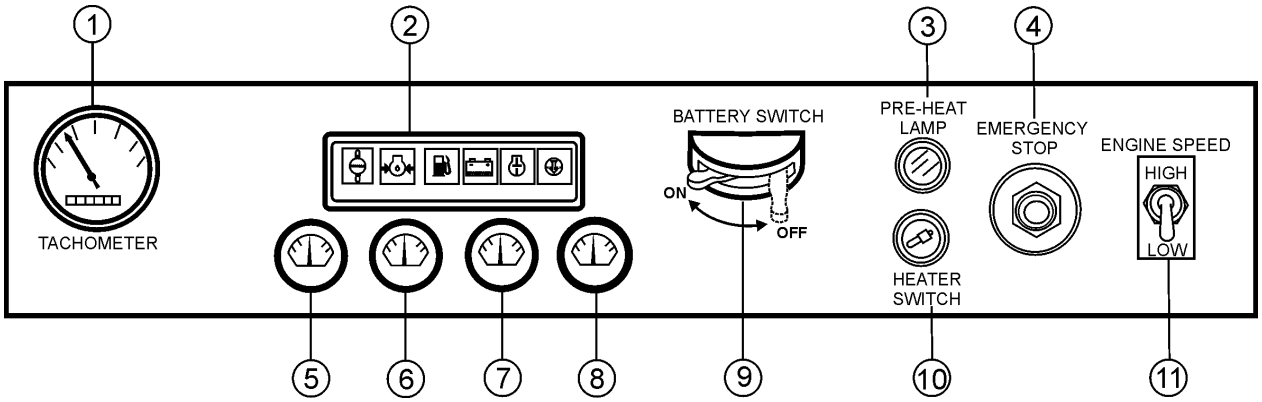
D. Overcrank Shutdown – Indicates the unit has attempted to be started a pre- programmed number of times, and has failed to start. The number of cycles and duration are programmable. Typical programmable start settings is 3 cycles with a 10 second duration. This is considered a ***major*** fault and 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.



Up to S/N 3698616



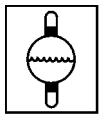
S/N 3698617~

Figure 7. Engine Operating Panels

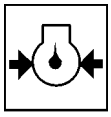
The definitions below describe the controls and functions of the DCA-600SSK " ***Engine Operating Panels*** " (Figure 7).

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.

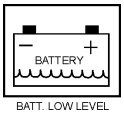


B. Low Oil Pressure Lamp – During normal operation of the generator this lamp should remain **OFF**. When the Auto-OFF/Reset-Manual switch is set to the "Manual" position to start the engine, the lamp will illuminate. After the oil pressure rises after start-up the lamp will go **OFF**. If this lamp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

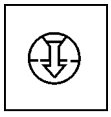


C. Low Fuel Level Lamp – When this lamp is **ON**, it is time to stop the engine and add fuel. Remember to let the engine cool before adding fuel.

D. Low Battery Fluid Lamp – This lamp goes **ON** when the battery fluid is low. If this lamp goes **ON** during normal operation of the generator, stop the engine and fill the battery with distilled water to the specified level.



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. **Charging Ammeter Gauge –** Indicates the current being supplied by the engine's alternator which provides current for generator's control circuits and battery charging system.
8. **Fuel Level Gauge –** Indicates amount of diesel fuel remaining.
9. **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.
10. **Preheat Switch (S/N 3698617~) –** Press on to heat glow plugs in cold weather conditions.
11. **Engine Speed Switch (S/N 3698617~) –** This switch changes the engine speed from idle to normal.
12. **Ignition Switch (Up to S/N 3698616) –** Four position switch, ***pre-heat***, ***stop***, ***run*** and ***start***. Insert ignition key to start and stop engine.
13. **Throttle Lever (Up to S/N 3698616) -** This lever controls the speed of the engine (low or high).

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

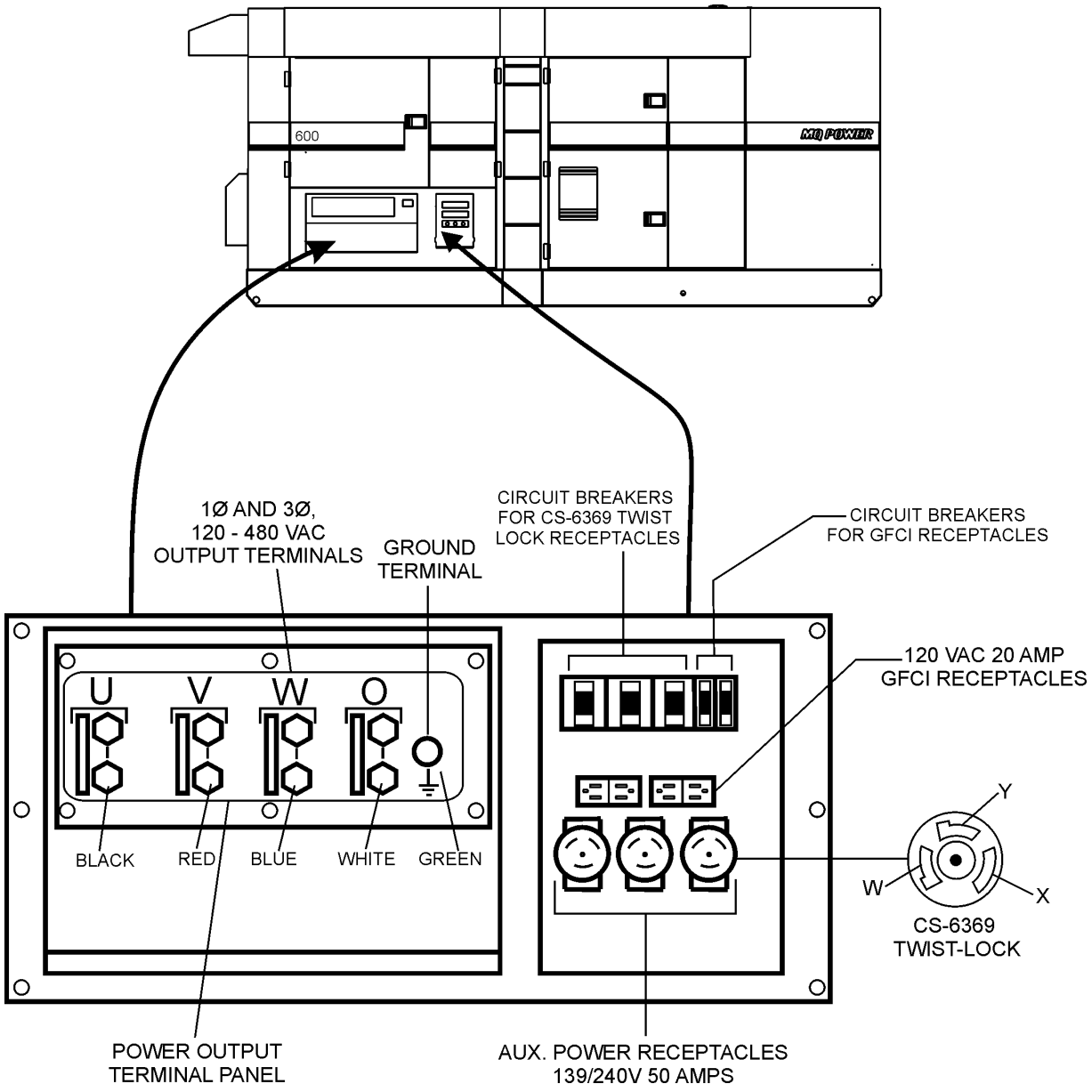
Output Terminal Panel

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

NOTE

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

Figure 8. Output Terminal Panel



120 VAC GFCI Receptacles

There are two 120 VAC, 20 amp GFCI (Duplex Nema 5-20R) recepacles provided on the output terminal panel. These receptacles can be accessed in **<u>any</u>** ***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.

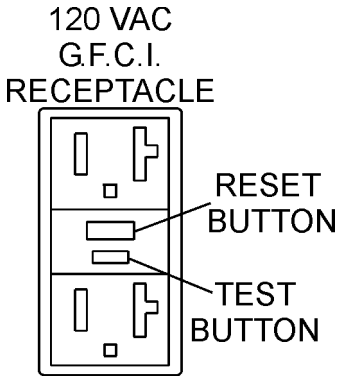


Figure 9. G.F.C.I. Receptacle

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 **<u>any</u>** ***voltage change-over board*** position.

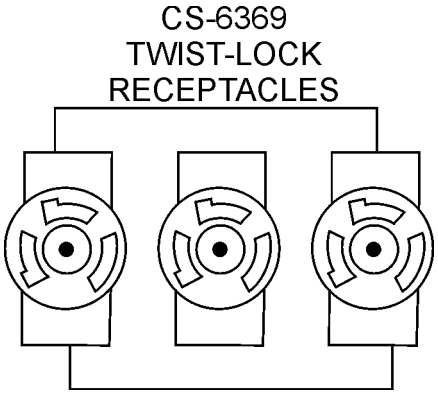


Figure 10. 240/139 VAC Twist-Lock Auxiliary Receptacles

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.

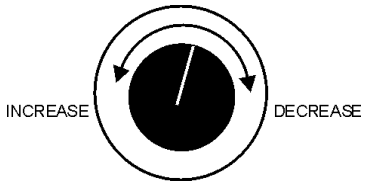


Figure 11. Voltage Regulator Control Knob

Access to UVWO Terminals

The UVWO terminal lugs are protected by a terminal cover (Figure 12). Un-lock the locking latch, and lift the terminal cover to gain access to the UVWO terminals.

After the load wires have been securely attached to the UVWO terminals, place the terminal cover in the down position and secure the locking latch.

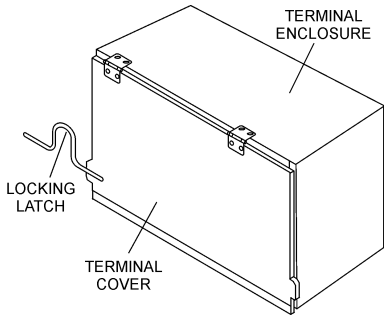


Figure 12. Terminal Cover (UVWO Terminals)

Connecting Loads

Loads can be connected to the generator by the **UVWO** terminal lugs or the convenience receptacles. (See Figure 13). 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.

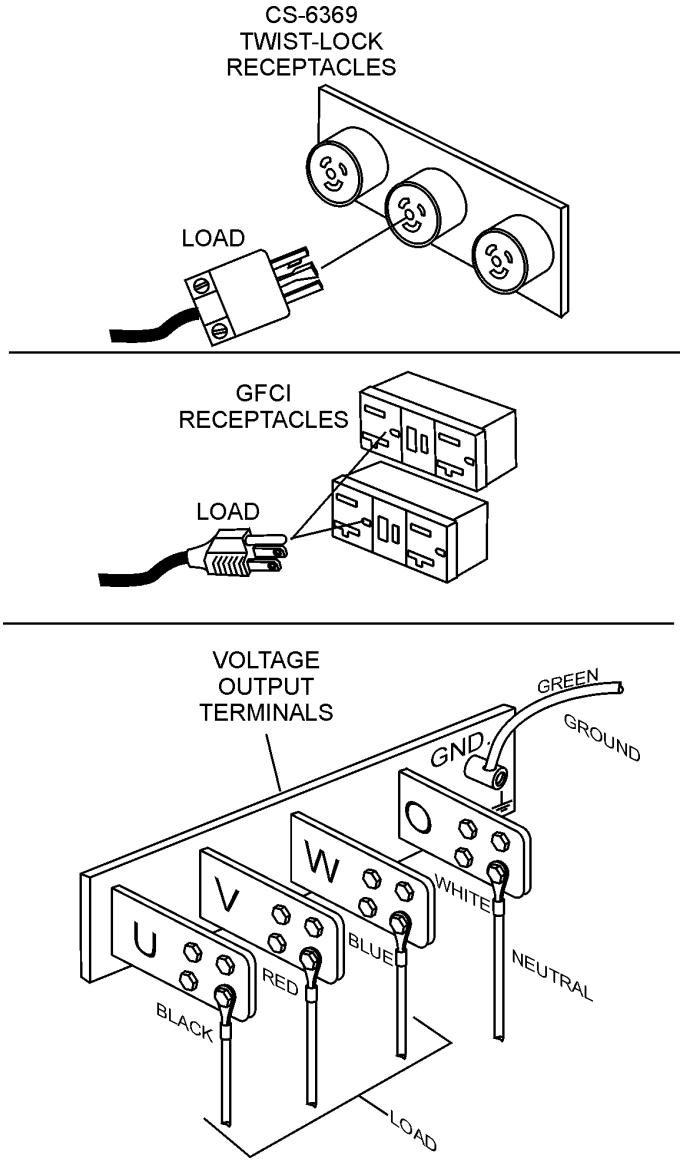


Figure 13. Connecting Loads

Over Current Relay

An ***over current relay*** (Figure 14) 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.

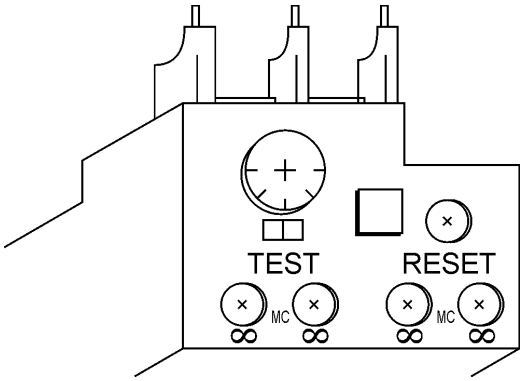


Figure 14. Over Current Relay

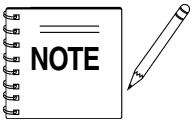
Maximum Power Output (KW)

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.

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)

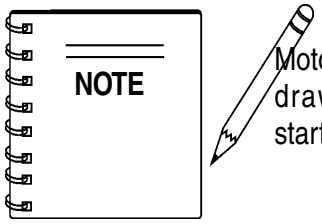
Current in Amperes	Load In Watts		Maximum Allowable Cable Length			
	At 120 Volts	At 240 Volts	#10 Wire	#12 Wire	#14 Wire	#16 Wire
2.5	300	600	1000 ft.	600 ft.	375 ft.	250 ft.
5	600	1200	500 ft.	300 ft.	200 ft.	125 ft.
7.5	900	1800	350 ft.	200 ft.	125 ft.	100 ft.
10	1200	2400	250 ft.	150 ft.	100 ft.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

$$KVA = \frac{\text{VOLTAGE X AMPERAGE X } 1.732}{1000}$$



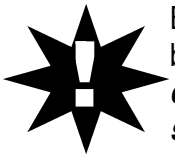
Motors and motor-driven equipment draw much greater current for starting than during operation.

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.

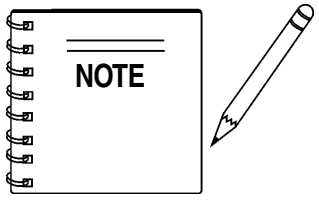
- When connecting a resistance load such as an incandescent lamp or electric heater, a capacity of up to the generating set's rated output (kW) can be used.
- When connecting a fluorescent or mercury lamp, a capacity of up to the generating set's rated output (kW) multiplied by 0.6 can be used.
- When 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.

CAUTION:



Before connecting this generator to any building's electrical system, a ***licensed electrician*** must install an ***isolation (transfer) switch***. Serious injury or death may result without the installation of a transfer switch.



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

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 15) is located on the control box, behind the generator control panel. This board has been provided for ease of voltage selection.

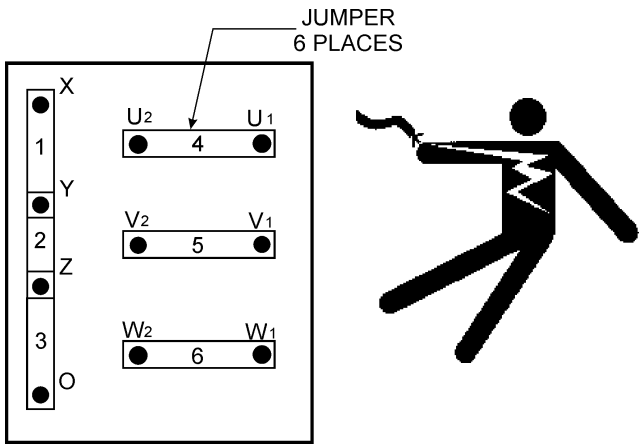


Figure 15. Voltage Change-Over Board 240V Configuration

DANGER:

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***

Table 7. Generator Available Voltages						
Three-Phase	208V	220V	240V	416V	440V	480V
Single-Phase	120V	127V	139V	240V	254V	277V

Generator Amperage

Tables 8 and 9 describe the generator's current output capability for both 1Ø-phase and 3Ø phase applications.

Table 8. Generator Ampere Ratings — 1Ø				
kW	**139V**	**240V**	**277V**	**480V**
40	288	167	144	83
80	576	333	289	167
120	863	500	433	250
160	1,151	667	578	333
200	1,439	833	722	417
240	1,727	1,000	866	500
280	2,014	1,167	1,011	583
320	2,302	1,333	1,155	667
360	2,590	1,500	1,300	750
400	2,878	1,667	1,444	833
440	3,165	1,833	1,588	917
480 (max)	3,453	2,000	1,733	1,000

Table 9. Generator Ampere Ratings — 3Ø		
kW	**240V**	**480V**
40	120	60
80	241	120
120	361	180
160	481	241
200	601	301
240	722	361
280	842	421
320	962	481
360	1,083	541
400	1,203	601
440	1,323	662
480(max)	1,443	722

Maximum Amps

Table 10 shows the ***maximum*** amps the generator can provide. **DO NOT** exceed the maximum amps as listed.

Table 10. Generator Maximum Amps

Model	DCA600SSK
Rated Voltage	**Maximum Amps**
Single Phase 120 Volt	1,333.3 amps (4 wire)
Single Phase 240 Volt	666.7 amps (4 wire)
Three Phase 240 Volt	1.443 amps
Three Phase 480 Volt	721.7 amps

How to Read the Output Terminal Gauge.

The AC ammeter and AC voltmeter change-over switches on the control panel **DO NOT** effect the generator output. They are provided to help observe how much power is being supplied, produced at the UVWO terminals lugs.

When the voltage change-over board is jumpered for 3Ø, 240V operation (See Figure 16), place the ***AC Voltmeter Change-Over Switch*** (Figure 17) to the W-U position and the ***AC Ammeter Change-Over Switch*** (Figure 19) to the U or W position to read the output on the selected leg.

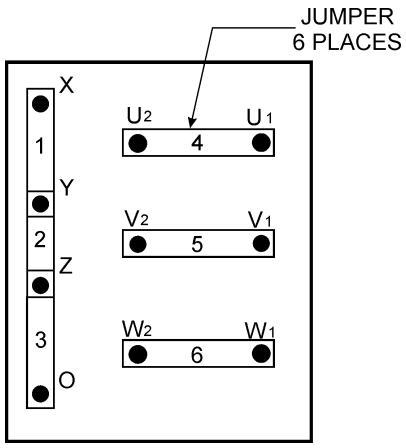


Figure 16. Voltage Change-Over Board 240V Configuration

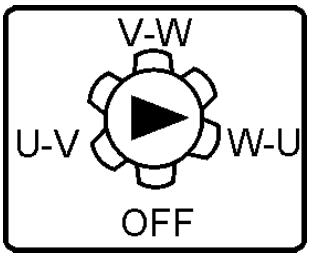


Figure 17. AC Voltmeter Change-Over Switch

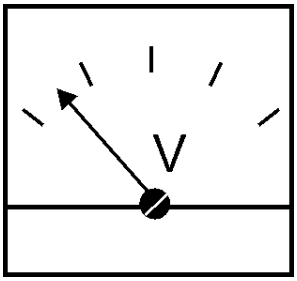


Figure 18 AC Voltmeter Gauge (Volt reading on W-U Lug)

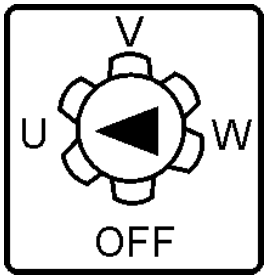


Figure 19. AC Ammeter Change-Over Switch

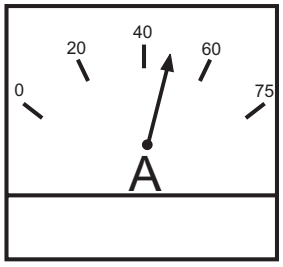
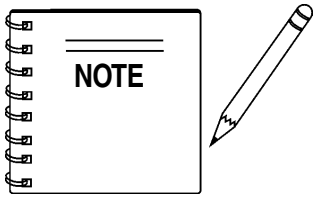


Figure 20. AC Ammeter (Amp reading on U lug)



The ***ammeter*** and ***voltmeter*** gauges are only active when the UVWO terminals are in use.

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 21.

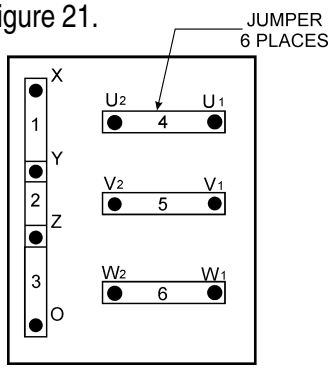


Figure 21. Voltage Change-Over Board 240V Configuration

2. Connect the load wires to the UVWO terminals as shown in Figure 22.

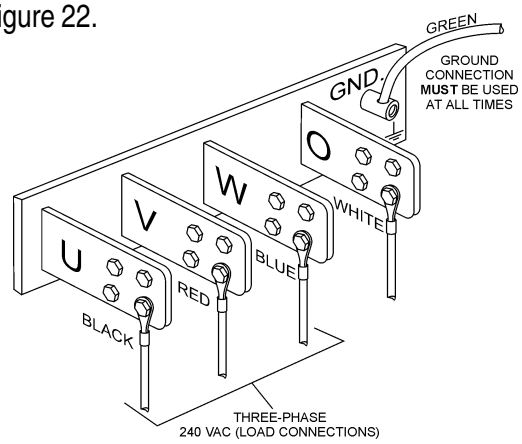


Figure 22. UVWO Terminal Lugs 3Ø-240V Connections

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

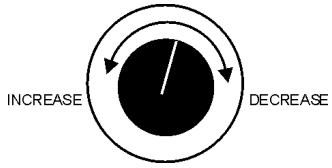


Figure 23. Voltage Regulator Knob

1Ø-240V UVWO Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 240V operation as shown in Figure 21 .
2. Connect the load wires to the UVWO terminals as shown in Figure 24.

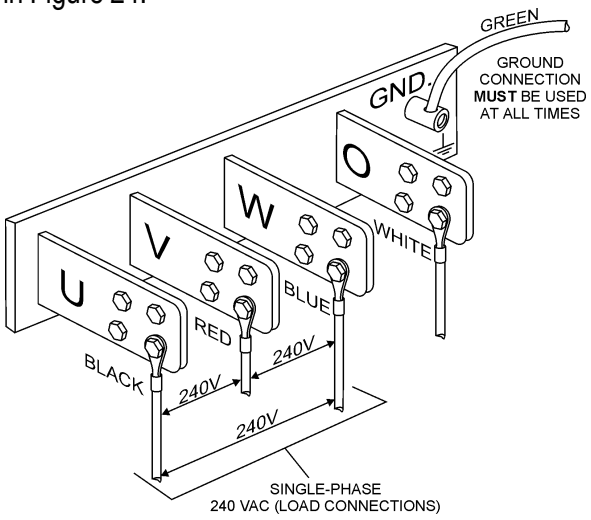


Figure 24. UVWO Terminal Lugs 1Ø-240V Connections

1Ø-139V UVWO Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 240V operation as shown in Figure 21.
2. Connect the load wires to the UVWO terminals as shown in Figure 25.

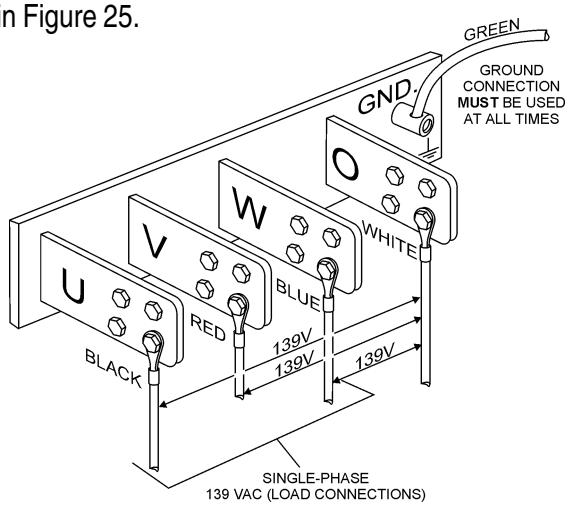


Figure 25. UVWO Terminal Lugs 1Ø-139V Connections

3Ø-480V UVWO Terminal Output Voltages

1. Jumper the voltage change-over board for 480V operation as shown in Figure 26. 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.

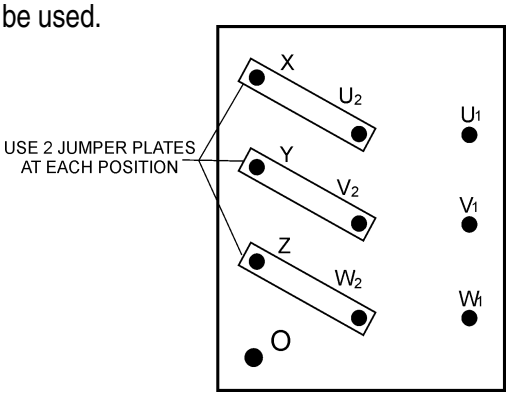


Figure 26. Voltage Change-Over Board 480V Configuration

2. Connect the load wires to the UVWO terminals as shown in Figure 27.

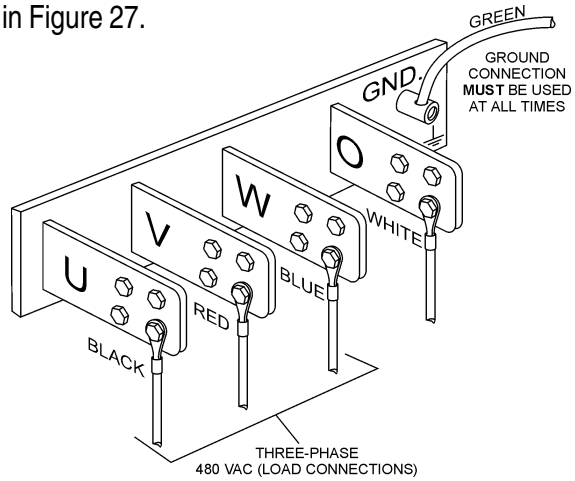


Figure 27. UVWO Terminal Lugs 3Ø-480V Connections

NOTE

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

DANGER:

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

1Ø-480V UVWO Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 480V operation as shown in Figure 26.
2. Connect the load wires to the UVWO terminals as shown in Figure 28.

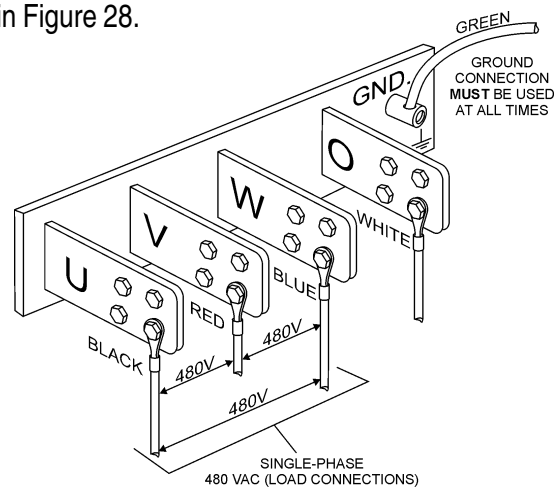


Figure 28. UVWO Terminal Lugs 1Ø-480V Connections

1Ø-277V UVWO Terminal Output Voltages

1. Make sure the voltage change-over board is jumpered for 480V operation as shown in Figure 26.
2. Connect the load wires to the UVWO terminals as shown in Figure 29.

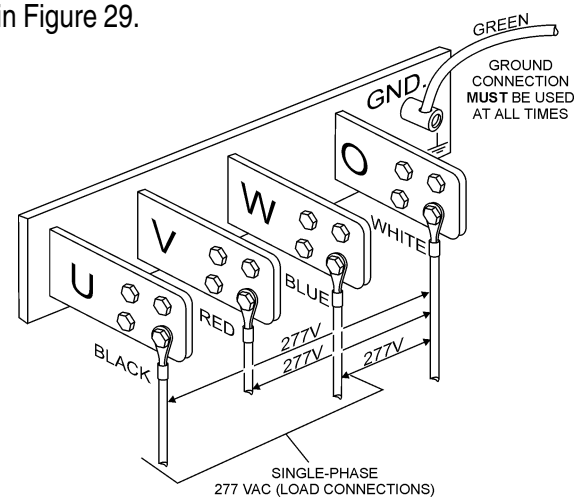


Figure 29. UVWO Terminal Lugs 1Ø-277V Connections

Circuit Breakers

To protect the generator from an overload, a 3-pole, 800 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 30) on the dipstick. See Table 11 for proper selection of engine oil.

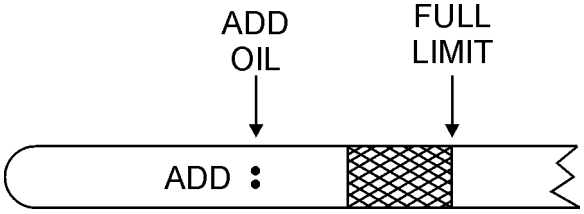


Figure 30. Engine Oil Dipstick

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 **Komatsu 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 11. 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:

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

The DCA600SSK series generators may (if equipped with a trailer or skid) have a ***double fuel tank system*** (Figure 31), 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.

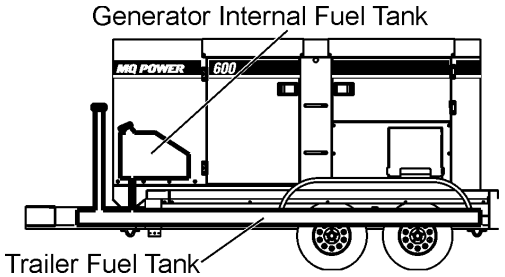


Figure 31 Double Fuel Tank System

WARNING:

ONLY properly trained personnel who have read and understand this section should refill the double fuel tank system.
Use ***#2 diesel fuel***.

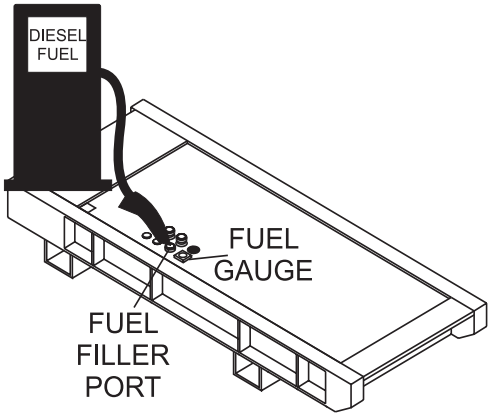


Figure 32. Skid Type Fuel Tank System

Refueling Procedure:

DANGER:

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

1. **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 33.

WARNING:

ALWAYS! place trailer on firm level ground before refueling.

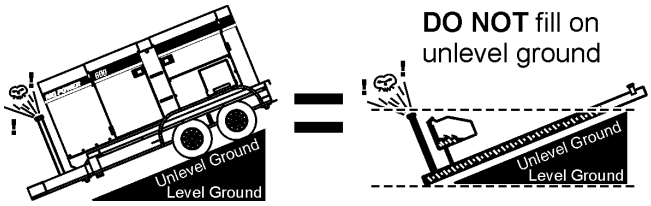


Figure 33. Only Fill on Level Ground

2. **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 34) first.

CAUTION:

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

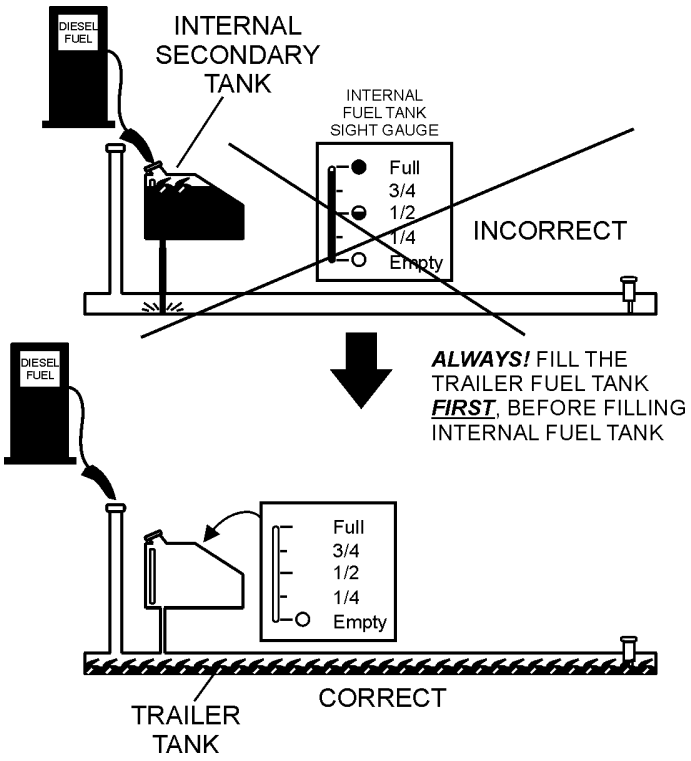
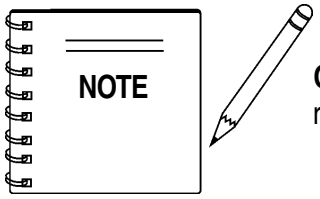
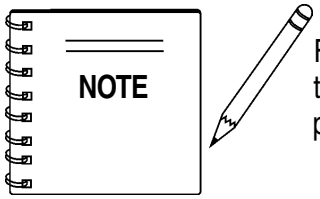


Figure 34. Fuel Tank Filling Order



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



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 35.

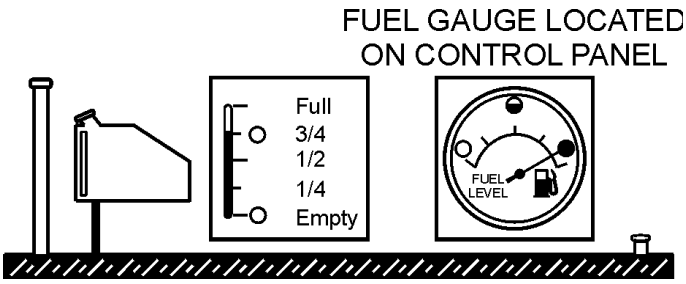


Figure 35. Full Trailer Tank

WARNING:

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

4. Once the trailer tank is full, the ***secondary inner tank*** can be filled (See Figure 36). Notice how the trailer filler tube level rises when the internal tank is filled.

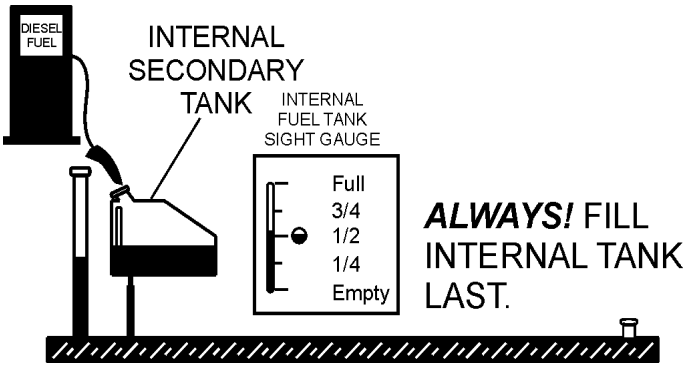


Figure 36. Filling Secondary Internal Fuel Tank

5. Figure 37 below reflects a full fuel system.

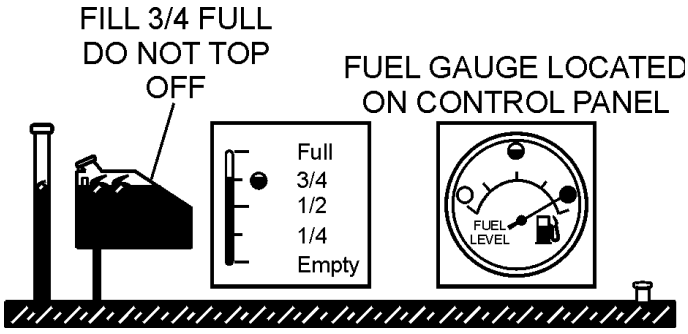


Figure 37. Full Fuel System

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.

WARNING:

It is recommended to only fill the internal secondary take to 3/4 full in order to allow for fuel return, fuel expansion, and to avoid spillage. See Figure 38 for fuel expansion.

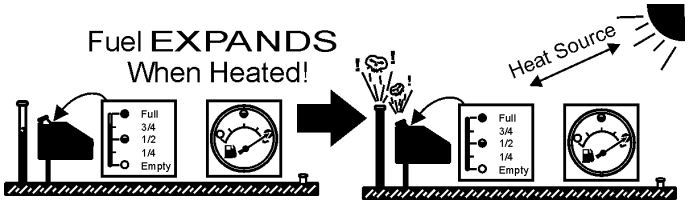


Figure 38. Fuel Expansion

Coolant (Ethylane 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.

CAUTION:

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.

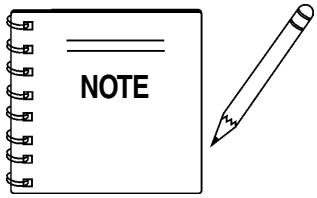
Day-to-day addition of coolant is done from the recovery tank. When adding coolant to the radiator, **DO NOT** remove the radiator cap until the unit has completely cooled. See Table 12 for engine and radiator, coolant capacities. Make sure the coolant level in the recovery tank is always between the "**H**" and the "**L**" markings.

Table 12. Coolant Capacity	
Engine and Radiator	16.9 Gal. (64.0 Liters)
Reserve Tank	2 Quarts (1.9 Liters)

Operation Freezing Weather

When operating in freezing weather, be certain the proper amount of antifreeze (Table 13) has been added.

Table 13. 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 **Komatsu 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 **Komatsu Engine Owner's Manual.**

The fan belt tension is proper if the fan belt bends 10 to 15 mm (Figure 39) when depressed with the thumb as shown below.

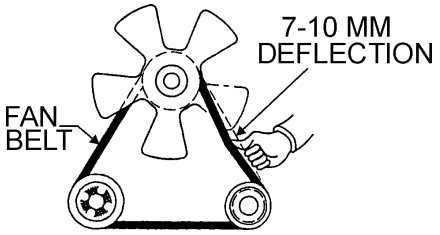


Figure 39. Fan Belt Tension

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 40) 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:

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

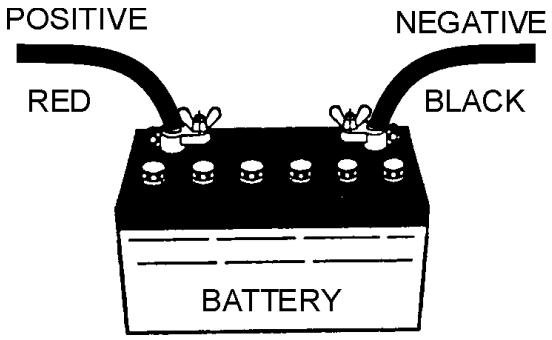
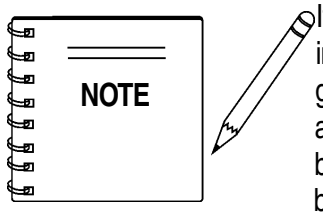


Figure 40. Battery Connections

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:

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***.

WARNING:

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***.

BEFORE STARTING

Generator and Control Panel

CAUTION:

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

NOTE

Steps 1 thru 19 are referenced for Engine Operating Panel up to S/N 3698616. See Figure 41 below. This unit has an ***ignition switch*** and a ***throttle handle***.

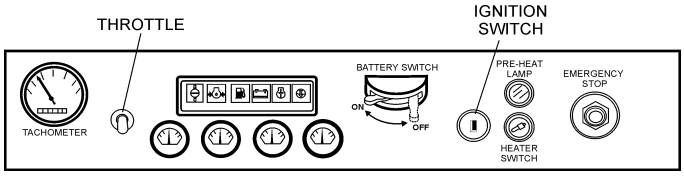


Figure 41. Engine Operating Panel Up To S/N 3698616

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

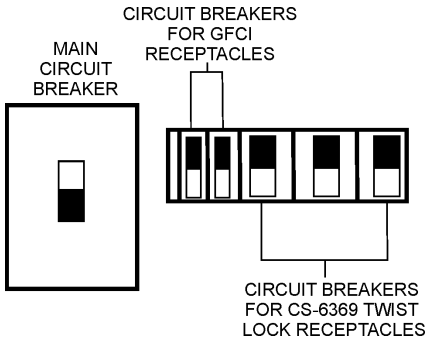


Figure 42. Main, Aux. and GFCI Circuit Breakers (OFF)

2. 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.
3. Tighten the UVWO terminal nuts securely to prevent load wires from slipping out.

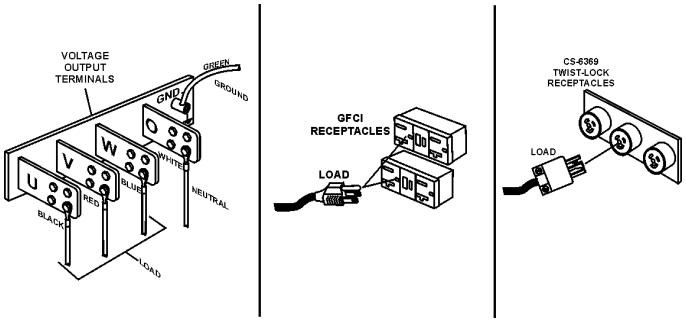


Figure 43. Load Connections

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

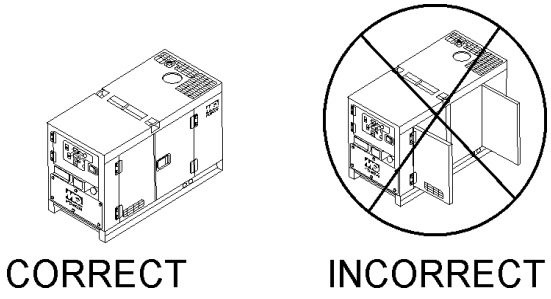


Figure 44. Engine Enclosure Doors

5. Set the ***battery ON/OFF switch*** (Figure 45) to the "**ON**" position.

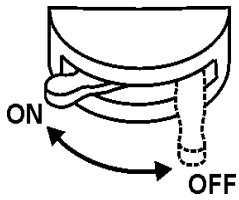


Figure 45. Battery ON/OFF Switch

6. When starting the generator in **COLD** weather conditions, turn the ***ignition key*** to the "**PREHEAT**" position (Figure 46),

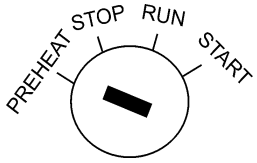


Figure 46. Ignition Switch (Pre-Heat)

7. Verify that the pre-heat lamp(Figure 47) is lit (**ON**) before starting engine.

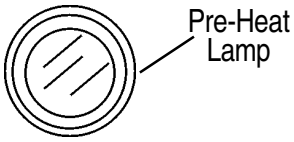


Figure 47. Pre-Heat Lamp

8. Place the ***engine throttle lever*** in the "**LOW**" position (Figure 48).

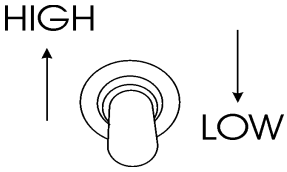


Figure 48. Engine Throttle Control

9. Turn the ignition key to the "**START**" position (Figure 49) and listen for the engine to begin cranking. After the engine starts release the ignition key.

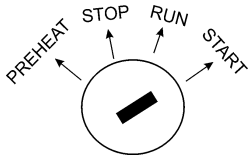


Figure 49. Engine Ignition Switch

10. Once the engine has started, let it run for 3-5 minutes, then turn the throttle handle control (Figure 48) to the "**HIGH**" position.

11. The generator's frequency meter (Figure 50) should be displaying the 60 cycle output frequency in **HERTZ**.

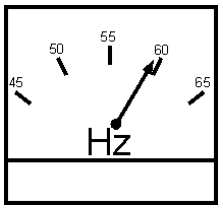


Figure 50. Frequency Meter (Hz)

12. The generator's AC-voltmeter (Figure 51) will display the generator's output in **VOLTS**. If the voltage is not within the specified tolerance, use the voltage adjustment control knob (Figure 52) to increase or decrease the desired voltage.

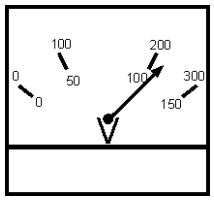


Figure 51. AC Voltmeter

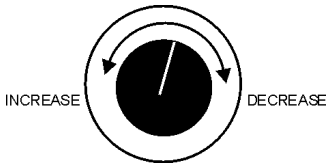


Figure 52. Voltage Adjust Control Knob

13. The ammeter (Figure 53) 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.

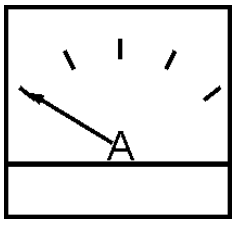


Figure 53. Ammeter (No Load)

14. The engine oil pressure gauge (Figure 54) will indicate the oil pressure (kg/ cm^2) of the engine. Under normal operating conditions the oil pressure is approximately

Figure 54. Oil Pressure Gauge

15. The ***coolant temperature gauge*** (Figure 55) will indicate the coolant temperature. Under normal operating conditions the coolant temperature should be between 165 and 215 degrees Fahrenheit (***Green Zone***).

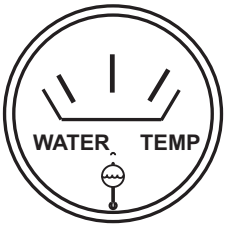


Figure 55. Coolant Temperature Gauge

16. The ***tachometer gauge*** (Figure 56) will indicate the speed of the engine when the generator is operating. Under normal operating conditions this speed is approximately 1800 RPM's.

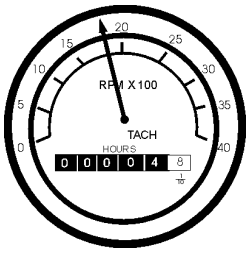


Figure 56. Engine Tachometer Gauge

17. Place the ***main***, ***GFCI***, and ***aux***. circuit breakers in the "**ON**" position (Figure 57).

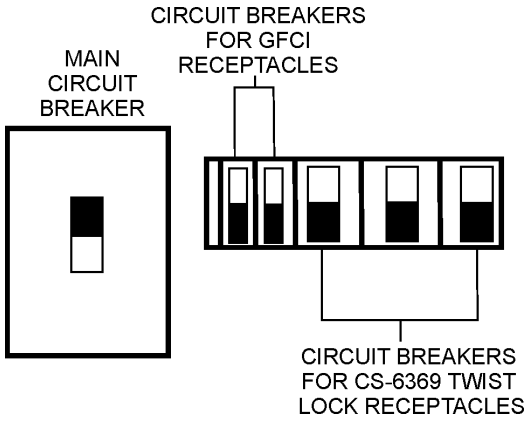


Figure 57. Main, Aux. and GFCI Circuit Breakers (ON)

18. Observe the generator's ammeter (Figure 58) 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.

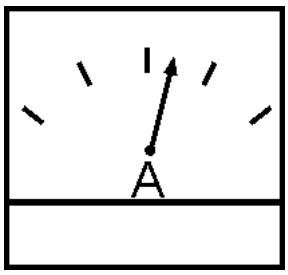


Figure 58. Ammeter (Load)

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

BEFORE STARTING

Generator and Control Panel

CAUTION:

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

NOTE

Steps 20 thru 26 are referenced for Engine Operating Panel S/N 3698617~. See Figure 59 below. This unit does not have an ignition switch or a throttle handle. It does have an "***engine speed switch***" that is used in conjunction with the MPEC unit.

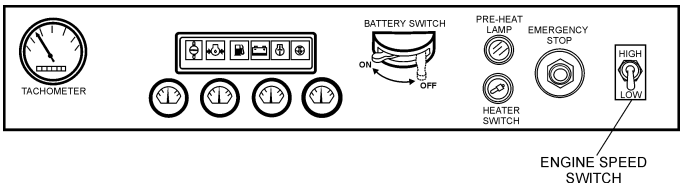


Figure 59. Engine Operating Panel S/N 3698617~

20. Set the ***battery ON/OFF switch*** (Figure 60) to the "**ON**" position.

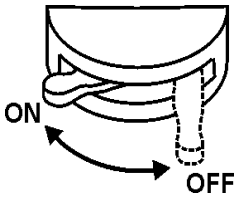


Figure 60. Battery ON/OFF Switch

21. Press and hold the engine preheat button (Figure 59) until the preheat lamp is lit (**ON**).

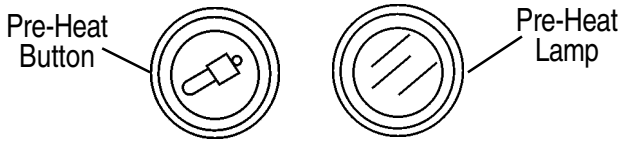


Figure 60. Pre-Heat Button/ Lamp

22. Place the engine speed switch in the "***LOW***" position (Figure 62).

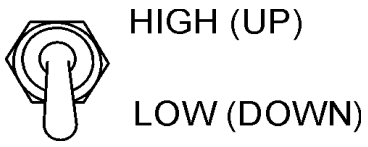


Figure 62. Engine Speed Switch (Low)

23. Place the Auto-Off/Reset-Manual switch in the "***Manual***" position to start the engine (Figure 63). Once the engine starts, let the engine run for 1-2 minutes. Listen for any abnormal noises.

Figure 63. Auto-Off/Reset-Manual Switch

24. Once the engine is warm and the engine is running properly, place the engine speed switch in the "***HIGH***" position (Figure 64).

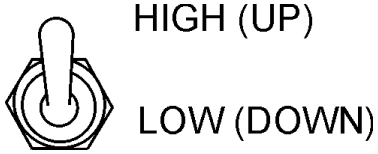


Figure 64. Engine Speed Switch (High)

25. Verify that the "**Engine Running**" status LED on the MPEC unit (Figure 65) is "**ON**" (lit) after the engine has been started.

Figure 65. Engine Running LED (ON)

26. Continue operating the generator as outlined in steps 11 thru 19 (pages 46-47).

DANGER:

Before connecting this generator to any building's electrical system, a **licensed electrician** must install an ***isolation*** (transfer) ***switch***. Serious ***injury*** or ***death*** may result without the installation of a transfer switch.

CAUTION:

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:

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.

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 45) as outlined in the ***Manual Starting Procedure***.

2. Set the ***battery ON/OFF switch*** (Figure 66) to the "**ON**" position.

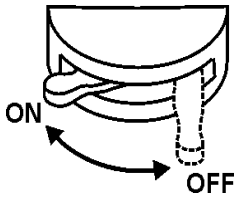
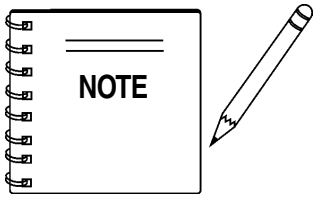


Figure 66. Battery ON/OFF Switch

CAUTION:

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 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 67) to the "**High**" position.

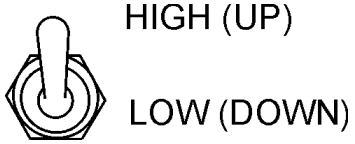


Figure 67. Engine Speed Switch (High)

4. Place the Off/Manual/Auto switch (Figure 68) on the MPEC unit to the **AUTO** position.

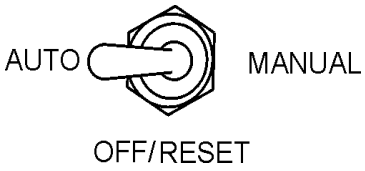


Figure 68. Off/Manual Auto Switch (AUTO)

5. Continue operating the generator as outlined in steps 11 thru 19 (pages 46-47).

Engine Shutdown Ignition Key (Up to S/N 3698616)

To shutdown the generator use the following procedure:

1. Place both the **MAIN**, **GFCI** and **LOAD** circuit breakers (Figure 69) to the "**OFF** position".

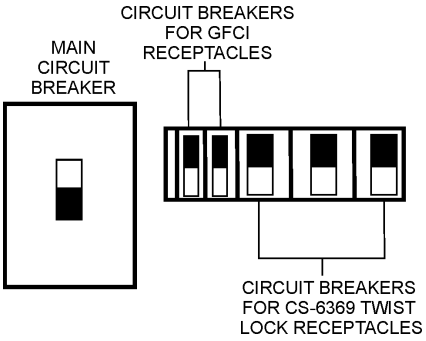


Figure 69. Main, Aux. and GFCI Circuit Breakers (OFF)

2. Place the throttle control (Figure 70) in the "**LOW**" position.

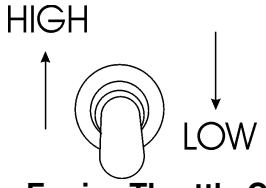


Figure 70. Engine Throttle Control

3. Let the engine cool by running it for 3-5 minutes with no load applied.
4. Place the ignition key (Figure 71) in the "**STOP**" position.

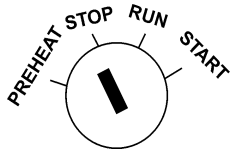


Figure 71. Ignition Key Switch (STOP position)

5. Remove all loads from the generator.

Emergency Shutdown Procedure

1. **PUSH** inward the emergency stop button located on the ***engine operating panel*** (Figure 72) to turn off the generator in the event of an emergency. This button is located on either Engine Operating Panel.

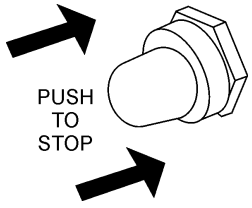


Figure 72. Emergency Stop Button

Engine Shutdown Controller (S/N 3698617~)

To shutdown the generator use the following procedure:

1. Place both the **MAIN**, **GFCI** and **LOAD** circuit breakers as shown in Figure 67 to the "**OFF** position".
2. Place the engine speed switch in the "***LOW***" position (Figure 73).

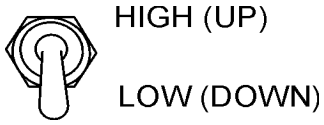


Figure 73. Engine Speed Switch (High)

3. Let the engine cool by running it for 3-5 minutes with no load applied.
4. Place the Auto-Off/Reset-Manual switch (Figure 74) to the ***OFF/Reset*** position.

Figure 74. Off/Manual Auto Switch (AUTO)

5. Verify that the ***all*** status LED's on the MPEC display are "**OFF**" (not lit).
6. Remove all loads from the generator.

CAUTION:

NEVER stop the engine suddenly except in an emergency. **DO NOT** use the emergency stop switch a as method of shutting down the generator. This switch is **ONLY** to be used in the event of an emergency.

NOTE

To disengage the emergency stop function, pull the emergency stop button outward to its original position. This will allow the generator to operate normally. Remember the generator will not start if the emergency stop button is engaged.

Use Table 14 shown below as a general checklist to be performed on a daily basis.

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		
	Drain Bottom of Fuel Tank		X		
	Clean Unit, Inside and Outside		X		
	Change Fuel Filter *2			X	
	Clean Radiator and Check Coolant Protection Level			X	
	Replace Air Filter Element				X
	Change Corrosion Resistor				X
	Check all Hoses and Clamps				X
	Clean Inside of Fuel Tank				X
GENERATOR	Measure Insulation Resistance Over 3M ohms		X		

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

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

General Inspection

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

Air Cleaner

Every ***50 hours***: If dust indicator is **RED**, clean the air cleaner element.

Outer Element:

1. Loosen wing bolt, remove dust cup, then remove wing nut and take out element.
2. Clean the inside of the body and cover using a damp cloth.
3. Blow dry with compressed air (0.69Mpa {7kgf.cm^2, 99.4 PSI} maximum) against the side of the element along the pleats. Then blow dry against outside along the pleats, then against inside again.
4. Remove one seal each time the element is cleaned.
5. Replace the outer element after cleaning it 6 times or after one year. Replace the outer element if indicator is red even after cleaning it.
6. Check the inner cylinder element clamping nut for looseness, and retighten if necessary.
7. If seal washer is damaged or the threads of wing nut are damaged, replace.
8. Remove evacuator valve and clean it with compressed air. Reinstall.

Inner element (if equipped)

1. Remove the cover and outer element, then remove the inner element.
2. Cover the air connector opening (outer side) with clean cloth or cloth tape.
3. Clean the inside of the body. Remove air connector opening protection.
4. Install a new inner cylinder element to the cylinder and tighten the nut.
5. Install element.
6. After replacing the element, press the button of the dust indicator to return the red piston to its original position.

Fuel Addition

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

Removing Water from the Tank

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

Air Removal

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

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

Service Daily

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

Cleaning the Fuel Strainer

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

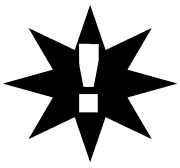
Check Oil Level

Check the crankcase oil level prior to each use, or when the fuel tank is filled. Insufficient oil may cause severe damage to the engine. Make sure the generator is level. The oil level must be between the two notches on the dipstick as shown in Figure 30.

Check Electric Heater (If equipped)

Before starting in cold weather (once a year), please contact your Komatsu distributor for inspection. Remove electric heater from the engine intake manifold and check for disconnections or dirt. When checking or installing the electric heater, replace the gasket with a new part.

CAUTION:



Allow engine to ***cool*** when flushing out radiator. Flushing the radiator while ***hot!*** will damage radiator. In addition the possibility of *hot!* coolant exists which can cause severe burns.

Flushing Out Radiator and Changing Coolant

1. Stop the engine and allow to cool. Tighten valve of the corrosion resistor (if equipped).
2. Turn water filer cap slowly and remove it.
3. Prepare a container to catch the coolant, then open drain plug of the radiator or heat exchanger and drain plug of the engine, and drain the coolant.
4. After draining the coolant, close drain plugs and fill with tap water.
5. When the water level is near the mouth of the water filler, open drain plugs and start the engine, and run at low idling. Keep the engine running at low idling and flush the radiator for about 10 minutes.
6. Adjust the flow of the water flowing in and draining out to ensure that the radiator is always full during the flushing operation. While flushing water through the system, watch carefully the water inlet hose does not come out of the radiator filler port.
7. After flushing, stop the engine, open drain plug and drain the water, then close drain plugs.
8. After draining the water, flush the system with a flushing agent. See instructions on flushing agent label.
9. After flushing, open drain plugs and drain out all the water, then close drain plugs and add tap water so the water level is near the mouth of the water filler.
10. When the water level is near the mouth of the water filler, open drain plugs and start the engine, run at low idling and continue to flush the system until clean water comes out. Adjust the flow of the water flowing in and draining out to ensure the radiator is always full during the flushing operation.
11. When clean water comes out, stop the engine, drain all the water, then close drain plugs.
12. Remove the corrosion resistor (if equipped) and open valve.
13. Supply water until it flows over the water filler.
14. Drain the water inside reserve tank, clean the inside of the reserve tank, then fill with coolant/water mixture to between the full and low lines.
15. Stop the engine, wait for 3 minutes, add tap water until the water level reaches near the water filer port, then tighten the radiator cap.

Changing Oil

1. Make sure the oil is cool before changing.
2. Set a container directly under the drain plug of the oil pan. Loosen the drain plug slowly.
3. Check the drained oil for excessive metal particles or foreign material. Contact the distributor if there is metal particles or foreign material.
4. Using a filter wrench, turn filter cartridge to the left to remove it. If the filter cartridge is filled with a large amount of oil, wait 10 minutes or so before removing. Make sure there is no old gasket stuck on the filter holder.
5. Tighten drain plug. Clean the filter holder, fill the new filter cartridge with clean engine oil, coat the packing and thread of the new filter cartridge with engine oil, then install it to the filter holder. Tighten until the gasket surface contacts the seal surface of the filter holder, then tighten it a further 3/4 to 1 turn.
6. Add engine oil through oil filler until the oil level is between the H and L marks on the dipstick.
7. Run the engine at idling for a short time, then stop the engine. Recheck the oil level and fill as necessary.

Replacing Fuel Filter

1. Set the container under the filter cartridge to catch fuel.
2. Using a filter wrench, turn the filter cartridge to the left to remove it.
3. Clean the filter holder, fill the new filter cartridge with fuel, coat the packing surface of the filter cartridge with engine oil, then install the cartridge to the filter holder.
4. When installing, tighten until the packing surface contacts the seal surface of the filter holder then tighten a further 2/3 of a turn. If the filter cartridge is tighten too much, the packing will be damaged and will cause fuel leakage. Fuel leakage will occur if the filter cartridge is not tightened enough. Always tighten to the correct angle.

5. After replacing filter cartridge, loosen air bleed plug.
6. Loosen the knob of feed pump, and pump it up and down until no bubbles come out with the fuel from air bleed plug.
7. After bleeding the air, tighten air bleed plug, then push in the knob of feed pump and lock it in position.
8. Replace Corrosion resistor cartridge (if equipped)
9. Screw in valves at the top of the corrosion resistor.
10. Using a filter wrench, turn the cartridge to the left to remove it.
11. Coat the seal surface of the new cartridge with engine oil and install it to the filter holder.
12. Tighten until he packing surface contacts the seal surface of the filter holder, then tighten a further 2/3 of a turn.
13. Open valves.

Cleaning Breather Element

1. Loosen the clamp, then remove the hose and take out breather. Wipe off the dirt around the breather. Check the O-ring, and replace if necessary.
2. Wash the breather in diesel fuel or flushing oil, blow dry with compressed air, then reinstall it.
3. Inspect the hose and if there is any deteriorated oil stuck inside the hose. Replace hose if necessary.

Greasing

1. Using a grease pump, grease the fan hub (1 place) and tension pulley (2 places).

Generator Storage:

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

- Fill the fuel tank completely. Treat with fuel stabilizer if necessary.
- Completely drain oil from the crankcase and refill if necessary with fresh oil.
- Clean the entire generator, internal and external.
- Disconnect the negative terminals of the battery and cover it, or remove it from the generator and store it separately.
- If the ambient temperature is expected to drop below 0°C, add antifreeze to the radiator.
- Cover the generator set and store in a clean, dry place

Removal From Long Term Storage:

- Apply oil to the engine valve and rocker arms, and examine the operating condition of the valves.
- Remove the oil filler pipe from the turbocharger oil inlet port, add 0.5-1L (0.13-0.26 gal) of oil to the turbocharger, reinstall the oil filler pipe.
- Change the oil in engine oil pan.
- Replace all the filters.
- Flush the inside of the cooling system.
- Drain the water from the fuel tank and bleed the air from the fuel system.
- If the engine has not been started for more than one year, contact your Komatsu distributor to have engine overhauled.

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

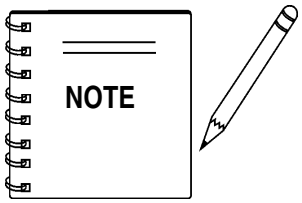
This generator is equipped with two 120 VAC, 20 amp input receptacles located on the output terminal panel.

The purpose of these receptacles is to provide power via commercial power to the ***jacket water heate***r and i***nternal battery charger***.

These receptacles will **ONLY** function when commercial power has been supplied to them (Figure 75). 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***.

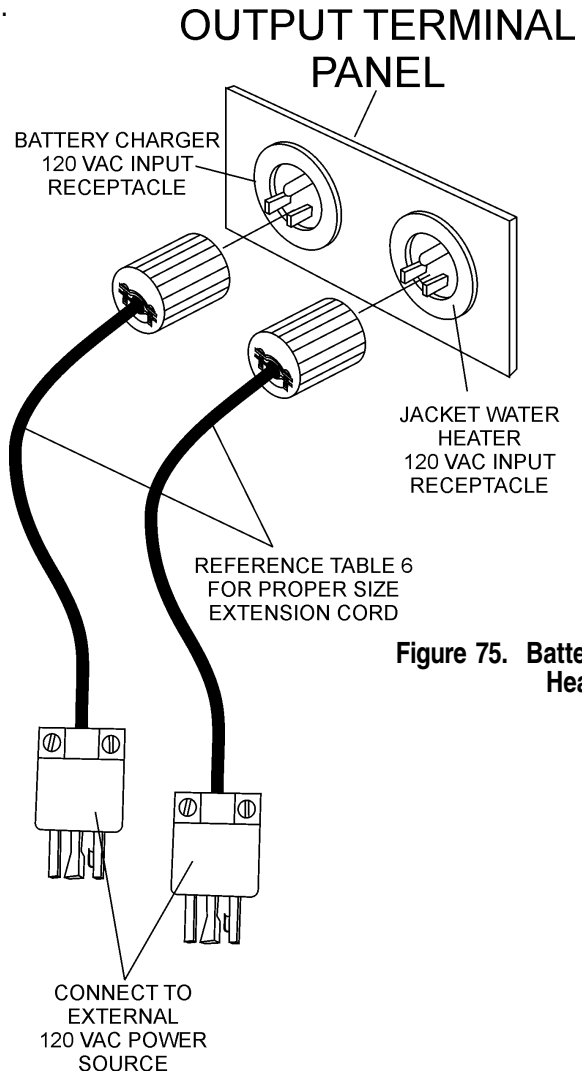


Figure 75. Battery Charger/Jacket Water Heater Power Connections

Brakes

Trailer brakes should be inspected the ***first 200 miles*** of operation. This will allow the brake shoes and drums to seat properly. After the first 200 mile interval, inspect the brakes ***every 3,000 miles***. If driving over rough terrain, inspect the brakes more frequently.

Air Brake System

Air brakes use compressed air to make the brakes function. Air brakes are a good and safe way of stopping large and heavy vehicles. There are many components that make up an air-brake system, such as the air compressor, air compressor governor, air storage tanks and air tank drains. These components need to be maintained by ***qualified*** and ***trained technicians***.

S-Cam Brakes

When the brake pedal is pushed, air is let into each brake chamber (Figure 76). Air Pressure pushes the rod out, moving the slack adjuster, thus twisting the brake cam shaft. This turns the s-cam (so called because it is shaped like the letter "S").

The s-cam forces the brake shoes away from one another and presses them against the inside of the brake drum. When the brake pedal has been released, the s-cam rotates back and a spring pulls the brake shoes away from the drum, letting the wheels roll freely.

Air Tank Drains

Compressed air usually has some water in it which is ***bad*** for the air brake system. Water can freeze in cold weather and thus cause brake failure. The water tends to collect in the bottom of the air tank. ***Daily air tank drainage is required to remove water from the air tank***.

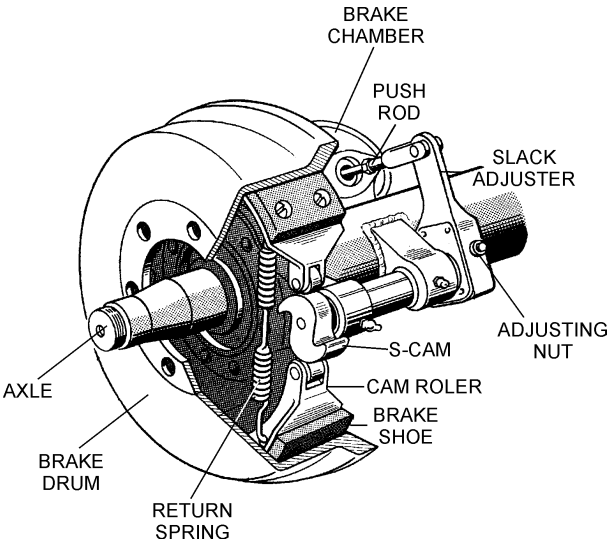


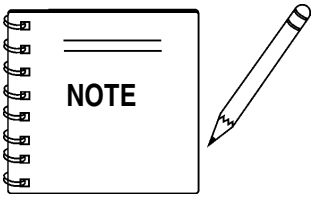
Figure 76. Hydraulic Brake Components

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.



Use Table 15 as a basic troubleshooting guide when brake problems occur.

Table 15. Air Brake Troubleshooting

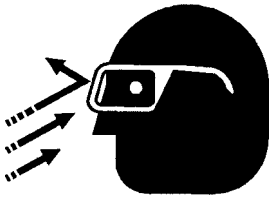
Symptom	Possible Cause	Solution
No Brakes	Air Brake line broken or kinked?	Repair or replace.
	Worn lining?	Replace lining.
	Slack adjustment incorrect?	Adjust correctly.
Weak Brakes or Brakes Pull to One Side	Brake lining glazed?	Reburnish or replace.
	Trailer overloaded?	Correct weight.
	Brake drums scored or grooved?	Machine or replace.
	Tire pressure correct?	Inflate all tires equally.
	Tires unmatched on the same axle?	Match tires.
Locking Brakes	Brake components loose, bent or broken?	Replace components.
	Brake drums out-of-round?	Replace.
	Brake lining glazed?	Replace brake lining.
Noisy Brakes	Drums and lining glazed?	Replace brake lining and drum.
Dragging Brakes	Brake lining thickness incorrect or not adjusted correctly?	Install new shoes and linings.
	Zerk fittings lubricated?	Lubricate zerk fittings.

Tires/Wheels/Lug Nuts

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

CAUTION:

DO NOT attempt to repair or modify a wheel. **DO NOT** install 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.

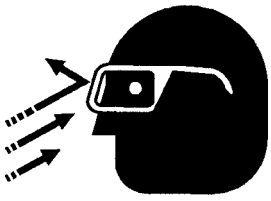


Tire Wear/Inflation

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.

CAUTION:



NOTE

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

TABLE 16. TIRE WEAR TROUBLESHOOTING

WEAR PATTERN		CAUSE	SOLUTION
	Center Wear	Over Inflation.	Adjust pressure to particular load per tire manufacturer.
	Edge Wear	Under Inflation.	Adjust pressure to particular load per tire manufacturer.
	Side Wear	Loss of 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

The ***leaf suspension*** springs and associated components (Figure 77) should be visually inspected ***every 6,000*** miles for signs of excessive wear, elongation of bolt holes, and loosening of fasteners. Replace all damaged parts (suspension) immediately. Torqued suspension components as detailed in Table 17.

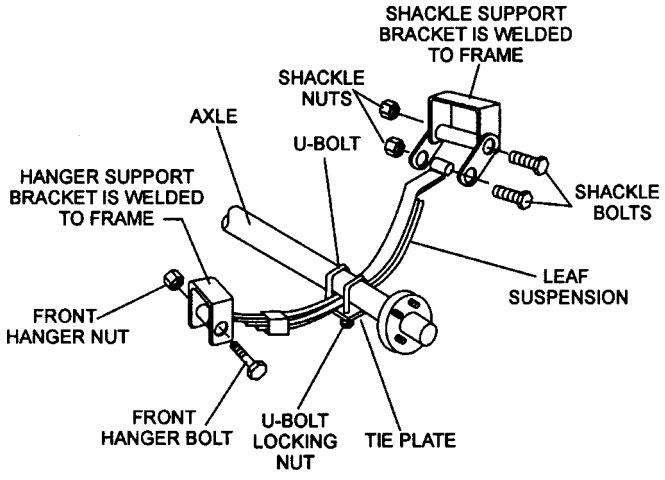


Figure 77. Major Suspension Components

Table 17. Suspension Torque Requirements	
Item	**Torque (Ft.-Lbs.)**
3/8" U-BOLT	MIN-30 MAX-35
7/16" U-BOLT	MIN-45 MAX-60
1/2" U-BOLT	MIN-45 MAX-60
SHACKLE BOLT SPRING EYE BOLT	SNUG FIT ONLY. PARTS MUST ROTATE FREELY. LOCKING NUTS OR COTTER PINS ARE PROVIDED TO RETAIN NUT-BOLT ASSEMBLY.
SHOULDER TYPE SHACKLE BOLT	MIN-30 MAX-50

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 78. **DO NOT** torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Table 18.
3. After first road use, retorque all lug nuts in sequence. Check all wheel lug nuts periodically.

Table 18. 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

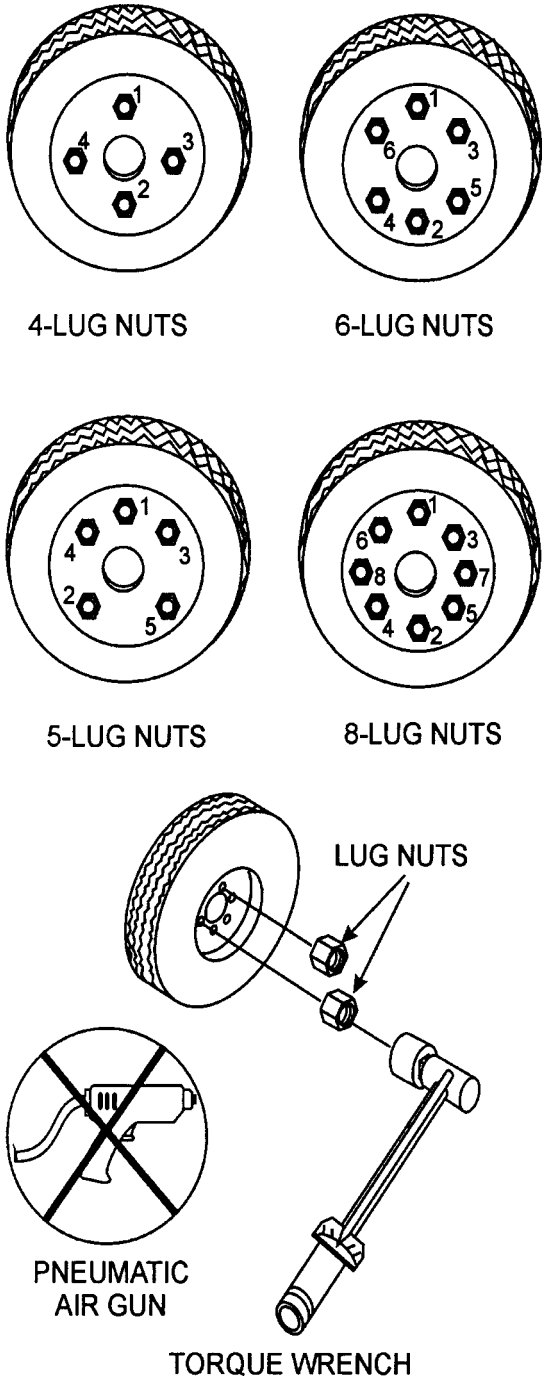
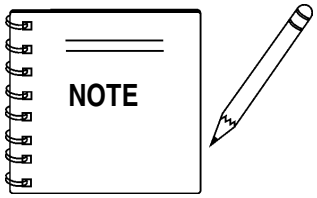
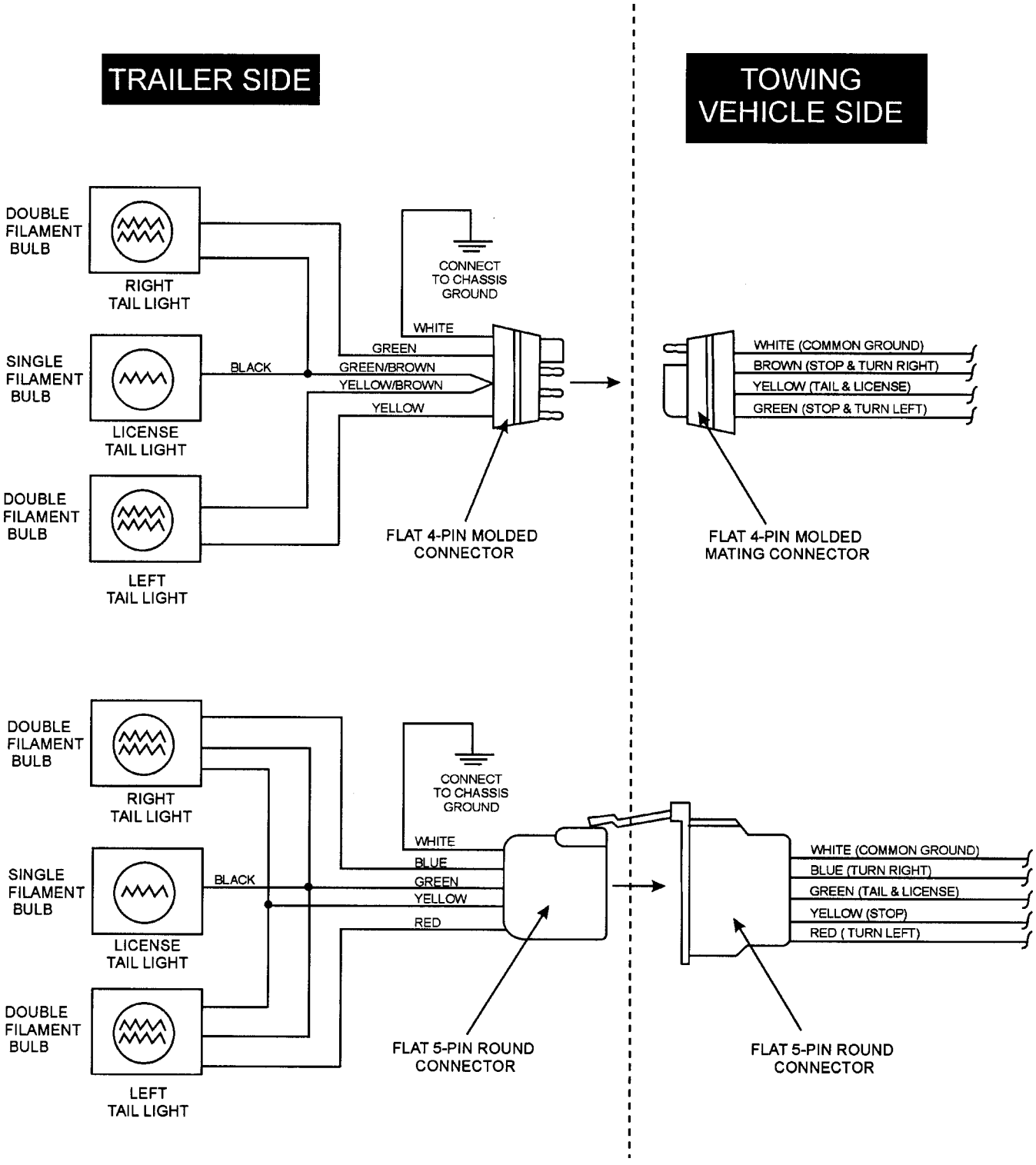


Figure 78. Wheel Lug Nuts Tightening Sequence



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


TRAILER SIDE
TOWING VEHICLE SIDE
DOUBLE FILAMENT BULB
RIGHT TAIL LIGHT
SINGLE FILAMENT BULB
LICENSE TAIL LIGHT
DOUBLE FILAMENT BULB
LEFT TAIL LIGHT
BLACK
CONNECT TO CHASSIS GROUND
WHITE
GREEN
GREEN/BROWN
YELLOW/BROWN
YELLOW
FLAT 4-PIN MOLDED CONNECTOR
WHITE (COMMON GROUND)
BROWN (STOP & TURN RIGHT)
YELLOW (TAIL & LICENSE)
GREEN (STOP & TURN LEFT)
FLAT 4-PIN MOLDED MATING CONNECTOR
DOUBLE FILAMENT BULB
RIGHT TAIL LIGHT
SINGLE FILAMENT BULB
LICENSE TAIL LIGHT
DOUBLE FILAMENT BULB
LEFT TAIL LIGHT
BLACK
CONNECT TO CHASSIS GROUND
WHITE
BLUE
GREEN
YELLOW
RED
FLAT 5-PIN ROUND CONNECTOR
WHITE (COMMON GROUND)
BLUE (TURN RIGHT)
GREEN (TAIL & LICENSE)
YELLOW (STOP)
RED (TURN LEFT)
FLAT 5-PIN ROUND CONNECTOR

TYPICAL 7 POLE TRAILER WIRE DIAGRAM

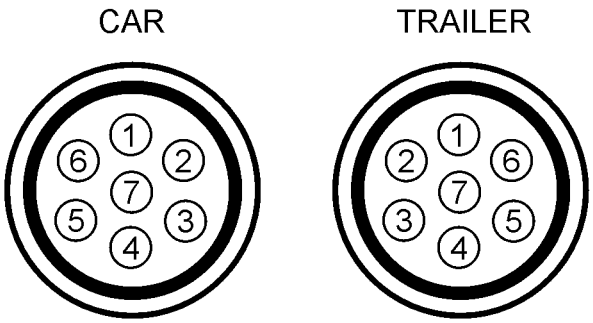
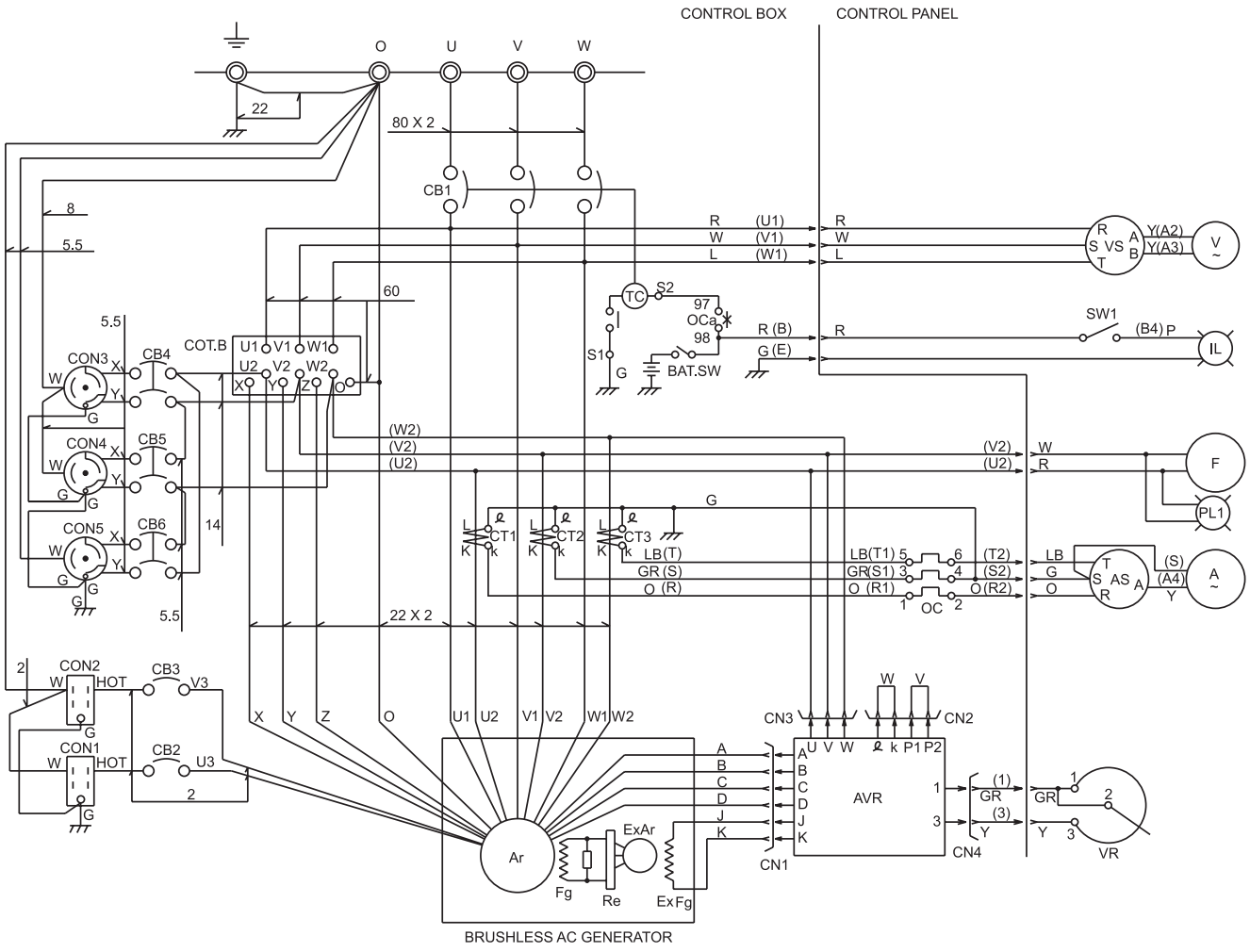


TABLE 19. TRAILER WIRE DIAGRAM

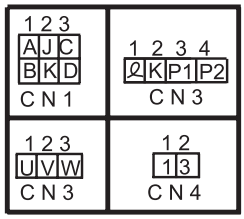
POLE	DESCRIPTION	COLOR
1 / L	LEFT TURN	YELLOW
2 / 54G	REVERSE	BLACK
3 / 31	EARTH	WHITE
4 / R	RIGHT TURN	GREEN
5 / 58R	SERVICE BRAKES	BLUE
6 / 54	STOP LAMP	RED
7 / 58L	TAIL LAMPS	BROWN

DCA-600SSK —GENERATOR WIRING DIAGRAM

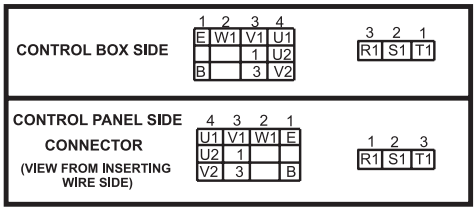


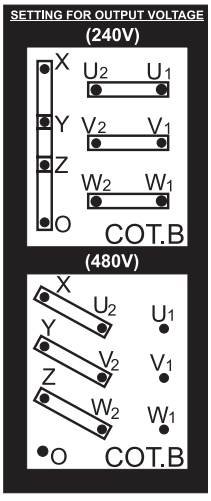
BRUSHLESS AC GENERATOR

AVR CONNECTOR



(VIEW FROM INSERTING WIRE SIDE)





WIRE SIZE TABLE
80: 80mm²
60: 60mm²
22: 22mm²
14: 14mm²
8 : 8mm²
5.5: 5.5mm²
2 : 2mm ²
NO MARK:1.25mm²

COLOR CODE TABLE			
CODE/ 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
kW	WATTMETER -20 ~200 KW
WT	WATT-METER TRANSDUCER

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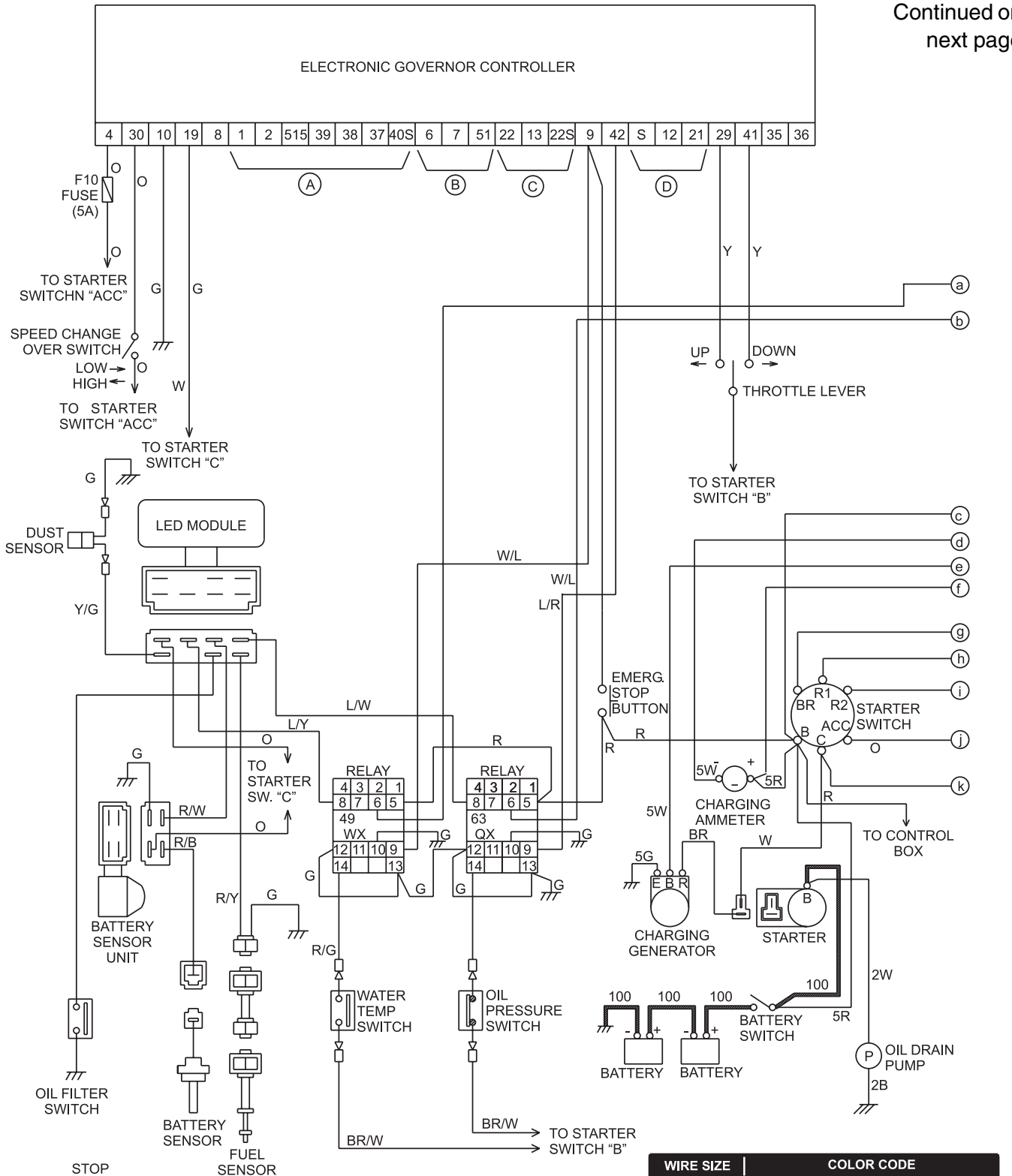

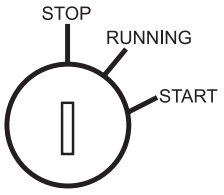

	STARTER SWITCH CONNECTION					
	B	R1	BR	ACC	R2	C
STOP	●					
RUNNING	●		●	●		
START	●		●		●	●

WIRE SIZE	COLOR CODE			
100: 100 mm²	CODE/ WIRE COLOR			
38: 38 mm²	B	BLACK	R	RED
22: 22 mm²	L	BLUE	W	WHITE
14: 14 mm²	BR	BROWN	Y	YELLOW
5: 5 mm²	G	GREEN	LB	LIGHT BLUE
2: 2 mm²	GR	GRAY	LG	LIGHT GREEN
	V	VIOLET	O	ORAGNE
	P	PINK		

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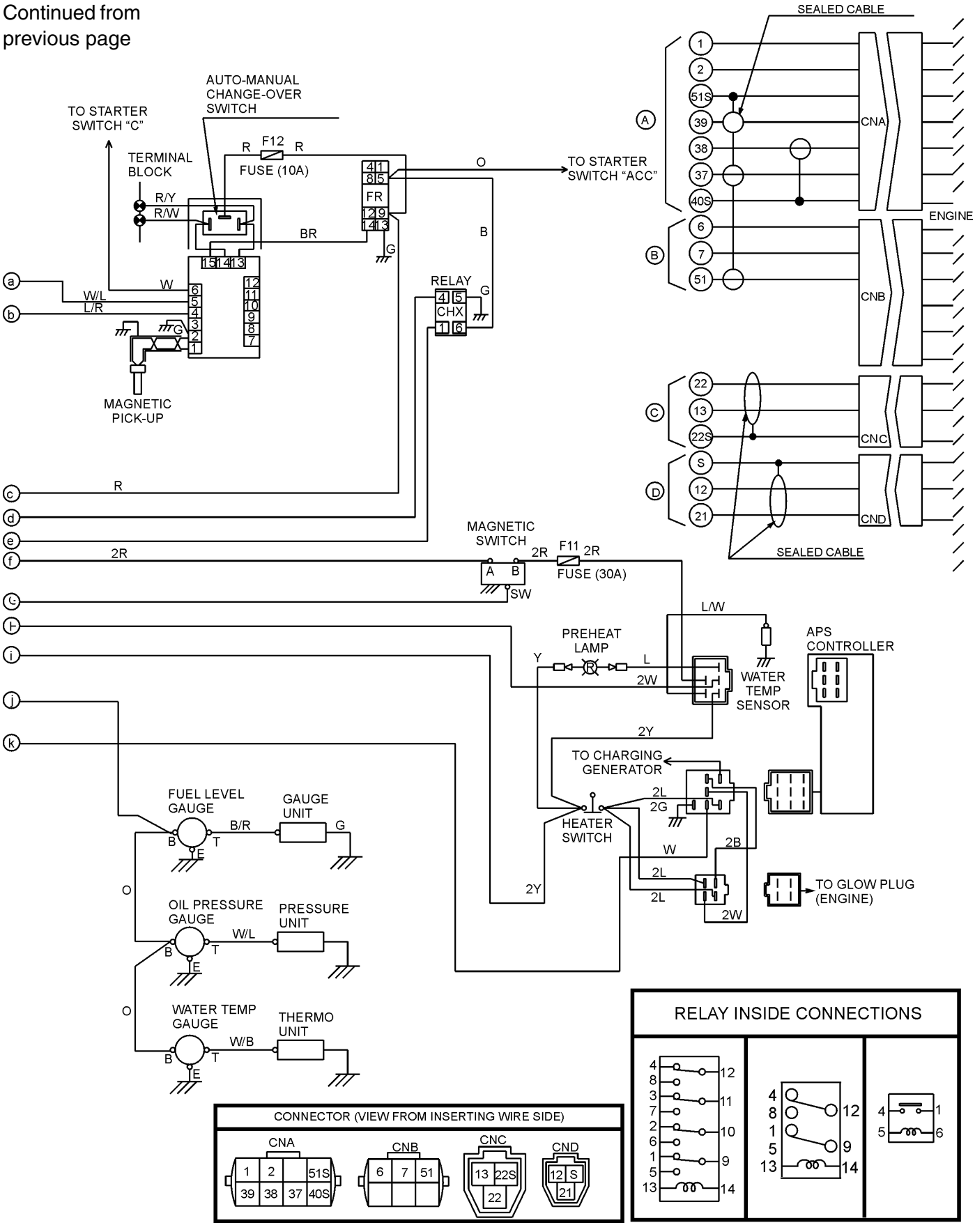


Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use Table 20 (Engine Troubleshooting) as a basic guideline for troubleshooting the engine. If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 20. 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.

TABLE 20. 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-600SSK — TROUBLESHOOTING (GENERATOR/ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use Table 21 (Generator Troubleshooting) as a basic guideline for troubleshooting the generator. If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 21. 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.

Use Table 22 (Engine Controller Troubleshooting) as a basic guideline for troubleshooting the MPEC. If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 22. 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 temperture 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.

EXPLANATION OF CODE IN REMARKS COLUMN

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

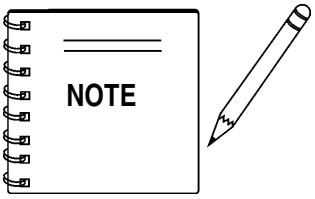
Items Found In the "Remarks" Column

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

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

Items Found In the "Items Number" Column

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

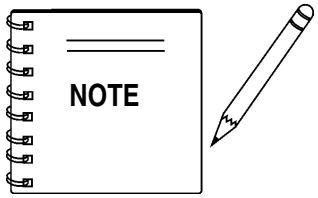


If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.

DCA-600SSK w/SA6D170AE-1 KOMATSU ENGINE

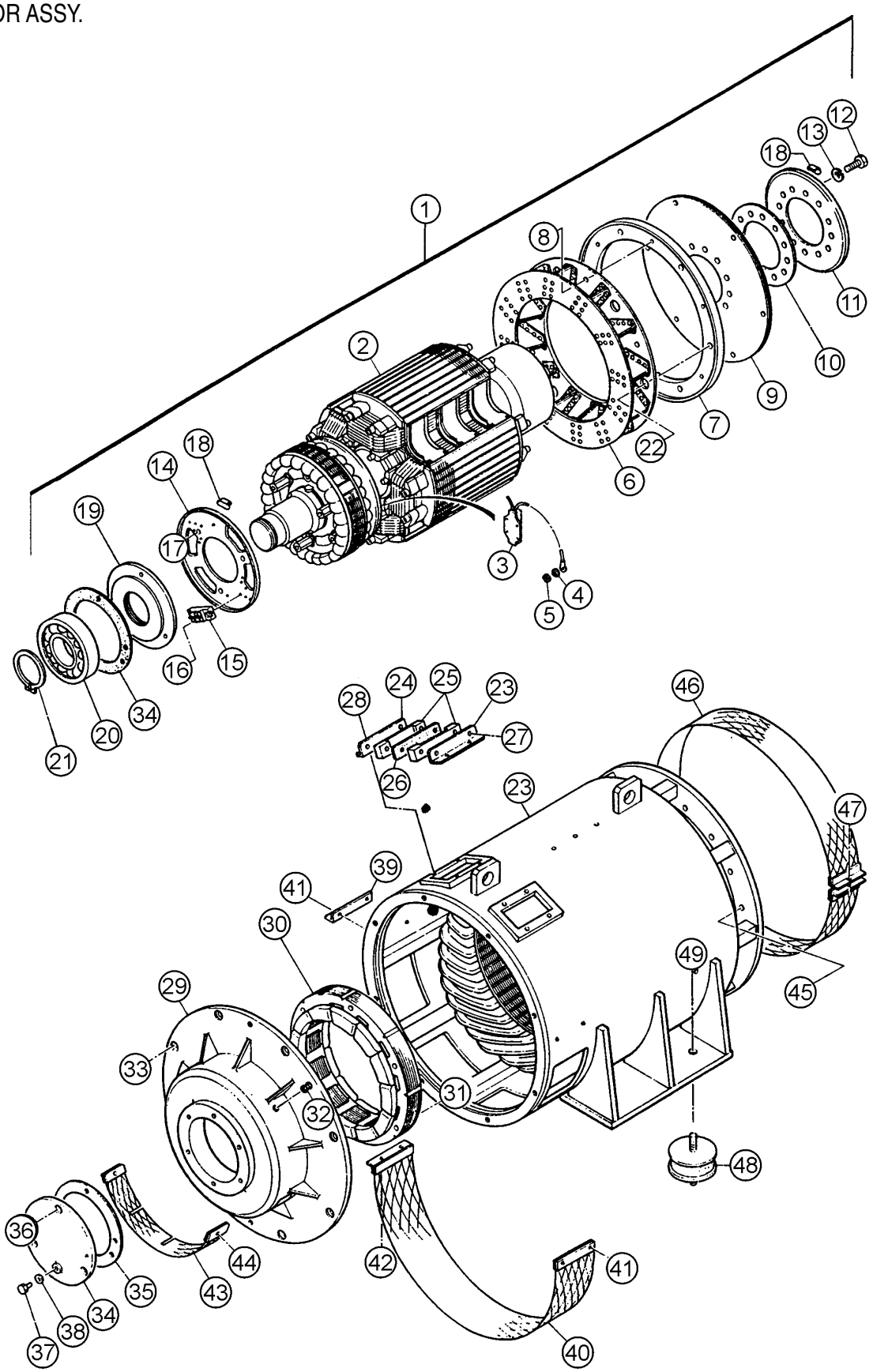
1 to 3 Units

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.

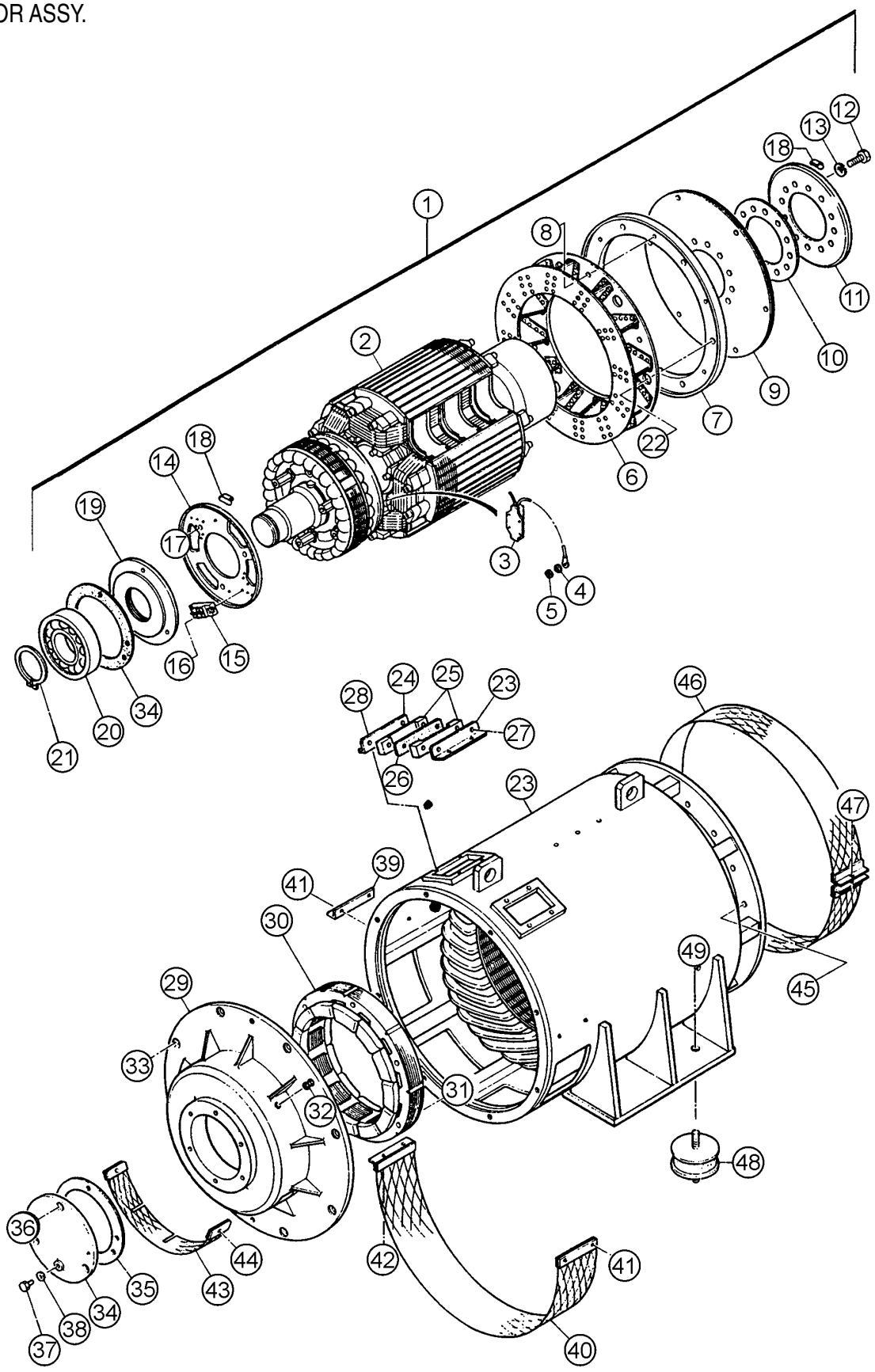
GENERATOR ASSY.



GENERATOR ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	8181000002	ROTOR ASSY.	1	INCLUDE ITEMS W/*
2		FIELD ASSY.	1	
3*	0601842366	RESISTOR	4	SMRK 80W 50 KOHMS
4*	8171020004	INSULATOR WASHER	1	
5*	8171020504	INSULATOR WASHER	1	
6*	8461070002	FAN	1	
7*	8461614003	COUPLING RING	1	
8*	012212025	HEX. HEAD BOLT	6	REPLACES 0010312025
8*	0042512000	LOCK WASHER	6	
9*	C4163100004	COUPLING DISK ASSY.	1	
10*	8461612004	WASHER, COUPLING HUB	1	
11*	8461015003	BALANCING PLATE	1	
12*	0012120055	HEX. HEAD BOLT	12	
13*	0042620000	LOCK WASHER	12	
14*	8461026023	SET PLATE, RECTIFIER	1	
15*	0601823282	RECTIFIER	2	RM50TC-24
16*	0018205020	HEX. SOCKET HEAD CAP SCREW	4	
16*	0032005000	LOCK WASHER	4	REPLACES 0040005000
16*	0401450050	PLAIN WASHER	4	REPLACES 0041205000
17*	0010112020	HEX. HEAD BOLT	6	
17*	0040012000	LOCK WASHER	6	
18*	0601000209	BALANCING WEIGHT KIT	1	
19*	7431014003	BEARING FLANGE	1	
20*	0070106321	BEARING	1	
21*	0080000105	SNAP RING	1	
22	0012116060	HEX. HEAD BOLT	6	
22	0042516000	LOCK WASHER	6	
23	C4130100203	STATOR ASSY.	1	
24	7431323003	CLAMPER	4	
25	7431323123	CLAMPER	4	
26	7431323204	CLAMPER	2	
27	0016310080	HEX. HEAD BOLT	4	
27	020310080	HEX. NUT	4	REPLACES 0030010000
27	0040010000	LOCK WASHER	8	
27	031110160	PLAIN WASHER	4	REPLACES 0041210000
28	012210020	HEX. HEAD BOLT	8	REPLACES 0017110020
29	8461315002	END BRACKET	1	
30	C4137000003	FIELD ASSY. EXCITER	1	
31	0012110075	HEX. HEAD BOLT	6	
31	0042610000	LOCK WASHER	6	
31	031110160	PLAIN WASHER	6	REPLACES 0041210000

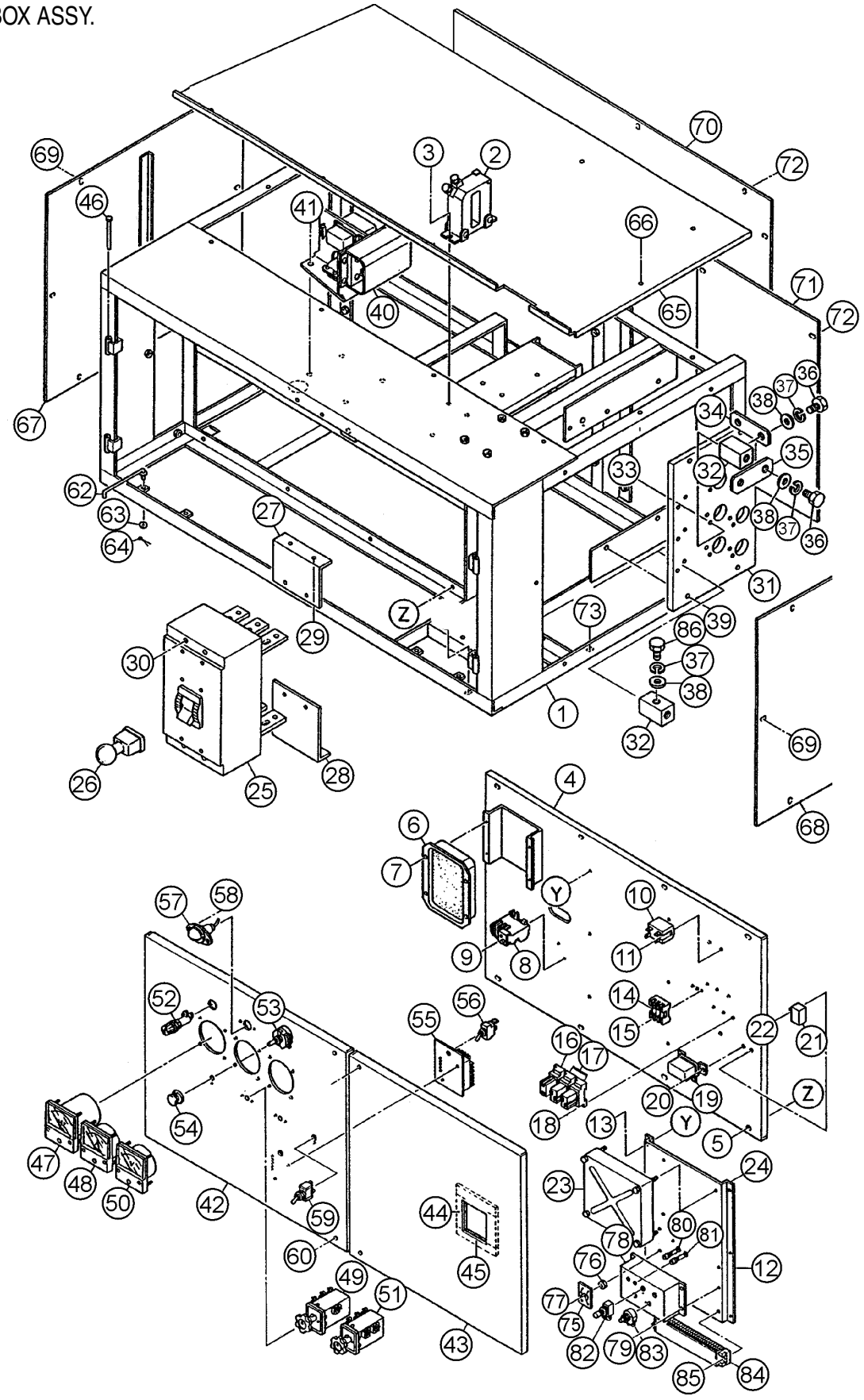
GENERATOR ASSY.



GENERATOR ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
32	0845044904	GROMMET	1	
33	0016316045	HEX. HEAD BOLT	8	
33	0040016000	LOCK WASHER	8	
33	0041216000	PLAIN WASHER	8	
34	7431310003	COVER, BEARING	1	
35	8461312004	GASKET, BEARING	2	
36	0016308095	HEX. HEAD BOLT	3	
36	0040008000	LOCK WASHER	3	
36	0311108160	PLAIN WASHER	3	REPLACES 0041208000
37	0010110016	HEX. HEAD BOLT	1	
38	0803000104	PACKING	1	
39	8461335004	BRACKET, COVER	1	
40	8461334003	COVER, STATOR	1	
41	0105050616	HEX. HEAD BOLT	4	REPLACES 0017106012
42	0017106050	HEX. HEAD BOLT	2	
43	8461333003	LOCK WASHER	1	
44	0105050616	HEX. HEAD BOLT	2	REPLACES 0017106012
45	0012112040	HEX. HEAD BOLT	16	
45	0042512000	LOCK WASHER	16	
46	8461332003	COVER, FAN	1	
47	0017106050	HEX. HEAD BOLT	1	
48	0605000012	RUBBER SUSPENSION	4	
49	0030020000	HEX. NUT	8	
49	030220510	LOCK WASHER	8	REPLACES 0040020000

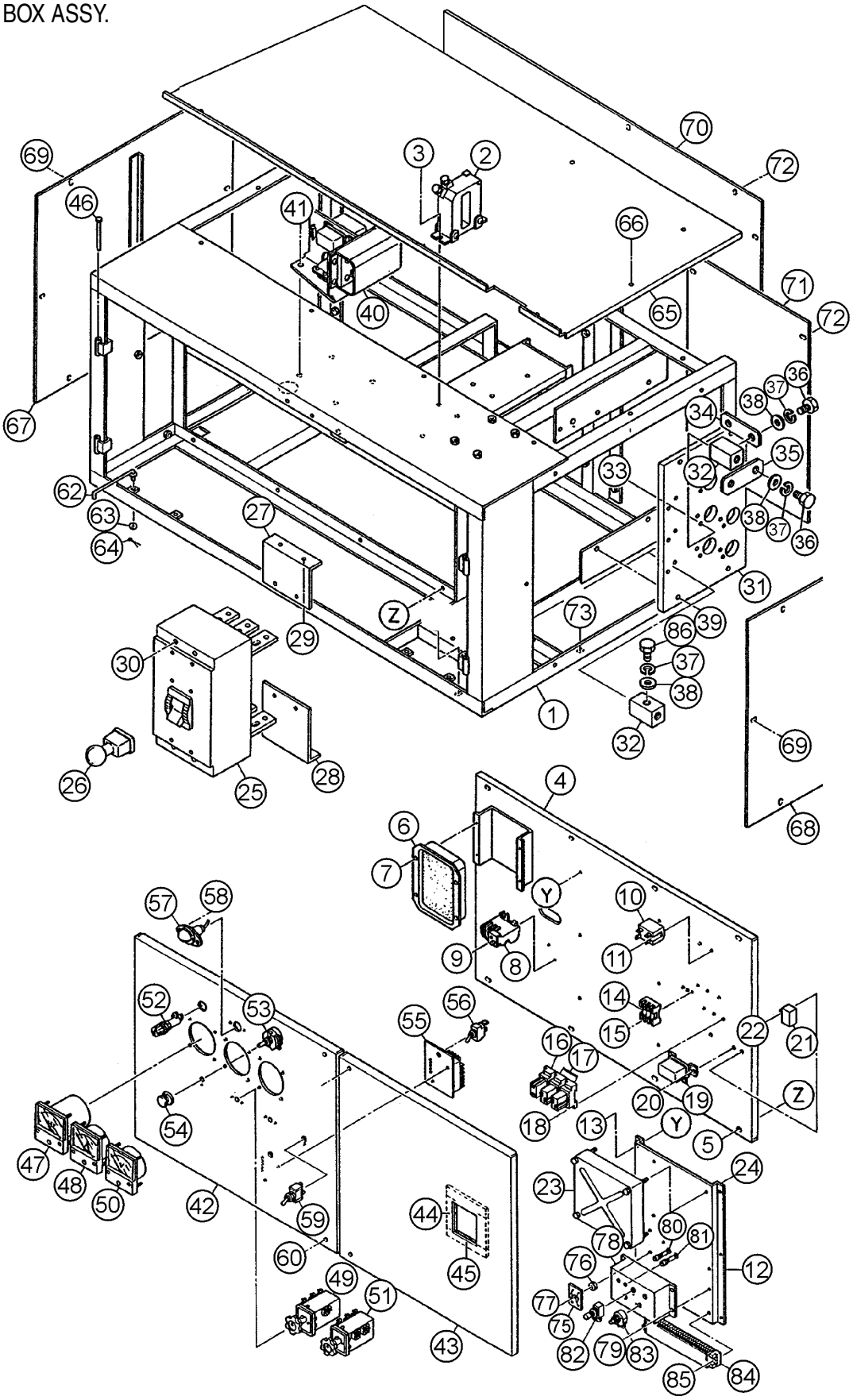
CONTROL BOX ASSY.



CONTROL BOX ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	8181812502	CONTROL BOX	1	UP TO S/N 3692433
1	8481812502	CONTROL BOX	1	S/N 3692434~
2	0601806153	CURRENT TRANSFORMER, AMMETER	3	CW-40LM 1200/5A
3	0017108020	HEX. HEAD BOLT	6	
4	C4261501503	SET PANEL, ELECTRIC PARTS	1	
5	011208030	HEX. HEAD BOLT	8	REPLACES 0017108030
6	0601820625	AUTOMATIC VOLTAGE REGULATOR	1	
7	0027105016	MACHINE SCREW	4	
8	0601820892	OVER CURRENT RELAY	1	
9	0027104016	MACHINE SCREW	2	
10	0601823706	RELAY	1	
11	0027104014	MACHINE SCREW	2	
12	C5352800003	BRACKET	1	
13	0017106016	HEX. HEAD BOLT	6	
14	0601802133	FUSE (LEFT SIDE) 5A	1	
14	0601802164	FUSE 30A	1	
14	0601802149	FUSE (RIGHT SIDE) 10A	1	
14	0601802218	HOLDER, FUSE	1	
15	0021004020	MACHINE SCREW	3	
15	0040004000	LOCK WASHER	3	
15	0041204000	PLAIN WASHER	3	
16	0601823757	RELAY	1	
16	0601823143	SOCKET	1	
16	PYCA1	HOLDER	1	REPLACES 0601824400
17	0601823759	RELAY	2	
17	0601823146	SOCKET	2	
17	PYCA1	HOLDER	2	REPLACES 0601824400
18	0027104016	MACHINE SCREW	6	
19	1750733520	RELAY	1	REPLACES 0602201246
20	0017105016	HEX. HEAD BOLT	2	
21	0602201911	UNIT, BATTERY SENSOR	1	C7038A0000
22	0017106020	HEX. HEAD BOLT	1	
23	6162839180	CONTROLLER	1	REPLACES 0602202536
24	0207006000	HEX. NUT	4	
25	0601807030	CIRCUIT BREAKER, XS1600NE 1600A	1	INCLUDES ITEM W/*
26*	0601802525	HANDLE, CIRCUIT BREAKER	1	
27	7971816104	BRACKET, CIRCUIT BREAKER	1	
28	7971816304	BRACKET, CIRCUIT BREAKER	1	
29	0017108020	HEX. HEAD BOLT	4	
30	0021008045	MACHINE SCREW	4	
30	0030008000	HEX. NUT	4	
30	0040008000	LOCK WASHER	4	

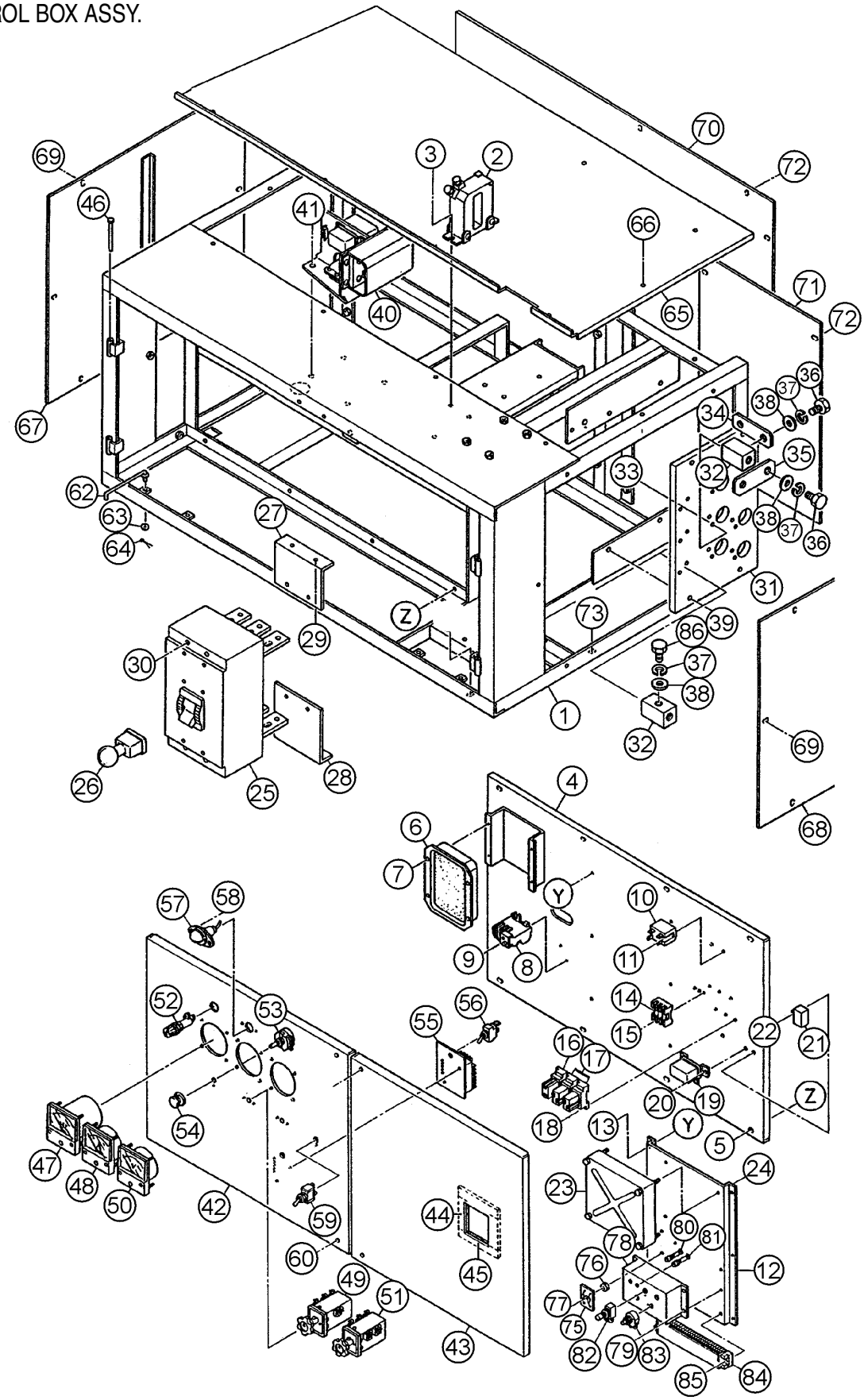
CONTROL BOX ASSY.



CONTROL BOX ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
30	0041208000	PLAIN WASHER	4	
31	7431861113	CHANGE-OVER BOARD, VOLTAGE	1	
32	7431852104	CHANGE TERMINAL	10	
33	0017108035	HEX. HEAD BOLT	20	
34	7971852504	TERMINAL PLATE	7	
35	7431853104	CHANGE PLATE	6	
36	0801832504	HEX. HEAD BOLT	17	
37	0040020000	LOCK WASHER	20	
38	0041420000	PLAIN WASHER	20	
39	0010110040	HEX. HEAD BOLT	4	
39	0030010000	HEX. NUT	4	
39	0040010000	LOCK WASHER	4	
39	0041210000	PLAIN WASHER	4	
40	6008153600	APS UNIT	1	REPLACES 0602201245
41	0010010040	HEX. HEAD BOLT	4	
41	0040010000	LOCK WASHER	4	
41	0041210000	PLAIN WASHER	4	
42	C4224001403	CONTROL PANEL (GEN-SIDE)	1	
43	7971822603	CONTROL PANEL (CB-SIDE)	1	
44	0228800124	RUBBER SEAL	2	
45	0228800100	RUBBER SEAL	2	
46	0605011211	PIN	4	
47	0601800480	FREQUENCY METER	1	PAK-100 220V 45~65 Hz
48	0601800736	AC AMMETER	1	PSK-100 0~1200A, 0~2400A
49	0601801040	CHANGE-OVER SWITCH, AMMETER	1	SL-2 AS
50	0601800252	AC VOLTMETER	1	PCK-100 0~600V
51	0601801041	CHANGE-OVER SWITCH, VOLTMETER	1	SL-2 VS
52	0601810072	PILOT LAMP	1	LP-132DC 220V
52	0601810261	BULB	1	CT-13W
53	0601840073	RHEOSTAT (VOLTAGE REGULATOR)	1	RA20A2SE102BJ
54	0601840121	KNOB	1	
55	ECU9988N600/800	ENGINE CONTROLLER	1	REPLACES 0601827396 S/N368617~
56	82608	SWITCH	1	REPLACES 0601831340 S/N368617~
57	0601810161	PANEL LIGHT	1	V325070
57	0601810214	BULB	1	
58	0207004000	HEX. NUT	2	
59	0601830710	SWITCH, PANEL LIGHT	1	S-301T
60	C9221100004	HEX. HEAD BOLT	2	
60	0040008000	LOCK WASHER	2	
60	031108160	PLAIN WASHER	2	REPLACES 0041208000
60	0080200007	SNAP RING	2	
61	C9221100004	HEX. HEAD BOLT	2	
61	0040008000	LOCK WASHER	2	

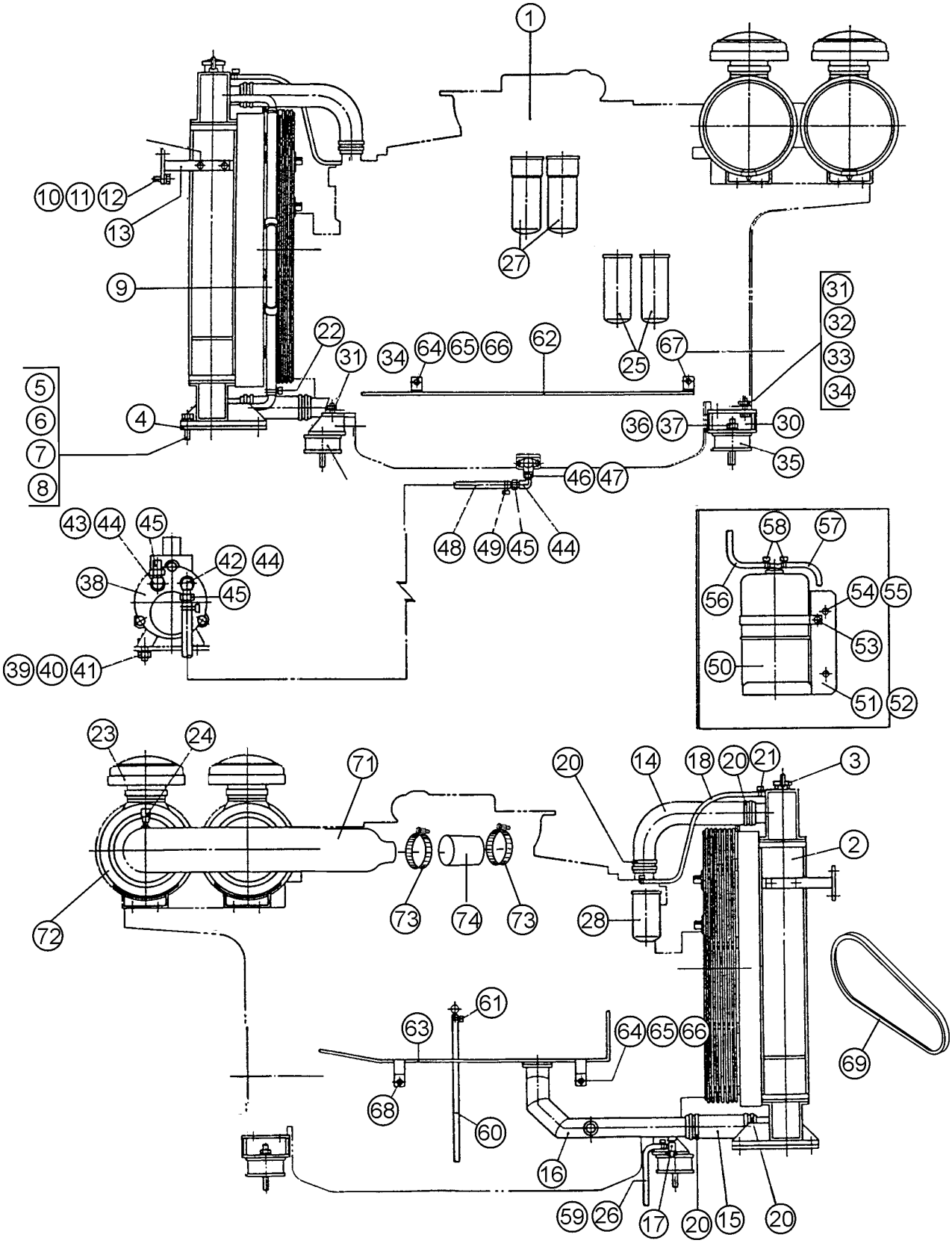
CONTROL BOX ASSY.



CONTROL BOX ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
61	0041208000	PLAIN WASHER	2	
61	0080200007	SNAP RING	2	
62	3871824004	STOPPER, CONTROL PANEL	2	
63	952404470	PLAIN WASHER	2	REPLACES 0041206000
64	505015300	SNAP PIN	2	REPLACES 0605010502
65	8481814503	COVER, CONTROL BOX	1	
66	011008020	HEX. HEAD BOLT	10	REPLACES 0017108020
67	8481812104	SIDE PANEL, CONTROL BOX	1	
68	7971812104	SIDE PANEL, CONTROL BOX	1	
69	8481812104	HEX. HEAD BOLT	12	
70	8481825104	PANEL, CONTROL BOX	1	
71	8481825304	PANEL, CONTROL BOX	1	
72	0017108020	HEX. HEAD BOLT	15	
73	012010030	HEX. HEAD BOLT	5	REPLACES 0017110030
74	0017108020	HEX. HEAD BOLT	3	
75	Z0110000904	RESISTOR UNIT	2	1/4W 560 OHMS x 4
76	020106050	HEX. NUT	2	REPLACES 0030006000
77	0027105020	MACHINE SCREW	2	
78	C5352800104	BRACKET	1	
79	0017105016	HEX. HEAD BOLT	4	
80	0601810575	PILOT LAMP, ENGINE TROUBLE	1	KRE-108-4R DC24V
81	0601810576	PILOT LAMP, ENGINE TROUBLE	1	KRE-108-4G DC24V
82	0601831205	RESET SWITCH	1	SB-221 N/O
83	0601840009	RHEOSTAT (DROOP & IDLE SPEED CONTROLLER)	2	RA20A 2SE 502BJ 2W 5k OHMS
84	0601815802	TERMINAL BOARD	1	
85	0027104020	MACHINE SCREW	2	
86	0801830904	HEX. HEAD BOLT	3	

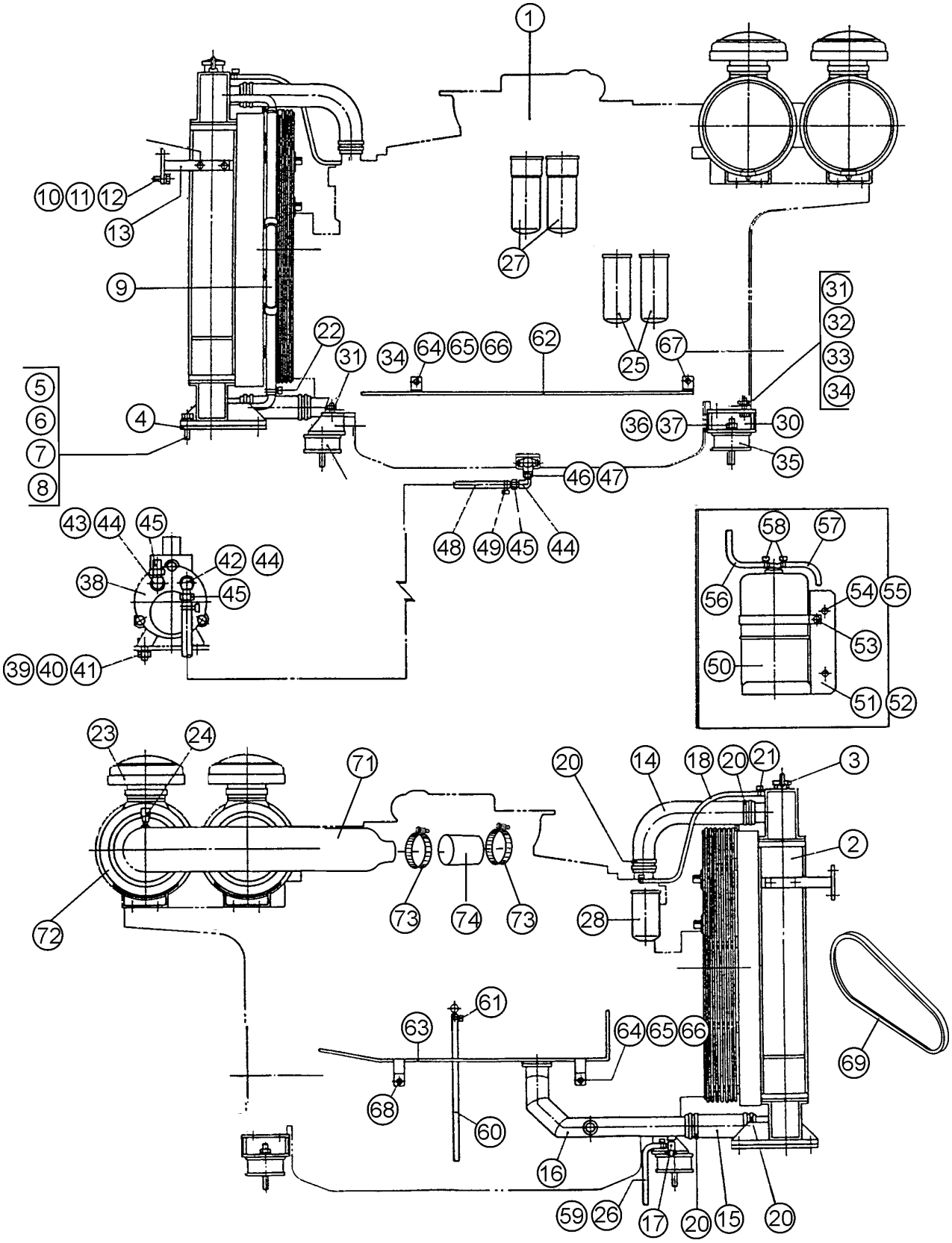
ENGINE & RADIATOR ASSY.



ENGINE & RADIATOR ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4924200114	ENGINE	1	SA6D170AE1
2	6162639171	RADIATOR	1	REPLACES 0602011986 INCLUDE ITEM W/*
3*	23S0311150M	CAP, RADIATOR	1	REPLACES 0602011058
4	6995621350	RUBBER SHEET	2	REPLACES 0605000098
5	0010118100	HEX. HEAD BOLT	8	
6	0030018000	HEX. NUT	16	
7	0040018000	LOCK WASHER	8	
8	0041218000	PLAIN WASHER	16	
9	8495123004	BRACKET, RADIATOR	2	
10	0010112025	HEX. HEAD BOLT	4	
11	0040012000	PLAIN WASHER	4	
12	0041212000	PLAIN WASHER	4	
13	0017110025	HEX. HEAD BOLT	4	
14	6995621690	RADIATOR HOSE, UPPER	1	REPLACES 0602013953
15	6162639650	RADIATOR HOSE, LOWER	1	REPLACES 0602014649
16	6162639640	RADIATOR PIPE	1	REPLACES 0602013305
17	0773050004	DRAIN VALVE	1	REPLACES 0602012054
18	6128619530	RADIATOR HOSE	1	REPLACES 0602013079
19	6128619650	RADIATOR HOSE	1	REPLACES 0602013954
20	0728101029	HOSE BAND	8	REPLACES 0602014350
21	0728100167	HOSE BAND	2	REPLACES 0602014059
22	0728100489	HOSE BAND	2	REPLACES 0602014351
23	6125817032	ELEMENT, AIR CLEANER	2	REPLACES 0602040156
24	6008157190	DUST SENSOR	1	REPLACES 0602040647
25	6002111231	CARTRIDGE, OIL FILTER	2	REPLACES 0602041146
26	0727061510	HOSE	1	REPLACES 0602014648
27	6003117111	CARTRIDGE, FUEL FILTER	2	REPLACES 0602042155
28	6004111030	CARTRIDGE, CORROSION RESISTOR	1	REPLACES 0602045149
29	7435112004	ENGINE FOOT	1	
30	8485112004	ENGINE FOOT	2	
31	0010118060	HEX. HEAD BOLT	6	
32	0030018000	HEX. NUT	6	
33	0040018000	LOCK WASHER	6	
34	0041218000	PLAIN WASHER	6	
35	0605000012	RUBBER SUSPENSION	4	
36	0030020000	HEX. NUT	8	
37	030220510	LOCK WASHER	8	REPLACES 0040020000
38	0602023161	PUMP	1	GM-2524H

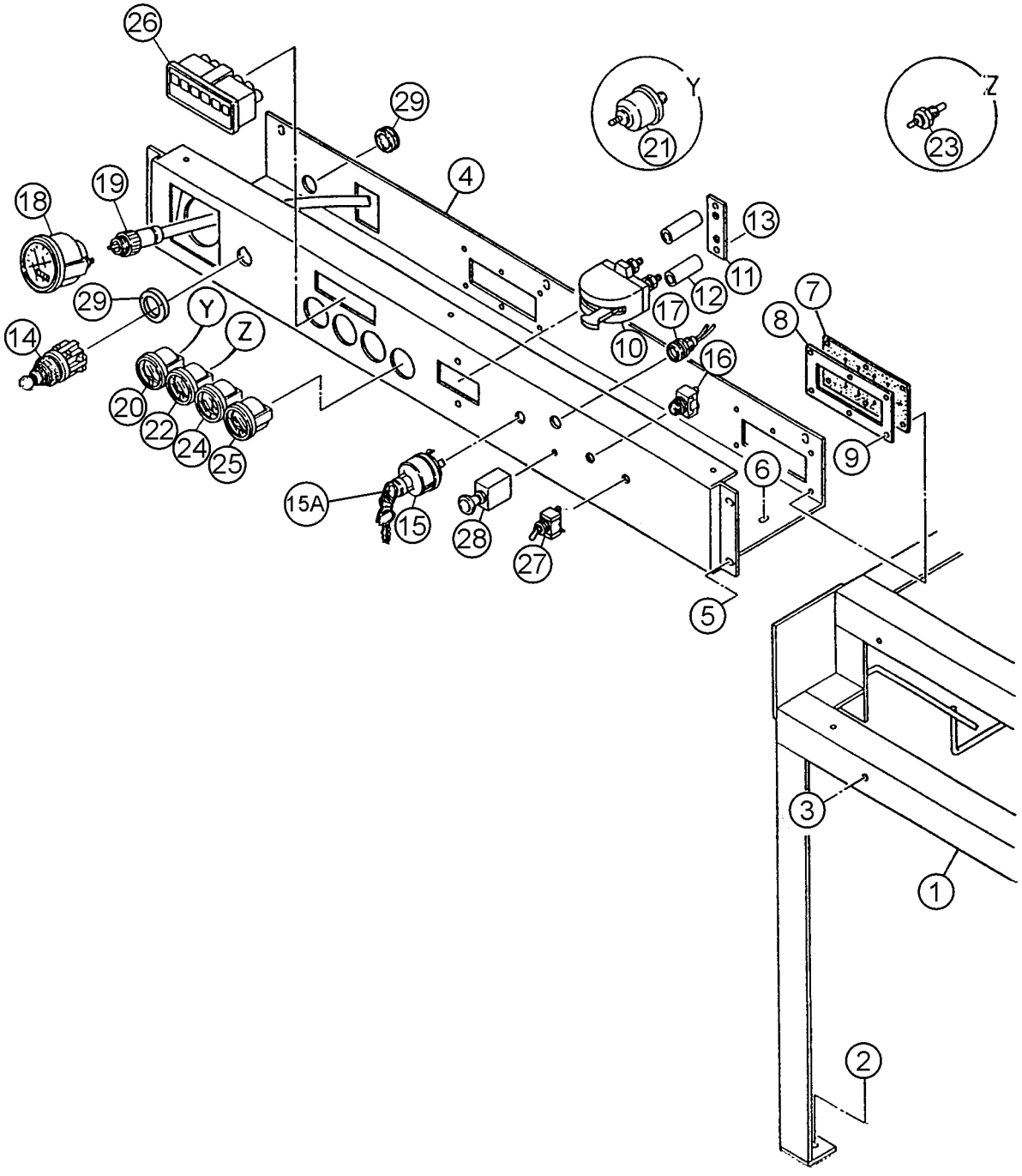
ENGINE & RADIATOR ASSY.



ENGINE & RADIATOR ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
39	0010108025	HEX. HEAD BOLT	4	
40	031108160	PLAIN WASHER	4	REPLACES 0041208000
41	020108060	HEX. NUT	4	REPLACES 0207008000
42	0131710060	BUSHING	1	
43	0131708060	BUSHING	1	
44	0130206000	STREET ELBOW	3	
45	0602022202	HOSE JOINT	3	
46	3502054124	DRAIN JOINT	1	
47	0802024004	PACKING	1	
48	0191601350	HOSE	1	
49	0605515134	HOSE BAND	2	
50	0602010230	RESERVE TANK	1	
51	8492082103	BRACKET, RESERVE TANK	1	
52	0229200700	RUBBER CUSHON	1	
53	0017106030	HEX. HEAD BOLT	1	
54	0021108020	MACHINE SCREW	2	
55	020108060	HEX. NUT	1	REPLACES 0207008000
56	0199601200	HOSE	1	
57	0194001600	HOSE	1	
58	0605515013	HOSE BAND	3	
59	0728002023	HOSE BAND	1	REPLACES 0602014055
60	0194201000	HOSE BAND	1	
61	0605515014	HOSE BAND	1	
62	8482256304	CLAMPER ROD	1	
63	8482256104	CLAMPER ROD	1	
64	0010118040	HEX. HEAD BOLT	2	
65	0040018000	LOCK WASHER	2	
66	0041218000	PLAIN WASHER	2	
67	0017110025	HEX. HEAD BOLT	1	
68	0017112025	HEX. HEAD BOLT	1	
69	0412222568	V-BELT SET	1	
70	6125817032	AIR CLEANER ASSY.	2	
71	6162134911	AIR CLEANER CONNECTOR	1	
72	6127814823	GASKET, AC CONNECTOR	1	
73	0728101589	CLAMP, HOSE A/C TO TURBO	2	
74	6162837530	HOSE, A/C TO TURBO	1	

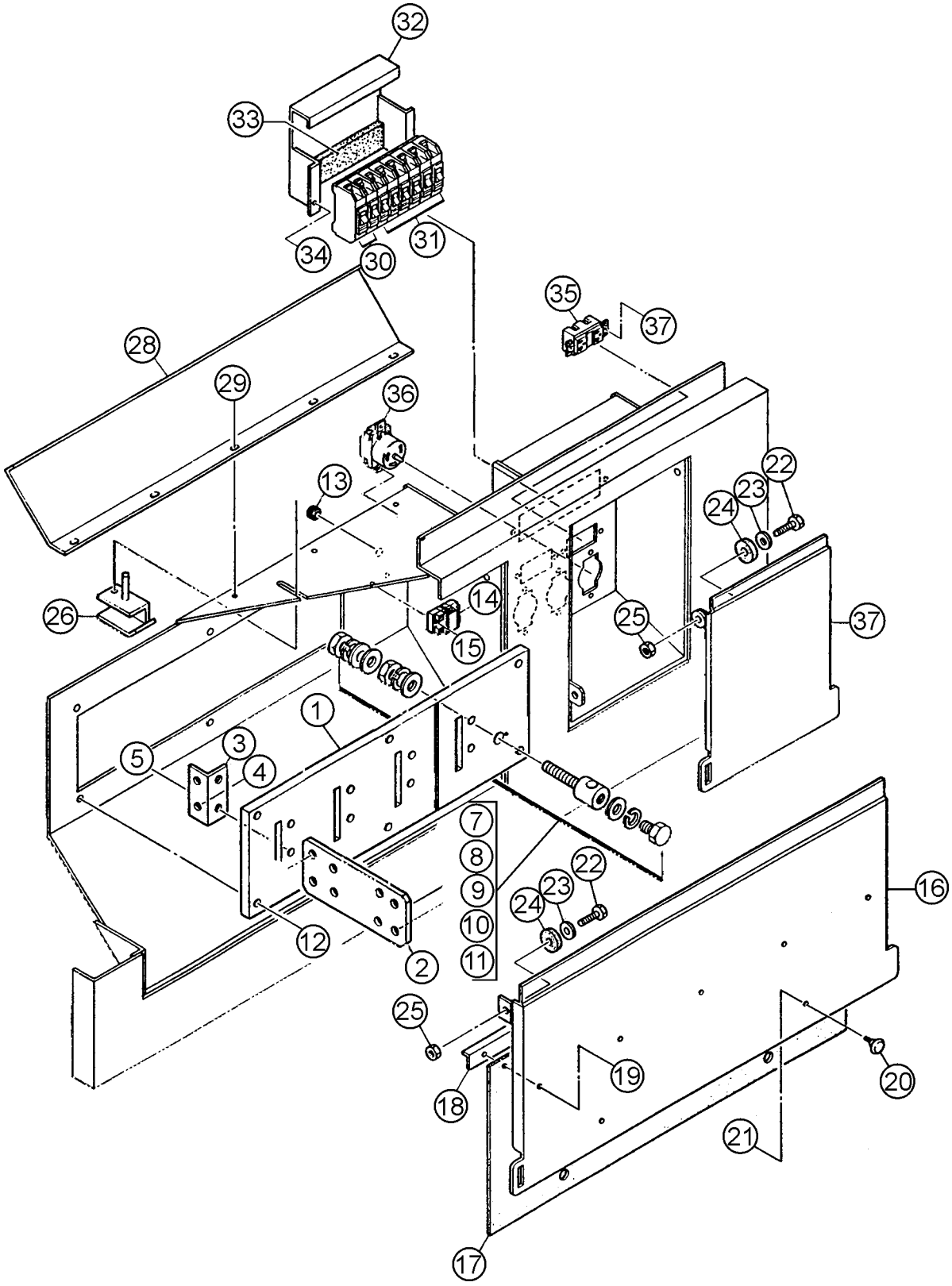
ENGINE OPERATING PANEL ASSY.



ENGINE OPERATING PANEL ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4484000602	SUPPORT LEG	1	
2	012212035	HEX. HEAD BOLT	4	REPLACES 0010012035
2	0030012000	HEX. NUT	4	
2	0040012000	LOCK WASHER	4	
2	031112230	PLAIN WASHER	4	REPLACES 0041212000
3	0017110025	HEX. HEAD BOLT	2	
4	C4352100503	OPERATING PANEL	1	
5	011008020	HEX. HEAD BOLT	4	REPLACES 0017108020
6	011008020	HEX. HEAD BOLT	6	REPLACES 0017108020
7	8085182004	RUBBER COVER	2	
8	8085183004	SET FRAME, RUBBER COVER	2	
9	011206020	HEX. HEAD BOLT	12	REPLACES 0017106020
10	0315262002	BATTERY SWITCH	1	REPLACES 0602101012
11	0805008804	SET PLATE, BATTERY SWITCH	1	
12	0805008704	STAY, BATTERY SWITCH	2	
13	0021008070	MACHINE SCREW	2	
13	0040008000	LOCK WASHER	2	
13	031108160	PLAIN WASHER	2	REPLACES 0041208000
14	0601830780	THROTTLE LEVER, ARNS1-2020	1	UP TO S/N 3698616
15	6008155390	STARTER SWITCH	1	REPL. 0602100049 UP TO S/N3698616
15A	615	KEY, STARTER SWITCH	1	UP TO S/N 3698616
16	0806410000	EMERGENCY STOP BUTTON	1	REPLACES 0602104045
17	0814721200	PREHEAT LAMP	1	REPLACES 0602103043
18	0602120054	TACHOMETER	1	25000-KX4110
19	0602120165	CABLE, TACHOMETER	1	62500-KA8610 L=3500
20	0602122060	OIL PRESSURE GAUGE	1	42000KX1410
21	0602122203	UNIT, OIL PRESSURE	1	53600KX0501
22	0602123061	WATER TEMPERATURE GAUGE	1	40000KX0910
23	0602123206	UNIT, WATER TEMPERATURE	1	51400KS0600
24	0602121052	CHARGING AMMETER	1	43000KV0300
25	0602125060	FUEL GAUGE	1	41000KW0110
26	0602115014	ENGINE WARNING DISPLAY	1	V3376600000
27	0601830710	ENGINE SPEED SWITCH, S-301T	1	S/N 3698617~
28	0602210649	PREHEATING SWITCH	1	0806130070 S/N 3698617~
29	0601850267	GROMMET	1	UP TO S/N 3693908
29	0601850267	GROMMET	2	S/N 3693908~

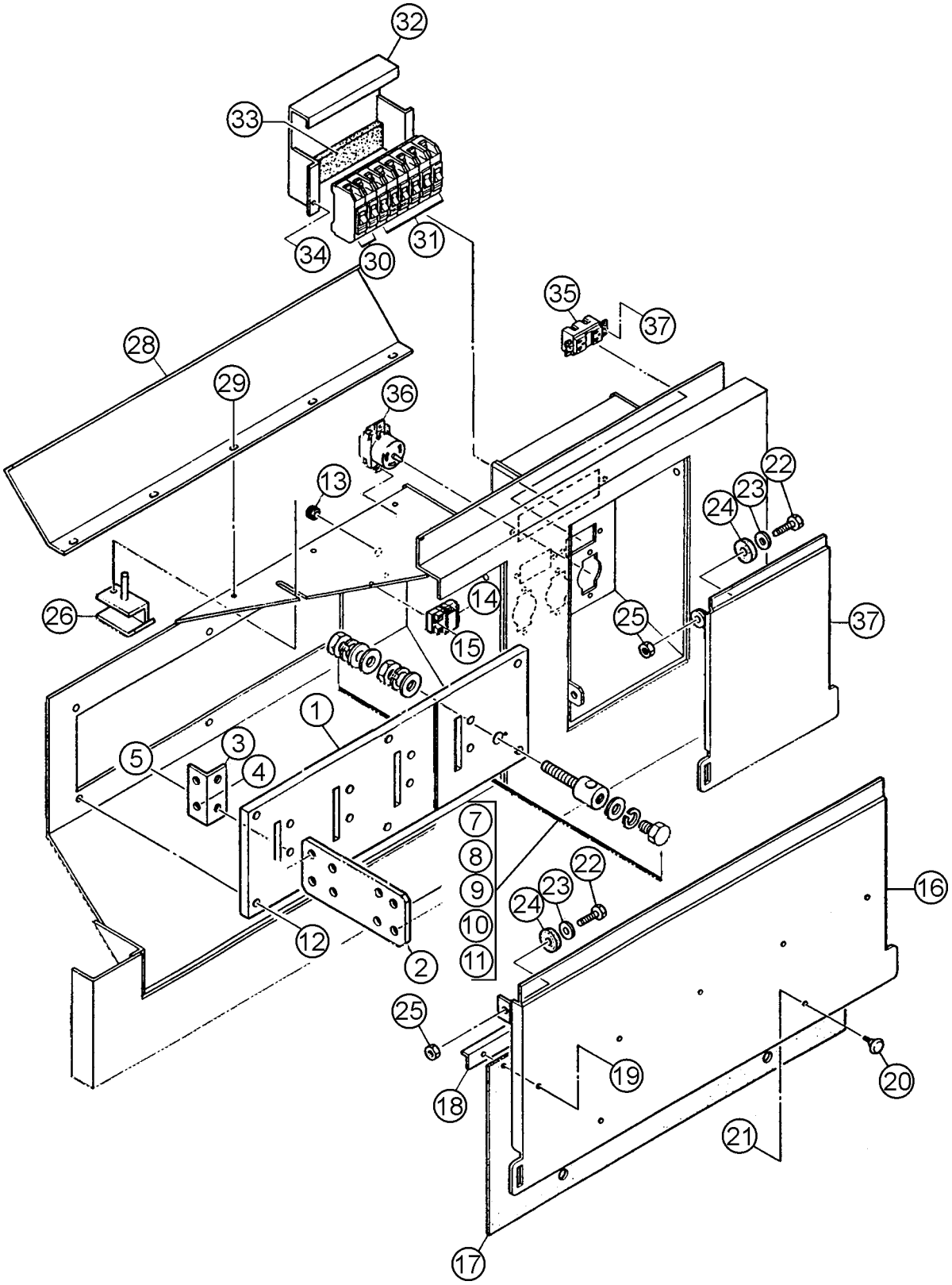
OUTPUT TERMINAL ASSY.



OUTPUT TERMINAL ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4231700603	SET BOARD, OUTPUT TERMINAL	1	
2	7521860504	OUTPUT TERMINAL	4	
3	7521850504	BRACKET, OUTPUT TERMINAL	4	
4	0010112040	HEX. HEAD BOLT	8	
4	0030012000	HEX. NUT	8	
4	0040012000	LOCK WASHER	8	
4	031112230	PLAIN WASHER	16	REPLACES 0041212000
5	012212045	HEX. HEAD BOLT	8	REPLACES 0010112045
5	0030012000	HEX. NUT	8	
5	0040012000	LOCK WASHER	8	
5	0041212000	PLAIN WASHER	16	
6	0010112040	HEX. HEAD BOLT	24	
6	0030012000	HEX. NUT	24	
6	0040012000	LOCK WASHER	24	
6	031112230	PLAIN WASHER	48	REPLACES 0041212000
7	0801830404	TERMINAL	1	
8	0801830904	HEX. HEAD BOLT	1	
9	0039320000	HEX. NUT	2	
10	030220510	LOCK WASHER	3	REPLACES 0040020000
11	0041420000	PLAIN WASHER	4	
12	0010112050	HEX. HEAD BOLT	6	
12	0030012000	HEX. NUT	6	
12	0040012000	LOCK WASHER	6	
12	031112230	PLAIN WASHER	12	REPLACES 0041212000
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	1	
19	0019106020	HEX. HEAD BOLT	5	
19	0042306000	LOCK WASHER	5	
19	0042406000	PLAIN WASHER	5	
20	0605010660	KNOB	2	
21	0207006000	HEX. NUT	2	
22	012212045	HEX. HEAD BOLT	4	REPLACES 0010112045
23	031112230	PLAIN WASHER	4	REPLACES 0041212000
24	0805009804	STAY RUBBER	4	

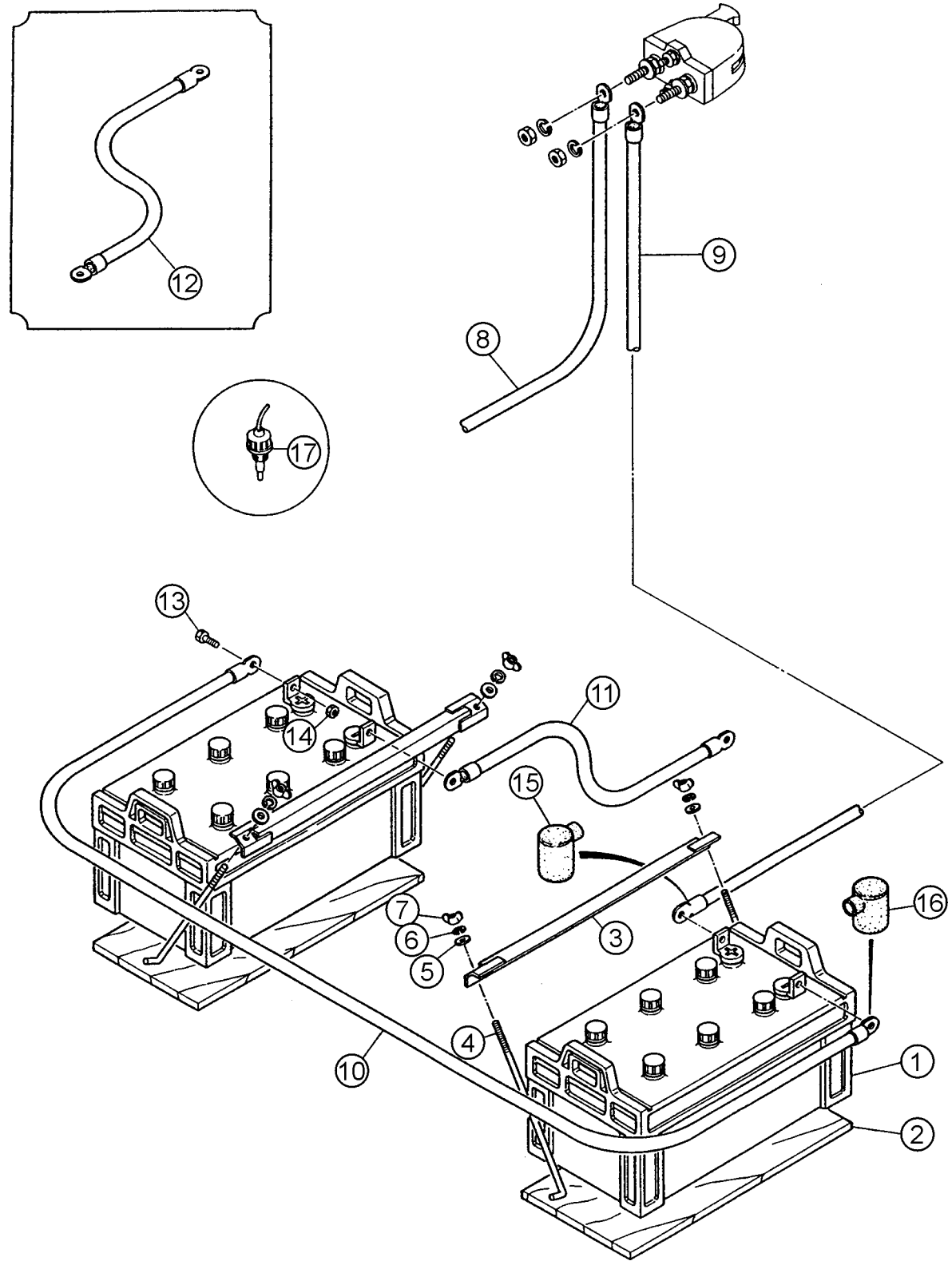
OUTPUT TERMINAL ASSY.



OUTPUT TERMINAL ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
25	0030012000	HEX. NUT	4	
26	7521865603	STOPPER	1	
27	0010108030	HEX. HEAD BOLT	1	
27	020108060	HEX. NUT	1	REPLACES 0030008000
27	0041208000	PLAIN WASHER	2	REPLACES 0041208000
28	C4237100504	COVER	1	
29	011008020	HEX. HEAD BOLT	5	REPLACES 0017108020
30	0601805313	CIRCUIT BREAKER 265V, 20A	2	
31	0601805840	CIRCUIT BREAKER 265V, 50A	3	
32	C4261601203	BRACKET, CIRCUIT BREAKER	1	
32-1	0223300200	RUBBER CUSHION	1	
33	0017106030	HEX. HEAD BOLT	2	
34	0601812597	RECEPTACLE, GF-530EM	2	REPLACES 0601812598
35	0601811034	RECEPTACLE, CS6369	3	REPLACES 0601812565
36	0021304015	MACHINE SCREW	10	REPLACES 0027104015
36	0030004000	HEX. NUT	10	
36	031104080	PLAIN WASHER	10	REPLACES 0041204000
37	C423711203	COVER	1	

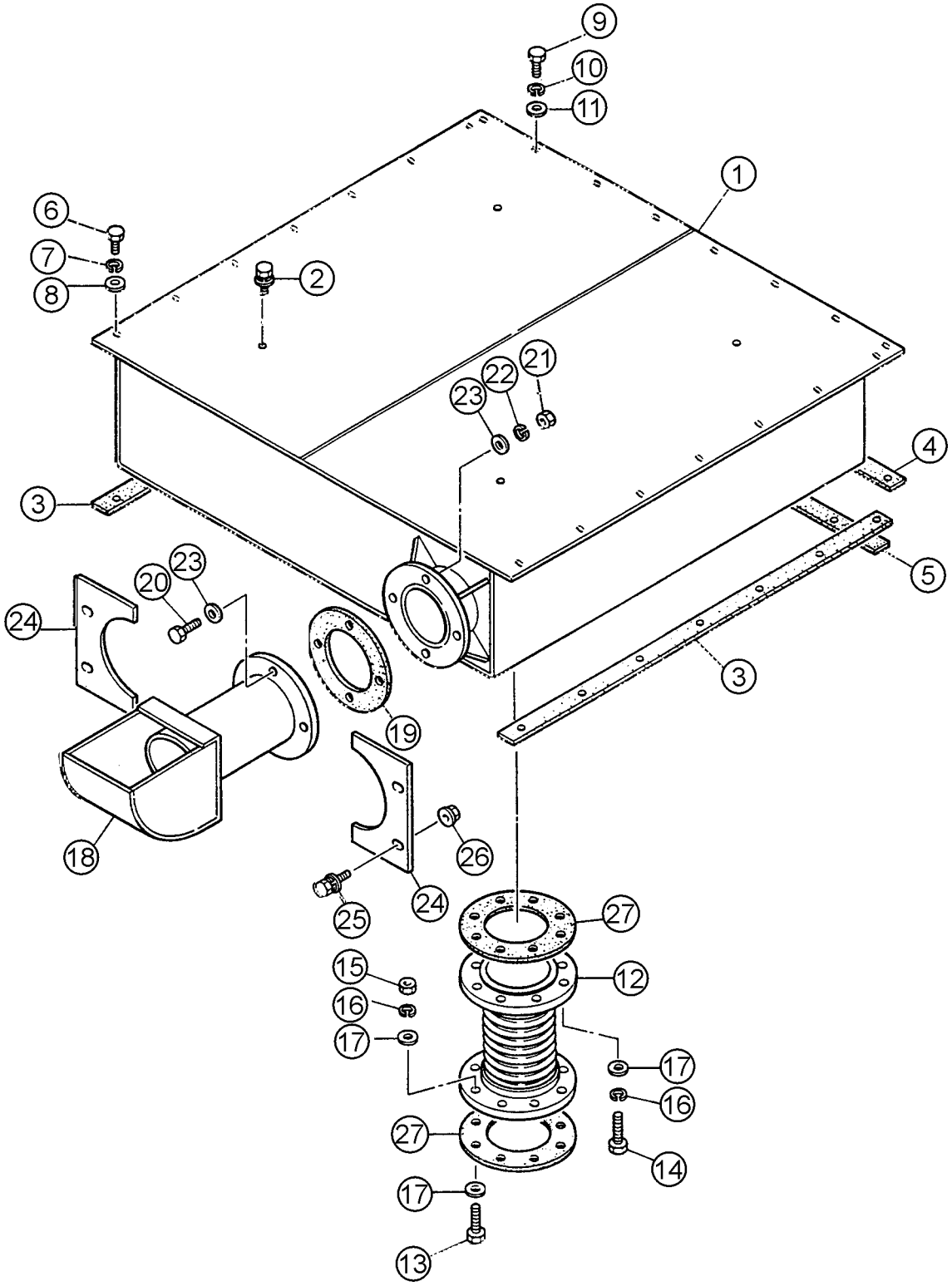
BATTERY ASSY.



BATTERY ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	0168719052	BATTERY	2	
2	0805018904	BATTERY SHEET	2	
3	0805007804	BATTERY BAND	2	
4	0805006504	BATTERY BOLT	4	
5	0037808000	WING NUT	4	
6	0040008000	LOCK WASHER	4	
7	031108160	PLAIN WASHER	4	REPLACES 0041208000
8	8482280104	BATTERY CABLE	1	
9	8482280304	BATTERY CABLE	1	
10	7432280504	BATTERY CABLE	1	
11	7432280904	BATTERY CABLE	1	
12	7432281104	EARTH CABLE	1	
13	0347010030	HEX. HEAD BOLT	4	
14	0208110000	HEX. NUT	4	
15	0845040114	TERMINAL CAP (+)	2	
16	0845041004	TERMINAL CAP (-)	2	
17	0602220205	BATTERY SENSOR	1	

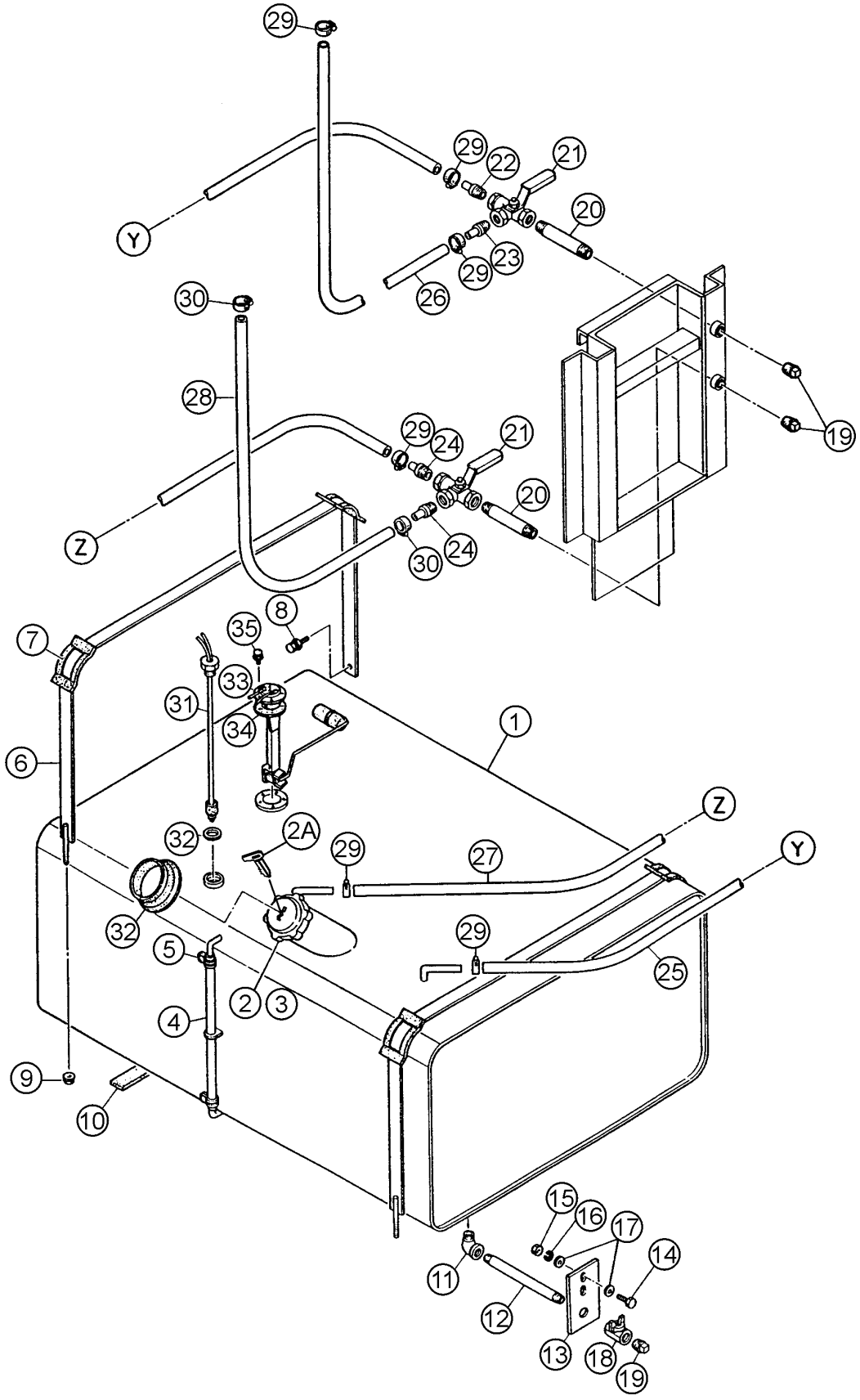
MUFFLER ASSY.



MUFFLER ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	8482311002	MUFFLER	1	
2	0019210020	HEX. HEAD BOLT	4	
3	7432356504	PACKING	2	
4	7432356604	PACKING	1	
5	7432356704	PACKING	1	
6	0019110030	HEX. HEAD BOLT	14	
7	0042310000	LOCK WASHER	14	
8	0042410000	HEX. HEAD BOLT	14	
9	0019108030	HEX. HEAD BOLT	8	
10	030208200	LOCK WASHER	8	REPLACES 0042308000
11	031108160	PLAIN WASHER	8	REPLACES 0042308000
12	C4334000513	EXHAUST PIPE	1	
13	0010116060	HEX. HEAD BOLT	8	
14	0010116050	HEX. HEAD BOLT	8	
15	0030016000	HEX. NUT	8	
16	0040016000	LOCK WASHER	16	
17	0041216000	PLAIN WASHER	24	
18	7472355003	OUTLET PIPE	1	
19	C3334200704	GASKET	1	
20	0010112050	HEX. HEAD BOLT	4	
21	0030012000	HEX. NUT	4	
22	0040012000	LOCK WASHER	4	
23	031112230	PLAIN WASHER	8	REPLACES 0041212000
24	8225125604	COVER	2	
25	011008020	HEX. HEAD BOLT	4	REPLACES 0017108020
26	020108060	HEX. NUT	4	REPLACES 0207008000
27	C4334200504	GASKET	2	

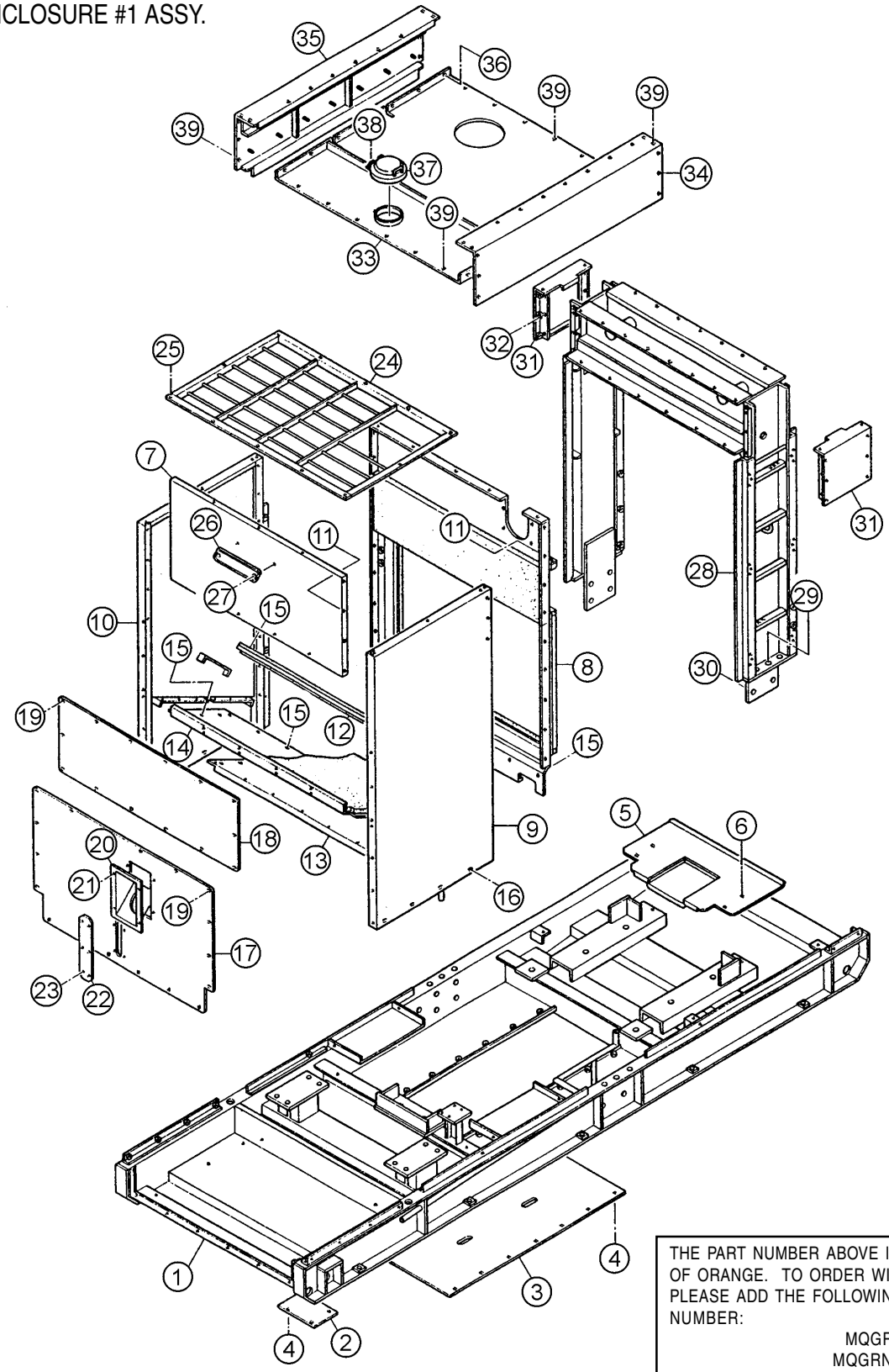
FUEL TANK ASSY.



FUEL TANK ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4364000703	FUEL TANK	1	S/N UP TO 3692433
1	C4364000713	FUEL TANK	1	S/N 3692434~
2	0605505030	CAP, FUEL TANK	1	REPLACES 0605505005
2A	0601850590	KEY	1	REPLACES 0601850505
3	0810105400	FUEL FILTER	1	
4	0264100385	HOSE, FUEL GAUGE	1	
5	0605515079	HOSE BAND	2	
6	7435523104	TANK BAND	2	
7	0805003414	PAD, TANK BAND	4	
8	011008020	HEX. HEAD BOLT	2	REPLACES 0017108020
9	020108060	HEX. NUT	2	REPLACES 0037908000
10	0222100600	TANK SHEET	6	
11	0130206000	STREET ELBOW, 1/2	1	
12	7435517114	DRAIN PIPE	1	
13	7525516504	BRACKET	1	
14	0019108030	HEX. HEAD BOLT	2	
15	0205008000	HEX. NUT	2	
16	030208200	LOCK WASHER	2	REPLACES 0042308000
17	031108160	PLAIN WASHER	4	REPLACES 0042408000
18	0603325011	VALVE	1	
19	0132006000	PLUG, 1/2	3	
20	7435512104	LONG NIPPLE	2	
21	0605511033	THREE WAY VALVE	2	
22	0602022209	HOSE JOINT	1	
23	0602022203	HOSE JOINT	1	
24	7435514304	HOSE JOINT	2	
25	0191403850	SUCTION HOSE	1	
26	0191301100	SUCTION HOSE	1	
27	0191104000	RETURN HOSE	1	
28	0191001800	RETURN HOSE	1	
29	0605515073	HOSE BAND	6	
30	0605515000	HOSE BAND	2	
31	0605503009	FUEL SENSOR	1	
32	0802120604	PACKING	1	
33	0605501050	UNIT, FUEL	1	52000KA9810
34	0602021155	PACKING	1	52391KW3700
35	0027104010	MACHINE SCREW	5	
36	0845039604	RUBBER SEAL	1	

ENCLOSURE #1 ASSY.



THE PART NUMBER ABOVE INDICATES DEFAULT COLOR OF ORANGE. TO ORDER WITH DIFFERENT COLOR, PLEASE ADD THE FOLLOWING LETTERS WITH THE PART NUMBER:

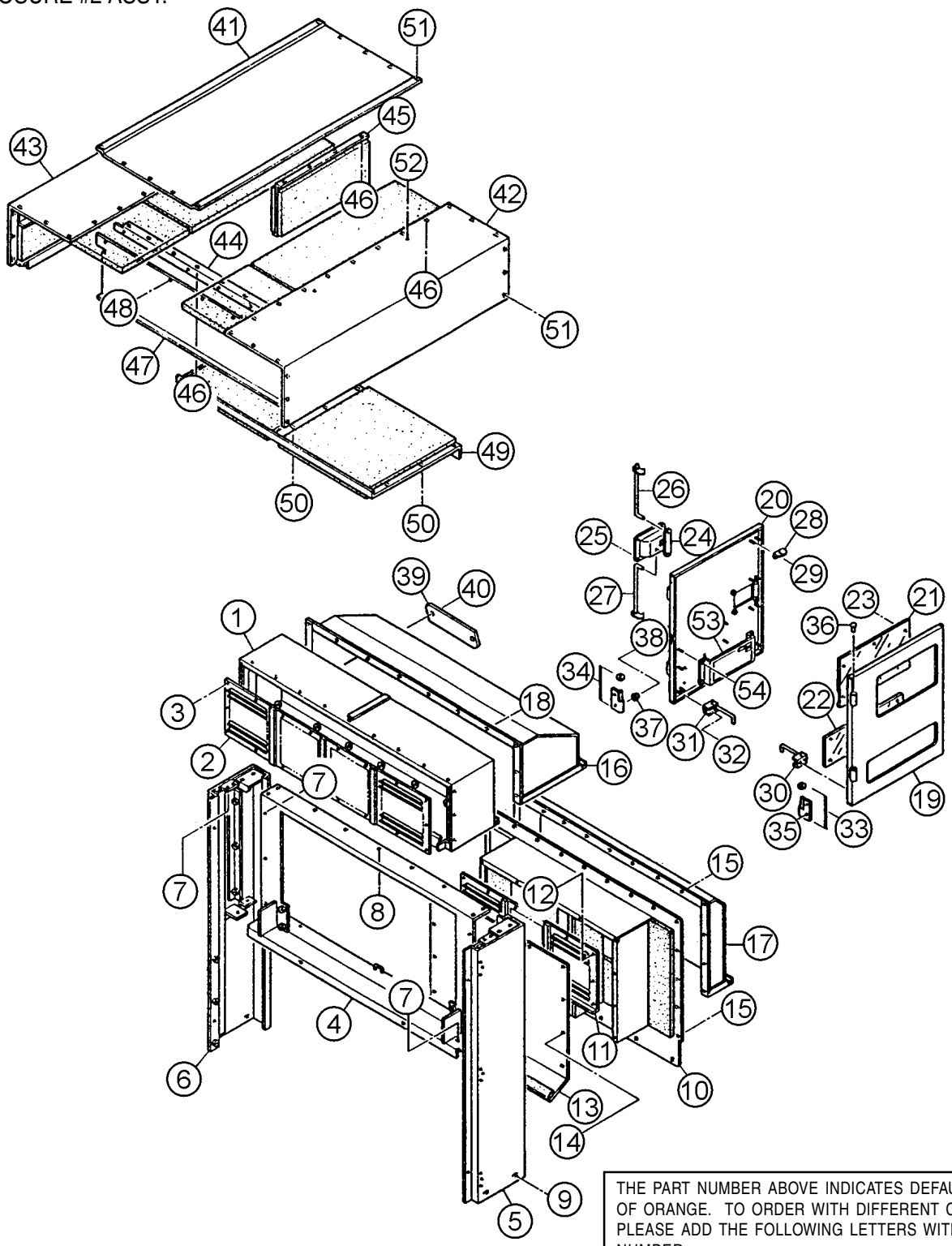
MQGR-GRAY
MQGRN-GREEN
MQW-WHITE

THE SERIAL NUMBER MAY BE REQUIRED.

ENCLOSURE #1 ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4414000102	BASE	1	
2	3875116304	FLOOR PANEL	1	
3	7435116104	FLOOR PANEL	1	
4	011008020	HEX. HEAD BOLT	18	REPLACES 0017108020
5	8495118003	GUIDE PANEL, AIR	1	
6	011008020	HEX. HEAD BOLT	4	REPLACES 0017108020
7	C4424002303	FRONT FRAME	1	
7	C4494100203	LINING	1	
8	C4424000403	FRONT FRAME	1	
8	C4494100203	LINING	1	
9	C4424000302	FRONT FRAME	1	
9	C4494100203	LINING	1	
10	C4424000202	FRONT FRAME	1	
10	C4494100203	LINING	1	
11	011008020	HEX. HEAD BOLT	26	REPLACES 0017108020
12	C4424700004	GUIDE PANEL, AIR	1	
12	C4494100203	LINING	1	
13	C4424300203	GUIDE PANEL, AIR	1	
13	C4494100203	LINING	1	
14	C4424300003	GUIDE PANEL, AIR	1	
14	C4494100203	LINING	1	
15	011008020	HEX. HEAD BOLT	30	REPLACES 0017108020
16	0019210025	HEX. HEAD BOLT	8	
17	8485125203	COVER, FRONT FRAME	1	
18	8485125104	COVER, FRONT FRAME	1	
18	8465924104	LINING	1	
19	011008020	HEX. HEAD BOLT	32	REPLACES 0019208020
20	0845042703	FILLER BRACKET	1	
21	0019208020	HEX. HEAD BOLT	4	REPLACES 0019208020
22	7525125304	COVER	1	
23	0019206016	HEX. HEAD BOLT	6	
24	8475125003	COVER FRONT FRAME	1	
25	011008020	HEX. HEAD BOLT	12	REPLACES 0019208020
26	0600500090	EMBLEM	1	
27	0021106020	MACHINE SCREW	2	
28	C4434000112	CENTER FRAME	1	
29	0010120075	HEX. HEAD BOLT	6	
29	0030020000	HEX. NUT	6	
29	0030020000	LOCK WASHER	6	
29	0041220000	PLAIN WASHER	12	
30	0010120065	HEX. HEAD BOLT	8	
30	0030020000	HEX. NUT	8	
30	030220510	LOCK WASHER	8	REPLACES 0040020000
30	0041220000	PLAIN WASHER	16	
31	C4434200013	COVER	2	
32	011008020	HEX. HEAD BOLT	12	REPLACES 0017108020
32	020108060	HEX. NUT	12	REPLACES 0207008000
33	8495161103	ROOF PANEL	1	
34	C4464100003	ROOF PANEL	1	
35	C4464100103	ROOF PANEL	1	
36	020108060	HEX. NUT	14	REPLACES 0207008000
37	0800251701	FILLER COVER	1	
38	0019206016	HEX. HEAD BOLT	2	
39	011008020	HEX. HEAD BOLT	30	REPLACES 0019208020

ENCLOSURE #2 ASSY.



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MQGR-GRAY
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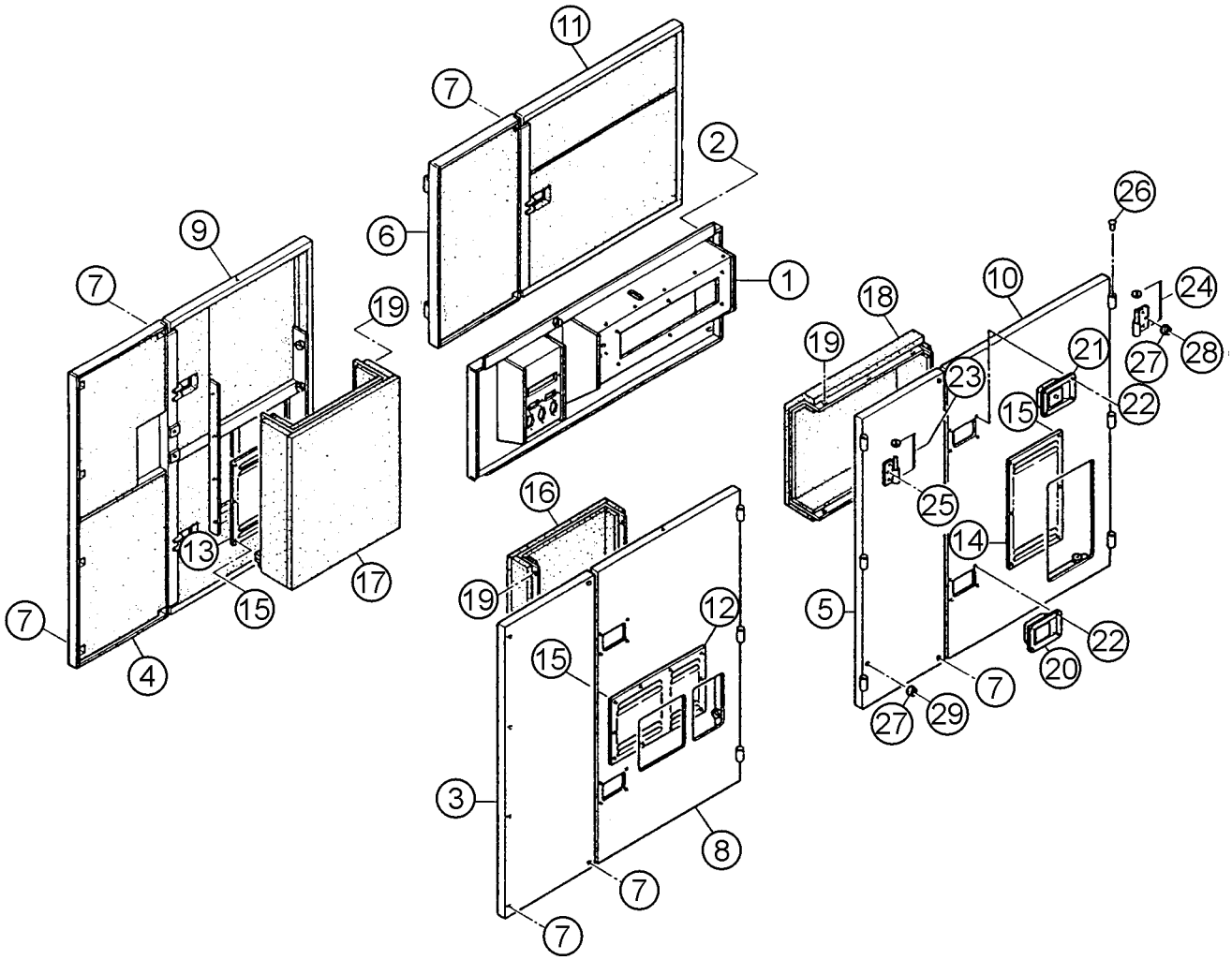
MQW-WHITE

THE SERIAL NUMBER MAY BE REQUIRED.

ENCLOSURE #2 ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4444000003	REAR FRAME	1	
2	3875151004	LOUVER PANEL	1	
3	0205006000	HEX. NUT	21	
3	0042306000	LOCK WASHER	21	
3	0042406000	PLAIN WASHER	21	
4	C4444000103	REAR FRAME	1	
5	C4444000203	REAR FRAME	1	
6	C4444000303	REAR FRAME	1	
7	0017110025	HEX. HEAD BOLT	18	
8	011008020	HEX. HEAD BOLT	5	REPLACES 0017108020
9	0019210025	HEX. HEAD BOLT	4	
10	7975155003	COVER, REAR FRAME	1	
10	3875944104	LINING	1	
11	3875151104	LOUVER PANEL	1	
12	0205006000	HEX. NUT	16	
12	0042306000	LOCK WASHER	16	
12	0042406000	PLAIN WASHER	16	
13	7975156004	DUCT COVER	1	
13	8495946104	LINING	1	
14	011008020	HEX. HEAD BOLT	17	REPLACES 0017108020
15	011008020	HEX. HEAD BOLT	23	REPLACES 0019208020
16	C4444300703	VISOR	1	
17	3875165803	VISOR	1	
18	011008020	HEX. HEAD BOLT	12	REPLACES 0019208020
19	7975143003	DOOR, REAR FRAME	1	
20	7975143113	DOOR, REAR FRAME	1	
21	3875147204	WINDOW PLATE	1	
22	3875147304	WINDOW PLATE	1	
23	020106050	HEX. NUT	12	REPLACES 0207306000
24	B9114000102	DOOR HANDLE	1	
25	0021806016	MACHINE SCREW	4	
26	7975146004	DOOR ROD	1	
27	7975146104	DOOR ROD	1	
28	0845050704	STAY	4	
29	0207006000	HEX. NUT	8	
30	0805011304	STOPPER, DOOR	1	
21	0805011204	STOPPER, DOOR	1	
32	0207006000	HEX. NUT	4	
33	M9110100204	HINGE	2	REPLACES 0845047104
33	0845045004	WASHER	2	

ENCLOSURE #2 ASSY.



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MQGR-GRAY
MQGRN-GREEN
MQW-WHITE

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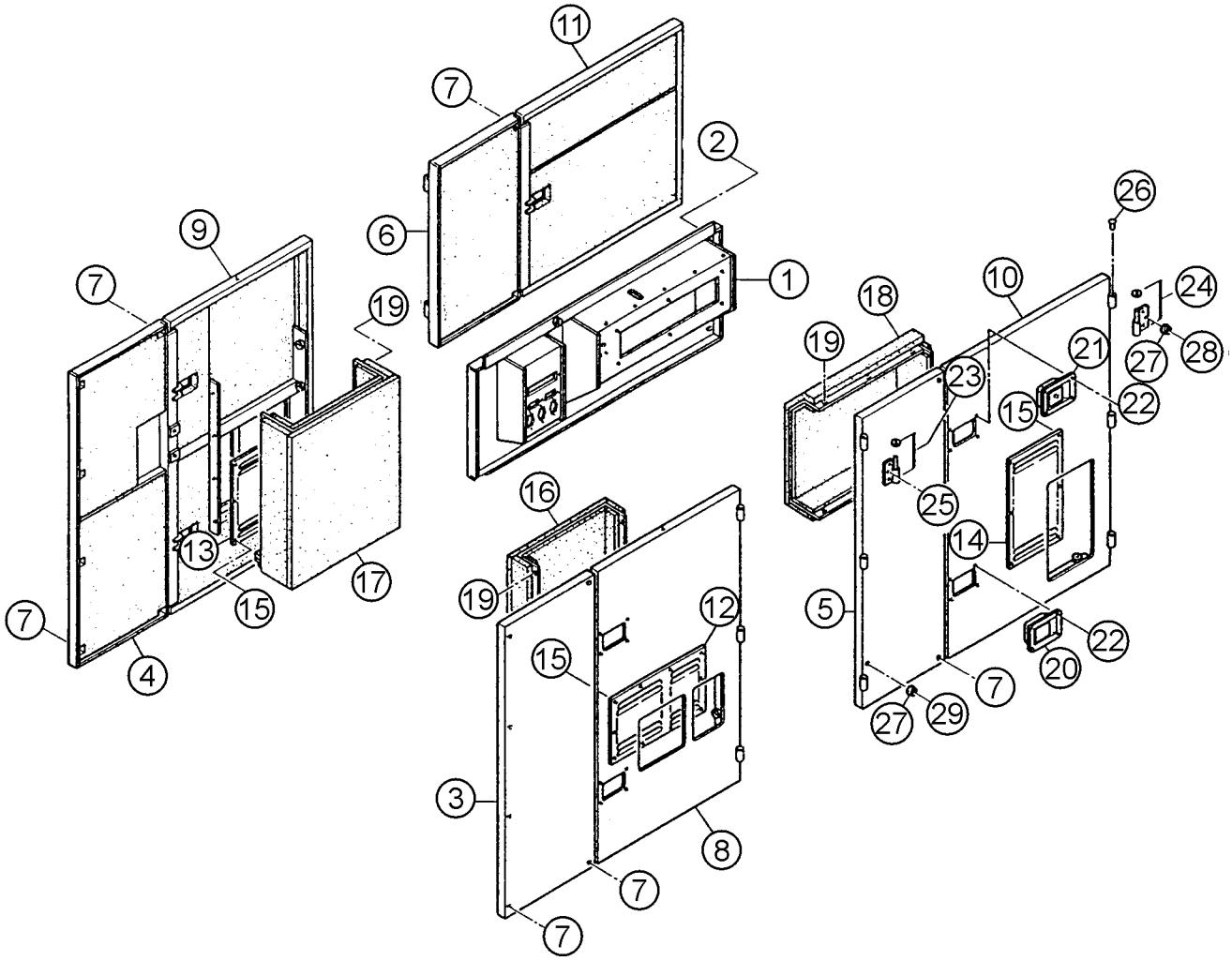
ENCLOSURE #2 ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
34	M9110100340	HINGE	2	REPLACES 0845047204
34	0845045004	WASHER	2	
35	011008020	HEX. HEAD BOLT	6	REPLACES 0019208020
36	0845031504	CAP	4	
37	0601850097	STOPPER	2	
38	011208025	MACHINE SCREW	2	REPLACES 0021008025
39	0600500090	EMBLEM	1	
40	0021106020	MACHINE SCREW	2	
41	C4464200303	ROOF PANEL	1	
41	8485960104	LINING	1	
42	C4464200403	ROOF PANEL	1	
42	8485960104	LINING	1	
43	C4464200503	ROOF PANEL	1	
43	8485960104	LINING	1	
44	C4464500304	GUIDE	1	
45	C4464500204	PANEL	1	
45	8485960104	LINING	1	
46	020108060	HEX. NUT	27	REPLACES 0207008000
47	C4464500404	PANEL	1	
48	011008020	HEX. HEAD BOLT	11	REPLACES 0017108020
49	8485166004	COVER, ROOF PANEL	1	
49	8485968104	LINING	1	
50	011008020	HEX. HEAD BOLT	9	REPLACES 0017108020
51	011008020	HEX. HEAD BOLT	30	REPLACES 0019208020
52	0019210025	HEX. HEAD BOLT	4	
53	B9114500104	DOOR POCKET	1	
54	0207006000	HEX. NUT	4	

ENCLOSURE #3 ASSY.



THE PART NUMBER ABOVE INDICATES DEFAULT COLOR OF ORANGE. TO ORDER WITH DIFFERENT COLOR, PLEASE ADD THE FOLLOWING LETTERS WITH THE PART NUMBER:

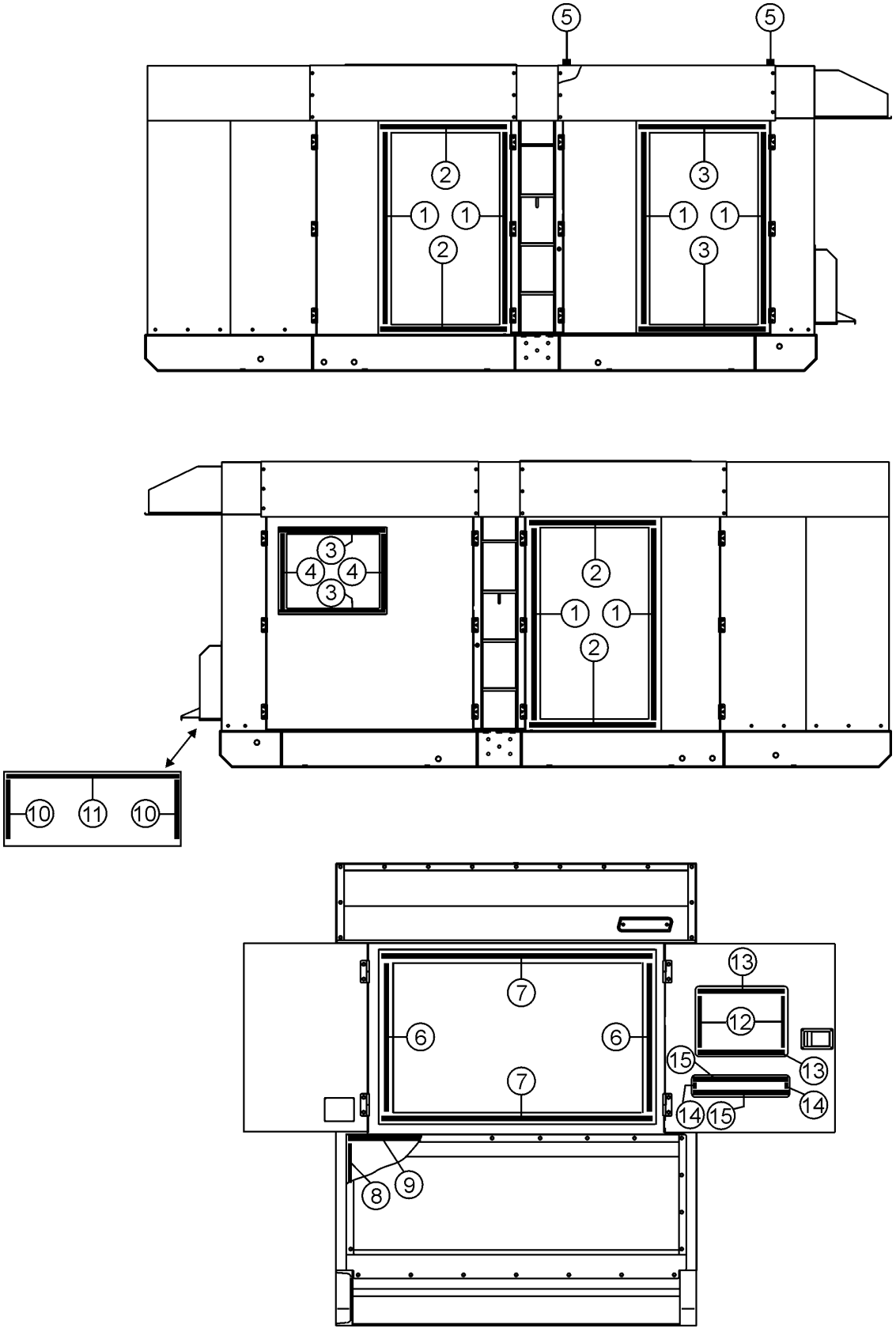
MQGR-GRAY
MQGRN-GREEN
MQW-WHITE

THE SERIAL NUMBER MAY BE REQUIRED.

ENCLOSURE #3 ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	C4454201603	SPLASHER PANEL	1	
2	0019110070	HEX. HEAD BOLT	6	
2	0042310000	LOCK WASHER	6	
2	0042410000	PLAIN WASHER	6	
3	8495172003	SIDE PANEL	1	
3	8495972104	LINING	1	
4	8495172103	SIDE PANEL	1	
4	8495972304	LINING	1	
5	8495172203	SIDE PANEL	1	
5	8495972504	LINING	1	
6	8495172303	SIDE PANEL	1	
6	8495972704	LINING	1	
7	0019108070	HEX. HEAD BOLT	16	
7	030208200	LOCK WASHER	16	REPLACES 0042308000
7	031108160	PLAIN WASHER	16	REPLACES 0042408000
8	8485171003	SIDE DOOR	1	
8	8485970103	LINING	1	
9	8485171103	SIDE DOOR	1	
9	8485970303	LINING	1	
10	7975171403	SIDE DOOR	1	
10	8485970503	LINING	1	
11	7975171203	SIDE DOOR	1	
11	7975970704	LINING	1	
12	7525151504	LOUVER PANEL	1	
13	7525151404	LOUVER PANEL	1	
14	7975151004	LOUVER PANEL	1	
15	0205006000	HEX. NUT	28	
15	0042306000	LOCK WASHER	28	
15	0042406000	PLAIN WASHER	28	
16	8485176004	DUCT	1	
16	8485976104	LINING	1	
17	7865176004	DUCT	1	
17	7865976104	LINING	1	
18	8465176004	DUCT	1	
18	8465976104	LINING	1	
19	011008020	HEX. HEAD BOLT	22	REPLACES 0017108020
20	0825007362	DOOR HANDLE	3	
21	B9114000002	DOOR HANDLE	4	
22	0021806016	MACHINE SCREW	28	
23	0845046904	HINGE	8	
23	0845045004	WASHER	8	
24	0845047004	HINGE	8	
24	0845045004	WASHER	8	
25	011008020	HEX. HEAD BOLT	39	REPLACES 0019208020
26	0845031504	CAP	16	
27	0601850097	STOPPER	10	
28	011208025	MACHINE SCREW	9	REPLACES 0021008025
29	0021008020	MACHINE SCREW	1	

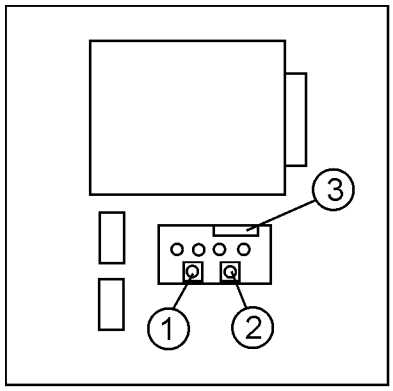
RUBBER SEAL ASSY.

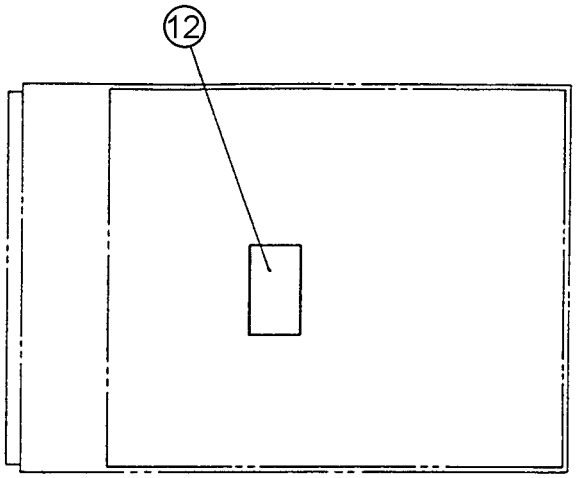


RUBBER SEAL ASSY.

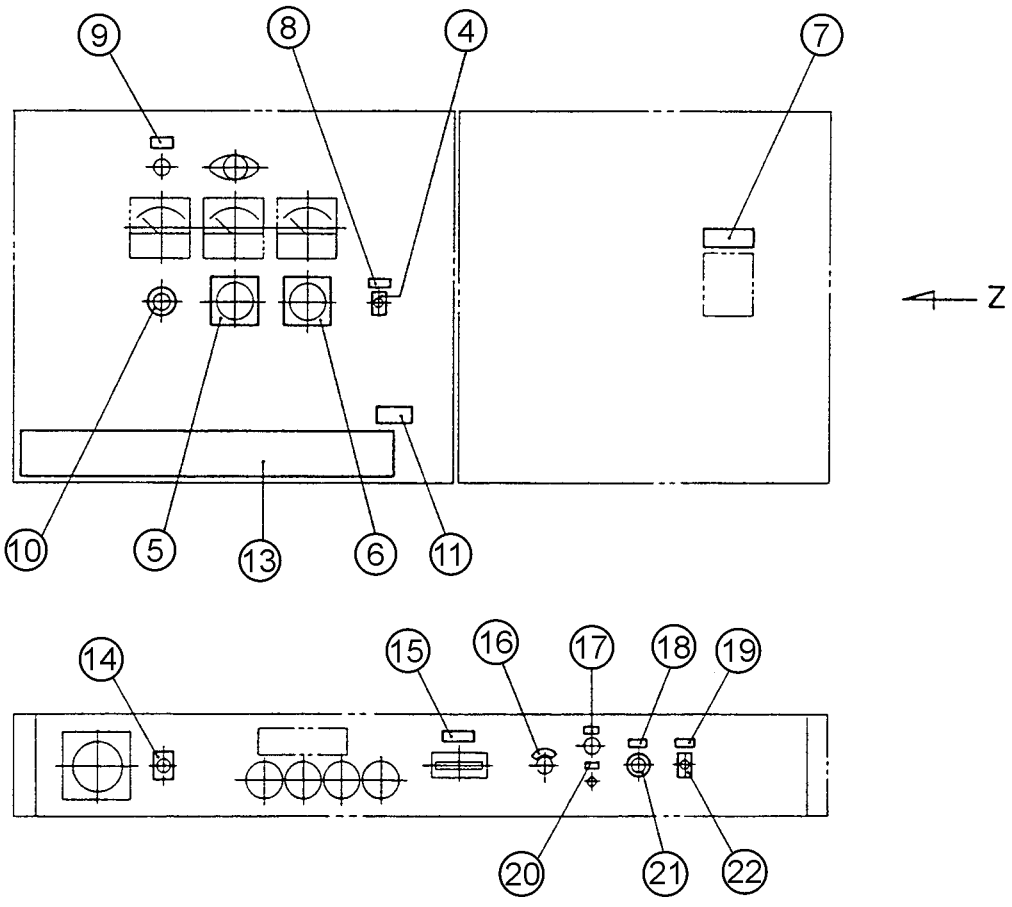
NO	PART NO	PART NAME	QTY.	REMARKS
1	0228901640	RUBBER SEAL	6	
2	0228900970	RUBBER SEAL	4	
3	0228901100	RUBBER SEAL	4	
4	0228900990	RUBBER SEAL	2	
5	0229201650	RUBBER SEAL	2	
6	0228800860	RUBBER SEAL	2	
7	0228801380	RUBBER SEAL	2	
8	0229200780	RUBBER SEAL	2	
9	0229201490	RUBBER SEAL	1	
10	0229200595	RUBBER SEAL	2	
11	0229201490	RUBBER SEAL	1	
12	0228100280	RUBBER SEAL	2	
13	0228100520	RUBBER SEAL	2	
14	0228100150	RUBBER SEAL	2	
15	0228100580	RUBBER SEAL	2	

NAME PLATE AND DECALS





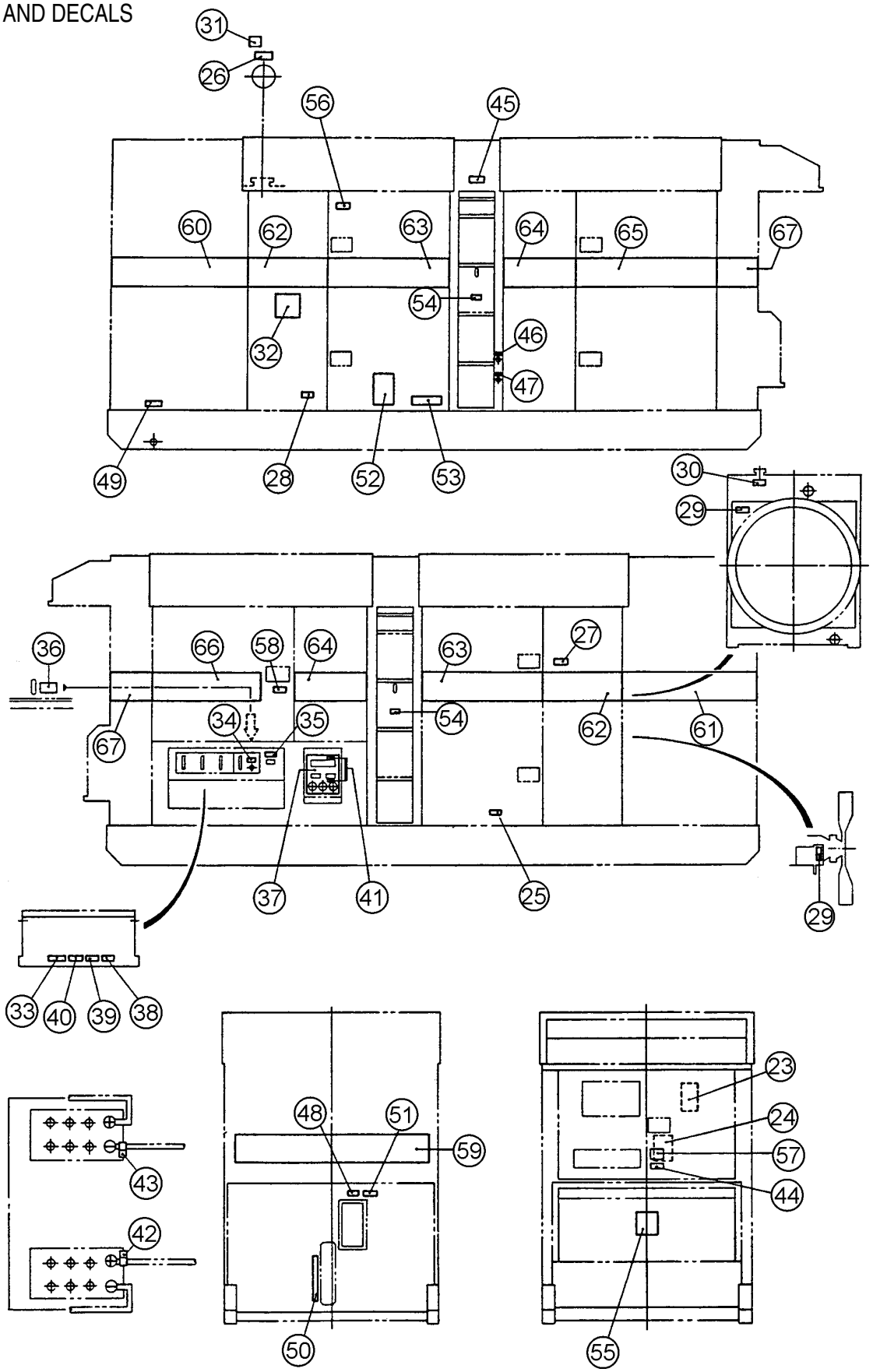
VIEW - Z



NAME PLATE AND DECALS

NO	PART NO	PART NAME	QTY.	REMARKS
		CONTROL BOX GROUP		
1	Z0110001204	DECAL: DROOP, Z011000120	1	UP TO S/N 3693908
2	Z0110001304	DECAL: IDLE SPEED	1	Z011000130
3	Z0110001504	DECAL: RESET	1	Z011000150
4	0800520100	PLATE; ON-OFF	1	AT-202
5	0800520904	PLATE; AMMETER CHANGE-OVER SWITCH	1	N-2438
6	0800520814	PLATE; VOLTMETER CHANGE-OVER SWITCH	1	N-2439
7	0840624504	DECAL; CIRCUIT BREAKER	1	S-3031
8	0840624604	DECAL; PANEL LIGHT	1	S-3032
9	0840624704	DECAL; PILOT LAMP	1	S-3033
10	0840624804	DECAL; VOLTAGE REGULATOR	1	S-3034
11	B9531100604	DECAL; WARNING ELECTRIC SHOCK HAZARD	1	B93110060
12	C9521203003	DECAL; SETTING FOR OUTPUT VOLTAGE	1	C92120300
13	C4561101803	DECAL; WHISPERWATT 600	1	C46110180
		ENGINE OPERATING PANEL GROUP		
14	0800588004	DECAL: THROTTLE LEVER	1	N-3808
15	0800682004	DECAL: BATTERY SWITCH	1	S-874
16	0840655804	DECAL: STARTER SWITCH	1	S-4515
17	0840625004	DECAL: PREHEAT LAMP	1	S-3036
18	0800686004	DECAL: STOP BUTTON	1	S-878
19	9039208704	DECAL: ENGINE SPEED	1	S-4452
20	0840655004	DECAL: HEATER SWITCH	1	S-4506
21	0840631204	DECAL: RED CIRCLE	1	S-3346
22	9039208694	DECAL: HIGH-LOW	1	S-4451

NAME PLATE AND DECALS



NAME PLATE AND DECALS

NO	PART NO	PART NAME	QTY.	REMARKS
		PROCEDURE GROUP		
23	C4551001002	DECAL: HANDLING PROCEDURES	1	C45100100
24	8490611303	DECAL: PROCEDURES FOR START UP	1	S-4519
		ENGINE & RADIATOR GROUP		
25	0800616204	DECAL: WATER DRAIN COCK	1	S-705
26	0800689204	DECAL: COOLING WATER	1	S-961
27	6360610304	DECAL: WATER	1	S-1880
28	0840611903	DECAL: PRECAUTIONS ON HANDLING	1	S-2570
29	B9504000404	DECAL: WARNING MOVING PARTS	2	B90400040
30	B9504100104	DECAL: WARNING HOT COOLANT	1	B90410010
31	0966810000	DECAL: WARNING	1	REPLACES 0600501100
32	6162937111	DECAL: FUEL PRIMING	1	REPLACES 0600500011
		OUTPUT TERMINAL GROUP		
33	C0551000404	DECAL; 3-PHASE OUTPUT TERMINAL	1	C05100040
34	0840614104	DECAL; GROUND	1	S-2635
35	9039202064	DECAL; START CONTACT	1	S-4468
36	0840655704	DECAL; TERMINAL COVER STOPPER	1	S-4516
37	B4551000103	DECAL; RECEPTACLE & CIRCUIT BREAKER	1	B45100010
38	B9511100304	DECAL; WARNING	1	B91110030
39	B9511100404	DECAL; WARNING ELECTRIC SHOCK HAZARD	1	B91110040
40	B9531100504	DECAL; WARNING ELECTRIC SHOCK HAZARD	1	B93110050
41	C1551000404	DECAL; 240/139 VOLT	2	C15100040
		BATTERY GROUP		
42	0800689404	DECAL: +	2	S-2090
43	0800689504	DECAL: -	1	S-2091
		MUFFLER ASSY.		
44	B9504200004	DECAL; WARNING ENGINE EXHAUST	1	B90420000
45	B9511100204	DECAL: CAUTION HOT SURFACES	1	B91110020
		FUEL TANK GROUP		
46	0800688404	DECAL; FUEL INLET	1	S-1344
47	0800688504	DECAL; FUEL OUTLET	1	S-1345
48	1320620904	DECAL; DIESEL FUEL	1	S-1756
49	6360620004	DECAL; FUEL DRAIN PLUG	1	S-1883
50	0840607104	DECAL; FUEL GAUGE	1	S-2365
51	B9504500004	DECAL; WARNING DIESEL FUEL	1	B90450000
		ENCLOSURE GROUP		
52	0800615102	DECAL; CAUTION AGAINST OIL AND	1	S-544A
53	1320610603	DECAL; WATER-OIL	1	S-1760
54	1320621504	DECAL; SUPPORT HOOK	2	S-2257
55	0840625902	DECAL; MQ	1	S-3057
56	B9504000304	DECAL; CAUTION HOT PARTS	1	B90400030
57	B9521100404	DECAL; SAFETY INSTRUCTIONS	1	B92110040
58	B9531100604	DECAL; WARNING ELECTRIC SHOCK HAZARD	1	B93110060
59	C4561101603	STRIPE	1	
60	C4561101503	STRIPE	1	
61	C4561101303	STRIPE	1	
62	C4561101204	STRIPE	2	
63	C4561101704	STRIPE	2	
64	C4561101104	STRIPE	2	
65	C4561101403	STRIPE	1	
66	C4561101003	STRIPE	1	
67	C4561100904	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 not 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.

NOTE PAGE

PARTS AND OPERATION MANUAL

HERE'S HOW TO GET HELP

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

PARTS DEPARTMENT
800/427-1244 or 310/537-3700
FAX: 800/672-7877 or 310/637-3284

SERVICE DEPARTMENT
800/835-2551 or 310/537-3700
FAX: 310/638-8046

WARRANTY DEPARTMENT
800/835-2551 or 310/537-3700
FAX: 310/638-8046

MAIN
800/421-1244 or 310/537-3700
FAX: 310 - 537-3927

Manufactured for Multiquip Inc.
by
DENYO MANUFACTURING, CO., USA

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POST OFFICE BOX 6254
CARSON, CA 90749
310-537-3700 • 800-421-1244
FAX: 310-537-3927
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WWW: multiquip.com

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