

PARTS AND OPERATION MANUAL

MQ POWER DCA-85SSJU WHISPERWATT™ GENERATOR (STANDARD)

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WARNING



CALIFORNIA--Proposition 65 Warning

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

HERE'S HOW TO GET HELP

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

PARTS DEPARTMENT

800/427-1244 or 310/537-3700

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

SERVICE DEPARTMENT

800/835-2551 or 310/537-3700

FAX: 310/638-8046

WARRANTY DEPARTMENT

800/835-2551 or 310/537-3700

FAX: 310/638-8046

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800/421-1244 or 310/537-3700

FAX: 310/537-3927

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NOTE

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

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

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

Earn Extra Discounts when you order by FAX!

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

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

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

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

No other allowances on freight shipped by any other carrier.

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

DISCOUNTS ARE SUBJECT TO CHANGE

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

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

**Up to 5%
extra savings!**

**UPS
Special**
For faxed orders only

**Now! Direct TOLL-FREE access
to our Parts Department!**

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RULES FOR SAFE OPERATION

CAUTION:



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

The following safety guidelines should always be used when operating the DCA-85SSJU portable generator:

GENERAL SAFETY

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



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



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

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



- **NEVER** operate this equipment under the influence of drugs or alcohol.



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

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

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

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

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



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

- The engine of this generator requires an adequate free flow of cooling air. Never operate the generator in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious damage to the generator or engine and may cause injury to people. The generator engine gives off **DEADLY** carbon monoxide gas.

CAUTION:



Always refuel in a well-ventilated area, away from sparks and open flames.



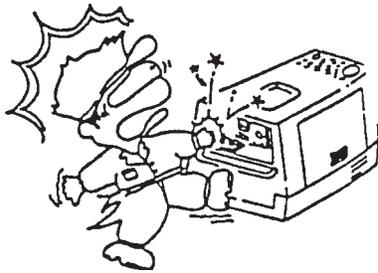
- Always use extreme caution when working with **flammable** liquids. When refueling, **stop the engine** and allow it to cool. **DO NOT** smoke around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.

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

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

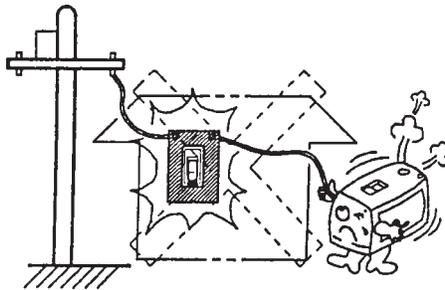
RULES FOR SAFE OPERATION

CAUTION:



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

CAUTION:



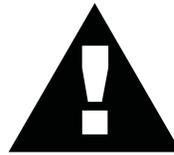
■ **Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is opened.**

CAUTION:



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

CAUTION:



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

Radiator

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

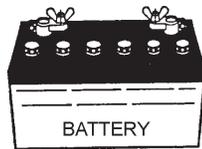
Battery

CAUTION:



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

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



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

NEVER Run engine without air filter. Severe engine damage may occur.

Always service air cleaner frequently to prevent carburetor malfunction.

Always disconnect the battery before performing service on the generator.

Always be sure the operator is familiar with proper safety precautions and operations techniques before using generator.

Always store equipment properly when not in use. Equipment should be stored in a clean, dry location out of the reach of children.

DO NOT leave the generator running in the manual mode unattended.

DO NOT allow unauthorized people to operate this equipment.

Always read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.

Refer to the **John Deere Engine Owner's Manual** for engine technical questions or information.

Loading and Unloading (Crane)

Before lifting, make sure the generator's lifting hook is secure and that there is no apparent damage to the generator itself (loose screws, nuts and bolts). If any part is loose or damaged, please take corrective action before lifting.

Always drain fuel prior to lifting.

Always make sure crane or lifting device has been properly secured to the hook of guard frame on generator.

NEVER lift the machine while the engine is running.

Use adequate lifting cable (wire or rope) of sufficient strength.

When lifting the generator, always use the balanced center-point suspension hook and lift straight upwards.

NEVER allow any person or animal to stand underneath the machine while lifting.

When loading the generator on a truck, be sure to use the front and back frame bars as a means to secure the generator during transport.

Transporting

Always shutdown engine before transporting.

Tighten fuel tank cap securely.

Drain fuel when transporting generator over long distances or bad roads.

Always tie-down the generator during transportation by securing the generator.

If generator is mounted on a trailer, make sure trailer complies with all local and state safety transportation laws. See page 10 for basic towing procedures.

Emergencies

Always know the location of the nearest **fire extinguisher** and **first aid kit**. Know the location of the nearest telephone. Also know the phone numbers of the nearest **ambulance**, **doctor** and **fire department**.

Maintenance Safety

NEVER lubricate components or attempt service on a running machine.

Always allow the machine a proper amount of time to cool before servicing.

Keep the machinery in proper running condition.

Fix damage to the machine immediately and always replace broken parts.

Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, coolant, fuel, and fuel filters.

DO NOT use plastic containers to dispose of hazardous waste.

DO NOT pour waste, oil, coolant or fuel directly onto the ground, down a drain or into any water source.

DCA-85SSJU — TOWING RULES FOR SAFE OPERATION

Towing Safety Precautions

CAUTION :



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

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

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

Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR).

ALWAYS inspect the hitch and coupling for wear. **NEVER** tow a trailer with defective hitches, couplings, chains etc.

Check the tire air pressure on both towing vehicle and trailer. Also check the tire tread wear on both vehicles.

ALWAYS make sure the trailer is equipped with a "Safety Chain".

ALWAYS attach trailer's safety chain to bumper of towing vehicle.

ALWAYS make sure the vehicle and trailer directional, backup, brake, and trailer lights are connected and working properly.

The maximum speed for highway towing is **45 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **10 MPH** or less depending on type of terrain.

Place *chocked blocks* underneath wheel to prevent **rolling**, while parked.

Place *support blocks* underneath the trailer's bumper to prevent **tipping**, while parked.

Use the trailer's hand winch to adjust the height of the trailer, then insert locking pin to lock wheel stand in place, while parked.

Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve gas mileage.

Avoid sharp turns to prevent rolling.

.Remove wheel stand when transporting.

DO NOT transport generator with fuel in tank.

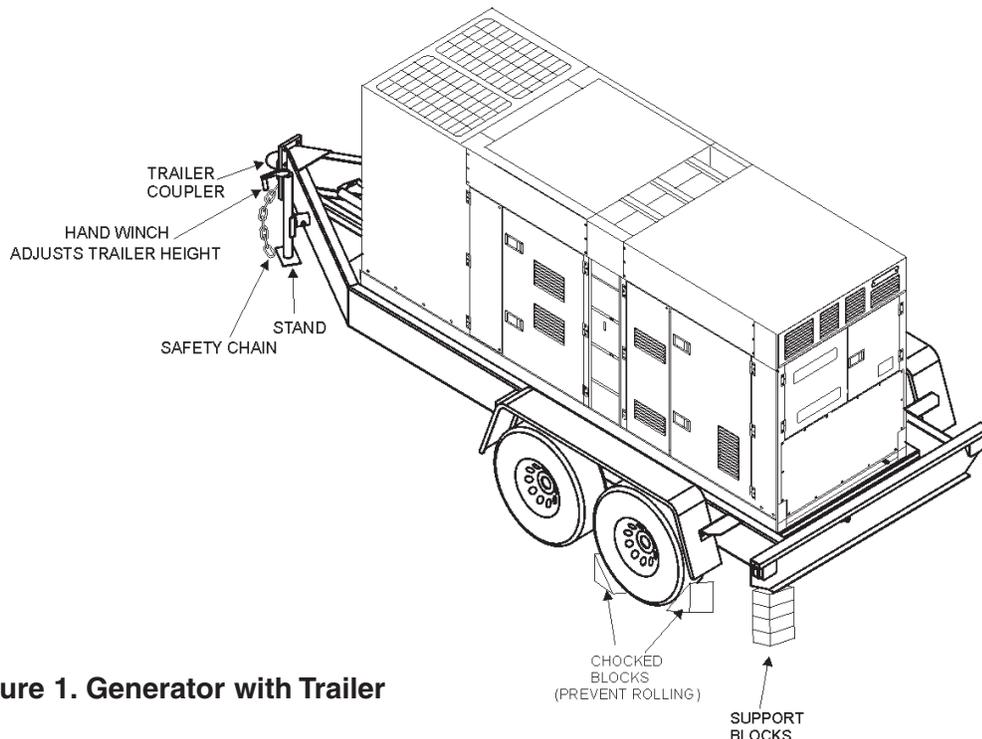


Figure 1. Generator with Trailer

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 to provide the user with trailer service and maintenance information. The service and maintenance guidelines referenced in this section apply to a wide range of trailers. 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 with reading Table 1.

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** - This measurement is from the ball hitch to the rear bumper (reflector).
5. **Frame Width** - This 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 4 and Figure 5 or 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 (see Table 3). 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.

DCA-85SSJU —TRAILER-SPECIFICATIONS

Table 1. Specifications

MODEL	APPLICATION	FUEL CELL	BRAKE SYSTEM	GVWR	FRAME LENGTH	FRAME WIDTH	JACK STAND
TRLR-10W	SDW225, SGW250, TLW300	NO	NO	1900LBS	96"	50"	800LB. FULL TILT WHEEL
TRLR-10	DCA10, TLG12, DCA-15	NO	NO	1900LBS	96"	50"	800LB. FULL TILT WHEEL
TRLR-10XF	DCA10, TLG-12, DCA15, TLW-300	52 GAL	NO	1900LBS	96"	50"	800LB. FULL TILT WHEEL
TRLR-225W	WELDERS, DA7000SS	NO	NO	2200LBS	85"	42"	800LB. FULL TILT WHEEL
TRLR-BLW400	BLW-400	NO	ELECTRIC	2700LBS	W/MAST 154" W/O 124"	55" (78" TALL)	800LB. FULL TILT WHEEL
TRLR-50X	DCA-25	NO	NO	2700LBS	124"	55"	800LB. FULL TILT WHEEL
TRLR-50XF	DCA-25	41 GAL	NO	2700LBS	124"	55"	800LB. FULL TILT WHEEL
TRLR-70W	DCA-45, -60, 70	NO	SURGE	7000LBS	186"	77"	2000LB. FLAT PAD
TRLR-70X	DCA-45, -60, 70	OPT	SURGE	7000LBS	138"	66"	2000LB. FLAT PAD
TRLR-70XF	DCA-45, -60, 70	53 GAL	SURGE	7000LBS	138"	66"	2000LB. FLAT PAD
TRLR-100XF	DCA-100, 125	150 GAL	HYDRAULIC SURGE	7000LBS	190"	76"	2000LB. FLAT PAD
TRLR-85/125	DCA-85, 100, 125	145 GAL	HYDRAULIC	10000LBS	186"	77"	2000LB. FLAT PAD
TRLR-150XF	DCA-150, 180	200 GAL	HYDRAULIC SURGE	11160LBS	204"	84"	5000 LB. FLAT PAD
TRLR-220XF	DCA-220	250 GAL	HYDRAULIC SURGE	14000LBS	222"	83"	5000 LB. FLAT PAD
TRLR-300XF	DCA-300	250 GAL	HYDRAULIC SURGE	18000LBS	238"	83"	5000 LB. FLAT PAD
TRLR-400XF	DCA-400	350 GAL	ELECTRIC	18000LBS	238"	83"	5000 LB. FLAT PAD
TRLR-600XF	DCA-600, 800	550 GAL	AIR	30000LBS	384"	96"	5000 LB. FLAT PAD
TRLR-800SX	DCA-600, 800	550 GAL	AIR	30000LBS	384"	96"	5000 LB. FLAT PAD

DCA-85SSJU —TRAILER-SPECIFICATIONS

Table 1. 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"	3500lbs. 2-3/8"	5 LUG	4 LEAF	4 POLE RUBBER FLAT
TRLR-50XF	2" BALL CLASS	B78-13LRC	13"X4.50"	3500lbs. 2-3/8"	5 LUG	4 LEAF	4 POLE RUBBER FLAT
TRLR-70W	2" BALL CLASS 3" ADJUSTABLE	205-14C BIAS (4)	14"X5"	3500lbs. 3"	5 LUG	5 LEAF	4 POLE RUBBER FLAT
TRLR-70X	2" BALL CLASS 3" ADJUSTABLE	205-14C BIAS (4)	14"X5"	3500lbs 3"	5 LUG	5 LEAF	4 POLE RUBBER FLAT
TRLR-70XF	2" BALL CLASS 3" ADJUSTABLE	205-14C BIAS (4)	14"X5"	3500lbs. 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"	3500lbs 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)-6000lbs	6 LUG	7 LEAF	4 WIRE LOOM
TRLR-150XF	3" BALL EYE	750-16 E BIAS (4)	16"X7"	(2)-6000lbs	8 LUG	7 LEAF	4 WIRE LOOM
TRLR-220XF	3" EYE ADJUSTABLE	ST235/85R16E RADIAL(4)	16"X7"	(2)-7000lbs	8 LUG	Q FLEX	4 WIRE LOOM
TRLR-300XF	3" EYE ADJUSTABLE	ST235/85R16E RADIAL(6)	16"X7"	(2)-6000lbs	8 LUG	Q FLEX	4 WIRE LOOM
TRLR-400XF	3" EYE ADJUSTABLE	ST235/85R16E RADIAL(6)	16"X7"	(3)-7000lbs.	8 LUG	Q FLEX	4 WIRE LOOM
TRLR-600XF	5TH WHEEL	ST215/75R17.5H RADIAL (8)	16"X7"	(3)-10000lbs	8 LUG	7 LEAF	6 WIRE LOOM
TRLR-800AR	5TH WHEEL	ST215/75R17.5H RADIAL (8)	16"X7"	(3)-10000lbs	8 LUG	AIR-RIDE	6 WIRE LOOM

Brakes

If your trailer has a braking system, the 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.

Electric Brakes

Electrically actuated brakes (Figure 2) are similar to hydraulic brakes. The basic difference is that hydraulic brakes are actuated by an electromagnet.

Listed below are some of the advantages that electric brakes have over hydraulic brakes:

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

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

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

Figure 2 displays the major electric brake components that will require inspection and maintenance. Please inspect these components as required.

Electric Brake Adjustment

1. Place the trailer on jack stands. Make sure the jack stands are placed on secure level ground.
2. Check the wheel and drum for free rotation.
3. Remove the adjusting hole cover from the adjusting slot at the bottom brake backing plate.
4. With a screwdriver or standard adjusting tool, rotate the star wheel of the adjuster assembly to expand the brake shoes.
5. Adjust the brake shoes outward until the pressure of the lining against the wheel drum makes the wheel difficult to turn.
6. Rotate the star wheel in the opposite direction until the wheel rotates freely with slight lining drag.
7. Replace the adjusting hole cover and lower the trailer to the ground.
8. Repeat steps 1 through 6 on the remaining brakes.

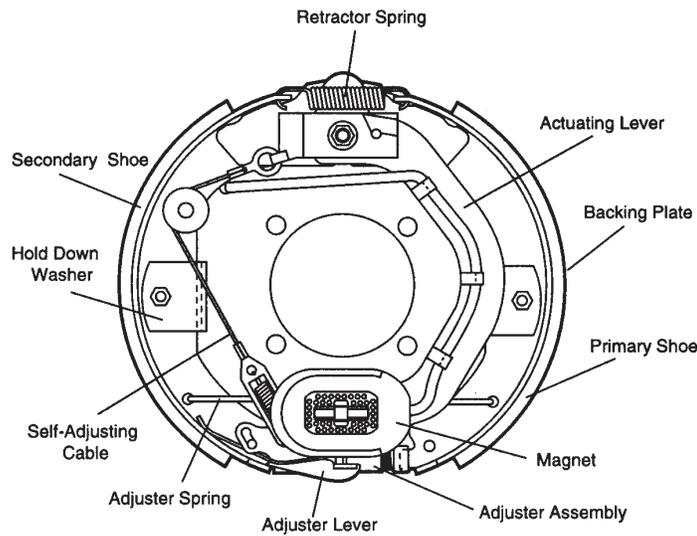


Figure 2. Electrical Brake Components

Hydraulic/Air/Surge Brakes

Hydraulic brakes (Figure 3) should not require any special attention with the exception of routine maintenance such as shoe and lining replacement. These brakes can be adjusted in the same manner as electric brakes. Brake lines should be periodically checked for cracks, kinks, or blockage.

Figure 3 below displays the major hydraulic/air/surge brake components that will require inspection and maintenance. Please inspect these components as required using steps 1 through 6 as referenced in the electric brake adjustments section.

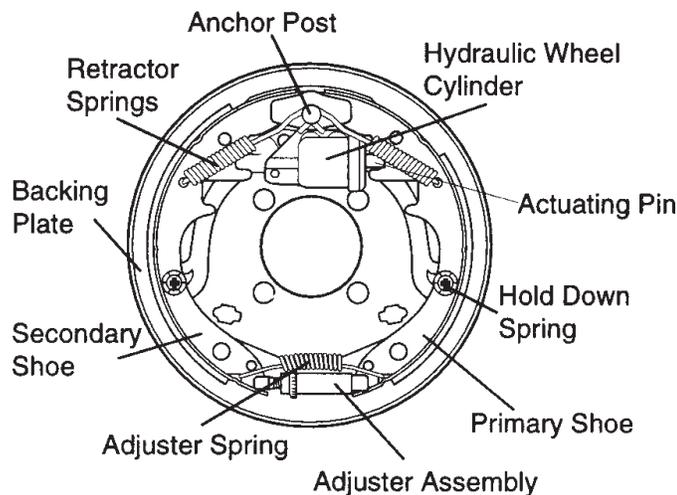
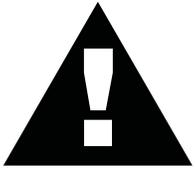


Figure 3. Hydraulic Brake Components

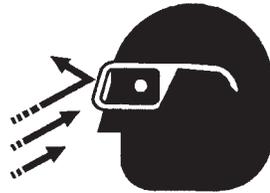
Tires/Wheels/Lug Nuts

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 an 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.

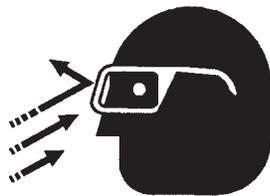


Tire Wear/Inflation

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 2 (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 2. 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 4) 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 3.

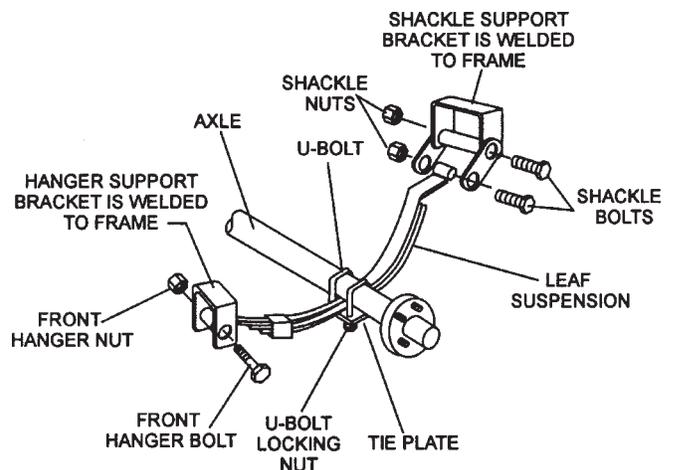


Figure 4. Major Suspension Components

Table 3. 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

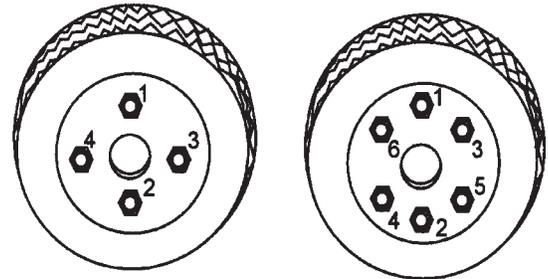
Lug Nut Torque Requirements

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 5. DO NOT torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Table 4.
3. After first road use, retorque all lug nuts in sequence. Check all wheel lug nuts periodically.

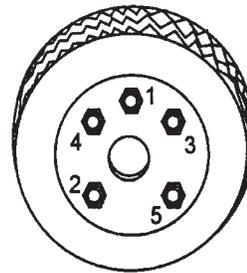
Table 4. Tire Torque Requirements

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

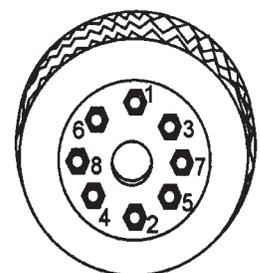


4-LUG NUTS

6-LUG NUTS



5-LUG NUTS



8-LUG NUTS

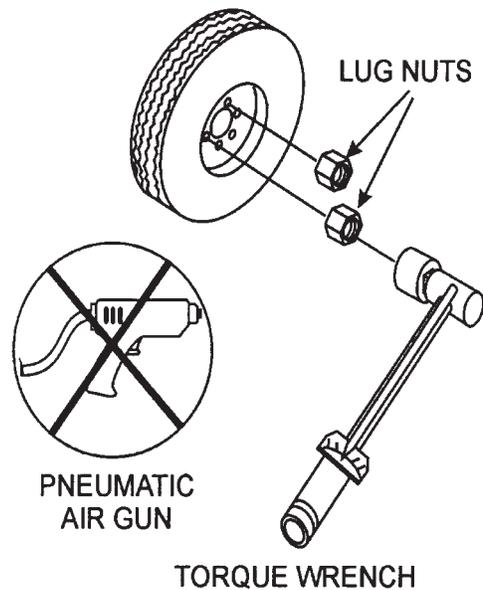


Figure 5. Wheel Lug Nuts Tightening Sequence

NOTE

NEVER use an pneumatic air gun to tighten wheel lug nuts.

DCA-85SSJU —TRAILER-WIRING DIAGRAM

TRAILER SIDE

TOWING VEHICLE SIDE

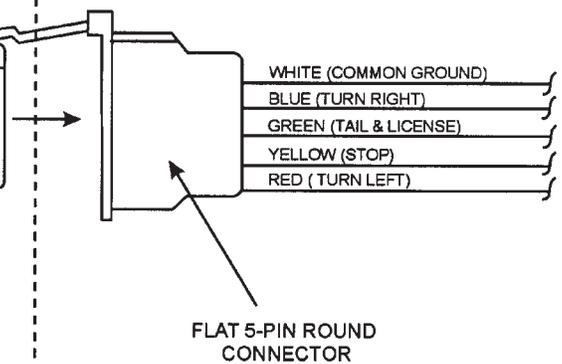
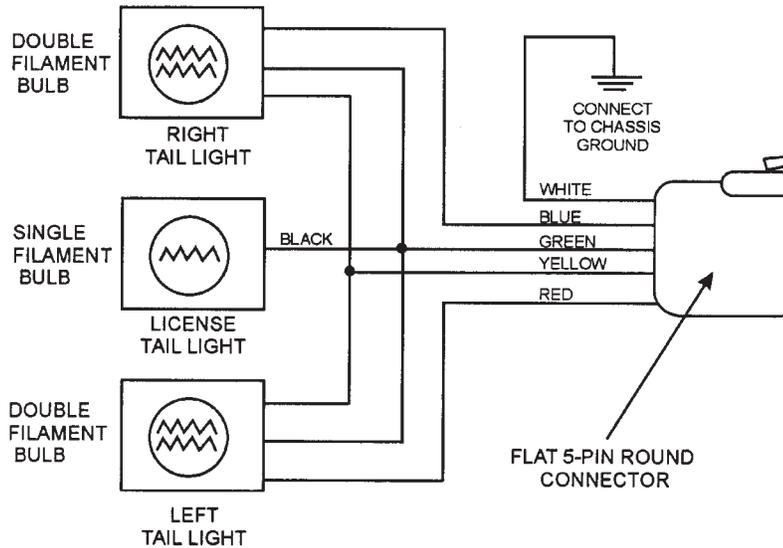
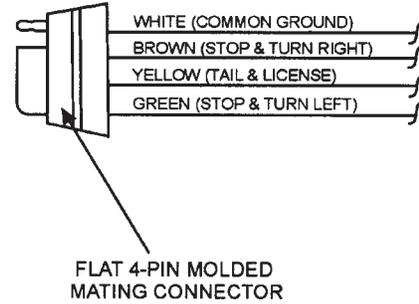
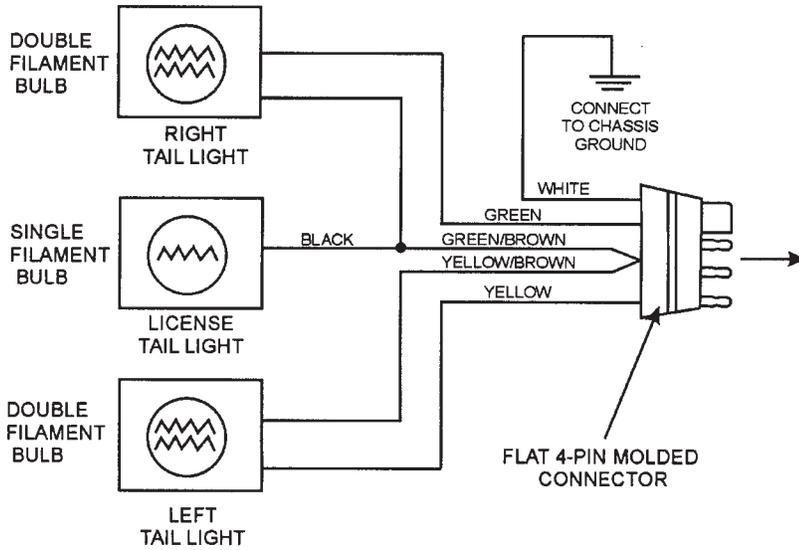


Table 5. Electric Brake Troubleshooting

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

Table 6. Hydraulic Brake Troubleshooting

Symptom	Possible Cause	Solution
No Brakes	Brake line broken or kinked?	Repair or replace.
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.
Noisy Brakes	System lubricated?	Lubricate.
	Brake components correct?	Replace and correct.
Dragging Brakes	Brake lining thickness correct or in right wrong position?	Install new shoes and linings.
	Enough brake fluid or correct fluid?	Replace rubber parts fill with dot4 fluid.

DCA-85SSJU — GENERATOR DECALS

The DCA -85SSJU generator is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. The illustration below and on the preceding pages show the decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.

OPERATING PROCEDURES

Manual Starting

1. Check the engine oil, coolant, and fuel levels. Replenish if necessary.
2. Place all Generator Circuit Breakers in the "OFF" position and close all doors.
3. Check that the Voltage select switch (or the Voltage change-over board) is present at desired voltage.

(In case of generator having multiple voltage ratings)

4. Set the Engine speed switch to the "LOW" position.
5. Turn the Auto-Off/Reset-Manual switch to the "Manual" position to start the engine. If the engine fails to start in the specified number of attempts, the overcrank lamp will indicate and the Auto-Off/Reset-Manual switch must be returned to the "Off/Reset" position before proceeding.
6. When the engine is ready for starting during cold weather operating conditions, push the Intake heater button for approximately 30 seconds. Start engine using the Auto-Off/Reset-Manual switch to the "Manual" position. As soon as the engine starts, release the button.

If the engine still does not start, utilize the water heater until water is warm. (If additional water heater is supplied.)

7. After starting, allow the engine to run for 1 or 2 minutes to warm up. At temperatures below freezing, this time period must be extended to 2 to 4 minutes.
8. When the engine starts, immediately check for abnormal noise, vibration, fluid leakage or any indication of a problem.

Check the control panel gauges. If all is normal, let the engine remain at the "Low" position for a short time, depending on the ambient conditions, warm up.

9. After sufficient warmup time has elapsed, set the Engine speed switch to the "High" position and the unit is ready for operation.
10. Check the V_L Load speed as shown in the table below.

60Hz operation—Approx. 60.0Hz (1800rpm)
 1. Adjust the Voltage Regulator to the specified voltage.

M35200010

P/N M3552000103

SAFETY INSTRUCTIONS

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

- Read the instruction manual carefully before operating or servicing.

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

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

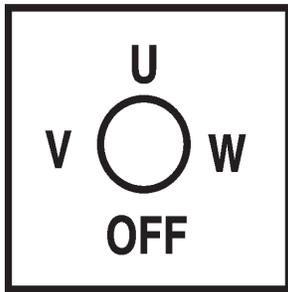
- Close the cover and control panel before operating.

Moving parts and hot surfaces are contained within the enclosure.

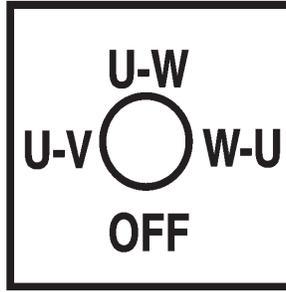
- Close all doors and lock them before operating.

M92010030

P/N M9520100304



P/N M9520000104



P/N M9520000204



P/N M950000004



P/N M9510200002

OVER CURRENT RELAY

If it is impossible to reset the CIRCUIT BREAKER, open the control panel and push the RESET BUTTON as below.

M92020010

P/N M9520200104



P/N M9500300104



P/N M9500300004



P/N M9500500104



P/N M9500500004



P/N M9503000103



⚠ WARNING
ELECTRIC SHOCK HAZARD

- Do not touch internal wiring or connections while this machine is operating.
- Turn power off before servicing.

M92010000

P/N M9520100004

DANGER
HIGH VOLTAGE
M92010040

P/N M9520100401

NOTE

To use 50 AMP receptacles, adjust the voltage selector switch to the single phase position and the main line circuit breaker to the on position.

M1500020

P/N M155000204

	<p>⚠ WARNING ELECTRIC SHOCK HAZARD</p> <ul style="list-style-type: none"> • Do not touch output terminals while this machine is operating. • Turn power off before servicing. 	<p>⚠ WARNING ELECTRIC SHOCK HAZARD</p> <ul style="list-style-type: none"> • Always complete the grounding path from the ground terminal on this genset to an external grounding source. See instruction manual for details. 	<p>⚠ WARNING</p> <ul style="list-style-type: none"> • Before connecting this generator to any building's electrical system, a licensed electrician must install an isolation (transfer) switch. • Serious injury or death may result without this transfer switch.
	M92010050		

P/N M9520100503



⚠ WARNING
HOT COOLANT can cause severe burns.

- Do not remove cap if radiator is hot.

M90310000

P/N M9503100004



⚠ WARNING
ENGINE EXHAUST can cause severe injury or death.

- Use only in open, well ventilated areas or vent exhaust outside.

M90320000

P/N M9503200004

⚠ CAUTION
Stop engine before switching.

M92010020

P/N M9520100204



⚠ CAUTION
MOVING PARTS can cause severe injury.

- Do not operate with doors open.
- Stop engine before servicing.

M90300000

P/N M9503000004



⚠ WARNING
HOT PARTS can burn skin.

- Do not touch until the machine has sufficiently cooled.

M91010000

P/N M9510100004



⚠ WARNING
ELECTRIC SHOCK HAZARD

- Do not touch internal wiring or connections while this machine is operating.
- Turn power off before servicing.

M92010000

P/N M9520100004

DCA-85SSJU — SPECIFICATIONS

Table 7. Specifications		
Generator Specifications		
Model	DCA-85SSJU	
Type	Revolving field, self ventilated, open protected type synchronous generator	
Armature Connection	Star with Neutral	Zig Zag
Phase	3	Single
Standby Output	88 KVA (70.4 KW)	66KW
Prime Output	82 KVA (65.6 KW)	60KW
Voltage	240V or 480V	240/120V
Frequency	60 Hz	
Speed	1800 rpm	
Power Factor	0.8	1
Aux. AC Power	Single Phase, 60 Hz	
Voltage	120 V	
Output	4.8 KW (2.4 KW x 2)	
Engine Specifications		
Model	JOHN DEERE 4045 TF 250	
Type	4 cycle, water-cooled, direct injection, turbo-charged	
No. of Cylinders	4 cylinders	
Bore x Stroke	4.19 in. x 5 in. (106 mm x 127 mm)	
Rated Output	102HP/1800 rpm	
Displacement	274 cu. in. (4500 cc)	
Starting	Electric	
Coolant Capacity	6.9 gal. (26 liters)	
Lube Oil Capacity	3.4 gal. (13 liters)	
Fuel Consumption	4.8 gal. (18.2L)/hr at full load	3.5 gal. (13.3L)/hr at 3/4 load
	2.6 gal. (9.9L)/hr at 1/2 load	1.6 gal. (6.1L)/hr at 1/4 load
Battery	12V- 120AH	
Fuel	#2 Diesel Fuel	

DCA-85SSJU FAMILIARIZATION

Generator

The MQ Power Model DCA-85SSJU is a 68 kW **generator** that is designed as a high quality portable (requires a trailer for transport) power source for telecom sites, lighting facilities, power tools, submersible pumps and other industrial and construction machinery.

Engine Control Panel

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

- Tachometer
- Water Temperature Gauge
- Oil Pressure Gauge
- Charging Ammeter Gauge
- Engine Speed Switch
- Microprocessor Engine Controller (engine controller)
- Pre-Heat Button
- Panel Light
- Panel Light 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

Output Terminal Panel

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

- Three 240/139V output receptacles, 50 amp
- Two 120V input receptacles, 20 amp
- 3 Load Circuit Breakers 265V @65 amps
- 2 Load GFCI Circuit Breakers 265V @ 20amps

Control Box

The "Control Box" is provided with the following:

- Main Circuit Breaker 250 amps
- Over-Current Relay

Open Delta Excitation System

The DCA-85SSJU generator is equipped with the state of the art "**Open-Delta**" excitation system. The open delta system consist of an electrically independent winding wound among stationary windings of the AC output section.

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

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

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

Microprocessor Controlled Alarm System

The DCA-85SSJU 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-85SSJU 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 engine.

Engine

The **DCA-85SSJU** is powered by a 4 cycle, water cooled, turbocharged JOHN DEERE Model 4045TF 250 **diesel** engine. This engine is designed to meet every performance requirement for the generator. Reference Table 7, page 23 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-85SSJU generator are addressed on the following pages.

DCA-85SSJU — MAJOR COMPONENTS

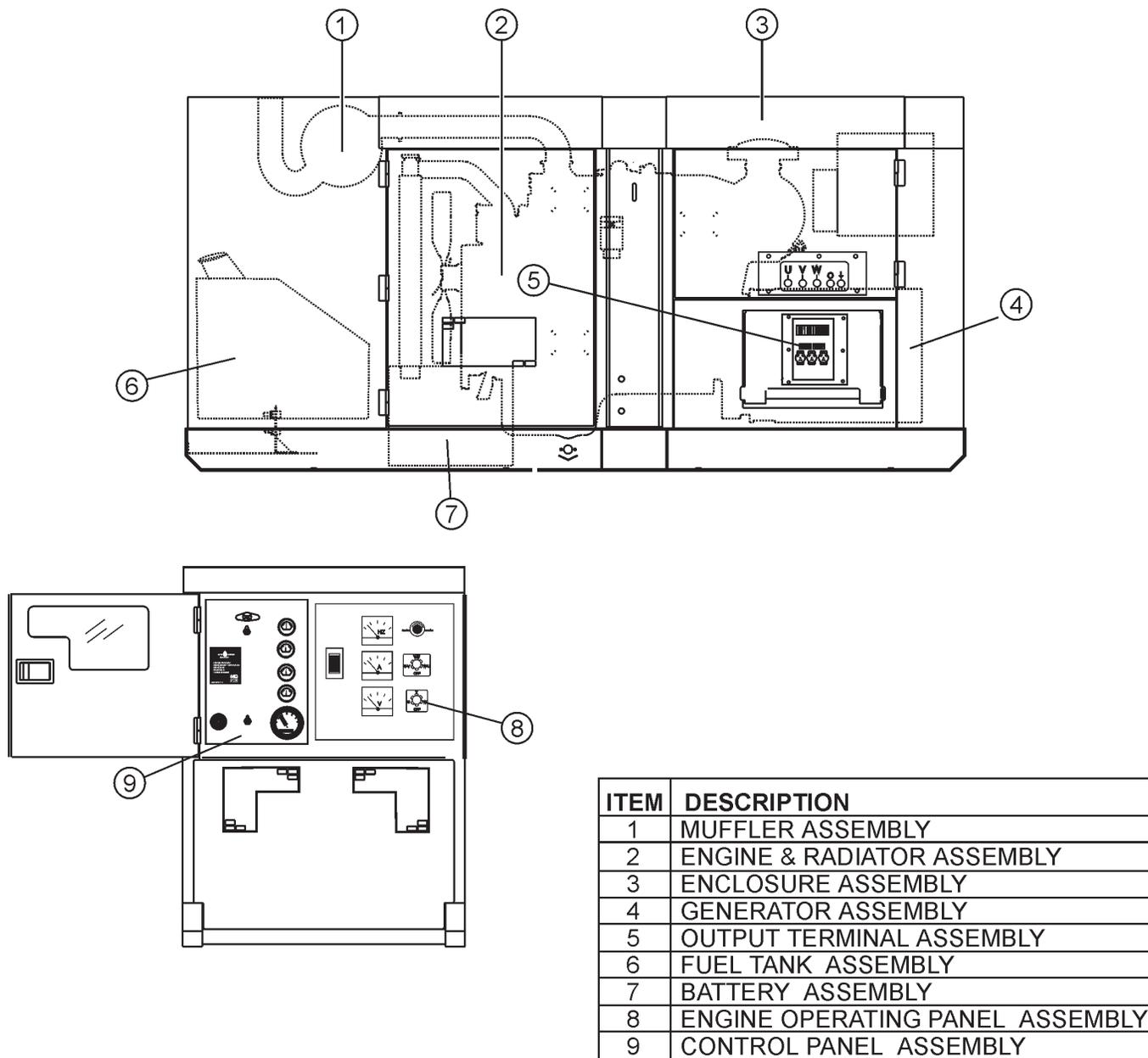


Figure 6. Major Components

DCA-85SSJU — DIMENSIONS

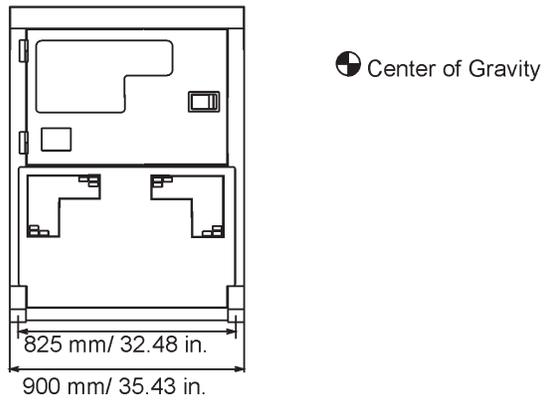
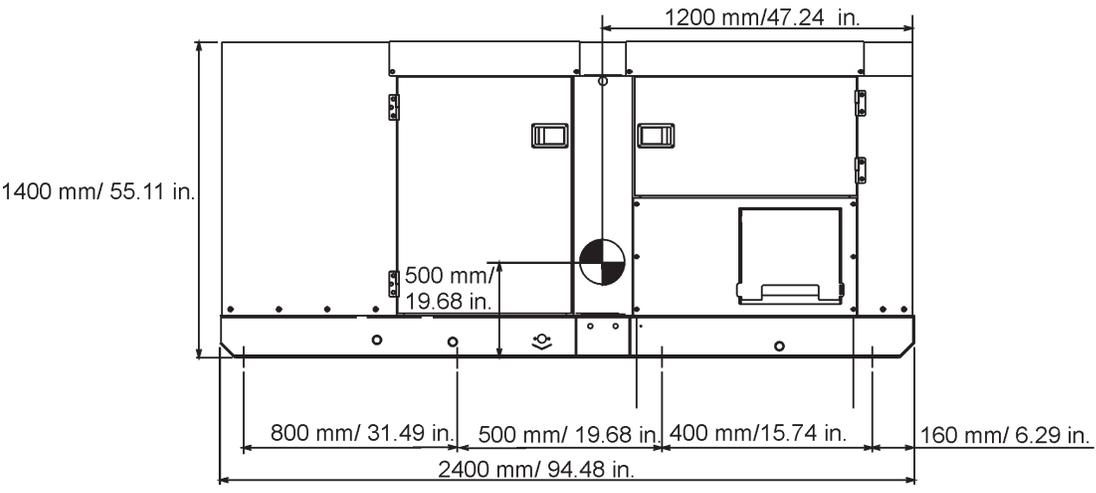
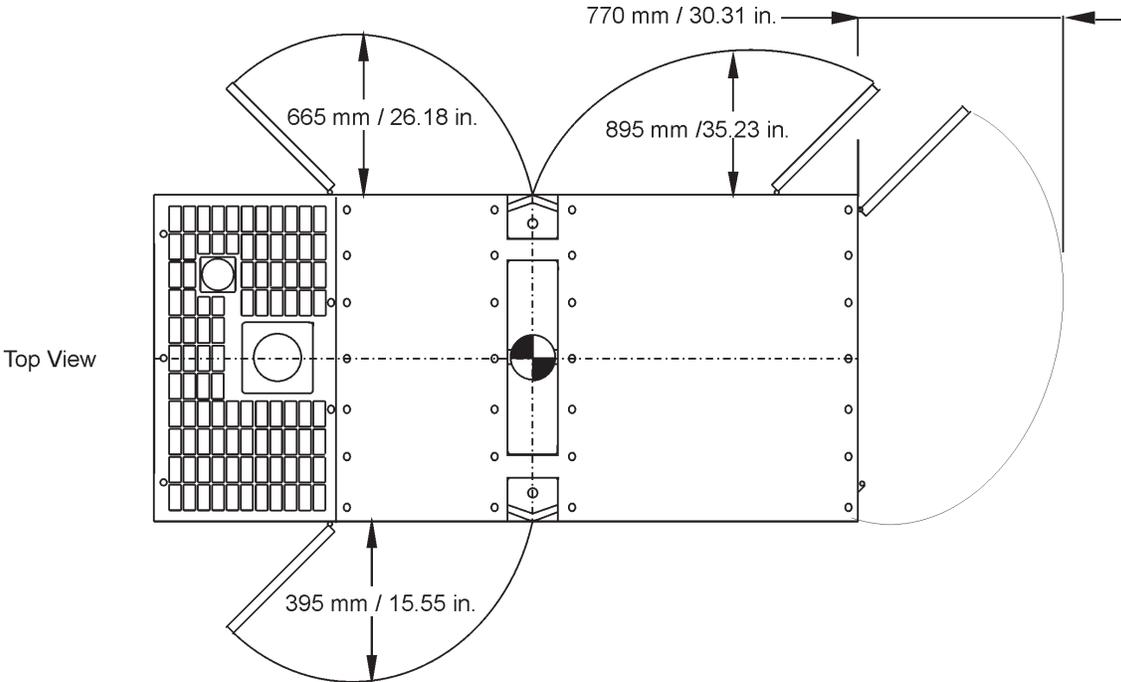
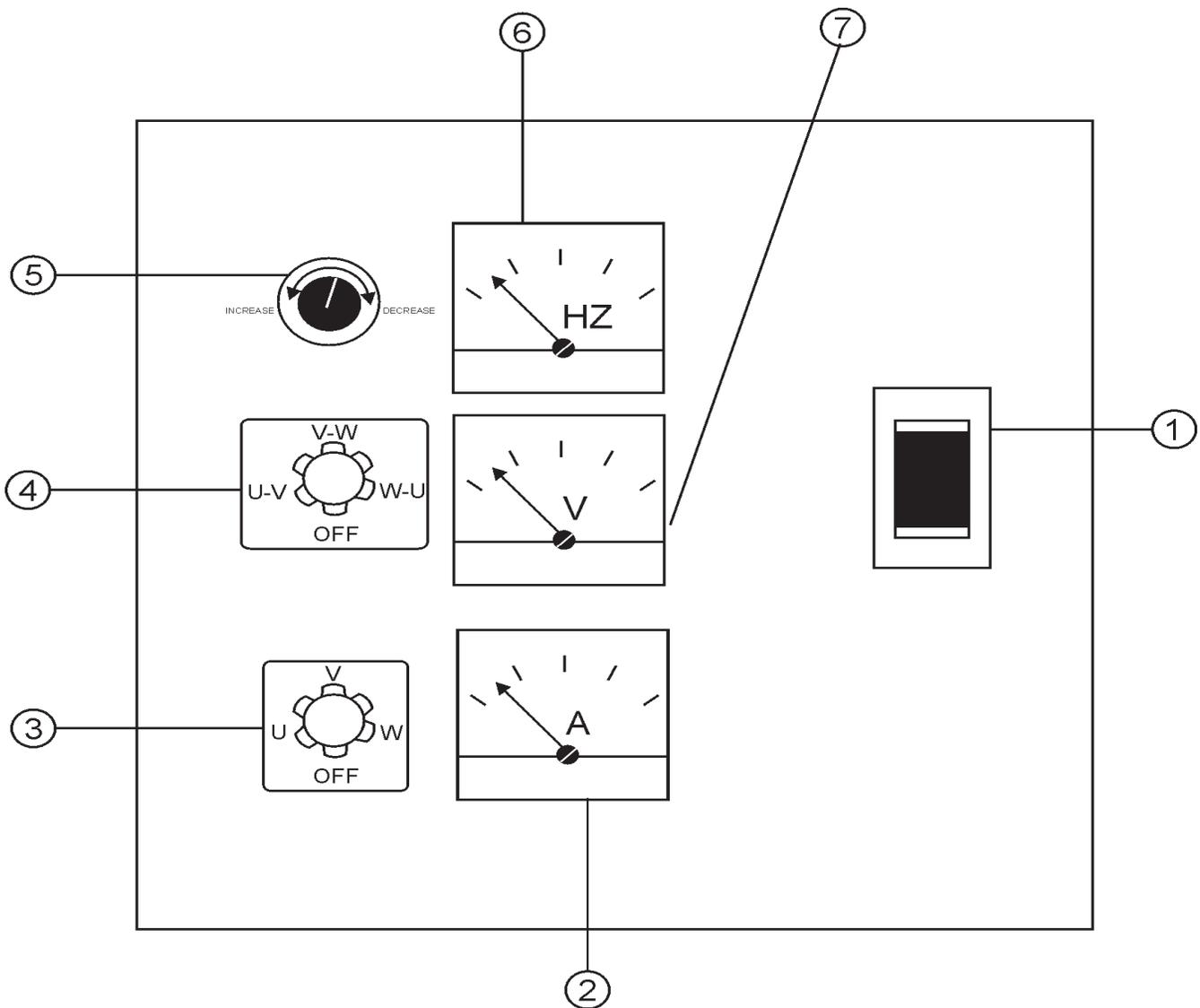


Figure 7. Dimensions



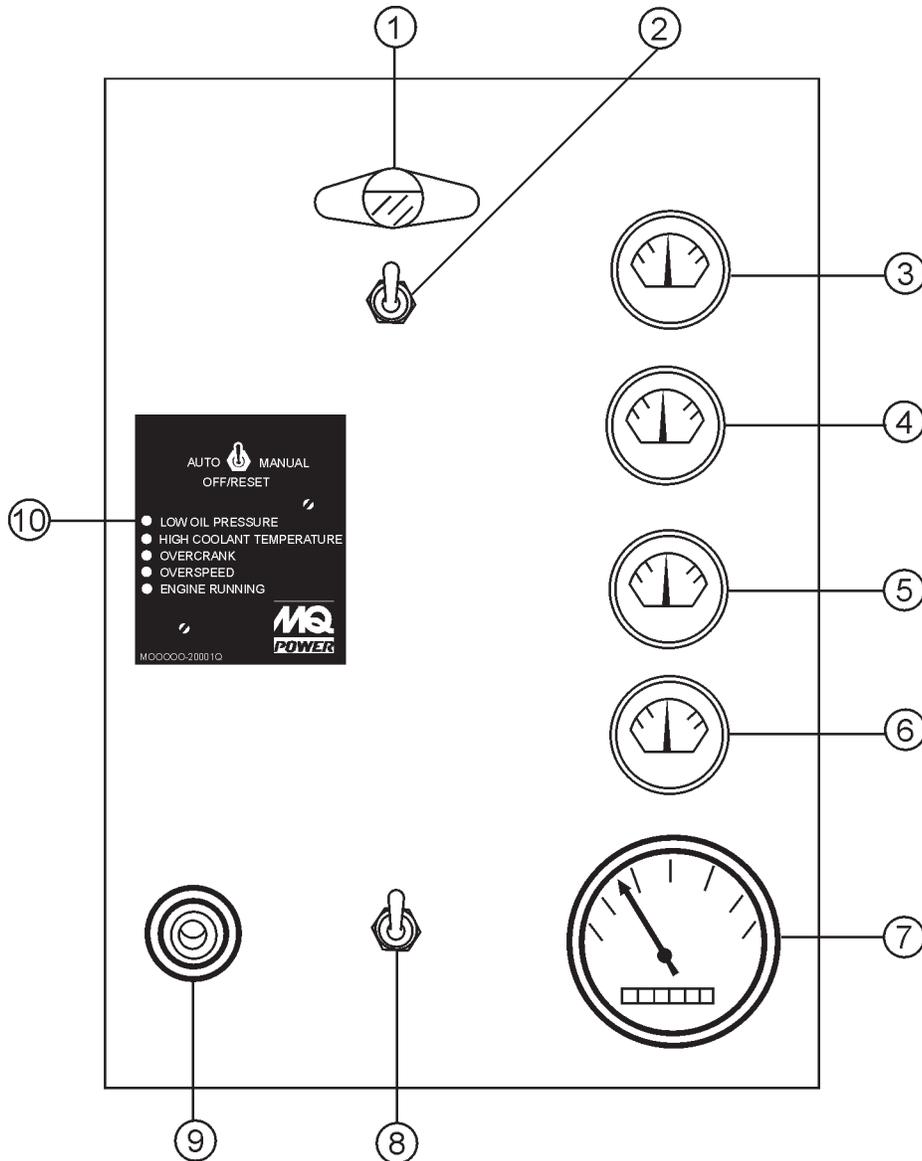
NO	DESCRIPTION
1	CIRCUIT BREAKER
2	AC AMMETER
3	AMMETER CHANGE-OVER SWITCH
4	VOLTMETER CHANGE-OVER SWITCH
5	VOLTAGE REGULATOR
6	FREQUENCY METER
7	AC VOLTMETER

Figure 8. Control Panel

The definitions below describe the controls and functions of the DCA-85SSJU " **Control Panel** " (Figure 8).

1. **Main Circuit Breaker** – This three-pole, 250 amp main breaker is provided to protect the UVW voltage output terminals from overload.
2. **AC Ammeter** – Indicates the amount of current the load is drawing from the generator.
3. **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.
4. **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.
5. **Voltage Regulator Control** – Allows manual adjustment of the generator's output voltage.
6. **Frequency Meter** – Indicates the output frequency in hertz (Hz). Normally 60 Hz \pm 1 Hz .
7. **AC Voltmeter** – Indicates the single phase output voltage present at the UVW terminals.

DCA-85SSJU — ENGINE OPERATING PANEL



NO	DESCRIPTION
1	PANEL LIGHT
2	PANEL LIGHT SWITCH
3	OIL PRESSURE GAUGE
4	WATER TEMPERATURE GAUGE
5	CHARGING AMMETER
6	FUEL GAUGE
7	TACHOMETER
8	ENGINE SPEED SWITCH
9	PREHEAT BUTTON
10	AUTO/START/STOP CONTROLLER

Figure 9. Engine Operating Panel

DCA-85SSJU — ENGINE OPERATING PANEL

The definitions below describe the controls and functions of the DCA-85SSJU " **Engine Operating Panel** " (Figure 10).

1. **Panel light** - Normally used in dark places or at night. When activated, panel will luminate. When the generator is not in use, turn the panel light switch to the 'OFF' position.
2. **Panel light switch**- When activated, will turn on control panel light.
3. **Oil Pressure Gauge** – Normal operation should be about 42~71 psi. When starting the generator the oil pressure may read a bit higher, but after the engine warms up the oil pressure should return to normal.
4. **Water Temperature Gauge** – During normal operation this gauge be should read between 165°F to 203°F.
5. **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.
6. **Fuel Gauge** - Indicates amount of diesel fuel available.
7. **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.
8. **Engine Speed Switch**- This handle will change the speed of the engine from high to low.
9. **Pre-Heat Button** – Press hold this button until the preheat lamp is lit (ON).



10. **Auto/Stop Manual Engine Controller**- Has a vertical row of status LED's (Figure 11), that when lit, indicate that an engine malfunction (fault), has been detected. When a fault has been detected the engine controller will evaluate the fault and all major faults will shutdown the generator. During **cranking cycle** , The controller will attempt to crank the engine for 10 seconds before



Figure 11. Engine Controller

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 engine controller will shutdown the engine by initializing the "Over Speed Protection" mode.

Also the engine controller 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 engine controller 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.

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.

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.

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

E. Overspeed Shutdown – Indicates 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.

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

OUTPUT TERMINAL FAMILIARIZATION

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

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

Control Box

The "Control Box" is provided with the following:

- Main Circuit Breaker 250 amps
- Over-Current Relay

Output Terminal Panel

The Output Control Panel (See Figure 14) is located on the right hand side (left from control panel) of the generator. The UVW lugs are protected by a face plate cover that can be secured in the close position by a pad lock. (See Figure 11).

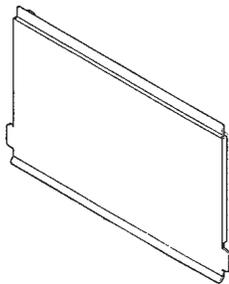


FIGURE 11. Output Terminal Cover

120 Volt Receptacle

Two GFCI Duplex Nema 5-20R (120V, 20 Amp) receptacle is provided on the output terminal. This receptacle can be used anytime the generator is in operation. The receptacle is controlled by the circuit breaker located on the control panel.

Pressing the reset button resets the receptacle after being tripped. Pressing the "Test Button" (See Figure 12) in the center of this receptacle will check the GFCI function. The receptacle should be tested at least once a month.

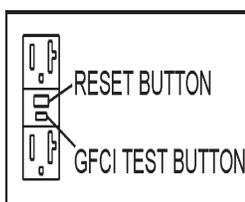


FIGURE 12. GFCI Test Button

Connecting Load

Loads can be connected to the generator by the UVW Lugs or the convenience receptacles. (See Figure 13). Make sure to read the operation manual before attempting to connect a load to the generator.

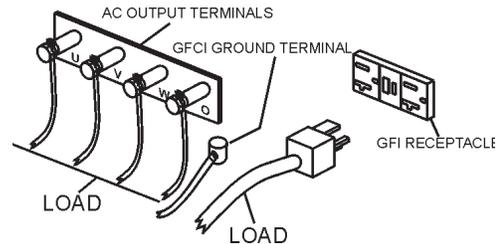


FIGURE 13. Connecting Load

Circuit Breakers

To protect the generator from an overload, a 3-pole, 240 amp, **main** circuit breaker is provided to protect the UVW output terminals from overload. In addition two single-pole, 20 amp **GFCI** circuit breakers are provided to protect the GFCI receptacles from overload. Three 50 amp **load** circuit breakers have also been provided to protect the load side of the generator from overload. Make sure to switch **ALL** circuit breakers to the "OFF" position prior to starting the engine.

Maximum Output

The entire load connected to the UVW Lugs, all four slots in the duplex receptacles, and the must not exceed 70 kW in standby or 65 kW in prime output.

Twist Lock Dual Voltage Receptacles - To use these receptacles, place the voltage selector switch in the single phase 240/120 voltage position and adjust the output voltage to 240 volts with the voltage regulator on the Control Panel. Place the voltmeter change-over switch to the U-W position and the ammeter change-over switch to the U or W to read the output.

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

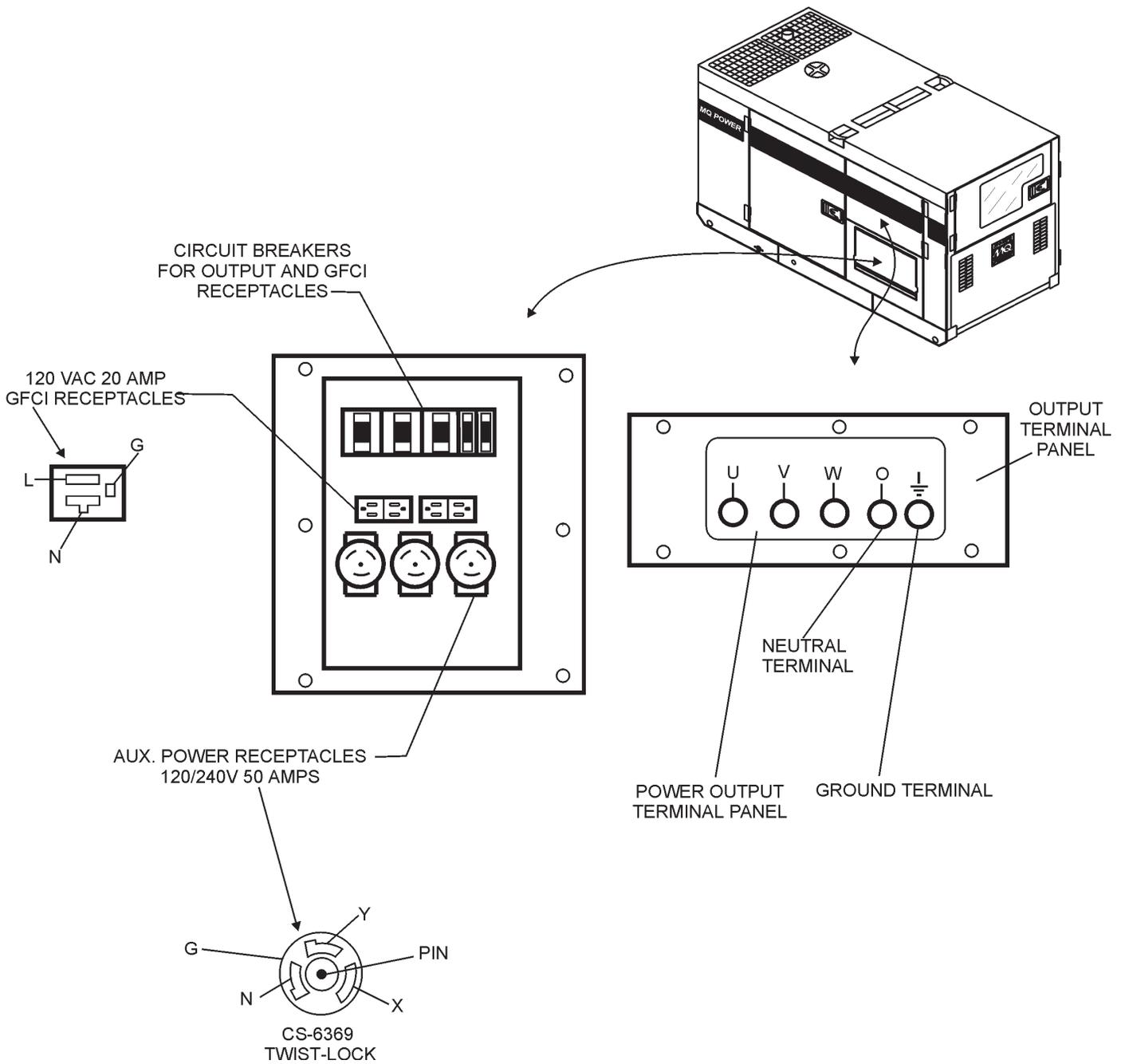


FIGURE 14. Output Terminal Panel

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

Output Terminal Panel Available Voltages

A wide range of voltages are available to supply load to many different applications. Voltages may be selected by using the voltage selector switch and how you hookup your hard wire connection to the generator. To obtain some of the voltages listed, fine adjustment with the Voltage Regulator on the control panel is necessary. See the table below (Table 8) for a list of available voltages the generator is able to supply.

	208 VOLT	220 VOLT	240 VOLT	416 VOLT	440 VOLT	480 VOLT
3-Phase						
Single Phase	120 VOLT	127 VOLT	139 VOLT	240 VOLT	254 VOLT	277 VOLT

Voltage Selector Switch

The voltage selector switch is located above the UVWO Hard Wire Hook-up Panel. It has been provided for ease of voltage selection.

CAUTION :



NEVER switch Voltage Selector Switch position while the engine is engaged.

Voltage Selector Switch Locking Button

The voltage selector switch has a locking button to protect the generator and generator load from being switched while the engine is running. To lock the Voltage Selector Switch, press in the red button located on the Voltage Selector Switch, and use a pad lock to hold it into this position. (See figure 17, page 37)

Over Current Relay

An over current relay is connected to the circuit breaker. In an over current situation, 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.

Maximum Amps

The following table show the maximum amps the entire generator can provide. Do not exceed the maximum amps listed. (See Table 9 below.)

Model:	DCA85SSJU
Rated Voltage	Maximum Amps
Single Phase 120 Volt	550 amps (4 wire)
Single Phase 240 Volt	275 amps (4 wire)
Three Phase 240 Volt	198 amps
Three Phase 480 Volt	99 amps

Receptacle Use

When the UVWO terminals are providing power, the receptacle power available decrease. Do not exceed receptacle power available listed on Table 10.

Power in Use		Receptacle Power Available
240/480V 3-Phase	240/120V Single Phase or Twist Lock CS6369	Duplex NEMA 5-20R 120V
85	60	0
77.8	58.8	1.2
73.7	57.6	2.4
69.5	56.4	3.6
65.4	55.2	4.8

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

How to read the output terminal gauge.

The gauge and knobs on the control panel **DO NOT** effect the generator output . They are to help observe how much power is being supplied produced at the UVWO legs.

When the Voltage selector switch is in the 240/120V position (see Figure 15), place the AC Voltmeter Change-over switch to the W-U position and the AC ammeter Change -over Switch to the U or W position to read the output on the selected leg.

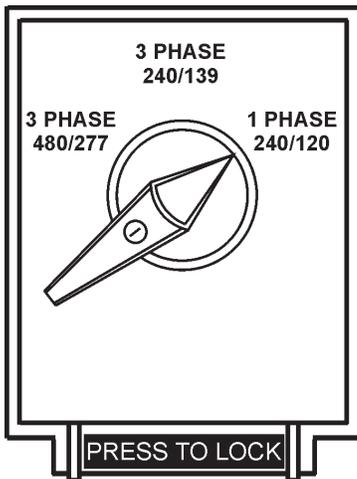


FIGURE 15. Voltage Selector Switch 240/120V Single Phase Position

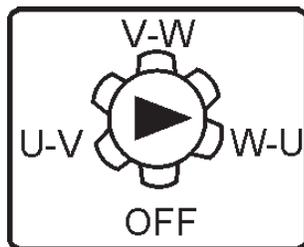


FIGURE 16. AC Voltmeter Change-over switch (Reading the W-U leg on the output terminal panel)

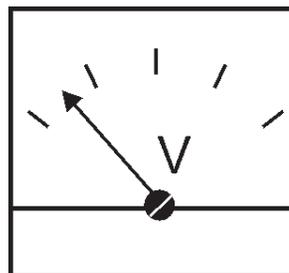


FIGURE 17. AC Voltmeter Gauge (Volt reading on W-U Lug)

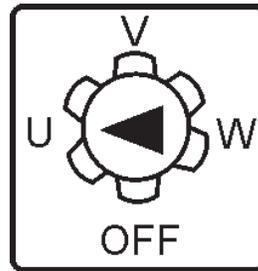


FIGURE 18. AC Ammeter Change-over Switch (Reading the U leg on the output terminal panel)

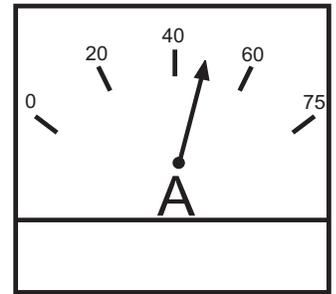


FIGURE 19. AC Ammeter (Amp reading on U lug)

NOTE

When using plural single phase voltages, make sure to balance the load on each of the single phase legs.

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

240/120V Hard Wire Hookup

The output terminal panel, when supplying single phase 120 volts, will provide three legs available with 183 amps each on three different circuits. (See Figure 21 below.) The voltage selector switch must be set at the single phase 240/120V position. (See figure 20 below.)

The output terminal panel, when supplying single phase 240 volts, will provide one leg only with 91.6 amps available. (See Figure 23) when the voltage selector switch is at the single phase 240/120V position.

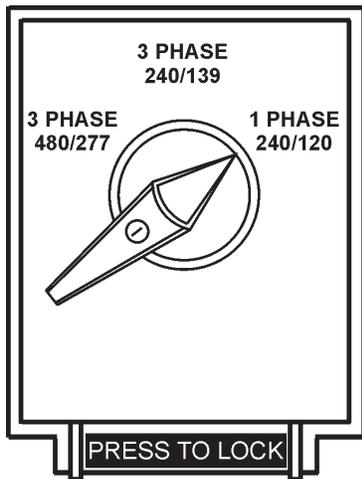


FIGURE 20. Voltage Selector Switch 240/120V Single Phase Position

480/240V Hard Wire Hookup

The output terminal panel, when supplying three phase 240 volts, will provide one circuit available at 198 amps with any two wires plus the ground. (See Figure 23 below.) The voltage selector switch must be set at the three phase 480/277V position. (See figure 22 below.)

The output terminal panel, when supplying 3 phase 480 volts, will provide one circuit available at 99 amps available with all three wires plus ground. (See Figure 23) when the voltage selector switch is set at the three phase 480/277V position.

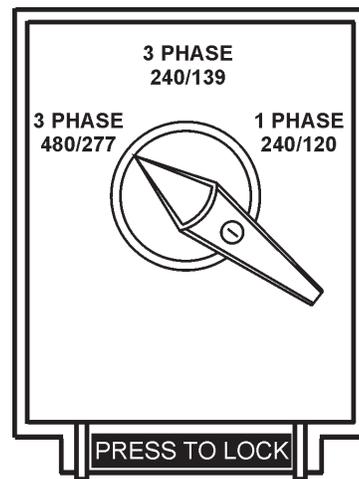


FIGURE 22. Voltage Selector Switch 480/277V Three Phase Position

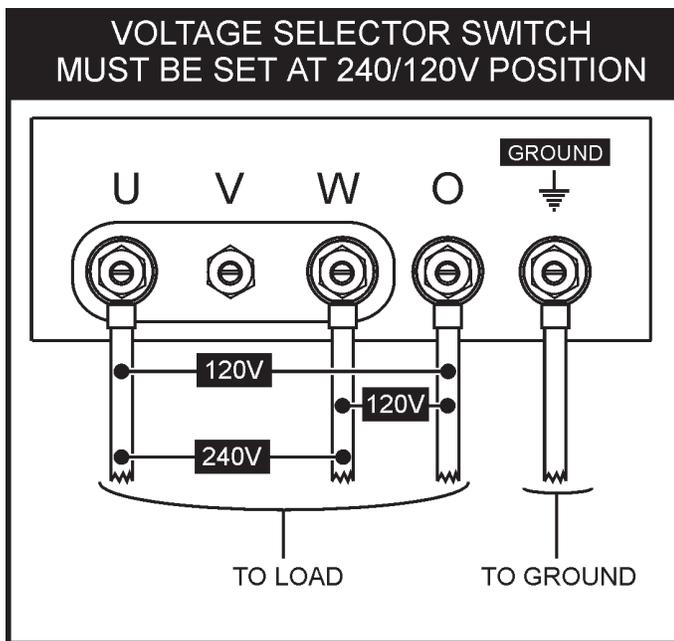


FIGURE 21. Hard Wire Hook-up at 240/120V Position

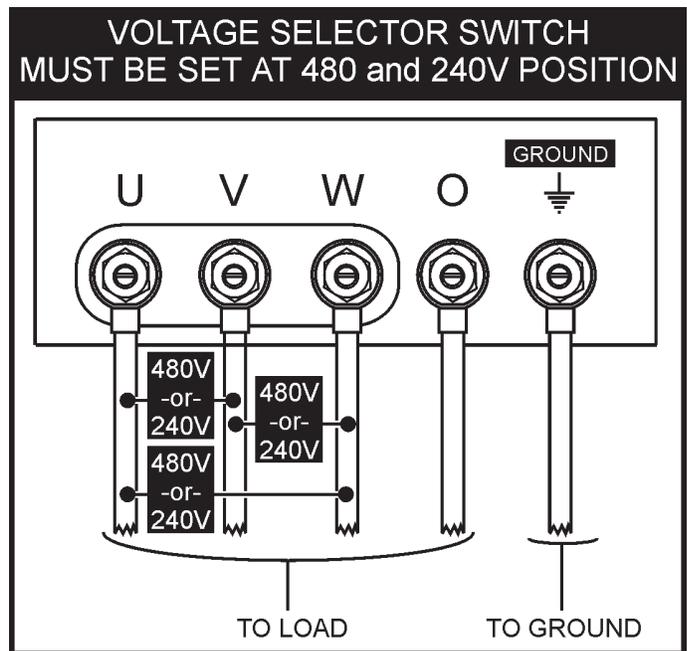


FIGURE 23. Hard Wire Hook-up at 480/240V Position

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

Voltage Selector Switch- 3 Phase 480/277V Position

The following are additional voltages available when the voltage selector switch is in the 3 phase 480/277V position. (See figure 24 below.)

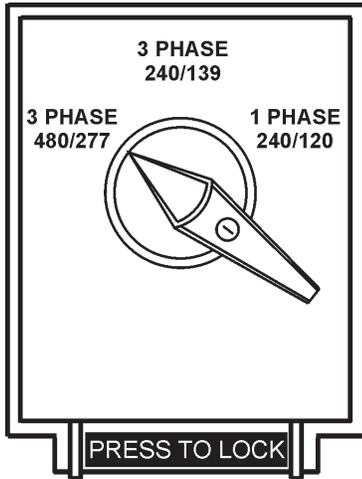


FIGURE 24. Voltage Selector Switch 480/277V Single Phase Position



FIGURE 25. Voltage Selector Switch 270/120V Single Phase Position

3 Phase, 480V, 440V, or 416 Volt

The following connection, with the voltage selector switch locked into the 3 phase 480/277V position (See Figure 24), can offer **THREE PHASE** power at 480V, 440V, or 416V. After hooking up the hard wires to the lugs as shown in figure 28 below, 480V will be the voltage with the Voltage Regulator Knob turned toward maximum. 440 volt will be reached when the Voltage Regulator Knob is turned down, and 416 volt when the Voltage Regulator Knob is toward the lowest setting (See Figure 25).

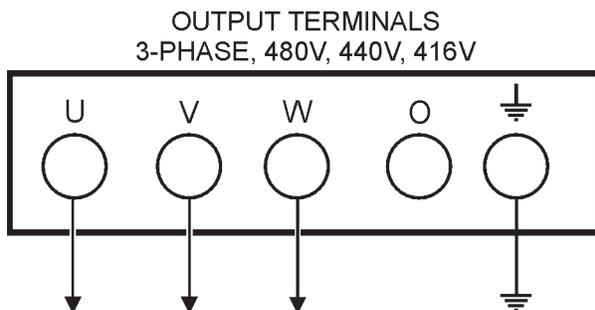


FIGURE 26. Hard Wire Hook-up for Three Phase 480V, 440V, or 416V

Single Phase: 480V, 440V, or 416 Volt

The following connection, with the voltage selector switch locked into the 3 phase 480/277V position (See Figure 24), can offer **SINGLE PHASE** power at 480V, 440V, or 416V. After hooking up the hard wires to the lugs as shown in figure 27 below, 480V will be the voltage with the Voltage Regulator Knob turned toward maximum. 440 volt will be reached when the Voltage Regulator Knob is turned down, and 416 volt when the Voltage Regulator Knob is toward the lowest setting (See Figure 25).

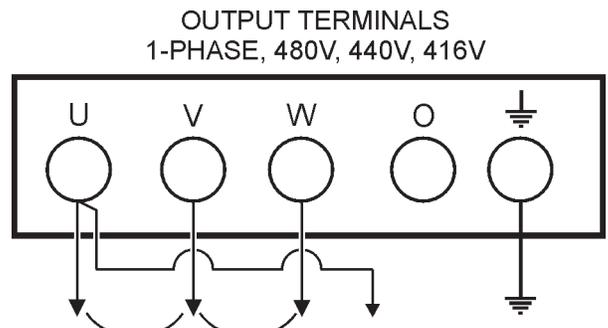


FIGURE 27. Hard Wire Hook-up for Single Phase 480V, 440V, or 416V

Single Phase: 277V, 254V, or 240V

The following connection, with the voltage selector switch locked into the 3 phase 480/277V position (See Figure 28), can offer **SINGLE PHASE** power at 277V, 254V, or 240V. After hooking up the hard wires to the lugs as shown in figure 28 below, 277V will be the voltage with the Voltage Regulator Knob turned toward maximum. 254 volt will be reached when the Voltage Regulator Knob is turned down, and 240 volt when the Voltage Regulator Knob is toward the lowest setting (See Figure 25).

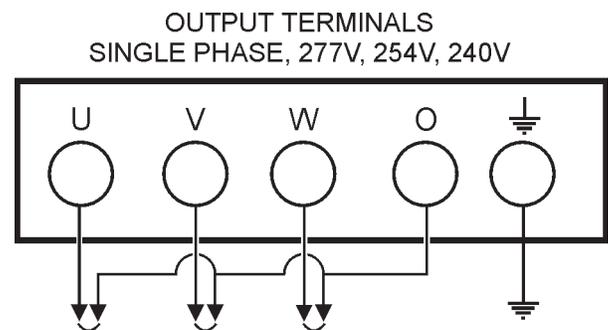


FIGURE 28. Hard Wire Hook-up for Single Phase 277V, 254V, or 240V

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

Voltage Selector Switch- 3 Phase 240/139V Position

The following are additional voltages available when the voltage selector switch is in the 3 phase 240/139V position. (See Figure 29 below.)

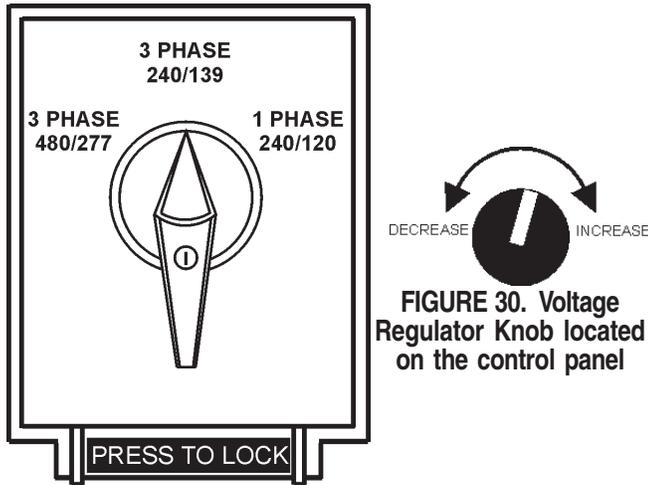


FIGURE 29. Voltage Selector Switch 240/139V Three Phase Position

3 Phase, 240V, 220V, or 208 Volt

The following connection, with the voltage selector switch locked into the 3 phase 240/139V position (See Figure 29), can offer **THREE PHASE** power at 270V, 220V, or 208V. After hooking up the hard wires to the lugs as shown in figure 31 below, 240V will be the voltage with the Voltage Regulator Knob turned toward maximum. 220 volt will be reached when the Voltage Regulator Knob is turned down, and 208 volt when the Voltage Regulator Knob is toward the lowest setting (See Figure 30).

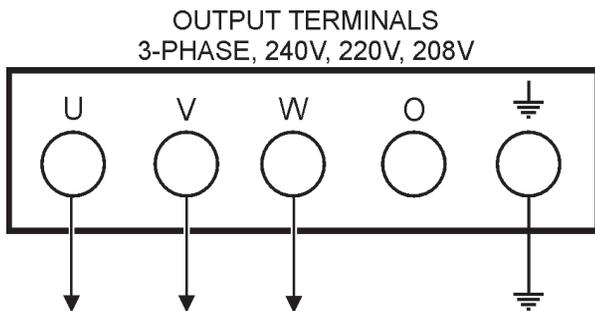


FIGURE 31. Hard Wire Hook-up for Three Phase 240V, 220V, or 208V

Single Phase: 240V, 220V, or 208 Volt

The following connection, with the voltage selector switch locked into the 3 phase 240/139V position (See Figure 29), can offer **SINGLE PHASE** power at 240V, 220V, or 208V. After hooking up the hard wires to the lugs as shown in figure 32 below, 240V will be the voltage with the Voltage Regulator Knob turned toward maximum. 220 volt will be reached when the Voltage Regulator Knob is turned down, and 208 volt when the Voltage Regulator Knob is toward the lowest setting (See Figure 30).

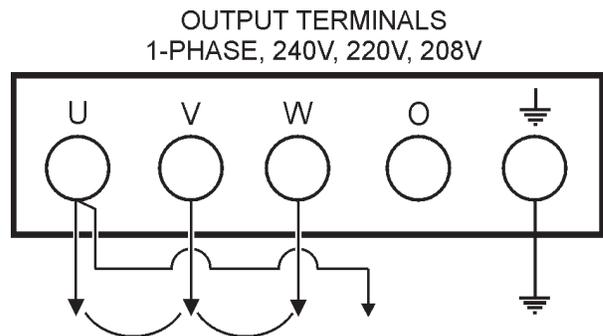


FIGURE 32. Hard Wire Hook-up for Single Phase 240V, 220V, or 208V

Single Phase: 139V, 127V, or 120V

The following connection, with the voltage selector switch locked into the 3 phase 240/139V position (See Figure 29), can offer **SINGLE PHASE** power at 139V, 127V, or 120V. After hooking up the hard wires to the lugs as shown in figure 33 below, 139V will be the voltage with the Voltage Regulator Knob turned toward maximum. 127 volt will be reached when the Voltage Regulator Knob is turned down, and 120 volt when the Voltage Regulator Knob is toward the lowest setting (See Figure 30).

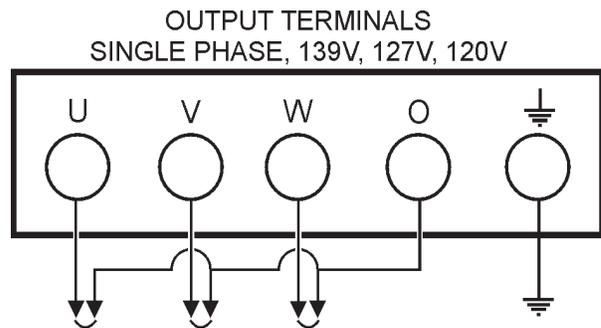


FIGURE 33. Hard Wire Hook-up for Single Phase 139V, 127V, or 120V

DCA-85SSJU — OUTPUT TERMINAL PANEL OVERVIEW

Voltage Selector Switch- Single Phase 240/120V Position

The following are additional voltages available when the voltage selector switch is in the single phase 240/120V position. (See Figure 34 below)

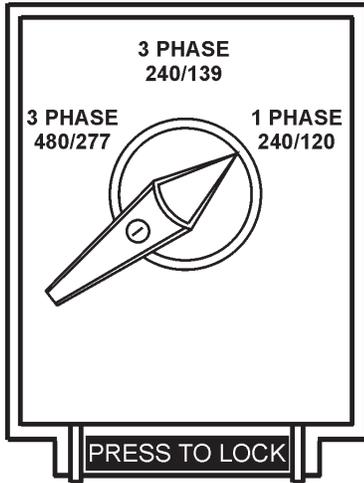


FIGURE 34. Voltage Selector Switch 240/120V Single Phase Position



FIGURE 35. Voltage Regulator Knob located on the control panel

Single Phase: 120 Volt

The following connection, with the voltage selector switch locked into the single phase 240/120V position (See Figure 34), will offer **SINGLE PHASE** power at 120V. After hooking up the hard wires to the lugs as shown in figure 37 below, use the Voltage Regulator Knob to fine tune to 120V. (See Figure 35).

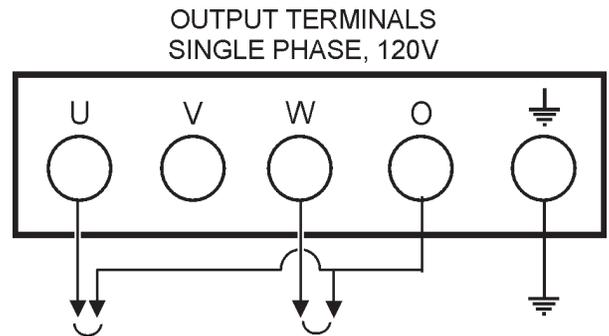


FIGURE 37. Hard Wire Hook-up for Single Phase, 120 volt

Single Phase, 240 Volt

The following connection, with the voltage selector switch locked into the single phase 240/120V position (See Figure 34), will offer **SINGLE PHASE** power at 240V. After hooking up the hard wires to the lugs as shown in figure 36 below, use the Voltage Regulator Knob to fine tune to 240V. (See Figure 35)

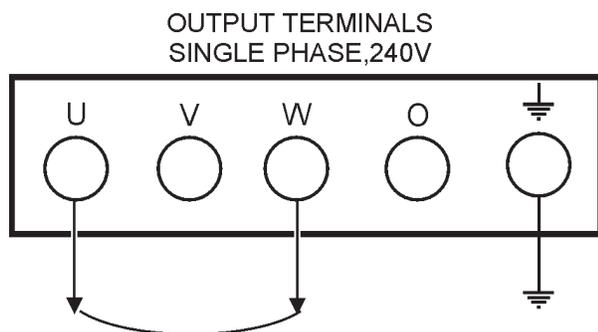


FIGURE 36. Hard Wire Hook-up for Single Phase 240 volt

Outdoor Installation

Install the generator in a location where it will not be exposed to rain or sunshine. Make sure the generator is on secure level ground so 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.

CAUTION :



An electric shock may happen when vibrators are used. Pay close attention to handling when operating vibrators and always use rubber boots and gloves to insulate the body from electrical shock.

Generator Grounding

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

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

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

1. Use one of the following wire types to connect the generator to earth ground.
 - a. Copper - 10 AWG (5.3 mm²) or larger.
 - b. Aluminum - 8 AWG (8.4 mm²) or larger.
2. When grounding the generator (Figure 38) connect the ground cable between the lock washer and the nut on the generator and tighten the nut fully. Connect the other end of the ground cable to earth ground.
3. NEC article 250-52(c) specifies that the earth ground rod should be buried a minimum of 8 ft. into the ground.

NOTE

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

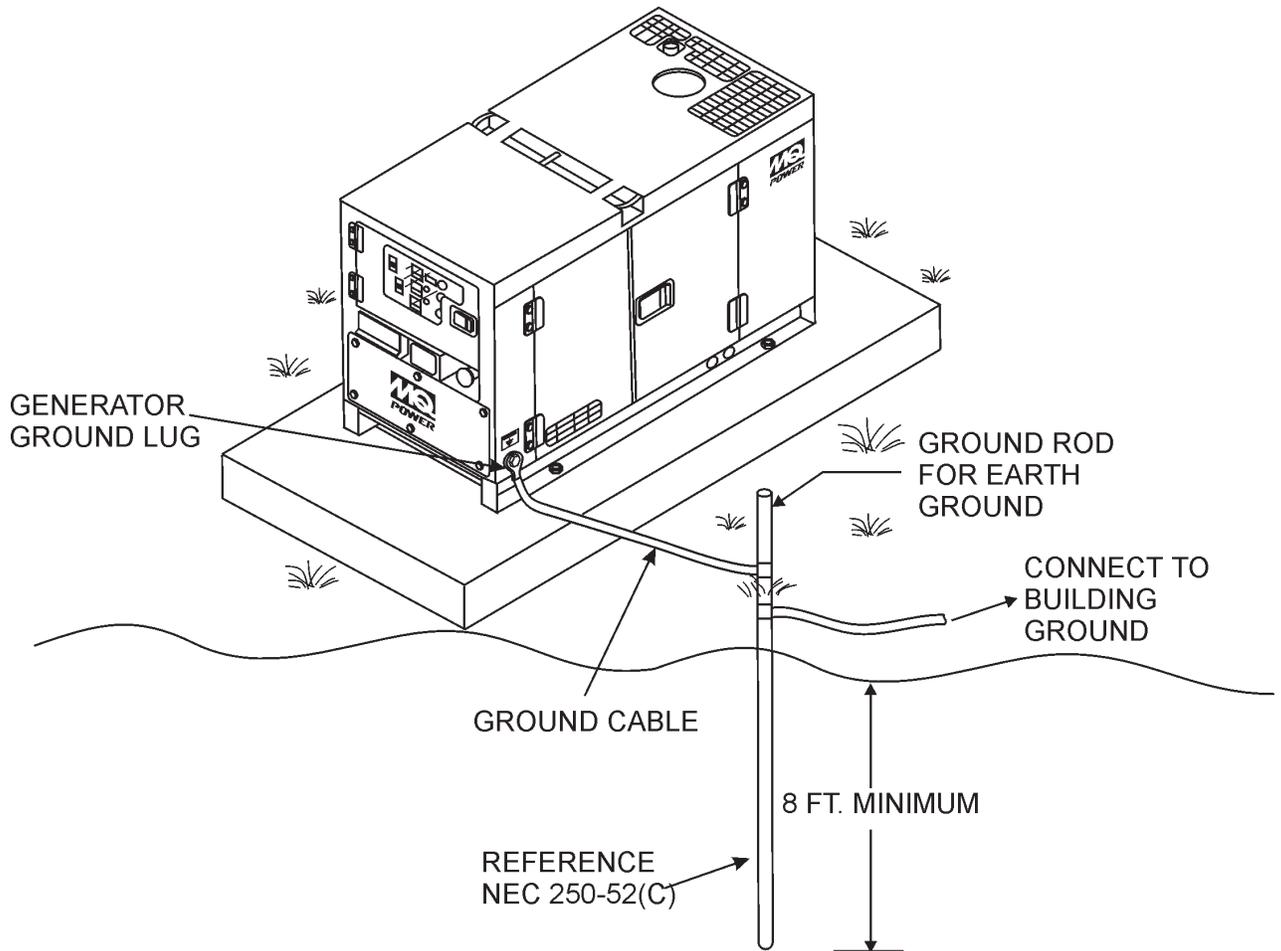


Figure 38. Typical Generator Grounding Application

General Inspection Prior to Operation

The DCA-600SSK generator has been thoroughly inspected and accepted prior to shipment from the factory. However, be sure to check for damaged parts or components, or loose nuts and bolts, which could have occurred in transit.

Extension Cable

When using extension cords or cables, the distance, length, and cable size should be considered when using them to power various loads. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generator and point of use (load) is held to a minimum. This is determined from its load current, length and thickness according to the following this equation for three-phase, three-line system:

$$e = 1/58 \times L/S \times I \times 1.723$$

e=voltage drop (V), L=cable length (m), S=cable thickness (mm²), and I=load current (A). Be sure to select the cable length and thickness that will not exceed the voltage drop by 5%.

Circuit Breakers

To protect the generator from an overload, a 3-pole, 250 amp, **main** circuit breaker is provided to protect the UVW output terminals from overload. In addition two single-pole, 20 amp **GFCI** circuit breakers are provided to protect the GFCI receptacles from overload. Three 50 amp **load** circuit breakers have also been provided to protect the load side of the generator from overload. Make sure to switch **ALL** circuit breakers to the "OFF" position prior to starting the engine.

NOTE

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

Lubrication Oil

Fill the engine crankcase with lubricating oil through the filler hole, but do not overfill. Make sure the generator is level. and verify that the oil level is maintained between the two notches (Figure 39) on the dipstick. See Table 11 for proper selection of engine oil.

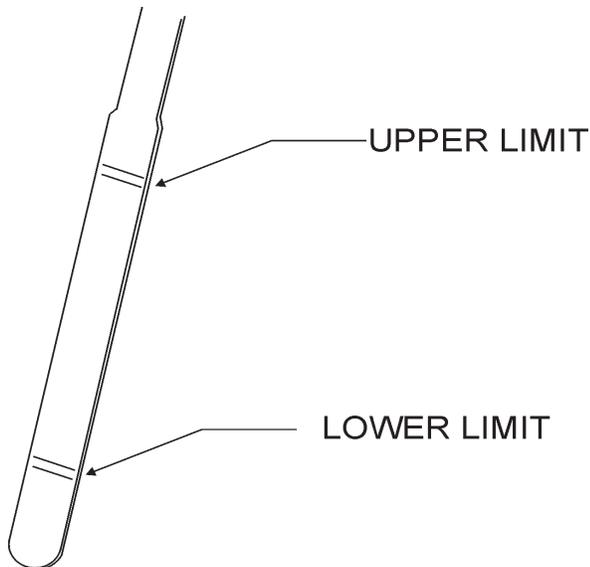


Figure 39. Engine Oil Dipstick

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

Fuel

Fill the fuel tank with clean and fresh **diesel fuel**. **DO NOT** fill the tank beyond capacity.

Pay attention to the fuel tank capacity when replenishing fuel. Refer to the fuel tank capacity listed on page 23, Specification Table 7.

The fuel tank cap must be closed tightly after filling. Handle fuel in a safety container. If the container does not have a spout, use a funnel. Wipe up any spilled fuel immediately.

CAUTION:



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

Coolant

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

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

Table 11. Recommended Motor Oil

Temperature Range	Type Oil
122° F ~ 32° F (50° C ~ 0°C)	SAE 15W-40 or SAE40
32° F ~ -22° F (0° C ~ -30°C)	SAE 5W-30
Below 5° C (-15°)	SAE 0W-30

CAUTION :



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

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

Table 12. Coolant Capacity

Engine and Radiator	6.9 Gal. (26 liters)
Reserve Tank	2 Quarts (1.9liters)

Operation in 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

NOTE

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 battery disconnected.

Air Cleaner

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

The fan belt tension is proper if the fan belt bends 7 to 10 mm (Figure 40) when depressed with the thumb as shown below.

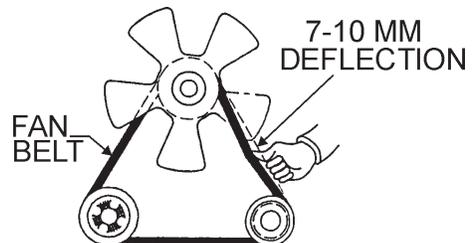


Figure 40. Fan Belt Tension

CAUTION :



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

Battery

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

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

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

Battery Cable Installation

ALWAYS be sure the battery cables (Figure 41) are properly connected to the battery terminals as shown below. The **RED** cable is connected to the positive terminal of the battery, and the **BLACK** cable is connected to the negative terminal of the battery.

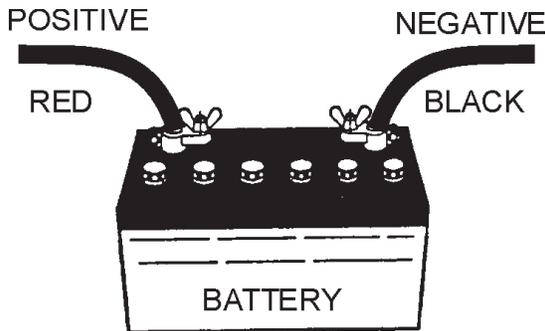


Figure 41. Battery Connections

CAUTION :



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

Wiring

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

Piping and Hose Connection

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

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

CAUTION :



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

When connecting battery do the following:

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

Single Phase Load

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

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

NOTE

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

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

The power factor of this generator is 0.8. See Table 14 below when connecting loads.

Table 14. Power Factor By Load

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

Three Phase Load

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

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

CAUTION:



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

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

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

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 this transfer switch.

NOTE

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

DCA-85SSJU — GENERATOR START-UP PROCEDURE

WARNING:



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

Before Starting Engine

1. Check the lubricating oil level prior to starting the engine. Make sure the generator is level. The oil level must be maintained between two notches on the dipstick.
2. When there is not enough lubricating oil, fill the crankcase with high grade motor oil. Use a high quality detergent oil classified CC or higher (See Table 7 on page 37).
3. Check the coolant level in the radiator and subtank. Replenish with antifreeze as necessary. Always maintain the coolant level between the **FULL** and **LOW** markings on the coolant container. Be sure that the radiator cap is fastened securely.
4. Check the fuel level on the fuel gauge. If fuel is low, fill the fuel tank with clean fresh unleaded automotive diesel. If diesel spillage occurs, completely wipe up the spilled fuel immediately.

Before Starting Generator and Control Panel

CAUTION:



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

1. Be sure to disconnect the electrical load and switch the **main**, **load** and **G.F.C.I.** circuit breakers (Figure 43) to the "OFF" position prior to starting the engine.

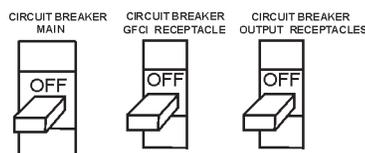


Figure 43. Main, GFCI and Load Circuit Breakers

2. Connect the load to the UVW terminals as shown in Figure 44. These terminals can be found on the output terminal panel, (see page 32 Figure 14 for description and usage of receptacles). To gain access to the output terminals lift the UVW cover. Tighten terminal nuts securely to prevent load wires from slipping out.

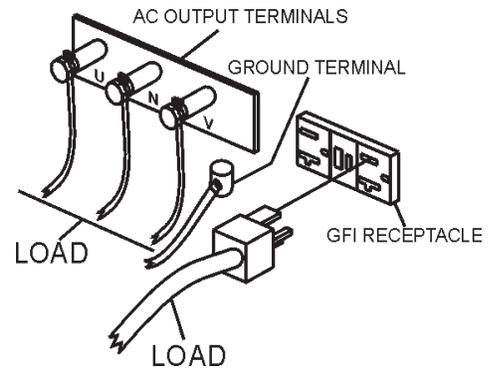


Figure 44. UVW Terminal Lugs (Load)

3. Connect the negative battery cable (BLACK) to the negative post on the battery (Figure 45).

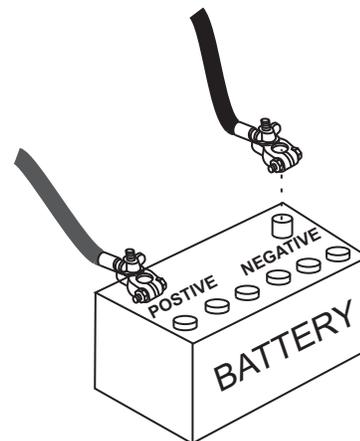


Figure 45. Battery Connections

DCA-85SSJU — GENERATOR START-UP PROCEDURE

4. Close all engine enclosure doors (Figure 46).

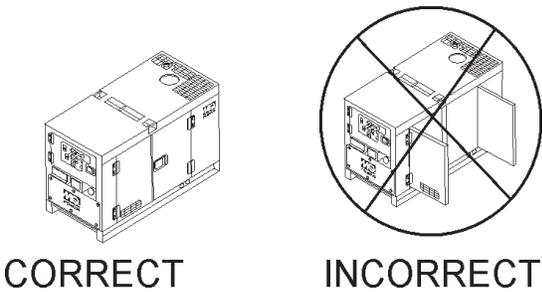


Figure 46. Engine Enclosure Doors

8. Turn the Auto-Off/Reset-Manual switch to 'Manual' to start the engine (Figure 50). Once the engine starts, let the engine run for 1-2 minutes. Listen for any abnormal noises.



Figure 50. Auto-Off/Reset-Manual Switch

5. When starting the generator in **COLD** weather conditions, press and hold the engine preheat button (Figure 47).



Figure 47. Engine Pre-Heat Button

9. Once the engine is warm and the engine is running properly, set the engine speed switch to 'High' (Figure 51).



Figure 51. Engine Speed Switch (high)

6. Check the voltage selection switch is at the desired voltage (Figure 48).

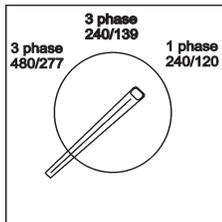


Figure 48. Voltage Selection Switch

10. The generator's frequency meter (Figure 52) displays the 60 cycle output frequency in **HERTZ**.

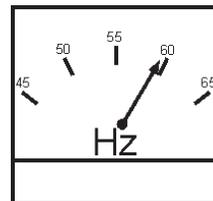


Figure 52. Frequency Meter (Hz)

7. Set engine speed switch to 'Low' (Figure 49).

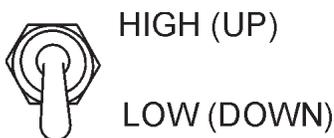


Figure 49. Engine Speed Switch (low)

11. The generator's voltage meter (Figure 53) displays the 120 VAC in **VOLTS**. If the voltage is not within the specified frequency tolerance, use the voltage adjustment control knob (Figure 54) to increase or decrease the desired voltage.

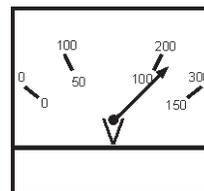


Figure 53. Voltmeter

DCA-85SSJU — GENERATOR START-UP PROCEDURE



Figure 54. Voltage Adjust Control Knob

12. The ammeter (Figure 55) will indicate zero amps with no load applied. When a load is applied, this meter will indicate the amount of current that the load is drawing from the generator's alternator.

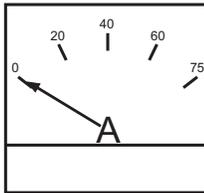


Figure 55. Ammeter (No Load)

13. The engine oil pressure gauge (Figure 56) will indicate the oil pressure (kg/cm²) of the engine. Under normal operating conditions the oil pressure is approximately 25 psi.

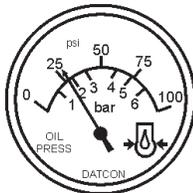


Figure 56. Oil Pressure Gauge

14. The coolant temperature gauge (Figure 57) will indicate the coolant temperature. Under normal operating conditions the coolant temperature is between 165 and 215 degrees Fahrenheit.

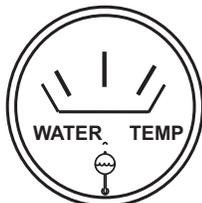


Figure 57. Coolant Temperature Gauge

15. The tachometer (Figure 58) will indicate the speed of the engine when the generator is operating. Under normal operating conditions this speed is approximately 1800 RPM's.

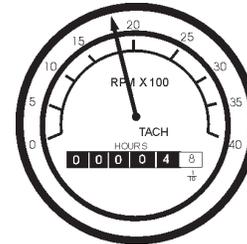


Figure 58. Engine Tachometer

16. Turn the MAIN, GFCI and LOAD circuit breakers to their ON position (Figure 59).

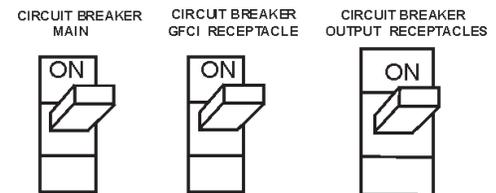


Figure 59. Main and GFCI Circuit Breakers

17. Observe the generator's ammeter (Figure 60) and verify it reads the anticipated amount of current with respect to the load. The ammeter will only display a current reading if the load is in use.

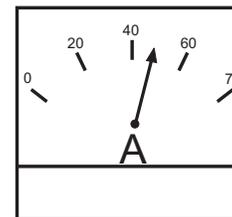


Figure 60. Ammeter (Load)

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

CAUTION:



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

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.

Starting the generator in the "AUTO" mode is similar to starting the generator in the "MANUAL" mode, with a few exceptions.

CAUTION:



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 10 (Before Starting, page 47-48) as outlined in the manual starting procedure.
2. Place the Off/Manual/Auto switch (Figure 61) in the **AUTO** position .



Figure 61. Off/Manual Auto Switch (AUTO)

3. Continue to follow the steps outline in the manual start-up procedure (start at step 12, page 50).

DCA-85SSJU— GENERATOR SHUT DOWN PROCEDURE

ENGINE SHUTDOWN

To shutdown the generator, use the following procedure:

1. Switch both the MAIN, GFCI and LOAD circuit breakers (Figure 62) to the “OFF” position.

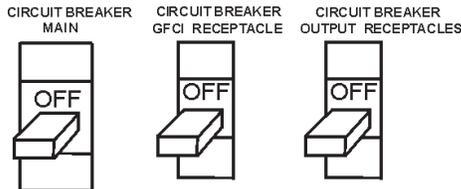


Figure 62. Main, GFCI and Load circuit breakers

2. Set the engine speed switch (Figure 63) to the idle (low) position.

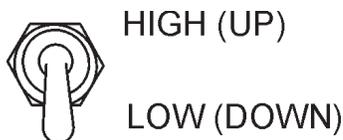


Figure 63. Engine Speed Switch

3. Let the engine cool by running it for 3-5 minutes with no load applied.
4. Turn the Auto-Off/Reset-Manual switch from the engine controller to “OFF/Reset” position (Figure 64).



Figure 64. Off/Manual Auto Switch

5. Remove the load from the UVW terminal strip.

General Inspection

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

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

Air Cleaner

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

Fuel Addition

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

Removing Water from the Tank

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

Air Removal

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

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

Service Daily

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

Cleaning the Fuel Strainer

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

Check Oil Level

Check the crankcase oil level prior to each use, or when the fuel tank is filled. Insufficient oil may cause severe damage to the engine. Make sure the generator is level. The oil level must be between the two notches on the dipstick as shown in page 39, Figure 13.

Generator Storage

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

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

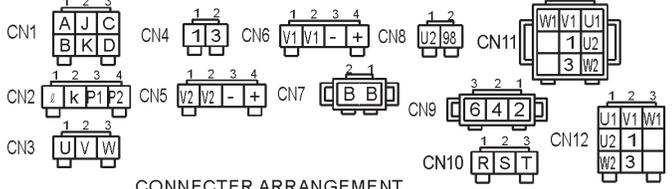
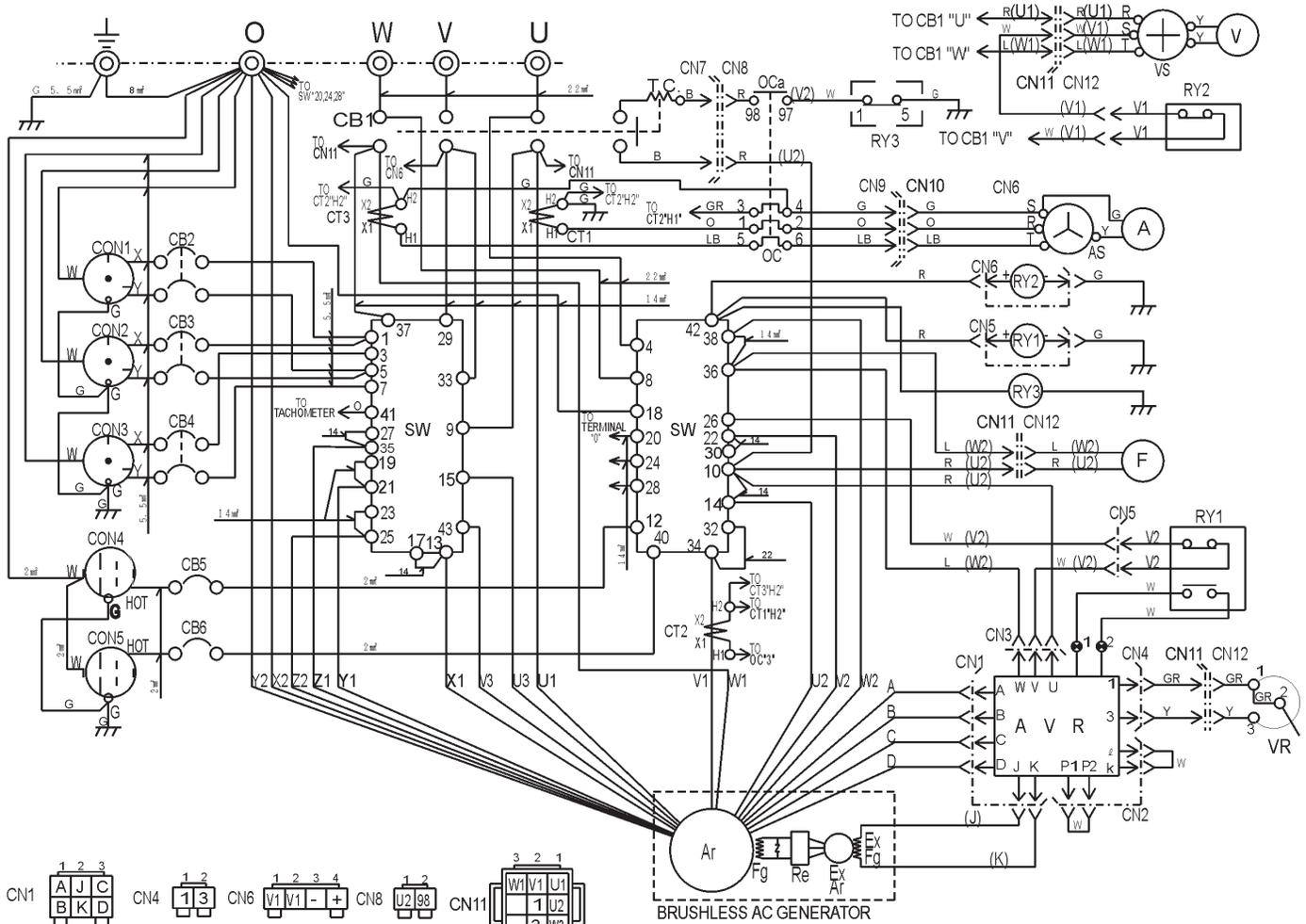
Maintenance - Table 15

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

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

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

DCA-85SSJU — GENERATOR WIRING DIAGRAM



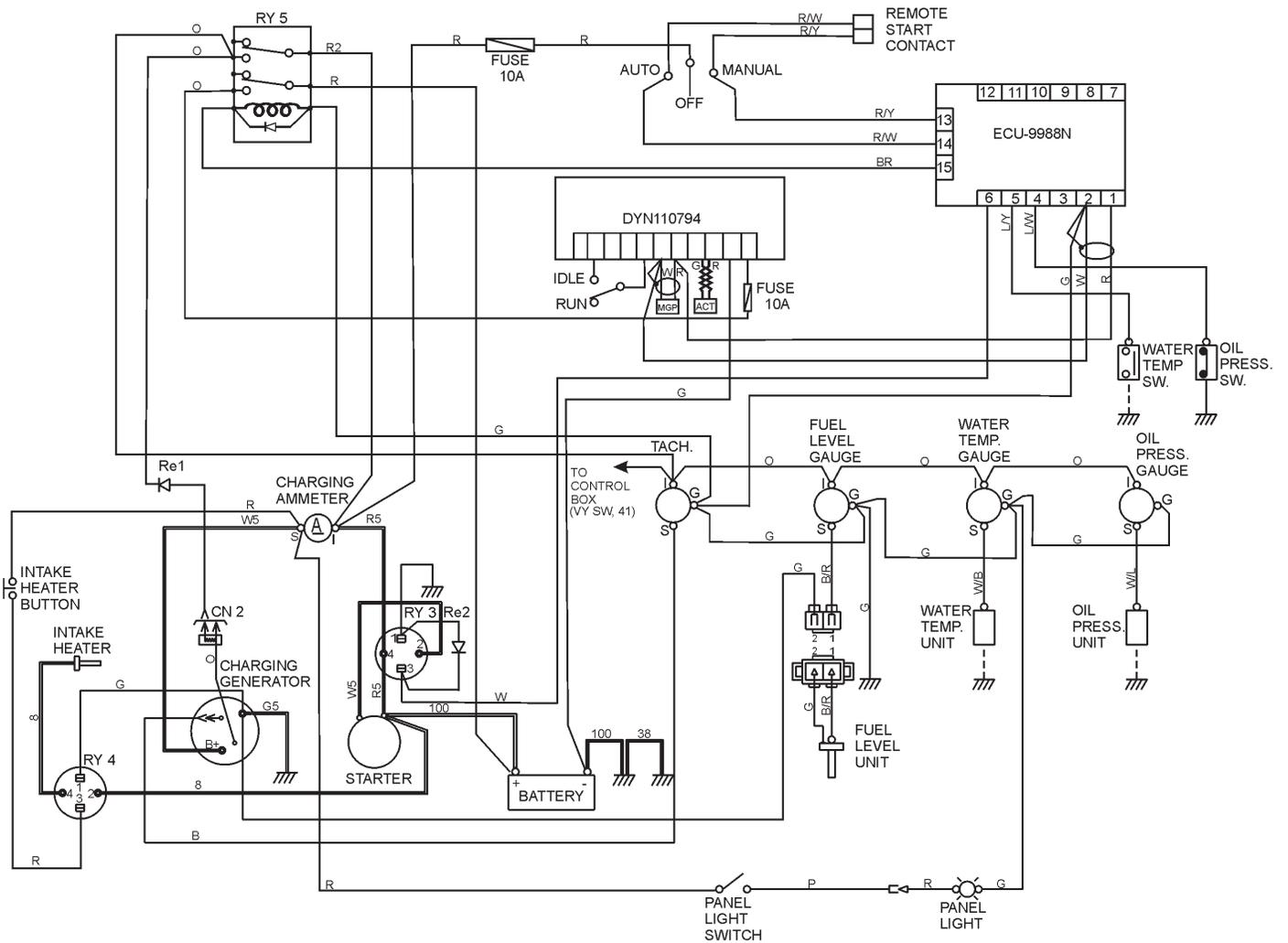
CONNECTER ARRANGEMENT (WIRING VIEW)

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

Notice :
1. No designation lead size : 1.25

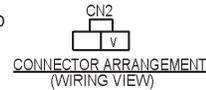
SYMBOL	DESIGNATION
Ar	MAIN GENERATOR ARMATURE WINDING
Fg	MAIN GENERATOR FIELD WINDING
ExAr	EXCITER ARMATURE WINDING
ExFg	EXCITER FIELD WINDING
Re	RECTIFIER
AVR	AUTOMATIC VOLTAGE REGULATOR
VR	VOLTAGE REGULATOR (RHEOSTAT)
CT 1,2,3	CURRENT TRANSFORMER
AS	CHANGE-OVER SWITCH, AMMETER
A	AC AMMETER
VS	CHANGE-OVER SWITCH, VOLTMETER
V	AC VOLTMETER
F	FREQUENCY METER
CB1	CIRCUIT BREAKER
CB2,3,4	CIRCUIT BREAKER
CB5,6	CIRCUIT BREAKER
CON1,2,3	RECEPTACLE
CON4,5	RECEPTACLE
OC	OVER CURRENT RELAY
SW	SELECTOR SWITCH
RY1,2,3	RELAY UNIT

DCA-85SSJU — ENGINE WIRING DIAGRAM



WIRE SIZE	COLOR CODE	
	WIRE COLOR	WIRE COLOR
60: 60 mil		
38: 38 mil	B BLACK	R RED
5: 5 mil	L BLUE	W WHITE
2: 2 mil	BR BROWN	Y YELLOW
No. 1.25 mil	G GREEN	LB LIGHT BLUE
	GR GREY	LG LIGHT GREEN
	V VIOLET	O ORANGE
	P PINK	

○ = SEALED CABLE



DCA-85SSJU — TROUBLESHOOTING (ENGINE)

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

diagnosis based on the Engine Troubleshooting (Table 16). If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 16. 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.	Starter malfunctioning?	Repair or replace.
	Wiring disconnected?	Connect wiring.

TABLE 16. 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-85SSJU — TROUBLESHOOTING (GENERATOR)

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

diagnosis based on the Generator Troubleshooting (Table 17) or Engine Controller Troubleshooting (Table 18). If the problem cannot be remedied, consult our company's business office or service plant.

TABLE 17. GENERATOR TROUBLESHOOTING

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

DCA-85SSJU — TROUBLESHOOTING (ENGINE CONTROLLER)

TABLE 18. ENGINE CONTROLLER TROUBLESHOOTING

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 malfunction in controller?	Refer to dealer.
	Wire shorted?	Inspect/repair wire.
Low coolant level light is on.	Low coolant level?	Fill coolant level.
	Sending unit failure?	Replace sending unit.
	Low battery voltage?	Replace/charge battery.
High coolant temperature light is on.	Fan belt tension incorrect?	Tighten/replace fan belt.
	Air flow is not circulation through radiator?	Clean/repair radiator grill.
	Doors open?	Close doors.
	Exhaust leaking?	Replace/repair gaskets or faulty part.
	Generator being overloaded?	Check/reduce load.
	Thermostat failure?	Replace thermostat.
	Air intake blocked?	Clear all air intakes.
	Temperature switch failure?	Replace temperature switch.
Overcrank light is on.	No or low Fuel?	Fill fuel level.
	Engine 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 (magnetic pick up) light(s) or on.	MPU out of adjustment?	Adjust MPU.
	MPU dirty?	Clean MPU.

EXPLANATION OF CODE IN REMARKS COLUMN

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

Items Found In the “Remarks” Column

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

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

Items Found In the “Items Number” Column

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

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

DCA-85SSJUW/JOHN DEERE DIESEL ENGINE

1 to 5 Units

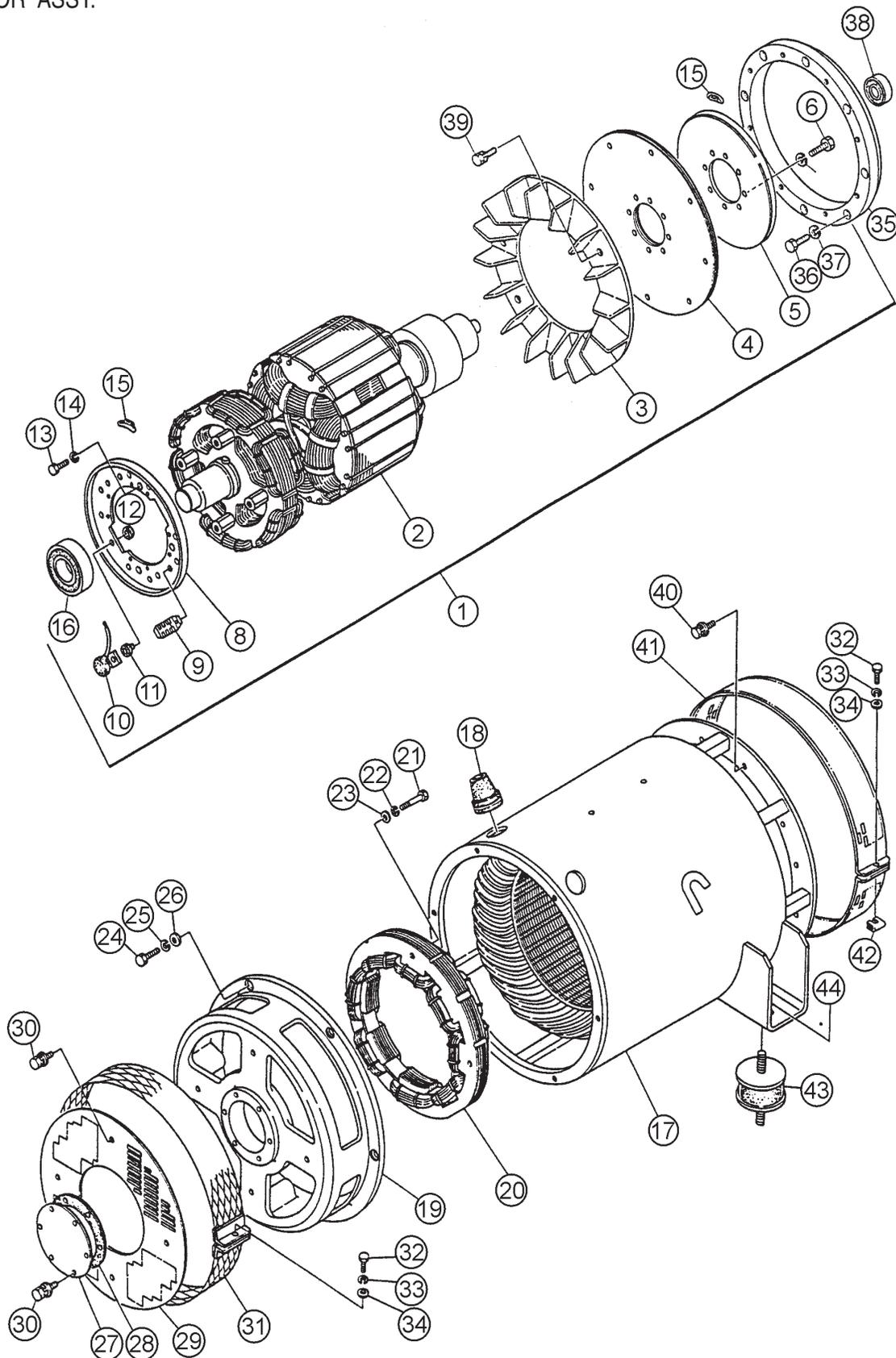
Qty.	P/N	Description
10	6125817032	AIR FILTER
10	6003118293	FUEL FILTER
10	6002111231	OIL FILTER
5	6004111151	CARTRIDGE, CORROSION RESISTOR
1	0601840487	CIRCUIT BREAKER
2	0412121757	ENGINE FAN BELT
1	6008155390	SWITCH, STARTER
5	615	KEY SET, STARTER SWITCH (2)
2	0602122281	OIL SWITCH
1	6152611520	RADIATOR HOSE (UPPER)
1	6152611531	RADIATOR HOSE (LOWER)
1	0802010900	FUEL CAP
1	061820625	AUTOMATIC VOLTAGE REGULATOR
1	0601807373	MAIN CIRCUIT BREAKER
1	0601805840	CIRCUIT BREAKER
1	0601810072	PILOT LAMP
2	0601810261	BULB, PILOT LAMP
1	23S0311150M	CAP, RADIATOR
1	0602122200	UNIT, OIL PRESSURE
1	0602123206	UNIT, WATER TEMPERATURE
1	0602121052	CHARGING AMMETER

NOTE

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

DCA-85SSJU — GENERATOR ASSY.

GENERATOR ASSY.



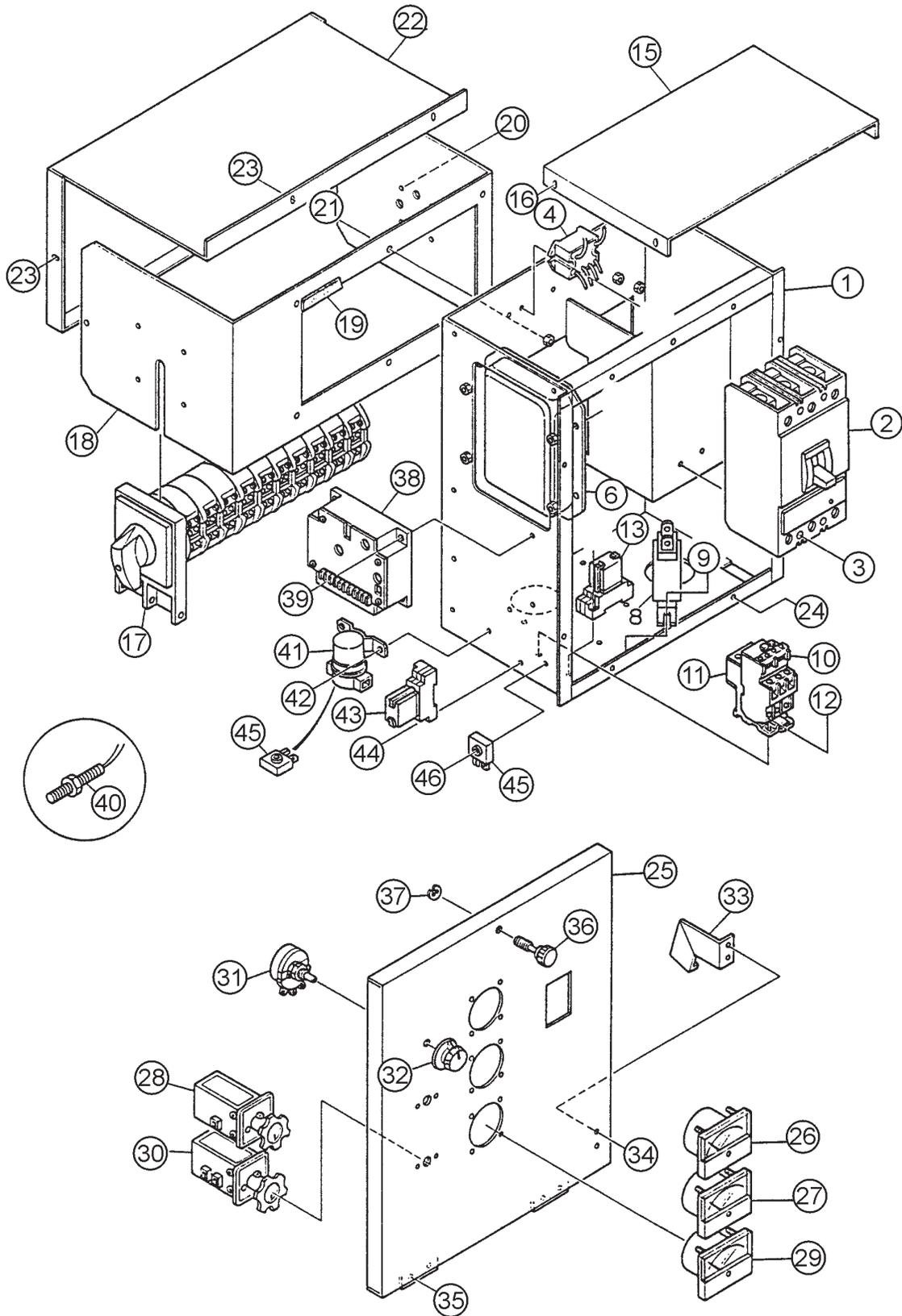
DCA-85SSJU — GENERATOR ASSY.

GENERATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	B6110000102	ROTOR ASS'Y	1	
2		FIELD ASS'Y	1	
3	8101070033	FAN	1	
4	8101611004	COUPLING DISK	5	
5	8101015003	BALANCING PLATE	1	
6	012010030	HEX. HEAD BOLT	8	REPLACES 0012110030
7	0042510000	LOCK WASHER	8	
8	030210250	SET PLATE, RECTIFIER	1	REPLACES 8101026013
9	0601821349	RECTIFIER	2	PT 3610
10	0601822601	SURGE ABSORBER	1	ERZ- M14JK621A
11	8001020004	INSULATOR WASHER	1	
12	8001020504	INSULATOR WASHER	1	
13	0010110020	HEX. HEAD BOLT	4	
14	0040010000	LOCK WASHER	4	
15	0601000209	BALANCING WEIGHT KIT	1	
16	0071906311	BEARING	1	6311 DDU C3
17	B6130000203	STATOR ASS'Y	1	
18	0845041804	GROMMET	2	
19	8101315202	END BRACKET	1	
20	8101350013	FIELD ASS'Y, EXCITER	1	
21	0012110070	HEX. HEAD BOLT	4	
22	0042610000	LOCK WASHER	4	
23	031110160	PLAIN WASHER	4	REPLACES 0041210000
24	0010110035	HEX. HEAD BOLT	6	
25	0040010000	LOCK WASHER	6	
26	031110160	PLAIN WASHER	6	REPLACES 0041210000
27	8101310014	COVER, BEARING	1	
28	8131312014	GASKET, BEARING	1	
29	8101331003	COVER, END BRACKET	1	
30	0105050616	HEX. HEAD BOLT	10	REPLACES 0017106012
31	8101333003	COVER, END BRACKET	1	
32	0010106030	HEX. HEAD BOLT	2	
33	0040006000	LOCK WASHER	2	
34	952404470	PLAIN WASHER	2	REPLACES 0041206000
35	8101614003A	COUPLING RING	1	REPLACES M2163400003
36	0343204170	HEX. HEAD BOLT	8	
37	EM923344	LOCK WASHER	8	REPLACES 0043604000
38	0070506306	BEARING	1	6306ZZ
39	0012810035	HEX. HEAD BOLT	8	
40	0012810030	HEX. HEAD BOLT	12	
41	8111332014	COVER, FAN	1	
42	020106050	NUT	1	REPLACES 0600815000
43	0605000010	RUBBER SUSPENSION	2	
44	0030012000	HEX. NUT	2	
	0040012000	LOCK WASHER	2	
	031112230	PLAIN WASHER	2	REPLACES 0041212000

DCA-85SSJU — CONTROL BOX ASSY.

CONTROL BOX ASSY.



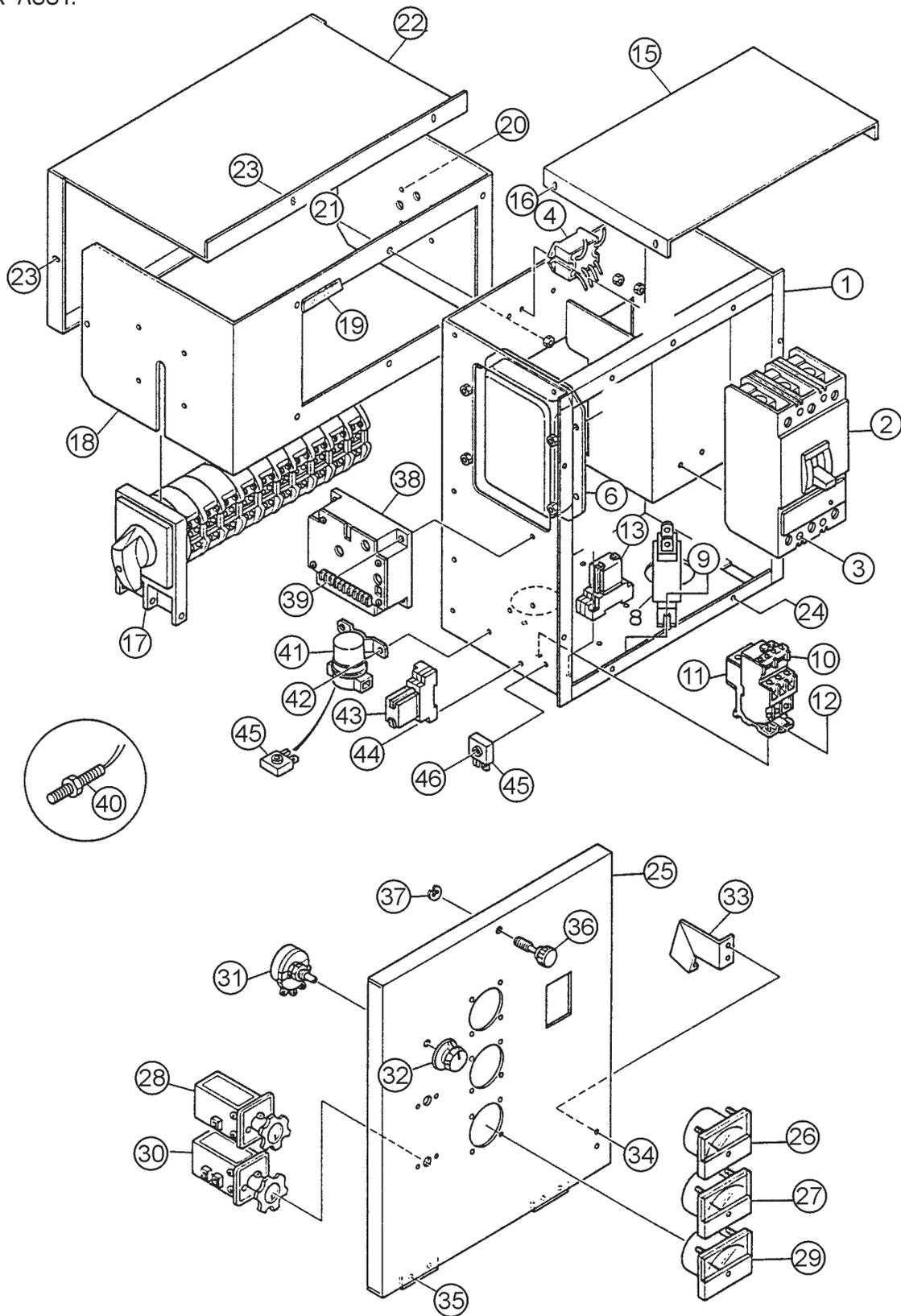
DCA-85SSJU — CONTROL BOX ASSY.

CONTROL BOX ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
	M2248700104	WIRE HARNESS, GENERATOR	1	
1	M2215000002	CONTROL BOX	1	
2	0601808814	CIRCUIT BREAKER.....	1	KAF362501021 3P 250A
3	0021005080	MACHINE SCREW	4	
4	0601823863	RELAY UNIT	2	MSA9013A
5	0021304015	MACHINE SCREW	4	REPLACES 0027104015
6	0601820671	AUTOMATIC VOLTAGE REGULATOR.....	1	NTA5A2DB
7	0027105015	MACHINE SCREW	4	
8	0601806118	CURRENT TRANSFORMER	3	814943 200 /5A
9	011808015	MACHINE SCREW	6	REPLACES 0027106015
10	0601820846	OVER CURRENT RELAY	1	LA7D1064
11	0601820845	OVER CURRENT RELAY	1	LR2D1308
12	0021304015	MACHINE SCREW	2	REPLACES 0027104015
	0030004000	HEX. NUT	2	REPLACES 0207004000
13	LY2US12VD	RELAY	1	REPLACES 0601823768
	PTF08AE	BASE	1	REPLACES 0601823109
	PYCA1	CLIP	2	REPLACES 0601824400
14	0027104020	MACHINE SCREW	2	
15	M2213500103	CONTROL BOX COVER	1	
16	011106015	HEX. HEAD BOLT	4	REPLACES 0016906015
17	M3923100004	SELECTOR SWITCH	1	VY 125
18	M2215600003	SWITCH BRACKET	1	
19	EDGEGES	EDGING	2	REPLACES 0330000295
20	0027103010	MACHINE SCREW	4	
21	011106015	HEX. HEAD BOLT	6	REPLACES 0016906015
22	M2215600104	SWITCH COVER	1	
23	011106015	HEX. HEAD BOLT	4	REPLACES 0016906015
24	011106015	HEX. HEAD BOLT	8	REPLACES 0016906015
	0040506000	TOOTHED WASHER	1	
25	M2223000103	CONTROL PANEL	1	
26	0601807630	FREQUENCY METER	1	UP TO S/N7700090; 264250DJDJ9
	0601807641	FREQUENCY METER	1	S/N7700091~; FCF645~65Hz 240V

DCA-85SSJU — CONTROL BOX ASSY.

CONTROL BOX ASSY.



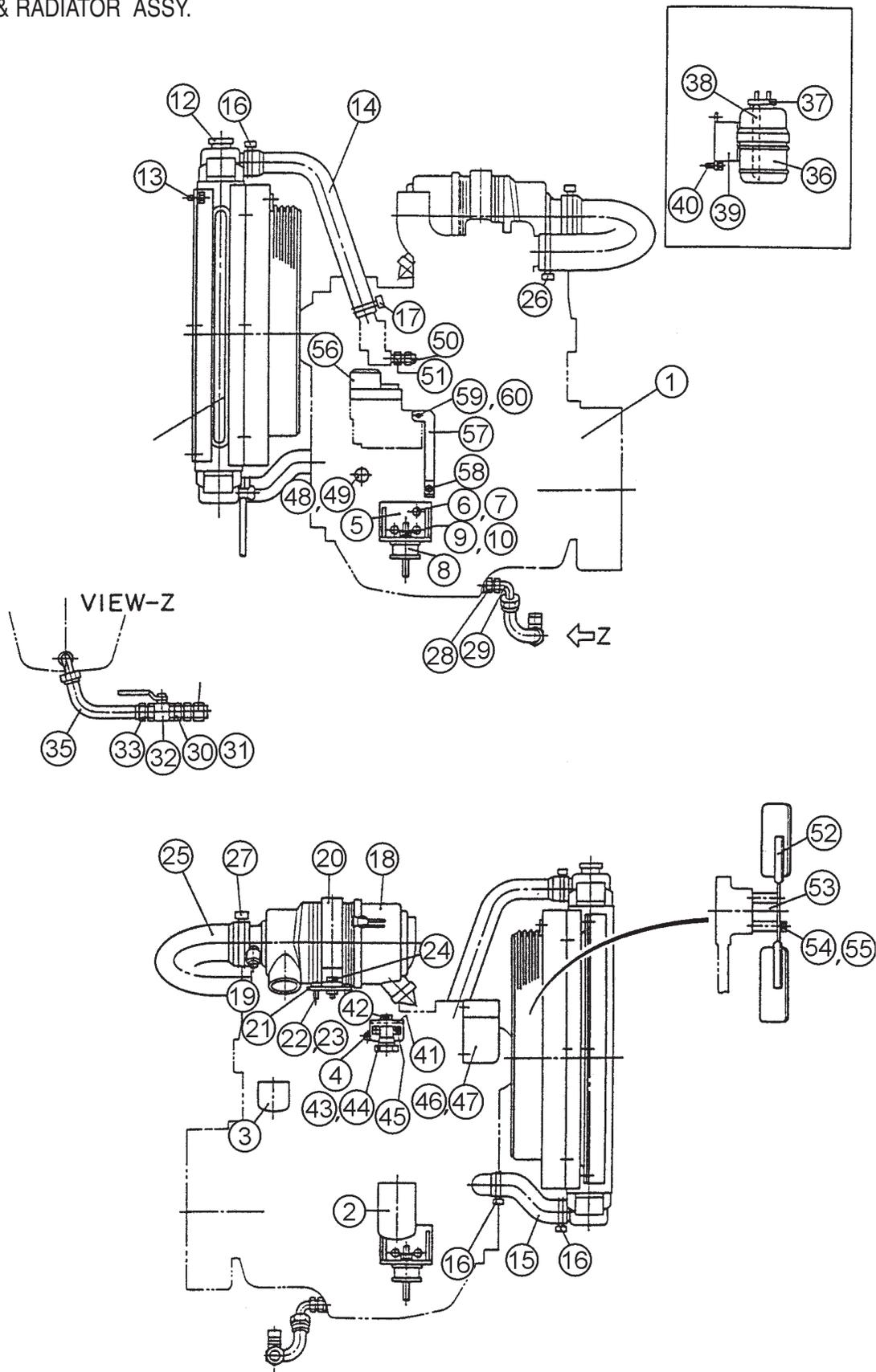
DCA-85SSJU — CONTROL BOX ASSY.

CONTROL BOX ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
27	0601808953	AC AMMETER	1	UP TO S/N7700090; 260240LSLS1JCA
	0601808988	AC AMMETER	1	S/N7700091~; ACF6 0-800A, 0-400A/5A
28	0601801040	CHANGE- OVER SWITCH, AMMETER	1	SL- 2AS
29	0601806813	AC VOLTMETER	1	UP TO S/N7700090;260244SJSJ1
	0601806859	AC VOLTMETER	1	S/N7700091~; SCF6 0-600V
30	0601801041	CHANGE- OVER SWITCH, VOLTMETER ...	1	SL- 2VS
31	0601840073	RHEOSTAT (VOLTAGE REGULATOR)	1	RA20A2SE102BJ 2W 1K OHM
32	0601840121	KNOB	1	
33	M1223100004	STOPPER	1	
34	0027105010	MACHINE SCREW	2	
35	0027105010	MACHINE SCREW	4	
36	M9220100004	SET SCREW	1	
37	0080200007	SNAP RING	1	
38	DYN110794000012	CONTROLLER	1	REPLACES 0602202599
39	0027105015	MACHINE SCREW	4	
40	0602120485	SPEED SENSOR	1	MPS6724
41	0602202592	STARTER RELAY	1	AT141011
42	011808015	MACHINE SCREW	2	REPLACES 0027106015
43	LY2DDC12V	RELAY	1	REPLACES 0601827656
	PTF08AE	BASE	1	REPLACES 0601823109
	PYCA1	CLIP	2	REPLACES 0601824400
44	0027104020	MACHINE SCREW	2	
45	0601821370	RECTIFIER	2	REPLACES 0601823240
46	0027104020	MACHINE SCREW	1	

DCA-85SSJU — ENGINE AND RADIATOR ASSY.

ENGINE & RADIATOR ASSY.



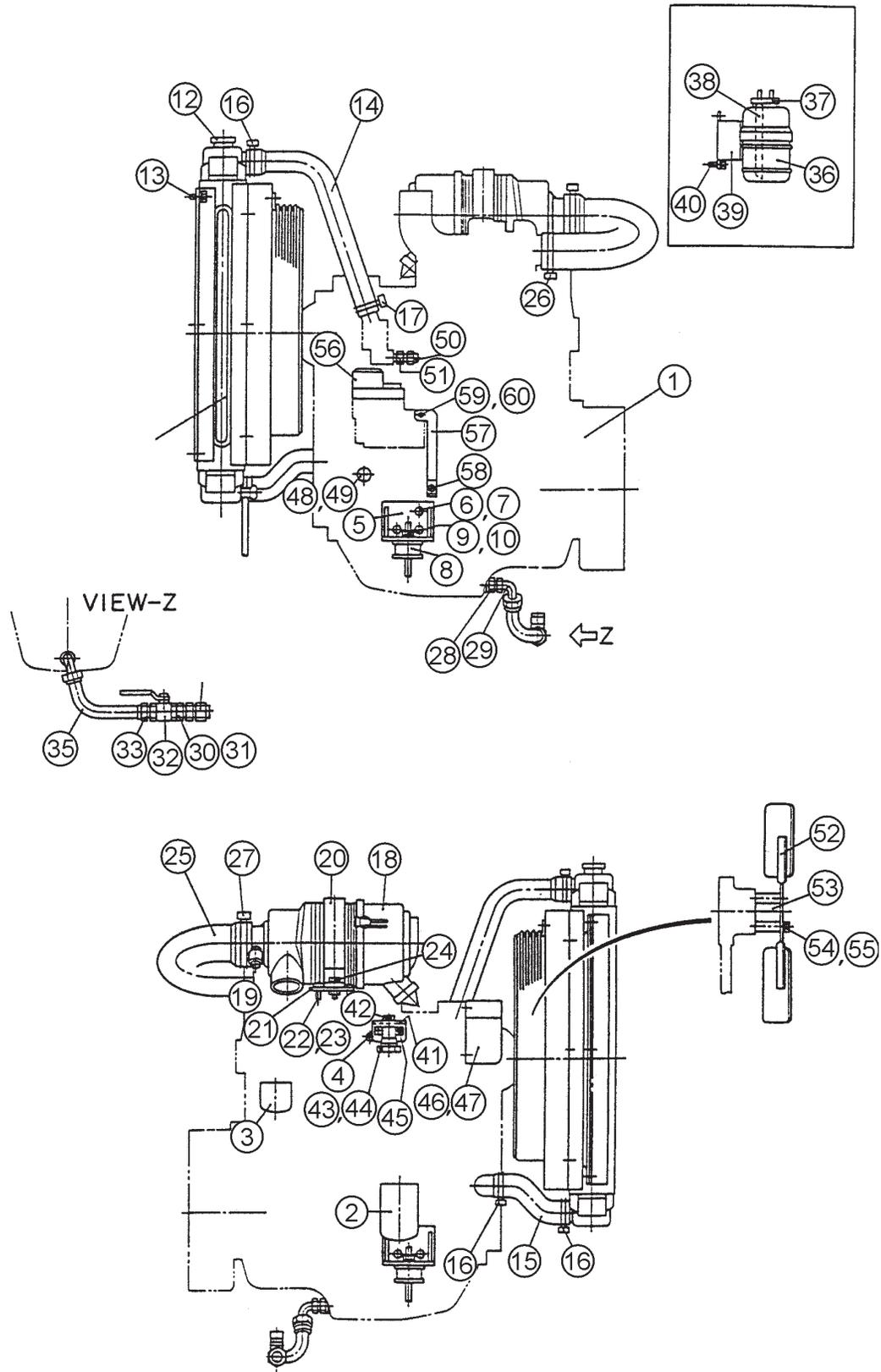
DCA-85SSJU — ENGINE AND RADIATOR ASSY.

ENGINE & RADIATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	M2925200014	ENGINE	1	JOHN DEERE 4045TF250
	0602011490	FAN BELT	1	
2	0602041290	ELEMENT, OIL FILTER	1	RE59754A
3	0602042590	ELEMENT, FUEL FILTER	1	RE62418
4	0602014297	ELECTRIC HEATER	1	RE29658
5	M2303200303	ENGINE FOOT	2	
6	011008020	HEX. HEAD BOLT	6	REPLACES 0010312030
7	0040012000	LOCK WASHER	6	
8	0605000009	RUBBER SUSPENSION	2	
9	0030012000	HEX. NUT	2	
10	0040012000	LOCK WASHER	2	
11	0602012743	RADIATOR	1	C2810030001
12	0602011065	CAP	1	C89C0115010
13	0015908020	HEX. HEAD BOLT	6	
14	M2310500503	RADIATOR HOSE	1	
15	M2310500603	RADIATOR HOSE	1	
16	0605515147	HOSE BAND	3	
17	0605515201	HOSE BAND	1	
18	0602046582	AIR CLEANER	1	FPG082527
	0602046365	ELEMENT, AIR CLEANER	1	P828889
19	0602040651	INDICATOR, AIR CLEANER	1	RBX002352
20	0602040554	BAND, AIR CLEANER	1	
21	M2375200004	BRACKET, AIR CLEANER	1	
22	011008020	HEX. HEAD BOLT	4	REPLACES 0016908020
23	020108060	HEX. NUT	4	REPLACES 0207008000
24	0016908030	HEX. HEAD BOLT	2	
25	M2375100003	HOSE, AIR CLEANER	1	
26	0605515146	HOSE BAND	1	
27	0605515200	HOSE BAND	1	
28	0602022563	ADAPTER	1	
29	0602022561	90 ELBOW	1	
30	0603306590	CONNECTOR	1	
31	0603300285	ROCKNUT	1	
32	0605511395	VALVE	1	
33	0603306395	HOSE JOINT	1	
34	0602021070	CAP	1	10FNTX- S
35	0269200600	DRAIN HOSE	1	
36	M9300000103	RESERVE TANK	1	
37	M9300100003	CAP, RESERVE TANK	1	

DCA-85SSJU — ENGINE AND RADIATOR ASSY.

ENGINE & RADIATOR ASSY.



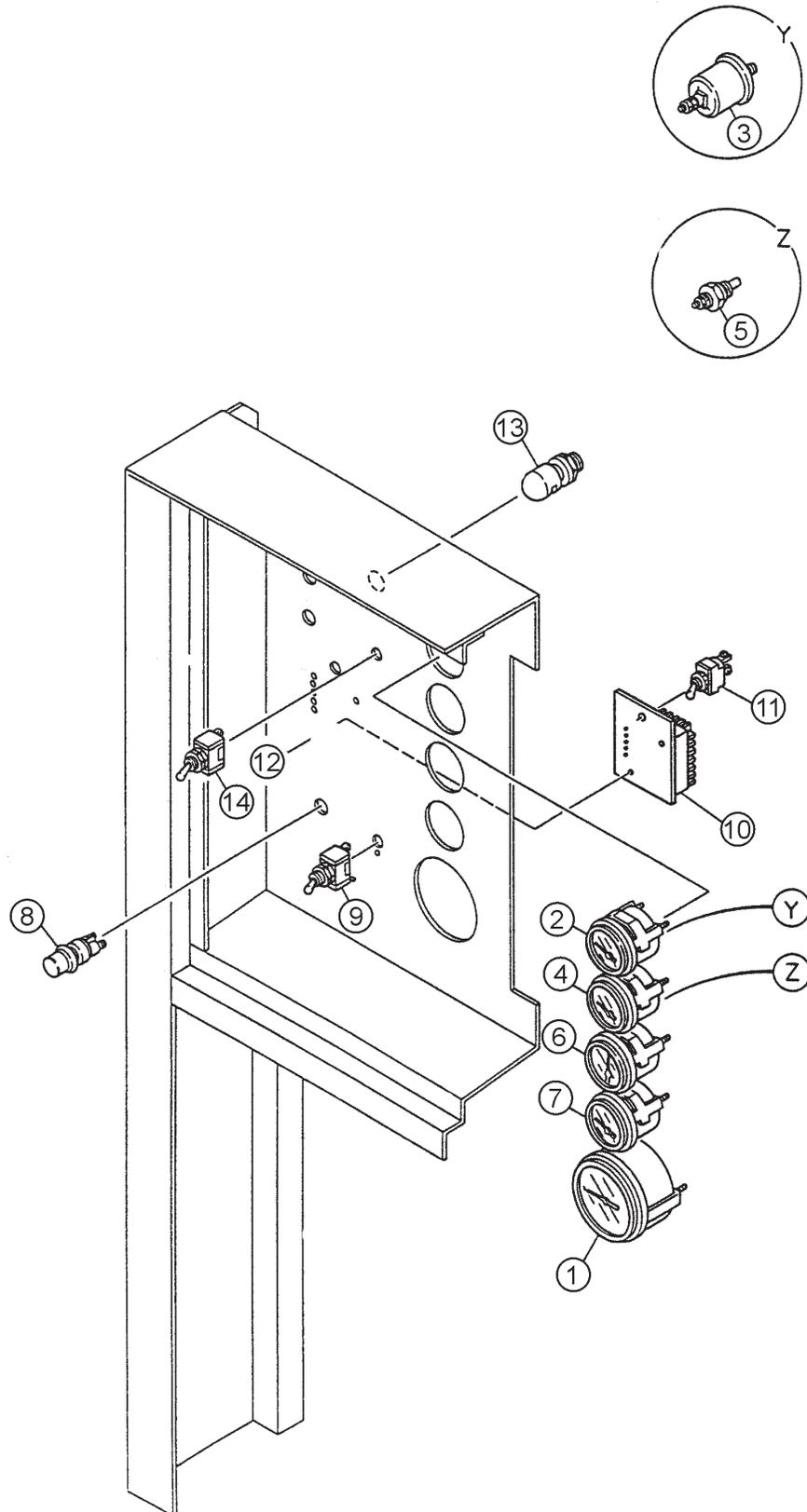
DCA-85SSJU — ENGINE AND RADIATOR ASSY.

ENGINE & RADIATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
38	0199100175	HOSE	1	
39	M2316100114	BRACKET, RESERVE TANK	1	REPLACES M2316100204
40	011008020	HEX. HEAD BOLT	2	REPLACES 0016908020
41	M2260600024	RELAY BRACKET	1	
42	012210020	HEX. HEAD BOLT	1	REPLACES 0017110020
43	0602202592	RELAY	1	AT141011
44	020106050	HEX. NUT	2	REPLACES 0030006000
45	011808015	MACHINE SCREW	2	REPLACES 0027106015
46	M2483400014	ALTERNATOR COVER	1	
47	011206020	HEX. HEAD BOLT	2	REPLACES 0016906020
48	0602122281	OIL SWITCH	1	1718939011
49	M9200100704	ADAPTER	1	
50	0602123282	WATER SWITCH	1	1518183041
51	M9200100404	ADAPTER	1	
52	0602060000	BLOWER FAN	1	REPLACES 0602060011
53	0602061000	FAN SPACER	1	R81911
54	0012110095	HEX. HEAD BOLT	4	
55	030210250	LOCK WASHER	4	REPLACES 0042510000
56	DYNC70025000012	ACTUATOR	1	REPLACES 0602150093
57	M3356200004	STOPPER BRACKET	1	
58	012210020	HEX. HEAD BOLT	1	REPLACES 0017110020
59	011206020	HEX. HEAD BOLT	1	REPLACES 0017106020
60	0207006000	HEX. NUT	1	

DCA-85SSJU — ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.



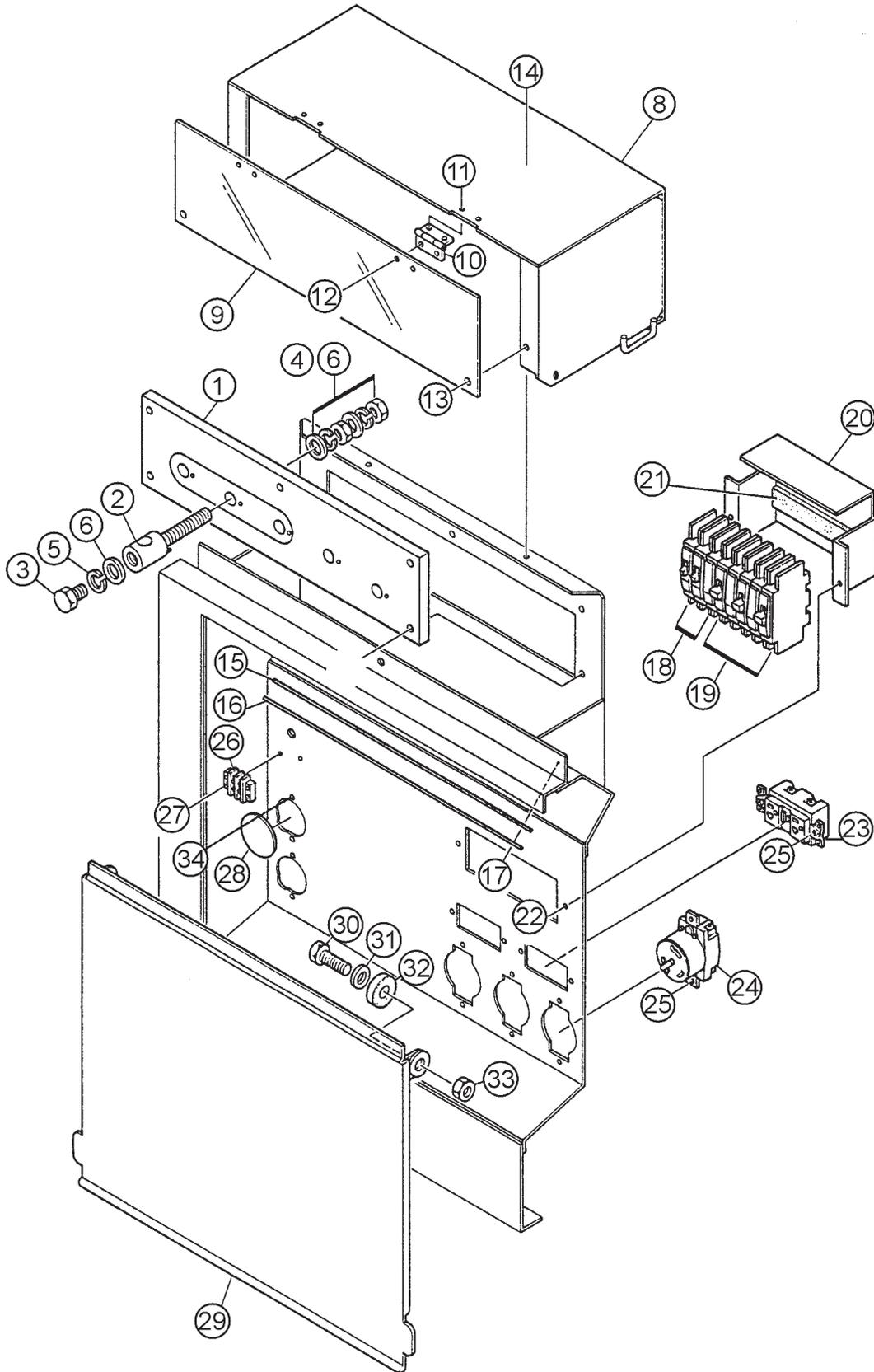
DCA-85SSJU — ENGINE OPERATING PANEL ASSY.

ENGINE OPERATING PANEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
	M2357200062	WIRE HARNESS, ENGINE	1	
1	0602120096	TACHOMETER	1	103678
2	0602122093	OIL PRESSURE GAUGE	1	100174
3	0602122272	UNIT, OIL PRESSURE	1	108497
4	0602123092	WATER TEMPERATURE GAUGE	1	100182
5	0602123261	UNIT, WATER TEMPERATURE	1	0202500
6	0602121080	CHARGING AMMETER	1	100158
7	0602125090	FUEL GAUGE	1	100176
8	0601831585	PREHEAT BUTTON	1	44047
	0601831586	CAP	1	44053
9	0601831395	ENGINE SPEED SWITCH	1	7302K36
10	ECU9988N	ENGINE CONTROLLER	1	REPLACES 0602202545
11	82608	SWITCH	1	REPLACES 0601831340
12	0027104035	MACHINE SCREW	2	
	0030004000	HEX. NUT	2	REPLACES 0207004000
13	0601810141	PANEL LIGHT	1	9826800370
14	0601831330	SWITCH, PANEL LIGHT	1	900001

DCA-85SSJU — OUTPUT TERMINAL ASSY.

OUTPUT TERMINAL ASSY.



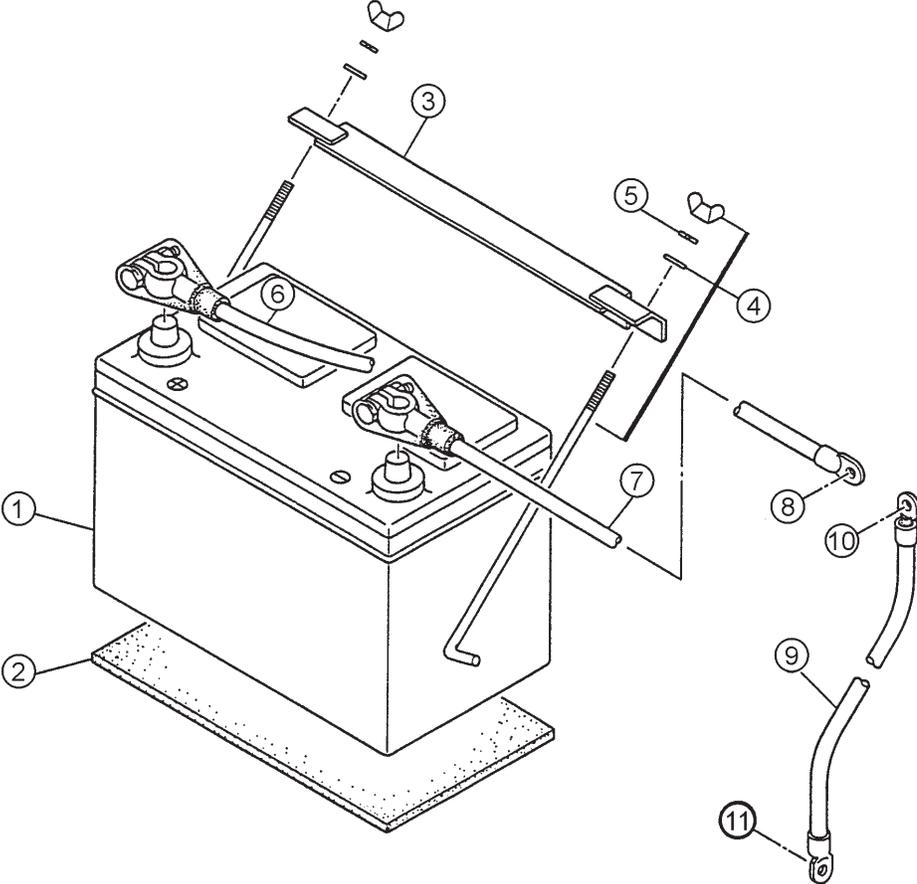
DCA-85SSJU — OUTPUT TERMINAL ASSY.

OUTPUT TERMINAL ASSY.

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	M3230700003	TERMINAL PANEL	1	
2	M9220100304	OUTPUT TERMINAL BOLT	5	
3	0801830804	TIE BOLT	5	REPLACES M9220100404
4	0039316000	HEX. NUT	10	
5	0040016000	LOCK WASHER	15	
6	0041416000	PLAIN WASHER	20	
7	0012108035	HEX. HEAD BOLT	5	REPLACES 0016908035
8	M2238100003	TERMINAL COVER	1	
9	M3236100104	OUTPUT WINDOW	1	
10	0605010040	HINGE	2	TH- TM122
11	0027103010	MACHINE SCREW	4	
	0207003000	HEX. NUT	4	REPLACES 0030003000
	S8413	PLAIN WASHER	4	REPLACES 0041203000
12	0027103010	MACHINE SCREW	4	
	0207003000	HEX. NUT	4	REPLACES 0030003000
13	011106015	HEX. HEAD BOLT	2	REPLACES 0016906015
14	011106015	HEX. HEAD BOLT	4	REPLACES 0016906015
15	M3236400004	CABLE OUTLET COVER	1	
16	M3236300004	SUPPORTER, CABLE OUTLET COVER	1	
17	011106015	HEX, HEAD BOLT	6	REPLACES 0016906015
18	0601808803	CIRCUIT BREAKER	2	QUO 120B 1P 20A
19	0601808804	CIRCUIT BREAKER	3	QOU 250B 2P 50A
20	M1260700304	BREAKER FITTING COVER	1	
21	0222100150	CUSHION RUBBER	1	
22	011106015	HEX. HEAD BOLT	2	REPLACES 0016906015
23	0601812597	RECEPTACLE;GF530EM 125V 20AX2	2	REPLACES 0601812598
24	0601811034	RECEPTACLE;CS6369 250V 50A;	3	REPLACES 0601812538
25	0021304015	MACHINE SCREW	10	REPLACES 0027104015
	0030004000	HEX. NUT	10	REPLACES 0207004000
26	0601815194	TERMINAL BLOCK	1	601- GP- 02
27	0021304015	MACHINE SCREW	2	REPLACES 0027104015

DCA-85SSJU — BATTERY ASSY.

BATTERY ASSY.



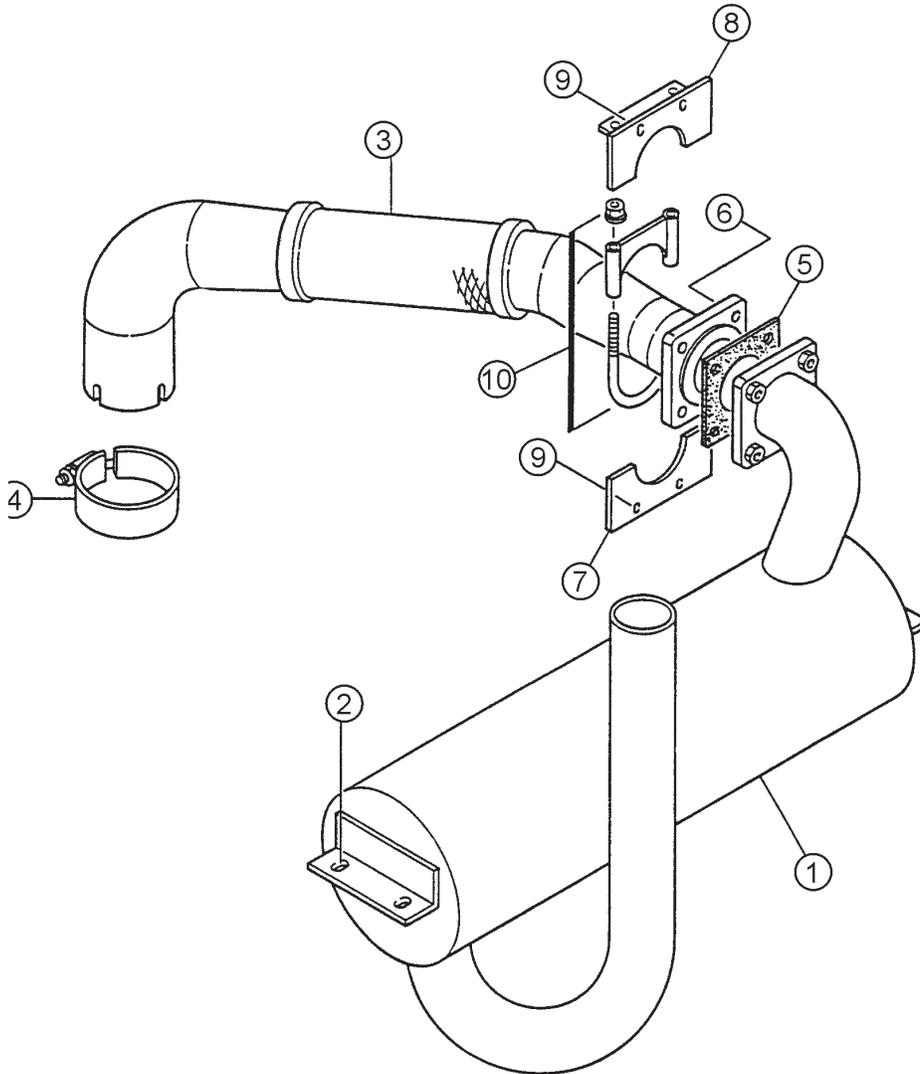
DCA-85SSJU — BATTERY ASSY.

BATTERY ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	551010280	BATTERY	1	REPLACES 0602220187
2	M9310500014	BATTERY SHEET	1	
3	M9103000304	BATTERY BAND	1	
4	06022209020	BATTERY BOLT SET	2	
5	0040006000	LOCK WASHER	2	
6	M1346400204	BATTERY CABLE	1	
7	M2346400104	BATTERY CABLE	1	
8	011008020	HEX. HEAD BOLT	1	REPLACES 0016908020
	0040508000	TOOTHED WASHER	1	
9		CABLE	1	
10	0017112025	HEX. HEAD BOLT	1	
	0040512000	TOOTHED WASHER	1	
11	012210020	HEX. HEAD BOLT	1	REPLACES 0017110020
	0040510000	TOOTHED WASHER	1	

DCA-85SSJU — MUFFLER ASSY.

MUFFLER ASSY.



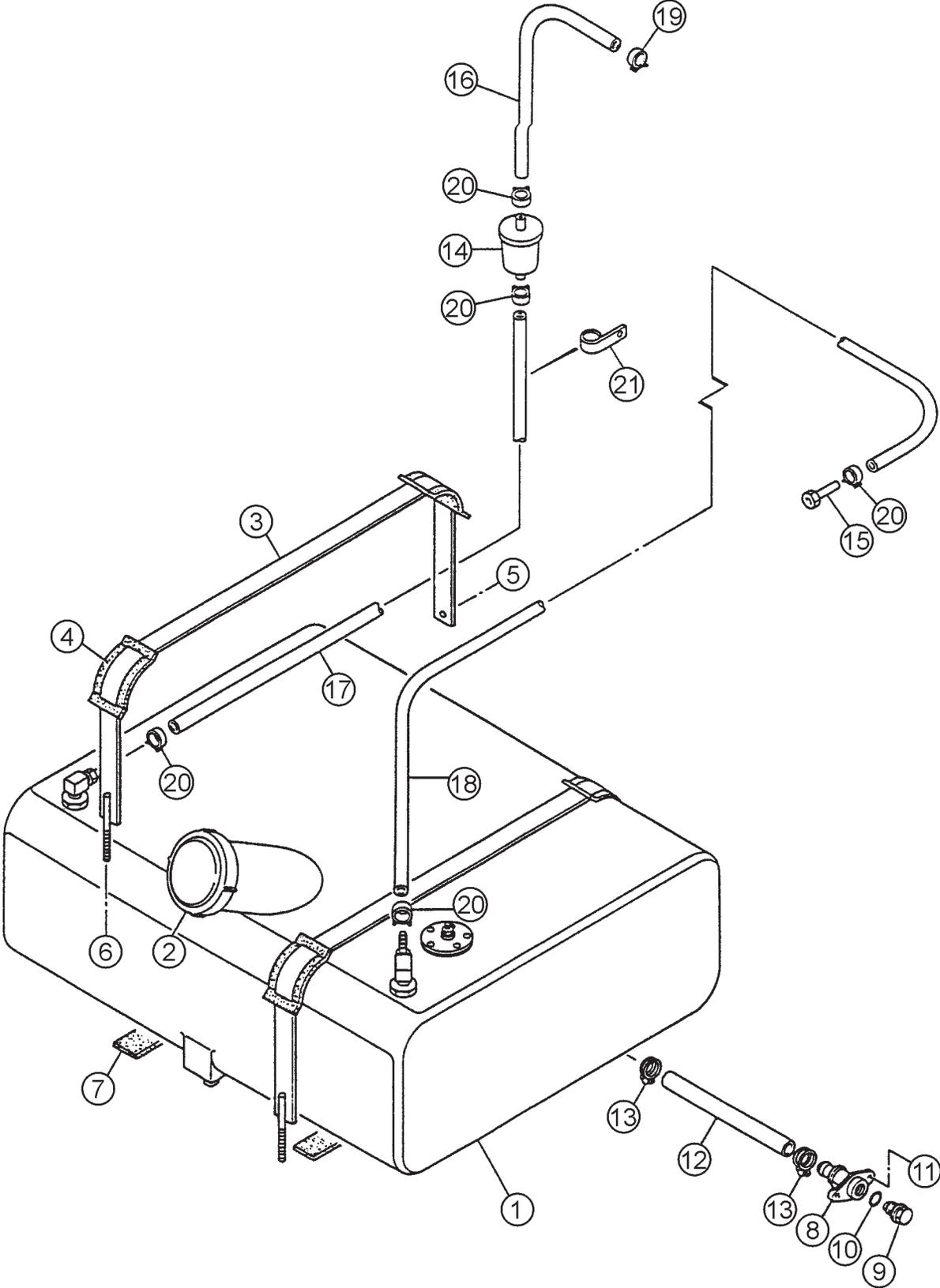
DCA-85SSJU — MUFFLER ASSY.

MUFFLER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0602300166	MUFFLER	1	
2	012210025	HEX. HEAD BOLT	4	REPLACES 0016910025
3	M2335000003	EXHAUST PIPE	1	
4	0602325066	CLAMP	1	MOO1432
5	M2333200004	GASKET	1	REPLACES M2333200014
6	0016908040	HEX. HEAD BOLT	4	
7	M2330400314	COVER	1	
8	M2333399913	BRACKET	1	
9	011106015	HEX. HEAD BOLT	4	REPLACES 0016906015
10	0602326060	U BOLT SET	1	89545K

DCA-85SSJU — FUEL TANK ASSY.

FUEL TANK ASSY.



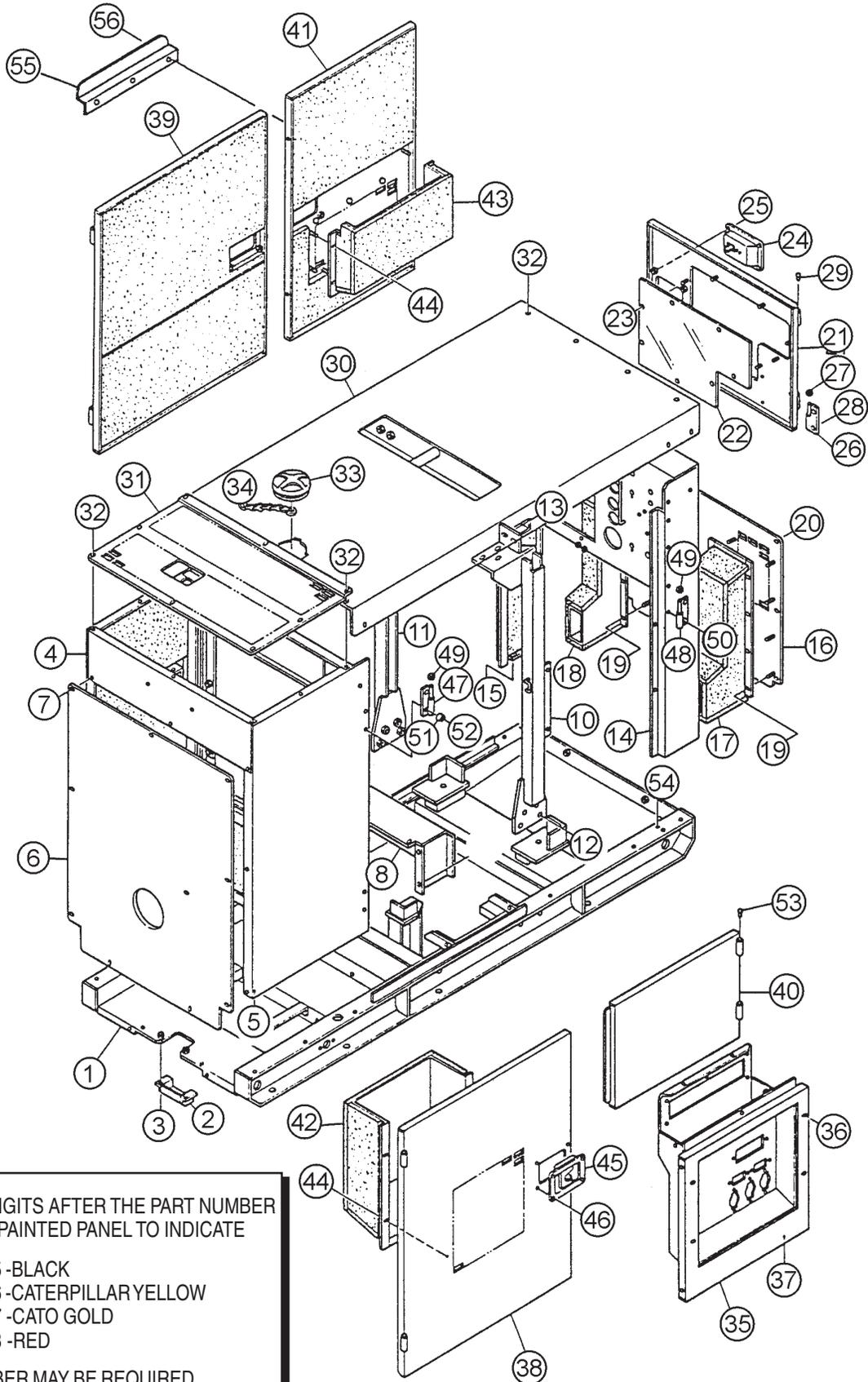
DCA-85SSJU — FUEL TANK ASSY.

FUEL TANK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	M2363000102	FUEL TANK	1	
2	0605505070	CAP, FUEL TANK	1	
3	M3363200104	TANK BAND	2	
4	M9310500104	SUPPORTER SHEET	4	
5	011008020	HEX. HEAD BOLT	2	REPLACES 0016908020
6	0207308000	HEX.NUT	2	
7	0222100178	RUBBER SHEET	4	
8	M9200000003	DRAIN JOINT	1	
9	M9200200004	DRAIN BOLT	1	
10	0150000018	O RING	1	
11	011206020	HEX. HEAD BOLT	2	REPLACES 0016906020
12	M1363400104	DRAIN HOSE	1	
13	0605515198	HOSE BAND	2	
14	0602042420	FUEL FILTER	1	PTG15P
15	0602042601	LEAK- OFF LINE	1	RE67050
16	0191300450	SUCTION HOSE	1	
17	0191301600	SUCTION HOSE	1	
18	0191302000	RETURN HOSE	1	
19	0605515189	HOSE BAND	1	
20	0605515109	HOSE BAND	5	
21	0602220911	CLAMP	1	

DCA-85SSJU — ENCLOSURE ASSY.

ENCLOSURE ASSY.



ADD THE FOLLOWING DIGITS AFTER THE PART NUMBER
WHEN ORDERING ANY PAINTED PANEL TO INDICATE
COLOR OF UNIT:

- | | |
|-----------------|----------------------|
| 1-ORANGE | 5-BLACK |
| 2-WHITE | 6-CATERPILLAR YELLOW |
| 3-SPECTRUM GRAY | 7-CATO GOLD |
| 4-SUNBELT GREEN | 8-RED |

THE SERIAL NUMBER MAY BE REQUIRED.

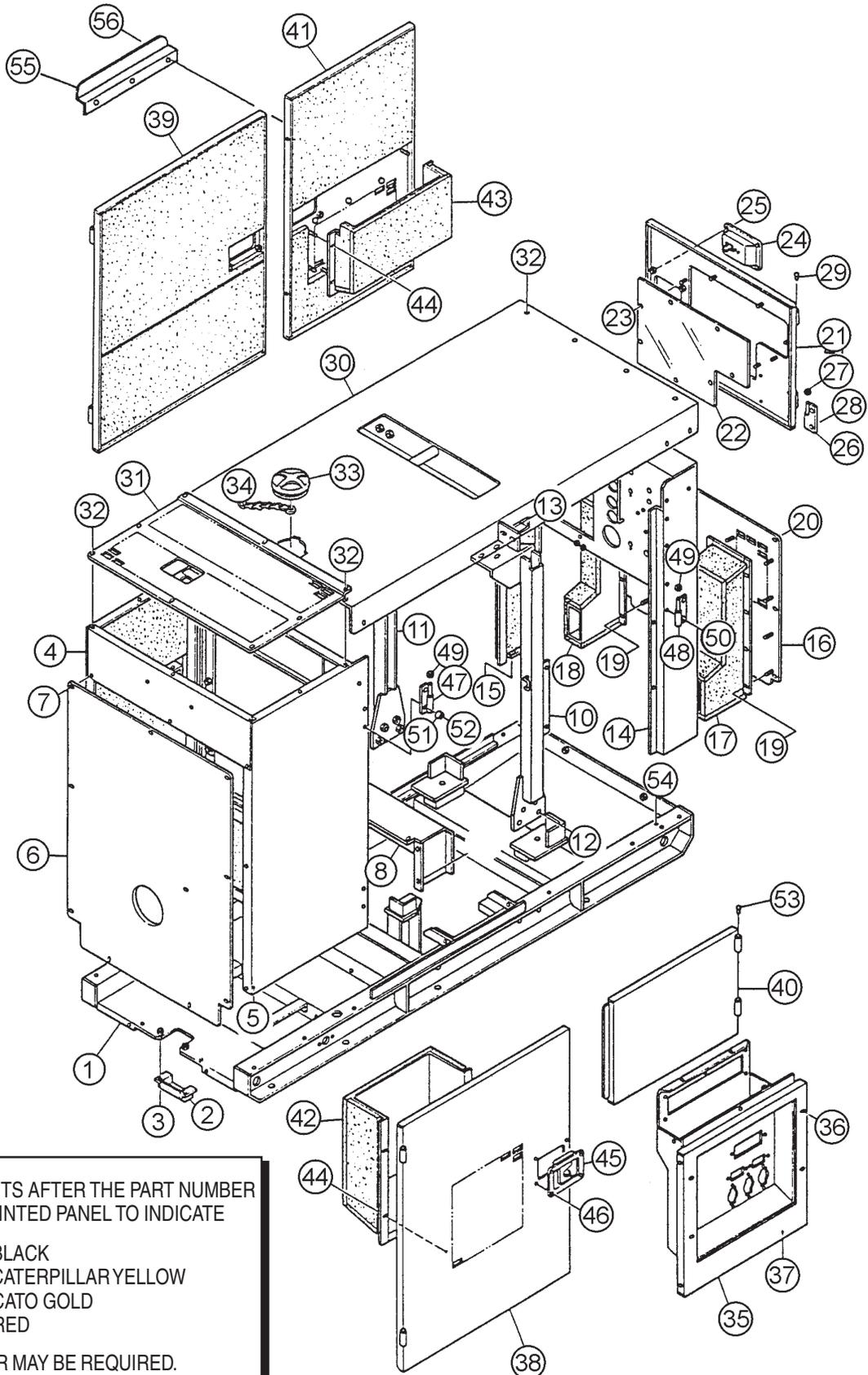
DCA-85SSJU — ENCLOSURE ASSY.

ENCLOSURE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	M2415000203	BASE	1	
2	M1413400004	UNDER COVER	1	
3	011008020	HEX. HEAD BOLT	2	REPLACES 0016908020
4	M2425000003	FRONT FRAME	1	
	M2495100503	ACOUSTIC SHEET	1	
5	011008020	HEX. HEAD BOLT	6	REPLACES 0016908020
6	M2423200214	COVER, FRONT FRAME	1	
	M2495100404	ACOUSTIC SHEET	1	
7	011008020	HEX. HEAD BOLT	11	REPLACES 0016908020
8	M2423200313	INNER COVER, FRONT FRAME	1	
9	011008020	HEX.HEAD BOLT	7	REPLACES 0016908020
10	M2435000203	CENTER FRAME	1	
11	M2433000303	CENTER FRAME	1	
12	0010114030	HEX. HEAD BOLT	8	
	030214350	LOCK WASHER	8	REPLACES 0040014000
	031114260	PLAIN WASHER	8	REPLACES 0041214000
13	012212030	HEX. HEAD BOLT	10	REPLACES 0017112030
14	M2445000103	REAR FRAME	1	
	M2493300904	ACOUSTIC SHEET	1	
15	011008020	HEX. HEAD BOLT	4	REPLACES 0016908020
16	M2445300003	REAR COVER	1	
17	M2445300103	DUCT, REAR COVER	1	
	M2495300504	ACOUSTIC SHEET	1	
18	M2445300203	DUCT, REAR COVER	1	
	M2495300004	ACOUSTIC SHEET	1	
19	0207006000	HEX. NUT	16	
20	011008020	HEX. HEAD BOLT	9	REPLACES 0016908020
21	M2443200123	REAR DOOR	1	
22	M1443600204	WINDOW PLATE	1	
23	020106050	HEX. NUT	8	REPLACES 0207306000
	952404470	PLAIN WASHER	8	REPLACES 0041206000
24	B9114000002	DOOR HANDLE ASS'Y	1	REPLACES M9113000002
25	0027106016	MACHINE SCREW	4	REPLACES 0021806015
	0030006000	HEX. NUT	4	
26	M9110100204	HINGE	2	
27	M9116100004	WASHER	2	
28	011008020	HEX. HEAD BOLT	3	REPLACES 0016908020
29	0845031504	BLIND PLUG	2	REPLACES M9310000004

DCA-85SSJU — ENCLOSURE ASSY.

ENCLOSURE ASSY.



ADD THE FOLLOWING DIGITS AFTER THE PART NUMBER
WHEN ORDERING ANY PAINTED PANEL TO INDICATE
COLOR OF UNIT:

- | | |
|-----------------|---------------------|
| 1-ORANGE | 5-BLACK |
| 2-WHITE | 6-CATERPILLARYELLOW |
| 3-SPECTRUM GRAY | 7-CATO GOLD |
| 4-SUNBELT GREEN | 8-RED |

THE SERIAL NUMBER MAY BE REQUIRED.

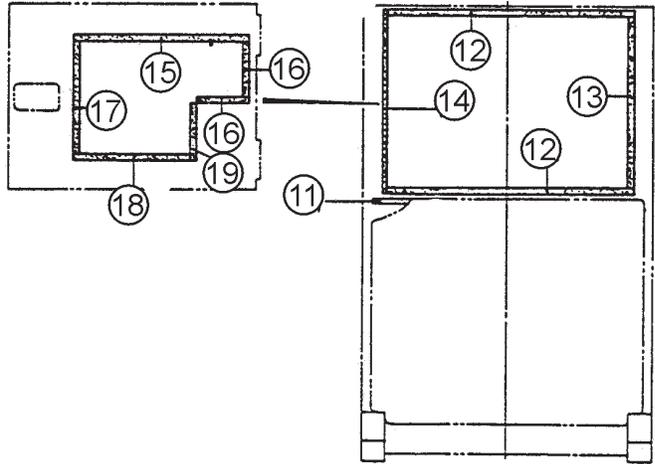
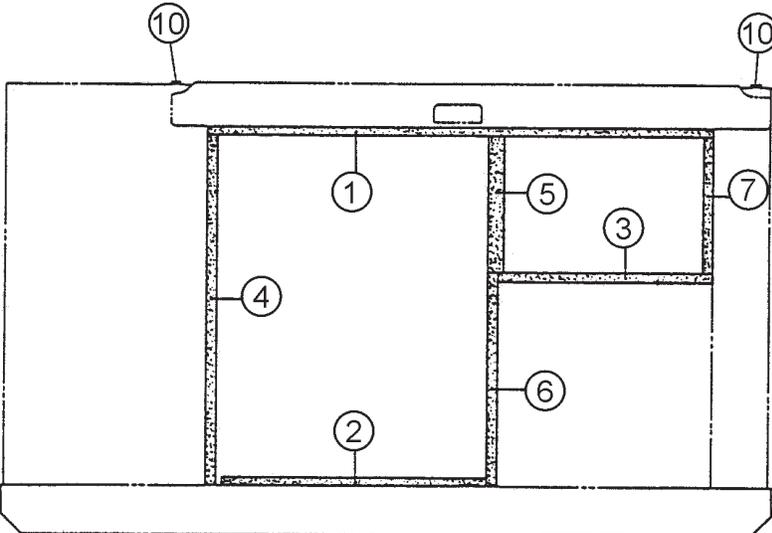
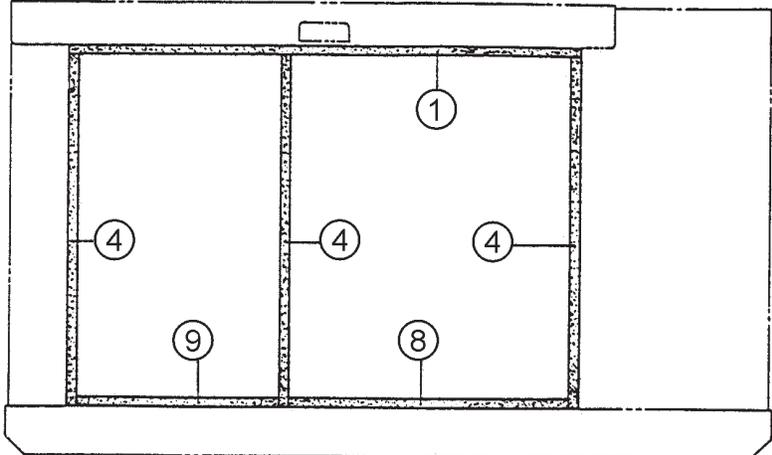
DCA-85SSJU — ENCLOSURE ASSY.

ENCLOSURE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
30	M2463000202	ROOF PANEL	1	
	M2493500123	ACOUSTIC SHEET	1	
31	M2463500114	OVER COVER, FRONT FRAME	1	
32	011008020	HEX. HEAD BOLT	18	REPLACES 0016908020
33	1625165103	BONNET CAP	1	REPLACES M9310000103
34	1625165204	CHAIN ASS'Y	1	REPLACES M1483600204
35	M2455200103	SPLASHER PANEL	1	
	M2493300804	ACOUSTIC SHEET	1	
36	011208060	HEX. HEAD BOLT	4	REPLACES 0016908055
37	011008020	HEX. HEAD BOLT	2	REPLACES 0016908020
38	M2455000003	SIDE DOOR	1	
	M2493400904	ACOUSTIC SHEET	1	
39	M2453000603	SIDE DOOR	1	
	M2493401104	ACOUSTIC SHEET	1	
40	M2455000103	SIDE DOOR	1	
	M2495400304	ACOUSTIC SHEET	1	
41	M2455000203	SIDE DOOR	1	
	M2495400004	ACOUSTIC SHEET	1	
42	M2453300503	DUCT	1	
	M2493401004	ACOUSTIC SHEET	1	
43	M2455300003	DUCT	1	
	M2495400404	ACOUSTIC SHEET	1	
44	020706000	HEX. NUT	13	
45	B9114000002	DOOR HANDLE ASS'Y	3	REPLACES M19113000002
46	0027106016	MACHINE SCREW	12	REPLACES 0021806015
	020106050	HEX. NUT	12	REPLACES 0030006000
47	M9110100204	HINGE	4	
48	M9110100304	HINGE	4	
49	M9116100004	WASHER	8	
50	011008020	HEX. HEAD BOLT	9	REPLACES 0016908020
51	0601850097	DOOR STOPPER	8	
52	0027208025	MACHINE SCREW	8	
53	0845031504	BLIND PLUG	8	REPLACES M9310000004
54	011008020	HEX. HEAD BOLT	1	REPLACES 0016908020
	0040508000	TOOTHED WASHER	1	
55	M2455600004	DOOR BRACKET	1	
56	0016906015	HEX. HEAD BOLT	3	

DCA-85SSJU — RUBBER SEALS ASSY.

RUBBER SEALS ASSY.



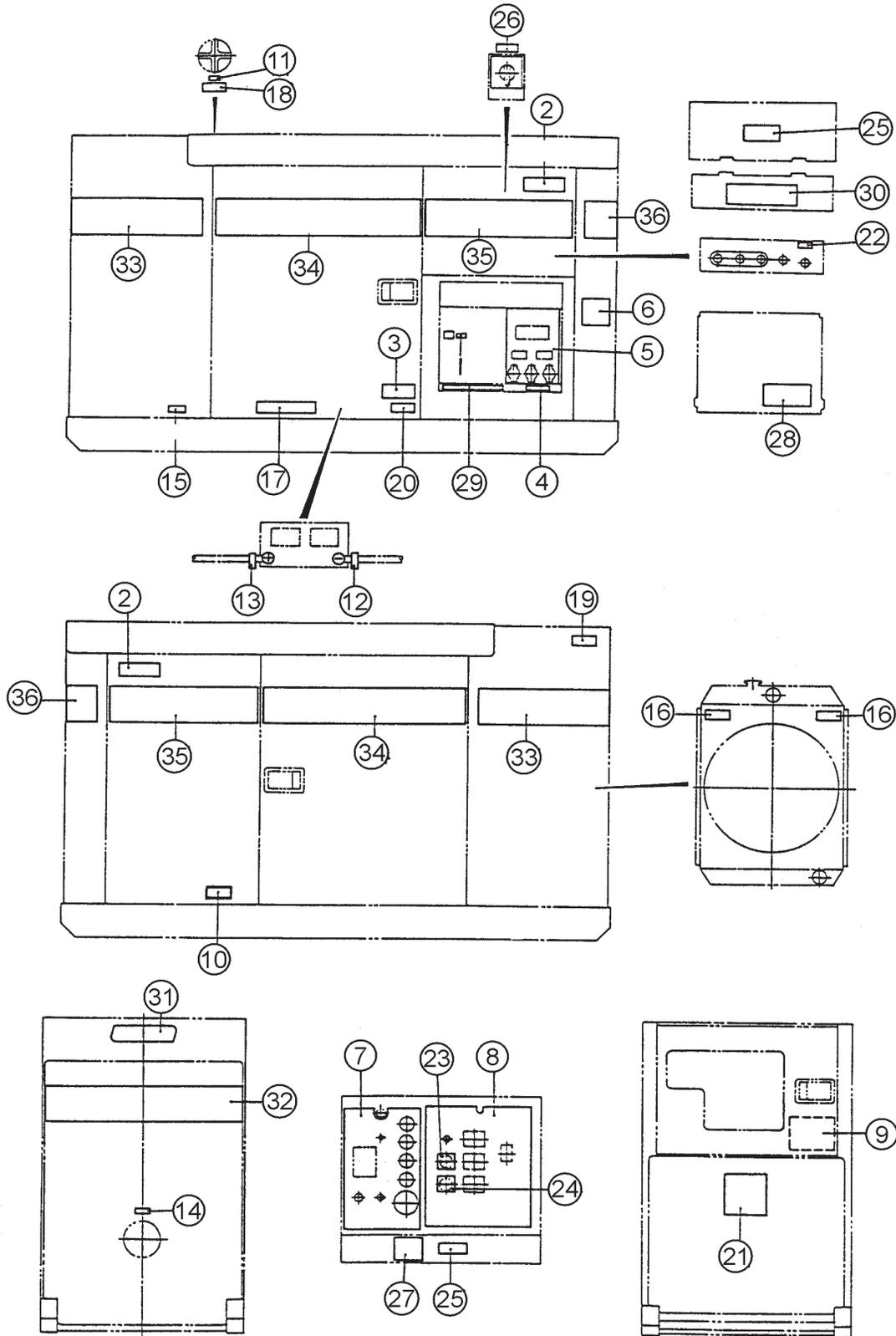
DCA-85SSJU — RUBBER SEALS ASSY.

RUBBER SEALS ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0228901580	SEAL RUBBER	2	
2	0229200825	SEAL RUBBER	1	
3	0228900670	SEAL RUBBER	1	
4	0228901090	SEAL RUBBER	4	
5	M2492300004	SEAL RUBBER	1	
6	0228800665	SEAL RUBBER	1	
7	0228900425	SEAL RUBBER	1	
8	0228900860	SEAL RUBBER	1	
9	0228900630	SEAL RUBBER	1	
10	0229200900	SEAL RUBBER	2	
11	0229200840	SEAL RUBBER	1	
12	0228800770	SEAL RUBBER	2	
13	0228800540	SEAL RUBBER	1	
14	0228800580	SEAL RUBBER	1	
15	0228100550	SEAL RUBBER	1	
16	0228100170	SEAL RUBBER	2	
17	0228100350	SEAL RUBBER	1	
18	0228100360	SEAL RUBBER	1	
19	0228100180	SEAL RUBBER	1	

DCA-85SSJU — NAMEPLATE AND DECAL ASSY.

NAME PLATE ASSY.



DCA-85SSJU — NAMEPLATE AND DECAL ASSY.

NAME PLATE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	9039209064	DECAL; START CONTACT	1	S- 4468
2	C9522100003	DECAL; CAUTION	2	C9221 0000
3	C9595300004	DECAL; CAUTION	1	C9053 0000
4	M1550000204	DECAL; NOTE	1	M1500 0020
5	M1550000703	DECAL; AUXILIARY OUTPUT	1	M1500 0070
6	M2552000104	DECAL; NOTE	1	M2520 0010
7	M2552000203	DECAL; ENGINE OPERATING	1	M2520 0020
8	M2552000303	DECAL; GENERATOR CONTROL	1	M2520 0030
9	M3552000103	DECAL; OPERATING PROCEDURES	1	M3520 0010
10	M9500000004	DECAL; OIL DRAIN PLUG	1	M9000 0000
11	M9500100004	DECAL; WATER	1	M9001 0000
12	M9500300004	DECAL; -	1	M9003 0000
13	M9500300104	DECAL; +	1	M9003 0010
14	M9500500004	DECAL; DIESEL FUEL	1	M9005 0000
15	M9500500104	DECAL; FUEL DRAIN PLUG	1	M9005 0010
16	M9503000004	DECAL; WARNING MOVING PARTS	2	M9030 0000
17	M9503000103	DECAL; WATER - OIL CHECK	1	M9030 0010
18	M9503100004	DECAL; WARNING HOT COOLANT	1	M9031 0000
19	M9503200004	DECAL; WARNING ENGINE EXHAUST	1	M9032 0000
20	M9510100004	DECAL; CAUTION HOT PARTS	1	M9101 0000
21	M9510200002	DECAL; MQ	1	M9102 0000
22	M9520000004	DECAL; GROUND	1	M9200 0000
23	M9520000104	DECAL; AMMETER CHANGE- OVER SWITCH	1	M9200 0010
24	M9520000204	DECAL; VOLTMETER CHANGE- OVER SWITCH	1	M9200 0020
25	M9520100004	DECAL; WARNING ELECTRIC SHOCK HAZARD	2	M9201 0000
26	M9520100204	DECAL; CAUTION	1	M9201 0020A
27	M9520100304	DECAL; SAFETY INSTRUCTIONS	1	M9201 0030
28	M9520100404	DECAL; DANGER HIGH VOLTAGE	1	M9201 0040
29	M9520100503	DECAL; WARNING	1	M9201 0050
30	M9520200003	DECAL; CONNECTION OF OUTPUT CABLE	1	M9292 0000
31	0600500090	EMBLEM	1	
	0021106015	MACHINE SCREW	2	
32	M2560100003	STRIPE; WHISPERWATT	1	
33	M2560100103	STRIPE; MQ POWER	2	
34	M2560100203	STRIPE	2	
35	M2560100403	STRIPE	2	
36	M2562100004	STRIPE; 85	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 listed in the parts price book as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for 5 working days from notification, pending instructions. If a reply is not received within 5 days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

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

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

SPECIAL EXPEDITING SERVICE

A \$20.00 to \$50.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable here under for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. A part from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

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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