PARTS AND OPERATION MANUAL

OPERATION AND PARTS MANUAL

MQ
POWER

BRAND SERIES

MODEL DCA-45SSIU2

WHISPERWATT™

GENERATOR

(STANDARD)

PARTS LIST NO. M1870300034A
Revision #7 (06/13/07)

To find the latest revision of this publication, visit our website at:
www.multiquip.com

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.
TABLE OF CONTENTS

MQ POWER DCA-45SSIU2 AC GENERATOR

Here’s How To Get Help ........................................ 3
Table Of Contents .............................................. 4
Parts Ordering Procedures .................................. 5
DCA-45SSIU2 Specifications .................................. 6
Dimensions .......................................................... 7-8
Safety Message Alert Symbols .......................... 10-11
Rules for Safe Operation .................................... 12-15
Installation ......................................................... 16-17
Towing Safety Precautions ................................. 18
Trailer Specifications ......................................... 19-21
 Generator Decals .............................................. 22-23
General Information ........................................... 24
Major Components ............................................. 25
Generator Control Panel ..................................... 26
Engine Operating Panel ....................................... 27
Output Terminal Panel Familiarization ................. 28-30
Load Application ............................................... 31
Generator Outputs ............................................ 32-33
Gauge Reading .................................................. 33
Output Terminal Panel Connections .................... 34-35
Pre-setup ......................................................... 36-40
Generator Start-up Procedure ............................ 41-43
Generator Shut-down Procedure ......................... 44
Maintenance ..................................................... 45-47
Trailer Brakes Maintenance ............................... 48
Trailer Maintenance .......................................... 49-50
Trailer Wiring Diagram ..................................... 51
Engine Wiring Diagram ...................................... 52-53
Generator Wiring Diagram .................................. 54
Engine Troubleshooting ..................................... 55-56
Generator Troubleshooting ................................. 57
Explanation of Codes in Remarks Column .............. 58
Suggested Spare Parts ........................................ 59

COMPONENT DRAWINGS

Generator Assembly .......................................... 60-61
Control Box Assembly ...................................... 62-65
Engine & Radiator Assembly ............................. 66-67
Engine Operating Panel Assembly ..................... 68-69
Output Terminal Assembly ................................. 70-71
Battery Assembly .............................................. 72-73
Muffler Assembly ............................................. 74-75
Fuel Tank Assembly .......................................... 76-77
Enclosure Assembly ......................................... 78-81
Rubber Seal Assembly ..................................... 82-83
Name Plate And Decals ..................................... 84-85

ISUZU 4BG1 ENGINE

Cylinder Head Cover Assembly .......................... 86-87
Cylinder Head Assembly .................................... 88-89
Cylinder Block Assembly .................................. 90-91
Oil Pan and Level Gauge Assembly .................... 92-93
Camshaft and Valve Assembly ......................... 94-95
Crankshaft, Piston and Flywheel Assembly ......... 96-97
Timing Gear and Flywheel Housing Assembly ...... 98-99
Engine Mounting Assembly .............................. 100-101
Inlet Manifold Assembly ................................ 102-103
Exhaust Manifold Assembly ............................ 104-105
Ventilation Assembly ...................................... 106-107
Water Pump and Corrosion Resistor Assembly ...... 108-109
Thermostat and Housing Assembly .................... 110-111
Engine Water Piping Assembly ......................... 112-113
Fan and Fan Belt Assembly ............................... 114-115
Fuel Injection Assembly .................................... 116-117
Fuel Filter and Bracket Assembly ..................... 118-119
Fuel Pump and Piping Assembly ........................ 120-121
Oil Cooler and Oil Filter Assembly .................... 122-123
Oil Pump and Oil Strainer Assembly .................. 124-125
Oil and Vacuum Piping Assembly ...................... 126-127
Electrical Control Assembly ............................ 128-129
Battery Relay Assembly .................................... 130-131
Starter Component Assembly ........................... 132-133
Inj. Pump Component Assembly ....................... 134-137
Governor Component Assembly ......................... 138-141
Feed Pump Assembly ...................................... 142-143
Misc. Inj. Pump Assembly ................................ 144-145
Coupling Assembly ......................................... 146-147
Accelerator Pedal Assembly .............................. 148-149
Air Duct Assembly ........................................... 150-151
Fuel Sedimenter Assembly ............................... 152-153
Clutch Assembly .............................................. 154-155
Switch and Relay Assembly .............................. 156-157

Terms and Condition of Sale — Parts ............... 158

NOTE: Specification and part number are subject to change without notice.
PARTS ORDERING PROCEDURES

When ordering parts, please supply the following information:

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

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

Here’s how to get help...

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

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

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

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

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

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

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

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

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

<table>
<thead>
<tr>
<th>Ordered via</th>
<th>Standard orders</th>
<th>Stock orders ($750 list and above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax</td>
<td>3%</td>
<td>10%</td>
</tr>
<tr>
<td>Web</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

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

FedEx Ground Service at no charge for freight
No other allowances on freight shipped by any other carrier.

NOTE: DISCOUNTS ARE SUBJECT TO CHANGE

Direct TOLL-FREE access to our Parts Department:
Toll-free nationwide — 800-427-1244
## Table 1. Generator Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>DCA-45SSIU2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Revolving field, self ventilated, open protected type synchronous generator</td>
</tr>
<tr>
<td><strong>Armature Connection</strong></td>
<td>Star with Neutral</td>
</tr>
<tr>
<td><strong>Phase</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Standby Output</strong></td>
<td>47.7 KVA (38.2 KW)</td>
</tr>
<tr>
<td><strong>Prime Output</strong></td>
<td>45 KVA (36 KW)</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>240V or 480V</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>60 Hz</td>
</tr>
<tr>
<td><strong>Speed</strong></td>
<td>1,800 rpm</td>
</tr>
<tr>
<td><strong>Power Factor</strong></td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Aux. AC Power</strong></td>
<td>Single Phase, 60 Hz</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>120 VAC</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>4.8 KW (2.4 KW x 2)</td>
</tr>
</tbody>
</table>

## Engine Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>ISUZU B-4BG1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>4 Cycle, water-cooled, direct injection</td>
</tr>
<tr>
<td><strong>No. of Cylinders</strong></td>
<td>4 cylinders</td>
</tr>
<tr>
<td><strong>Bore x Stroke</strong></td>
<td>4.13 in. x 4.92 in. (105 mm x 125 mm)</td>
</tr>
<tr>
<td><strong>Rated Output</strong></td>
<td>55.2 HP/1,800 rpm</td>
</tr>
<tr>
<td><strong>Displacement</strong></td>
<td>268 cu. in. (4,392 cc)</td>
</tr>
<tr>
<td><strong>Starting</strong></td>
<td>Electric</td>
</tr>
<tr>
<td><strong>Coolant Capacity</strong></td>
<td>5.3 gal. (20 liters)</td>
</tr>
<tr>
<td><strong>Lube Oil Capacity</strong></td>
<td>3.4 gal. (12.9 liters)</td>
</tr>
<tr>
<td><strong>Fuel Consumption</strong></td>
<td>2.7 gal. (10.3L)/hr at full load</td>
</tr>
<tr>
<td></td>
<td>1.5 gal. (5.7L)/hr at 1/2 load</td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td>12V- 100AH</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>#2 Diesel Fuel</td>
</tr>
</tbody>
</table>
Figure 1. Dimensions
Figure 2. Dimensions

1250 mm / 49.21 in.

770 mm / 30.31 in.

610 mm / 24.02

763 mm / 30.04 in.
FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

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

This Owner’s Manual has been developed to provide complete instructions for the safe and efficient operation of the MQ Power Model DCA45SSIU2 WHISPERWATT™ GENERATOR.

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

SAFETY MESSAGE ALERT SYMBOLS

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

DANGER: You WILL be KILLED or SERIOUSLY injured if you DO NOT follow directions.

WARNING: You CAN be KILLED or SERIOUSLY injured if you DO NOT follow directions.

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

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

HAZARD SYMBOLS

Lethal Exhaust Gases

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

Explosive Fuel

Diesel fuel is extremely flammable, and its vapors can cause an explosion if ignited. DO NOT start the engine near spilled fuel or combustible fluids. DO NOT fill the fuel tank while the engine is running or hot. DO NOT overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames. NEVER use fuel as a cleaning agent.

Burn Hazards

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

Rotating Parts

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

ALWAYS place the engine ON/OFF switch in the OFF position, when the trowel is not in use.

Respiratory Hazard

ALWAYS wear approved respiratory protection.

Over Speed Conditions

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

Sight and Hearing hazard

ALWAYS wear approved eye and hearing protection.

Equipment Damage Messages

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

NOTE

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

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

The following safety guidelines should always be used when operating the **DCA-45SSIU2 Generator**:

**GENERAL SAFETY**

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

- This equipment should not be operated by persons under 18 years of age.
- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.

- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.
- **NEVER** operate this equipment under the influence or drugs or alcohol.

- **NEVER** use accessories or attachments, which are not recommended by MQ Power for this equipment. Damage to the equipment and/or injury to user may result.
- Manufacture does not assume responsibility for any accident due to equipment modifications.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- **ALWAYS** check the machine for loosened threads or bolts before starting.
- **NEVER** operate the generator in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death**.

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

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

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

- **ALWAYS** make sure generator is properly grounded.
- **NEVER** use gas piping as an electrical ground.
- **DO NOT** place hands or fingers inside generator engine compartment when engine is running.
- **ALWAYS** make sure generator installation is accordance with **national and local electrical codes**.
- **ALWAYS** have a qualified electrician perform the generator wiring installation.
- **NEVER** power cables or cords **lay in water**.
- **NEVER** **stand in water** while AC power from the generator is being transfer to a load.
- **NEVER** use a defective or frayed power cable. Check the cable for cuts in the insulation.
- **NEVER** use a extension cord that is frayed or damaged where the insulation has been cut.
- **ALWAYS** make certain that proper extension cord has been selected for the job See Table 5.

- The electrical voltage required to operate the generator can cause severe injury or even death through physical contact with live circuits. Turn all circuit breakers **OFF** before performing maintenance on the generator.
Always make sure that electrical circuits are properly grounded per the National Electrical Code (NEC) and local codes before operating generator. Severe injury or death by electrocution can result from operating an ungrounded generator.

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

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

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

Danger:

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

Danger:

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

Danger:

Never touch output terminals during operation. This is extremely dangerous. Always stop the machine and place the circuit breaker in the “OFF” position when contact with the output terminals is required. There exists the possibility of electrocution, electrical shock or burn, which can cause severe bodily harm or even death!

Danger:

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

Caution:

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

Radiation

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

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

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

Maintenance Safety

Never lubricate components or attempt service on a running machine.

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

Keep the machinery in proper running condition.

Fix damage to the machine immediately and always replace broken parts.
**DCA-45SSIU2 — RULES FOR SAFE OPERATION**

- **NEVER** Run engine without air filter. Severe engine damage may occur.
- **ALWAYS** Service air cleaner frequently to prevent engine malfunction.
- **ALWAYS** Disconnect the negative battery terminal before performing service on the generator.
- **ALWAYS** Be sure the operator is familiar with proper safety precautions when operating the generator set.
- **ALWAYS** Store equipment properly when not in use.
- **DO NOT** Leave the generator running in the manual mode unattended.
- **DO NOT** Allow unauthorized people to operate this equipment.
- **ALWAYS** Read, understand, and follow procedures in Operator’s Manual before attempting to operate equipment.
- **Refer to the Isuzu Engine Owner’s Manual** for engine technical questions or information.

**Battery**

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

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

**DANGERS:**

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

**Generator Grounding**

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

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

**Transporting**

- **ALWAYS** shutdown engine before transporting.
- Tighten both fuel tank caps securely.
- If generator is mounted on a trailer, make sure trailer complies with all local and state safety transportation laws. See next page “Towing Safety Precautions” for basic towing techniques.
Towing Safety Precautions

**CAUTION:**

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

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

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

- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR) of 6,000 lbs.
- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow a trailer with defective hitches, couplings, chains etc.
- Check the tire air pressure on both towing vehicle and trailer. *Trailer tires should be inflated to 50 psi cold.* Also check the tire tread wear on both vehicles.
- **ALWAYS** make sure the trailer is equipped with a "Safety Chain".
- **ALWAYS** attach trailer's safety chains to towing vehicle properly.
- **ALWAYS** make sure the vehicle and trailer directional, backup, brake, and trailer lights are connected and working properly.
- The maximum speed for highway towing is **45 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **10 MPH** or less depending on type of terrain.
- Place *chock blocks* underneath wheel to prevent rolling, while parked.
- Use the trailer’s swivel jack to adjust the trailer height to a level position while parked.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve towing.

#### Emergencies

- **ALWAYS** know the location of the nearest **fire extinguisher**.
- **ALWAYS** know the location of the nearest and **first aid kit**.
- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site**. Also know the phone numbers of the nearest **ambulance, doctor** and **fire department**. This information will be invaluable in the case of an emergency.
Figure 3.  Typical Generator Grounding Application
Outdoor Installation

Install the generator in a clear area. Make sure the generator is on secure level ground so that it cannot slide or shift around. Also install the generator in a manner so that the exhaust will not be discharged in the direction of nearby homes.

The installation site must be relatively free from moisture and dust. All electrical equipment should be protected from excessive moisture. Failure to do will result in deterioration of the insulation and will result in short circuits and grounding.

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

CAUTION

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

Indoor Installation

Exhaust gases from diesel engines are extremely poisonous. Whenever an engine is installed indoors the exhaust fumes must be vented to the outside. The engine should be installed at least two feet from any outside wall. Using an exhaust pipe which is too long or too small can cause excessive back pressure which will cause the engine to heat excessively and possibly burn the valves.

Mounting

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

Generator Grounding

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

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

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

1. Use one of the following wire types to connect the generator to earth ground.
   a. Copper - 10 AWG (5.3 mm²) or larger.
   b. Aluminum - 8 AWG (8.4 mm²) or larger.

2. When grounding the generator (Figure 3) connect the ground cable between the lock washer and the nut on the generator and tighten the nut fully. Connect the other end of the ground cable to earth ground.

3. NEC article 250-52(c) specifies that the earth ground rod should be buried a minimum of 8 ft. into the ground.

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

**CAUTION:**

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

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

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

- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR).
- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow a trailer with defective hitches, couplings, chains etc.
- Check the tire air pressure on both 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 **55 MPH** unless posted otherwise. Recommended off-road towing is not to exceed **15 MPH** or less depending on type of terrain.
- Place *chocked blocks* underneath wheel to prevent *rolling*, while parked.
- Place *support blocks* underneath the trailer's bumper to prevent *tipping*, while parked.
- Use the trailer's hand winch to adjust the height of the trailer, then insert locking pin to lock wheel stand in place, while parked.
- Avoid sudden stops and starts. This can cause skidding, or jackknifing. Smooth, gradual starts and stops will improve gas milage.
- Avoid sharp turns to prevent rolling.
- Remove wheel stand when transporting.
- **DO NOT** transport generator with fuel in tank.

---

**Figure 4. Generator with Trailer**
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 a wide range of trailers. Remember periodic inspection of the trailer will ensure safe towing of the equipment and will prevent damage to the equipment and personal injury.

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

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

Use the following definitions when reading Table 2.

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

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APPLICATION</th>
<th>FUEL CELL</th>
<th>BRAKE SYSTEM</th>
<th>GVWR</th>
<th>FRAME LENGTH</th>
<th>FRAME WIDTH</th>
<th>JACK STAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRLR-10W</td>
<td>SDW225, SGW250, TLW-300</td>
<td>NO</td>
<td>NO</td>
<td>1900LBS</td>
<td>96&quot;</td>
<td>50&quot;</td>
<td>800LB. FULL TILT WHEEL</td>
</tr>
<tr>
<td>TRLR-10</td>
<td>DCA10, TLG12, DCA-15</td>
<td>NO</td>
<td>NO</td>
<td>1900LBS</td>
<td>96&quot;</td>
<td>50&quot;</td>
<td>800LB. FULL TILT WHEEL</td>
</tr>
<tr>
<td>TRLR-10XF</td>
<td>DCA10, TLG-12, DCA15, TLW-300</td>
<td>52 GAL</td>
<td>NO</td>
<td>1900LBS</td>
<td>96&quot;</td>
<td>50&quot;</td>
<td>800LB. FULL TILT WHEEL</td>
</tr>
<tr>
<td>TRLR-225W</td>
<td>WELDERS, DA7000SS</td>
<td>NO</td>
<td>NO</td>
<td>2200LBS</td>
<td>85&quot;</td>
<td>42&quot;</td>
<td>800LB. FULL TILT WHEEL</td>
</tr>
<tr>
<td>TRLR-BLW400</td>
<td>BLW-400</td>
<td>NO</td>
<td>ELECTRIC</td>
<td>2700LBS</td>
<td>W/MAST</td>
<td>154&quot;</td>
<td>55&quot; (78&quot; TALL)</td>
</tr>
<tr>
<td>TRLR-50X</td>
<td>DCA-25</td>
<td>NO</td>
<td>NO</td>
<td>2700LBS</td>
<td>124&quot;</td>
<td>55&quot;</td>
<td>800LB. FULL TILT WHEEL</td>
</tr>
<tr>
<td>TRLR-50XF</td>
<td>DCA-25</td>
<td>41 GAL</td>
<td>NO</td>
<td>2700LBS</td>
<td>124&quot;</td>
<td>55&quot;</td>
<td>800LB. FULL TILT WHEEL</td>
</tr>
<tr>
<td>TRLR-70W</td>
<td>DCA-45, -60, -70</td>
<td>NO</td>
<td>SURGE</td>
<td>7000LBS</td>
<td>186&quot;</td>
<td>77&quot;</td>
<td>2000LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-70X</td>
<td>DCA-45, -60, -70</td>
<td>OPT</td>
<td>SURGE</td>
<td>7000LBS</td>
<td>138&quot;</td>
<td>66&quot;</td>
<td>2000LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-70XF</td>
<td>DCA-45, -60, -70</td>
<td>53 GAL</td>
<td>SURGE</td>
<td>7000LBS</td>
<td>138&quot;</td>
<td>66&quot;</td>
<td>2000LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-100XF</td>
<td>DCA-100, 125</td>
<td>150 GAL</td>
<td>HYDRAULIC SURGE</td>
<td>7000LBS</td>
<td>190&quot;</td>
<td>76&quot;</td>
<td>2000LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-85/125</td>
<td>DCA-85, 100, 125</td>
<td>145 GAL</td>
<td>HYDRAULIC</td>
<td>10000LBS</td>
<td>186&quot;</td>
<td>77&quot;</td>
<td>2000LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-150XF</td>
<td>DCA-150, 180</td>
<td>200 GAL</td>
<td>HYDRAULIC SURGE</td>
<td>11160LBS</td>
<td>204&quot;</td>
<td>84&quot;</td>
<td>5000 LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-220XF</td>
<td>DCA-220</td>
<td>250 GAL</td>
<td>HYDRAULIC SURGE</td>
<td>14000LBS</td>
<td>222&quot;</td>
<td>83&quot;</td>
<td>5000 LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-300XF</td>
<td>DCA-300</td>
<td>250 GAL</td>
<td>HYDRAULIC SURGE</td>
<td>18000LBS</td>
<td>238&quot;</td>
<td>83&quot;</td>
<td>5000 LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-400XF</td>
<td>DCA-400</td>
<td>350 GAL</td>
<td>ELECTRIC</td>
<td>18000LBS</td>
<td>238&quot;</td>
<td>83&quot;</td>
<td>5000 LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-600XF</td>
<td>DCA-600, 800</td>
<td>550 GAL</td>
<td>AIR</td>
<td>30000LBS</td>
<td>384&quot;</td>
<td>96&quot;</td>
<td>5000 LB. FLAT PAD</td>
</tr>
<tr>
<td>TRLR-800SX</td>
<td>DCA-600, 800</td>
<td>550 GAL</td>
<td>AIR</td>
<td>30000LBS</td>
<td>384&quot;</td>
<td>96&quot;</td>
<td>5000 LB. FLAT PAD</td>
</tr>
</tbody>
</table>
### Table 2. Specifications (Con’t)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>COUPLER</th>
<th>TIRES</th>
<th>WHEELS</th>
<th>AXLE</th>
<th>HUBS</th>
<th>SUSPENSION</th>
<th>ELECTRICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRLR-10W</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>175-13C</td>
<td>13”X4.50”</td>
<td>2200# 2X2</td>
<td>5 LUG</td>
<td>3 LEAF</td>
<td>4 WIRE LOOM W/ 4 POLE FLAT</td>
</tr>
<tr>
<td>TRLR-10</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>175-13C</td>
<td>13”X4.5”</td>
<td>2200#2X2</td>
<td>5 LUG</td>
<td>3 LEAF</td>
<td>4 POLE FLAT</td>
</tr>
<tr>
<td>TRLR-10XF</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>175-13C</td>
<td>13”X4.5”</td>
<td>2200#2X2</td>
<td>5 LUG</td>
<td>3 LEAF</td>
<td>4 POLE FLAT</td>
</tr>
<tr>
<td>TRLR-225W</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>175-13B</td>
<td>13X4.5”</td>
<td>2200#2X2</td>
<td>5 LUG</td>
<td>Q FLEX</td>
<td>4 POLE FLAT</td>
</tr>
<tr>
<td>TRLR-400</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>175-13C</td>
<td>13 X 4.5”</td>
<td>2200#2X2</td>
<td>5 LUG</td>
<td>3 LEAF</td>
<td>4 POLE FLAT</td>
</tr>
<tr>
<td>TRLR-50X</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>B78-13LC</td>
<td>13”X4.50”</td>
<td>3500lbs. 2-3/8”</td>
<td>5 LUG</td>
<td>4 LEAF</td>
<td>4 POLE RUBBER FLAT</td>
</tr>
<tr>
<td>TRLR-50XF</td>
<td>2” BALL CLASS 2 ADJUSTABLE</td>
<td>B78-13LC</td>
<td>13”X4.50”</td>
<td>3500lbs. 2-3/8”</td>
<td>5 LUG</td>
<td>4 LEAF</td>
<td>4 POLE RUBBER FLAT</td>
</tr>
<tr>
<td>TRLR-70W</td>
<td>2” BALL CLASS 3 ADJUSTABLE</td>
<td>205-14C Bias (4)</td>
<td>14”X5”</td>
<td>3500lbs. 3”</td>
<td>5 LUG</td>
<td>5 LEAF</td>
<td>4 POLE RUBBER FLAT</td>
</tr>
<tr>
<td>TRLR-70X</td>
<td>2” BALL CLASS 3 ADJUSTABLE</td>
<td>205-14C Bias (4)</td>
<td>14”X5”</td>
<td>3500lbs. 3”</td>
<td>5 LUG</td>
<td>5 LEAF</td>
<td>4 POLE RUBBER FLAT</td>
</tr>
<tr>
<td>TRLR-70XF</td>
<td>2” BALL CLASS 3 ADJUSTABLE</td>
<td>205-14C Bias (4)</td>
<td>14”X5”</td>
<td>3500lbs. 3”</td>
<td>5 LUG</td>
<td>5 LEAF</td>
<td>4 POLE RUBBER FLAT</td>
</tr>
<tr>
<td>TRLR-100XF</td>
<td>ADJUSTABLE 2-5/6 OPT 3” EYE</td>
<td>205-15C Bias (4)</td>
<td>14”X5.5”</td>
<td>3500lbs. 3”</td>
<td>5 LUG</td>
<td>5 LEAF</td>
<td>4 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-85/125</td>
<td>ADJUSTABLE 2-5/6 OPT 3” EYE</td>
<td>ST225/75R15D RADIAL (4)</td>
<td>14”x6”</td>
<td>(2)-6000lbs</td>
<td>6 LUG</td>
<td>7 LEAF</td>
<td>4 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-150XF</td>
<td>3” BALL EYE ADJUSTABLE</td>
<td>750-16 E BIAS (4)</td>
<td>16”X7”</td>
<td>(2)-6000lbs</td>
<td>8 LUG</td>
<td>7 LEAF</td>
<td>4 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-220XF</td>
<td>3” EYE ADJUSTABLE</td>
<td>ST235/85R16E RADIAL(4)</td>
<td>16”X7”</td>
<td>(2)-7000lbs</td>
<td>8 LUG</td>
<td>Q FLEX</td>
<td>4 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-300XF</td>
<td>3” EYE ADJUSTABLE</td>
<td>ST235/85R16E RADIAL(6)</td>
<td>16”X7”</td>
<td>(2)-6000lbs</td>
<td>8 LUG</td>
<td>Q FLEX</td>
<td>4 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-400XF</td>
<td>3” EYE ADJUSTABLE</td>
<td>ST235/85R16E RADIAL(6)</td>
<td>16”X7”</td>
<td>(3)-7000lbs</td>
<td>8 LUG</td>
<td>Q FLEX</td>
<td>4 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-600XF</td>
<td>5TH WHEEL</td>
<td>ST215/75R17.5H RADIAL (8)</td>
<td>16”X7”</td>
<td>(3)-10000lbs</td>
<td>8 LUG</td>
<td>7 LEAF</td>
<td>6 WIRE LOOM</td>
</tr>
<tr>
<td>TRLR-800AR</td>
<td>5TH WHEEL</td>
<td>ST215/75R17.5H RADIAL (8)</td>
<td>16”X7”</td>
<td>(3)-10000lbs</td>
<td>8 LUG</td>
<td>AIR-RIDE</td>
<td>6 WIRE LOOM</td>
</tr>
</tbody>
</table>
The DCA-45SSIU2 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 page show the decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.
**WARNING**

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

**WARNING**

**ELECTRIC SHOCK HAZARD**
- Do not touch output terminals while this machine is operating.
- Turn power off before servicing.

**WARNING**

**ELECTRIC SHOCK HAZARD**
- Always complete the grounding path from the ground terminal on this generator to an external grounding source. See instruction manual for details.

**WARNING**

**HOT COOLANT can cause severe burns.**
- Do not remove cap if radiator is hot.

**DANGER**

**HIGH VOLTAGE**
- Stop engine before switching.

**CAUTION**

**CAUTION**

**HOT PARTS can burn skin.**
- Do not touch until the machine has sufficiently cooled.

**CAUTION**

**MOVING PARTS can cause severe injury.**
- Do not operate with doors open.
- Stop engine before servicing.

**WARNING**

**ENGINE EXHAUST can cause severe injury or death.**
- Use only in open, well ventilated areas or vent exhaust outside.

**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.

**WARNING**

**ELECTRIC SHOCK HAZARD**
- Do not touch output terminals while this machine is operating.
- Turn power off before servicing.
DCA-45SSIU2 — GENERAL INFORMATION

DCA-45SSIU2  FAMILIARIZATION

Generator
The MQ Power Model DCA-45SSIU2 (Figure 5) is a 26 kW generator that is designed as a high quality portable (requires a trailer for transport) power source for telecom sites, lighting facilities, power tools, submersible pumps and other industrial and construction machinery.

Engine Operating Panel
The “Engine Operating Panel” is provided with the following:
- Tachometer
- Water Temperature Gauge/Lamp
- Oil Pressure Gauge/Lamp
- Charging Ammeter Gauge
- Engine Speed Handle
- Pre-Heat Lamp
- Panel Light
- Panel Light Switch
- Ignition/Preheat 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
- Voltage Regulator
- Over-Current Relay

Output Terminal Panel
The “Output Terminal Panel” is provided with the following:
- Three 250 VAC output receptacles (CS-6369), 50 amps
- Three auxiliary circuit breakers, 250V @50 amps
- Two 125 VAC output receptacles, (GFCI), 20 amps
- Two GFCI circuit breakers, 120V@ 20amps
- Five output terminal lugs (3Ø power)

Control Box
The “Control Box” is provided with the following:
- 3-Pole, 250 VAC, 110 amp Main Circuit Breaker
- Automatic Voltage Regulator
- Current Transformer
- Emergency Relay

Open Delta Excitation System
The DCA-45SSIU2 generator is equipped with the state of the art "Open-Delta" excitation system. The open delta system consist of an electrically independent winding wound among stationary windings of the AC output section.

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

When a heavy load, such as a motor starting or a short circuit occurs, the automatic voltage regulator (AVR) switches the configuration of the open delta to the series connection of B to C. This has the effect of adding the voltages of each phase to provide higher excitation to the exciter section and thus better voltage response during the application of heavy loads.

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

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

Engine
The DCA-45SSIU2 is powered by a 4 cycle, water cooled, turbocharged Isuzu 4BG1 diesel engine. This engine is designed to meet every performance requirement for the generator. Reference Table 1 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-45SSIU2 generator are addressed on the following pages.

Mechanical Governor System
The mechanical governor system control the RPM of the engine. When the engine demands increase or decrease, the mechanical governor system regulates the frequency variation to ±.5%. The electronic governor option increases frequency variation to ±0.25%.

Extension Cables
When electric power is to be provided to various tools or loads at some distance from the generator, extension cords are normally used. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generator and point of use (load) is held to a minimum. Use the cable selection chart (Table 5) as a guide for selecting proper extension cable size.