

# PARTS AND OPERATION MANUAL

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# MQ POWER DCA-60SSI2 WHISPERWATT™ GENERATOR (Standard)

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PARTS LIST NO. M1870300034

Revision #2 (04/27/01)



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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*

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## ISUZU 6BG1 ENGINE

|                                                  |         |
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### NOTE

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

# PARTS ORDERING PROCEDURES

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

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

## Earn Extra Discounts when you order by FAX!

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

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

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

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

No other allowances on freight shipped by any other carrier.

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

\*DISCOUNTS ARE SUBJECT TO CHANGE\*

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

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

**Up to 5%  
extra savings!**

**UPS  
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For faxed orders only

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to our Parts Department!**

**Toll-free nationwide:**

**800-421-1244**

**Toll-free FAX:**

**800/6-PARTS-7 • 800-672-7877**

# RULES FOR SAFE OPERATION

## CAUTION:



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

The following safety guidelines should always be used when operating the DCA-60SSI2 portable generator:

### GENERAL SAFETY

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



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



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

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



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



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

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

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

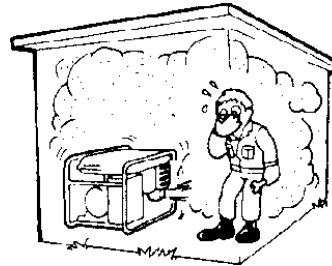
- Always check the machine for loosened threads or bolts before starting.

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



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

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



## CAUTION:



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

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

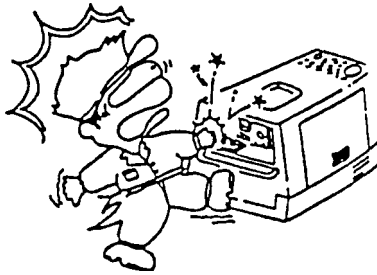
- **NEVER** operate the generator in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe *bodily harm or even death*.

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



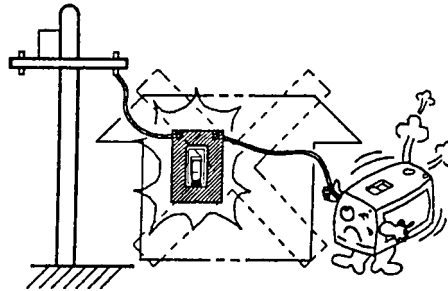
# RULES FOR SAFE OPERATION

## CAUTION:



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

## CAUTION:



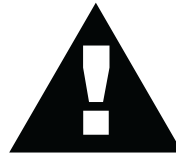
■ **Backfeed** to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is opened.

## 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.

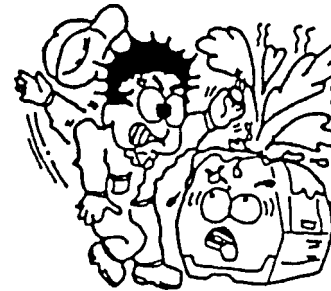
## CAUTION:



**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.

# RULES FOR SAFE OPERATION

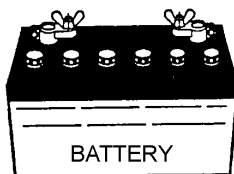
## Battery

### CAUTION:



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

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



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

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

### Loading and Unloading (Crane)

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

**RULES FOR SAFE OPERATION****Transporting**

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

**Emergencies**

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

**Maintenance Safety**

- **NEVER** lubricate components or attempt service on a running machine.
- Always allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, coolant, fuel, and fuel filters.
- **DO NOT** use plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil, coolant or fuel directly onto the ground, down a drain or into any water source.

# DCA-60SSI2 — TOWING RULES FOR SAFE OPERATION

## Towing Safety Precautions

### CAUTION :

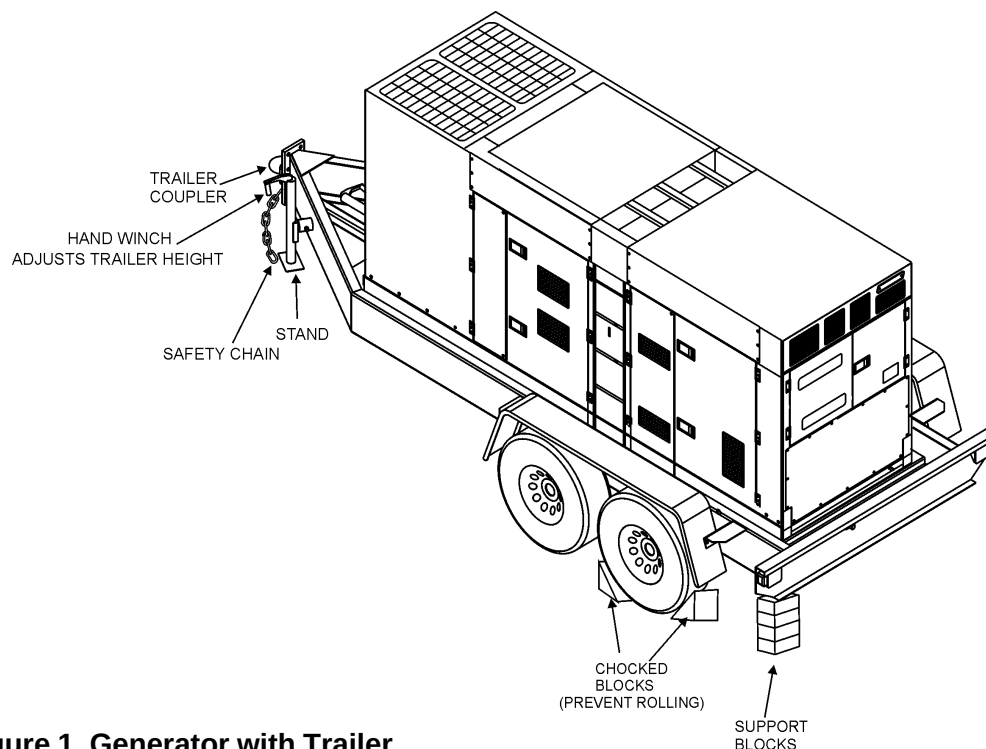


Check with your county or state safety towing regulations department before towing your generator.

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

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

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



**Figure 1. Generator with Trailer**

## DCA-60SSIU — TRAILER-SAFETY GUIDELINES

**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 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 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-60SSIU —TRAILER-SPECIFICATIONS

Table 1. Specifications

| MODEL       | APPLICATION            | FUEL CELL | BRAKE SYSTEM    | GVWR     | FRAME LENGTH            | FRAME WIDTH       | JACK STAND                |
|-------------|------------------------|-----------|-----------------|----------|-------------------------|-------------------|---------------------------|
| TRLR-10-15  | TLG-12, DCA15, TLW-300 | NO        | NO              | 1900LBS  | 96"                     | 50"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-10X    | TLG-12, DCA15, TLW-300 | NO        | NO              | 1900LBS  | 96"                     | 50"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-10XF   | TLG-12, DCA15, TLW-300 | 51 GAL    | NO              | 1900LBS  | 96"                     | 50"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-225W   | DCA-10                 | NO        | NO              | 2200LBS  | 85"                     | 42"               | 800LB.<br>FULL TILT WHEEL |
| BLW-400     | BLW-400                | NO        | ELECTRIC        | 2700LBS  | W/MAST 154"<br>W/O 124" | 55"<br>(78" TALL) | 800LB.<br>FULL TILT WHEEL |
| TRLR-15XF   | DCA-15                 | 41 GAL    | NO              | 2700LBS  | 124"                    | 55"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-50X    | DCA-25                 | NO        | NO              | 2700LBS  | 124"                    | 55"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-50XF   | DCA-25                 | 41 GAL    | NO              | 2700LBS  | 124"                    | 55"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-25SBT  | DCA-25                 | NO        | NO              | 2990LBS  | 120"                    | 66"               | 800LB.<br>FULL TILT WHEEL |
| TRLR-70W    | DCA-45, -60, 70        | NO        | SURGE           | 7000LBS  | 186"                    | 77"               | 2000LB.<br>FLAT PAD       |
| TRLR-70X    | DCA-45, -60, 70        | OPT       | SURGE           | 7000LBS  | 138"                    | 66"               | 2000LB.<br>FLAT PAD       |
| TRLR-70XF   | DCA-45, -60, 70        | 53 GAL    | SURGE           | 7000LBS  | 138"                    | 66"               | 2000LB.<br>FLAT PAD       |
| TRLR-100XF  | DCA-100, 125           | 150 GAL   | HYDRAULIC SURGE | 7000LBS  | 190"                    | 76"               | 2000LB.<br>FLAT PAD       |
| TRLR-85/125 | DCA-85, 100, 125       | 145 GAL   | HYDRAULIC       | 10000LBS | 186"                    | 77"               | 2000LB.<br>FLAT PAD       |
| TRLR-150XF  | DCA-150, 180           | 200 GAL   | HYDRAULIC SURGE | 11160LBS | 204"                    | 84"               | 5000 LB.<br>FLAT PAD      |
| TRLR-220XF  | DCA-220                | 250 GAL   | HYDRAULIC SURGE | 14000LBS | 222"                    | 83"               | 5000 LB.<br>FLAT PAD      |
| TRLR-300XF  | DCA-300                | 250 GAL   | HYDRAULIC SURGE | 18000LBS | 238"                    | 83"               | 5000 LB.<br>FLAT PAD      |
| TRLR-400XF  | DCA-400                | 350 GAL   | ELECTRIC        | 18000LBS | 238"                    | 83"               | 5000 LB.<br>FLAT PAD      |
| TRLR-600XF  | DCA-600, 800           | 550 GAL   | AIR             | 30000LBS | 384"                    | 96"               | 5000 LB.<br>FLAT PAD      |
| TRLR-800SX  | DCA-600, 800           | 550 GAL   | AIR             | 30000LBS | 384"                    | 96"               | 5000 LB.<br>FLAT PAD      |

## DCA-60SSIU —TRAILER-SPECIFICATIONS

Table 1. Specifications (Con't)

| MODEL       | COUPLER                        | TIRES                        | WHEELS    | AXLE               | HUBS  | SUSPENSION | ELECTRICAL                    |
|-------------|--------------------------------|------------------------------|-----------|--------------------|-------|------------|-------------------------------|
| TRLR-10-15W | 2" BALL CLASS<br>2 ADJUSTABLE  | 175-13C                      | 13"X4.50" | 2200# 2X2          | 5 LUG | 3 LEAF     | 4 WIRE LOOM W/<br>4 POLE FLAT |
| TRLR-10X    | 2" BALL CLASS<br>2 ADJUSTABLE  | 175-13C                      | 13"X4.5"  | 2200#2X2           | 5 LUG | 3 LEAF     | 4 POLE FLAT                   |
| TRLR-10XF   | 2" BALL CLASS<br>2 ADJUSTABLE  | 175-13C                      | 13"X4.5"  | 2200#2X2           | 5 LUG | 3 LEAF     | 4 POLE FLAT                   |
| TRLR-225W   | 2" BALL CLASS<br>2 ADJUSTABLE  | 175-13B                      | 13X4.5"   | 2200#2X2           | 5 LUG | Q FLEX     | 4 POLE FLAT                   |
| BLW 400     | 2" BALL CLASS<br>2 ADJUSTABLE  | 175-13C                      | 13 X 4.5" | 2200#2X2           | 5 LUG | 3 LEAF     | 4 POLE FLAT                   |
| TRLR-15XF   | 2" BALL CLASS                  | B78-13LRC                    | 13"X4.50" | 3500# 2-1/2"       | 5 LUG | 4 LEAF     | 4 POLE RUBBER<br>FLAT         |
| TRLR-50X    | 2" BALL CLASS                  | B78-13LRC                    | 13"X4.50" | 3500lbs.<br>2-3/8" | 5 LUG | 4 LEAF     | 4 POLE RUBBER<br>FLAT         |
| TRLR-50XF   | 2" BALL CLASS                  | B78-13LRC                    | 13"X4.50" | 3500lbs.<br>2-3/8" | 5 LUG | 4 LEAF     | 4 POLE RUBBER<br>FLAT         |
| TRLR-70W    | 2" BALL CLASS<br>3" ADJUSTABLE | 205-14C<br>BIAS (4)          | 14"X5"    | 3500lbs.<br>3"     | 5 LUG | 5 LEAF     | 4 POLE RUBBER<br>FLAT         |
| TRLR-70X    | 2" BALL CLASS<br>3" ADJUSTABLE | 205-14C<br>BIAS (4)          | 14"X5"    | 3500lbs<br>3"      | 5 LUG | 5 LEAF     | 4 POLE RUBBER<br>FLAT         |
| TRLR-70XF   | 2" BALL CLASS<br>3" ADJUSTABLE | 205-14C<br>BIAS (4)          | 14"X5"    | 3500lbs.<br>3"     | 5 LUG | 5 LEAF     | 4 POLE RUBBER<br>FLAT         |
| TRLR-100XF  | ADJUSTABLE 2-5/6<br>OPT 3" EYE | 205-15C<br>BIAS (4)          | 14"X5.5"  | 3500lbs<br>3"      | 5 LUG | 5 LEAF     | 4 WIRE LOOM                   |
| TRLR-85/125 | ADJUSTABLE 2-5/6<br>OPT 3" EYE | ST225/75R15D<br>RADIAL (4)   | 14"x6"    | (2)-6000lbs        | 6 LUG | 7 LEAF     | 4 WIRE LOOM                   |
| TRLR-150XF  | 3" BALL EYE                    | 750-16 E<br>BIAS (4)         | 16"X7"    | (2)-6000lbs        | 8 LUG | 7 LEAF     | 4 WIRE LOOM                   |
| TRLR-220XF  | 3" EYE<br>ADJUSTABLE           | ST235/85R16E<br>RADIAL(4)    | 16"X7"    | (2)-7000lbs        | 8 LUG | Q FLEX     | 4 WIRE LOOM                   |
| TRLR-300XF  | 3" EYE<br>ADJUSTABLE           | ST235/85R16E<br>RADIAL(6)    | 16"X7"    | (2)-6000lbs        | 8 LUG | Q FLEX     | 4 WIRE LOOM                   |
| TRLR-400XF  | 3" EYE<br>ADJUSTABLE           | ST235/85R16E<br>RADIAL(6)    | 16"X7"    | (3)-7000lbs.       | 8 LUG | Q FLEX     | 4 WIRE LOOM                   |
| TRLR-600XF  | 5TH WHEEL                      | ST215/75R17.5H<br>RADIAL (8) | 16"X7"    | (3)-10000lbs       | 8 LUG | 7 LEAF     | 6 WIRE LOOM                   |
| TRLR-800AR  | 5TH WHEEL                      | ST215/75R17.5H<br>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.

## DCA-60SSIU — TRAILER SAFETY GUIDELINES

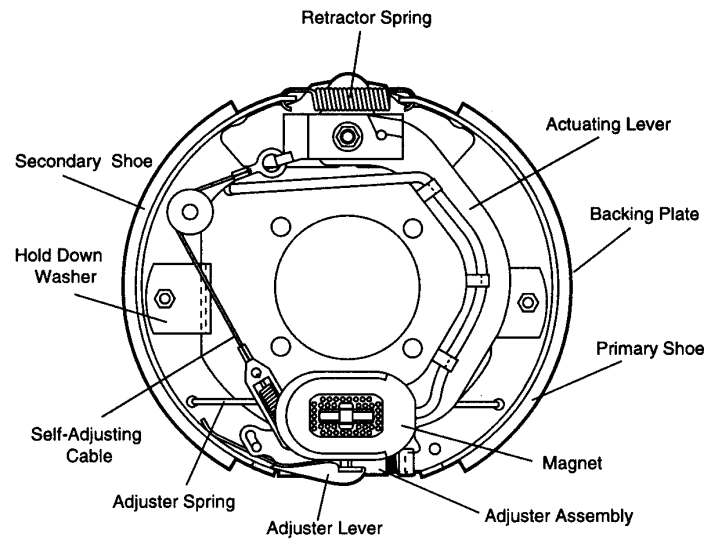


Figure 2. Electrical Brake Components

### 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.

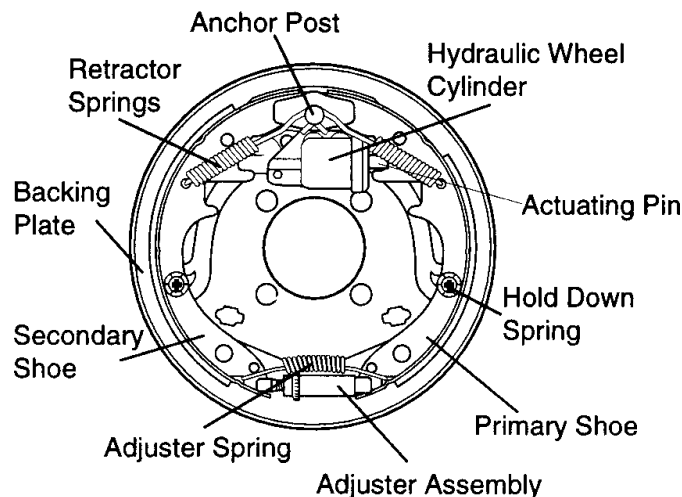


Figure 3. Hydraulic Brake Components

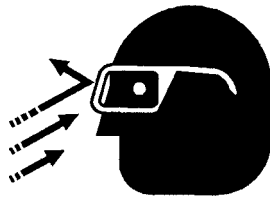
## DCA-60SSIU — TRAILER SAFETY GUIDELINES

**Tires/Wheels/Lug Nuts**

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

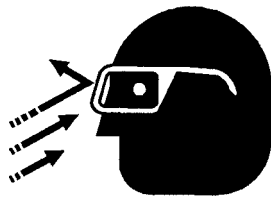
**CAUTION:**

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

**Tire Wear/Inflation**

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

Table 2 (Tire Wear Troubleshooting) will help pinpoint the causes and solutions of tire wear problems.

**CAUTION:****NOTE**

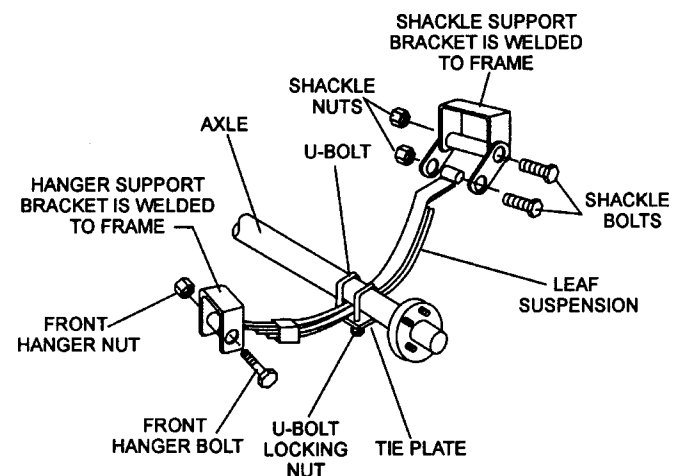
ALWAYS wear safety glasses when removing or installing force fitted parts. Failure to comply may result in serious injury.

**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**

**DCA-60SSIU —TRAILER SAFETY GUIDELINES****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<br>SPRING EYE BOLT | SNUG FIT ONLY. PARTS MUST ROTATE FREELY.<br>LOCKING NUTS OR COTTER PINS ARE PROVIDED TO<br>RETAIN NUT-BOLT ASSEMBLY. |
| SHOULDER TYPE<br>SHACKLE BOLT   | MIN-30 MAX-50                                                                                                        |

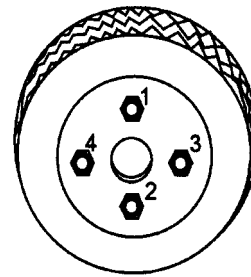
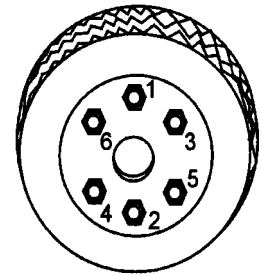
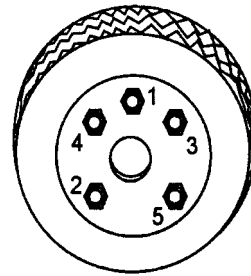
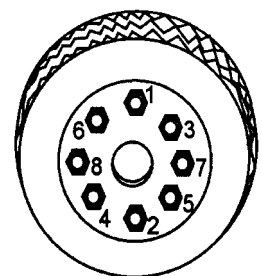
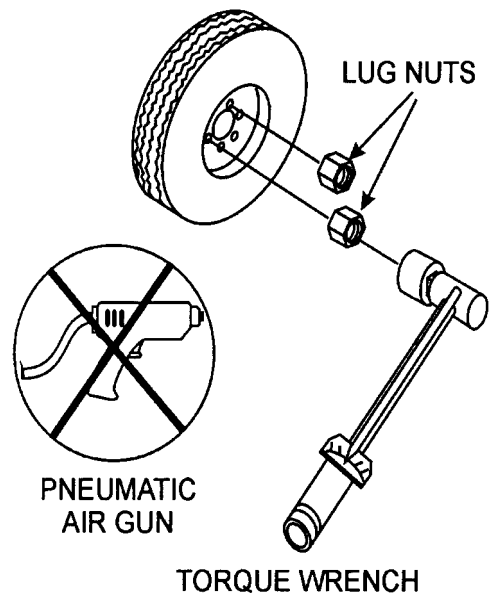
**Lug Nut Torque Requirements**

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.

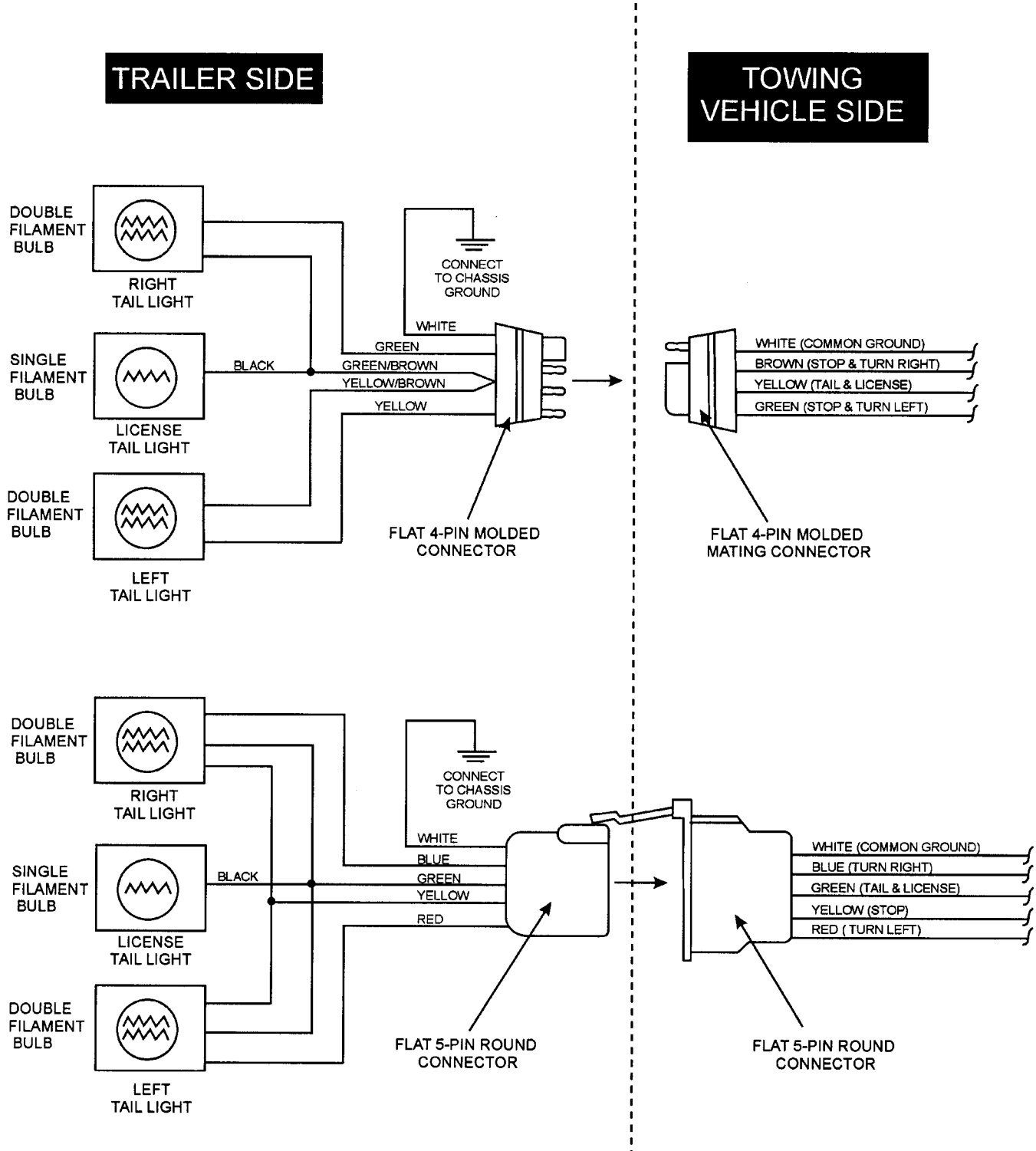
**Table 4. Tire Torque Requirements**

| Wheel Size | First Pass<br>FT-LBS | Second Pass<br>FT-LBS | Third Pass<br>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-60SSIU —TRAILER-WIRING DIAGRAM



**DCA-60SSIU —TRAILER-BRAKE TROUBLESHOOTING****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.                               |

**DCA-60SSIU —TRAILER-BRAKE TROUBLESHOOTING****Table 6. Hydraulic Brake Troubleshooting**

| <b>Symptom</b>                         | <b>Possible Cause</b>                                      | <b>Solution</b>                            |
|----------------------------------------|------------------------------------------------------------|--------------------------------------------|
| 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-60SSI2 — GENERATOR DECALS

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

## OPERATING PROCEDURES

## Manual Starting

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

## Manual Stopping

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

## Auto Starting/Stopping

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

## Emergency Stopping

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

M35200010

P/N M3552000103

## SAFETY INSTRUCTIONS

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

- Read the instruction manual carefully before operating or servicing.

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

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

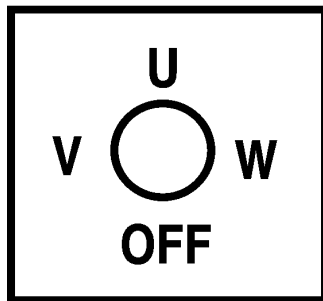
- Close the cover and control panel before operating.

Moving parts and hot surfaces are contained within the enclosure.

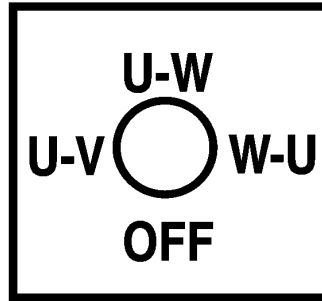
- Close all doors and lock them before operating.

M92010030

P/N M9520100304



P/N M9520000104



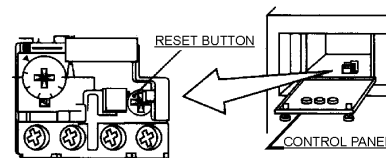
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## OVER CURRENT RELAY

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

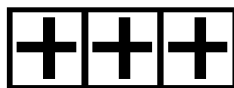


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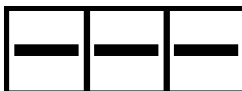
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P/N M9510200002



P/N M9500300104



P/N M9500300004



P/N M9500500104

DIESEL FUEL

M90050000

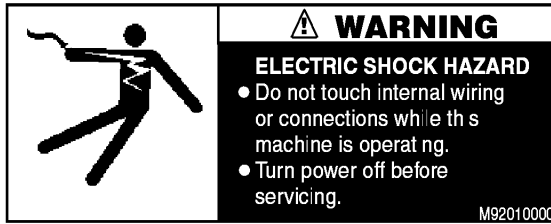
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WATER • OIL CHECK AND FILL DAILY

M90300010

P/N M9503000103

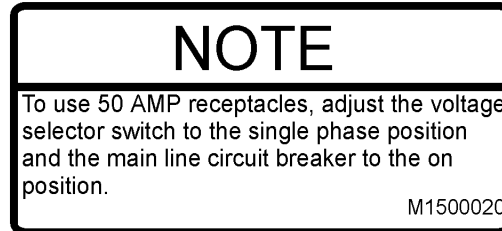
## DCA-60SSI2 — GENERATOR DECALS



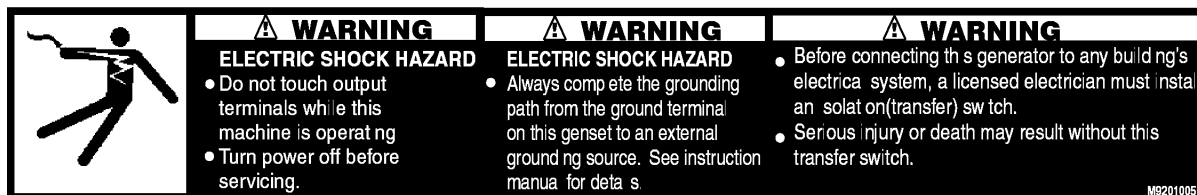
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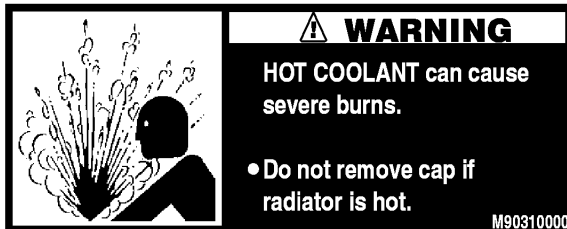
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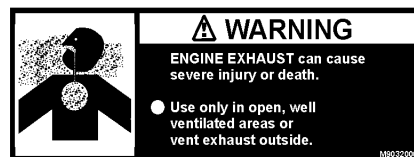
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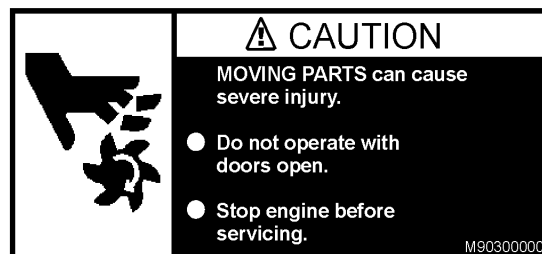
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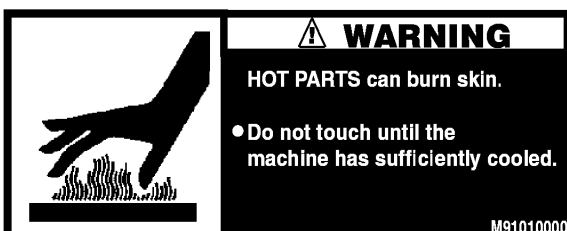
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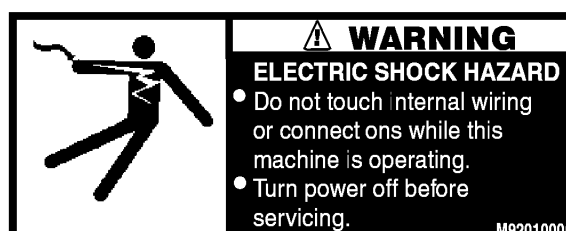
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P/N M9510100004



P/N M9520100004

**DCA-60SSI2 — SPECIFICATIONS**

| Table 7. Specifications  |                                                                             |                                        |
|--------------------------|-----------------------------------------------------------------------------|----------------------------------------|
| Generator Specifications |                                                                             |                                        |
| Model                    | DCA-60SSI2                                                                  |                                        |
| Type                     | Revolving field, self ventilated, open protected type synchronous generator |                                        |
| Armature Connection      | Star with Neutral                                                           | Zig Zag                                |
| Phase                    | 3                                                                           | Single                                 |
| Standby Output           | 72 KVA (57.6 KW)                                                            | 41.5KW                                 |
| Prime Output             | 60 KVA (48 KW)                                                              | 34.6KW                                 |
| Voltage                  | 240V or 480V                                                                | 240/120V                               |
| Frequency                | 60 Hz                                                                       |                                        |
| Speed                    | 1800 rpm                                                                    |                                        |
| Power Factor             | 0.8                                                                         | 1                                      |
| Aux. AC Power            | Single Phase, 60 Hz                                                         |                                        |
| Voltage                  | 120 V                                                                       |                                        |
| Output                   | 4.8 KW (2.4 KW x 2)                                                         |                                        |
| Engine Specifications    |                                                                             |                                        |
| Model                    | ISUZU A-6BG1                                                                |                                        |
| Type                     | 4 Cycle, water-cooled, direct injection                                     |                                        |
| No. of Cylinders         | 6 cylinders                                                                 |                                        |
| Bore x Stroke            | 4.1 in. x 4.9 in. (105 mm x 125 mm)                                         |                                        |
| Rated Output             | 77HP/1800 rpm                                                               |                                        |
| Displacement             | 396 cu. in. (6494 cc)                                                       |                                        |
| Starting                 | Electric                                                                    |                                        |
| Coolant Capacity         | 7.8 gal. (29.5 liters)                                                      |                                        |
| Lube Oil Capacity        | 5.1 gal. (19.3 liters)                                                      |                                        |
| Fuel Consumption         | 3.9 gal. (14.9L)/hr at <b>full load</b>                                     | 3.0 gal. (11.4L)/hr at <b>3/4 load</b> |
|                          | 2.4 gal. (9.1L)/hr at <b>1/2 load</b>                                       | 1.9 gal. (7.2L)/hr at <b>1/4 load</b>  |
| Battery                  | 12V- 100AH x 2                                                              |                                        |
| Fuel                     | #2 Diesel Fuel                                                              |                                        |

## DCA-60SSI2 — GENERAL INFORMATION

## DCA-60SSI2 FAMILIARIZATION

## Generator

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

## Engine Operating Panel

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

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

## Generator Control Panel

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

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

## Output Terminal Panel

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

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

## Control Box

The "Control Box" is provided with the following:

- Main Circuit Breaker 150 amps
- Over-Current Relay

## Open Delta Excitation System

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

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

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

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

## Engine

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

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

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

## Mechanical Governor System

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

## DCA-60SSI2 — MAJOR COMPONENTS

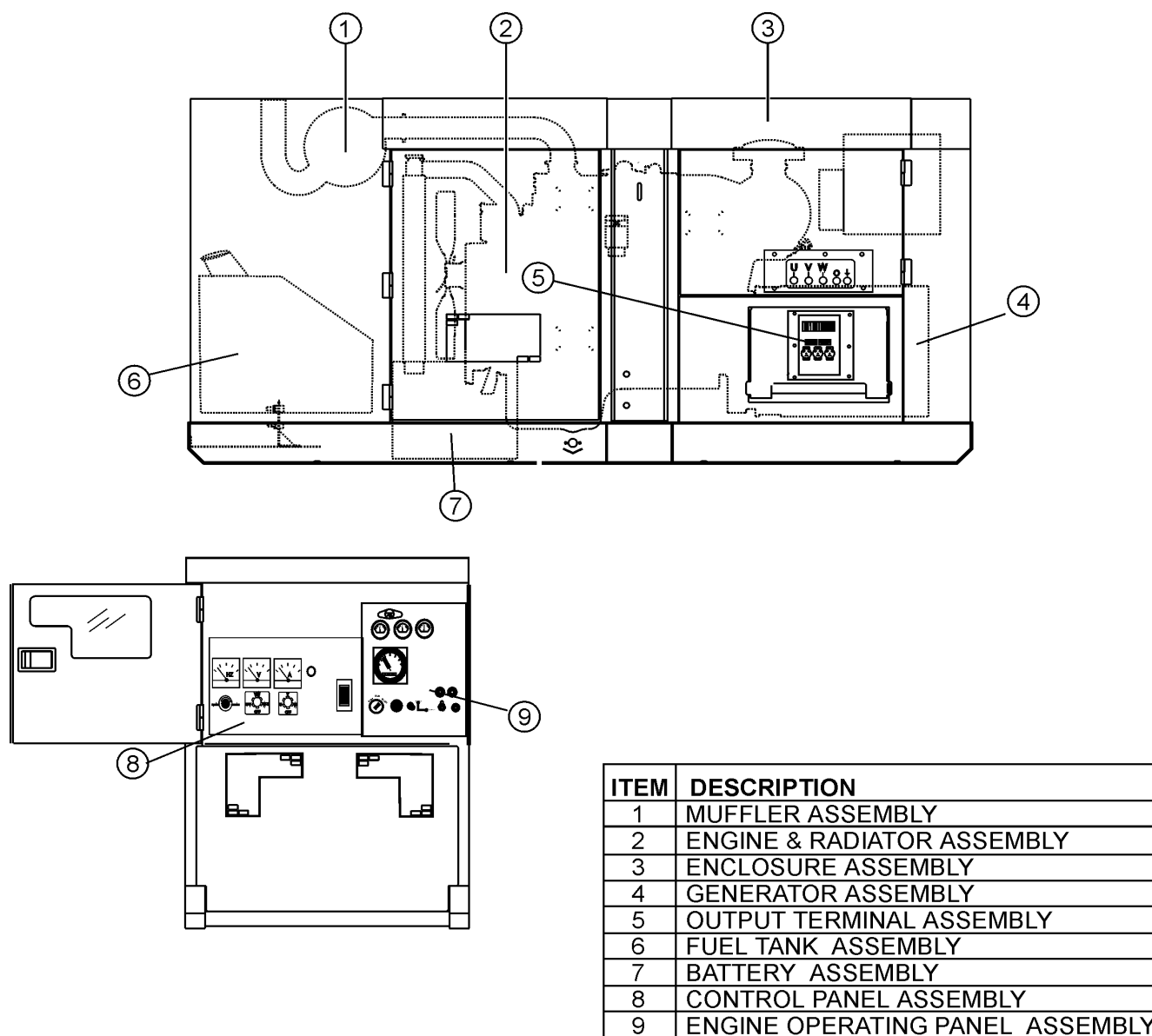


Figure 6. Major Components

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

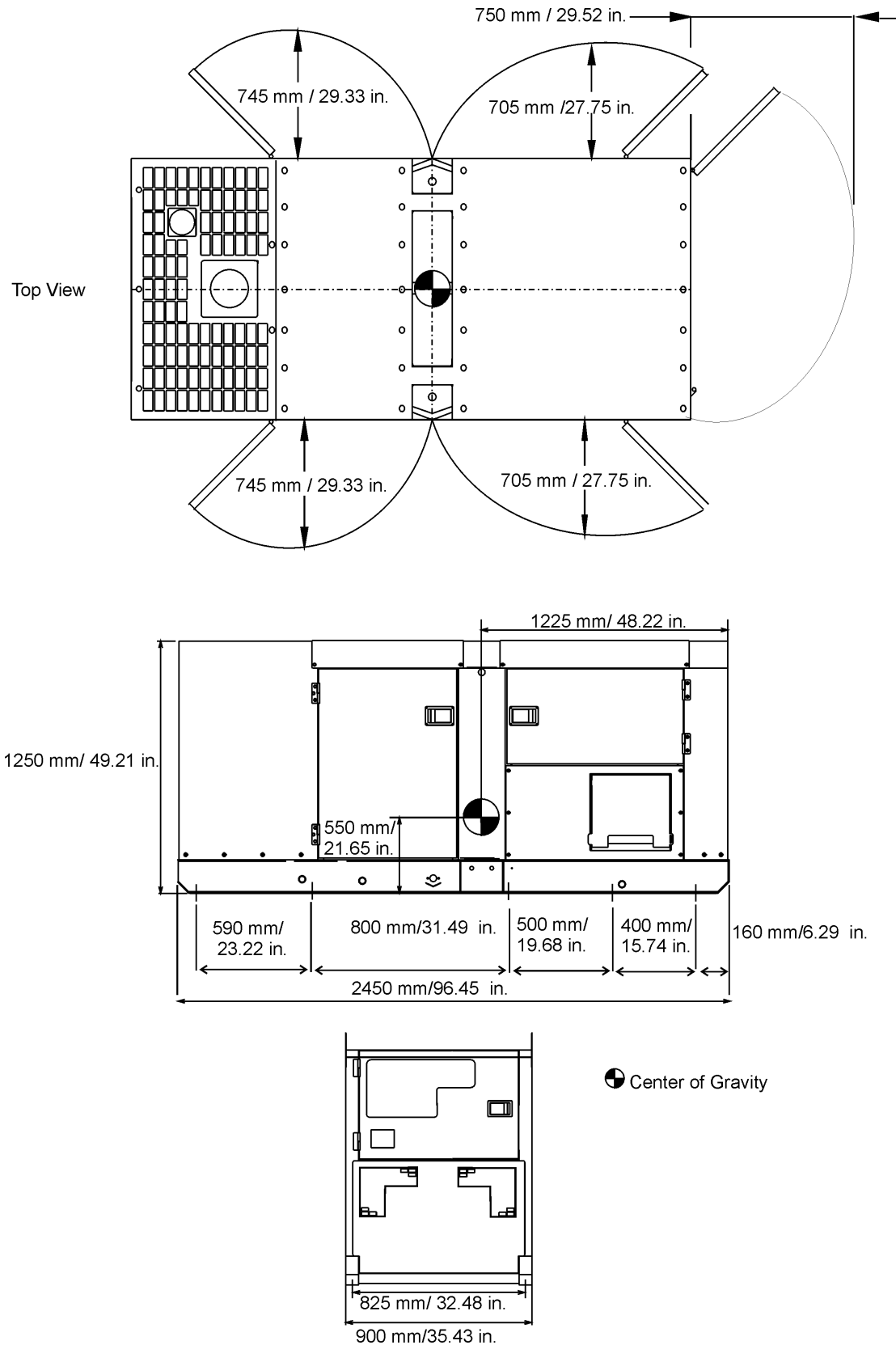
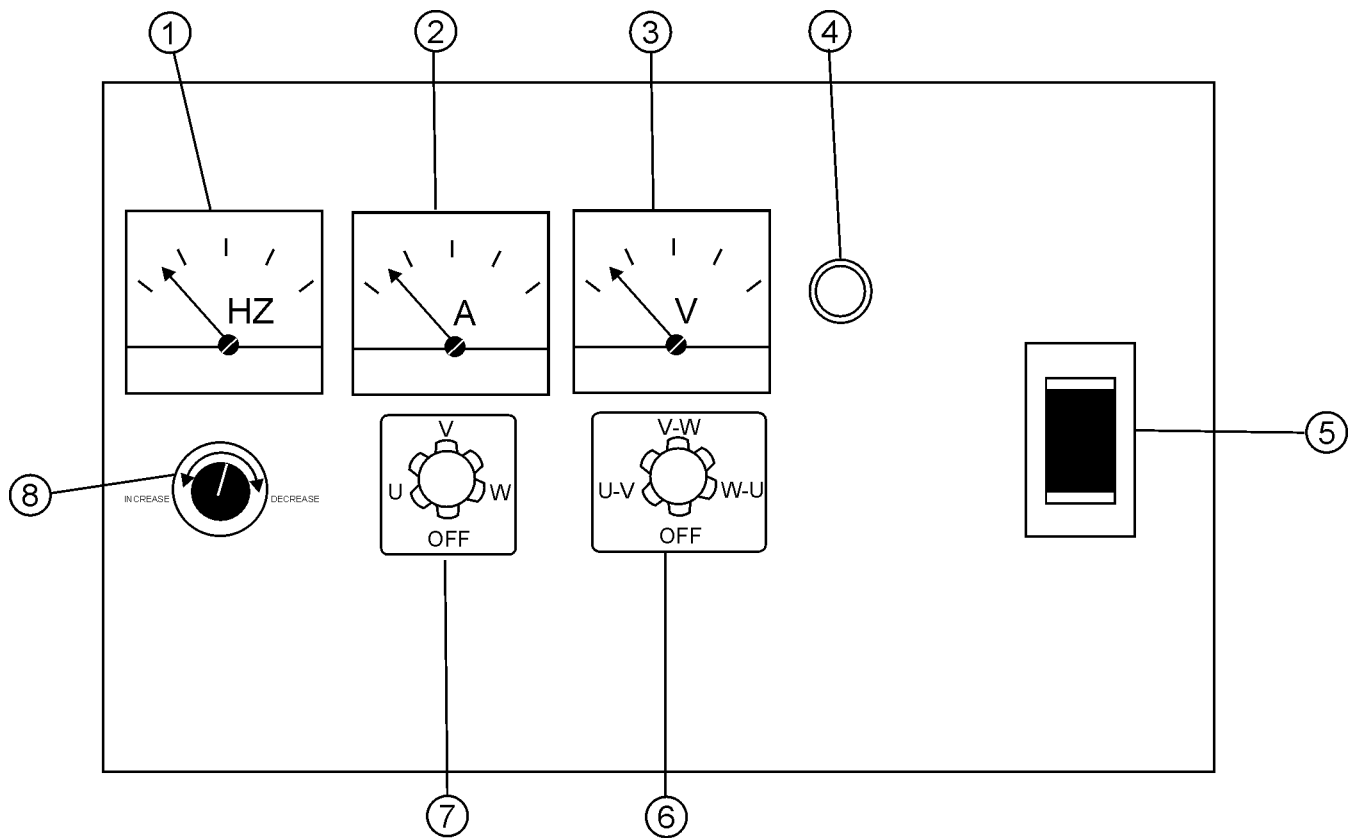


Figure 7. Dimensions

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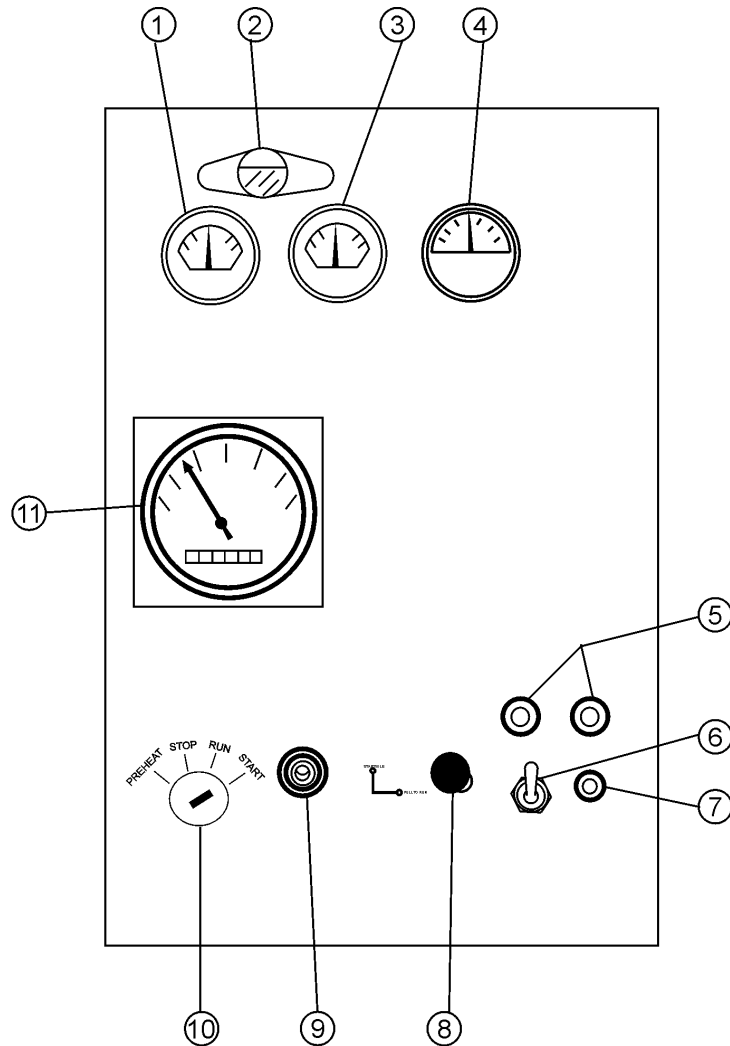
**DCA-60SSI2 — CONTROL PANEL**

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

Figure 8. Control Panel

The definitions below describe the controls and functions of the DCA-60SSI2 " **Control Panel** " (Figure 8).

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

**DCA-60SSI2 — ENGINE OPERATING PANEL**

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

Figure 9. Engine Operating Panel

**DCA-60SSI2 — ENGINE OPERATING PANEL**

The definitions below describe the controls and functions of the DCA-60SSI2 "**Engine Operating Panel**" (Figure 9).

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

## DCA-60SSIU — OUTPUT TERMINAL PANEL

**Output Terminal Panel**

The output control panel is located on the rear (control panel) end of the generator. The UNV lugs are protected by a face plate cover that can be secured in the close position by a pad lock.

**120 Volt Receptacle**

One GFCI Duplex NEMA 5-20R (120V, 20 Amp) receptacle is located 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.

The reset button will reset the receptacle after being tripped. Pressing the "Test Button" (Figure 8) in the center of this receptacle will check the GFCI function. The receptacle should be tested at least once a month.

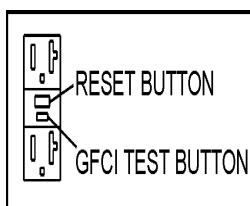


Figure 10. GFCI Test Button

**Generator Grounding**

Make sure the generator is properly grounded before applying load. Generators are NOT considered grounded when mounted on a trailer.

**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 (Figure 8, page 28). 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.

**Connecting Load**

Loads can be connected to the generator by the UVWO lugs or the duplex receptacles. (See figure 3). Make sure to read the operation manual before attempting to connect a load to the generator.

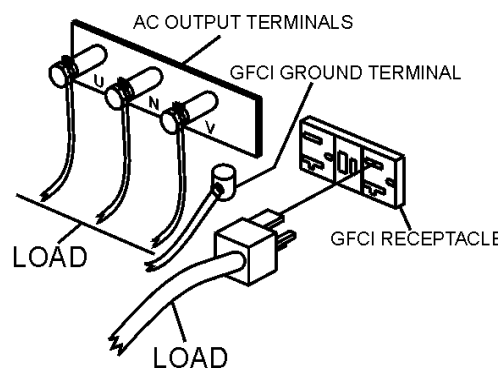


Figure 11. Load Application

**Circuit Breakers**

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

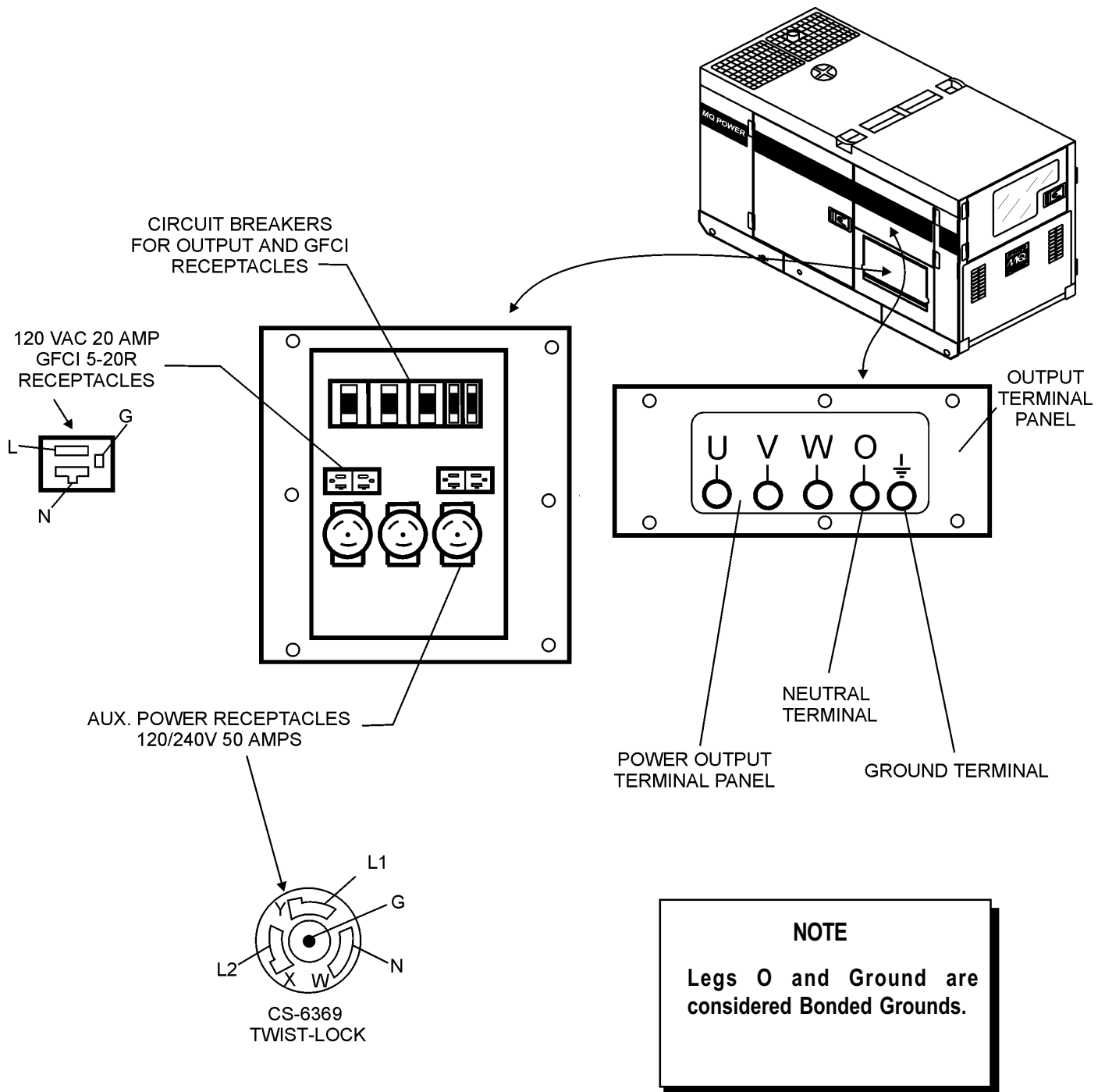
**Maximum Output**

The entire load connected to the UVWO lugs, all four slots in the duplex receptacles, and the must not exceed 52.8 kW in standby or 48 kW in prime output.

**Generator Grounding**

Make sure to ground the generator in **EVERY** application prior to connecting a load. Generators are **NOT** grounded just because they are mounted on trailers or other vehicles that are on rubber tires.

# DCA-60SSIU — OUTPUT TERMINAL VOLTAGE SELECTION



## DCA-60SSIU — OUTPUT AMPERAGE SETUP

**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 depending 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 Table 8 for available voltages the generator will supply.

**Over Current Relay**

An over current relay is connected to the circuit breaker. During an over current situation, both the circuit breaker and the over current relay will 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 inside the control box.

**Table 8. Voltage Available**

|                              |          |          |          |          |          |          |
|------------------------------|----------|----------|----------|----------|----------|----------|
| 3 Phase<br>(Switchable)      | 208 VOLT | 220 VOLT | 240 VOLT | 416 VOLT | 440 VOLT | 480 VOLT |
| Single Phase<br>(Switchable) | 120 VOLT | 127 VOLT | 139 VOLT | 240 VOLT | 254 VOLT | 277 VOLT |

**CAUTION :**

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

**Maximum Amps**

Table 9 shows the maximum amps the generator will provide. Do not exceed the maximum amps listed.

**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.

**Table 9. Maximum Amps**

| Rated Voltage            | Maximum Amps        |
|--------------------------|---------------------|
| Single Phase<br>120 Volt | 133.3 amps (4 wire) |
| Single Phase<br>240 Volt | 66.7 amps (4 wire)  |
| Three Phase<br>240 Volt  | 144 amps            |
| Three Phase<br>480 Volt  | 72 amps             |

## DCA-60SSIU — OUTPUT AMPERAGE SETUP

**Receptacle Use**

When the UVWO terminals are providing power, the receptacle power availability will decrease.

**How To Read The Output Terminal Gauges.**

The gauges (Figure 15 and 17) and change-over switches on the control panel DO NOT effect the generator output. They are to help observe how much power is being supplied at the UVWO legs.

When the voltage selector switch is in the 240/120V position (Figure 13), place the AC voltmeter change-over switch to the W-U position (Figure 14) and the AC ammeter change-over switch to the U or W position (Figure 16) to read the output on the selected leg.

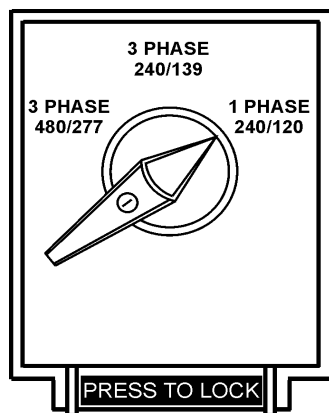


Figure 13. Voltage Selector Switch 240/120V Single Phase Position

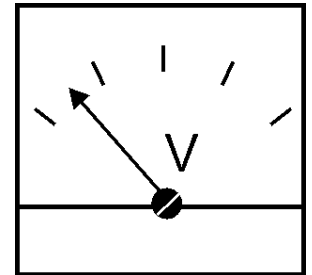
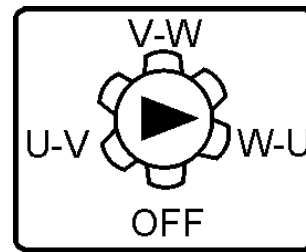


Figure 14 and 15. AC Voltmeter Change-over switch and Voltmeter Gauge

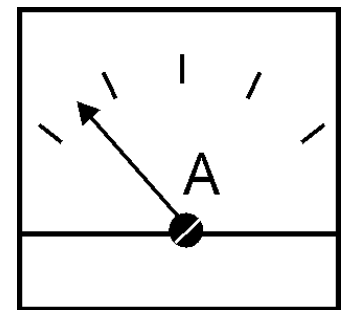
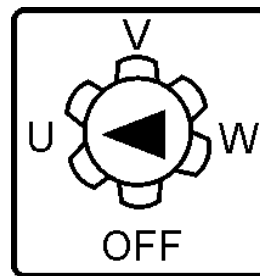


Figure 16 and 17. AC Ammeter Change-over Switch and Ammeter Gauge

**NOTE**

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

# DCA-60SSIU — OUTPUT VOLTAGE SETUP

## 240/120V Hard Wire Hookup

With the voltage selector set and locked at 'single phase 240/120' and using single phase 120 volts, the generator will provide three legs available with 100 amps each on three different circuits (Figure 18).

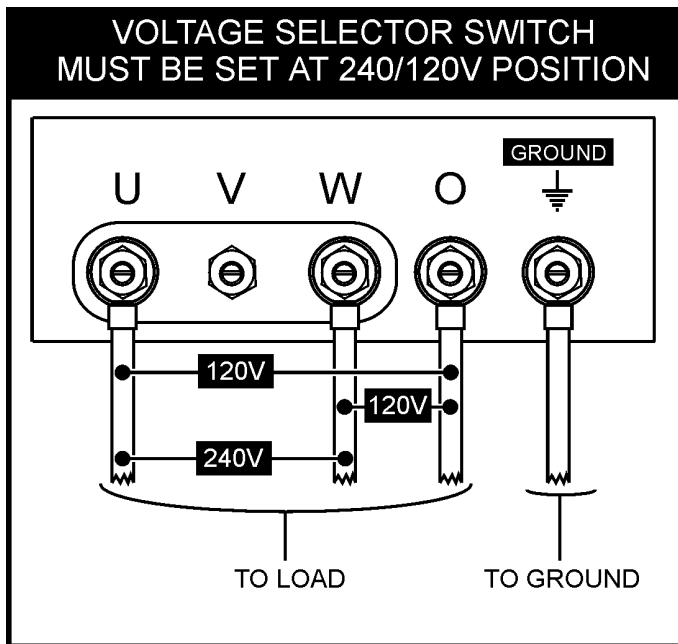


Figure 18. Hard Wire Hookup at 240/120V Position

## 480/240V Hard Wire Hookup

With the voltage selector set and locked at '3 phase 480/277' (Figure 19) and using the 3-phase 240 hookup, it will provide one circuit available at 108 amps with any two wires plus the ground (Figure 20).

When using the 3-phase 480 volts hookup, it will provide one circuit available at 50 amps with all three wires plus ground.

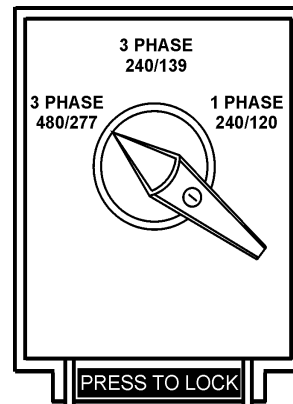


Figure 19. Voltage Selector Switch 480/277V Three Phase Position

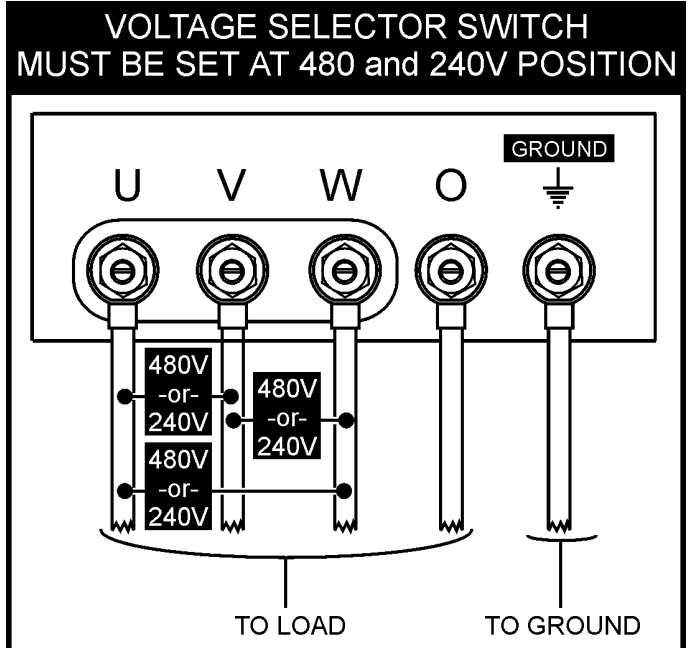


Figure 20. Hard Wire Hookup at 480/240V Position

## DCA-60SSIU — OUTPUT VOLTAGE SETUP

**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.



Figure 21. Voltage Regulator Knob

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

This setting can provide 3-phase power at 480, 440, or 416 volts. After hooking up the hard wires to the lugs as shown in Figure 22, 480 volts can be obtained with the voltage regulator knob turned toward maximum; 440 volts can be obtained with the voltage regulator knob is turned down; and 416 volts can be obtained with the voltage regulator knob is at the lowest setting.

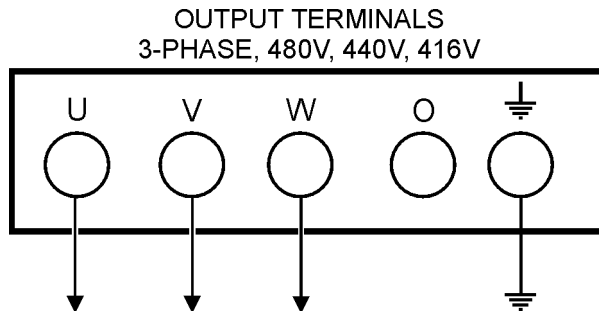


Figure 22. Hard Wire Hookup for Three Phase 480V, 440V, or 416V

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

This setting can provide single phase power at 480, 440, or 416 volts. After hooking up the hard wires to the lugs as shown in Figure 23, 480 volts can be obtained with the voltage regulator knob turned toward maximum; 440 volts can be obtained with the voltage regulator knob is turned down; and 416 volts can be obtained with the voltage regulator knob is at the lowest setting.

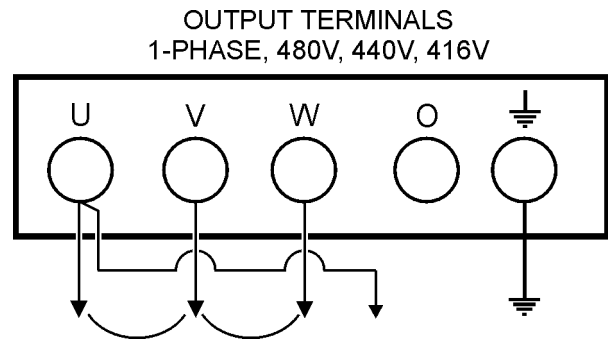


Figure 23. Hard Wire Hookup for Single Phase 480V, 440V, or 416V

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

This setting can provide single phase power at 277, 254, or 240 volts. After hooking up the hard wires to the lugs as shown in Figure 24, 277 volts can be obtained with the voltage regulator knob turned toward maximum; 254 volts can be obtained with the voltage regulator knob is turned down; and 240 volts can be obtained with the voltage regulator knob is at the lowest setting.

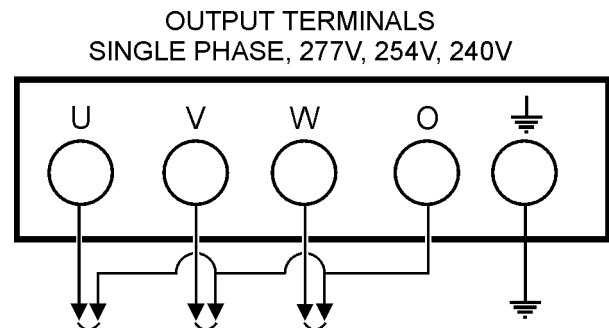


Figure 24. Hard Wire Hookup for Single Phase 277V, 254V, or 240V

## DCA-60SSIU — OUTPUT VOLTAGE SETUP

**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.

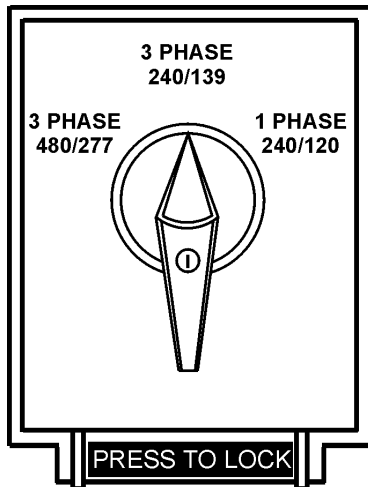


Figure 25. Voltage Selector Switch 240/139V Three Phase Position

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

This setting can provide 3-phase power at 240, 220, or 208 volts. After hooking up the hard wires to the lugs as shown in Figure 26, 240 volts can be obtained with the voltage regulator knob turned toward maximum; 220 volts can be obtained with the voltage regulator knob is turned down; and 208 volts can be obtained with the voltage regulator knob is at the lowest setting.

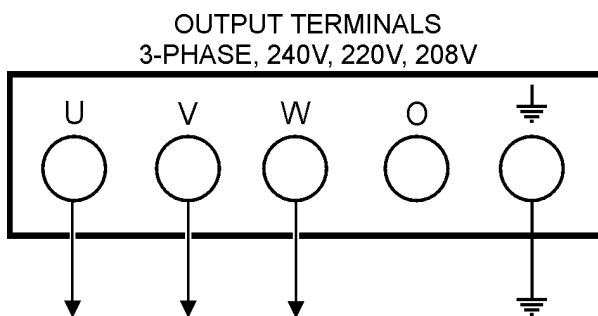


Figure 26. Hard Wire Hookup for Three Phase 240V, 220V, or 208V

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

This setting can provide single phase power at 240, 220, or 208 volts. After hooking up the hard wires to the lugs as shown in Figure 27, 240 volts can be obtained with the voltage regulator knob turned toward maximum; 220 volts can be obtained with the voltage regulator knob is turned down; and 208 volts can be obtained with the voltage regulator knob is at the lowest setting.

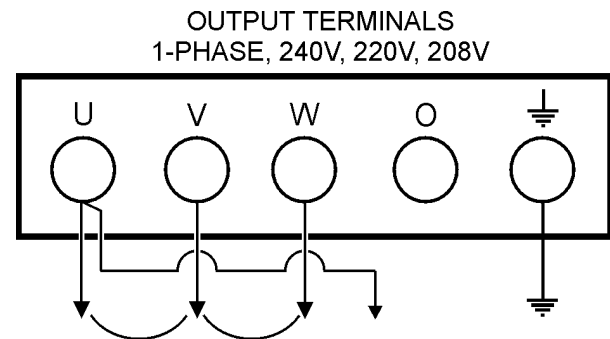


Figure 27. Hard Wire Hookup for Single Phase 240V, 220V, or 208V

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

This setting can provide single phase power at 139, 127, or 120 volts. After hooking up the hard wires to the lugs as shown in Figure 28, 139 volts can be obtained with the voltage regulator knob turned toward maximum; 127 volts can be obtained with the voltage regulator knob is turned down; and 120 volts can be obtained with the voltage regulator knob is at the lowest setting.

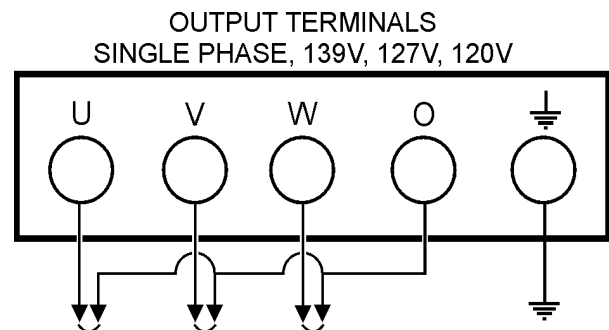


Figure 28. Hard Wire Hookup for Single Phase 139V, 127V, or 120V

# DCA-60SSIU — OUTPUT VOLTAGE SETUP

## 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.

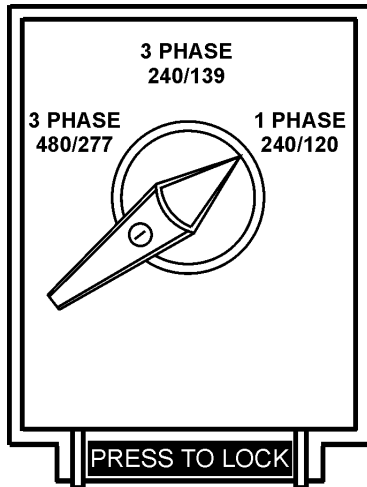


Figure 29. Voltage Selector Switch 240/120V Single Phase Position

## Single Phase: 120 Volt

This setting can provide single phase power at 120 volts. After hooking up the hard wires to the lugs as shown in Figure 31, 120 volts can be obtained with the voltage regulator knob turned to fine tune.

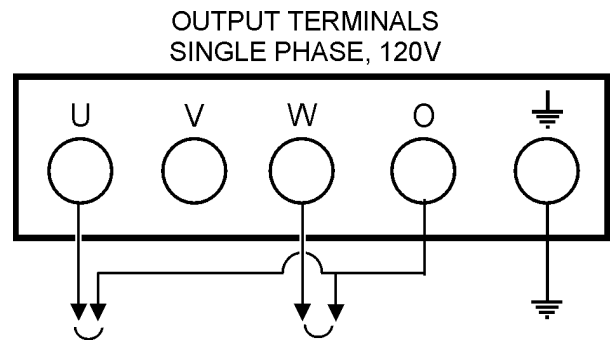


Figure 31. Hard Wire Hookup for Single Phase, 120 volt

## Single Phase, 240 Volt

This setting can provide single phase power at 240 volts. After hooking up the hard wires to the lugs as shown in Figure 30, 240 volts can be obtained with the voltage regulator knob turned to fine tune.

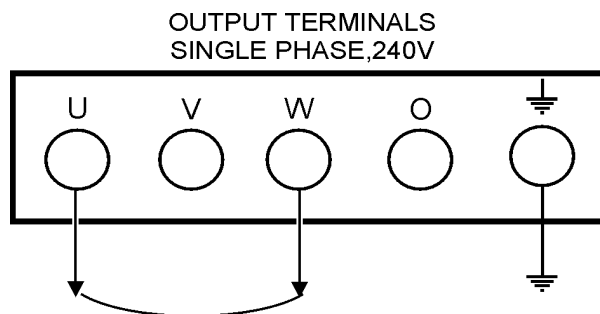


Figure 30. Hard Wire Hookup for Single Phase 240 volt

### 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 it cannot slide or shift around. Also install the generator so the exhaust will not be discharged in the direction of nearby homes.

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

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

### CAUTION :



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

### Indoor Installation

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

### CAUTION :



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

### Generator Grounding

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

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

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

1. Use one of the following wire types to connect the generator to earth ground.
  - a. Copper - 10 AWG (5.3 mm<sup>2</sup>) or larger.
  - b. Aluminum - 8 AWG (8.4 mm<sup>2</sup>) or larger.
2. When grounding the generator (Figure 32) 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.

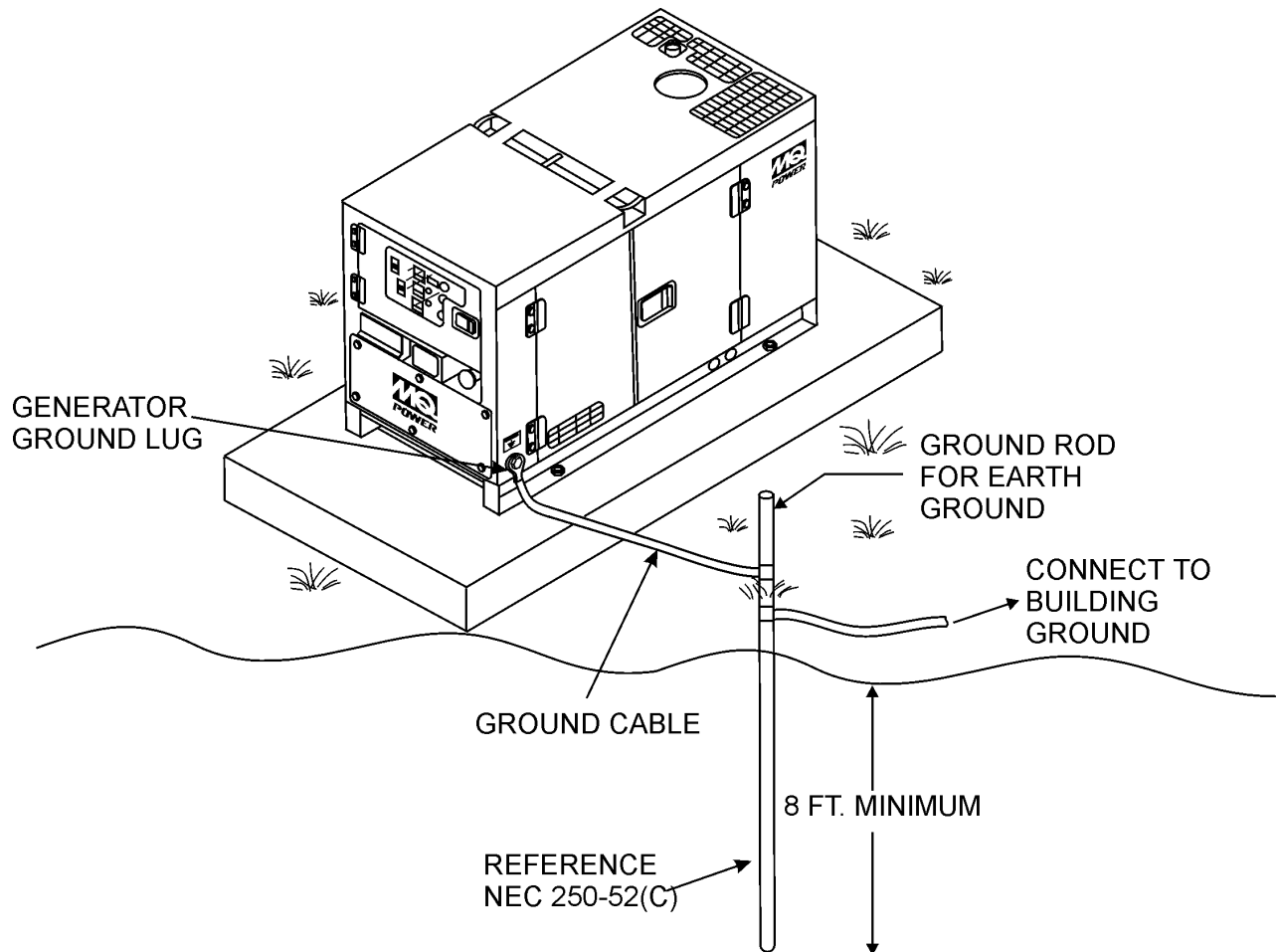


Figure 32. Typical Generator Grounding Application

### General Inspection Prior to Operation

The DCA-60SSI2 generator has been thoroughly inspected and accepted prior to shipment from the factory. However, be sure to check for damaged parts or components, or loose nuts and bolts, which could have occurred in transit.

### Extension Cable

When electric power is to be provided to various tools or loads at some distance from the generator, extension cords are normally used. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generator and point of use (load) is held to a minimum. Use the Cable Selection Guide (Table 10) as a guide for selecting proper cable size.

### Circuit Breakers

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

#### NOTE

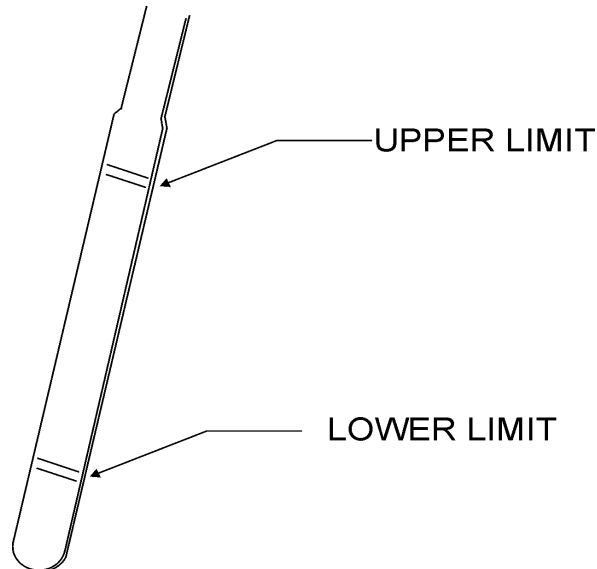
**ALWAYS** consult with a licensed electrician for correct extension cord wire size.

Table 10. Cable Selection (60 Hz, Single Phase Operation)

| Current in Amperes                                     | Load In Watts |              | Maximum Allowable Cable Length |          |          |          |
|--------------------------------------------------------|---------------|--------------|--------------------------------|----------|----------|----------|
|                                                        | At 120 Volts  | At 240 Volts | #10 Wire                       | #12 Wire | #14 Wire | #16 Wire |
| 2.5                                                    | 300           | 600          | 1000 ft.                       | 600 ft.  | 375 ft.  | 250 ft.  |
| 5                                                      | 600           | 1200         | 500 ft.                        | 300 ft.  | 200 ft.  | 125 ft.  |
| 7.5                                                    | 900           | 1800         | 350 ft.                        | 200 ft.  | 125 ft.  | 100 ft.  |
| 10                                                     | 1200          | 2400         | 250 ft.                        | 150 ft.  | 100 ft.  |          |
| 15                                                     | 1800          | 3600         | 150 ft.                        | 100 ft.  | 65 ft.   |          |
| 20                                                     | 2400          | 4800         | 125 ft.                        | 75 ft.   | 50 ft.   |          |
| CAUTION: Equipment damage can result from low voltage. |               |              |                                |          |          |          |

### Lubrication Oil

Fill the engine crankcase with lubricating oil through the filler hole, but do not overfill. Make sure the generator is level. With the dipstick inserted all the way, but without being screw into the filler hole, verify that the oil level is maintained between the two notches (Figure 33) on the dipstick. See Table 11 for proper selection of engine oil.



**Figure 33. 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 **Isuzu 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              |
|----------------------------------|-----------------------|
| 104° F ~ 23° F<br>(40° C ~ -5°C) | SAE 30                |
| 23° F ~ 5° F<br>(-5° C ~ -15°C)  | SAE 20 or SAE 10W-30  |
| Below 5° C (-15°)                | SAE 10W or SAE 10W-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 | 7.8 Gal. (29.5 Liter) |
| Reserve Tank        | .95 Gal. (2 Liter)    |

**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 %<br>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 Outer 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 radiator is dangerous, so clean only with the engine turned off and the battery disconnected.

**Air Cleaner**

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

**Fan Belt Tension**

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

The fan belt tension is proper if the fan belt bends 10 to 15 mm (Figure 34) when depressed with the thumb as shown below. Never place hands near the belts or fan while the generator is running.

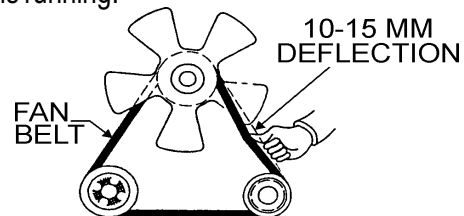


Figure 34. Fan Belt Tension

**CAUTION :**

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

**Adjusting Fan Belt**

If the fan belt does not have the 10 to 15 mm deflection follow the procedure below to adjust:

Loosen the alternator adjusting plate and alternator mounting bolt.

Pivot the alternator at the mounting bolt toward the engine left or right until the belt reflects the proper tension.

Tighten the mounting bolt and the adjusting bolt.

**Battery**

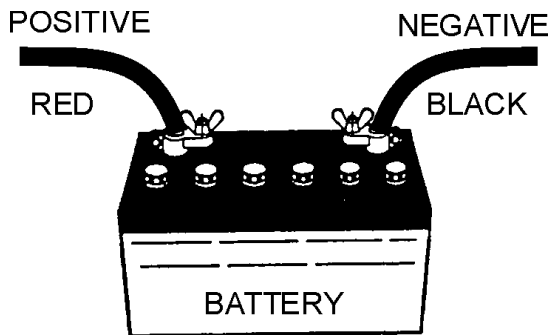
This unit is of negative ground. **DO NOT** connect in reverse. Always maintain battery fluid level between the specified marks. Battery life will be shortened, if the fluid level is not properly maintained. Add only distilled water when replenishment is necessary. **DO NOT** over fill.

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

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 to inhibit corrosion.

**Battery Cable Installation**

**ALWAYS** be sure the battery cables (Figure 35) 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 35. Battery Connections**

**Alternator**

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

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

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

**CAUTION :**

If the battery cable is connected incorrectly, 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 key is in the ignition and is set in 'START' mode. **ALWAYS** remove the key from the ignition and the ignition 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.

**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.

**DCA-60SSI2 — LOAD APPLICATION****Single Phase Load**

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

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

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

**NOTE**

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

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

The power factor of this generator is 1.0. See Table 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:

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

**CAUTION:**

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

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

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

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

**CAUTION:**

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

**NOTE**

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

# DCA-60SSI2 — GENERATOR START-UP PROCEDURE

## WARNING:



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

### Before Starting Engine

1. Check the lubricating oil level prior to starting the engine. Make sure the generator is level. The oil level must be maintained between two notches on the dipstick.
2. When there is not enough lubricating oil, fill the crankcase with high grade motor oil. Use a high quality detergent oil classified CC or higher (See Table 11 on page 43).
3. Check the coolant level in the radiator and subtank. Replenish with antifreeze as necessary. Always maintain the coolant level between the **FULL** and **LOW** markings on the coolant container. Be sure that the radiator cap is fastened securely.
4. Check the fuel level on the fuel gauge. If fuel is low, fill the fuel tank with clean fresh unleaded automotive diesel. If diesel spillage occurs, completely wipe up the spilled fuel immediately.

### Before Starting

#### Generator and Control Panel

## CAUTION:



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

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

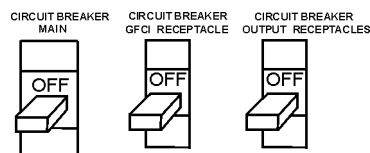


Figure 36. Main, GFCI and Load Circuit Breakers

2. Connect the load to the UVW terminals as shown in Figure 37. These terminals can be found on the output terminal panel, (see page 22 Figure 6). To gain access to the output terminals lift the UVW cover. Tighten terminal nuts securely to prevent load wires from slipping out.

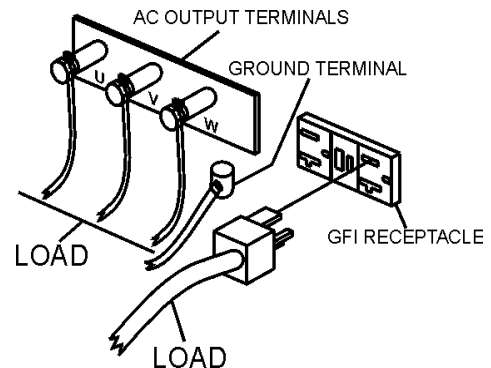


Figure 37. UVW Terminal Lugs (Load)

3. Connect the negative battery cable (BLACK) to the negative post on the battery (Figure 38).

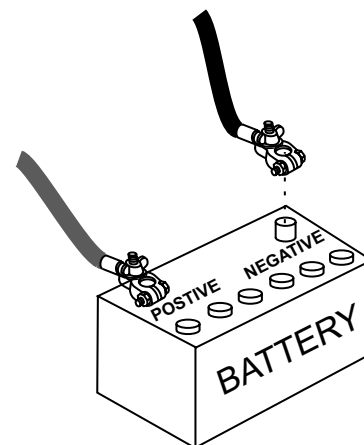
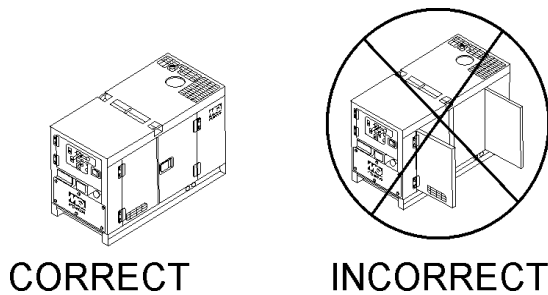


Figure 38. Battery Connections

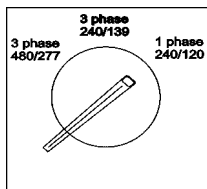
# DCA-60SSI2 — GENERATOR START-UP PROCEDURE

4. Close all engine enclosure doors (Figure 39).



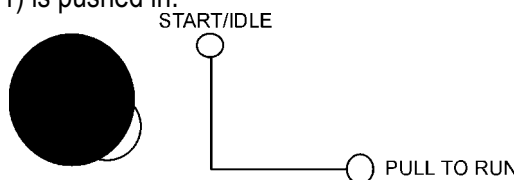
**Figure 39. Engine Enclosure Doors**

5. Check the voltage selection switch (Figure 40) is at the desired voltage.



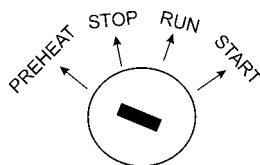
**Figure 40. Voltage Selection Switch**

6. Check to see if the engine throttle lever (Figure 41) is pushed in.



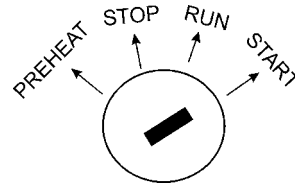
**Figure 41. Engine Throttle Lever**

7. Turn the starter switch to 'PREHEAT' (Figure 42) until the indicator light turns on. The oil pressure indicator light will initially turn on, but should turn off once the pressure rises.



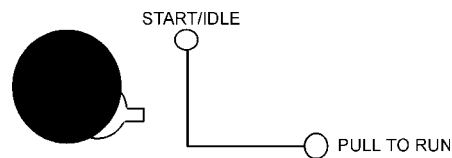
**Figure 42. Key Switch (Preheat)**

8. Once the preheat indicator lights, turn the key to 'START' (Figure 43). After the engine cranks, release the key to 'RUN'.



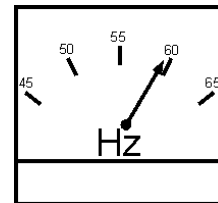
**Figure 43. Starter Switch (Start)**

9. Pull the engine throttle lever and turn left until the lever sets on the knob (Figure 44).



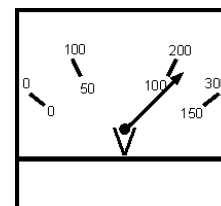
**Figure 44. Engine Throttle Lever (Up)**

10. The generator's frequency meter (Figure 45) displays the 60 cycle output frequency in **HERTZ**.



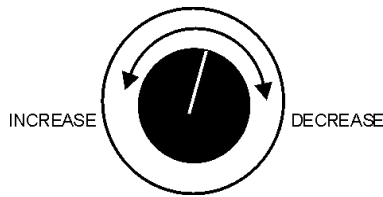
**Figure 45. Frequency Meter (Hz)**

11. The generator's voltage meter (Figure 46) displays the 120 VAC in **VOLTS**. If the voltage is not within the specified frequency tolerance, use the voltage adjustment control knob (Figure 47) to increase or decrease the desired voltage.



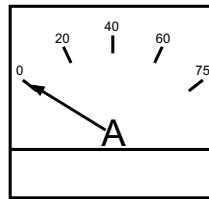
**Figure 46. Voltage Meter (Volts)**

# DCA-60SSI2 — GENERATOR START-UP PROCEDURE



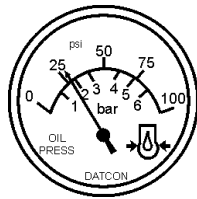
**Figure 47. Voltage Adjust Control Knob**

12. The ammeter (Figure 48) 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.



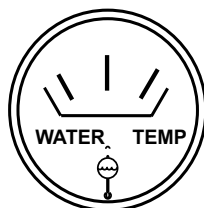
**Figure 48. Ammeter (No Load)**

13. The engine oil pressure gauge (Figure 49) will indicate the oil pressure (kg/ cm<sup>2</sup>) of the engine. Under normal operating conditions the oil pressure is approximately 25 psi.



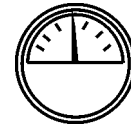
**Figure 49. Oil Pressure Gauge**

14. The coolant temperature gauge (Figure 50) will indicate the coolant temperature. Under normal operating conditions the coolant temperature is between 165 and 215 degrees fahrenheit.



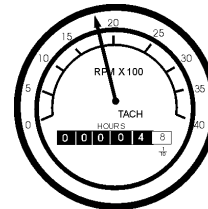
**Figure 50. Coolant Temperature Gauge**

15. The charging ammeter (Figure 51) will indicate if the battery is properly charged.



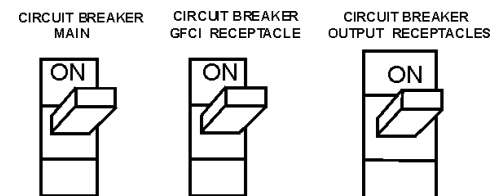
**Figure 51. Charging Ammeter**

16. The tachometer (Figure 52) will indicate the speed of the engine when the generator is operating. Under normal operating conditions this speed is approximately 1800 RPM's.



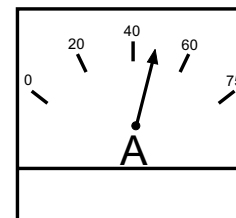
**Figure 52. Engine Tachometer**

17. Turn the MAIN, GFCI and LOAD circuit breakers to their ON position (Figure 53).



**Figure 53. Main and GFCI Circuit Breakers**

18. Observe the generator's ammeter (Figure 54) 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 54. Ammeter (Load)**

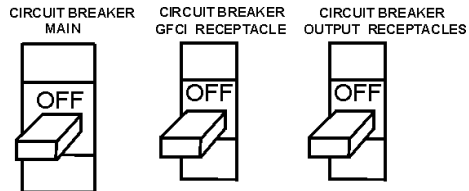
19. The generator will run until manually stopped or an abnormal condition occurs.

# DCA-60SSI2 — GENERATOR SHUT-DOWN PROCEDURE

## ENGINE SHUTDOWN

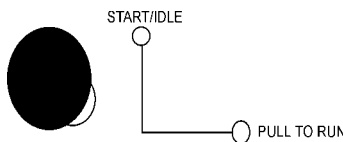
To shutdown the generator, use the following procedure:

1. Switch both the MAIN, GFCI and LOAD circuit breakers (Figure 55) to the "OFF" position.



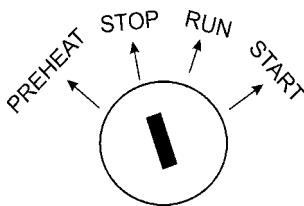
**Figure 55. Main, GFCI and Load circuit breakers**

2. Turn to the right and press in the engine throttle lever (Figure 56).



**Figure 56. Engine Throttle Lever**

3. Let the engine cool by running it for 3-5 minutes with no load applied.
4. Turn the key switch to 'STOP' (Figure 57).



**Figure 57. Key Switch (OFF)**

5. Remove the load from the UVW terminal strip.

## EMERGENCY STOP

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

[illegible]

**General Inspection**

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

**Engine Side** (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.

The air cleaner is equipped with an indicator. After the dirty air cleaner has been replaced, press the dust indicator button to reset the indicator.

**Fuel Addition**

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

**Removing Water from the Fuel 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 more empty volume inside the tank, the easier it is for water to condense. This can be reduced by keeping the tank full as much 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 switch to the "ON" position for 15-30 seconds. Try again, if needed. This unit is equipped with an automatic air bleeding system.

**Service Daily**

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

**Cleaning the Fuel Strainer**

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

**Check Oil Level**

Check the crankcase oil level prior to each use, or when the fuel tank is filled. Insufficient oil may cause severe damage to the engine. Make sure the generator is level. The oil level must be between the two notches on the dipstick as shown in Figure 32, page 43.

**Replacing Oil Filter**

1. Detach the oil filter cartridge with a filter wrench.
2. Apply a film of oil to the gasket for the cartridge.
3. Screw in the cartridge by hand. When the gasket is in contact with the seal surface, tighten the cartridge one or two more times by hand.
4. After the oil cartridge has been replaced, the engine oil will drop slightly. Run the engine for a while and check for leaks before adding more oil if needed. Clean excessive oil from engine.

**Replacing Fuel Filter**

1. Replace the fuel filter cartridge with new one every 400 hours or so.
2. Apply fuel oil thinly over the gasket and hand-tighten the cartridge into position.
3. Vent any air.
4. **Fuel Injection Nozzle**
5. Use an injection nozzle tester to check the static injection starting pressure and the fuel spray conditions.
6. Abnormal fuel consumption will lead to a lowered output and blackish exhaust smoke. The required injection starting pressure should be 14.7MPa (150kg/cm<sup>2</sup>, 2130psi).

**Feed Pump Strainer Cleaning**

The strainer is incorporated in the feed pump inlet side joint bolt. Clean the strainer with compressed air and rinse it in the fuel oil.

**Flushing Out Radiator and Replacing Coolant**

1. Open both cocks located at the crankcase side and at the lower part of the radiator and drain coolant. Open the radiator cap while draining. Remove the overflow tank and drain.
2. Check hoses for softening and kinks. Check clamps for signs of leakage.
3. Flush the radiator by running clean tap water through radiator until signs of rust and dirt are removed. **DO NOT** clean radiator core with any objects, such as a screwdriver.
4. Tighten both cocks and replace the overflow tank.
5. Replace with coolant (see page 44, Table 14 for mixture).
6. Close radiator cap tightly.

**CAUTION :**

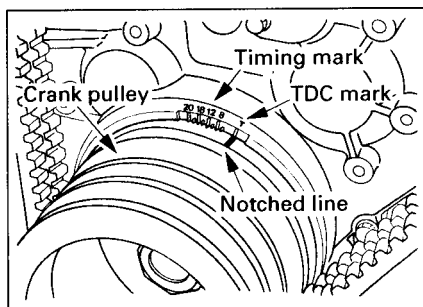
Allow engine to cool when flushing out radiator. Flushing the radiator while hot will damage radiator.

### Valve Clearance Check

1. In order to bring No. 1 or No. 4 cylinder to top dead center in the compression stroke, align the notched line on the crank pulley with TDC mark on the timing gear case cover.
2. Do the adjustment on the circle marked valves in the below table where No. 1 cylinder is at the center in the compression stroke.
3. After adjustment started from either piston top center, turn the crankshaft 360° to align the notched line with the TDC mark to do the adjustment again on the remaining valve. See Table 16 and Figure 55 for valve arrangement.

### Injection Timing Check and Adjustment

1. Bring No. cylinder to the top dead center on the compression stroke.
2. Turn the crankshaft pulley clockwise (viewed at engine front) and align the notched line on the crank pulley with the TDC mark on the timing gear case cover.



**Figure 58. Valve Adjustment**

#### NOTE:

Take necessary precautions to prevent dust and foreign particles in the pump interior when timing adjustments are made.

3. Remove the timing check hole cover at the front of injection pump to check the alignment between the pointer "a" on the injection pump gear lock plate and the projected area mark "b" on the timing gear case.
4. If "a" and "b" are in alignment, the timing is set correctly. If not, follow nos. 1-3 until the "a" and "b" are aligned.
5. Reversely turn the crankshaft pulley counterclockwise viewed at the engine front about 30° crank angle.
6. Remove No. 1 injection pipe from the engine.
7. Remove the injection pump No. 1 delivery valve holder, delivery valve and spring and reinstall the delivery valve holder on the original place.
8. Delivery valve holder tightening torque: 39~44Nm(29~33lbf.)
9. Slowly turn the crankshaft pulley clockwise and at the same time continue to feed the fuel with pumping the Feed pump. When the fuel stop to flow out from No. 1 delivery valve holder, stop pumping.
10. Observe and make sure which mark (injection starting angle line) on the timing gear case cover is aligning with the notched line on the crank pulley.
11. The timing line shows the injection starting crank angle of the engine.
12. The injection starting crank angle should be at the 14° timing mark.

**Table 16. Valve Adjustment**  
(I=Inlet; E=Exhaust)

| Cylinder No.                                               | 1 |   | 2 |   | 3 |   | 4 |   |
|------------------------------------------------------------|---|---|---|---|---|---|---|---|
| Valve Arrangement                                          | I | E | I | E | I | E | I | E |
| When No. 1 is at top dead center in the compression stroke | X | X | X |   |   | X |   |   |
| When No. 4 is at top dead center in the compression stroke |   |   |   | O | O |   | O | O |

**DCA-60SSIU — MAINTENANCE**

| <b>INSPECTION / MAINTENANCE</b> |                                                   | <b>10 Hrs<br/>DAILY</b> | <b>250 Hrs</b> | <b>500 Hrs</b> | <b>1000 Hrs</b> |
|---------------------------------|---------------------------------------------------|-------------------------|----------------|----------------|-----------------|
| <b>ENGINE</b>                   | 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 * <sup>1</sup>      |                         | X              |                |                 |
|                                 | Clean Air Filter                                  |                         | X              |                |                 |
|                                 | Drain Bottom of Fuel Tank                         |                         | X              |                |                 |
|                                 | Clean Unit, Inside and Outside                    |                         | X              |                |                 |
|                                 | Change Fuel Filter * <sup>2</sup>                 |                         |                | 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               |
| <b>GENERATOR</b>                | Measure Insulation Resistance Over 3M ohms        |                         | X              |                |                 |

\*<sup>1</sup> Replace engine oil and filter at 100 hours, first time only.

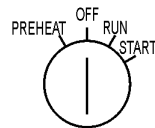
\*<sup>2</sup> Replace fuel filter at 250 Hours, first time only.

**Generator Storage**

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

- Fill 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.

PAGE 56 — DCA-60SSI2 — PARTS AND OPERATION MANUAL(STD) — REV. #1 (04/27/01)



| KEY CONNECTION DIAGRAM |   |                |     |                |   |                |                |                |
|------------------------|---|----------------|-----|----------------|---|----------------|----------------|----------------|
|                        | B | R <sub>1</sub> | ACC | R <sub>2</sub> | C | A <sub>r</sub> | P <sub>1</sub> | P <sub>2</sub> |
| OFF                    | ● |                |     |                |   | ●              | ●              |                |
| PREHEAT                | ● | ●              |     |                |   | ●              | ●              |                |
| RUN                    | ● |                | ●   |                |   | ●              |                | ●              |
| START                  | ● |                |     | ●              | ● | ●              |                | ●              |

## DCA-60SSI2 — TROUBLESHOOTING (ENGINE)

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

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

**TABLE 16. ENGINE TROUBLESHOOTING**

| SYMPTOM                       | POSSIBLE PROBLEM                                                     | SOLUTION                                                                      |
|-------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>Engine does not start.</b> | 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.                                                                       |
| <b>Starter does not run.</b>  | Starter malfunctioning?                                              | Repair or replace.                                                            |
|                               | Wiring disconnected?                                                 | Connect wiring.                                                               |

## DCA-60SSI2 — TROUBLESHOOTING (ENGINE)

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-60SSI2 — TROUBLESHOOTING (GENERATOR/ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, use the tables shown for diagnosis based on the Engine and Radiator Troubleshooting (Table 7). If the problem cannot be remedied, consult our company's business office or service plant.

**TABLE 17. ENGINE & GENERATOR TROUBLESHOOTING**

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

[illegible]

**EXPLANATION OF CODE IN REMARKS COLUMN**

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

**Items Found In the “Remarks” Column**

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

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

**Items Found In the “Items Number” Column**

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

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

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

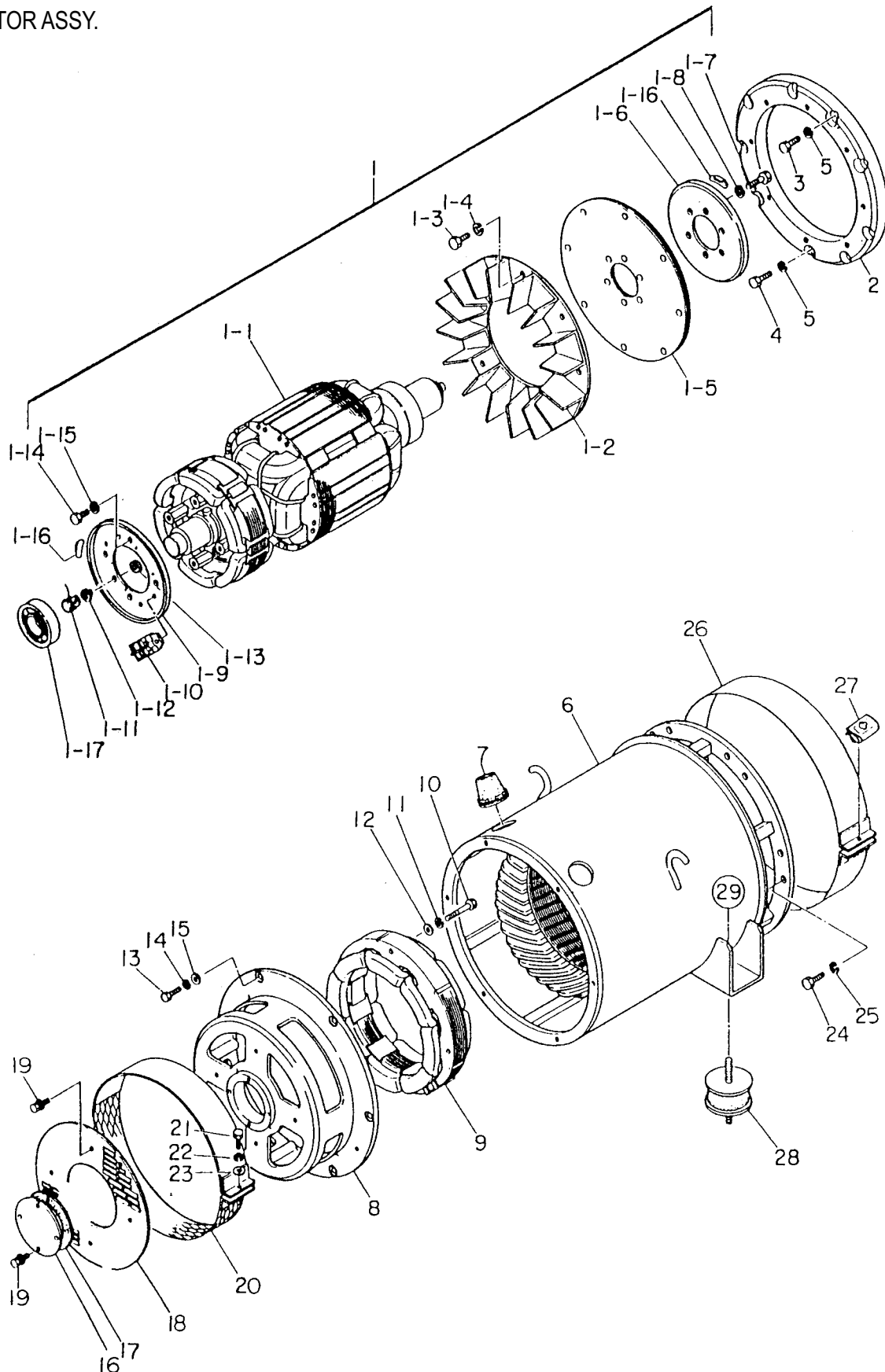
| <u>Qty.</u> | <u>P/N</u>       | <u>Description</u>          |
|-------------|------------------|-----------------------------|
| 1 .....     | 0601805869 ..... | CIRCUIT BREAKER             |
| 1 .....     | 0601820671 ..... | AUTOMATIC VOLTAGE REGULATOR |
| 1 .....     | 0601840073 ..... | RHEOSTAT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

**NOTE**

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

# DCA-60SSI2 --- GENERATOR ASSY.

GENERATOR ASSY.



## DCA-60SSI2 --- GENERATOR ASSY.

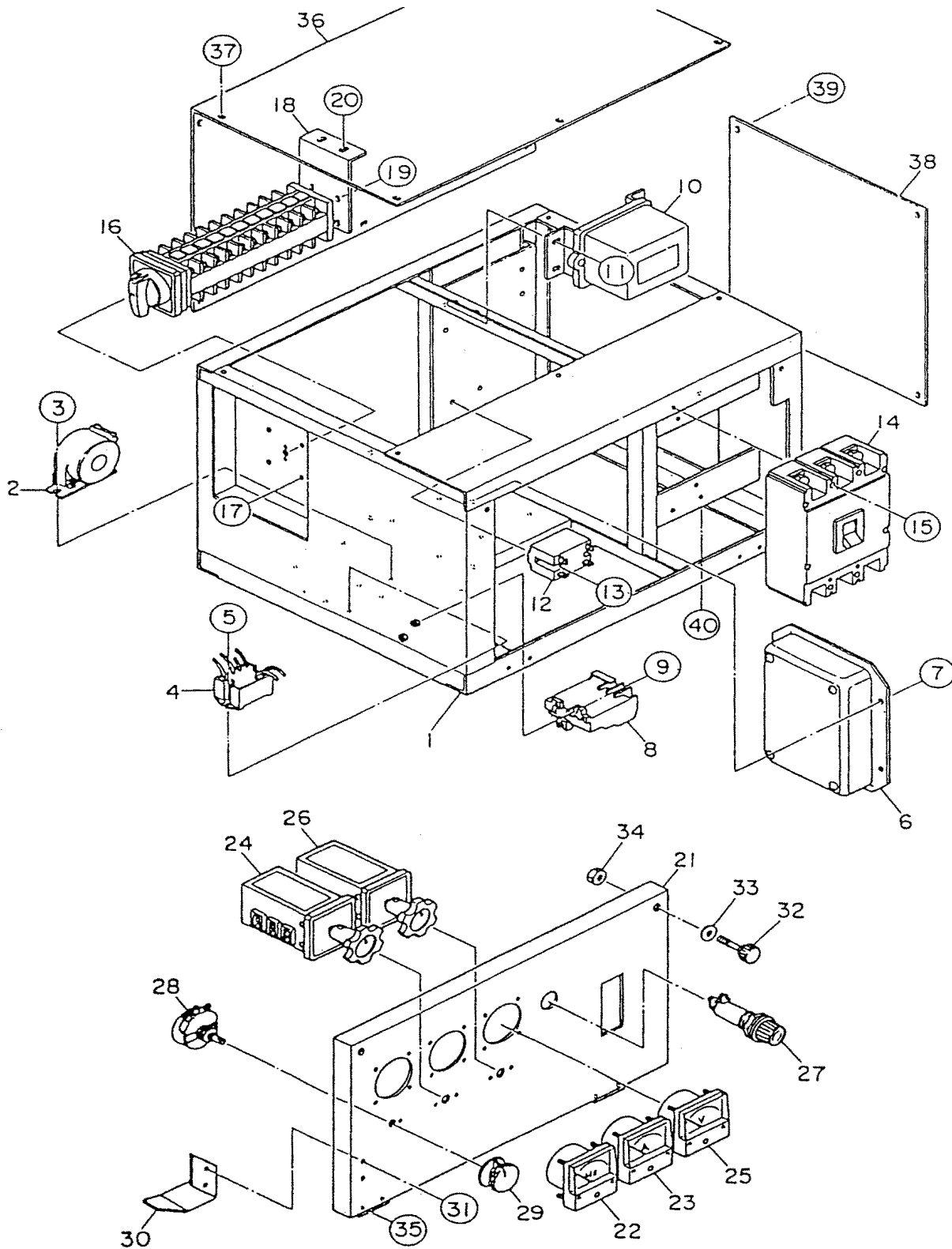
## GENERATOR ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>ITEM</u>           | <u>QTY.</u> | <u>REMARKS</u>      |
|------------|-----------------|-----------------------|-------------|---------------------|
| 1          | 8081000312      | ROTOR ASSY.           | 1           |                     |
| 1-1        |                 | FIELD ASSY.           | 1           |                     |
| 1-2        | 8051070003      | FAN                   | 1           |                     |
| 1-3        | 0012110035      | HEX. HEAD BOLT        | 8           |                     |
| 1-4        | 030210250       | LOCK WASHER .....     | 8           | REPLACES 0042510000 |
| 1-5        | 8041611004      | COUPLING DISK         | 4           |                     |
| 1-6        | 8041015003      | BALANCING PLATE       | 1           |                     |
| 1-7        | 0010310025      | HEX. HEAD BOLT .....  | 6           | REPLACES 0010310025 |
| 1-8        | 030210250       | LOCK WASHER .....     | 6           | REPLACES 0042510000 |
| 1-6        | 8001026013      | SET PLATE RECTUFER    | 1           |                     |
| 1-10       | 0601821349      | RECTIFIER .....       | 2           | PT3610              |
| 1-11       | 0601822601      | SURGER ABSORBER ..... | 1           | ERZM14JK621A        |
| 1-12       | 8001020004      | INSULATOR WASHER      | 1           |                     |
| 1-13       | 8001020504      | INSULATOR WASHER      | 1           |                     |
| 1-14       | 0010108020      | LOCK WASHER           | 4           |                     |
| 1-16       | 0601000209      | BALANCING WEIGHT KIT  | 1           |                     |
| 1-17       | 0071906310      | BEARING .....         | 1           | 6310DDU             |
| 2          | 8051614003      | COUPLING RING         | 1           |                     |
| 3          | 8051653004      | REAMER BOLT           | 2           |                     |
| 4          | 012010030       | HEX. HEAD BOLT .....  | 7           | REPLACES 0012110030 |
| 5          | 0042510000      | LOCK WASHER .....     | 9           | REPLACES 0042510000 |
| 6          | 8081340503      | STRATOR ASSY.         | 1           |                     |
| 7          | 0845041604      | GROMMET               | 2           |                     |
| 8          | 8041315202      | END BRACKET           | 1           |                     |
| 9          | 8041350013      | FIELD ASSY. EXCITER   | 1           |                     |
| 10         | 0010308065      | HEX. HEAD BOLT        | 4           |                     |
| 11         | 0042608000      | LOCK WASHER           | 4           |                     |
| 12         | 031108160       | PLAIN WASHER .....    | 6           | REPLACES 0041208000 |
| 13         | 0010108025      | HEX. HEAD BOLT        | 6           |                     |
| 14         | 0040008000      | LOCK WASHER           | 6           |                     |
| 15         | 0041208000      | PLAIN WASHER          | 6           |                     |
| 16         | 8041310024      | COVER, BEARING        | 1           |                     |
| 17         | 8041310014      | GASKET, BEARING       | 1           |                     |
| 18         | 8041331014      | COVER, END BRACKET    | 1           |                     |
| 19         | 0105050616      | HEX. HEAD BOLT .....  | 8           | REPLACES 0017106012 |
| 20         | 8001333003      | COVER, END BRACKET    | 1           |                     |
| 21         | 0010106030      | HEX. HEAD BOLT        | 1           |                     |
| 22         | 0040006000      | LOCK WASHER           | 1           |                     |
| 23         | 952404470       | PLAIN WASHER .....    | 1           | REPLACES 0041206000 |
| 24         | 0105091025      | HEX. HEAD BOLT .....  | 6           | REPLACES 0010310025 |
| 25         | 030210250       | LOCK WASHER .....     | 6           | REPLACES 0042510000 |
| 26         | 8051332014      | COVER, FAN            | 1           |                     |
| 27         | 020106050       | NUT .....             | 1           | REPLACES 0600815000 |
| 28         | 0605000010      | RUBBER SUSPENSION     | 2           |                     |
| 29         | 0030012000      | HEX. NUT              | 4           |                     |
|            | 0040012000      | LOCK WASHER           | 4           |                     |

Full View

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

CONTROL BOX ASSY.



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

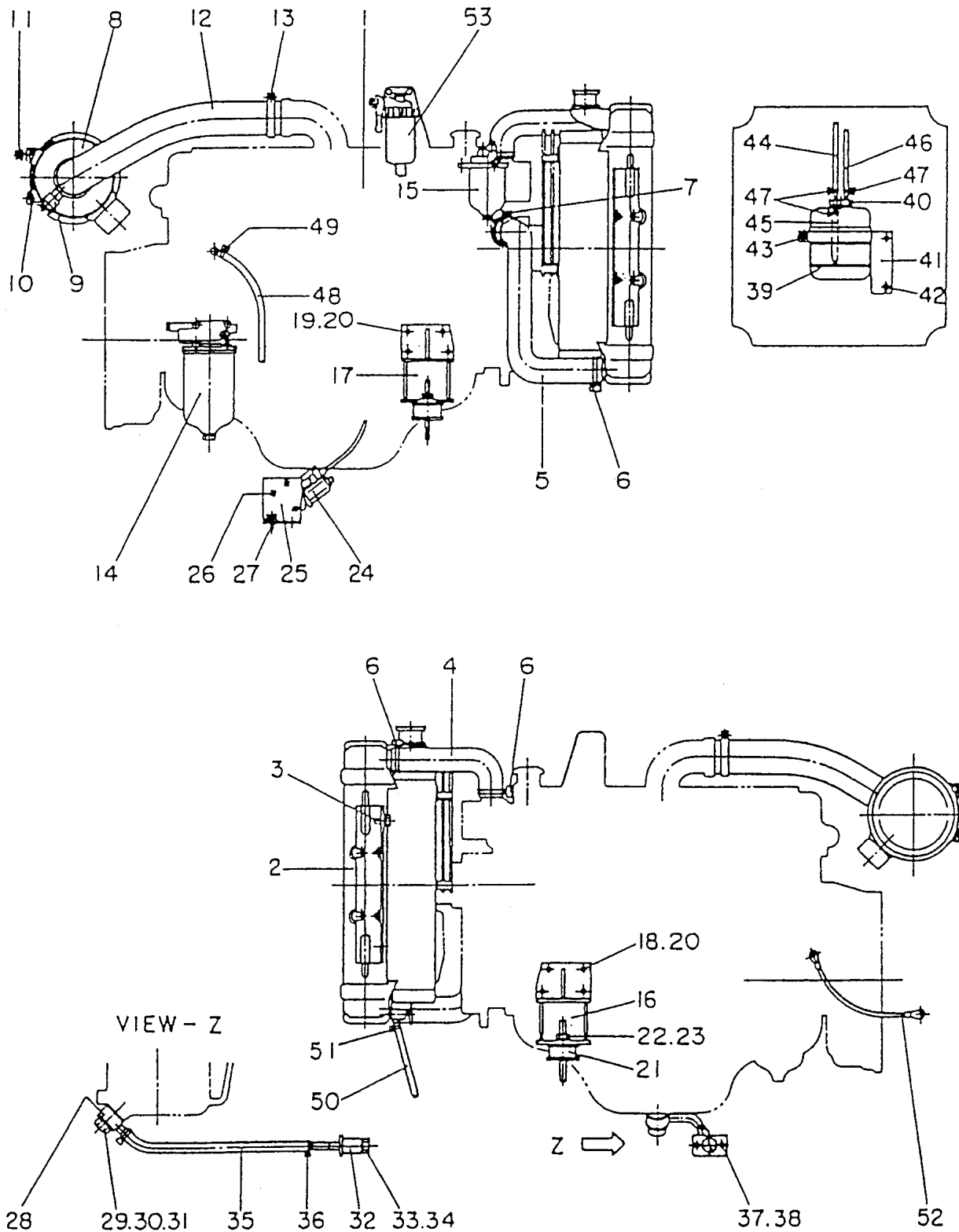
## CONTROL BOX ASSY.

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

Full View

## DCA-60SSI2 ENGINE AND RADIATOR ASSY.

ENGINE AND RADIATOR ASSY.



**DCA-60SSI2 ENGINE AND RADIATOR ASSY.**

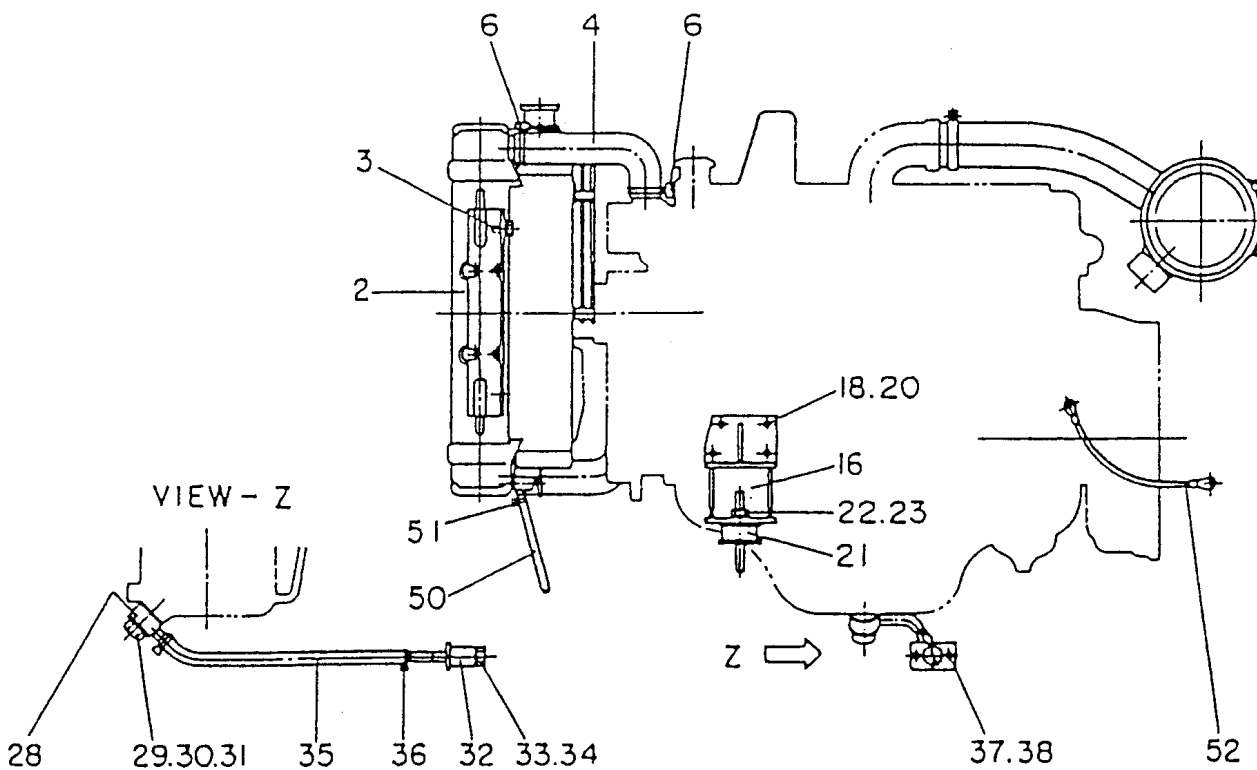
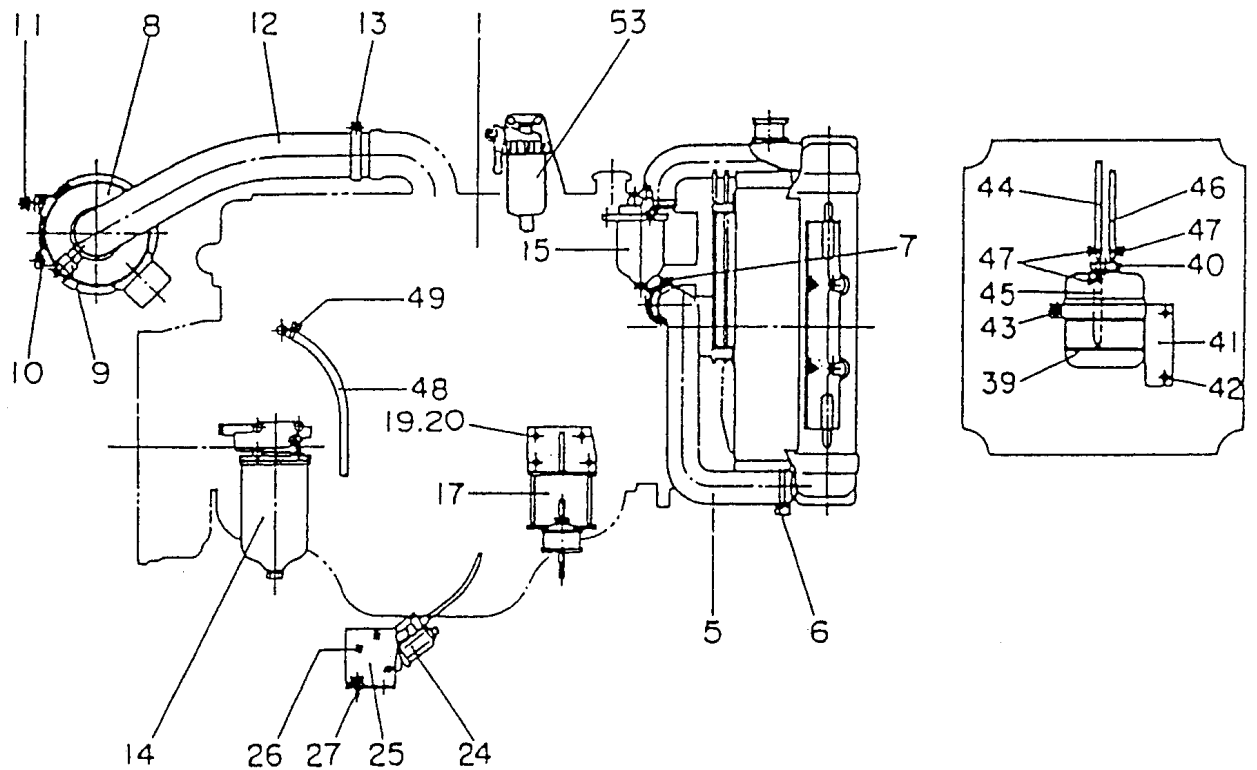
## ENGINE AND RADIATOR ASSY.

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

Full View

## DCA-60SSI2 ENGINE AND RADIATOR ASSY.

## ENGINE AND RADIATOR ASSY.



**DCA-60SSI2 ENGINE AND RADIATOR ASSY.**

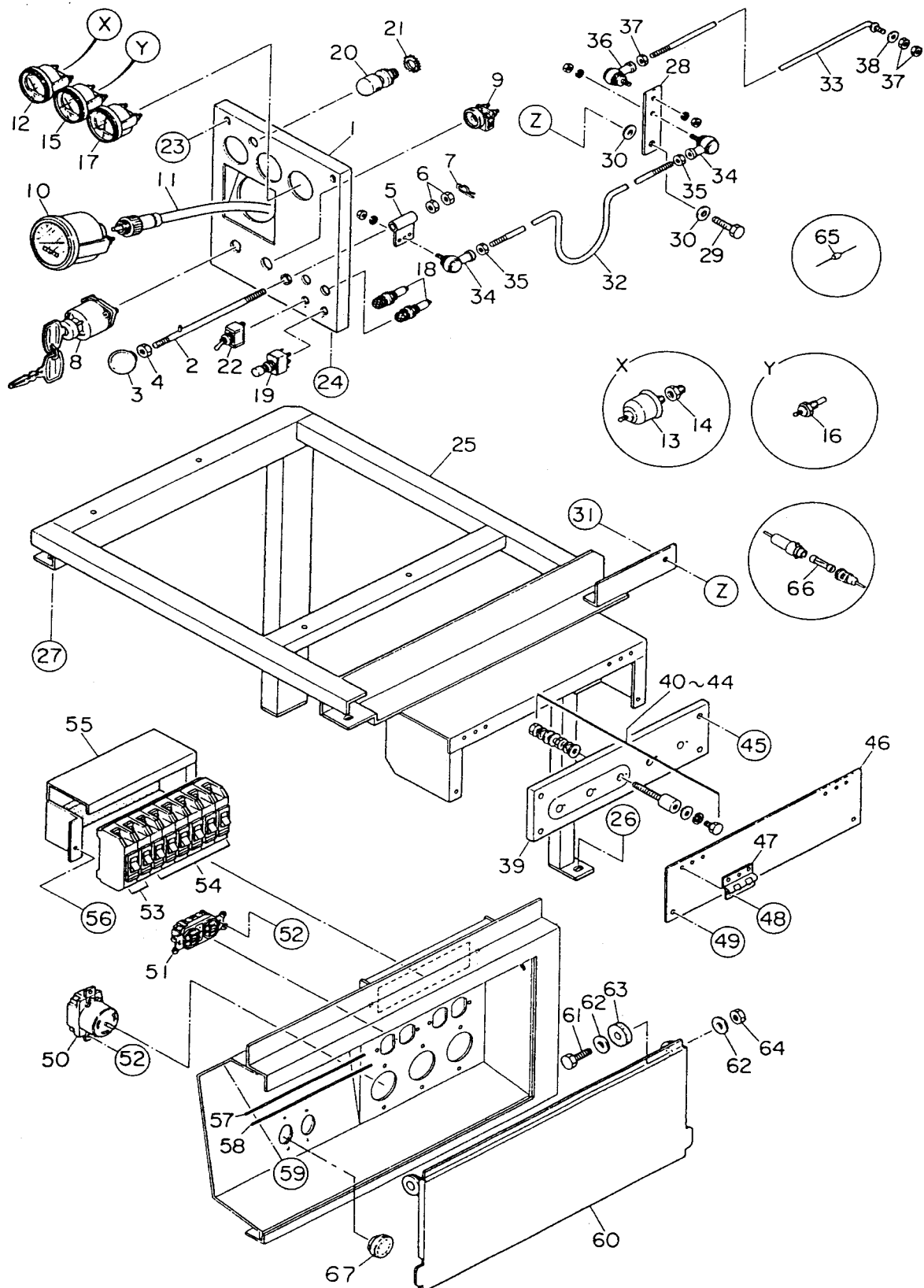
## ENGINE AND RADIATOR ASSY.

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

Full View

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

ENGINE OPERATING PANEL ASSY.



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

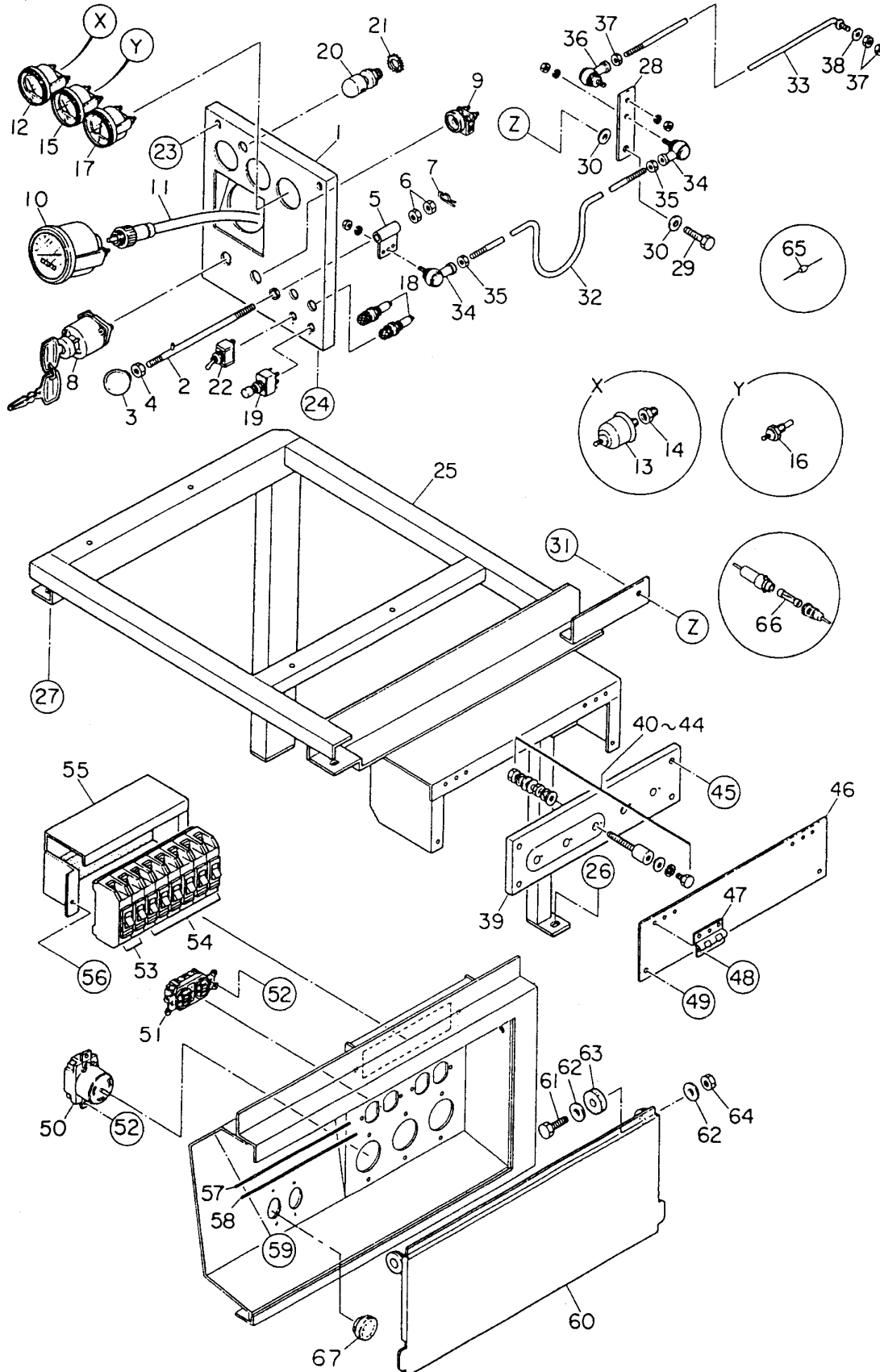
## ENGINE OPERATING PANEL ASSY.

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

Full View

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

## ENGINE OPERATING PANEL ASSY.



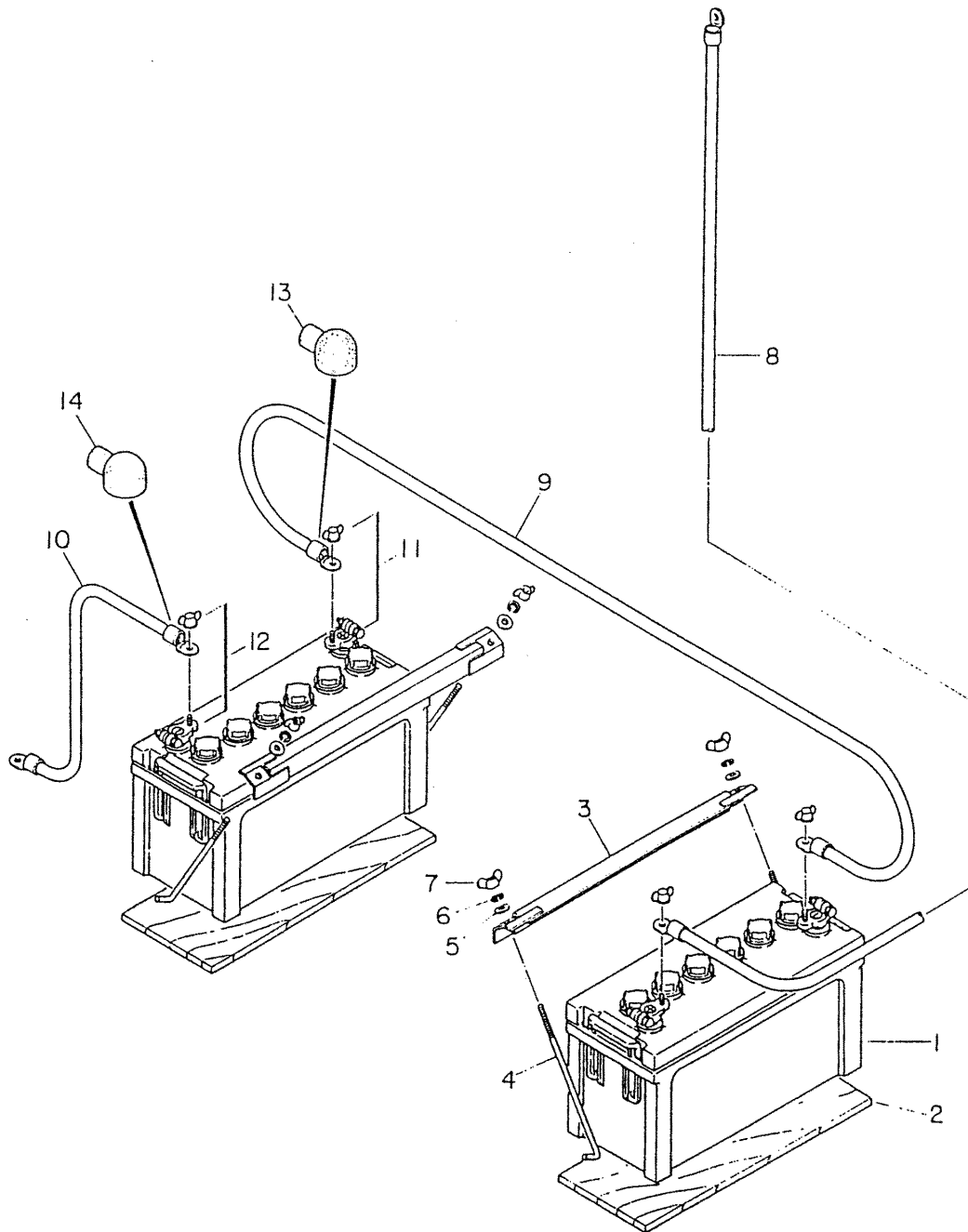
**DCA-60SSI2 --- ENGINE OPERATING PANEL ASSY.**

## ENGINE OPERATING PANEL ASSY.

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

**DCA-60SSI2 --- BATTERY ASSY.**

BATTERY ASSY.



## DCA-60SSI2 --- BATTERY ASSY.

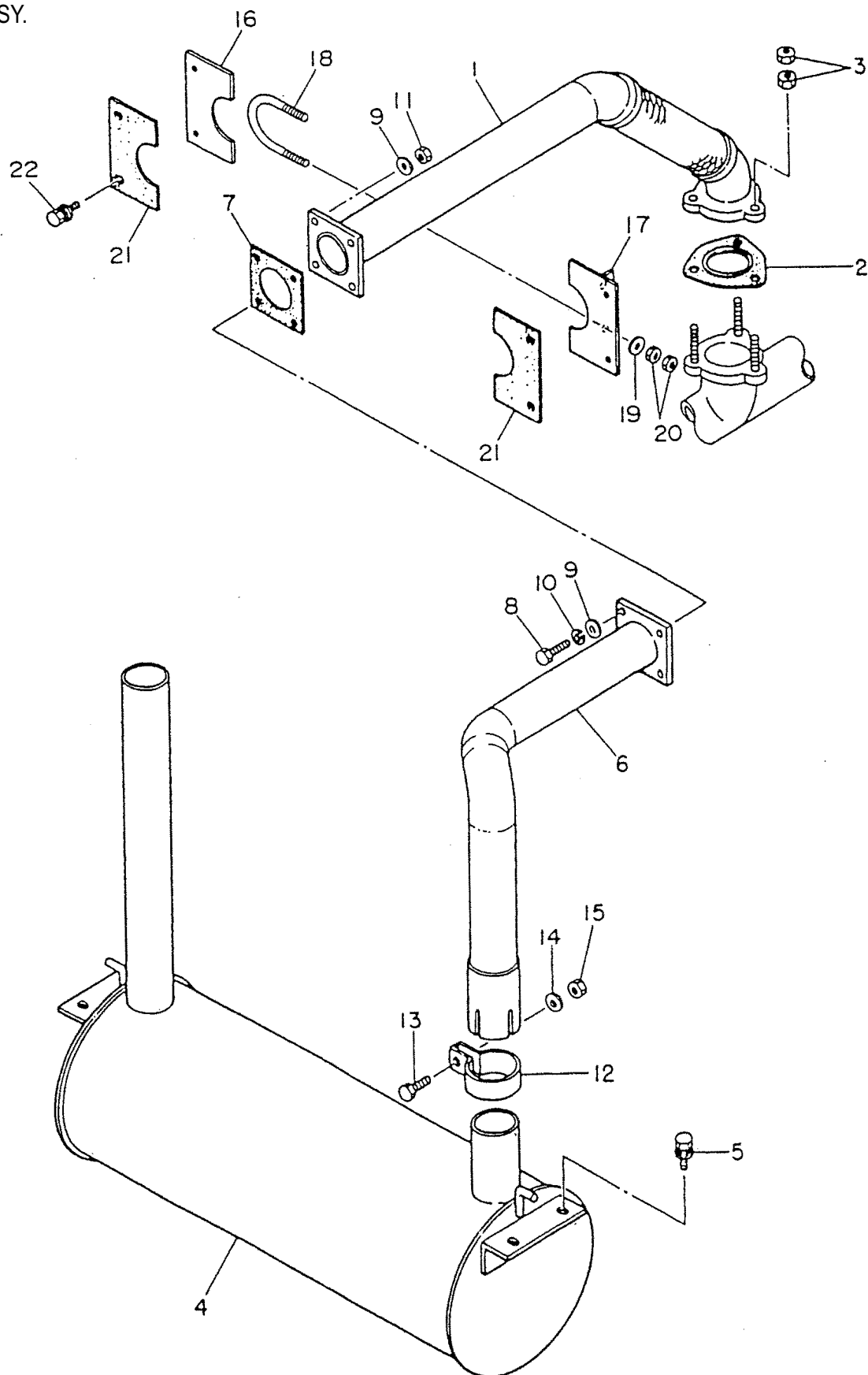
## BATTERY ASSY.

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

Full View

**DCA-60SSI2 --- MUFFLER ASSY.**

MUFFLER ASSY.



## DCA-60SSI2 --- MUFFLER ASSY.

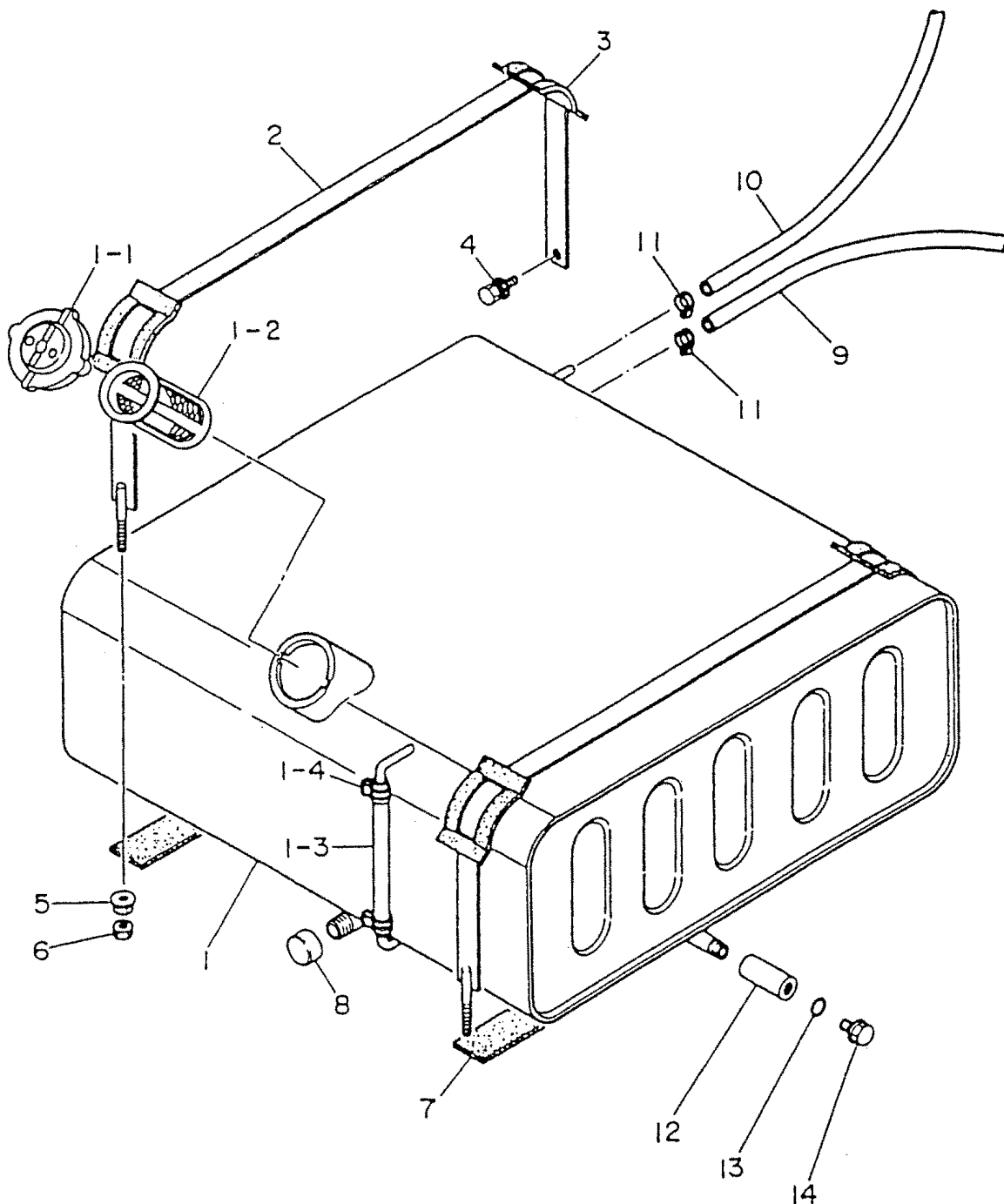
## MUFFLER ASSY.

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

Full View

**DCA-60SSI2 --- FUEL TANK ASSY.**

FUEL TANK ASSY.



## DCA-60SSI2 --- FUEL TANK ASSY.

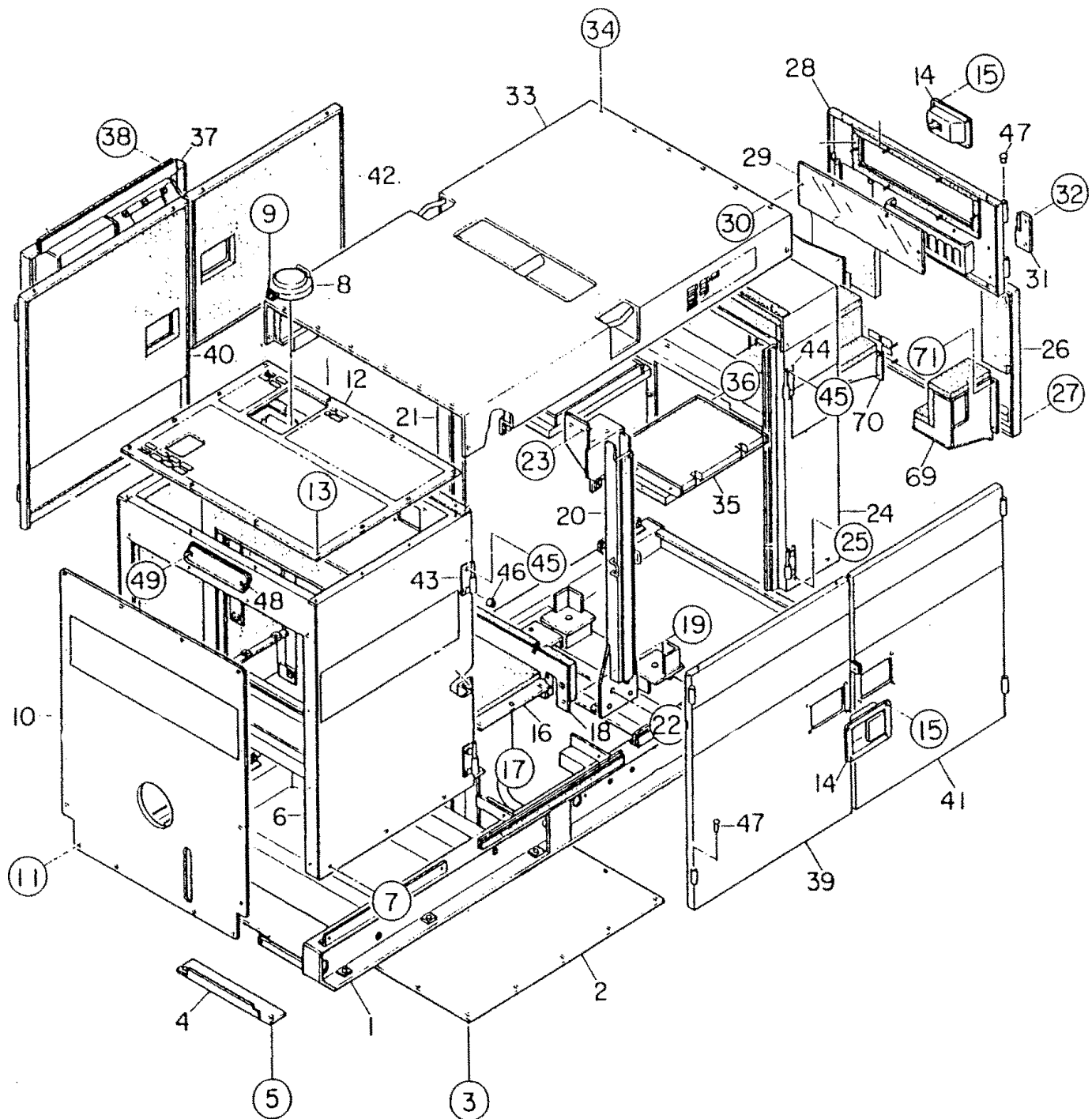
## FUEL TANK ASSY.

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

Full View

**DCA-60SSI2 --- ENCLOSURE ASSY.**

ENCLOSURE ASSY.



## DCA-60SSI2 --- ENCLOSURE ASSY.

## ENCLOSURE ASSY.

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

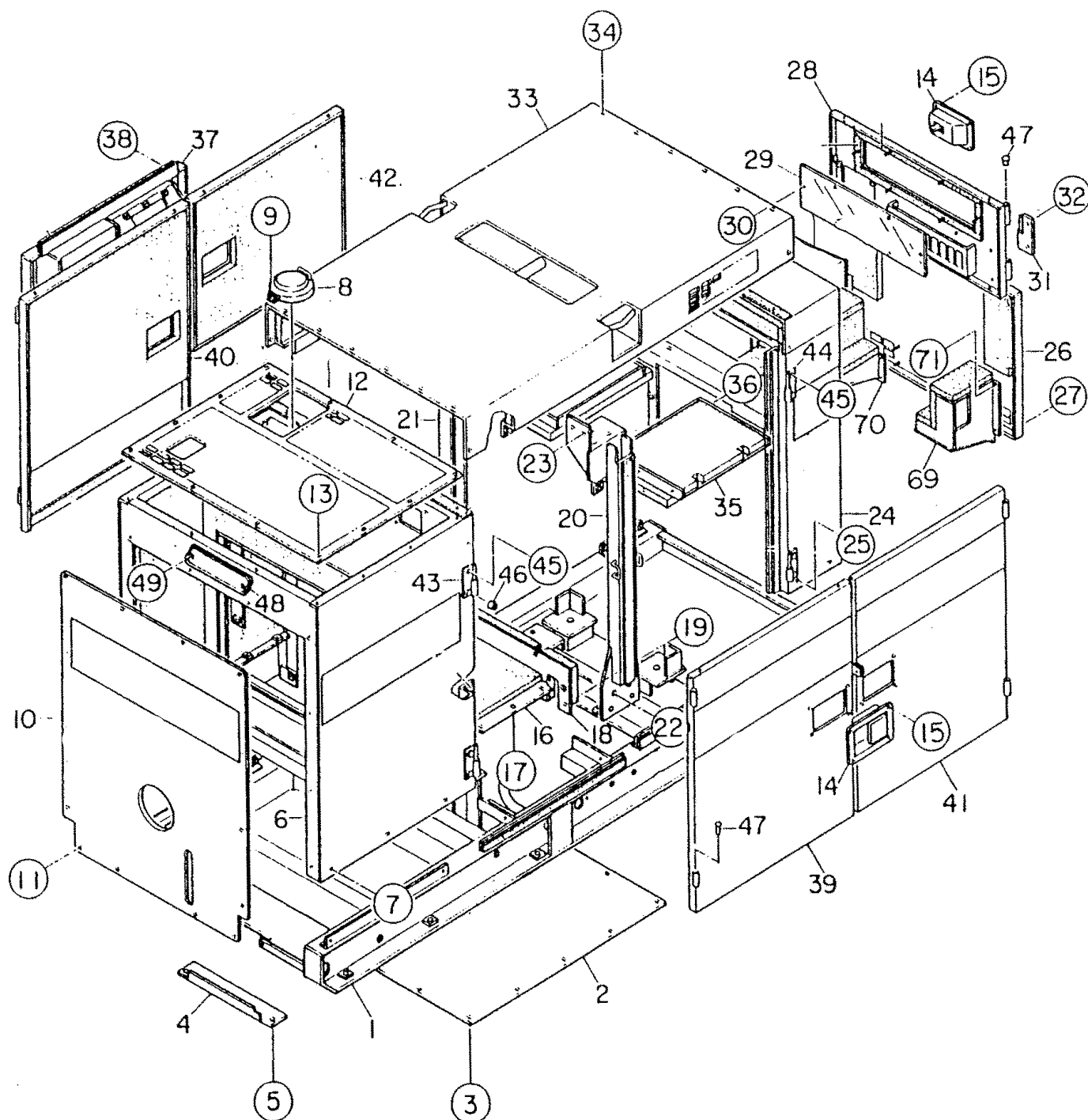
Full View

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

THE SERIAL NUMBER MAY BE REQUIRED.

**DCA-60SSI2 --- ENCLOSURE ASSY.**

ENCLOSURE ASSY.



## DCA-60SSI2 --- ENCLOSURE ASSY.

## ENCLOSURE ASSY.

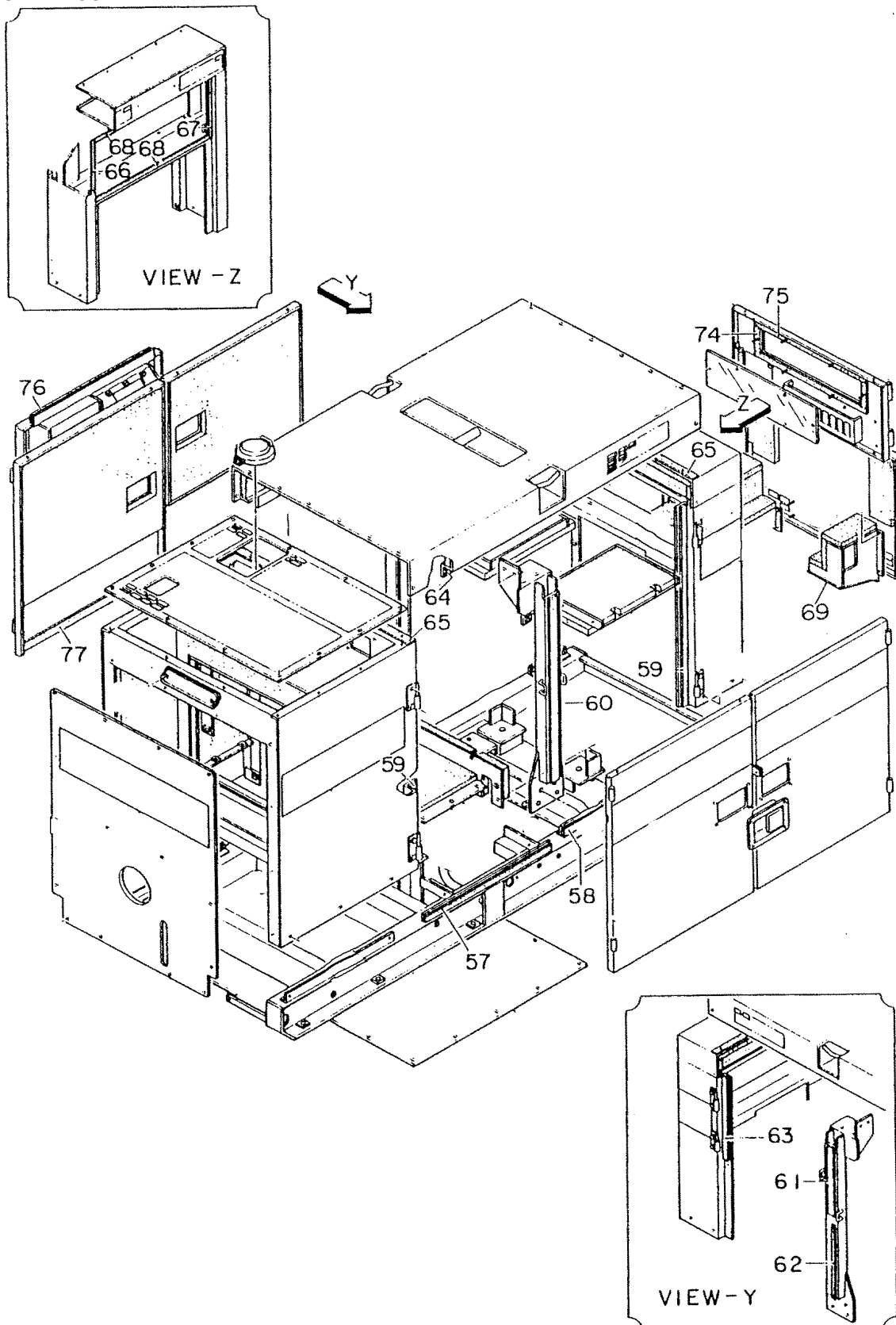
| NO. | PART NO.    | ITEM                   | QTY. | REMARKS               |
|-----|-------------|------------------------|------|-----------------------|
| 27  | 011008040   | HEX.HEAD BOLT .....    | 8    | REPLACES 0010108040   |
|     | 0040008000  | LOCK WASHER            | 8    |             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

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

THE SERIAL NUMBER MAY BE REQUIRED.

**DCA-60SSI2 --- RUBBER SEAL ASSY.**

## RUBBER SEAL ASSY.



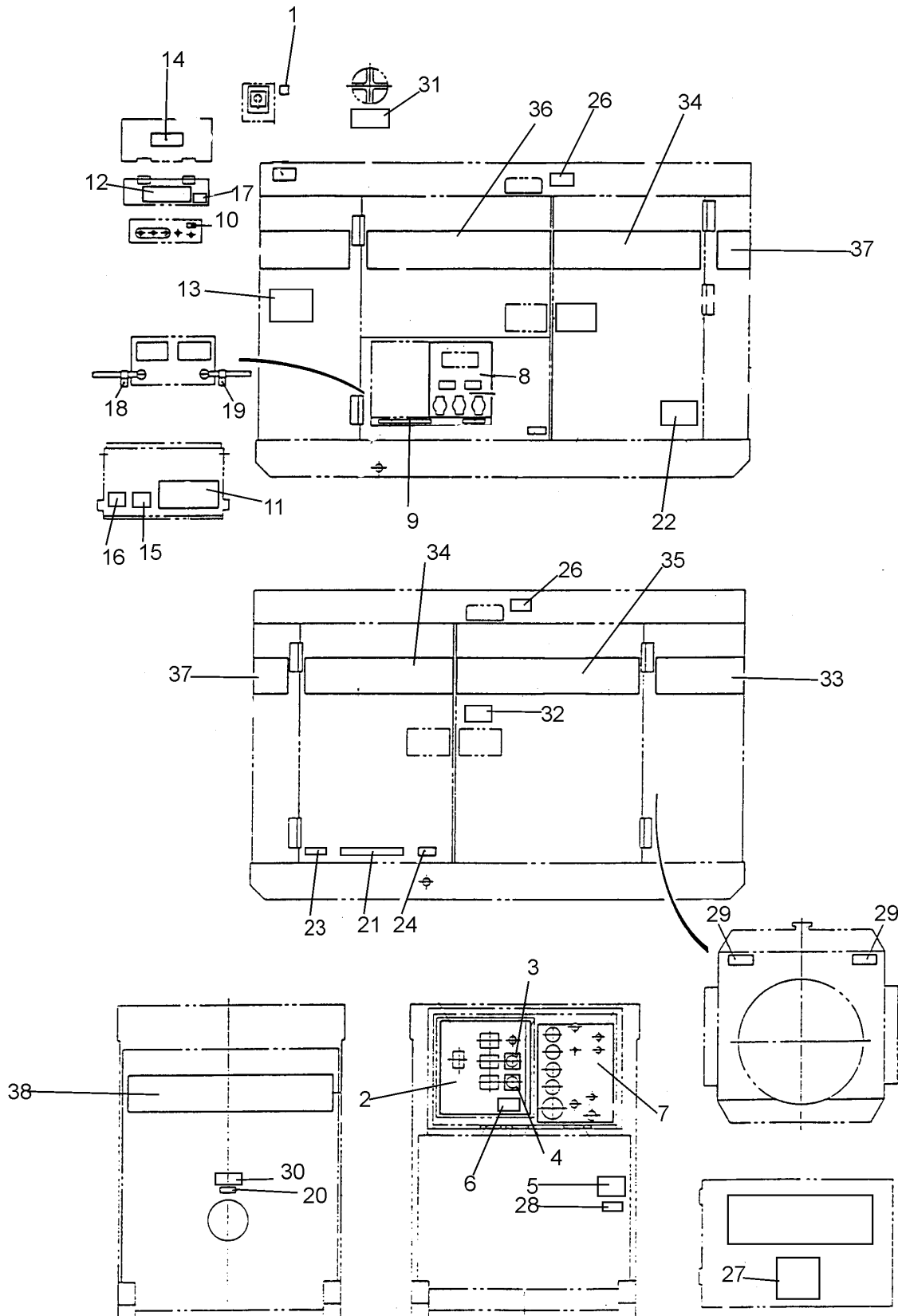
## DCA-60SSI2 --- RUBBER SEAL ASSY.

## RUBBER SEAL ASSY.

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

Full View

## DECAL ASSY.



## DCA-60SSI2 --- DECALS

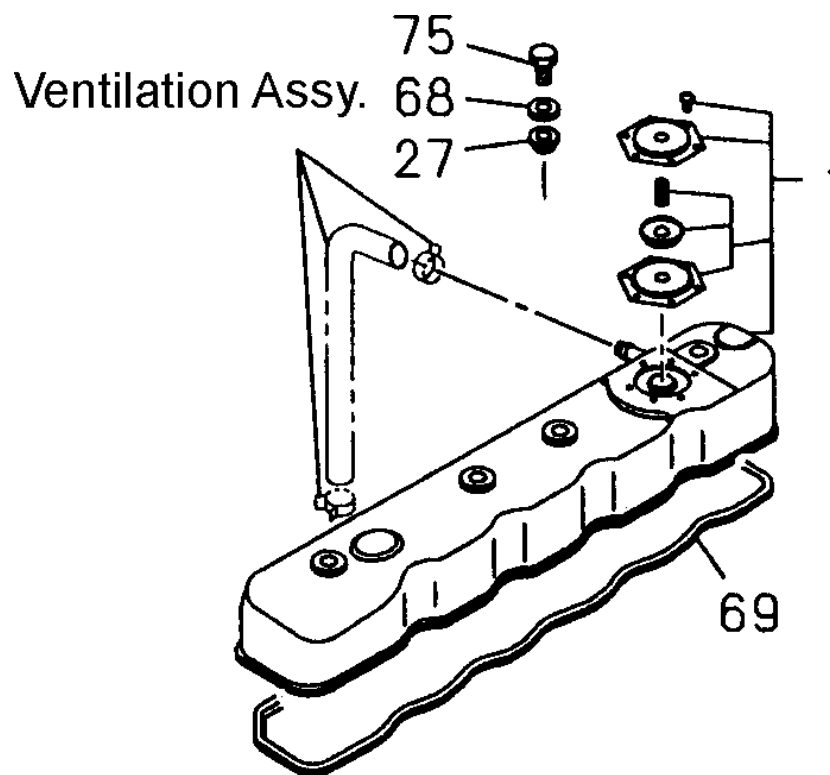
## DECAL ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>ITEM</u>                               | <u>QTY.</u> | <u>REMARKS</u>       |
|------------|-----------------|-------------------------------------------|-------------|----------------------|
| 1          | B9521100504     | DECAL; CAUTION .....                      | 1           | B92110050            |
| 2          | B4551005902     | DECAL; CONTROL PANEL .....                | 1           | B45100590            |
| 3          | 0800520904      | PLATE; AMMETER CHANGE-OVER SWITCH .....   | 1           | N2438                |
| 4          | 0800520804      | PLATE; VOLTAGE CHANGE-OVER SWITCH .....   | 1           | N2439                |
| 5          | B9521100404     | DECAL; SAFETY INSTRUCTION .....           | 1           | B92110040            |
| 6          | B9531100604     | DECAL; WARNING .....                      | 1           | B93110060            |
| 7          | 3340670002      | DECAL; OPERATING PANEL .....              | 1           | S2361A               |
| 8          | 8050670113      | DECAL; RECEPTABLE & CIRCUIT BREAKER ..... | 1           | S3349A               |
| 9          | B1551001604     | DECAL; NOTE .....                         | 1           | B15100160            |
| 10         | 0840614104      | DECAL; GROUND MARK .....                  | 1           | S2635                |
| 11         | 0840619904      | DECAL; CAUTION .....                      | 1           | S2731                |
| 12         | 0840627103      | DECAL; CABLE JOINING .....                | 1           | S3245                |
| 13         | 8080670514      | DECAL; CAUTION .....                      | 1           | S3696B               |
| 14         | B9531100604     | DECAL; WARNING ELECTRIC SHOCK HAZARD .... | 1           | B93110060            |
| 15         | B9511100404     | DECAL; WARNING ELECTRIC SHOCK HAZARD .... | 1           | B91110040            |
| 16         | B9531100504     | DECAL; WARNING ELECTRIC SHOCK HAZARD .... | 1           | B93110050            |
| 17         | B9511100304     | DECAL; WARNING .....                      | 1           | B91110030            |
| 18         | 0800689404      | DECAL; + .....                            | 1           | S2090                |
| 19         | 0800689504      | DECAL; - .....                            | 1           | S2091                |
| 20         | 1320620904      | DECAL; DIESEL FUEL .....                  | 1           | S1756                |
| 21         | 1320610603      | DECAL; WATER, OIL .....                   | 1           | S1760                |
| 22         | 6360610304      | DECAL; WATER .....                        | 1           | S1880                |
| 23         | 6360620004      | DECAL; FUEL DRAIN PLUG .....              | 1           | S1883                |
| 24         | 6360620204      | DECAL; OIL DRAIN PLUG .....               | 1           | S1885                |
| 25         | 0840627304      | DECAL; WARNING .....                      | 1           | S3247                |
| 26         | 1320621504      | DECAL; SUPPORT HOOK .....                 | 2           | S2257                |
| 27         | 0840625902      | DECAL; MQ .....                           | 1           | S3057                |
| 28         | B9504200004     | DECAL; WARNING ENGINE EXHAUST .....       | 1           | B90420000            |
| 29         | B9504000404     | DECAL; WARNING MOVING PARTS .....         | 2           | M90400040            |
| 30         | B9504500004     | DECAL; WARNING DIESEL FUEL .....          | 1           | B90450000            |
| 31         | B9504100104     | DECAL; WARNING HOT COOLANT .....          | 1           | B90410010            |
| 32         | B9504000304     | DECAL; CAUTION HOT PARTS .....            | 1           | B90400030            |
| 33         | 7450630703      | STRIPE .....                              | 1           | REPLACES B4561100103 |
| 34         | B4561100403     | STRIPE                                    | 2           |                      |
| 35         | B4561100503     | STRIPE                                    | 1           |                      |
| 36         | B4561100604     | STRIPE                                    | 1           |                      |
| 37         | B4561100304     | STRIPE                                    | 2           |                      |
| 38         | B4561100003     | STRIPE                                    | 1           |                      |

Full View

**ISUZU 6BG1 — CYLINDER HEAD COVER ASSY.**

CYLINDER HEAD COVER ASSY.



**ISUZU 6BG1 — CYLINDER HEAD COVER ASSY.**

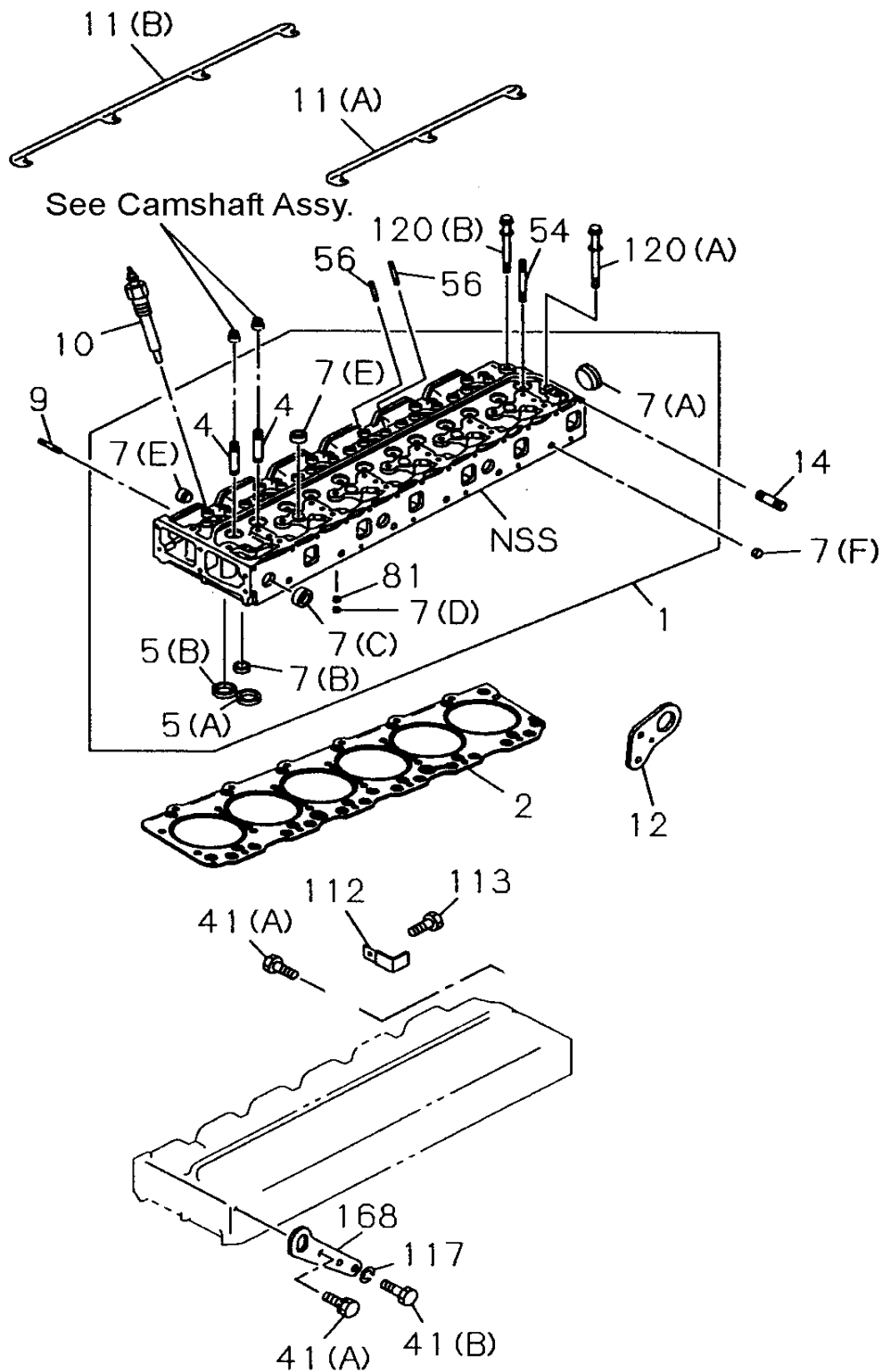
## CYLINDER HEAD COVER ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u>    | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|----------------|---------------------|-------------|----------------|
| 1         | 1111803500     | CYLINDER HEAD COVER | 1           |                |
| 27        | 9111790300     | GASKET              | 4           |                |
| 68        | 9111791050     | CAP NUT WASHER      | 4           |                |
| 69        | 1111730550     | GASKET              | 1           |                |
| 75        | 8943401920     | NUT                 | 4           |                |

Full View

## ISUZU 6BG1 — CYLINDER HEAD ASSY.

## CYLINDER HEAD ASSY.

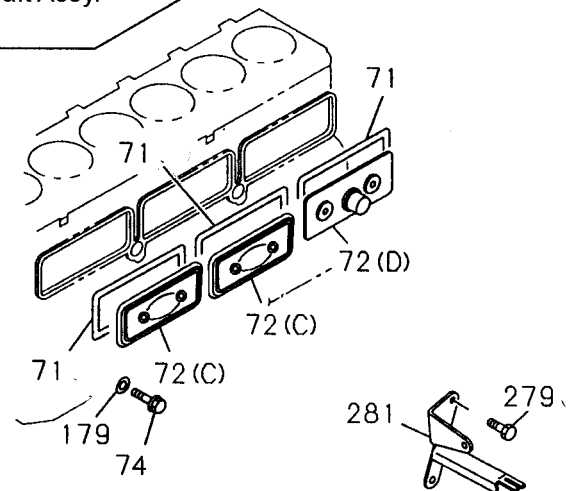
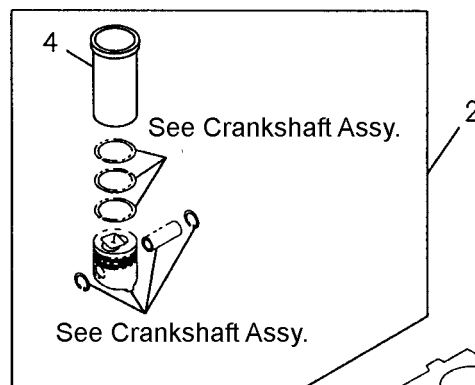


## ISUZU 6BG1 — CYLINDER HEAD ASSY.

## CYLINDER HEAD ASSY.

| <u>NO</u>     | <u>PART NO</u> | <u>PART NAME</u>         | <u>QTY.</u> | <u>REMARKS</u>      |
|---------------|----------------|--------------------------|-------------|---------------------|
| 1             | 1111106142     | CYLINDER HEAD ASSY. .... | 1           | INCL. ITEMS W/*     |
| 2             | 1111411960     | GASKET                   | 1           |                     |
| 4*            | 5117210010     | VALVE GUIDE              | 12          |                     |
| 5A*           | 1117150540     | INLET SEAT               | 6           |                     |
| 5B*           | 1117110430     | EXHAUST SEAT             | 6           |                     |
| 7A*           | 1096000051     | SEALING CUP, OD=45       | 1           |                     |
| 7B*           | 9111291280     | SEALING CUP, OD=20       | 3           |                     |
| 7C*           | 5112190150     | SEALING CUP, OD=32       | 3           |                     |
| 7D*           | 5096000130     | SEALING CUP, OD=12.3     | 6           |                     |
| 7E*           | 1096000160     | SEALING CUP, OD=25       | 5           |                     |
| 7F            | 9111296010     | SEALING CUP, OD=12.5     | 5           |                     |
| 9             | 9041108250     | STUD, M8X25 L=37         | 3           |                     |
| 10            | 1825130430     | GLOW PLUG .....          | 6           | REPLACES 9825139289 |
| Full View 11A | 5197320011     | CONNECTOR, L=236         | 1           |                     |
| 11B           | 5197320021     | CONNECTOR, L=354         | 1           |                     |
| 12            | 9117776221     | HANGER                   | 1           |                     |
| 14            | 9096300260     | STUD, M8X86 L=99         | 12          |                     |
| 41A           | 0286810200     | BOLT, M10X20 FLANGE      | 3           |                     |
| 41B           | 0208014250     | BOLT, M14X25             | 1           |                     |
| 54            | 9098301630     | STUD, M8X83 L=96         | 4           |                     |
| 56            | 1093000180     | STUD, M8X40 L=58         | 12          |                     |
| 81*           | 9096600340     | PLUG, OD=11.9            | 6           |                     |
| 112           | 9099167550     | CLIP                     | 1           |                     |
| 113           | 0280806100     | BOLT, M6X10 FLANGE       | 1           |                     |
| 117           | 9091505140     | WASHER                   | 1           |                     |
| 120A          | 1090701010     | BOLT, M12X113            | 20          |                     |
| 120B          | 1090701000     | BOLT, M12X100            | 6           |                     |
| 168           | 5117770551     | HANGER                   | 1           |                     |

This diagram is an exploded view of a 4-cylinder engine assembly. The main components shown are the cylinder block (1), the cylinder head (4), and the crankshaft (8). Various bolts, nuts, and washers are labeled with numbers and letters in parentheses. For example, 335(A), 335(B), 335(C), and 335(D) refer to different types of bolts. Other labels include 136, 30, 37, 236, 70, 80, 113, 130, 28, 338, 242, 218, 82, 220, 55, 83, 37, 12, 269, 137, 267, 162, 219, 34, 35, 38, and 218. A callout for the camshaft assembly is shown with the text "See Camshaft Assy" and a pointer to the camshaft (8). Another callout for the crankshaft is shown with the text "See Crank" and a pointer to the crankshaft (8). The diagram is a technical drawing with dashed lines indicating the assembly path.



## ISUZU 6BG1 — CYLINDER BLOCK ASSY.

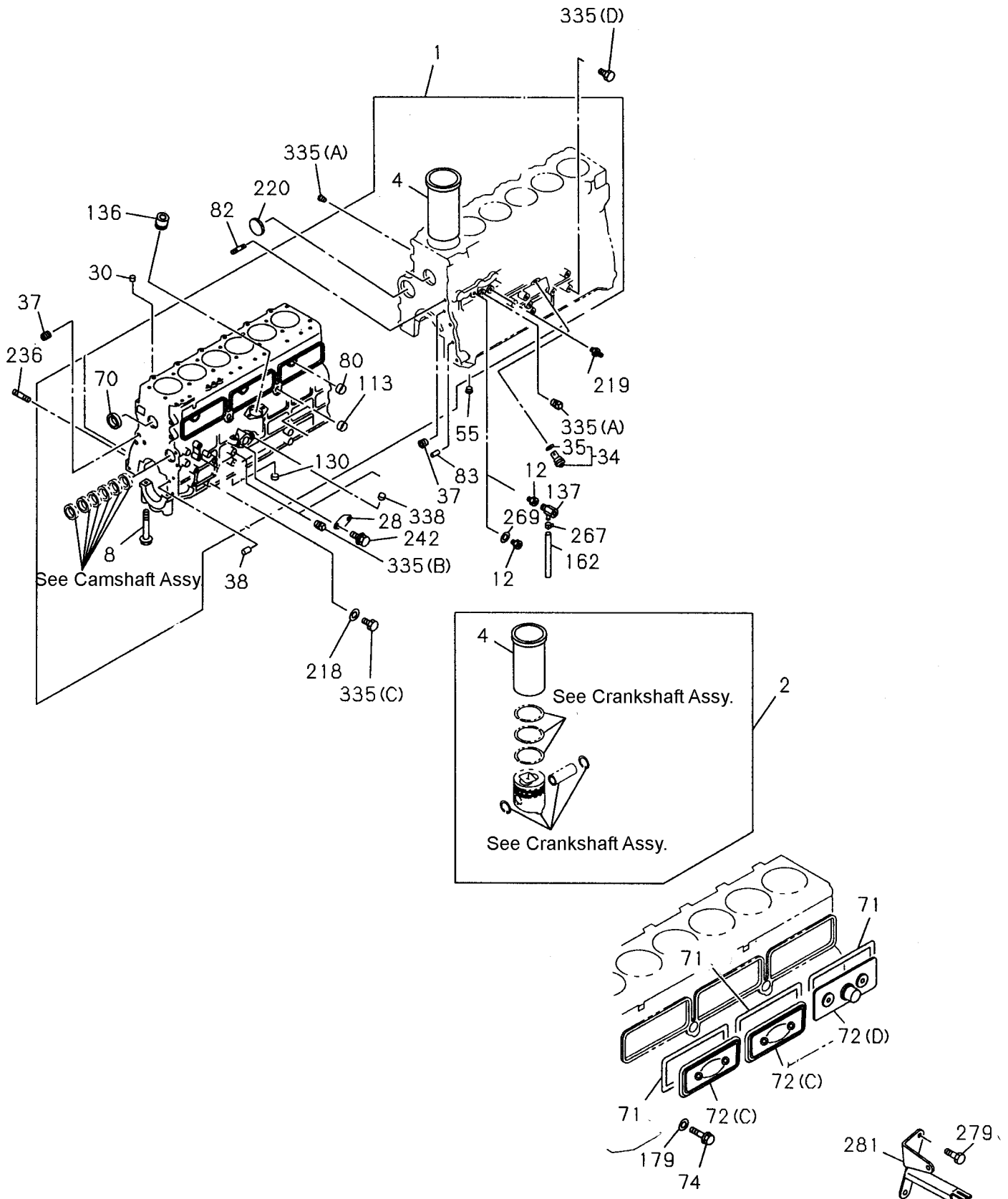
## CYLINDER BLOCK ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>                | <u>QTY.</u> | <u>REMARKS</u>                 |
|------------|-----------------|---------------------------------|-------------|--------------------------------|
| 1          | 1112103408      | CYLINDER BLOCK                  | 1 .....     | INCL. ITEMS W/*                |
| 2          | 1878116900      | LINER, GRADE=1 .....            | 6 .....     | UP TO DEC. 98; INCL. ITEMS W/# |
|            | 1878119420      | LINER, GRADE=1 .....            | 6 .....     | FROM JAN. 99~                  |
|            | 1878116910      | LINER, GRADE=2 .....            | 6 .....     | UP TO DEC. 98                  |
|            | 1878119430      | LINER, GRADE=2 .....            | 6 .....     | FROM JAN. 99~                  |
|            | 1878116920      | LINER, GRADE=3 .....            | 6 .....     | UP TO DEC. 98                  |
|            | 1878119440      | LINER, GRADE=3 .....            | 6 .....     | FROM JAN. 99~                  |
|            | 1878116930      | LINER, GRADE=4 .....            | 6 .....     | UP TO DEC. 98                  |
|            | 1878119450      | LINER, GRADE=4 .....            | 6 .....     | FROM JAN. 99~                  |
| 4*#        | 1112612480      | LINER, OD GRD=1 ID GRD=AX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613820      | LINER, OD GRD=1 ID GRD=AX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612490      | LINER, OD GRD=1 ID GRD=CX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613830      | LINER, OD GRD=1 ID GRD=CX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612500      | LINER, OD GRD=2 ID GRD=AX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613840      | LINER, OD GRD=2 ID GRD=AX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612510      | LINER, OD GRD=2 ID GRD=CX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613850      | LINER, OD GRD=2 ID GRD=CX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612520      | LINER, OD GRD=3 ID GRD=AX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613860      | LINER, OD GRD=3 ID GRD=AX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612530      | LINER, OD GRD=3 ID GRD=CX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613870      | LINER, OD GRD=3 ID GRD=CX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612540      | LINER, OD GRD=4 ID GRD=AX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613880      | LINER, OD GRD=4 ID GRD=AX ..... | 6 .....     | FROM JAN. 99~                  |
|            | 1112612550      | LINER, OD GRD=4 ID GRD=CX ..... | 6 .....     | UP TO DEC. 98                  |
|            | 1112613890      | LINER, OD GRD=4 ID GRD=CX ..... | 6 .....     | FROM JAN. 99~                  |
| 8*         | 1090004691      | BOLT, M16X119                   | 14          |                                |
| 12         | 1096660360      | CONNECTOR                       | 1           |                                |
| 28         | 1112191630      | COVER                           | 1           |                                |
| 30         | 8941480790      | PIN, OD=16                      | 2           |                                |
| 34         | 8970233390      | VALVE                           | 1           |                                |
| 35         | 5096230350      | GASKET                          | 1           |                                |
| 37         | 1096050681      | PLUG                            | 2           |                                |
| 38         | 1097400780      | PIN, OD=10 L=50                 | 1           |                                |
| 55         | 1096050660      | PLUG, PT 3/8 T=8.0              | 1           |                                |
| 70*        | 1096000520      | SEALING CUP, OD=60              | 2           |                                |
| 71         | 8943673681      | GASKET                          | 3           |                                |
| 72C        | 8970285250      | COVER                           | 2           |                                |
| 72D        | 9112916051      | COVER                           | 1           |                                |
| 74         | 8943675301      | BOLT, M8X56 FLANGE              | 6           |                                |
| 80*        | 1096000121      | CUP, OD=32                      | 3           |                                |
| 82         | 5093000231      | STUD, M14X44 L=65               | 1           |                                |
| 83         | 9081510180      | PIN, OD=10 L=18                 | 2           |                                |

Full View

# ISUZU 6BG1 — CYLINDER BLOCK ASSY.

## CYLINDER BLOCK ASSY.



## ISUZU 6BG1 — CYLINDER BLOCK ASSY.

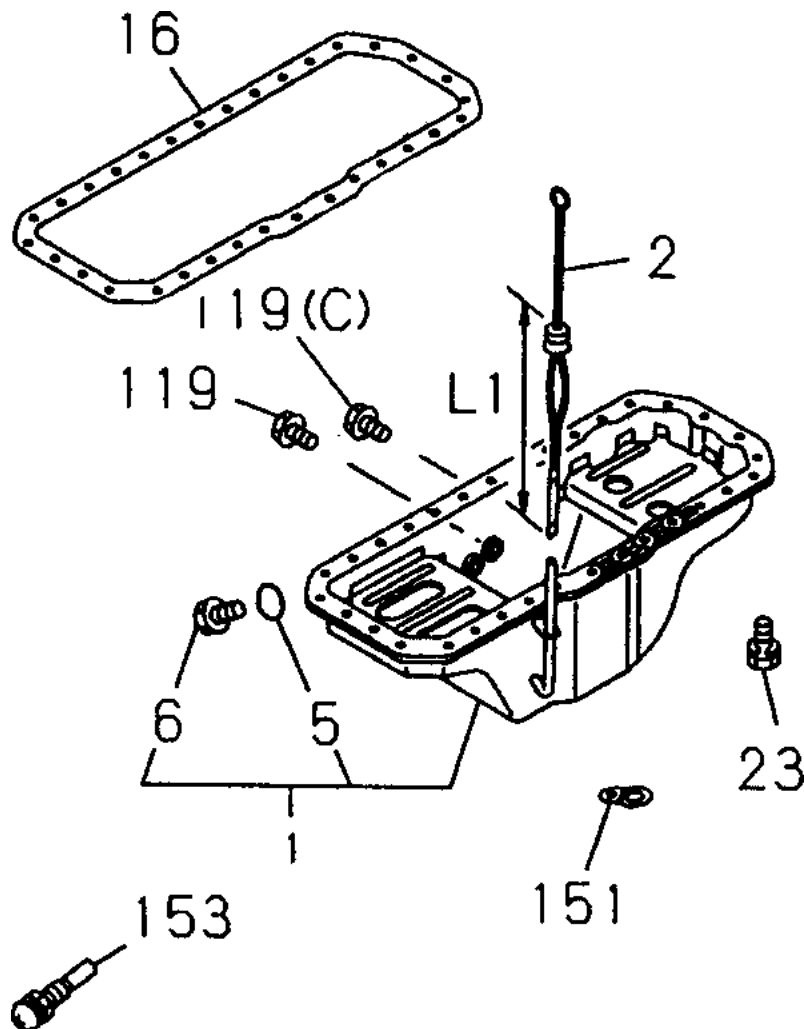
## CYLINDER BLOCK ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>         | <u>QTY.</u> | <u>REMARKS</u>      |
|------------|-----------------|--------------------------|-------------|---------------------|
| 113*       | 5112190140      | CUP, OD=28               | 2           |                     |
| 130*       | 5112570011      | DOWEL                    | 1           |                     |
| 136        | 9112246021      | BUSHING                  | 1           |                     |
| 137        | 1096800240      | DRAIN COCK               | 1           |                     |
| 162        | 9099147010      | HOSE, L=900 S.B. L=10000 | 1           |                     |
| 179        | 9095720080      | GASKET                   | 6           |                     |
| 218        | 9095714120      | GASKET .....             | 1           | ..... UP TO MAR. 98 |
|            | 9095720140      | GASKET .....             | 1           | ..... FROM APR. 98~ |
| 219        | 5096540130      | NIPPLE                   | 1           |                     |
| 220        | 9098600190      | PLUG                     | 1           |                     |
| 236        | 1093000530      | STUD, M10X18.5 L=33      | 1           |                     |
| 242        | 0286808200      | BOLT, M8X20 FLANGE       | 2           |                     |
| 267        | 8970157540      | CLIP                     | 1           |                     |
| 269        | 1096301150      | GASKET                   | 1           |                     |
| 279        | 0286810200      | BOLT, M10X20 FLANGE      | 2           |                     |
| 281        | 5197890030      | BRACKET                  | 1           |                     |
| 335A       | 5096050180      | PLUG, RIGHT SIDE         | 8           |                     |
| 335B       | 1096050791      | PLUG, LEFT SIDE          | 1           |                     |
| 335C       | 9992023140      | PLUG, LEFT SIDE          | 1           |                     |
| 335D       | 9992023120      | PLUG, RIGHT SIDE         | 1           |                     |
| 338        | 5111290030      | SEALING CUP, OD=15.6     | 1           |                     |

Full View

**ISUZU 6BG1 — OIL PAN AND LEVEL GAUGE ASSY.**

OIL PAN AND LEVEL GAUGE ASSY.



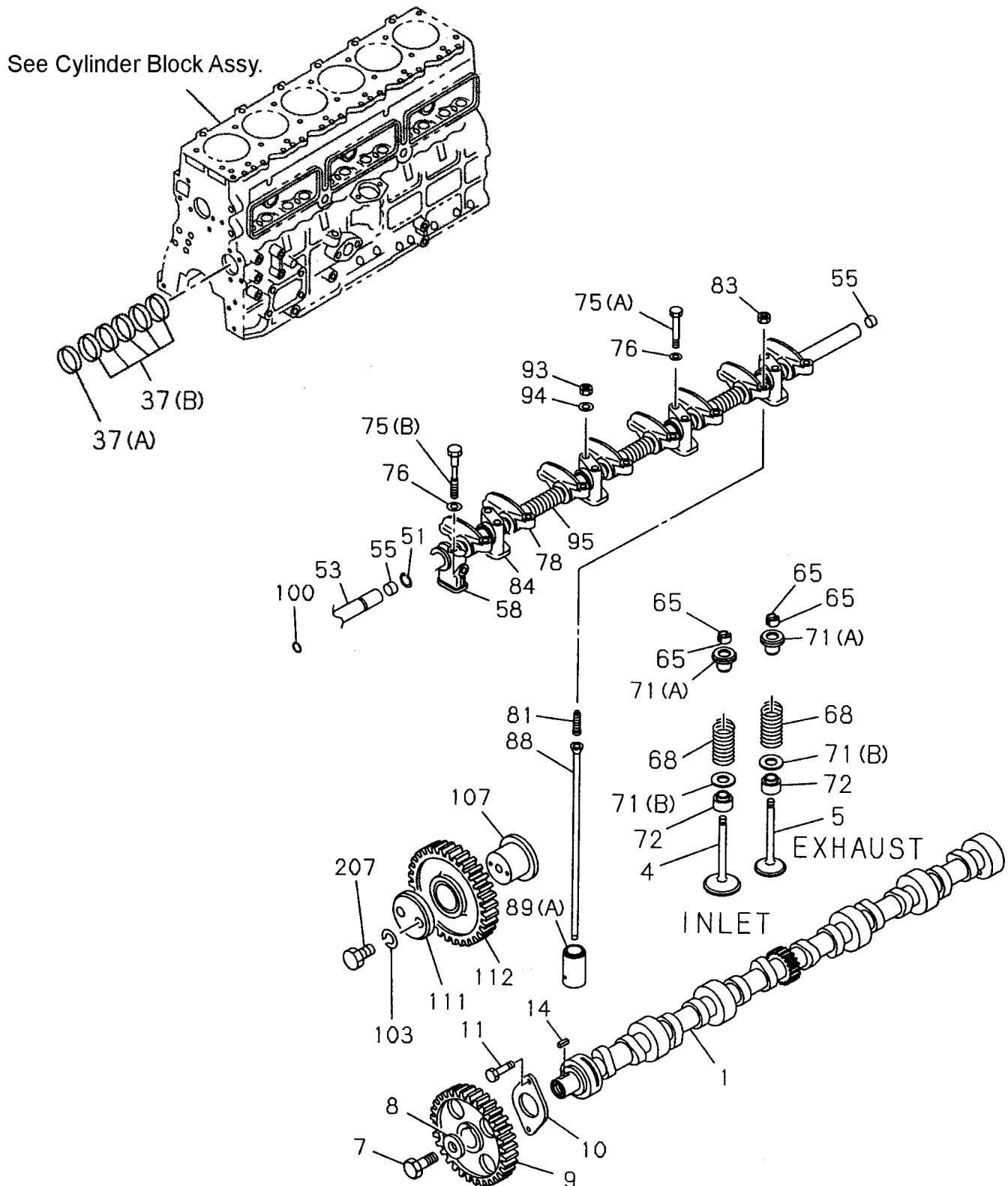
**ISUZU 6BG1 — OIL PAN AND LEVEL GAUGE ASSY.**

## OIL PAN AND LEVEL GAUGE ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>          | <u>QTY.</u> | <u>REMARKS</u>  |
|-----------|------------|-----------------|---------------------------|-------------|-----------------|
|           | 1          | 1113604421      | OIL PAN ASSY. ....        | 1           | INCL. ITEMS W/* |
|           | 2          | 1117602000      | GAUGE                     | 1           |                 |
|           | 5*         | 1096230570      | GASKET                    | 1           |                 |
|           | 6*         | 9096620120      | PLUG                      | 1           |                 |
|           | 16         | 1113671000      | GASKET                    | 1           |                 |
|           | 23         | 0500408180      | BOLT, M8X12 W/LOCK WASHER | 32          |                 |
|           | 119C       | 9992023240      | PLUG, M24X12              | 1           |                 |
|           |            | 9992023160      | PLUG; M16X12              | 1           |                 |
|           | 120        | 9095714240      | GASKET, ID=24.5           | 1           |                 |
|           |            | 9095714160      | GASKET, ID=16.5           | 1           |                 |
|           | 151        | 9112290700      | CLIP                      | 1           |                 |
|           | 153        | 9831514320      | THERMOMETER               | 1           |                 |

## ISUZU 6BG1 — CAMSHAFT AND VALVE ASSY.

CAMSHAFT AND VALVE ASSY.



## ISUZU 6BG1 — CAMSHAFT AND VALVE ASSY.

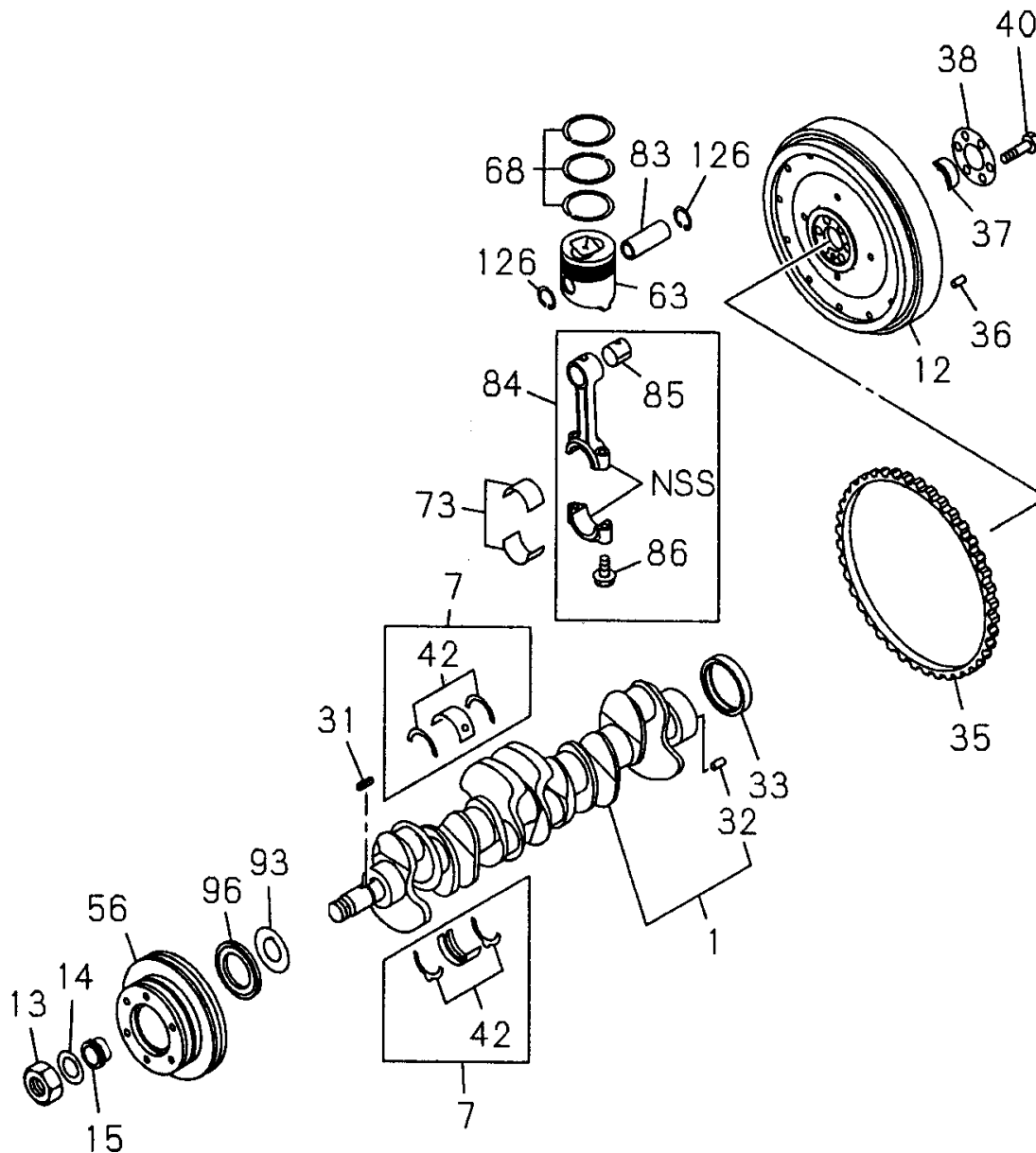
## CAMSHAFT AND VALVE ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>          | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|---------------------------|-------------|----------------|
| 1          | 1125140050      | CAMSHAFT                  | 1           |                |
| 4          | 1125510830      | VALVE, INLET              | 6           |                |
| 5          | 1125520251      | VALVE, EXHAUST            | 6           |                |
| 7          | 9920614280      | BOLT, M14X28              | 1           |                |
| 8          | 9098518503      | WASHER, ID=14.5           | 1           |                |
| 9          | 1125220162      | GEAR, Z=50                | 1           |                |
| 10         | 9116810150      | THRUST PLATE              | 1           |                |
| 11         | 0500408250      | BOLT, M8X25 W/LOCK WASHER | 2           |                |
| 14         | 9080307130      | KEY                       | 1           |                |
| 37A        | 9116110480      | METAL                     | 1           |                |
| 37B        | 9116130350      | METAL                     | 5           |                |
| 51         | 9091800190      | SNAP RING                 | 1           |                |
| 53         | 1126210621      | ROCKER ARM SHAFT          | 1           |                |
| 55         | 9126260050      | PLUG                      | 2           |                |
| 58         | 5126280120      | BRACKET                   | 1           |                |
| 65         | 5126560060      | SPLIT COLLAR              | 24          |                |
| 68         | 1125610990      | VALVE SPRING              | 12          |                |
| 71A        | 8941145790      | SPRING SEAT               | 12          |                |
| 71B        | 5125630010      | SPRING SEAT               | 12          |                |
| 72         | 1125690150      | SEAL                      | 12          |                |
| 75A        | 1090005670      | BOLT, M8X65               | 8           |                |
| 75B        | 9096021480      | BOLT, M8X65               | 1           |                |
| 76         | 9098514300      | WASHER                    | 9           |                |
| 78         | 1126111180      | ROCKER ARM                | 12          |                |
| 81         | 9126160420      | SCREW                     | 12          |                |
| 83         | 9091115080      | ADJ. SCREW LOCK NUT       | 12          |                |
| 84         | 9126281050      | BRACKET                   | 6           |                |
| 88         | 1125750360      | PUSH ROD                  | 12          |                |
| 89         | 5125710032      | TAPPET VALVE              | 12          |                |
| 93         | 1094001160      | NUT                       | 4           |                |
| 94         | 9095814300      | WASHER                    | 4           |                |
| 95         | 1095803350      | SPRING                    | 5           |                |
| 100        | 5096230600      | GASKET                    | 1           |                |
| 103        | 9091505100      | WASHER                    | 2           |                |
| 107        | 9125310300      | SHAFT                     | 1           |                |
| 111        | 5125350011      | COLLAR                    | 1           |                |
| 112        | 8941339373      | GEAR                      | 1           |                |
| 207        | 0108110550      | BOLT, M10X55              | 2           |                |

Full View

# ISUZU 6BG1 — CRANKSHAFT, PISTON AND FLYWHEEL ASSY.

CRANKSHAFT, PISTON AND FLYWHEEL ASSY.



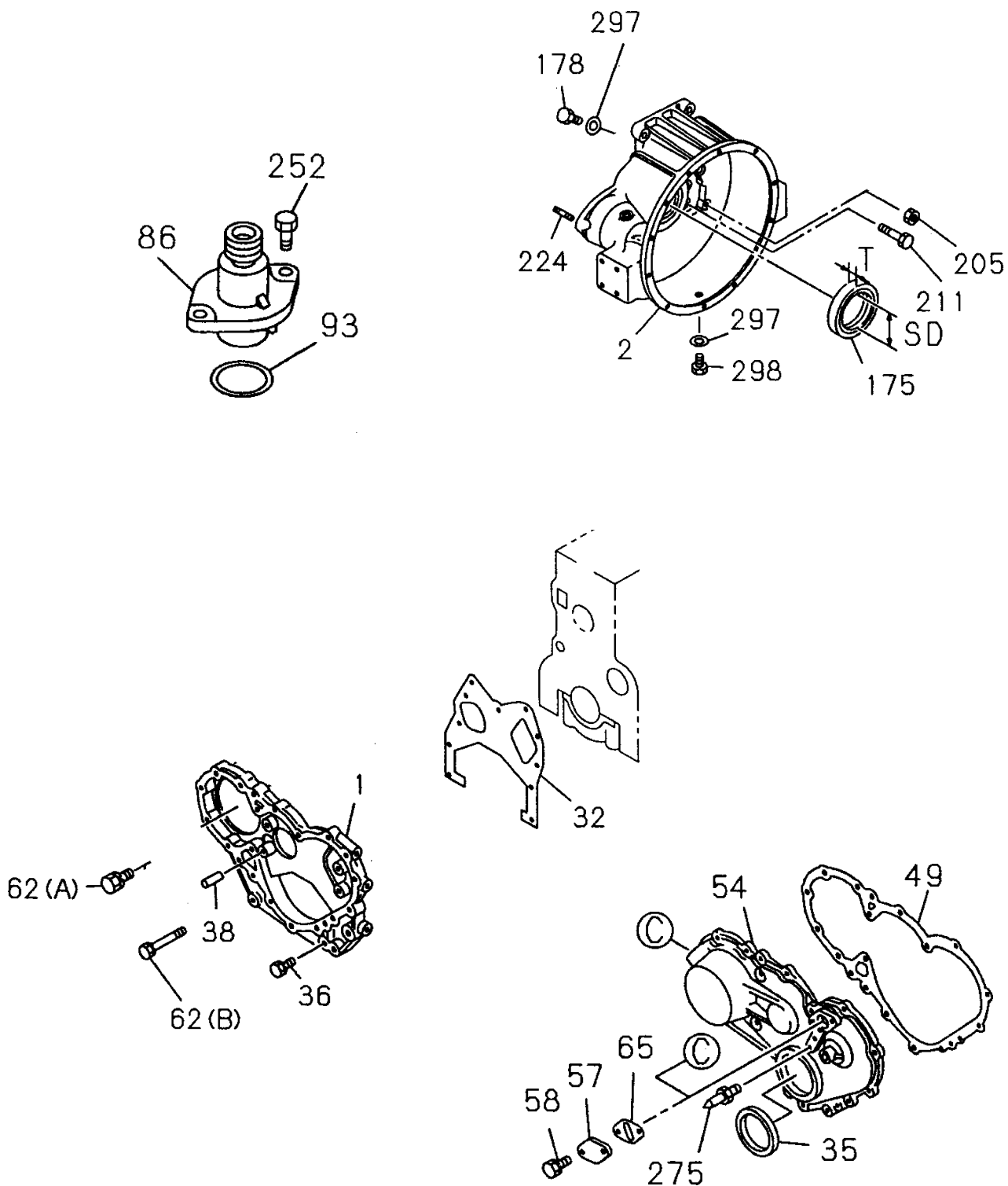
**ISUZU 6BG1 — CRANKSHAFT, PISTON AND FLYWHEEL ASSY.**

## CRANKSHAFT, PISTON AND FLYWHEEL ASSY.

| <u>NO</u> | <u>PART NO</u> | <u>PART NAME</u>         | <u>QTY.</u> | <u>REMARKS</u>  |
|-----------|----------------|--------------------------|-------------|-----------------|
| 1         | 1123104480     | CRANKSHAFT .....         | 1 .....     | INCL. ITEMS W/* |
| 7         | 1115100742     | METAL KIT .....          | 1 .....     | INCL. ITEMS W/# |
| 12        | 5123310642     | FLYWHEEL                 | 1           |                 |
| 13        | 9098401071     | NUT                      | 1           |                 |
| 14        | 9098514310     | WASHER                   | 1           |                 |
| 15        | 9123790450     | BUSHING                  | 1           |                 |
| 28        | 8971379101     | GEAR, Z=25               | 1           |                 |
| 31        | 5097380010     | FEATHER KEY              | 1           |                 |
| 32*       | 9081512200     | PIN                      | 1           |                 |
| 33        | 5123190032     | RING                     | 1           |                 |
| 35        | 9123336070     | GEAR, Z=129              | 1           |                 |
| 37        | 1098002140     | BEARING                  | 1           |                 |
| 38        | 5123360081     | WASHER                   | 1           |                 |
| 40        | 9098013340     | BOLT                     | 6           |                 |
| 42#       | 1116800012     | WASHER                   | 2           |                 |
| 56        | 5123712092     | PULLEY, 2-GROOVE         | 1           |                 |
| 63        | 1121117690     | PISTON, STD. GRD=AX      | 6           |                 |
|           | 1121117700     | PISTON, STD. GRD=CX      | 6           |                 |
| 68        | 1121211011     | RING SET                 | 6           |                 |
| 73        | 9122716080     | METAL SET                | 6           |                 |
| 83        | 9122116040     | PISTON PIN               | 6           |                 |
| 84        | 1122301041     | CONNECTOR ARM ASSY. .... | 6 .....     | INCL. ITEMS W/% |
| 85%       | 1122510270     | BUSHING                  | 6           |                 |
| 86%       | 1122350271     | BOLT, M20X49.5           | 12          |                 |
| 93        | 1123620031     | THROWER                  | 1           |                 |
| 96        | 5123620031     | DUST THROWER             | 1           |                 |
| 126       | 8941075751     | SNAP RING                | 12          |                 |

# ISUZU 6BG1 — TIMING GEAR AND FLYWHEEL HOUSING ASSY.

## TIMING GEAR AND FLYWHEEL HOUSING ASSY.



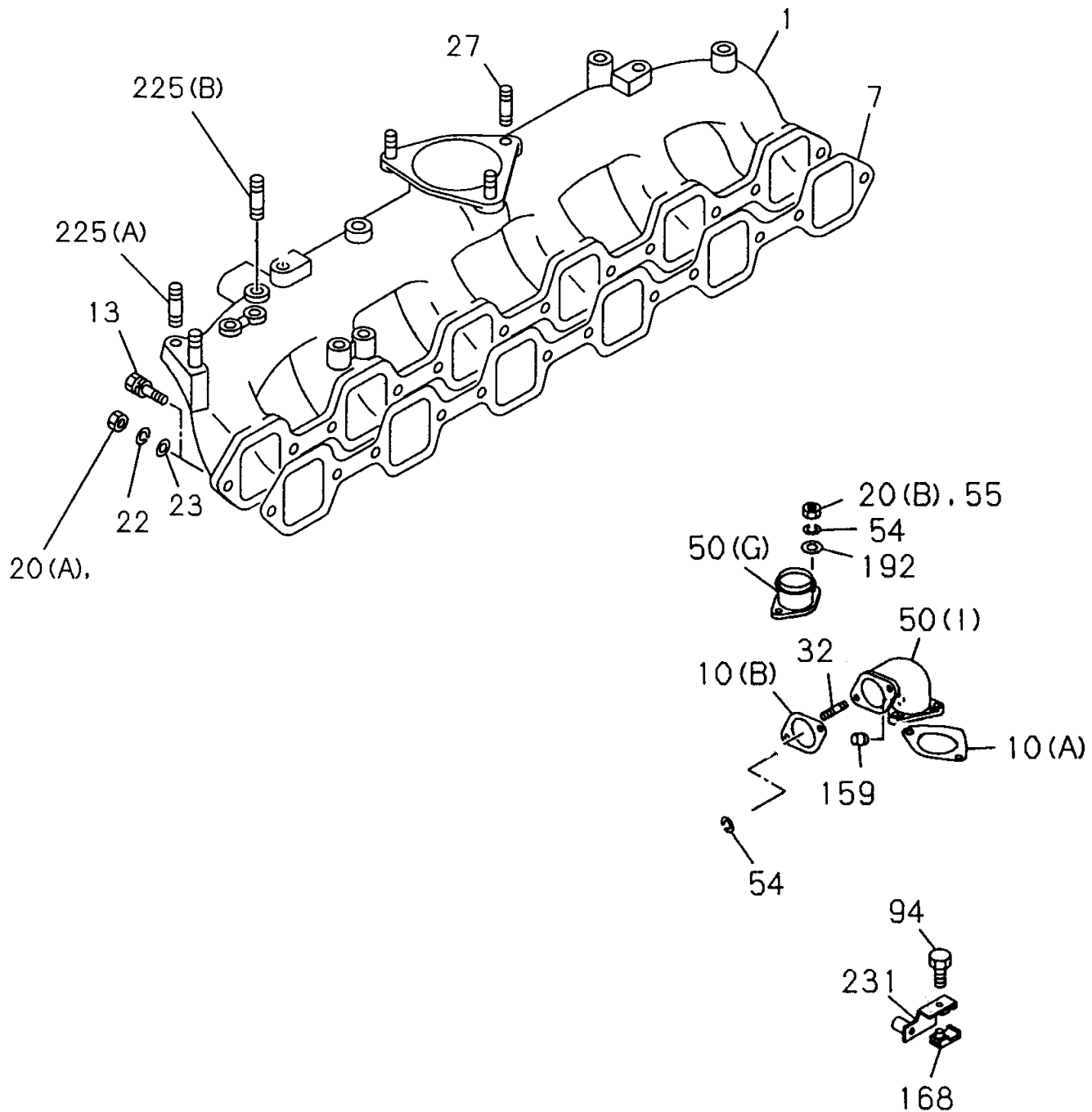
**ISUZU 6BG1 — TIMING GEAR AND FLYWHEEL HOUSING ASSY.**

## TIMING GEAR AND FLYWHEEL HOUSING ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>             | <u>QTY.</u> | <u>REMARKS</u>      |
|------------|-----------------|------------------------------|-------------|---------------------|
| 1          | 5113110113      | TIMING GEAR CASE             | 1           |                     |
| 2          | 8943213304      | FLYWHEEL HOUSING             | 1           |                     |
| 32         | 8943706710      | GASKET                       | 1           |                     |
| 35         | 1096254380      | SEAL                         | 1           |                     |
| 36         | 0280808450      | BOLT, M8X45 FLANGE           | 2           |                     |
|            | 0286808200      | BOLT, M8X20 FLANGE           | 4           |                     |
| 38         | 9081510180      | PIN, OD=10 L=18              | 1           |                     |
| 49         | 8970222160      | GASKET                       | 1           |                     |
| 54         | 1113210790      | COVER                        | 1           |                     |
| 57         | 5113210090      | TIMING COVER                 | 2           |                     |
| 58         | 0280806120      | BOLT, M6X12 FLANGE           | 4           |                     |
| 62A        | 0286808250      | BOLT, M8X25 FLANGE           | 7           |                     |
| 62B        | 0280808500      | BOLT, M8X50 FLANGE           | 5           |                     |
| 65         | 8970276011      | GASKET                       | 2           |                     |
| 86         | 9839101012      | ELBOW                        | 1           |                     |
| 93         | 1096234650      | GASKET                       | 1           |                     |
| 175        | 1096254391      | SEAL                         | 1           |                     |
| 178        | 8943218380      | PLUG                         | 1           |                     |
| 205        | 0911602140      | NUT                          | 1           |                     |
| 211        | 0500408250      | BOLT, M8X25 W/LOCK WASHER .. | 7           | REPLACES 0288914450 |
| 224        | 9944112350      | STUD, M12X35 L=53            | 3           |                     |
| 252        | 0286808200      | BOLT, M8X20 FLANGE           | 2           |                     |
| 275        | 5113270090      | POINTER                      | 1           |                     |
| 297        | 9095714160      | GASKET                       | 1           |                     |
| 298        | 9992023160      | PLUG                         | 1           |                     |

**ISUZU 6BG1 — INLET MANIFOLD ASSY.**

INLET MANIFOLD ASSY.



## ISUZU 6BG1 — INLET MANIFOLD ASSY.

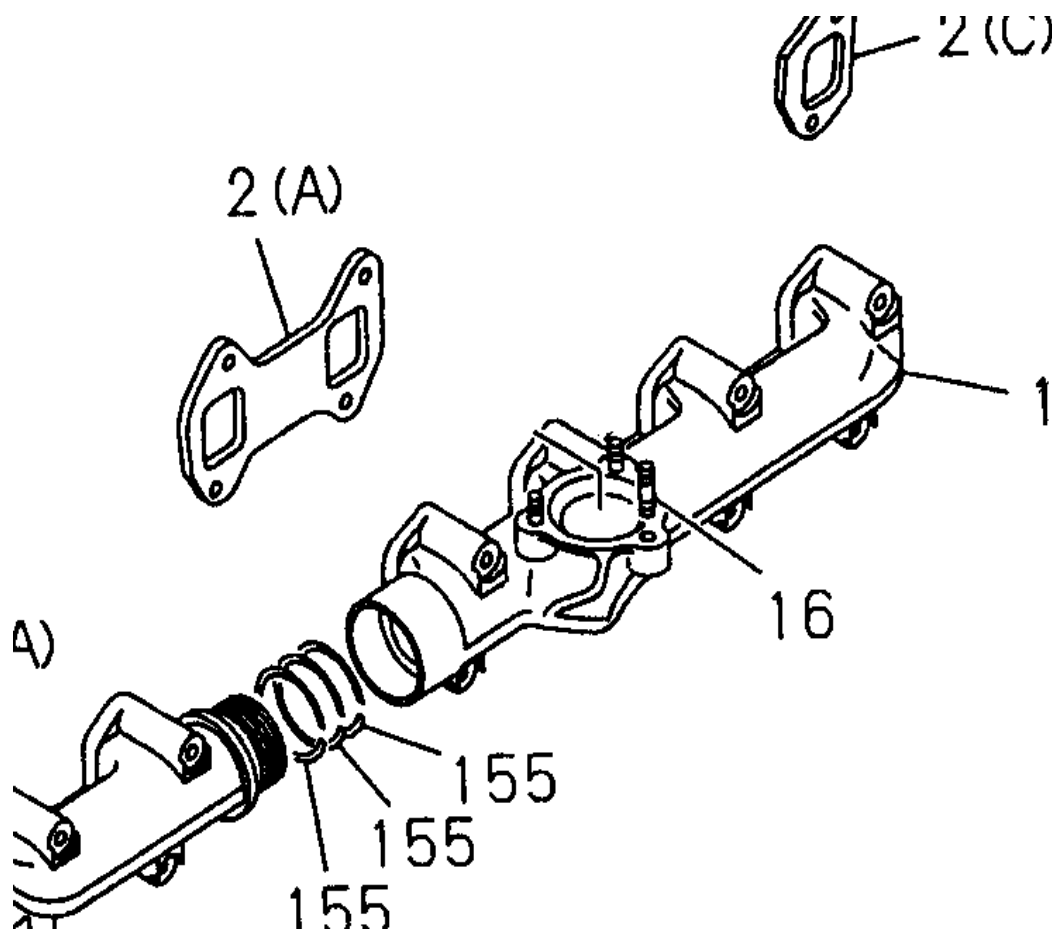
## INLET MANIFOLD ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>  | <u>QTY.</u> | <u>REMARKS</u>          |
|------------|-----------------|-------------------|-------------|-------------------------|
| 1          | 1141121842      | INLET MANIFOLD    | 1           |                         |
| 7          | 1141150610      | GASKET            | 1           |                         |
| 10A        | 1141150590      | GASKET            | 1           |                         |
| 10B        | 1096370610      | GASKET            | 1           |                         |
| 13         | 0501408280      | BOLT, M8X28 ..... | 9           | W/LOCK AND PLAIN WASHER |
| 20A        | 9091104080      | NUT, M8           | 3           |                         |
| 20B        | 0911501080      | NUT, M8 FLANGE    | 3           |                         |
| 22         | 9091505080      | LOCK WASHER       | 3           |                         |
| 23         | 9091605080      | PLAIN WASHER      | 3           |                         |
| 27         | 9040108200      | STUD, M8X20 L=36  | 3           |                         |
| 27A        | 9040108450      | STUD, M8X45 L=61  | 3           |                         |
| 32         | 9044110250      | STUD, M10X25 L=40 | 2           |                         |
| 50G        | 1141123150      | PIPE              | 1           |                         |
| 50I        | 1141126310      | PIPE              | 1           |                         |
| 54         | 9091505100      | LOCK WASHER       | 2           |                         |
| 55         | 9091104100      | NUT               | 2           |                         |
| 94         | 0500406300      | BOLT, M6X30 ..... | 1           | W/LOCK WASHER           |
| 159        | 8941640270      | PIPE              | 1           |                         |
| 168        | 1154192151      | CLIP              | 1           |                         |
| 225A       | 9044110280      | STUD, M10X28 L=43 | 2           |                         |
| 225B       | 5093000290      | STUD, M10X18 L=33 | 2           |                         |
| 231        | 1154192162      | STAY              | 1           |                         |

Full View

**ISUZU 6BG1 — EXHAUST MANIFOLD ASSY.**

EXHAUST MANIFOLD ASSY.



## ISUZU 6BG1 — EXHAUST MANIFOLD ASSY.

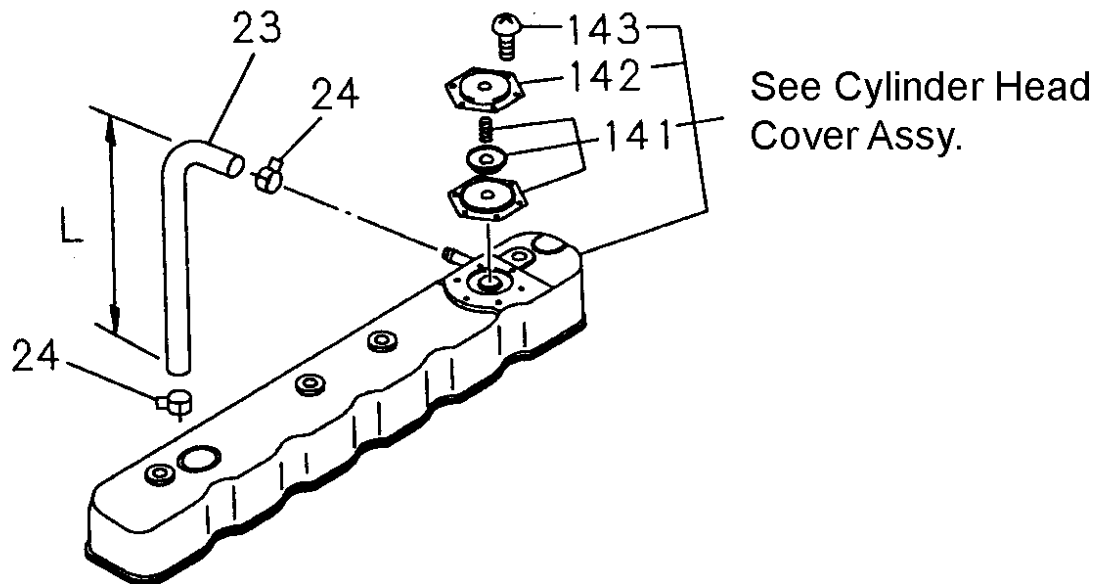
## EXHAUST MANIFOLD ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>  | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|-------------------|-------------|----------------|
| 1A         | 9141412761      | EXHAUST MANIFOLD  | 1           |                |
| 1B         | 9141418030      | EXHAUST MANIFOLD  | 1           |                |
| 2C         | 1141451140      | GASKET .....      | 6 .....     | UP TO MAR. 99  |
| 2A         | 8944046100      | GASKET .....      | 3 .....     | FROM APR. 99~  |
| 16         | 9044110300      | STUD, M10X30 L=45 | 3           |                |
| 18         | 9098445650      | NUT               | 12          |                |
| 155        | 9141496530      | RING              | 3           |                |

Full View

**ISUZU 6BG1 — VENTILATION ASSY.**

VENTILATION ASSY.



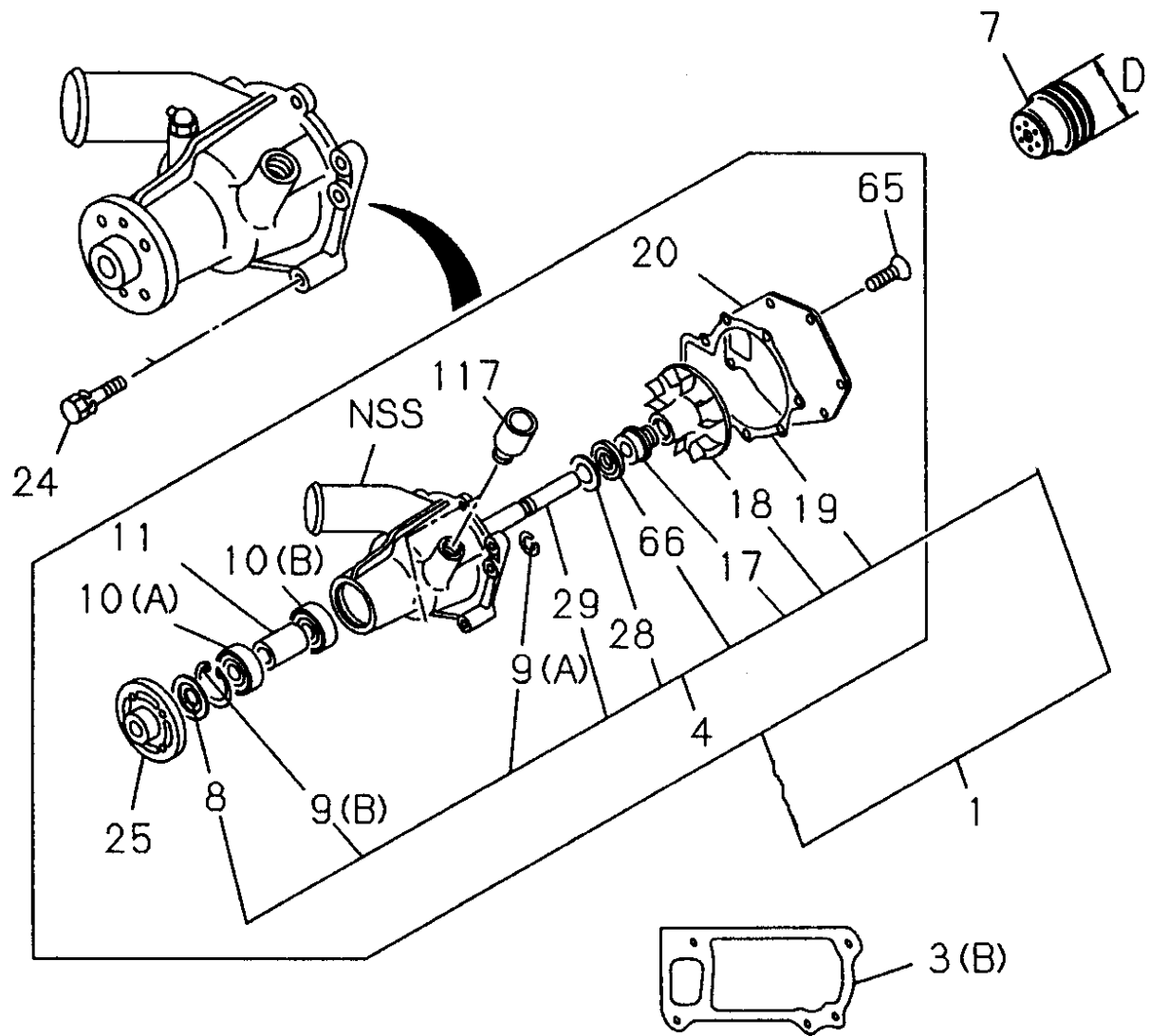
**ISUZU 6BG1 — VENTILATION ASSY.**

## VENTILATION ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>     | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|------------|-----------------|----------------------|-------------|----------------|
|           | 23         | 1093607520      | HOSE, L=240          | 1           |                |
|           | 24         | 1097070841      | CLIP, ID=20          | 2           |                |
|           | 141        | 8941101110      | DIAPHRAGM ASSY.      | 1           |                |
|           | 142        | 1143620020      | COVER                | 1           |                |
|           | 143        | 9934905100      | SCREW, M5X10 PANHEAD | 6           |                |

# ISUZU 6BG1 — WATER PUMP AND CORROSION RESISTOR ASSY.

WATER PUMP AND CORROSION RESISTOR ASSY.



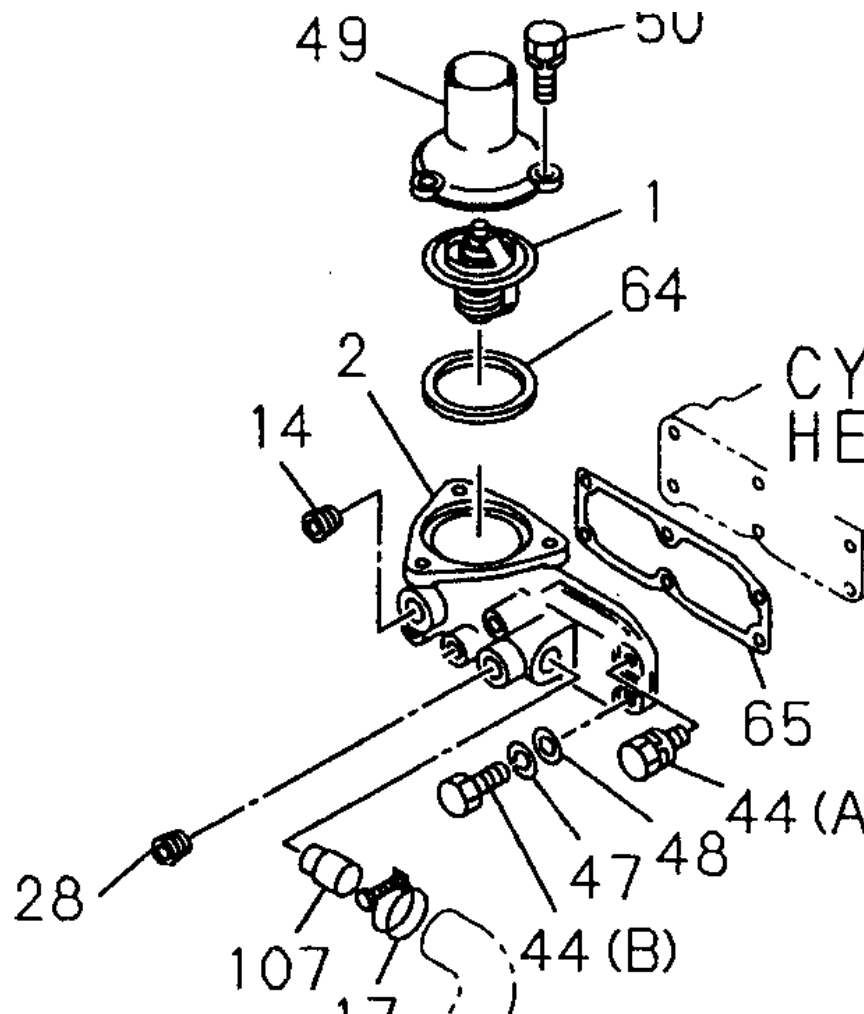
**ISUZU 6BG1 — WATER PUMP AND CORROSION RESISTOR ASSY.**

## WATER PUMP AND CORROSION RESISTOR ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>        | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|-------------------------|-------------|-----------------|
| 1          | 1136500180      | PUMP ASSY .....         | 1 .....     | INCL. ITEMS W/* |
| 3          | 8943706610      | GASKET                  | 1           |                 |
| 4*         | 1878112530      | REPAIR KIT .....        | 1 .....     | INCL. ITEMS W/# |
| 7          | 5136410381      | PULLEY, 2-GROOVE, D=173 | 1 .....     | UP TO MAR. 99   |
|            | 1136411870      | PULLEY, 2-GROOVE, D=173 | 1 .....     | FROM APR. 99~   |
| 8*#        | 5136390010      | THROWER                 | 1           |                 |
| 9A*#       | 9099521430      | SNAP RING               | 1           |                 |
| 9B*        | 9091801520      | SNAP RING               | 1           |                 |
| 10A*       | 5098000510      | BEARING                 | 1           |                 |
| 10B*       | 5098000500      | BEARING                 | 1           |                 |
| 11*        | 5136340020      | SPACER                  | 1           |                 |
| 17*#       | 5136200062      | SEAL UNIT               | 1           |                 |
| 18*#       | 9136218020      | IMPELLER                | 1           |                 |
| 19*#       | 9136136130      | GASKET                  | 1           |                 |
| 20*        | 9136128020      | COVER                   | 1           |                 |
| 24*        | 0280810700      | BOLT, M10X70 FLANGE     | 1           |                 |
|            | 0280810500      | BOLT, M10X50            | 2           |                 |
|            | 0286810350      | BOLT, M10X35            | 1           |                 |
| 25*        | 5136420072      | CENTER                  | 1           |                 |
| 28*#       | 1095030700      | WASHER                  | 1           |                 |
| 29*#       | 1136310740      | SHAFT                   | 1           |                 |
| 65*        | 9030908200      | SCREW                   | 3           |                 |
| 66*#       | 5096250550      | SEAL                    | 1           |                 |
| 117*       | 1096601192      | CONNECTOR               | 1           |                 |

**ISUZU 6BG1 — THERMOSTAT AND HOUSING ASSY.**

THERMOSTAT AND HOUSING ASSY.



**ISUZU 6BG1 — THERMOSTAT AND HOUSING ASSY.**

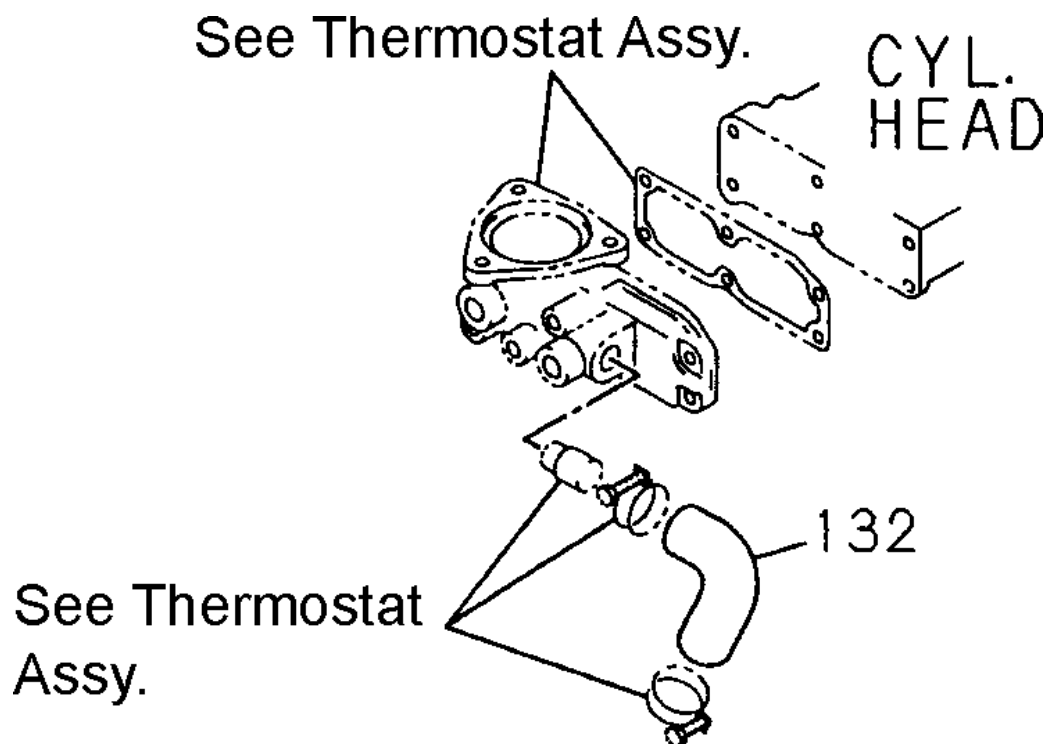
## THERMOSTAT AND HOUSING ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>  | <u>QTY.</u> | <u>REMARKS</u>                |
|------------|-----------------|-------------------|-------------|-------------------------------|
| 1          | 1137700700      | THERMOSTAT        | 1           |                               |
| 2          | 5137160260      | HOUSING           | 1           |                               |
| 14         | 9096640050      | PLUG, PT 3/4      | 1           |                               |
| 17         | 5097040460      | CLIP              | 2           |                               |
| 28         | 9096620340      | HEATER PLUG, M25  | 1           |                               |
| 44A        | 0286810350      | BOLT, M10X35      | 3           |                               |
| 44B        | 0108060950      | BOLT, M10X95      | 3           |                               |
| 47         | 9091505100      | LOCK WASHER       | 3           |                               |
| 48         | 9091605100      | PLAIN WASHER      | 3           |                               |
| 49         | 1137130370      | PIPE              | 1           |                               |
| 50         | 0501408250      | BOLT, M8X25 ..... | 3           | ..... W/LOCK AND PLAIN WASHER |
| 64         | 1137430160      | GASKET            | 1           |                               |
| 65         | 113740130       | GASKET            | 1           |                               |
| 107        | 5137210152      | PIPE              | 1           |                               |

Full View

**ISUZU 6BG1 — ENGINE WATER PIPING ASSY.**

ENGINE WATER PIPING ASSY.



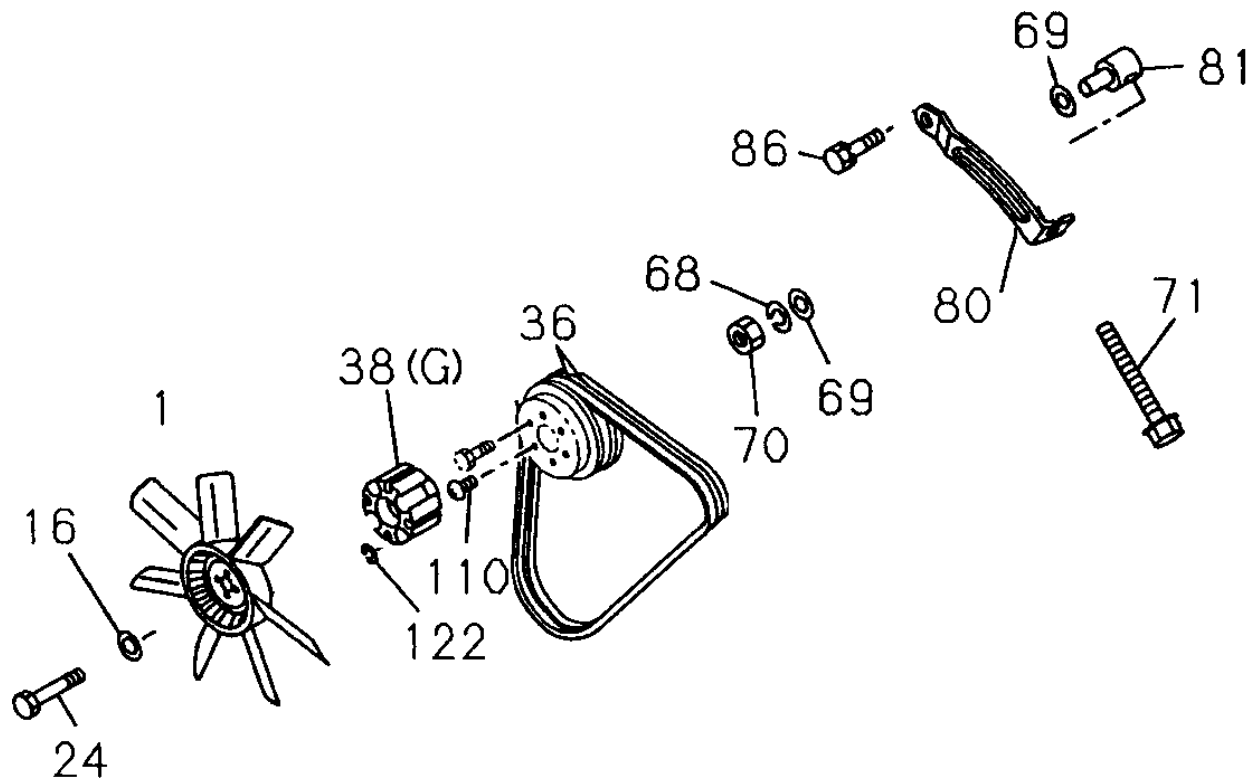
**ISUZU 6BG1 — ENGINE WATER PIPING ASSY.**

ENGINE WATER PIPING ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|------------------|-------------|----------------|
| 132        | 8971380860      | HOSE             | 1           |                |

**ISUZU 6BG1 — FAN AND FAN BELT ASSY.**

FAN AND FAN BELT ASSY.



## ISUZU 6BG1 — FAN AND FAN BELT ASSY.

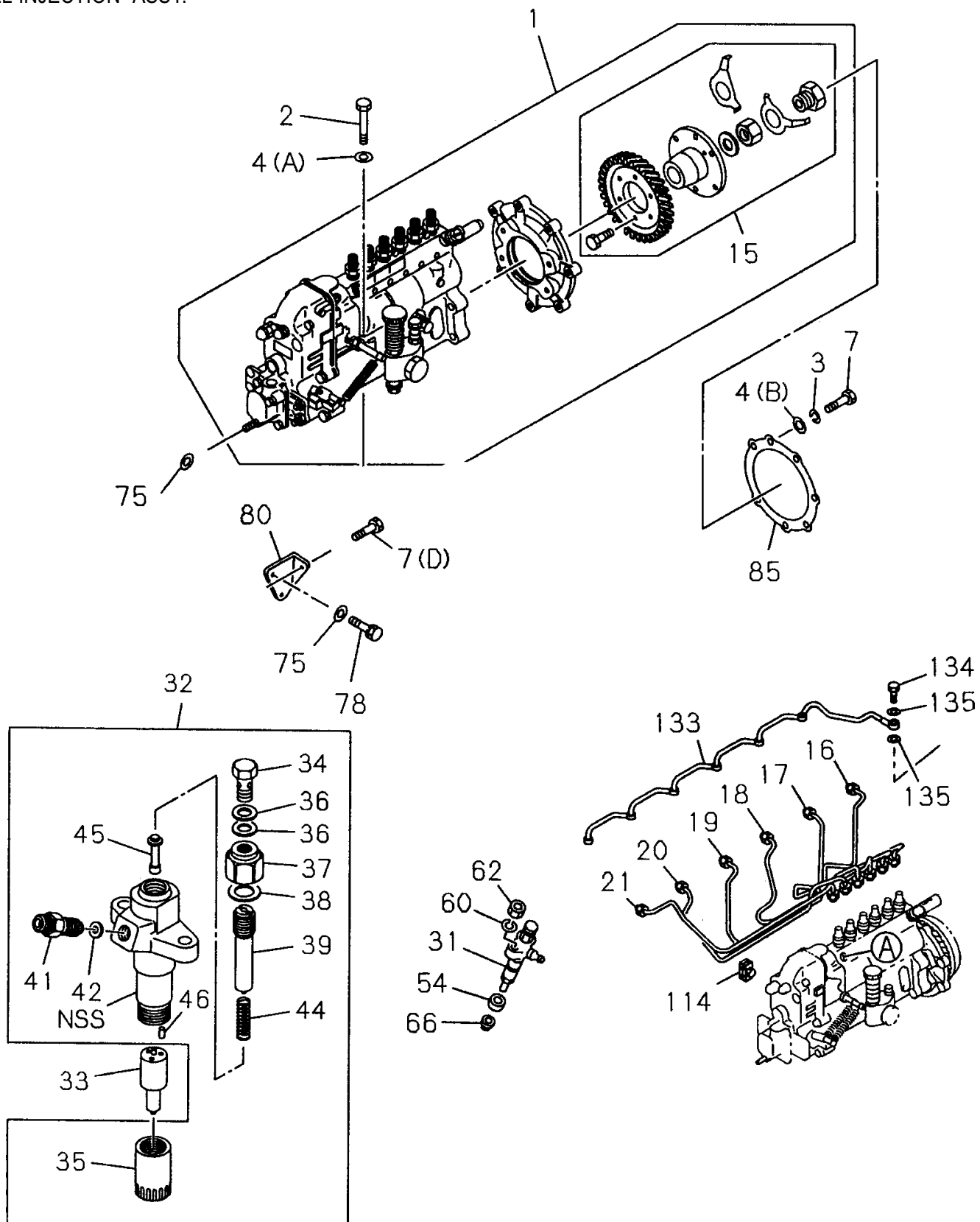
## FAN AND FAN BELT ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>         | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|--------------------------|-------------|----------------|
| 1          | 8944838971      | FAN, D=550-7 BLOW        | 1           |                |
| 16         | 9091647080      | PLAIN WASHER             | 4           |                |
| 24         | 1090440730      | BOLT                     | 4           |                |
| 36         | 1136712260      | BELT, L=1246 2 PIECE SET | 1           |                |
| 38A        | 8944340750      | SPACER, T=51.7           | 1           |                |
| 38G        | 1136420470      | SPACER, T=61             | 1           |                |
| 68         | 9091505120      | LOCK WASHER              | 1           |                |
| 69         | 9091607120      | PLAIN WASHER             | 2           |                |
| 70         | 9991104120      | NUT                      | 1           |                |
| 71         | 1090091141      | BOLT, M10X155            | 1           |                |
| 80         | 1136741181      | ADJ. PLATE               | 1           |                |
| 81         | 1136741610      | SLIDING PIECE            | 1           |                |
| 86         | 0286810250      | ADJ. BOLT, M10X25 FLANGE | 1           |                |
| 110        | 9034906100      | SCREW, M6X10             | 2           |                |
| 122        | 9091505080      | LOCK WASHER              | 4           |                |

Full View

## ISUZU 6BG1 — FUEL INJECTION ASSY.

FUEL INJECTION ASSY.



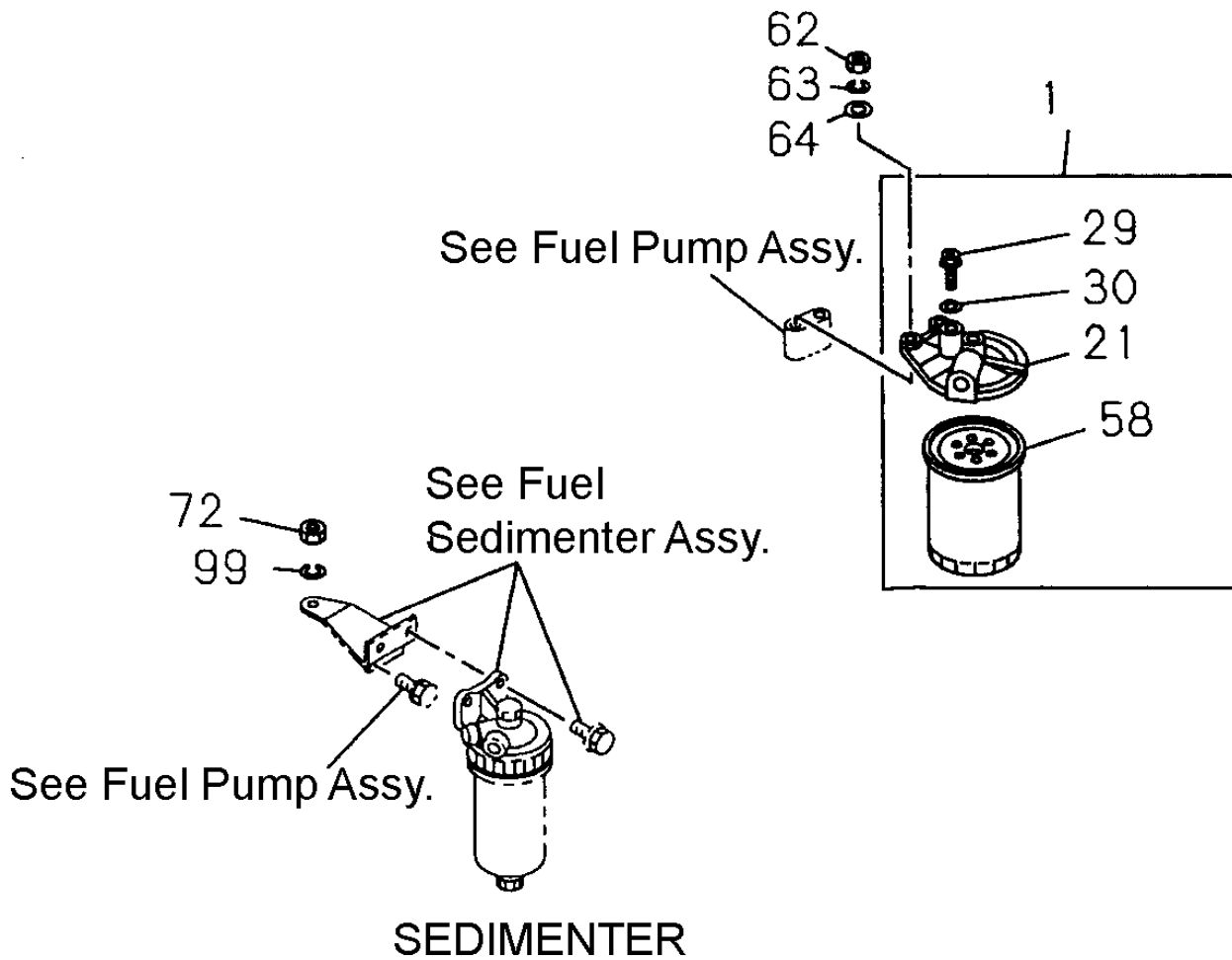
**ISUZU 6BG1 — FUEL INJECTION ASSY.**
**FUEL INJECTION ASSY.**

| <b>NO.</b> | <b>PART NO.</b> | <b>PART NAME</b>          | <b>QTY.</b> | <b>REMARKS</b>      |
|------------|-----------------|---------------------------|-------------|---------------------|
| 1          | 1156032880      | FUEL INJ. PUMP ASSY. .... | 1           | INCL. ITEMS W/*     |
| 2          | 0108108750      | BOLT, M8X75               | 4           |                     |
| 3          | 9091505080      | LOCK WASHER               | 7           |                     |
| 4A         | 9098519340      | WASHER                    | 4           |                     |
| 4B         | 9091605080      | WASHER                    | 7           |                     |
| 7C         | 0108108600      | BOLT, M8X60 .....         | 7           | REPLACES 0108058600 |
| 7D         | 0500410250      | BOLT, M10X25 .....        | 1           | W/LOCK WASHER       |
| 15*        | 1157801720      | COUPLING ASSY.            | 1           |                     |
| 16         | 1154151831      | PIPE, INJ. NO. 1          | 1           |                     |
| 17         | 1154151841      | PIPE, INJ. NO. 2          | 1           |                     |
| 18         | 1154151851      | PIPE, INJ. NO. 3          | 1           |                     |
| 19         | 1154151861      | PIPE, INJ. NO. 4          | 1           |                     |
| 20         | 1154151871      | PIPE, INJ. NO. 5          | 1           |                     |
| 21         | 1154151881      | PIPE, INJ. NO. 6          | 1           |                     |
| 31         | 1153002912      | NOZZLE ASSY.              | 6           |                     |
| 32         | 8970161471      | HOLDER ASSY. ....         | 6           | INCL. ITEMS W/#     |
| 33         | 5153110270      | NOZZLE                    | 6           |                     |
| 34#        | 1096750371      | BOLT                      | 6           |                     |
| 35#        | 1153320170      | NUT                       | 6           |                     |
| 36#        | 1096300820      | GASKET, ID=8 OD=13.2      | 12          |                     |
| 37#        | 5153320060      | NUT                       | 6           |                     |
| 38#        | 5153390600      | GASKET                    | 6           |                     |
| 39#        | 8941695030      | SCREW                     | 6           |                     |
| 41#        | 8943203080      | CONNECTOR                 | 6           |                     |
| 42#        | 5153390030      | GASKET                    | 6           |                     |
| 44#        | 5153430050      | SPRING                    | 6           |                     |
| 45#        | 8941695020      | PUSH ROD                  | 6           |                     |
| 46#        | 9153470030      | PIN                       | 12          |                     |
| 54         | 9153390510      | COVER                     | 6           |                     |
| 60         | 9091505080      | LOCK WASHER               | 12          |                     |
| 62         | 9091104080      | NUT                       | 12          |                     |
| 66         | 5153150030      | GASKET                    | 6           |                     |
| 75         | 9091607100      | PLAIN WASHER              | 3           |                     |
| 78         | 0500410200      | BOLT, M10X20 .....        | 2           | W/PLAIN WASHER      |
| 80         | 1197511200      | BRACKET                   | 1           |                     |
| 85         | 8943706750      | GASKET                    | 1           |                     |
| 114        | 9154196120      | CLIP                      | 6           |                     |
| 133        | 1154124711      | PIPE                      | 1           |                     |
| 134        | 1096750371      | BOLT                      | 1           |                     |
| 135        | 1096300820      | GASKET, ID=8.2 OD=13.2    | 2           |                     |

**Full View**

**ISUZU 6BG1 — FUEL FILTER AND BRACKET ASSY.**

FUEL FILTER AND BRACKET ASSY.



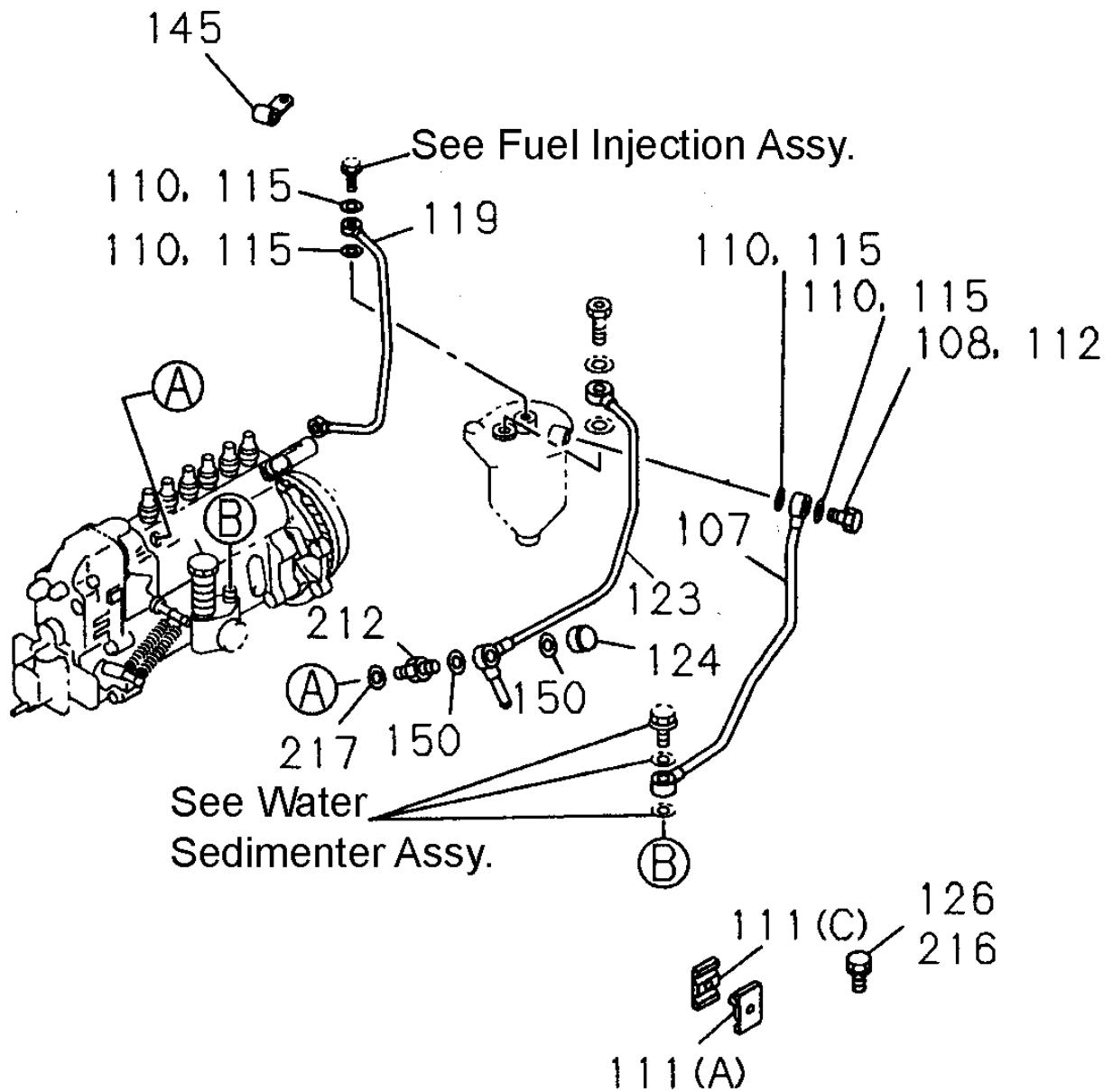
**ISUZU 6BG1 — FUEL FILTER AND BRACKET ASSY.**

## FUEL FILTER AND BRACKET ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>       | <u>QTY.</u> | <u>REMARKS</u>    |
|-----------|------------|-----------------|------------------------|-------------|-------------------|
|           | 1          | 1132007011      | FUEL FILTER ASSY. .... | 1           | INIICL. ITEMS W/* |
|           | 21*        | 1132121080      | COVER                  | 1           |                   |
|           | 29*        | 1132600470      | VALVE                  | 1           |                   |
|           | 30*        | 1096300850      | GASKET                 | 2           |                   |
|           | 58*        | 1132400691      | ELEMENT                | 1           |                   |
|           | 62         | 9091104100      | NUT                    | 2           |                   |
|           | 63         | 9091505100      | LOCK WASHER            | 2           |                   |
|           | 64         | 9091605100      | PLAIN WASHER           | 2           |                   |
|           | 72         | 9091105100      | NUT, M10               | 2           |                   |
|           | 99         | 9091505100      | LOCK WASHER            | 2           |                   |

## ISUZU 6BG1 — FUEL PUMP AND PIPE ASSY.

FUEL PUMP AND PIPE ASSY.



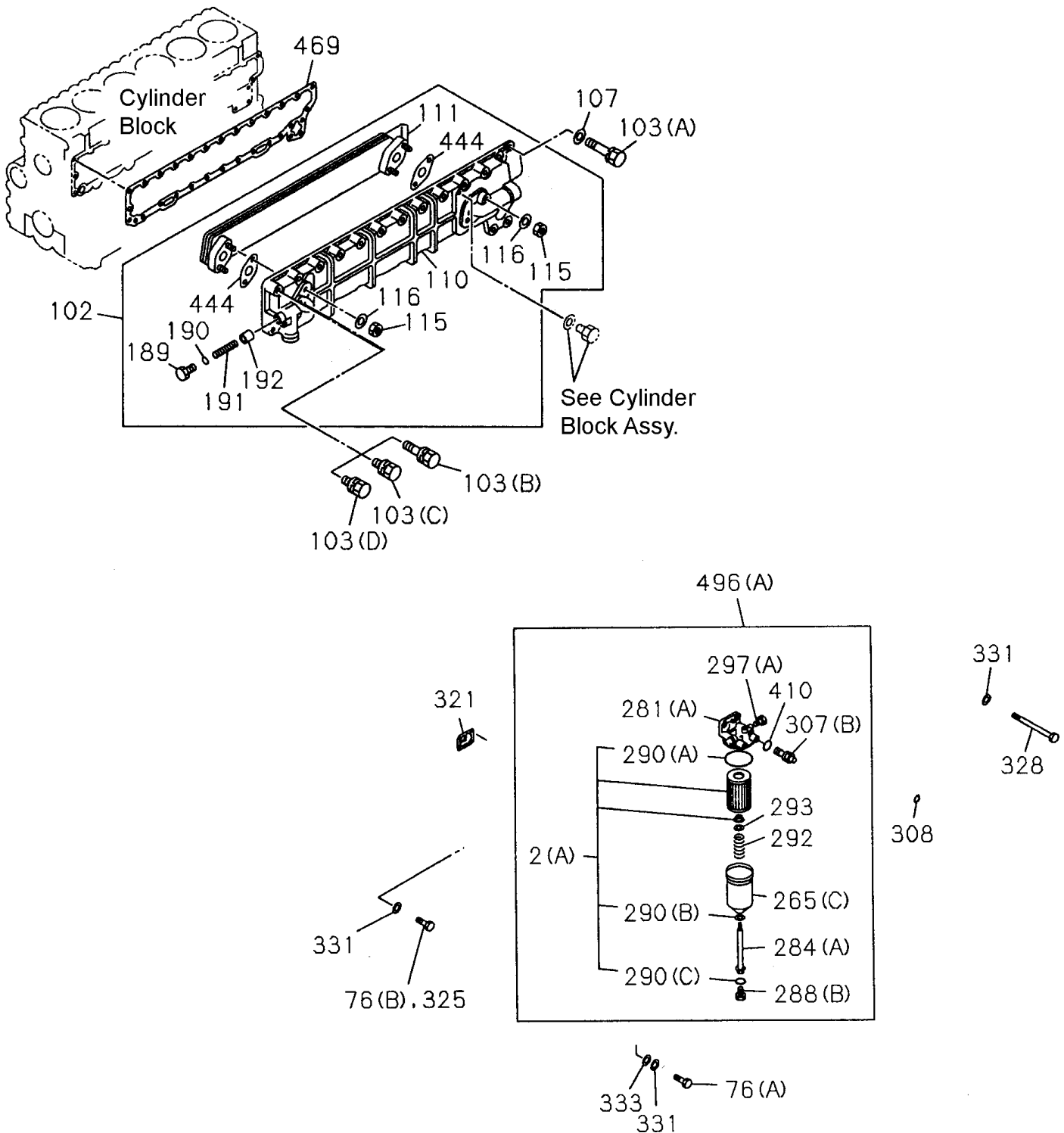
# ISUZU 6BG1 — FUEL PUMP AND PIPE ASSY.

## FUEL PUMP AND PIPE ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>        | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|-------------------------|-------------|----------------|
| 107        | 1154142940      | PIPE                    | 1           |                |
| 108        | 1096750860      | BOLT                    | 1           |                |
| 110        | 1096300850      | GASKET                  | 2           |                |
| 111A       | 5097091030      | CLIP, W/TUBE L=48       | 3           |                |
| 111C       | 5097091040      | CLIP, W/OUT TUBE L=45   | 3           |                |
| 112        | 1096750860      | BOLTM14X27              | 1           |                |
| 115        | 1096300850      | GASKET, ID=14.2 OD=19.2 | 2           |                |
| 119        | 1154142950      | PIPE                    | 1           |                |
| 123        | 1154142962      | PIPE                    | 1           |                |
| 124        | 1094680021      | NUT                     | 1           |                |
| 126        | 0500406300      | BOLT M6X30 .....        | 2           | W/LOCK WASHER  |
| 145        | 9095245550      | CLIP, ID=6              | 1           |                |
| 150        | 1096300850      | GASKET, ID=14.2 OD=19.2 | 2           |                |
| 212        | 1132600011      | OVERFLOW VALVE          | 1           |                |
| 216        | 0500406300      | BOLT, M6X30 .....       | 1           | W/ LOCK WASHER |
| 217        | 1096300850      | GASKET, ID=14.2 OD=19.2 | 1           |                |

## ISUZU 6BG1 — OIL COOLER AND OIL FILTER ASSY.

## OIL COOLER AND OIL FILTER ASSY.



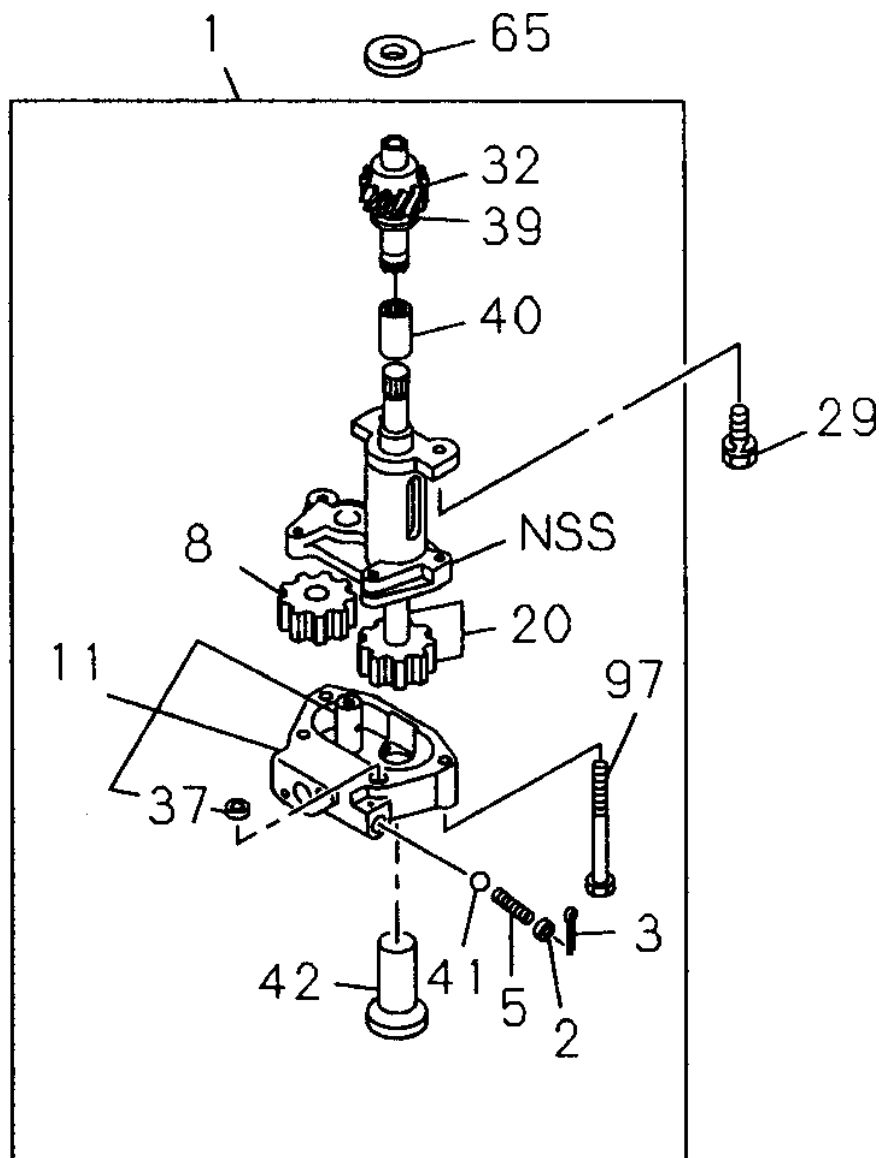
**ISUZU 6BG1 — OIL COOLER AND OIL FILTER ASSY.**

## OIL COOLER AND OIL FILTER ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>         | <u>QTY.</u> | <u>REMARKS</u>          |
|-----------|------------|-----------------|--------------------------|-------------|-------------------------|
|           |            |                 |                          |             |                         |
|           | 2          | 1878100752      | OIL FILTER ELEMENT ..... | 1           | INCL. ITEMS W/%         |
|           | 76A        | 9098009281      | BOLTM10X145              | 2           |                         |
|           | 76B        | 0286810350      | BOLT, M10X35             | 2           |                         |
|           | 102        | 1217002491      | OIL COOLER ASSY. ....    | 1           | INCL. ITEMS W/*         |
|           | 103A       | 8942059861      | BOLT, M8X65              | 1           |                         |
|           | 103B       | 0501408450      | BOLT, M8X65 .....        | 10          | W/LOCK AND PLAIN WASHER |
|           | 103C       | 0501408280      | BOLT, M8X28 .....        | 15          | W/LOCK AND PLAIN WASHER |
|           | 103D       | 1090300910      | BOLT, M8X20 .....        | 2           | W/PLAIN WASHER          |
|           | 107        | 9091605080      | PLAIN WASHER             | 3           |                         |
|           | 110*       | 1112810281      | BODY                     | 1           |                         |
|           | 111*       | 1112820180      | CORE                     | 1           |                         |
|           | 115*       | 9091114100      | NUT                      | 4           |                         |
|           | 116*       | 9091645100      | PLAIN WASHER             | 4           |                         |
|           | 189*       | 9132630100      | PLUG                     | 1           |                         |
|           | 190*       | 9095622150      | GASKET                   | 1           |                         |
|           | 191*       | 5095800920      | BYPASS SPRING            | 1           |                         |
|           | 192*       | 5112880010      | BYPASS VALVE             | 1           |                         |
|           | 196        | 5096050170      | PLUG                     | 2           |                         |
|           | 265#       | 5132110100      | BODY                     | 1           |                         |
|           | 281#       | 5132120212      | COVER                    | 1           |                         |
|           | 284#       | 1132310420      | BOLT                     | 1           |                         |
|           | 288#       | 109000105       | PLUG, M10                | 1           |                         |
|           | 290A%#     | 9099203110      | GASKET                   | 1           |                         |
|           | 290B%#     | 9099206940      | GASKET, ID=15.5          | 1           |                         |
|           | 290C%#     | 1096230550      | GASKET, ID=9.8           | 1           |                         |
|           | 292        | 9099412830      | SPRING                   | 1           |                         |
|           | 293        | 9132390250      | SEAT                     | 1           |                         |
|           | 297        | 9098621610      | PLUG                     | 1           |                         |
|           | 307        | 5132600061      | VALVE                    | 1           |                         |
|           | 309        | 1096231630      | GASKET                   | 1           |                         |
|           | 321        | 8943706700      | GASKET                   | 1           |                         |
|           | 328        | 8941486171      | BOLT                     | 1           |                         |
|           | 331        | 9091605100      | PLAIN WASHER             | 2           |                         |
|           | 333        | 9095720100      | GASKET, ID=10.2 OD=19    | 2           |                         |
|           | 410        | 1096231630      | GASKET                   | 1           |                         |
|           | 444*       | 1112820140      | GASKET                   | 2           |                         |
|           | 469        | 112820200       | GASKET                   | 1           |                         |
|           | 496        | 5132000726      | OIL FILTER ASSY. ....    | 1           | INCL. ITEMS W/#         |

**ISUZU 6BG1 — OIL PUMP AND OIL STRAINER ASSY.**

OIL PUMP AND OIL STRAINER ASSY.



**ISUZU 6BG1 — OIL PUMP AND OIL STRAINER ASSY.**

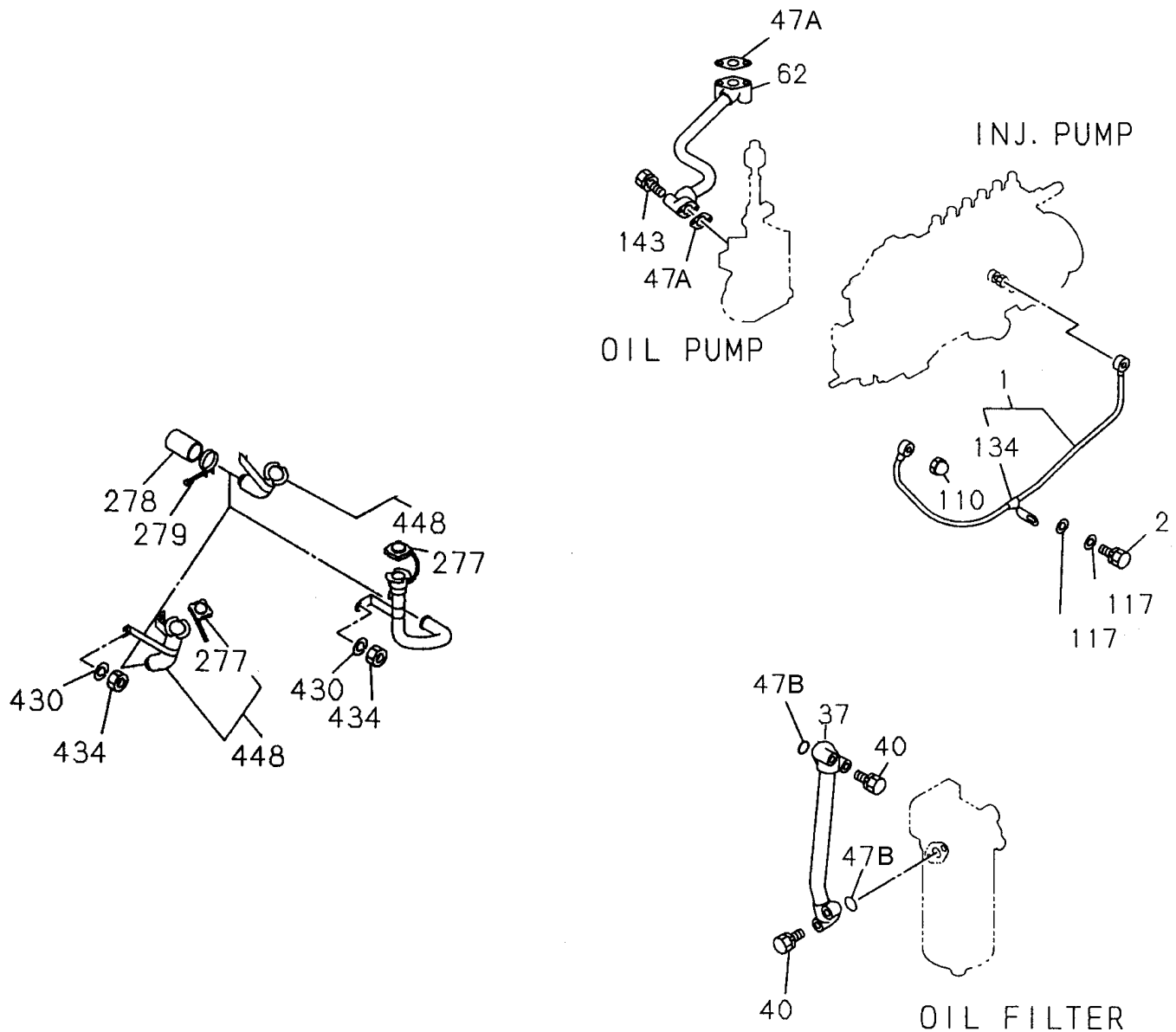
## OIL PUMP AND OIL STRAINER ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>    | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|---------------------|-------------|-----------------|
| 1          | 1131002770      | OIL PUMP ASSY. .... | 1           | INCL. ITEMS W/* |
| 2*         | 5131650040      | SEAT                | 1           |                 |
| 3*         | 9081140300      | PIN                 | 1           |                 |
| 5*         | 5095800980      | SPRING              | 1           |                 |
| 8*         | 5131250010      | GEAR                | 1           |                 |
| 11*        | 1131130470      | COVER ASSY.         | 1           |                 |
| 20*        | 5131210050      | GEAR                | 1           |                 |
| 29         | 0286810250      | BOLT, M10X25 FLANGE | 2           |                 |
| 32*        | 1131280180      | PINION              | 1           |                 |
| 37*        | 1131190030      | DOWEL               | 1           |                 |
| 39*        | 9131190100      | COLLAR              | 1           |                 |
| 40*        | 1131230160      | COUPLING            | 1           |                 |
| 41*        | 5098430030      | BALL                | 1           |                 |
| 42*        | 1131401160      | STRAINER            | 1           |                 |
| 65         | 9131190100      | COLLAR              | 1           |                 |
| 97*        | 1090440470      | BOLT, M8X60         | 4           |                 |

Full View

**ISUZU 6BG1 — OIL AND VACUUM PIPING ASSY.**

## OIL AND VACUUM PIPING ASSY.



**ISUZU 6BG1 — OIL AND VACUUM PIPING ASSY.**

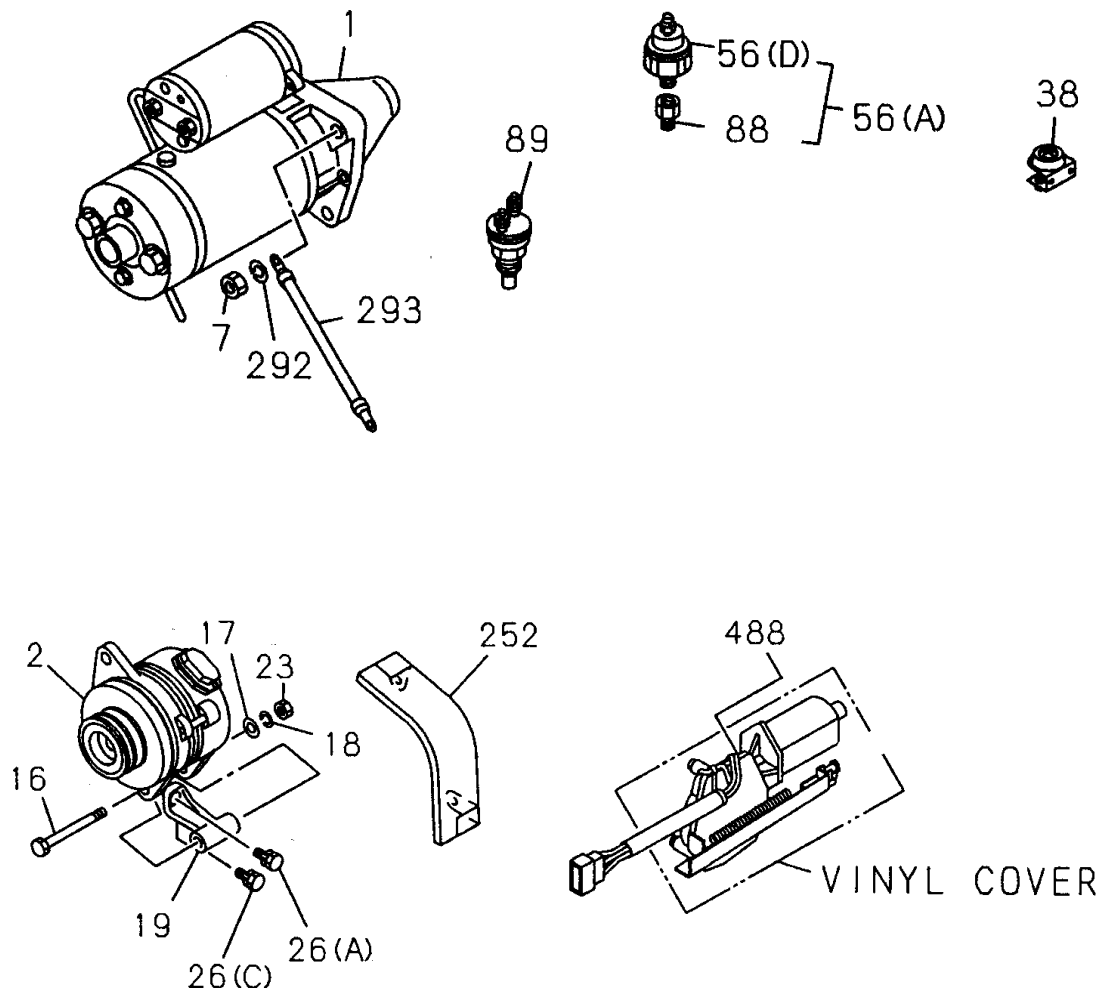
## OIL AND VACUUM PIPING ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>   | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|--------------------|-------------|-----------------|
| 1          | 5133112050      | PIPE .....         | 1 .....     | INCL. ITEMS W/* |
| 2          | 1096750770      | BOLT, M10X21       | 1           |                 |
| 37         | 5133111190      | PIPE               | 1           |                 |
| 40         | 0286808400      | BOLT, M8X40 FLANGE | 4           |                 |
| 47A        | 9099211880      | GASKET, ID=18      | 2           |                 |
| 47B        | 1096234620      | GASKET, ID=22.8    | 2           |                 |
| 62         | 1133115322      | PIPE               | 1           |                 |
| 110        | 9098440220      | NUT                | 1           |                 |
| 117        | 1096300830      | GASKET, ID=10.2    | 2           |                 |
| 134*       | 9099171051      | CLIP               | 1           |                 |
| 143        | 0280808400      | BOLT, M8X40 FLANGE | 4           |                 |
| 277#       | 1117500241      | CAP                | 1           |                 |
| 278        | 9099129760      | HOSE               | 1           |                 |
| 279        | 9099155531      | CLIP               | 2           |                 |
| 430        | 9091505080      | LOCK WASHER        | 1           |                 |
| 434        | 9091104080      | NUT                | 1           |                 |
| 448        | 1117402011      | FILLER .....       | 1 .....     | INCL. ITEMS W/# |

Full View

**ISUZU 6BG1 — ELECTRICAL CONTROL ASSY.**

ELECTRICAL CONTROL ASSY.



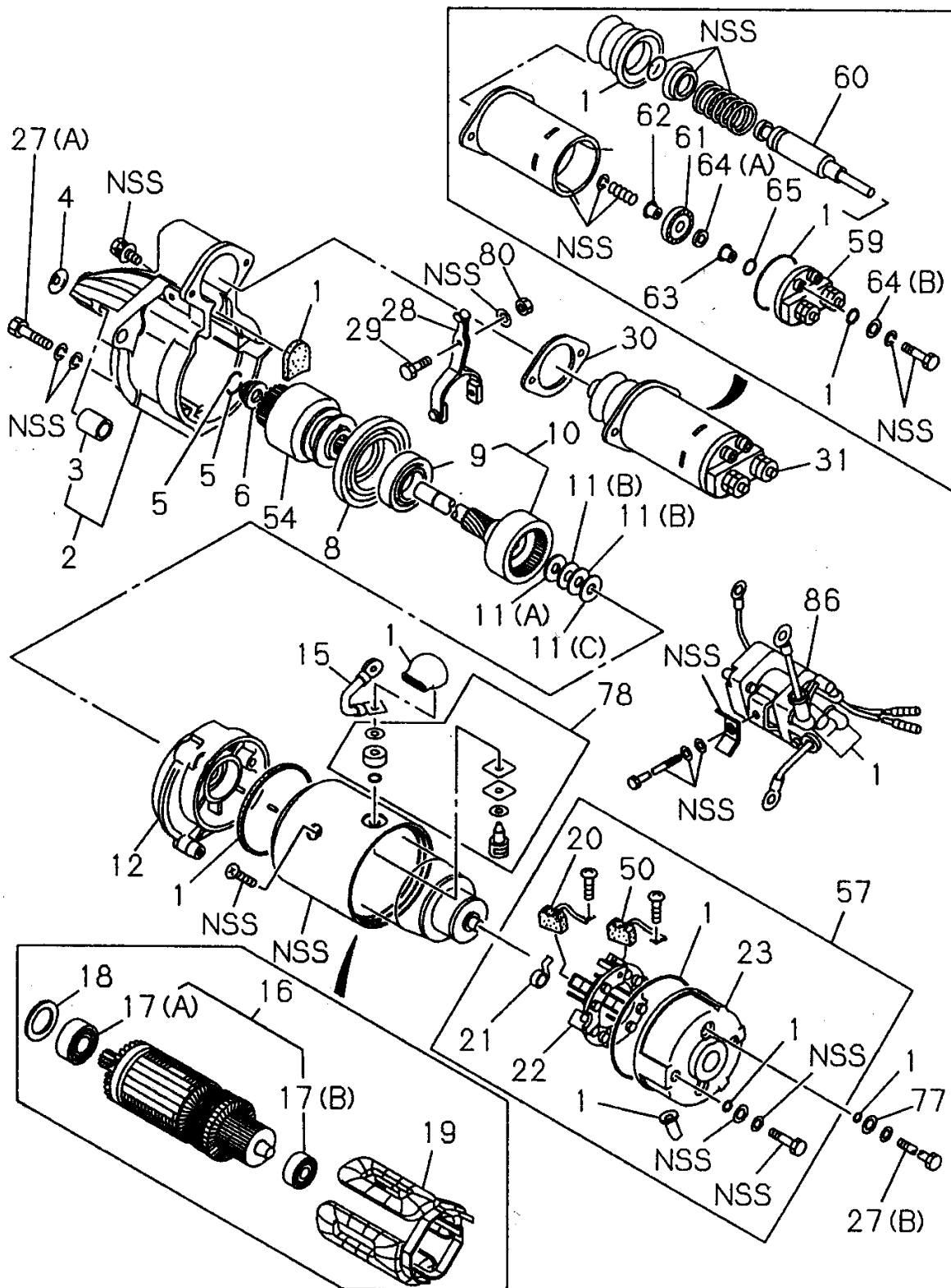
**ISUZU 6BG1 — ELECTRICAL CONTROL ASSY.**

## ELECTRICAL CONTROL ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>    | <u>QTY.</u> | <u>REMARKS</u>  |
|-----------|------------|-----------------|---------------------|-------------|-----------------|
|           | 1          | 1811001911      | STARTER ASSY.       | 1           |                 |
|           | 2          | 1812003650      | GENERATOR ASSY.     | 1           |                 |
|           | 7          | 9991104120      | NUT                 | 3           |                 |
|           | 16         | 1090001331      | BOLT, M14X135       | 1           |                 |
|           | 17         | 9091605140      | PLAIN WASHER        | 1           |                 |
|           | 18         | 9091505140      | LOCK WASHER         | 1           |                 |
|           | 23         | 9991104140      | NUT                 | 1           |                 |
|           | 26A        | 0280810250      | BOLT, M10X25 FLANGE | 1           |                 |
|           | 26C        | 0286810350      | BOLT, M10X35        | 2           |                 |
|           | 38         | 9825300430      | RESISTOR            | 1           |                 |
|           | 56A        | 5831510030      | SWITCH .....        | 1 .....     | INCL. ITEMS W/* |
|           | 56D*       | 9827200690      | SWITCH              | 1           |                 |
|           | 88*        | 9099022380      | ADAPTER             | 1           |                 |
|           | 89         | 8971256010      | SWITCH              | 1           |                 |
|           | 252        | 1197190362      | COVER               | 1           |                 |
|           | 292        | 9091505120      | LOCK WASHER         | 3           |                 |
|           | 293        | 9829322110      | CABLE               | 1           |                 |
|           | 488        | 1819001931      | STOPPER             | 1           |                 |

## ISUZU 6BG1 — STARTER COMP. ASSY.

STARTER COMP. ASSY.



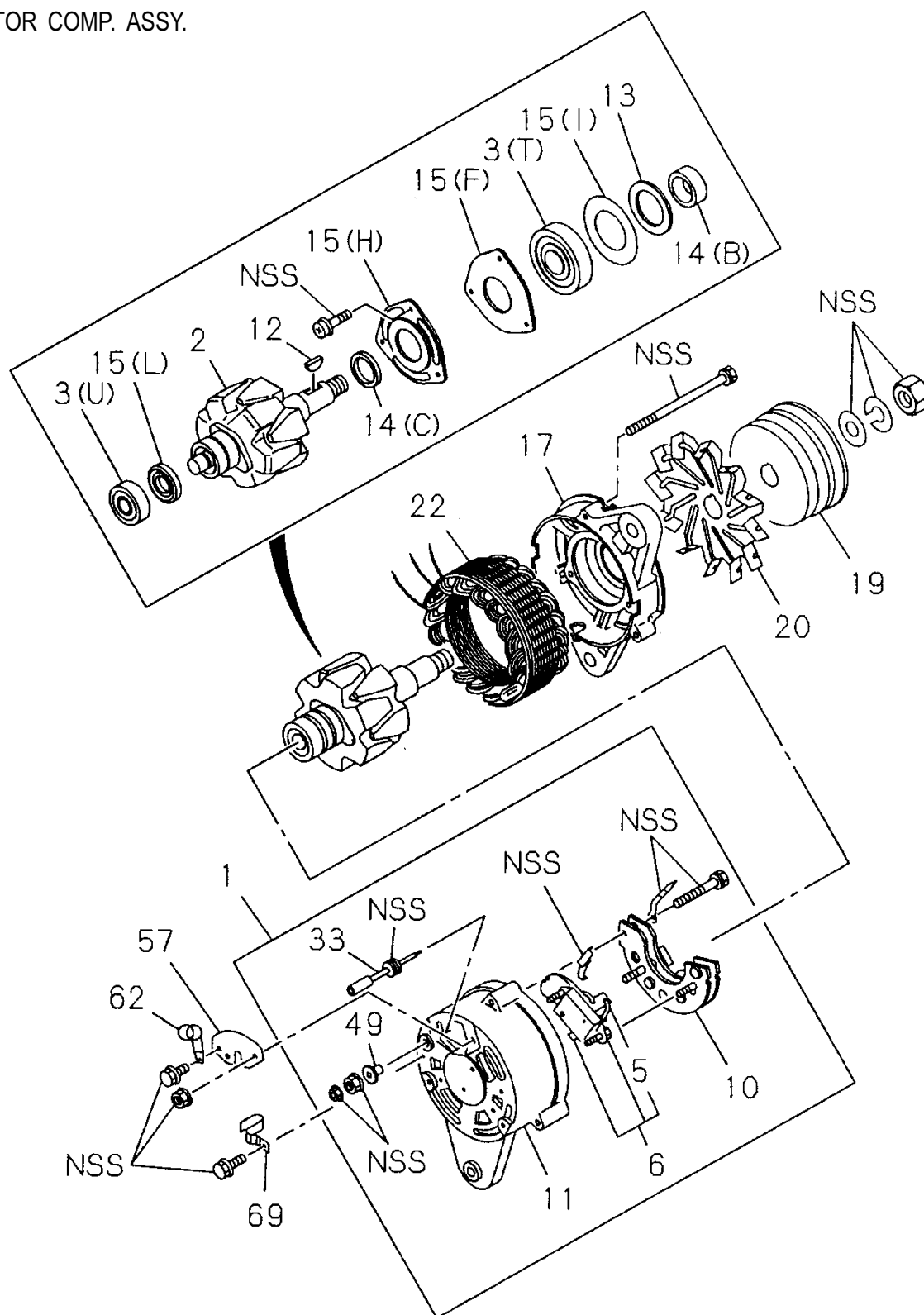
## ISUZU 6BG1 — STARTER COMP. ASSY.

## STARTER COMP. ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|------------------|-------------|-----------------|
| 1          | 1811293640      | SEAL KIT .....   | 1           | INCL. ITEMS W/1 |
| 2          | 1811230250      | CASE .....       | 1           | INCL. ITEMS W/% |
| 3%         | 1811293970      | METAL            | 1           |                 |
| 4          | 5811291420      | COVER            | 1           |                 |
| 5          | 5811291440      | CLIP             | 2           |                 |
| 6          | 5811291450      | STOPPER          | 1           |                 |
| 8          | 1811130260      | BRACKET          | 1           |                 |
| 9&         | 1811293860      | BEARING          | 1           |                 |
| 10         | 1811230240      | SHAFT .....      | 1           | INCL. ITEMS W/& |
| 11A        | 5811291600      | WASHER           | 1           |                 |
| 11B        | 5811291590      | WASHER           | 2           |                 |
| 11C        | 5811291580      | WASHER           | 1           |                 |
| 12         | 1811130730      | BRACKET          | 1           |                 |
| 15         | 1811160440      | WIRE             | 1           |                 |
| 16         | 1811210370      | ARMATURE .....   | 1           | INCL. ITEMS W/# |
| 17A#       | 1811293950      | BEARING .....    | 1           | UP TO MAR. 95   |
|            | 5811291550      | BEARING .....    | 1           | FROM APR. 95~   |
| 17B#       | 1811293850      | BEARING .....    | 1           | UP TO MAR. 95   |
|            | 1811291960      | BEARING .....    | 1           | FROM APR. 95~   |
| 18         | 5811291560      | WASHER           | 2           |                 |
| 19         | 1811293960      | COIL             | 1           |                 |
| 20*        | 1811160420      | BRUSH, +         | 2           |                 |
| 21*        | 1811170140      | SPRING           | 2           |                 |
| 22*        | 1811180360      | HOLDER           | 1           |                 |
| 23*        | 1811150620      | COVER            | 1           |                 |
| 27A        | 1811293870      | BOLT             | 3           |                 |
| 27B        | 5811292140      | BOLT             | 2           |                 |
| 28         | 1811270310      | LEVER            | 1           |                 |
| 29         | 1811291850      | PIN              | 1           |                 |
| 30         | 5811291470      | PLATE            | 1           |                 |
| 31         | 5811510360      | SWITCH           | 1           |                 |
| 50*        | 1811160430      | BRUSH, -         | 2           |                 |
| 54         | 5811220160      | CLUTCH           | 1           |                 |
| 57         | 1811150610      | COVER ASSY. .... | 1           | INCL. ITEMS W/* |
| 59         | 5811291500      | TERMINAL         | 1           |                 |
| 60         | 5811291460      | PLUNGER          | 1           |                 |
| 61         | 5811291480      | CONTACT          | 1           |                 |
| 62         | 9821161400      | BUSHING          | 1           |                 |
| 63         | 5811180190      | HOLDER           | 1           |                 |
| 64A        | 9821161420      | WASHER           | 1           |                 |
| 64B        | 5811291510      | WASHER           | 2           |                 |
| 65         | 5811291490      | RING             | 2           |                 |
| 77         | 1812291140      | WASHER           | 2           |                 |
| 78         | 1811293840      | TERMINAL         | 1           |                 |
| 80         | 1811291840      | NUT              | 1           |                 |
| 86         | 1825530230      | RELAY .....      | 1           | UP TO MAR. 95   |
|            | 1825530370      | RELAY .....      | 1           | FROM APR. 95~   |

## ISUZU 6BG1 — ALTERNATOR COMP. ASSY.

ALTERNATOR COMP. ASSY.



**ISUZU 6BG1 — ALTERNATOR COMP. ASSY.**

## ALTERNATOR COMP. ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u>        |
|------------|-----------------|------------------|-------------|-----------------------|
| 1          | 1812142290      | REAR COVER       | 1           | ..... INCL. ITEMS W/# |
| 2          | 1812210720      | ROTOR            | 1           |                       |
| 3T         | 1812292250      | BEARING          | 1           |                       |
| 3U         | 8941730540      | BEARING          | 1           |                       |
| 5          | 1812170620      | HOLDER           | 1           |                       |
| 6#         | 1812700070      | REGULATOR ASSY.  | 1           |                       |
| 10#        | 1812170690      | RECTIFIER        | 1           |                       |
| 11#        | 1812142240      | COVER            | 1           |                       |
| 12         | 9822158670      | KEY              | 1           |                       |
| 13         | 1812293830      | GASKET           | 2           |                       |
| 14B        | 1812295270      | COLLAR           | 1           |                       |
| 14C        | 1812295430      | COLLAR           | 1           |                       |
| 15H        | 1812295130      | RETAINER         | 1           |                       |
| 15F        | 1812293760      | RETAINER         | 1           |                       |
| 15I        | 1812295260      | RETAINER         | 1           |                       |
| 15L        | 8941730600      | RETAINER         | 1           |                       |
| 17         | 1812130670      | FRONT COVER      | 1           |                       |
| 19         | 1812220550      | PULLEY           | 1           |                       |
| 20         | 1812230090      | FAN              | 1           |                       |
| 22         | 1812110900      | STATOR           | 1           |                       |
| 33#        | 1812295560      | WIRE             | 1           |                       |
| 49#        | 8941730610      | BUSHING          | 1           |                       |
| 57         | 1812295440      | COVER            | 1           |                       |
| 62         | 1812291220      | CLIP             | 1           |                       |
| 69         | 1812295160      | CLIP             | 1           |                       |

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**ISUZU 6BG1 — INJ. PUMP COMP. ASSY.**

**Table of Contents**

**ISUZU 6BG1 — INJ. PUMP COMP. ASSY.**



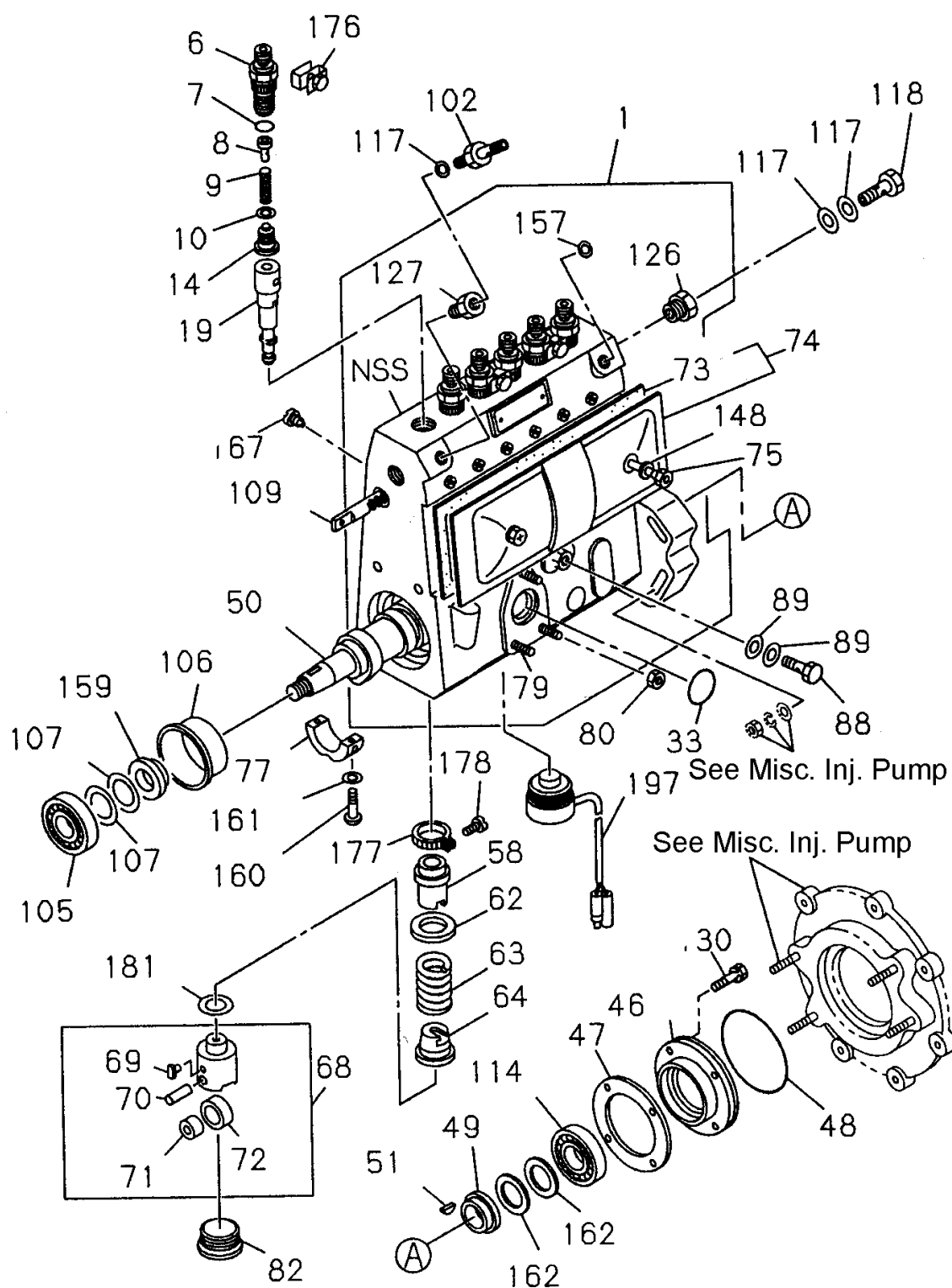
## ISUZU 6BG1 — INJ. PUMP COMP. ASSY.

## INJ. PUMP COMP. ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>        | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|-------------------------|-------------|-----------------|
| 1          | 5156110250      | HOUSING .....           | 1 .....     | INCL. ITEMS W/* |
| 6*         | 5156440170      | HOLDER                  | 6           |                 |
| 7*         | 1096230520      | GASKET                  | 6           |                 |
| 8*         | 5156290450      | STOPPER                 | 6           |                 |
| 9*         | 5156430010      | SPRING                  | 6           |                 |
| 10*        | 1156490010      | GASKET                  | 6           |                 |
| 14*        | 5156410010      | VALVE                   | 6           |                 |
| 19*        | 1156310690      | PLUNGER ASSY.           | 6           |                 |
| 33         | 1096230130      | GASKET                  | 1           |                 |
| 46         | 1156192430      | COVER                   | 1           |                 |
| 48         | 5156191560      | GASKET                  | 14          |                 |
| 49         | 9812250470      | RING                    | 1           |                 |
| 50*        | 5156210250      | CAMSHAFT                | 1           |                 |
| 51         | 5196190490      | KEY                     | 1           |                 |
| 62         | 9812350150      | SEAT                    | 6           |                 |
| 63         | 5156430090      | SPRING                  | 6           |                 |
| 64         | 9812350210      | SET                     | 6           |                 |
| 68         | 9812212230      | TAPPET .....            | 6 .....     | INCL. ITEMS W/# |
| 69#        | 5156190410      | GUIDE                   | 6           |                 |
| 70#        | 9812222200      | PIN                     | 6           |                 |
| 71#        | 1156290010      | BUSHING                 | 6           |                 |
| 72#        | 1156220030      | ROLLER                  | 6           |                 |
| 73*%       | 1157299600      | GASKET                  | 1           |                 |
| 74         | 1156120500      | COVER .....             | 1 .....     | INCL. ITEMS W/% |
| 75*        | 1156190030      | SCREW                   | 2           |                 |
| 77         | 1156190330      | BEARING                 | 1           |                 |
| 79*        | 9812151150      | STUD                    | 3           |                 |
| 80         | 8941711100      | NUT                     | 3           |                 |
| 82         | 5156191360      | PLUG                    | 6           |                 |
| 88         | 1156190920      | BOLT                    | 1           |                 |
| 89         | 1157190930      | GASKET                  | 2           |                 |
| 105        | 9000906770      | BEARING, NSK            | 1           |                 |
|            | 5098000380      | BEARING, NTN            | 1           |                 |
| 107        | 5156290150      | SHIM .....              | AR .....    | T=0.10          |
|            | 5156290160      | SHIM .....              | AR .....    | T=0.12          |
|            | 5156290170      | SHIM .....              | AR .....    | T=0.14          |
|            | 5156290180      | SHIM .....              | AR .....    | T=0.16          |
|            | 5156290190      | SHIM .....              | AR .....    | T=0.18          |
|            | 5156290200      | SHIM .....              | AR .....    | T=0.50          |
|            | 5156290380      | SHIM .....              | AR .....    | T=1.00          |
|            | 9812250330      | SHIM .....              | AR .....    | T=0.30          |
|            | 5156190390      | SHIM .....              | AR .....    | T=0.70          |
|            | 5156290900      | SHIM .....              | AR .....    | T=1.40          |
|            | 1156390880      | SHIM .....              | AR .....    | T=2.40          |
| 109*       | 5156370030      | RACK                    | 1           |                 |
| 114        | 5098000380      | BEARING, NTN            | 1           |                 |
|            | 9000906770      | BEARING, NSK            | 1           |                 |
| 117        | 1096300850      | GASKET, ID=14.2 OD=19.2 | 2           |                 |
| 118        | 1157590110      | BOLT                    | 1           |                 |
| 126*       | 9812350170      | ADAPTER                 | 1           |                 |
| 127*       | 5156190440      | ADAPTER                 | 1           |                 |
| 130        | 9019006140      | SCREW, M6X14 .....      | 4 .....     | W/LOCK WASHER   |
| 148*       | 9812151440      | GASKET                  | 2           |                 |
| 115        | 1156190240      | BOLT                    | 1           |                 |

## ISUZU 6BG1 — INJ. PUMP COMP. ASSY.

INJ. PUMP COMP. ASSY.



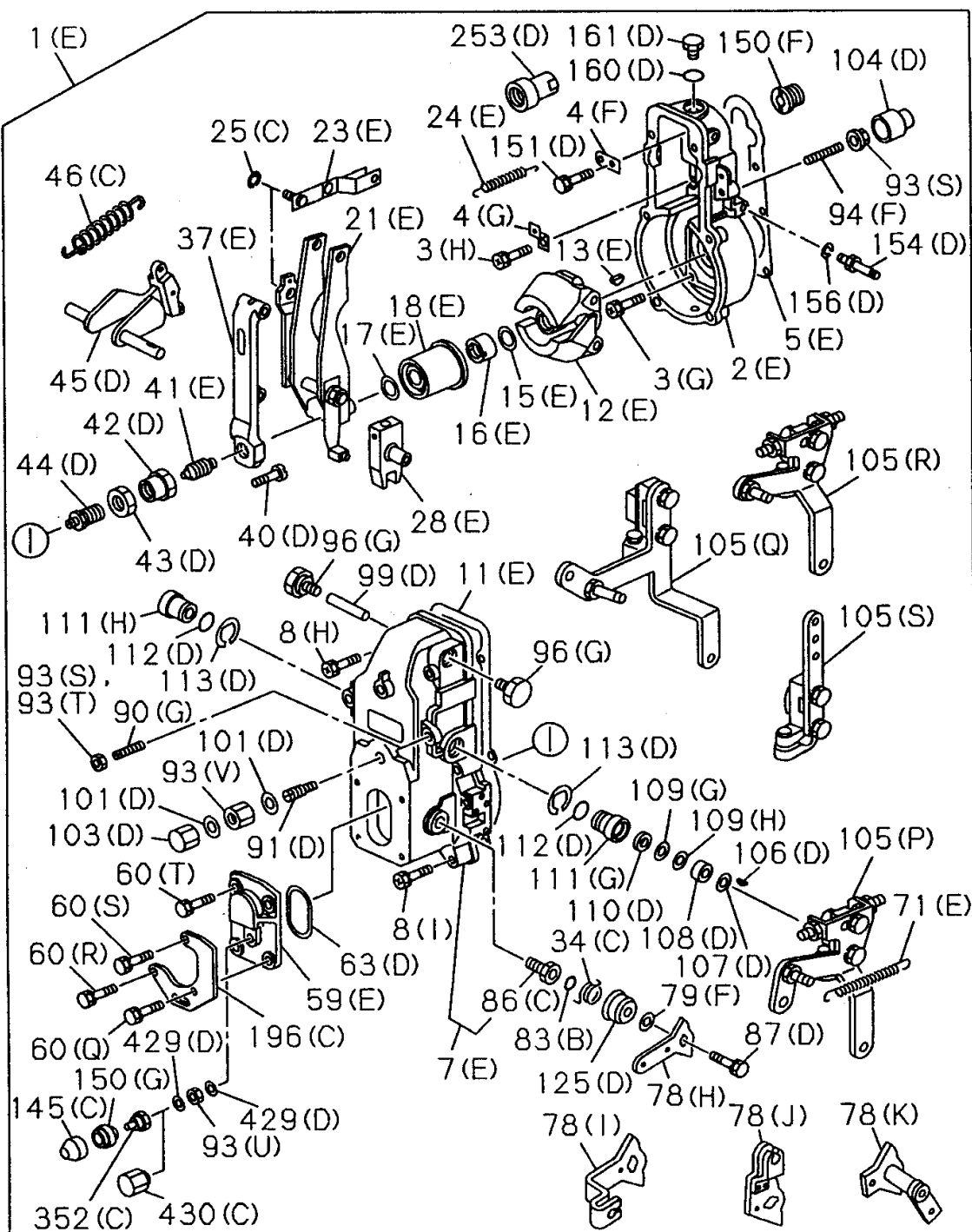
## ISUZU 6BG1 — INJ. PUMP COMP. ASSY.

## NJ. PUMP COMP. ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|------------------|-------------|----------------|
| 157*       | 8941445880      | GASKET           | 1           |                |
| 159        | 9812250470      | RING             | 1           |                |
| 160        | 9884100660      | SCREW            | 2           |                |
| 161        | 9812250430      | GASKET           | 2           |                |
| 162        | 5156290150      | SHIM .....       | AR .....    | T=0.10         |
|            | 5156290160      | SHIM .....       | AR .....    | T=0.12         |
|            | 5156290170      | SHIM .....       | AR .....    | T=0.14         |
|            | 5156290180      | SHIM .....       | AR .....    | T=0.16         |
|            | 5156290190      | SHIM .....       | AR .....    | T=0.18         |
|            | 5156290200      | SHIM .....       | AR .....    | T=0.50         |
|            | 5156290380      | SHIM .....       | AR .....    | T=1.00         |
|            | 9812250330      | SHIM .....       | AR .....    | T=0.30         |
|            | 5156190390      | SHIM .....       | AR .....    | T=0.70         |
|            | 5156290900      | SHIM .....       | AR .....    | T=1.40         |
|            | 1156390880      | SHIM .....       | AR .....    | T=2.40         |
| 167*       | 1156390030      | BOLT             | 1           |                |
| 176        | 5156250010      | PLATE            | 3           |                |
| 177        | 9812250570      | PINION           | 6           |                |
| 178        | 9812350030      | SCREW            | 6           |                |
| 181        | 5156190340      | SHIM .....       | AR .....    | T=0.30         |
|            | 5156190350      | SHIM .....       | AR .....    | T=0.40         |
|            | 5156190360      | SHIM .....       | AR .....    | T=0.50         |
|            | 5156190010      | SHIM .....       | AR .....    | T=0.60         |
|            | 5156190020      | SHIM .....       | AR .....    | T=0.70         |
|            | 5156190030      | SHIM .....       | AR .....    | T=0.80         |
|            | 5156190040      | SHIM .....       | AR .....    | T=0.90         |
|            | 5156190050      | SHIM .....       | AR .....    | T=1.00         |
|            | 5156190070      | SHIM .....       | AR .....    | T=1.10         |
|            | 5156190080      | SHIM .....       | AR .....    | T=1.20         |
|            | 5156190090      | SHIM .....       | AR .....    | T=1.30         |
|            | 5156190100      | SHIM .....       | AR .....    | T=1.40         |
|            | 5156190110      | SHIM .....       | AR .....    | T=0.55         |
|            | 5156190120      | SHIM .....       | AR .....    | T=0.65         |
|            | 5156190130      | SHIM .....       | AR .....    | T=0.75         |
|            | 5156190150      | SHIM .....       | AR .....    | T=0.85         |
|            | 9812350420      | SHIM .....       | AR .....    | T=0.95         |
|            | 9812350430      | SHIM .....       | AR .....    | T=1.05         |
|            | 9812350440      | SHIM .....       | AR .....    | T=1.15         |
|            | 9812350450      | SHIM .....       | AR .....    | T=1.25         |
|            | 5156191060      | SHIM .....       | AR .....    | T=1.50         |
|            | 5156191070      | SHIM .....       | AR .....    | T=1.60         |
|            | 5156190250      | SHIM .....       | AR .....    | T=0.20         |
|            | 5156190260      | SHIM .....       | AR .....    | T=0.25         |
|            | 5156190270      | SHIM .....       | AR .....    | T=0.35         |
|            | 5156190370      | SHIM .....       | AR .....    | T=0.45         |
|            | 5156191080      | SHIM .....       | AR .....    | T=1.35         |
|            | 5156191090      | SHIM .....       | AR .....    | T=1.45         |
|            | 5156191100      | SHIM .....       | AR .....    | T=1.55         |

## ISUZU 6BG1 — GOVERNOR COMP. ASSY.

GOVERNOR COMP. ASSY.



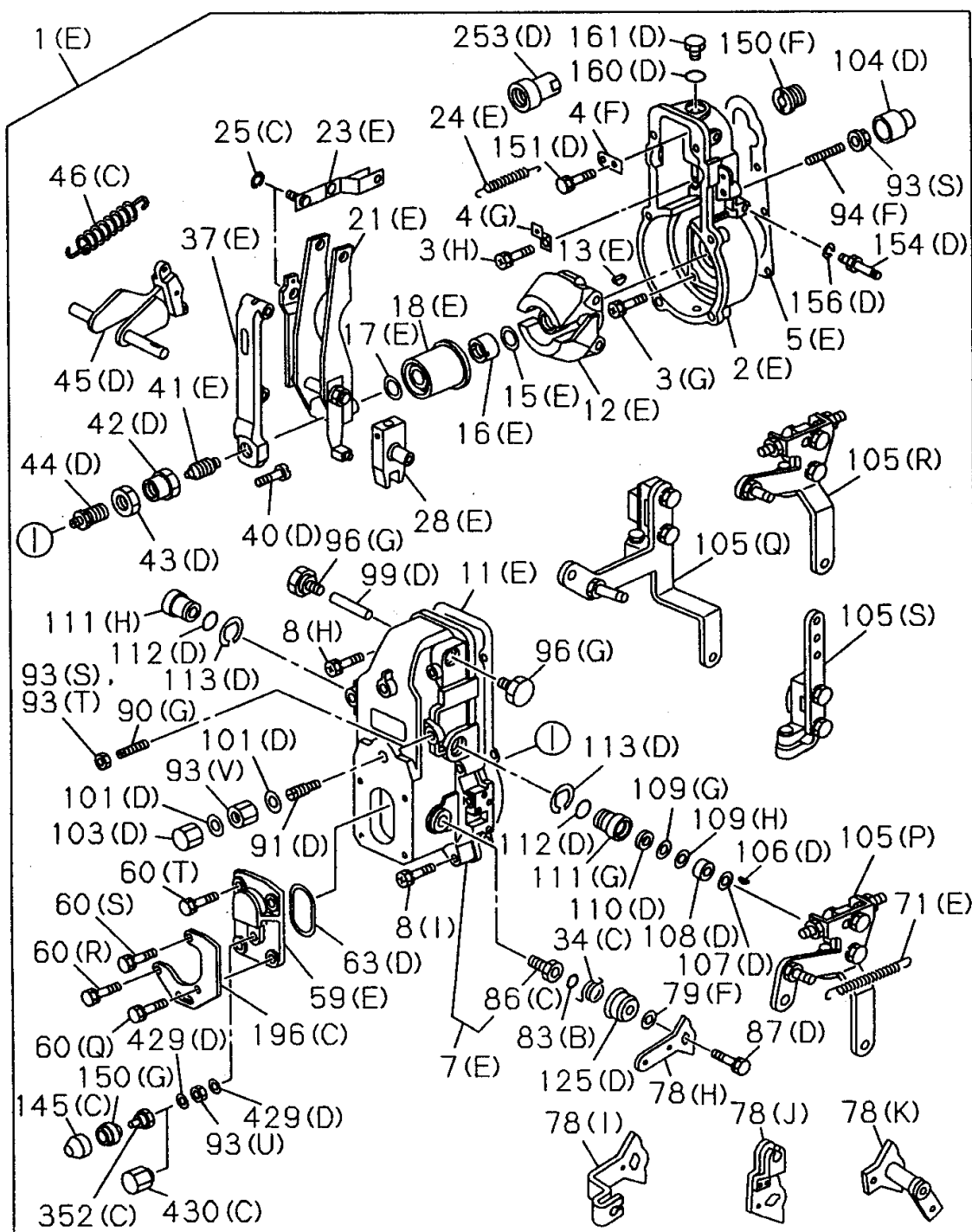
## ISUZU 6BG1 — GOVERNOR COMP. ASSY.

## GOVERNOR COMP. ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>    | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|---------------------|-------------|-----------------|
| 1          | 1157300480      | GOVERNOR ASSY. .... | 1           | INCL. ITEMS W/* |
| 2*         | 5157210040      | HOUSING             | 1           |                 |
| 3*         | 5157290270      | BOLT, M6X15         | 6           |                 |
| 4*         | 8913253970      | PLATE               | 1           |                 |
| 5*         | 1157290010      | GASKET              | 1           |                 |
| 7*         | 5157210220      | COVER .....         | 1           | INCL. ITEMS W/# |
| 8H*        | 5157290540      | BOLT                | 2           |                 |
| 8I*        | 5157290330      | BOLT                | 4           |                 |
| 11*        | 1157290020      | GASKET              | 1           |                 |
| 12*        | 1157220210      | FLYWEIGHT ASSY.     | 1           |                 |
| 13*        | 5196190490      | KEY, 16MM           | 1           |                 |
| 15*        | 5157290340      | LOCK WASHER         | 1           |                 |
| 16*        | 9813250860      | NUT                 | 1           |                 |
| 17*        | 9813250880      | SHIM .....          | AR          | T=0.20          |
|            | 9813255510      | SHIM .....          | AR          | T=0.40          |
|            | 9813255520      | SHIM .....          | AR          | T=0.60          |
|            | 9813255530      | SHIM .....          | AR          | T=1.00          |
|            | 5157292860      | SHIM .....          | AR          | T=0.50          |
|            | 5157292870      | SHIM .....          | AR          | T=1.50          |
|            | 1157298910      | SHIM .....          | AR          | T=2.00          |
|            | 1157298920      | SHIM .....          | AR          | T=3.00          |
|            | 1157298930      | SHIM .....          | AR          | T=4.00          |
| 18*        | 5157190080      | SLEEVE              | 1           |                 |
| 21*        | 5157250330      | LEVER ASSY.         | 1           |                 |
| 23*        | 1157250110      | LING                | 1           |                 |
| 24*        | 9813222350      | SPRING              | 1           |                 |
| 25*        | 9091854040      | SNAP RING           | 1           |                 |
| 28*        | 5157250420      | LEVER               | 1           |                 |
| 34*        | 1157232120      | SPRING              | 1           |                 |
| 37*        | 8970267520      | LEVER ASSY.         | 1           |                 |
| 40*        | 1157291010      | SCREW               | 1           |                 |
| 41*        | 8944707560      | SPRING CAPSULE      | 1           |                 |
| 43*        | 9008130230      | NUT                 | 1           |                 |
| 45*        | 1157256680      | LEVER ASSY.         | 1           |                 |
| 59*        | 1157210230      | COVER               | 1           |                 |
| 60Q*       | 1156192820      | BOLT                | 2           |                 |
| 60S*       | 5157291670      | BOLT                | 1           |                 |
| 63*        | 9813919070      | GASKET              | 1           |                 |
| 71*        | 5157230880      | SPRING              | 1           |                 |
| 78*        | 1157254490      | LEVER               | 1           |                 |
| 79*        | 1157292940      | SHIM .....          | AR          | T=0.20          |
|            | 1157292950      | SHIM .....          | AR          | T=0.25          |
|            | 1157292960      | SHIM .....          | AR          | T=0.30          |
|            | 1157292970      | SHIM .....          | AR          | T=0.35          |
|            | 1157292980      | SHIM .....          | AR          | T=0.40          |
|            | 1157292990      | SHIM .....          | AR          | T=0.50          |
| 83*        | 9813919060      | SEAL                | 1           |                 |
| 86*#       | 9813254290      | BUSHING             | 1           |                 |
| 87*        | 9019006160      | BOLT                | 1           |                 |

## ISUZU 6BG1 — GOVERNOR COMP. ASSY.

GOVERNOR COMP. ASSY.



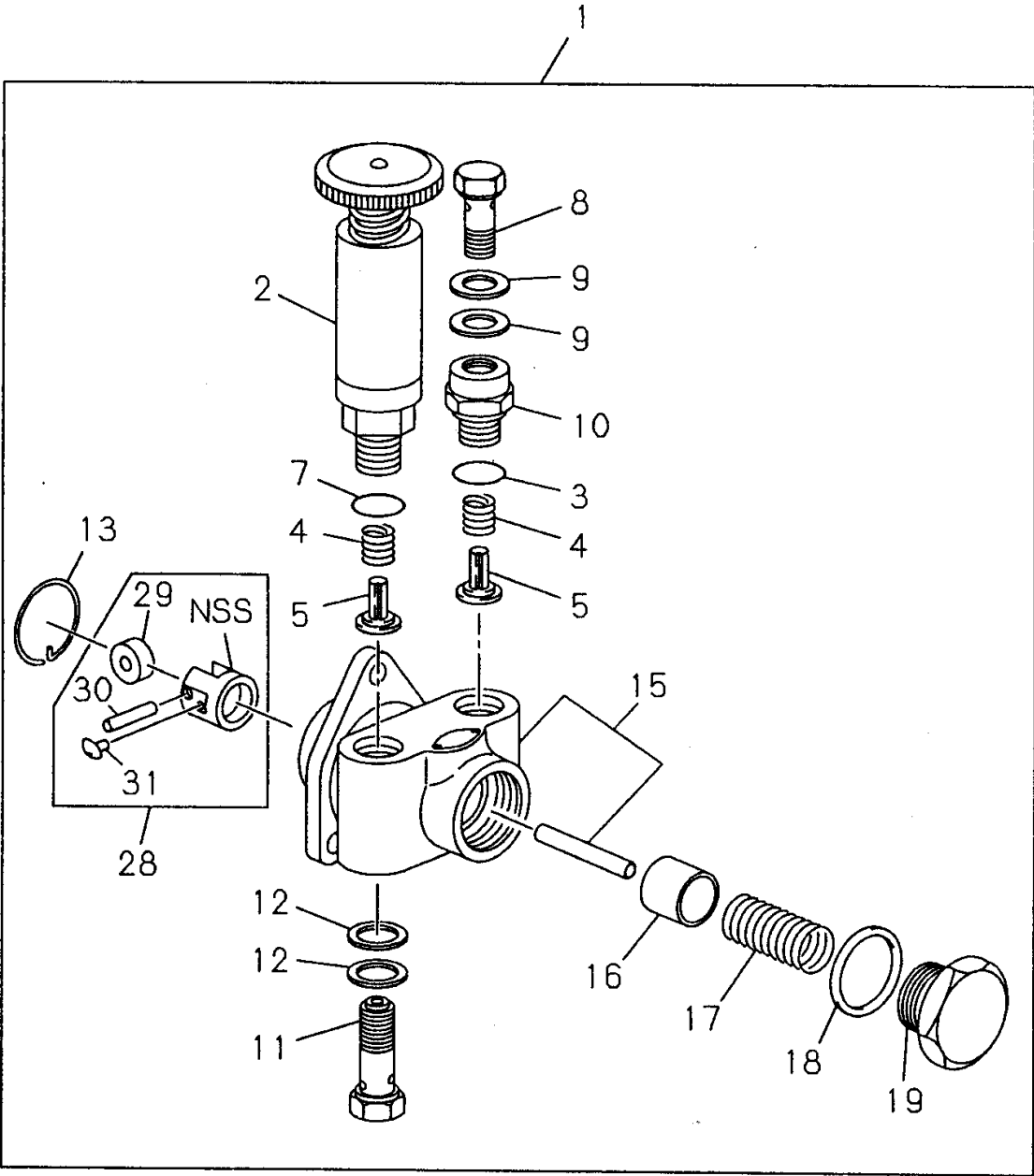
## ISUZU 6BG1 — GOVERNOR COMP. ASSY.

## GOVERNOR COMP. ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>  | <u>QTY.</u> | <u>REMARKS</u>      |
|------------|-----------------|-------------------|-------------|---------------------|
| 90*        | 5157291230      | SCREW             | 1           |                     |
| 918*       | 8944278480      | SPRING CAPSULE    | 1           |                     |
| 93S*       | 9844100270      | NUT               | 1           |                     |
| 93T*       | 1157790580      | NUT               | 1           |                     |
| 93U*       | 1157790400      | NUT               | 1           |                     |
| 93V*       | 1157296890      | NUT               | 1           |                     |
| 94*        | 1157795020      | SCREW             | 1           |                     |
| 96*        | 5157290530      | PLUG              | 2           |                     |
| 99*        | 9813250620      | PIN               | 1           |                     |
| 101*       | 8941445880      | GASKET            | 2           |                     |
| 103*       | 1157290920      | NUT               | 1           |                     |
| 104*       | 8971796700      | CAP               | 1           |                     |
| 105*       | 1157259210      | LEVER             | 1           |                     |
| 106*       | 9813250300      | KEY, 13MM         | 1           |                     |
| 107*       | 9813254880      | WASHER            | AR          |                     |
| 108*       | 1157293010      | COLLAR            | 1           |                     |
| 109*       | 1157290990      | SHIM              | 1           |                     |
|            | 9813251730      | SHIM              | AR          |                     |
| 110*       | 1157290980      | SEAL              | 1           |                     |
| 111G*      | 8970242390      | BUSHING           | 1           |                     |
| 111H*      | 8970242400      | BUSHING           | 1           |                     |
| 112*       | 9813212050      | GASKET            | 2           |                     |
| 113*       | 9091854150      | RING              | 2           |                     |
| 158*       | 9813252100      | CAP               | 1           |                     |
| 145*       | 1157795650      | CAP               | 1           |                     |
| 150F*      | 9813150650      | ADAPTER           | 1           |                     |
| 150G*      | 1157795670      | ADAPTER           | 1           |                     |
| 151*       | 9019008180      | BOLT, M8X18 ..... | 1           | ..... W/LOCK WASHER |
| 154*       | 1157795620      | BOLT              | 1           |                     |
| 156*       | 1835794920      | WASHER            | 1           |                     |
| 160*       | 1157290150      | GASKET            | 1           |                     |
| 161*       | 1157290380      | PLUG              | 1           |                     |
| 196*       | 1157791910      | BRACKET           | 1           |                     |
| 253*       | 1157296360      | LIMITER           | 1           |                     |
| 352*       | 1157795640      | CAP NUT           | 1           |                     |
| 429*       | 5157290990      | GASKET            | 2           |                     |

**ISUZU 6BG1 —FEED PUMP ASSY.**

FEED PUMP ASSY.



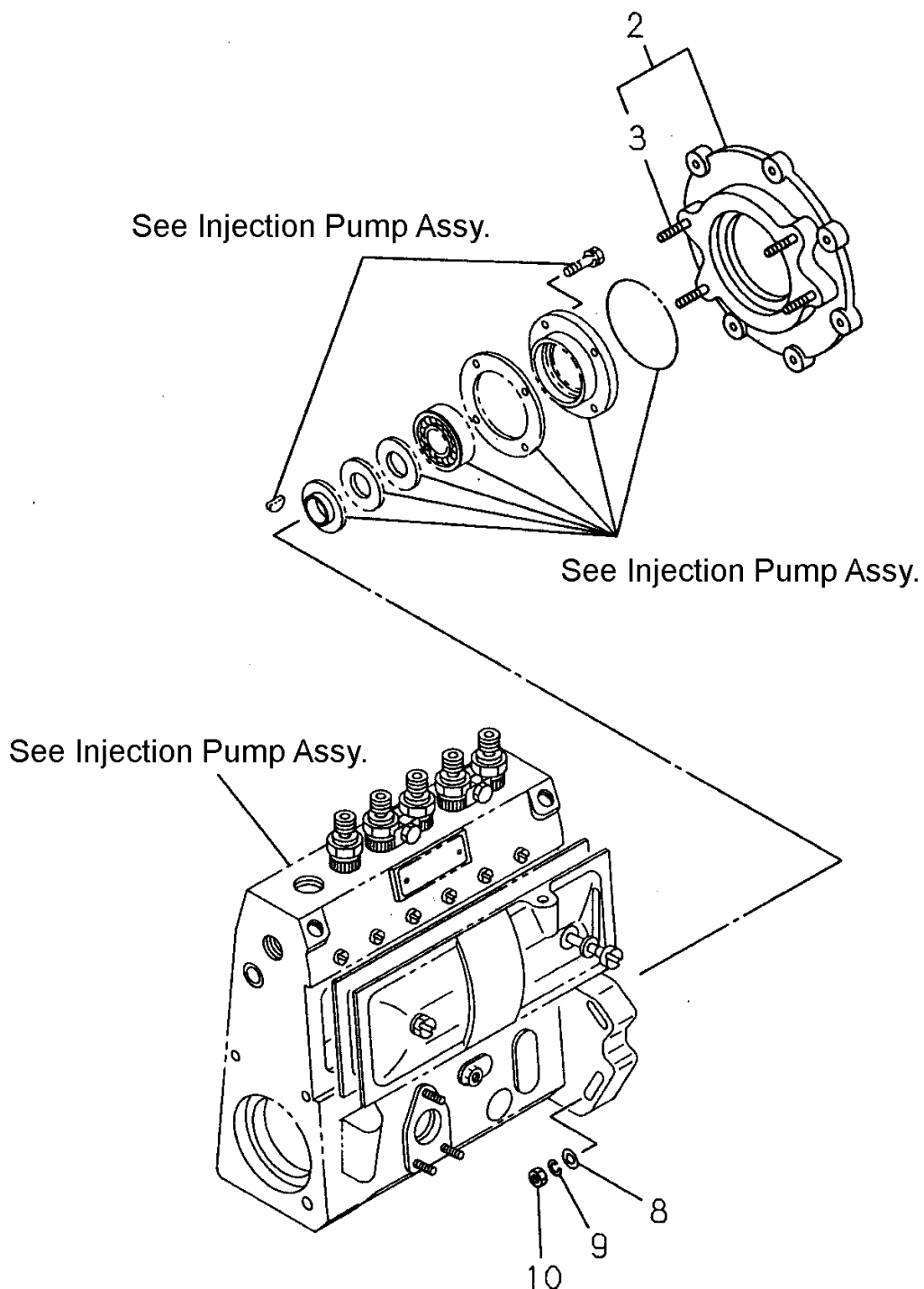
**ISUZU 6BG1 — FEED PUMP ASSY.**

## FEED PUMP ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|------------------|-------------|-----------------|
| 1          | 1157501620      | PUMP ASSY. ....  | 1           | INCL. ITEMS W/* |
| 2*         | 1157610060      | PUMP             | 1           |                 |
| 3*         | 1196230160      | GASKET           | 1           |                 |
| 4*         | 9813517020      | VALVE SPRING     | 2           |                 |
| 5*         | 1157550020      | PUMP VALVE       | 2           |                 |
| 7*         | 1196230160      | GASKET           | 2           |                 |
| 10*        | 1157590030      | ADAPTER          | 1           |                 |
| 11*        | 1096750630      | BOLT             | 1           |                 |
| 12*        | 1096300850      | GASKET           | 2           |                 |
| 13*        | 9813550250      | SNAP RING        | 2           |                 |
| 15*        | 5157510120      | HOUSING          | 1           |                 |
| 16*        | 9813512050      | PISTON           | 1           |                 |
| 17*        | 9813513020      | SPRING           | 1           |                 |
| 18*        | 9813550350      | GASKET           | 1           |                 |
| 19*        | 8941711850      | PLUG             | 1           |                 |
| 28*        | 5157540010      | TAPPET ASSY.     | 1           |                 |
| 29*        | 9813514030      | ROLLER           | 1           |                 |
| 30*        | 9813514100      | PIN              | 1           |                 |
| 31*        | 1157590020      | GUIDE            | 2           |                 |

**ISUZU 6BG1 — MISC. INJECTION PUMP ASSY.**

MISC. INJECTION PUMP ASSY.



**ISUZU 6BG1 — MISC. INJECTION PUMP ASSY.**

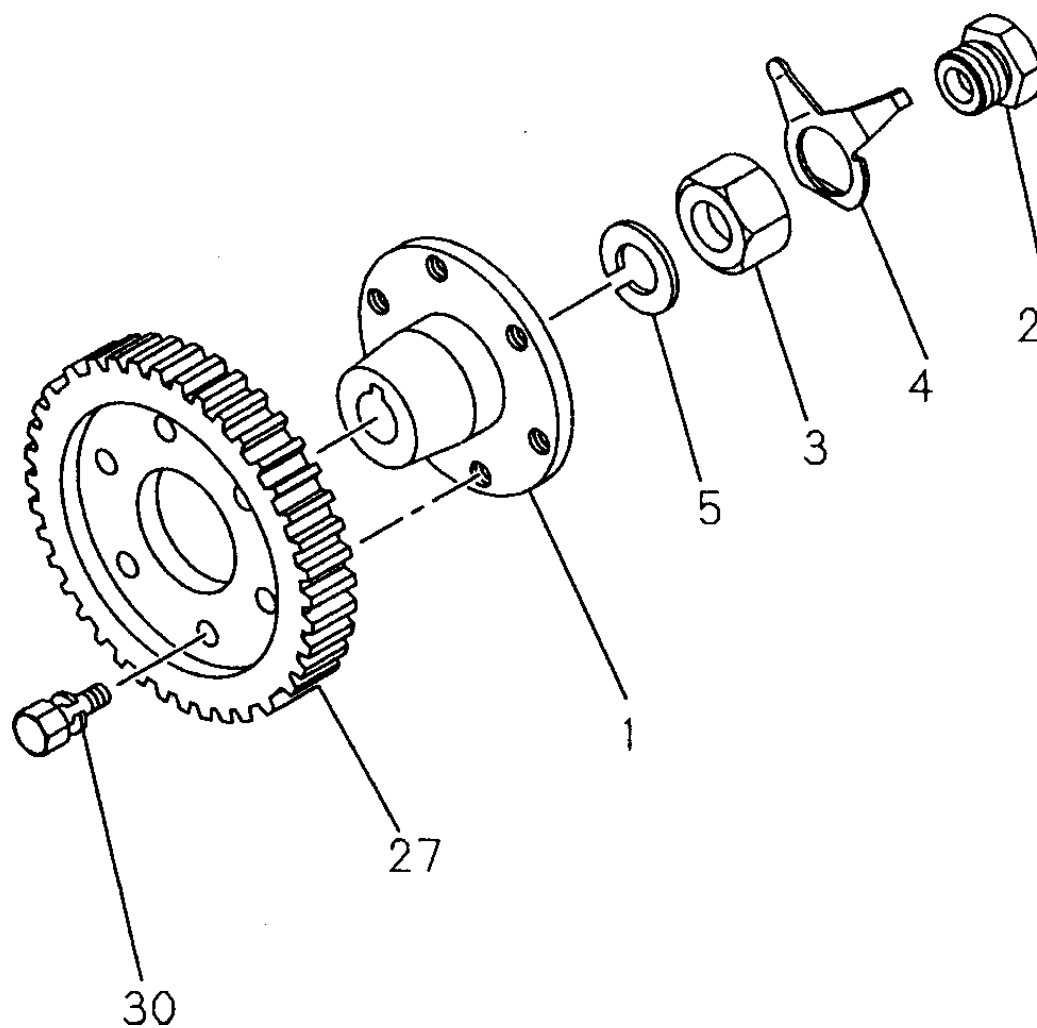
MISC. INJECTION PUMP ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|------------|-----------------|------------------|-------------|----------------|
| 2          | 1197510490      | BRACKET .....    | 1 .....     | INCL. ITEM W/* |
| 3*         | 9041010300      | STUD             | 4           |                |
| 8          | 9091645100      | PLAIN WASHER     | 4           |                |
| 9          | 9091506100      | LOCK WASHER      | 4           |                |
| 10         | 5156390020      | NUT              | 4           |                |

Full View

**ISUZU 6BG1 — COUPLING ASSY,**

COUPLING ASSY.



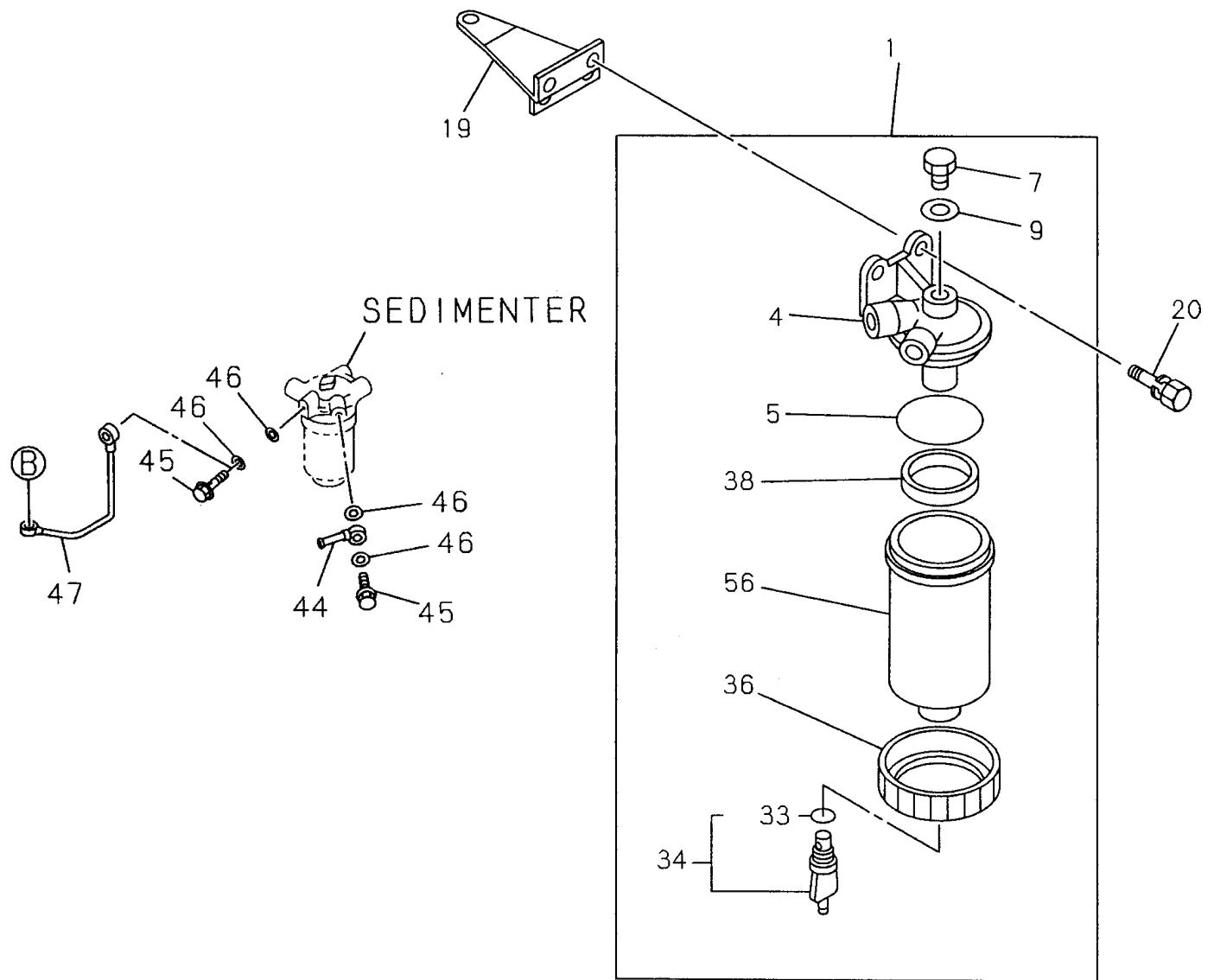
## ISUZU 6BG1 — COUPLING ASSY.

## COUPLING ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u> | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|------------|-----------------|------------------|-------------|----------------|
|           | 1          | 5157810030      | COUPLING         | 1           |                |
|           | 2          | 9096620070      | BOLT             | 1           |                |
|           | 3          | 9884105020      | NUT              | 1           |                |
|           | 4          | 1156192470      | PLATE            | 1           |                |
|           | 5          | 5156190480      | WASHER           | 1           |                |
|           | 27         | 1125240150      | GEAR             | 1           |                |
|           | 30         | 8944575170      | BOLT             | 6           |                |

**ISUZU 6BG1 — WATER SEDIMENTER ASSY.**

WATER SEDIMENTER ASSY.



## ISUZU 6BG1 — WATER SEDIMENTER ASSY.

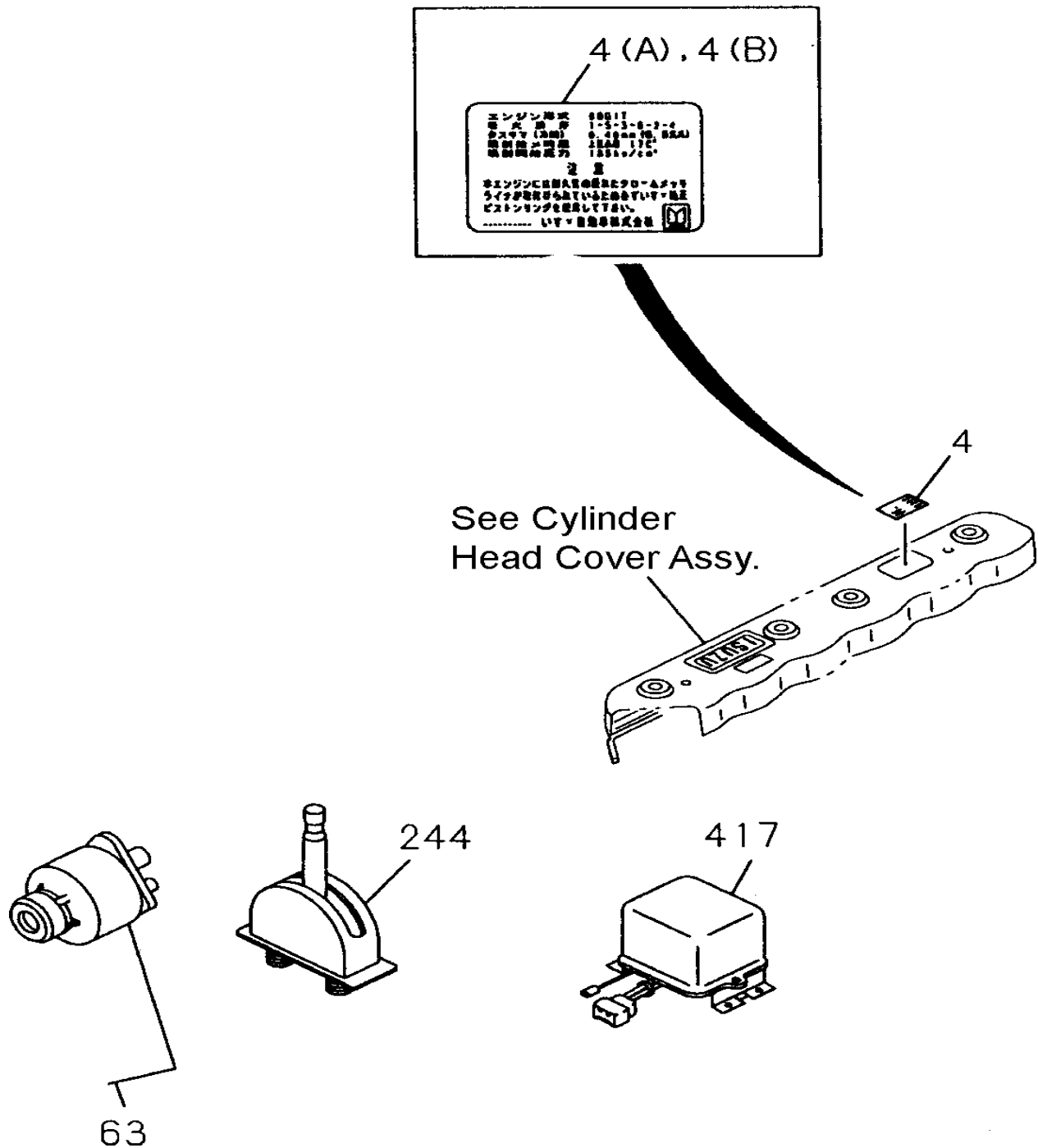
## WATER SEDIMENTER ASSY.

| <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>      | <u>QTY.</u> | <u>REMARKS</u>  |
|------------|-----------------|-----------------------|-------------|-----------------|
| 1          | 1132008410      | FUEL SEDIMENTER ..... | 1 .....     | INCL. ITEMS W/* |
| 4*         | 5132120591      | COVER                 | 1           |                 |
| 5*         | 5096230700      | GASKET                | 1           |                 |
| 7*         | 5132190200      | PLUG                  | 1           |                 |
| 9*         | 5096300240      | GASKET                | 1           |                 |
| 19         | 1197550921      | BRACKET               | 1           |                 |
| 20         | 0280808250      | BOLT, M8X25 FLANGE    | 2           |                 |
| 33*#       | 8944163770      | WASHER                | 1           |                 |
| 34*        | 8944537460      | PLUG .....            | 1 .....     | INCL. ITEMS W/# |
| 36*        | 5132190221      | RING                  | 1           |                 |
| 38*        | 5132190210      | FLOAT                 | 1           |                 |
| 44         | 5154112231      | PIPE                  | 1           |                 |
| 45         | 1096750860      | BOLT, M14X27          | 2           |                 |
| 46         | 1096300850      | GASKET                | 4           |                 |
| 47         | 1154143741      | PIPE                  | 1           |                 |
| 56*        | 1132112110      | CASE                  | 1           |                 |

Full View

## ISUZU 6BG1 — SWITCH AND RELAY ASSY.

SWITCH AND RELAY ASSY.



**ISUZU 6BG1 — SWITCH AND RELAY ASSY.**

## SWITCH AND RELAY ASSY.

| Full View | <u>NO.</u> | <u>PART NO.</u> | <u>PART NAME</u>     | <u>QTY.</u> | <u>REMARKS</u> |
|-----------|------------|-----------------|----------------------|-------------|----------------|
|           | 4          | 1858886780      | LABEL, ENGINE MAINT. | 1           |                |
|           | 63         | 1823100080      | SWITCH ASSY.         | 1           |                |
|           | 244        | 1823200010      | BATTERY SWITCH       | 1           |                |
|           | 417        | 1825500732      | EMERGENCY RELAY      | 1S          |                |

Effective: July 1, 2000

**TERMS AND CONDITIONS OF SALE — PARTS****PAYMENT TERMS**

Terms of payment for parts are net 10 days.

**FREIGHT POLICY**

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

**MINIMUM ORDER**

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

**RETURNED GOODS POLICY**

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

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
  - a. The parts numbers and descriptions must match the current parts price list.
  - b. The list must be typed or computer generated.
  - c. The list must state the reason(s) for the return.
  - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
  - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.
5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
  - a. Obsolete parts. (If an item is listed in the parts price book as being replaced by another item, it is obsolete.)
  - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
  - c. Any line item with an extended dealer net price of less than \$5.00.
  - d. Special order items.
  - e. Electrical components.
  - f. Paint, chemicals, and lubricants.
  - g. Decals and paper products.
  - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for 5 working days from notification, pending instructions. If a reply is not received within 5 days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

**PRICING AND REBATES**

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

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

**SPECIAL EXPEDITING SERVICE**

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

**LIMITATIONS OF SELLER'S LIABILITY**

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

**LIMITATION OF WARRANTIES**

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

[illegible]

# PARTS AND OPERATION MANUAL

## Table of Contents

### **HERE'S HOW TO GET HELP**

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

#### **PARTS DEPARTMENT**

*800/427-1244 or 310/537-3700*

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

#### **SERVICE DEPARTMENT**

*800/835-2551 or 310/537-3700*

*FAX: 310/638-8046*

#### **WARRANTY DEPARTMENT**

*800/835-2551 or 310/537-3700*

*FAX: 310/638-8046*

#### **MAIN**

*800/421-1244 or 310/537-3700*

*FAX: 310/537-3927*

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#### **MULTIQIP INC.**

18910 WILMINGTON AVE.

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800-421-1244

FAX: 310-537-3927

E-mail: [mq@multiquip.com](mailto:mq@multiquip.com) • [www.multiquip.com](http://www.multiquip.com)

#### **PARTS DEPARTMENT:**

800-427-1244

FAX: 800-672-7877

#### **SERVICE DEPARTMENT:**

800-835-2551

FAX: 310-638-8046