

# OPERATION AND PARTS MANUAL



## **WHISPERWELD™ SERIES MODEL TLW-300SS WELDER/AC GENERATOR (KUBOTA D722EB DIESEL ENGINE)**

Revision # 2 (04/07/10)

To find the latest revision of this  
publication, visit our website at:  
[www.mqpower.com](http://www.mqpower.com)



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



**CALIFORNIA — Proposition 65 Warning**

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



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### NOTE

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

# PARTS ORDERING PROCEDURES

www.mqpower.com

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

Effective:  
January 1<sup>st</sup>, 2006



### Order via Internet (Dealers Only):

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

- View Parts Diagrams
- Order Parts
- Print Specification Information



If you have an MQ Account, to obtain a Username and Password, E-mail us at: [parts@multiquip.com](mailto:parts@multiquip.com).

To obtain an MQ Account, contact your District Sales Manager for more information.

Goto [www.multiquip.com](http://www.multiquip.com) and click on **Order Parts** to log in and save!

Use the **internet** and qualify for a **5% Discount** on *Standard orders* for all orders which include complete part numbers.\*

Note: Discounts Are Subject To Change



### Order via Fax (Dealers Only):

All customers are welcome to order parts via Fax.

**Domestic (US) Customers dial:**  
1-800-6-PARTS-7 (800-672-7877)

**Fax** your order in and qualify for a **2% Discount** on *Standard orders* for all orders which include complete part numbers.\*

Note: Discounts Are Subject To Change



**Order via Phone:** Domestic (US) Dealers Call:  
1-800-427-1244

### Non-Dealer Customers:

Contact your local Multiquip Dealer for parts or call 800-427-1244 for help in locating a dealer near you.



**International Customers** should contact their local Multiquip Representatives for Parts Ordering information.

## When ordering parts, please supply:

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

### NOTICE

All orders are treated as *Standard Orders* and will ship the same day if received prior to 3PM PST.

WE ACCEPT ALL MAJOR CREDIT CARDS!



# 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 TLW-300SS Welder/AC 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, welding shield, ventilator, 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.

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

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

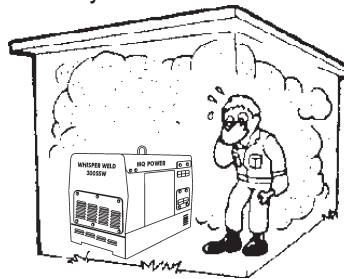
- Always check the machine for loosened threads or bolts before starting.

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or welder/AC 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 welder/AC generator requires an adequate free flow of cooling air. Never operate the welder/AC 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 welder/AC generator engine and may cause injury to people. The engine gives off **DEADLY** carbon monoxide gas.



restricted. If the air flow is restricted it will cause serious damage to the welder/AC generator engine and may cause injury to people. The engine gives off **DEADLY** carbon monoxide gas.

- 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 welder/AC 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.

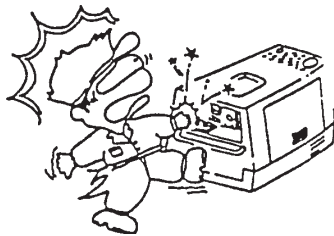
## CAUTION:



This welder/AC generator is a source of providing **LETHAL** high voltages. **Never** permit unqualified personnel—especially children to operate the welder/AC generator.

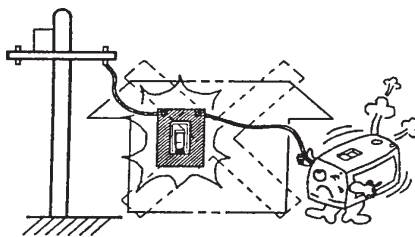
- This welder/AC generator is equipped with a **ground terminal** for your protection. Always complete the grounding path from the welder/AC generator to an external grounding source.
- **NEVER** operate this welder/AC generator, or handle any electrical equipment while standing in **water, while bare foot, while hands are wet, or in the rain**. *Dangerous electrical shock could occur causing severe bodily harm or even death.*
- This welder/AC generator requires an adequate free flow of cooling air. Never operate the welder/AC 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 welder/AC generator and may cause injury to people.
- **Arc rays can cause blindness. Always wear protective shield when welding.**

## CAUTION:



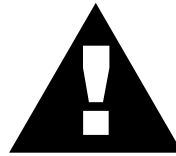
- **NEVER** touch output terminals or electrode during operation. This is extremely dangerous. Always stop the machine when contact with the output terminals and welding electrode.

## CAUTION:



- **Never** connect the welder/AC generator to house wiring. This is illegal and very dangerous. Electrical shock could occur causing damage to the welder/AC generator and bodily harm even death.

## CAUTION:



- **Never** use damaged or worn cables when connecting power tools or equipment to the welder/AC 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 welder/AC generator and electrical shock.

## CAUTION:



**DO NOT** touch or open coolant drain plug, radiator cap, or engine oil drain plug while the welder/AC generator is running. Always allow sufficient time for the engine and generator to cool before performing maintenance.

### 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**. This information will be invaluable in the case of an emergency.

### 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, fuel, coolant 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.

# OPERATION AND SAFETY DECALS

## Machine Safety Decals

The TLW-300SS welder/AC generator is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. The illustration below shows these decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.

**IMPORTANT "CHECK DAILY"**

1. Radiator water level.
2. Reserve tank water level.  
(Important) Not more than a 50/50 Anti-Freeze/Water Mixture is recommended.
3. Engine Oil Level.

S-2377

P/N 6390671104

**OPERATING PROCEDURE**  
MULTIQUIP WhisperWeld  
DC Welder/AC Generator

1. Check the Oil level.
2. Check the Water level.
3. Check the Fuel level.
4. Turn the Idle Control switch to "ON".
5. Insert the key into the Starter Switch.
6. Turn the key to "RUN". The Oil Pressure Alarm lamp should be lit.
7. Turn the key to "HEAT". When the preheat lamp lights turn the key to "START" to start the engine. AVOID HIGH SPEEDS IMMEDIATELY AFTER STARTING.
8. When the engine starts, the Oil Pressure Alarm lamp should go out.
9. Let the engine idle for more than 5 minutes with the Idle Control switch in "ON" position.
10. Turn the Idle Control switch to either "ON" or "OFF" for full engine operation.
11. After welding let the engine run for 5 minutes with the Idle Control switch in the "ON" position. NEVER STOP THE ENGINE SUDDENLY EXCEPT IN AN EMERGENCY.
12. Stop the engine by turning the key in the Starter Switch to "STOP" and remove the key.

S-4937

P/N 8700611603

**WARNING!**

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.

P/N 0820610404

**OIL DRAIN**  
S-1403

P/N 1630645004

**COOLANT DRAIN**  
S-1404

P/N 1630647004

**FUEL DRAIN**  
S-3090

P/N 7810680104

**G. F. C. I.**  
D92200100

P/N D9522001004

**FUEL COCK**  
ON  
OFF  
S-3704

P/N 1630680104

**GROUND**  
S-1923

P/N 0800628504

**GROUND**  
for G.F.C.I.  
S-3821

P/N 7670624004

++++  
S-2090

P/N 0600689404

**CAUTION**  
CLEAN OR  
REPLACE  
PAPER ELEMENT  
EVERY 100 HOURS  
S-1495

P/N 1630610404

-----  
S-2091

P/N 0800689504

**CAUTION**  
DO NOT  
OPERATE WITH  
DOORS OPEN  
S-1409

P/N 1630610504

**COOLING  
WATER**  
S-3091

P/N 7810680204

**USE #2 DIESEL  
FUEL ONLY**  
S-1408

P/N 1630680004

**NAMEPLATE**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CONTACT MQ  
SERVICE DEPT.


**FUSE PULLY**  
USE SPECIFIED FUSE ONLY.

F6		15A	SPARE
F5	15A	5A	
F4	5A	30A	
F3	5A		
F2	5A		
F1	30A		

P/N 8700625504



# OPERATION AND SAFETY DECALS




**WARNING**

- Only operate machine in well ventilated areas.
- Do not inhale exhaust gases.

S-4984

**DANGEROUS GAS** Only qualified personnel should install, use, or service this equipment.

P/N 8700611804



**CAUTION**

**HOT PARTS** can burn skin.

- Do not touch until the machine has sufficiently cooled.


B90400030

P/N B9504000304


**CAUTION**

Before starting the engine, check that the oil level is within the indicated operating range. If the level is above the H mark or below the L mark, it is important to correct before operating to avoid damage.

OIL LEVEL GAUGE



P/N 8700611524



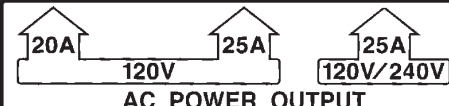
**DANGER**

- Do not touch output terminals or internal wiring while unit is operating.
- Turn off power before servicing.

S-4985

**ELECTRICAL SHOCK HAZARD** Only qualified personnel should install, use, or service this equipment.

P/N 8700611904



20A 120V 25A 25A 120V/240V

**AC POWER OUTPUT**

005200000

P/N D252000031

**DANGER EXPLOSIVE GASES**  
Cigarettes, flames or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge or use booster cables or adjust post connections without proper instruction and training.

**KEEP VENT CAPS TIGHT AND LEVEL**

**POISON CAUSES SEVERE BURNS**  
Contains sulfuric acid. Avoid contact with skin, eyes or clothing. In event of accident flush with water and call a physician immediately.

**KEEP OUT OF REACH OF CHILDREN**

P/N 0820650604

— WELDING OUTPUT TERMINAL +

S-1238

P/N 0800690804

**WARNING**





**CALIFORNIA**

**Proposition 65 Warning**

This product contains or produces chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm).

DCL160

P/N DCL160

<b>⚠ DANGER ⚠ CAUTION</b>		<ul style="list-style-type: none"> <li>• Read the instruction manual carefully before operating the unit.</li> <li>• This machine must be installed, operated, and serviced only by a qualified person with sufficient knowledge and skill for safety.</li> <li>• Do not allow people to be near the welder or welding site.</li> </ul>	
<b>Cautions on Welding Operation</b>	Never remove or cover this label.		
<b>⚠ DANGER</b>	<p>Voltage can burn or kill!</p> <ul style="list-style-type: none"> <li>• Never touch electrical parts in the machine during operation, as it may lead to burn or death due to electrical shock. Stop engine before touching the output terminals for cable connection or before servicing.</li> <li>• Never touch the machine especially when your body or the machine is wet.</li> <li>• Ask a qualified person to ground the welder and base metal.</li> <li>• Use dry welding gloves.</li> </ul>	<b>⚠ DANGER</b>	<p>Fume or gas due to welding may harm human's health!</p> <ul style="list-style-type: none"> <li>• Install ventilator or use respirator according to laws and regulations.</li> <li>• If site is tight, install ventilator, use respirator, or perform cutting under supervision.</li> <li>• Do not perform welding operation near site of fat-removing, rinsing, or spraying.</li> <li>• Use respirator for welding a coated steel sheet.</li> <li>• Use respirator for welding in the bottom of oil tank or vessel in order to protect against oxygen starvation.</li> </ul>
			
<b>⚠ DANGER</b>	<p>Welding can cause fire or explosion!</p> <ul style="list-style-type: none"> <li>• Remove inflammables or inflammable gas away from welding site.</li> <li>• Install protective curtain around welding site to shield arc rays and spatters.</li> <li>• Never weld airtight tank or pipe.</li> <li>• Place a fire extinguisher near welding site.</li> </ul>	<b>⚠ CAUTION</b>	<p>Arc rays, spatters and slags may harm your eyes, and noise may damage your ears!</p> <ul style="list-style-type: none"> <li>• Use a shield with proper shade of filter.</li> <li>• Wear proper gloves, long-sleeve shirts and foot protection.</li> <li>• Use ear protector if noise level is high.</li> </ul>
			

D91210020

P/N D9512100203

# TLW-300SS — SPECIFICATIONS

Table 1. Specifications	
Welder Specifications	
Model	BLW-300SS
Type	Brushless, revolving, field type generator
Rated Current	280A
Rated Voltage	31.2V / 25V
Range of Current	35-300A
Duty Cycle	50% / 100%
Generator Specifications	
Frequency	60 Hz
Speed	3600 rpm
Max. Output	10.5kW
Rated Output	10.0kW
Voltage	120/240 V
Engine Specifications	
Model	KUBOTA D722EB
Type	4 Cycle, vertical
No. of Cylinders	3 cylinders
Bore x Stroke	2.64 in. x 2.68 in. (67 mm x 68 mm)
Rated Output	18.8HP/3600 rpm
Displacement	43.9 cu. in. (719 cc)
Starting	Electric
Coolant Capacity	.55 gal. (2.1 liters)
Lube Oil Capacity	.83 gal. (3.15 liters)
Fuel Consumption	Welding .66 gal. (2.5L)/hr AC Power 1.14 gal. (4.3L)/hr
Fuel Capacity	Approx. 9.5 gal (36 liters)
Fuel type	#2 Diesel Fuel
Battery	12V- 45AH

The maximum output of the engine listed above is applicable to supplying electrical power for continuous service at ambient conditions in accordance with SAE Test cord J607. The above ambient conditions are at standard sea level, with a barometric reading of 29.92 inches and a temperature of 60 degrees Fahrenheit.

Generally, the engine output power will decrease 3 1/2% for each 1000 feet of altitude above sea level, and 1% for each 10° F Fahrenheit above the standard temperature of 60° F.

## TLW-300SS FAMILIARIZATION

### Generator

The MQ Power Model TLW-300SS welder/AC generator can provide 280 amps of welding current. When used as a generator, can provide a maximum of 10 kilowatts of power.

### Control Panel

The **control panel** is provided with the following:

- One GFCI 120 volt receptacle, 20 amp
- One 120 volt receptacle, 30 amp
- One 120/240 volt receptacle, 30 amp
- Circuit Protector Breaker (GFCI) 120V @20 Amps
- Idle Control Switch
- Main Circuit Breaker, 42A
- Starter Switch
- Warning Lamp Unit
- Hour Meter
- Ground Terminal

### Engine Protection System

Engine protection fail safe features are provided in the event of low oil pressure, high coolant temperature and failure of the battery to charge. If any of the above conditions occur while operating the welder/AC generator, it will cause a complete unit shut down.

### Battery Charge Indicator

This unit is equipped with a protective device that signals an indicator and automatically stops the engine when the battery cannot be charged by the alternator.

### Water Temperature Indicator

This unit is equipped with an apparatus that signals an indicator and automatically stops the engine when the cooling water temperature becomes abnormally high. This apparatus will not function properly if the machine is operated with less than the proper amount of coolant.

### Oil Pressure Warning Indicator

In the event of low oil pressure (engine), this welder/AC generator is equipped with an engine protection fail safe system. If low oil pressure is detected while operating the welder/AC generator, the engine protection system will shut down the engine.

If this condition (low oil pressure) should occur, please refer to the engine troubleshooting table (page 28) in this manual.

### Excitation System

The TLW-300SS Welder/AC generator uses a brushless exciter to create rated output electricity. This system will use the mechanical energy generated by the 3600 RPM engine to spin the rotor (or armature) inside the welder/AC generator (or alternator end).

The motion created by the rotor (which holds copper coils) spins inside a housing of permanent magnets called the "STATOR". A magnetic field is created by the stator and produces an electrical current.

### Engine

The TLW-300SS is powered by a 4-cycle KUBOTA **diesel** engine. This engine is designed to meet every performance requirement for welder/AC generator. Reference Table 1, page 10 for engine specifications.

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

Figures 2 and 3 (pages 13-14) show the basic controls and indicators for the TLW-300SS Welder/AC generator.

# TLW-300SS — DIMENSIONS

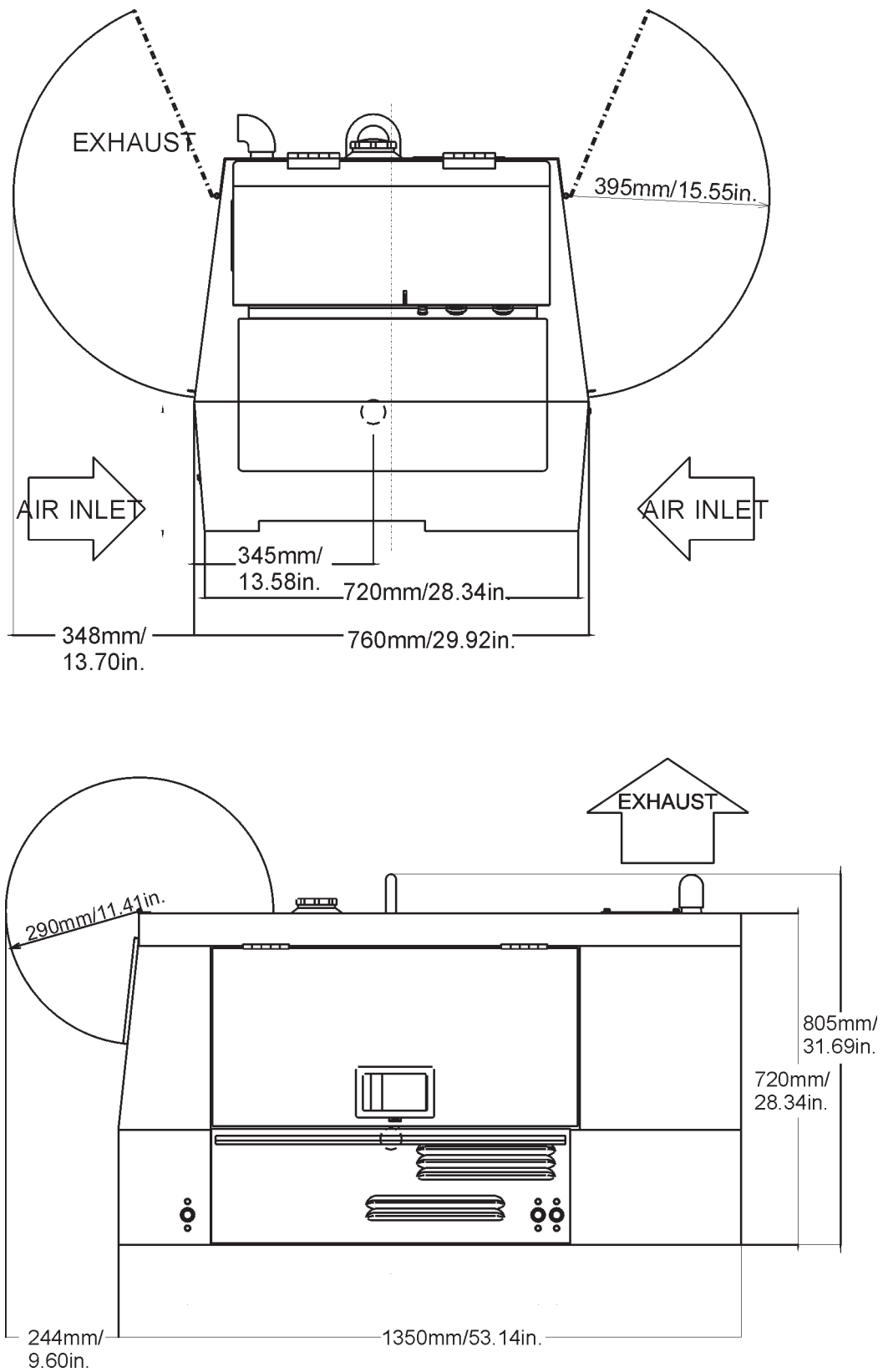


Figure 1. TLW-300SS Dimensions

## CAUTION:



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

### Explanation of Chart:

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

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

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

Use the following definitions with reading Table 2.

1. **Fuel Cell** - Provides an adequate amount of fuel for the equipment in use. Fuel cells must be empty when transporting equipment.
2. **Braking System** - System employed in stopping the trailer. Typical braking systems are electric, surge, hydraulic, hydraulic-surge and air.
3. **GVWR**- Gross Vehicle Weight Rating (GVWR), is the maximum number of pounds the trailer can carry, including the fuel cell (empty).
4. **Frame Length** - 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.

# TLW-300SS — TRAILER-SPECIFICATIONS

Table 1. Specifications

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

# TLW-300SS — TRAILER-SPECIFICATIONS

**Table 1. Specifications (Con't)**

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

## Tires/Wheels/Lug Nuts

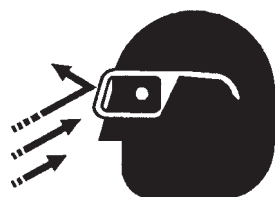
Tires and wheels are a very important and critical components of the trailer. When specifying or replacing the trailer wheels it is important the wheels, tires, and axle are properly matched.

### 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.

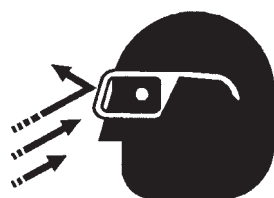


### Tire Wear/Inflation

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 3 (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 3. 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 2) 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 4.

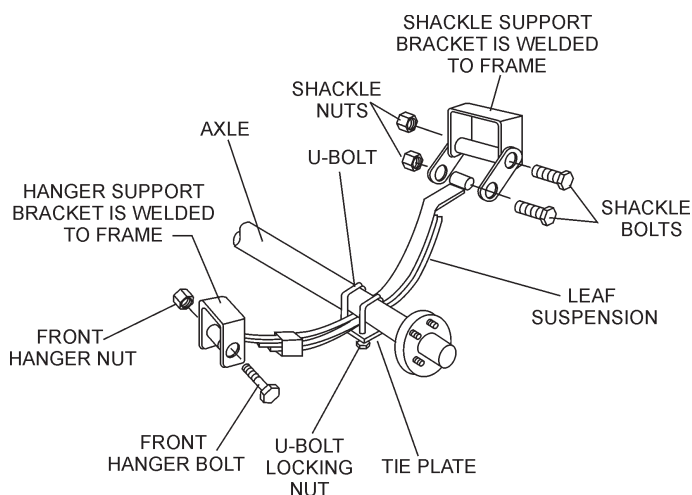


Figure 2. Major Suspension Components



**Table 4. Suspension Torque Requirements**

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

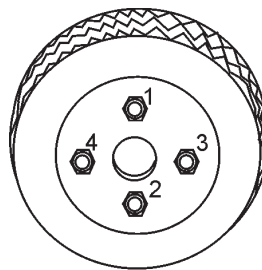
### Lug Nut Torque Requirements

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

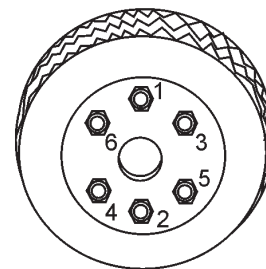
1. Start all wheel lug nuts by hand.
2. Torque all lug nuts in sequence. See Figure 3. **DO NOT** torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Table 5.
3. After first road use, retorque all lug nuts in sequence. Check all wheel lug nuts periodically.

**Table 5. Tire Torque Requirements**

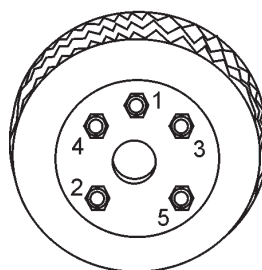
Wheel Size	First Pass FT-LBS	Second Pass FT-LBS	Third Pass FT-LBS
12"	20-25	35-40	50-65
13"	20-25	35-40	50-65
14"	20-25	50-60	90-120
15"	20-25	50-60	90-120
16"	20-25	50-60	90-120



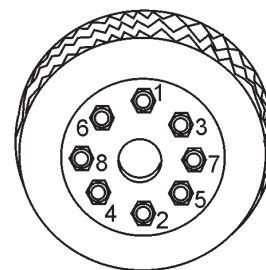
4-LUG NUTS



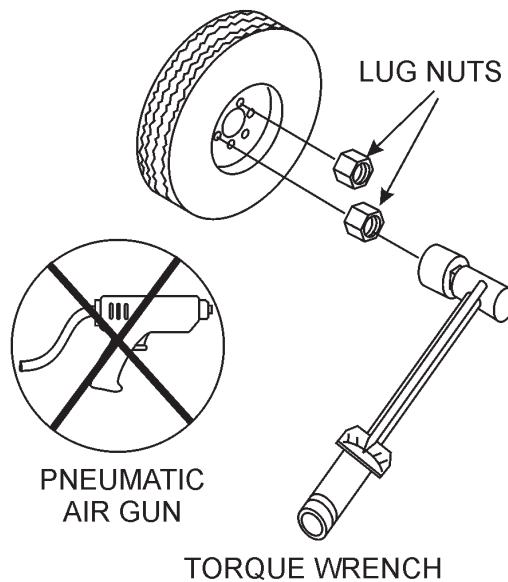
6-LUG NUTS



5-LUG NUTS



8-LUG NUTS



**Figure 3. Wheel Lug Nuts Tightening Sequence**

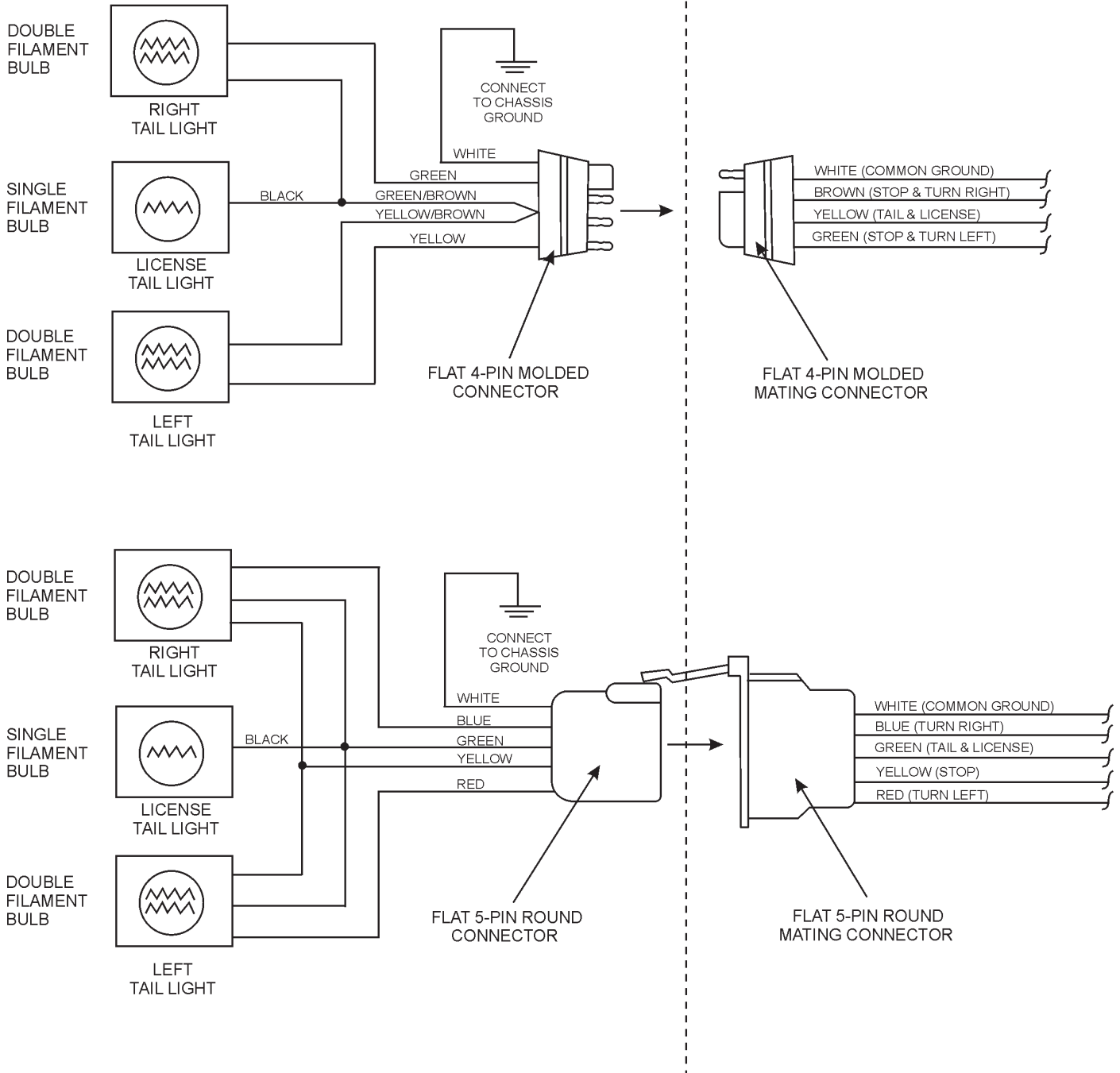
**NOTE**

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

# TLW-300SS —TRAILER-WIRING DIAGRAM

## TRAILER SIDE

## TOWING VEHICLE SIDE



## Towing Safety Precautions

### CAUTION :



Check with your county or state safety towing regulations department before towing your generator. Vehicle towing codes and regulations can vary from state to state.

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

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

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

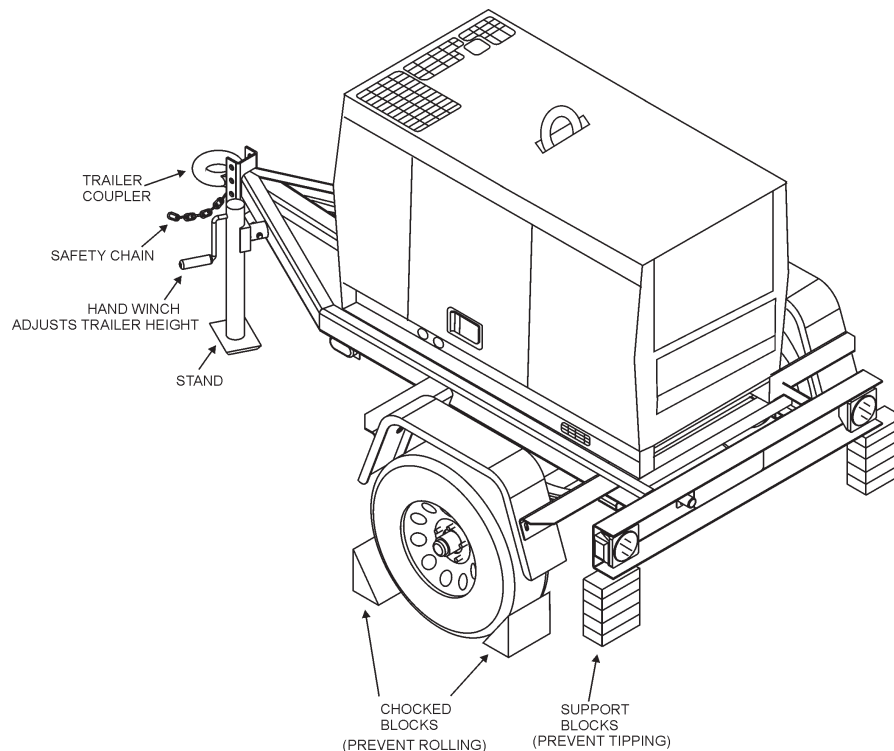
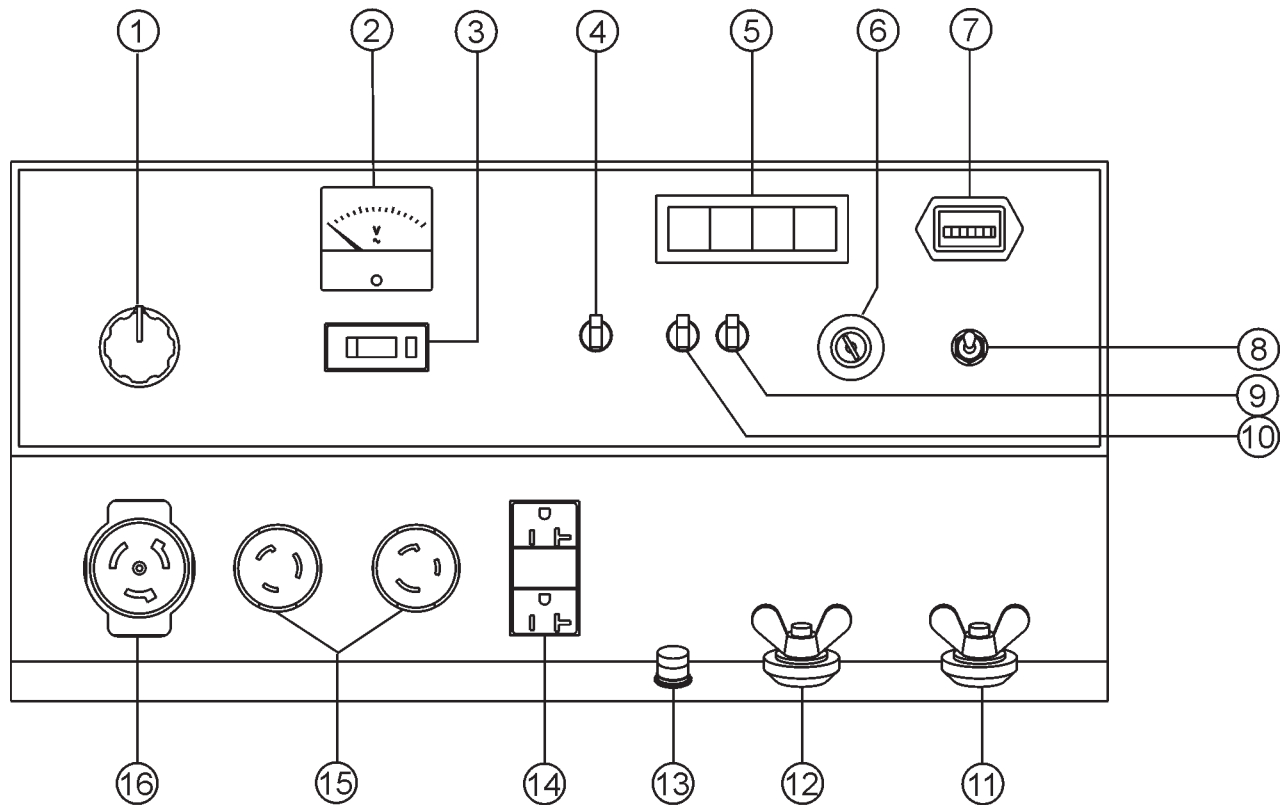


Figure 4. Welder/AC Generator and Towing Trailer

# TLW-300SS — CONTROLS AND INDICATORS



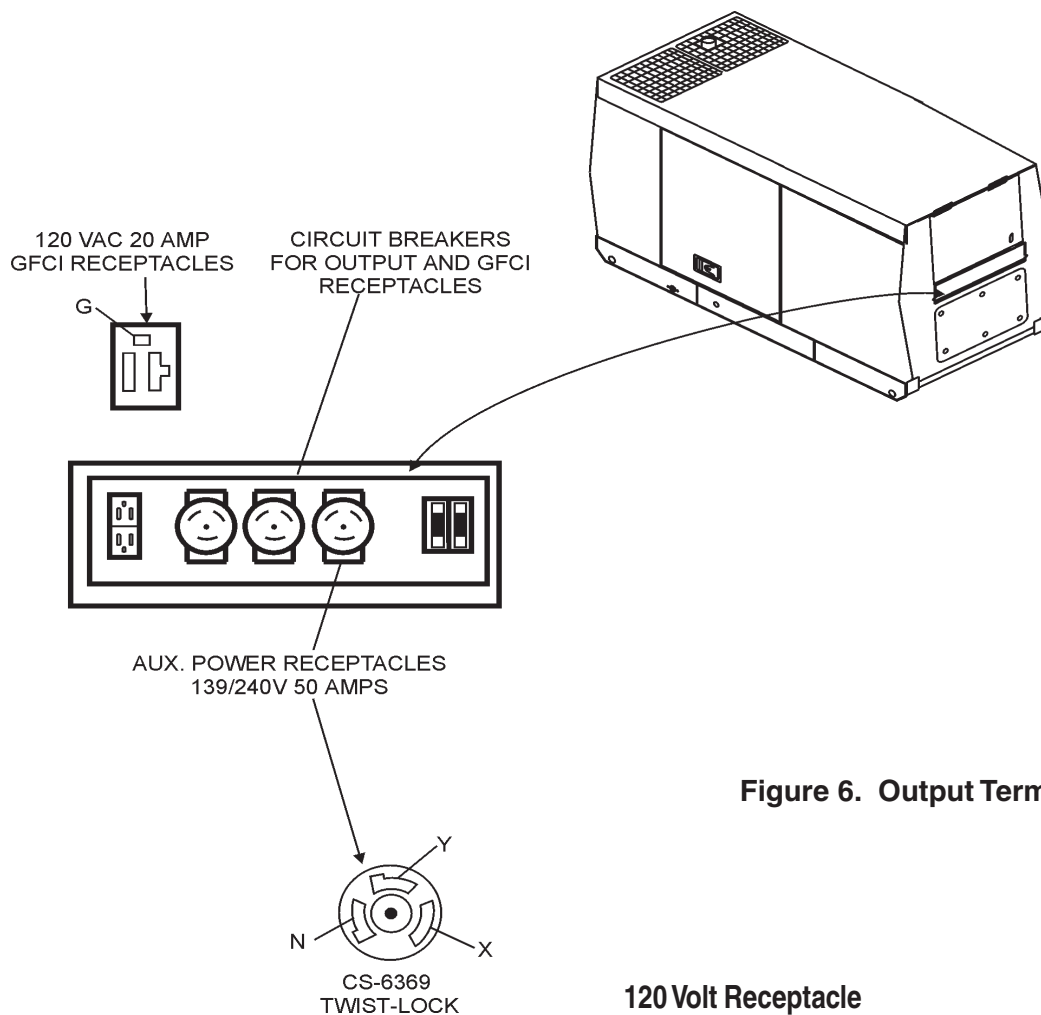
NO	ITEM
1	VOLTAGE REGULATOR
2	AC VOLTMETER
3	MAIN CIRCUIT BREAKER
4	CIRCUIT BREAKER FOR 30A 240V RECEPTACLE
5	ENGINE WARNING INDICATOR
6	STARTER WITH KEY SWITCH
7	HOUR METER
8	IDLE CONTROL SWITCH
9	CIRCUIT BREAKER FOR 20A 120V RECEPTACLE
10	CIRCUIT BREAKER FOR 30A 120V RECEPTACLE
11	POSITIVE WELDING OUTPUT TERMINAL
12	NEGATIVE WELDING OUTPUT TERMINAL
13	G.F.C.I. GROUND TERMINAL
14	G.F.C.I. RECEPTACLE
15	120V RECEPTACLES
16	240V RECEPTACLE

Figure 5. Controls and Indicators

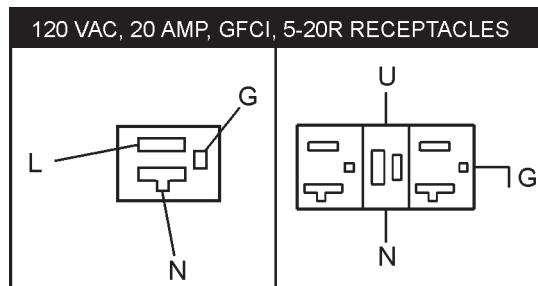
Figure 5 shows the location of the controls and indicators. The functions of each control or indicator is described below.

1. **Voltage Regulator-** Controls the Voltage for welding/load.
2. **AC Voltmeter-** Indicated amount of voltage output.
3. **Main Circuit Breaker-** 2-pole, 42A will shut down current when welder/generator is overloaded.
4. **No. 1 Circuit Breaker-(S/N 5308737~)-** single pole circuit breaker will shut down current in the 240V/30A receptacle.
5. **Ignition Switch with Key-** Used to start and preheat engine.
6. **Engine Warning Indicators-** Lights red when the following conditions occur:
  - Low Oil Pressure
  - High Water Temperature
  - Electrical System Is Not Charging Properly
7. **Hour Meter** – Indicates number of hours machine has been in use or hours engine was run.
8. **Idle Switch-** Turn on for rpms to automatically adjust rpms when a load is added.
9. **No. 3 Circuit Breaker-(S/N 5308737~)-** single pole circuit breaker will shut down current in the 120V/20A receptacle.
10. **No. 2 Circuit Breaker-(S/N 5308737~)-** single pole circuit breaker will shut down current in the 120V/30A receptacle.
11. **Positive Welding Output Terminal-** Positive connection for welding.
12. **Negative Welding Output Terminal-**Negative connection for welding.
13. **G.F.C.I. Ground Terminal-** Used to ground GFCI receptacle.
14. **G.F.C.I. Receptacle-** 120V/20A receptacle for smaller power applications.
15. **120V Receptacles-** used for 20 or 30 amp power applications.
16. **240V Receptacle-** used for 30 amp power applications.

# TLW-300SS — OUTPUT TERMINAL OVERVIEW



**Figure 6. Output Terminal Panel**

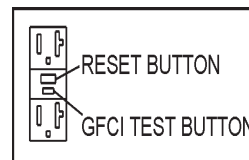


**Figure 7. Duplex Receptacle Detail**

## 120 Volt Receptacle

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

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



**Figure 8. GFCI Test Button**

## Outdoor Installation

Install the welder/AC generator in a location where it will not be exposed to rain or sunshine. Make sure the Welder/AC generator is on secure level ground so it cannot slide or shift around. Also install the welder/AC 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.

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

## CAUTION :



Pay close attention to ventilation when operating the welder/AC generator inside tunnels and caves. The engine exhaust contains noxious elements.

## 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 and cause the engine to heat excessively.

Eliminate the danger of deadly carbon monoxide gas. Remember that exhaust fumes from any diesel engine are very poisonous if discharged in a closed room, but harmless if allowed to mix with the outside air. If the welder/AC generator is installed indoors, you must make provisions for venting the engine exhaust to the outside of the building.

## 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 a electrical shock.

## General Inspection Prior to Operation

The TLW-300SS utilizes a welder/AC generator that 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.

## Ground

The nut and ground terminal on the welder/AC generator should always be used to connect to a suitable ground. The ground path should be of #8 size wire.

Connect the terminal of the ground wire between the lock washer and the nut and tighten the nut fully. Connect their end of the wire to a suitable ground.

## Circuit Breakers

To protect the welder/AC generator from an overload, a 2-pole, 42 amp, *main* circuit breaker is provided. In addition, three separate circuit breakers are provided for each receptacle. Be sure the circuit breakers are in the 'OFF' position prior to starting the engine.

## Welding Cable

When welding, use the table below (Table 6) to measure the optimum amount of voltage and amperes when selecting the proper welding cable. The relationship between cable length and sectional area is to keep the line voltage drop within 4V.

**Table 6. Welding Cable Sizes**

Total Cable Length (ft)/ Current (A)	50	100	125	150	200	250	300
100	#3	#3	#3	#3	#3	#3	#3
150	#3	#3	#3	#3	#2	#1	#1
200	#3	#3	#2	#1	#1/0	#2/0	#3/0
250	#3	#2	#1	#1/0	#2/0	#3/0	#3/0

## DC Welding/AC Power

This unit will provide simultaneous use of DC welding power and AC Power. Use the table below (Table 7) when selecting electrode size for the amount of AC power provided.

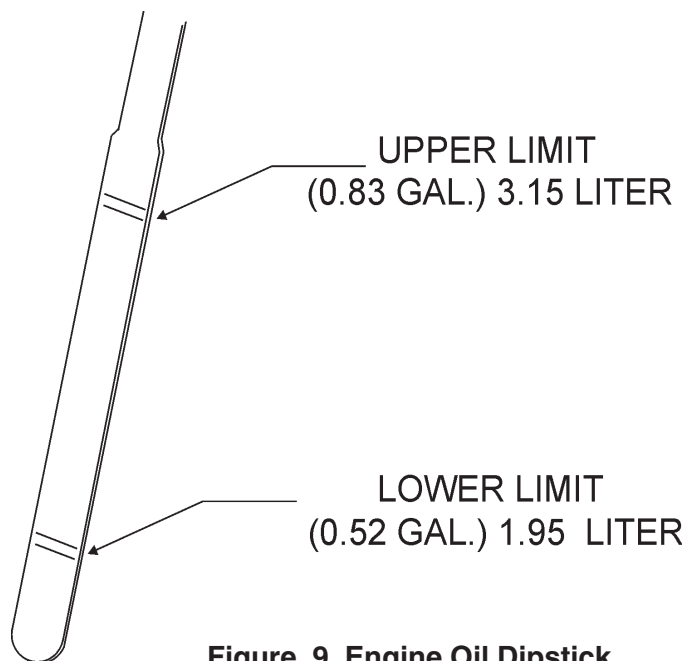
**Table 7. DC Weldng/AC Power Capacity**

WELDING ELECTRODE SIZE	AC POWER SOURCE CAPACITY
0	10.5kW
3/32" to 1/8"	3.5kW
5/32"	2.5kW
3/16"	1.5kW
7/32" to 1/4"	0.8kW



## Lubrication Oil

Fill the engine crankcase with lubricating oil through the filler hole, but do not overfill. Make sure the welder/AC 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 9) on the dipstick. See Table 8 for proper selection of engine oil.



**Figure 9. Engine Oil Dipstick**

## Fuel

Fill the fuel tank with clean 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 10 Specification Table 1.

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.

## CAUTION :



Never fill the fuel tank while the engine is running or in the dark. Fuel spillage on a hot engine can cause a fire or explosion. If fuel spillage occurs, wipe up the spilled gasoline 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 ***Kubota Engine Operator's Manual*** for further details.

**Table 8. Recommended Motor Oil**

Temperature Range	Type Oil
104° F ~ 23° F (40° C ~ -5° C)	SAE 30W or SAE 40W
23° F ~ 5° F (-5° C ~ -15° C)	SAE 20W or SAE 10W
Below 5° C (-15°)	SAE 10W

**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 or antifreeze is done from the reserve tank. See Table 9 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 9. Coolant Capacity	
Engine and Radiator	0.55 Gal.
Reserve Tank	0.27 Gal.

**Operation in Freezing Weather**

When operating in freezing weather, be certain that the proper amount of antifreeze has been added. See Table 10 for antifreeze operating temperatures.

Table 10. Anti-Freeze Operating Temperatures				
Vol % Anti-Freeze	Freezing Point		Boiling Point	
	°C	°F	°C	°F
40	-24	-12	106	222
50	-37	-34	108	226

**NOTE**

*When the antifreeze is mixed with water, the antifreeze mixing ratio must be less than 50%.*

**Cleaning the Radiator**

The radiator may overheat if the fins become overloaded with dust or debris. Periodically clean the radiator fins with compressed air.

**Fan Belt Tension**

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

The fan belt tension is proper if the fan belt (Figure 10) bends 7 to 9 mm (0.28- to 0.35 in.) when depressed with the thumb as shown in Figure 5 below.

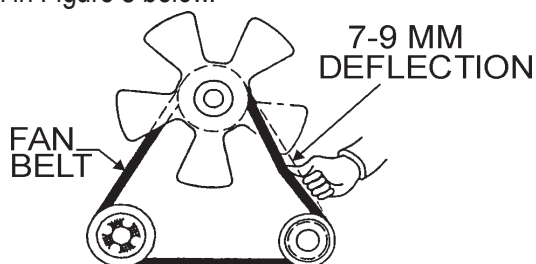


Figure 10. Fan Belt Tension

**CAUTION :**



**Never** place hands near the belts or fan while the welder/AC generator is running.

**Air Cleaner**

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

**Battery**

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

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

**CAUTION :**

When using a combination of dual receptacles, total load should not exceed the rated capacity of the welder/AC generator set.

**Power Outlets**

The welder/AC generator has the following single-phase 60 Hz, 120/240 volt receptacles.

**Single Phase**

- One Duplex NEMA (GFCI) 5-20R (120V, 20 Amp)
- One Twist Lock-Non-NEMA CS6369
- One Twist Lock NEMA L14-30R (120/240V, 25 Amp)
- One Twist Lock NEMA L5-30R (120V, 25 Amp)

**Main Circuit Breaker**

This 42 amp breaker protects the welder/AC generator from short circuiting or overloading from the 60 Hz single-phase load.

**Protection Breakers**

Each receptacle has individual breakers to protect them from an overload. The main circuit breaker is also for receptacle number 1, L14-30R; number 2 breaker is for the CS6369; the number 3 breaker is for the L5-30R; and the number 4 breaker is for the GFCI receptacle.

**Idle Control Switch**

The TLW-300SS Welder/AC generator is provided with an automatic idle (engine) control capability for noise suppression and fuel cost reduction. The automatic idle control feature automatically engages under a no-load condition.

When the Idle Control Switch is placed in the "ON" position, the engine revolutions will be approximately 2200 rpm (low-speed operation). When a load is connected to one of the output receptacles, the engine speed will automatically increase to about 3600 rpm (high-speed operation) within 10 seconds. Conversely, when the load is removed, the engine speed will automatically drop back down to 2200 rpm within 10 seconds.

With AC loads of more than 150W (such as lighting equipment, motor-powered tools, submersible water pumps, etc.), the engine runs at high speed. When a no load condition is produced, the engine automatically slows down.

Turn the idle control switch to the "ON" (up) position when AC loads of more than 150W are connected. Turn the idle control switch to the "OFF" (down) position when AC loads of less than 100W or when a magnetic switch is used.

**Fuel Gauge**

The fuel gauge is located next to the control panel on the left side.

**GFCI Receptacle**

Before connecting a load to the generator's GFCI receptacle, **push** the "Test Button" on the front of receptacle before connecting the load, to confirm that the receptacle is functioning correctly.

## Single Phase Load

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

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

### NOTE

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

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

The power factor of this welder/AC generator is 1.0. See Table 11. below when connecting loads.

**Table 11. 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

- 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.

## 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.

The idle control is operated at minimum load capacity of 100W. If the load capacity is less than 100W, change the idle control switch to the "OFF" position.

## CAUTION:



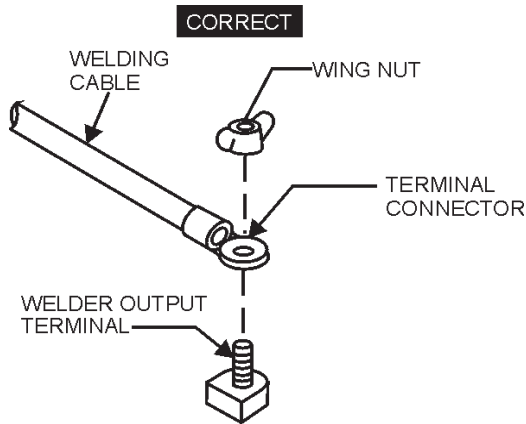
Before connecting this welder/AC generator to any building's electrical system, a licensed electrician must install an isolation (transfer) switch. Serious injury or death may result without this transfer switch.

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

# TLW-300SS—WELDER OPERATING INSTRUCTIONS

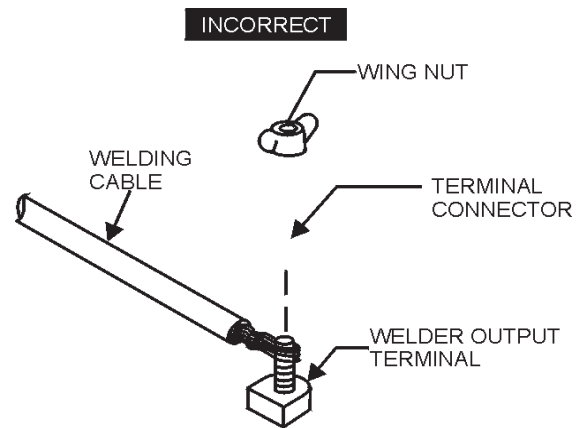
## Welding Cables and Polarities

Connect the welding cables (Figure 11) to the welder's output terminals located on the control panel. The output terminals have (+) and (-) polarities. Select the appropriate polarities according to the application (See Welding Applications, Table 12).



**Figure 11. Electrode Cable Connection (Correct)**

**NOTE**  
**ALWAYS** attach terminal connectors at the end of each cable. **NEVER** connect exposed or frayed wires (Figure 12) directly to the terminals. Exposed wiring may cause shocks or di-electric breakdown from poor contact.



**Figure 12. Electrode Cable Connection (Incorrect)**

**Table 12. Welding Applications**

POLARITY	WELDING METHOD	TYPICAL APPLICATIONS
Straight Polarity	(+) ... Ground Clamp (Base Metal)	Welding steel materials for general structures, and thickness plates.
	(-) ... Electrode Holder	Arc welding for copper alloy
Reverse Polarity	(+) ... Electrode Holder	Build-up welding, arc welding of thin plates
	(+) ... Ground Clamp (Base Metal)	Arc welding of stainless steel

## Duty Cycle

The welder is rated at 100% duty cycle at 280 amps. However, the duty cycle depends upon the welding current. Select the appropriate duty cycle from Table 13 to prevent overload.

Duty Cycle (%)	100	80
Current (Amps)	280 or less	300

## CAUTION :



Always wear welding shield with correct filter shade when welding.

## FIVE ESSENTIALS FOR PROPER WELDING PROCEDURES

Besides the steady sizzling sound that a correct arc produces, the shape of the molten pool and the movement of the metal at the rear of the pool serve as a guide in checking weld quality. In a correctly made deposit, the ripples produced on the bead will be uniform and the bead will be smooth, with no overlap or undercut.

### 1. Correct Electrode Size

The correct choice of electrode size involves consideration of a variety of factors. Such as the type, position, and preparation of the joint, the ability of the electrode to carry high current values without injury to the weld metal or loss of deposition efficiency. The mass of work metal and its ability to maintain its original properties after welding, the characteristics of the assembly with reference to effect of stresses set up by heat application, the practicability of heat treatment before and/or after welding, the specific requirements as to welding quality and the cost of achieving the desired results.

### 2. Correct Current

If current on equipment is too high or too low, you are certain to be disappointed in your weld. If too high, the electrode melts too fast and your molten pool is large and irregular. If too low, there is not enough heat to melt the base metal and your molten pool will be too small, will pile up, and look irregular.

### 3. Correct Arc Length

If the arc is too long or voltage too high the metal melts off the electrode in large globules which wobble from side to side as the arc wavers, giving a wide, spattered and irregular bead—with poor fusion between original metal and deposited metal.

If the arc is too short or voltage too low, there is not enough heat to melt the base metal properly and the electrode quite often sticks to the work. This gives a high, uneven bead, having irregular ripples and poor fusion.

### 4. Correct Travel Speed

When your speed is too fast: your pool does not last long enough, impurities and gas is locked in. The bead is narrow and ripples pointed. When speed is too slow: the metal piles up, the bead is high and wide, with a rather straight ripple.

### 5. Correct Electrode Angle

The electrode angle is of particular importance in fillet welding and deep groove welding. Generally speaking, when making a fillet weld, the electrode should be held so that it bisects the angle between the plates and is perpendicular to the line of weld. If under cut occurs in the vertical member lowers the angle of the arc and directs the arc toward the vertical member.

## CAUTION:



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

## CAUTION:



- Check the fuel level on the fuel gauge. When fuel is low, fill the fuel tank with clean fresh **DIESEL FUEL**.
- If fuel spillage occurs, wipe up the spilled gasoline completely.

### Starting

1. Turn the fuel cock lever to the "ON" position (Figure 13).

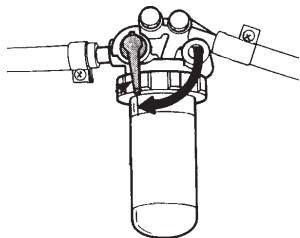


Figure 13. Fuel cock set to 'ON' position

2. Close door. Operation with the doors open may cause insufficient cooling to the unit, and damage may result.
3. Insert the key into the starter switch and turn it to the 'ON' position. Check to see the oil pressure and charge lights on the "Warning Lamp Unit" are lit. If either are not lit, check the system and wiring (refer to the *Kubota Engine Operator's Manual*).
4. Turn the key to the 'PREHEAT' position (Figure 14). When the preheat light glows, turn the key to the 'START' position to start the engine. As soon as the engine starts, release the key. The key will automatically return to the 'RUN' position.

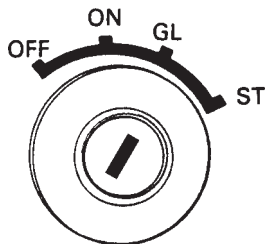
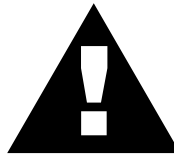


Figure 14. Key switch to 'PREHEAT' position

5. During winter or when the surrounding air temperature is cold, in situations where a load start is required, turn the key to the 'HEAT' position for a longer time.
6. If the engine does not start within 10 seconds after the key is turned to the 'START' position, wait for about 30 seconds and repeat the procedure as described in step 4.

## CAUTION:



**NEVER** turn the key to the 'START' position while the engine is running.

7. When the engine starts, the *oil pressure* light and *charge* light should go out. If these lights stay on, stop the engine immediately and check the system and wiring (refer to the *Kubota Engine Operator's Manual*).
8. Let the engine idle for five minutes with the *automatic idle control switch* in the 'ON' position.
9. Check the engine for abnormal vibrations, noises and oil leakage.
10. Check the generator's output voltage by referring to the AC voltmeter on the control panel. If the meter indicates 120 volts, then 120 VAC can be obtained from the 120 V and 240V receptacles at the same time.

## CAUTION:



**NEVER** turn the key to the 'START' position while the engine is running.

### Shutdown

1. Remove the load from the welder/AC generator, then place both the main and GFCI circuit breakers to the 'OFF' position.
2. Listen for the engine speed to drop. Run at low speed for 3-5 minutes.
3. Stop the engine by turning the key to 'STOP' position and remove the key. Turn the fuel cock lever to the 'OFF' position.

## General Inspection

At least daily or prior to each use, the welder/AC generator should be cleaned and inspected for deficiencies. Check for loose, missing or damaged nuts, bolts or other fasteners. Also check for fuel or oil leaks.

## Engine Side:

For a more detail engine maintenance schedule refer to the *KUBOTA Engine Shop and Operator's Manuals*.

## Air Cleaner

**Every 50 hours:** The air cleaner employed on the KUBOTA engine Model D422EB is a dry type. **DO NOT** apply oil to the air cleaner. If the welder/AC generator is used in extremely dusty areas, service air cleaner element more frequently.

1. Release the air cleaner retaining clamps (Figure 15) and remove the air cleaner element.
2. Wipe the inside of the air cleaner with a damp cloth and remove all dust and debris that may have accumulated inside air cleaner body.
3. Use compressed air to clean air filter element. Blow compressed air from the inside while turning the element.

## CAUTION:



**ALWAYS** keep the pressure of the compressed air below 99 psi.

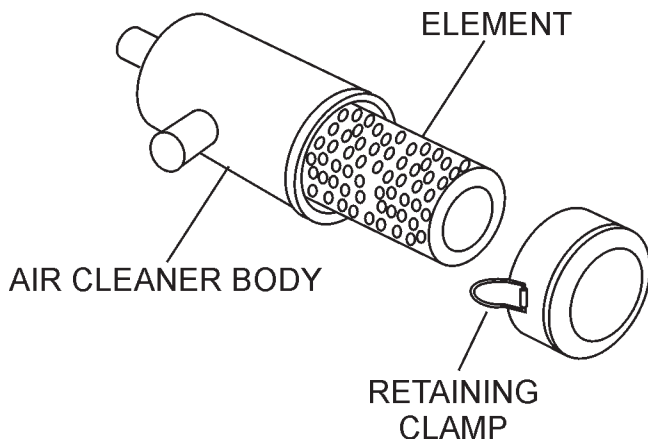


Figure 15. Air Cleaner Components

## 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.

## Generator Storage

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

- Drain the fuel tank completely.
- Run the engine until **all** the gasoline is completely consumed.
- Completely drain the oil from the crankcase and refill with fresh oil.
- Disconnect the **negative** battery cable from the battery.
- Clean all external parts of the welder/AC generator with a cloth.
- Cover the generating set and store in a clean, dry place.

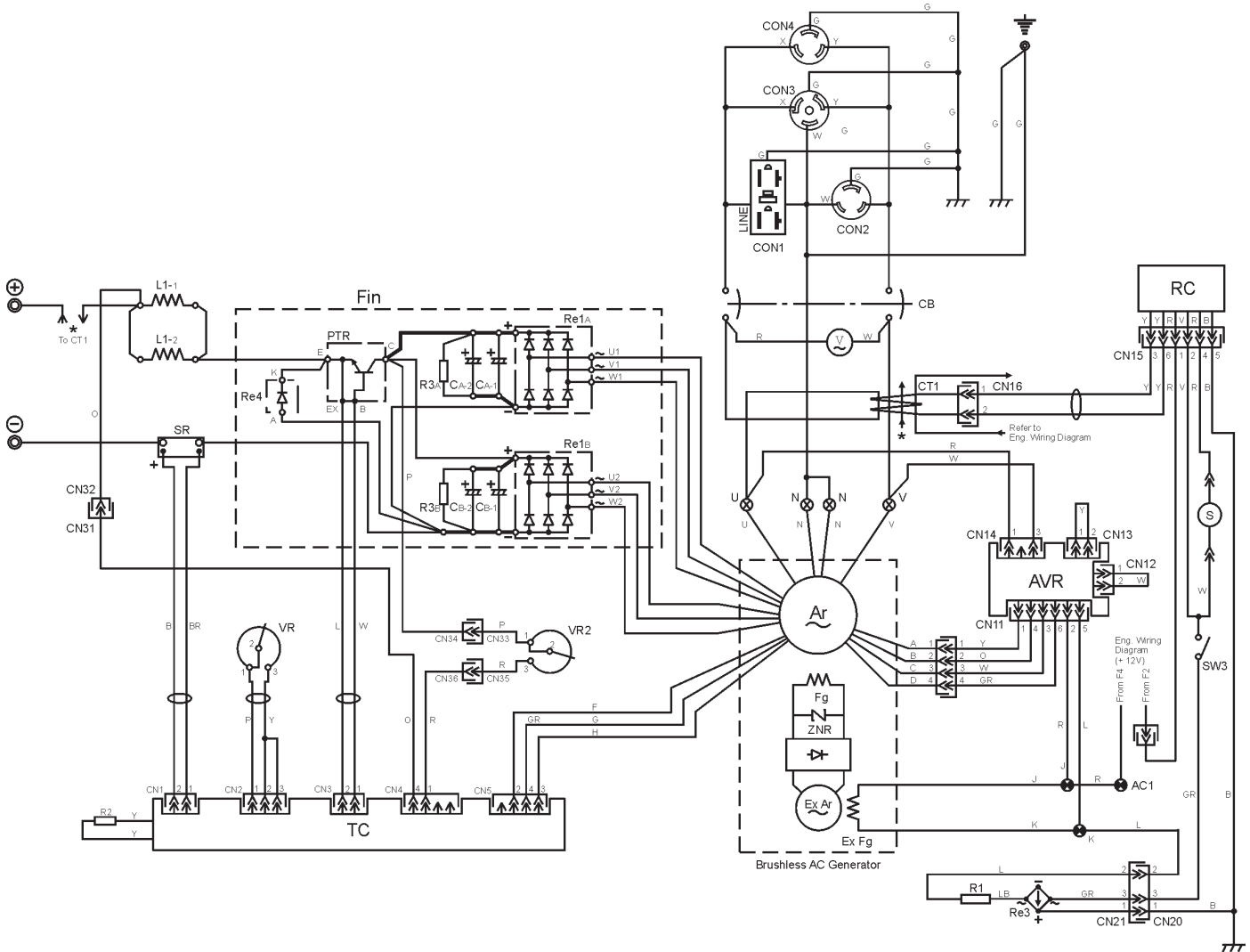


INSPECTION / MAINTENANCE		10 Hrs DAILY	100 Hrs	500 Hrs	1000 Hrs
ENGINE	Check Engine Fluid Levels	X			
	Check Air Cleaner	X			
	Check Battery Acid Level	X			
	Check Fan Belt Condition	X			
	Check for Leaks	X			
	Check for Loosening of Parts	X			
	Replace Engine Oil and Filter *1		X		
	Clean Air Filter		X		
	Clean Unit, Inside and Outside		X		
	Drain Bottom of Fuel Tank			X	
	Change Fuel Filter *2			X	
	Clean Radiator and Check Coolant Protection Level			X	
	Replace Air Filter Element				X
	Change Corrosion Resistor				X
	Check all Hoses and Clamps				X
Clean Inside of Fuel Tank				X	
WELDER	Clean terminal connectors		X		

\*1 Replace engine oil and filter at 50 hours, first time only.

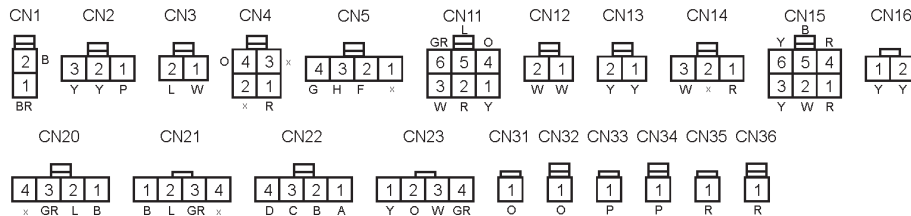
\*2 Replace fuel filter at 250 Hours, first time only.

# TLW-300SS —GEN. WIRING DIAGRAM S/N 5308736 AND BELOW



## CONNECTOR

(View from inserting wire side)



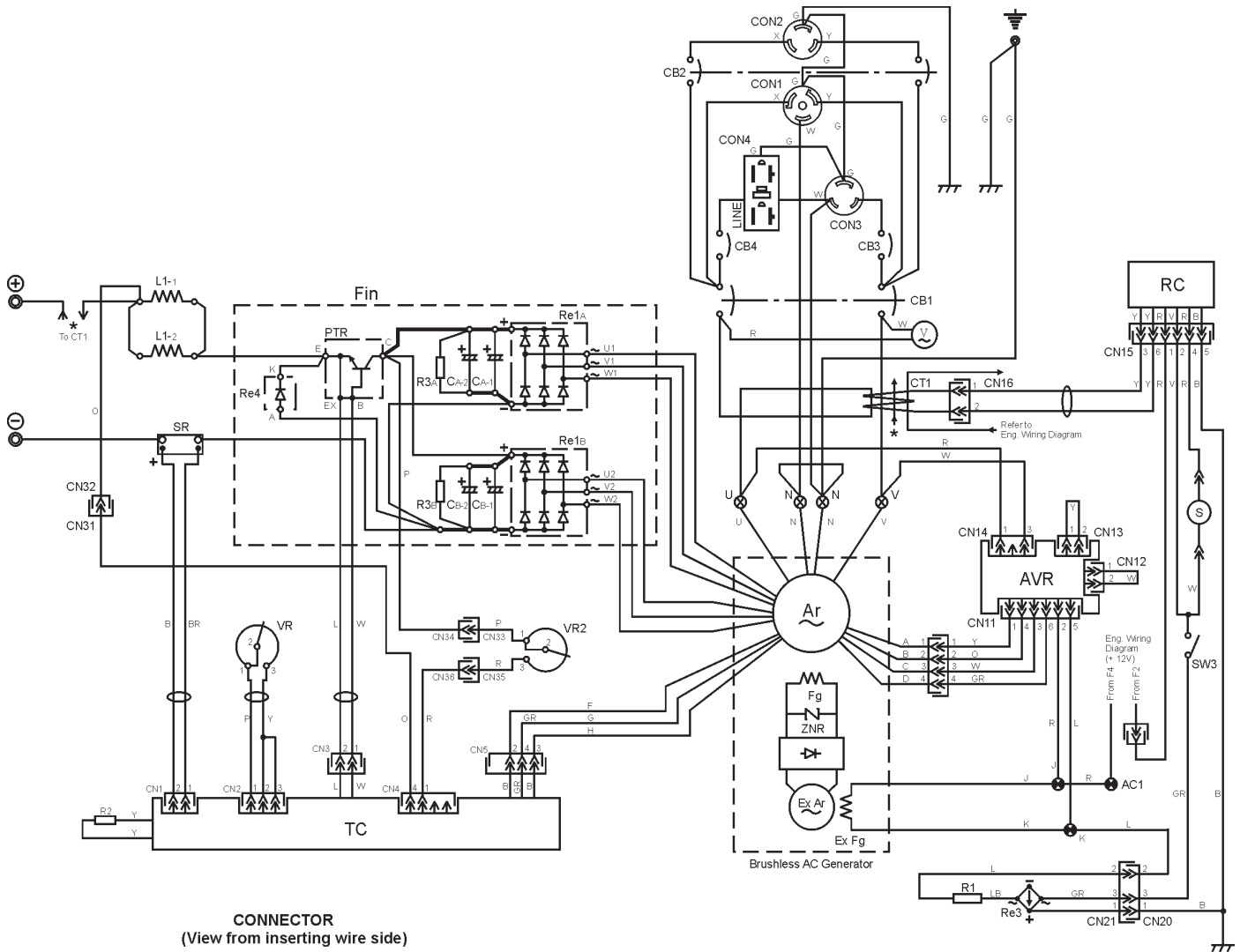
SYMBOL	PARTS NAME
⊕	Terminal board
CB	Circuit breaker
V	AC voltmeter
CON1	Receptacle 125V-20A
CON2	Receptacle 125V-30A
CON3	Receptacle 250V-30A
CON4	Receptacle 125/250V-50A
⏚	Ground terminal
Re1A, B	Rectifiers
CA, B	Condenser
R3A, B	Resistor
PTR	Transistor
Re4	Rectifier
L1	DC reactor
SR	Shunt

SYMBOL	PARTS NAME
⊖	DC welding output
TC	Control unit, transistor
R2	Resistor
VR	Variable resistor
VR2	Rheostat
⊕	Terminal board
AVR	Automatic voltage regulator
Re3	Rectifier
R1	Resistor
RC	Control unit, slowdown
CT1	Current transformer
S	Rotary solenoid
SW3	Switch, idle control

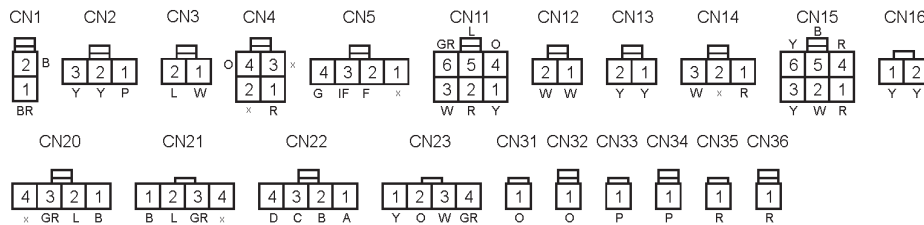
Wiring Color Code	Wiring Color Code
Symbol	Color
B	Black
L	Blue
BR	Brown
G	Green
GR	Gray
V	Violet
P	Pink

Wiring Color Code	Wiring Color Code
Symbol	Color
R	Red
W	White
Y	Yellow
LB	Light Blue
LG	Light Green
O	Orange

# TLW-300SS —GEN. WIRING DIAGRAM S/N 5308737 AND ABOVE



## CONNECTOR (View from inserting wire side)

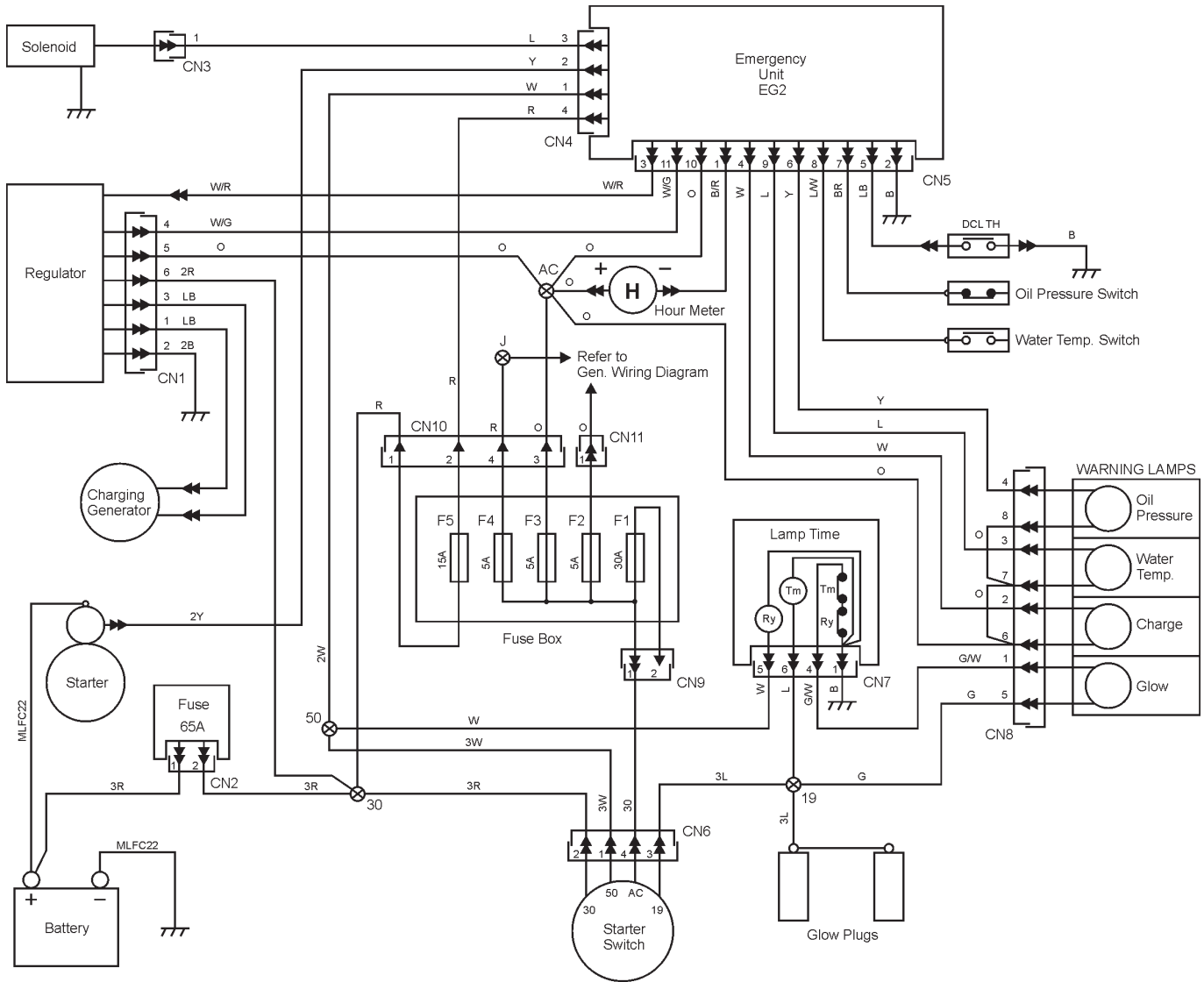


SYMBOL	PARTS NAME
⊕	Terminal board
V	AC voltmeter
CB1	Circuit breaker
CB2	Circuit breaker
CB3	Circuit breaker
CB4	Circuit breaker
CON1	Receptacle (120/240V)
CON2	Receptacle (240V)
CON3	Receptacle (120V)
CON4	Receptacle (120V-GFCI)
⊕	Ground terminal
Re1A, B	Rectifiers
CA, B	Condenser
R3A, B	Resistor
PTR	Transistor

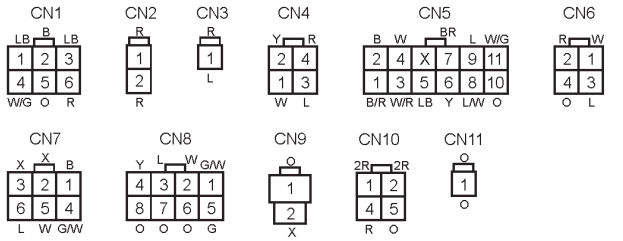
SYMBOL	PARTS NAME
Re4	Rectifier
L1	DC reactor
SR	Shunt
⊕	Output terminal
TC	Control unit, transistor
R2	Resistor
VR	Current control
VR2	Rheostat
⊕	Terminal board
AVR	Automatic voltage regulator
Re3	Rectifiers
R1	Resistor
RC	Control unit, idle control
CT1	Current transformer
S	Rotary solenoid
SW3	Switch, idle control

Wiring Color Code		Wiring Color Code	
Symbol	Color	Symbol	Color
B	Black	R	Red
L	Blue	W	White
BR	Brown	Y	Yellow
G	Green	LB	Light Blue
GR	Gray	LG	Light Green
V	Violet	O	Orange
P	Pink		

# TLW-300SS —ENGINE WIRING DIAGRAM S/N 5308736 AND BELOW

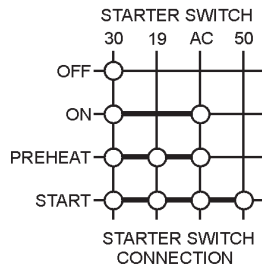


**CONNECTOR VIEWED AT WINDING SIDE**

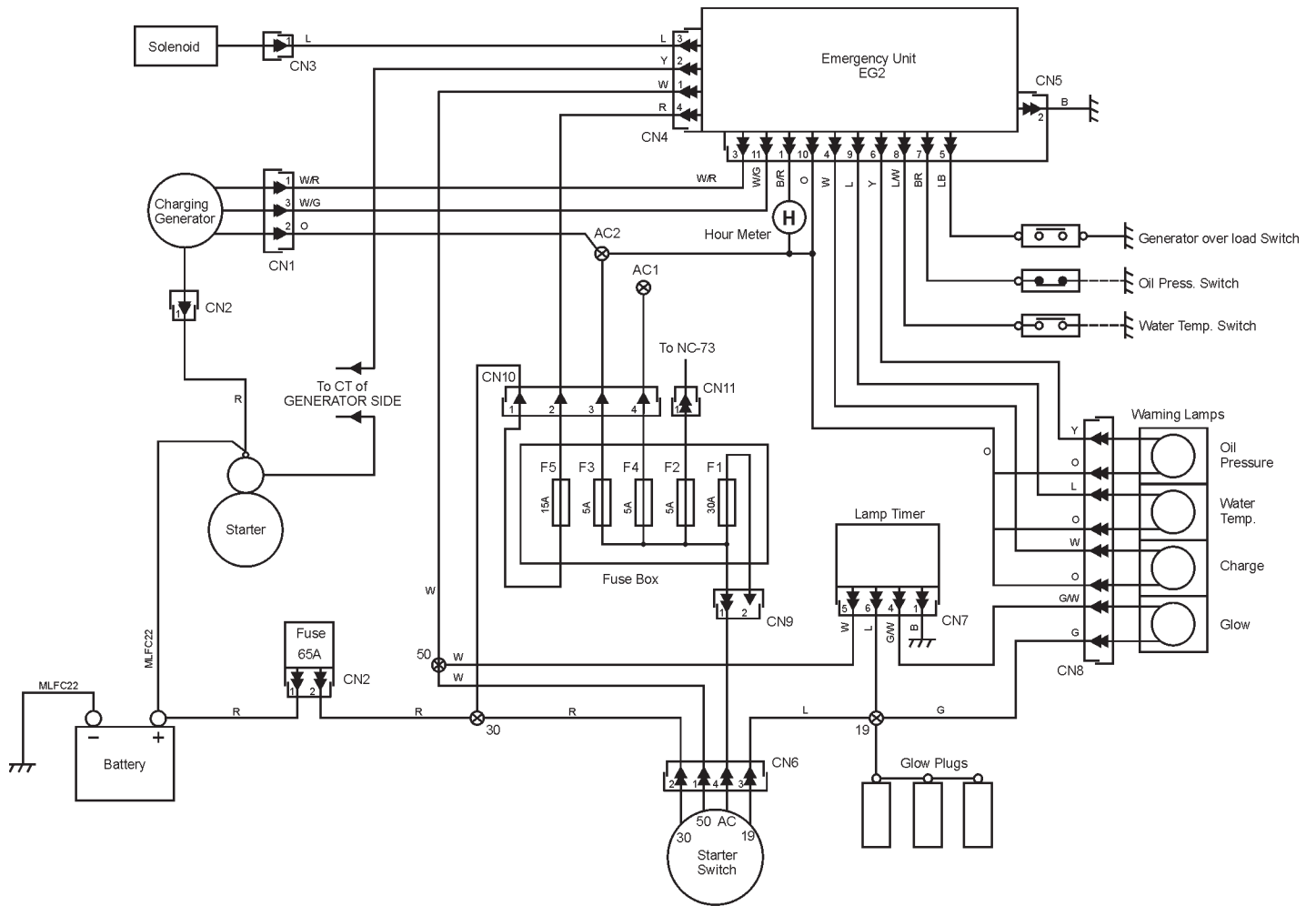


COMBINATION TERMINALS TB2

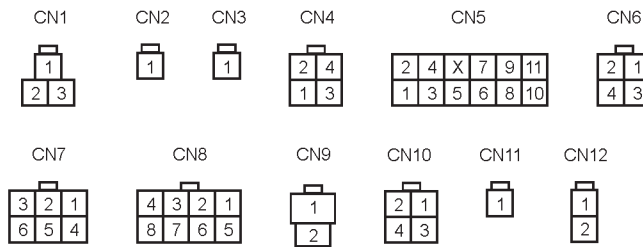
Symbol	Color
B	Black
L	Blue
BR	Brown
G	Green
GR	Gray
V	Violet
P	Pink
R	Red
W	White
Y	Yellow
LB	Light Blue
LG	Light Green
O	Orange



# TLW-300SS —ENGINE WIRING DIAGRAM S/N 5308737 AND ABOVE

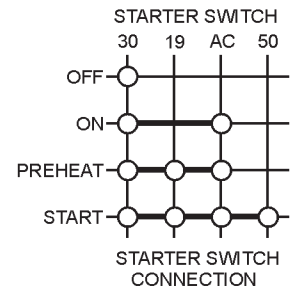


## CONNECTOR VIEWED AT WINDING SIDE



COMBINATION TERMINALS TB2 ⊗

Wiring Color Code	
Symbol	Color
B	Black
L	Blue
BR	Brown
G	Green
GR	Gray
V	Violet
P	Pink
R	Red
W	White
Y	Yellow
LB	Light Blue
LG	Light Green
O	Orange



## TLW-300SS — TROUBLESHOOTING (ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the

diagnosis based on the Engine Troubleshooting (Table 14) information shown below and on the preceding page. If the problem cannot be remedied, consult our company's business office or service plant.

**TABLE 14. ENGINE TROUBLESHOOTING (PART 1)**

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine does not start.	No fuel?	Replenish fuel.
	Air in the fuel system?	Bleed system.
	Water in the fuel system?	Remove water from fuel tank.
	Fuel pipe clogged?	Clean fuel pipe.
	Fuel filter clogged?	Clean or change fuel filter.
	Excessively high viscosity of fuel or engine oil at low temperature?	Use the specified fuel or engine oil.
	Fuel with low cetane number?	Use the specified fuel.
	Fuel leak due to loose injection pipe retaining nut?	Tighten nut.
	Incorrect injection timing?	Adjust.
	Fuel cam shaft worn?	Replace.
	Injection nozzle clogged?	Clean injection nozzle.
	Injection pump malfunctioning?	Repair or replace.
	Seizure of crankshaft, camshaft, piston, cylinder liner or bearing?	Repair or replace.
	Compression leak from cylinder?	Replace head gasket, tighten cylinder head bolt, glow plug and nozzle holder.
	Improper valve timing?	Correct or replace timing gear.
Piston ring and liner worn?	Replace.	
Excessive valve clearance?	Adjust.	

**TABLE 14. ENGINE TROUBLESHOOTING (PART 2)**

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.

# TLW-300SS — TROUBLESHOOTING (ENGINE)

**TABLE 14. ENGINE TROUBLESHOOTING (PART 3)**

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
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.
Starter does not run.	Battery discharged?	Charge battery.
	Starter malfunctioning?	Repair or replace.
	Key switch malfunctioning?	Repair or replace.
	Wiring disconnected?	Connect wiring.
	Fuse F5 burned out?	Replace fuse.
Engine speed rises and no voltage is present in 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.
Engine starts and "Idle Control Switch" is in OFF position. Engine speed rises and engine has large vibrations. Overloads.	Bad engine installation?	Repeat installation of engine.
Engine starts and "Idle Control Switch" is in OFF position. Engine speed rises and engine has abnormal noise.	Loose engine parts?	Check all engine parts for tightness.
	Defective alternator?	Check alternator for damaged bearing or loose clamping bolts.
	Defective enclosure?	Check enclosure bolts for tightness.
Engine starts and "Idle Control Switch" is in OFF position. Engine speed rises and remains at high speed when Idle Control switch is placed in the ON position.	Defective idle control device?	Repair or replace idle control device.
	Defective idle control switch?	Replace idle control switch.
	Defective solenoid?	Replace solenoid.
	Defective relay?	Replace relay.



# TLW-300SS — TROUBLESHOOTING (WELDER)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the

diagnosis based on the Welder Troubleshooting (Table 15) information shown below and on the proceeding page. If the problem cannot be remedied, consult our company's business office or service plant.

**TABLE 15. WELDER TROUBLESHOOTING**

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
AC voltage is not present in generator's AC section or welding section.	Low speed?	Refer to "Engine remains at low speed" section.
	Defective resistor (R)?	Replace resistor.
	Defective field controller?	Replace 'Field Controller'.
	Defective rotor?	Replace rotor.
	Defective wiring?	Repair wiring.
	Blown fuse F3?	Replace fuse.
Poor welding and low voltage in AC power section.	Defective field controller?	Replace 'Field Controller'.
	Defective rotor?	Replace rotor.
	Low speed?	Refer to "Engine remains at low speed" section.
	Layer short-circuit in armature winding?	Replace armature.
	Defective wiring?	Repair wiring.
AC power is normal but there is no welding capability. Voltage adjustment is in-operative.	Defective current transformer?	Replace transformer, CT1, CT2, or CT3.
	Defective field controller?	Replace 'Field Controller'.
	Defective rectifier(RE)?	Replace rectifier.
	Defective reactor (DCL or L1 or L2)?	Replace reactor.
	Inadequate length and thickness of welding cable.	See table 2 for correct welding cable.
	Layer short-circuit in armature winding?	Replace armature.
	Defective wiring?	Repair wiring.
	Defective selector switch?	Replace S1 switch.
AC power is too low or cannot be used, but welding is normal.	Defective circuit breaker?	Replace circuit breaker.
	Layer short-circuit in armature winding (AC side)?	Replace armature.
	Defective wiring?	Repair wiring.
	Defective field controller?	Replace 'Field Controller'.
Battery discharges too soon.	Defective engine regulator?	Replace regulator.
	Defective wiring?	Repair wiring.
	Defective ignition switch?	Replace ignition switch.

# EXPLANATION OF CODE IN REMARKS COLUMN

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

## NOTICE

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

## SAMPLE PARTS LIST

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

## NO. Column

**Unique Symbols** — All items with same unique symbol

(@, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the “Remarks” column.

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

## NOTICE

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

## PART NO. Column

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

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

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

## QTY. Column

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

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

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

## REMARKS Column

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

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

Indicated by:

“INCLUDES ITEMS W/(unique symbol)”

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

Indicated by:

“S/N XXXXX AND BELOW”

“S/N XXXX AND ABOVE”

“S/N XXXX TO S/N XXX”

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

Indicated by:

“XXXXX ONLY”

“NOT USED ON XXXX”

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

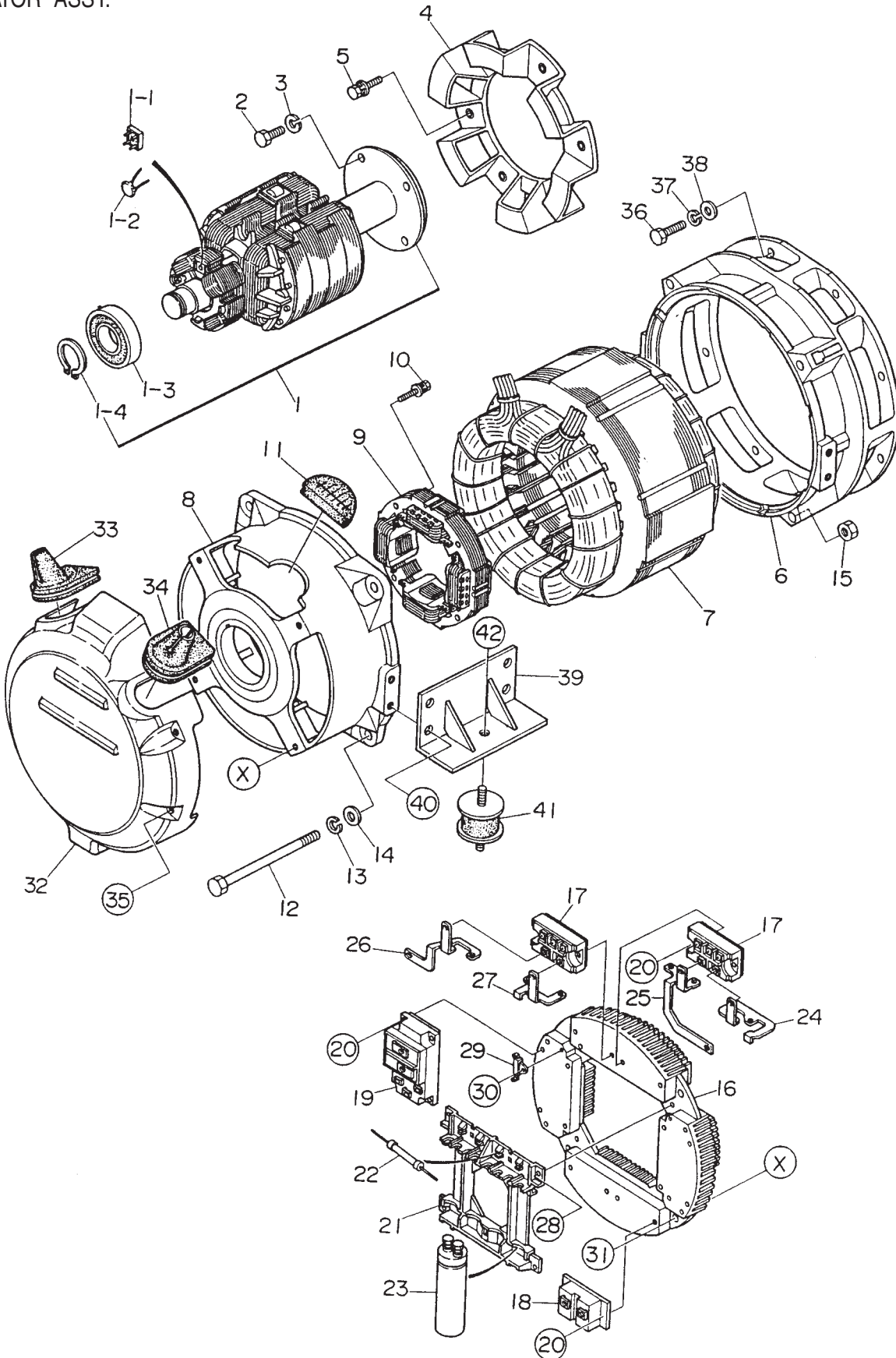
**“Not Sold Separately”** — Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

***TLW-300SS W/KUBOTA D722EB DIESEL ENGINE 1 TO 3 UNITS***

<b>Qty.</b>	<b>P/N</b>	<b>Description</b>
4 .....	0601820152 .....	CONDENSER
1 .....	0601821270 .....	TRANSISTOR
2 .....	0601821391 .....	RECTIFIER
1 .....	0601840103 .....	KNOB
1 .....	0601840204 .....	RHEOSTAT
1 .....	0601800281 .....	AC VOLTMETER
1 .....	0601808254 .....	CIRCUIT BREAKER
1 .....	0602100077 .....	STARTER SWITCH
2 .....	3741055150 .....	KEY, STARTER SWITCH
1 .....	0601830735 .....	IDLE CONTROL SWITCH
1 .....	0601812565 .....	RECEPTACLE
1 .....	0601812597 .....	RECEPTACLE
2 .....	0801888204 .....	OUTPUT TERMINAL WELDING
1 .....	0601823857 .....	SLOW DOWN
1 .....	0602200475 .....	EMERGENCY UNIT
1 .....	0601820664 .....	AUTOMATIC VOLTAGE REGULATOR
1 .....	0810105800 .....	FUEL CAP
1 .....	0602042171 .....	FUEL ELEMENT
1 .....	0602011088 .....	RADIATOR CAP
1 .....	0602046374 .....	AIR CLEANER ELEMENT
1 .....	0602041270 .....	OIL FILTER
1 .....	8702015603 .....	RADIATOR HOSE (UPPER)
1 .....	8702015503 .....	RADIATOR HOSE (LOWER)
1 .....	1920373010 .....	THERMOSTAT
1 .....	1567673270 .....	THERMOSTAT GASKET
1 .....	1747297010 .....	V-BELT

# TLW-300SS — GENERATOR ASSY.

## GENERATOR ASSY.



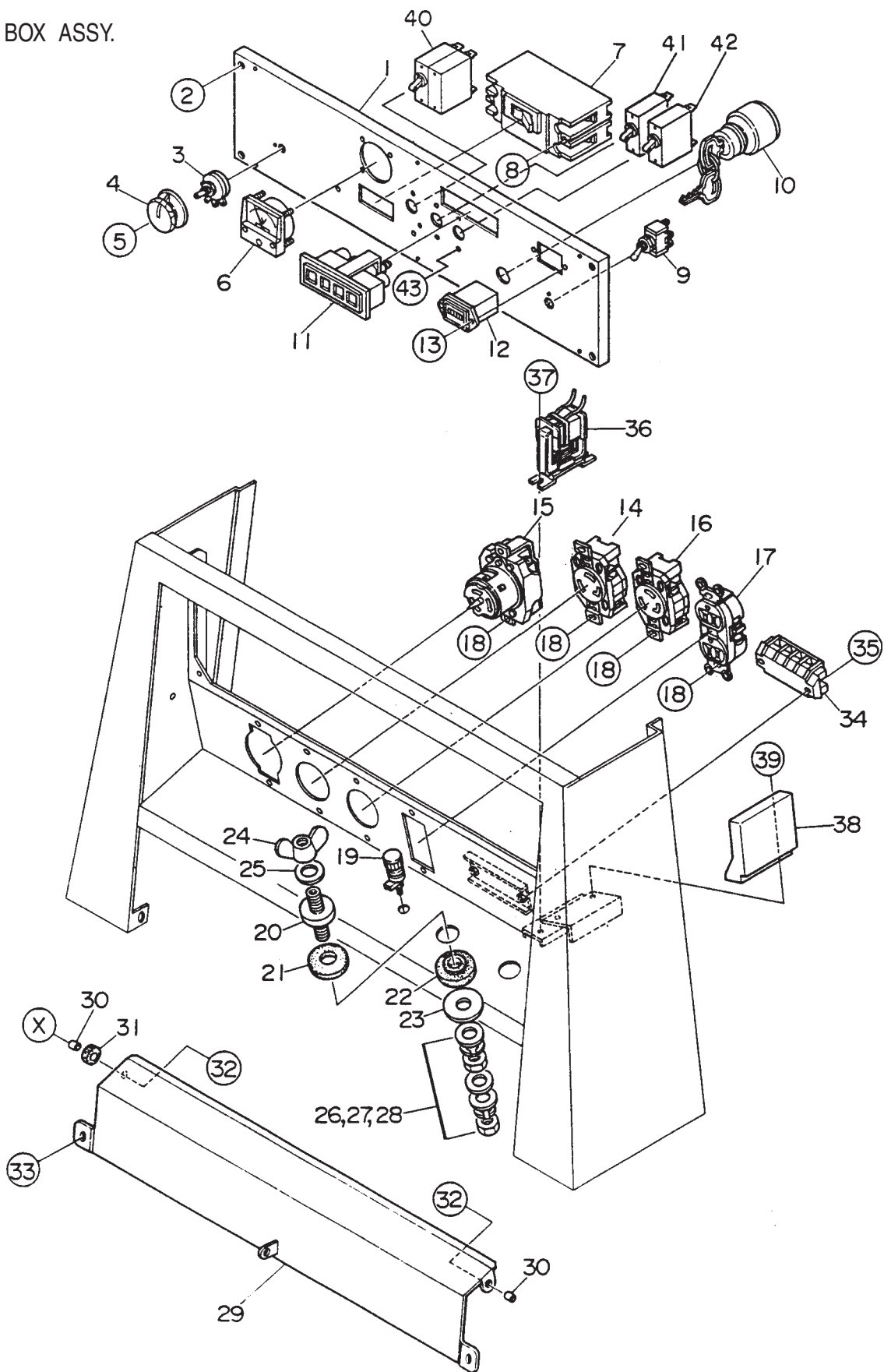
# TLW-300SS — GENERATOR ASSY.

## GENERATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	D4110000203	FIELD ASSY.		
1-1	0601820037	RECTIFIER .....	1	S10VB60
1-2	0601822638	SURGE ABSORBER .....	1	TNR15G431K
1-3	0071206307	BEARING .....	1	6307DDU
1-4	0080000035	SNAP RING	1	
2	0105091025	HEX. HEAD BOLT .....	4	REPLACES 0010710025
3	0042510000	LOCK WASHER	4	
4	D4111100103	FAN	1	
5	011208025	HEX. HEAD BOLT .....	6	REPLACES 0017108025
6	D4153100102	END BRACKET	1	
7	D4134001203	ARMATURE ASSY.....	1	UP TO S/N5308736; REPLACES 87013403B
	D4134001213	ARMATURE ASSY.....	1	FROM S/N5308737
8	D4153000202	END BRACKET	1	
9	B0137000003	FIELD ASSY. EXCITER	1	
10	0017105035	HEX. HEAD BOLT	4	
11	D4153400403	GROMMET	2	
12	D4131200004	SET BOLT	4	
13	0040012000	LOCK WASHER	4	
14	031112230	PLAIN WASHER.....	4	REPLACES 0041212000
15	0030012000	HEX. NUT	4	
16	D4183200302	FIN	1	
17	0601821391	RECTIFIER .....	2	RM50TCM
18	06018232253	RECTIFIER .....	1	FRS300BA50
19	0601821270	TRANSISTOR .....	1	SQD300BA60
20	0017105016	HEX. HEAD BOLT	10	
21	D4183000102	CONDENSER BRACKET	1	
22	0601842345	RESISTOR .....	2	RS7B3 32KL
23	0601820152	CONDENSER .....	4	CEAUP2C332T2
24	D4183301203	CONNECTION PLATE	1	
25	D4183300903	CONNECTION PLATE	1	
26	D4183301403	CONNECTION PLATE	1	
27	D4183301503	CONNECTION PLATE	1	
28	0011305100	HEX. HEAD BOLT .....	4	REPLACES 0017105012
29	0601831034	TEMPERATURE SWITCH.....	1	OHD385M
30	0027103010	MACHINE SCREW	1	
31	011208025	HEX.HEAD BOLT .....	4	REPLACES 0017108025
32	D4153400002	COVER	1	
33	D4153400303	GROMMET	1	
34	D4153400103	GROMMET	1	
35	0027105010	MACHINE SCREW	4	
36	012010030	HEX.HEAD BOLT .....	8	REPLACES 0010310030
37	030210250	LOCK WASHER.....	8	REPLACES 0042510000
38	031110160	PLAIN WASHER.....	8	REPLACES 0041210000
39	8701320004	GENERATOR FOOT .....	2	UP TO S/N4728027
	8701320014	GENERATOR FOOT .....	2	FROM S/N4728028
40	0015083904	HEX. HEAD BOLT	8	
41	0805083904	RUBBER SUSPENSION	2	
42	0207010000	HEX. NUT	2	

# TLW-300SS — CONTROL BOX ASSY.

CONTROL BOX ASSY.



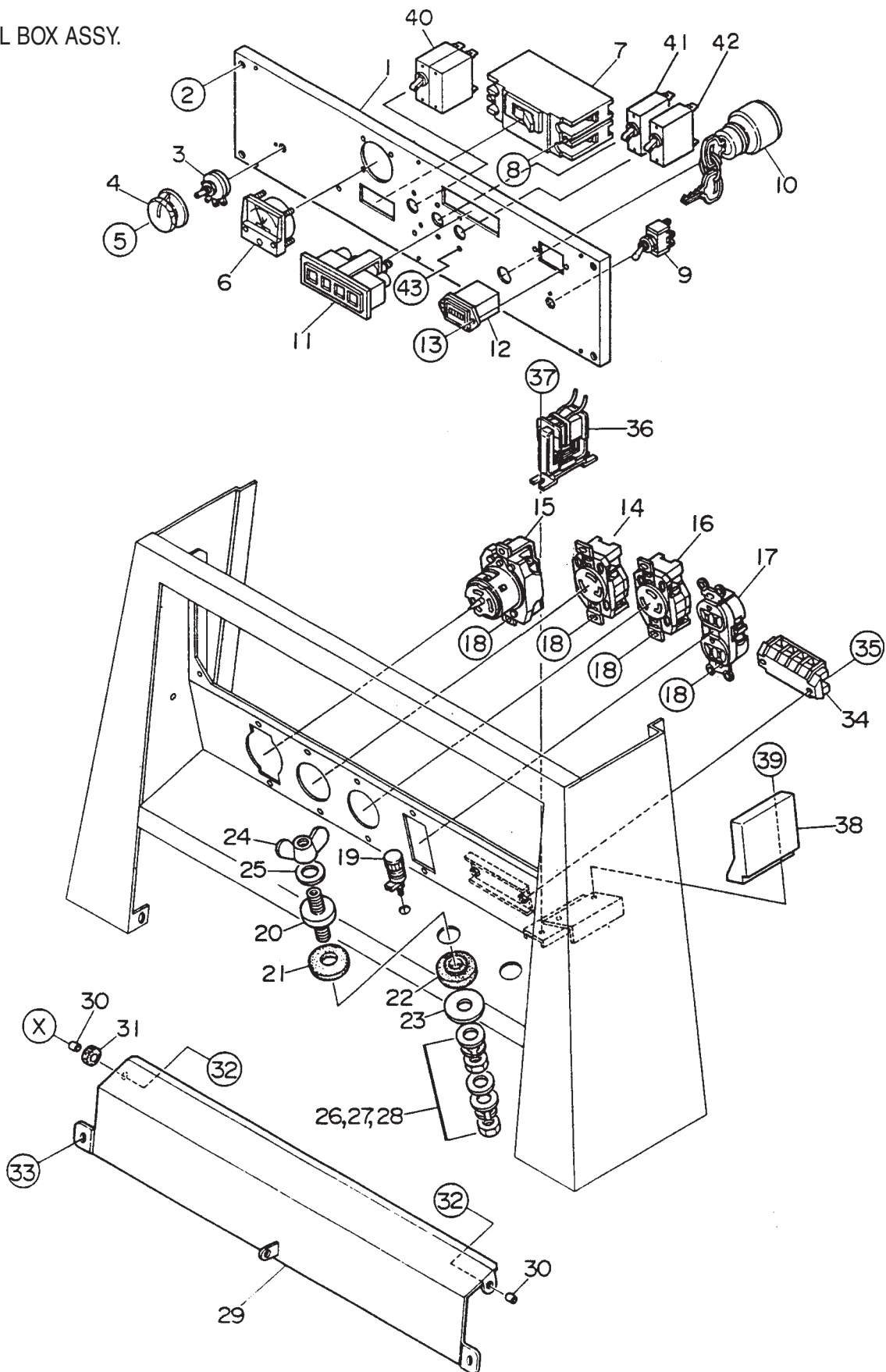
# TLW-300SS — CONTROL BOX ASSY.

## CONTROL BOX ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8701827103	CONTROL PANEL .....	1	S/N5300001 TO S/N5308736
	8701827113	CONTROL PANEL .....	1	S/N5308737~
2	0021506030	MACHINE SCREW	4	
3	0601840204	RHEOSTAT (DC REGULATOR) .....	1	RA25YN20SB100L
4	0601840103	KNOB		
5	0023304008	SET SCREW	2	
6	0601800281	AC VOLTMETER .....	1	SCF5A 0~150V, 0~300V
7	0601808254	CIRCUIT BREAKER .....	1	XE50NS 42A
8	0021004075	MACHINE SCREW	2	
	0038704000	HEX. NUT	2	
	0040004000	LOCK WASHER	2	
	031104080	PLAIN WASHER .....	2	REPLACES 0041204000
9	0601830735	SWITCH IDLE CONTROL .....	1	ET110A12
10	3741059110	STARTER SWITCH .....	1	REPLACES 0602100077
11	0601810523	INDICATOR ASSY. ....	1	PLB128Q
	0601810207	BULB	4	
12	0601800680	HOUR METER .....	1	15113
13	0027103512	MACHINE SCREW	2	
	0030003500	HEX. NUT	2	
	0040403500	WASHER	2	
14	0601811033	RECEPTACLE .....	1	L6-30R
15	0601811034	RECEPTACLE .....	1	CS6369; REPLACES 0601812565
16	0601811031	RECEPTACLE .....	1	L530R
17	0601812597	RECEPTACLE .....	1	520R
18	0027104016	MACHINE SCREW	8	
	0038704000	HEX. NUT	8	
19	0601815109	GROUND TERMINAL .....	1	T381
20	0801888204	OUTPUT TERMINAL, WELDING	2	
21	0801840104	INSULATOR WASHER	2	
22	0801840004	INSULATOR WASHER	2	
23	6109170	SET WASHER, OUTPUT TERMINAL .....	2	REPLACES 0801841204
24	0000000002	WING NUT .....	2	REPLACES 0801884004
25	0041412000	PLAIN WASHER	2	
26	039312000	HEX. NUT .....	4	REPLACES 0039512000

# TLW-300SS — CONTROL BOX ASSY.

CONTROL BOX ASSY.





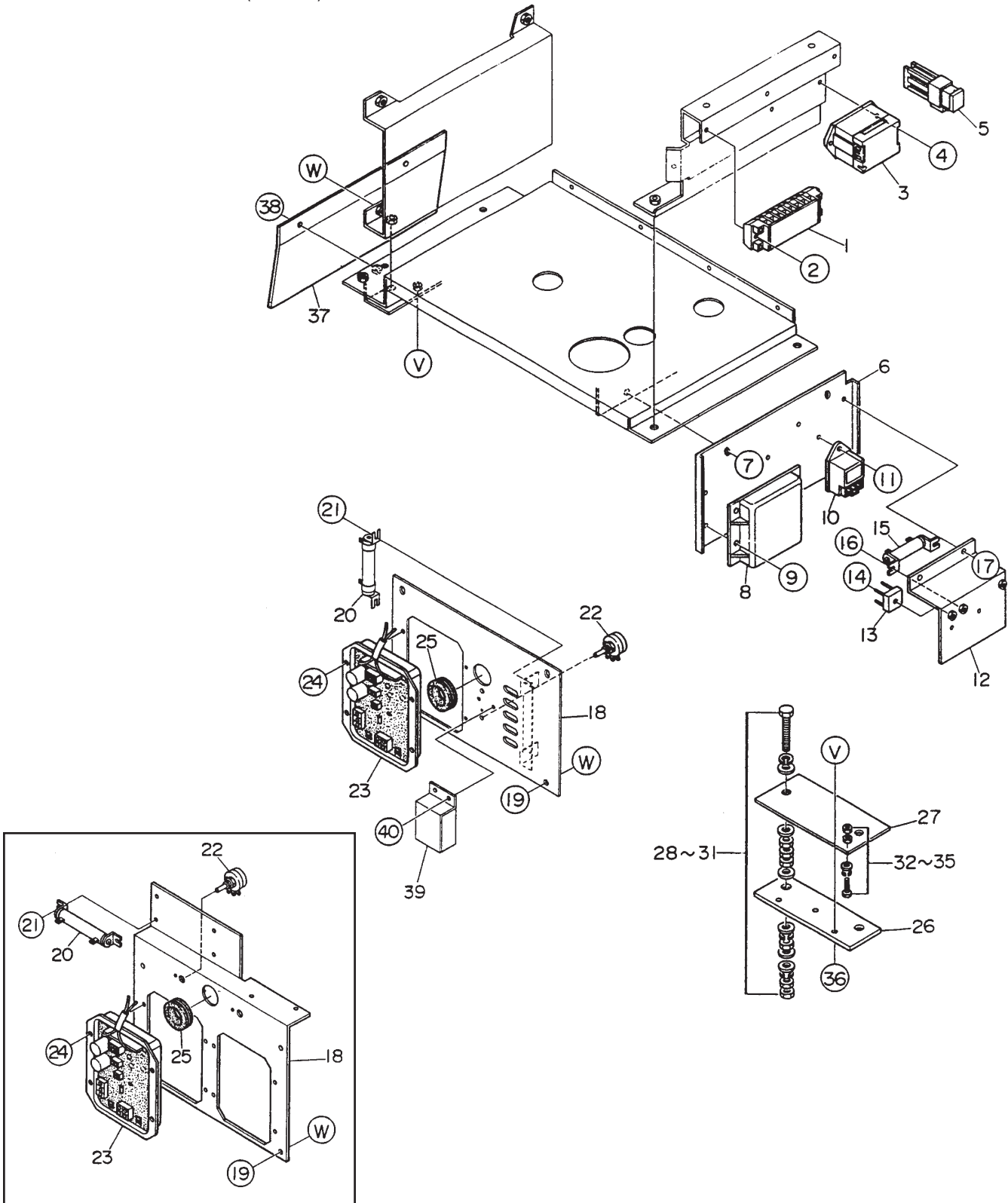
# TLW-300SS — CONTROL BOX ASSY.

## CONTROL BOX ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
27	0040012000	LOCK WASHER	4	
28	0042712000	PLAIN WASHER	6	
29	8701868403	COVER, OUTPUT TERMINAL	1	
	8701869304	RUBBER SHEET	1	
30	0821800014	COLLAR	2	
31	0805588004	RUBBER WASHER	1	
32	011206020	HEX. HEAD BOLT .....	2	REPLACES 0017106020
33	0017106016	HEX. HEAD BOLT	2	
34	0601815731	TERMINAL BOARD .....	1	KT304P
35	0027105020	MACHINE SCREW	2	
36	0601804211	CURRENT TRANSFORMER .....	1	MCT100Y
37	0027104016	MACHINE SCREW	2	
38	0601823857	SLOW DOWN .....	1	NC73
39	0017105016	HEX. HEAD BOLT	2	
40	0601806422	CIRCUIT PROTECTOR .....	1	S/N5308737~
41	0601806421	CIRCUIT PROTECTOR .....	1	S/N5308737~
42	0601806420	CIRCUIT PROTECTOR .....	1	S/N5308737~
43	0027103006	MACHINE SCREW .....	6	S/N5308737~

# TLW-300SS —CONTROL PARTS ASSY. (PART 1)

## CONTROL PARTS ASSY. (PART 1)



UP TO S/N535308736

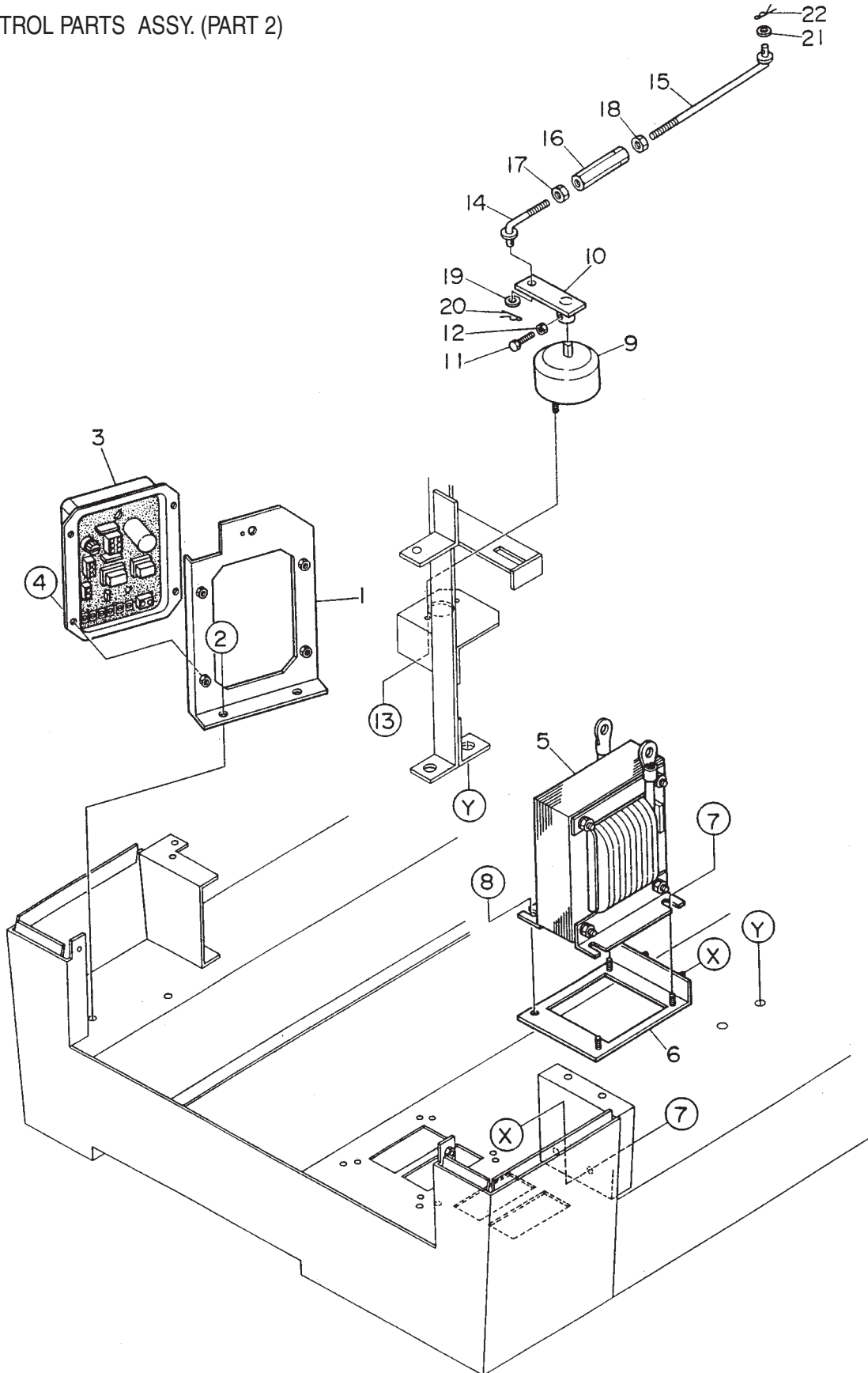
# TLW-300SS —CONTROL PARTS ASSY. (PART 1)

## CONTROL PARTS ASSY. (PART 1)

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0601815422	TERMINAL BOARD .....	1 .....	KT208P; REPLACES 0601815422
2	0027104020	MACHINE SCREW	2	
3	8701899004	FUSE BOX .....	1 .....	FB6PS
	0601806642	FUSE .....	4 .....	5A
	0601806643	FUSE .....	2 .....	15A
	0601806644	FUSE .....	2 .....	30A
4	0017105016	HEX. HEAD BOLT	2	
5	0601806640	FUSE .....	1 .....	65A
6	8702210004	BRACKET, ELECTRIC PARTS	1	
7	0017106016	HEX. HEAD BOLT	2	
8	1747260600	EMERGENCY UNIT .....	1 .....	REPLACES 0602200475
9	0027105020	MACHINE SCREW	4	
10	1569465990	LAMP TIMER .....	1 .....	REPLACES 0602201273
11	0027105016	MACHINE SCREW	1	
12	8702240004	COVER, ELECTRIC PARTS	1	
13	0601823204	RECTIFIER .....	1 .....	S5VB60
14	0027106016	MACHINE SCREW	1	
15	0601842349	RESISTOR .....	1 .....	GG20W 35L
16	0027104012	MACHINE SCREW	2	
17	0017105016	HEX. HEAD BOLT	2	
18	8701832003	BRACKET, ELECTRIC PARTS .....	1 .....	UP TO S/N5308736
	D4485500003	BRACKET, ELECTRIC PARTS .....	1 .....	FROM S/N5308737~
19	0017106016	HEX. HEAD BOLT	4	
20	8701836004	RESISTOR .....	1 .....	GG40W 1.2OHM
21	0027104012	MACHINE SCREW	2	
22	0601840203	RHEOSTAT .....	1 .....	RA30YN20SB 3KOHM
23	0601823331	CONTROL UNIT, TRANSISTOR .....	1 .....	WC20
24	0027105016	MACHINE SCREW	4	
25	0601850219	GROMMET .....	1 .....	C30NG79Q
26	D4266700004	SET BOARD, SHUNT	1	
27	D4266600504	SHUNT	1	
28	0019012080	HEX. HEAD BOLT	2	
29	0039312000	HEX. NUT .....	12 .....	REPLACES 0039512000
30	0042212000	LOCK WASHER	6	
31	0041412000	PLAIN WASHER	12	
32	0019005016	HEX. HEAD BOLT	2	
33	0039505000	HEX. NUT	4	
34	0042205000	LOCK WASHER	2	
35	0041405000	PLAIN WASHER	2	
36	0017106020	HEX. HEAD BOLT	2	
37	8701832404	COVER, SHUNT	1	
38	0017106016	HEX. HEAD BOLT	2	
39	D4485400004	COVER, RHEOSTAT .....	1 .....	UP TO S/N5308737
40	0017105016	HEX. HEAD BOLT .....	2 .....	UP TO S/N5308737

# TLW-300SS —CONTROL PARTS ASSY. (PART 2)

CONTROL PARTS ASSY. (PART 2)



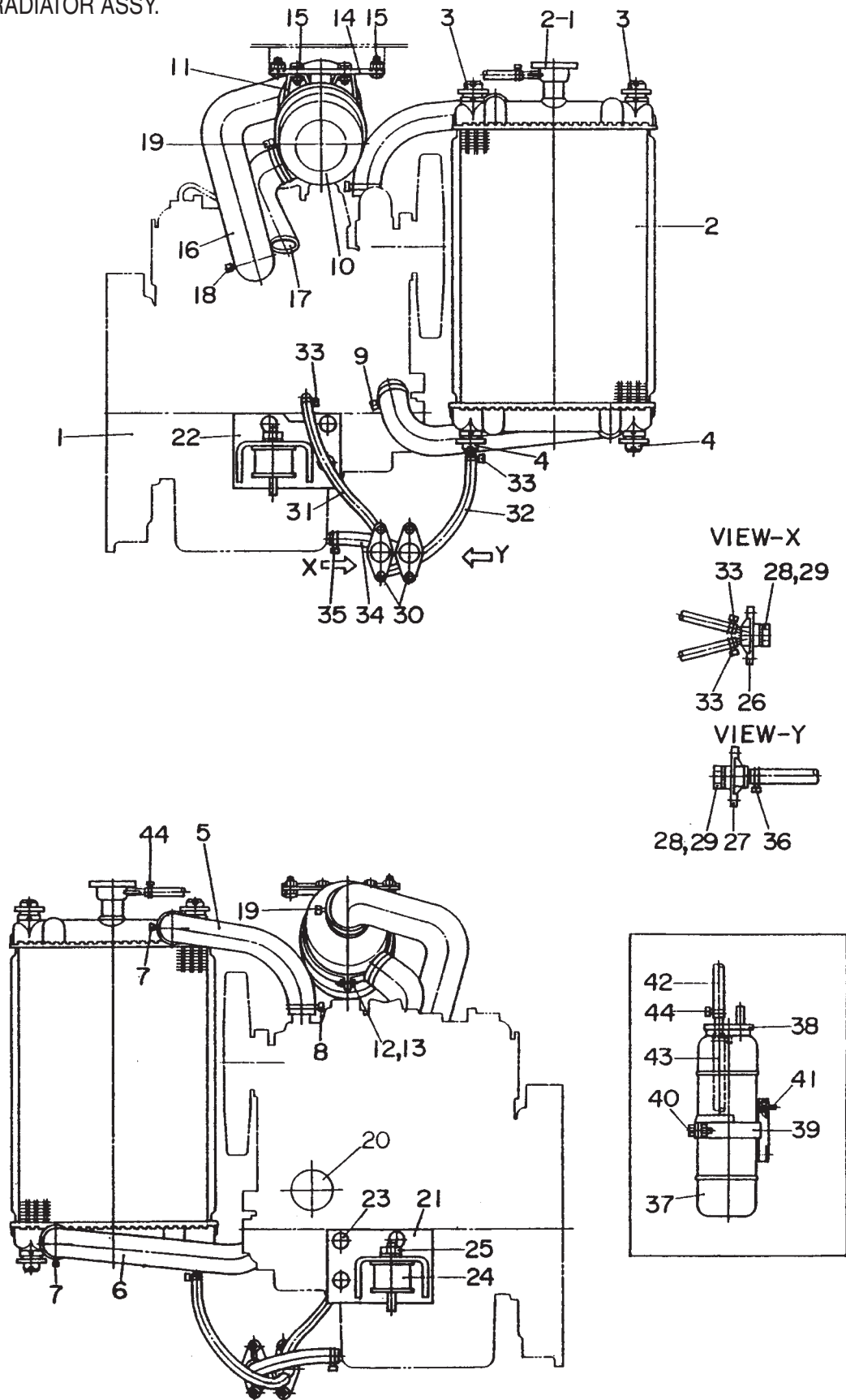
# TLW-300SS —CONTROL PARTS ASSY. (PART 2)

## CONTROL PARTS ASSY. (PART 2)

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8701832304	BRACKET, AVR	1	
2	011008020	HEX. HEAD BOLT .....	2 .....	REPLACES 0017108020
3	0601820664	AUTOMATIC VOLTAGE REGULATOR	1 .....	AN5W201
4	0017105016	HEX. HEAD BOLT	4	
5	D4263500203	DC REACTOR	2	
6	8705146004	REACTOR BRACKET	1	
7	0207006000	HEX. NUT	5	
8	0017106016	HEX. HEAD BOLT	5	
9	16226361032	ROTARY SOLENOID .....	1 .....	REPLACES 1620150404
10	8702631004	ARMATURE SOLENOID	1	
11	011606025	HEX. HEAD BOLT .....	1 .....	REPLACES 0010006025
12	020106050	HEX. NUT .....	1 .....	REPLACES 0030006000
13	0207006000	HEX. NUT	2	
14	8702151104	GOVERNOR ROD	1	
15	8702151004	GOVERNOR ROD	1	
16	1552154004	SCREW JOINT	1	
17	0031008000	HEX. NUT	1	
18	0039308000	HEX. NUT .....	1 .....	REPLACES 0036508000
19	031108160	PLAIN WASHER .....	1 .....	REPLACES 0041208000
20	0605010503	SNAP PIN	1	
21	952404470	PLAIN WASHER .....	1 .....	REPLACES 0041206000
22	505015300	SNAP PIN .....	1 .....	REPLACES 0605010502

# TLW-300SS — ENGINE AND RADIATOR ASSY.

ENGINE AND RADIATOR ASSY.

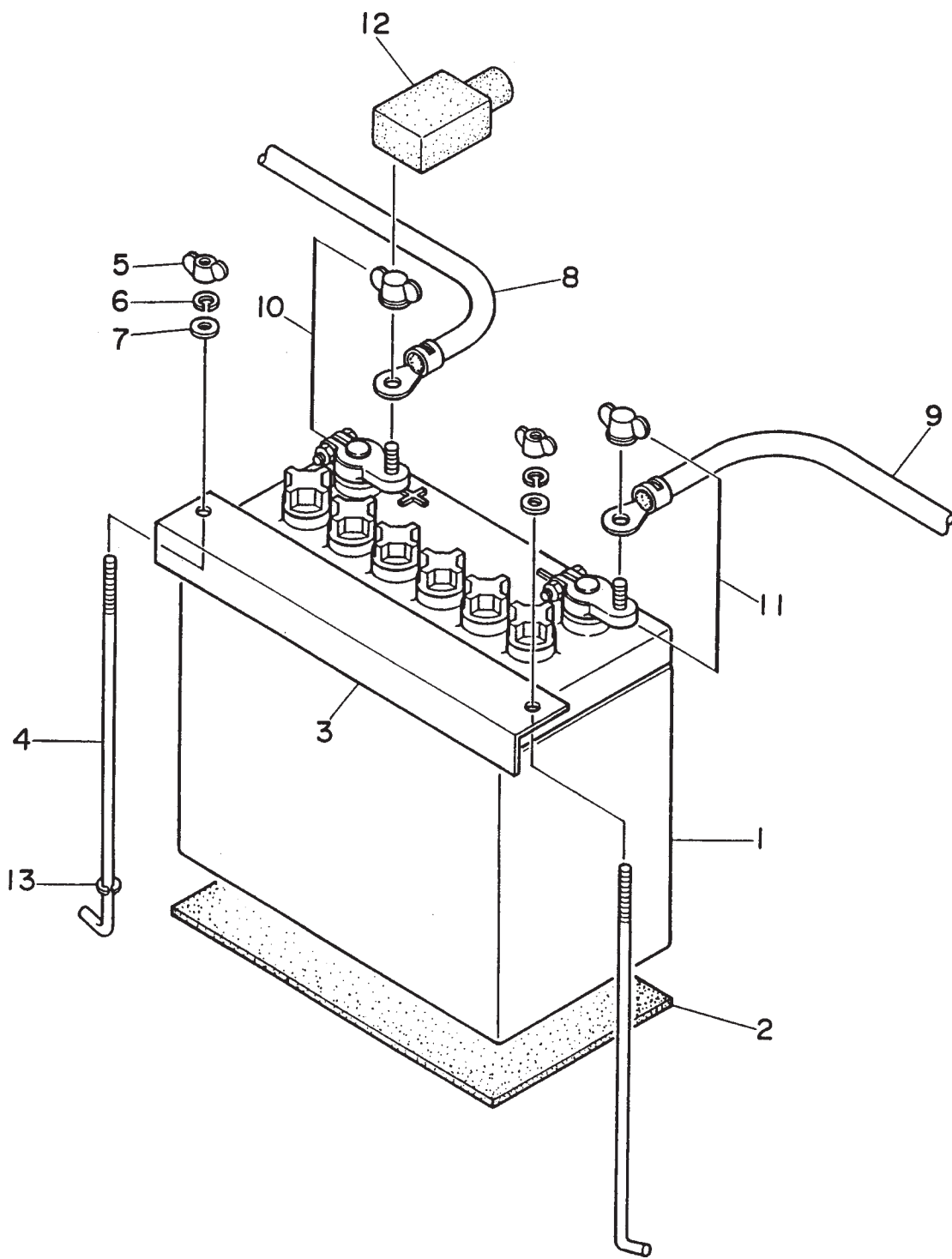


# TLW-300SS — ENGINE AND RADIATOR ASSY.

## ENGINE AND RADIATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8700150104	ENGINE, KUBOTA D722B1 .....	1	UP TO S/N4728027
	8700150114	ENGINE, KUBOTA D722B2 .....	1	FROM S/N4728028~
2	0602011955	RADIATOR .....	1	8706010000
2-1	0602011088	CAP, RADIATOR .....	1	R912010700
3	8702014004	RUBBER MOUNT	2	
4	0605000460	RUBBER MOUNT	2	
5	8702015603	RADIATOR HOSE	1	
6	8702015503	RADIATOR HOSE	1	
7	0605515113	HOSE BAND	2	
8	0605515110	HOSE BAND	1	
9	0605515090	HOSE BAND	1	
10	1558911010	AIR CLEANER .....	1	REPLACES 0602046265
	7000011221	ELEMENT, AIR CLEANER .....	1	REPLACES 0602046374
11	1538111250	BAND, AIR CLEANER .....	1	REPLACES 0602040573
12	011208030	HEX. HEAD BOLT .....	1	REPLACES 0017108030
13	020108060	HEX. NUT .....	1	REPLACES 0207008000
14	8702031004	BRACKET, AIR CLEANER	1	
15	011008020	HEX. HEAD BOLT .....	4	REPLACES 0017108020
16	8702037003	HOSE, AIR CLEANER	1	
17	7812036404	HOSE, AIR CLEANER	1	
18	0605515006	HOSE BAND	1	
19	0602014302	HOSE BAND .....	2	REPLACES 0605515021
20	7000015241	CARTRIDGE, OIL FILTER .....	1	REPLACES 0602041270
21	8705112004	ENGINE FOOT .....	1	UP TO S/N4728027
	8705112104	ENGINE FOOT .....	1	FROM S/N4728028~
22	8705112104	ENGINE FOOT .....	1	UP TO S/N5728027
	8705112004	ENGINE FOOT .....	1	FROM S/N4728028~
23	0012410020	HEX. HEAD BOLT	8	
24	0805083904	RUBBER SUSPENSION	2	
25	0207010000	HEX. NUT	2	
26	1622014103	DRAIN JOINT, WATER	1	
27	1502025103C	DRAIN JOINT, OIL	1	
28	0802011104	PLUG	2	
29	0150000018	O RING	2	
30	0017106016	HEX. HEAD BOLT	4	
31	0199900550	DRAIN HOSE	1	
32	0199900620	DRAIN HOSE	1	
33	0605515094	HOSE BAND	4	
34	0192200480	DRAIN HOSE	1	
35	0605515004	HOSE BAND	1	
36	0605515003	HOSE BAND	1	
37	0802081403	RESERVE TANK	1	
38	0802081104	CAP, RESERVE TANK	1	
39	8702082004	BRACKET, RESERVE TANK	1	
40	0017106025	HEX. HEAD BOLT	1	
41	0017106016	HEX. HEAD BOLT	2	
42	0199900340	HOSE	1	
43	7222016304	HOSE	1	
44	0605515094	HOSE BAND	3	

BATTERY ASSY.





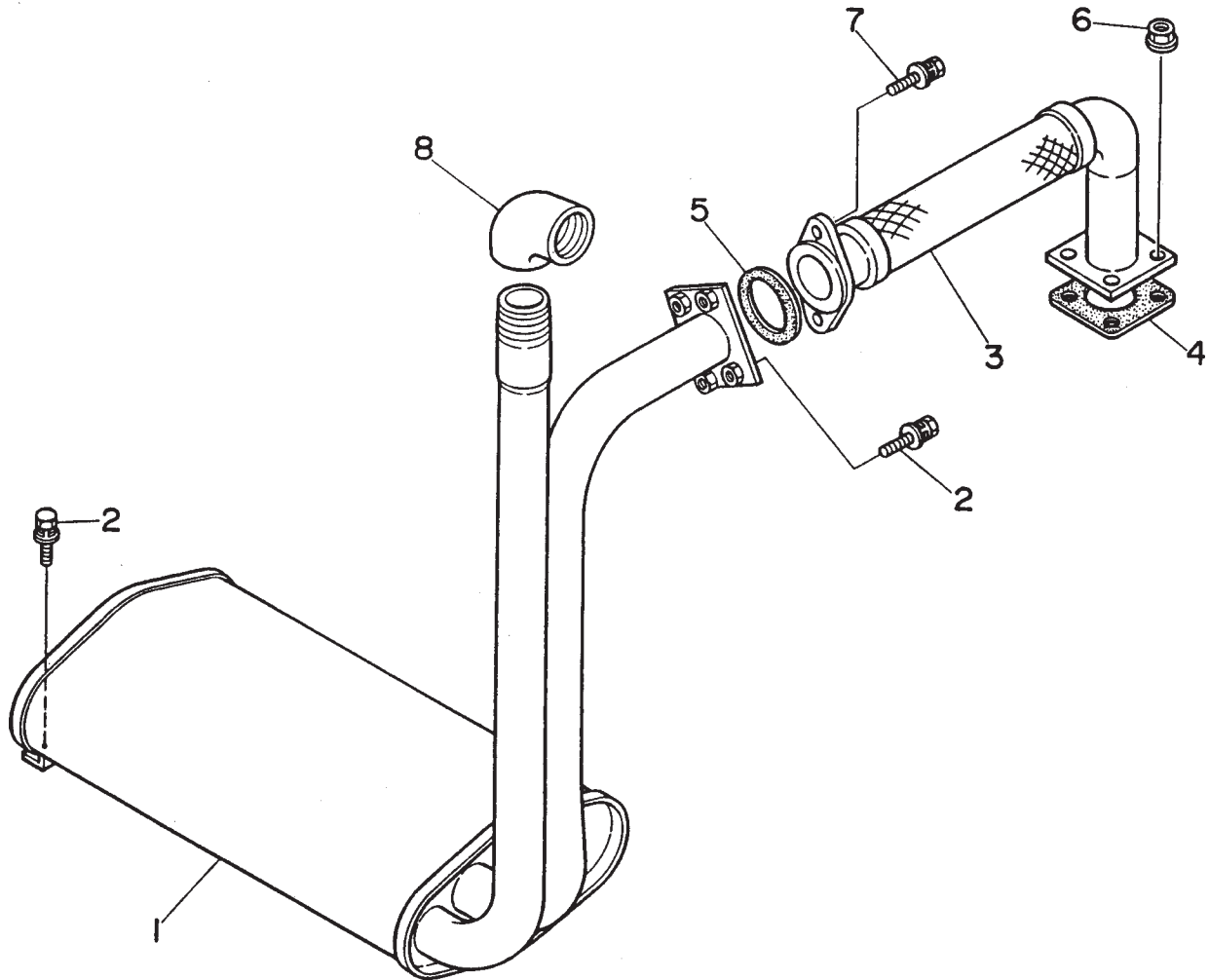
# TLW-300SS —BATTERY ASSY.

## BATTERY ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0169105524	BATTERY .....	1 .....	55B24L
2	3312251104	BATTERY SHEET	1	
3	8702250004	BATTERY BAND	1	
4	1742251004	BATTERY BOLT	2	
5	0037806000	WING NUT	2	
6	0040000600	LOCK WASHER	2	
7	952404470	PLAIN WASHER .....	2 .....	REPLACES 0041206000
8		BATTERY CABLE .....	1 .....	MAKE LOCALLY
9		BATTERY CABLE .....	1 .....	MAKE LOCALLY
10	0602220310	TERMINAL ASSY. ....	1 .....	NO9P
11	0602220311	TERMINAL ASSY. ....	1 .....	NO9N
12	0845040414	TERMINAL CAP .....	1 .....	TC7R; REPLACES 0602220600
13	0080200005	SNAP RING	1	

# TLW-300SS —MUFFLER ASSY.

MUFFLER ASSY.



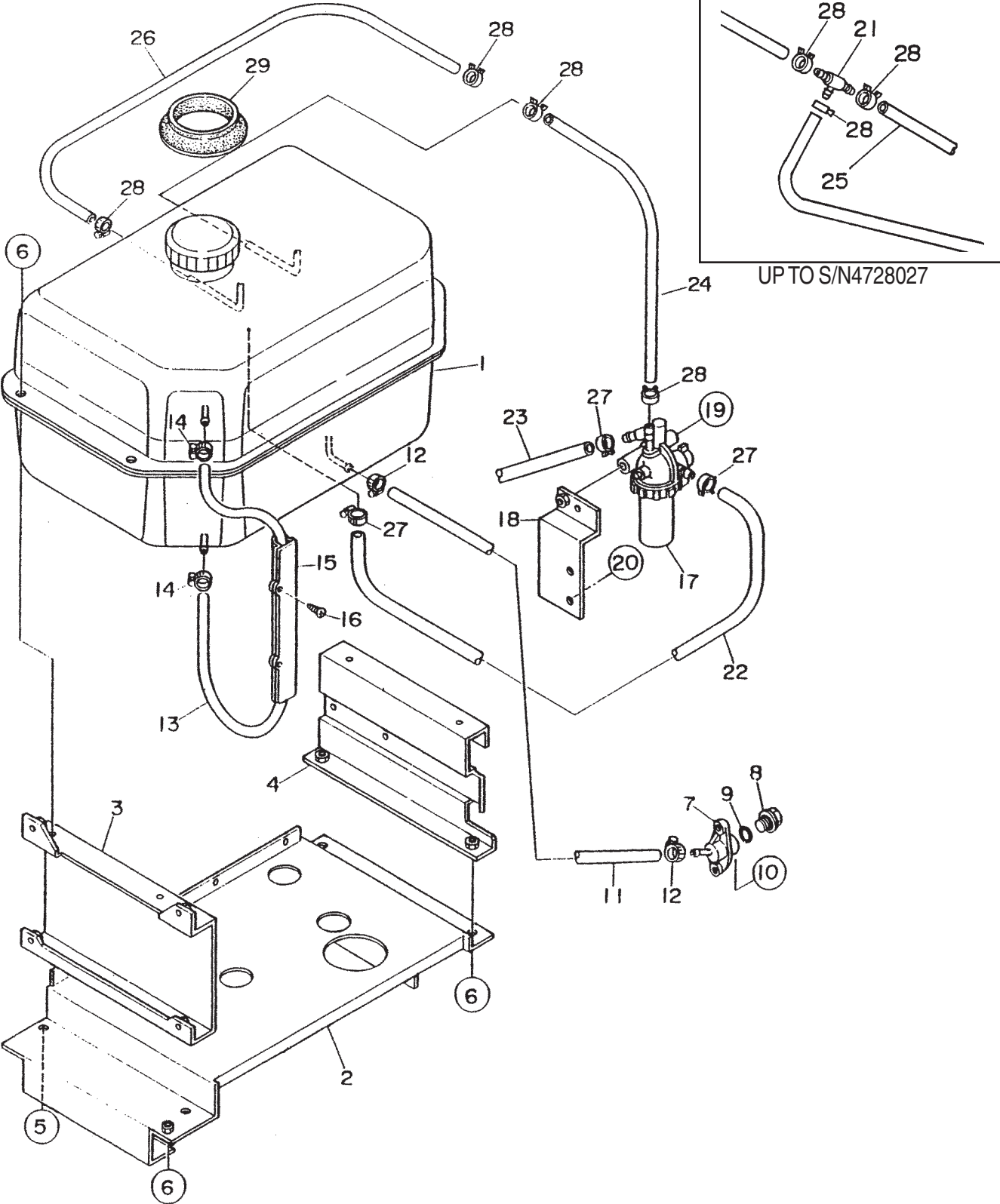
# TLW-300SS —MUFFLER ASSY.

## MUFFLER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8702310203	MUFFLER .....	1 .....	UP TO S/N4728027
	8702310213	MUFFLER .....	1 .....	FROM S/N4728028~
2	011008020	HEX. HEAD BOLT .....	4 .....	REPLACES 0017108020
3	87023300003	EXHAUST PIPE	1	
4	1526312370	GASKET .....	1 .....	REPLACES 0602320071
5	1502336004	GASKET	1	
6	020108060	HEX. NUT .....	4 .....	REPLACES 0207208000
7	011208035	HEX. HEAD BOLT .....	2 .....	REPLACES 0017108035
8	0130012000	ELBOW JOINT, 1 1/4	1	

# TLW-300SS — FUEL TANK ASSY.

FUEL TANK ASSY.



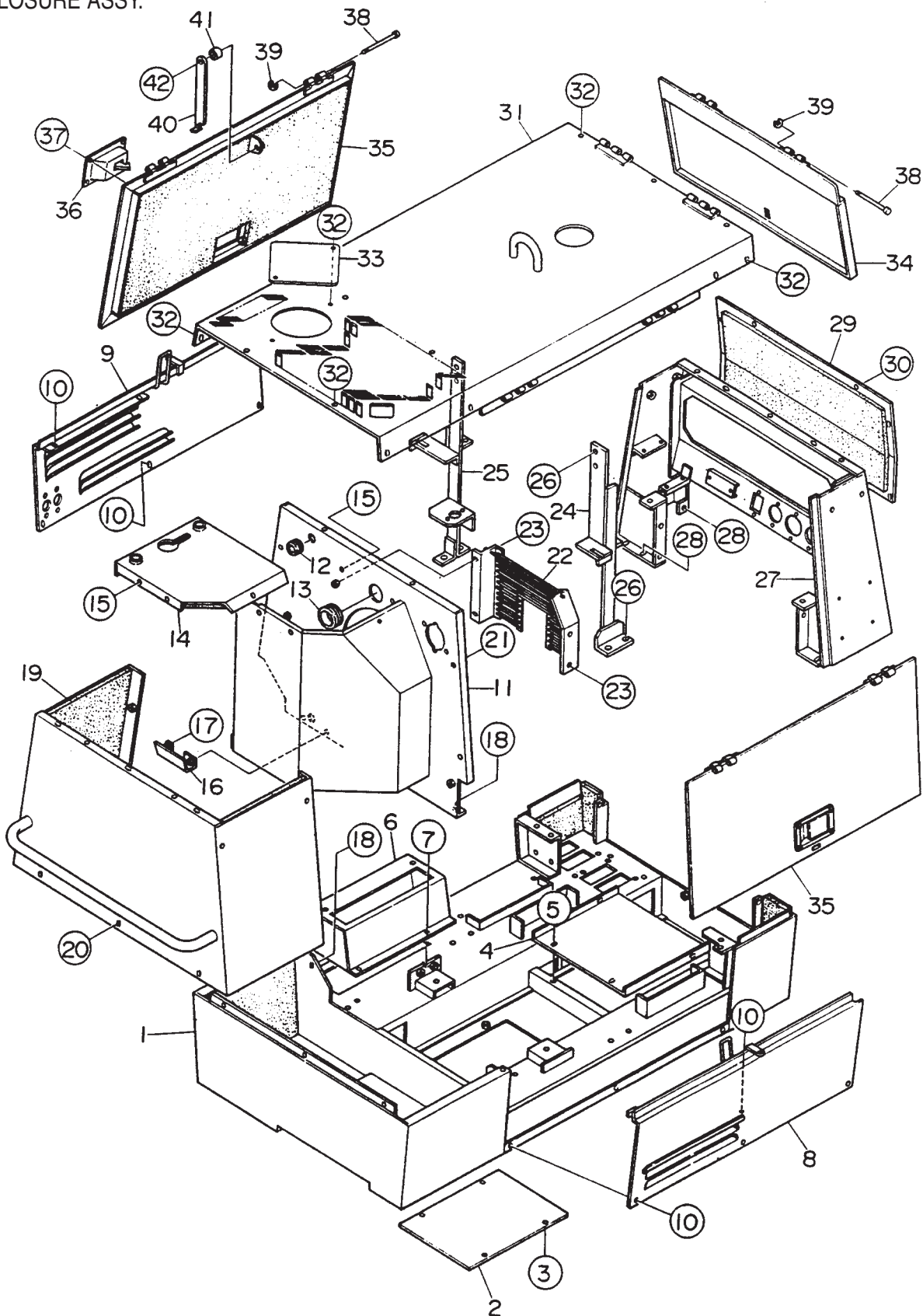
# TLW-300SS —FUEL TANK ASSY.

## FUEL TANK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8705500203	FUEL TANK .....	1 .....	UP TO S/N4728027
	8705500213	FUEL TANK .....	1 .....	FROM S/N4728028~
	0810105800	CAP, FUEL TANK	1	
	0810105900	FUEL FILTER	1	
2	8705525103	BRACKET, FUEL TANK	1	
3	8705526003	BRACKET, FUEL TANK	1	
4	8705526204	BRACKET, FUEL TANK	1	
5	011208025	HEX. HEAD BOLT .....	2 .....	REPLACES 0017108025
6	011008020	HEX. HEAD BOLT .....	6 .....	REPLACES 0017108020
7	7812014003	DRAIN JOINT	1	
8	0802011104	PLUG	1	
9	0150000018	O RING	1	
10	0017106016	HEX. HEAD BOLT	2	
11	0199900800	DRAIN HOSE	1	
12	0605515094	HOSE BAND	2	
13	0264200750	HOSE, FUEL GAUGE	1	
14	0605515005	HOSE BAND	2	
15	7815511203	BRACKET, FUEL GAUGE	1	
16	0028104012	MACHINE SCREW	2	
17	1704143013	FUEL FILTER .....	1 .....	REPLACES 0602042097
	1523143560	ELEMENT, FUEL FILTER .....	1 .....	REPLACES 0602042171
18	8705546004	BRACKET, FUEL FILTER .....	1 .....	UP TO S/N4728027
	1332037104	BRACKET, FUEL FILTER .....	1 .....	FROM S/N4728028~
19	0017108065	HEX. HEAD BOLT	1	
20	011008020	HEX. HEAD BOLT .....	2 .....	UP TO S/N5308736; REPLACES 0017108020
	012210020	HEX. HEAD BOLT .....	2 .....	FROM S/N5308737~; REPLACES 0017110020
21	1510142570	T JOINT .....	1 .....	REPLACES 0603306695
22	0966180350	SUCTION HOSE .....	1 .....	REPLACES 0605513153
23	1461142123	SUCTION HOSE .....	1 .....	REPLACES 0605513089
24	0966140300	RETURN HOSE .....	1 .....	REPLACES 0605514041
25	096614170	RETURN HOSE .....	1 .....	REPLACES 0605514044
26	0966140100	RETURN HOSE .....	1 .....	REPLACES 0605514042
27	1624142750	HOSE BAND .....	4 .....	REPLACES 0605515186
28	1624142320	HOSE BAND .....	6 .....	REPLACES 0605515187
29	1615511204	RUBBER SEAL	1	

# TLW-300SS — ENCLOSURE ASSY.

ENCLOSURE ASSY.



ENCLOSURE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8705110202	BASE .....	1 .....	UP TO S/N4728027
	8705119803	LINING	1	
	8705110212	BASE .....	1 .....	FROM S/N4728028~
2	8705110704	FLOOR PANEL	1	
3	0017106016	HEX. HEAD BOLT	4	
4	8705118004	PANEL	1	
5	0017106016	HEX. HEAD BOLT	4	
6	8705119703	DUCT	1	
	8705119904	LINING	1	
7	0017106016	HEX. HEAD BOLT	2	
8	8705181303	SPLASHER PANEL	1	
9	8705181403	SPLASHER PANEL	1	
10	0017106016	HEX. HEAD BOLT	10	
11	8705120102	FRONT FRAME .....	1 .....	UP TO S/N4728027
	8705126112	FRONT FRAME .....	1 .....	FROM S/N4728028~
	8705129004A	LINING .....	1 .....	REPLACES 8705129004
	8705129404A	LINING	1	
12	0601850239	GROMMET	2	
13	8705129404A	GROMMET .....	2 .....	REPLACES 0601850251
14	8705125004	DUCT COVER	1	
	8705129204	LINING	1	
15	0017106016	HEX. HEAD BOLT	2	
16	8705127004	GUIDE, DRAIN HOSE	1	
17	0017106016	HEX. HEAD BOLT	2	
18	011008020	HEX. HEAD BOLT .....	4 .....	REPLACES 0017108020
19	8705121102	FRONT FRAME .....	1 .....	UP TO S/N4728027
	8705129503	LINING	1	
	8705121112	FRONT FRAME .....	1 .....	FROM S/N4728028~
20	0017106016	HEX. HEAD BOLT	3	
21	0017108020	HEX. HEAD BOLT	4	
22	8705127503	FAN GUARD	1	
23	0017106016	HEX. HEAD BOLT	4	
24	8705132103	HANGER	1	
25	8705132203	HANGER .....	1 .....	UP TO S/N4728027
	8705132213	HANGER .....	1 .....	FROM S/N4728028~

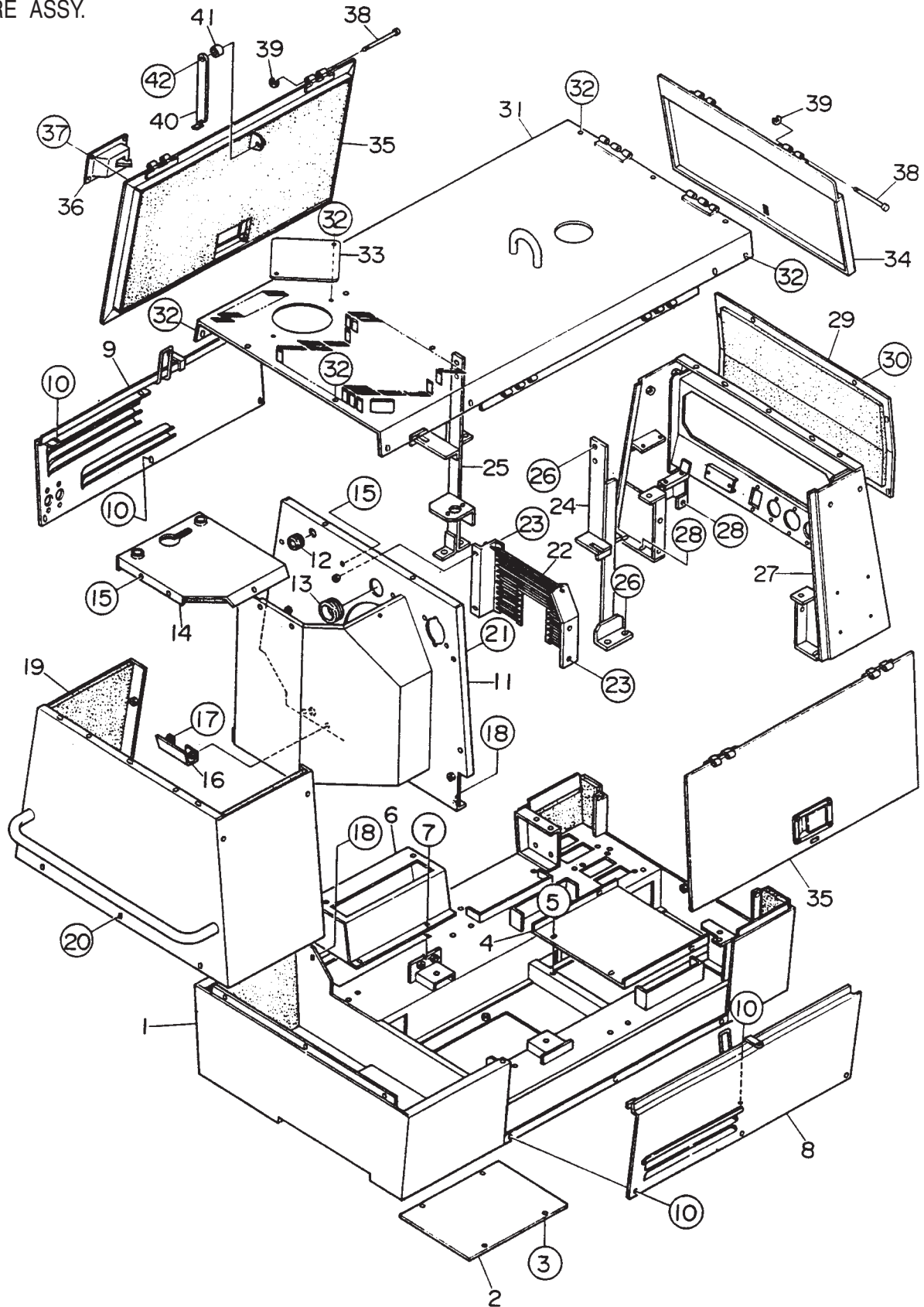
THE PART NUMBER SHOWN IS TEAL. ADD THE FOLLOWING LETTERS AFTER THE PART NUMBER WHEN ORDERING ANY PAINTED PANEL TO INDICATE COLOR OF UNIT:

MQSK-SCARLET/RED  
MQW - WHITE

THE SERIAL NUMBER MAY BE REQUIRED.

# TLW-300SS — ENCLOSURE ASSY.

ENCLOSURE ASSY.





# TLW-300SS — ENCLOSURE ASSY.

## ENCLOSURE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
26	012212030	HEX. HEAD BOLT .....	8 .....	REPLACES 0017112030
27	8705142202	REAR FRAME .....	1 .....	UP TO S/N5308736
	8705142212	REAR FRAME .....	1 .....	FROM S/N5308737~
28	011008020	HEX. HEAD BOLT .....	5 .....	REPLACES 0017108020
29	8704144004	COVER, REAR FRAME	1	
	8705149004	LINING	1	
30	0017106016	HEX. HEAD BOLT	7	
31	8705161102	ROOF PANEL .....	1 .....	UP TO S/N5308736
	8705161112	ROOF PANEL .....	1 .....	FROM S/N5308737~
	8705169104	LINING	1	
32	0017106016	HEX. HEAD BOLT .....	15 .....	UP TO S/N5308736
	0017106016	HEX. HEAD BOLT .....	17 .....	FROM S/N5308737~
33	1625165103	FILLER COVER .....	1 .....	UP TO S/N5308736
	D4425200104	COVER, RADIATOR CAP .....	1 .....	FROM S/N5308737~
34	8705145503	DOOR, REAR FRAME	1	
35	8705171203	SIDE DOOR	2	
	8705179304	LINING	2	
36	0605010230	DOOR HANDLE	2	
37	0021505016	MACHINE SCREW	8	
38	0810014704	PIN	6	
39	0080200004	SNAP RING	6	
40	1995186004	DOOR STAY	2	
41	7835088004	COLLAR	2	
42	0017108020	HEX. HEAD BOLT	2	

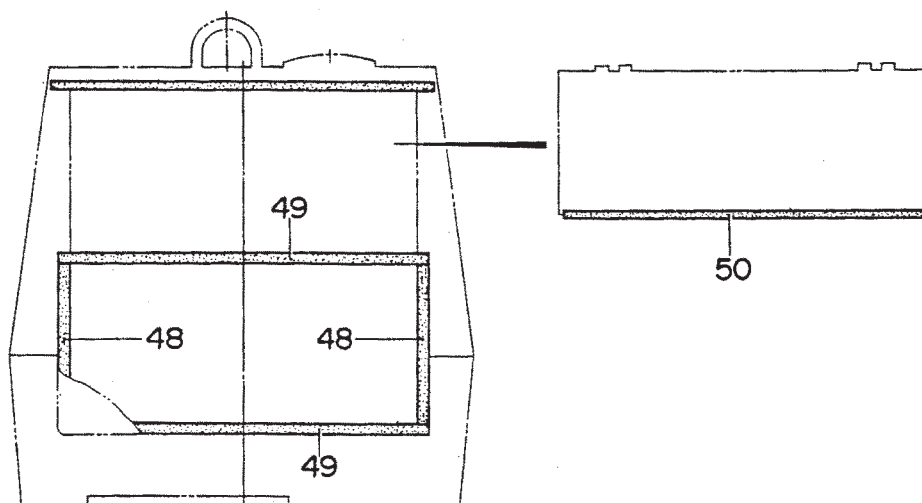
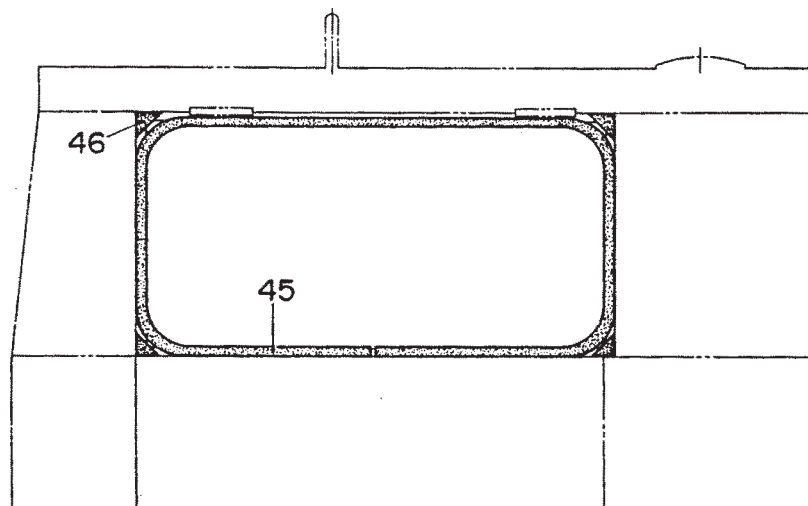
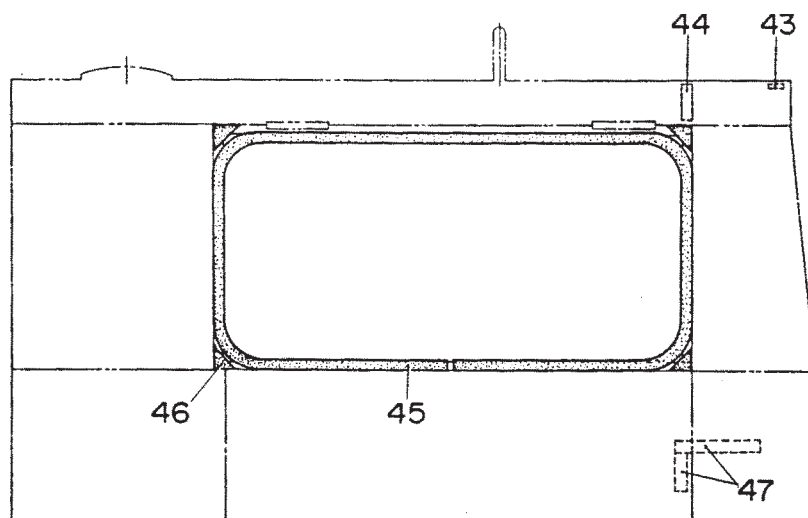
THE PART NUMBER SHOWN IS TEAL. ADD THE FOLLOWING LETTERS AFTER THE PART NUMBER WHEN ORDERING ANY PAINTED PANEL TO INDICATE COLOR OF UNIT:

MQSK-SCARLET/RED  
MQW - WHITE

THE SERIAL NUMBER MAY BE REQUIRED.

# TLW-300SS —RUBBER SEAL ASSY.

RUBBER SEAL ASSY.

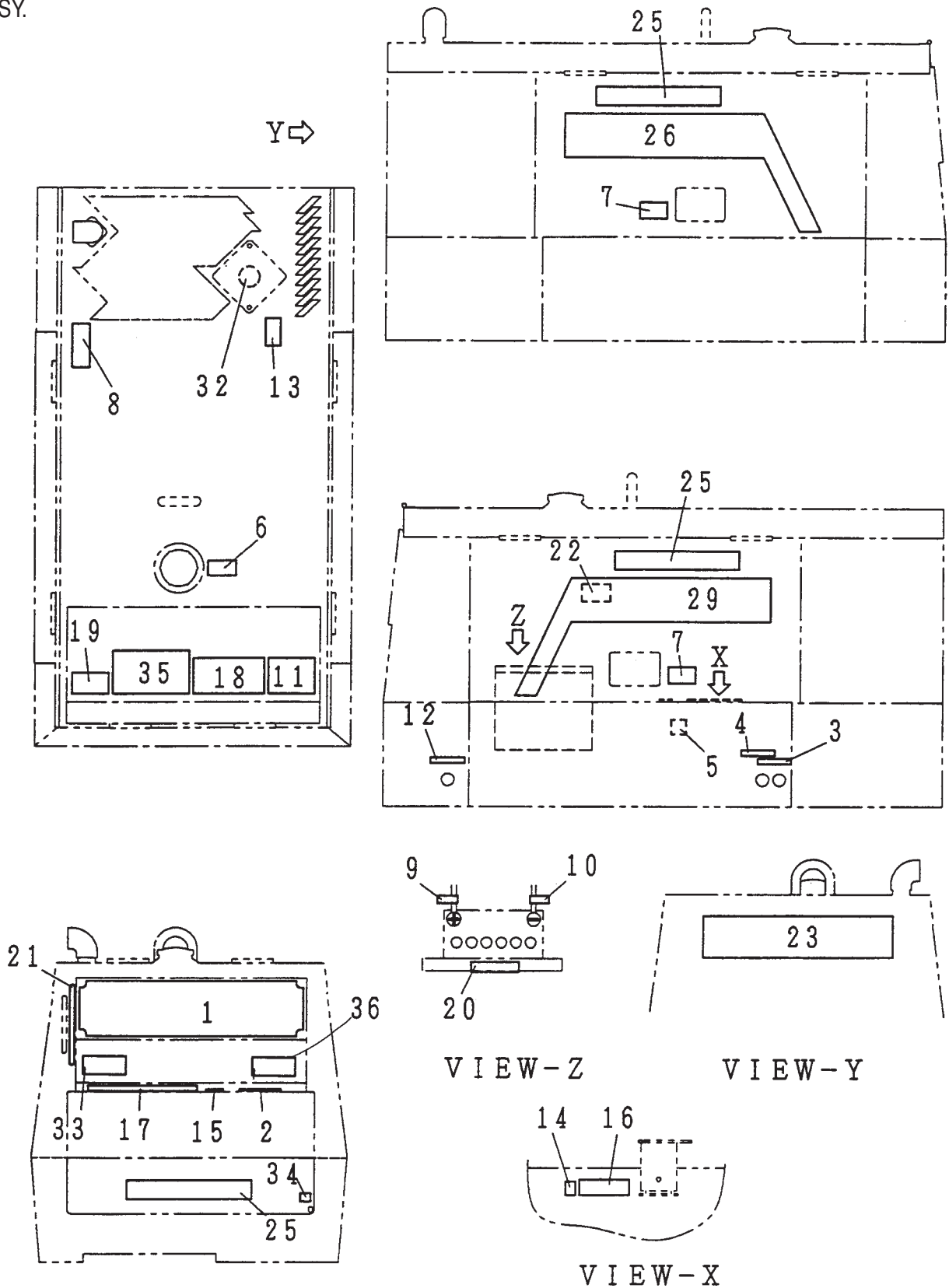


## TLW-300SS —RUBBER SEAL ASSY.

### RUBBER SEAL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
43	0229200630	RUBBER SEAL	1	
44	8705940104	RUBBER SEAL	2	
45	0220302250	RUBBER SEAL	2	
46	8705940204	RUBBER SEAL	8	
47	8705910004	RUBBER SEAL	1	
48	0229200240	RUBBER SEAL	2	
49	0229200585	RUBBER SEAL	2	
50	0026900610	RUBBER SEAL	1	

DECAL ASSY.

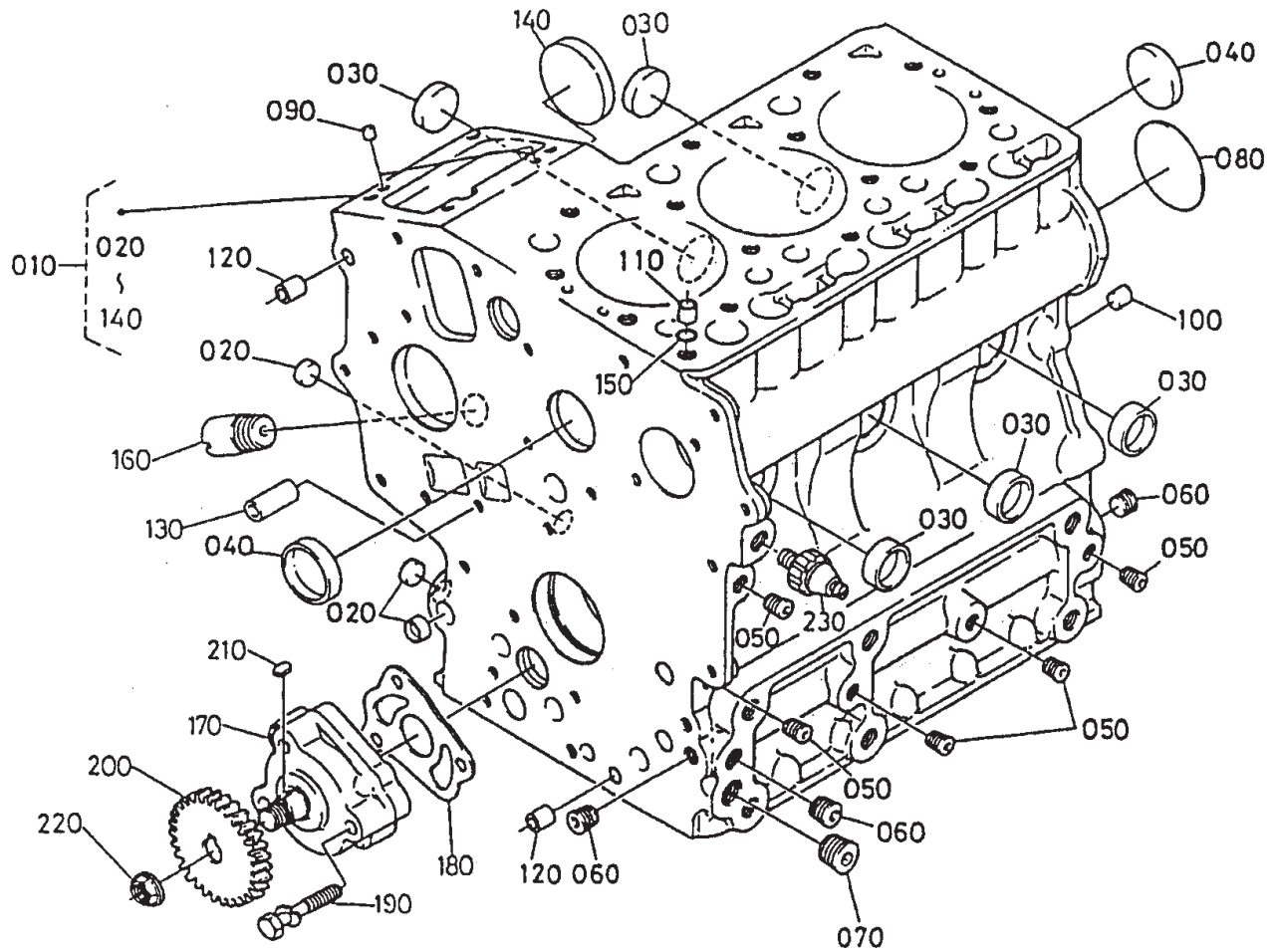


DECAL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
1	8700502302	PLATE; MAIN NAME PLATE;N5608 .....	1 .....	UP TO S/N5308736
	8700502312	PLATE; MAIN NAME PLATE;N5608A .....	1 .....	FROM S/N5308737~
2	0800690804	DECAL; WELDING OUTPUT TERMINAL .....	1 .....	S1238
3	1630645004	DECAL; OIL DRAIN .....	1 .....	S1403
4	1630647004	DECAL; COOLANT DRAIN .....	1 .....	S1404
5	1630610404	DECAL; CAUTION, FUEL FILTER .....	1 .....	S1406
6	1630680004	DECAL; USE #2 DIESEL FUEL ONLY .....	1 .....	S1408
7	1630610504	DECAL; CAUTION, DOOR .....	2 .....	S1409
8	6360610604	DECAL; WARNING, EXHAUST GAS; S1948 .....	1 .....	UP TO S/N4728027
	8700611804	DECAL; WARNING, EXHAUST GAS; S4984 .....	1 .....	FROM S/N4728028~
9	0800689404	DECAL; BATTERY CABLE (+) .....	1 .....	S2090
10	0800689504	DECAL; BATTERY CABLE (-) .....	1 .....	S2091
11	6390671104	DECAL; IMPORTANT 'CHECK DAILY' .....	1 .....	S2377
12	7810680104	DECAL; FUEL DRAIN .....	1 .....	S3060
13	7810680204	DECAL; COOLING WATER .....	1 .....	S3061
14	1980680004	DECAL; FUEL COCK; S3704 .....	1 .....	UP TO S/N5308736
	1630680104	DECAL; FUEL COCK; S1407 .....	1 .....	FROM S/N5308737
15	7670624004	DECAL; GROUND FOR GFCI .....	1 .....	S3821
16	8700611504	DECAL; CAUTION, OIL REFUEL;S4926A .....	1 .....	UP TO S/N5308736
	8700611524	DECAL; CAUTION, OIL REFUEL;S4929B .....	1 .....	FROM S/N5308737~
17	8700620103	DECAL; AC POWER OUTPUT; S4935 .....	1 .....	UP TO S/N5308736
	8700620113	DECAL; AC POWER OUTPUT; S4935A .....	1 .....	FROM S/N5308737~
18	8700611603	DECAL; OPERATING PROCEDURE .....	1 .....	S4937
19	0820610404	DECAL; WARNING, GENERATOR .....	1 .....	S3627
20	0820650604	DECAL; CAUTION, BATTERY .....	1 .....	STCL78(YUASA)
21	8700615204	DECAL; FUEL GAUGE .....	1 .....	S4638A
22	8700625504	DECAL; FUSE BOX .....	1 .....	S4936
23	8700630303	DECAL; STICKER; S4934 .....	1 .....	UP TO S/N5308736
	D4562000502	DECAL; STICKER; D462000050 .....	1 .....	FROM S/N5308737~
24	8700630403	DECAL; STICKER; S4934 .....	1 .....	UP TO S/N5308736
25	8700630803	DECAL; STICKER; S4931 .....	1 .....	UP TO S/N5308736
	D2562200104	DECAL; STICKER MQ; D26220010 .....	3 .....	FROM S/N5308737~
26	8700632202	DECAL; STRIPE; S4929 .....	1 .....	UP TO S/N5308736
	D4562100203	DECAL;(A) STRIPE; S46210020 .....	1 .....	FROM S/N5308737~
27	8700631204	DECAL; STRIPE; S4626A .....	1 .....	UP TO S/N5308736
28	8700631404	DECAL; STRIPE; S4628 .....	1 .....	UP TO S/N5308736
29	8700632302	DECAL; STRIPE; S4930 .....	1 .....	UP TO S/N5308736
	D4562100303	DECAL;(B) STRIPE; D43210030 .....	1 .....	FROM S/N5308737~
30	8700631304	DECAL; STRIPE; S4627A .....	1 .....	FROM S/N5308736
31	8700631504	DECAL; STRIPE; S4629 .....	1 .....	FROM S/N5308736
32	0600501103	DECAL; RADIATOR CAP .....	1 .....	(CALSONIC)
33	8700611904	DECAL; DANGER, ELECTRICAL SHOCK; S4985 .....	1 .....	FROM S/N4728028
34	0800628504	DECAL; GROUND; S1123 .....	1 .....	FROM S/N5308737~
35	D9512100203	DECAL; WARNING (ARC); B91210020 .....	1 .....	FROM S/N5308737~
36	DCL160	DECAL; PROPOSITION 65 WARNING .....	1 .....	REPLACES D9522100204

# KUBOTA D722EB —CRANKCASE ASSY.

## CRANKCASE ASSY.



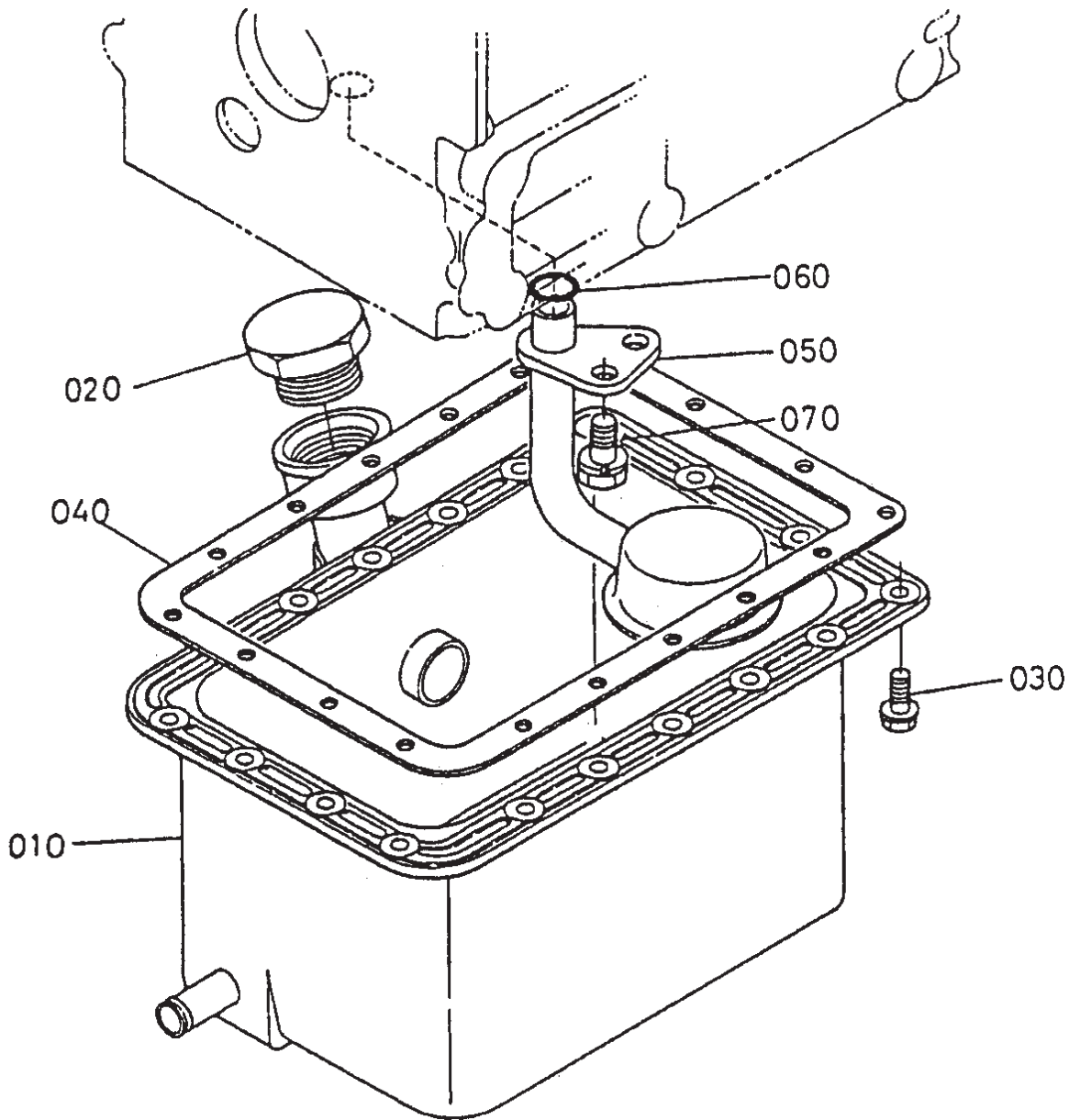
# KUBOTA D722EB —CRANKCASE ASSY.

CRANKCASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1687301010	COMP. CRANKCASE .....	1 .....	INCLUDES ITEMS W/*
020*	1685196260	CAP, SEALING	3	
030*	1685193270	CAP, SEALING	5	
040*	1545196270	CAP, SEALING	2	
050*	1526196010	PLUG	5	
060*	1552196020	PLUG	3	
070*	1552196030	PLUG	1	
080*	1526196160	PLUG	1	
090*	0501200508	PIN, STRAIGHT	2	
100*	0501200814	PIN, STRAIGHT	2	
110*	1522133650	PIN, PIPE	1	
120*	1523133960	PIN, PIPE	2	
130*	1733159190	PIN, PIPE	2	
140*	1685116210	COVER, FUEL CAMSHAFT	1	
150	1522133700	O RING	1	
160	1584773130	JOINT, DRAIN PIPE	1	
170	1685135010	OIL PUMP ASSY.	1	
180	1586235152	OIL PUMP GASKET	1	
190	1584191050	BOLT	3	
200	1584135660	OIL PUMP DRIVE GEAR	1	
210	0571200408	FEATHER KEY	1	
220	0278350100	FLANGE NUT	1	
230	1522139013	OIL SWITCH	1	

# KUBOTA D722EB —OIL PAN ASSY.

OIL PAN ASSY.





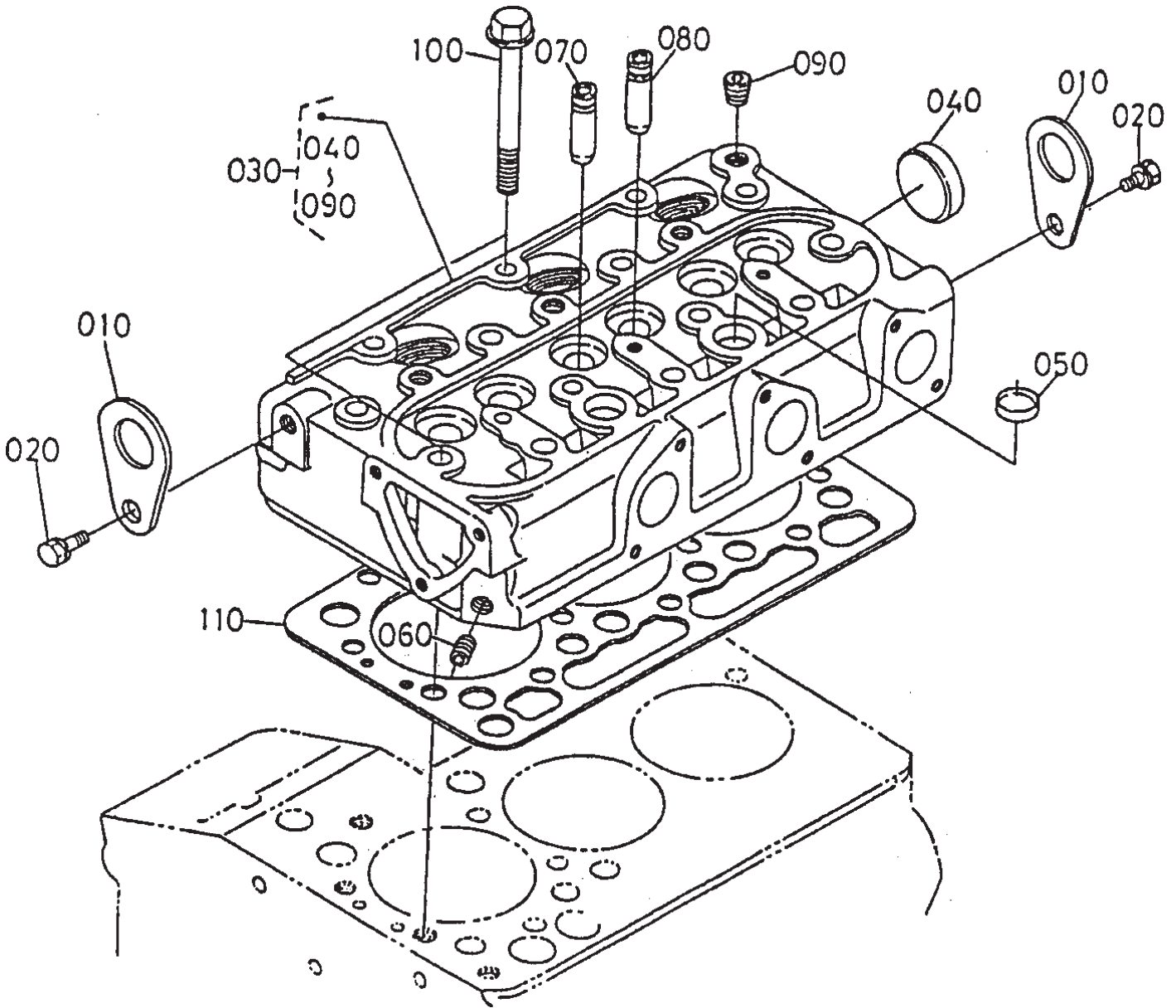
# KUBOTA D722EB —OIL PAN ASSY.

## OIL PAN ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1747601500	COMP. OIL PAN	1	
020	6721176180	PLUG	1	
030	0102350612	BOLT	18	
040	1586201620	GASKET, OIL PAN	1	
050	1685132110	OIL FILTER	1	
060	0481100160	O RING	1	
070	0112360814	BOLT	1	

# KUBOTA D722EB —CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.



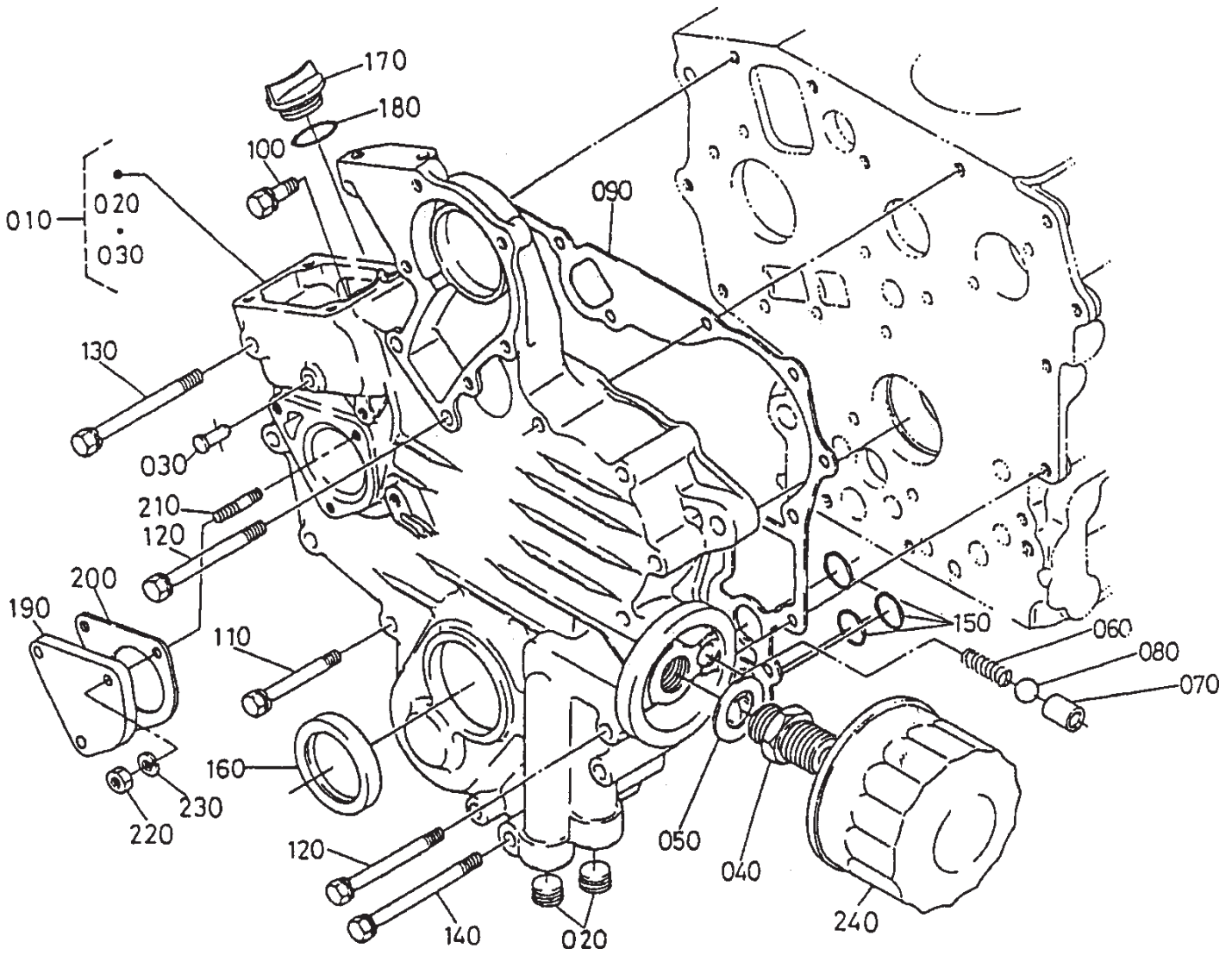
# KUBOTA D722EB —CYLINDER HEAD ASSY.

## CYLINDER HEAD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1584101750	ENGINE HOOK	2	
020	0112360814	BOLT	2	
030	1687303042	COMP. CYLINDER HEAD .....	1 .....	INCLUDES ITEMS W/*
040*	1532196260	SEALING CAP	1	
050*	1526103370	SEALING CAP	2	
060*	1526196010	PLUG	1	
070*	1584113540	INLET VALVE GUIDE	3	
080*	1584113560	EXHAUST VALVE GUIDE	3	
090*	1584196020	PLUG	1	
100	1460103450	CYLINDER HEAD BOLT	14	
110	1687103310	CYLINDER HEAD GASKET	1	

# KUBOTA D722EB —GEAR CASE ASSY.

## GEAR CASE ASSY.



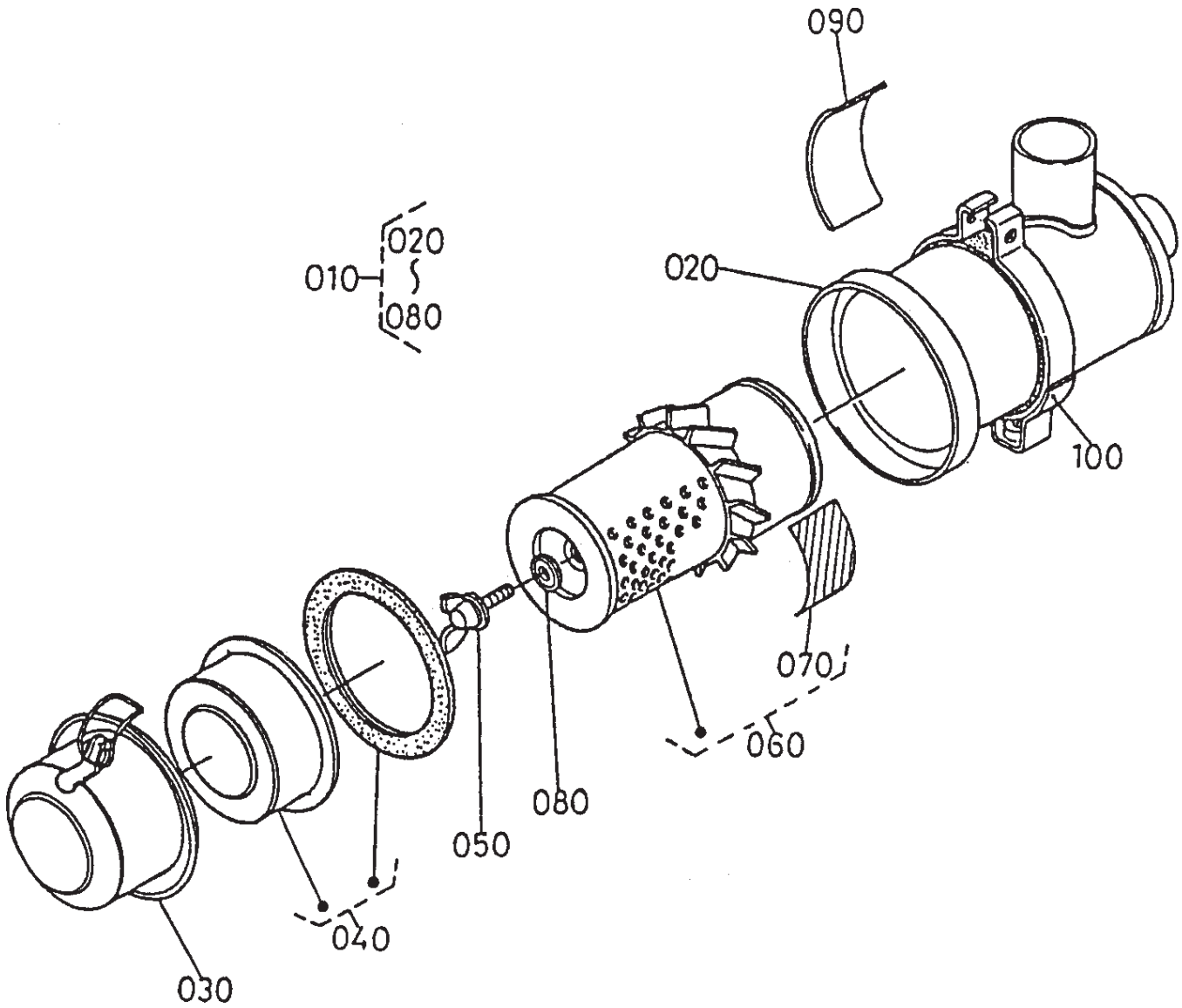
# KUBOTA D722EB —GEAR CASE ASSY.

GEAR CASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1687504024	COMP. GEAR CASE .....	1 .....	INCLUDES ITEMS W/*
020*	1685196010	PLUG	2	
030*	1584156280	START SPRING PIN	1	
040	1524132290	PIPE JOINT	1	
050	1584194010	PLAIN WASHER	1	
060	1685136950	SPRING	1	
070	1584136930	VALVE SEAT	1	
080	0771503211	BALL	1	
090	1586204170	GEAR CASE GASKET .....	1 .....	REPLACES 1586204170
100	0102350618	BOLT	1	
110	0102360650	BOLT	8	
120	1584191010	BOLT	5	
130	0102360670	BOLT	1	
140	0102350675	BOLT	1	
150	0481106130	O RING	3	
160	1587704140	OIL SEAL	1	
170	1585233140	OIL FILLER PLUG	1	
180	0481150300	O RING	1	
190	1946183340	COVER	1	
200	1946288130	H/M GEARCASE GASKET	1	
210	1522188210	STUD	3	
220	025650060	NUT	3	
230	0451260060	LOCK WASHER	3	
240	7000015241	OIL FILTER CARTRIDGE .....	1 .....	REPLACES 1585399170

# KUBOTA D722EB —AIR CLEANER ASSY.

AIR CLEANER ASSY.



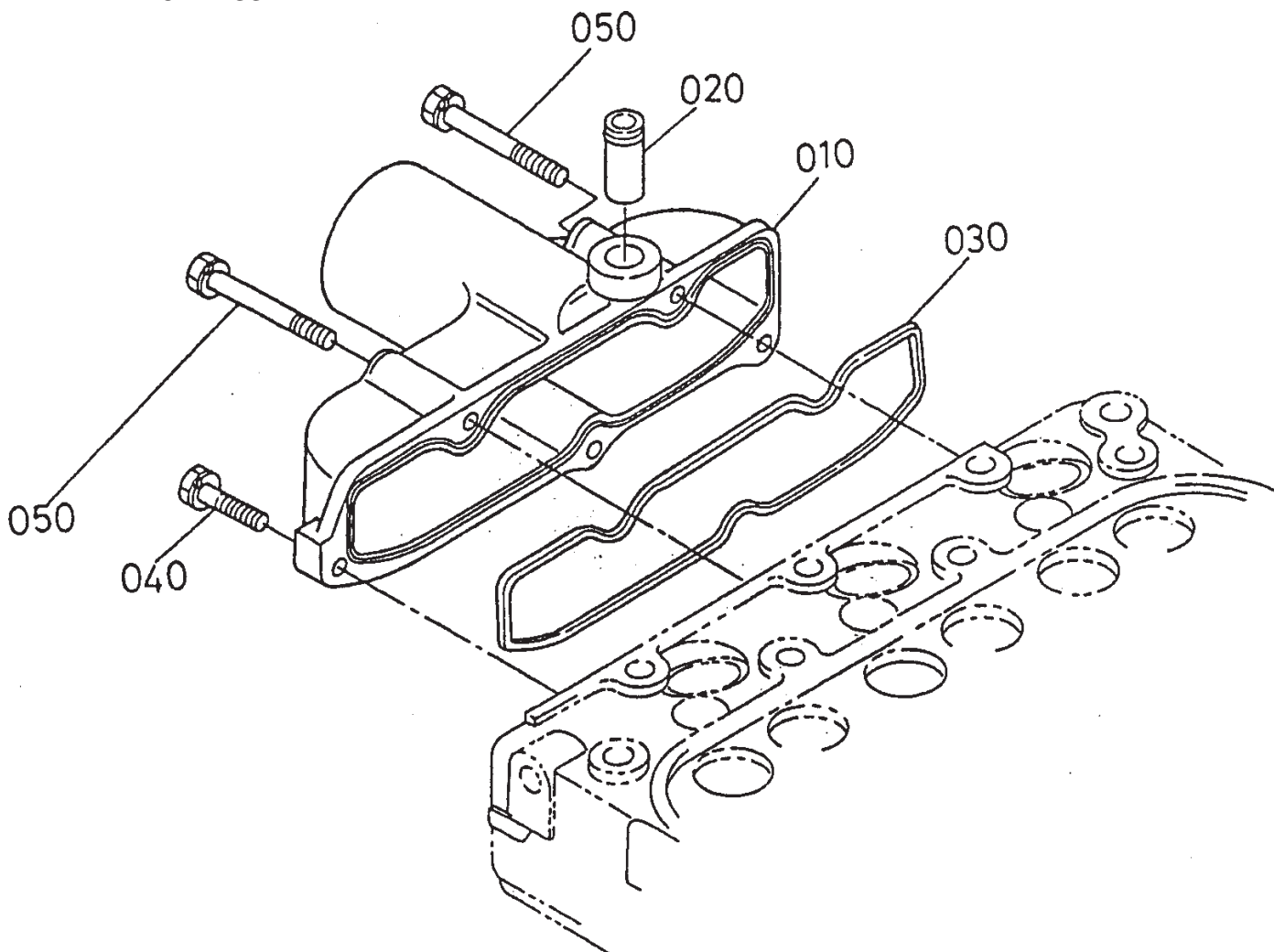
# KUBOTA D722EB —AIR CLEANER ASSY.

AIR CLEANER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1558911010	AIR CLEANER ASSY.....	1 .....	INCLUDES ITEMS W/* REPLACES 1556211010
020*	1554511150	AIR CLEANER BODY	1	
030*	1558911160	AIR CLEANER COVER	1	
040*	1522111410	BAFFLE COVER	1	
050*	1522192620	WING BOLT	1	
060*	7000011221	CLEANER ELEMENT ASSY.....	1 .....	INCLUDES ITEMS W/# REPLACES 1556211080
070*#	1522787480	A/C ELEMENT LABEL	1	
080*	1522194430	RUBBER WASHER	1	
090	1522187450	AIR CLEANER LABEL	1	
100	1538111250	AIR CLEANER BAND	1	

# KUBOTA D722EB — INLET MANIFOLD ASSY.

INLET MANIFOLD ASSY.





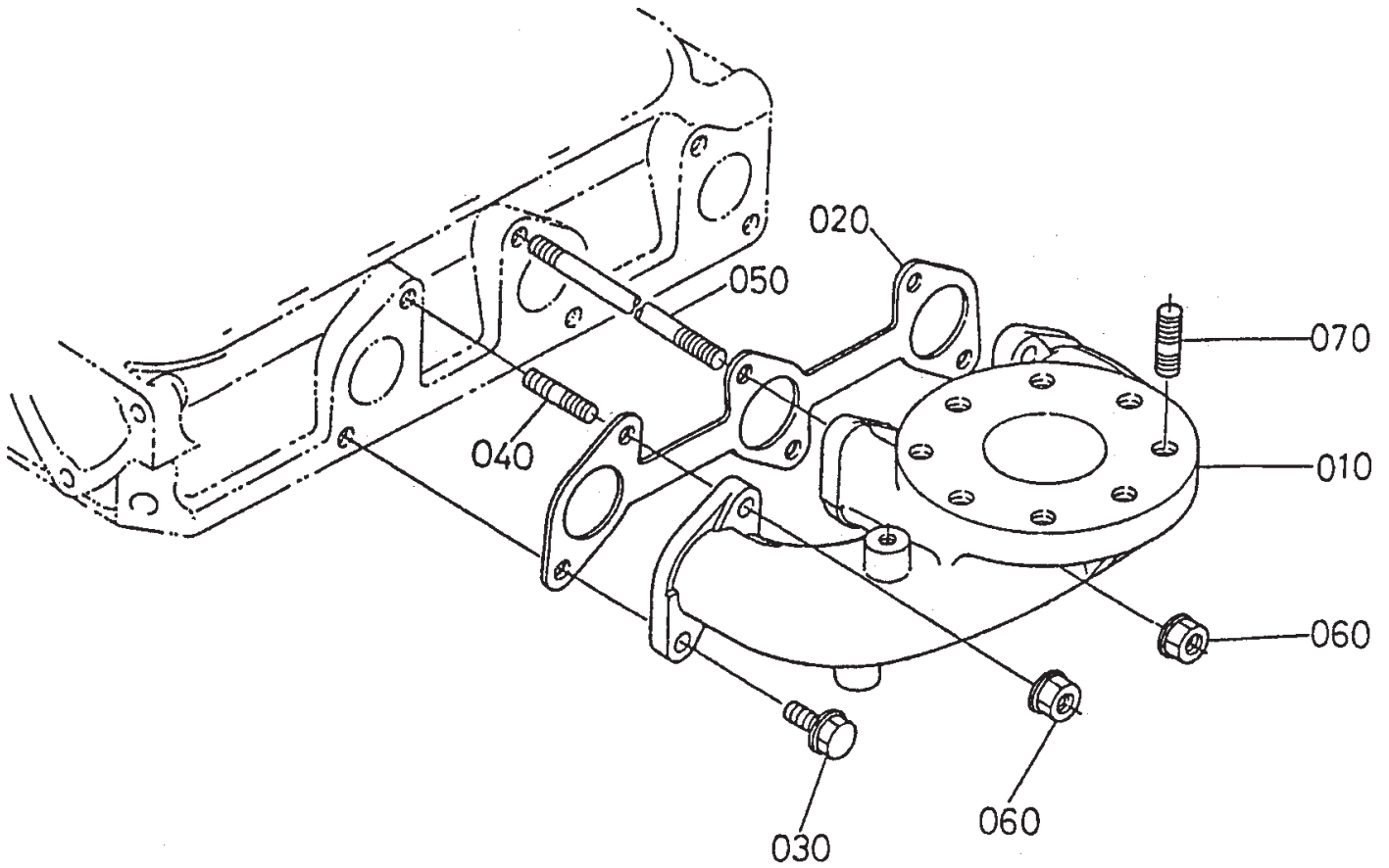
## KUBOTA D722EB —INLET MANIFOLD ASSY.

### INLET MANIFOLD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1747211770	INLET MANIFOLD ASSY.	1	
020	1733173342	WATER RETURN PIPE	1	
030	1586111820	INLET MANIFOLD GASKET	1	
040	0102350618	BOLT	2	
050	0102350645	BOLT	3	

# KUBOTA D722EB —EXHAUST MANIFOLD ASSY.

EXHAUST MANIFOLD ASSY.



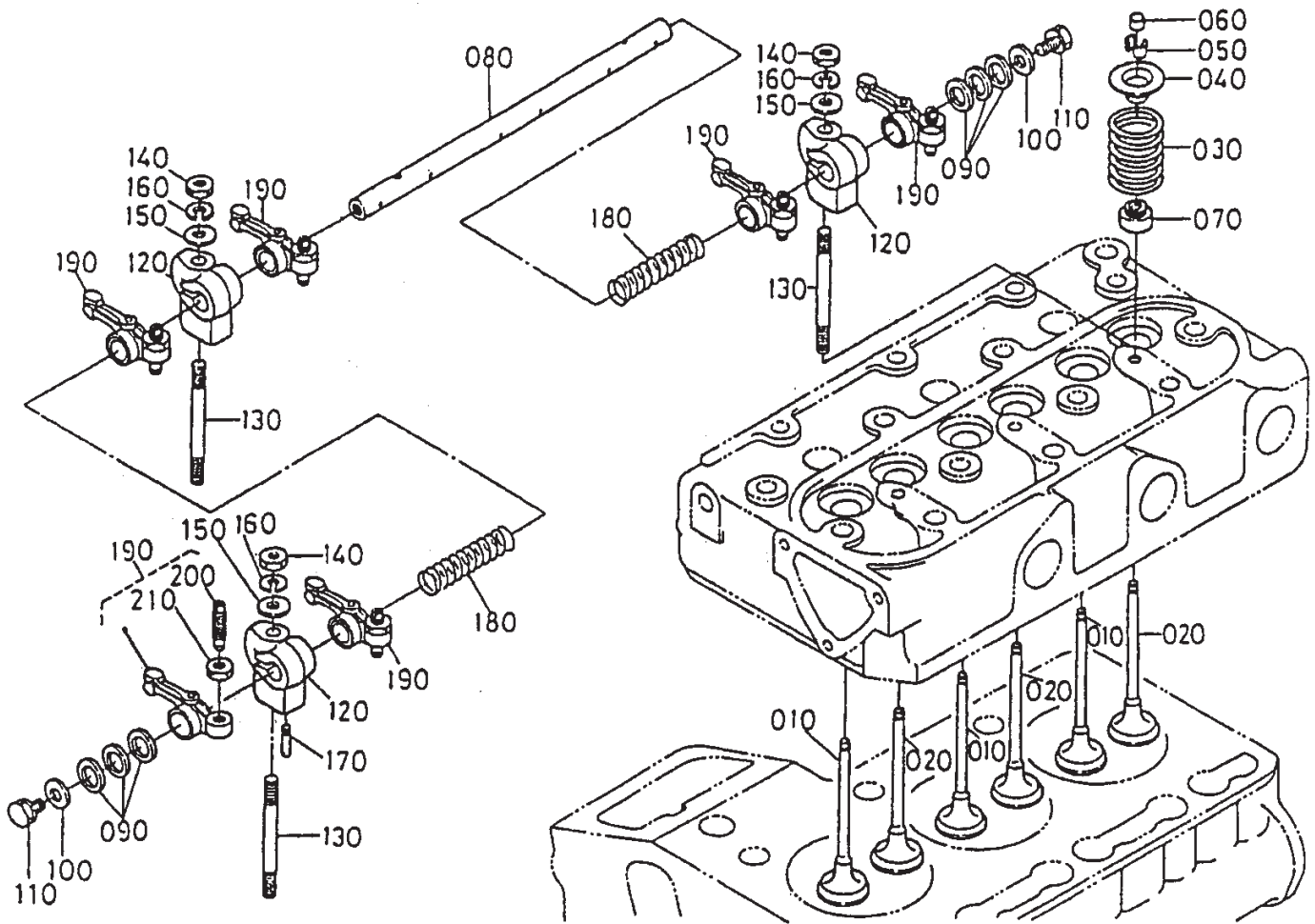
# KUBOTA D722EB —EXHAUST MANIFOLD ASSY.

## EXHAUST MANIFOLD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1902412314	EXHAUST MANIFOLD	1	
020	1586212350	GASKET	1	
030	0175950616	UBS BOLT	3	
040	0151350618	STUD	1	
050	1569491490	STUD	2	
060	0275650060	UBS NUT	3	
070	0151350822	STUD	4	

# KUBOTA D722EB — VALVE AND ROCKER ARM ASSY.

## VALVE AND ROCKER ARM ASSY.



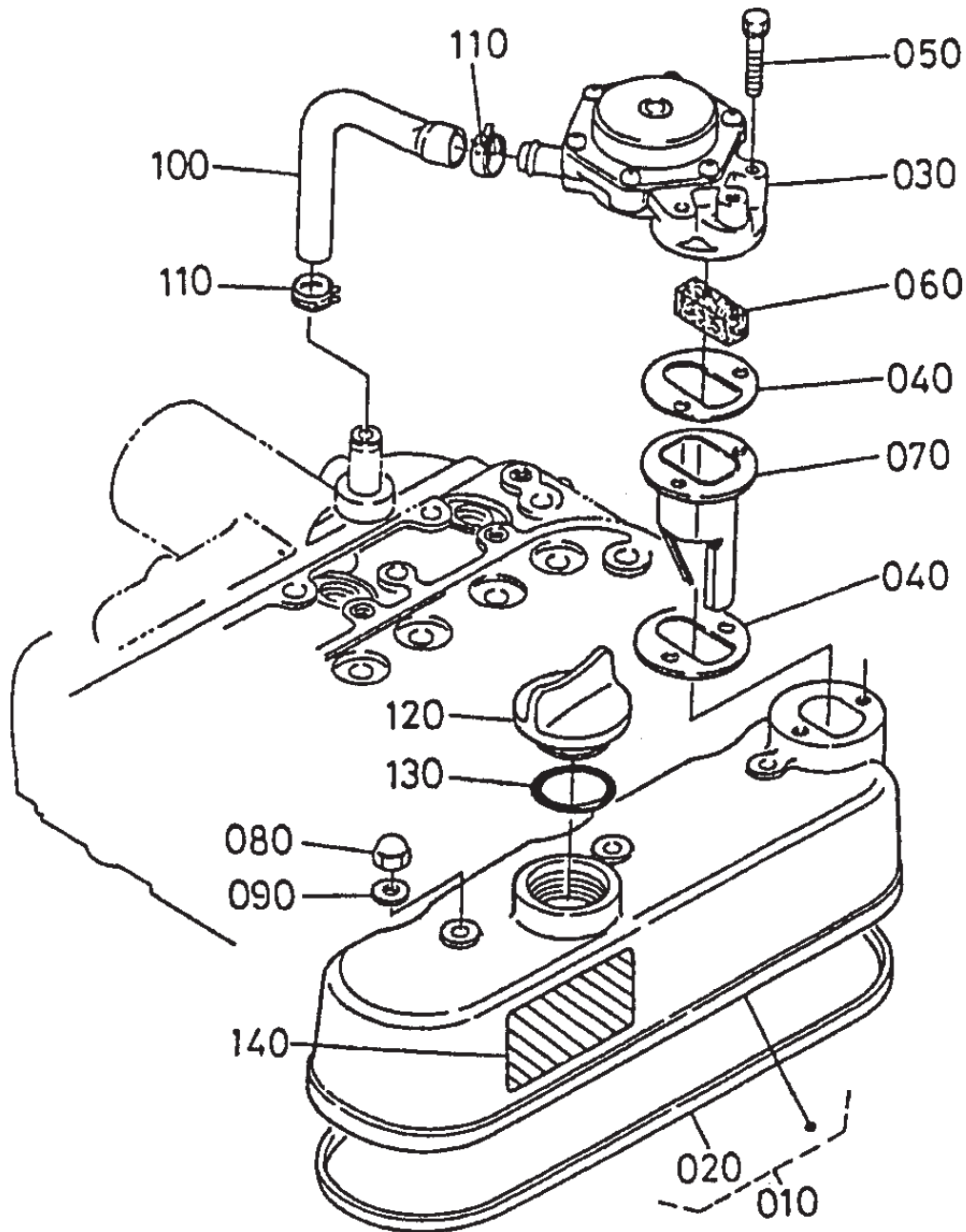
# KUBOTA D722EB —VALVE AND ROCKER ARM ASSY.

## VALVE AND ROCKER ARM ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1460113110	INLET VALVE	3	
020	1460113120	EXHAUST VALVE	3	
030	1460113240	VALVE SPRING	6	
040	1460113330	RETAINER SPRING	6	
050	1460113360	VALVE SPRING COLLET .....	6.....	SET
060	1685113280	VALVE CAP	6	
070	1142013150	VALVE STEM SEAL	6	
080	1586114260	ROCKER ARM SHAFT	1	
090	1687114430	WASHER	6	
100	1584194020	PLAIN WASHER	2	
110	0102350610	BOLT	2	
120	1584114350	ROCKER ARM BRACKET	3	
130	1460114410	STUD	3	
140	0205650060	NUT	3	
150	0401250060	PLAIN WASHER	3	
160	0451260060	LOCK WASHER	3	
170	1460114420	ROCKER ARM SET SCREW	1	
180	1460114310	ROCKER ARM SPRING	2	
190	1584114030	ROCKER ARM ASSY. ....	6.....	INCLUDES ITEMS W/*
200*	1584114230	ADJUSTING SCREW	6	
210*	1460114240	NUT	6	

# KUBOTA D722EB —HEAD COVER ASSY.

HEAD COVER ASSY.

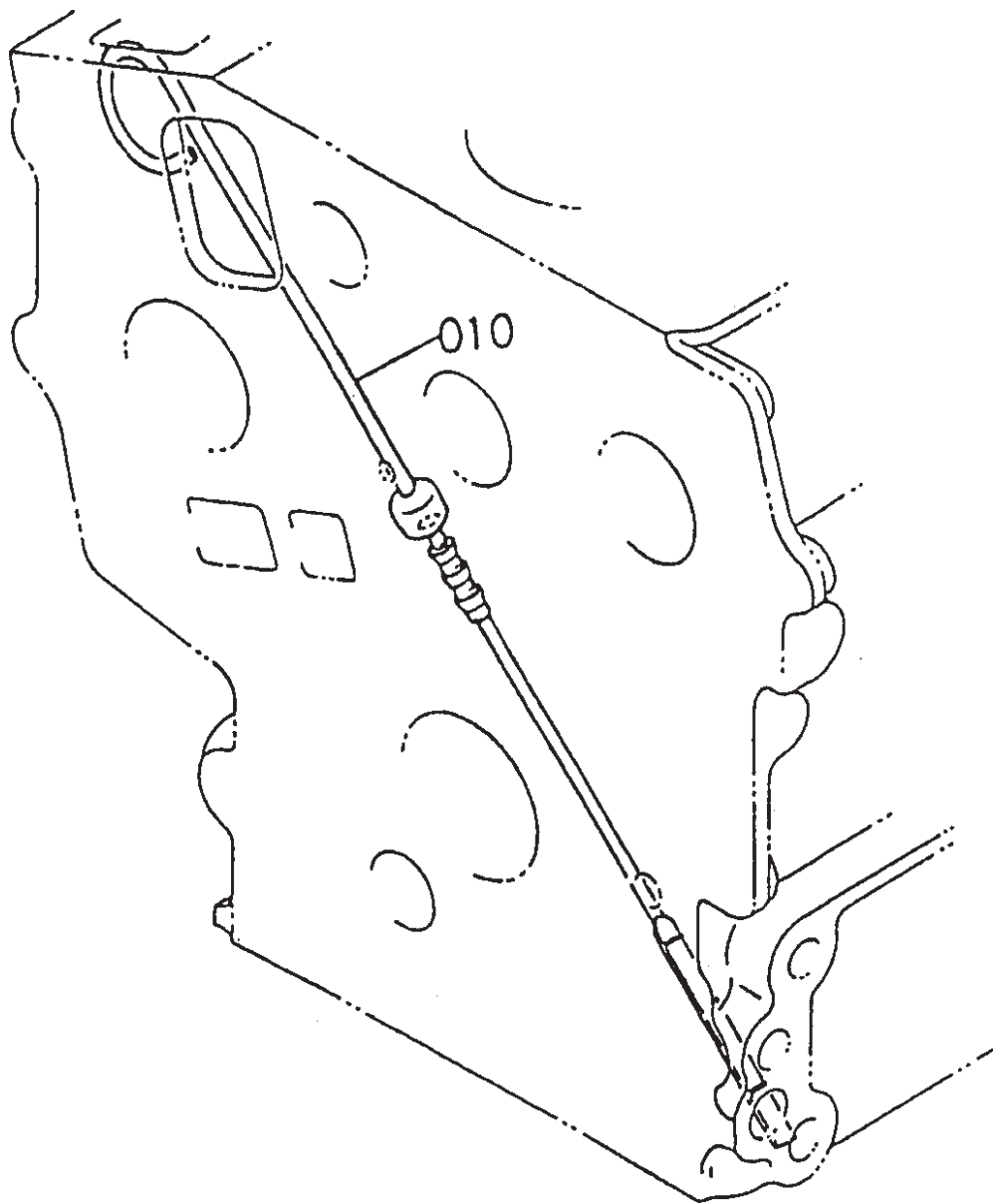


# KUBOTA D722EB —HEAD COVER ASSY.

HEAD COVER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1747214500	CYLINDER HEAD COVER ASSY...	1	INCLUDES ITEMS W/*
020*	1686114522	HEAD COVER GASKET .....	1	REPLACES 1686114520
030	1625905020	COMP. BREATHER	1	
040	1752405130	BREATHER GASKET	2	
050	0102350635	BOLT	2	
060	1584105670	BREATHER ELEMENT	1	
070	1747214490	PLATE	1	
080	1584114620	CAP NUT	3	
090	1560196650	GASKET	3	
100	1747205510	BREATHER PIPE	1	
110	1624133510	PIPE BAND	2	
120	1585233140	OIL FILLER PLUG	1	
130	0481150300	O RING	1	
140	1668987110	ENGINE NAME PLATE	1	

DIPSTICK ASSY.





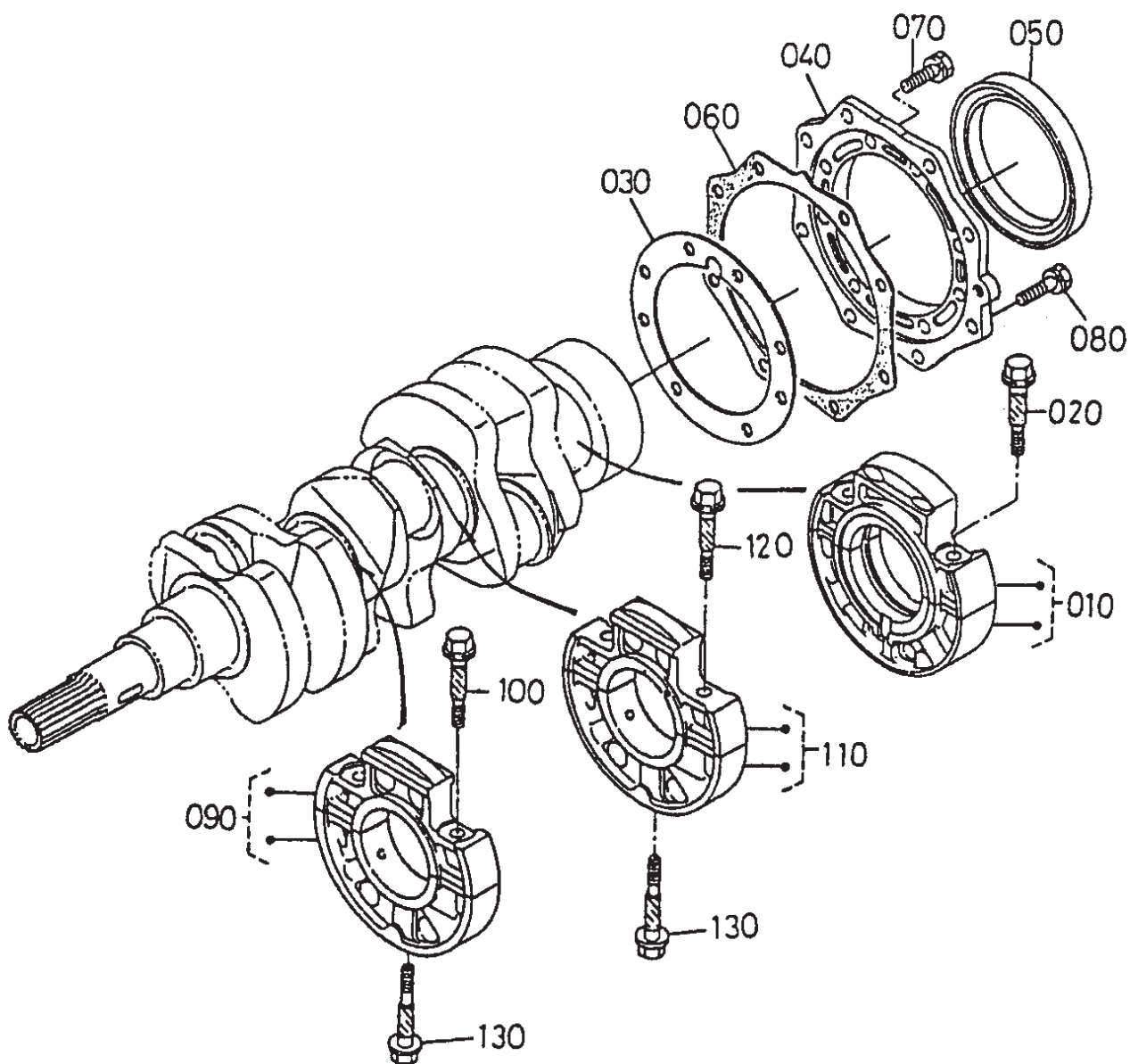
# KUBOTA D722EB —DIPSTICK ASSY.

DIPSTICK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1747236412	OIL GAUGE	1	

# KUBOTA D722EB---MAIN BEARING CASE ASSY.

MAIN BEARING CASE ASSY.



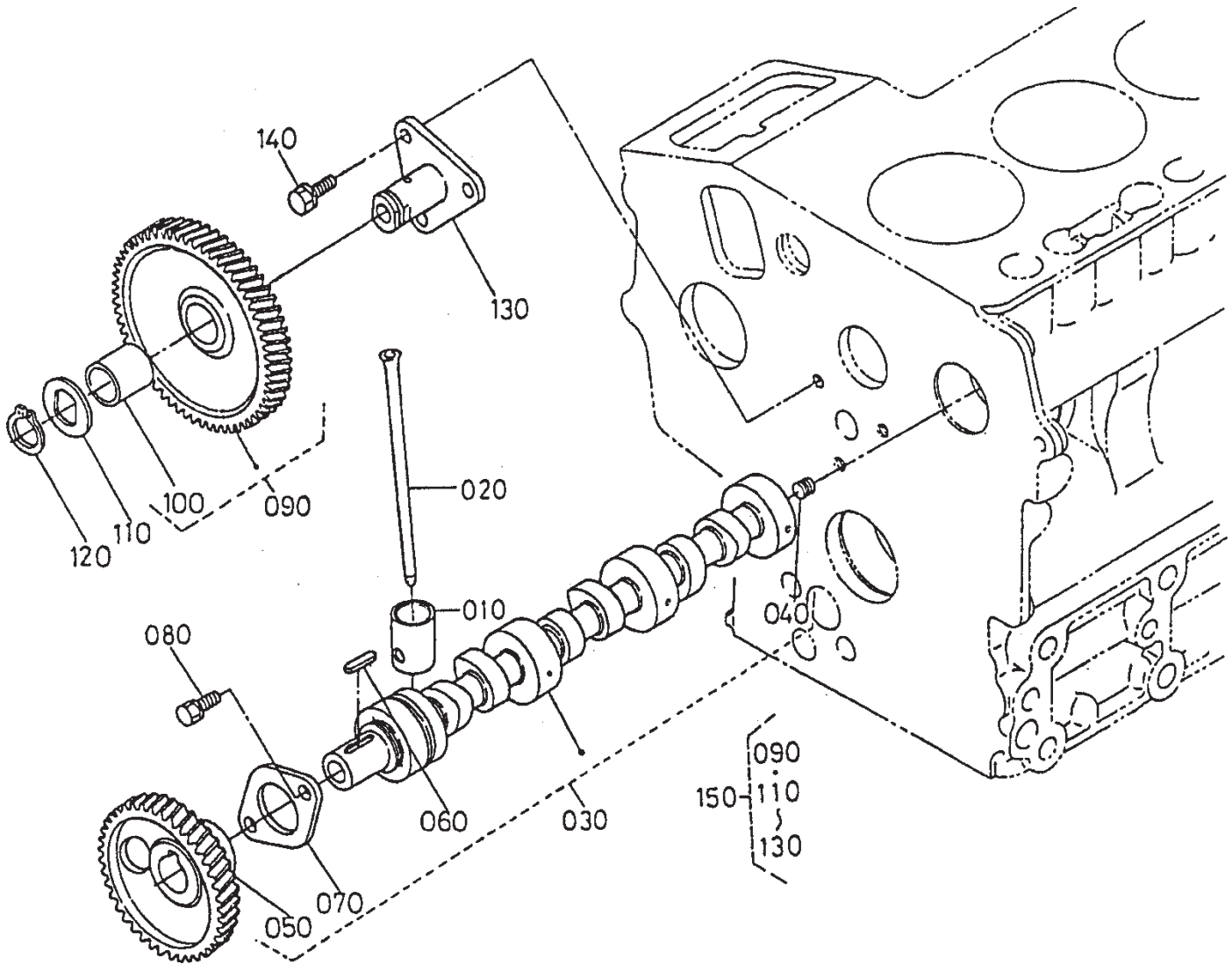
# KUBOTA D722EB —MAIN BEARING CASE ASSY.

## MAIN BEARING CASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1685104090	MAIN BEARING CASE ASSY.	1	
020	1584104540	BEARING CASE BOLT	2	
030	1585204360	BEARING CASE GASKET	1	
040	1584104810	BEARING CASE COVER	1	
050	1921599160	OIL SEAL	1	
060	1586204820	BEARING. CASE COVER GASKET	1	
070	0102350620	BOLT	8	
080	0102350622	BOLT	8	
090	1685104040	MAIN BEARING CASE ASSY.	1	
100	1584104540	BEARING CASE BOLT	2	
110	1686104050	MAIN BEARING CASE ASSY.	1	
120	1584104540	BEARING CASE BOLT	2	
130	1584104562	BEARING CASE BOLT	2	

# KUBOTA D722EB —CAMSHAFT ASSY.

CAMSHAFT ASSY.



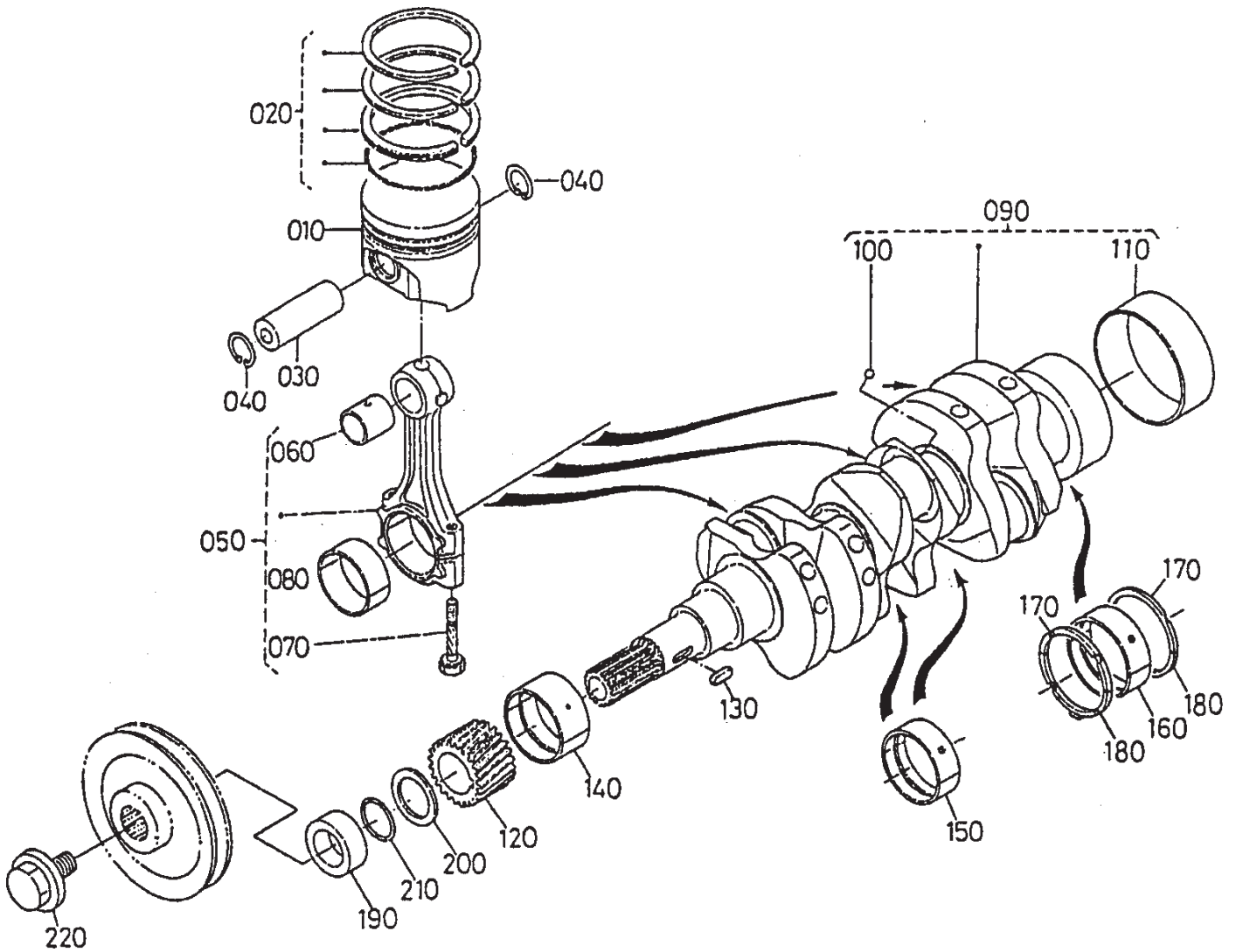
# KUBOTA D722EB —CAMSHAFT ASSY.

## CAMSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1685115550	TAPPET	6	
020	1685115110	PUSH ROD	6	
030	1686416010	CAMSHAFT ASSY. ....	1	INCLUDES ITEMS W#
040#	1552193610	SET SCREW	1	
050#	1686416510	CAM GEAR	1	
060#	0571200518	FEATHER KEY	1	
070#	1584116270	CAMSHAFT STOPPER	1	
080	0102350612	BOLT	2	
090*	1587524013	IDLE GEAR COMP. ....	1	INCLUDES ITEMS W/%
100%	1587524282	BUSH	1	
110*	1587524370	IDLE GEAR COLLAR	1	
120*	1587524320	SNAP RING	1	
130*	1587524250	IDLE GEAR SHAFT	1	
140	0102350614	BOLT	3	
150	1587599340	IDLE SERV GEAR ASSY. ....	1	INLCUDES ITEMS W/*

# KUBOTA D722EB —PISTON AND CRANKSHAFT ASSY.

## PISTON AND CRANKSHAFT ASSY.



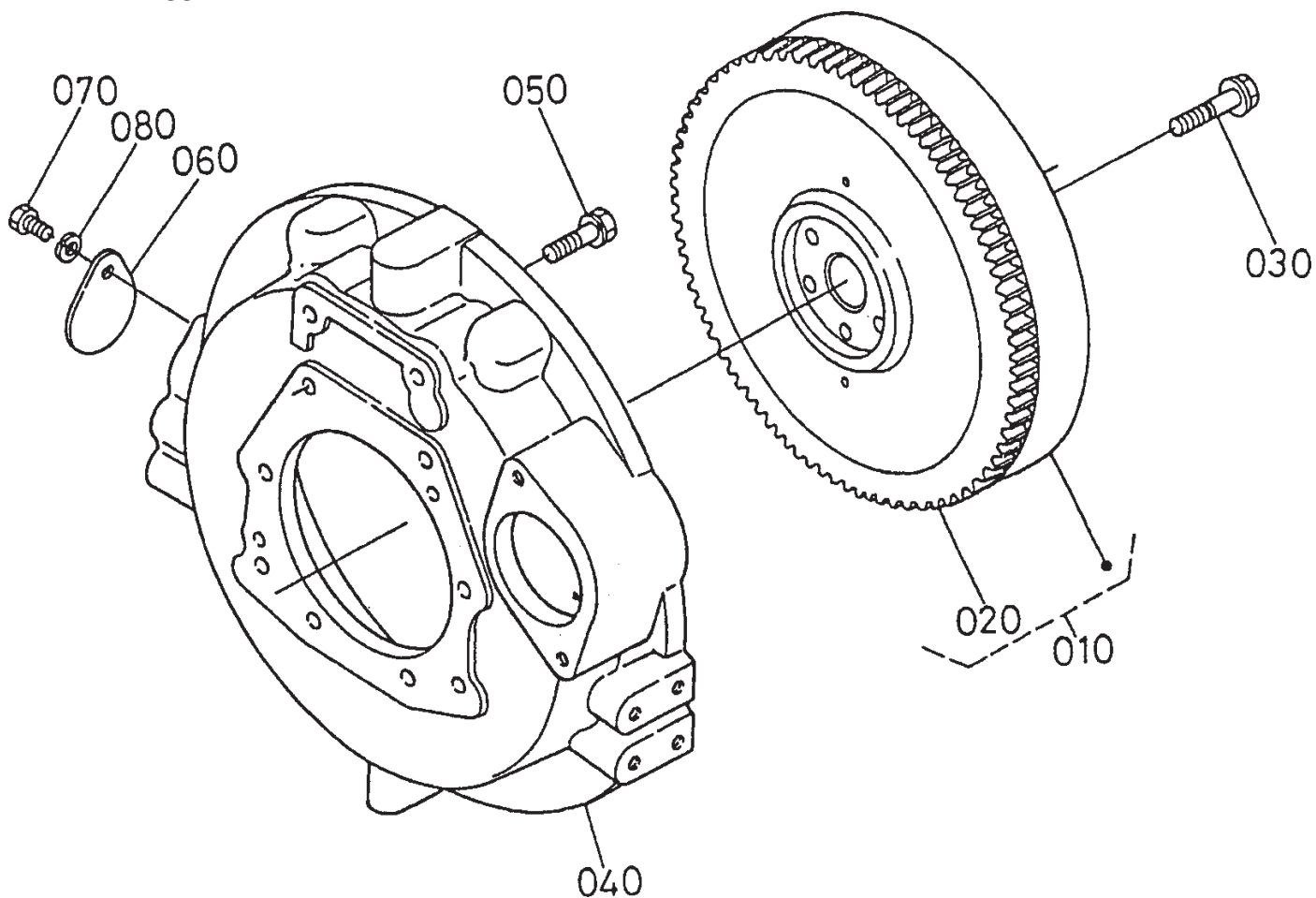
# KUBOTA D722EB —PISTON AND CRANKSHAFT ASSY.

## PISTON AND CRANKSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1685121112	PISTON .....	3 .....	STD
010	1685121900	PISTON .....	3 .....	+0.25MM
020	1685121052	PISTON RING ASSY. ....	3 .....	STD
020	1685121093	PISTON RING ASSY. ....	3 .....	+0.25MM
030	1685121310	PISTON RING	3	
040	1526121330	PISTON PIN CIRCULAR CLIP	6	
050	1685122010	CONNECTING ROC ASSY. ....	3 .....	INCLUDES ITEMS W/*
060*	1685121980	PISTON PIN BUSHING	3	
070*	1685122140	CONNECTING ROD BOLT	6	
080*	1685122320	METAL CRANKPIN M .....	3 .....	STD SET
080	1586122970	METAL CRANKPIN .....	3 .....	-0.20MM SET
080	1586122980	METAL CRANKPIN .....	3 .....	-0.40MM SET
090	1686323010	COMP. CRANKSHAFT .....	1 .....	INCLUDES ITEMS W#
100#	0771503207	BALL	3	
110#	192523280	CRANKSHAFT SLEEVE	1	
120	1584124110	CRANK GEAR	1	
130	0571200515	FEATHER KEY	1	
140	1586123470	METAL, CRANSHAFT .....	1 .....	STD
140	1586123910	METAL, CRANKSHAFT .....	1 .....	-0.20MM
140	1586123920	METAL, CRANKSHAFT .....	1 .....	-0.40MM
150	1686123490	METAL, CRANKSHAFT M .....	2 .....	STD SET
150	1586123860	METAL, CRANKSHAFT .....	2 .....	-0.20MM SET
150	1586123870	METAL, CRANKSHAFT .....	2 .....	-0.40MM SET
160	1686123480	METAL, CRANKSHAFT M .....	1 .....	STD SET
160	1569423930	METAL, CRANKSHAFT .....	1 .....	-0.20MM SET
160	1569423940	METAL, CRANKSHAFT .....	1 .....	-0.40MM SET
170	1526123530	SIDE METAL .....	2 .....	STD
170	1526123950	SIDE METAL .....	2 .....	+0.20MM
170	1526123960	SIDE METAL .....	2 .....	+0.40MM
180	1526122510	SIDE METAL .....	2 .....	STD
180	1526123970	SIDE METAL .....	2 .....	+0.20MM
180	1526123980	SIDE METAL .....	2 .....	+0.40MM
190	1584123250	COLLAR, CRANKSHAFT	1	
200	1588123310	OIL SLINGER	1	
210	0481116220	O RING	1	
220	1588191030	BOLT	1	

# KUBOTA D722EB — FLYWHEEL ASSY.

FLYWHEEL ASSY.





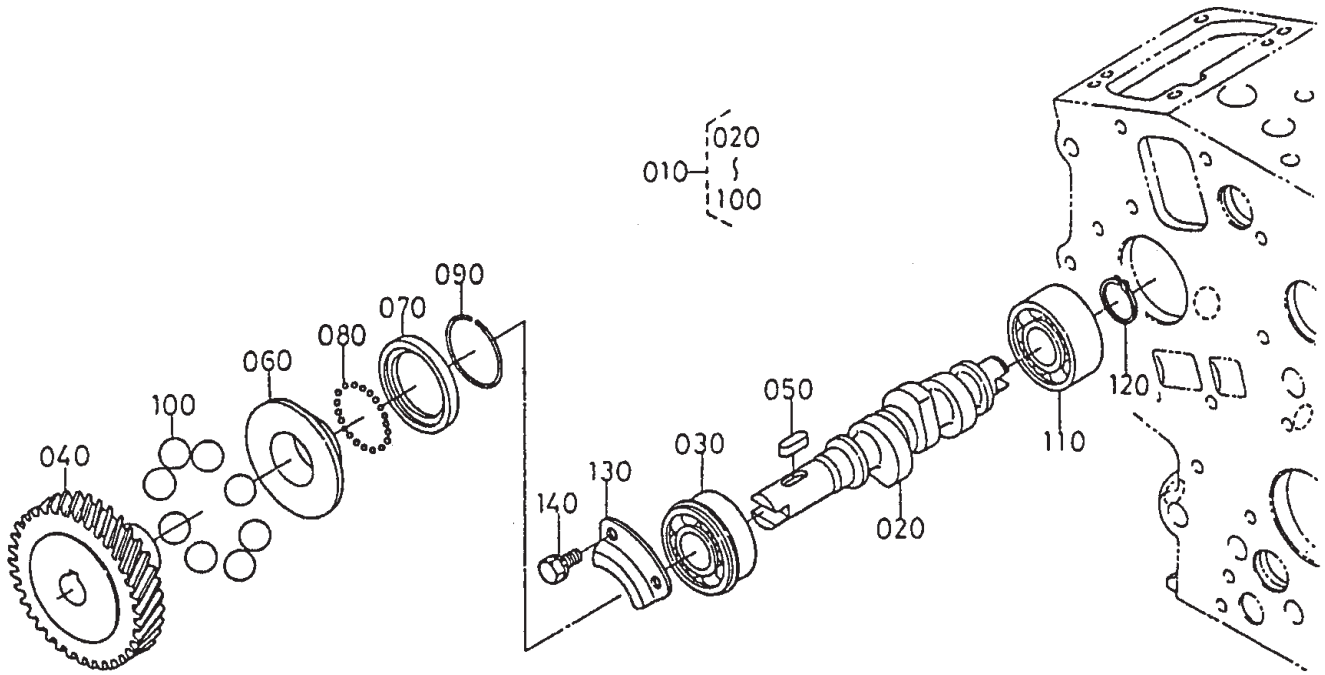
# KUBOTA D722EB —FLYWHEEL ASSY.

## FLYWHEEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1587825010	COMP. FLYWHEEL .....	1	INCLUDES ITEMS W/*
020*	1526263820	RING GEAR	1	
030	1553325162	FLYWHEEL BOLT .....	5	REPLACES 1553325160
040	1587804610	FLYWHEEL HOUSING	1	
050	011008020	BOLT .....	10	REPLACES 0112350822
060	3122014140	COVER	1	
070	0115350812	BOLT	1	
080	0451250080	LOCK WASHER .....	1	REPLACES 0451260080

# KUBOTA D722EB —FUEL CAMSHAFT ASSY.

FUEL CAMSHAFT ASSY.



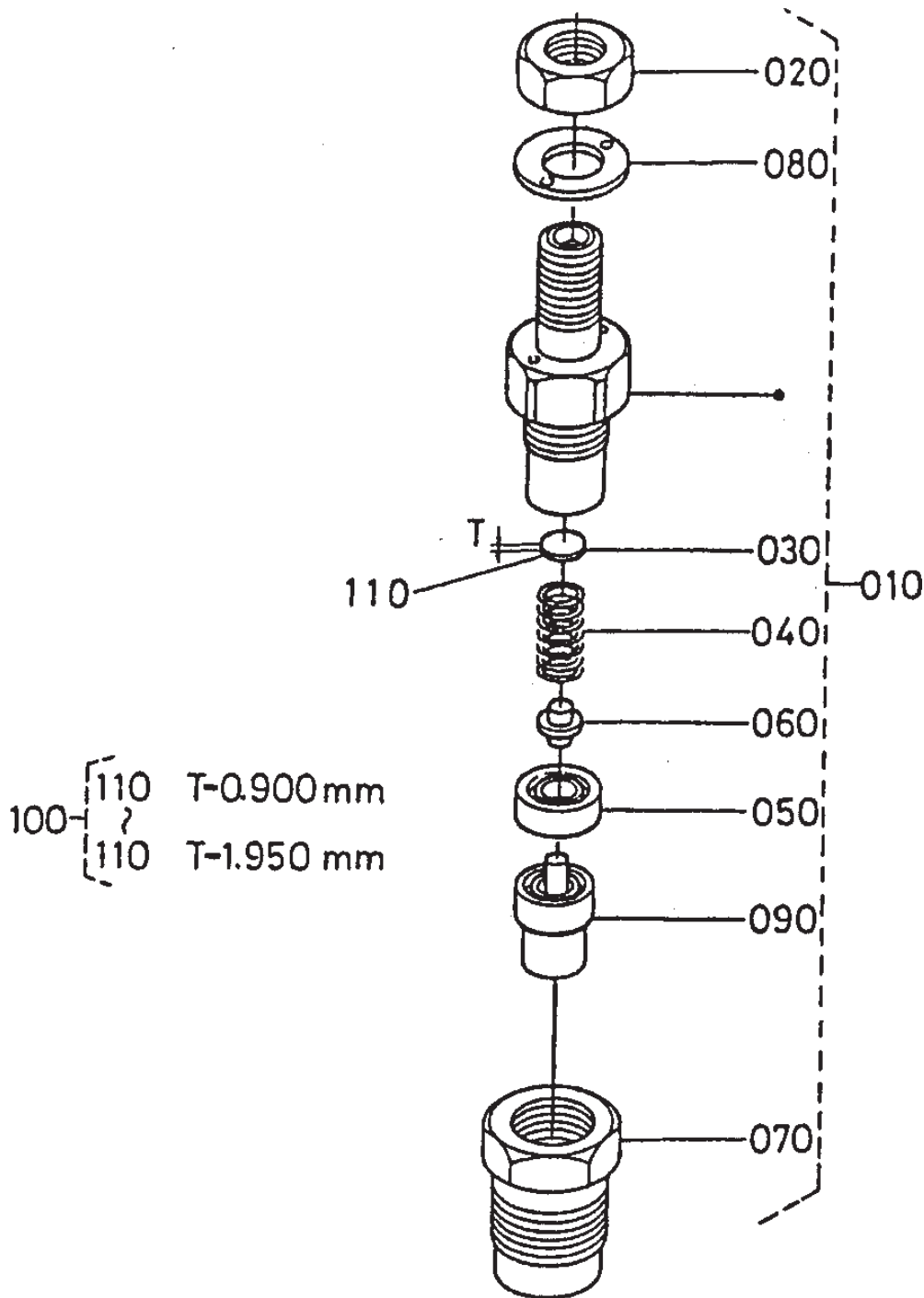
# KUBOTA D722EB —FUEL CAMSHAFT ASSY.

## FUEL CAMSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1686116020	FUEL CAMSHAFT ASSY. ....	1 .....	INCLUDES ITEMS W/*
020*	1587516170	FUEL CAMSHAFT	1	
030*	0815306203	BALL BEARING	1	
040*	1685151150	INJECTION PUMP GEAR	1	
050*	0571200515	FEATHER KEY	1	
060*	1584155450	GOVERNOR SLEEVE	1	
070*	1584155690	GOVERNOR BALL CASE	1	
080*	0771500801	BALL	32	
090*	1526155470	GOVERNOR SLEEVE CIR. CLIP	1	
100*	0771503217	BALL	8	
110	0810306203	BALL BEARING	1	
120	0461200170	EXTERNAL CIR. CLIP	1	
130	1584116320	FUEL CAMSHAFT STOPPER	1	
140	0102350612	BOLT	2	

# KUBOTA D722EB —NOZZLE HOLDER COMP. ASSY.

NOZZLE HOLDER COMP. ASSY.



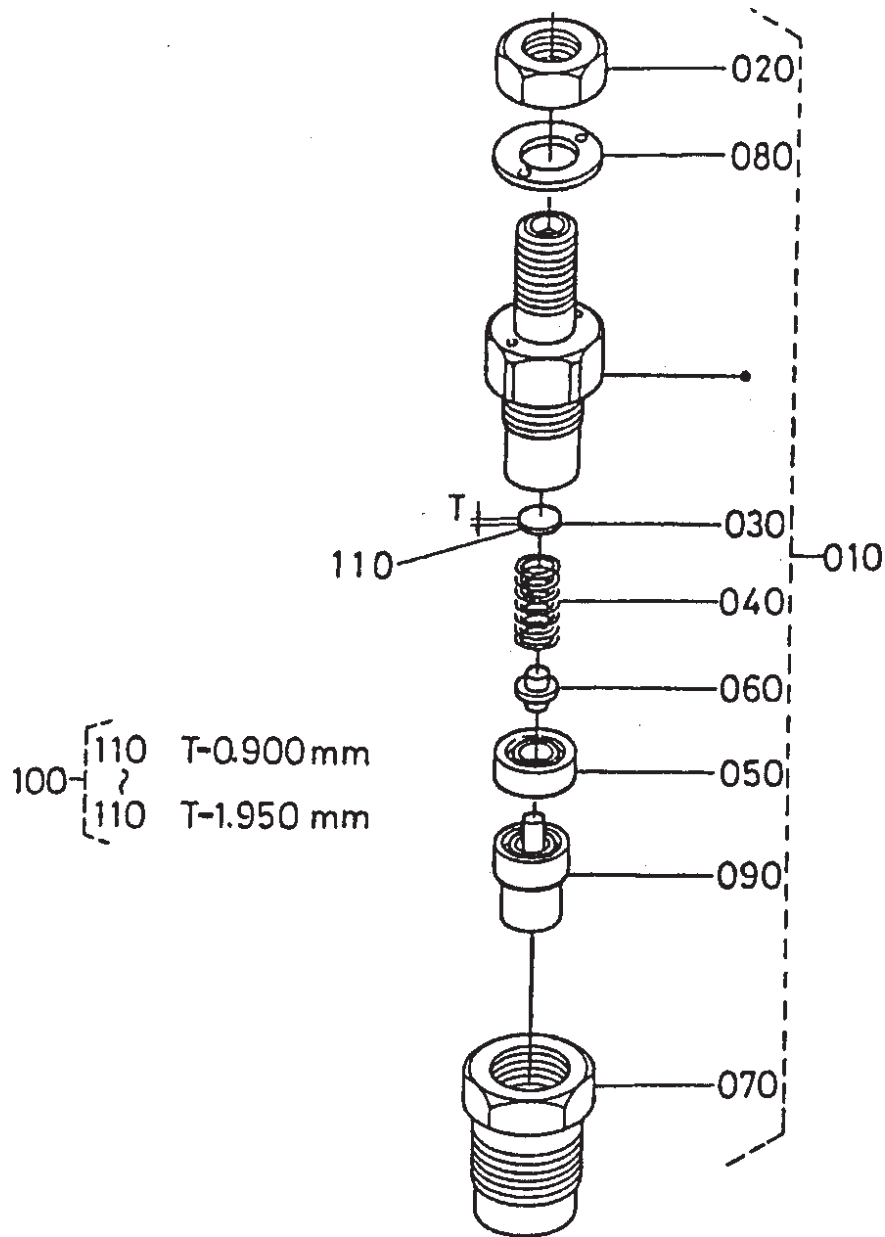
# KUBOTA D722EB —NOZZLE HOLDER COMP. ASSY.

## NOZZLE HOLDER COMP. ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1600153000	NOZZLE HOLDER ASSY.	3	INLCUDES ITEMS W/*
020*	1584192030	NUT	3	
030*	1584153230	ADJUSTING WASHER	3	
040*	1584153170	NOZZLE SPRING	3	
050*	1584153350	SPACER	3	
060*	1584153160	PUSH ROD	3	
070*	1685153280	NOZZLE NUT	3	
080*	1584194040	WASHER	3	
090*	1685153610	NOZZLE PIECE	3	
100	1584198100	ADJUSTING WASHER ASSY. ....	3	OPTION; INCLUDES ITEMS W/#
110#	1584153230	ADJUSTING WASHER .....	3	0.900MM
110#	1584198510	ADJUSTING WASHER .....	3	0.925MM
110#	1584198520	ADJUSTING WASHER .....	3	0.950MM
110#	1584198530	ADJUSTING WASHER .....	3	0.975MM
110#	1584198540	ADJUSTING WASHER .....	3	1.000MM
110#	1584198550	ADJUSTING WASHER .....	3	1.025MM
110#	1584198560	ADJUSTING WASHER .....	3	1.050MM
110#	1584198570	ADJUSTING WASHER .....	3	1.075MM
110#	1584198580	ADJUSTING WASHER .....	3	1.100MM
110#	1584198590	ADJUSTING WASHER .....	3	1.125MM
110#	1584198600	ADJUSTING WASHER .....	3	1.150MM
110#	1584198610	ADJUSTING WASHER .....	3	1.175MM
110#	1584198620	ADJUSTING WASHER .....	3	1.200MM
110#	1584198630	ADJUSTING WASHER .....	3	1.225MM
110#	1584198640	ADJUSTING WASHER .....	3	1.250MM
110#	1584198650	ADJUSTING WASHER .....	3	1.275MM
110#	1584198660	ADJUSTING WASHER .....	3	1.300MM
110#	1584198670	ADJUSTING WASHER .....	3	1.325MM
110#	1584198680	ADJUSTING WASHER .....	3	1.350MM
110#	1584198690	ADJUSTING WASHER .....	3	1.375MM
110#	1584198700	ADJUSTING WASHER .....	3	1.400MM
110#	1584198710	ADJUSTING WASHER .....	3	1.425MM
110#	1584198720	ADJUSTING WASHER .....	3	1.450MM
110#	1584198730	ADJUSTING WASHER .....	3	1.475MM
110#	1584198740	ADJUSTING WASHER .....	3	1.500MM
110#	1584198750	ADJUSTING WASHER .....	3	1.525MM
110#	1584198760	ADJUSTING WASHER .....	3	1.550MM

# KUBOTA D722EB —NOZZLE HOLDER COMP. ASSY.

NOZZLE HOLDER COMP. ASSY.



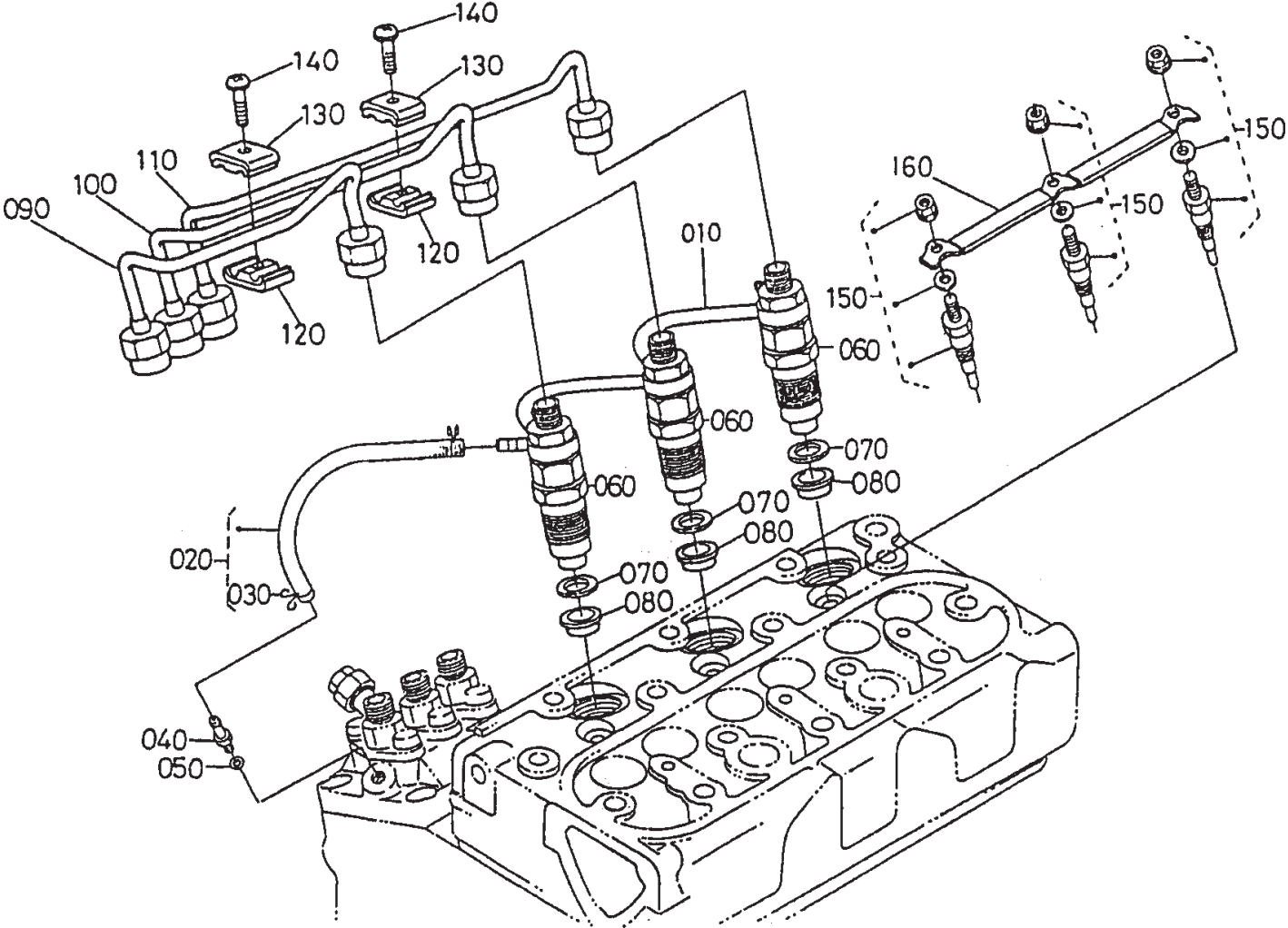
# KUBOTA D722EB —NOZZLE HOLDER COMP. ASSY.

## NOZZLE HOLDER COMP. ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
110#	1584198770	ADJUSTING WASHER .....	3 .....	1.575MM
110#	1584198780	ADJUSTING WASHER .....	3 .....	1.600MM
110#	1584198790	ADJUSTING WASHER .....	3 .....	1.625MM
110#	1584198800	ADJUSTING WASHER .....	3 .....	1.650MM
110#	1584198810	ADJUSTING WASHER .....	3 .....	1.675MM
110#	1584198820	ADJUSTING WASHER .....	3 .....	1.700MM
110#	1584198830	ADJUSTING WASHER .....	3 .....	1.725MM
110#	1584198840	ADJUSTING WASHER .....	3 .....	1.750MM
110#	1584198850	ADJUSTING WASHER .....	3 .....	1.775MM
110#	1584198860	ADJUSTING WASHER .....	3 .....	1.800MM
110#	1584198870	ADJUSTING WASHER .....	3 .....	1.825MM
110#	1584198880	ADJUSTING WASHER .....	3 .....	1.850MM
110#	1584198890	ADJUSTING WASHER .....	3 .....	1.875MM
110#	1584198900	ADJUSTING WASHER .....	3 .....	1.900MM
110#	1584198910	ADJUSTING WASHER .....	3 .....	1.925MM
110#	1584198920	ADJUSTING WASHER .....	3 .....	1.950MM

# KUBOTA D722EB ---NOZZLE HOLDER GLOW PLUG ASSY.

NOZZLE HOLDER GLOW PLUG ASSY.





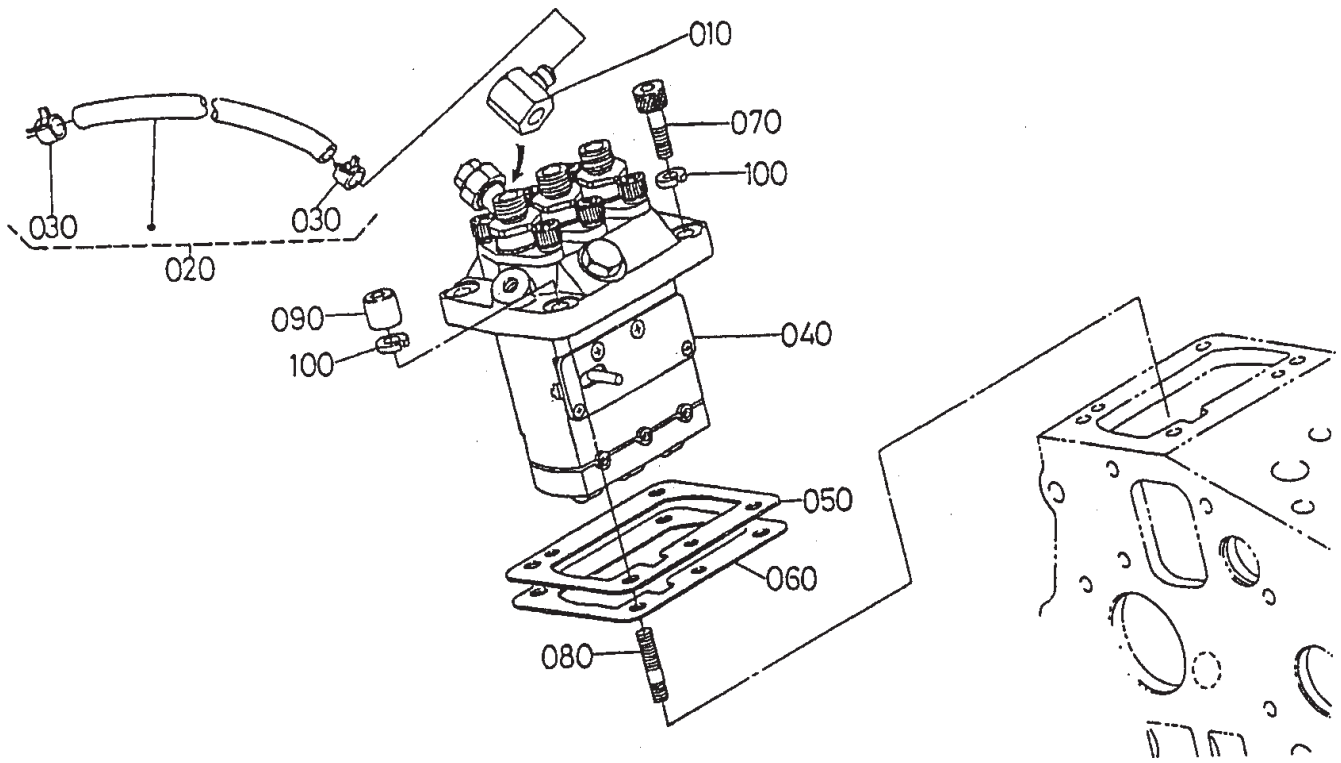
## KUBOTA D722EB —NOZZLE HOLDER GLOW PLUG ASSY.

### NOZZLE HOLDER GLOW PLUG ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1586242502	OVERFLOW PIPE ASSY.	1	
020	1584142500	OVERFLOW PIPE ASSY. ....	1	Ø4xØ8X 135L; INCLUDES ITEMS W/*
030*	1024442320	PIPE CLIP .....	2	REPLACES 1497142750
040	1584151360	AIR BLEEDER SCREW	1	
050	1560196650	GASKET	1	
060	1600153000	NOZZLE HOLDER ASSY.	3	
070	1584153622	GASKET .....	3	REPLACES 1584153620
080	1907753650	HEAT SEAL	3	
090	1685153712	INJECTION PIPE	1	
100	1685153722	INJECTION PIPE	1	
110	1686153732	INJECTION PIPE	1	
120	1584153850	PIPE CLAMP	2	
130	1584153860	PIPE CLAMP	2	
140	0302450520	WASHER AND SCREW	2	
150	1685165512	GLOW PLUG .....	3	REPLACES 1685165510
160	1686165560	GLOW PLUG CORD	1	

# KUBOTA D722EB —INJECTION PUMP ASSY.

INJECTION PUMP ASSY.



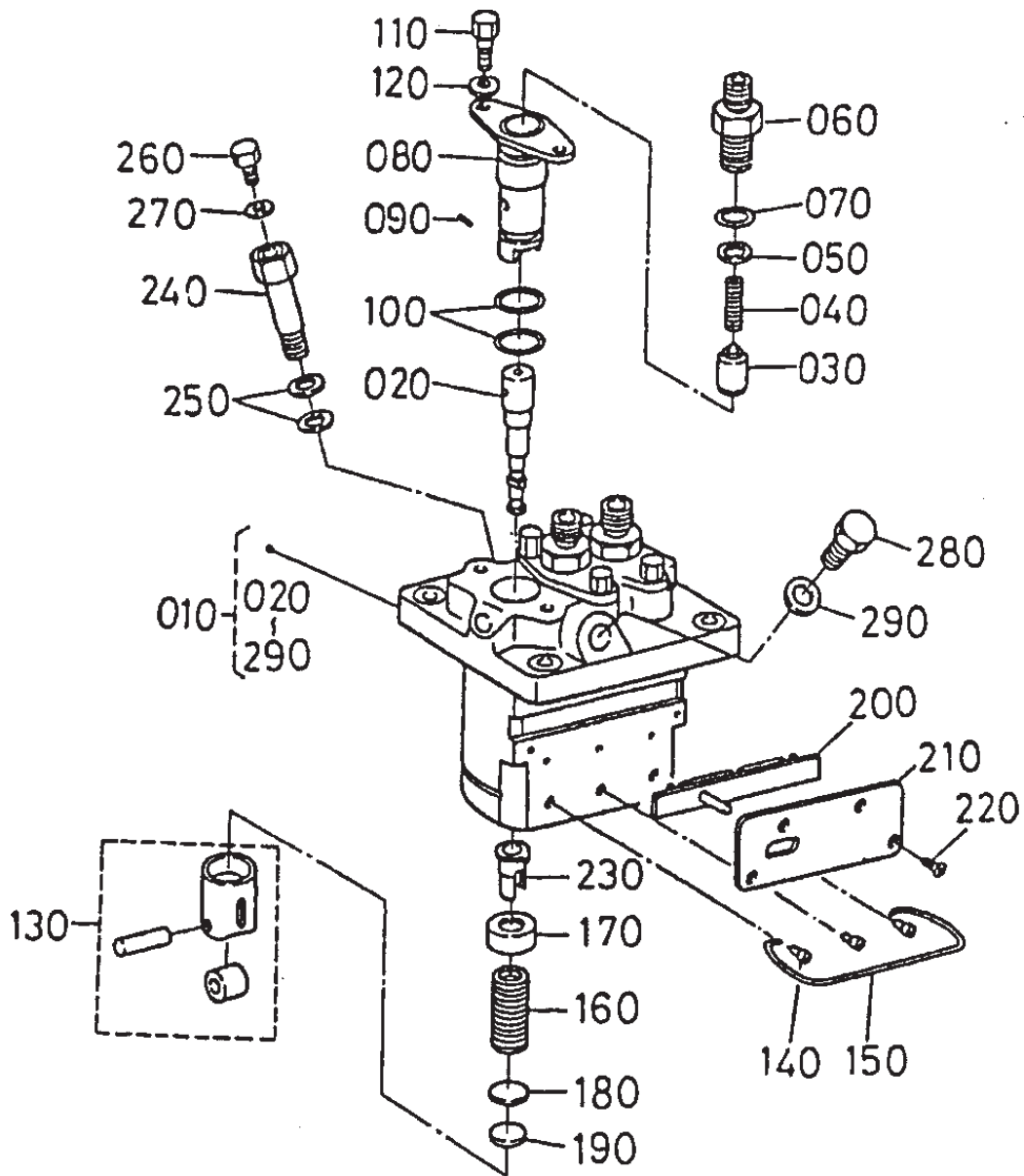
# KUBOTA D722EB —INJECTION PUMP ASSY.

INJECTION PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1584195680	EYE JOINT	1	
020	1526142010	FUEL PIPE ASSY., Ø8 X Ø13X175L ...	1	INCLUDES ITEMS W/*
030*	1624142750	PIPE BAND	2	
040	1600651010	INJECTION PUMP ASSY.	1	
050	1600652092	INJECTION SHIM .....	1	0.20MM
050	1600652122	INJECTION SHIM .....	1	0.25MM
060	1600652122	INJECTION SHIM .....	1	0.30MM
070	0131110620	HEX. SOCKET HEAD BOLT	2	
080	1584191500	STUD	2	
090	1584192320	CAP NUT	2	
100	0451260060	LOCK WASHER	4	

# KUBOTA D722EB —INJECTION PUMP COMP. ASSY.

INJECTION PUMP COMP. ASSY.



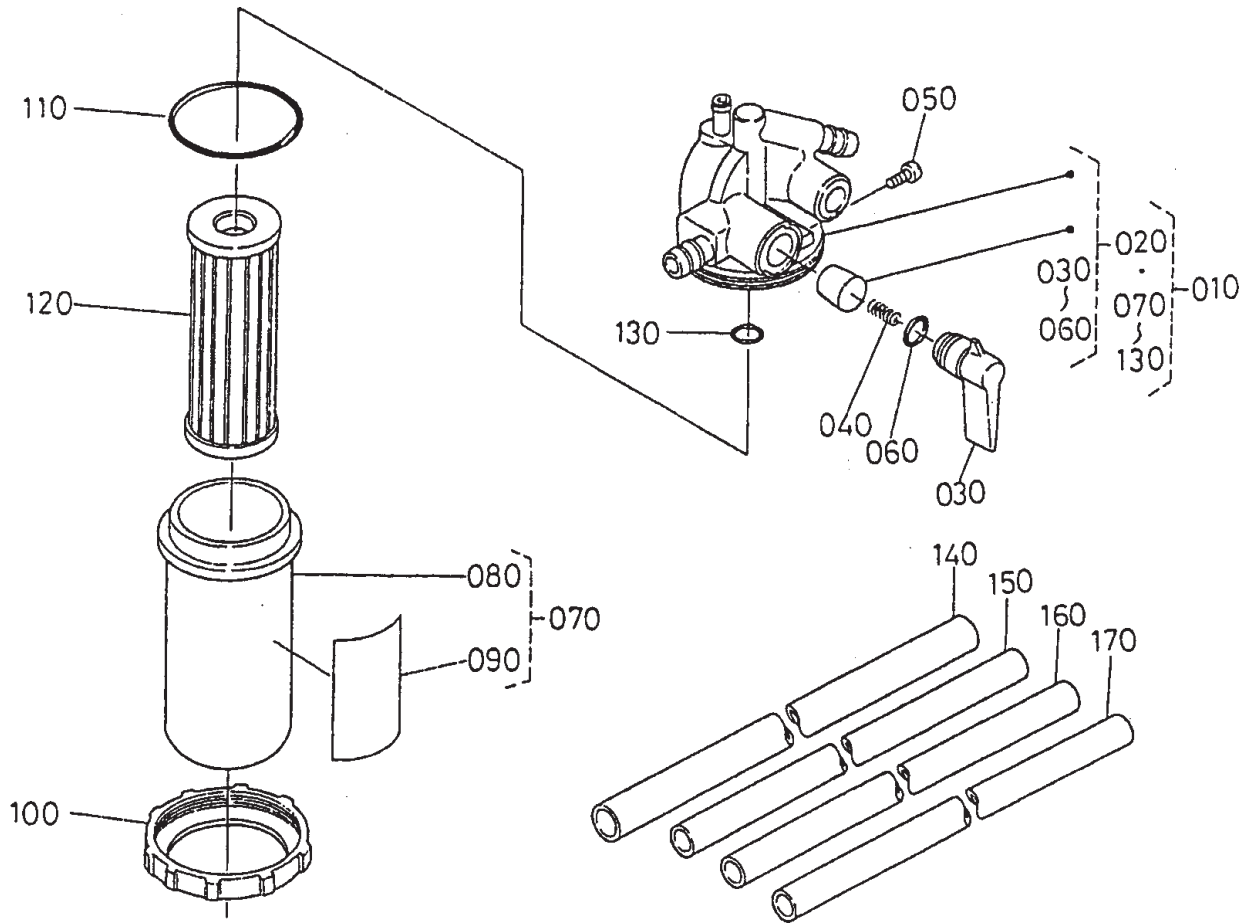
# KUBOTA D722EB —INJECTION PUMP COMP. ASSY.

## INJECTION PUMP COMP. ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1600651010	INJECTION PUMP ASSY. ....	1 .....	INCLUDES ITEMS W/*
020*	1685151050	PUMP PLUNGER	3	
030*	1584151030	DELIVERY VALVE	3	
040*	1584151230	DELIVER VALVE SPRING	3	
050*	1584151240	DELIVERY VALVE GASKET	3	
060*	1685151220	DELIVERY VALVE HOLDER	3	
070*	1584196760	O RING	3	
080*	1584151560	SLEEVE FLANGE	3	
090*	1584194570	JOINT PIN	3	
100*	1584151200	O RING	6	
110*	1586291430	SCREW	6	
120*	1585251470	WASHER	6	
130*	1584151070	TAPPET ASSY.	3	
140*	1584151250	TAPPET GUIDE PIN	3	
150*	1586151430	CLAMP PIN	1	
160*	1584151280	PLUNGER SPRING	3	
170*	1584151270	SEAT SPRING, UPPER	3	
180*	1584151290	SEAT SPRING, LOWER	3	
190*	1584151490	SHIM	3	
200*	1586151060	CONTROL RACK	1	
210*	1586151540	PLATE	1	
220*	1584193110	CSK-HD SCREW	4	
230*	1584151380	CONTROL SLEEVE	3	
240*	1584151320	FOLLOW SCREW	1	
250*	1584196650	GASKET	2	
260*	1584151350	SCREW	1	
270*	1584196660	GASKET	1	
280*	1586191010	BOLT	1	
290*	1586196650	GASKET	1	

# KUBOTA D722EB — FUEL FILTER ASSY.

FUEL FILTER ASSY.



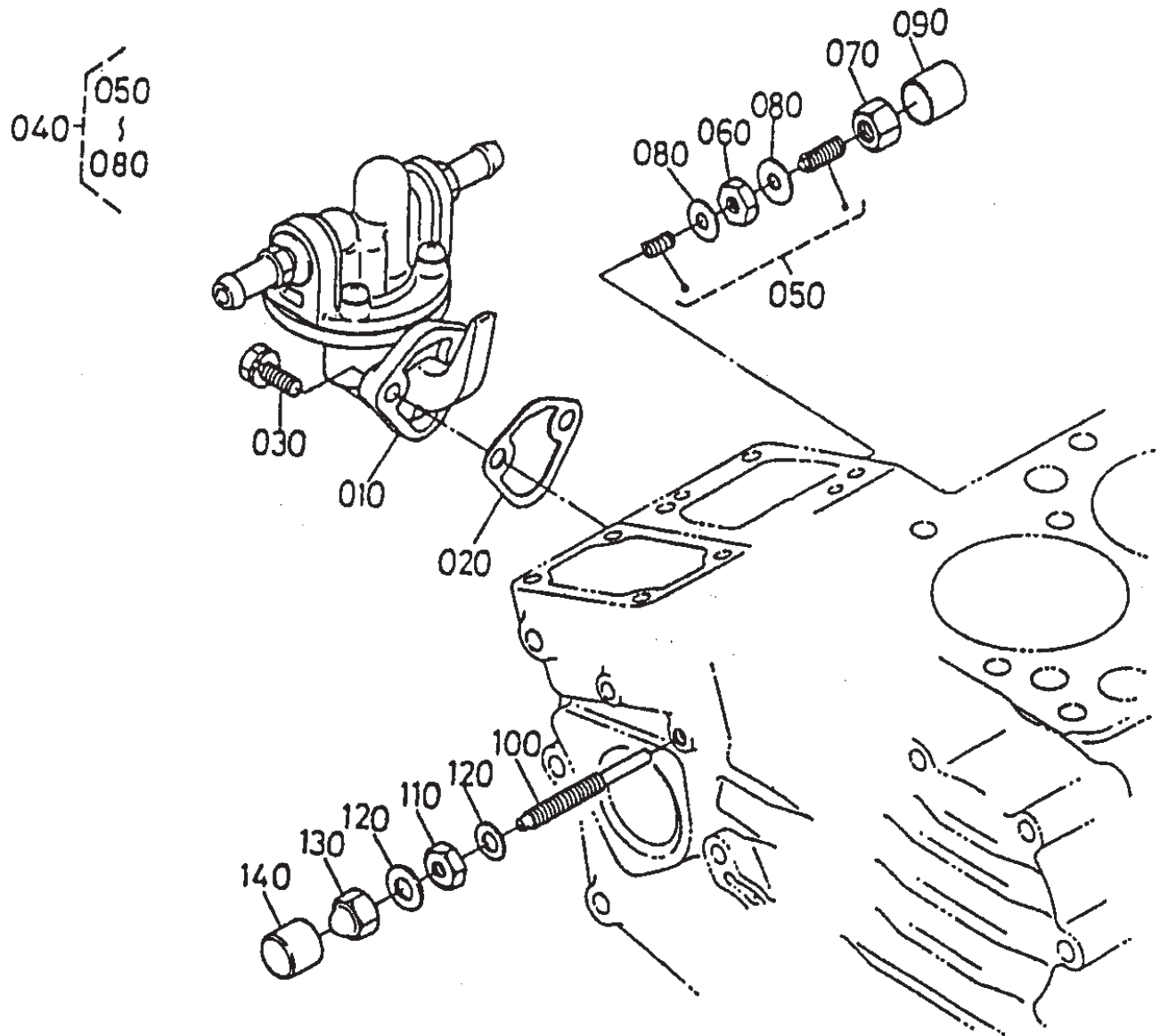
# KUBOTA D722EB —FUEL FILTER ASSY.

## FUEL FILTER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1575143010	FUEL FILTER ASSY. ....	1 .....	INCLUDES ITEMS W/*
020*	1553143110	COMP. COCK BODY .....	1 .....	INCLUDES ITEMS W/#
030#	1430143522	COCK LEVER	1	
040#	1430143820	VALVE SPRING	1	
050#	1430143830	SET SCREW	1	
060#	1430143840	LEVER O RING	1	
070*	1539343100	FILTER CUP ASSY. ....	1 .....	INCLUDES ITEMS W/%
080*%	1539343580	FILTER CUP	1	
090*%	1687388430	FUEL LABEL	1	
100*	1430143590	RETAINING RING	1	
110*	1430143650	FILTER CUP O RING	1	
120*	1523143560	ELEMENT ASSY.	1	
130*	0481100100	FILTER O RING	1	
140	0966180350	FUEL HOSE .....	1 .....	Ø8 X Ø13X350L
150	0966140400	FUEL HOSE .....	1 .....	Ø4 X Ø8X400L
160	0966140300	FUEL HOSE .....	1 .....	Ø4 X Ø8X300L
170	0966180240	FUEL HOSE .....	1 .....	Ø8 X Ø13X240L

# KUBOTA D722EB —FUEL PUMP ASSY.

FUEL PUMP ASSY.





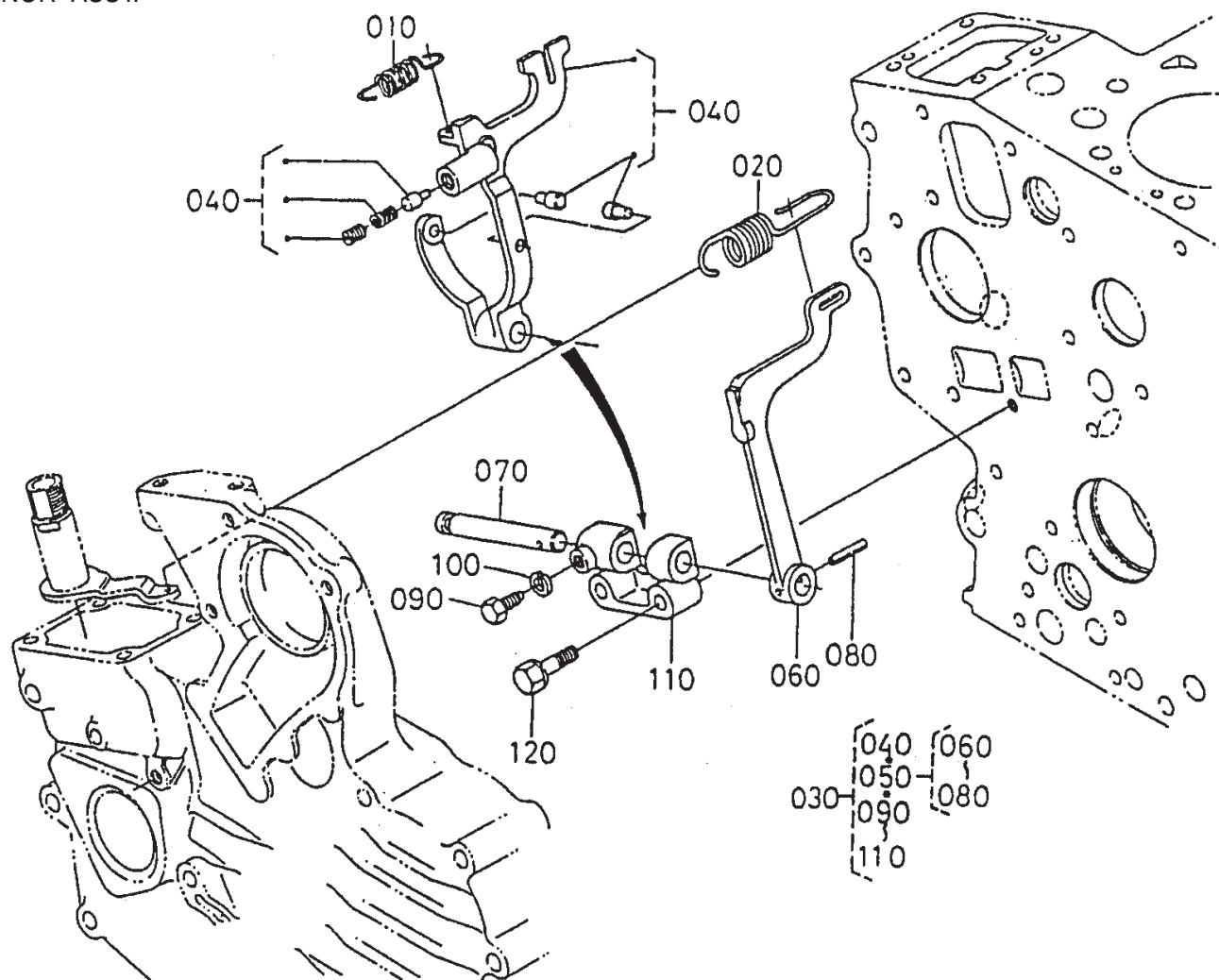
# KUBOTA D722EB —FUEL PUMP ASSY.

FUEL PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1582152030	FUEL PUMP ASSY. ....	1	REPLACES 1903552030
020	1626452140	FUEL PUMP GASKET	1	
030	0102350616	BOLT	2	
040	1584154092	IDLE APPARATUS ASSY. ....	1	INCLUDES ITEMS W/*
050*	1584154100	ADJUSTING BOLT ASSY. ....	1	INCLUDES ITEMS W/#
060*#	1526192020	NUT	1	
070*	1584154220	CAP NUT	1	
080*#	1502133660	GASKET	2	
090	1584154270	CAP	1	
100	1584154122	ADJUSTING BOLT	1	
110	1G03154210	NUT	1	
120	156019665	GASKET	2	
130	1584192330	CAP NUT	1	
140	1G02154290	PIPE	1	

# KUBOTA D722EB — GOVERNOR ASSY.

GOVERNOR ASSY.



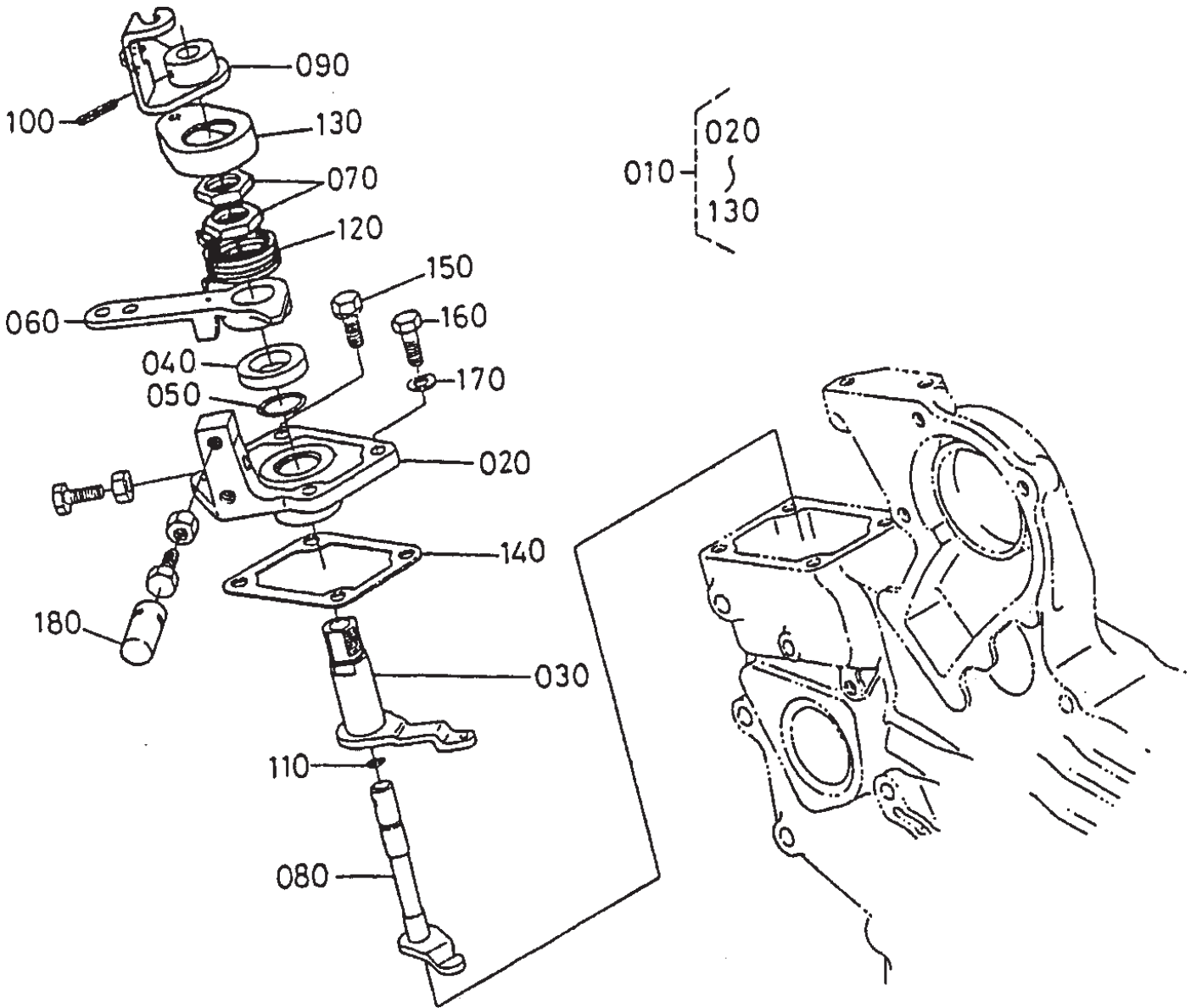
# KUBOTA D722EB —GOVERNOR ASSY.

GOVERNOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1584156480	START SPRING	1	
020	1946156410	GOVERNOR SPRING	1	
030	1600056050	FORK LEVER ASSY. ....	1	INCLUDES ITEMS W/*
040*	1600056040	FORK LEVER COMP.	1	
050*	1584156060	FORK LEVER ASSY. ....	1	INCLUDES ITEMS W/#
060#	1584156130	FORK LEVER	1	
070#	1584156150	FORK LEVER SHAFT	1	
080#	0541100318	SPRING PIN	1	
090*	1526166410	BOLT	1	
100*	0451250050	LOCK WASHER	1	
110*	1584156230	FORK LEVER HOLDER	1	
120	0102350635	BOLT	2	

# KUBOTA D722EB —SPEED CONTROL PLATE ASSY.

SPEED CONTROL PLATE ASSY.



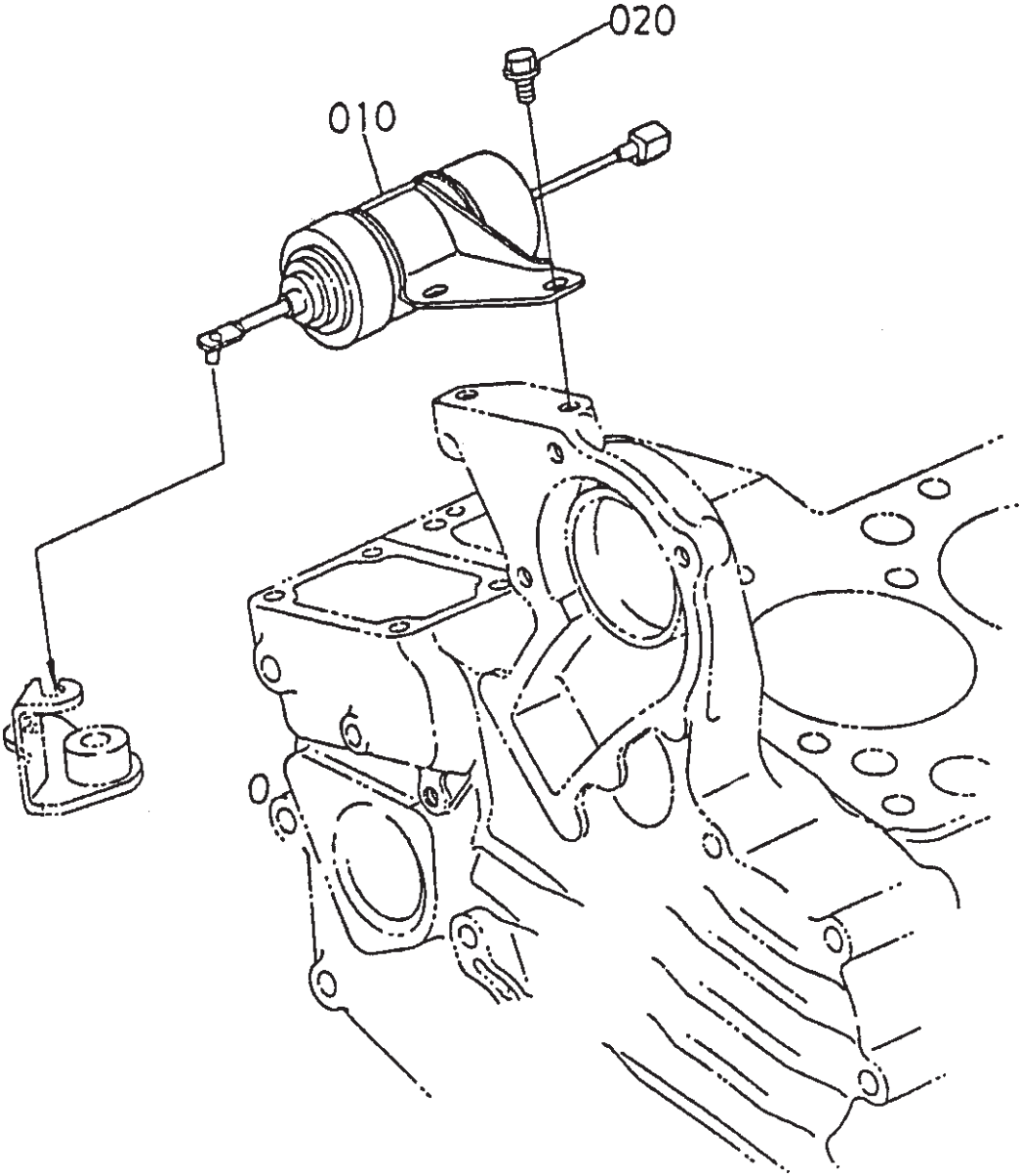
# KUBOTA D722EB—SPEED CONTROL PLATE ASSY.

SPEED CONTROL PLATE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1G30157000	SPEED CONTROL PLATE COMP.	1	INCLUDES ITEMS W/*
020*	1584157110	SPEED CONTROL PLATE	1	
030*	1584156110	GOVERNOR LEVER	1	
040*	1584157240	COLLAR	1	
050*	0481110160	O RING	1	
060*	166757150	SPEED CONTROL LEVER	1	
070*	1584192010	SPEED CONTROL NUT	2	
080*	1687857740	LEVER SHAFT	1	
090*	1685157720	ENGINE STOP LEVER	1	
100*	0541100318	SPRING PIN	1	
110*	0481110070	O RING	1	
120*	1687857920	RETURN SPRING	1	
130*	1686657300	CAP	1	
140	1586257210	GASKET	1	
150	0102350618	BOLT	2	
160	0105350618	BOLT	2	
170	1560196650	GASKET	2	
180	1G02154280	PIPE	1	

# KUBOTA D722EB —STOP SOLENOID ASSY.

STOP SOLENOID ASSY.



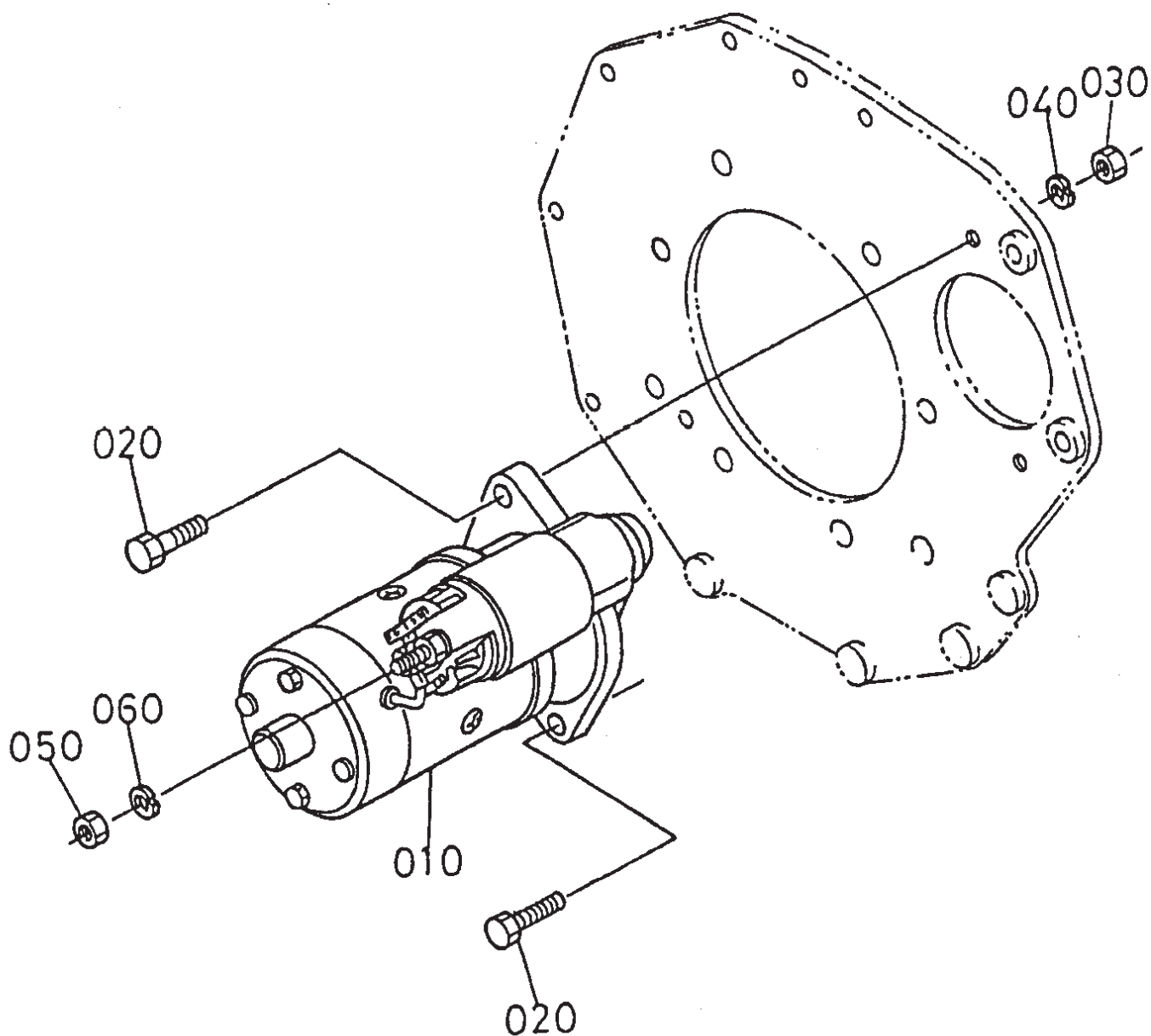
# KUBOTA D722EB —STOP SOLENOID ASSY.

STOP SOLENOID ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1685160010	STOP SOLENOID	1	
020	0175450612	FLANGE BOLT	2	

# KUBOTA D722EB —STARTER ASSY.

STARTER ASSY.





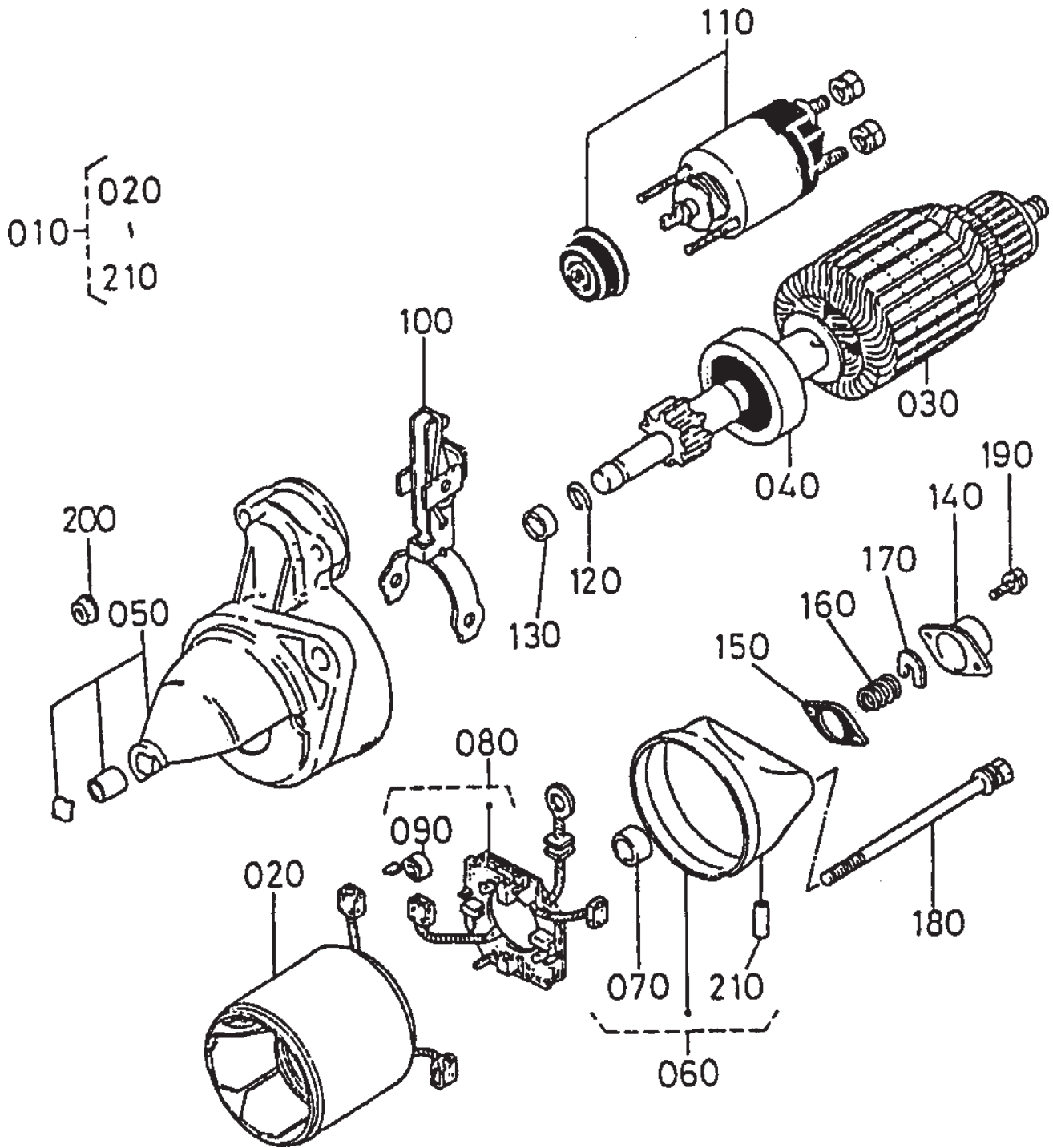
# KUBOTA D722EB —STARTER ASSY.

## STARTER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1523163015	STARTER ASSY.	1	
020	0115350825	BOLT	2	
030	025650080	NUT	2	
040	0451250080	LOCK WASHER .....	2 .....	REPLACES 0451260080
050	0211450080	NUT	1	
060	0451250080	LOCK WASHER .....	1 .....	REPLACES 0451260080

# KUBOTA D722EB —STARTER COMPONENT ASSY.

STARTER COMPONENT ASSY.



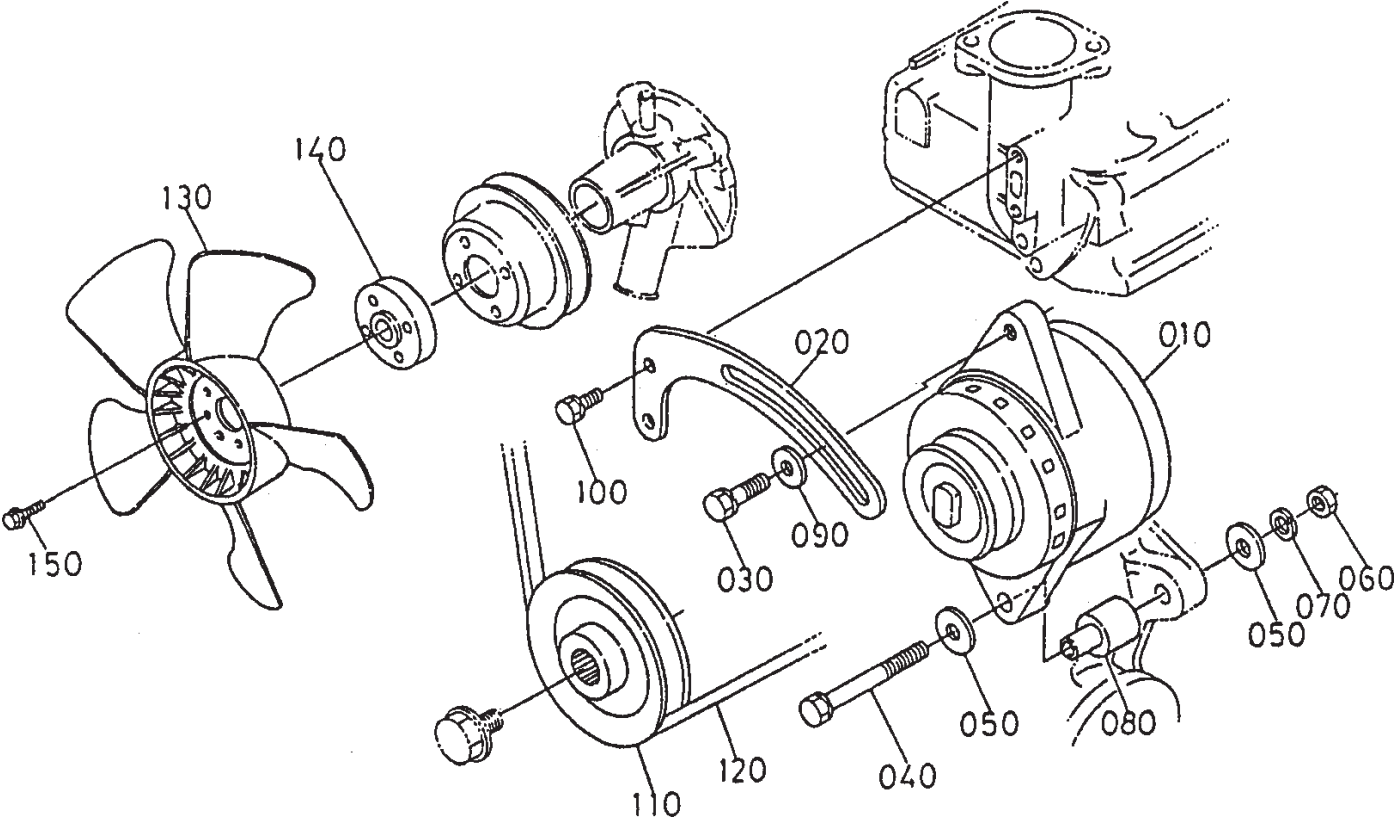
# KUBOTA D722EB —STARTER COMPONENT ASSY.

## STARTER COMPONENT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1523163015	STARTER ASSY. ....	1	INCLUDES ITEMS W/*
020*	1427863080	YOKE	1	
030*	1427863070	ARMATURE	1	
040*	1427863040	OVER RUNNING CLUTCH	1	
050*	1523163032	HOUSING ASSY.	1	
060*	1427863200	END FRAME ASSY. ....	1	INCLUDES ITEMS W/#
070*#	1427863250	BUSH	1	
080*	1427863380	BRUSH HOLDER ASSY. ....	1	INCLUDES ITEMS W/%
090*%	1427863390	BRUSH SPRING	4	
100*	1427863050	DRIVE LEVER	1	
110*	7000065425	MAGNETIC SWITCH .....	1	REPLACES 1523163022
120*	1522194820	SNAP PIN	1	
140*	1427863510	END FRAME CAP	1	
150*	1427863520	GASKET	1	
160*	1427863190	BRAKE SPRING	1	
170*	1427863180	BRAKE SHOE	1	
180*	1427863320	THROUGH BOLT	2	
190*	0302450414	WASHER AND SCREW	2	
200*	1427892010	NUT	2	
210*#	1427863570	BREATHER PIPE	1	

# KUBOTA D722EB —DYNAMO ASSY.

DYNAMO ASSY.



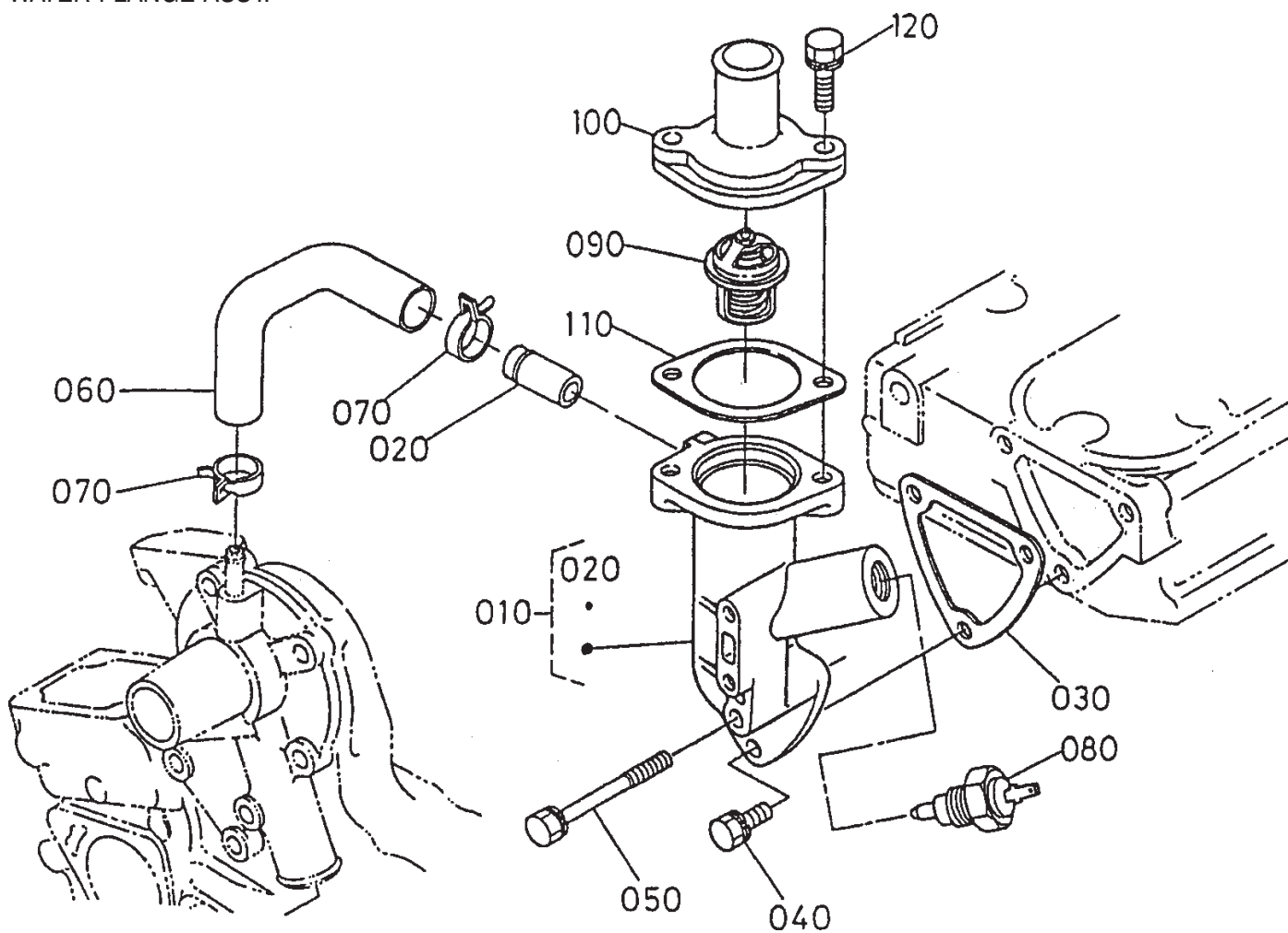
# KUBOTA D722EB —DYNAMO ASSY.

DYNAMO ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1747264010	DYNAMO ASSY.	1	
020	1747264420	DYNAMO STAY	1	
030	0112350825	BOLT	1	
040	0115350865	BOLT	1	
050	0401350080	PLAIN WASHER	2	
060	0215650080	NUT	1	
070	0451250080	LOCK WASHER .....	1	REPLACES 0451260080
080	1747264370	COLLAR	1	
090	0401560080	PLAIN WASHER	1	
100	0102350616	BOLT	2	
110	1587574280	FAN DRIVE PULLEY	1	
120	1747297010	V BELT .....	1	351N
130	1747274110	FAN	1	
140	1705374150	FAN COLLAR	1	
150	1720891040	FLANGE BOLT	4	

# KUBOTA D722EB —WATER FLANGE ASSY.

WATER FLANGE ASSY.



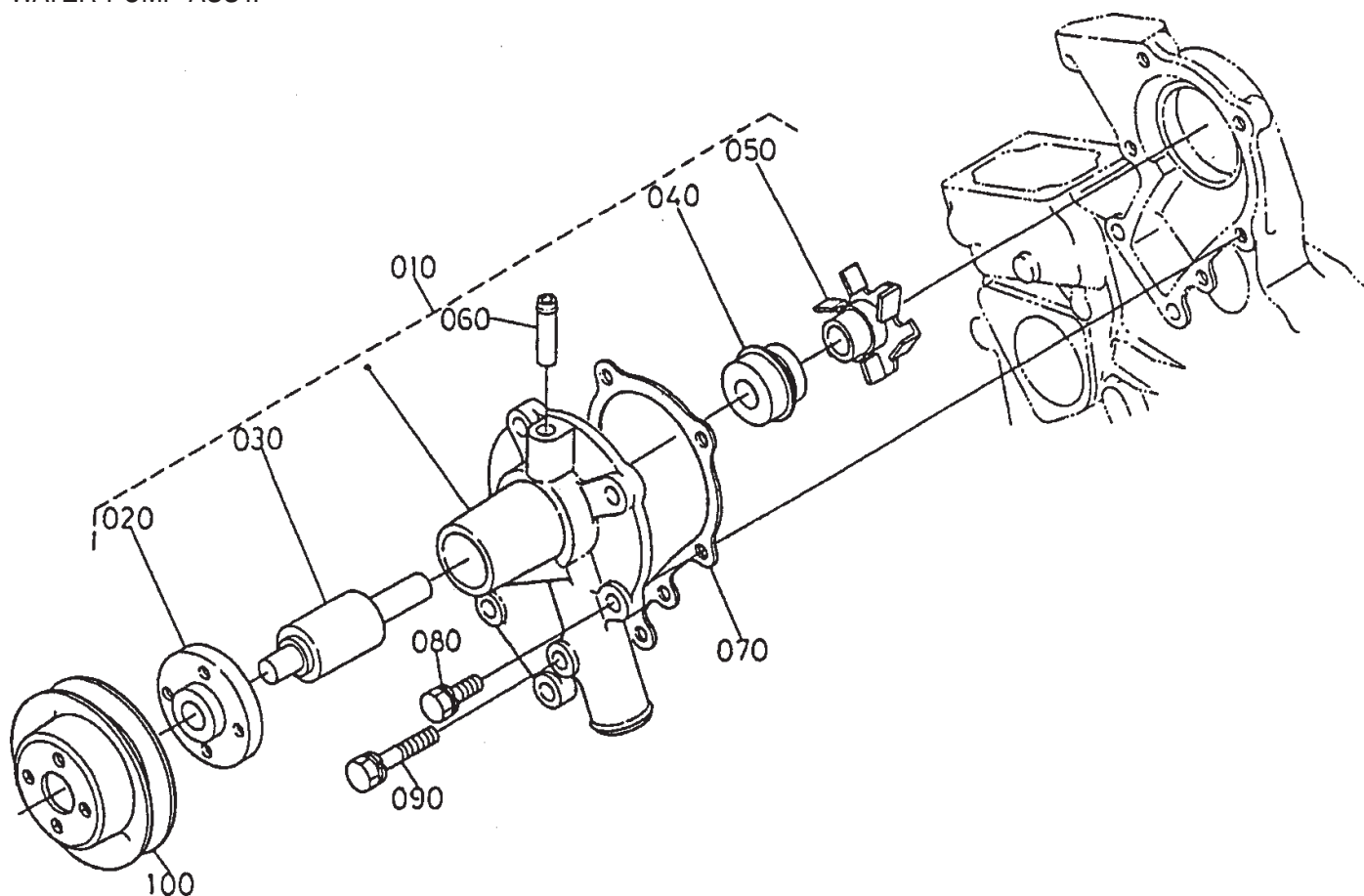
# KUBOTA D722EB —WATER FLANGE ASSY.

## WATER FLANGE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>Q TY.</u>	<u>REMARKS</u>
010	1687572700	WATER FLANGE COMP. ....	1 .....	INCLUDES ITEMS W/*
020*	1624173370	WATER RETURN PIPE	1	
030	1584172922	WATER FLANGE GASKET .....	1 .....	REPLACES 1586272920
040	0102350616	BOLT	2	
050	1588191020	BOLT	1	
060	1685173350	WATER RETURN PIPE	1	
070	1624173360	PIPE BAND	2	
080	1753883040	THERMOMETER SWITCH	1	
090	1920373010	THERMOSTAT ASSY.	1	
100	1584173260	THERMOSTAT COVER	1	
110	1567673270	THERMOSTAT GASKET	1	
120	0102350622	BOLT	2	

# KUBOTA D722EB —WATER PUMP ASSY.

WATER PUMP ASSY.





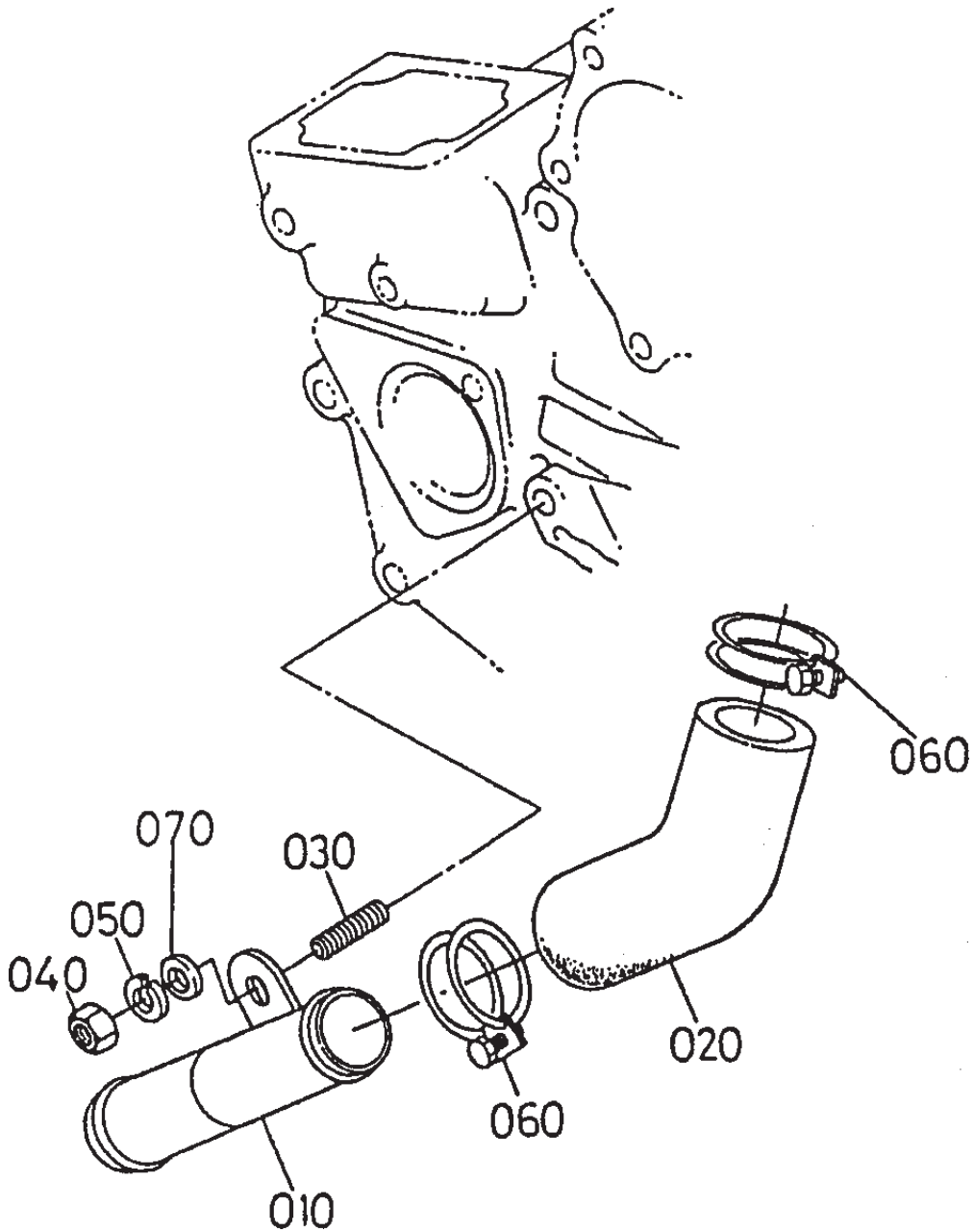
# KUBOTA D722EB —WATER PUMP ASSY.

## WATER PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1988373030	WATER PUMP ASSY. ....	1	INCLUDES ITEMS W/*
020*	1585273520	WATER PUMP FLANGE	1	
030*	1585273550	BEARING	1	
040*	1548173050	MECHANICAL SEAL ASSY.	1	
050*	1988373510	WATER PUMP IMPELLER	1	
060*	1585273340	WATER RETURN PIPE	1	
070	1588173432	WATER PUMP GASKET .....	1	REPLACES 1988373430
080	0102350622	BOLT	4	
090	0102350638	BOLT	1	
100	1584171250	FAN PULLEY	1	

# KUBOTA D722EB — WATER PIPE ASSY.

WATER PIPE ASSY.



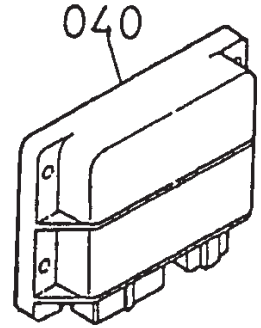
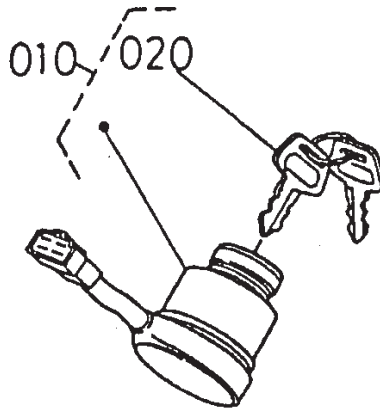
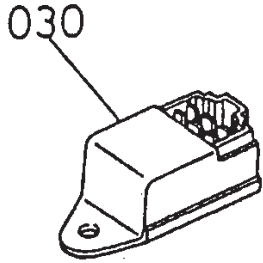
## KUBOTA D722EB —WATER PIPE ASSY.

### WATER PIPE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1584172860	WATER PIPE	1	
020	1588172870	WATER PIPE	1	
030	1584191510	STUD	1	
040	0205650060	NUT	1	
050	0451260060	LOCK WASHER	1	
060	0931889030	HOSE CLAMP	2	
070	0401250060	PLAIN WASHER	1	

# KUBOTA D722EB —STARTER SWITCH ASSY.

STARTER SWITCH ASSY.



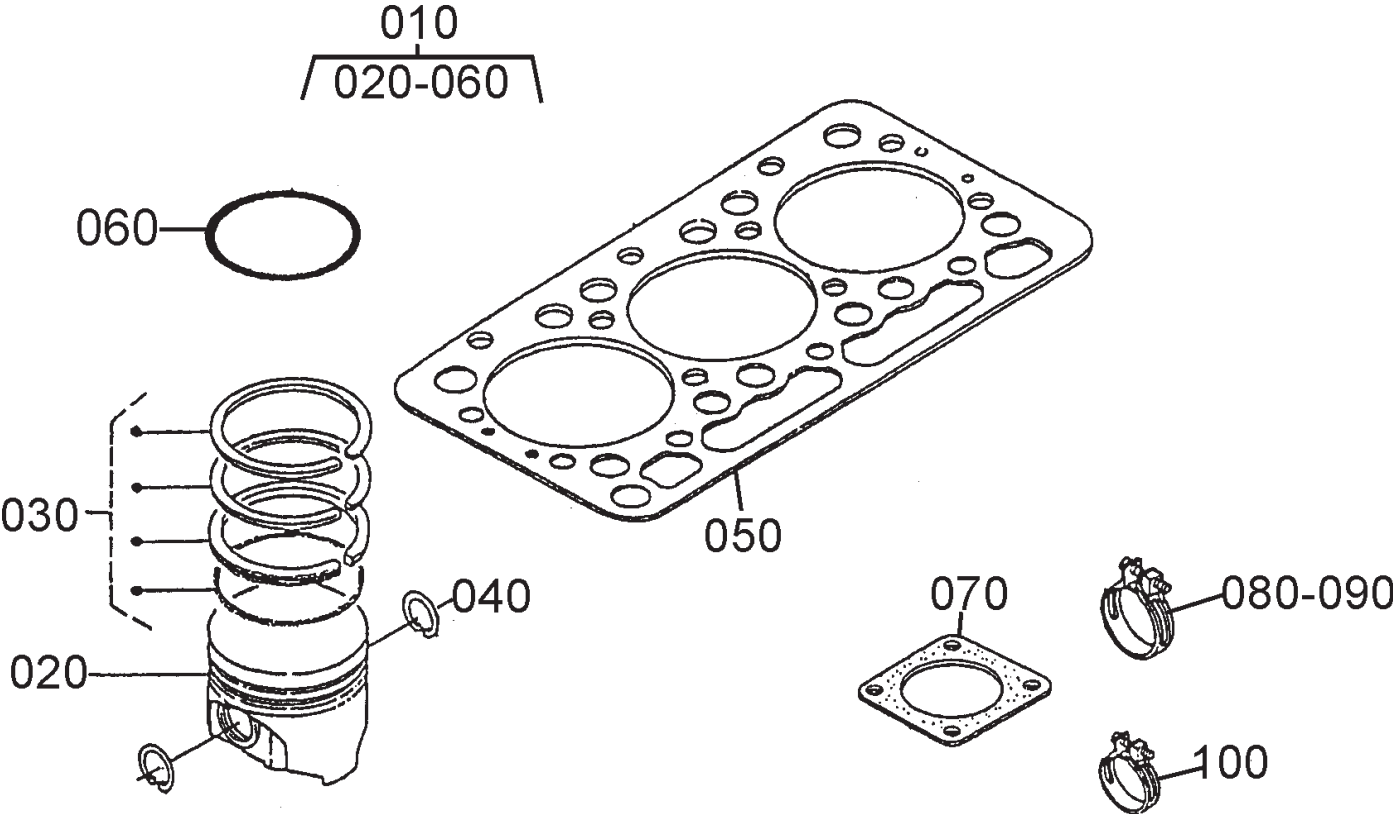
# KUBOTA D722EB —STARTER SWITCH ASSY.

## STARTER SWITCH ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	3741059110	STARTER SWITCH ASSY. ....	1 .....	INCLUDES ITEMS W/*
020*	3741055150	STARTER KEY	1	
030	1569465990	GLOW LAMP TIMER	1	
040	1747260600	EMERGENCY UNIT	1	

# KUBOTA D722EB —PISTON KIT AND ACCESSORIES ASSY.

PISTON KIT AND ACCESSORIES ASSY.



# KUBOTA D722EB —PISTON KIT AND ACCESSORIES ASSY.

PISTON KIT AND ACCESSORIES ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>ITEM</u>	<u>QTY.</u>	<u>REMARKS</u>
010	1687321000	PISTON KIT .....	1 .....	INCLUDES ITEMS W/*; REPLACES 1687121000
020*	1685121112	PISTON	3	
030*	1685121052	PISTON RING ASSY.	3	
040*	1526121330	PISTON PIN CIRCULAR CLIP	6	
050*	1687103310	GASKET, CYLINDER HEAD	1	
060*	1522133700	O RING	1	
070	1526312370	GASKET, MUFFLER	1	
080	1522111720	HOSE CLAMP	3	
090	1624142320	HOSE CLAMP	4	
100	1624142750	HOSE CLAMP	4	

# TERMS AND CONDITIONS OF SALE — PARTS

## PAYMENT TERMS

Terms of payment for parts are net 30 days.

## FREIGHT POLICY

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

## MINIMUM ORDER

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

## RETURNED GOODS POLICY

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

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

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

## PRICING AND REBATES

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

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

## SPECIAL EXPEDITING SERVICE

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

## LIMITATIONS OF SELLER'S LIABILITY

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

## LIMITATION OF WARRANTIES

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

Effective: February 22, 2006




# OPERATION AND PARTS MANUAL

## HERE'S HOW TO GET HELP

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

### ***MULTIQUIP CORPORATE OFFICE***

18910 Wilmington Ave      Tel. (800) 421-1244  
Carson, CA 90746      Fax (800) 537- 3927  
Contact: mq@multiquip.com  
Web: www.multiquip.com

### ***MQ Power***

1800 Water Ridge Rd.      Tel. (800) 883-2551  
Suite 500/600      Fax (972) 315-1847  
Lewisville, TX 75057  
Contact: mqpower@multiquip.com  
Web: www.mqpower.com

### ***MQ Parts Department***

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

### ***Service/Tech Support/Warranty***

800-835-2551      Fax: 310-638-8046

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This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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