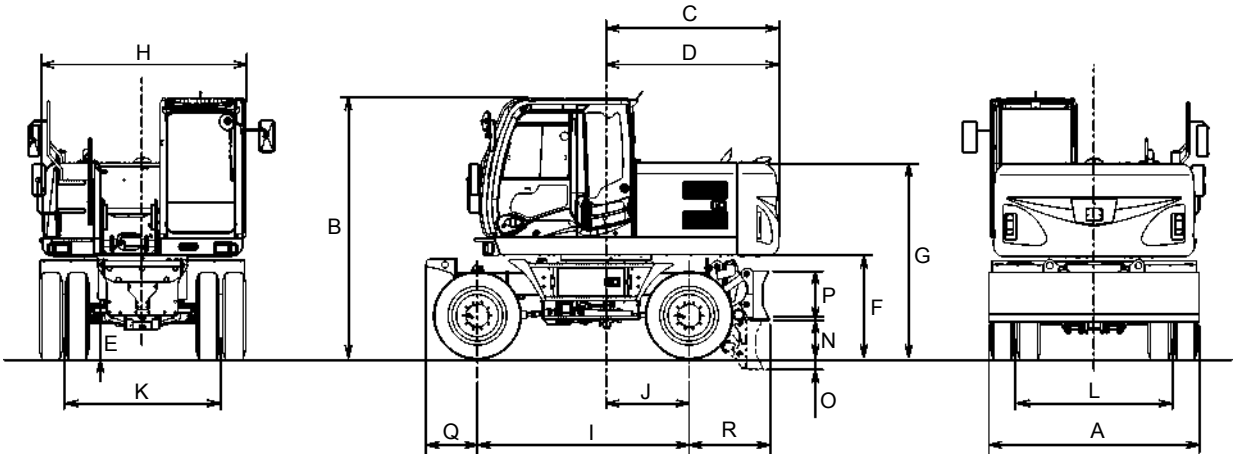
SPECIFICATIONS

ZX140W-3 (Standard CHASSIS, REAR BLADE)

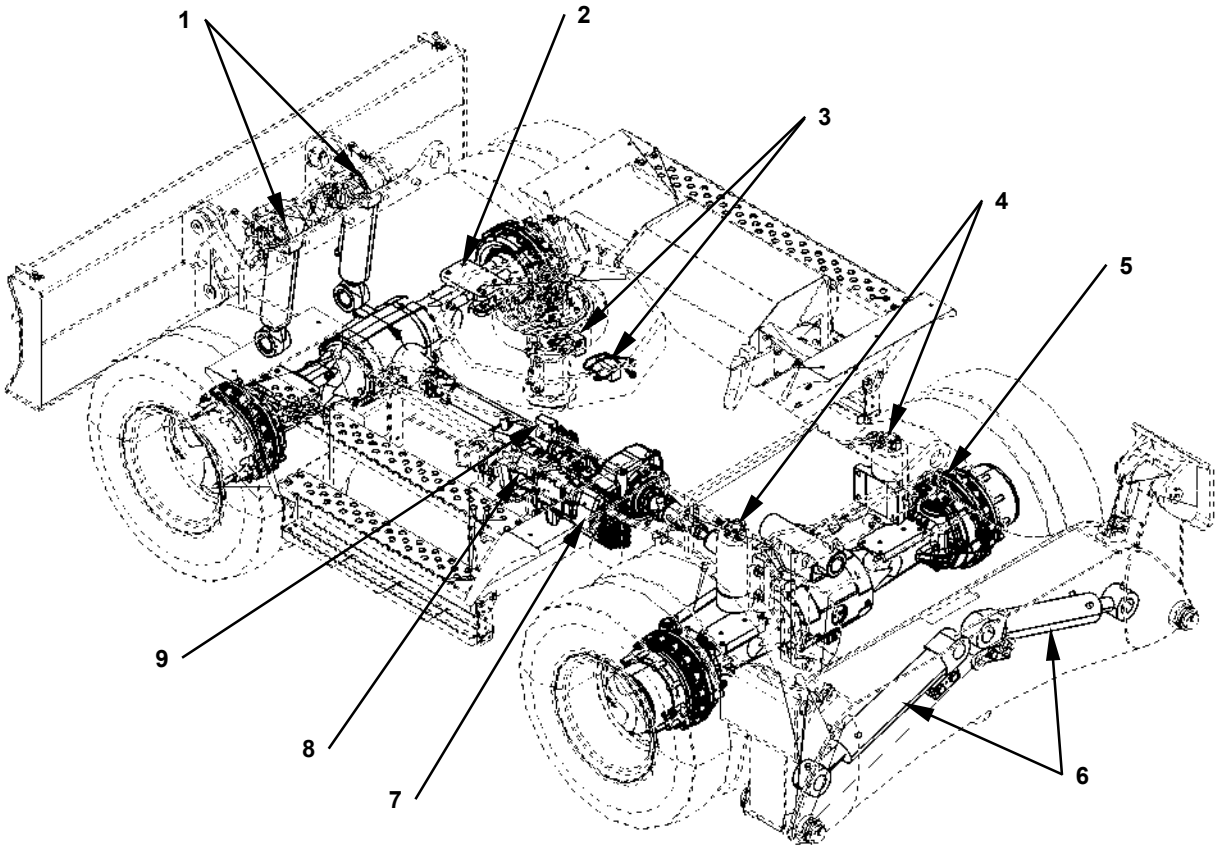


MCGB-12-001

Type of Front-End Attachment		Monoblock Boom	2-Piece Boom
Type of Arm		2.52m (8 ft 3 in)	2.52m (8 ft 3 in)
Bucket Capacity (Heaped)		PCSA 0.50 m^3 (0.65 yd^3), CECE 0.45 m^3	
Operating Weight	kg (lb)	14700 (32400)	15200 (33500)
Basic Machine Weight	kg (lb)	12500 (27600)	12500 (27600)
Engine		ISUZU AI-4JJ1X	
Engine Power	SAE J1349 net ISO 9249 net EEC 80/1269 net	90.2 kW/2200 min^{-1} (123 PS/2200 rpm)	
A: Overall Width (Excluding Rearview Mirrors)	mm (ft·in)	2530 (8' 4")	
B: Cab Height	mm (ft·in)	3130 (10' 3")	
C: Rear End Swing Radius	mm (ft·in)	2120 (7' 0")	
D: Rear End Length	mm (ft·in)	2120 (7' 0")	
E: Minimum Ground Clearance	mm (ft·in)	350 (1' 2")	
F: Counterweight Clearance	mm (ft·in)	1215 (4' 0")	
G: Engine Cover Height	mm (ft·in)	2360 (7' 9")	
H: Overall Width of Upperstructure	mm (ft·in)	2450 (8' 1")	
I: Wheelbase	mm (ft·in)	2550 (8' 4")	
J: Swing-Center to Rear Axle	mm (ft·in)	1000 (3' 3")	
K: Front Wheel Tread	mm (ft·in)	1875 (6' 2")	
L: Rear Wheel Tread	mm (ft·in)	1875 (6' 2")	
M: Outrigger Spread	mm (ft·in)	-	
N: Max. Raising Height	mm (ft·in)	445 (1' 6")	
O: Max. Digging Depth	mm (ft·in)	145 (6")	
P: Blade Height	mm (ft·in)	590 (1' 11")	
Q: Front Axle to Front of Chassis	mm (ft·in)	570 (1' 10")	
R: Rear Axle to Rear of Chassis	mm (ft·in)	980 (3' 3")	
Tire Size		10.00-20 16PR	
Swing Speed	min^{-1} (rpm)	13.7	
Travel Speed (Fast / Slow / Creeper) *	km/h (mph)	35/8.6/2.2 (21.7/5.3/1.4)	
Gradeability	Degree (%)	35 (70)	

NOTE: "" The specification not matching the local regulation is excluded.*

Undercarriage



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1 - Blade Cylinder
2 - Rear Axle
3 - 2-Spool Solenoid Valve Unit (Blade / Outrigger Cylinder)
4 - Axle Lock Cylinder
5 - Front Axle
6 - Outrigger Cylinder
7 - Travel Motor
8 - Transmission
9 - Transmission Changeover Solenoid Valve

Performance (New Engine)

IMPORTANT: This list shows design specifications, which are not servicing standards.

Fuel Consumption Ratio	220±11 g/kW·h (299±15 g/PS·h) @ $90.2^{+1.5}_{-3.9}$ kW
	(at Full Load: 2200 min-1)
	220±11 g/kW·h (299±15 g/PS·h) @ 83±3.3 kW
	(at Working Load: 2000 min-1)
Maximum Output Torque	402±20 N·m (41±2 kgf·m, 300±15 lbf·ft) @ Approx. 1800 min^{-1}
Compression Pressure	3 MPa (31 kgf/cm^2, 440 psi) @ 200 min^{-1}
Valve Clearance (Intake/Exhaust)	0.15/0.15 mm (Cold)
No Load Speed	Slow: (at Full Load) 800±20 min^{-1}
	Fast: (at Full Load) 2200±20 min^{-1}
	(at Working Load) 2000±20 min^{-1}

ECM: ENGINE CONTROL MODULE

Function Outline
ECM (Engine Control Module) receives the signals from sensors and MC
ECM processes and drives the two-way valve, suction control valve and EGR (Exhaust Gas Recirculation) motor in order to control the supply pump, injector pump and EGR valve.

ECM has the controls as follows.

- Fuel Injection Control
  ECM detects the engine operating condition according to the signals from each sensor and MC and controls the fuel injection.

- Fuel Injection Amount Correction
  ECM adjusts fuel injection amount according to the signal of atmospheric pressure sensor.

- Preheating Control
  ECM controls time for continuity of electrical current for the glow plug according to coolant temperature and improves the starting of engine.

- EGR Control
  ECM decides EGR gas amount according to engine speed, fuel flow rate, coolant temperature, atmospheric pressure and intake-air temperature.
  ECM opens EGR valve and re-circulates exhaust gas, amount of which is equal to EGR gas amount, in the intake manifold. EGR gas is combined with intake-air so that combustion temperature is lowered and NOx is reduced.

- Engine Stop Control
  When the emergency stop switch is turned to the ON position, ECM stops the fuel injection of injector and stops the engine.

NOTE: As for details on each control, refer to the SYSTEM / ECM System group.

Parking Brake Alarm Control

Function: The buzzer sounds when the front attachment is operated with the parking brake applied in order to protect the transmission.

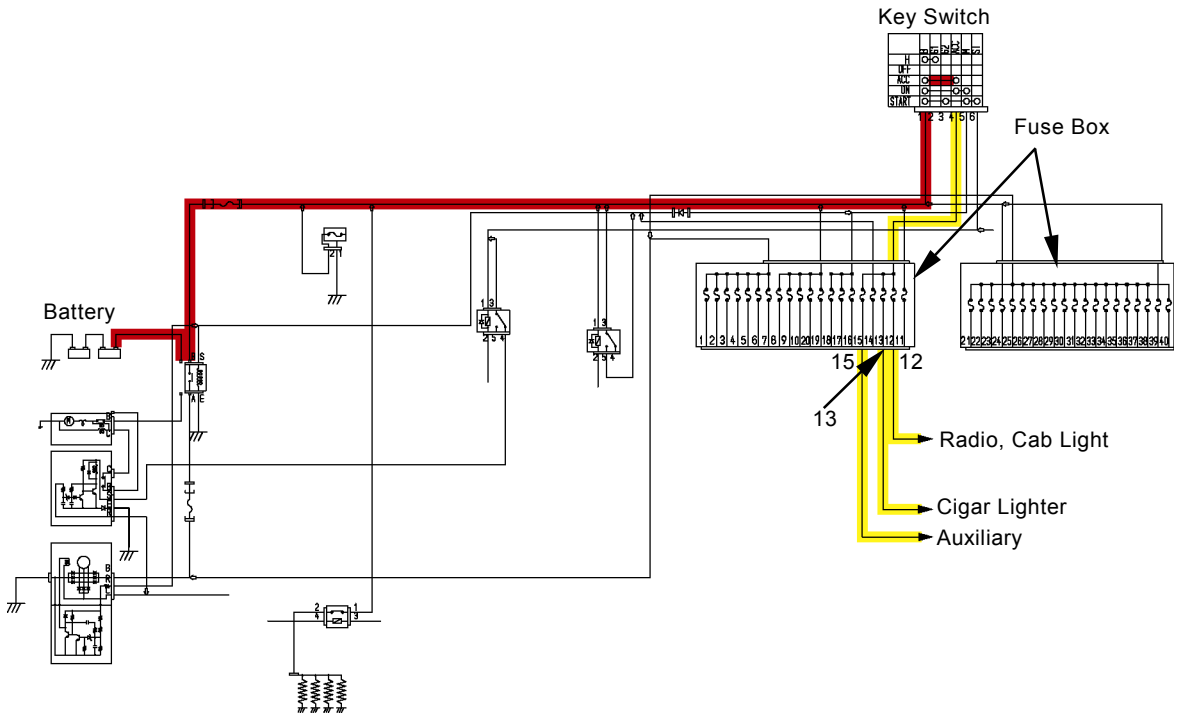
Operation:

1. When the brake switch is in the P (parking brake) position and MC receives the signals from pressure sensors (front attachment, boom raise, arm roll-in and swing), MC sends the signals to the monitor unit by using CAN communication.

NOTE: Even if the same operation is made, the sensing pressure may differ depending on oil temperature. MC judges that the front attachment is being operated when the oil temperature and the pilot pressure match the values shown in the following table.

Oil Temperature	Pilot Pressure	Input Sensor
10 °C or more	0.7 MPa	Front Attachment
0 °C up to 10 °C	1 MPa	Boom Raise Arm Roll-In Swing
Below 0 °C	1.5 MPa	↑

2. Terminal #A9 is grounded by the monitor unit.
3. Therefore, current from fuse #19 flows to the buzzer and the buzzer sounds.



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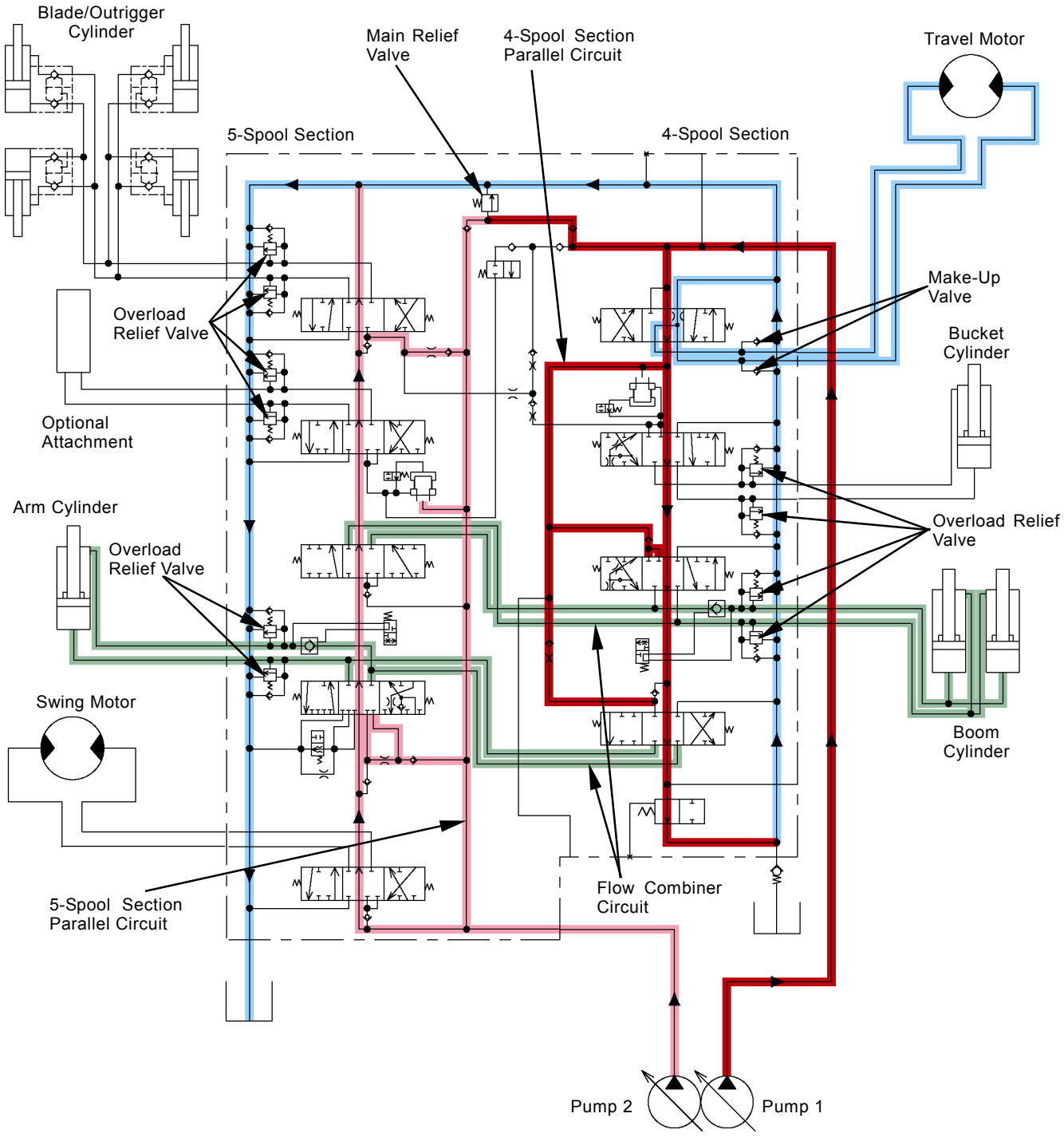

Blade/Outrigger Cylinder
Main Relief Valve
4-Spool Section Parallel Circuit
Travel Motor
5-Spool Section
4-Spool Section
Make-Up Valve
Overload Relief Valve
Bucket Cylinder
Optional Attachment
Arm Cylinder
Overload Relief Valve
Overload Relief Valve
Swing Motor
Boom Cylinder
5-Spool Section Parallel Circuit
Flow Combiner Circuit
Pump 2
Pump 1
T16W-03-03-027

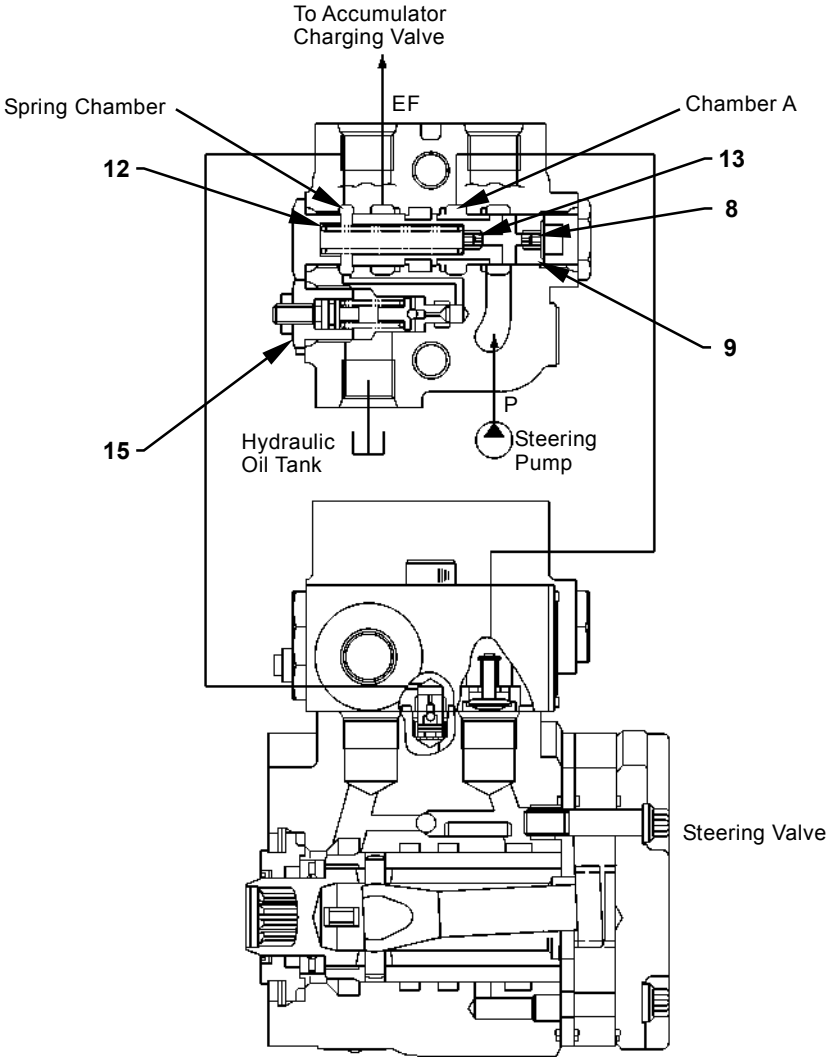
PRIORITY VALVE

Construction:

The priority valve consists of relief valve (15), spool (9), spring (12), orifice (8) and orifice (13).

The illustration shows the spool (9) position when the engine stops. Spool (9) is pushed to the right by spring (12).

Port P is connected to the steering pump. Chamber A and the spring (12) chamber are connected to the steering valve. In addition, the spring (12) chamber is connected to relief valve (15). Port EF is connected to the accumulator charging valve. Port T is connected to the hydraulic oil tank.



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PRACTICE SAFE MAINTENANCE

To avoid accidents:

- Understand service procedures before starting work.
- Keep the work area clean and dry.
- Do not spray water or steam inside cab.
- Never lubricate or service the machine while it is moving.
- Keep hands, feet and clothing away from power-driven parts.

SA-028

Before servicing the machine:

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.
4. Run the engine at slow idle speed without load for 5 minutes.
5. Turn the key switch to OFF to stop engine.
6. Relieve the pressure in the hydraulic system by moving the control levers several times.
7. Remove the key from the switch.
8. Attach a "Do Not Operate" tag on the control lever.
9. Pull the pilot control shut-off lever to the LOCK position.
10. Allow the engine to cool.

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- If a maintenance procedure must be performed with the engine running, do not leave machine unattended.
- If the machine must be raised, maintain a 90 to 100˚ angle between the boom and arm. Securely support any machine elements that must be raised for service work.
- Inspect certain parts periodically and repair or replace as necessary. Refer to the section discussing that part in the "MAINTENANCE" chapter in the operator's manual.
- Keep all parts in good condition and properly installed.
- Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.
- When cleaning parts, always use nonflammable detergent oil. Never use highly flammable oil such as fuel oil and gasoline to clean parts or surfaces.
- Disconnect battery ground cable (–) before making adjustments to electrical systems or before performing welding on the machine.

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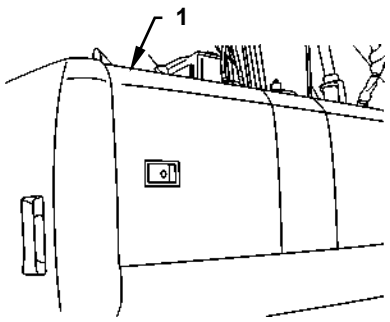
REMOVAL AND INSTALLATION OF PUMP DEVICE

CAUTION: Bleed air from the hydraulic oil tank before doing any work. (Refer to BLEED AIR FROM HYDRAULIC OIL TANK on W1-4-1.)

Removal

1. Open cover (1).



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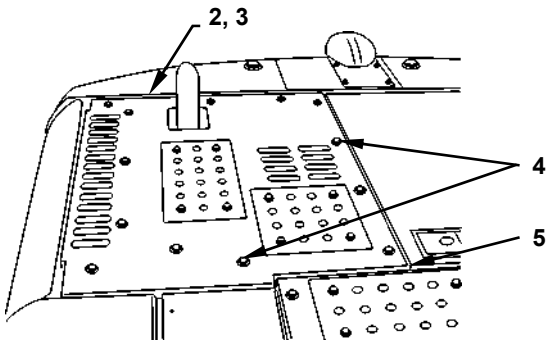
2. Remove sems bolts (4) (12 used) from cover (2). Remove cover (2) from cover (3) and support (5).
   : 17 mm



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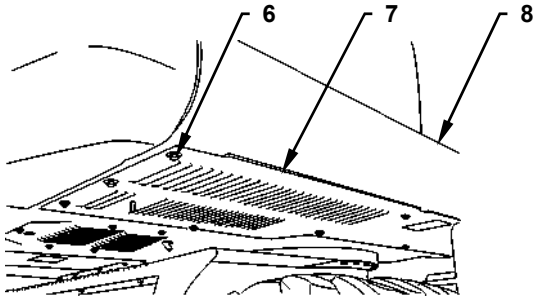
3. Remove sems bolts (6) (6 used) from cover (7). Remove cover (7) from main frame (8).
   : 17 mm



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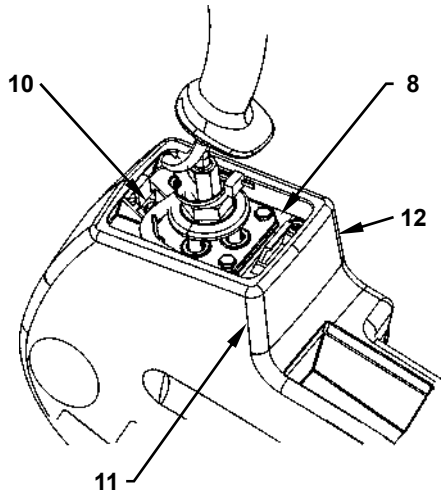
7. Install cover (11, 12) to bracket (8) with round head screw (10).



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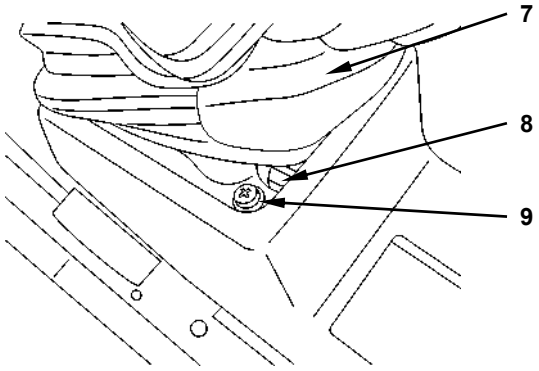
8. Install boot (7) to bracket (8) with round head screws (9) (4 used).



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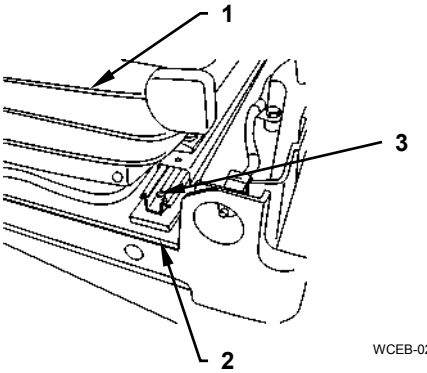
CAUTION: Seat (1) weight: 40 kg (90 lb)

9. Install seat (1) to plate (2) with socket bolts (3) (4 used).
   : 6 mm
   : 20 N·m (2 kgf·m, 15 lbf·ft)

10. Install seat belt (6) (2 used) to bracket (5) (2 used) with sems bolts (4) (2 used).
    : 16 mm
    : 50 N·m (5 kgf·m, 37 lbf·ft)



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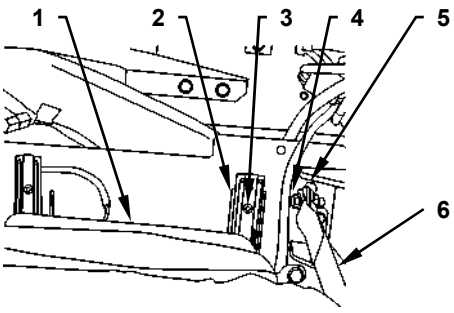

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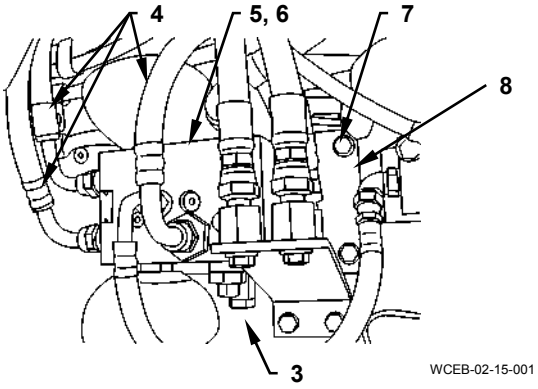
Installation

1. Install accumulator charge valve (5) to bracket (8) with sems bolts (6) (4 used).
   : 17 mm
   : 50 N·m (5 kgf·m, 37 lbf·ft)

2. Install the bracket (8) assembly to main frame (3) with sems bolts (7) (4 used).
   : 17 mm
   : 50 N·m (5 kgf·m, 37 lbf·ft)

3. Connect hoses (4) (8 used) to accumulator charge valve (5).
   : 17 mm
   : 24.5 N·m (2.5 kgf·m, 18 lbf·ft)
   : 22 mm
   : 39 N·m (4 kgf·m, 29 lbf·ft)
   : 27 mm
   : 78 N·m (8 kgf·m, 58 lbf·ft)

4. Install cover (2) to main frame (3) with sems bolts (7) (6 used).
   : 17 mm
   : 50 N·m (5 kgf·m, 37 lbf·ft)



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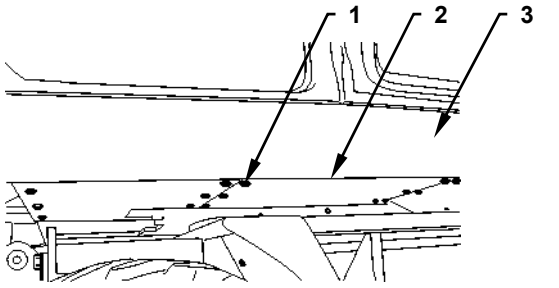

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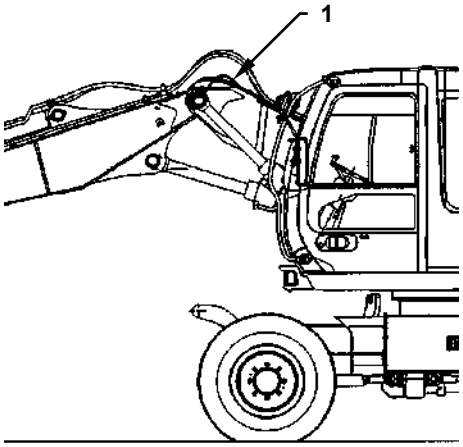
11. Connect lubrication hoses (1) (2 used) to the boom cylinder (3) rod side.
    : 17 mm
    : 24.5 N·m (2.5 kgf·m, 18 lbf·ft)



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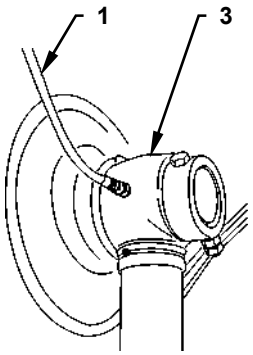

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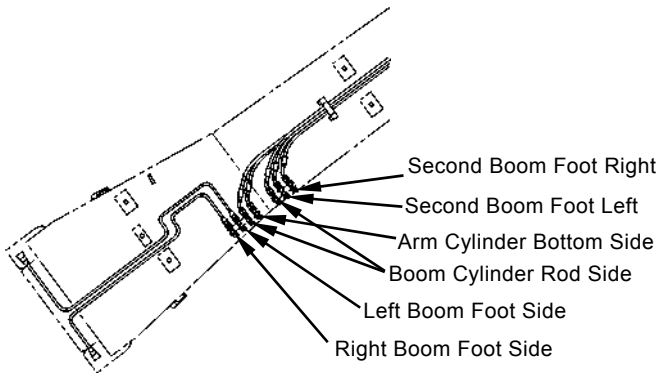
12. Apply grease onto the boom cylinder (3) rod side, the bottom side and the boom foot side.



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