

SECTION 1 GENERAL



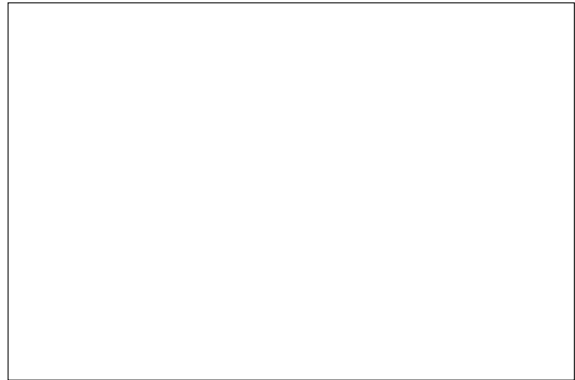
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SECTION 1 GENERAL

GROUP 1 SAFETY HINTS

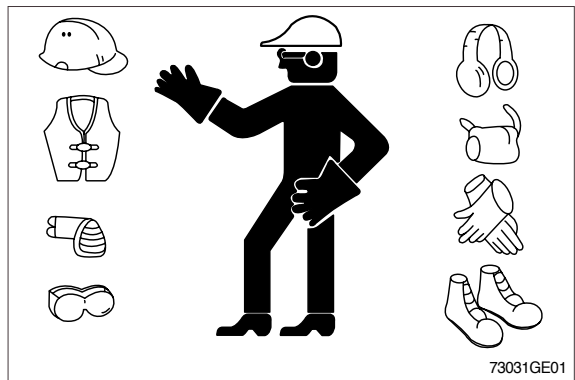
FOLLOW SAFE PROCEDURE

Unsafe work practices are dangerous. Understand service procedure before doing work; Do not attempt shortcuts.



WEAR PROTECTIVE CLOTHING

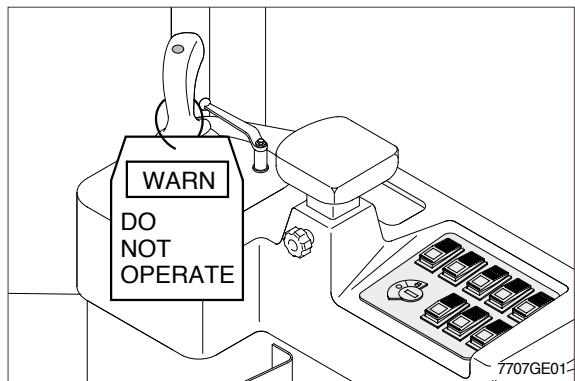
Wear close fitting clothing and safety equipment appropriate to the job.



WARN OTHERS OF SERVICE WORK

Unexpected machine movement can cause serious injury.

Before performing any work on the wheel loader, attach a 「Do Not Operate」 tag on the right side controller lever.

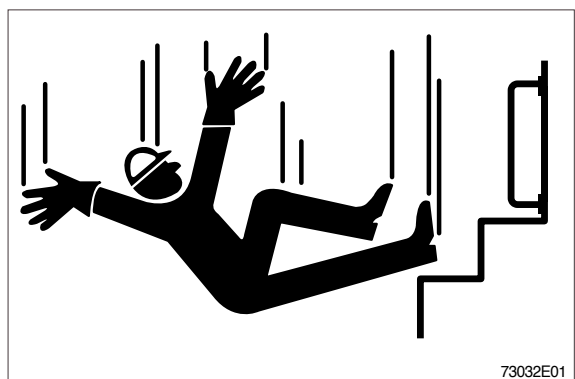


USE HANDHOLDS AND STEPS

Falling is one of the major causes of personal injury. When you get on and off the machine, always maintain a three point contact with the steps and handrails and face the machine. Do not use any controls as handholds.

Never jump on or off the machine. Never mount or dismount a moving machine.

Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.

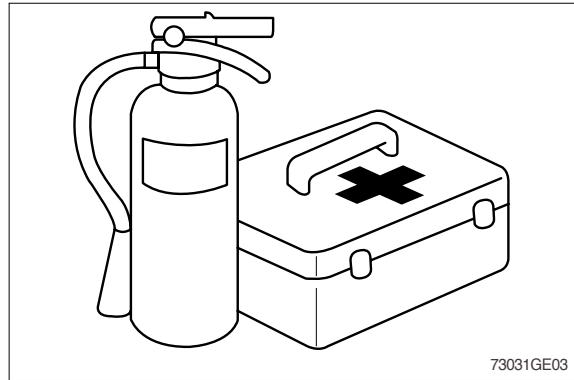


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

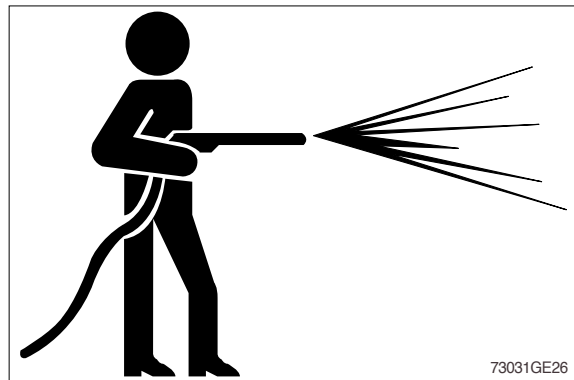
Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



WORK IN CLEAN AREA

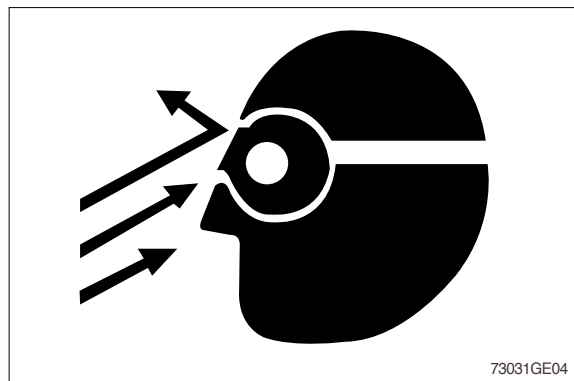
Before starting a job :

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; Do not attempt shortcuts.



PROTECT AGAINST FLYING DEBRIS

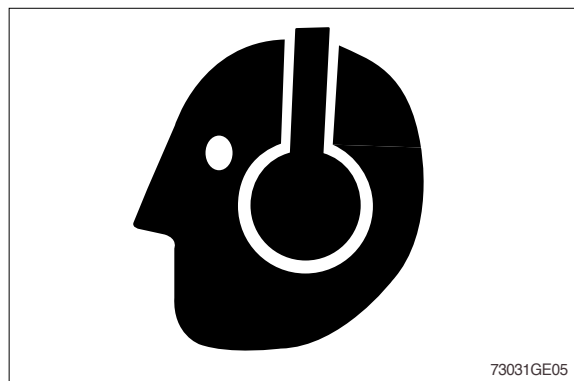
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

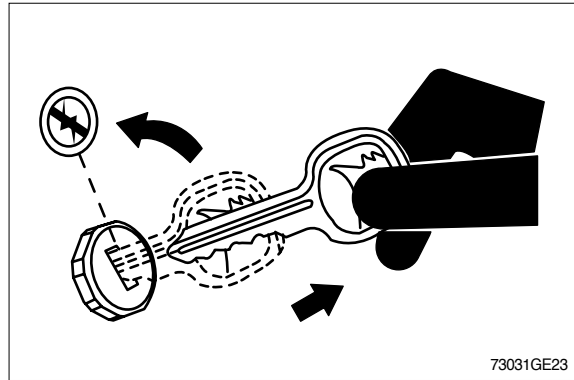
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



PARK MACHINE SAFELY

Before working on the machine:

- Park machine on a level surface.
- Lower bucket to the ground.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Move pilot control shutoff lever to locked position.
- Allow engine to cool.

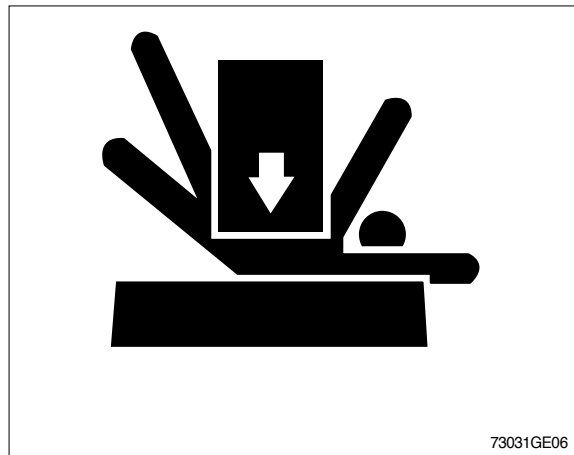


SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load.

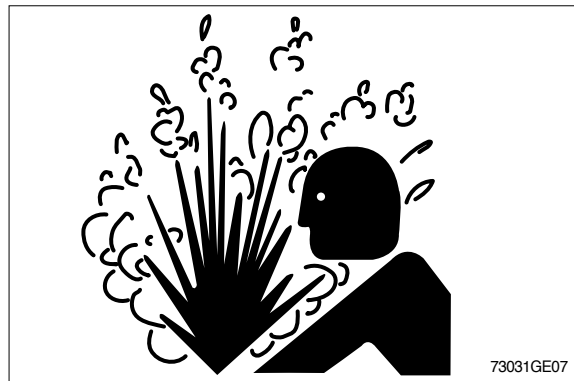
Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



SERVICE COOLING SYSTEM SAFELY

Explosive release of fluids from pressurized cooling system can cause serious burns.

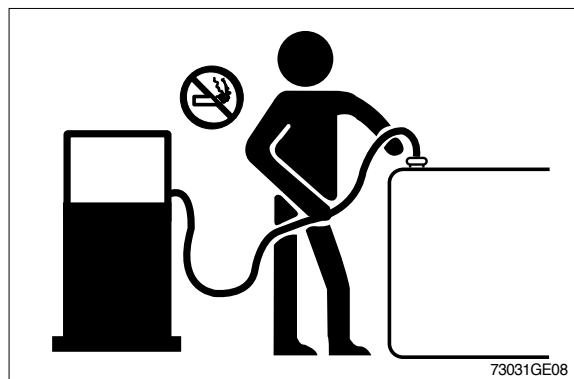
Shut off engine. Only remove filler cap when cool enough to touch with bare hands.



HANDLE FLUIDS SAFELY-AVOID FIRES

Handle fuel with care; It is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine.

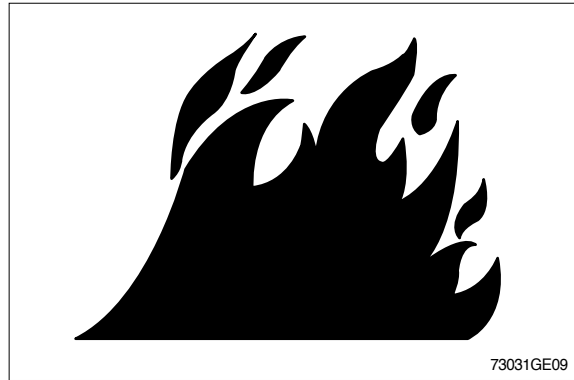
Fill fuel tank outdoors.



Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags ; They can ignite and burn spontaneously.



BEWARE OF EXHAUST FUMES

Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.

If you must operate in a building, be positive there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.

REMOVE PAINT BEFORE WELDING OR HEATING

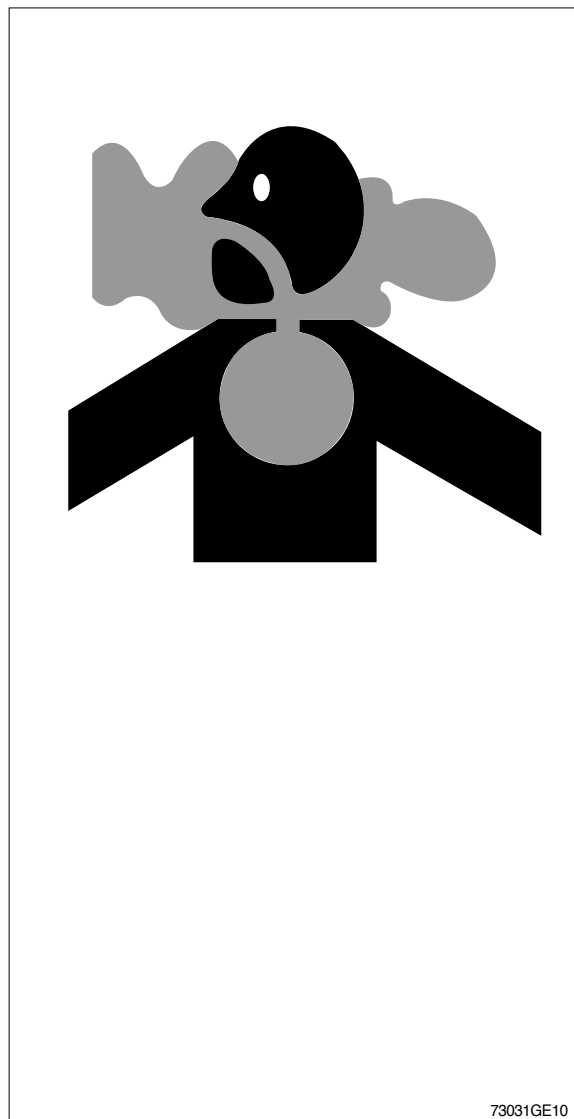
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



ILLUMINATE WORK AREA SAFELY

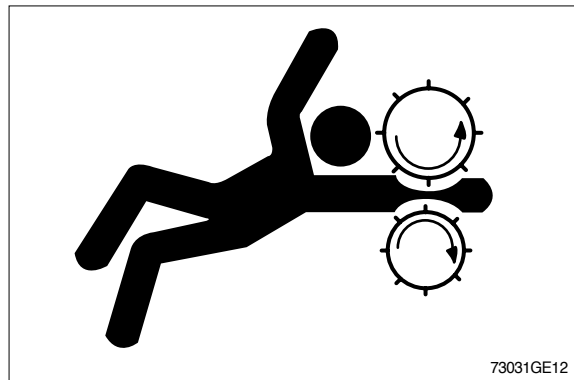
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



SERVICE MACHINE SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

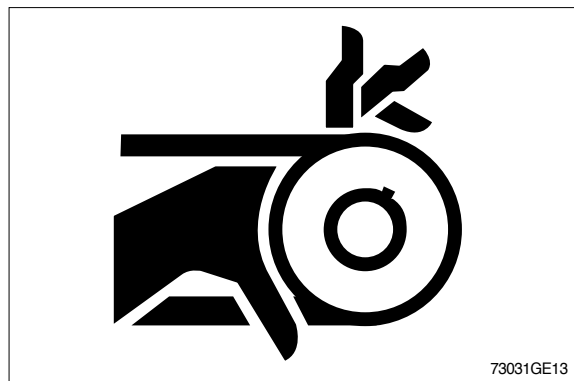
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

To prevent accidents, use care when working around rotating parts.



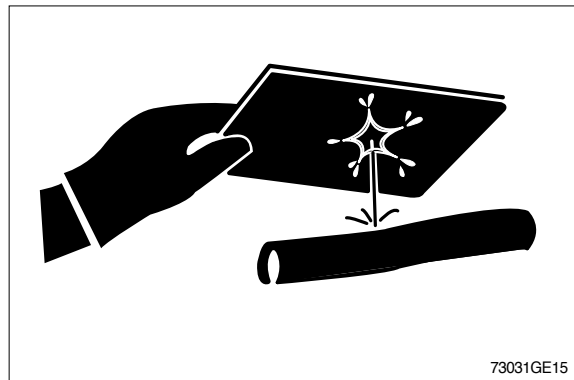
AVOID HIGH PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials.

Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area. Install fire resisting guards to protect hoses or other materials.



PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C(60°F).



PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

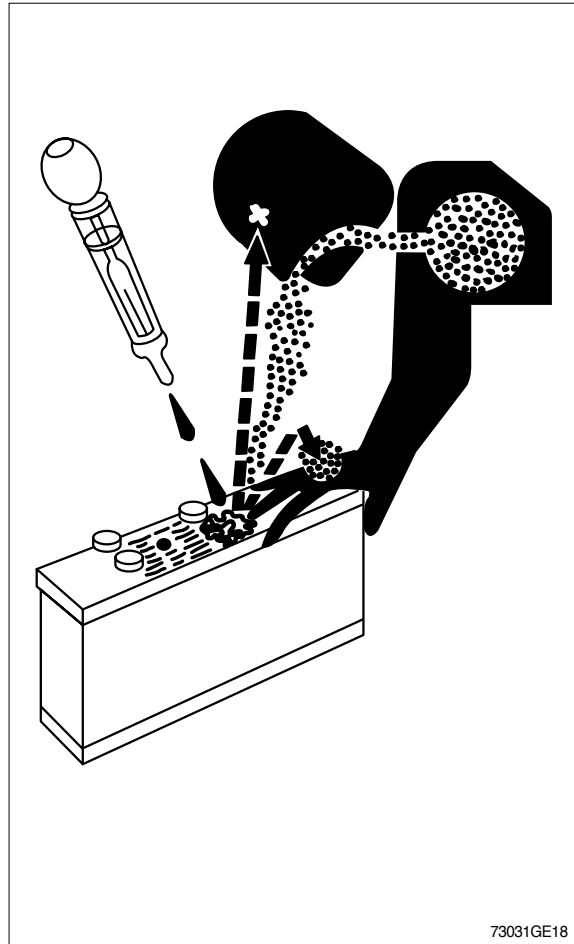
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10-15 minutes.
Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



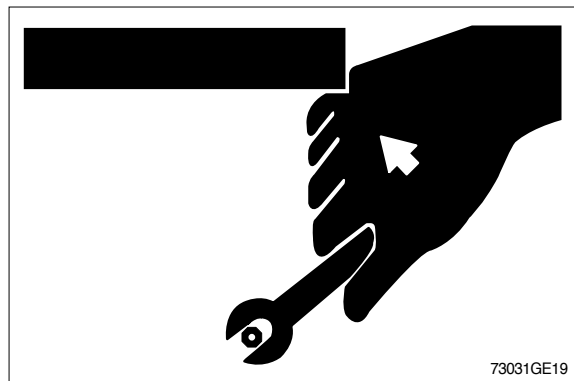
USE TOOLS PROPERLY

Use tools appropriate to the work. Makeshift tools, parts, and procedures can create safety hazards.

Use power tools only to loosen threaded tools and fasteners.

For loosening and tightening hardware, use the correct size tools. Avoid bodily injury caused by slipping wrenches.

Use only recommended replacement parts.(See Parts catalogue.)



SERVICE TIRES SAFELY

Explosive separation of a tire and rim parts can cause serious injury or death.

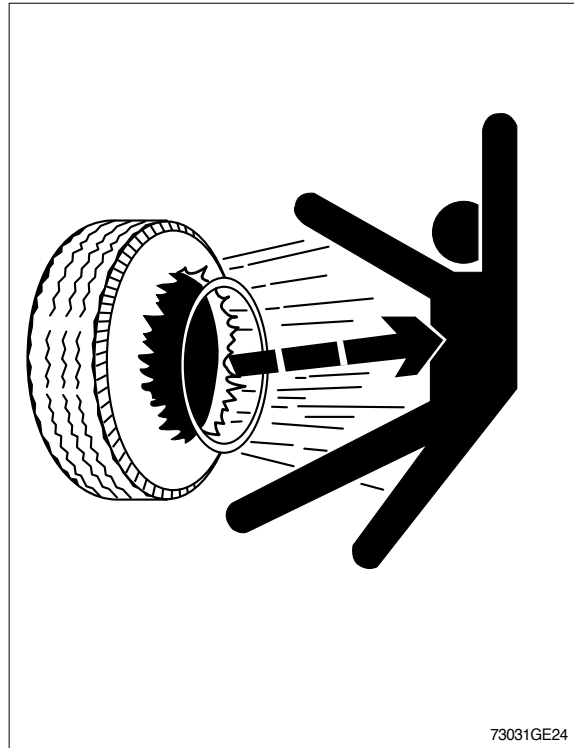
Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion.

Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and not in front of or over the tire assembly. Use a safety cage if available.

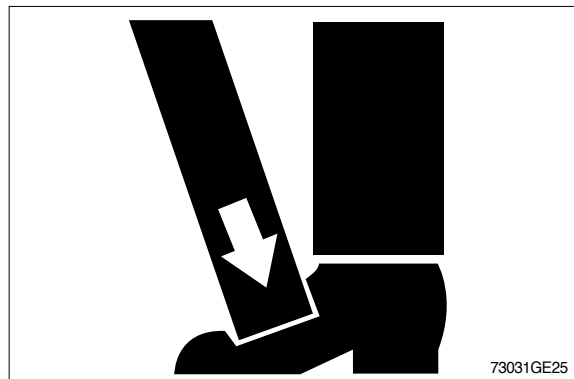
Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.

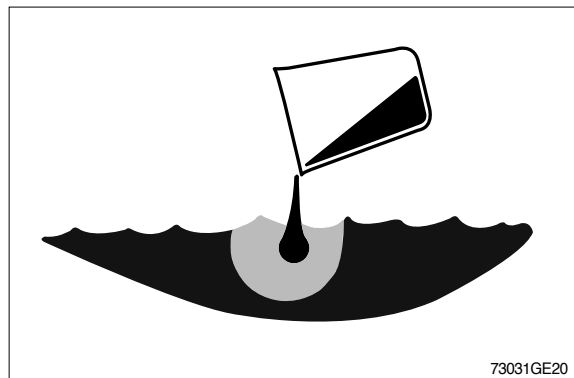


DISPOSE OF FLUIDS PROPERLY

Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, find out the proper way to dispose of waste from your local environmental agency.

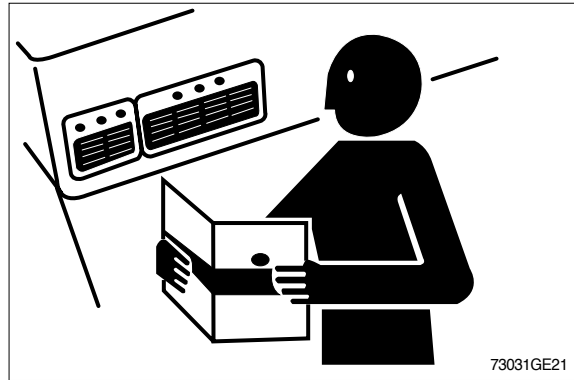
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, and other harmful waste.



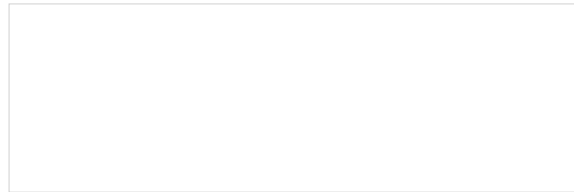
REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



LIVE WITH SAFETY

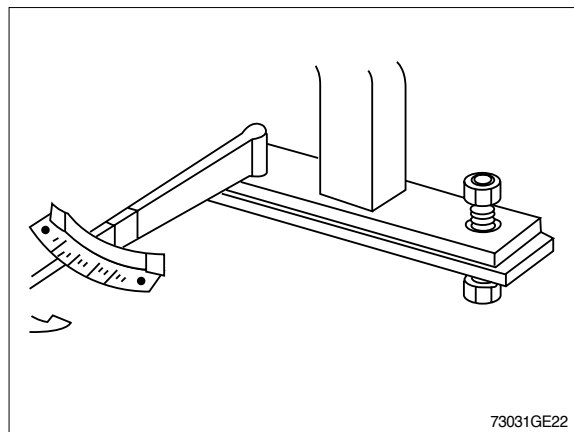
Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.



KEEP ROPS INSTALLED PROPERLY

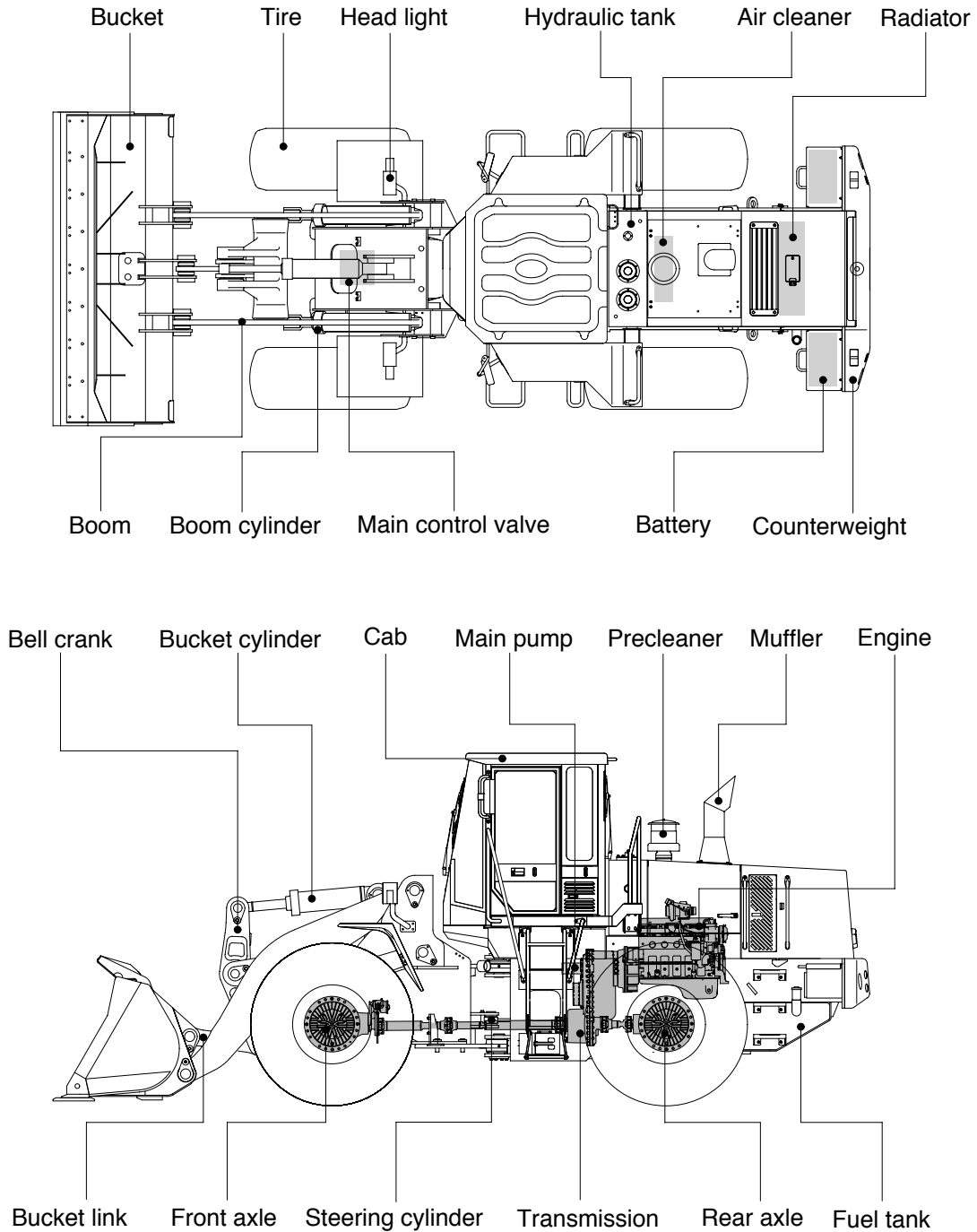
Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.



GROUP 2 SPECIFICATION

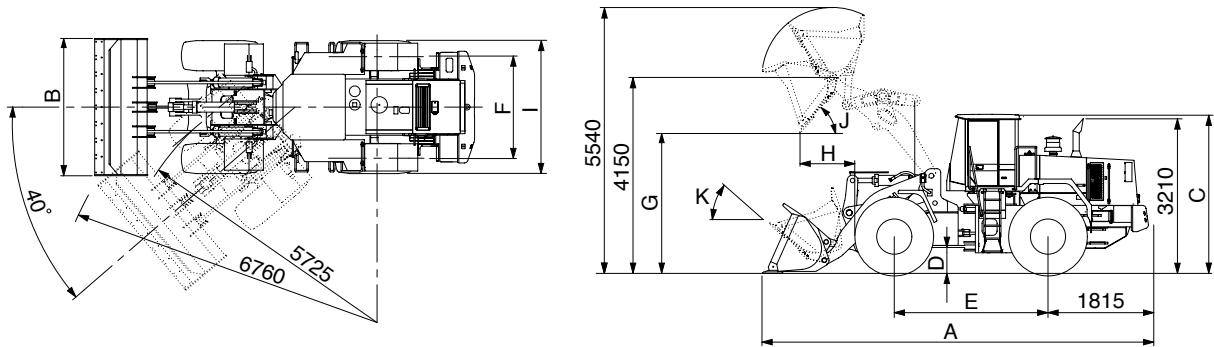
1. MAJOR COMPONENT



76072SE01

2. SPECIFICATIONS

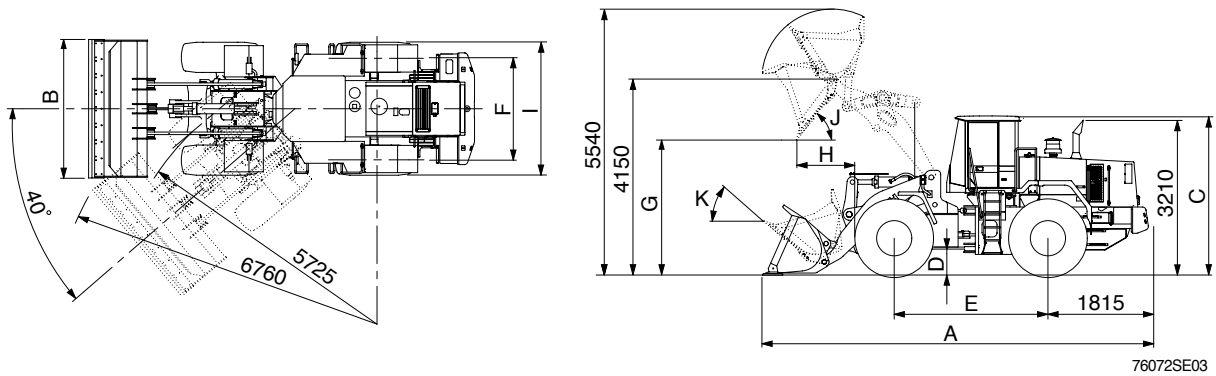
1) WITHOUT TOOTH AND CUTTING EDGE TYPE BUCKET



76072SE02

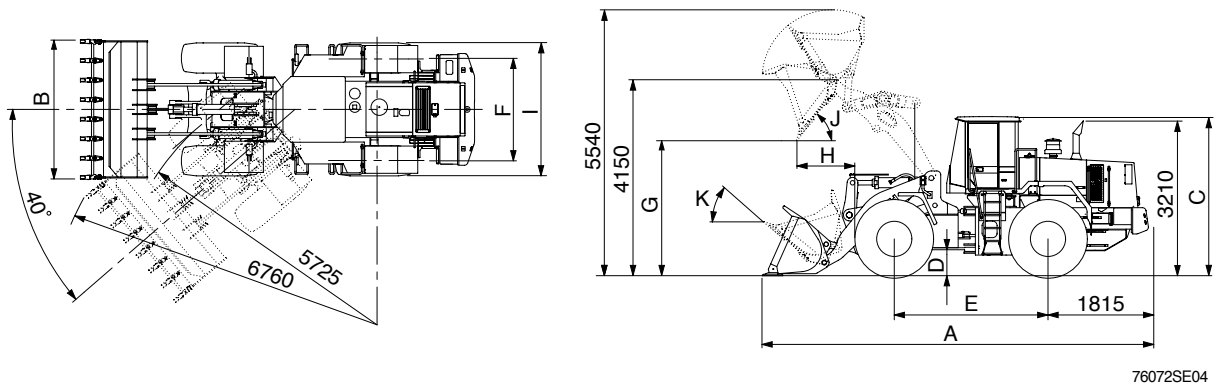
Description		Unit	Specification	
Operating weight		kg(lb)	17660(38930)	
Bucket capacity	Struck	m ³ (yd ³)	2.6(3.4)	
	Heaped		3.0(3.9)	
Overall length	A	mm(ft-in)	7960(26' 1")	
Overall width	B		2900(9' 6")	
Overall height	C		3440(11' 3")	
Ground clearance	D		420(1' 5")	
Wheelbase	E		3300(10'10")	
Tread	F		2160(7' 1")	
Dump clearance at 45°	G		3075(10' 1")	
Dump reach(Full lift)	H		1155(3'10")	
Width over tires	I		2770(9' 1")	
Dump angle	J		Degree (°)	47
Roll back angle(Carry position)	K			47
Cycle time	Lift(With load)		sec	6.2
	Dump(With load)			1.3
	Lower(Empty)	3.0		
Maximum travel speed		km/hr(mph)	36.4(22.7)	
Braking distance		m(ft-in)	11(36' 1")	
Minimum turning radius(Center of outside tire)			5.73(18' 9")	
Gradability		Degree (°)	30	
Travel speed	Forward	First gear	7.6(4.7)	
		Second gear	12.8(8.0)	
		Third gear	23.6(14.7)	
		Fourth gear	36.4(22.7)	
	Reverse	First gear	8.0(5.0)	
		Second gear	13.5(8.4)	
Third gear		24.7(15.4)		

2) WITH BOLT-ON CUTTING EDGE TYPE BUCKET



Description		Unit	Specification	
Operating weight		kg(lb)	17900(39460)	
Bucket capacity	Struck	m ³ (yd ³)	2.7(3.5)	
	Heaped		3.1(4.1)	
Overall length	A	mm(ft-in)	8060(26' 5")	
Overall width	B		2900(9' 6")	
Overall height	C		3440(11' 3")	
Ground clearance	D		420(1' 5")	
Wheelbase	E		3300(10'10")	
Tread	F		2160(7' 1")	
Dump clearance at 45°	G		3000(9'10")	
Dump reach(Full lift)	H		1190(3'11")	
Width over tires	I		2770(9' 1")	
Dump angle	J		Degree (°)	47
Roll back angle(Carry position)	K			47
Cycle time	Lift(With load)	sec	6.2	
	Dump(With load)		1.3	
	Lower(Empty)		3.0	
Maximum travel speed		km/hr(mph)	36.4(22.7)	
Braking distance		m(ft-in)	11(36' 1")	
Minimum turning radius(Center of outside tire)			5.73(18' 9")	
Gradability		Degree (°)	30	
Travel speed	Forward	First gear	7.6(4.7)	
		Second gear	12.8(8.0)	
		Third gear	23.6(14.7)	
		Fourth gear	36.4(22.7)	
	Reverse	First gear	8.0(5.0)	
		Second gear	13.5(8.4)	
Third gear		24.7(15.4)		

3) WITH TOOTH TYPE BUCKET



76072SE04

Description		Unit	Specification	
Operating weight		kg(lb)	17820(39290)	
Bucket capacity	Struck	m ³ (yd ³)	2.6(3.4)	
	Heaped		3.0(3.9)	
Overall length	A	mm(ft-in)	8180(26'10")	
Overall width	B		2950(9' 8")	
Overall height	C		3440(11' 3")	
Ground clearance	D		420(1' 5")	
Wheelbase	E		3300(10'10")	
Tread	F		2160(7' 1")	
Dump clearance at 45.	G		2870(9' 5")	
Dump reach(Full lift)	H		1270(4' 2")	
Width over tires	I		2770(9' 1")	
Dump angle	J		Degree (.)	47
Roll back angle(Carry position)	K			47
Cycle time	Lift(With load)	sec	6.2	
	Dump(With load)		1.3	
	Lower(Empty)		3.0	
Maximum travel speed		km/hr(mph)	36.4(22.7)	
Braking distance		m(ft-in)	11(36' 1")	
Minimum turning radius(Center of outside tire)			5.73(18' 9")	
Gradability		Degree (.)	30	
Travel speed	Forward	First gear	7.6(4.7)	
		Second gear	12.8(8.0)	
		Third gear	23.6(14.7)	
		Fourth gear	36.4(22.7)	
	Reverse	First gear	8.0(5.0)	
		Second gear	13.5(8.4)	
Third gear		24.7(15.4)		

3. WEIGHT

Item	kg	lb
Front frame assembly	1631	3596
Rear frame assembly	1962	4326
Front fender(LH & RH)	28	62
Counterweight	1050	2315
Cab assembly	1000	2205
Engine assembly	459	1012
Transmission assembly	470	1036
Drive shaft(Front)	44	97
Drive shaft(Center)	46	101
Drive shaft(Rear)	27	60
Front axle(Include differential)	970	2139
Rear axle(Include differential)	840	1852
Tire(23.5-25, 20PR, L3)	300	661
Hydraulic tank assembly	210	463
Fuel tank assembly	368	811
Main pump assembly	37	82
Fan & brake pump assembly	7	15
Main control valve	51	112
Flow amplifier valve	15	33
Boom assembly	1200	2646
Bell crank assembly	360	794
Bucket link	57	126
3.1m ³ bucket, with bolt on cutting edge	1675	3693
3.0m ³ bucket, with tooth	1625	3583
3.0m ³ bucket, without tooth and cutting edge	1415	3120
Boom cylinder assembly	158	348
Bucket cylinder assembly	184	406
Steering cylinder assembly	29	64
Seat	40	88
Battery	55	121

4. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins QSB5.9
Type	4-cycle turbocharged, charge air cooled diesel engine
Control type	Electronic control
Cooling method	Water cooling
Number of cylinders and arrangement	6 cylinders, in-line
Firing order	1-5-3-6-2-4
Combustion chamber type	Direct injection type
Cylinder bore x stroke	102 x 120mm(4.02" x 4.72")
Piston displacement	5880cc(359cu in)
Compression ratio	16.3 : 1
Rated gross horse power	218ps at 2200rpm
Maximum gross torque at 1400rpm	96kgf · m(694lbf · ft)
Engine oil quantity	16 (4.2 U.S. gal)
Wet weight	459kg(1012lb)
High idling speed	2370 ± 50rpm
Low idling speed	900 ± 50rpm
Rated fuel consumption	155g/ps · hr
Starting motor	Nippondenso 228000-7902 (24V)
Alternator	Delco Remy 22SI(24V-70Amp)
Battery	2 x 12V x 160Ah

2) MAIN PUMP

Item	Specification
Type	Fixed displacement tandem gear pump
Capacity	68+63cc/rev
Maximum operating pressure	210kgf/cm ² (2990psi)
Rated oil quantity	282 /min(74.5U.S.gpm / 62.0U.K.gpm)
Rated speed	2200rpm

3) BRAKE + FAN PUMP

Item	Specification
Type	Fixed displacement tandem gear pump
Capacity	22.9+11.9cc/rev
Maximum operating pressure	180kgf/cm ² (2560psi)
Rated oil quantity	69 /min(18.2U.S.gpm)
Rated speed	2200rpm

4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool
Operating method	Hydraulic pilot assist
Main relief valve pressure	210kgf/cm ² (2990psi)
Overload relief valve pressure(Boom)	240kgf/cm ² (3410psi)

5) REMOTE CONTROL VALVE

Item	Specification	
Type	Pressure reducing type	
Operating	Minimum	5.8kgf/cm ² (82.5psi)
	Maximum	19kgf/cm ² (270psi)
Single operation stroke	Lever	70mm(2.8in)

6) CYLINDER

Item		Specification
Boom cylinder	Bore dia x Rod dia x Stroke	Ø 160 x Ø90 x 757mm
Bucket cylinder	Bore dia x Rod dia x Stroke	Ø 180 x Ø90 x 530mm
Steering cylinder	Bore dia x Rod dia x Stroke	Ø 80 x Ø45 x 440mm

7) DYNAMIC POWER TRANSMISSION DEVICES

Item		Specification	
Transmission	Model	4WG210	
	Type	Converter	Single-stage, single-phase
		Transmission	Full-automatic power shift
	Gear shift	Forward fourth gear, reverse third gear	
	Adjustment	Electrical single lever type, kick-down system.	
Axle	Drive devices	4-wheel drive	
	Front	Front fixed location	
	Rear	Oscillation 12. of center pin-loaded	
Wheels	Tires	23.5-25, 20PR(L3)	
Brakes	Travel	Four-wheel, wet-disc type, full hydraulic	
	Parking	Spring applied, hydraulic released brake on front axle	
Steering	Type	Full hydraulic, articulated	
	Steering angle	40. to both right and left angle, respectively	

5. TIGHTENING TORQUE OF MAJOR COMPONENT

No	Items	Size	kgf · m	lbf · ft	
1	Engine	Engine mounting bolt(2EA)	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
2		Engine mounting bolt(Bracket)	M12 × 1.75	10.7 ± 1.6	77.4 ± 11.6
3		Radiator mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
4		Fuel tank mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
5		Air cleaner mounting bolt	M10 × 1.5	6.9 ± 1.4	50.0 ± 10.1
6	Hydraulic system	Main pump housing mounting bolt	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
7		Main control valve mounting bolt	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
8		Steering unit mounting bolt	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
9		Flow amplifier valve mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
10		Brake valve mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
11		Fan and brake pump mounting bolt	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
12		Cut-off valve mounting bolt	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
13		Remote control lever mounting bolt	M 6 × 1.0	1.1 ± 0.2	8.0 ± 1.4
14		Pilot supply unit mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
15		Safety valve	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
16		Hydraulic oil tank mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
17	Power train system	Transmission mounting bolt	M24 × 3.0	100 ± 15	723 ± 109
18		Transmission mounting bolt(Bracket)	M20 × 2.5	46.3 ± 7.0	335 ± 50.6
19		Torque converter housing mounting bolt	M10 × 1.5	4.6 ± 0.7	33.3 ± 5.1
20		Front axle mounting bolt, nut	M24 × 2.0	100 ± 15	723 ± 109
21		Rear axle support mounting bolt, nut	M36 × 3.0	308 ± 46.2	2228 ± 334
22		Tire mounting nut	M22 × 1.5	61 ± 2.0	441 ± 14.5
23		Drive shaft joint mounting bolt	1/2-20UNF	15.5 ± 0.5	112 ± 3.6
24	Others	Counterweight mounting bolt	M30 × 2.0	199 ± 29.9	1439 ± 216
25		Operator's seat mounting bolt	M 8 × 1.25	3.4 ± 0.8	24.6 ± 5
26		ROPS Cab mounting bolt(4EA)	M27 × 2.0	124	900

6. TORQUE CHART

Use following table for unspecified torque.

1) BOLT AND NUT

(1) Coarse thread

Bolt size	8T		10T	
	kgf · m	lbf · ft	kgf · m	lbf · ft
M 6 × 1.0	0.85 ~ 1.25	6.15 ~ 9.04	1.14 ~ 1.74	8.2 ~ 12.6
M 8 × 1.25	2.0 ~ 3.0	14.5 ~ 21.7	2.73 ~ 4.12	19.7 ~ 29.8
M10 × 1.5	4.0 ~ 6.0	28.9 ~ 43.4	5.5 ~ 8.3	39.8 ~ 60
M12 × 1.75	7.4 ~ 11.2	53.5 ~ 79.5	9.8 ~ 15.8	71 ~ 114
M14 × 2.0	12.2 ~ 16.6	88.2 ~ 120	16.7 ~ 22.5	121 ~ 167
M16 × 2.0	18.6 ~ 25.2	135 ~ 182	25.2 ~ 34.2	182 ~ 247
M18 × 2.5	25.8 ~ 35.0	187 ~ 253	35.1 ~ 47.5	254 ~ 343
M20 × 2.5	36.2 ~ 49.0	262 ~ 354	49.2 ~ 66.6	356 ~ 482
M22 × 2.5	48.3 ~ 63.3	350 ~ 457	65.8 ~ 98.0	476 ~ 709
M24 × 3.0	62.5 ~ 84.5	452 ~ 611	85.0 ~ 115	615 ~ 832
M30 × 3.5	124 ~ 168	898 ~ 1214	169 ~ 229	1223 ~ 1655
M36 × 4.0	174 ~ 236	1261 ~ 1703	250 ~ 310	1808 ~ 2242

(2) Fine thread

Bolt size	8T		10T	
	kgf · m	lbf · ft	kgf · m	lbf · ft
M 8 × 1.0	2.17 ~ 3.37	15.7 ~ 24.3	3.04 ~ 4.44	22.0 ~ 32.0
M10 × 1.25	4.46 ~ 6.66	32.3 ~ 48.2	5.93 ~ 8.93	42.9 ~ 64.6
M12 × 1.25	7.78 ~ 11.58	76.3 ~ 83.7	10.6 ~ 16.0	76.6 ~ 115
M14 × 1.5	13.3 ~ 18.1	96.2 ~ 130	17.9 ~ 24.1	130 ~ 174
M16 × 1.5	19.9 ~ 26.9	144 ~ 194	26.6 ~ 36.0	193 ~ 260
M18 × 1.5	28.6 ~ 43.6	207 ~ 315	38.4 ~ 52.0	278 ~ 376
M20 × 1.5	40.0 ~ 54.0	289 ~ 390	53.4 ~ 72.2	386 ~ 522
M22 × 1.5	52.7 ~ 71.3	381 ~ 515	70.7 ~ 95.7	512 ~ 692
M24 × 2.0	67.9 ~ 91.9	491 ~ 664	90.9 ~ 123	658 ~ 890
M30 × 2.0	137 ~ 185	990 ~ 1338	182 ~ 248	1314 ~ 1795
M36 × 3.0	192 ~ 260	1389 ~ 1879	262 ~ 354	1893 ~ 2561

2) PIPE AND HOSE

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	3	21.7
3/8"	22	4	28.9
1/2"	27	5	36.2
3/4"	36	12	86.8
1"	41	14	101

3) FITTING

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	6	43.4
3/4"	36	13	94.0
1"	41	15	109

7. RECOMMENDED LUBRICANTS

Use only oils listed below or equivalent.

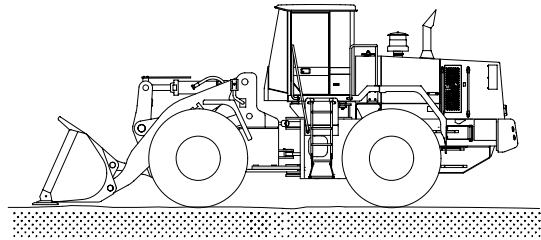
Do not mix different brand oil.

Service point	Kind of fluid	Capacity (U.S. gal)	Ambient temperature °C(°F)						
			-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)
Engine oil pan	Engine oil	16(4.2)	SAE 30						
			SAE 10W						
			SAE 10W-30						
			SAE 15W-40						
Transmission	Oil	32(8.5)	SAE 10W-30						
			SAE 15W-40						
Axle	Gear oil	Front : 62(16.4) Rear : 42(11.1)	SAE 80W-90LSD/API GL-5						
Hydraulic tank	Hydraulic oil	Tank: 115(30.4) System: 260(69)	ISO VG 32						
			ISO VG 46						
			ISO VG 68						
Fuel tank	Diesel fuel	355(93.8)	ASTM D975 NO. 1						
			ASTM D975 NO. 2						
Fitting (Grease nipple)	Grease	As required	NLGI NO. 1						
			NLGI NO. 2						
Radiator	Mixture of antifreeze and water 50 : 50	39(10.3)	Ethylene glycol base permanent type						

GROUP 3 OPERATIONAL CHECKOUT RECORD SHEET

- Owner :
- Date :
- Hours :
- Serial No. :
- Technician :

**Use this sheet to record operational checkout results.
Perform the operational check before installing any test equipment.**



7707GE02

Item	OK	NOT OK	Comments
------	----	-----------	----------

1. Monitor indicator and gauge checks(Engine OFF)

- | | | | |
|--|----|----|--|
| · Hourmeter and gauge check | ** | ** | |
| · Battery check | ** | ** | |
| · Monitor indicator circuit check | ** | ** | |
| · Monitor turn signals and warning indicator check | ** | ** | |

2. Transmission, axle and engine linkages, neutral start switch and reverse warning alarm switch checks

- | | | | |
|--|----|----|--|
| · Transmission control lever and neutral | ** | ** | |
| · Neutral start and reverse warning | ** | ** | |
| · Alarm circuit checks | ** | ** | |
| · Engine speed control linkage check | ** | ** | |

3. Monitor indicator and gauge checks(Engine running)

- | | | | |
|--|----|----|--|
| · Monitor display and alternator output checks | ** | ** | |
| · Monitor bypass circuit and seat belt indicator check | ** | ** | |
| · Monitor primary and secondary level check | ** | ** | |
| · Transmission oil warm up procedure | ** | ** | |
| · Transmission temperature gauge check | ** | ** | |

7. Steering system checks

- | | | | |
|---------------------------------|-----|-----|-------|
| · Steering valve check | *** | *** | _____ |
| · Steering system leakage check | *** | *** | _____ |
| · Priority valve | | | |
| Low check pressure | *** | *** | _____ |
| High check pressure | *** | *** | _____ |

8. Accessory checks

- | | | | |
|---------------------------------------|-----|-----|-------|
| · Operating lights check | *** | *** | _____ |
| · Work light check | *** | *** | _____ |
| · Brake light check | *** | *** | _____ |
| · Cab light check | *** | *** | _____ |
| · Horn circuit check | *** | *** | _____ |
| · Windshield washer and wiper check | *** | *** | _____ |
| · Defroster blower check | *** | *** | _____ |
| · Heater/Air conditioner blower check | *** | *** | _____ |
| · Heater functional check | *** | *** | _____ |
| · Air conditioner functional check | *** | *** | _____ |
| · Start aid system check | *** | *** | _____ |

9. Cab components and vandal protection checks

- | | | | |
|------------------------------------|-----|-----|-------|
| · Cab door latch check | *** | *** | _____ |
| · Cab door hold open latch check | *** | *** | _____ |
| · Cab door release button check | *** | *** | _____ |
| · Cab door lock check | *** | *** | _____ |
| · Cab door window check | *** | *** | _____ |
| · Cab window latch check | *** | *** | _____ |
| · Steering column adjustment check | *** | *** | _____ |
| · Seat and seat belt check | *** | *** | _____ |
| · Air intake filter door check | *** | *** | _____ |
| · Engine side panels check | *** | *** | _____ |
| · Radiator cap access door check | *** | *** | _____ |
| · Frame locking bar check | *** | *** | _____ |
| · Boom lock check | *** | *** | _____ |
| · Service decal check | *** | *** | _____ |