

TECHNICAL MANUAL

KX251

No. LR001-M0030

Kubota

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PRECAUTIONS ON MAINTENANCE

1. Correct operation

Correct operation means to follow the correct "procedure" and "method."

Procedure focuses on speed and accuracy of each job.

In the method, are addressed what type of facility, tools, instruments, materials, oil should be used, how and which part should be checked, adjusted or disassembled, and what matters to attend to.

2. Precautions on operation

1. Safety check

Check that stoppers and sleepers are correctly installed for the vehicle jack-up operation.

2. Preparation

Prepare all of the tools and inspect and adjust the instruments.

3. For efficiency

1) Understand the state before disassembly.

What is the problem? Is disassembly absolutely necessary?

2) Before disassembly

Determine whether match marks are necessary. For the electrical system, disconnect the cable from the battery terminal.

3) Precautions for disassembly

In stead of checking all of the disassembled parts at once, check each part individually as it is disassembled. When removing the hydraulic unit or the hoses, mount a dust cap on the connection.

4) Repair of disassembled parts

Keep the disassembled parts in order. Clearly distinguish the parts to be replaced with new parts from those to be reused. Packings, seals, rings, split pins must be replaced.

NOTE:

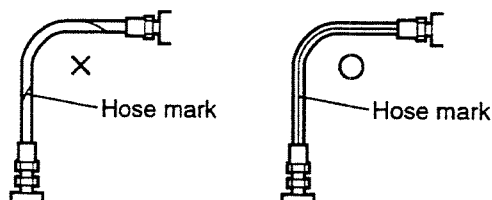
Electrical equipment, rubbers and V belts (which are easily affected by water and oil) must be handled carefully in order to prevent soiling them.

5) Clean disassembled parts

Thoroughly clean the disassembled parts.

6) Assembly

Perform the assembly correctly (tightening torque, application of Three Bond, screw lock, grease, use of seal tape, etc.). Also install the hose correctly.

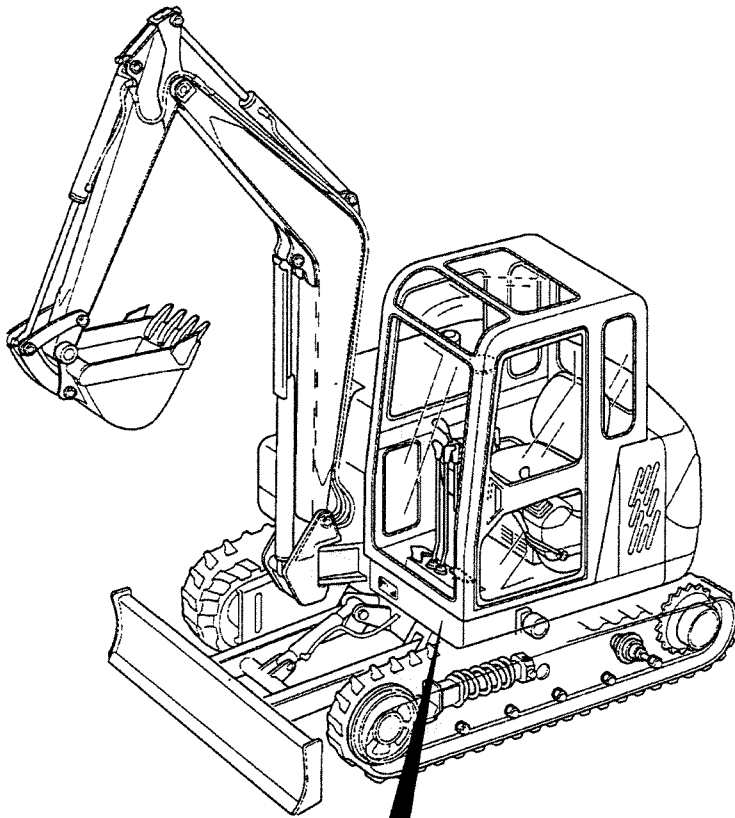


2 OUTLINE

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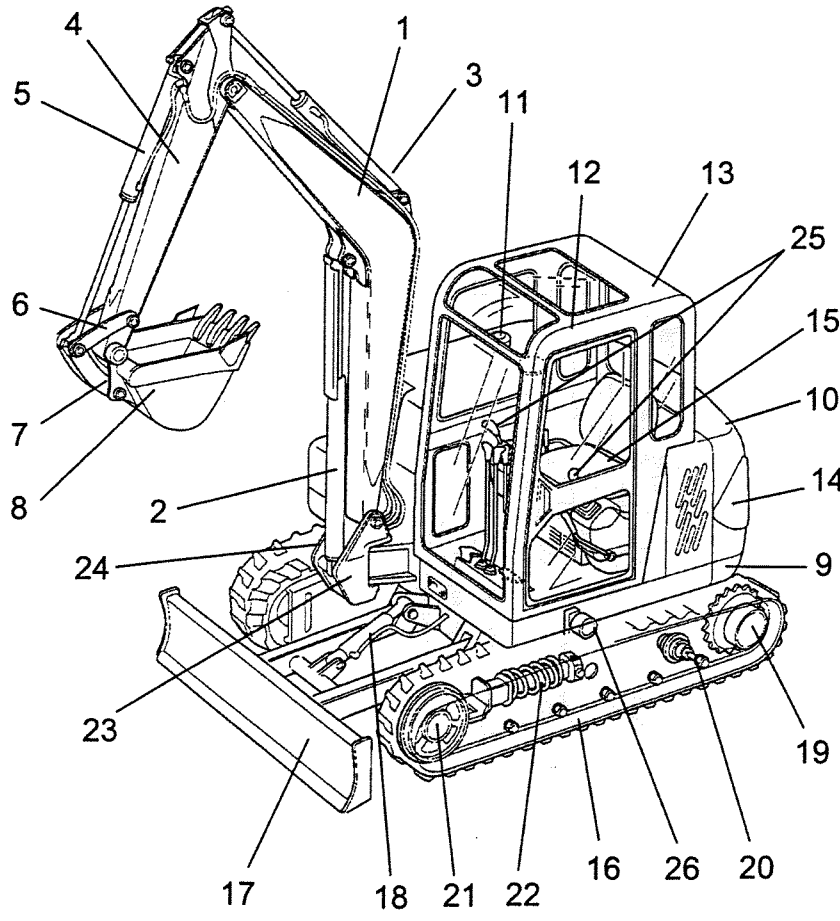
2-1 Location of Serial Number



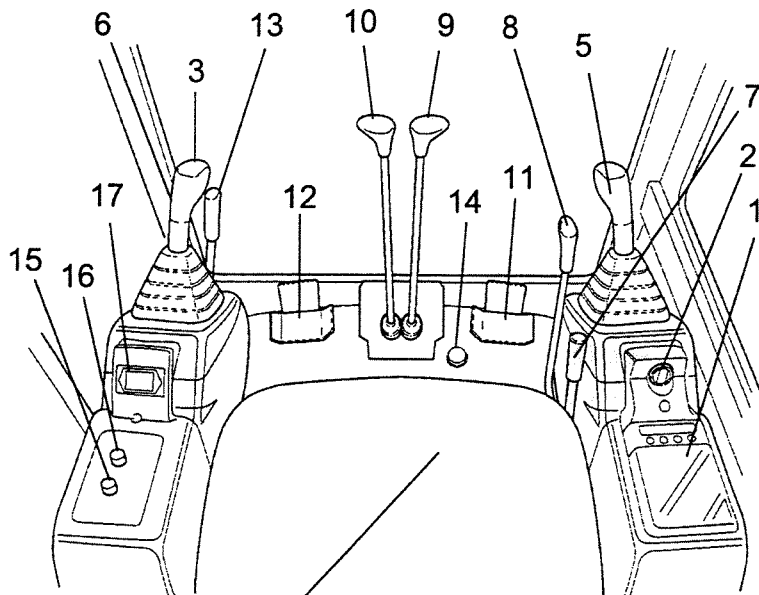
Model name
Serial No.

KUBOTA CORP.		CE	
2-47 SHIKITSU HIGASHI 1-CHOME			
NANIWAKU OSAKA JAPAN			
MODEL	<input type="text"/>	SERIAL NO.	<input type="text"/>
MASS	<input type="text"/> Kg	MAX. DRAW BAR PULL	<input type="text"/> KN
POWER	<input type="text"/> KW	MAX. VERT. LOAD	<input type="text"/> KN
MANUFACTURED YEAR	<input type="text"/>	MADE IN JAPAN	

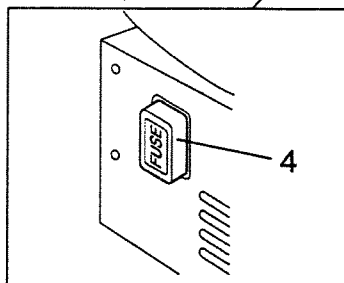
2-2 Name of each part



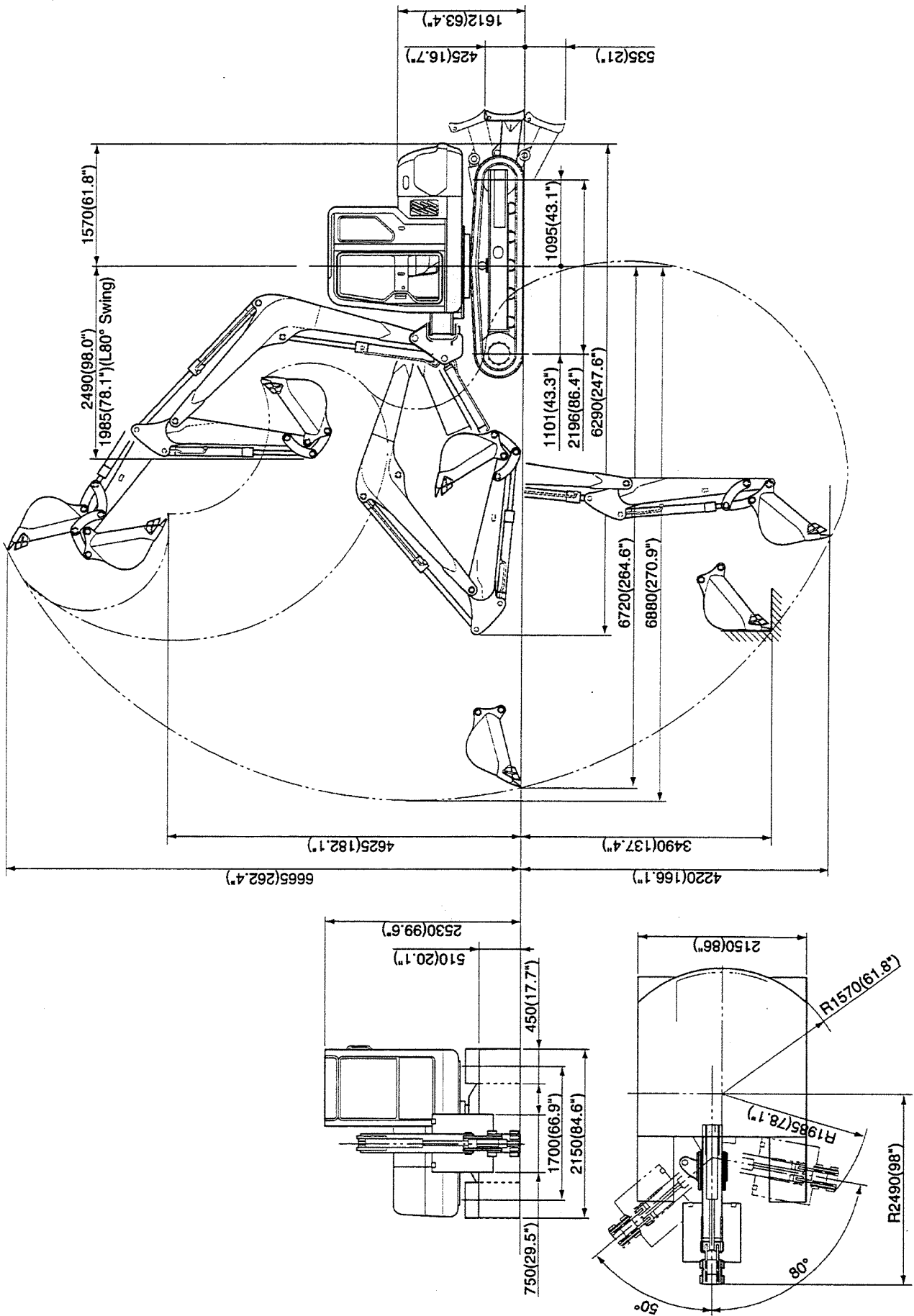
1. Boom
2. Boom cylinder
3. Arm cylinder
4. Arm
5. Bucket cylinder
6. Bucket links
7. Dump link
8. Bucket
9. Swing frame
10. Engine cover
11. Fuel tank
12. Hydraulic tank
13. Cabin
14. Counter weight
15. Operator's seat
16. Crawler
17. Dozer blade
18. Dozer cylinder
19. Drive/Track motor
20. Track roller
21. Front idler
22. Grease cylinder
23. Swing post
24. Swing cylinder
25. Operation levers
26. Carrier roller



1. Meter unit
2. Starter switch
3. Horn switch
4. Fuse box
5. Right operation lever
6. Left operation lever
7. Accelerator lever
8. Dozer operation lever
9. Right travelling lever
10. Left travelling lever
11. Swing pedal
12. P.T.O. pedal
13. Operation lock lever
14. Overdrive pedal
15. Heater switch(for Cabin)
16. Wiper switch(for Cabin)
17. Hour meter



2-3 Dimensions and Specifications



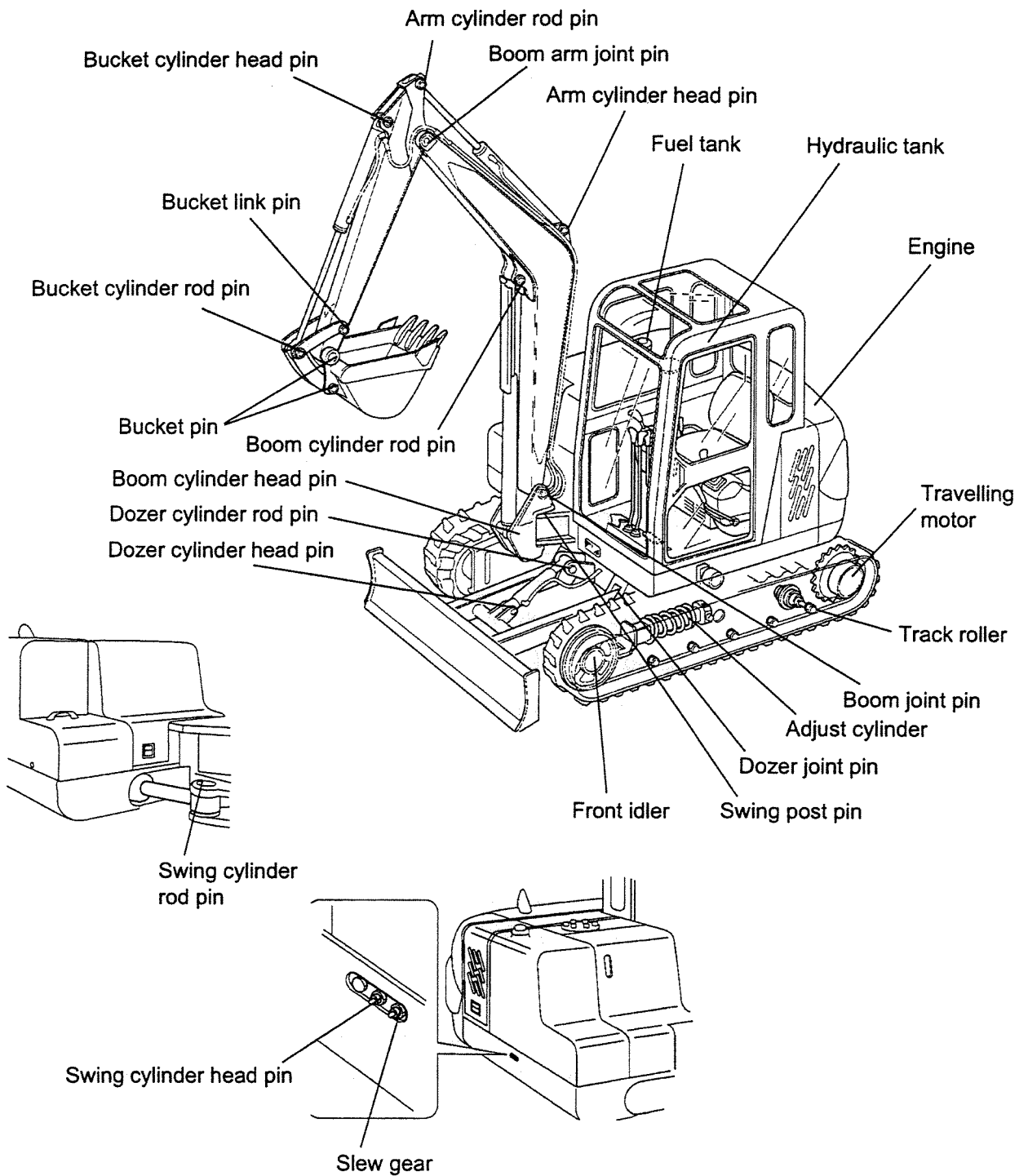
Model		Unit	KX251	
Machine weight	Cabin rubber	Kgf(lbf)	7430(16383)	
	Cabin steel		7530(16604)	
Standard bucket capacity		m ³ (ft ³)	0.25(8.925)	
Standard bucket width		mm(in)	750(29.5")	
Engine	Type		V3300-B	
	Displacement	cc	3,318	
	Rated output	kw(ps)/min ⁻¹	43.4(59)/2300	
Working range	Max.digging depth		mm(in)	4220(166.1")
	Max.digging depth with blade down		mm(in)	4485(176.5")
	Max.vertical digging depth		mm(in)	3490(137.4")
	Max.digging height		mm(in)	6665(262.4")
	Max.dumping height		mm(in)	4625(182.1")
	Max.digging radius		mm(in)	6880(270.9")
	Min.turning radius	front	mm(in)	2485(97.8")
		swing	mm(in)	1985(78.1")
	Rear end radius		mm(in)	1570(61.8")
Boom swing angle		Angle	L80/R50	
Dimensions	Overall length		mm(in)	6285(247.4")
	Overall width		mm(in)	2150(84.6")
	Overall height		mm(in)	2530(99.6")
	Dozer(widthxheight)		mm(in)	2150x510(84.6"x20.1")
Performance	Travelling speed		Km(mile)/h	3.1(1.93)/4.8(2.98)
	Slew speed		rpm	9.7
	Gradeability		min ⁻¹	30°
	Max.digging force(bucket)		KN(lbf)	51.5(11576)
	Max.digging force(arm)		KN(lbf)	37.2(8379)
Undercarriage	Ground pressure	Cabin rubber	KPa(psi)	34(4.8)
		Cabin steel		34(4.9)
	Shoe widthxtumbler center		mm(in)	450x2196(17.7"x86.4")
	Type of travelling motor			Piston shoe-in type
Crawler tension system			Grease cylinder	
Hydraulic pressure	Type of hydraulic pump			Piston shoe-in type
	Main pump oil flow Qty.		ℓ(in ³ /galon)/min	78.2(4770/17.2/20.6US)x2+46.7(2848/10.3/12.3US)
	P.T.O oil flow Qty.		ℓ(in ³ /galon)/min	78.2(4770)±17.2±20.6US)
	Pressure P1,P2/P3		MPa(psi)	25.5(3698)/23.5(3414)
Capacity	Hyd.oil capacity		ℓ(in ³ /galon)	85(5185/18.7/22.4US)
	Engine oil capacity		ℓ(in ³ /galon)	13.2(805/2.9/3.5US)
	Fuel capacity		ℓ(in ³ /galon)	130(7930/28.6/34.3US)
	Cooling water capacity		ℓ(in ³ /galon)	9(549/1.9/2.4US)
Noise level LwA/LpA		dB	98/78	

2-4 Weight list

Unit: kg(lbf)

Part name	Weight	Part name	Weight
Boom	290(639)	Track frame	1015(2238)
Arm	160(353)	Dozer	280(617)
Bucket	150(330)	Steel crawler	425(937)×2
Dump link	20(44)	Rubber crawler	370(816)×2
Bucket link	10(22)×2	Idler	50(110)×2
Boom joint pin	12.5(28)	Spring case	40(88)×2
Arm joint pin	8.5(19)	Track roller	14.5(32)×8
Bucket pin	8.0(18)×2	Carrier roller	8(17.6)
Swing post	180(397)	Sprocket	20(44)×2
Swing post pin	19.7(43)	Turning motor	70(154)
Swing frame	845(1863)	Drive motor	86(190)×2
Hydraulic oil tank	55(121)	Lever stand	12(26)×2
Fuel tank	37(82)	Engine	250(551)
Engine cover(A)	30(66)	Radiator	39(86)
Engine cover(B)	25(55)	Battery	22(48.5)
Engine cover(C)	20(44)	Battery cover	12(26)
Weight(R)(L)	300(661)×2	Tank cover	16(35)
Weight(Center)	290(639)	Pilot valve (drive)	10.8(24)
Operator cabin	300(661)	Pilot valve	1.2(2.6)×3
Boom cylinder	100(220)	Swivel joint	21(46.3)
Arm cylinder	80(176)	Control valve	50(110)
Bucket cylinder	50(110)	Pump	58(128)
Swing cylinder	89(196)	Seat plate	12.7(28)
Dozer cylinder	60(132)	Seat	31(68)
Turning bearing	100(220)	Joystick	3.5(7.7)×2

2-5 Oil and grease supply points



2-6 List of lubrication

Name	Quantity of oil/water	Type of oil according to ambient condition	
		-10°C~40°C	-20°C~0°C
Engine cooling water	10.2ℓ (2.2 gal, 2.7 U.S. gal, 622 in ³)	Soft water (antifreeze is mixed in water)	
Fuel tank (effective capacity)	130 ℓ (28.6 gal, 34.3 U.S. gal, 7930 in ³)	Diesel fuel with freezing point below -7°C	
Engine lubricating oil	13.2 ℓ (2.9 gal, 3.5 U.S. gal, 805 in ³)	SAE 10W-30	
Travelling motor (reduction gear)	1500 cc (91 in ³)	SAE 30-CD	
Hydraulic tank	85 ℓ (18.7 gal, 22.4 U.S. gal, 5185 in ³)	ISO VG 46	
Track roller (1 piece)	80 cc (4.88 in ³)	SAE 30-CD	
Front idler (1 piece)	70 cc (4.27 in ³)	SAE 30-CD	

Genuine oil

Be sure to use Castrol Hyspin 46.

Table of recommended Lubricants

No.	LUBRICANT	SHELL	MOBIL
1	Engine Oil	Myrina oil 15W-40	Delvac Super15W-40
2	Gear Oil	Spirax Heavy Duty 140	Mobilub HD 85W-140
3	Hydraulic Oil	ISO VG 46 (equivalent)	ISO VG46 (equivalent)
4	Cup Grease	Alvinia 2	Mobilux 2
5	Anti Freeze	Anti Freeze	Anti Freeze
6	Diesel Fuel	—	—

*The engine oil SAE-CD 10W-30 or equivalent at the time of shipment is used for the lubricating oil for slewing and travelling speed reducer.

Cooling water (antifreeze)

*To prevent the cooling system from freezing, add antifreeze to the cooling water. Replace the cooling water after 1 year from its delivery, because the effect will decrease.

*Use "Long-life coolant" for the antifreeze.

*Mixing ratio of antifreeze.

Temperature	-5°C	-10°C	-15°C	-20°C	-25°C
Injection rate	2.0	2.5	3.1	3.5	3.9

Engine inside capacity	Radiator capacity	Reserve tank capacity	Total
4.0ℓ (0.88 gal, 1.1U.S. gal, 244 in ³)	3.9ℓ (0.8 gal, 1.0U.S. gal, 238 in ³)	1.1ℓ (0.2 gal, 0.3U.S. gal, 67 in ³)	9.0ℓ (1.9 gal, 2.4U.S. gal, 549 in ³)