

WSM

WORKSHOP MANUAL **KUBOTA EXCAVATOR**

KX61-3, KX71-3 **Mechanism Chapter**

Kubota

Record of Revisions

Symbol	Date	Main Revised Points & Corrective Measures	Person-in-charge
△1			
△2			
△3			
△4			

KX61-3 EU and KX71-3 EU are for EU(European) - version.
KX71-3 PP is for KTC, KCL and KTA - version.

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I. General

a. Sales feature

Product concept : Comfort in compact

(1) Grade up the basic performance; Digging, filling back and lifting capacity

(2) Grade up product feature to differentiate competitor; Digital meter, hose protection

Workability	Bucket digging force improvement Variable pump adoption Boom and SP simultaneous operation The maximum digging depth priority High level stability
Maintenance	Blade hose division New digital meter adoption
Amenity	Much easier access into cabin Cabin width expansion
Operativity	Straight travel adoption Smoother operation
Safety	Engine safety start Travel lock system ROPS, FOPS standard equipment

b. Difference between KX61-3 and KX71-3

	Differentiation	KX61-3	KX71-3	Remark
No1.	Engine	V1505 (24.8 PS)	V1505 (27.5PS)	
No2.	Bucket digging forth	2190 kgf	2570 kgf	Bucket cylinder is different
No3.	Working area (Arm length)	1300 mm	1350 mm	Boom is different
No4.	New digital meter	Equipped	Equipped	
No5.	Variable track specification	Not adopted	Not adopted	
No6.	Travel speed	Two speed	Two speed	
No7.	Straight travel	Equipped	Equipped	
No8.	Seat grade	High back seat	High back seat	
No9.	Roof window of the cabin	Not equipped	Not equipped	

c. Quick chart for selling points : KX61-3, KX71-3



Short stroke operating lever and wrist rest

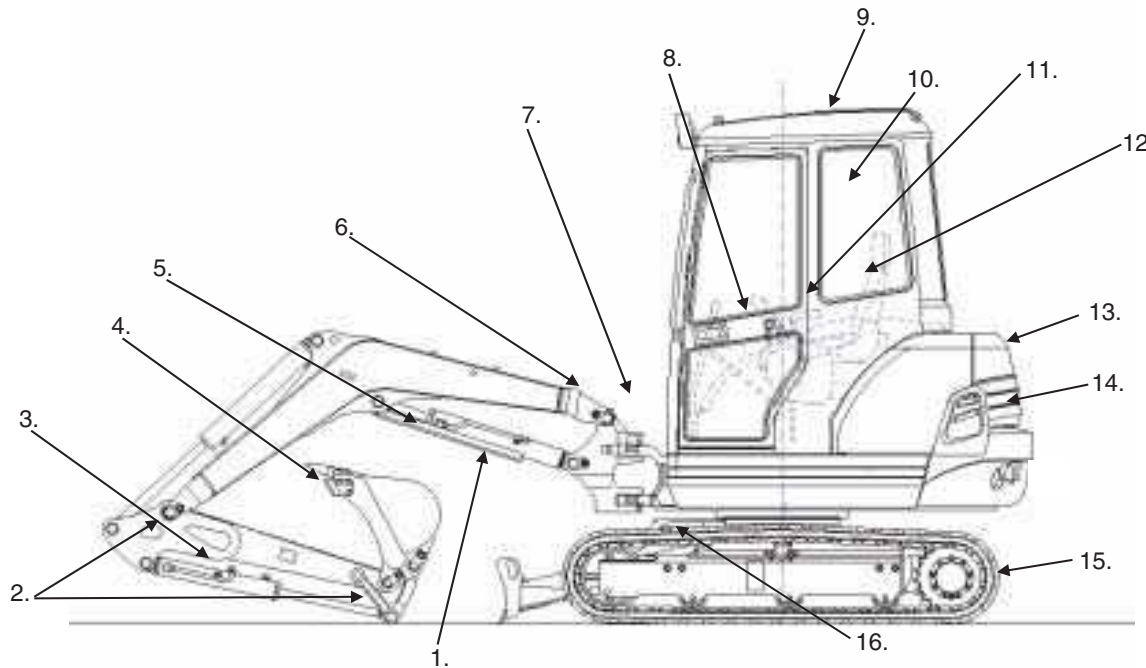


Digital panel with new navigation system



High speed travel switch on the dozer lever

M-1-4



Best matching of variable displacement hydraulic pump and Kubota new diesel engine

V1505, 24.8HP 2100rpm (KX61-3)
V1505, 27.5HP 2300rpm (KX71-3)

1. Reinforced boom cylinder protector
2. Iron bush
3. Bucket cylinder hoses are inside.
4. Bucket breakout force is No.1 in the class.
5. Upgraded lifting capacity
6. Front hose cover for clear view
7. Front hoses go inside the swing bracket.
8. Travel safety lock system
9. Rops / Fops
10. Low noise level
11. Wrist rest control lever
12. New digital panel (Kubota I.C.S)
13. Double full open bonnet
14. 4-cylinder engine
15. Reinforced rubber track
16. Separate-type dozer cylinder hose

d. Comparison to competitors;EU - version

A:Advantage, B:Equal

■, □ : Salers points

	Advantage	VS Current model		Items	Standard type (2.5 ~ 2.8t class)					Standard type (2.8 ~ 3.0t class)				
		New	Continued		KX61-3	KX61-2α	B25V	Neuson 2503	Bobcat 325	KX71-3	KX71-2α	Takeuchi TB125	Bobcat 328	VOLVO EC25
Workability	A	■	★	Big displacement, 4 cylinder engine	4	3	3	3	3	4	4	3	3	3
			★	Variable displacement pump, large discharge	V2	V2	V2	V2	V2	V2	G	V2	V2	V1
		■	★	Lifting capacity (KN)	4.9	4.3	4.2	3.5	*	5.5	4.2	3.9	3.0	4.3
		■	★	Bucket digging force (KN) upgraded, reinforced arm	21.5	21.5	20.0	19.3	21.2	25.2	24.6	20.6	21.2	21.8
	B		★	Large working space (Long arm)	○	○	×	×	×	○	○	○	×	○
			★	Swivel motor negative brake	○	×	○	○	×	○	×	○	×	○
Durability	A		★	Standard third line	○	×	○	○	○	○	×	○	○	×
		□	★	Front hoses in the swing bracket	○	×	×	×	△	○	×	×	△	×
			★	Rugged boom cylinder protector	○	×	×	×	×	○	×	×	×	×
	B	□	★	Swing bracket bush	○	×	○	×	×	○	×	×	×	×
			★	Bucket cylinder hose inside	○	○	×	○	×	○	○	○	×	×
			★	Rugged rubber track (300 mm)	○	×	○	×	○	○	×	○	○	○
Maintenance	A		★	Line filter in the pilot system	○	×	*	*	*	○	×	*	*	*
		■	★	Double full open bonnet	○	×	△	○	△	○	×	△	△	○
	B		★	Separate-type dozer cylinder hose	○	○	○	×	○	○	○	×	○	×
			★	upper roller	○	×	○	○	×	○	×	○	×	○
			★	Tool box	○	×	*	*	*	○	○	*	*	*
Comfortability			★	Track frame shape	One angle	Angle	Flat	Angle	Flat	One angle	Angle	Angle	Flat	Angle
	A	■	★	New digital panel	○	×	×	×	×	○	×	×	×	×
	B		★	Noise level at ear (dBA)	78	79	78	74	80	78	79	77	80	80
Operability	A		★	Auto glow, easy start	○	×	*	*	*	○	×	*	*	*
	B		★	Wrist rest control	○	×	○	×	○	○	×	○	○	○
			★	Smooth control fuling	○	○	○	×	×	○	○	○	×	○
		□	★	Large fuel tank	○ 45	28	29	41	53.3	× 45	63	51	53.3	49
Safety	A	□	★	Rops/Fops cab, 4P canopy	○	Tops/Fops	○ (OP)	○	Rops/	○	Tops/Fops	Tops/Fops	Rops/	○
			★	Front hose cover	○	×	×	×	×	○	×	×	×	×
	B		★	Stability (Front, KN)	4.1	3.2	4.8	4.1	3.5	4.4	4.1	3.9	4.0	3.7
		□	★	Travel safety lock	○	×	○	○	○	○	×	○	○	○

e. Components compatibility

		Parent	100% compatible	high compatible	low compatible	Original design	
No.	Components	U20-3	U25-3	KX71-3(PP)	KX61-3(EU)	KX71-3(EU)	Remark
1	Track frame						
2	Front idler						
3	Track tension						
4	Track roller						
5	Upper roller						KX91-3
6	Track shoe						W=300mm, 80 links
7	Swivel bearing						Different maker
8	Seat						Full suspension seat
9	Swivel frame						
10	Engine mount						V1505
11	Pump mount						Different coupling maker
12	Bonnet						Different maker
13	Control box cover						
14	Canopy						≠ KX71-3
15	Cab						≠ KX71-3
16	Weight						
17	Fuel tank						Different maker
18	Electrical components						
19	Label						
20	Hydro pump						Fujikoshi
21	Control valve						NA: Nabuco, EU: Hidra control
22	Swivel motor						
23	Travel motor						EU: Transmittel & Kayaba NA: Kubota Seiki
24	Oil tank						
25	Swivel joint						
26	Pilot valve						EU: Joystick type NA = KX121-3
27	Swing bracket						
28	Boom						
29	Arm						
30	Bucket link						
31	Bucket						NA = KX91-3
32	Dozer blade						Different maker
33	Swing cyl.						Different maker
34	Boom cyl.						Different maker
35	Arm cyl.						Different maker
36	Bucket cyl.						Different maker
37	Dozer cyl.						Different maker

f. Machine specifications

		Unit	KX61-3 EU	KX71-3 EU	KX71-3 PP
Engine					
Type			Vertical, water-cooled 4 cycle, 4 cylinders diesel		
Model			V1505-E2-BH-9-EU	V1505-E2-BH-10-EU	V1505-E2-BH-10
Output power (ISO 3406m Gross)		kW PS	18.3 kW/2100rpm 24.9 PS/2100rpm	20.6 kW/2300rpm 28.0 PS/2300rpm	← (SAE-J1349)
Displacement		cc	1498	1498	←
Dimensions					
Overall length	STD/Long	mm (in)	4270 / 4310	4520 / 4550	4550 (179.1)
Overall width		mm (in)	1400	1500	← (59.1)
Overall crawler width		mm (in)	1400	1500	← (59.1)
Overall height	Canopy	mm (in)	2430	2430	← (95.7)
	Cabin	mm (in)	2410	2410	← (94.9)
Min. ground clearance		mm (in)	305	←	← (12.0)
Max. digging depth	STD. Arm	mm (in)	2490	2680	—
	Long Arm	mm (in)	2740	2870	2970 (116.9)
Max. digging height	STD. Arm	mm (in)	4360	4470	—
	Long Arm	mm (in)	4540	4600	4700 (185.0)
Max. digging radius	STD. Arm	mm (in)	4480	4700	—
	Long Arm	mm (in)	4720	4890	4990 (196.5)
Max. dumping height	STD. Arm	mm (in)	3060	3170	—
	Long Arm	mm (in)	3240	3300	3180 (125.2)
Swing angle (left/right)		deg	78 / 57	←	←
Travel speed	Low speed R/L	km/h (m/h)	2.8 / 2.7	2.7 / 2.6	2.6 (1.6) / 2.6 (1.6)
	High speed R/L	km/h (m/h)	4.4 / 4.3	4.6 / 4.5	4.5 (2.8) / 4.4 (2.7)
Swing speed		rpm	9.5	9.4	←
Max. traction force	Low speed	kN (kgf) lbw	20.2 (2060)	22.3 (2275)	22.1 (2250) 4960
	High speed	kN (kgf) lbw	11.7 (1193)	14.6 (1490)	11.1 (1130) 2491
Performance					
Tumbler distance		mm (in)	1560	←	← (61.4)
Tread		mm (in)	1100	1200	← (47.2)
Crawler width × No. of shoe × pitch	Rubber	mm (in)	300 × 53 × 80	←	←
Bucket					
Capacity CECE heaped		m ³ (yd ³)	0.06	0.07	0.08 (0.06)
Width		mm (in)	450	480	450 (17.7)
Dozer					
Width × height		mm (in)	1400 × 300	1500 × 300	← (59.1 × 11.8)
Lift above GL / below GL		mm (in)	350 × 310	370 × 350	340 × 300 (13.4 × 12.2)

Note:Kubota Japan Bucket

g. Machine weight

kgf
(lbs)

	Track	Arm	KX61-3 EU	KX71-3 EU	KX71-3 PP
Canopy	Rubber	STD	2530 (5566)	2720 (5984)	—
		Long	2540 (5588)	2730 (6006)	2780 (6116)
	Iron	STD	2625 (5775)	2815 (6193)	—
		Long	2630 (5786)	2825 (6215)	2875 (6325)
Cab	Rubber	STD	2640 (5808)	2830 (6226)	—
		Long	2650 (5830)	2840 (6248)	2890 (6358)
	Iron	STD	2735 (6017)	2925 (6435)	—
		Long	2745 (6039)	2935 (6457)	2985 (6567)
Cab (Light weight)	Rubber	STD	2580 (5676)	—	—
		Long	2590 (5698)	—	—
	Iron	STD	2675 (5885)	—	—
		Long	2685 (5907)	—	—

(Note : Cab - canopy = 105 kgf, Iron track - rubbertrack = 95 kgf, Long arm - STD arm = 10 kgf)

Machine specifications : Service port, Wrist rest, STD and Long arm, FM-cab or canopy, KBM & KBT bucket

M-1-9

No	Specifications Items			Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks
					Std value	Allowable range	Std value	Allowable range	Std value	Allowable range	
4	1	Rear end min. turning radius		mm	1160.0	1137.0 to 1183.0	1200.0	1176.0 to 1224.0	←	←	
					inch	45.7	44.8 to 46.6	47.2	46.3 to 48.2	←	
	2	Swivel frame rear ground clearance		mm	530.0	519.0 to 541.0	←	←	←	←	
					inch	20.9	20.4 to 21.3	←	←	←	
	3	Tambler center distance		mm	1560.0	1513.0 to 1607.0	←	←	←	←	
					inch	61.4	59.6 to 63.3	←	←	←	
	4	Crawler total length		mm	1990.0	1930.0 to 2050.0	←	←	←	←	
					inch	78.3	76.0 to 80.7	←	←	←	
	5	Crawler total width		mm	1400.0	1920.0 to 2000.0	1500.0	1920.0 to 2000.0	←	←	
					inch	55.1	75.6 to 78.7	59.1	75.6	78.7	
	6	Min. ground clearance		mm	305.0	296.0 to 314.0	←	←	←	←	
					inch	12.0	11.7 to 12.4	←	←	←	
5	Front attachment	Bucket heaped capacity	CECE	m3	0.040	0.038 to 0.042	0.050	0.048 to 0.052	0.060	0.058 to 0.062	
				yd3	0.052	0.050 to 0.055	0.065	0.063 to 0.068	0.078	0.076 to 0.081	
			SAE, JIS	m3	0.060	0.058 to 0.062	0.070	0.067 to 0.073	0.080	0.077 to 0.083	
				yd3	0.078	0.076 to 0.081	0.092	0.088 to 0.095	0.105	0.101 to 0.109	
		Bucket width		mm	450.0	540.0 to 560.0	480.0	540.0 to 560.0	450.0	540.0 to 560.0	Without side cutter
				inch	17.7	21.3 to 22.0	18.9	21.3 to 22.0	17.7	21.3 to 22.0	
		Swing angle	L	deg	78.0	76.0 to 80.0	←	←	←	←	
			R	deg	57.0	55.0 to 59.0	←	←	56.0	54.0 to 58.0	
		Max. digging radius		mm	4480.0	4413.0 to 4547.0	4700.0	4630.0 to 4771.0	4990.0	4915.0 to 5065.0	
				inch	176.4	173.7 to 179.0	185.0	182.3 to 187.8	196.5	193.5 to 199.4	
			(Long)	mm	4720.0	4649.0 to 4791.0	4890.0	4817.0 to 4963.0	-	-	
				inch	185.8	183.0 to 188.6	192.5	189.6 to 195.4	-	-	
		Ground level Max. digging radius"		mm	4350.0	4285.0 to 4415.0	4580.0	4511.0 to 4649.0	4880.0	4807.0 to 4953.0	
				inch	171.3	168.7 to 173.8	180.3	177.6 to 183.0	192.1	189.3 to 195.0	
			(Long)	mm	4600.0	4531.0 to 4669.0	4770.0	4698.0 to 4842.0	-	-	
				inch	181.1	178.4 to 183.8	187.8	185.0 to 190.6	-	-	
	10	Ground level Min. finish radius"		mm	1520.0	1474.0 to 1566.0	1550.0	1504.0 to 1597.0	1430.0	1387.0 to 1473.0	Bucket bottom horizontal
				inch	59.8	58.0 to 61.7	61.0	59.2 to 62.9	56.3	54.6 to 58.0	
			(Long)	mm	1380.0	1339.0 to 1421.0	1430.0	1387.0 to 1473.0	-	-	
				inch	54.3	52.7 to 55.9	56.3	54.6 to 58.0	-	-	

No		Specificatios Items		Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks			
					Std value	Allowable range	Std value	Allowable range	Std value	Allowable range				
5	11	Max. digging depth		mm	2490.0	2440.0 to 2540.0	2680.0	2626.0 to 2734.0	2970.0	2911.0 to 3029.0				
				inch	98.0	96.1 to 100.0	105.5	103.4 to 107.6	116.9	114.6 to 119.3				
				(Long)	mm	2740.0	2685.0 to 2795.0	2870.0	2813.0 to 2927.0	-		-		
					inch	107.9	105.7 to 110.0	113.0	110.7 to 115.2	-		-		
	12	Max. vertical digging depth		mm	2050.0	1989.0 to 2112.0	2260.0	2192.0 to 2328.0	1900.0	1843.0 to 1957.0				
				inch	80.7	78.3 to 83.1	89.0	86.3 to 91.7	74.8	72.6 to 77.0				
				(Long)	mm	2290.0	2221.0 to 2359.0	2460.0	2386.0 to 2534.0	650.0		631.0 to 670.0		
					inch	90.2	87.4 to 92.9	96.9	93.9 to 99.8	25.6		24.8 to 26.4		
	13	Max. digging height		mm	4360.0	4273.0 to 4447.0	4470.0	4381.0 to 4559.0	4700.0	4606.0 to 4794.0				
				inch	171.7	168.2 to 175.1	176.0	172.5 to 179.5	185.0	181.3 to 188.7				
	(Long)			mm	4540.0	4449.0 to 4631.0	4600.0	4508.0 to 4692.0	4580.0	4488.0 to 4672.0				
				inch	178.7	175.2 to 182.3	181.1	177.5 to 184.7	180.3	176.7 to 183.9				
	14	Max. dump height		mm	3060.0	2999.0 to 3121.0	3170.0	3107.0 to 3233.0	3180.0	3116.0 to 3244.0				
				inch	120.5	118.1 to 122.9	124.8	122.3 to 127.3	125.2	122.7 to 127.7				
	(Long)			mm	3240.0	3175.0 to 3305.0	3300.0	3234.0 to 3366.0	-	-				
				inch	127.6	125.0 to 130.1	129.9	127.3 to 132.5	-	-				
	15	Max. dump height (Arm vertical)		mm	1270.0	1232.0 to 1308.0	1280.0	1242.0 to 1318.0	1040.0	1009.0 to 1071.0				
				inch	50.0	48.5 to 51.5	50.4	48.9 to 51.9	40.9	39.7 to 42.2				
				(Long)	mm	1030.0	999.0 to 1061.0	1080.0	1048.0 to 1112.0	-		-		
					inch	40.6	39.3 to 41.8	42.5	41.3 to 43.8	-		-		
	16	Mini. turning radius	Front straight		mm	1830.0	1775.0 to 1885.0	1840.0	1785.0 to 1895.0	1940.0	1882.0 to 1998.0			
					inch	72.0	69.9 to 74.2	72.4	70.3 to 74.6	76.4	74.1 to 78.7			
					(Long)	mm	1880.0	1824.0 to 1936.0	1870.0	1814.0 to 1926.0	-		-	
						inch	74.0	71.8 to 76.2	73.6	71.4 to 75.8	-		-	
			Full swing position		mm	1430.0	1387.0 to 1473.0	1440.0	1397.0 to 1483.0	1580.0	1533.0 to 1627.0			
					inch	56.3	54.6 to 58.0	56.7	55.0 to 58.4	62.2	60.4 to 64.1			
					(Long)	mm	1480.0	1436.0 to 1524.0	1490.0	1445.0 to 1535.0	-		-	
						inch	58.3	56.5 to 60.0	58.7	56.9 to 60.4	-		-	
17	Dozer	Width		mm	1400.0	1395.0 to 1405.0	1500.0	1495.0 to 1505.0	←	←				
				inch	55.1	54.9 to 55.3	59.1	58.9 to 59.3	←	←				
				Height	mm	300.0	290.0 to 310.0	←	←	←		←		
					inch	11.8	11.4 to 12.2	←	←	←		←		

No		Specificatios Items			Unit	KX61-3 EU			KX71-3 EU			KX71-3 PP			Remarks
						Std value	Allowable range		Std value	Allowable range		Std value	Allowable range		
6	3		Max. lift above GL		mm	350.0	300.0 to 400.0		370.0	320.0 to 420.0		340.0	290.0 to 390.0		
					inch	13.8	11.8 to 15.7		14.6	12.6 16.5		13.4	11.4 15.4		
	4		Max. below GL		mm	310.0	260.0 to 360.0		350.0	300.0 to 400.0		310.0	260.0 to 360.0		
					inch	12.2	10.2 to 14.2		13.8	11.8 15.7		12.2	10.2 14.2		
Q2		Main Specs JIS A8404													
1	1	Bucket tooth slaggish			mm	60.0	73.0 >		←	←		←	←		Pushing force;30kgf
					inch	2.4	2.9 >		←	←		←	←		
	2	Front boom declination			mm	0.0	10.0 >		←	←		←	←		
					inch	0.0	0.4 >		←	←		←	←		
	3	Dozer's declination			mm	3.0	10.0 >		←	←		←	←		
					inch	0.1	0.4 >		←	←		←	←		
2	1	Distance to teeth from boom cylinder			mm	45.0	41.0 to 50.0		35.0	32.0 to 39.0		40.0	36.0 to 44.0		
					inch	1.8	1.6 to 2.0		1.4	1.3 to 1.5		1.6	1.4 to 1.7		
3	1	Approach angle			deg	35.0	32.0 to 39.0		31.5	28.0 to 35.0		30.0	27.0 to 33.0		
4	1	Crawler height			mm	430.0	421.0 to 439.0		←	←		←	←		Include grouser on the spocket
					inch	16.9	16.6 to		←	←		←	←		
	2	Max. crawler height			mm	445.0	436.0 to 454.0		←	←		465.0	456.0 to 474.0		
					inch	17.5	17.2 to 17.9		←	←		18.3	18.0 to 18.7		
Q3		Engine performance													
1	1	Max. engine rpm	no load		rpm	2300.0	2300.0 >		2500.0	2500.0 >		←	←		Boom, arm, swivel
	2		1 pump relief		rpm	-	-		-	-		-	-		
	3		2 pump relief		rpm	-	-		-	-		-	-		
	4		3 pump relief		rpm	-	-		-	-		-	-		
	5		2 pump relief		rpm	2100.0	2000.0 <		2300.0	2200.0 <		←	←		
	6		Dozer+2 pump relief		rpm	2100.0	2000.0 <		2300.0	2200.0 <		←	←		
2	1	Idler			rpm	1100.0	1050.0 to 1150.0					←	←		Cab:1500rpm
Q4		Travelling performance													
1	1	Travel motor block performance	L		mm	270.0	300.0 >		280.0	300.0 >		←	←		On the 20 deg. slope, 10 min, engine stop condition, travel stance, oil temp. 50degree centi.
					inch	10.6	11.8 >		11.0	11.8 >		←	←		
	2	R		mm	270.0	300.0 >		280.0	300.0 >		←	←			
				inch	10.6	11.8 >		11.0	11.8 >		←	←			

No		Specificatios Items			Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks	
						Std value	Allowable range	Std value	Allowable range	Std value	Allowable range		
2	1	Max. Traction force	F1		kgf	2060.4	1856.4 <	2274.6	2050.2 <	2254.2	2029.8 <	Oil temp. 50 degree centi., travel stance, F1:slip, 70% of absolute traction force, F2:Relief, 60 % of absolute traction force	
					kN	20.2	18.2 <	22.3	20.1 <	22.1	19.9 <		
					lbw	4542.4	4092.7 <	5014.6	4519.9 <	4969.7	4474.9 <		
	2		F2		kgf	1193.4	1071.0 <	1489.2	1336.2 <	1132.2	1020.0 <		
					kN	11.7	10.5 <	14.6	13.1 <	11.1	10.0 <		
					lbw	2631.0	2361.1 <	3283.1	2945.8 <	2496.1	2248.7 <		
3	1	Travel straightness	F1		mm	600.0	600.0 >	←	←	←	←	10m distance, engine max.speed, oil temp.50 degree centi.	
					inch	23.6	23.6 >	←	←	←	←		
	2		F2		mm	600.0	600.0 >	←	←	←	←		
					inch	23.6	23.6 >	←	←	←	←		
	3		Dozer F1		mm	600.0	600.0 >	←	←	←	←	Dozer up & down 10m distance	
					inch	23.6	23.6 >	←	←	←	←		
	4		Dozer R1		mm	600.0	600.0 >	←	←	←	←		
					inch	23.6	23.6 >	←	←	←	←		
4	1	Track shoe sag distance	Iron		mm	75.0	75.0 to 80.0	←	←	←	←		
					inch	3.0	3.0 to 3.1	←	←	←	←		
	2		Rubber		mm	10.0	10.0 to 15.0	←	←	←	←		
					inch	0.4	0.4 to 0.6	←	←	←	←		
Q5		Work performance											
1	1	Boom lifting capacity			kgf	499.8	448.8 <	489.6	438.6 <	360.0	326.4 <	Front end, Arm extend bucket crowd, at tooth	
					kN	4.9	4.4 <	4.8	4.3 <	3.5	3.2 <		
					lbw	1101.9	989.4 <	1079.4	966.9 <	793.7	719.6 <		
	2	Arm digging force			kgf	1499.4	1428.0 <	1795.2	1703.4 <	1485.0	1407.6 <	Bucket tooth root	
					kN	14.7	14.0 <	17.6	16.7 <	14.6	13.8 <		
					lbw	3305.6	3148.2 <	3957.7	3755.3 <	3273.9	3103.2 <		
			3	(Long)		kgf	1264.8	1203.6 <	1652.4	1570.8 <	-	-	Machine stance to JIS bucket tooth root
						kN	12.4	11.8 <	16.2	15.4 <	-	-	
						lbw	2788.4	2653.5 <	3642.9	3463.0 <	-	-	
	4	Bucket digging force	Crowd	kgf	2193.0	2080.8 <	2570.4	2437.8 <	2160.0	2050.2 <			
				kN	21.5	20.4 <	25.2	23.9 <	21.2	20.1 <			
				lbw	4834.7	4587.4 <	5666.8	5374.4 <	4762.0	4519.9 <			

No		Specificatios Items			Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks		
						Std value	Allowable range	Std value	Allowable range	Std value	Allowable range			
1	5			Power hole	kgf	-	-	-	-	2880.0	2754.0 <			
					kN	-	-	-	-	28.4	27.0 <			
					lbw	-	-	-	-	6349.3	6071.5 <			
	6	Dozer force		down	kgf	1723.8	1642.2 <	2130.0	2019.6 <	←	←	Cutting edge down force at ground level		
					kN	16.9	16.1 <	20.9	19.8 <	←	←			
					lbw	3800.3	3620.4 <	4695.8	4452.5 <	←	←			
2	1	Boom speed	Canopy	up 1st	sec	2.6	2.3 to 2.9	2.4	2.1 to 2.7	←	←	Oil temp. 50±5°C(122±41°F) Ground to max. height (exculude cushioning)		
				up 2nd	sec	4.2	3.9 to 4.5	4.3	4.0 to 4.6	4.0	3.7 to 4.3			
				down	sec	2.6	2.3 to 2.9	2.3	2.0 to 2.6	2.4	2.1 to 2.7			
				down	sec	4.0	3.7 to 4.3	3.9	3.6 to 4.2	3.8	3.5 to 4.1			
3	1	Arm speed		crowd	sec	2.6	2.3 to 2.9	3.0	2.7 to 3.3	2.9	2.6 to 3.2			
				extend	sec	2.6	2.3 to 2.9	3.0	2.7 to 3.3	2.9	2.6 to 3.2			
4	1	Bucket speed		crowd	sec	2.7	2.4 to 3.0	2.8	2.5 to 3.1	←	←	Oil temp. 50±5°C(122±41°F)		
				dump	sec	1.9	1.6 to 2.2	←	←	←	←			
5	1	Dozer speed		G to up	sec	0.8	0.5 to 1.1	←	←	←	←	Ground to max. up		
				Max up	sec	2.3	2.0 to 2.6	2.2	1.9 to 2.5	←	←	Max. up to max. down		
				G to down	sec	1.0	0.7 to 1.3	←	←	←	←			
				Max. down	sec	3.0	2.7 to 3.3	2.8	2.5 to 3.1	←	←			
6	1	Arm cylinder cavita-tion		mm	0.0	5.0 >	←	←	←	←	Oil temp. 95±5°C(203±41°F)			
				inch	0.0	0.2 >	←	←	←	←				
7	1	Max. digging height radius			mm	2210.0	1989.0 to 2431.0	2490.0	2241.0 to 2739.0	-	- - - -			
					inch	87.0	78.3 to 95.7	98.0	88.2 to 107.8	-	- - - -			
					2	(Long)	mm	2390.0	2151.0 to 2629.0	2650.0	2385.0 to 2915.0		2650.0	2385.0 to 2915.0
							inch	94.1	84.7 to 103.5	104.3	93.9 to 114.8		104.3	93.9 to 114.8
	3	Max. dump height radius			mm	2500.0	2350.0 to 2650.0	2210.0	2077.0 to 2343.0	-	- - - -	at bucket pin		
					inch	98.4	92.5 to 104.3	87.0	81.8 to 92.2	-	- - - -			
					4	(Long)	mm	2670.0	2510.0 to 2830.0	2430.0	2284.0 to 2576.0		2530.0	2378.0 to 2682.0
							inch	105.1	98.8 to 111.4	95.7	89.9 to 101.4		99.6	93.6 to 105.6
	5	Bucket bottom height at arm vertical			mm	1550.0	1504.0 to 1597.0	1560.0	1513.0 to 1607.0	-	- - - -	Bucket horizontal		
					inch	61.0	59.2 to 62.9	61.4	59.6 to 63.3	-	- - - -			
					6	(Long)	mm	1310.0	1271.0 to 1349.0	1370.0	1329.0 to 1411.0		1320.0	1280.0 to 1360.0
							inch	51.6	50.0 to 53.1	53.9	52.3 to 55.6		52.0	50.4 to 53.5
	7	7	Bucket wrist angle			degree	180.0	177.0 to 183.0	185.0	182.0 to 188.0	←	←		

No		Specificatios Items		Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks	
					Std value	Allowable range	Std value	Allowable range	Std value	Allowable range		
Q6		Swivel, swing performance										
1	1	Swivel torque	L	kgf•m	438.6	377.4 <	489.6	418.2 <	420.0	357.0 <	Arm extend,show/ Quick	
				kN.m	4.3	3.7 <	4.8	4.1 <	4.1	3.5 <		
				ft•lbs	3172.4	2729.7 <	3541.3	3024.8 <	3037.9	2582.2 <		
	2		R	kgf•m	438.6	377.4 <	489.6	418.2 <	420.0	357.0 <		
				kN.m	4.3	3.7 <	4.8	4.1 <	4.1	3.5 <		
				ft•lbs	3172.4	2729.7 <	3541.3	3024.8 <	3037.9	2582.2 <		
2	1	Swivel angle	L	deg	21.3	19.0 <	18.8	17.0 <	16.0	14.0 <	Bucket load=JIS heaped×1.8	
			R	deg	21.3	19.0 <	18.8	17.0 <	16.0	14.0 <		
3	1	Swivel block perfor- mance	Engine stop	L	deg	0.0	5.0 >	←	←	←	←	On 20 degree slope, 1 min. bucket heaped capacity
	R			deg	0.0	5.0 >	←	←	←	←		
	3		Engine idle	L	deg	0.0	30.0 >	←	←	←	←	Lever lock release,
	4			R	deg	0.0	30.0 >	←	←	←	←	
4	1	Swivel start-up speed	L	sec	2.0	1.7 to 2.3	←	←	2.5	2.2 to 2.8	0 to 90 deg swivel, bucket heaped, engine Max.	
	2		R	sec	2.0	1.7 to 2.3	←	←	2.5	2.2 to 2.8		
5	1	Swing speed	L	sec	6.5	6.0 to 7.0	6.1	5.6 to 6.6	←	←	Empty bucket load. Engine max.	
	2		R	sec	6.2	5.7 to 6.7	5.6	5.1 to 6.1	←	←		
6	1	Swing Lock	Cylinder dislocation	Swivel R&L	mm	0.0	10.0 >	←	←	←	←	90 deg-swivel, 100 times actual digging
					inch	0.0	0.4 >	←	←	←	←	
	2	Reciprocating motion	L / R	Swing	mm	0.0	0.0 >	←	←	←	←	90 deg-swivel, 100 times
					inch	0.0	0.0 >	←	←	←	←	
Q7		Hydraulic performance										
1	1	Relief pressure set- ting	P1	kgf/cm ²	230.0	225.4 to 240.7	240.0	234.6 to 249.9	220.0	215.2 to 220.3	At pump delivery 50±5°C	
				MPa	22.6	22.1 to 23.6	23.5	23.0 to 24.5	21.6	21.1 to 21.6		
				bar	2.2	2.2 to 2.3	2.3	2.3 to 2.4	2.1	2.1 to 2.1		
				psi	3271.4	3206.2 to 3423.8	3413.6	3336.8 to 3554.4	3129.1	3061.1 to 3133.7		
	2		P2	kgf/cm ²	230.0	225.4 to 240.7	240.0	234.6 to 249.9	220.0	215.2 to 220.3		
				MPa	22.6	22.1 to 23.6	23.5	23.0 to 24.5	21.6	21.1 to 21.6		
				bar	2.2	2.2 to 2.3	2.3	2.3 to 2.4	2.1	2.1 to 2.1		
				psi	3271.4	3206.2 to 3423.8	3413.6	3336.8 to 3554.4	3129.1	3061.1 to 3133.7		

No		Specificatios Items			Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks
						Std value	Allowable range	Std value	Allowable range	Std value	Allowable range	
1	3			P3	kgf/cm ²	175.0	170.3 to 180.5	210.0	205.0 to 215.2	210.0	205.0 to 215.2	
					MPa	17.2	16.7 to 17.7	20.6	20.1 to 21.1	20.6	20.1 to 21.1	
					bar	1.7	1.6 to 1.7	2.0	2.0 to 2.1	2.0	2.0 to 2.1	
					psi	2489.1	2422.8 to 2567.9	2986.9	2916.1 to 3061.1	2986.9	2916.1 to 3061.1	
	4		P4	kgf/cm ²	40.0	34.7 to 44.9	←	←	←	←		
				MPa	3.9	3.4 to 4.4	←	←	←	←		
				bar	3.9	3.9 to 5.0	←	←	←	←		
				psi	568.9	493.3 to 638.3	←	←	←	←		
2	1	Cylinder oil sealing capacity	Boom	50±5°C (122±41°F)	mm	1.0	20.0 >	←	←	←	←	Arm extend, bucket
				inch	0.0	0.8 >	←	←	←	←		
	2		Arm	95±5°C (203±41°F)	mm	2.0	20.0 >	←	←	←	←	height 1m, 10 min.
				inch	0.1	0.8 >	←	←	←	←		
	3		Bucket	50±5°C (122±41°F)	mm	1.0	11.0 >	←	←	←	←	Bucket load=JIS heaped×1.8
				inch	0.0	0.4 >	←	←	←	←		
	4		Dozer	50±5°C (122±41°F)	mm	1.0	10.0 >	←	←	←	←	
				inch	0.0	0.4 >	←	←	←	←		
	5			50±5°C (122±41°F)	mm	2.0	20.0 >	←	←	←	←	
				inch	0.1	0.8 >	←	←	←	←		
	3		1	Boom cushioning performance		30°C(86°F)	sec	3.0	3.0 >	←	←	←
50°C(122°F)		sec				0.4 to1.3	0.4 to 1.3	←	←	←	←	
80°C(176°F)		sec				0.3	0.3 <	←	←	←	←	
Q8		Lever operating force & stroke										
1	1	Boom lever operat- ing force		up	kgf	1.0	0.5 to 1.5	←	←	1.4	0.9 to 1.9	
					N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
					lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	
	2		down	kgf	1.0	0.5 to 1.5	←	←	1.4	0.9 to 1.9		
				N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0		
				lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0		
	3	Arm lever		crowd	kgf	1.0	0.5 to 1.5	←	←	1.43	0.9 to 1.9	Extend & crowd
					N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
					lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	

No	Specifications Items			Unit	KX61-3 EU		KX71-3 EU		KX71-3 PP		Remarks
					Std value	Allowable range	Std value	Allowable range	Std value	Allowable range	
1	4		extend	kgf	1.0	0.5 to 1.5	←	←	1.43	0.9 to 1.9	
				N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
				lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	
	5 Bucket lever		crowd	kgf	1.0	0.5 to 1.5	←	←	1.43	0.9 to 1.9	Dump & crowd
				N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
				lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	
			extend	kgf	1.0	0.5 to 1.5	←	←	1.43	0.9 to 1.9	
				N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
				lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	
	7 Swivel (Swing) lever		R	kgf	1.0	0.5 to 1.5	←	←	1.43	0.9 to 1.9	Left & right
				N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
				lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	
			L	kgf	1.0	0.5 to 1.5	←	←	1.43	0.9 to 1.9	
				N	10.0	5.0 to 15.0	←	←	14.0	9.0 to 19.0	
				lbw	7.4	3.7 to 11.1	←	←	10.3	6.6 to 14.0	
	9 Dozer lever		up	kgf	2.6	2.0 to 3.1	←	←	2.4	1.9 to 3.0	Up & down
				N	25.0	20.0 to 30.0	←	←	24.0	19.0 to 29.0	
				lbw	18.4	14.8 to 22.1	←	←	17.4	14.0 to 21.4	
			down	kgf	2.6	2.0 to 3.1	←	←	2.4	1.9 to 3.0	
				N	25.0	20.0 to 30.0	←	←	24.0	19.0 to 29.0	
				lbw	18.4	14.8 to 22.1	←	←	17.4	14.0 to 21.4	
	11 Travel lever	L	Forward	kgf	1.6	1.1 to 2.1	←	←	1.6	1.1 to 2.1	
				N	16.0	11.0 to 21.0	←	←	16.0	11.0 to 21.0	
				lbw	11.8	8.1 to 15.5	←	←	11.6	8.1 to 15.5	
			Back	kgf	1.6	1.1 to 2.1	←	←	1.6	1.1 to 2.1	
				N	16.0	11.0 to 21.0	←	←	16.0	11.0 to 21.0	
				lbw	11.8	8.1 to 15.5	←	←	11.6	8.1 to 15.5	
		R	Forward	kgf	1.6	1.1 to 2.1	←	←	1.6	1.1 to 2.1	
				N	16.0	11.0 to 21.0	←	←	16.0	11.0 to 21.0	
				lbw	11.8	8.1 to 15.5	←	←	11.6	8.1 to 15.5	
			Back	kgf	1.6	1.1 to 2.1	←	←	1.6	1.1 to 2.1	
				N	16.0	11.0 to 21.0	←	←	16.0	11.0 to 21.0	
				lbw	11.8	8.1 to 15.5	←	←	11.6	8.1 to 15.5	

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