WSM

WORKSHOP MANUAL
KUBOTA EXCAVATOR

KX 36·61·101 41·71·151

MECHANISM CHAPTER

Kubota

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General Specifications

Machine model				KX41	KX71	KX101	KX151
Machine weight (Iron track)	STD arm	R/F Canopy	lb (kgf)	3440 (1560)	6240 (2830)	7935 (3600)	11440 (5190)
		R/F Cab	lb (kgf)	—	6425 (2915)	8125 (3685)	11630 (5275)
	Long arm	R/F Canopy	lb (kgf)	3465 (1570)	6260 (2840)	7980 (3620)	11850 (5375)
		R/F Cab	lb (kgf)	—	6460 (2930)	8180 (3710)	12035 (5460)
	Tele-arm	R/F Canopy	lb (kgf)	3605 (1635)	7155 (3245)	8765 (3975)	—
		R/F Cab	lb (kgf)	—	7340 (3330)	8950 (4060)	—
Machine weight (Rubber track)	STD arm	R/F Canopy	lb (kgf)	3310 (1500)	6085 (2760)	7740 (3510)	10670 (4840)
		R/F Cab	lb (kgf)	—	6275 (2845)	7925 (3595)	10855 (4925)
	Long arm	R/F Canopy	lb (kgf)	3330 (1510)	6110 (2770)	7785 (3530)	11080 (5025)
		R/F Cab	lb (kgf)	—	6305 (2860)	7980 (3620)	11285 (5110)
	Tele-arm	R/F Canopy	lb (kgf)	3475 (1575)	7000 (3175)	8565 (3885)	—
		R/F Cab	lb (kgf)	—	7190 (3260)	8750 (3970)	—
Machine length			in. (mm)	1400 (3555)	177.8 (4515)	196.5 (4990)	217.1 (5515)
Machine height	R/F Canopy		in. (mm)	88.2 (2240)	96.3 (2445)	97.0 (2465)	100.4 (2550)
	R/F Cab		in. (mm)	—	96.5 (2450)	97.2 (2470)	100.6 (2555)
Machine width			in. (mm)	41.5 (1055)	61.4 (1560)	63.3 (1610)	65.7 (1670)
Overall crawler width			in. (mm)	37.8 (960)	57.1 (1450)	59.4 (1510)	78.4 (1990)
Min.ground clearance			in. (mm)	6.7 (170)	11.6 (295)	11.6 (295)	12.4 (315)
Bucket capacity (Standerd)	Struck		cu·ft (m^3)	1.24 (0.035)	2.12 (0.055)	2.82 (0.08)	4.24 (0.12)
	CECE heaped		cu·ft (m^3)	1.4 (0.04)	2.3 (0.065)	3.5 (0.10)	4.9 (0.14)
	SAE heaped		cu·ft (m^3)	1.6 (0.045)	2.6 (0.075)	4.2 (0.12)	5.6 (0.16)
Standard bucket width			in. (mm)	17.7 (450)	18.9 (480)	23.6 (600)	25.6 (650)
Working capacity (45° side ditch)	Cycle time		sec.	9.26	9.21	9.91	11.61
	Work amount		cu·yd (m^3/h)	36.9 (28.24)	60.3 (46.14)	80.0 (61.20)	102.5 (78.37)
Noise level	At operator's ear		dB (A)	74.4	74.0	75.0	77.5
	At 7m away		dB (A)	64.7	65.5	67.5	68.5
Boom length			in. (mm)	63.2 (1605)	88.2 (2240)	98.8 (2510)	113.0 (2870)
Arm length / STD / Long			in. (mm)	35.4 (900) 45.3 (1150)	47.2 (1200) 55.1 (1400)	51.2 (1300) 63.0 (1600)	59.1 (1500) 65.0 (1650)
Bucket length (KBT make)			in. (mm)	18.9 (481)	23.4 (594.5)	25.7 (652.5)	30.4 (772.5)
Operating space (Cabi	Max.digging height: STD / L arm		in. (mm)	121.5 (3085) / 126.0 (3200)	165.7 (4210) / 169.3 (4300)	182.3 (4630) / 184.8 (4695)	201.0 (5105) / 203.3 (5165)
	Max.dumping height: STD / L arm		in. (mm)	80.1 (2035) / 84.8 (2155)	116.3 (2955) / 119.9 (3045)	124.6 (3165) / 130.9 (3325)	140.0 (3555) / 142.3 (3615)
	Max.digging depth: STD / L arm		in. (mm)	81.1 (2060) / 90.9 (2310)	105.1 (2670) / 113.0 (2870)	121.3 (3080) / 133.1 (3380)	138.2 (3510) / 144.3 (3665)
	Distance to max. digging depth: STD / L arm		in. (mm)	56.7 (1440) / 56.5 (1435)	74.6 (1895) / 74.2 (1885)	77.8 (1975) / 77.2 (1960)	90.4 (2295) / 89.8 (2280)
	Max.vertical digging depth: STD / L arm		in. (mm)	64.0 (1625) / 73.6 (1870)	76.8 (1950) / 84.6 (2150)	88.0 (2235) / 99.4 (2525)	106.9 (2715) / 112.8 (2865)
	Max.digging reach: STD / L arm		in. (mm)	142.1 (3610) / 151.4 (3845)	182.5 (4635) / 189.6 (4815)	199.4 (5065) / 210.2 (5340)	227.6 (5780) / 233.1 (5920)
	Min.front turning radius: Straight / Swing		in. (mm)	64.8 (1645) / 46.1 (1170)	76.2 (1935) / 55.9 (1420)	85.8 (2180) / 68.7 (1745)	100.4 (2550) / 82.7 (2100)
	Rear end turning radius		in. (mm)	42.9 (1090)	53.1 (1350)	58.5 (1485)	59.6 (1515)
Max.bucket digging force at teeth root			lbw (kgf)	2811 (1275)	5490 (2490)	5941 (2695)	7352 (3335)
Max. arm digging force at teeth root (L. arm)			lbw (kgf)	1720 (780)	3031 (1375)	3880 (1760)	5126 (2325)
Lifting capacity: STD / Long arm			lbw (kgf)	423 (192) /	730 (331) /	974 (442) /	1246 (565) /
Boom swing angle, left / right			degree	90° / 50°	90° / 50°	80° / 43°	80° / 43°
Boom swing moment, left / right			ft·lb (kgf·m)	6299 (871) / 4425 (612)	14135 (1954) / 10662 (1486)	17468 (2415) / 13389 (1811)	35087 (4851) / 24469 (3383)
Body swivel speed			rpm	8.3 / 5.5	8.7 / 5.5	9.4	8.4
Body swivel moment			ft·lb (kgf·m)	1643 (227.2)	3624 (501.1)	5114 (707.0)	7935 (1097.0)
Body swivel capable angle			degree	25≦	25≦	25≦	26≦
Traction force (cab, iron track)			lbw (kgf)	11811 (1633)	23377 (3232)	31030 (4290)	36715 (5076)
Travel speed, high / low			mph (km / h)	1.24 (2.0)	1.3 (2.1)	2.24 (3.6) / 1.18 (1.9)	2.24 (3.6) / 1.12 (1.8)

— KTC, KCL, KTA Version —

Machine model					KX41	KX71	KX101	KX151
Dozer	Width×height×length			in. (mm)	37.8×8.8×34.3 (960×225×871)	57.1×15.2×64.8 (1450×385×1645)	59.4×19.2×64.8 (1510×485×1645)	78.3×16.1×54.7 (1990×410×1390)
	Lift above GL×below GL			in. (mm)	6.5×6.9 (165×175)	15.0×19.5 (380×495)	15.2×19.1 (385×485)	16.3×17.9 (415×455)
	Displacement capacity			cu. yd (m^3)	0.08 (0.06)	0.27 (0.215)	0.29 (0.224)	0.436 (0.333)
Undercarriage	Shoe width×link No.			in. (mm)	9.06 (230)×32	11.8 (300)×37	13.8 (350)×43	21.7 (550)×38
	Track shoe length			in. (mm)	53.9 (1370)	68.5 (1766)	81.6 (2072)	95.5 (2425)
	Tumbler distance			in. (mm)	39.8 (1010)	51.2 (1300)	63.0 (1600)	73.2 (1860)
	Track shoe center distance			in. (mm)	28.7 (730)	45.3 (1150)	45.7 (1160)	56.7 (1440)
	Ground contact pressure (Iron track)	STD arm	R/F Canopy	psi (kgf / cm^2)	4.4 (0.31)	4.8 (0.34)	4.3 (0.30)	3.4 (0.24)
			R/F Cab	psi (kgf / cm^2)	—	5.0 (0.35)	4.4 (0.31)	3.4 (0.24)
		Long arm	R/F Canopy	psi (kgf / cm^2)	4.6 (0.32)	4.8 (0.34)	4.3 (0.30)	3.6 (0.25)
			R/F Cab	psi (kgf / cm^2)	—	5.0 (0.35)	4.4 (0.31)	3.6 (0.25)
		Tele-arm	R/F Canopy	psi (kgf / cm^2)	4.7 (0.33)	5.4 (0.38)	4.7 (0.33)	—
			R/F Cab	psi (kgf / cm^2)	—	5.5 (0.39)	4.8 (0.34)	—
	Ground contact pressure (Rubber track)	STD arm	R/F Canopy	psi (kgf / cm^2)	4.3 (0.30)	4.7 (0.33)	4.8 (0.34)	4.3 (0.30)
			R/F Cab	psi (kgf / cm^2)	—	4.8 (0.34)	5.0 (0.35)	4.4 (0.31)
		Long arm	R/F Canopy	psi (kgf / cm^2)	4.3 (0.30)	4.7 (0.33)	4.8 (0.34)	4.6 (0.32)
			R/F Cab	psi (kgf / cm^2)	—	4.8 (0.34)	5.0 (0.35)	4.6 (0.32)
		Tele-arm	R/F Canopy	psi (kgf / cm^2)	4.6 (0.32)	5.4 (0.38)	5.4 (0.38)	—
			R/F Cab	psi (kgf / cm^2)	—	5.5 (0.39)	5.5 (0.39)	—
Engine	Model				D1105-BH	V1505-BH	V1902-BH6	V1902-BH6
	SAE J1349 (Gross)			HP	22.2	32.2	36.6	42.7
	DIN6270NB			PS	20	29	33	39
	Rated Max.Speed			rpm	2400	2600	2450	2800
	Idle Speed			rpm	1000~1200	←	←	←
	Max. torque			ft·lb (kgf·m) / rpm	47.7 (6.6) / 1500	65.8 (9.1) / 1700	84.6 (11.7) / 1500	←
	Bore×stroke			in. (mm)	3.07×3.09 (78×78.4)	←	3.35×3.23 (85×82)	←
	Displacement			cu. in. (cc)	68.5 (1123)	91.4 (1498)	113.5 (1861)	113.5 (1861)
	Fuel cousumption ratio			lb (g) / ps·h	0.42 (190)	0.42 (190)	0.46 (210)	0.46 (210)
Hydraulic system	Pump flow rate		P_1	U.S. gal (ℓ) / min	3.5 (13.2)	7.7 (29.1)	8.5 (32.3)	9.8 (37.0)
			P_2	U.S. gal (ℓ) / min	3.5 (13.2)	7.7 (29.1)	8.5 (32.3)	9.8 (37.0)
			P_3	U.S. gal (ℓ) / min	2.6 (9.8)	4.8 (18.2)	5.6 (21.3)	8.3 (31.4)
			P_4	U.S. gal (ℓ) / min	—	0.89 (3.36)	0.99 (3.76)	1.14 (4.30)
	Main relief pressure setting		a_1	psi. (kgf / cm^2)	2775 (195)	2490 (175)	2275 (160)	2700 (190)
			a_2	psi. (kgf / cm^2)	2985 (210)	2845 (200)	2985 (210)	2985 (210)
			a_3	psi. (kgf / cm^2)	2775 (195)	2275 (160)	2775 (195)	2700 (190)
			a_4	psi. (kgf / cm^2)	—	—	—	1990 (140)
	Travel motor total displacement			cu. in. (cc) / rev	20.6 (338.5)	59.5 (975.2)	73.7 (1208.4) / 38.6 (636)	106.1 (1738.8) / 53.9 (884.1)
	Swivel motor	Displacement		cu. in. (cc) / rev	11.9 (195)	1.00 (16.4)	1.00 (16.4)	1.42 (23.3)
		Relief pressure		psi. (kgf / cm^2)	1705 (120)	2135 (150)	2885 (203)	2885 (203)
Hydraulic system	Service port	Flow rate		U.S. gal (ℓ) / min	6.97 (26.4)	15.4 (58.2)	17.1 (64.6)	19.6 (74.0) ; 9.78 (37.0)
		Operating pressure		psi. (kgf / cm^2)	2985 (210)	2845 (200)	2985 (210)	1990 (140) ; 2985 (210)
	Cylinder Bore×rod dia. ×stroke	Boom		in. (mm)	2.17×1.18×15.20 (55×30×386)	3.15×1.57×18.86 (80×40×479)	3.54×1.77×21.5 (90×45×547)	3.94×2.17×27.8 (100×55×706)
		Arm		in. (mm)	2.17×1.18×16.3 (55×30×415)	2.76×1.57×22.76 (70×40×578)	3.15×1.79×24.8 (80×45×632)	3.54×2.17×30.8 (90×55×770)
		Bucket		in. (mm)	2.17×1.18×11.3 (55×30×286)	2.95×1.77×14.72 (75×45×374)	2.76×1.57×19.3 (70×40×490)	2.95×1.77×23.0 (75×45×585)
		Swing		in. (mm)	2.17×1.18×14.2 (55×30×360)	3.15×1.57×18.31 (80×40×466)	←	3.94×2.17×23.9 (100×55×607)
		Dozer		in. (mm)	2.76×1.38×2.99 (70×35×176)	3.54×1.77×5.71 (90×45×145)	←	3.94×2.36×6.89 (100×60×175)
	Oil cooler capacity, Code No.			kcal / h	2100 (49101-02511)	4000 (49301-02511)	←	←
Fuel, coolant & lubricant	Fuel tank			U.S. gal (ℓ)	6.34 (24.0)	15.06 (57.0)	15.06 (57.0)	17.44 (66.0)
	Coolant			U.S. gal (ℓ)	1.06 (4.0)	1.32 (5.0)	2.11 (8.0)	2.11 (8.0)
	Engine			U.S. gal (ℓ)	1.06 (4.0)	1.40 (5.3)	1.98 (7.5)	1.98 (7.5)
	Final drive (each side)			U.S. gal (ℓ)	0.07 (0.25)	0.13 (0.5)	0.16 (0.6)	0.32 (1.2)
	Swivel drive			U.S. gal (ℓ)	—	0.34 (1.3)	0.34 (1.3)	0.58 (2.2)
	Hydraulic tank			U.S. gal (ℓ)	1.58 (6.0)	5.28 (20.0)	6.60 (25.0)	10.57 (40.0)

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