

Specs & Test Values

Specification and test values

ENGINE

WB93R-5 & WB97R-5

MODEL		KOMATSU S4D104E
FLYWHEEL HORSEPOWER	Kw / rmp	74/2200 (E3 24R)
TYPE		Vertical, in line, 4-cycle, water cooled diesel
No. OF CYL. - BORE x STROKE	mm x mm	4 - 104 x 132
COMBUSTION SYSTEM		Direct Injection
DISPLACEMENT	l	4.485
MAX TORQUE / rpm	Nm / rpm	398 / 1400
FIRING ORDER		1-3-4-2 (No. 1 cylinder on flywheel side)
COMPRESSURE PRESSURE	bar	17,5 ± 0,5
VALVE CLEARANCE (suction valves)	mm	0,30 ± 0,05
(exhaust valves)		0,55 ± 0,05
INJECTION PRESSURE	bar	245
OIL PRESSURE at high idling	bar	3,5
OIL PRESSURE at low idling		0,7
OIL CAPACITY engine with filters	l	13
STARTER nominal voltage	V	12
nominal output	Kw	3

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TRANSMISSION

			WB93R-5	WB97R-5
TYPE			4 speed syncromeshed with Power Shuttle and torque converter	4 speed syncromeshed with Power Shift and torque converter
MODEL			TLB1	TLB2
PUMP FLOW	900	l/min	26	26
	2200	l/min	60	60
F. & R. CLUTCH PRESSURE	900rpm	bar	13,0 - 14,5	13,5 - 16
	2200rpm		13,0 - 15,5	14,5 - 17,5
TORQUE CONVERTER	900rpm	bar	0,5 - 9,0	3,0 - 9,0
	2200rpm			
LUBRICATION		bar	Clutch position: neutral	0,5 - 5,0
			Clutch position: FWD/REW	0,5 - 3,5
4WD CLUTCH	900rpm	bar	13 - 14	14 - 16,5
	2200rpm		13 - 15,5	15,5 - 18,5
1° gear clutch pressure check point	900rpm	bar		11,5 - 14,5
	2200rpm			13 - 15,5
2°,3°, 4° gear clutch pressure check point	900rpm	bar		14 - 16,5
	2200rpm			15,5 - 18
GEARS			4 + 4	4 + 4
OIL SPECIFICATION			ATF - DEXRON®II - D	ATF - DEXRON®II - D
SUCTION OIL FILTERING CAPACITY		µm	250	250
FILTERING CAPACITY AND DELIVERY OIL FILTER TYPE		µm	10 AGV BETA 2,2	10 AGV BETA 2,2
PUMP MAX PRESSURE		bar	16	16
CONVERTER STALL TORQUE RATIO			3,01	3,01

AXLES

WB93R-5 & WB97R-5

FRONT AXLE		
Bevel gear set backlash	mm	0.18 ÷ 0.28
Pinion bearings preloading (measured on D=34.8mm without seals)	daN	P = 9.2 ÷ 13.7
Total pinion-ring gear bearing preloading (measured on D=34.8mm without seals)	daN	T = (P+3.75) ÷ (P+5.75)
Bevel gear ratio		2.462 / 1
Epicyclic reduction gear ratio		6.00 / 1
Total ratio		14.77 / 1
Dry weight	Kg	310
Steering angle	°	50° ⁰ ₋₂
REAR AXLE		
Bevel gear set backlash	mm	0.21 ÷ 0.29
Pinion bearings preloading (measured on D=34.8mm without seals)	daN	P = 11.5 ÷ 13.8
Total pinion-ring gear bearing preloading (measured on D=34.8mm without seals)	daN	T = (P+3.3) ÷ (P+5.0)
Bevel gear ratio		2.75 / 1
Epicyclic reduction gear ratio		6.40 / 1
Total ratio		17.60 / 1
Dry weight	Kg	420
Steering angle	°	RIGID

BRAKES

WB93R-5 & WB97R-5

		OIL WET BRAKE DISKS
BRAKE TYPE		
NUMBER OF BRAKE DISCS (EACH SIDE)		2
NUMBER OF BRAKE COUNTERDISCS (EACH SIDE)		2
NOMINAL BRAKE DISC THICKNESS	mm	6.73 ± 0.1
WORN BRAKE DISC MINIMUM THICKNESS	mm	5.08
NOMINAL BRAKE COUNTERDISC THICKNESS (HUB-SIDE)	mm	8.0 ± 0.1
WORN BRAKE COUNTERDISC MINIMUM THICKNESS (HUB-SIDE)	mm	7.06
NOMINAL BRAKE COUNTERDISC THICKNESS (HOUSING-SIDE)	mm	5.0 ± 0.1
WORN BRAKE COUNTERDISC MIN. THICKNESS (HOUSING-SIDE)	mm	4.06
PISTON MAX WEAR	mm	0.4
MAXIMUM OPERATING PRESSURE	bar	43

HYDRAULIC CIRCUIT

WB93R-5 & WB97R-5

PUMP MODEL		LPV71 (75)
DISPLACEMENT	cc	75
MAX FLOW	l/min	165 (2200 rpm)
HYDRAULIC OIL		SAE 10W-30
HYDRAULIC OIL SYSTEM CAPACITY	l	98

STEERING

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OPERATING PRESSURE (at 1500 rpm)	bar	170
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OPERATING PRESSURE

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LOADER		ENGINE AT 1000 rpm	
OPERATING PRESSURE		bar	218
BUCKET	PISTON SIDE	bar	218
	ROD SIDE	bar	218
BUCKET 4 X 1		bar	218
BACKHOE		ENGINE AT 1000 rpm	
OPERATING PRESSURE		bar	218
SWING		bar	215
ARM	PISTON SIDE	bar	218
BUCKET	SUCTION VALVE	bar	218
BOOM	PISTON SIDE	bar	218
	ROD SIDE	bar	218

MAINTENANCE

WB93R-5 & WB97R-5

		Capacity	Specification	Change [h]	Filters
ENGINE OIL		13	API CI-4	500 (oil + filter)	EA504074043
TRANSMISSION		23	GM DEXTRON II D	1000 (oil + filter)	CA0040952
REAR AXLE		15	UTTO FLUID	1000	
FRONT AXLE		7	UTTO FLUID	1000	
FINAL DRIVE (each)		0,75	UTTO FLUID	1000	
BRAKES		0.8	GM DEXTRON II D	2000	
HYDRAULIC SYSTEM		98	(See table)	500 (filter) 2000(oil)	42N-62-15470
FUEL FILTER				500	EA504073234
AIR FILTER MAIN				When required	848101189
SAFETY				When required	848101190