

SHOP MANUAL

KUBOTA

Models

L185-L235-L245-L275-L285-L295-L305-L345-L355

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DUAL DIMENSIONS

This service manual provides specifications in both the U.S. Customary and Metric (SI) systems of measurement. The first specification is given in the measuring system perceived by us to be the preferred system when servicing a particular component, while the second specification (given in parenthesis) is the converted measurement. For instance, a specification of "0.28 mm (0.011 inch)" would indicate that we feel the preferred measurement, in this instance, is the metric system of measurement and the U.S. system equivalent of 0.28 mm is 0.011 inch.

CONDENSED SERVICE DATA

	L185	L235	L245	L275	L285
GENERAL					
Engine Make	Own				
Engine Model	Z751A	D1102A	D1101A	D1302A	V1501A
Number of Cylinders	2	3	3	3	4
Bore	76 mm (3 in.)	76 mm (3 in.)	76 mm (3 in.)	82 mm (3.23 in.)	76 mm (3 in.)
Stroke	82 mm (3.23 in.)				
Displacement	743 cc (45.3 cu.in.)	1115 cc (68.3 cu.in.)	1115 cc (68.3 cu.in.)	1299 cc (79.3 cu.in.)	1487 cc (90.7 cu.in.)
Cylinder Sleeves	Dry				
Battery-Volts	12				
Ground Polarity	Negative				
Forward Speeds	8				
TUNE-UP					
Compression Pressure	3235 kPa (470 psi)				
Firing Order	1-2	1-2-3	1-2-3	1-2-3	1-3-4-2
Valve Clearance— Intake and Exhaust	0.18-0.22 mm (0.007-0.009 in.)				
Injection Timing (BTDC)	25°				
Timing Mark Location	Flywheel				
Injection Pressure	13720-14700 kPa (1990-2135 psi)				
Low Idle Speed (rpm)	800-850				
High Idle Speed (rpm)	2950	2750	2950	2750	2550
Rated Speed (rpm)	2800	2600	2800	2600	2400
Rated Power at Pto Shaft	11.5 kW (15.45 HP)	14.6 kW (19.59 HP)	16.4 kW (22 HP)	17.5 kW (23.42 HP)	19.8 kW (26.45 HP)
SIZES-CLEARANCES					
Crankshaft Main Journal— Diameter	51.921-51.940 mm (2.0441-2.0449 in.)				
Bearing Clearance— Front Bearing	0.040-0.118 mm (0.0016-0.0046 in.)				
All Other Bearings	0.040-0.104 mm (0.0016-0.0041 in.)				
Crankshaft Crankpin Journal— Diameter	43.959-43.975 mm (1.7307-1.7313 in.)				
Bearing Clearance	0.035-0.093 mm (0.0014-0.0037 in.)				
Crankshaft End Play	0.15-0.31 mm (0.006-0.012 in.)				
Camshaft Journal— Diameter	39.934-39.950 mm (1.5722-1.5728 in.)				
Bearing Clearance	0.050-0.091 mm (0.0020-0.0036 in.)				

CONDENSED SERVICE DATA (CONT.)

SIZES-CLEARANCES (CONT.)	L185	L235	L245	L275	L285
Cam Height - Intake and Exhaust			33.36 mm (1.3134 in.)		
Piston Pin - Diameter			23.002-23.011 mm (0.9056-0.9059 in.)		
Clearance in Rod			0.014-0.038 mm (0.0006-0.0015 in.)		
Valve Seat Angle - Intake and Exhaust			45°		
CAPACITIES					
Crankcase Oil	3.8 L (4.0 qts.)	6.1 L (6.4 qts.)	6.1 L (6.4 qts.)	6.1 L (6.4 qts.)	8.9 L (9.4 qts.)
Cooling System	5.3 L (5.6 qts.)	6.6 L (7.0 qts.)	6.6 L (7.0 qts.)	6.6 L (7.0 qts.)	7.0 L (7.4 qts.)
Transmission - 2WD	22 L (23 qts.)	24 L (25 qts.)	22 L (23 qts.)	24 L (25 qts.)	27 L (29 qts.)
4WD	23 L (24 qts.)	24 L (25 qts.)	23 L (24 qts.)	24 L (25 qts.)	...
Fluid Type	Kubota UDT Transmission Fluid				
Front Axle Differential Case (4WD)	1.1 L (1.2 qts.)	2.3 L (2.4 qts.)	1.1 L (1.2 qts.)	2.6 L (2.7 qts.)	...
Fluid Type	SAE 80 or 90 Gear Oil				
Front Axle Outer Drive Case (4WD) - Each	0.8 L (0.8 qts.)	0.3 L (0.3 qts.)	0.8 L (0.8 qts.)	0.3 L (0.3 qts.)	...
Fluid Type	SAE 80 or 90 Gear Oil				
Steering Gear Box (Manual)			0.3 L (0.3 qts.)		...
Fluid Type	SAE 80 or 90 Gear Oil				

CONDENSED SERVICE DATA

GENERAL	L295	L305	L345	L355
Engine Make			Own	
Engine Model	D1301A	D1301A	V1501A	V1702A
Number of Cylinders	3	3	4	4
Bore	82 mm (3.23 in.)	82 mm (3.23 in.)	76 mm (3 in.)	82 mm (3.23 in.)
Stroke			82 mm (3.23 in.)	
Displacement	1299 cc (79.3 cu.in.)	1299 cc (79.3 cu.in.)	1487 cc (90.7 cu.in.)	1732 cc (105.6 cu.in.)
Cylinder Sleeves			Dry	
Battery-Volts			12	
Ground Polarity			Negative	
Forward Speeds			8	
TUNE-UP				
Compression Pressure			3235 kPa (470 psi)	
Firing Order	1-2-3	1-2-3	1-3-4-2	1-3-4-2
Valve Clearance - Intake and Exhaust			0.18-0.22 mm (0.007-0.009 in.)	
Injection Timing (BTDC)			25°	
Timing Mark Location			Flywheel	
Injection Pressure			13720-14700 kPa (1990-2135 psi)	

CONDENSED SERVICE DATA (CONT.)

	L295	L305	L345	L355
TUNE-UP (CONT.)				
Low Idle Speed (rpm)	800-850			
High Idle Speed (rpm)	2950	2950	2950	2750
Rated Speed (rpm)	2800	2800	2800	2600
Rated Power at Pto Shaft	19.7 kW (26.46 HP)	19.5 kW (26.21 HP)	21.9 kW (29.35 HP)	21.6 kW (29 HP)

SIZES-CLEARANCES

Crankshaft Main Journal - Diameter	51.921-51.940 mm (2.0441-2.0449 in.)			
Bearing Clearance - Front Bearing	0.040-0.118 mm (0.0016-0.0046 in.)			
All Other Bearings	0.040-0.104 mm (0.0016-0.0041 in.)			
Crankshaft Crankpin Journal - Diameter	43.959-43.975 mm (1.7307-1.7313 in.)			
Bearing Clearance	0.035-0.095 mm (0.0014-0.0037 in.)			
Crankshaft End Play	0.15-0.31 mm (0.006-0.012 in.)			
Camshaft Journal - Diameter	39.934-39.950 mm (1.5722-1.5728 in.)			
Bearing Clearance	0.050-0.091 mm (0.002-0.0036 in.)			
Cam Height - Intake and Exhaust	33.36 mm (1.3134 in.)			
Piston Pin - Diameter	23.002-23.011 mm (0.9056-0.9059 in.)			
Clearance in Rod	0.014-0.038 mm (0.0006-0.0015 in.)			
Valve Seat Angle - Intake and Exhaust	45°			

CAPACITIES

Crankcase Oil	6.1 L (6.4 qts.)	6.1 L (6.4 qts.)	9.1 L (9.6 qts.)	9.1 L (9.6 qts.)
Cooling System	5.8 L (6.1 qts.)	5.8 L (6.1 qts.)	7.0 L (7.4 qts.)	7.0 L (7.4 qts.)
Transmission - 2WD	26 L (27.5 qts.)	22 L (23.2 qts.)	22 L (23.2 qts.)	...
4WD	27 L (28.5 qts.)	22 L (23.2 qts.)	22 L (23.2 qts.)	32 L (33.8 qts.)
Fluid Type	Kubota UDT Transmission Fluid			
Front Axle Differential Case (4WD)	2.0 L (2.1 qts.)	5.0 L (5.3 qts.)	5.0 L (5.3 qts.)	5.0 L (5.3 qts.)
Fluid Type	SAE 80 or 90 Gear Oil			
Front Axle Outer Drive Case (4WD) - Each	1.5 L (1.6 qts.)	0.7 L (0.7 qts.)	0.7 L (0.7 qts.)	0.7 L (0.7 qts.)
Fluid Type	SAE 80 or 90 Gear Oil			
Steering Gear Box (Manual)	0.3 L (0.3 qts.)	...	0.2 L (0.2 qts.)	...
Fluid Type	SAE 80 or 90 Gear Oil	...	SAE 80 or 90 Gear Oil	...
Power Steering Reservoir	*	1.5 L (1.6 qts.)	1.5 L (1.6 qts.)
Fluid Type	Kubota UDT Transmission Fluid			

*Same as transmission.

FRONT SYSTEM (TWO-WHEEL DRIVE)

FRONT AXLE

All Models So Equipped

1. Fig. 1 shows an exploded view of typical tread front axle assembly used on Models L185 and L235. Model L275 uses an adjustable tread front axle as shown in Fig. 2. All other models are equipped with an adjustable tread front axle as shown in Fig. 3.

Service procedures are basically similar for all models. Front axle pivot pin (3) is retained by a spring pin (9) at rear and by an adjusting nut (1) at front.

Diametral clearance between pivot pin and bushings (4) should not exceed 0.5 mm (0.020 inch). Renew bushings and pivot pin as needed if clearance is excessive.

When reinstalling front axle assembly, lubricate pivot pin and bushings with multi-purpose grease, then check and adjust axle end play as follows: Use a spring scale to measure force required to pivot axle as shown in Fig. 3A. Turn pivot pin adjusting nut as required to obtain pivot force between 49-117 N (11-26 pounds). Secure nut with cotter pin.

TIE RODS AND TOE-IN

All Models So Equipped

2. Tie rod and drag link ends are non-adjustable, automotive type. Renew ends that are excessively worn.

Adjust front wheel toe-in to 2-8 mm ($\frac{1}{8}$ - $\frac{5}{16}$ inch) by shortening or lengthening tie rod. Adjust length of drag link, if necessary, to permit equal turning radius in either direction.

STEERING SPINDLE AND WHEEL HUB

All Models So Equipped

3. Refer to appropriate Fig. 4 or Fig. 5 for exploded view of steering spindle and associated parts. To remove spindle (11), remove front wheel and steering arm, then lower spindle from axle. Use a suitable puller to remove wheel hub and bearings.

Inspect all parts for excessive wear, corrosion or other damage. Maximum recommended diametral clearance between spindle and bushings is 0.4 mm (0.016 inch).

Fig. 1—Exploded view of fixed tread front axle used on Models L185 and L235.

1. Adjusting nut
2. Adjusting collar
3. Pivot pin
4. Pivot bushings
5. Spindle bushings
6. Axle
7. "O" ring
8. Washer
9. Spring pin
10. Axle bracket

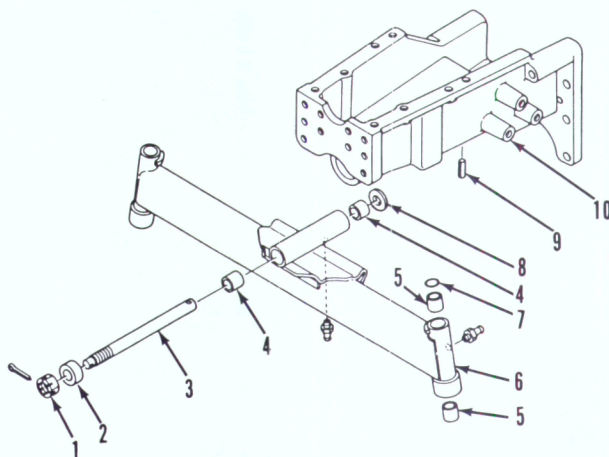


Fig. 2—Exploded view of adjustable tread front axle used on Model L275. Except for axle extension (11), refer to Fig. 1 legend.

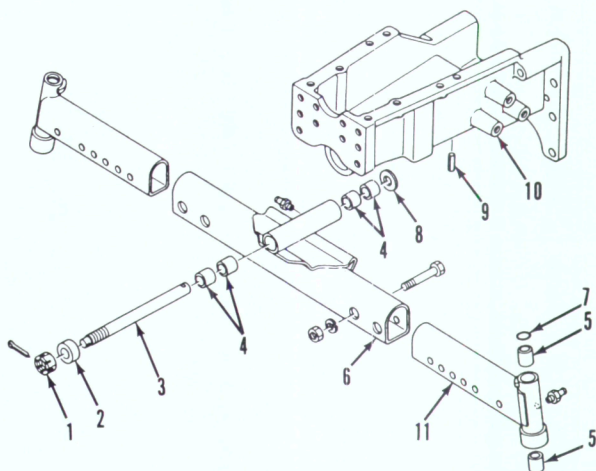


Fig. 3—Exploded view of adjustable tread front axle used on Models L245, L285, L295, L305 and L345.

1. Adjusting nut
2. Adjusting collar
3. Pivot pin
4. Pivot bushings
5. Spindle bushings
6. Axle
7. "O" ring
8. Washer
9. Spring pin
10. Axle bracket
11. Axle extension
12. Bumper

