

SHOP MANUAL

ALLIS-CHALMERS

MODELS D-10, D-10 Series III, D-12 AND D-12 Series III

The tractor serial number is stamped on the left front of the torque tube. The engine serial number is stamped on the rear left side of the engine block.

All models are available in both standard or high clearance design. All types use adjustable front axles. D-10 tractors have narrower tread than D-12 tractors.

IMPORTANT

At tractor Serial Numbers D10-3501 and D12-3001, numerous changes were made in D-10 and D-12 tractors. D-10 Series III and D-12 Series III tractors, beginning at tractor serial number D10-9001 and D12-9001, also incorporate numerous additional changes. Where service procedure or specifications are affected, changes are noted in the text of this manual by serial number range. Check serial number of tractor prior to reference to manual.

INDEX (By Starting Paragraph)

	Prior to Serial Nos. D10-3501 & D12-3001	Tractor Serial Nos. D10-3501 & Up. D12-3001 & Up		Prior to Serial Nos. D10-3501 & D12-3001	Tractor Serial Nos. D10-3501 & Up. D12-3001 & Up
BELT PULLEY	87	87B	Valve Guides	18	18
BRAKES			Valve Springs	19	19
Adjustment	85	85	Valve Timing	23	23
Drums R&R	86A	86A	FINAL DRIVE		
Reline	86	86	Bevel Gears, Adjust	78	78
CARBURETOR	39	39A	Bull Gear, Renew	81	81
CLUTCH			Bull Pinion Bearings, Adjust..	82	82
Engine Clutch	62	62	Bull Pinion, Renew	84	84
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Radiator	57	57	Adjustable Axle	1	1
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ELECTRICAL SYSTEM			Manual Steering System	4	4
Generator, Regulator	60C	61B	Power Steering System	*	10
Starting Motor	60D	61C	GOVERNOR		
ENGINE			Adjustment	55	55
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Camshaft	26	26	Battery Ignition Timing	60B	61A
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Crankshaft and Bearings	31	31	POWER LIFT SYSTEM		
Cylinder Head	16	16	Pump Overhaul (Plunger Type)	90	*
Cylinder Sleeves	28	28	Gear Type (Camshaft Driven)	94	*
Flywheel	34	34	Gear Type (Pto Driven)....	*	106
Flywheel Timing Marks	35	35	Pump R&R (Plunger Type)...	89	*
Front Oil Seal	32	32	Gear Type (Camshaft Driven)	93	*
Ignition Timing	60B	61A	Gear Type (Pto Driven)...	*	105
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Rocker Arms	21	21	TRANSMISSION (MAIN)		
Tappets	20	20	Bevel Pinion Shaft	75	75
Timing Gears	23	23	Main Shaft	74	74A
Timing Gear Cover	22	22	Reverse Idler	77	77
Valves and Valve Seats	17	17	Shifter Assembly	73	73

*Indicates feature not available within Serial Number range.

CONDENSED SERVICE DATA

Prior to Tractor Serial Nos. D10-3501 & D12-3001
Tractor Serial Nos. D10-3501 & Up, D12-3001 & Up

Prior to Tractor Serial Nos. D10-3501 & D12-3001
Tractor Serial Nos. D10-3501 & Up, D12-3601 & Up

GENERAL

Engine Make	Own	Own
Engine Model	10	149
Cylinders	4	4
Bore—Inches	3 3/8	3 1/2
Stroke—Inches	3 3/8	3 3/8
Displacement—Cubic Inches	139	149
Compression Ratio	7.75:1	7.5:1
Pistons Removed From	Above	Above
Main Bearings, Number of	3	3
Main & Rod Bearings, Adjustable?	No	No
Cylinder Sleeves	Wet	Wet
Forward Speeds	4	4
Reverse Speeds	1	1
Generator & Starter Make	D-R	D-R

TUNE-UP

Firing Order	1-2-4-3	1-2-4-3
Valve Tappet Gap (Hot)		
Intake	0.012-0.014	0.009
Exhaust	0.012-0.014	0.015
Valve Seat & Face Angle	45°	45°
Ignition Distributor Make	D-R	D-R
Ignition Distributor Model	1112593	1112609
Breaker Contact Gap	0.022	0.022
Ignition Timing—Retard	TDC	TDC
Ignition Timing—Full Advance	25° BTDC	25° BTDC
Flywheel Mark Indicating: Retard Timing	Line Marked "DC"	Line Marked "CENTER"
Full Advance	Line Marked "F"	Line Marked "F"
Spark Plug, Type	See Paragraph 60	
Electrode Gap	0.025	0.025
Carburetor Make	Zenith	Zenith
Carburetor Model	161J7	161J7
Engine Low Idle RPM	500-575	500-575
Engine High Idle RPM	1975-2075	1975-2075
Engine Loaded RPM	1650	1650
P.T.O. No Load RPM	645-680	645-680
P.T.O. Loaded RPM	540	540

SIZES—CAPACITIES—CLEARANCES

Crankshaft Journal Diameter	2.748-2.749	2.748-2.749
Crankpin Diameter	1.936-1.937	1.936-1.937
Camshaft Journal Diameter	1.749-1.750	1.749-1.750
Piston Pin Diameter	0.8133-0.8135	0.8133-0.8135
Valve Stem Diameter	0.3407-0.3417	0.3407-0.3417
Ring End Gap		
Compression Rings	0.008-0.014	0.007-0.017
Oil Rings	0.007-0.017	0.007-0.017
Ring Land Clearance		
Compression Rings	0.0015-0.0035	0.001-0.003
Oil Rings	0.001-0.003	0.001-0.003
Main Bearings, Diametrical Clearance	0.002-0.004	0.002-0.004
Rod Bearings, Diametrical Clearance	0.001-0.003	0.001-0.003
Piston Skirt Clearance	0.0015-0.003	0.0015-0.003
Crankshaft End Play	0.004-0.008	0.004-0.008
Camshaft End Play	Spring Loaded	
Camshaft Bearing Clearances	0.002-0.004	0.002-0.004
Cooling System—Quarts	8	8
Crankcase Oil—Quarts (Including Filter)	4 1/2	4 1/2
Transmission & Differential—Quarts	6 1/2	6 1/2
Equipped with PTO & Hydraulic Pump	*	11 1/2
Equipped with PTO, Belt Pulley and Plunger Type Pump	8 3/4	*
Equipped with Range Transmission & PTO	*	12 1/2
Final Drive, Each—Quarts	1	1
Fuel Tank—Gallons	12	12
Hydraulic Pump (Without "Traction-Booster" System)	2	*
Power Steering	*	2

TIGHTENING TORQUE—Ft.-Lbs.

Connecting Rod Nuts	35-40	35-40
Cylinder Head Capscrews	80-85	80-85
Main Bearing Capscrews	90-95	90-95
Piston Pin Clamp Capscrews	35-40	35-40

*Does not apply

FRONT SYSTEM

ADJUSTABLE AXLE

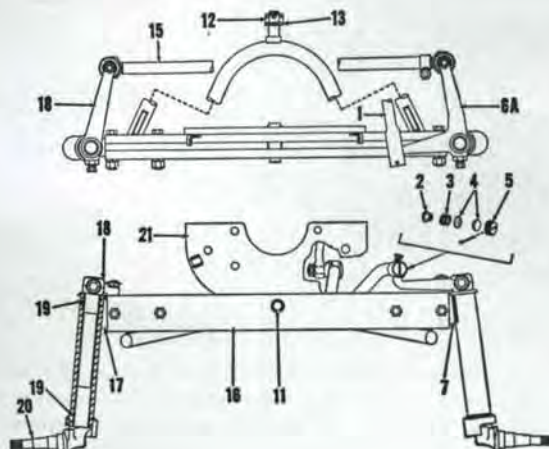
1. REMOVE AND REINSTALL. To remove the complete axle assembly, first remove hood and grille shell. Support tractor and detach drag link from steering arm. Remove nut (12—Fig. 1 or 2) then, move front axle forward away from the tractor.

On D-12 tractors, the intermediate arm (8—Fig. 2) is fitted with a bushing which should be renewed if clearance is excessive.

2. OVERHAUL. To renew axle pivot pin bushing (11—Fig. 1 or 2), first remove the axle as in paragraph 1 and renew bushing in a conventional manner.

Fig. 1—Adjustable front axle for D-10 tractors. High clearance and standard versions are similar.

2. Bumper
3. Spring
4. Bearing washers
5. Plug
- 6A. Left spindle arm
7. Left spindle support
11. Axle pivot pin bushing
12. Radius rod nut
13. Spring washer
15. Tie rod
16. Axle main (center) member
17. Right spindle support
18. Right spindle arm
19. Spindle bushings
20. Spindles
21. Axle support and pivot pin



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