

Information and Instructions

This shop manual contains several sections each covering a specific group of wheel type tractors. The Tab Index on the preceding page can be used to locate the section pertaining to each group of tractors. Each section contains the necessary specifications and the brief but terse procedural data needed by a mechanic when repairing a tractor on which he has had no previous actual experience.

Within each section, the material is arranged in a systematic order beginning with an index which is followed immediately by a Table of Condensed Service Specifications. These specifications include dimensions, fits, clearances and timing instructions. Next in order of arrangement is the procedures paragraphs.

In the procedures paragraphs, the order of presentation starts with the front axle system and steering and proceeding toward the rear axle. The last paragraphs are devoted to the power take-off and power lift systems. Interspersed where needed are additional tabular specifications pertaining to wear limits, torquing, etc.

HOW TO USE THE INDEX

Suppose you want to know the procedure for R&R (remove and reinstall) of the engine camshaft. Your first step is to look in the index under the main heading of ENGINE until you find the entry "Camshaft." Now read to the right where under the column covering the tractor you are repairing, you will find a number which indicates the beginning paragraph pertaining to the camshaft. To locate this wanted paragraph in the manual, turn the pages until the running index appearing on the top outside corner of each page contains the number you are seeking. In this paragraph you will find the information concerning the removal of the camshaft.

SHOP MANUAL

JOHN DEERE

SERIES 40-320-330-420-430-440

MODEL IDENTIFICATION SUFFIX

<p>H—Hi-Crop</p> <p>I—Special Utility (420 only)</p> <p>I—Industrial (440 only)</p> <p>S—Standard</p>	<p>T—Tricycle</p> <p>U—Utility</p> <p>V—Special</p> <p>W—Row Crop Utility</p>
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Tractor serial number is stamped on left side of center frame.

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SHOP MANUAL

JOHN DEERE

MODELS 435D-440ID

Tractor serial number is stamped on plate which is affixed to bottom of instrument panel.

NOTE

This manual provides methods for servicing the 435D and 440ID (diesel) tractors which, except for the engine and accessories covered in this manual, are serviced in the same manner as the similar 430W and 440I (non-diesel) tractors covered in the first section of this shop manual (previously JD15). In the index listed blow, the first column lists the tractor components, the two columns under the tractor model list the beginning paragraph number and the manual in which the desired paragraph containing the service information will be found.

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CONDENSED SERVICE DATA

	435D	440ID		435D	440ID
GENERAL			SIZES—CAPACITIES—CLEARANCES		
Engine Make	GM	GM	Crankshaft Main Journal Dia.....	2.999-3.000	2.999-3.000
Cylinders	2	2	Crankpin Diameter	2.499-2.500	2.499-2.500
Bore—Inches	3 $\frac{3}{8}$	3 $\frac{3}{8}$	Camshaft Journal Diameter.....	2.1820-2.1825	2.1820-2.1825
Stroke—Inches	4 $\frac{1}{2}$	4 $\frac{1}{2}$	Balance Shaft Journal Diameter..	2.1820-2.1825	2.1820-2.1825
Displacement—Cubic Inches	106.2	106.2	Piston Pin Diameter.....	1.3746-1.3750	1.3746-1.3750
Compression Ratio	17.0:1	17.0:1	Valve Stem Diameter—Exhaust..	0.3095-0.3105	0.3095-0.3105
Pistons Removed From?.....	Above	Above	Main Bearing Running Clearance	0.002-0.004	0.002-0.004
Main Bearings, Number of.....	3	3	Rod Bearing Running Clearance..	0.0044-0.0084	0.0044-0.0084
Main & Rod Brgs., Adjustable?...	No	No	Camshaft Bearing		
Cylinder Sleeves?	Yes	Yes	Running Clearance	0.0045-0.006	0.0045-0.006
Generator, Regulator &			Balance Shaft Bearing		
Starting Motor—Make	Delco-Remy	Delco-Remy	Running Clearance	0.0045-0.006	0.0045-0.006
Electrical System—Voltage	12	12	Crankshaft End Play.....	0.004-0.011	0.004-0.011
Battery Ground Polarity.....	Positive	Positive	Camshaft End Play.....	0.008-0.015	0.008-0.015
Forward Speeds	4 or 5	4 or 5	Balance Shaft End Play.....	0.008-0.015	0.008-0.015
			Piston Skirt Clearance.....	0.0037-0.0074	0.0037-0.0074
TUNE-UP			Cooling System—Gallons	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Compression—Gage Pounds	500(1)	500(1)	Crankcase Oil—Quarts	9	9
Tappet Gap	0.009 Hot	0.009 Hot	Fuel Tank—Gallons	10 $\frac{1}{2}$	10 $\frac{1}{2}$
Exhaust Valve Face Angle.....	30°	30°	Transmission & Differential—Qts..	9	9
Exhaust Valve Seat Angle.....	30°	30°	Final Drives (Each)—Quarts....	1 $\frac{3}{4}$	1 $\frac{3}{4}$
Injector Timing	See Par. 143	See Par. 143	Hydraulic System—Quarts	12	12
Nozzle Opening Pressure—PSI...	450-850	450-850	Belt Pulley—Pints	$\frac{1}{2}$	$\frac{1}{2}$
Engine High Idle—RPM.....	1975	1975	TIGHTENING TORQUES (Fr.-Lbs.)		
Engine Rated Speed—RPM.....	1850	1850	Cylinder Head Bolts.....	170-180	170-180
Belt Pulley High Idle—RPM.....	1356	1356	Main Bearing Bolts.....	120-130	120-130
Belt Pulley Rated Speed—RPM..	1270	1270	Rod Bearing Bolts.....	45-50	45-50
Power Shaft High Idle—RPM....	597	597	Rocker Arm Bolts.....	50-55	50-55
Power Shaft Rated Speed—RPM..	560	560	Flywheel Cap Screws.....	130-140	130-140
			Balance Weight Nuts.....	300-325	300-325
			Timing Gear Cover Cap Screws..	See Par. 96	See Par. 96
			Injector Clamp Bolt	20-25	20-25

(1) Compression check made with engine running at 600 rpm.

SHOP MANUAL

JOHN DEERE

820(3 Cyl.)—830(3 Cyl.)

Tractor serial number is located on right side of transmission case.
 Engine serial number is stamped on a plate at lower right front of engine cylinder block.

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SHOP MANUAL

JOHN DEERE

720 DIESEL-730 DIESEL

(General Purpose, Hi-Crop & Standard)

IDENTIFICATION

Tractor serial number stamped on plate on right side of main case

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SHOP MANUAL

JOHN DEERE

MODELS 80-820-830

IDENTIFICATION

Tractor serial number is stamped on plate on right side of main case.
MODEL 80 tractors have serial numbers from 8000000 to 8199999.
MODEL 820 tractors have serial numbers from 8200000 to 8299999.
MODEL 830 tractors have serial numbers beginning with 8300000.
 All models produced in non-adjustable axle version only.

I N D E X (By Starting Paragraph)

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