

FORD

SHOP MANUAL

MODELS 8000—8600—8700—9000—9600—9700—TW-10—TW-20—TW-30

These Ford tractors are equipped with a six-cylinder diesel engine. The 9000 series, TW-20 and TW-30 models engines are equipped with a turbocharger and due to increased power output, several components on these models have been strengthened in comparison to the 8000 series and TW-10 models. An eight-speed gear type transmission and disc type clutch is standard on all models. A Dual Power planetary gear assembly which provides under-drive ratios in all transmission speeds is standard on TW-30 models and available for all other models.

Identification numbers pertaining to Models 8000, 8600, 9000 and 9600 are located on a plate inside the tool box cover.

Numbers pertaining to Models 8700 and 9700 are located on a plate mounted on the underside of the radiator filler cap access door.

Numbers pertaining to Models TW-10 and TW-20 are on a plate located above the right front corner of the radiator and are accessible after removing the right front grill panel.

Numbers pertaining to Model TW-30 are on a plate located between the radiator and front fuel tank; they are accessible by sliding the right front grill panel forward.

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CONDENSED SERVICE DATA

GENERAL	8000,	9000,	TW-10	TW-20	TW-30
	8600, 8700	9600, 9700			
Engine Make	Own	Own	Own	Own	Own
No. of Cylinders	6	6	6	6	6
Bore, Inches	4.4	4.4	4.4	4.4	4.4
Stroke, Inches	4.4	4.4	4.4	4.4	4.4
Displacement, Cubic Inches	401	401	401	401	401
Compression Ratio	16.5:1	16.5:1	16.3:1	15.6:1	15.6:1
Pistons Removed From	Above	Above	Above	Above	Above
Main Bearings, Number of	7	7	7	7	7
Cylinder Sleeves	None	None	None	None	None
Generator Make	Own	Own
Alternator Make			Motorola		
Starter Make	Own	Own	Own	Own	Own
Turbocharger Make			See Paragraph 134		
Injection Pump Make	Simms	Simms	Minimec	Minimec	Minimec
Forward Speeds	8	8	8	8
With Dual Power	16	16	16	16	16
Reverse Speeds	2	2	2	2
With Dual Power	4	4	4	4	4

CONDENSED SERVICE DATA CONT.

TUNE-UP	8000, 8600, 8700	9000, 9600, 9700	TW-10	TW-20, TW-30
Firing Order	1-5-3-6-2-4			
Compression, Gage Lbs. at Cranking Speed of 200 Rpm	380-480	380-480	300-400	275-375
Maximum Allowable Variation Between Cylinders, Psi	20	20	20	20
Valve Tappet Gap, Intake, Hot	0.014-0.016 inch			
Valve Tappet Gap, Exhaust, Hot	0.017-0.019 inch			
Engine Low Idle Rpm	700-800	700-800	700-800	700-800
Engine High Idle Rpm	2530-2580	2420-2470	2530-2580	2420-2470
Engine Rpm at Rated Load	2300	2200	2300	2300
Engine Rpm for 540 Pto Rpm	1900	*1900	1873	*1873
Engine Rpm for 1000 Pto Rpm	1935	1935	1918	1918
Injection Timing	23° BTDC			
Battery Terminal Grounded	Neg.			

*540 rpm pto shaft not available on 9000, TW-30 and some 9600 models.

SIZES - CAPACITIES - CLEARANCES [INCHES]

Crankshaft Journal Diameter	See Paragraph 98			
Crankpin Diameter	See Paragraph 97			
Camshaft Journal Diameter	2.3895-2.3905			
Piston Pin Diameter	1.4997-1.5000	1.6246-1.6251	1.4997-1.5000	1.6246-1.6251
Valve Stem Diameter, Intake	0.3711-0.3718			
Valve Stem Diameter, Exhaust	0.3701-0.3708			
Main Bearing Running Clearance	0.002-0.0045			
Rod Bearing Running Clearance, Aluminum Bearings	0.0025-0.0046			
Copper-Lead Bearings	0.0017-0.0038			
Camshaft Bearing Running Clearance	0.001-0.003			
Crankshaft End Play	0.004-0.008			
Camshaft End Play	0.001-0.007			
Piston Skirt Clearance	See Paragraph 95			
Cooling System, Quarts	18	19	20	20
Crankcase, Quarts, Without Filter Change	10	12	18	18
With Full Flow Filter Change Only	12	14	20	20
With Both Filters Changed	13 (8000 only)			
Rear Axle & Hydraulic Systems, Quarts	See Paragraph 197			
Power Take-Off, Quarts	See Paragraph 217			
Transmission, Quarts	See Paragraph 197			
Fuel, Gallons	43	43	58	**100
Power Steering System, Quarts	4.2	4.2	3.9	3.9

**TW-20 fuel capacity is 58 gallons.

FRONT SYSTEM AND STEERING MODELS 8000—8600—9000—9600

WIDE ADJUSTABLE FRONT AXLE

Exploded view of row crop axle is shown in Fig. 1; all purpose type is similar except center (main) member is reversed. All parts except center steering arm (13) and inner tie rod ends (12)

are interchangeable between row crop and all purpose types. Refer to Figs. 2 and 3 for center steering arm and tie rod installation.

1. R&R FRONT AXLE ASSEMBLY.
To remove either the row crop or all purpose type front axle, proceed as

follows: Straighten tabs of locking plates and unbolt center steering arm (13—Fig. 1) from steering motor shaft. Support front end of tractor, unbolt front pivot pin support (21) from front support and roll axle assembly forward. Unbolt and remove rear pivot pin support (16).

Reinstall front axle by reversing

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