

1981 Medium & Heavy Duty Gas

FORD MOTOR CO.

GENERAL SPECIFICATIONS						
Engine	Net HP At RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore	Stroke	Displ. Cu. Ins.
300"	119@3200	243@1200	8.9:1	4.00"	3.98"	300"
370" 2V	174@3600	274@2200	8.4:1	4.05"	3.59"	370"
370" 4V	196@3600	293@2600	8.0:1	4.05"	3.59"	370"
429"	223@4000	343@2700	8.0:1	4.36"	3.59"	429"
475"	4.50"	3.75"	475"
477"	210@3200	393@2300	7.2:1	4.50"	3.75"	477"
534"	227@3200	431@2100	7.3:1	4.50"	4.20"	534"

PISTONS, PINS, RINGS						
Engine	PISTONS	PINS		RINGS		
	Clearance	Piston Fit	Rod Fit	Rings	End Gap	Side Clearance
300"	.0014-.0022"	.0002-.0004"	Press Fit	1	.010-.020"	.0019-.0036"
				2	.010-.020"	.0020-.0040"
				3	.010-.035"	①
370"	.0018-.0039"	.0003-.0006"	Press Fit	1	.010-.022"	.0019-.0039"
				2	.010-.023"	.0020-.0040"
				3	②	.0015-.0030"③
429"	.0019-.0037"	.0003-.0006"	Press Fit	1	.013-.025"	.0019-.0036"
				2	.010-.020"	.0020-.0040"
				3	.013-.028"	.0020-.0035"
475", 477", 534"	.0028-.0034"	.0003-.0005"	.0002-.0004"	1	.018-.028"	.0029-.0046"
				2	.015-.025"	.0029-.0046"
				3	.013-.028"	.0014"-.0031"

① — Ring should be snug fit in groove with no visible side play.

② — Steel rail type ring, gap not measured.

③ — On 370" 2V, ring should be snug fit in groove with no visible side play.

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS							
Engine	MAIN BEARINGS				CONNECTING ROD BEARINGS		
	Journal Diam.	Clearance	Thrust Bearing	Crankshaft End Play	Journal Diam.	Clearance	Side Play
300"	2.3982-2.3990"	.0008-.0015"	No. 3	.004-.008"	2.1228-2.1236"	.0008-.0015"	.006-.013"
370", 429"	2.9994-3.0002"	.0008-.0026"	No. 3	.004-.008"	2.4992-2.5000"	.0008-.0028"	.010-.020"
475", 477", 534"	3.1246-3.1254"	.0019-.0028"	No. 3	.004-.008"	2.7092-2.7100"	.0019-.0037"	.006-.014"

VALVE SPRINGS			
Engine	Free Length	PRESSURE (LBS.)	
		Valve Closed	Valve Open
300"			
Int.	1.99"	76-84@1.70"	187-207@1.30"
Exh.	1.87"	77-85@1.58"	12-202@1.18"
370", 429"			
Int.	1.97"	76-84@1.72"	218-241@1.26"
Exh.	1.97"①	76-84@1.78"	218-241@1.52"
475", 477"			
Int.	2.02"	73-81@1.70"	171-189@1.28"
Exh.	2.02"	73-81@1.70"	171-189@1.28"

① — 370" 2V is 2.03"

CAMSHAFT			
Engine	Journal Diam.	Clearance	Lobe Lift
300"	2.017-2.018"	.001-.003"	.249"
370", 429"	2.1238-2.1348"	.001-.003"	.2526"①
475, 477"			
No. 1	2.474-2.475"	.001-.003"	.2777"
No. 2, 3, 4, 5	2.370-2.371"		
534"			
No. 1	2.474-2.475"	.001-.002"	.2777"
No. 2, 3, 4, 5	2.370-2.371"		

① — Exhaust lobe lift is .265"

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VALVES							
Engine & Valve	Head Diam.	Face Angle	Seat Angle	Seat Width	Stem Diameter	Stem Clearance	Valve Lift
300"							
Int.	1.772-1.790"	44°	45°	.060-.080"	.3416-.3423"	.0010-.0027"	.403"
Exh.	1.551-1.569"	44°	45°	.070-.090"	.3416-.3423"	.0010-.0027"	.403"
370" 2V							
Int.	1.779-1.789"	44°	45°	.060-.080"	.3711-.3718"	.0010-.0027"	.4377"
Exh.	1.557-1.567"	44°	45°	.070-.090"	.3701-.3708"	.0020-.0037"	.4809"
370" 4V							
Int.	1.779-1.789"	44°	45°	.060-.080"	.3717-.3718"	.0010-.0027"	.4377"
Exh.	1.557-1.567"	44°	45°	.090-.100"	.3703-.3712"	.0016-.0035"	.4809"
429"							
Int.	2.059-2.069"	44°	45°	.060-.080"	.3711-.3718"	.0010-.0027"	.4377"
Exh.	1.667-1.677"	44°	45°	.093-.108"	.3703-.3712"	.0016-.0035"	.4809"
475", 477"							
Int.	2.015-2.025"	44°	45°	.090-.105"	.4349-.4358"	.0010-.0026"	.4388"
Exh.	1.630-1.640"	44°	45°	.100-.115"	.4335-.4344"	.0024-.0040"	.4388"
534"							
Int.	2.015-2.025"	44°	45°	.090-.105"	.4358-.4359"	.0010-.0026"	.4388"
Exh.	1.630-1.640"	44°	45°	.100-.115"	.4335-.4344"	.0024-.0040"	.4388"

OIL PUMP SPECIFICATIONS

300"

Relief Valve Spring Tension	20.6-22.6lbs@2.49"
Shaft-to-Housing Clearance	.0015-.0029"
Relief Valve Clearance	.0015-.0029"
Rotor Assembly End Clearance	.004" Max.
Outer Race-to-Housing Clearance	.001-.013"

370 & 429"

Relief Valve Spring Tension	11.1-11.8lbs@1.56"
Shaft-to-Housing Clearance	.0015-.0030"
Relief Valve Clearance	.0015-.0030"
Rotor Assembly End Clearance	.004" Max.
Outer Race-to-Housing Clearance	.001-.013"

475", 477" & 534"

Relief Valve Spring Tension	10.7-11.9lbs @1.07"
Shaft-to-Housing Clearance	.0015-.0030"
Relief Valve Clearance	.0015-.0030"
Rotor Assembly End Clearance	.004" Max.
Outer Race-to-Housing Clearance	.006-.011"

TIGHTENING SPECIFICATIONS

300"

Application	Ft. Lbs.
Cylinder Head Bolts⓪	
Step One	55
Step Two	65
Step Three	70-85
Manifold-to-Cylinder Head	22-32
Intake manifold-to-Exhaust Manifold	28-33
Main Bearing Cap Bolts	60-70
Connecting Rod Cap Nuts	40-45
Vibration Damper	130-150
Flywheel Bolts	75-85

370" & 429"

Application	Ft. Lbs.
Cylinder Head Bolts⓪	
Step One	70-80
Step Two	100-110
Step Three	130-140
Manifold-to-Cylinder Head — Intake	22-32
Manifold-to-Cylinder Head — Exhaust	28-33
Main Bearing Cap Bolts	95-105
Connecting Rod Cap Nuts	45-50
Vibration Damper-to-Crankshaft	150-175
Flywheel Bolts	75-85

475", 477" & 534"

Application	Ft. Lbs.
Cylinder Head Bolts⓪	
Step One	140
Step Two	160
Step Three	180
Manifold-to-Cylinder Head — Intake	25-32
Manifold-to-Cylinder Head — Exhaust	22-32
Main Bearing Cap Bolts	150-165
Connecting Rod Cap Nuts	60-65
Damper-to-Crankshaft	130-175
Flywheel-to-Crankshaft	75-85

⓪ — See cylinder head tightening sequence.

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