



**SERVICE
DATA
BOOK**

**2000
3000
4000
5000**

4020040
Reprinted

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ENGINES

The following specifications apply to all engines except where noted :

(a) Engines prior to April, 1968

(b) Engines after April, 1968

FORD 2000		FORD 3000		FORD 4000		FORD 5000	
Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel
Displacement							
(a) 158 cu. in. (2590 cc.)	158 cu. in. (2590 cc.)	158 cu. in. (2590 cc.)	175 cu. in. (2868 cc.)	192 cu. in. (3147 cc.)	201 cu. in. (3294 cc.)	233 cu. in. (3819 cc.)	233 cu. in. (3819 cc.)
(b) "	"	"	"	201 cu. in. (3294 cc.)	"	256 cu. in. (4193 cc.)	256 cu. in. (4193 cc.)
Compression Ratio							
(a) 8-0-1	17-5-1	8-0-1	16-5-1	8-0-1	16-5-1	8-0-1	16-5-1
(b) "	"	"	"	7-75-1	"	7-75-1	"
Stroke							
(a) 3-8 in. (96-52 mm.)	3-8 in. (96-52 mm.)	3-8 in. (96-52 mm.)	4-2 in. (106-68 mm.)	4-2 in. (106-68 mm.)	4-4 in. (111-76 mm.)	4-2 in. (106-68 mm.)	4-2 in. (106-68 mm.)
(b) "	"	"	"	4-4 in. (111-76 mm.)	"	"	"
Bore (nominal size)							
(a) 4-2 in. (106-68 mm.)	4-2 in. (106-68 mm.)	4-2 in. (106-68 mm.)	4-2 in. (106-68 mm.)	4-4 in. (111-76 mm.)	4-4 in. (111-76 mm.)	4-2 in. (106-68 mm.)	4-2 in. (106-68 mm.)
(b) "	"	"	"	"	"	4-4 in. (111-76 mm.)	4-4 in. (111-76 mm.)
Firing Order							
1-2-3	1-2-3	1-2-3	1-2-3	1-2-3	1-2-3	1-3-4-2	1-3-4-2
Maximum No-Load Speed (r.p.m.)							
2065-2165	2175-2225	2285-2385	2175-2225	2395-2495	2425-2475	2285-2385	2325-2375

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Idle Speed

All Models—600–700 r.p.m.

Maximum Permissible Pressure Differences between Cylinders

Gasoline—all plugs removed—at cranking speed: 25 lb./in.² (1.76 Kg./cm.²) run in engine
35 lb./in.² (2.46 Kg./cm.²) new engine

Diesel—all injectors removed—at cranking speed: 50 lb./in.² (3.52 Kg./cm.²) run in engine
75 lb./in.² (5.27 Kg./cm.²) new engine

Connecting Rod

Length between centres	7.499–7.501 in. (190.475–190.525 mm.)
Small end bushing (I.D.)	1.5003–1.5006 in. (38.1076–38.1152 mm.)
Clearance bushing to piston pin	0.0005–0.0007 in. (0.013–0.018 mm.)
Side float	0.005–0.013 in. (0.13–0.33 mm.)
Maximum twist	0.012 in. (0.31 mm.)
Maximum bend	0.004 in. (0.102 mm.)
Connecting rod width	1.669–1.671 in. (42.393–42.443 mm.)

Crankshaft

Rear oil seal journal diameter	4.808–4.814 in. (12.212–12.228 cm.)
Main journal diameter (Red)	3.3718–3.3723 in. (85.643–85.656 mm.)
(Blue)	3.3713–3.3718 in. (85.631–85.643 mm.)
Main journal wear limits	0.005 in. (0.127 mm.) maximum
Main and crank-pin fillet radius	0.12–0.14 in. (3.05–3.56 mm.)

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Crankshaft—*continued*

Thrust bearing journal length	1.459–1.461 in. (37.058–37.109 mm.)
Intermediate bearing journal length	1.455–1.465 in. (36.957–37.211 mm.)
Rear main bearing journal length	1.485–1.515 in. (37.719–38.481 mm.)
Crank pin journal diameter (Red)	2.7500–2.7504 in. (69.850–69.860 mm.)
(Blue)	2.7496–2.7500 in. (69.839–69.864 mm.)
Crankshaft end play	0.004–0.008 in. (0.102–0.203 mm.)

Main Bearing Liners

Liner length	1.10–1.11 in. (27.94–28.19 mm.)
Liner length (thrust liner)	1.453–1.455 in. (36.906–36.957 mm.)

<i>Identifying Mark</i>	<i>Colour Code</i>	<i>Material</i>	<i>Wall Thickness</i>	<i>Specified Clearance</i>
PV or G	Red	Copper Lead	0.1245–0.1250 in. (3.1623–3.1750 mm.)	0.0022–0.0045 in. (0.0559–0.1143 mm.)
PV or G	Blue	Copper Lead	0.1249–0.1254 in. (3.1724–3.1861 mm.)	0.0022–0.0045 in. (0.0559–0.1143 mm.)
G and AL	Red	Aluminium Tin	0.1245–0.1250 in. (3.1623–3.1750 mm.)	0.0022–0.0045 in. (0.0559–0.1143 mm.)
G and AL	Blue	Aluminium Tin	0.1249–0.1254 in. (3.1724–3.1861 mm.)	0.0022–0.0045 in. (0.0559–0.1143 mm.)

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Crank Pin Bearing Liners

<i>Identifying Mark</i>	<i>Colour Code</i>	<i>Material</i>	<i>Wall Thickness</i>	<i>Specified Clearance</i>
PV or G	Red	Copper Lead	0.0943–0.0948 in. (2.3952–2.4079 mm.)	0.0017–0.0038 in. (0.0432–0.0965 mm.)
PV or G	Blue	Copper Lead	0.0947–0.0952 in. (2.4054–2.4181 mm.)	0.0017–0.0038 in. (0.0432–0.0965 mm.)
G and AL	Red	Aluminium Tin	0.0939–0.0944 in. (2.3851–2.3978 mm.)	0.0025–0.0046 in. (0.0635–0.1170 mm.)
G and AL	Blue	Aluminium Tin	0.0943–0.0948 in. (2.3952–2.4079 mm.)	0.0025–0.0046 in. (0.0635–0.1170 mm.)

Crankshaft Balancer—5000 only

Gear back lash	0.002–0.008 in. (0.050–0.20 mm.)
Back lash between balancer and crankshaft gear	0.002–0.008 in. (0.050–0.20 mm.)
End float, balancer gear to support	0.003–0.017 in. (0.08–0.43 mm.)

Cylinder Block

Standard bore diameter—nominal 4.2 in. (106.68 mm.)	4.2007–4.2032 in. (106.70–106.76 mm.)
“ “ “ —nominal 4.4 in. (111.76 mm.)	4.4007–4.4032 in. (111.78–111.84 mm.)
Cylinder bore taper	0.001 in. (0.025 mm.)
Cylinder bore out-of-round	0.001 in. (0.025 mm.)
Reboring size—Measure ‘W’ dimension on piston and add specified piston clearance—See Figure 1	

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Pistons

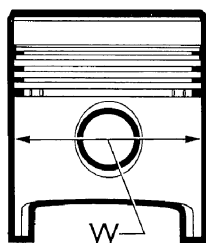
'W' Diameter (Figure 1)	FORD 2000/3000	FORD 4000	FORD 5000 (Prior to April, 1968)	FORD 5000 (After April, 1968)
Diesel	4.1927–4.1952 in. (106.49–106.56 mm.)	4.3922–4.3947 in. (111.56–111.62 mm.)	4.1927–4.1952 in. (106.49–106.56 mm.)	4.3922–4.3947 in. (111.56–111.62 mm.)
Gasoline	4.1975–4.2000 in. (106.62–106.68 mm.)	4.3975–4.4000 in. (111.70–111.76 mm.)	4.1975–4.2000 in. (106.62–106.68 mm.)	4.3975–4.4000 in. (111.70–111.76 mm.)

Clearance—Piston 'W' Diameter to bore—Diesel:

Ford 2/3/5000 with nominal 4.2 in. (106.68 mm.) bore	.. ..	0.0075–0.0085 in. (0.191–0.216 mm.)
Ford 4000 with nominal 4.4 in. (111.76 mm.) bore	.. ..	0.008–0.009 in. (0.203–0.229 mm.)
Ford 4/5000 (after April, 1968) with nominal 4.4 in. (111.76 mm.) bore	.. ..	0.008–0.009 in. (0.203–0.229 mm.)

Piston 'W' Diameter to bore—Gasoline:

Ford 2/3/5000 with 4.2 in. bore	.. ..	0.0027–0.0037 in. (0.069–0.094 mm.)
Ford 4000 with 4.4 in. bore	.. ..	0.0032–0.0042 in. (0.081–0.086 mm.)
Ford 2/3/4/5000 (after April, 1968) with 4.2 & 4.4 bore	.. ..	0.0027–0.0037 in. (0.069–0.094 mm.)



'W' dimension measured at 90° to centre line through axis of piston pin.

Figure 1

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Piston Pin Clearance	0-0003-0-0005 in. (0-008-0-013 mm.)
Piston Rings—End Gap								
Oil	0-013-0-028 in. (0-33-0-71 mm.)
Top Compression	..	..	..	..	..	..	..	0-012-0-019 in. (0-30-0-48 mm.)
Intermediate	..	..	..	..	..	..	..	0-010-0-017 in. (0-25-0-46 mm.)
Push Rods								
Overall length of push rod (short)	..	..	..	..	..	..	..	10-505-10-475 in. (266-827-266-065 mm.)
(long)	..	..	..	..	..	..	..	12-025-11-995 in. (305-435-304-673 mm.)
Tappet								
Tappet diameter	..	..	..	..	..	..	..	0-9889-0-9894 in. (25-11-25-13 mm.)
Tappet bore diameter	..	..	..	..	..	..	..	0-990-0-991 in. (25-15-25-17 mm.)
Rocker Shaft, Support and Arm								
Shaft diameter	..	..	..	..	..	..	..	1-000-1-001 in. (25-40-25-43 mm.)
Support diameter (I.D.)	..	..	..	..	..	..	..	1-002-1-004 in. (25-45-25-50 mm.)
Arm diameter (I.D.)	..	..	..	..	..	..	..	1-003-1-004 in. (25-48-25-50 mm.)
Exhaust Valve and Guide								
Face angle	..	..	..	..	..	..	..	45° 30' to 45° 45'
Stem diameter	..	..	..	..	..	..	..	0-3701-0-3708 in. (9-40-9-42 mm.) Std.
								0-3731-0-3838 in. (9-48-9-50 mm.) O/S
								0-3851-0-3858 in. (9-78-9-80 mm.) O/S
								0-4001-0-4008 in. (10-16-10-18 mm.) O/S

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