

1961 FORD

SERVICE SPECIFICATIONS



FORD DIVISION • FORD MOTOR COMPANY

**1961
FORD
SERVICE
SPECIFICATIONS**

**SERVICE DEPARTMENT
FORD DIVISION
FORD MOTOR COMPANY**

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TRUCK AND
ECONOLINE



FORD
CAR,
THUNDER-
BIRD, AND
FALCON



FOREWORD

This booklet contains service specifications for the 1961 Ford Car, Thunderbird, Falcon, Econoline, and Truck.

The specifications contained in this booklet were in effect at the time the book was approved for printing. The Ford Division of Ford Motor Company reserves the right to discontinue models at any time, or change specifications or design, without notice and without incurring obligation.

Carl T. Doman

Carl T. Doman
National Service Manager
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PART I FORD TRUCKS

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ENGINES

NOTE: All specifications are given in inches unless otherwise noted.

ENGINE IDENTIFICATION

Truck

PATENT PLATE SYMBOL	CUBIC INCH DISPLACEMENT
C	292 MD
D	292 HD
F	332
J	223
N	302
P	401
Q	477
R	534
S	144

GENERAL

ENGINE MODELS AND PISTON DISPLACEMENT (Cubic Inches)

144 Six	144
223 Six	223
262	262
V-8 MD (Medium Duty)	292
HD (Heavy Duty)	292, 302, and 332
SD (Super Duty)	401, 477, and 534

BORE AND STROKE

144	3.50 x 2.50
223	3.625 x 3.60
262	3.718 x 4.03
292	3.75 x 3.30
302	3.625 x 3.66
332	3.80 x 3.66
401	4.125 x 3.75
477	4.50 x 3.75
534	4.50 x 4.20

COMPRESSION RATIO

144 Six	8.7:1
223 Six	8.1:1
262	8.0:1
292 HD V-8;	7.6:1
292 MD V-8	7.9:1
302	7.1:1
332	7.0:1
401, 477, 534	7.5:1
SD V-8	7.5:1

TORQUE — (Foot-Pounds)

@ Specified rpm

1.44	138 @2000
223 Six	203 @2600
292 MD V-8	270 @2240
292 HD V-8	274 @2800
302 HD V-8	290 @2600
332 HD V-8	312 @2600
401 SD V-8	343 @2000-2600
477 SD V-8	412 @1400-1800
534 SD V-8	481 @1600-1800

VALVE ARRANGEMENT

(Front to Rear)

144	E-1-E-1-E-E-1-E-1-E
223	E-1-E-1-E-E-1-E-1-E
292, 302, and 332	E-1-E-1-E-1-E-1-E
401, 477, and 534	E-1-E-1-E-1-E-1-E

COMPRESSION PRESSURE

Sea Level @ Cranking Speed

144	770 ± 10
All Engines (except 144)	150 ± 20

GENERAL — (Continued)

TAXABLE HORSEPOWER

144	29.4
223	31.50
262	33.18
292	44.60
302	42.05
332	46.20
401	54.00
477 and 534	65.00

BRAKE HORSEPOWER

@ Specified rpm

144 Six	90 @ 4200
223 Six	139 @ 4200
292 MD V-8	172 @ 4000
292 HD V-8	180 @ 4000
302 HD V-8	194 @ 3800
332 HD V-8	205 @ 3800
401 SD V-8	226 @ 3600
477 SD V-8	231 @ 3400
534 SD V-8	266 @ 3200

FIRING ORDER

144	1-5-3-6-2-4
223 and 262 Six	1-5-3-6-2-4
All V-8's	1-5-4-8-6-3-7-2

OIL CAPACITY

144	3½ quarts
223, 292	5 quarts*
262	6 quarts*
302 and 332	8 quarts*
401, 477, and 534	9 quarts**

*Add one quart when changing oil filter.

**Add 2 quarts when changing oil filter.

ENGINE IDLE RPM*

Manual-Shift

144	500-550†
144	550-600†
223, 262, 292MD, 401, 477, 534	500-550
292HD, 302, 332	525-575

Automatic Transmissions

144, 170	475-525†
144, 170	525-575†
223, 262, 292MD, 292HD, 302, 332	475-525

*Engine idle speed can be varied to suit operating conditions.

†Without positive crankcase ventilation.

‡With positive crankcase ventilation.

ENGINE IDLE MANIFOLD VACUUM

Inches of Mercury @ Specified
Engine Neutral Idle RPM

(sea level)

144	18
223, 292	18
Other Engines	17

OIL PRESSURE—

Hot @ 2000 rpm

144, 223, 262, 292, 302, and 332	35-55 psi
401, 477, 534	35-65 psi

RECOMMENDED OIL VISCOSITY*

@ Specified Ambient Temperature:

144 Engine	
Above + 70° F	SAE 30
+ 32° F to + 70° F	SAE 20-20W
+ 32° F to - 10° F	SAE 10-10W
Below - 10° F	SAE 5W

All Engines (Except 144)

Above + 100° F	SAE 40
+ 32° F to + 100° F	SAE 30
+ 10° F to + 32° F	SAE 20-20W
+ 10° F to - 10° F	SAE 10W
Below - 10° F	SAE 5W

*Multi-viscosity oils may be used if they are certified by the supplier to satisfy ASTM-GIV Test Sequences which describe the minimum requirements for API oil classification "For Service MS."

RECOMMENDED MINIMUM A.P.I. CLASSIFICATION OF ENGINE LUBRICATING OILS

All Engines Except SD V-8* and 144 .. MS-DS

144 .. MS

SD V-8 .. MS-S1

*For extreme heavy duty operation over 100° F. use S1 (Mil-L-2104-A.)

CYLINDER HEAD

GASKET SURFACE FLATNESS All Engines—.033 inch (144 Engine—.002 inch) in any 6 inches or .006 inch overall.	VALVE SEAT RUNOUT Maximum 0.002 Wear Limit 0.0025
VALVE GUIDE BORE DIAMETER STANDARD Intake 144 0.3115-0.3125 223 and 292 0.3433-0.3440 262, 302 and 332 0.3728-0.3735 401, 477, and 534 0.4368-0.4375 Exhaust 144 0.3115-0.3125 223 and 292 MD 0.3433-0.3440 262 0.3728-0.3735 All HD and SD Engines 0.4368-0.4375	VALVE SEAT INSERT TO BORE INTERFERENCE FIT STANDARD AND OVERSIZE Intake and Exhaust 262 0.0015-0.0040 HD and SD Engines 0.002-0.004
VALVE SEAT WIDTH Intake 144 0.070-0.080 262 0.060-0.080 292 0.055-0.085 223, 302, and 332 0.070-0.090 401, 477, and 534 0.090-0.110 Exhaust 144 0.070-0.080 223 0.070-0.090 292 MD 0.065-0.095 262, 292 HD 0.085-0.100 Other Engines 0.090-0.110	VALVE SEAT INSERT BORE DIAMETER STANDARD Intake 302 and 332 2.1215-2.1225 401, 477, and 534 2.2165-2.2175 Exhaust 262, 292, 302, and 332 HD 1.6245-1.6260 401, 477, and 534 1.7405-1.7415
VALVE SEAT ANGLE All Engines (Intake and Exhaust) 45°	VALVE SEAT INSERT DIAMETER STANDARD Intake 302 and 332 2.1245-2.1255 401, 477, and 534 2.2195-2.2205 Exhaust 262, 292, 302, and 332 HD 1.6275-1.6285 401, 477, and 534 1.7435-1.7445

VALVE MECHANISM

VALVE LASH COLD Intake 144 0.016 223, 262, and 292 0.019 302, 332, 401, 477, and 534 0.020 Exhaust 144 0.016 223, 262, and 292 0.019 302, 332 0.022 401, 477, and 534 0.020 HOT Intake and Exhaust 144 0.016 223 and 262 0.019 292 0.018 302, 332, 401, 477, and 534 0.020	VALVE STEM DIAMETER STANDARD Intake 144 0.3100-0.3107 223 and 292 0.3416-0.3423 262 0.3710-0.3720 302 and 332 0.3711-0.3718 401, 477, and 534 0.4349-0.4358 Exhaust 144 0.3090-0.3097 223 and 292 0.3398-0.3405 262 0.3693-0.3703 All Other Engines 0.4335-0.4344 0.003 OVERSIZE Intake 144 0.3130-0.3137 223 and 292 0.3446-0.3453 262 0.3740-0.3750 302 and 332 0.3741-0.3748 401, 477, and 534 0.4379-0.4388 Exhaust 144 0.3120-0.3127 223 and 292 0.3428-0.3435 262 0.3723-0.3733 302, 332, 401, 477, and 534 0.4365-0.4374
VALVE HEAD DIAMETER Intake 144 1.462-1.472 223 and 262 1.775-1.785 292 1.642-1.652 302 and 332 1.920-1.930 401, 477, and 534 2.015-2.025 Exhaust 144 1.261-1.271 401, 477, and 534 1.630-1.640 All Other Engines 1.505-1.515	0.015 OVERSIZE Intake 144 0.3250-0.3257 223 and 292 0.3566-0.3573 262 0.3860-0.3870 302 and 332 0.3861-0.3868 401, 477, and 534 0.4499-0.4508 Exhaust 144 0.3240-0.3247 223 and 292 MD 0.3548-0.3555 292 HD 0.4494-0.4500 302, 332, 401, 477, and 534 0.4485-0.4494 262 0.3848-0.3858
VALVE STEM TO VALVE GUIDE CLEARANCE Intake 144 0.0008-0.0025 - Wear Limit 0.0045 262 0.0008-0.0025 - Wear Limit 0.0055 401, 477, 534 0.0016-0.0030 - Wear Limit 0.0045 All Other Engines 0.0010-0.0024 - Wear Limit 0.0045 Exhaust 144 0.0018-0.0035 - Wear Limit 0.0055 223 and 292 MD 0.0028-0.0042 - Wear Limit 0.0055 262 0.0025-0.0042 - Wear Limit 0.0055 292 HD 0.0018-0.0032 - Wear Limit 0.0055 All Other Engines 0.0024-0.0040 - Wear Limit 0.0055	0.030 OVERSIZE Intake 144 0.3400-0.3407 223 and 292 0.3716-0.3723 262 0.4010-0.4020 302 and 332 0.4011-0.4018 401, 477, and 534 0.4649-0.4658 Exhaust 144 0.3390-0.3397 223 and 292 MD 0.3698-0.3705 262 0.3993-0.4003 292 HD 0.4643-0.0653 302, 332, 401, 477, and 534 0.4635-0.4644

VALVE MECHANISM (Cont.)

VALVE FACE RUNOUT Intake and Exhaust 223 and 292 0.0015 - Wear Limit 0.0020 Other Engines... 0.0025 - Wear Limit 0.0025	VALVE PUSH ROD RUNOUT (maximum) 144 0.25 Other Engines 0.020
VALVE SPRING OUT OF SQUARE (maximum) 144 0.069 262 0.068 Other Engines 0.072	ROCKER ARM SHAFT O.D. 144, 223, 262, 292, 302, and 332... 0.780-0.781 Other Engines 0.781-0.784
VALVE SPRING FREE LENGTH (approximate) 144 2.00 262 1.96 401, 477, and 534 2.07 Other Engines 2.09	VALVE TAPPET DIAMETER STANDARD 223 0.4983-0.4989 292 and 262 0.4989-0.4995 144, 302, 332, 401, 477, and 534 0.8740-0.8745
VALVE SPRING PRESSURE Pounds @ Specified Length Valve Closed 144 47.75-56.25 Wear Limit 40 @1.585 401, 477, and 534 84-89 @1.70- Wear Limit 75 @1.70 Other Engines 71-79 @1.78- Wear Limit 64 @1.78 Valve Open 144 112-122 @1.222 Wear Limit 101 401, 477, and 534 178-192 @1.28- Wear Limit 160 @1.28 Other Engines 161-177 @1.39- Wear Limit 145 @1.39	VALVE TAPPET TO TAPPET BORE CLEARANCE 223 0.0011-0.0027-Wear Limit 0.0055 262, 292 .. 0.0005-0.0021-Wear Limit 0.0055 Other Engines 0.0005-0.0020-Wear Limit 0.0030
VALVE SPRING ASSEMBLED HEIGHT - Pad To Retainer 144 1-9/16-1-39/64 262 1-5/8-1-11/16 401, 477, and 534 1-11/16-1-23/32 Other Engines 1-3/4-1-25/32	ROCKER ARM TO ROCKER SHAFT CLEARANCE 144 0.002-0.004-Wear Limit 0.006 223 Six, and 292 0.002-0.004-Wear Limit 0.008 302 and 332... 0.002-0.005-Wear Limit 0.006 401, 477, 534... 0.001-0.004-Wear Limit 0.007
	ROCKER SHAFT BORE DIAMETER All Engines 0.783-0.784

CAMSHAFT, TIMING CHAIN, AND TIMING GEARS

CAMSHAFT END PLAY 144 0.003-0.007 Wear Limit 0.012 Other Engines. 0.001-0.007-Wear Limit 0.012	CAMSHAFT JOURNAL RUNOUT All Engines 0.005
CAMSHAFT JOURNAL TO BEARING CLEARANCE All Engines... 0.001-0.003-Wear Limit 0.006	CAMSHAFT JOURNAL OUT-OF-ROUND All Engines 0.0005-Wear Limit 0.001

CAMSHAFT, TIMING CHAIN, AND TIMING GEARS (Cont.)

CAMSHAFT LOBE LIFT Intake 144 0.2405 223 and 262 0.273 292 0.264 302 and 332 0.244 401, 477, and 534 0.278 Exhaust 144 0.2395 223 and 262 0.273 292 MD 0.262 302 and 332 0.265 401, 477, and 534 0.278	TIMING CHAIN DEFLECTION 144, 223, 262, and 292 0.5 MAXIMUM ALLOWABLE LOBE LIFT LOSS Intake and Exhaust-Except SD Engines. 0.005 Intake and Exhaust-SD Engines 0.008 CAMSHAFT JOURNAL DIAMETER STANDARD 144 1.8095-1.8105 223, 262, and 292 1.9255-1.9265 302 and 332 2.1238-2.1248* 401, 477, and 534 2.370-2.371* Front Journal 302, 332, 401, 477, and 534... 2.4738-2.4748 *Nos. 2, 3, 4, and 5 journals only.
CAMSHAFT GEAR TO CRANKSHAFT GEAR BACKLASH 302, 332, 401, 477, and 534 0.002-0.004	

CAMSHAFT BEARINGS

Inside Diameter 144 1.8115-1.8125 223, 262 and 292 1.9275-1.9285 302 and 332 2.126-2.127* 401, 477, and 534 2.372-2.373* *Nos. 2, 3, 4, and 5 bearings only-No. 1 bearing 2.476-2.477.	Location in relation to Front Face of Block Cam Bearing Bore - No. 1 bearing only (below) 144 0.115-0.125 223, 292, 302, and 332 0.005-0.020 401, 477, and 534 0.310-0.330
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FLYWHEEL

CONVENTIONAL AND OVERDRIVE TRANSMISSION ASSEMBLED FLYWHEEL CLUTCH FACE RUNOUT (Maximum) All Engines 0.010

CRANKSHAFT

MAIN BEARING JOURNAL DIAMETER STANDARD 144 2.2486-2.2490 223, 262, and 292 2.4980-2.4988 302 and 332 2.6230-2.6238 401, 477, and 534 3.1246-3.1254	CONNECTING ROD JOURNAL DIAMETER 144 2.1236-2.1240 223 and 262 2.2980-2.2988 292 2.1880-2.1888 302 and 332 2.2482-2.2490 401, 477, and 534 2.7092-2.7100
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CRANKSHAFT (Cont.)

MAIN BEARING JOURNAL RUNOUT 144 0.0025 – Wear Limit 0.0035 223 and 262 0.003 – Wear Limit 0.004 292 0.002 – Wear Limit 0.003 Other Engines 0.002 – Wear Limit 0.003	MAIN BEARING JOURNAL THRUST FACE RUNOUT All Engines 0.001
CONNECTING ROD AND MAIN BEARING JOURNALS OUT-OF-ROUND All Engines 0.0004 – Wear Limit 0.0006	CRANKSHAFT FREE END PLAY 144 0.004-0.006 – Wear Limit 0.012 All Engines 0.004-0.008 – Wear Limit 0.012
CONNECTING ROD AND MAIN BEARING JOURNALS TAPER All Engines 0.0003 – Wear Limit 0.001	ASSEMBLED FLYWHEEL CLUTCH FACE RUNOUT All Engines 0.010
THRUST BEARING JOURNAL LENGTH 144 1.275-1.277 223 and 262 1.359-1.361 292, 302, and 332 1.124-1.126 401, 477, and 534 1.279-1.281	ASSEMBLED FLYWHEEL O. D. RUNOUT 144, 223, 262, and 292 0.007 Other Engines 0.006
	ASSEMBLED SPROCKET OR GEAR FACE RUNOUT 223, 262, and 292 0.006

MAIN BEARINGS

JOURNAL CLEARANCE 144 0.001-0.003 – Wear Limit 0.006 223 0.0006-0.0028 – Wear Limit 0.0038 292 0.0006-0.0032 – Wear Limit 0.0042	302 and 332 0.0012-0.0032 – Wear Limit 0.0042 401, 477, and 534 0.0018-0.0039 – Wear Limit 0.0049
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CONNECTING ROD

PISTON PIN BUSHING I.D. STANDARD 144 0.9107-0.9112 223, 262, and 292 0.9122-0.9125 302 and 332 0.9122-0.9125 401, 477, and 534 1.2201-1.2204	PISTON PIN BUSHING OUT-OF-ROUND AND TAPER 144 0.0003 All Engines (Except 144) 0.0002
BEARING BORE DIAMETER 144 2.2390-2.2394 223 and 262 2.4230-2.4238 292 2.3120-2.3128 302 and 332 2.4002-2.4010 401, 477, and 534 2.9032-2.9040	CONNECTING ROD ASSEMBLY (Assembled to crankshaft) Side Clearance 144 0.004-0.011 – Wear Limit 0.014 223 0.003-0.009 – Wear Limit 0.012 292 0.006-0.016 – Wear Limit 0.019 302, 332 0.006-0.016 – Wear Limit 0.017 401, 477, and 534 0.006-0.014 – Wear Limit 0.017

CONNECTING ROD (Cont.)

BEARING BORE OUT-OF-ROUND AND TAPER 144 0.0002 Other Engines 0.0004	CONNECTING ROD Twist Total Difference (maximum*) All Engines 0.012 Bend Total Difference* All Engines 0.004 *Pin bushing and crankshaft bearing bore must be parallel and in the same vertical plane within the specified total difference at ends of 8-inch-long bar measured 4-inches on each side of rod.
CONNECTING ROD LENGTH (Center to center) 144 4.854-4.856 223 6.258-6.262 262 6.043-2.047 292 MD 6.320-6.324 292 HD 6.250-6.254 302 and 332 7.064-7.066 401, 477, and 534 7.739-7.741	

CONNECTING ROD BEARINGS

BEARING TO CRANKSHAFT CLEARANCE 144 0.0005-0.0027 223 and 262 0.0006-0.0025 – Wear Limit 0.0035 292 0.0005-0.0024 – Wear Limit 0.0034	302 and 332 ... 0.0006-0.0027 – Wear Limit 0.0036 401, 477, and 534 0.0017-0.0036 – Wear Limit 0.0039
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PISTON

PISTON DIAMETER STANDARD (color coded red) 144 3.4976-3.4982 223 and 302 3.6236-3.6242 262 3.7167-3.7173 292 3.7486-3.7492 332 3.7986-3.7992 401 4.1233-4.1239 477 and 534 4.4983-4.4989	0.003 OVERSIZE 144 3.5000-3.5006 223 and 302 3.6260-3.6266 262 3.7191-3.7197 292 3.7510-3.7516 332 3.8010-3.8016 401 4.1257-4.1263 477 and 534 4.5007-4.5013
STANDARD (color coded blue) 144 3.4988-3.4994 223 and 302 3.6248-3.6254 262 3.7179-3.7185 292 3.7498-3.7504 332 3.7998-3.8004 401 4.1245-4.1251 477 and 534 4.4995-4.5001	PISTON TO BORE CLEARANCE (Bottom of skirt) 144 0.0018-0.0036 262 0.0021-0.0027 401, 477, and 534 0.0011-0.0029 – Wear Limit 0.005 All Other Engines 0.0008-0.0026 – Wear Limit 0.005

PISTON PIN

PISTON PIN DIAMETER STANDARD (color coded green) 401, 477, and 534 1.2198-1.2201 Other Engines 0.9120-0.9123 0.002 OVERSIZE (color coded yellow) 401, 477, and 534 1.2218-1.2221 All Other Engines 0.9140-0.9143 0.001 OVERSIZE (color coded blue) 401, 477, and 534 1.2208-1.2211 All Other Engines 0.9130-0.9133	PISTON PIN LENGTH 144, 223, 262, and 292 3.010-3.030 302 3.008-3.028 332 3.156-3.176 401 3.335-3.350 477 and 534 3.840-3.855 PISTON PIN TO PISTON CLEARANCE (Loose) 401, 477, and 534 0.0003-0.0005—Wear Limit 0.001 Other Engines 0.0001-0.0003—Wear Limit 0.0008
PISTON PIN TO CONNECTING ROD BUSHING CLEARANCE (Loose) All Engines 0.0001-0.0005	Wear Limit All Engines 0.001

PISTON RINGS

SIDE CLEARANCE Compression Ring 144 0.0024-0.0041 223, 262, and 292 0.0019-0.0036—Wear Limit 0.006 302 and 332 0.0024-0.0091—Wear Limit 0.006 401, 477, and 534 0.0030-0.0045—Wear Limit 0.006 *Except 332 Engine: 0.0025-0.0024 at top; 0.003-0.005 at bottom. Oil Ring 223, 262, and 292 Snug 302 and 332 0.0028-0.0052—Wear Limit 0.007 401, 477, and 534 0.0014-0.0031—Wear Limit 0.007	Oil Ring All Engines 0.1859-0.1866 †Two rings used per groove. Width specified is for one ring. RING GAP WIDTH Compression Ring (Standard Bore) 144 0.010-0.020 223, 262, and 292* 0.010-0.025 302 and 332 . . . Top Ring 0.010-0.031 . . . Bottom Ring 0.012-0.027 SD Engines. . . Top Ring 0.016-0.031 . . . Other Rings 0.013-0.028 Oil Ring (Standard Bore) 144 0.015-0.055 223 and 292 0.015-0.062* 302 and 332 0.010-0.028† 401, 477, and 534 0.013-0.033 *Steel rail. †At top 0.010 – 0.025 at bottom.
RING WIDTH Compression Ring 144, 262, and 292 0.0774-0.0781 All Other Engines 0.0930-0.0935* *Except 332 Engine: 0.0930-0.0935 at top; 0.0930-0.0940 at bottom.	

CYLINDER BLOCK

CYLINDER BORE DIAMETER (Standard spreads for 8 grades). 144 3.500-3.5012 223 3.6250-3.6274 262 3.7150-3.7214 292 3.7500-3.7524 302 3.6250-3.6274 332 3.8000-3.8024 401 4.1250-4.1274 477 and 534 4.5000-4.5024 CYLINDER BORE TAPER All Engines 0.001—Wear Limit 0.005	CYLINDER BORE OUT-OF-ROUND (maximum) 144, 223, 262, and 292 0.0010—Wear Limit 0.003 Other Engines 0.0005—Wear Limit 0.003 HEAD GASKET SURFACE FLATNESS 144 0.002 inch in any 6 inches or 0.006 inch overall Other Engines . 0.003 inch in any 6 inches or 0.006 inch overall
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OIL PUMP (Gear Type)

RELIEF VALVE SPRING TENSION (Pounds @ specified length) 223 9.55-10.05 @1.56	GEAR END CLEARANCE (pump assembled) 223 0.003-0.006
RELIEF VALVE CLEARANCE 223 0.002-0.004	DRIVEN GEAR TO SHAFT CLEARANCE 223 0.001-0.002
DRIVE SHAFT TO HOUSING BEARING CLEARANCE 223 0.0015-0.0029	GEAR TO HOUSING RADIAL CLEARANCE 223 0.001-0.005

OIL PUMP (Rotor Type)

RELIEF VALVE SPRING TENSION (Pounds @ specified length) 144 8.6-9.5 @1.078 223 9.0-9.6 @1.53 292, 302, and 332 8.7-9.9 @1.71 401, 477, and 534 10.7-11.9 @1.07	ROTOR ASSEMBLY END CLEARANCE (Pump assembled) All Engines 0.0011-0.0041
RELIEF VALVE CLEARANCE All V-8 Engines 0.0015-0.0029	OUTER RACE TO HOUSING RADIAL CLEARANCE All Engines 0.006-0.012
DRIVE SHAFT TO HOUSING BEARING CLEARANCE All Engines 0.0015-0.0029	DRIVE SHAFT LENGTH (Rotor assembly face to shaft end) 144 2.36-2.38 292, 302, and 332 3.36-3.38 401, 477, and 534 2.67-2.69

TORQUE LIMITS (Foot-Pounds)

MAIN BEARING CAP BOLTS (Oiled threads)		OIL PICK-UP TUBE TO OIL PAN	
144	65-75	292	28-32
223 and 262	95-105	302 and 332	10-12
292	80-90	CRANKCASE VENTILATION ADAPTER TO CYLINDER BLOCK	
302 and 332	120-130	144	6-9
401, 477, and 534	150-164	223	8-10
CYLINDER HEAD BOLTS (Oiled threads)		292	3-5
144 and 292MD	65-75	FUEL PUMP TO CYLINDER BLOCK OR CYLINDER FRONT COVER	
292HD	70-80	144 and 223	12-15
223 and 262	95-105	292	23-28
302 and 332	95-110	MANIFOLD TO CYLINDER HEAD	
401, 477, and 534	130-150	Intake	23-28
OIL PAN TO CYLINDER BLOCK		Exhaust - 302 and 332	12-15
144	7-9	144	13-18
Other Engines	9-13	Other Engines	23-28
OIL FILTER ADAPTER TO CYLINDER BLOCK		FLYWHEEL TO CRANKSHAFT	
144	50-60	401, 477, and 534	100-110
302 and 332	20-25	Other Engines	75-85
401, 477, and 534	12-15	OIL PUMP TO CYLINDER BLOCK	
OIL FILTER CENTER BOLT		223 Six	30-35
401, 477, and 534	45-50	144, 262, 292, 302 and 332	12-15
Other Engines	20-25	401, 477 and 501	23-28
OIL COOLER TO CYLINDER BLOCK		OIL PUMP COVER PLATE	
401, 477, and 534	20-25	Rotor	6-9
CYLINDER FRONT COVER		Gear	12-15
144, 223 and 262	6-9	VALVE ROCKER ARM ADJUSTING SCREW (Self-locking-type- minimum torque to rotate)	
292	12-15	144, 223, 292, 302, and 332	3
302, 332, 401, 477, and 534	23-28	VALVE ROCKER ARM ADJUSTING NUT	
WATER OUTLET HOUSING		401, 477, and 534	30-35
All Other Engines	23-28	CAMSHAFT SPROCKET OR GEAR TO CAMSHAFT	
144, 292	12-15	144, 223, 262, and 292	35-45
VALVE ROCKER ARM COVER		302, 332, 401, 477, 534	20-24
144	3-5	DAMPER OR PULLEY TO CRANKSHAFT	
292, 302, and 332	2.0-2.5	144	45-55
All Other Engines	4-7	223, 262, and 292	70-90
WATER PUMP TO CYLINDER BLOCK OR FRONT COVER		302, 332, 401, 477, and 534	130-145
144 and 292	12-15		
Other Engines	23-28		
OIL PICK-UP TUBE TO OIL PUMP			
144	12-15		
223, 262, 292, 302, and 332	10-12		

TORQUE LIMITS (Cont.)

CONNECTING ROD NUTS		ENGINE GOVERNOR TO CYLINDER BLOCK	
144	19-24	401, 477 and 534	23-28
401, 477, and 534	60-65	ENGINE FRONT SUPPORT	
All Other Engines	40-42	Insulator Assembly To Engine Front Mount	
CAMSHAFT THRUST PLATE TO BLOCK		144	23-28
All Engines	12-15	223, 292, 302, and 332	45-55 (1/2-20) 35-45 (7/16-20)
VALVE ROCKER SHAFT SUPPORT TO CYLINDER HEAD		Engine Front Mounting Bracket To Engine Front Support	
144	30-35	401, 477, and 534	45-55 (1/2-20)
223 and 262	45-55	ENGINE REAR SUPPORT	
292	12-15	Insulator To Rear Engine Mount	
302 and 332	22-25	144	23-29
VALVE PUSH ROD CHAMBER COVER		401, 477, and 534	100-150 (5/8-18)
223	(Inch-Pounds) 15-20	All Other Engines	70-90 (9/16-18)
292, 302, and 332	2.0-2.5	Engine Rear Support To Flywheel Housing	
401, 477, and 534	.5 and 10*	401, 477, and 534	90-100 (1/2-13)
*10 on center end bolts; 5 on side bolts			

TORQUE LIMITS FOR VARIOUS SIZE BOLTS

CAUTION: If any of the torque limits listed in this table disagree with any of those listed in the preceding tables, the limits listed in the preceding tables prevail.						
Size (Inches)	1/4-20	1/4-28	5/16-18	5/16-24	3/8-16	3/8-24
Torque (Foot-Pounds)	6-9	6-9	12-15	15-18	23-28	30-35
Size (Inches)	7/16-14	7/16-20	1/2-13	1/2-20	9/16-18	5/8-18
Torque (Foot-Pounds)	45-50	50-60	60-70	70-80	85-95	130-145

IGNITION TIMING

INITIAL IGNITION TIMING (B.T.D.C.)	
144	2°
223 and 292 MD V-8	4°
All HD and SD V-8*	
With regular fuel of 85-88 octane	4°
With regular fuel of 88-90 octane	6°
With regular fuel of 90-92 octane	8°
With regular fuel of 92 octane or more or premium fuel	10°
*All octane numbers obtained through the research method.	

DISTRIBUTOR—GENERAL

SIX CYLINDER ENGINE		SHAFT END PLAY CLEARANCE	
Breaker Arm Spring Tension (Ounces)	17-20	144 Engine	0.022-0.033
Contact Spacing (Inches)	0.024-0.026	Six Cylinder Engine	0.005-0.008
Dwell Angle at Idle Speed	35°-38°	All V-8 Engines	0.022-0.030
ALL V-8 ENGINES		292 (Distance from bottom of mounting flange to bottom of gear)	4.991-4.996
Breaker Arm Spring Tension (Ounces)	17-20	302, and 332 (Distance from bottom of mounting flange to bottom of gear)	4.927-4.953
Contact Spacing (Inches)	0.014-0.016	401, 477, and 534 (Distance from bottom of mounting flange to bottom of gear)	5.111-5.116
Dwell Angle at Idle Speed	26°-28 1/2°		

ADVANCE CHARACTERISTICS

LOADOMATIC DISTRIBUTORS		
223 SIX ENGINE (COAF 12127-G)		
Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
450	0	0.38
650	2-1/2- 3-1/2	0.79
1100	6-3/4- 7-3/4	2.85
1400	8-3/4- 9-3/4	4.33
1800	10-1/4-11-1/4	5.99

DUAL ADVANCE DISTRIBUTORS		
292 MD V-8 ENGINES (COTF-12127-B)		
VACUUM ADVANCE. Set test stand to 0° at 1000 rpm and 0 inches of vacuum.		
Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
1000	0-1	5
1000	3-3/4- 6-3/4	10
1000	5-1/2- 8-1/2	13
Maximum vacuum advance limit		8-1/2°
CENTRIFUGAL ADVANCE. Set test stand to 0° at 250 rpm.		
Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
550	0	0
700	3/4- 1-3/4	0
900	3-1/4- 4-1/4	0
1150	5-1/2- 6-1/2	0
1600	8-1/2-10	0
1800	9-1/4-10-3/4	0
Maximum advance		10-3/4°
ADVANCE CHARACTERISTICS — (Cont.)

DUAL ADVANCE DISTRIBUTORS (Cont.)			
401, 477 and 534 SD V-8 ENGINES (COTF-12127-C)			
VACUUM ADVANCE. Set test stand to 0° at 1000 rpm and 0 inches of vacuum.			
Distributor RPM	Advance (Degrees)		
1000	0- 2-1/2		
1000	5- 7-3/4		
1000	5-1/2-8-1/2		
Maximum Advance Limit			8-1/2°
CENTRIFUGAL ADVANCE. Set test stand to 0° at 250 rpm amd 0 inches of vacuum.			
Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)	
350	0	0	
500	1-1/4- 2-1/4	0	
1100	10-1/4-11-3/4	0	
1400	12-1/4-13-3/4	0	
Maximum Advance Limit			13-1/4°
CENTRIFUGAL ADVANCE DISTRIBUTORS			
Set test stand to 0° at 250 rpm			
292 HD V-8 ENGINES(COTF-12102-C and D)			
Distributor RPM	* Advance (Degrees)		
400	0		
500	1/2- 1-1/2		
900	5-1/2- 6-1/2		
1250	8-1/2- 9-1/2		
2000	10-3/4-12-1/4		
Maximum Advance Limit			18°
302 AND 332 HD V-8 ENGINES (COTF-12102-E AND F)			
Distributor RPM	Advance (Degrees)		
500	0		
850	1- 2		
1175	3-1/4- 4-1/2		
2000	9-10-1/2		
Maximum Advance Limit			18°

COIL

ALL ENGINES		Amperage Draw
Primary Resistance		Engine Stopped
(Ohms)*	1.40-1.54 (75°F.)	Engine Idling
Secondary Resistance		*Primary Circuit
(Ohms)	8000-8800 (75°F.)	Resistor

CONDENSER

ALL ENGINES	144 (Champion F14-Y)
Capacity (Microfarads) 0.21-0.25	223 and 292 MD (Champion 860)
Minimum Leakage (Megohms) 5	Other Engines (Champion F-10)
Maximum Series Resistance (Ohms) 1	PLUGS
	Size 18mm
	Gap (Inches) 0.028-0.032
	(144 Engine) 0.032-0.036
	Torque (Foot-Pounds) 15-20

GOVERNORS

VACUUM GOVERNOR	GOVERNED SPEED—ENGINE RPM
THROTTLE ACTUATING MECHANISM	LOAD NO LOAD
Spring Color	Conventional Drive
All HD V-8 Engines Blue	Transmission 3600 3800
Spring Position	Automatic
All HD V-8 Engines No. 1	Transmission 3800 4000
Upper By-Pass Jet	MECHANICAL GOVERNOR
HD Engine 25	Spring Color (Governor Spring) Pink*
292, 302 and 332 HD Engines 26	GOVERNED SPEED—ENGINE RPM
Lower By-Pass Jet	NO LOAD
HD Engine 26	(SD Engine) 2500-3700
292, 302 and 332 HD Engines 25	*If governed speeds below 3300 rpm are desired, governor spring color coded brown must be used.

FUEL PUMPS

MECHANICAL FUEL PUMP	ELECTRIC FUEL PUMP
FUEL PUMP PRESSURE (psi at 500 Engine rpm)	FUEL PUMP PRESSURE (psi at 11.8–12.3 volts)
144, 223 and 292 MD 3.5-5.5	All Engines 2
292 HD and 302 HD 3.5-6.5	MINIMUM FUEL PUMP VOLUME
MINIMUM FUEL PUMP VOLUME (Flow at 500 engine rpm)	Engine 1 quart flow
All Engines 1 Pint in 30 seconds	302 and 332 HD V-8 Within 40 seconds
	401 SD V-8 Within 36 seconds
	477 SD V-8 Within 33 seconds
	534 SD V-8 Within 30 seconds

CARBURETORS

SINGLE-BARREL CARBURETORS

The following carburetors are used on engines that are equipped with the positive crankcase ventilation system.	10,000–15,000 feet CITE-9510-V and -Y 61 CITE-9510-AC-AD and -Z 62 CIUE-9510-A 50 CIUE-9510-B 50
CITE-9510-AC Manual-Shift Transmission CITE-9510-AD Automatic Transmission CITE-9510-Z Manual-Shift Transmission CIUE-9510-A Manual-Shift Transmission	CITE Float Setting (Initial Setting Only) 13/64 ± 1/64 inch from the roof of the float chamber to the lowest point of the float, carburetor inverted.
The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system.	CIUE Float Setting (Initial Setting Only) 11/64 ± 1/64 inch from roof of float chamber to lowest point of float, carburetor inverted.
CITE-9510-V Manual-Shift Transmission CITE-9510-Y Automatic Transmission CIUE-9510-B Manual-Shift Transmission	CITE Fuel Level Setting 11/16 ± 1/32 inch below economizer piston mounting surface.
Main Metering Jet Identification No.	CIUE Fuel Level Setting 23/32 inch below power valve mounting surface. Tolerance – 1/32 inch.
0–5,000 feet CITE-9510-V and -Y 65 CITE-9510-AC-AD, and -Z 66 CIUE-9510-A 53 CIUE-9510-B 53	CITE Venturi Size 1-1/4 inches CIUE Venturi Size 1-1/8 inches
5,000–10,000 feet CITE-9510-V and -Y 63 CITE-9510-AC-AD and -Z 64 CIUE-9510-A 52 CIUE-9510-B 52	Spark Control Valve Identification No. 55
	Anti-Stall Dashpot Clearance CITE-9510-Y and CITE-9510-AD 0.060–0.090
	Initial Idle Mixture Adjustment 1–1 1/2 turns open Power Valve Opens at 4–7 inches of mercury

CARBURETORS (Continued)

DUAL CARBURETORS

The following carburetors are used on engines that are equipped with the positive crankcase ventilation system. CITE-9510-AG used with 292 MD and manual-shift transmission. CITE-9510-AF used with 292 MD and automatic transmission. CITE-9510-AE used with 292 MD and manual-shift transmission, or automatic transmission. CITE-9510-D used with 401 SD V-8 CITE-9510-J used with 477 SD V-8	5,000-10,000 feet CITE-9510-AG, -AF and -K 49 CITE-9510-AE 50 CITE-9510-E and -L 48 CITE-9510-D 55 CITE-9510-J 56 10,000-15,000 feet CITE-9510-AG, -AF and -K 47 CITE-9510-AE 48 CITE-9510-E and -L 46 CITE-9510-D 53 CITE-9510-J 54
The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system. CITE-9510-E used with 292 MD and manual-shift transmission. CITE-9510-L used with 292 MD and automatic transmission. CITE-9510-K used with 292 MD and manual-shift transmission or automatic transmission. CITE-9510-D used with 401 SD V-8 CITE-9510-J used with 401 SD V-8	Power Valve Identification No. All Altitudes CITE-9510-AG, -AF, -AE, -E, -L, and -K 65 CITE-9510-D 35 CITE-9510-J 55 Power Valve opens at CITE-9510-AE and -K 6-9 inches of mercury CITE-9510-AF, -AG, -L, and -AF 7-10 inches of mercury CITE-9510-D 4-7 inches of mercury CITE-9510-J 5.5-8.5 inches of mercury
Main Metering Jet Identification No. 0-5,000 feet CITE-9510-AG, -AF, and -K 51 CITE-9510-AE 52 CITE-9510-E and -L 50 CITE-9510-D 57 CITE-9510-J 58	Dry Float Setting (Initial Setting Only) 7/8 inch clearance between the bottom of the float and fuel bowl with the bowl inverted. Fuel Level Setting Lower edge of sight plug opening $\pm$ 1/16 inch. Venturi Size 1-1/32 inches Anti-Stall Dashpot Clearance CITE-9510-L, and -AF 0.060-0.090 Initial Idle Mixture Adjustment 1-1/2 turns open

CARBURETORS (Continued)

4-BARREL CARBURETORS

The following carburetors are used on engines that are equipped with the positive crankcase ventilation system. CITE-9510-A used with the 292 HD and a manual-shift transmission or an automatic transmission. CITE-9510-F used with the 302 HD and a manual-shift transmission or an automatic transmission. CITE-9510-B used with the 332 HD and a manual-shift transmission or an automatic transmission. CITE-9510-G used with 401 SD V-8 CITE-9510-C used with 477 SD V-8 CITE-9510-H used with 534 SD V-8	Secondary 0-5,000 feet CITE-9510-A, and -AM 58 CITE-9510-F and -H 62 CITE-9510-B and -AN 64 CITE-9510-G and -C 65 5,000-10,000 feet CITE-9510-A and -AM 56 CITE-9510-F and -H 60 CITE-9510-B and -AN 62 CITE-9510-C and -G 63 10,000-15,000 feet CITE-9510-A 65 CITE-9510-F and -H 58 CITE-9510-B and -AN 60 CITE-9510-AM 54 CITE-9510-C and -G 61
The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system. CITE-9510-AM used with the 292 HD and a manual-shift transmission or an automatic transmission. CITE-9510-AN used with the 302 HD and a manual-shift transmission or an automatic transmission. CITE-9510-B used with the 332 HD and a manual-shift transmission or an automatic transmission. CITE-9510-G used with 401 SD V-8 CITE-9510-C used with 477 SD V-8 CITE-9510-H used with 534 SD V-8	Power Valve Identification No. 0-5,000 feet CITE-9510-B 65 CITE-9510-AM, -A, and -H 45 CITE-9510-AN and -F 25 CITE-9510-C and -G 35 5,000-10,000 feet CITE-9510-AM, -A, and -H 45 CITE-9510-F and -AN 25 CITE-9510-B 40 CITE-9510-C and -G 35
Main Metering Jet Identification No. Primary 0-5,000 feet CITE-9510-A, -AM, and -B 52 CITE-9510-F and -AM 51 CITE-9510-G and -H 49 CITE-9510-C 50 5,000-10,000 feet CITE-9510-A, -B, and -AN 50 CITE-9510-F, -AM, and -C 49 CITE-9510-G 48 10,000-15,000 feet CITE-9510-A, -B, -AN, and -C 48 CITE-9510-F, -AM, -G, and -H 47	10,000-15,000 feet CITE-9510-AM, -A, and -H 45 CITE-9510-F and -AN 25 CITE-9510-B 40 CITE-9510-C and -G 35 Power Valve Opens at CITE-9510-AM and -A 5-8 inches of mercury CITE-9510-F, -AN, and -H 2.5 inches of mercury CITE-9510-B 6.5-9.5 inches of mercury CITE-9510-C and -G 3-6 inches of mercury

CARBURETORS (Continued)

4-BARREL CARBURETORS

(Continued)

Depoppler Valve Identification No. All carburetors 215	Venturi Size Primary and Secondary 1-1/16 inches
Dry Float Initial Setting Primary 7/8 inch clearance between the bottom of the float and the fuel bowl with the bowl inverted. Secondary 3/4 inch clearance between the bottom of the float and the fuel bowl with the bowl inverted.	Initial Idle Mixture Adjustment 1-1-1/2 turns open Fast (Cold) Idle Adjustment 0.010-0.015 inch clearance between the fast idle screw and the fast idle cam.
Fuel Level Setting Primary and Secondary Lower edge of the sight plug opening $\pm$ 1/16 inch.	Governor By-Pass Jet Number CITE-9510-A, -F, -B, -AM, and -AN Upper 26 Lower 25

FUEL TANK CAPACITIES

Tank Type	Truck Model	Approximate Capacity (U.S. Gallons)
Standard	F-, C-, and T-Series (cab models)	18
	B-Series	30
	P-Series and F-100, F-250, F-350 Series (cowl models)	17
	F-500 thru 950 (cowl series)	18
	H and HT Series	50
Optional (Mounted Outside of Frame)	P-400 and P-500, F-500 through 600, C-550 through 600 P-350	30
Optional (Saddle)	F-, C-, and T-Series (700 through 1100)	125
Optional (Step)	F- and T-Series (750 through 1100)	50
Optional (Cylindrical)	H-, HT-, F-, C-, and T-Series (700 through 1100)	60

WATER PUMP, DRIVE BELTS, AND THERMOSTATS

WATER PUMP DRIVE ARRANGEMENT	Crankshaft and Power Steering Pump Pulley
144 Single belt drives water pump, fan, and generator. F- and T-Series Trucks 223-Single belt drives water pump, fan, and generator. 302 and 332 HD-Front belt drives fan. Rear belt drives water pump and generator. 292 MD and HD-Two rear belts drive fan, water pump, and generator. Front belt drives air compressor. 401, 477, and 534 SD-Two front belts drive water pump and alternator. Rear belt drives air compressor. C-Series Trucks 292 MD and HD-Rear belt drives fan, water pump, and generator. Front belt drives air compressor. 302 and 332 HD-Front belt drives air compressor. Rear belt drives water pump and generator. 401, 477, and 534 SD-Front belt drives water pump and alternator. Rear belt drives air compressor.	All Engines 1/4 inch Generator and Pump Pulley All Engines, Except SD 1/2 inch Crankshaft and Air Compressor All Engines 1/2 inch
DRIVE BELT DEFLECTION	THERMOSTAT
Fan and Crankshaft Pulley All Engines 1/2 inch	Front (Low Temperature Thermostat) OPENS $^{\circ}$ F: 144, 223; 292 MD and HD; 302 and 332 HD; 401, 477, and 534 SD . 157-162-Fully Open 182 Front (High Temperature Thermostat) OPENS $^{\circ}$ F: 144 173-183 - Fully Open 200 223; 292 MD and HD; 302, and 332 HD 175-180 - Fully Open 200 Rear Thermostat OPENS $^{\circ}$ F: SD V-8 Engines... 142-147 - Fully Open 160

CLUTCHES

CLUTCH ADJUSTMENTS	
Part Name	Inches
Clutch Master Cylinder Fluid Level (Below Top)	1/2
Slave Cylinder Push Rod Adjusting Nut Clearance	1/4
Initial Pedal Free Travel— Econoline	7/8–1–1/8
(F-, T-, P and B-Series)	3/16–3/8
C-Series	1/8–1/4
Final Pedal Free Travel— All except C-Series	2

Part Name	Inches
C-Series	1–13/16
Clutch Housing Alignment (Maximum Deviation from Plane)	0.007
Bore Alignment	0.010
Maximum Shim to Correct Alignment	0.010
Maximum Clutch Finger Height Difference Single Disc	0.031
Double Disc	0.020

CLUTCHES (Cont.)

CLUTCH TORQUE LIMITS (Foot-Pounds)			NOMENCLATURE	NUTS AND/ OR BOLTS	TORQUE LIMITS
NOMENCLATURE	NUTS AND/ OR BOLTS	TORQUE LIMITS	NOMENCLATURE	NUTS AND/ OR BOLTS	TORQUE LIMITS
Bolt Pressure Plate Cover to Flywheel	5/16-18 3/8-18	18-25 25-30	Bolt Clutch Housing to Engine Block	7/16-14	40-45
			Bolt Clutch Slave Cylin- der to Clutch Housing	7/16-14	40-45

MANUAL-SHIFT TRANSMISSIONS

LUBRICANT REFILL CAPACITIES		TORQUE LIMITS (Foot-Pounds)		
Transmission Type and Make	Approximate Capacity (Pints)	NOMENCLATURE	NUTS AND/ OR BOLTS	TORQUE LIMITS
3-Speed (Ford B9TR-7004-A and B)	2-3 1/4	Bolt-Reverse Lock- out Plunger Retainer	11/16-16	80-100
3-Speed (Ford B9TR-7003-A and B)	3-1/2	Bolt-Flywheel Hous- ing to Engine Block	7/16-14	40-50
Overdrive (Warner T-86-G or H)	3-1/4	Bolt & Nut Insulator to Trans. Assy. Front & Rear (Aux. Trans. only)	3/4-16	195-235
3-Speed Medium Duty (Warner T-89C)	3-1/2	Bolt-Output Shaft Bearing Retainer to Trans. Case	3/8-16 7/16-14 1/2-18 5/8-11	20-25 30-38 50-62 96-120
3-Speed Heavy Duty (Warner T-87E)	5-1/2	Bolt-Gear Shift Lever Tower to Gearshift Housing	3/8-16 7/16-14	20-25 30-38
4-Speed (Warner T-98A)	8	Bolt-Clutch Housing to Trans. Case	7/16-14 5/8-11 9/16-12	30-38 96-120 70-90
5-Speed Medium Duty (Clark 250-V or 251-VO)	9	Nut-Clutch Housing to Trans. Case	7/16-20 5/8-18 9/16-18	35-45 115-140 81-102
5-Speed Heavy Duty (Clark 265-V or 264-VO)	11-1/2	Bolt-Rear Mounting Bracket to Aux. Trans.	7/16-14	40-45
5-Speed (Spicer 5652 and 5756-B)	13	Nut-Rear Support Plate to Trans. Aux. Case	5/8-18	115-140
5-Speed (Spicer 6352, 6453-A, and 6852-G)	17			
8-Speed (Fuller R-46)	17			
3-Speed Auxiliary (Spicer 5831-C or D)	4			
3-Speed Auxiliary (Spicer 7231-B and D)	8			
4-Speed Auxiliary (Spicer 8341-A)	12			

MANUAL SHIFT TRANS. (Cont.)**TORQUE LIMITS (Foot - Pounds) (Cont.)**

NOMENCLATURE	NUTS AND/ OR BOLTS	TORQUE LIMITS	NOMENCLATURE	NUTS AND/ OR BOLTS	TORQUE LIMITS
Bolt & Nut Brake Support Plate to Transmission Support Plate	1/2-20	58-72	Bolt & Nut-Bellcrank Mounting Bracket to Crossmember	3/8-16 3/8-24	20-25 24-30
Nut-U-Joint Flange to Transmission Output Shaft	1.00-20 1-1/2-18 1-1/4-18	90-125 275-350 225-275	Bolt & Nut-Bellcrank to Mounting Bracket	9/16-18	100-120
Nut-Input Shaft Yoke to Aux. Trans.	1-1/4-18	275-350	Nut-Handbrake Drum to U-Joint Flange (Motor End)	7/16-20 1/2-20 3/8-24	45-50 75-80 30-35
Bolt & Nut Bracket (Aux.) Trans. Control to #3 Crossmember	3/8-24	24-30	Nut-Handbrake Anchor Bar to Trans. Case (except 5-speed Extra-Heavy Duty)	9/16-18	100-110
Bolt or Nut-Support Trans.(Rear)to Frame Siderails (8-Speed) Transmission only)	7/16-20	45-55	Nut-Handbrake Anchor Bar to Trans. Case (5-Speed Extra-Heavy Duty only)	9/16-18	120-130
Stud & Nut-Insulator to Trans.Rear Sup- port (8-Speed Trans. only)	3/4-16	90-110	Bolt-Bellcrank to Trans.	3/8-16	20-25
Nut Trans.Rear Mount Plate to Insulator Stud & Trans.Support (8-Speed Trans. only)	3/4-16	195-235	Bolt-Reverse Lockout Plunger Retainer	11/16-16	80-100
Bolt-Parking Brake to Transmission Bearing Retainer	5/8-18 7/16-20 3/8-24 1/2-20	180-220 50-70 24-30 45-55	Bolt-Countershaft Rear Bearing Retainer	5/16-18 3/8-16 7/16-14 1/2-13	25-30 35-40 45-55 60-70
Nut-Drum Parking Brake to Companion Flange	3/8-24 7/16-20	35-45 50-70	Bolt-Converter Hous- ing to Flywheel Housing	3/8-16	20-25
Nut-Bellcrank to Transmission	9/16-18	70-90	Bolt-Flywheel Hous- ing to Engine Block	7/16-14	40-50
Bolt-Lever Assy. to Transmission	3/8-16	20-25	Bolt-Rear Cross Shaft Housing to Adapter or Trans. Assy.	7/16-14	30-38
Bolt-Support to Transmission	3/8-16	20-25	Lock Nut-Front Shift Control Rod to U-Joint	3/4-16	160-180

MANUAL SHIFT TRANSMISSION (Cont.)

TORQUE LIMITS (Foot-Pounds)

NOMENCLATURE	NUTS AND/OR BOLTS	TORQUE LIMITS	NOMENCLATURE	NUTS AND/OR BOLTS	TORQUE LIMITS
Bolt—Countershaft and Reverse Idler	5/16-18	25-30	Nut—Main Shaft Bearing Lock (8-Speed)	2-1/2-16	300-350
Shaft Retainer	3/8-16	25-37			
	3/8-16†	18-25			
	7/16-14	40-45			
	1/2-13**	80-85			
Bolt—Gear Shift Housing to Transmission Case	5/16-18	20-25	Nut—Input Shaft Bearing Lock (8-Speed)	2-1/8-16	250-300
	3/8-16	35-40			
	3/8-16†	30-35			
	7/16-14	45-50			
Bolt—Power Take Off Cover to Trans. Case	3/8-16	20-30	Bolt—Gear Shifter Rod Gate (8-Speed)	7/16-20	50-60
Bolt—Input Shaft Bearing Retainer to Transmission Case	5/16-18	25-30			
	3/8-16	25-30	Nut—Reverse Shift Lever Pivot Pin (8-Speed)	1/2-20	100-115
	7/16-14	40-45			
Bolt—Countershaft Front Bearing Retainer	5/16-18	25-30	Screw—Aux. Trans. Shift Bar Position Finder (8-Speed)	9/16-18	25-30
	3/8-16	25-35			
	7/16-14	50-55			
Nut or Bolt—Aux. Transmission Case to Transmission Case	1/2-20	110-115	*Except 5-Speed MD and HD Transmissions: 175–225. †5-Speed Medium Duty only. **Torque for 5-Speed Heavy Duty Exclusive is 65–75. ††3-Speed Heavy Duty and 4-Speed only.		
Nut—Countershaft Bearing Lock (8-Speed)	1-1/4-18	225-275	TRANSFER CASE – 4-WHEEL DRIVE TRUCKS – TORQUE LIMITS (Foot-Pounds)		
Nut—Countershaft Bearing Lock (5-Speed Extra H.D. & 5-Speed Exclusive)	1-1/4-18	350-450	NOMENCLATURE	STUD OR NUT	TORQUE LIMITS
Nut—Countershaft Bearing Lock (5-Speed Exclusive H.D.)	1-1/2-18	350-450	Stud—Transfer Case to Support	5/8-11	110-130
Nut—Auxiliary Countershaft Bearing Lock (8-Speed)	1-1/2-18	250-300	Nut—Stud Transfer Case to Support	5/8-18	60-80
			Bolt—Transfer Case Control Lever Bracket to Trans.	5/16-18	20-25
				3/8-16	30-35

MANUAL SHIFT TRANSMISSION (Cont.)

MANUAL-SHIFT TRANSMISSION CONTROLS – TORQUE LIMITS (Foot-Pounds)					
NOMENCLATURE	NUTS AND/OR BOLTS	TORQUE LIMITS	NOMENCLATURE	NUTS AND/OR BOLTS	TORQUE LIMITS
Transfer Case Control Lever Pivot Bolt to Control Lever Bracket	1/2-20*	45-55	Bolt—Rear Cross Shaft Housing to Adapter or Trans. Assembly	7/16-14†	30-38
Transfer Case Mtg. Bracket to #3 C/M	3/8-24*	25-35	Bolt & Nut Aux. Trans. Insulators Frame Brackets to Trans. Assy.	3/4-16	90-110
Bolt—Transfer Case Control Lever Bracket to Trans.	5/16-18*	20-25			
	3/8-16*	30-35			
*4-Wheel Drive Truck †C-Series Truck					

AUTOMATIC TRANSMISSIONS

FORDOMATIC AND HD CRUISE-O-MATIC

LUBRICANT REFILL CAPACITY 10 Quarts

TRANSMISSION CHECKS AND ADJUSTMENTS

Operation	Specification
Transmission End Play Check	0.010-0.029 inch
Turbine and Stator End Play Check (Fordomatic and Cruise-O-Matic used with V-8 engines)	0.060 inch (maximum)
Stator One-Way Clutch Check (Fordomatic and Cruise-O-Matic used with V-8 engines)	Lockup at 10 foot-pounds torque
Front Band Adjustment	Adjust to 10 inch-pounds torque, and back off screw one full turn
Rear Band Adjustment	Adjust to 10 foot-pounds torque, and back off screw 1-1/2 turns
Primary Sun Gear Shaft Ring End Gap Check	0.002-0.009 inch
Accelerator Pedal Height Adjustment	2-3/4 inches above floor mat

AUTOMATIC TRANSMISSIONS (Cont.)

FORDOMATIC AND HD CRUISE-O-MATIC STALL SPEEDS		
Engine	Engine Stall Speeds (rpm)	
	Fordomatic	HD Cruise-O-Matic
223 Six	1400-1600	1380-1580
292 V-8	1500-1700	1500-1700

FLUID PRESSURE RANGES

Engine Speed	Selector Lever Position	Gauge Reading (psi)	
		Fordomatic	HD Cruise-O-Matic
Idle	All	52-67	56-68
1000	DR, D1, or D2	80-85	80-85
Stall	Dr or Lo	137-157	—
Stall	D1 or D2	—	150-170
Stall	R	184-204	196-216
Stall	Lo	—	196-216

GEAR RATIOS – FORDOMATIC AND HD CRUISE-O-MATIC

Gear	Selector Lever Position		Clutch Applied	Band Applied	Gear Ratio
	Fordomatic	HD Cruise-O-Matic			
Neutral	N	N	None	None	—
Second	Dr	D1 or D2	Front	Front	1.48:1
Third	Dr	D1 or D2	Front	None	1.00:1
			and Rear		
First	Lo	D1 or Lo	Front	Rear*	2.40:1
Reverse	R	R	Rear	Rear	2.00:1

*In first gear D1, the planet carrier is held against rotation by the one-way clutch.

FORDOMATIC SHIFT POINTS (approximate)

Truck Model	Automatic Shifts (mph)						Manual Shift (mph)
	Dr.						
	Min. Throttle	Max. Throttle	Min. Throttle	Max. Throttle	Max. Throttle	Max. Throttle	
F-100	2-3	2-3	3-2	3-2	1-2	2-1	2-1
	8-17	43-60	5-8	40-56	27-39	8-19	11-21

AUTOMATIC TRANSMISSIONS (Cont.)

HD CRUISE-O-MATIC SHIFT POINTS (approximate)

Truck Model	Automatic Shifts (mph)								Manual Shift (mph)
	D1		D1 or D2		D1	D1 or D2	D1	D2	
	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Min.	Lo
F-250	1-2	1-2	2-3	2-3	3-1	3-2	3-1	3-2	2-1
P-350	6-11	25-40	8-20	40-62	3-8	36-58	16-27	3-8	12-22
P-400	5-10	22-38	7-19	35-58	3-7	31-54	14-26	3-7	11-20
P-500									
F-350									

FORDOMATIC AND HD CRUISE-O-MATIC TORQUE SPECIFICATIONS

Name	Foot Pounds
Converter Cover to Converter Impeller Bolts (6 Cyl.)	15-28
Converter Impeller Hub to Converter Impeller Housing Bolts	8-10
Converter Housing to Transmission Case Bolts	40-45
Front Pump to Transmission Case Bolts	17-22
Front Servo to Transmission Case Bolts	30-35
Rear Servo to Transmission Case Bolts	40-45
Planetary Support to Transmission Case Bolts	20-25
Upper Valve Body to Lower Valve Body Bolts	4-6
Control Valve Body to Transmission Case Bolts	8-10
Pressure Regulator Assembly to Transmission Case Bolts	17-22
Extension Assembly to Transmission Case Bolts	28-38
Oil Pan to Transmission Case Bolts	10-13
Case Assembly—Gage Hole Plugs	7-15
Rear Band Adjusting Screw Locknut	35-40
Front Band Adjusting Screw Locknut	20-25
Manual Control Lever Nut	35-40
Inner Throttle Lever Nut	17-20
Front Pump Cover Screws	25-35*
Rear Pump Cover Screws (1/4-inch)	80-90*
Rear Pump Cover Screws (10-24)	25-35*
Governor Inspection Cover Screws	50-60*
Converter Cover Drain Plug	15-28
Converter Housing to Engine Bolts	45-50
Starter Attaching Bolts	15-20
Governor Valve Body to Counterweight Screws	50-60*
Governor Valve Body Cover Screws	20-30*
Pressure Regulator Cover Screws	20-30*
Control Valve Body Screws	20-30*
Flywheel to Converter Nuts & Bolts	15-28

* Inch - Pounds

AUTOMATIC TRANSMISSIONS (Cont.)**FORDOMATIC AND HD CRUISE-O-MATIC TORQUE SPECIFICATIONS (Cont.)**

NAME	FOOT-POUNDS
Case Assembly - Oil Cooler Inlet & Outlet Pipe Plugs	10-15
Front Servo Release Piston to Servo Piston Bolts (V-8)	20-30*
Lower Valve Body Cover Side Plate to Lower Body Cover Bolts	20-30*
Control Valve Body Cover to Lower Body Screws	20-30*
* Inch-Pounds	

TRANSMATIC DRIVE**GENERAL SPECIFICATION**

Dry Weight (Including Parking Brake)	510 lbs.
Oil Specifications	Ford Automatic Transmission Fluid B8A-19582-A
Maximum Torque Converter Multiplication	F and C Series 2.8:1 T Series 3.5:1
Front Pump Capacity	12 gpm at 2000 rpm
Rear Pump Capacity	6 gpm at 2000 rpm
Power Take-Off Mountings	2, SAE Regular Duty
Power Take-Off Drive Gear	57-Tooth, 6/8 Pitch
Power Take-Off Drive Gear Speed	Max. 0.72 Engine Speed
Lockup Clutch	Single Plate Type, Hydraulic Applied
Total Torque Ratio Coverage:	
Low (First) Gear Stall	F and C Series 14.83:1 T Series 18.54:1
High (Sixth) Gear Lockup	1.00:1

TORQUE SPECIFICATIONS

NAME	FOOT-POUNDS
Range Selector Shaft Nut	14-17
Throttle Valve Shaft Nut	14-17
Rear Bearing Retainer Bolts	42-50
Low Clutch Reaction Housing Anchor Bolt	35-40
Intermediate Clutch Reaction Housing Anchor Bolt	35-40
Reverse Clutch Reaction Housing Anchor Bolt	35-40
Low and Reverse Piston Housing Anchor Bolt	17-20
Intermediate Piston Housing Anchor Bolt	17-20
Rear Pitot Tube Mounting Bolts	10-12
Output Flange Bolt	83-100
Parking Brake Drum to Output Shaft Flange	70-80
High-Range Clutch Diaphragm Anchor Bolts	17-20
Converter Housing Mounting Bolts	42-50
Dust Shield to Flywheel Housing	6-9
Converter Pump Cover Nuts	19-23
Hydraulic Retarder Control Valve Body Bolts	15-18
Oil Transfer Plate Bolts	8-10

AUTOMATIC TRANSMISSIONS (Cont.)**TRANSMATIC DRIVE (Cont.)
TORQUE SPECIFICATIONS (Cont.)**

NAME	FOOT-POUNDS
Downshift Timing Valve Body Bolts	8-10
Control Valve Body Bolts	4-6
Oil Pan Bolts	8-10
Oil Filter Cover Nut	8-10
Converter Pump Hub Bolts	9-11
Converter Stator Support Sleeve Bolts	17-20
Front Oil Pump Bolts	15-18
Front Pitot Tube Screws	30-48*
Rear Oil Pump Bolts	15-18
Converter Lube Supply Cover Screws	24-36*
Converter Pressure Regulator Valve Retainer Screws	24-36*
Downshift Timing Valve Cover Screws	24-36*
Main Control Valve Body Cover Screws	24-36*
Exhaust Regulator Valve Body Cover Screws	24-36*
Power Take-off Cover Bolts	15-20
Bolt or Nut-Support Transmission (Rear) to Frame Siderails	45-50
Bolt or Nut-Support To Transmission Rear Insulators	(1/2-20) 40-60 (1/2-13) 50-70
* Inch - Pounds	

WEAR LIMITS - INCHES**TORQUE CONVERTER, LOCKUP CLUTCH, AND
FRONT PUMP**

Converter Cover Bushing - maximum clearance between bushing and turbine shaft	0.006
Lockup Clutch Plate - minimum thickness	0.170
Roller Race - Minimum O.D.	2.841
Stator Support Bushing - maximum clearance between bushing and turbine shaft	0.005
Thrust Washer - minimum thickness	0.085
Front Pump Driven Gear - minimum O.D.	4.743

AUTOMATIC TRANSMISSION (Cont.)
TRANSMATIC DRIVE (Cont.)
WEAR LIMITS (Cont.)

SPLITTER MECHANISM, HIGH-RANGE CLUTCH, AND POWER TAKE-OFF DRIVE GEAR	
Turbine Shaft Bushing—maximum clearance between bushing and output shaft	0.007
Thrust Washer—minimum thickness	0.085
Splitter Planet Carrier—no scoring permissible.	
High-range and High-splitter Internal Teeth Clutch Plates—minimum thickness	0.140
High-range and High-Splitter External Teeth Clutch and Reaction Plates—maximum coning	0.005
High-range Clutch Housing Bushing—maximum clearance between bushing and diaphragm hub	0.008
Splitter Sun Gear Bushing—maximum clearance between bushing and planet carrier	0.015
Low-splitter Clutch Plate—minimum thickness	0.234
TRANSMISSION REAR SUB-ASSEMBLIES	
Intermediate, Low, and Reverse Clutch Plates—minimum thickness	0.286
Intermediate, Low, and Reverse Clutch Apply Plates—maximum coning	0.008
Thrust Washers—minimum thickness	0.085
Output Shaft Bushing—maximum clearance between bushing and splitter output shaft ..	0.010
Rear Oil Pump Drive Gear—minimum O.D.	4.743

TRANSMATIC TRANSMISSION LUBRICANT CAPACITY

	Pints
Dry Capacity	38
Refill (Converter and Heat Exchanger not Drained)	26

STALL SPEED LIMITS

	Engine Model	Engine Speed (rpm)
Converter Operation	302 HD V-8	2150-2350
	332 HD V-8	2250-2450
Hydraulic Retarder Operation	332 HD V-8	3000 Maximum
	302 HD V-8	2900 Maximum

AUTOMATIC TRANSMISSIONS (Cont.)
TRANSMATIC DRIVE (Cont.)

SHIFT POINTS AT FULL THROTTLE AND FULL LOAD				
Upshifts			Downshifts	
Shift	Engine Speed (rpm)		Shift	Engine Speed (rpm)
	Full Throttle (at Detent)	Max. Throttle (thru Detent)		Max. Throttle (thru Detent)
Converter To Lockup	2250 2450	2400 2600	2-1	2800 2600
1-2	3725 3775	No Shift	Lockup To Converter	2200 2100
Converter To Lockup	2250 2450	2400 2600	4-3	2700 2500
3-4	3725 3775	No Shift	Lockup To Converter	2200 2100
Converter To Lockup	2250 2450	2400 2600	6-5	2825 2600
3-4	3725 3775	No Shift	5-4	2850 2600
4-5	3725 3775	No Shift	4-3	2700 2500
5-6	3725 3775	No Shift	Lockup To Converter	2200 2100

AUTOMATIC TRANSMISSIONS (Cont.)
TRANSMATIC DRIVE (Cont.)
MAIN PRESSURE CHECK — CONVERTER OPERATION — ENGINE IDLE

Selector Lever Position	Gear	Engine Speed (rpm)	Throttle Position at Transmission	Gauge Readings (psi)
N		475-500	Closed	100 Minimum
R		400-450	Closed	50 Minimum
3-4, 3-5, 3-6	Third	400-450	Closed	50 Minimum
1-2	First	400-450	Closed	50 Minimum

MAIN PRESSURE CHECK — CONVERTER OPERATION

Selector Lever Position	Engine Speed (rpm)	Gauge Readings (psi)		
		Medium Duty		Heavy-Duty
All Positions	1200	Closed Throttle	Full Throttle	Full Throttle
		155 Minimum	175 Minimum	200 Minimum

MAIN PRESSURE CHECK — HYDRAULIC RETARDER OPERATION

Selector Lever Position	Throttle Position at Transmission and Engine	Retarder Pedal Position	Minimum Main Pressure (psi)
N	At Stop	At Stop	125

AUTOMATIC TRANSMISSIONS (Cont.)
TRANSMATIC DRIVE (Cont.)

PRESSURE CHECK — CONVERTER LOCKUP OPERATION — MAXIMUM THROTTLE

Selector Lever Position (Drive Shaft Disconnected)	Gear	Clutches Applied	Engine Speed (rpm)	Throttle Position at Transmission	Gauge Readings (psi)	
					Medium-Duty	Heavy-Duty
3-6	Third	Lockup, Low-Splitter, Intermediate-Range	2700	Maximum*	97-113	107-125

*Depress accelerator pedal stop to prevent upshift. Then increase engine speed.

**PRESSURE CHECK FOR RANGE AND HIGH-SPLITTER CLUTCHES—
 CONVERTER LOCKUP OPERATION—CLOSED THROTTLE**

Selector Lever Position (Drive Shaft Disconnected)	Gear	Clutches Applied	Engine Speed (rpm)	Throttle Position at Transmission	Gauge Readings (psi)
1-2	Second	Lockup, High-Splitter, Low Range	2000	Closed	65-75
3-4	Fourth	Lockup, High-Splitter, Intermediate-Range	2000	Closed	65-75
3-6	Sixth	Lockup, High-Splitter, High-Range	2000	Closed	65-75

GOVERNOR PRESSURE CHECK — G1 AND G2

Selector Lever Position (Drive Shaft Disconnected)	Gear	Engine Speed (rpm)	Throttle Position at Transmission	Gauge Readings (psi)	
				G1 Limits	G2 Limits
3-6	Sixth	2800	Closed	60-70	60-70

REAR AXLE LUBRICANT CAPACITIES					
Axle Make and Model	Axle Type	Approximate Capacity (Pints)	Axle Make and Model	Axle Type	Approximate Capacity (Pints)
Ford	1-Speed	2	Eaton	1-Speed	21
Spicer	1-Speed	4.5	1892	1-Speed	21
44	1-Speed	4.5	1893	1-Speed	21
60	1-Speed	6	1911	1-Speed	24
Timken			1350	2-Speed	13
B-140	1-Speed	11	8802	1-Speed	22
C-100	1-Speed	15	8803	1-Speed	22
D-100	1-Speed	15	9503	1-Speed	24
F-104	1-Speed	15	13602	2-Speed	13
F-106	1-Speed	15	13800	2-Speed	13
H-140	1-Speed	20	16802	2-Speed	20
QT-241	1-Speed	34	16803	2-Speed	20
QT-341	2-Speed	32	17800	2-Speed	19
R-141	1-Speed	28	17801	2-Speed	19
R-202	1-Speed	36	18803	2-Speed	22
R-302	2-Speed	34	19503	2-Speed	24
RT-241	1-Speed	32	22M	Tandem	Forward Axle - 10 Rearward Axle - 10
RT-341	1-Speed	32			Power Divider - 7
U-200	1-Speed	38	28M	Tandem	Forward Axle - 17 Rearward Axle - 17
U-300	1-Speed	34			Power Divider - 9
QH	Tandem	Forward Axle - 34 Rearward Axle - 31	300-P	Tandem	Forward Axle - 22 Rearward Axle - 20
LH	Tandem	Forward Axle - 32.5 Rearward Axle - 32	34M	Tandem	Forward Axle - 23 Rearward Axle - 23
Eaton					Power Divider - 3
1350	2-Speed	13	34D-P	Tandem	Forward Axle - 24 Rearward Axle - 22
1614	1-Speed	17			Forward Axle - 24 Rearward Axle - 22
1615	1-Speed	17	38D-R	Tandem	Forward Axle - 24 Rearward Axle - 22
1618	1-Speed	20			Power Divider - 3
1619	1-Speed	20			
1790-A	1-Speed	22			
1791-A	1-Speed	22			

ECONOLINE REAR AXLE RATIOS AND GEAR IDENTIFICATION		
Ratio	No. of Teeth	
	Driven Gear	Pinion
3.50:1	35	10
4.00:1	36	9

F-100 REAR AXLE RATIOS AND GEAR IDENTIFICATION FORD AXLE		
Ratio	No. of Teeth	
	Driven Gear	Pinion
3.70 to 1	37	10
3.89 to 1	35	9
4.11 to 1	37	9

F-100 REAR AXLE ADJUSTMENTS FORD AXLE	
	Inches
Backlash Between Driven Gear and Pinion	0.004-0.009
Backlash Maximum Variation Between Teeth	0.003
Maximum Runout at Backface of Ring Gear as Assembled	0.003
Thickness-Differential Side Gear Thrust Washers	0.030-0.032
Thickness-Differential Pinion Gear Thrust Washers	0.030-0.032

F-100, F-250 AND P-350 REAR AXLE ADJUSTMENTS - SPICER	
	Inches
Backlash Between Drive Gear and Pinion	0.008-0.013
Backlash Maximum Variation Between Teeth	0.002
Maximum Runout at Backface of Gear (Assembled)	0.003
Pinion Bearing Preload	10-30 inch-pounds

SPICER AXLE TORQUE LIMITS FOOT-POUNDS	
	Axle Model
	44 & 44-4F 60
Pinion Shaft Nut	200-220 200-220
Differential Bearing Cap Bolts	70-90 70-90
Drive Gear Attaching Bolts	35-55 70-90
Cover to Housing Bolts	15-25 15-25

ECONOLINE REAR AXLE TORQUE LIMITS	
Rear Cover Bolts	15-25
Differential Bearing Cap Screws	40-50
Differential Bearing Adjusting Nut Locks	
Bolts	12-20
Universal Joint Flange	
Axle End to Universal	
Joint Bearing	
Assembly Nuts	10-14
Drive Gear Attaching Cap Screws	40-50
Rear Axle Shaft Bearing Retaining Nuts	
Minimum Torque Pinion Bearing Preload	140
Pinion Bearing Preload (Inch Pounds)	
New Bearings	17-27
Used Bearings	10-16
Differential Bearing Preload	2-1/2-3 notches tight

F-100 REAR AXLE TORQUE LIMITS - FORD AXLE	
	Foot-Pounds
Differential Bearing Cap Screws	70-80
Differential Bearing Adjusting Nut Lock Bolts	15-20
Carrier to Housing Stud Nuts	30-40
Pinion Retainer to Carrier Cap Screws	30-40
Drive Gear Attaching Bolts	65-75
Rear Axle Shaft Bearing Retainer Bolts	30-35
Minimum Torque Required to Tighten Pinion Nut to Obtain Correct Pinion Bearing Preload	175
Pinion Bearing Preload (Inch-Pounds)- New Bearings	17-27
Pinion Bearing Preload (Inch-Pounds)- Used Bearings	8-12
Differential Bearing Preload	2-1/2-3 notches tight

DRIVE GEAR ATTACHING BOLT TORQUE LIMITS - TIMKEN AND EATON AXLES	
Thread Size	Torque Limits (Foot-Pounds)
3/8 - 16	39 - 42
7/16 - 14	61 - 66
1/2 - 20	94 - 102
9/16 - 18	132 - 145
5/8 - 18	186 - 205
3/4 - 16	325 - 360

AXLE SHAFT FLANGE STUD NUT TORQUE LIMITS	
Thread Size	Torque Limits (Foot-Pounds)
7/16 - 20	50 - 70
1/2 - 20	80 - 100
3/4 - 16	200 - 250

BEARING PRELOAD (TIMKEN AND EATON)

Axle Model		Pinion Shaft Nut – Thread Size and Torque Limits (Foot-Pounds)	Press Ram Pressure for Preload Check (Tons)	Pinion and Cross Shaft Bearing Preload (Inch- Pounds)	Backlash Limits (Inches)	Differential Bearing Preload Adjusting Nut Notches Tighter from Zero End Play
T	Single-Speed	B-140-N	5	5-15	0.006-0.012	2
		C-100-N	6	5-15	0.006-0.012	2
I	Single Reduction	D-100-N	6	5-15	0.006-0.012	2
		F-104-N	6	5-15	0.006-0.012	2
M		F-106	6	5-15	0.006-0.012	2
		H-140	6	5-15	0.006-0.012	2
K	Single-Speed	U-200, 241	14	5-15	0.020-0.026	2
E	Double Reduction					
N	2-Speed Double Reduction	U-300	14	5-15	0.020-0.026	2

REAR AXLES (Cont.)
BEARING PRELOAD (TIMKEN AND EATON) (Cont.)

Axle Model		Pinion Shaft Nut – Thread Size and Torque Limits (Foot-Pounds)	Press Ram Pressure for Preload Check (Tons)	Pinion and Cross Shaft Bearing Preload (Inch- Pounds)	Backlash Limits (Inches)	Differential Bearing Preload Adjusting Nut Notches Tighter from Zero End Play
E	Single Speed	1614-1615	15	15-35	0.008-0.015	1-1/2-2
		1790-A-1791-A				1-1/2-2
A		1892-1893				1-1/2-2
		1911				1-1/2-2
T	2-Speed	1350	15	15-30	0.006-0.016	1-1/2-2
		13602				1-1/2-2
O		13800				1-1/2-2
		16802-3				1-1/2-2
N		17800-1				1-1/2-2
		18802-3				1-1/2-2
		19503				1-1/2-2
		22N (Forward)				1-1/2-2
		22N (Rearward)				2
		28M (Forward)				2
		28M (Rearward)				2
		32N (Forward)				2
		32N (Rearward)				1-1/2-2
		380 (Forward)				1-1/2-2
		380 (Rearward)				1-1/2-2

REAR AXLES – (Cont.)

TIMKEN AND EATON SINGLE-SPEED SINGLE REDUCTION REAR AXLE TORQUE LIMITS (Foot-Pounds)

	Pinion Shaft Nut	Pinion Bearing Retainer to Carrier Housing	Carrier to Axle Housing	Differential Case	Rear Cover to Axle Housing	Differential Bearing Cap Bolts to Carrier
T	175-250	23-31	53-69	23-31	—	80-106
I	300-400	23-31	53-69	80-105	—	110-145
M	300-400	53-69	53-69	80-105	—	110-145
K	300-400	53-69	53-69	80-105	—	110-145
E	300-400	53-69	53-69	80-105	—	110-145
N	300-400	53-69	53-69	80-105	—	110-145
E	325-450	100-125	80-100	80-100	35-40	175-200
A	325-450	100-125	150-175	80-100	35-40	175-200
T	400-600	100-125	150-175	80-100	35-40	225-250
A	400-600	150-175	150-175	100-125	35-40	225-250
T	325-450	100-125	50-70	80-100	35-40	150-175
O	325-450	100-125	80-100	80-100	35-40	150-175
N	400-600	100-125	150-175	80-100	35-40	150-175
	400-600	100-125	150-175	80-100	—	225-250

REAR AXLES – (Cont.)

EATON TWO-SPEED AND DOUBLE REDUCTION REAR AXLE TORQUE LIMITS (Foot-Pounds)

	Axle Models					
	1350	13602	13800	16802-3	17800-1	18802-3
Pinion Shaft Nut	200-325	325-450	325-450	325-450	400-600	400-600
Pinion Bearing Retainer to Carrier Housing	100-125	100-125	100-125	100-125	100-125	100-125
Carrier to Axle Housing	50-70	50-70	50-70	80-100	150-175	150-175
Gear Support Case	50-70	50-70	50-70	80-100	125-150	125-150
Differential Case	50-70	50-70	50-70	50-70	80-100	80-100
Inspection Cover to Housing	35-50	35-50	35-50	35-50	35-50	—
Differential Bearing Cap to Carrier Bolts	150-175	150-175	150-175	175-200	225-250	225-250
Bearing Adjuster Lock Bolts	100-125	100-125	100-125	100-125	150-175	150-175
Electric Shift Unit-Mounting Nuts	50-70	50-70	50-70	50-70	50-70	—

TIMKEN DOUBLE REDUCTION REAR AXLES TORQUE LIMITS (Foot-Pounds)

	Axle Models			Axle Models	
	U-200	U-300		U-200	U-300
Carrier to Housing	160-205	160-205	Differential Case Bolts	150-164	370-405
Pinion Cage to Carrier Housing	110-145	110-145	Shift Unit (Mounting)	—	23-31
Pinion Flange Nut	800-1100	800-1100	Shift Unit Lock Nut, Set Screw and Clamp Screw	—	30-35
Cross Shaft Bearing Cage and Cover	110-145	110-145	Shift Shaft Travel Adjusting Screw Lock Nuts	—	55-60

REAR AXLES - (Cont.) TANDEM SUSPENSION TORQUE LIMITS

Eaton Models 22M, 28M, 32M, 38D	Foot-Pounds	Eaton Models 22M, 28M, 32M, 38D	Foot-Pounds
Spring Aligning Set Screws	100-150	Torque Arm Stud Nut	200-450*
Plate to Support Beam Saddle Bolts	150-200	Axle Shaft Flange Stud Nuts	7/16-20 50-70
Support Beam Saddle Cap Stud Nut	150-200		1/2-20 80-100
Support Beam Shaft Nuts	350-400		3/4-16 200-250
Torque Arm Bracket to Frame Cross Member Bolts	65-75		

*Truck Model T-700, 175-225 foot-pounds

TANDEM FORWARD AXLE TORQUE SPECIFICATIONS (Foot-Pounds)

Eaton Model	22M	28M	34M	38D
Input Shaft Nut (Outer)	325-450	325-450	325-450	500-700
Input Shaft Nut (Inner)	325-450	325-450	325-450	500-700
Power Divider Differential Case Bolts	25-35	25-35	50-70	50-70
Drive Pinion Nut	400-600	400-600	600-800	400-600
Output Shaft Nut (Inner)	325-450	325-450	325-450	500-700
Output Shaft Nut (Outer)	325-450	325-450	325-450	500-700
Power Divider Cover to Power Divider Case Bolts	80-100	80-100	80-100	100-125
Power Divider Cover to Carrier	80-100	80-100	80-100	80-100
Oil Seal Retainer to Power Divider Case and Cover Bolts	80-100	80-100	80-100	150-175
Power Divider Case to Carrier Bolts	50-70	80-100	150-175	225-250
Carrier to Housing Bolts or Nuts	150-175	150-175	175-200	50-70
Differential Bearing Cap Bolts	25-35	25-35	50-70	50-70
Lockout Shift Bracket to Power Divider Bolts	80-100	80-100	80-100	18-25
Pinion Bearing Retainer Set Screw	18-25	18-25	18-25	200-250
Oil Collector Cap Screw	80-100	80-100	80-100	
Axle Shaft Flange Stud Nuts				

CHASIS SUSPENSION FRONT WHEEL ALIGNMENT

	Front Axle Capacity (Pounds)	Caster* (Degrees)	Camber † (Degrees)	Toe-In (Inches)	King Pin Inclination (Degrees)
F-100, F-250 (except 4-Wheel Drive)	2600	3	1	1/16	4
F-100, F-250 (4-Wheel Drive On ly)	3000	3 1/4	1 1/2	1/16	7 1/2
F-350, P-350	3800	4	1	1/16	4
P-400	3800	3	1	1/16	4
F-500, B-500	4000	4	1	1/16	4
P-500 (137-inch wheelbase)	4700	3	1	1/16	4
P-500 (154-inch wheelbase)	4700	3 1/2	1	1/16	4
F-600, B-600	4700	4	1	1/16	4
F-600, B-600, F-700, B-700, F-750 (cowl model), B-750	6000	4	1	1/16	5 1/2
F-750 (except cowl model), F-800, T-700	6000	3 5/32	1	1/16	5 1/2
F-700, B-700, F-750 (cowl model), B-750	7000	4	1	1/16	5 1/2
F-750 (except cowl model), F-800, T-750	7000	3	1	1/16	5 1/2
F-800, T-750	9000	3 5/32	1	1/16	5 1/2
F-800, T-800	11,000	3 5/32	1	1/16	5 1/2
T-800	15,000	3 5/32	1	1/16	6
C-550, C-600, C-700, C-750, C-800	All	3	1	1/16	5 1/2

Camber 1°; Maximum camber variation between wheels - 1/4°; Toe in, 1/16 inch.

*Maximum caster variation between wheels-1/2°.

†Four wheel drive. Caster, 3-1/4°; Camber, 1-1/2°; King Pin Inclination, 7-1/2°.

WHEEL NUT TORQUE

Model	Wheel Type	Bolt Size	Foot-Pounds*
Econoline	Disc	3/4-16	55-85
F-100, F-250, P-350	Disc	1/2-20	65-75
F-350, P-400	Disc	5/8-18	175-200†
F, B, P-500, C-550, F, C, B-600	Disc	3/4-16	400-500
F, C, B, T-700, F, C, B, T-750, F, C, T-800	Disc	1-1/8-16	400-500
F, C, B-700, F, C, B-750, F, C-800, F, C-850, F, C-950, F, C-1000, F, C-1100	Cast	5/8-11	170-180
T-700	Cast	5/8-11 (Front)	170-200
		9/16-12 (Rear)	120-145
T-750, T-800, T-850, T-950	Cast	5/8-11	170-200

*Torque specifications are for lubricated bolt threads.

†For 17.5 x 5.25 Single Wheels, 125-140.

CHASSIS SUSPENSION – (Cont.)

SPINDLE BOLTS AND BUSHINGS

Truck Model	Maximum Outside Diameter of Bolt (Inches)	Maximum Inside Diameter of Bushing (Inches)
F-100, F-250	0.859	0.861
F-350, P-350, P-400	0.921	0.923
F-500, B-500, P-500, F-600, B-600	1.129	1.131
C-550, C-600	1.234	—
F-700, B-700, T-700, F-750, B-750	1.234	—
With 6000-lb. front axle		
F-700, B-700, T-700, C-700, C-750, F-800, F-850	1.234	—
With 7000-lb. front axle		
T-750, C-800, T-800, C-850, T-850, F-950, C-950, T-950, F-1000, C-1000, F-1100, C-1100	1.436	—
With 9000-lb. front axle		
F-800, C-800, T-800, F-850, C-850, T-850, F-950, C-950, T-950, F-1000, C-1000, F-1100, C-1100	1.309–1.607 (tapered bolt)	—
With 11,000-lb. front axle		
T-800, T-850, C-950, T-950, F-1000, C-1000, F-1100, C-1100	1.309–1.794 (tapered bolt)	—
With 15,000-lb. front axle		

SPRING CLIP (U-BOLT) NUT TORQUE LIMITS

Truck Model	Front Spring Clip		Rear Spring Clip	
	Bolt Size	Torque (Foot-Pounds)	Bolt Size	Torque (Foot-Pounds)
Econoline	7/16–20	50–60	7/16–20	30–40
F-100	9/16–18	108–125	9/16–18	108–125
F-250, F-350, P-350, P-400	9/16–18	108–125	5/8–18	165–185
F-500, B-500, F-600, B-600	9/16–18	108–125	3/4–16	240–260
P-500, C-550, C-600	5/8–18	165–185	3/4–16	240–260
F-700, B-700, C-700, F-750, B-750, C-750, F-800, C-800, F-850, C-850	5/8–18	165–185	3/4–16	240–260
F-950, C-950, F-1000, C-1000, F-1100, C-1100	5/8–18	165–185	7/8–14	375–400
T-700, T-750, T-800,	5/8–18	165–185	7/8–14	250–300
T-850, T-950	5/8–18	165–185	7/8–14	375–400

CHASSIS SUSPENSION (Cont.)

TUBELESS TIRES

Tire Size and Ply Rating	D.C. Rim Type	Revolutions per Mile (New Tires)	Maximum Load Capacity (Pounds)	Pressure (psi)
6.50 x 13–4	4½J	—	—	24
6.50 x 16–6	4½K, 5K, 6L	731	1215	36
6.70 x 15–4	5K	753	1065	24
6.70 x 15–6	5K	753	1215	30
7 x 17.5–6	5.25	710	1520	45
7.10 x 15–6	5K	732	1300	30
7 x 22.5–6	5.25	587	1870	50
7 x 22.5–8	5.25	587	2180	65
8 x 17.5–6	5.25	676	1735	45
8 x 17.5–8	5.25	676	2060	60
8 x 19.5–8	5.25	609	2440	65
8 x 22.5–8	5.25, 6.0	558	2740	65
8 x 22.5–10	5.25, 6.0	558	2980	75
9 x 22.5–10	6.0, 6.75	540	3330	70
9 x 22.5–12	6.75	540	3600	80
10 x 22.5–10	6.75, 7.5	520	3960	70
11 x 22.5–12	7.5, 8.25	504	4580	75
11 x 24.5–12	7.5	480	4880	75
12 x 22.5–12	8.25	489	5150	75
12 x 22.5–14	8.25	489	5540	85
12 x 24.5–12	8.25	464	5480	75

TUBE TIRES

Tire Size and Ply Rating	Rim Type	Wheel Type	Revolutions per Mile (New Tires)	Maximum Load Capacity (Pounds)	Pressure (psi)
6.50 x 16–6	A	4½K, 5K, 6L	731	1215	36
7.00 x 17–6	C	5.5	637	1740	45
7.00 x 18–8	C	5.0	617	2140	60
7.50 x 16–6	B	5.5F	650	1815	45
7.50 x 17–8	C	5.5	617	2440	65
7.50 x 20–8	C, F	6.0	564	2740	65
7.50 x 20–10	C, F	6.0	564	2980	75
8.25 x 20–10	C, F	6.0	543	3330	70
8.25 x 20–10	C, D, F	6.5	543	3330	70
8.25 x 20–12	C, D, F	6.5	543	3600	80
9.00 x 20–10	C, D, F	6.5	523	3960	70

Rim Types: A–Drop Center

B–Semi Drop Center

C–Two Piece Firestone – RH 5° Adv. Rim

D–Three Piece Firestone – RH 5° Non-Demountable Rim

E–Three Piece Firestone – VA 5° Non-Demountable Rim

F–Three Piece Firestone – R 5° Demountable Rim

CHASSIS SUSPENSION (Cont.)

TUBE TIRES (Cont.)

Tire Size and Ply Rating	Rim Type	Wheel Type	Revolutions per Mile (New Tires)	Maximum Load Capacity (Pounds)	Pressure (psi)
9.00 x 20-10	D, F	7.0	523	3960	70
10.00 x 20-12	D, F	7.0, 7.5	507	4580	75
10.00 x 20-14	D, F	7.0, 7.5	507	4930	85
10.00 x 22-12	D, F	7.5	482	4880	70
11.00 x 20-12	D, F	7.5	492	5150	70
11.00 x 20-14	D, F	7.5	492	5540	85
11.00 x 20-4	E, G	8.0	482	6900	100
11.00 x 22-4	E, G	8.0	459	7300	100
11.00 x 22-12	D, F	7.5	468	5480	70
11.00 x 22-14	D, F	7.5	468	5900	80

Rim Types: D—Three Piece Firestone – RH 5° Non-Demountable Rim

E—Three Piece Firestone – VA 5° Non-Demountable Rim

F—Three Piece Firestone – R 5° Demountable Rim

G—Three Piece Firestone – VA 5° Demountable Rim

FRAME DIMENSIONS

Truck Model	Width at Front (Inches)	Width at Rear (Inches)	Front-End Dip (Inches)
†F-100, F-250, P-350	34	34	1/4
F-350, F-500, F-600, B-500, B-600	34*	34*	1-3/4
C-500, C-600	38	34	4-1/32
P-400 (P-500 137-inch Wheelbase)	34	34	1-3/4
P-500 (154-inch Wheelbase)	34	34	1-3/4
B-700, B-750	34	34	4
C-700, C-750, C-800, C-850, C-950	38	34	4-1/32
C-100, C-1100	38	34	4-1/32
F-700, F-750, F-800, F-850, F-950	34	34	4
F-1000, F-1100	34	34	4
T-700	34	34	4
T-750, T-800, T-850, T-950	34-1/8	34-1/8	4

*B-600, 34-1/16

†Rear Axle Kick-up, F-100-250, P-350, 2 inches

STEERING GEAR ADJUSTMENTS

Truck Model Application	Worm Bearing Pre-load* (Inch-Pounds)	Worm to Roller Mesh† (Inch-Pounds)
Econoline F-100, F-250	3-6	8-13
F-100-250 (4 Wheel Drive), F-350-500-600, B-500-600	4-9	20-1/4-27
P-350-400-500	2-1/4-6-3/4	11-18
F-600 thru 800, T-700-750, B-600, 650, 700	6-3/4-11-1/4	22-31
C-550-600-700	5-10	13-22
T-750, 800, F-800 (Power Steering)	7-11	25-31
F-800, C-800, T-800	7-11	25-31
C-750, 800	5-9	14-22

*Pull to keep wheel moving.

†Pull through high point - includes worm bearing pre-load.

STEERING – (Cont.)**STEERING LINKAGE TORQUE LIMITS**

Nomenclature	Nuts and/or Bolts and Torque Limits (Ft. Lbs.)				
Bolt & Nut-Spindle Connecting Rod Clamp	3/8-24 25-35	1/2-20 40-50	1/2-20* 50-55		
Bolt & Nut-Steering Gear Assembly to Frame	7/16-20 45-60	1/2-20 75-90	7/16-14 30-40		
Bolt & Nut-Steering Gear Arm (Steering Idler Arm)	5/8-18 180-220				
Nut-Steering Wheel Assembly to Steering Shaft & Worm Assembly	5/8-18 35-55	7/8-20 35-55			
Nut-Drag Link	1/2-20 45-55	9/16-18 70-90	3/4-16 80-100	7/8-14 90-110	
Nut-Spindle Connecting Rod Ball	1/2-20 45-55	9/16-18 60-75	5/8-16 70-80	3/4-16 90-110	7/8-14 100-120
Piston Rod Eye Stud Nut	5/8-18 70-90	5/8-16 90-110			
Cylinder Mounting and Bushing Stud Nut	5/8-18 115-140				
Cylinder Piston Jam Nut	1/2-20 58-72				
Cylinder Mounting Bracket to Frame Bolt	1/2-20 58-72				
Drag Link Stud Nut	1/2-20 45-55	9/16-18 70-90	3/4-16 80-100	7/8-14 90-110	
Idler Shaft to Idler Support Nut	1-14 40-50	1-1/4-12 40-50			
Control Valve Body Bolts	20-25				
Valve Spool Bolt	8-12				
Pitman Arm Clamp Lock Nut	220				

*Used on F-C-900-1000-1100, T-750-800-900.

STEERING – (Cont.)**POWER STEERING PUMP APPLICATIONS AND PRESSURES**

TOWER STEERING TOWER APPLICATIONS AND PRESSURES				
Pump Type	Truck Model	Front Axle (Rated Capacity)	PRESSURES	
			Engine – Idling Wheels Straight Ahead Shut-Off Valve Open	Shut-Off Valve Closed
ROLL (with Bushings)	F-100, 250	2600	50-60 psi	900-1050 psi at 2500 Engine rpm
	F-350-600 P-350-500 B-500-600	3800 thru 6000	60-70 psi	
	F, B, -700 T-700 (292 V-8)	6000		
ROLL (with Ball Bearings)	F-, T-750-1100 C-850-1100 B-750 T-700 (332 V-8)	6000 thru 9000	55-65 psi	1100-1300 psi at 1500 Engine rpm
	F, T, -800	11000		
	C-550, 700	6000 7000		
	T-800 F-, T-850, 950 F-1000, 1100 C-800-1100	11000 15000		

BRAKES

HYDRAULIC BRAKE PEDAL
FREE TRAVEL

All Trucks 3/16-3/8 inch

VACUUM BOOSTER MINIMUM HYDRAULIC PRESSURES

Make and Type	Effective Diameter (Inches)	Slave Cylinder Diameter (Inches)	Minimum Hydraulic Pressure (psi) at 20 Inches Vacuum	Truck Application
Midland (Hy-Power) Diaphragm	5-1/16	1	560	F-100
	8-1/8	7/8	960	F-500, F-600 B-500, B-600 C-550, C-600 P-500
Bendix (Hydrovac) Diaphragm	10-1/4	7/8	1420	F-700, F-750, F-800, F-850 B-700, B-750 C-700, C-750, C-800, C-850
Bendix (Hydrovac) Piston	6-3/4	1	625	F-350 P-350, P-400
	9-1/2	1-3/16	1325	F-950 C-950 T-700
Bendix (Hydrovac) Tandem Piston	9-1/2	1-1/8	1300	T-750, T-800, T-850

AIR COMPRESSOR GOVERNOR

Cut-out Pressure 100-105 psi
 Cut-in Pressure 80-85 psi

AIR RESERVOIR SAFETY VALVE

Release Pressure 150 psi

GENERATORS

Part Number	Watts @ 15 Volts	Generator rpm Charge Starts	Rate		Field Current Amps, @12 Volts-Hot	Brushes		
			Amperes	Generator rpm		Number Used	Original Length (Inches)	Spring Tension (Ounces)
Ford C1TF-1000-A	450	1300	30	2525	1.2-1.8	2	0.86	40
Ford C1TF-1000-H	450	1300	30	2525	1.2-1.8	2	0.90	20-26
Ford C1TF-1000-K	350	1300	30	2525	1.2-1.8	2	0.90	20-26
Ford C1TF-1000-L	450	1300	30	2525	1.2-1.8	2	0.90	20-26
Ford C1TF-1000-M	450	1300	30	2525	1.2-1.8	2	0.90	20-26
Lease-Neville C1TF-1030-DandE	640*	750	60	3400	2.4-3.0	-	-	-
Ford C00F-1000-C	375	1400	25	2450	1.2-1.8	2	0.86	32-40
Ford C00F-1000-D	450	1300	30	2550	1.2-1.8	2	0.86	32-40
C0AF-1000-B	450	1300	30	2525	1.2-1.8	2	0.86	32-40
C0AF-1000-G	450	1300	30	2525	1.2-1.8	2	0.86	32-40
C0TF-1000-C	600	1550	40	2650	1.2-1.8	2	0.86	40
C0TF-1000-J	450	1300	30	2525	1.2-1.8	2	0.86	32-40
C1TF-1000-A	450	1300	30	2525	1.2-1.8	2	0.86	32-40

* @ 14 volts

GENERATOR DATA

Generator Commutator Maximum Runout	0.002 inch
Generator Brushes Maximum Wear Limit	5/8 inch
Maximum External Circuit Resistance (Generator Armature Terminal to Battery Positive Terminal)	1.0 volt @ 30 amperes

ALTERNATOR DATA

Alternator Variation Between Phases	
Maximum - Under Load	0.3 volt
Maximum - No Load	1.5 volts
Alternator Pulley Nut Torque	40 foot-pounds

VOLTAGE REGULATION SETTING

Part Number	Current Rating	Cut-in Voltage	Voltage Regulation (Amps.)	Current Regulation	Reverse Current to Open (Amps.)
CITF - 10505 - A, B	30	12.0-12.8	14.6-15.4	28-32	6-9
B6A - 10175 - B	60	5.6-6.4	13.5-14.3	58-62	-
B8E - 10505 - C (Ford)	40	12.4-13.2	14.6-15.4	38-42	8
CITF - 10505 - D	40	12.5-13.9	14.2-14.9	38-42	2-6
CODF - 10505 - A	25	12.4-13.2	14.6-15.4	23-27	-

**VOLTAGE REGULATION SETTING VERSUS
AMBIENT AIR TEMPERATURE**

Ambient Temperature °F	Voltage Regulation Setting (Volts)	
	Standard Regulator (Ford and Bosch)	40 Amp. Low Cut-In (Auto-Lite)
25	15.1-15.9	14.3-15.2
35	15.0-15.8	14.3-15.2
45	14.9-15.7	14.3-15.1
55	14.8-15.6	14.3-15.0
65	14.7-15.5	14.3-14.9
75	14.6-15.4	14.2-14.9
85	14.5-15.3	14.1-14.8
95	14.3-15.1	14.1-14.7
105	Reverse 14.2-15.0	14.0-14.7
115	14.1-14.9	14.0-14.6
125	13.9-14.7	13.9-14.5
135	13.8-14.6	13.8-14.4
145	13.6-14.4	13.8-14.4

ELECTRICAL (Cont.)
STARTER MOTOR

Part Number	Normal Engine Cranking Speed	Min. Torque @5 Volts		Maximum No Load Amperage @12 Volts	Normal Current Draw Under Load	Type of Drive	No. Brushes Used	Brush Mfg. Length (Min.) (Inches)	Brush Wear Limit (Inches)	Brush Spring Tension (Ounces)
Ford C00F-11001-D	250-290	15.5	670	70	105-115	Roller Clutch	4	0.43-0.46	Half Size	48-56
Ford B6A-11002-A	150-180	15.5	550	80	210	Folo-Thru	4	0.43-0.46	Half Size	48-56
Delco B7T-11002-A	150-160	14.2	525	80	210	Positive Action	4	0.61-0.63	Half Size	35
Auto-Lite B80H-11002-A	140-160	17.2	525	60	210	Folo-Thru	4	0.46-0.48	Half Size	42-53
Delco Auto-Lite B8C-11002-A	140-160	17.5	525	60	210	Folo-Thru	4	0.75	Half Size	24 Minimum
Ford FAY-11001-A		15.5	550	85	210	Positive Action	4	0.46-0.48	Half Size	42-53
Ford B6P-11001-A		14.8	580	110	210	Folo-Thru	4	0.43-0.46	Half Size	48-56
Ford C1VF-11001-C		14.8	580	110	210	Folo-Thru	4	0.43-0.46	Half Size	48-56
Delco B9TF-11001-A		15.5	670	70	210	Positive Action	4	0.46-0.48	Half Size	42-53
		17.5	525	60	210	Folo-Thru	4	0.75	Half Size	24

ELECTRICAL (Cont.)
BATTERIES

Part Number	Charge	Plates	Amp. Hours
C1TF-10655-A, and 10657-A	Dry	114	150
C0DF-10655-A	Wet	54	40
C0DF-10655-E	Dry	54	55
B9A-10655-A	Wet	66	55
B6A-10655-E	Wet	78	70
B9A-10655-C	Wet	66	70
B6A-10654-C	Dry	78	70

ALLOWABLE FAST CHARGE TIME

Specific Gravity	Fast Charge Up To
1.150 or less	1 hour
1.150 to 1.175	3/4 hour
1.175 to 1.200	1/2 hour
1.200 to 1.225	1/4 hour
Above 1.225	Slow Charge only

BATTERY FREEZING TEMPERATURES

Specific Gravity	Freezing Temperature
1.280	-90° F.
1.250	-62° F.
1.200	-16° F.
1.150	+ 5° F.
1.100	+19° F.

**ELECTRICAL (Cont.)
FUSE AND CIRCUIT BREAKER CHART**

Circuit	Protective Device	Location
Headlamps	Circuit Breaker	Integral with Headlamp Switch
Auxiliary Lamps (Instruments Dome, Park and Rear)	3AG-15	Fuse Panel
Turn Signals	Circuit Breaker	Integral with Headlamp Switch
Trucks Econoline	SFE-7.5 Fuse	Fuse Panel
Radio	SFE-14 Fuse	Fuse Panel
Heater Blower	SFE-7.5 Fuse	Fuse Panel
Electric Windshield Wiper	Circuit Breaker	Mounts on Windshield Wiper Motor Mounting Bracket
Electric Fuel Pump	SFE-7.5 Fuse	Fuse Panel
Spotlight	SFE-14 Fuse	Cartridge in Feed Wire
	SFE-7.5 Fuse	Cartridge in Feed Wire
	SFE-7.5 Fuse	Fuse Panel
Pump Assembly (W/S Wiper Vacuum)	3AG-10 Fuse	Cartridge in Feed Wire
Cigar Lighter	Sulphur Disc	Back of Lighter Socket
	SFE-14	Fuse Panel
Overdrive	3AG-15	Open Clips on O D Relay
Two-Speed Axle	Circuit Breaker	Fuse Panel

**ELECTRICAL (Cont.)
BULB CHART**

Description	Candle Power or Wattage	Trade Number
EXTERIOR LAMPS		
Head Lamps Single - High / Low Beam	50 / 40 W	6012
Dual Lo-Beam (#2)	50 / 37.5 W	4002
Hi-Beam (#1)	37.5 W	4001
Front Turn Signal / Parking	32 / 4 C.P.	1034
Front Parking Only	4 C.P.	67
Independent Turn Signal, Front & Rear	32 C.P.	1073
Rear Turn Signal & Stop / Tail	32 / 4 C.P.	1034
Rear License Lamp Only	4 C.P.	67
Marker	4 C.P.	67
Spot Lamps	30 W	4435
INTERIOR LAMPS		
Instrument Panel Indicators		
Hi-Beam	2 C.P.	57

BULB CHART (Cont'd)

Description	Candle Power or Wattage	Trade Number
Oil Pressure	2 C.P.	57
Generator	2 C.P.	57
Turn-Signal	2 C.P.	57
Tachometer	2 C.P.	57
Differential Lockout	1.5 C.P.	1445
W/S Wiper Vacuum Pump Switch	1 C.P.	53
Retarder Oil Temperature Signal	1.5 C.P.	1445
Air Pressure Gauge	2 C.P.	57
Instrument Cluster Illumination	2 C.P.	57
Cigar Lighter Socket	1.5 C.P.	1445
Heater Control	2 C.P.	57
Radio Dial	2 C.P.	57
Transmission Control Selector	1.5 C.P.	1445
INTERIOR ILLUMINATION		
Dome Lamp	15 C.P.	1003

CAPACITY CHART

ENGINE COOLING SYSTEM CAPACITIES

Engine	Truck Model	Approximate Capacity* (Quarts)
144 Six	Econoline, P-100	8.9***
223 Six	F-100, F-250, F-350, F-500, F-600, B-500, B-600 .. P-100, P-350, P-400, P-500	18 18-1/2
262 Six	F-600, B-600	18
	C-550, C-600	28
292 MD V-8	F-100, F-250, F-350 (with single rear wheels) ... F-500, F-600	18
	B-500, 600	22
	F-350 (with dual rear wheels), F-700, B-700, T-700	22-1/2
	B-500, 600 (with Transmatic)	18-1/2
	P-350, P-400, 500	22
	F-B-700	28**
	C-550, C-600, C-700	28**
292 HD V-8	B-500, 600	18
	B-700	22
	B-500, 600	18
	C-550, C-600	28**
302 HD V-8	F-700	24
	T-700, B-700	26**
	C-700	29**
332 HD V-8	F-750, 800, B-750	22
	T-750, T-800	26**
	C-750, C-800, C-900	29**
401 SD V-8	F-850, F-950, T-850, T-950	46
	C-850, C-950	51
	H-950, HT-850	51
477 SD V-8	F-850, F-950, 1000, 1100; T-850, 950	46
	C-850, C-950, 1000, 1100	51
	H-950, HT-850	51
534 SD V-8	F-1000, 1100; T-850, 950	46
	C-1000, 1100	51
	H-950, H-1000, HT-850, HT-950	51

*Add 1 quart for trucks equipped with heater.

**Add 1½ quarts for trucks equipped with Transmatic transmission.

***Add 2 quarts for heater.

CAPACITY CHART – (Cont.)

FUEL TANK CAPACITIES

Tank Type	Truck Model	Approximate Capacity (U.S. Gallons)
Standard	Econoline	14
	F-, C-, and T-Series (cab models)	18
	B-Series	30
	P-Series and F-100-250-350 (cowl models)	17
	F-500 through 950 (cowl models)	18
	P-400 and P-500	30
Optional (Mounted Out-side of Frame)	F-Series (500-800); C-Series (550-800) T-Series (700-800)	
Optional Auxiliary Tanks		
Cylindrical	F- C-, and T-Series (700 through 1100) H-950, 1000; HT-850, 950	50 or 60
Saddle	F-, C-, and T-Series (700 through 1100)	125
Step	F- and T-Series (700 through 1100)	50 or 60

OIL CAPACITY

Engines	Capacity
144	3-1/2 quarts*
262	6 quarts*
223 and 292	5 quarts*
302 and 332	8 quarts*
401, 477, and 534	9 quarts**

*Add one quart when changing oil filter.

**Add 2 quarts when changing oil filter.

CARBURETOR OIL BATH AIR CLEANER

Engines	Capacity
223	1 Pint
262, 292, 302,	1 Quart
332	3-1/4 Pints
401-477-534	3 Pints

CAPACITY CHART (Cont.) **TRANSMISSION LUBRICANT REFILL CAPACITIES**

Transmission Type and Make	Approximate Capacity (Pints)
3-Speed (Ford B9TR-7004-A & B)	2-3/4
3-Speed (Ford B9TR-7003-A & B)	3-1/2
Overdrive (Warner T-86-G or H)	3-1/4
3-Speed Medium Duty (Warner T-89C)	3-1/2
3-Speed Heavy Duty (Warner T-87E)	5-1/2
4-Speed (Warner T-98A)	8
5-Speed Medium Duty (Clark 250-V or 251-V0)	9
5-Speed Heavy Duty (Clark 265-V or 264-V0)	11-1/2
5-Speed (Spicer 5652 and 5756-B)	13
5-Speed (Spicer 6352, 6453-A, and 6852-G)	17
8-Speed (Fuller R-46)	17
3-Speed Auxiliary (Spicer 5831-C or -D)	4
3-Speed Auxiliary (Spicer 7231-B and -D)	8
4-Speed Auxiliary (Spicer 8341-A)	12
Fordomatic and HD Cruise-O-Matic	20

PART II **FORD CAR – THUNDERBIRD – FALCON** **CONTENTS**

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NAME	ENGINE PREFIX	PATENT PLATE CODE	PISTON DISPLACEMENT (CU. IN.)	CARBURETOR (NO. OF BARRELS)	EXHAUST (TYPE)
Falcon 144 Falcon 170	EEN EET	S or D † S or D †	144 170	1 1	Single Single
Mileage Maker Six	EBP	V	223	1	Single
292 V-8	EDB	W or T †	292	2	Y*
352 V-8	EDT	X	352	2	Y*
390 V-8 High Performance V-8	EES	Y or G †	390	4	Dual
Police Interceptor 390 Special V-8	EES	Y	390	4	Dual
Thunderbird 390 V-8	EES	J	390	4	Dual

* Dual Exhaust on Sunliner

† Low compression - 84 octane

‡ Low Compression - Export

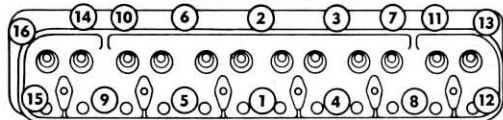
GENERAL

COMPRESSION RATIO Falcon 144 and 170 8.7:1 Mileage Maker Six 8.4:1 292 V-8 8.8:1 352 V-8 8.9:1 Thunderbird 390 V-8 9.6:1	TAXABLE HORSEPOWER 144 29.40 223 31.54 292 45.00 352 51.20 390 52.49
BRAKE HORSEPOWER @ SPECIFIED RPM Falcon 144 90 @ 4200 Falcon 170 101 @ 4400 Mileage Maker Six 135 @ 4000 292 V-8 175 @ 4200 352 V-8 220 @ 4400 Thunderbird 390 V-8 300 @ 4600 Police Interceptor 390 Special V-8 330 @ 4600	FIRING ORDER 144, 170 and 223 1-5-3-6-2-4 292 1-5-4-8-6-3-7-2 352 and 390 1-5-4-2-6-3-7-8
TORQUE - FOOT - POUNDS @ SPECIFIED RPM Falcon 144 138 @ 2000 Falcon 170 156 @ 2400 Mileage Maker Six 200 @ 2000 292 V-8 279 @ 2200 352 V-8 336 @ 2400 Thunderbird 390 V-8 427 @ 3400 Police Interceptor 352 Special V-8 427 @ 3200	VALVE ARRANGEMENT (Front to Rear) 144, 170 & 223- E-I-I-E-I-E-I-E-I-I-E 292 E-I-I-E-E-I-I-E 352 and 390 E-I-E-I-I-E-I-E
BORE AND STROKE 144 3.50 x 2.50 170 3.50 x 2.94 223 3.62 x 3.60 292 3.75 x 3.30 352 4.00 x 3.50 390 4.05 x 3.78	ENGINE IDLE RPM Manual-Shift Transmission 390 575-600 Other Engines 500-525 Automatic Transmissions (Drive Range) 144, 170 and 223 475-500 Other Engines 450-475
COMPRESSION PRESSURE Sea Level @ Cranking Speed 144 and 170 170 ± 10 223 150 ± 20 292 160 ± 20 352 180 ± 20 390 180 ± 20	ENGINE IDLE MANIFOLD VACUUM- Inches of Mercury @ Specified Engine Neutral Idle rpm (Sea Level) All Engines 18
	OIL CAPACITY* 144 and 170 3-½ quarts 223 4 quarts 292, 352, and 390 5 quarts *Add one quart extra when changing oil filter.
	OIL PRESSURE - (PSI) HOT @ 2000 rpm All Engines 35-55

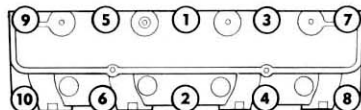
GENERAL (Cont.)

RECOMMENDED OIL VISCOSITY @ Specified Ambient Temperature;	RECOMMENDED MINIMUM A.P.I. CLASSIFICATION OF ENGINE LUBRICATING OILS
Above + 90°F. SAE 30	Type MS
+90°F. to +20°F. SAE 20-20W	
+20°F. to -10°F. SAE 10W	
Below -10°F. SAE 5W	

SIX CYLINDER ENGINE—TYPICAL



EIGHT CYLINDER ENGINE—TYPICAL



CYLINDER HEAD BOLT TIGHTENING SEQUENCE

CYLINDER HEAD

GASKET SURFACE FLATNESS 223, 292, 352 and 390 — 0.003 in any 6 inches or 0.006 inch overall 144 and 170 — 0.002 in any 6 inches or 0.006 inch overall	VALVE SEAT ANGLE Intake All Engines 45° Exhaust All Engines 45°
VALVE SEAT RUNOUT All Engines 0.002 Wear Limit 0.0025	VALVE GUIDE BORE DIAMETER Standard Intake and Exhaust 144 and 170 0.3115–0.3125 223 and 292 0.3433–0.3440 352 and 390 0.3728–0.3735
VALVE SEAT WIDTH Intake and Exhaust 223, 292, 352, 390 0.070–0.090 140 and 170 0.070–0.080	

VALVE MECHANISM

VALVE LASH Cold Intake and Exhaust 144 and 170 0.016 223 and 292 0.019 Hot Intake 144 and 170 0.016 223 and 292 0.019 Exhaust 144 and 170 0.016 223 and 292 0.019	VALVE STEM DIAMETER (Cont.) 0.003 Oversize Intake 144 and 170 0.3130–0.3137 223 and 292 0.3446–0.3453 352 and 390 0.3741–0.3748 Exhaust 144 and 170 0.3120–0.3127 223 and 292 0.3428–0.3435 352 and 390 0.3723–0.3730
VALVE CLEARANCE* 352 and 390 0.078–0.218 *Hydraulic valve lifters — Clearance specified is obtained at the valve stem tip with the lifter collapsed.	0.015 Oversize Intake 144 and 170 0.3250–0.3257 223 and 292 0.3566–0.3573 352 and 390 0.3861–0.3868 Exhaust 144 and 170 0.3240–0.3247 223 and 292 0.3548–0.3555 352 and 390 0.3843–0.3850
VALVE FACE RUNOUT Intake 223, 292, 352 and 390 0.002 Wear Limit 0.0025 144 and 170 0.0015 Wear Limit 0.002 Exhaust 223, 292, 144 and 170 0.0015 Wear Limit 0.0025 352 and 390 0.002 Wear Limit 0.0025	0.030 Oversize Intake 144 and 170 0.3400–0.3407 223 and 292 0.3716–0.3723 352 and 390 0.4011–0.4018 Exhaust 144 and 170 0.3390–0.3397 223 and 292 0.3698–0.3705 352 and 390 0.3993–0.4000
VALVE STEM TO VALVE GUIDE CLEARANCE Intake 144 and 170 0.0008–0.0025 Wear Limit 0.0045 Other Engines 0.0010–0.0024 Wear Limit 0.0045 Exhaust 144 0.0018–0.0035 Wear Limit 0.0055 Other Engines 0.0028–0.0042 Wear Limit 0.0045	VALVE HEAD DIAMETER Intake 144 1.462–1.472 170 1.522–1.532 223 1.775–1.785 292 1.642–1.652 352 and 390 2.022–2.037 Exhaust 144 and 170 1.261–1.271 223 and 292 1.505–1.515 352 and 390 1.551–1.561
VALVE STEM DIAMETER Standard Intake 144 and 170 0.3100–0.3107 223 and 292 0.3416–0.3423 352 and 390 0.3711–0.3718 Exhaust 144 and 170 0.3090–0.3097 223 and 292 0.3398–0.3405 352 and 390 0.3693–0.3700	

VALVE MECHANISM (Cont.)

VALVE SPRING PRESSURE (Pounds @ Specified Length) 144 and 170 47.75–56.25 @ 1.585 Wear Limit 40 @ 1.585 112–122 @ 1.222 Wear Limit 101 @ 1.222 223 and 292 71–79 @ 1.780 Wear Limit 64 @ 1.780 161–177 @ 1.390 Wear Limit 145 @ 1.390 352 94–104 @ 1.820 Wear Limit 89 @ 1.820 180–198 @ 1.420 Wear Limit 162 @ 1.420 390 74–84 @ 1.820 Wear Limit 62 @ 1.820 190–208 @ 1.420 Wear Limit 171 @ 1.420	VALVE TAPPET DIAMETER Standard 223 and 292 0.4983–0.4989 144, 170, 352, and 390 0.8740–0.8745
VALVE SPRING FREE LENGTH (Approximate) 144 and 170 2.00 223 and 292 2.09 352 2.26 390 2.15	HYDRAULIC VALVE LIFTER LEAK DOWN RATE (Maximum) 352 and 390 10–80 Seconds
VALVE SPRING ASSEMBLED HEIGHT 144 and 170 1-9/16–1-39/64 223 and 292 1-3/4–1-25/32 352 and 390 1-13/16–1-27/32	ROCKER ARM TO ROCKER SHAFT CLEARANCE 352 and 390 0.003–0.005 Wear Limit 0.006 Other Engines 0.002–0.004 Wear Limit 0.006
VALVE SPRING OUT OF SQUARE (Maximum) 144 and 170 0.069 223 and 292 0.073 352 0.072 390 0.075	ROCKER ARM SHAFT O.D. 144, 170, 223, and 292 0.780–0.781 352 and 390 0.839–0.840
VALVE PUSH ROD RUNOUT All Engines 0.025	ROCKER SHAFT BORE DIAMETER 144, 170, 223, and 292 0.783–0.784 352 and 390 0.843–0.844

CAMSHAFT AND TIMING CHAIN

CAMSHAFT JOURNAL DIAMETER Standard 144 and 170 1.8095–1.8105 223 and 292 1.9255–1.9265 352 and 390 2.1238–2.1248	CAMSHAFT LOBE LIFT Intake 144 and 170 0.2405 Wear Limit 0.2355 223 0.260 Wear Limit 0.255 292 0.264 Wear Limit 0.259 352, and 390 0.232 Wear Limit 0.227 Exhaust 144 and 170 0.2395 Wear Limit 0.2345 223 0.260 Wear Limit 0.255 292 0.262 Wear Limit 0.257 352 and 390 0.232 Wear Limit 0.227
CAMSHAFT JOURNAL TO BEARING CLEARANCE All Engines 0.001–0.003 Wear Limit 0.006	MAXIMUM ALLOWABLE LOBE LIFT LOSS All Engines – Intake and Exhaust 0.005
CAMSHAFT JOURNAL MAXIMUM OUT-OF-ROUND 144 and 170 0.0005 223, 292, 352, and 390 0.0001	
TIMING CHAIN DEFLECTION All Engines 0.5	
CRANKSHAFT MAIN BEARING JOURNAL DIAMETER Standard 144 and 170 2.2482–2.2490 223 and 292 2.4984–2.4988 352 and 390 2.7988–2.7992	CONNECTING ROD JOURNAL DIAMETER 144 and 170 2.1232–2.1240 223 2.2984–2.2988 292 2.1884–2.1888 352 and 390 2.4384–2.4388
MAIN BEARING JOURNAL MAXIMUM RUNOUT 144 and 170 0.0025 Wear Limit 0.0035 292, 352, 390 0.002 Wear Limit 0.003 223 0.003 Wear Limit 0.004	ASSEMBLED FLYWHEEL OUTSIDE DIAMETER MAXIMUM RUNOUT 144, 223, 292, and 352 0.007
CONNECTING ROD AND MAIN BEARING JOURNALS MAXIMUM TAPER All Engines 0.0003 Wear Limit 0.001	CONNECTING ROD AND MAIN BEARING JOURNALS MAXIMUM OUT-OF-ROUND All Engines 0.0004 Wear Limit 0.0006
	THRUST BEARING JOURNAL LENGTH 144 and 170 1.275–1.277 223 1.359–1.361 292, 352, and 390 1.124–1.126

CRANKSHAFT (Cont.)

MAIN BEARING JOURNAL THRUST FACE MAXIMUM RUNOUT All Engines 0.001	CRANKSHAFT FREE END PLAY All Engines 0.004–0.008 Wear Limit 0.012 ASSEMBLED FLYWHEEL CLUTCH FACE MAXIMUM RUNOUT All Engines 0.010
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MAIN BEARINGS

JOURNAL CLEARANCE 144 and 170 0.0006–0.0025 Wear Limit 0.0035 223 0.0006–0.0028 Wear Limit 0.0038	292 0.0006–0.0032 Wear Limit 0.0042 352 and 390 0.0006–0.0031 Wear Limit 0.0039
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CONNECTING ROD

BEARING BORE MAXIMUM OUT-OF-ROUND AND TAPER 144 and 170 0.0002 Other Engines 0.0004	CONNECTING ROD Twist Maximum Total Difference All Engines 0.012
CONNECTING ROD LENGTH (Center to center) 144 and 170 4.854–4.856 223 6.258–6.262 292 6.320–6.324 352 6.538–6.542 390 6.486–6.490	Bend Maximum Total Difference All Engines 0.004
PISTON PIN BUSHING I.D. Standard 144 and 170 0.9107–0.9112 223 and 292 0.9122–0.9125 352 and 390 0.9752–0.9755	CONNECTING ROD ASSEMBLY (Assembled to Crankshaft) Side Clearance 144 and 170 0.004–0.011 Wear Limit 0.014 223 0.003–0.009 Wear Limit 0.012 292, 352 and 390 0.006–0.016 Wear Limit 0.019
PISTON PIN BUSHING MAXIMUM OUT-OF-ROUND 144 and 170 0.0003 223 and 292 0.0002 352 and 390 0.0004	
PISTON PIN BUSHING MAXIMUM TAPER 144 and 170 0.0001 223 and 292 0.0002 352 and 390 0.0004	BEARING BORE DIAMETER 144 and 170 2.2390–2.2398 223 2.4230–2.4238 292 2.3120–2.3128 352 and 390 2.5907–2.5915

CONNECTING ROD BEARINGS

BEARING TO CRANKSHAFT CLEARANCE 144 and 170 0.0006–0.0025 Wear Limit 0.0035 223 0.0006–0.0025	Wear Limit 0.0035 292 0.0005–0.0024 Wear Limit 0.0034 352 and 390 0.0006–0.0026 Wear Limit 0.0038
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PISTON

PISTON DIAMETER Standard (Color coded red) 144 and 170 3.4976–3.4982 223 3.6236–3.6242 292 3.7486–3.7492 352 3.9983–3.9989 390 4.0477–4.0483 Standard (Color coded blue) 144 and 170 3.4988–3.4994 223 3.6248–3.6254 292 3.7498–3.7504 390 0.0017–0.0035	Standard (Color coded blue) (Cont.) 352 3.9995–4.0013 390 4.0489–4.0495 0.003 Oversize 144 and 170 3.5000–3.5006 223 3.6260–3.6266 292 3.7510–3.7516 352 4.0006–4.0012 390 4.0501–4.0509 PISTON TO BORE CLEARANCE (Bottom of Skirt) 144 0.0021–0.0027 Wear Limit 0.005 223 and 292 0.0008–0.0026 Wear Limit 0.005 352 0.0012–0.003 Wear Limit 0.005
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PISTON PIN

PISTON PIN DIAMETER Standard (Color coded green) 144, 170, 223, and 292 0.9120–0.9123 352 and 390 0.9750–0.9753 0.001 Oversize (Color coded blue) 223 and 292 0.9130–0.9133 352 and 390 0.9760–0.9763 0.002 Oversize (Color coded yellow) 223 and 292 0.9140–0.9143 352 and 390 0.9770–0.9773 PISTON PIN TO PISTON CLEARANCE (Loose) All Engines 0.0001–0.0003 Wear Limit 0.0008	PISTON PIN TO CONNECTING ROD BUSHING CLEARANCE Loose All Engines 0.0001–0.0005 Wear Limit 0.0008 PISTON PIN LENGTH 144, 170, 223 and 292 3.010–3.030 352 and 390 3.156–3.170
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PISTON RINGS

RING WIDTH Compression Ring Upper 144, 170, 352 and 390 0.0774–0.0781 223 0.0929–0.0936 292 0.0775–0.0780	Lower 140, 170 and 292 0.0770–0.0780 223, 352 and 390 0.0930–0.0940
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PISTON RINGS (Cont.)

RING GAP WIDTH Compression Ring (Standard Bore – Upper and Lower) 144, 170, 223 and 292 0.010–0.020 352 and 390 0.015–0.025	Oil Ring (Standard Bore) All (Steel Rail) 0.015–0.055
SIDE CLEARANCE Compression Ring Lower 144 and 170 0.0025–0.0045 223 0.0015–0.0035 292, 352, and 390 0.0020–0.0040 Wear Limit 0.006	Upper 144 and 170 0.0024–0.0041 223 0.0019–0.0036 292 0.0020–0.0035 352 and 390 0.0024–0.0041 Wear Limit 0.006 Oil Ring All Engines Snug

CYLINDER BLOCK

CYLINDER BORE DIAMETER (Standard spreads for 8 grades) 144 and 170 3.5000–3.5024 223 3.6250–3.6274 292 3.7500–3.7524 352 4.0000–4.0024 390 4.0500–4.0524	CYLINDER BORE MAXIMUM TAPER All Engines 0.001 Wear Limit 0.005 CYLINDER BORE MAXIMUM OUT-OF-ROUND All Engines 0.001 Wear Limit 0.003
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OIL PUMP (Gear Type)

RELIEF VALVE SPRING TENSION (Pounds @ Specified Length) 223 9.55–01.05 @ 1.56	GEAR END CLEARANCE (Pump Assembled) 223 0.003–0.006
RELIEF VALVE CLEARANCE 223 0.002–0.004	DRIVEN GEAR TO SHAFT CLEARANCE 223 0.001–0.002
DRIVE SHAFT TO HOUSING BEARING CLEARANCE 223 0.0015–0.0029	GEAR TO HOUSING RADIAL CLEARANCE 223 0.001–0.005

OIL PUMP (Rotor Type)

RELIEF VALVE SPRING TENSION (Pounds @ Specified Length) 144 and 170 8.6–9.5 @ 1.078 292 8.7–9.9 @ 1.71 223, 352 and 390 9.0–9.6 @ 1.53	DRIVE SHAFT TO HOUSING BEARING CLEARANCE All Engines 0.0015–0.0029
RELIEF VALVE CLEARANCE All Engines, except 223 0.0015–0.0029	ROTOR ASSEMBLY END CLEARANCE (Pump Assembled) All Engines 0.0011–0.0041

OIL PUMP (Rotor Type) (Cont.)

OUTER RACE TO HOUSING RADIAL CLEARANCE All Engines 0.006–0.012	DRIVE SHAFT LENGTH (ROTOR ASSEMBLY FACE TO SHAFT END) 114 and 170 2.36–2.38 292 3.36–3.38 352 and 390 2.24–2.26
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TORQUE LIMITS (Foot-Pounds)

MAIN BEARING CAP BOLTS (Oiled Threads) 144 and 170 65–75 292 80–90 Other Engines 95–105	FLYWHEEL TO CRANKSHAFT All Engines 75–85
CYLINDER HEAD BOLTS (Oiled Threads) 144, 170, and 292 65–75 223 95–105 352 and 390 80–90	OIL PUMP COVER PLATE 223 (Gear Type Pump) 12–15 All Engines (Rotor Type Pump) ... 6–9
OIL PAN TO CYLINDER BLOCK 144 and 170 7–9 223, 292, 352 and 390 9–13	OIL FILTER ANGLE ADAPTER TO CYLINDER BLOCK 352 and 390 12–15
INTAKE MANIFOLD TO CYLINDER HEAD 223 and 292 23–28 352 and 390 (Cast Iron) 30–35 390 (Aluminum) 12–15	OIL FILTER ADAPTER TO CYLINDER BLOCK All Engines 50–60
EXHAUST MANIFOLD TO CYLINDER HEAD 144 and 170 13–18 223, 292, 352 and 390 23–28	OIL FILTER TO ADAPTER OR CYLINDER BLOCK All Engines, except 144 and 170 Hand tighten until gasket contacts adapter face. Then tighten 1/2 turn more.
OIL PUMP TO CYLINDER BLOCK 144, 170, 292 and 390 12–15 223 30–35 352 23–28	CYLINDER FRONT COVER 144, 170 and 223 6–9 292, 352 and 390 12–15

TORQUE LIMITS (Foot-Pounds) (Cont.)

VALVE PUSH ROD CHAMBER COVER 223 and 292 2.0-2.5	FUEL PUMP TO CYLINDER BLOCK OR CYLINDER FRONT COVER 144, 170 and 223 12-15 292, 352, and 430 23-28
OIL PICK-UP TUBE TO OIL PUMP 292 10-12 All Other Engines 12-15	WATER OUTLET HOUSING 223 23-28 144, 170, 292, 352 and 390 12-15
WATER PUMP TO CYLINDER BLOCK OR FRONT COVER 144, 170 and 292 12-15 All Other Engines 23-28	CAMSHAFT SPROCKET TO CAMSHAFT All Engines 35-45
CAMSHAFT THRUST PLATE TO BLOCK 144, 223, and 292 12-15	DAMPER OR PULLEY TO CRANKSHAFT 144 and 170 45-55 All Other Engines 70-90
ENGINE FRONT SUPPORT Bracket to Insulator 144 23-28 223 40-45 Insulator to Frame or Underbody All Engines, except 144 35-40 Insulator to Engine 144 11-15 Other Engines 35-40 Bracket to Engine 144, 170 and 223 35-40 Bracket to Crossmember All Engines 45-50	CONNECTING ROD NUTS 144 and 170 19-24 Other Engines 40-45
ENGINE REAR SUPPORT Support Retainer to Insulator or Extension Housing 144 11-15 Other Engines 40-45 Support to Body or Frame All Engines 12-15	VALVE ROCKER ARM COVER 144 and 170 3-5 292 2.0-2.5 223, 352 and 390 5-8
VALVE ROCKER SHAFT SUPPORT TO CYLINDER HEAD 144 and 170 30-35 223 45-55 352 and 430 45-50 292 12-15	VALVE ROCKER ARM ADJUSTING SCREW Minimum torque to rotate 144, 170 and 292 3 223 30-35
	OIL PICK-UP TUBE TO OIL PAN 144 and 170 12-15

TORQUE LIMITS (Cont.)

STANDARD TORQUE LIMITS FOR VARIOUS SIZE BOLTS

CAUTION: Special torque limits listed in the preceding tables should be used in preference to these standard limits whenever they apply.

Size (Inches)	Torque (Foot-Pounds)	Size (Inches)	Torque (Foot-Pounds)
1/4-20	6-9	7/16-14	45-50
1/4-28	6-9	7/16-20	50-60
5/16-18	12-15	1/2-13	60-70
5/16-24	15-18	1/2-20	70-80
3/8-16	23-28	9/16-18	85-95
3/8-24	30-35	5/8-18	130-145

IGNITION TIMING

FALCON SIX MANUAL-SHIFT TRANSMISSION Recommended Setting 4° B.T.D.C. Allowable Range 2° to 10° B.T.D.C. AUTOMATIC TRANSMISSION Recommended Setting 10° B.T.D.C. Allowable Range 2° to 10° B.T.D.C.	THUNDERBIRD 292 V-8 MANUAL-SHIFT TRANSMISSIONS Recommended Setting 3° B.T.D.C. Allowable Range 2° to 10° B.T.D.C. AUTOMATIC TRANSMISSIONS Recommended Setting 10° B.T.D.C. Allowable Range 2° to 10° B.T.D.C.
MILEAGE MAKER SIX MANUAL-SHIFT TRANSMISSIONS Recommended Setting 4° B.T.D.C. Allowable Range 2° to 10° B.T.D.C. AUTOMATIC TRANSMISSION Recommended Setting 10° B.T.D.C. Allowable Range 2° to 10° B.T.D.C.	352 V-8 AND 390 V-8 MANUAL-SHIFT TRANSMISSIONS Recommended Setting 3° B.T.D.C. Allowable Range 2° to 10° B.T.D.C. 352 V-8 AND 390 V-8 AUTOMATIC TRANSMISSION Recommended Setting 6° B.T.D.C. Allowable Range 2° to 10° B.T.D.C.

DISTRIBUTOR - GENERAL

ALL SIX CYLINDER ENGINES Breaker Arm Spring Tension (Ounces) 17-20 Contact Spacing (Inches) 0.024-0.026 Dwell Angle at Idle Speed 35°-38°	ALL V-8 ENGINES Breaker Arm Spring Tension (Ounces) 17-20 Contact Spacing (Inches) 0.014-0.016 Dwell Angle at Idle Speed 26°-28-1/2°
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DISTRIBUTOR - GENERAL (Cont.)

SHAFT END PLAY CLEARANCE
(INCHES)

Six Cylinder (144) - (170)	0.022-0.033
Six Cylinder (223)	0.005-0.008
All V-8 Engines	0.022-0.030

GEAR LOCATION DIMENSION

MILEAGE MAKER SIX

Distance between base and gear (Inches)	0.005-0.008
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GEAR LOCATION DIMENSION
(Cont.)

292 V-8

Distance from bottom of mounting flange to bottom of gear (Inches)	4.991-4.996
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352 AND 390 V-8

Distance from bottom of mounting flange to bottom of gear (Inches)	5.111-5.116
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ADVANCE CHARACTERISTICS

NOTE: The advance characteristics given apply to the distributor with the indicated number only. The distributor number is stamped on the distributor housing or on a plate attached to the distributor housing.

FALCON 144 (DISTRIBUTOR NO. CODF-12127-A
USED WITH MANUAL-SHIFT TRANSMISSION)

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
400	0	0.33
600	1/2-1-1/2	0.78
800	3-1/2- 4-1/2	1.30
1400	10-11-1/4	3.45
1800	12-1/2-13-3/4	5.00
2000	12-3/4-14	5.35
Maximum advance limit		15-3/4°

FALCON 144 (DISTRIBUTOR NO. CODF-12127-B
USED WITH AUTOMATIC TRANSMISSION)

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
700	0	0.65
1000	1-1/4-2-1/4	1.27
1600	4-3/4-5-3/4	2.93
2000	5-3/4-7	3.94
Maximum advance limit		15-3/4°

FALCON 170 (DISTRIBUTOR NO. C1DF-12127-B
USED WITH MANUAL-SHIFT TRANSMISSION)

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
700	1-1/2- 2-1/2	0.43
1000	5-1/4- 6-1/4	0.92
1300	7-1/2- 8-3/4	1.50
1700	10-11-1/4	2.40
2000	11-12-1/4	3.00

DISTRIBUTORS (Cont.)

ADVANCE CHARACTERISTICS (Cont.)

FALCON 170
(DISTRIBUTOR NO. C1DF-12127-C
USED WITH AUTOMATIC TRANSMISSION)

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
700	0	0.43
900	3/4-1-3/4	0.76
1300	4-1/2-5-1/2	1.50
1700	7-8-1/4	2.40
2000	8-1/2-9-3/4	3.00

MILEAGE MAKER SIX
(DISTRIBUTOR NO. COAF-12127-G
USED WITH MANUAL-SHIFT TRANSMISSION)

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
450	0	0.38
650	2-1/2- 3-1/2	0.79
1100	6-3/4- 7-3/4	2.85
1400	8-3/4- 9-3/4	4.33
1800	10-1/4-11-1/4	5.99

Maximum advance limit 13°

MILEAGE MAKER SIX
(DISTRIBUTOR NO. C1AF-12127-D
USED WITH AUTOMATIC TRANSMISSION)

Set test stand to 0° @ 400 rpm and 0 inches of vacuum

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
800	3-1/2- 4-1/2	1.08
1000	6-1/4- 7-1/4	1.70
1200	7-1/2- 8-1/2	2.38
2000	7-1/2- 8-1/2	5.63
1450	13	6.50

Maximum advance limit 13°

DISTRIBUTORS (Cont.)**ADVANCE CHARACTERISTICS (Cont.)****THUNDERBIRD 292 V-8 (DISTRIBUTOR NO. COAF-12127-A)**

CENTRIFUGAL ADVANCE. Disconnect the vacuum line. Set test stand to 0° @ 300 rpm

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
500	0	0
800	1-1/4- 2-1/4	0
1300	5- 6-1/4	0
2000	10-1/4-11-3/4	0

Maximum advance limit 18°

VACUUM ADVANCE. Set test stand to 0° @ 1000 rpm and 0 inches of vacuum.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
1000	0- 1	77
1000	5- 8	12-1/2
1000	8-11	16
1000	9-1/2-12-1/2	20

Maximum advance limit 12-1/2°

THUNDERBIRD 352 V-8 (DISTRIBUTOR NO. COAF-12127-E)**CONVENTIONAL TRANSMISSION**

CENTRIFUGAL ADVANCE. Set test stand to 0° @ 300 rpm. Disconnect the vacuum line.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
500	0	0
775	1- 2	0
1250	5- 6-1/4	0
2000	11-1/2-13	0

Maximum advance limit 18°

VACUUM ADVANCE. Set test stand to 0° @ 1000 rpm and 0 inches of vacuum.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
1000	0- 1	5
1000	5- 8	10
1000	8-11	13-1/2
1000	9-1/2-12-1/2	17

Maximum advance limit 12-1/2°

DISTRIBUTORS (Cont.)**ADVANCE CHARACTERISTICS (Cont.)****THUNDERBIRD 352 V-8 (DISTRIBUTOR NO. COAF-12127-D)****AUTOMATIC TRANSMISSION**

CENTRIFUGAL ADVANCE. Set test stand to 0° @ 200 rpm. Disconnect the vacuum line.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
300	0	0
500	3/4- 1-3/4	0
1100	5- 6-1/4	0
2000	11-1/2-13	0

Maximum advance limit 18°

VACUUM ADVANCE. Set test stand to 0° @ 1000 rpm and 0 inches of vacuum.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
1000	0- 1	5
1000	5- 8	10
1000	8-11	13-1/2
1000	9-1/2-12-1/2	17

Maximum advance limit 12-1/2°

THUNDERBIRD 390 V-8 (DISTRIBUTOR NO. C1SF-12127-A)

CENTRIFUGAL ADVANCE. Set test stand to 0° @ 200 rpm. Disconnect the vacuum line.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
275	0	0
400	1- 2	0
475	3- 4	0
850	6- 7-1/4	0
2000	10-3/4-12-1/4	0

VACUUM ADVANCE. Set test stand to 0° @ 1000 rpm and 0 inches of vacuum.

Distributor RPM	Advance (Degrees)	Vacuum (Inches of Mercury)
1000	0-3	9
1000	5-8	15
1000	6-9	17

Maximum advance limit 9°

CONDENSER

ALL ENGINES

Capacity (Microfarads).....	0.21-0.25
Minimum Leakage (Megohms).....	5
Maximum Series Resistance (Ohms).....	1

COIL

ALL ENGINES

Primary Resistance (Ohms).....	1.40-1.54 (75°F.)
Secondary Resistance (Ohms).....	8000-8800 (75°F.)
Amperage Draw Engine Stopped.....	4.5
Engine Idling.....	2.5
*Primary Circuit Resistor (Ohms).....	1.30-1.40 (75°F.)

FUEL PUMP

FUEL PUMP STATIC PRESSURE
(PSI AT 500 ENGINE RPM)

144, 170 and 223 6 Cyl.	3.5-5.5
292, 352 and 390	4.0-6.0

MINIMUM FUEL PUMP VOLUME
(FLOW AT 500 ENGINE RPM)

144, 170 and 223 6 Cyl.-1 pint in 30 seconds	
All V-8 Engines.....	1 pint in 20 seconds

SPARK PLUGS

144, 170 and 223 6 Cyl.	Champion 870
Mileage Maker Six with Economy	
Carburetor	Champion 860
Thunderbird 292 V-8	Champion F-14Y*
Thunderbird 352 and 390	
Special V-8	Champion F-11Y

*Used on 144 6 Cyl. also.

ALL PLUGS

Size	18 mm
Gap (Inches)	0.032-0.036
Torque (Foot-Pounds)	15-20*

*When a new spark plug is installed in a new replacement cylinder head the torque of the plugs should be 20-30 foot-pounds.

MINIMUM INTAKE VACUUM
(INCHES OF MERCURY @ 500
ENGINE RPM)

All Engines	6.0
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MINIMUM BOOSTER PUMP
VACUUM (INCHES OF MERCURY
@ 500 ENGINE RPM)

All Engines	10.0
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ECCENTRIC TOTAL LIFT

144, 170 and 223 6 Cyl.	0.290-0.310 inch
292, 352 and 390	0.690-0.710 inch

CARBURETORS

170 CU. IN. ENGINE

The following carburetors are used on engines not equipped with the positive crankcase ventilation system.

CIDE-9510-C	Manual-shift Transmission
CIDE-9510-D	Automatic Transmission

The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system.

CIDE-9510-E	Manual-shift Transmission
CIDE-9510-F	Automatic Transmission

Main Metering Jet Identification No.

0-5,000 Feet	
CIDE-9510-A	60
CIDE-9510-D	60
CIDE-9510-E	61
CIDE-9510-F	61

5,000-10,000 Feet	
CIDE-9510-A	59
CIDE-9510-D	59
CIDE-9510-E	59
CIDE-9510-F	59

10,000-15,000 Feet	
CIDE-9510-C	58
CIDE-9510-D	58
CIDE-9510-E	58
CIDE-9510-F	58

Float Setting 11/64 ± 1/64 inch from the roof of the float chamber to the lowest point of the float, carburetor inverted.

Fuel Level Setting . 23/32 ± 1/32 inch below the economizer piston mounting surface.

Venturi Size

Spark Control Identification No. 35

Anti-Stall Dashpot Clear. . 0.120-0.150 inch

Initial Idle Mixture Adj. . 1-1/2 turns open

Power Valve Opens at ... 4-7 in. of mercury

144 CU. IN. ENGINE

The following carburetors are used on engines that are equipped with the positive crankcase ventilation system.

CIDE-9510-A	Manual-shift Transmission
CIDE-9510-B	Automatic Transmission

The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system.

CODE-9510-C	Manual-shift Transmission
CODE-9510-D	Automatic Transmission

Main Metering Jet Identification No.

0-5,000 Feet	
CIDE-9510-A	53
CIDE-9510-B	53
CODE-9510-C	52
CODE-9510-D	52

5,000-10,000 Feet	
CIDE-9510-A	52
CIDE-9510-B	52
CODE-9510-C	52
CODE-9510-D	52

10,000-15,000 Feet	
CIDE-9510-A	51
CIDE-9510-B	51
CODE-9510-C	51
CODE-9510-D	51

Float Setting 11/64 ± 1/64 inch from the roof of the float chamber to the lowest point of the float, carburetor inverted.

Fuel Level Setting . 23/32 ± 1/32 inch below the economizer piston mounting surface.

Venturi Size

SPARK CONTROL
VALVE IDENTIFICATION NO.

CODE-9510-C and CIDE-9510-A	50
CODE-9510-D and CIDE-9510-B	35
Anti-Stall Dashpot Clear. . 0.120-0.150 inch	
Initial Idle Mixture Adj. . 1-1/2 turns open	
Power Valve Opens at ... 4-7 in. of mercury	

CARBURETORS (Cont.)

SINGLE-BARREL CARBURETORS

The following carburetors are used on engines that are equipped with the positive crankcase ventilation system.

C1AE-9510-E	Manual-shift Transmission
C1AE-9510-F	Automatic Transmission
C1AE-9510-G (Economy)	Manual-shift Transmission
C1AE-9510-H (Economy)	Automatic Transmission

The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system.

COAE-9510-E	Manual-shift Transmission
COAE-9510-Z	Automatic Transmission

Main Metering Jet Identification No.

0-5,000 Feet	
COAE-9510-E	62
COAE-9510-Z	60
C1AE-9510-E	63
C1AE-9510-F	61
C1AE-9510-G	48
C1AE-9510-H	48

5,000-10,000 Feet	
COAE-9510-E	61
COAE-9510-Z	59
C1AE-9510-E	61
C1AE-9510-F	59
C1AE-9510-G	47
C1AE-9510-H	47

10,000-15,000 Feet	
COAE-9510-E	59
COAE-9510-Z	57
C1AE-9510-E	59
C1AE-9510-F	57
C1AE-9510-G	45
C1AE-9510-H	45

Single-Barrel Carburetors (Cont.)

*Power Valve Identification No. None

Float Setting (Initial Setting Only)

13/64 $\pm$ 1/64 from the roof of the float chamber to the lowest point of the float, carburetor inverted.

Fuel Level Setting

11/16 $\pm$ 1/32 inch below economizer piston mounting surface.

Venturi Size

Economy 1 inch
All except Economy 1-1/4 inches

*Spark Control Valve Identification No.

COAE-9510-Z and C1AE-9510-F 28
COAE-9510-E and C1AE-9510-E 55

Anti-Stall Dashpot Clearance

COAE-9510-Z, C1AE-9510-H and
C1AE-9510-F 0.060-0.090

Initial Idle Mixture Adjustment

..... 1-1/2 turns open

*Power Valve Opens at .4-7 in. of mercury.

*Not applicable to economy carburetor.

Choke Thermostatic Spring Housing

Initial Setting

All manual-shift transmission carburetors set at index.

All automatic transmission carburetors set at 2 digits lean.

CARBURETORS (Cont.)

FORD DUAL CARBURETORS

The following carburetors are used on engines that are equipped with the positive crankcase ventilation system.

C1AE-9510-AA	used with 292 engines and manual-shift transmission.
C1AE-9510-AB	used with 292 engines and automatic transmission.
C1AE-9510-AE	used with 352 engines and manual-shift transmission.
C1AE-9510-AF	used with 352 engines and automatic transmission.

The following carburetors are used on engines that are not equipped with the positive crankcase ventilation system.

C1AE-9510-AC	used with 352 engines and manual-shift transmission.
C1AE-9510-AD	used with 352 engines and automatic transmission.
C1AE-9510-Y	used with 292 engines and manual-shift transmission.
C1AE-9510-Z	used with 292 engines and automatic transmission.

Main Metering Jet Identification No.

0-5,000 Feet	
C1AE-9510-AA	49
C1AE-9510-AB	48
C1AE-9510-AC	56
C1AE-9510-AD	55
C1AE-9510-AE	57
C1AE-9510-AF	56
C1AE-9510-Y	48
C1AE-9510-Z	46

5,000-10,000 Feet

C1AE-9510-AA	47
C1AE-9510-AB	46
C1AE-9510-AC	54
C1AE-9510-AD	53
C1AE-9510-AE	55
C1AE-9510-AF	54
C1AE-9510-Y	46
C1AE-9510-Z	44

Main Metering

Jet Identification No. (Cont.)

10,000-15,000 Feet	
C1AE-9510-AA	45
C1AE-9510-AB	44
C1AE-9510-AC	52
C1AE-9510-AD	51
C1AE-9510-AE	53
C1AE-9510-AF	52
C1AE-9510-Y	44
C1AE-9510-Z	43

Power Valve Identification No.

0-5,000 Feet

C1AE-9510-AA	Green
C1AE-9510-AB	Green
C1AE-9510-AC	Red
C1AE-9510-AD	Red
C1AE-9510-AE	Red
C1AE-9510-AF	Red
C1AE-9510-Y	Green
C1AE-9510-Z	Green

5,000-10,000 Feet

C1AE-9510-AA	65
C1AE-9510-AB	65
C1AE-9510-AC	65
C1AE-9510-AD	65
C1AE-9510-AE	65
C1AE-9510-AF	65
C1AE-9510-Y	65
C1AE-9510-Z	65

10,000-15,000 Feet

C1AE-9510-AA	55
C1AE-9510-AB	55
C1AE-9510-AC	55
C1AE-9510-AD	55
C1AE-9510-AE	55
C1AE-9510-AF	55
C1AE-9510-Y	55
C1AE-9510-Z	55

Dry Float Setting (Initial Setting Only)

29/64 $\pm$ 1/64 inch from machined surface of main body to top of free end of float, with float in uppermost position.

CARBURETORS (Cont.)

FORD DUAL CARBURETORS (Cont.)

Fuel Level Setting

29/32 $\pm$ 1/32 inch below top surface of main body.

Venturi Size 1-1/8 inches

Choke Thermostatic Spring Housing

Initial Setting

Manual-shift transmission carburetors set at index (except 390 V-8).

Automatic transmission and manual-shift transmission (390 V-8 only) carburetors set at 2 digits lean.

Anti-Stall Dashpot Clearance

C1AE-9510-AB, C1AE-9510-AD,
C1AE-9510-AF, and
C1AE-9510-Z 0.060-0.090

Initial Idle Mixture Adj. 1-1/2 turns open

Fast (Cold) Idle Adjustment

With fast idle screw on the top step of the cam (hot engine).

C1AE-9510-AA, C1AE-9510-AC,
C1AE-9510-AE, and
C1AE-9510-Y 1500 rpm
C1AE-9510-AB, C1AE-9510-AD,
C1AE-9510-AF, and
C1AE-9510-Z 1700 rpm

Power Valve Opens at .. 7-10 in. of mercury

FORD FOUR-BARREL CARBURETOR

390 V-8 (Carburetor No. C1AE-9510-AG is used with manual-shift transmission and carburetor No. C1AE-9510-AH is used with automatic transmission. The carburetor number is stamped on the left side of the primary fuel bowl. Unless otherwise indicated, specifications apply to both carburetors.)

Main Metering Jet Identification No.

Primary

0-5000 Feet
C1AE-9510-AG 55
C1AE-9510-AH 54

5,000-10,000 Feet

C1AE-9510-AG 53
C1AE-9510-AH 52

10,000-15,000

C1AE-9510-AG 51
C1AE-9510-AH 50

Secondary

0-5,000 Feet
C1AE-9510-AG 63
C1AE-9510-AH 62

5-000-10,000 Feet

C1AE-9510-AG 61
C1AE-9510-AH 60

10,000-15,000 Feet

C1AE-9510-AG 59
C1AE-9510-AH 58

Power Valve Identification No.

0-5,000 Feet Plain
5,000-10,000 Feet 65
10,000-15,000 Feet 55

Dry Float Initial Setting

Primary and secondary

21/32 $\pm$ 1/64 inch from machined surface of main body to top of free end of the float, with the float in the uppermost position.

Fuel Level Setting

Primary and Secondary

29/64 $\pm$ 1/32 inch below the top machined surface of the main body.

CARBURETORS (Cont.)

FORD FOUR-BARREL CARBURETOR (Cont.)

Venturi Size

Primary 1-1/8 inches
Secondary 1-3/16 inches

Choke Thermostatic Spring Housing

Initial Setting

C1AE-9510-AG 2 Digits Lean
C1AE-9510-AH 2 Digits Lean

Anti-Stall Dashpot Clearance

C1AE-9510-AH 0.060-0.090

Initial Idle Mixture Adj. 1-1/2 turns open

Fast (Cold) Idle Adjustment

With fast idle screw on the top step of the cam (hot engine).

C1AE-9510-AG 1500 rpm
C1AE-9510-AH 1700 rpm

Power Valve Opens at .. 7-10 in. of mercury

FUEL TANK CAPACITIES

Cars and Thunderbird 20 gallons
Falcon 14 gallons

COOLING SYSTEM

COOLING SYSTEM CAPACITY

Standard

	Quarts*
Falcon	8.7
Mileage Maker Six	15
All V-8 Engines	19
Thunderbird	19

*Add 1 quart extra for heater.

WATER PUMP, DRIVE BELTS, AND THERMOSTATS

WATER PUMP DRIVE ARRANGEMENT

223, 292, 352 and 390 -

Single belt drives water pump, fan, and generator.

WATER PUMP TO ENGINE RATIO

Falcon 1.04:1
Mileage Maker Six 0.95:1
352 and 390 0.90:1

WATER PUMP, DRIVE BELTS, AND THERMOSTATS (Cont.)

PULLEY OR PULLEY HUB TO WATER PUMP HOUSING FACE DIMENSION Falcon —3.94 inches from front face of pulley hub. Mileage Maker Six—4.320 inches from front face of pulley hub. 292 V-8 —4.480 inches from front face of pulley hub. 352 Special and 390 V-8—8.650 inches from front face of pulley hub.	Between Generator and Water Pump Pulley (Right Side) All Engines 1/2 inch Between Fan Pulley and Air Conditioner Compressor Pulley All Engines 3/8 inch Between Idler and Air Conditioner Compressor 223 Engine 3/8 inch
IMPELLER TO HOUSING CLEARANCE Falcon 0.005–0.025 223 0.015–0.025 292 0.025–0.035 352 and 390 0.070–0.080	THERMOSTAT Low Temperature Opens °F—All Engines 157°–162° Fully Open—All Engines 182°
DRIVE BELT DEFLECTION Between Crankshaft and Power Steering Pump Pulley All Engines 3/8 inch	High Temperature Opens °F—All Engines 175°–180° Fully Open—All Engines 200°

CLUTCHES

CLUTCH ADJUSTMENTS (Inches) Clutch Pedal Free Travel 1-1/4–1-3/8 Falcon 7/8–1-1/8 Clutch Pedal Total Travel ... 6-5/8–6-7/8 Falcon 6-6-1/2 Maximum Variation of Finger Height... 0.031 Maximum Indicator Reading of Flywheel Housing Bore to Engine Concentricity..... 0.010 Falcon 0.003 Maximum Indicator Reading of Flywheel Housing Mounting Face to Engine Alignment 0.007 Falcon 0.006	CLUTCH TORQUE SPECIFICATIONS Foot-Pounds Clutch Release Equalizer Frame or Underbody Bracket Bolts... 25–32 Clutch Cover to Flywheel Bolts 17–20 Flywheel Housing Bolts..... 40–50 Pressure Plate and Cover to Flywheel Retaining Bolts 23–28 Lower Access Cover Plate to Flywheel Housing 17–20 Rear Mount Attaching Retainer to Transmission 40–45
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MANUAL-SHIFT TRANSMISSIONS

LUBRICANT REFILL CAPACITIES Pints (Approximately) Conventional Drive 3 Falcon 2.5 Overdrive, 223 and 292 3 Overdrive, 352 and 390 4	GEAR RATIOS (Cont.) Reverse Gear Conventional Drive Falcon 4.46 6 Cyl. 3.88 292 V-8 3.38 352 and 390 2.81 Overdrive 6-Cyl. 3.80 292 3.80 352 and 390 3.15 4th Gear 6-Cyl. and 292, V-8 0.70 352 and 390 0.72
TRANSMISSION GEAR RATIOS 1st Gear Conventional Drive 144 and 170 3.29 6-Cyl. 3.20 292 V-8 2.78 352 and 390 V-8 2.37 Overdrive 6-Cyl. and 292 2.80 352 and 390 V-8 2.49	TRANSMISSION TORQUE LIMITS Foot-Pounds Extension Housing Bolts 37–42 Main Drive Gear Bearing Retainer to Transmission Case Bolts 12–15 Transmission to Flywheel Housing Bolts 32–36 Transmission Cover to Transmission Case Bolts 10–13 Gear Shift Levers to Cam and Shaft Assy. Lock Nuts 12–15 Gear Shift Housing Assembly to Transmission Case Bolts 12–15
2nd Gear Conventional Drive 170 1.83 144 1.75 6-Cyl. 1.86 292 V-8 1.61 352 and 390 V-8 1.51 Overdrive 6-Cyl. and 292 V-8 1.69 352 and 390 1.59	TRANSMISSION ADJUSTMENTS Inches Cluster Gear End Play 0.004–0.018
3rd Gear Conventional Drive All 1.00 Overdrive All 1.00	

AUTOMATIC TRANSMISSIONS

FORDOMATIC

Lubricant Refill Capacity

Type of Lubricant	Engine	Quarts (Approximate)
Ford Automatic Transmission Fluid	144 and 170	6-1/4
C1AZ-19582-A	223 6-Cyl. and 292 V-8	9
	352 and 390 V-8	10

Checks and Adjustments

Operation	Specification
Transmission End Play Check	0.020-0.039 inch Selective Thrust Washers Available: 0.069-0.067 inch, 0.076-0.074 inch 0.085-0.083 inch, 0.094-0.092 inch
Turbine and Stator End Play Check	0.060 inch (Maximum)
Front Band Adjustment	Adjust screw to 10 foot-pounds torque, and back off two full turns
Rear Band Adjustment	Adjust screw to 45-50 inch-pounds torque, and back off two turns
Accelerator Pedal Height Adjustment	3-1/2 inches above floor mat* *Falcon 4-1/4 inches

Fluid Pressure Limits

Engine Speed	Selector Lever Position	Gauge Reading (psi)	
Idle	All	All Engines (except 144)	144
1000 rpm	D	46-56	40-48
Stall	D, L, and R	77-84	53-57
		170-192	135-155

Transmission Shift Points (Approximate)

Rear Axle Ratios	Engine Model	Automatic Shift Speeds (mph) -- Selector Lever at D			
		1-2 Minimum Throttle	1-2 Thru Detent	2-1 Thru Detent	2-1 Closed Throttle
2.91 to 1	352 V-8	16-18	53-58	48-53	6-14
3.10 to 1	144 Six	12-18	48-54	46-52	7-14
3.10 to 1	352 V-8	15-17	50-54	46-49	6-13
3.50 to 1	144 Six	11-16	43-49	41-48	7-12
3.56 to 1	223 Six	13-16	46-50	42-47	5-11
3.56 to 1	292 V-8	13-16	46-50	42-47	5-11

Stall Speed Limits

Engine Model	Engine rpm
144 Six and 170	1740-1940
223 Six	1370-1570
292 V-8	1590-1790
352 V-8	1570-1770

AUTOMATIC TRANSMISSIONS (Cont.)

FORDOMATIC TRANSMISSION (Cont.)

TORQUE SPECIFICATIONS

Name	Car Line	
	Falcon	Ford
	Foot-Pounds	
Governor Body Cover	20-30*	20-30*
Planet Gear Shaft Retainer to Output Shaft	20-30*	20-30*
Rear Pump to Body Cover	4-5	4-5
Control Valve Screws (10-24)	50-60*	20-30*
Body Bolts, Upper to Lower Body (1/4-20)	70-85*	6-7
Body Bolts, Body to Transmission Case (1/4-20)	8-10	8-10
Oil Pan to Case	10-13	10-13
Front Servo Cover to Case	12-15	12-15
Rear Servo Cover To Case	12-15	12-15
Converter Stator Support to Front Pump	12-17	12-17
Front Pump to Case	18-22	18-22
Rear Pump to Case	12-15	12-15
Extension Housing to Case	28-38	28-38
Nuts		
Manual Control Shift Lever Shaft	17-20	17-20
Throttle Outer Lever Shaft	17-20	17-20
Reverse Band Servo Piston Rod Lock Nut	15-18	15-18
Low Band Lock Stop	35-40	35-40
Oil Filter Tube Fitting to Case	40-50	40-50
Breather Tube Nut to Case		5-8
Plugs		
Pressure Gauge Connection	10-15	10-15
Case to Cooler Outlet		10-15
Case to Cooler Inlet		10-15
Converter Cover Drain	20-28	20-28
Front Servo Manufacturing Holes	10-15	

*Inch-Pounds

AUTOMATIC TRANSMISSION (Cont.)

CRUISE-O-MATIC Lubricant Refill Capacity

Type of Lubricant	Application	Approximate Capacity
Ford Automatic Transmission Fluid CIAZ-19582-A	292, 352 and 390	10 Quarts

Checks and Adjustments

Operation	Specification
Transmission End Play Check	0.010-0.029 inch Selective Thrust Washers Available: 0.063-0.061 inch, 0.063-0.067 inch 0.076-0.074 inch, 0.083-0.081 inch
Turbine and Stator End Play Check	0.060 inch (maximum)
Front Band Adjustment	Adjust screw to 10 inch-pounds torque, and back off one full turn; lock nut to 20-25 foot pounds
(Use 1/4 inch spacer between adjustment screw and servo piston stem)	
Rear Band Adjustment	Adjust screw to 10 foot-pounds torque, and back off 1-1/2 turns; lock nut to 35-40 foot-pounds
Primary Sun Gear Shaft Ring End Gap Check ..	0.002-0.009 inch
Accelerator Pedal Height Adjustment	Ford, 3-1/2 inches; Thunderbird, 3-7/16 in.
Rear Clutch Steel Plate Coning Clearance Check	0.010 inch (maximum)

Fluid Pressure Limits

Manifold Vacuum	Engine Speed	Selector Lever Position	Gauge Reading (psi)
18 Minimum	400-475	N-D1-D2	57-69
		P-R-L	57-213
1.5 or Less	Stall	D1 or D2	145-170
		L & R	201-213

Transmission Gear Ratios

Gear	Selector Lever Position	Clutch Applied	Band Applied	Gear Ratio (Car)	Gear Ratio (T'Bird)
Neutral	N	None	None	—	—
First	D1 or L	Front	Rear*	2.40:1	2.37:1
Second	D1 or D2	Front	Front	1.47:1	1.48:1
Third	D1 or D2	Front & Rear	None	1.00:1	1.00:1
Reverse	R	Rear	Rear	2.00:1	1.84:1

*In first gear D1, the planet carrier is held against rotation by the one-way clutch.

Stall Speed Limits

Engine Model	Engine R.P.M.
292 V-8	1500-1700
352 V-8	1600-1800
390 V-8	1800-2000

AUTOMATIC TRANSMISSIONS (Cont.)

CRUISE-O-MATIC (Cont.)

TRANSMISSION SHIFT POINTS (APPROXIMATE)

Rear Axle Ratio	Automatic Shift Speeds (mph)								Manual Shift Speeds (mph)
	D1		D1 or D2		D1		D1 or D2		
	1-2	1-2	2-3	2-3	3-1	3-2	3-2	3-2	
	Min. Throttle	Max. Throttle	Min. Throttle	Max. Throttle	Min. Throttle	Max. Throttle	Min. Throttle	Max. Throttle	
3.56:1	6-8	31-38	12-20	50-59	6-7	47-55	22-30	6-9	16-22
2.91:1	8-10	38-48	15-25	62-74	7-9	54-64	27-38	7-11	19-27
3.10:1	7-9	35-44	14-23	58-69	6-8	58-69	26-36	6-10	18-26

TORQUE SPECIFICATIONS

Name	Foot-Pounds	Name	Foot-Pounds
Converter to Flywheel Nuts	15-28	Front Pump Cover Screws	25-35*
Converter Housing to Transmission Case Bolts ..	35-45	Rear Pump Cover Screws (1/4-20)	80-90*
Front Pump to Transmission Case Bolts	17-22	Rear Pump Cover Screws (10-24)	25-35*
Front Servo to Transmission Case Bolts	30-35	Governor Inspection Cover Screws	50-60*
Rear Servo to Transmission Case Bolts	40-50	Converter Cover Drain Plug	15-28
Planetary Support to Transmission Case Screws ..	20-25	Converter Housing to Engine Bolts	45-50
Upper Valve Body to Lower Valve Body Bolts ..	4-6	Vent Tube Nut	3-10
Control Valve Body to Transmission Case Bolts ..	8-10	Governor Valve Body to Counterweight Screws ..	50-60*
Pressure Regulator Assembly to Transmission Case Screws ..	17-22	Governor Valve Body Cover Screws	20-30*
Extension Assembly to Transmission Case Bolts ..	28-38	Pressure Regulator Cover Screws	20-30*
Oil Pan to Transmission Case Bolts	10-13	Control Valve Body Screws	20-30*
Case Assembly - Gauge Hole Plugs	7-15	Case Assembly - Oil Cooler Inlet & Outlet Pipe Plugs ..	10-15
Rear Band Adjusting Screw Locknut	35-40	Front Servo Release Piston to Servo Piston Screw ..	20-30*
Front Band Adjusting Screw Locknut	20-25	Vacuum Diaphragm Unit	18-27
Manual Control Lever Nut	35-40		
Inner Throttle Lever Nut	17-20		

REAR AXLES

LUBRICATION CAPACITY

Car	4-1/2 pints
Thunderbird	4-1/2 pints
Falcon	2 pints

ADJUSTMENTS

	Inches
Backlash Between Drive Gear and Pinion (Car)	0.004-0.009
Backlash Between Drive Gear and Pinion (Falcon)	0.003-0.008
Maximum Backlash Variation Between Teeth	0.002
Maximum Runout of Backface of Ring Gear as Assembled	0.002
Differential Side Gear Thrust Washers Thickness	0.030-0.032
Differential Pinion Gear Thrust Washers Thickness	0.030-0.032
Normal Pinion Locating Shim	0.015
Available Shims (in steps of 0.001 inch)	0.008-0.024

TORQUE SPECIFICATIONS

	Foot-Pounds		
	Falcon	Ford	Thunderbird
Rear Cover Bolts	15-25		
Differential Bearing Cap Screws	40-50	70-80	70-80
Differential Bearing Adjusting Nut Lock Bolts	12-20	15-20	15-20
Rear Shock Absorber to rear spring Clip Plate			
Assembly Nuts	15-25	15-25	15-25
Universal Joint Flange Axle End to Universal Joint Bearing Assembly Nuts	10-14		
Drive Gear Attaching Cap Screws	35-45	65-75	65-75
Rear Axle Shaft Bearing Retaining Nuts	30-35	30-40	30-35
Spring Clip Nuts (Rear Spring to Axle Housing)	13-20	30-35	30-35
Minimum Torque Required to Tighten Pinion Flange Locknut to Obtain Correct Pinion Bearing Preload	140	175*	175*
Pinion Bearing Preload (Inch-Pounds)			
New Bearings	17-27	17-27	17-27
Used Bearings	10-16	8-12	8-12
Carrier to Housing Stud Nuts		30-40	30-40
Pinion Retainer to Carrier Cap Screws		30-40	30-40
Carrier to Housing Stud Nuts		30-40	30-40
Pinion Retainer to Carrier Cap Screws		30-40	30-40
Pinion Flange U-Bolt Nuts		15-20	15-20
Differential Bearing Preload	2-1/2-3 notches tight		

*Used spacer. If this torque is not possible, use new spacer.

PINION AND DRIVE GEAR IDENTIFICATION

Ratio	Number of Teeth	
	Drive Gear	Pinion
2.91:1	32	11
3.10:1	31	10
3.50:1	35	10
3.56:1	32	9
3.89:1	35	9
4.00:1	36	9

REAR AXLES - (Cont.) DRIVE PINION ADJUSTING SHIM THICKNESS CHANGES (INCHES)

New Pinion Marking*	Old Pinion Marking†									
	-4	-3	-2	-1	0	+1	+2	+3	+4	
+4	+0.008	+0.007	+0.006	+0.005	+0.004	+0.003	+0.002	+0.001	0	
+3	+0.007	+0.006	+0.005	+0.004	+0.003	+0.002	+0.001	0	-0.001	
+2	+0.006	+0.005	+0.004	+0.003	+0.002	+0.001	0	-0.001	-0.002	
+1	+0.005	+0.004	+0.003	+0.002	+0.001	0	-0.001	-0.002	-0.003	
0	+0.004	+0.003	+0.002	+0.001	0	-0.001	-0.002	-0.003	-0.004	
-1	+0.003	+0.002	+0.001	0	-0.001	-0.002	-0.003	-0.004	-0.005	
-2	+0.002	+0.001	0	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	
-3	+0.001	0	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007	
-4	0	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007	-0.008	

†New Pinion Marking for Falcon

*Old Pinion Marking for Falcon

CHASSIS SUSPENSION

TREAD WIDTH AND WHEELBASE		TOE-IN AND TOE-OUT	
Front Tread Width		Toe-In	
Car	61 inches	Car	1/4 to 1/8 inch
Thunderbird	60 inches	Thunderbird	1/16-1/8 inch
Falcon	55 inches	Falcon	5/32-7/32 inch
Rear Tread Width		Toe-Out on Turns (Angle of Inside Wheel When Outside Wheel is Turned 20°)	
Car	60 inches	Car	24-1/2°
Thunderbird	57 inches	Thunderbird	24-1/2°
Falcon	54.5 inches	Falcon	20-3/4°
Wheelbase		TORQUE LIMITS	
Car	119 inches	Connecting Rod Sleeve	
Thunderbird	113 inches	Clamp Bolts	
Falcon	109.5 inches	11-14 foot-pounds	

FRONT SUSPENSION TORQUE LIMITS

Name	Car Line		
	Falcon	Ford	Thunderbird
	Foot-Pounds		
Lower Arm Ball Joint Assembly to Spindle Nut	35-65	70-90	60-80
Upper Arm Ball Joint Assembly to Spindle Nut	35-65	60-80	60-80
Ball Joint Assembly to Upper Arm Nuts		28-35	
Ball Joint Assembly to Lower Arm Nuts		28-35	
Upper Arm Inner Shaft to Frame Bracket Nuts	65-90	65-85	
Upper Arm Bumper Assembly Nut		15-22	
Bumper Assembly to Lower Arm Nut		15-22	
Lower Arm Front Bushing Bolt		40-60	
Lower Arm Rear Bushing Bolt		36-46	
Shock Absorber Stud Nut		15-25	25-29
Spindle to Brake Backing Plate - Upper Bolt		80-100	80-100
Spindle to Brake Backing Plate - Lower Bolt		20-35	25-29
Stabilizer Bar to Lower Arm	12-17	10-15	10-15
Stabilizer Brackets to Frame		20-35	11-18
Front Shock Absorber Pin & Bushing Assembly to Lower Arm Nut		12-20	12-15
Bushing - Upper Arm to Upper Arm Inner Shaft		160-190	
Upper Arm Ball Joint Pre-load			20-35*
Arm and Bushing Assembly to Underbody Front Crossmember Bolt			36-46
Arm and Bushing Assembly to Underbody #2 Crossmember Bolt			36-46
Bumper Assembly - Suspension Compression To Body Bracket Stud Nut	12-17		
Front Shock Absorber to Spring Seat			15-25
Upper Arm Shaft to Bushing			15-25

CHASSIS SUSPENSION (Cont.)

FRONT SUSPENSION TORQUE LIMITS - Foot-Pounds (Cont.)

Name	Car Line		
	Falcon	Ford	Thunderbird
Lower Arm Assembly to Underbody Locknut	30-40		
Lower Arm Strut to Underbody Locknut	40-55		
Shock Absorber Assembly to Spring Seat Bolt	12-17		
Shock Absorber to Upper Mounting Bracket Stud Nut	15-25		
Brake Assembly to Front Spindle Locknut	25-35		
Strut to Lower Arm Bolt	40-55		
Shock Absorber Upper Bracket to Body Nut	8-13		
Stabilizer to Body Locknut	11-16		
Upper Arm Shaft to Upper Arm Bolt	40-55		
Shaft - Upper Arm Spring Seat to Upper Arm Locknut	13-18		
Lower Arm Ball Joint Pre-load	20-30*		
*Inch-Pounds			
REAR SUSPENSION TORQUE LIMITS			
Spring Front Hanger Stud Nut		30-45	
Bumper Assembly Retaining Stud Nut		15-22	
Shock Absorber Upper Stud Nut	15-25	15-25	15-25
Shock Absorber Lower Stud Nut	15-25	15-25	15-25
Shock Absorber to Rear Spring Clip Plate Nut		15-22	
Spring Shackles to Spring and Frame Nuts		15-22	
Spring U-Bolt Nut	13-20	30-45	30-45*
Spring Shackles to Underbody Nut	13-20		15-22
Spring Shackles to Rear Spring Nut	13-20		20-25
Universal Joint Flange-Axle End to Bearing Assembly Nut	10-14		

*10 pounds Less Torque for a used Nut.

FRONT WHEEL ALIGNMENT

	Falcon	Ford	Thunderbird
CASTER			
Caster Angle*	0° to 1°	-1/2° to + 1/2°	-1/4° to 1/4°
Maximum Allowable Difference Between Shim Stock Thicknesses at Both Bolts	1/16"	1/8"	
Amount of Caster Angle Change With 1/16 inch + Change of Shim Thickness at Either Bolt	1/2°	1/2°	
*Maximum Difference Between Wheels 1/2° + 1/32 Shim on Falcon			
CAMBER			
Camber Angle*	0° to + 1°	1/4°	+ 1° to 0°
Maximum Allowable Shim Stock Thickness at Each Bolt	9/16	19/32	11/16°
Amount of Camber Angle Change With 1/16 inch Change of Shim Thickness at Both Bolts	1/3°	1/4°	1/3°

*Maximum difference between wheels 1/2°, 1/4° preferred.

CHASSIS SUSPENSION (Cont.)

WHEELS AND TIRES

Model	Tire Size and Ply Rating	Inflation Pressure (psi)		Rim Type	Bolt Circle Diameter (Inches)	Wheel Nut Torque (Foot-Pounds)
		Front	Rear			
Falcon	6.00 x 13	24	24	4J	4.5	75-85
Optional	6.50 x 13	24	24	4J	4.5	75-85
All Car Sedans	7.50 x 14	24	24	Ledge 5.5	4.5	75-85
Convertible	8.00 x 14	24	24	Special 6.0	4.5	75-85
Station Wagon	8.00 x 14	24	26	Special 6.0	4.5	75-85
Thunderbird	8.00 x 14	24	24	Special Ledge 5.5	4.5	75-85

FRAMES

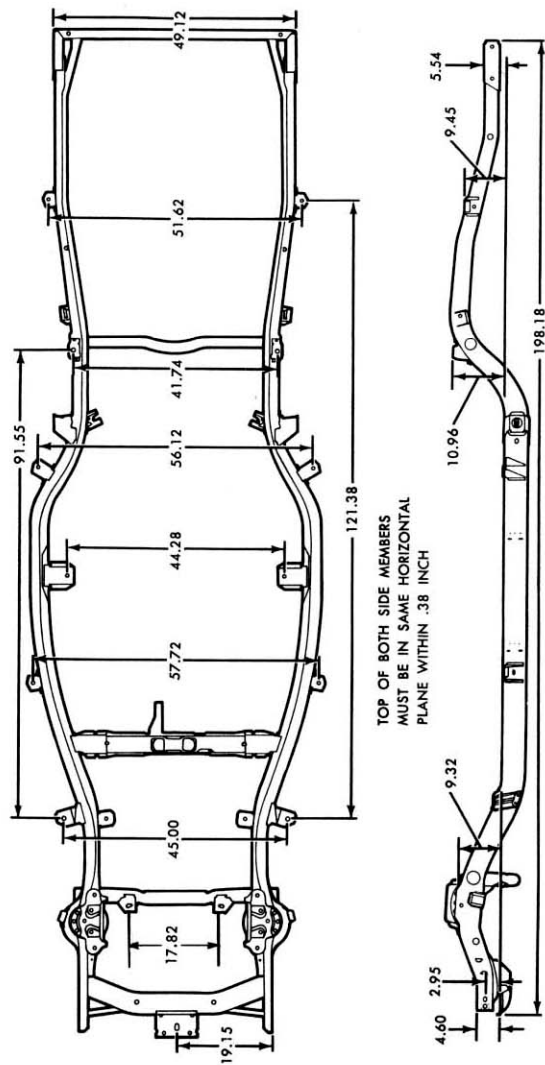


Fig. 1 - FRAME - TYPICAL FORD CAR (EXCEPT CONVERTIBLE)

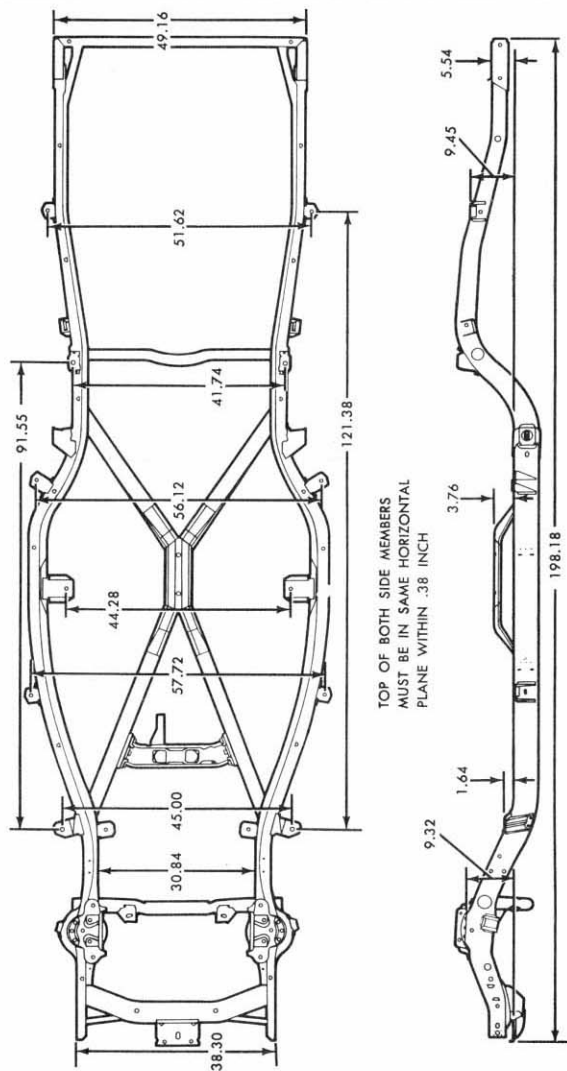


Fig. 2 - FRAME - FORD CONVERTIBLE

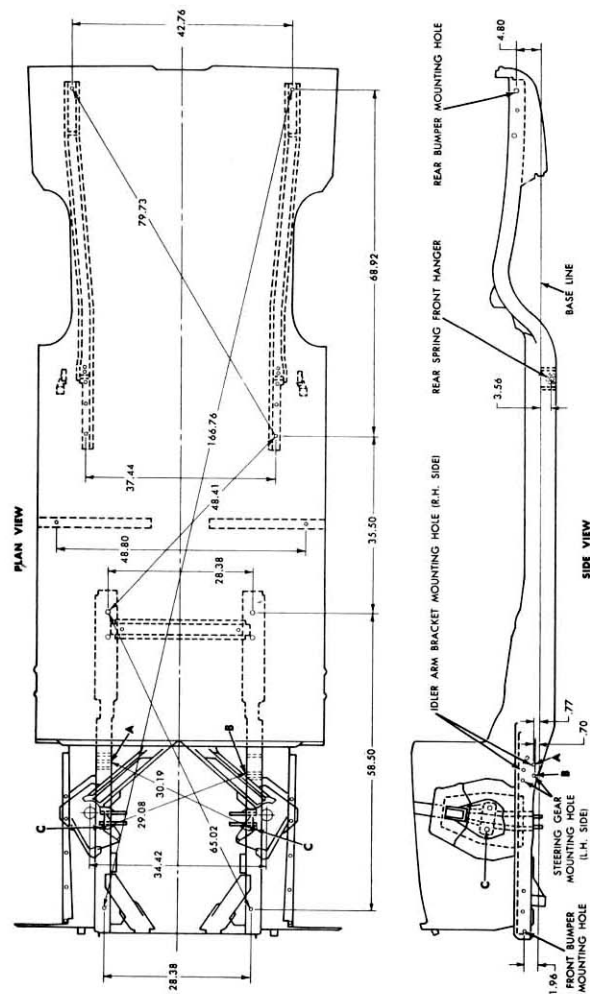


Fig. 3 - UNDERBODY - FALCON

STEERING GEAR

STEERING GEAR AND LINKAGE CHECKS AND ADJUSTMENTS

Sector Shaft End Play Check (Steering Linkage Disconnected)	No Perceptible End Play
Worm Bearing Pre-Load Check (Car)	2-7 Inch-Pounds
Worm Bearing Pre-Load Check (Falcon)	3-6 Inch-Pounds
Total Pre-Load (Mesh Load plus Worm Bearing Pre-Load)	9-15 Inch-Pounds
Permissible Backlash at 30°	
on Either Side of Straight-Ahead Steering Wheel Position	No Perceptible Backlash

TORQUE SPECIFICATIONS

Part Name	Foot-Pounds	
	Falcon	Ford
Steering Pitman Arm to Idler Arm Rod Lock Nut	25-35	50-60
Steering Spindle Connecting Rod to Steering Arm Idler Rod Lock Nut	25-35	45-55
Steering Spindle Connecting Rod End to Spindle Arm	25-35	45-55
Steering Spindle Connecting Rod Sleeve Clamp Nut	10-15	11-14
Steering Idler Arm Mounting Bracket to Frame or Underbody Nut	13-20	25-35
Steering Idler Arm Bushing Nut		60-70
Steering Idler Arm Bushing to Idler Arm Bracket Bolt	45-60	
Transmission Gear Shift Tube Bracket to Cap (Gear Shift Tube to Steering Column) Bolt		8-11
Steering Wheel Nut	25-35	25-35
Steering Gear Housing - Cover Assembly to Housing Assembly Bolt	12-20	12-20
Steering Pitman Arm Nut	85-110	110-150
Steering Gear Assembly to Frame or Underbody Assembly Bolt	25-35	28-43
Steering Column Bracket to Instrument Panel Nut	10-15	12-16
Transmission Manual Shift Rod to Tube 2nd Socket Assembly (Fordmatic and Cruise-O-Matic)		8-13

POWER STEERING ADJUSTMENTS

Permissible Deflection in Pump Belt (Mileage Maker Six)	1/2 inch
Pump Belt Tension (V-8 Engines)	19-22 foot-pounds
Pull Required to Turn Wheel at Least One Complete Turn Either Direction (Engine Idling)	Approximately 12 pounds
Worm and Ball Nut Mesh Adjustment - Car	7-12 inch-pounds
Worm and Ball Nut Mesh Adjustment - Thunderbird	6-14 inch-pounds
Normal Fluid Pressure Against Either Stop (Engine Idling)	700-850 psi
Carrier to Pump Housing End Clearance	0.0015 Inch Maximum
Carrier to Pump Housing End Clearance - Thunderbird	0.0016 Inch Maximum
Control Valve Spool Travel (from Center)	Approx. 0.060 inch
Control Valve Spool Travel (from Center) - Thunderbird	Approx. 0.080 inch

STEERING GEAR AND LINKAGE (Cont.)

TORQUE SPECIFICATIONS (POWER STEERING)

Engine	Foot-Pounds
All	Pitman Arm to Sector Shaft Nut
	Pitman Arm to Idler Arm Rod Nut
	Power Cylinder to Control Rods Locknut
	Spindle Arm Connecting Rod to Control Rod Nut
	Spindle Arm Connecting Rod to Spindle Arm Nut
	Spindle Connecting Rod Sleeve Clamp Locknut
	Idler Arm Mounting Bracket to Frame or Underbody Bolts
	Hose Insulator Bracket to Mounting Bolt
	Pump Valve Retainer
	Pump to Adjusting Bracket
	Spring Cap to Valve Housing Bolts (Car)
	Spring Cap to Valve Housing Bolts (Thunderbird)
	Pump Pulley Retaining Bolt
	Pump Reservoir to Fender Apron Nut
Mileage Maker Six	Drive Pulley and Crankshaft Pulley to Crankshaft Bolt
	Drive Pulley to Crankshaft Pulley Bolt
	Pump Adjusting Bracket to Generator Support Pivot Bolt
	Reservoir Adaptor Nut
	Pump Support to Exhaust Manifold Bolt
292 V-8	Pump Support to Water Pump Bolt
	Pump Adjusting Bracket to Pump Support Manifold Nut
	Pump Adjusting Bracket to Pump Support Bolt
	Pump Adjusting Bracket to Pump Support (Pivot Bolt) Nut
	Drive Pulley and Crankshaft Pulley to Crankshaft Bolt
352 and 390 V-8	Drive Pulley to Crankshaft Pulley Bolt
	Drive Pulley and Crankshaft Pulley to Crankshaft Double Sheaves
	Drive Pulley to Crankshaft Pulley Single Sheaf
	Pump Adjusting Bracket to Water Pump Housing Bolt
	Pump Adjusting Bracket to Water Pump Housing Pivot Bolt

* Used Nut, 50-60 foot-pounds.

† Used Nut, 7-10 foot-pounds.

DIMENSIONS

	Inches
Sector Shaft Arm Ball Stud to Spindle Connecting Rod Ball Stud - Car	12
Sector Shaft Arm Ball Stud to Spindle Connecting Rod Ball Stud - Thunderbird	10-3/4
Control Valve Spool to Housing	0.0002-0.0009

POWER STEERING PRESSURE

Wheel Against Either Stop (Engine Idling)	950-1100psi
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BRAKES **DIMENSIONS (Inches)**

Model		Drum Inside Diameter	Drum Maximum Boring Limit	Lining Length		Lining Width		Wheel Cylinder Bore Diameter	Master Cylinder Bore Diameter
				Primary	Secondary	Primary	Secondary		
Falcon	Front Rear	9 9	9.060 9.060	7.34 7.34	9.375 9.375	2-1/4 1-1/2	2-1/4 1-1/2	1.062 .8125	1.000
Fairlane, Fairlane 500, and Galaxie	Front Rear	11 11	11.060 11.060	9.28 9.28	11.93 11.93	2-1/2 2-1/2	2-1/2 2-1/2	1.3/32 15/16	1.000
Station Wagon, Courier, Police Interceptor, and Taxi	Front Rear	11 11	11.060 11.060	9.28 9.28	11.93 11.93	3 2-1/2	3 2-1/2	1.3/32 15/16	1.000
Thunderbird	Front Rear	11.030 11.030	11.060 11.060	9.030 9.030	11.095 11.095	3 3	2-1/2 2-1/2	1.3/32 1-15/16	1.000

BRAKE CHECKS AND ADJUSTMENTS – ALL CARS

Type of Check or Adjustment	Specifications
Brake Pedal	Pedal Free Play Drum Diameter (Except Falcon) 11.000–11.030 inch
Brake Shoe Repair	11.030–11.060 inch
Master Cylinder	Brake Lining Clearance (Midway between Rivets) Maximum 0.005 inch Lining Wear Limit (From Top of Rivets) Maximum 1/32 inch Hydraulic Master Cylinder Bore, Honed Diameter, Maximum 1.003 inch Push Rod Adjustment 0.962–0.967 inch (Not Available on Falcon) Refinish if Total Indicator Run-out Exceeds 0.007 inch (Car) or 0.005 inch (Falcon)
Power Unit – Piston Type	
Drum Out of Round	

BRAKES (Cont.)

TORQUE LIMITS

	Foot-Pounds
Master Cylinder Mounting Bolts	20–25
Control Assembly – Parking Brake to Cowl Side Bolt	15–19
Drum to Shaft Assembly Speed Nut	Hand Push Fit
Wheel Assembly to Axle Shaft to Drum Assembly Nut	55–85
Pedal Pad to Brake Pedal Nut	12–16
Master Cylinder Fitting Bolt	30–40
Backing Plate and Cylinder Assembly Brake Shoe Anchor Pin Nut	20–30
Brake Cylinder to Brake Backing Plate Bolt	10–20
	Inch-Pounds
*Valve Adjusting Eccentric Nut	180–220
*Mounting Bracket to Mounting Hub Nuts	85–115
	Foot-Pounds
*Master Cylinder to Mastervac Booster	12–18
*Mastervac Booster to Dash Panel Mounting Nuts	12–18

*Power Brakes only

ELECTRICAL

GENERATORS AND ALTERNATORS

Application Vendor and Engine Cu. In. Displ.	Amperes (@15 V)	Watts (@15 V)	Field Current (Amps. @ 12 V hot)	Cut-In Speed (Generator rpm)*	Rated Output Speed (Generator rpm)*	Belt Width (Inches)	Number Used	Brushes Original Length (Inches)	Spring Tension (Ounces)
STANDARD Ford 144 & 170	25	375	1.2-1.8	1300	2450	3/8	2	0.860	32-40
Ford 144 & 170	30	450	1.2-1.8	1300	2550	3/8	2	0.860	32-40
Ford All	30	450	1.2-1.8	1300	2525	3/8	2	0.860	32-40
Ford All V-8	35	525	1.2-1.8	1460	2670	3/8	2	0.860	32-40
Ford 292- 352	30	450	1.2-1.8	1300	2525	3/8	2	0.860	32-40

*To find the equivalent engine rpm, divide the generator pulley diameter by the crankshaft pulley diameter, and multiply by the generator rpm.
 ‡SelectAire on Thunderbird.

ELECTRICAL (Cont.)

GENERATORS AND ALTERNATORS - (Cont.)

Vendor and Engine Cu. In. Displ.	Amperes (@15 V)	Watts (@15 V)	Field Current (Amps. @ 12 V hot)	Cut-In Speed (Generator rpm)*	Rated Output Speed (Generator rpm)*	Belt Width (Inches)	Number Used	Brushes Original Length (Inches)	Spring Tension (Ounces)
Delco-Remy All	40	600	2.4-3.0	1325	2300	3/8	2	1.000	28
Bosch 292- 352	50	750	1.2-1.8	900	1380	3/8	4	1.125	16-18
Leece- Neville	60†	700	2.4-3.0	700	2525	3/8	-	-	-

†Amperes @14 V.

Generator Commutator Maximum Runout 0.002 inch
 Generator Brushes Maximum Wear Limits 5/8 inch

Maximum External Circuit Resistance (Generator
 Armature Terminal to Battery Positive Terminal) 0.7 volts @30 amperes

ELECTRICAL (Cont.)**STARTER MOTOR**

Current Draw Under Load (Amperes)	Normal Engine Cranking Speed (rpm)	Minimum Stall Torque ^a 5 Volts (Foot-Pounds)	Maximum Load (Amperes)	No Load Amperage	Maximum Commutator Runout (Inches)
Car & T-Bird 155-210	150-160	14.8	580	80-110	0.002
Falcon 110-115	250-290	15.5	670	70	0.002

STARTER BRUSHES

Minimum Mfg. Length (Inches)	Wear Limit (Inches)	Brush Spring Tension (Ounces)	Number Used
7/16	5/16	48-56	4

REGULATOR

Manufacturer	Current Rating	Cut-Out Voltage	Reverse Amperage To Open	Voltage Regulation 75° F	Current Limiter (Amperes)
Car					
Standard					
Ford.....	30	12.4-13.2	6-9	14.6-15.4	28-32
Bosch.....	30	12.4-13.2	6-9	14.6-15.4	28-32
Ford.....	35	12.4-13.2	2-6	14.6-15.4	33-37
Optional					
Auto-Lite (Low Cut-In).....	40	12.5-13.9	2-6	14.2-14.9	38-42
Delco-Remy.....	40	11.8-13.0	8 Maximum @ 12.2 Volts	14.6-15.4*	45-51.5
			2-8	14.2-14.6	85° F
Bosch (Low Cut-In).....	50	13.0-13.5	2-8	14.2-14.6	48-52
				14.2-14.8	
				13.5-14.3	
Leece-Neville.....	60	5.6-6.4	-		48-52
Falcon					
Standard					
Ford.....	25	12.4-13.2	3-7	14.6-15.4	23-27
Optional					
Ford.....	30	12.4-13.2	3-7	14.6-15.4	28-32
Bosch.....	30	12.4-13.2	3-7	14.6-15.4	28-32
Thunderbird					
Standard					
Ford or Bosch.....	30	12.4-13.2	6-9	14.6-15.4	28-32
Optional					
Ford.....	35	12.4-13.2	2-6	14.6-15.4	33-37

*Upper stage only; Lower stage 0.1 to 0.3 lower.

ELECTRICAL (Cont.)**VOLTAGE REGULATION SETTING**

Ambient Temperature ° F.	Voltage Regulation Setting (Volts)			
	Standard Regulator (Ford and Bosch)	40 amp. Low Cut-In (Delco-Remy)	50 amp. Low Cut-In (Bosch)	
			Lower Stage	Upper Stage
25	15.1-15.9	15.0-15.8	14.4	15.1
35	15.0-15.8	15.0-15.7	14.3	15.0
45	14.9-15.7	14.9-15.7	14.3	15.0
55	14.8-15.6	14.8-15.6	14.2	14.9
65	14.7-15.5	14.7-15.5	14.2	14.8
75	14.6-15.4	14.6-15.4	14.1	14.8
85	14.5-15.3	14.5-15.3	14.0	14.7
95	14.3-15.1	14.4-15.2	14.0	14.7
105	14.2-15.0	14.3-15.1	13.9	14.6
115	14.1-14.9	14.2-15.0	13.9	14.5
125	13.9-14.7	14.1-14.9	13.8	14.5
135	13.8-14.6	14.1-14.9	13.7	14.4
145	13.6-14.4	14.0-14.8	13.7	14.4

BATTERY (12 VOLTS)

Original Equipment			
Filter Cap Color	Plates	Amp. Hours	Ground
Falcon			
Yellow	54	40	Negative
Red	54	55	
Ford and Thunderbird			
Red	66	55	Negative
Gray	78	65	
Yellow	66	70	

ALLOWABLE FAST CHARGE TIME (Domestic Only)

Specific Gravity	Maximum Fast Charge Time
1.150 or less	1 hour
1.150 to 1.175	3/4 hour
1.175 to 1.200	1/2 hour
1.200 to 1.225	1/4 hour
Above 1.225	Slow Charge Only

SPECIFIC GRAVITY

Battery	Neg. Post Color
Domestic 1.280 ± 10	Plain Yellow Green Red
Low S.G. 1.260 ± 10	
Tropical 1.210 ± 10	
Dry Charge	

ELECTRICAL (Cont.)
LIGHTING SYSTEM, HORNS, AND INSTRUMENTS

BULB CHART

Unit	Candle Power or Wattage	Trade Number
Ford Car, Falcon and Thunderbird		
Front Turn Signal Parking	32/4 c.p.	1034
Rear Turn Signal and Stop Tail	32/4 c.p.	1034
License Plate	4 c.p.	67
Dome Lamp	15 c.p.	1003
Cluster Illumination	2 c.p.	57
Ford Car and Thunderbird		
Headlamp—Hi-Beam No. 1 (Inner)	37.5 w	4001
Headlamp—Lo-Beam No. 2 (Outer)	50/37.5 w	4002
Oil Pressure Indicator	2 c.p.	57
Generator Indicator	2 c.p.	57
Heater Control	2 c.p.	57
Spot Lamp	30 w	4405
Ford Car only		
Back-up Lamps	32 c.p.	1073
Courtesy Lamp—Convertible	4 c.p.	67
Courtesy Lamp—Other Models	15 c.p.	1003
Selectaire	2 c.p.	57
A/C Control Polaraire	1.5 c.p.	1445
Clock	2 c.p.	57
Hi-Beam Indicator	1.5 c.p.	1445
Radio Dial	2 c.p.	57
Hand Brake Signal	2 c.p.	257
Turn Signal	2 c.p.	57
Glove Compartment	2 c.p.	57

ELECTRICAL (Cont.)
LIGHTING SYSTEM, HORNS, AND INSTRUMENTS

BULB CHART (Cont.)

Unit	Candle Power or Wattage	Trade Number
Thunder bird Only		
Back-up Lamps	21 c.p.	1141
Luggage Compartment	6 c.p.	89
Hi Beam Indicator	2 c.p.	57
Windshield Wiper	2 c.p.	57
Heater & A/C Control	2 c.p.	57
Clock	2.6 c.p.	1816
Radio Dial	1.9 c.p.	1891
Courtesy and/or Map	6 c.p.	89
Automatic Transmission Control	1.5 c.p.	1445
Ash Receptacle	2 c.p.	57
Turn Signals	2.6 c.p.	1816

Unit	Candle Power or Wattage	Trade Number
Falcon Only		
Headlamps	50 40w	6012
Hi Beam Indicator	2 c.p.	57
Oil Pressure Indicator	1.5 c.p.	1445
Generator Indicator	1.5 c.p.	1445
Turn Signal Indicator	2 c.p.	57
Radio Dial	1.5 c.p.	1445

ELECTRICAL (Cont.)
LIGHTING SYSTEM, HORNS, AND INSTRUMENTS
FUSE AND CIRCUIT BREAKER CHART

Falcon

Circuit	Protective Device	Location
Headlamps	Circuit Breaker	Integral with Headlamp Switch
Instrument Panel, Dome, and All Exterior Lamps, except Headlamps	Circuit Breaker	Incorporated in Lighting Switch
Turn Signals	SFE-14 Fuse	Fuse Panel on Lighting Switch
Radio	SFE 7.5 Fuse	Fuse Panel on Lighting Switch
Heater Blower	SFE 14 Fuse	Fuse Panel on Lighting Switch
Electric Windshield Wiper	Circuit Breaker	Right Side of Instrument Panel
Cigar Lighter	Sulphur Disc	On Back of Cigar Lighter
Tailgate Control Circuit	Circuit Breaker	On Starter Relay
Tailgate Motor Ground	Circuit Breaker	Right Tailight Vicinity

Car

Spotlight	SFE 7.5 Fuse	Cartridge in Feed Wire
Clock	IAG-1 Fuse	Junction Block on Headlight Switch
Cigar Lighter	Sulphur Disc or Reset C.B.	Back of Lighter Socket
Overdrive	3AG-15 Fuse	Clips on O.D. Relay
Back Up Light & Turn Signals	SFE 14 Fuse	Junction Block on Headlight Switch
Headlight	Circuit Breaker	Integral with Headlight Switch
Auxiliary Lights (Park, Tail, Dash, Dome)	3AG-15 Fuse	Junction Block on Headlight Switch
Radio—Push Button & Manual	SFE 7.5 Fuse	Junction Block on Headlight Switch
Heater Blower	SFE 14 Fuse	Junction Block on Headlight Switch
Air Conditioning	20 Amp C.B.	Lip of Instrument Panel to Left of Steering Column
Electric Window Regulator	3AG-15 Fuse	Cartridge in Feed Wire
Power Circuit	30 Amp Circuit Breaker	On Starting Motor Relay
Ground Circuit	15 Amp Circuit Breaker	Cowl Panels—Right & Left
Front Doors	15 Amp Circuit Breaker	Inner Door Panels—Right & Left
Rear Doors	15 Amp Circuit Breaker	Right or Left Rear Floor Panels
Rear Quarters		

ELECTRICAL (Cont.)
LIGHTING SYSTEM, HORNS, AND INSTRUMENTS
FUSE AND CIRCUIT BREAKER CHART

Circuit	Protective Device	Location
Electric Windshield Wipers	12 Amp Circuit Breaker	Instrument Panel Left of Steering Column
Electric Seat	30 Amp Circuit Breaker	On Starting Motor Relay
Convertible Top Motor	30 Amp Circuit Breaker	On Starting Motor Relay
Windshield Washer Pump	SFE 7.5 Fuse	Cartridge in Feed Wire
Thunderbird		
Headlights	18 Amp Circuit Breaker	Integral with Headlight Switch
Auxiliary Lamps (Park, Tail, Dash, Dome)	3 AG-15 Fuse	Junction Block on Headlight Switch
Back Up Lights and Turn Signals	SFE 14 Fuse	Junction Block on Headlight Switch
Radio - Push Button & Manual	SFE 7.5 Fuse	Junction Block on Headlight Switch
Heater Blower	SFE 14 Fuse	Lower Left of Instrument Panel
Select-Aire Conditioning	20 Amp Circuit Breaker	Junction Block on Headlight Switch
Clock	IAG-1 Fuse	Lower Left of Instrument Panel
Cigar Lighter	Sulphur Disc or Reset C.B.	Back of Lighter Socket
Electric Window Regulator	30 Amp Circuit Breaker	On Starting Motor Relay
Power Circuit	15 Amp Circuit Breaker	Cowl Panel - Left and Right Side
Ground Circuit	15 Amp Circuit Breaker	Right and Left Floor Panels
Front Door	12 Amp Circuit Breaker	Lower Left of Instrument Panel
Rear Quarter	30 Amp Circuit Breaker	On Starting Motor Relay
Windshield Wiper Motor	SFE 7.5 Fuse	Cartridge in Feed Wire
Electric Seat	45 Amp Circuit Breaker	On Starting Motor Relay
Windshield Washer Pump	10 A-1p Circuit Breaker	Near Right Air Deflector
Convertible Top System	15 Amp Circuit Breaker	Luggage Compartment Door Panel
Power Circuit		Luggage Compartment Door Panel
Control Circuit		
Ground Circuit		
Luggage Compartment Lock Motor		
Upper Back Panel Motor		

ELECTRICAL (Cont.)**ACCESSORIES****Stop Light Switch**

Operating Pressure	60-110
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Turn Indicator

Current Draw at 12 Volts	0-4 Amperes
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Heater Motor Current Draw (Amperes at 12 Volts)

	Falcon	Ford and Thunderbird
At Slow Speed	4 to 5	2 to 4
At Medium Speed	-	4 to 6
At High Speed	5 to 6	6 to 8

Air Conditioning Current Draw

Unit	Maximum Amperes at 12 Volts
SelectAir Blower Hi	13
PolarAir Blower Hi	7.5
Magnetic Clutch	2.85*

*12.85 Volts

Horn Current Draw

	Amperes
CAR - Horns with Shunt Resistor	at 12 Volts
FALCON	9.0-10.0
THUNDERBIRD	10-11
	9.0-10.0

Instrument Voltage

CAR and THUNDERBIRD Average Voltage at Fuel and Temperature Gauge Terminals	5 volts
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SPEEDOMETER GEAR - REAR AXLE - TIRE SIZE COMBINATION - Standard Car

Rear Axle Ratio	Tire Size	Transmission	7.50 x 14		8.00 x 14	
			Teeth in Driven Gear	Color Code	Teeth in Driven Gear	Color Code
2.91:1		Fordomatic	17	Blue	17	Blue
		Cruise-O-Matic (292)	17	Brown	17	Brown
		Cruise-O-Matic (352)	19	Red	19	Red
3.10:1		Fordomatic	19	Gray	18	Purple
		Cruise-O-Matic (292)	19	Red	18	Natural
		Cruise-O-Matic (352, 390)	21	Green	21	Natural Green
3.56:1		Conventional and Overdrive	19	Red	18	Natural
		Fordomatic	21	Yellow	21	Yellow
		Cruise-O-Matic (292)	21	Green	21	Green
3.89:1		Cruise-O-Matic (352, 390)	22	Steel	22	Steel
		Conventional and Overdrive	20	Orange	20	Orange
		Cruise-O-Matic			22	Steel

LUBRICANT, FUEL, AND COOLANT CAPACITIES

Component	Engine				
	6-Cylinder		8-Cylinder		
	Cubic Inch Displacement		Cubic Inch Displacement		
	144 & 170	223	292	352	390
Steering Gear Housing	.33 pints	11 oz. (wt.)		11 oz. (wt.)	
Power Steering Reservoir	—	1-3/4 pints		2-1/4 pints	
Transmission Case					
Conventional Drive	2.5 pints		3 pints		
Overdrive	—		3 pints	4 pints	—
Fordomatic	6.25 pints		9 pints	10 pints	—
Cruise-O-Matic	—	—	10 pints	10 pints	10 pints
Rear Axle Housing	2.0 pints	4-1/2 pints		4-1/2 pints	
Crankcase*	3.5 quarts	4 quarts		5 quarts	
Fuel Tank					
Cars	14.8 gallons	20 gallons		20 gallons	
Cooling System †	8.7 quarts	15 quarts	19 quarts	19	19 quarts

*Add one quart when changing oil filter. †Add one quart for heater.

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