TUNE-UP

ENGINE IDENTIFICATION

Engine code letter is fourth digit of Official Serial Number or Warranty Number.

Application	Code
302"	G
360"	Y
390"	H
460"	J

MODEL IDENTIFICATION

RATING PLATE

F100/350 & E100/300 – Rating Plate is located on rear (lock) face of left front door.

P350 – Rating Plate is included in boxed items and is affixed by the body manufacturer.

U100 – Rating Plate is located on inner panel of glove compartment door.

Cowl & Windshield Models – Rating Plate is located on right side of cowl top panel or on panel under hood.

P35JUA73927

First Digit – Truck Series Letter.
Second & Third Digit – Truck Series Number.
Fourth Digit – Engine Code.
Fifth Digit – Assembly Plant.
Remaining Digits – Consecutive Unit Number.

TUNE-UP NOTES

► *IDLE SPEED ADJUSTMENT CAUTION* – Procedures and specifications for idle speed adjustment must be followed exactly as outlined. *See "Hot (Slow) Idle RPM" under Tune-Up.*

NOTE – For other items affecting Tune-Up, see CARBURETION Section or EMISSION CONTROL Section.

COMPRESSION PRESSURE

Check compression with engine at normal operating temperature and at cranking speed, throttle valve wide open and spark plugs removed. Compression in lowest reading cylinder must be within 25% of highest reading cylinder.

VALVE TAPPET CLEARANCE

Application	① Clearance
302"	.090-.190"
360" & 390"	.119-.219"
460"	.075-.175"

① – Clearance specified is obtained at valve stem tip with tappet collapsed.

VALVE ARRANGEMENT

302" & 460"
I-E-I-E-I-E-I-E (right bank, front to rear).
E-I-E-I-E-I-E-I (left bank, front to rear).
360" & 390"
E-I-E-I-I-E-I-E (both banks, front to rear).

SPARK PLUGS

Gap ..... .032-.036"
Torque ..... 15-20 ft. lbs.

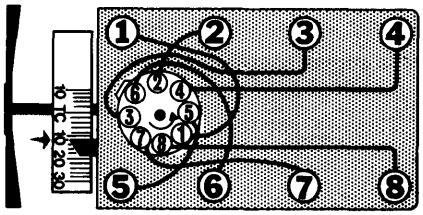
Spark Plug Type

Application	Autolite No.
302", 360", 390"	BRF-42
460"	ARF-42

DISTRIBUTOR

Point Gap ..... ① .017"
Cam Angle ..... ① 24-30°
Breaker Arm Spring Tension ..... ① 17-21 ozs.
Condenser Capacity ..... ① .21-.25 mfd.

① – Except California. All California engines have breakerless ignition.



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FIRING ORDER & TIMING MARKS

IGNITION TIMING

With engine at normal operating temperature and vacuum line disconnected and plugged, adjust timing to specifications.

NOTE – Refer to engine compartment, Emission Control Tune-Up decal for specifications.

HOT (SLOW) IDLE RPM

With engine at normal operating temperature, timing and dwell correctly set and parking brake engaged, connect tachometer to engine. Place automatic transmission in "D" or manual transmission in "N" and turn air conditioner "OFF". Turn solenoid adjusting screw in or out to obtain hot idle (higher) RPM specified on engine compartment Emission Control decal. Place automatic transmission in "N" and disconnect solenoid lead wire at bullet connector. Adjust solenoid off adjusting screw on carburetor throttle body to obtain solenoid off (lower) RPM specified on engine compartment decal. Connect solenoid lead wire, install air cleaner, connect all vacuum lines and open throttle slightly to allow solenoid plunger to fully extend. Recheck idle RPM.

NOTE – Refer to engine compartment, Emission Control Tune-Up Decal for specifications.

IDLE MIXTURE ADJUSTMENT

EXHAUST GAS ANALYZER PROCEDURE

Install a suitable, calibrated exhaust gas analyzer. With air cleaner installed, take an analyzer reading. Adjust idle mixture screws within range of limiter caps to specified air/fuel ratio or CO reading. Correct for any changes in engine idle RPM immediately as idle mixture screws are turned.

TUNE-UP (Cont.)

NOTE — Allow at least ten seconds following each mixture adjustment for analyzer to properly respond and stabilize.

Idle Limiter Cap — If proper CO% cannot be achieved within range of limiter caps, remove caps and adjust screws until proper CO% is obtained. Install new limiter caps in full counterclockwise position with tab of cap against stop on carburetor.

NOTE — Refer to engine compartment, Emission Control Tune-Up Decal for specifications.

COLD (FAST) IDLE RPM

With engine at normal operating temperature, remove air cleaner. Disconnect and plug vacuum lines at intake manifold, and EGR valve. Install jumper hose between carburetor spark port and distributor primary diaphragm hoses. Rotate fast idle cam until fast idle adjusting screw rests on specified step of fast idle cam. Turn fast idle adjusting screw to obtain specified fast idle RPM. Install air cleaner and re-connect all vacuum lines.

NOTE — Refer to engine compartment, Emission Control Tune-Up Decal for specifications.

AUTOMATIC CHOKE ADJUSTMENT

Loosen choke cover screws and turn choke cover in desired direction as indicated on cover to specified setting.

NOTE — Refer to engine compartment, Emission Control Tune-Up Decal for specifications.

GOVERNOR ADJUSTMENT

VELOCITY GOVERNOR

With engine at normal operating temperature, tachometer connected to engine and throttle at wide open position, compare RPM reading with operating range stamped on governor plate. If adjustment is required, remove governor seal. To increase RPM, turn cap counterclockwise and to decrease RPM turn cap clockwise. With adjustment complete, stop engine and seal cap.

VACUUM GOVERNOR

With engine at normal operating temperature, tachometer connected to engine and throttle at wide open position, compare RPM reading with correct operating range. If adjustment is required, stop engine and remove adjusting hole plug from controlling unit housing. Turn adjusting nut clockwise to increase speed and counterclockwise to decrease speed. One full turn of adjusting nut will change top speed approximately 150 RPM. Repeat procedure until correct top speed is obtained. Reinstall adjusting hole plug, new locking wire and lead seal.

FUEL PUMP PRESSURE & VOLUME

Pressure	
302"	① 4-6 psi
360", 390", 460"	5-6 psi
Volume (At Hot Idle RPM)	1 pt. in 15 seconds

① — Except California F100 & U100. California F100 & U100 5-6 psi.

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

IGNITION

DISTRIBUTOR

Application	Man. Trans. (① Ford Part No.)	Auto. Trans. (① Ford Part No.)
U100		
302"	D3BZ-D	D3UZ-G
302"	② D4BZ-F	② D4TZ-V
F100		
302"		② D4TE-PA
360" & 390"	② D4TE-YA	② D4TE-TA
460"	② D4TE-HA, CA	② D4TE-HA, CA
F250/350		
360" & 390"	② D4TE-YA	② D4TE-TA
460"	② D4TE-NA	② D4TE-NA
P350	② D4TE-NA	② D4TE-NA
E100/200		
302"	D3BF-BA	D3UF-FA
302"	② D4UE-HA	② D4UE-CA
E300		
302"	D3BF-BA	D3UF-JA
302"		② D3UF-KA

① — Basic number is 12127. Table gives prefix and suffix.
② — Equipped with Breakerless Ignition.

NOTE — All California engines are equipped with Breakerless Ignition.

Other Data & Specifications — *See Tune-Up and Ford Distributors in ELECTRICAL Section.*

IGNITION COIL

Application	① Ford Part No.
Standard	B6A-B
Breakerless Ignition	D4AZ-A

① — Basic number is 12029. Table gives prefix and suffix.

Resistance	Ohms @ 75°F
Standard Ignition	
Primary	1.40-1.54
Secondary	7,600-8,800
Breakerless Ignition	
Primary	.226-.251
Secondary	4,900-5,680

CARBURETION

CARBURETORS

Ford Model 2100 2-Bbl.

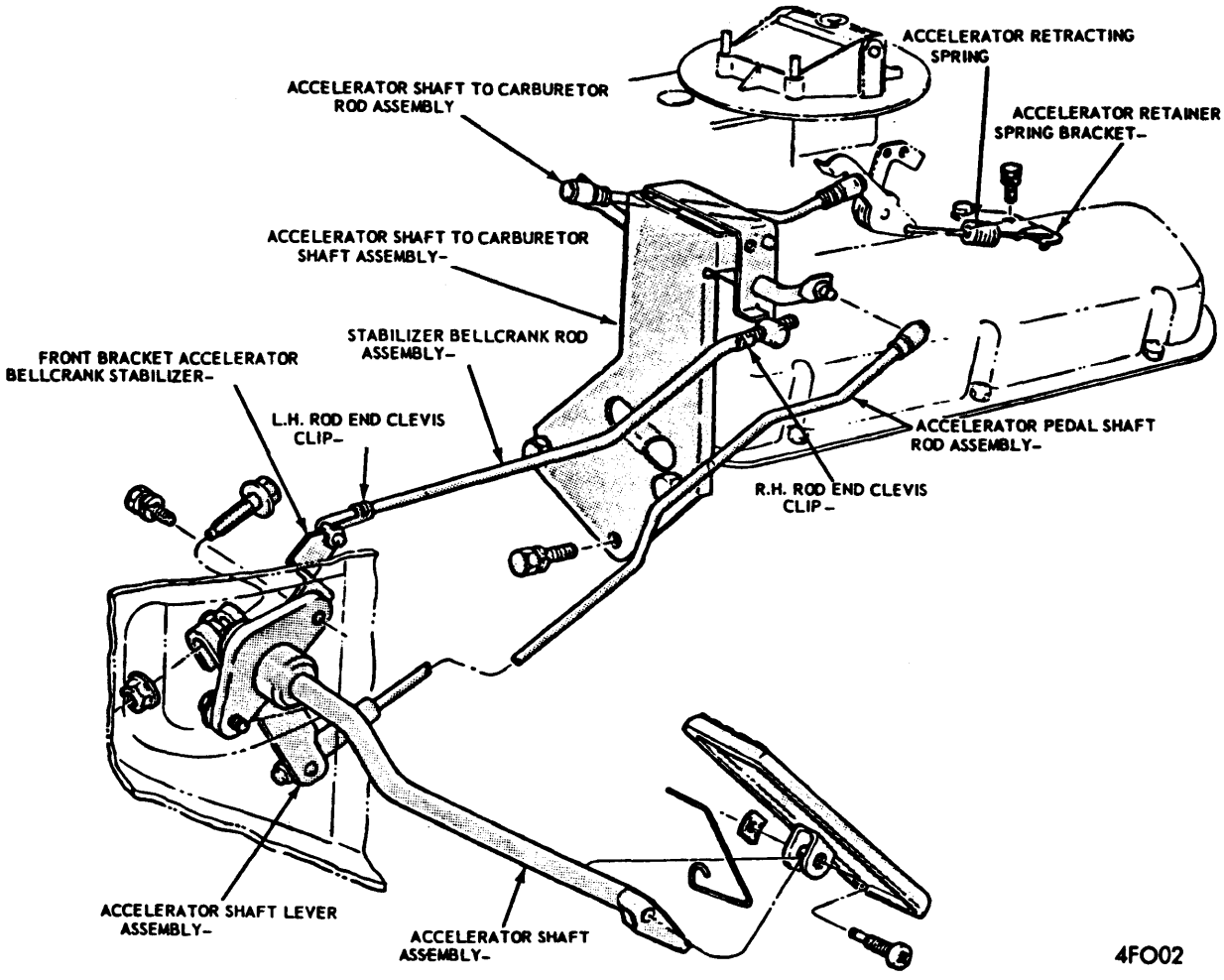
Application	① Ford Part No. Man. Trans.	Auto. Trans.
302"		
F100	② D4TE-EA, VA	② D4TE-LA
F100	D4PE-KA	D4PE-KA, D4TF-KA
E100/300	② D4UE-FA, GA, CA, DA	② D4UE-HA, JA
E100/300	D4UF-AA	D4UF-BA, EA
E100/300	D4PE-KA, RA	D4PE-KA, RA
U100	② D4BE-AA, CA, EA	② D4BE-BA, FA
U100	D4TF-AA, BA	D4TF-CA
U100	D4PE-KA	D4PE-KA

Ford Model 2100 2-Bbl. (Cont.)

Application	①Ford Part No. Man. Trans.	Auto. Trans.
360"		
F100	② D4TE-GA, HA, TA	② D4TE-SA, JA
F100	② D4PE-PA	② D4PE-PA
F100	D4TE-DA, ADA	D4TE-AFA, BAA
F100		D4PE-ZA
F250	D4TE-HA, D4PE-SA	D4TE-JA, D4PE-SA
F, P350	D4TE-HA, D4PE-SA	D4TE-JA, D4PE-SA
390"		
F100	D4PE-PA	D4PE-PA
F250	D4TE-HA, D4PE-SA	D4TE-JA, D4PE-SA
F350	D4TE-HA, D4PE-SA	D4TE-JA, D4PE-SA

① — Basic number is 9510. Table gives prefix and suffix.

② — Used on vehicle without Thermactor Emission System.



E100/300 ACCELERATOR LINKAGE

CARBURETION (Cont.)

Ford Model 4300 4-Bbl.

Application	Man. Trans. (① Ford Part No.)	Auto. Trans. (① Ford Part No.)
460"		
F100	D4TE-BA, BB	D4TE-BA, BB
F100	D4PE-DA	D4PE-DA
F, P250/350	D4TE-CA	D4TE-CA

① – Basic number is 9510. Table give prefix and suffix.

Holley Model 4150 4-Bbl.

Application	Man. Trans. (① Ford Part No.)	Auto. Trans. (① Ford Part No.)
390"		
F, P250/350	D4TE-ARA	D4TE-ASA

① – Basic number is 9510. Table gives prefix and suffix.

Other Data & Specifications – *See Tune-Up and Ford Carburetors in CARBURETION Section.*

ACCELERATOR LINKAGE ADJUSTMENT

E100/300 – Disconnect retaining clip and bellcrank stabilizer clevis from bellcrank assembly. Insert 3/16 inch diameter adjustment pins through adjustment holes in bellcrank assembly. Adjust bellcrank stabilizer clevis so that it fits freely in bore of bellcrank. Connect retaining clip and bellcrank stabilizer to bellcrank. Remove adjustment pins. Depress accelerator pedal to wide open position and adjust control rod assembly until carburetor throttle lever just reaches wide open position. Shorten control rod ONE turn. Reinstall clips and tighten all nuts and bolts.

F100/350, P350, U100 – Connect accelerator rod to shaft assembly and depress accelerator to floor. Rotate carburetor throttle lever to wide open position against stop and adjust throttle control rod until forward end surface of rod just touches rear surface of throttle lever ball stud. Connect throttle control rod to throttle lever ball stud.

DOWNSHIFT LINKAGE ADJUSTMENT

With accelerator linkage correctly adjusted, hold throttle lever in wide open position. Place a .060" feeler gauge between throttle lever and adjusting screw. Loosen adjusting screw lock nut and turn adjusting screw until downshift lever on transmission is against internal stop. Tighten adjusting screw lock nut.

ELECTRICAL

BATTERY

12 Volt – Negative Ground.

Filler Caps	Plates	Amps.
Yellow	54	45
Red	66	55
Red	66	55
Red	66	70
Yellow	78	70

STARTER

Application	① Ford Part No.
302" (Man. Trans.)	C5TZ-D
302" (Auto. Trans.)	C2OZ-B
360" & 390"	C3OZ-C
460"	② C8VY-C

① – Basic number is 11002. Table gives prefix and suffix.
② – Before serial number R20,001. After R20,001, D3TZ-C.

Other Data & Specifications – *See Ford Starters in ELECTRICAL Section.*

ALTERNATOR

Application	I.D. Color (Amps.)	① Ford Part No.
All (W/O A.I.R.)	Purple (38)	D2AZ-C
All (W/A.I.R.)	Purple (38)	D4OZ-C
All (W/O A.I.R.)	Orange (42)	D2AZ-C
All (W/A.I.R.)	Orange (42)	D4OZ-C
All (W/O A.I.R.)	Red (55)	D2AZ-D
All (W/A.I.R.)	Red (55)	D4OZ-B
All (W/O A.I.R.)	Green (61)	D2TZ-B
All (W/A.I.R.)	Green (61)	D4OZ-A

① – Basic number is 10346. Table gives prefix and suffix.

Other Data & Specifications – *See Ford Alternators in ELECTRICAL Section.*

ALTERNATOR REGULATOR

Application	Ford Part No.
All	D4TZ-10316-A

Other Data & Specifications – *See Ford Alternator Regulators in ELECTRICAL Section.*

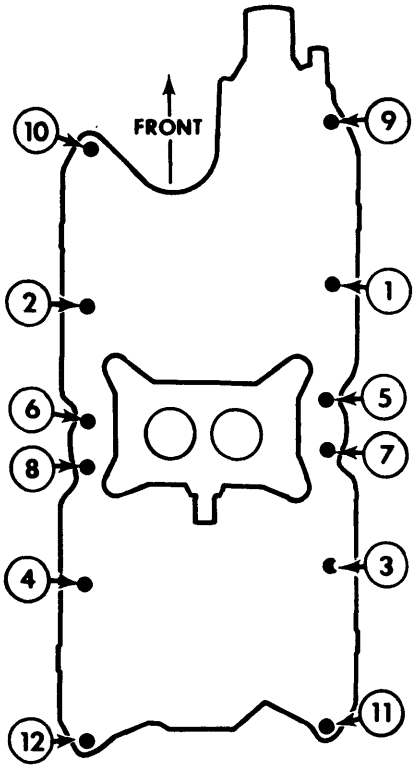
ENGINE

INTAKE MANIFOLD TIGHTENING

Tighten intake manifold bolts in sequence shown to specifications.

Application	Torque (Ft. Lbs.)
302"	17-25
360" & 390"	40-45
460"	25-30

ENGINE (Cont.)



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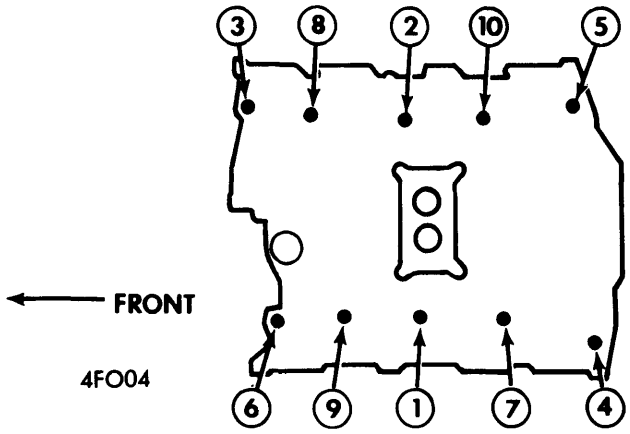
302" INTAKE MANIFOLD TIGHTENING SEQUENCE



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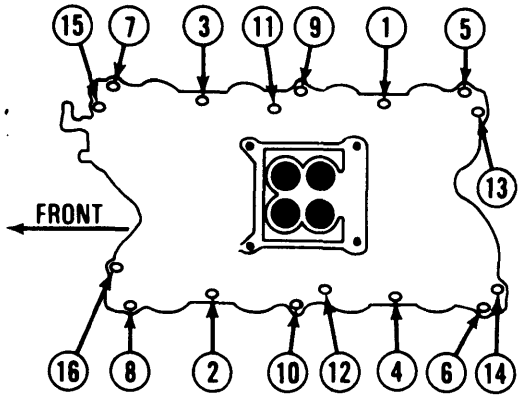
360" & 390"
INTAKE MANIFOLD TIGHTENING SEQUENCE



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460" INTAKE MANIFOLD TIGHTENING SEQUENCE

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	① Used Belt	New Belt
¼" Wide	60	80
⅜-½" Wide	110	140

① — Belt run for 10 minutes or more is considered used.

FILTERS & CLEANERS

Filter or Cleaner	① Service Interval (Miles)
Oil Filter	6,000
Air Filter (Oil Bath)	6,000
Air Filter (Dry Type)	12,000
PCV Valve	12,000
Fuel Filter	12,000
Emission Breather	24,000

① — All filters and cleaners should be serviced more often under severe use or very dusty conditions.

COOLING CAPACITIES

Application	Quantity (Qts.)
302"	
F100 (Standard Cooling)	14.8
F100 (Extra Cooling)	17.1
F100 (Super Cooling)	17.5
E100/300 (Standard Cooling)	15.2
E100/300 (Extra Cooling)	17.5
U100	16.0
360" & 390"	
F100/250 (Standard Cooling)	19.6
F100/250 (Man. Trans. Extra Cooling)	21.9
F100/250 (Auto. Trans. Extra Cooling)	22.3
F100/250 (Super Cooling)	23.9
F, P350 (Standard Cooling)	22.3
F, P350 (Extra Cooling)	23.9
460"	
F100/350, P350 (Standard Cooling)	21.0
F100/350, P350 (Extra Cooling)	22.6
F100/350, P350 (Super Cooling)	23.2

ENGINE (Cont.)

CAPACITIES (EXCEPT COOLING & FUEL)

Application	Quantity
Crankcase	
302", 360", 390"	① 6 qts.
460"	① 5 qts.
Drive Axles	②
Transfer Case	
F100	1.25 pts.
F250	4.5 pts.
U100	2.75 pts.
Automatic Transmission	
C-4	10.25 qts.
C-6	12.75 qts.
FMX-HD	11 qts.
Manual Transmission	
Ford 3.03	3.5 pts.
T-18B	6.5 pts.
T-87G	5.5 pts.
T-89F	3.25 pts.
New Process 435	6.75 pts.

① — Includes 1 qt. for filter change.
② — Fill to bottom of filler plug hole.

FUEL TANK CAPACITIES

Application	Quantity (Gals.)
F100	
Standard	19.2
Optional	20.2
F250 (4 x 2)	
Standard (Federal)	19.2
Standard (California)	19.2
Optional (Federal)	22.5
Optional (California)	20.2
F250 (4 x 4)	
Federal	19.3
California	17.5
F350 (Cab Models)	
Standard (Federal)	19.3
Standard (California)	17.5
Optional (Federal)	22.5
Optional (California)	20.2
F350 (Cowl and Windshield Models)	
Federal	22.5
California	20.2
F350 (Super Camper Special)	
Federal	20.6
California	19.3
P350	
104" Wheelbase	17.0
122" Wheelbase (Federal)	① 30.0
122" Wheelbase (California)	23.5
E100/200	20.2
E300	23.0
U100	12.2

① — Used on all M Series Vehicles.