1969 Ford V8 Tune-Up

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

MODEL IDENTIFICATION

RATING PLATE

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

P350 – Rating Plate is located on right side of radiator support.

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 upper cowl panel under hood.

F25YUA37484

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

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 and choke valves wide open and spark plugs removed. Compression in lowest reading cylinder should be within 25% of highest reading cylinder.

VALVE TAPPET CLEARANCE

Application	① Clearance
302"	.067-.167"
360", 390"	.100-.200"

① – One turn down after contact. Clearance specified is obtained at valve stem tip with tappet collapsed.

VALVE ARRANGEMENT

302"
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

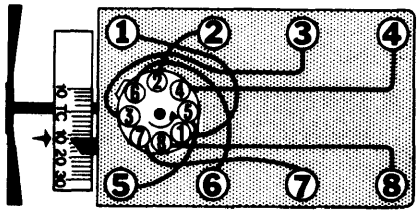
Gap
302" ..... .028-.032"
360", 390" ..... .032-.036"
Torque ..... 15-20 ft. lbs.

Spark Plug Type

Application	Autolite No.
302"	BTF-31
360", 390"	BF-32

DISTRIBUTOR

Point Gap
W/O Emission Control ..... .017"
W/Emission Control ..... .021"
Cam Angle
W/O Emission Control ..... 26-31°
W/Emission Control ..... 24-29°
Breaker Arm Spring Tension ..... 17-21 ozs.
Condenser Capacity ..... .21-.25 mfd.



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FIRING ORDER & TIMING MARKS

IGNITION TIMING

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

Application	Man. Trans.	Auto. Trans.
302"	6° BTDC	6° BTDC
360"	6° BTDC	10° BTDC
390"	6° BTDC	6° BTDC

HOT (SLOW) IDLE RPM

With engine at normal operating temperature, timing and dwell correctly set and parking brake engaged, install tachometer. Place automatic transmission in "D" and manual transmission in "N", turn headlights to high beam and turn air conditioning (if so equipped) "ON". With air cleaner installed, adjust idle RPM to specifications. Adjust idle mixture screws for smoothest idle within range of limiter caps. Stop engine and adjust fuel bowl vent valve. Set throttle linkage to hot idle position. Index mark on vent valve rod should now be even with open end of vent. Bend arm on vent valve rod actuating lever (where it contacts accelerator pump lever) to align groove with edge of bore.

Idle Speed RPM

Application	Man. Trans.	Auto. Trans.
All	650	550

TUNE-UP (Cont.)

IDLE MIXTURE ADJUSTMENT

EXHAUST GAS ANALYZER PROCEDURE

Install a suitable, calibrated exhaust gas analyzer. Disconnect Emission Control pump air supply hose at pump or check valve. Do not adjust for drop in engine RPM. Note amount of RPM drop. With air cleaner installed, take an analyzer reading. Adjust idle mixture screws within range of limiter caps to obtain specified air/fuel ratio. Correct for any changes in engine idle RPM immediately as idle mixture screw is turned. Refer to drop in idle RPM obtained when Emission Control pump was disconnected, then correct idle speed to RPM noted.

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

Idle Limiter Cap — If proper air/fuel ratio cannot be achieved within limits of idle limiter cap, remove cap and adjust screw until proper air/fuel mixture is achieved. Install new idle mixture limiter caps in full counterclockwise position with tab of cap against stop on carburetor.

Air/Fuel Ratio

Application	Man. Trans.	Auto. Trans.
302"	14.0/1	13.8/1
360"	14.1/1	14.1/1
390"	14.1/1	14.4/1

COLD (FAST) IDLE RPM

With engine at normal operating temperature and hot (slow) idle correctly set, rotate fast idle cam until fast idle adjusting screw rests on center step of fast idle cam. Start engine and turn fast idle screw to obtain specified RPM.

Application	Man. Trans.	Auto. Trans.
302"	1000	1000
360", 390"	1200	1400

CHOKE ADJUSTMENT

Manual Choke — Place choke linkage in full choke position and gradually turn choke operating rod adjusting nut until a gauge or drill of specified clearance will just pass between choke plate and air horn wall with adjusting nut lightly against plastic swivel.

Choke Plate Setting

Application	Clearance
302"	.200"
360", 390" ①	.165"

① — Except with manual transmission and without Emission Control. This setting should be .150".

DASHPOT ADJUSTMENT

With engine at normal operating temperature, hot (slow) idle correctly set, throttle valve closed and dashpot plunger held in depressed position, loosen lock nut and adjust dashpot to 1/8 inch clearance between end of plunger and tab on throttle lever.

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. 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 valve 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 specified top speed is obtained. Reinstall adjusting hole plug, new locking wire and lead seal.

Governed Engine Speed

Application	No-Load RPM	Full-Load RPM
All	3800	3600

FUEL PUMP PRESSURE & VOLUME

Pressure (At 500 RPM)	4.5-6.4 psi
Volume (At 500 RPM)	1 pt. in 30 seconds

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

IGNITION

DISTRIBUTOR

Application	Man. Trans. ① Ford Part No.	Auto. Trans. ① Ford Part No.
302"		
U100	C8TF-F	
E100/300 ②	C7OF-A	C7OF-B
E100/300 ③	C9UF-C	C9UF-C
360", 390"	C8TF-H	C8TF-H

① — Basic number is 12127. Table gives prefix and suffix.
② — W/O Emission Control.
③ — W/Emission Control.

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

IGNITION COIL

Application	① Ford Part No.
Conventional	B6A-B
Transistorized	C3TZ-A

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

Resistance	Ohms @ 75°F
Conventional	
Primary	1.40-1.54
Secondary	7,600-8,800
Transistorized	
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"	C9UF-A	C9UF-B
360", 390"		
W/O Emission Control	C8TF-Z	C8TF-AZ
W/Emission Control	C9TF-J	C9TF-K

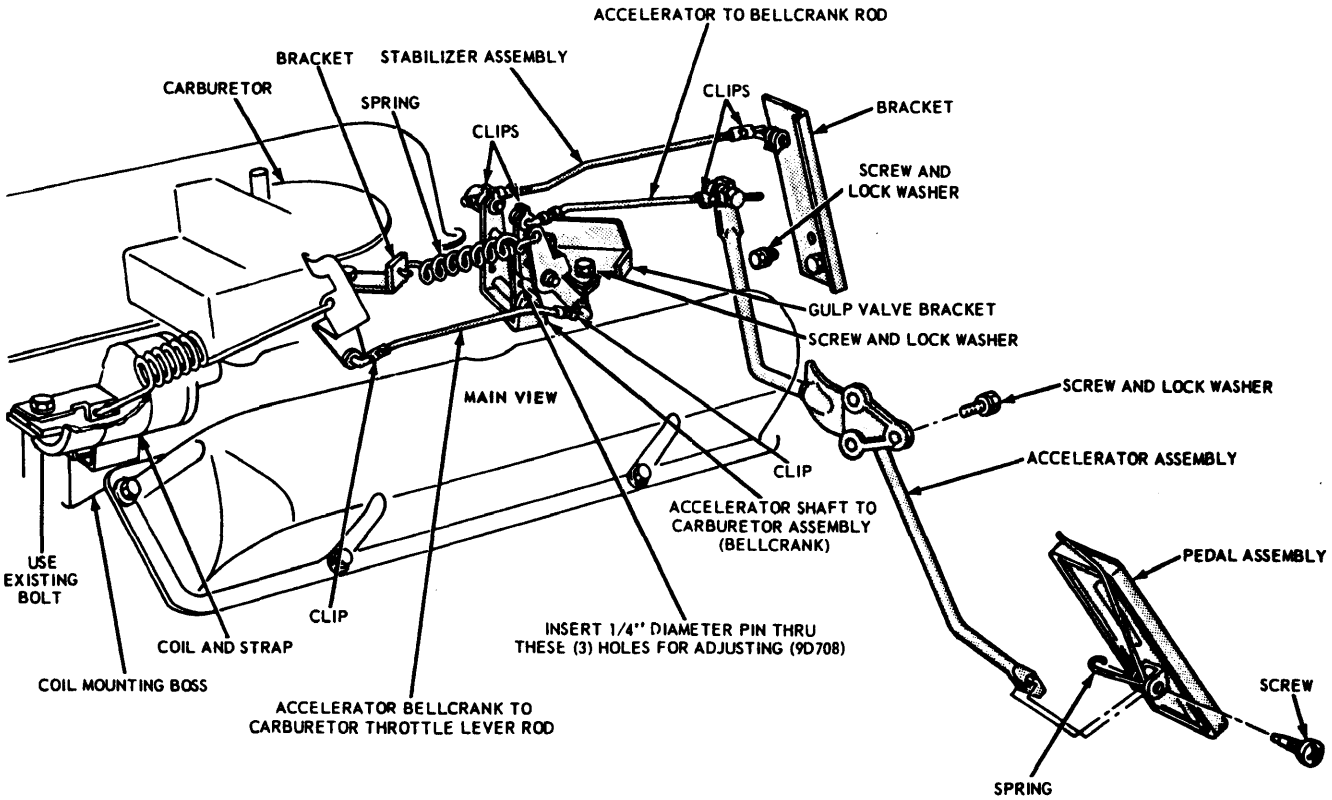
① — Basic number is 9510. Table gives prefix and suffix.

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

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

Accelerator Linkage Adjustment — Disconnect retaining clip and bellcrank stabilizer clevis from bellcrank assembly. Insert 1/4" (5/16" on E100/300) 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. *NOTE — Make sure clip is positioned securely.* 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 assembly ONE turn. Reinstall clips and tighten all nuts and bolts.

Downshift Linkage Adjustment — With accelerator linkage correctly adjusted, hold throttle in wide open position. Place .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.



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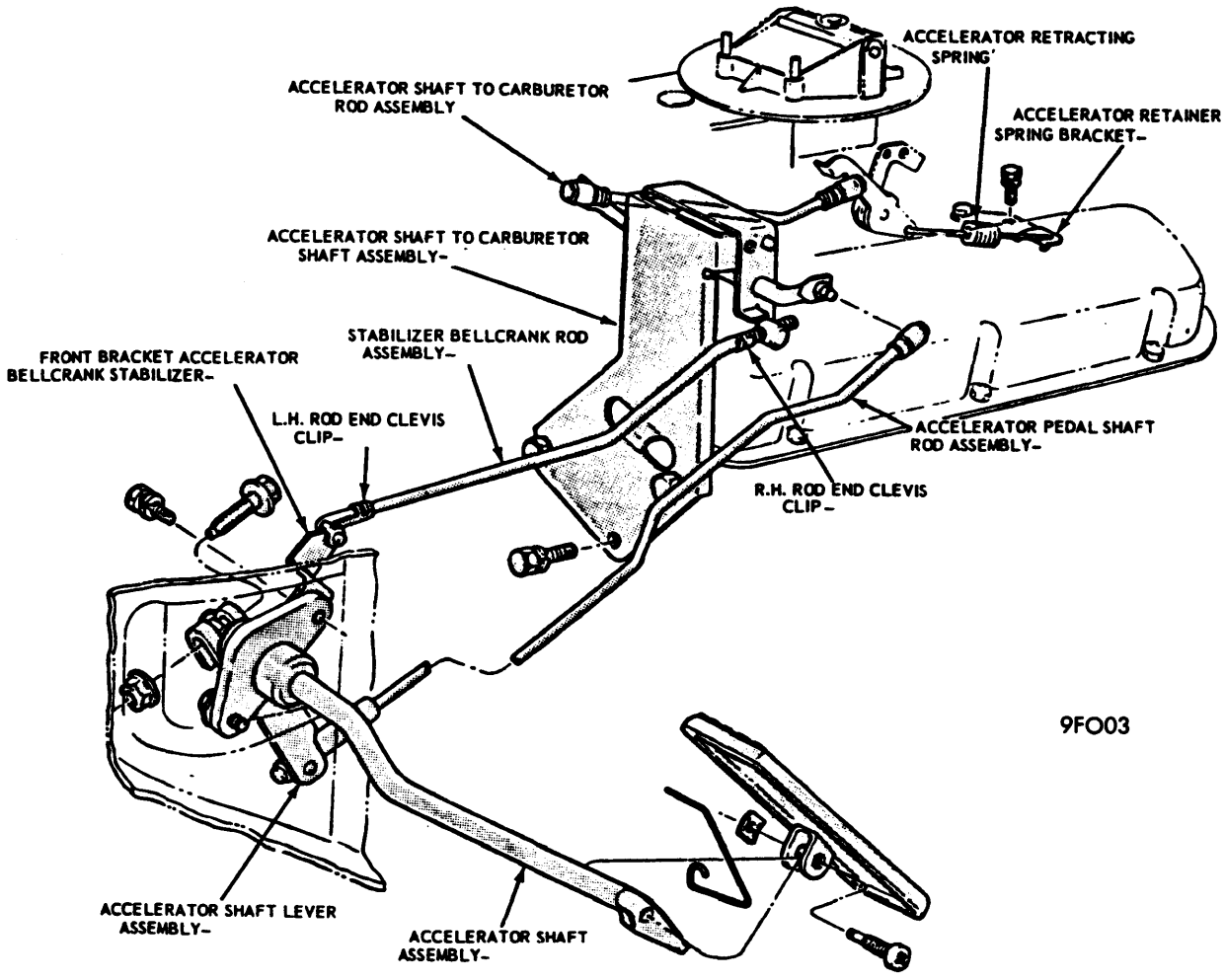
ACCELERATOR LINKAGE (EXCEPT E100/300)

CARBURETION (Cont.)



ACCELERATOR LINKAGE (E100/300)

ELECTRICAL

BATTERY

12 Volt – Negative Ground.

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

STARTER

Application	① Ford Part No.
302"	
Man. Trans.	C5TZ-D
Auto. Trans.	C2OZ-B
360", 390"	C3OZ-C

① – Basic number is 11002. Table gives prefix and suffix.

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

ALTERNATOR

Application	I.D. Color (Amps.)	① Ford Part No.
F100/350	Purple (38)	D0AZ-E
U100	Purple (38)	D2AZ-C
F100/350	Orange (42)	D0AZ-E
U100	Orange (42)	D2AZ-C
All (Except U100)	Red (55)	D0AZ-F
All (Except E100)	(70)	D1AZ-A

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

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

ALTERNATOR REGULATOR

Application	① Ford Part No.
All (W/O Transistorized)	C3SZ-B
All (W/Transistorized)	C6AZ-A

① – Basic number is 10316. Table gives prefix and suffix.

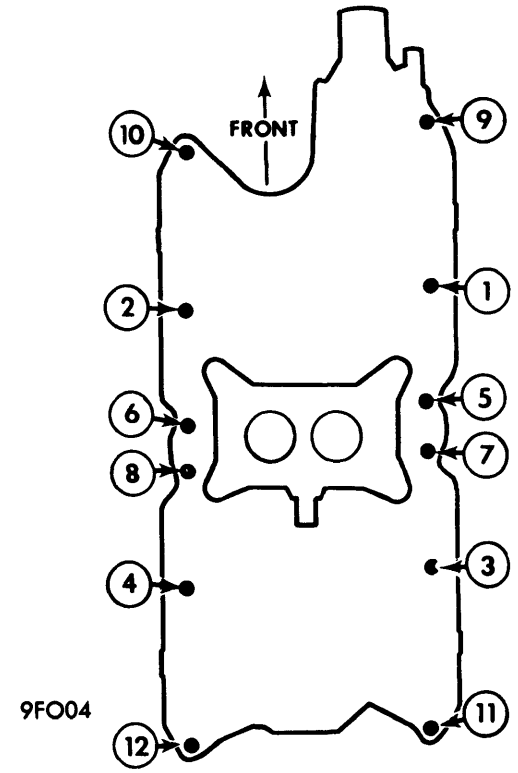
Other Data & Specifications – *See Ford Alternator Regulators in ELECTRICAL Section.*

ENGINE

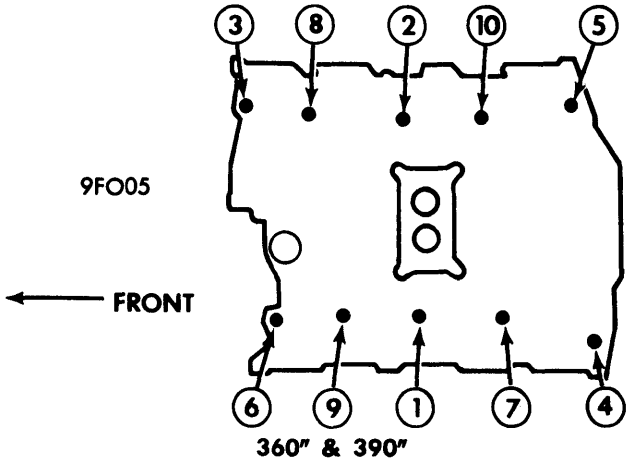
INTAKE MANIFOLD TIGHTENING

Tighten intake manifold bolts in sequence shown to specifications.

Application	Torque (Ft. Lbs.)
302"	20-22
360", 390"	32-35



302" INTAKE MANIFOLD TIGHTENING SEQUENCE



360" & 390"
INTAKE MANIFOLD TIGHTENING SEQUENCE

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

New Belt	120-140
Used Belt ①	80-110

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

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	6,000
Air Filter (Oil Bath)	6,000
Air Cleaner (Dry Type)	12,000
A.I.R. Filter	12,000
Crankcase Breather	6,000
Fuel Filter	12,000

COOLING CAPACITIES

Application	Quantity
U100	14.5 qts.
E100/300	
Standard	15.2 qts.
Heavy Duty	17.5 qts.
F100/250 (2 WD)	
Standard	21.88 qts.
Heavy Duty	22.25 qts.
F100/250 (4 WD)	22.25 qts.
F, P350	
Standard	22.25 qts.
Heavy Duty	23.88 qts.

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase (Includes Filter)	6 qts.
Fuel Tank	
U100	14.5 gals.
E100/300	24.0 gals.
F100/350 (Cab Models)	19.5 gals.
P350	17.0 gals.
F250/350 (Cowl or Windshield Models)	17.0 gals.
Drive Axles	①
Transfer Case	
F100	1.75 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-18 & 19	6.5 pts.
T-85	4 pts.
T-87G	5.5 pts.
T-89F	3.3 pts.
New Process 435	6.75 pts.

① — Fill to bottom of filler plug hole.