

TUNE-UP

ENGINE IDENTIFICATION

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

Application	Code
170" 6-Cyl.....	F
240" 6-Cyl.	A
300" 6-Cyl.	B

MODEL IDENTIFICATION

RATING PLATE

F100/350, E100 - 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 in inner panel of glove box door.

Cowl & Windshield Models - Rating Plate is mounted on right side of cowl top panel or upper cowl panel under hood.

P35TUA37000

- First Digit - Truck Series Letter.
- Second & Third Digits - Truck Series Numbers.
- 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 throttle wide open at cranking speed. Compression pressure should be at least 75% of highest reading.

VALVE ARRANGEMENT

- 170" - E-I-E-I-E-E-I-E-I-E (front to rear).
- 240" & 300" - E-I-E-I-E-I-E-I-E-I (front to rear).

VALVE TAPPET CLEARANCE

Application	Mechanical	Hydraulic
170"018"	
240" & 300"		⓪.082-.152"

⓪ - One turn down after contact. Clearance is with tappet collapsed.

SPARK PLUGS

Gap032-.036"
Torque.....	15-20 ft. lbs.

Spark Plug Type

Application	Autolite No.
170"	BF-82
240" & 300"	BTF-42

DISTRIBUTOR

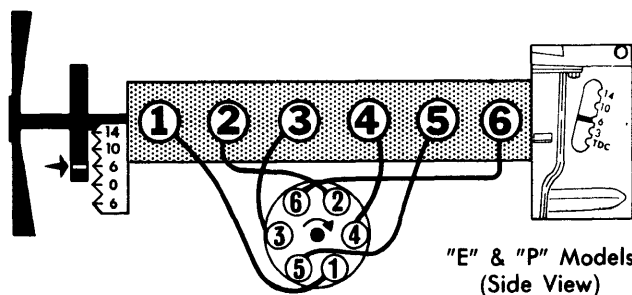
Point Gap;	
170"027"
240" & 300" E100 Bus & F100	⓪.027"
240" & 300" E100 Van, F250/350 & P350025"

⓪ - .025" on F100 240" Auto. Trans.

Cam Angle;	
170"	35-40
240" & 300" E100 Bus & F100	35-40

Breaker Arm Spring Tension	⓪17-21 ozs.
Condenser Capacity21-.25 mfd.

⓪ - 15-18 ozs. for pivotless points.



FIRING ORDER & TIMING MARKS

IGNITION TIMING

With engine at normal operating temperature, disconnect distributor vacuum line(s) and plug line(s). Install timing light to number one spark plug. Check and adjust timing at idle.

Timing Degrees BTDC

Application	Man. Trans.	Auto. Trans.
170"	6°	
240" & 300";		
W/O Emission Control.....	6°	10°
W/Emission Control	6°	6°

1969 Ford 6 Tune-Up

TUNE-UP (Cont.)

HOT (SLOW) IDLE RPM

Set parking brake and bring engine to normal operating temperature. Check timing and dwell and install a tachometer. Place automatic transmission in "D" or manual transmission in neutral. Seat hot idle compensator (if equipped), turn headlights to high beam and air conditioning "ON". With air cleaner installed, adjust curb idle RPM to specifications. Adjust mixture screw for smoothest idle within range of idle limiter caps. Stop engine and adjust fuel bowl vent valve (Autolite carburetor only). 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 MIXTURE ADJUSTMENT

EXHAUST GAS ANALYZER PROCEDURE

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

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

Idle Limiter Cap or Screw — If proper air/fuel mixture cannot be achieved within limits of idle limiter cap, remove cap and adjust mixture screw until proper air/fuel mixture is achieved. Replace with a colored idle mixture limiter cap.

Application	Air/Fuel Ratio
All Models.....	13.9

COLD (FAST) IDLE RPM

Autolite Carburetors — With engine at normal operating temperature and hot (slow) idle properly adjusted, manually rotate fast idle cam until fast idle adjusting screw rests on center step on cam. Start engine and turn fast idle adjusting screw to obtain specified RPM.

Carter Carburetors — Open throttle valve and hold choke valve fully closed to allow fast idle cam to revolve to fast idle position. Bend choke connector rod until there is light contact between fast idle arm and stop on carburetor body.

Hot (Slow) Idle RPM

Application	Man. Trans.	Auto. Trans.
170"	750	
240" & 300";		
W/Emission Control	①600	②500
W/O Emission Control.....	600	525
① — 775 RPM with solenoid energized and 500 RPM with solenoid de-energized on 240" engines.		
② — 525 RPM Calif. 240" engines only.		

Cold (Fast) Idle RPM

Application	Man. Trans.	Auto. Trans.
240" W/Emission Control		2700
300" W/Emission Control....	2700	2700

GOVERNOR ADJUSTMENT

240" & 300" — On vehicles equipped with conventional velocity governor, connect a tachometer to engine. With engine at normal operating temperature and throttle at wide open position, compare RPM with operating range stamped on governor plate. If adjustment is required, remove governor seal. To increase RPM, turn cap counterclockwise and clockwise to decrease RPM. With adjustment complete, stop engine and seal cap.

Application	No-Load RPM	Full Load RPM
240"	4000	3800
300"	3800	3600

FUEL PUMP PRESSURE & VOLUME

Pressure (at 500 RPM).....	4-6 lbs.
Volume	1 pt. in 30 sec.

MANIFOLD HEAT CONTROL VALVE

240" & 300" — Check valve for freedom of movement and lubricate with a suitable solvent (Rotunda COAZ-19A501-A).

EMISSION CONTROL

See *Appropriate article in EMISSION CONTROL Section.*

IGNITION

DISTRIBUTOR

①Ford Part No.

Application	Man. Trans.	Auto. Trans.
170"	C9UF-F	
240"	②C9UF-A, ②C8AF-A,	②C9UF-A, C6TF-AC, AD.....
300"	②C8TF-D, U, C6TF-AF.....	②C9TF-J, C6TF-AG, ②C8TF-U

① — Basic part number is 12127.

② — With emission control.

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

IGNITION COIL

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

① — Basic part number is 12029.

Resistance	Ohms @ 75°F
Conventional;	
Primary	1.40-1.54
Secondary	7600-8800
Transistorized;	
Primary	226-251
Secondary	4900-5680

CARBURETION

CARBURETORS

① Autolite Model 1101

Application	Man. Trans.	Auto. Trans.
240"	C8UF-S, C8TF-L	C8UF-R, ②C8TF-C
300"	②C9TF-G, ②H, C8TF-T,U	C8TF-S, ②F

① Carter Model YF

Application	Man. Trans.	Auto. Trans.
170"	C8TF-BE	
240"	C8UF-M, C9TF-M, ③E	③C9TF-E
300"	③C9TF-F	③C9TF-F

① - Basic part number is 9510.

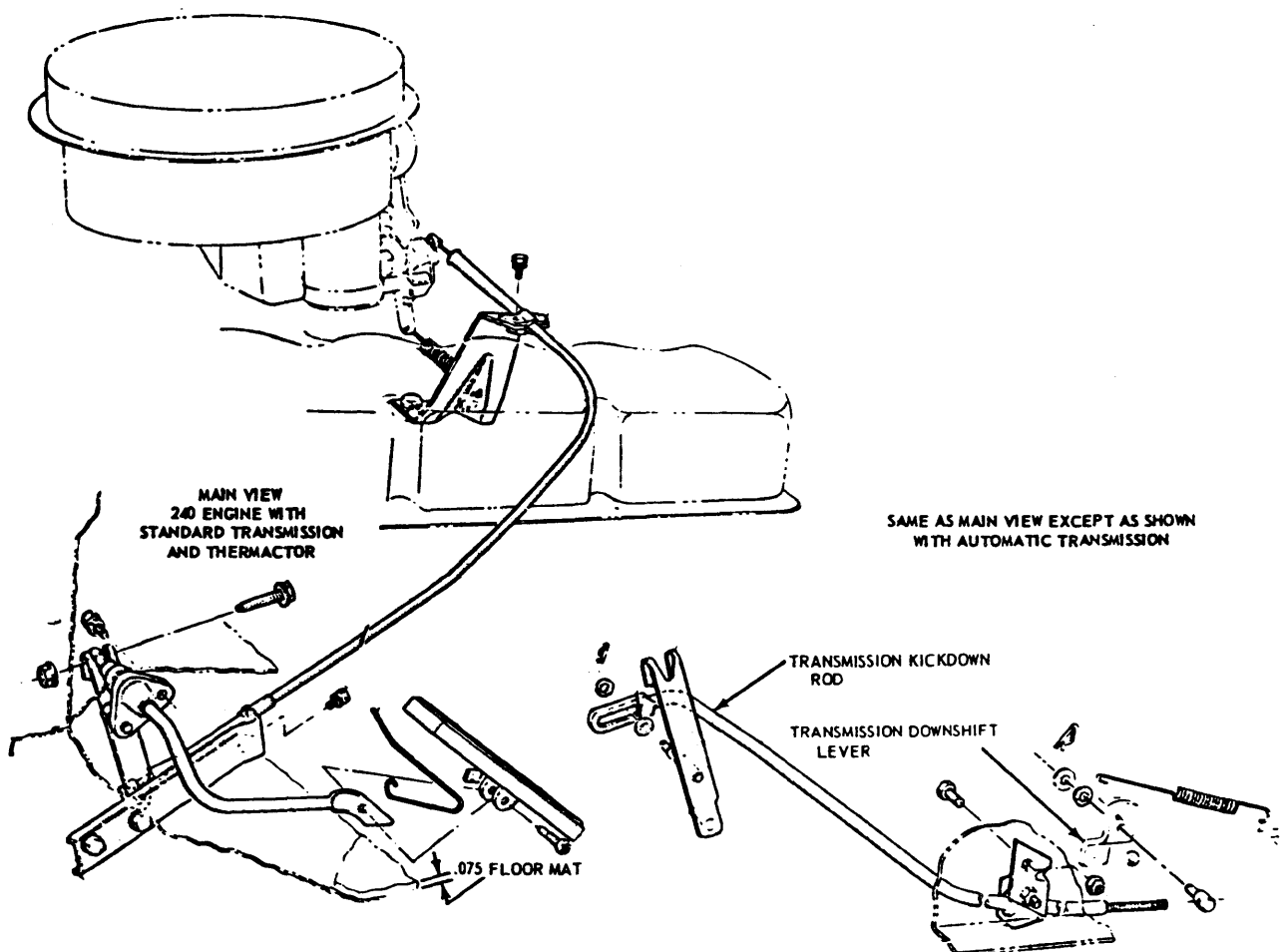
② - With emission control.

③ - Calif. only.

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

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

E100 170" & 300" - Remove engine cover and air cleaner. Place accelerator pedal in wide open position and check throttle valve position. Loosen throttle cable clamp and move cable in or out until throttle valve is wide open. Tighten throttle cable clamp. On 240" engines with automatic transmission, hold accelerator pedal in wide open position. Disconnect downshift rod at transmission downshift lever. Move downshift rod to maximum rearward position. Move transmission downshift lever to maximum forward position. Adjust downshift rod trunnion so that it slips freely into downshift lever, then lengthen rod one or two turns of the trunnion. Tighten and reinstall trunnion and downshift rod.

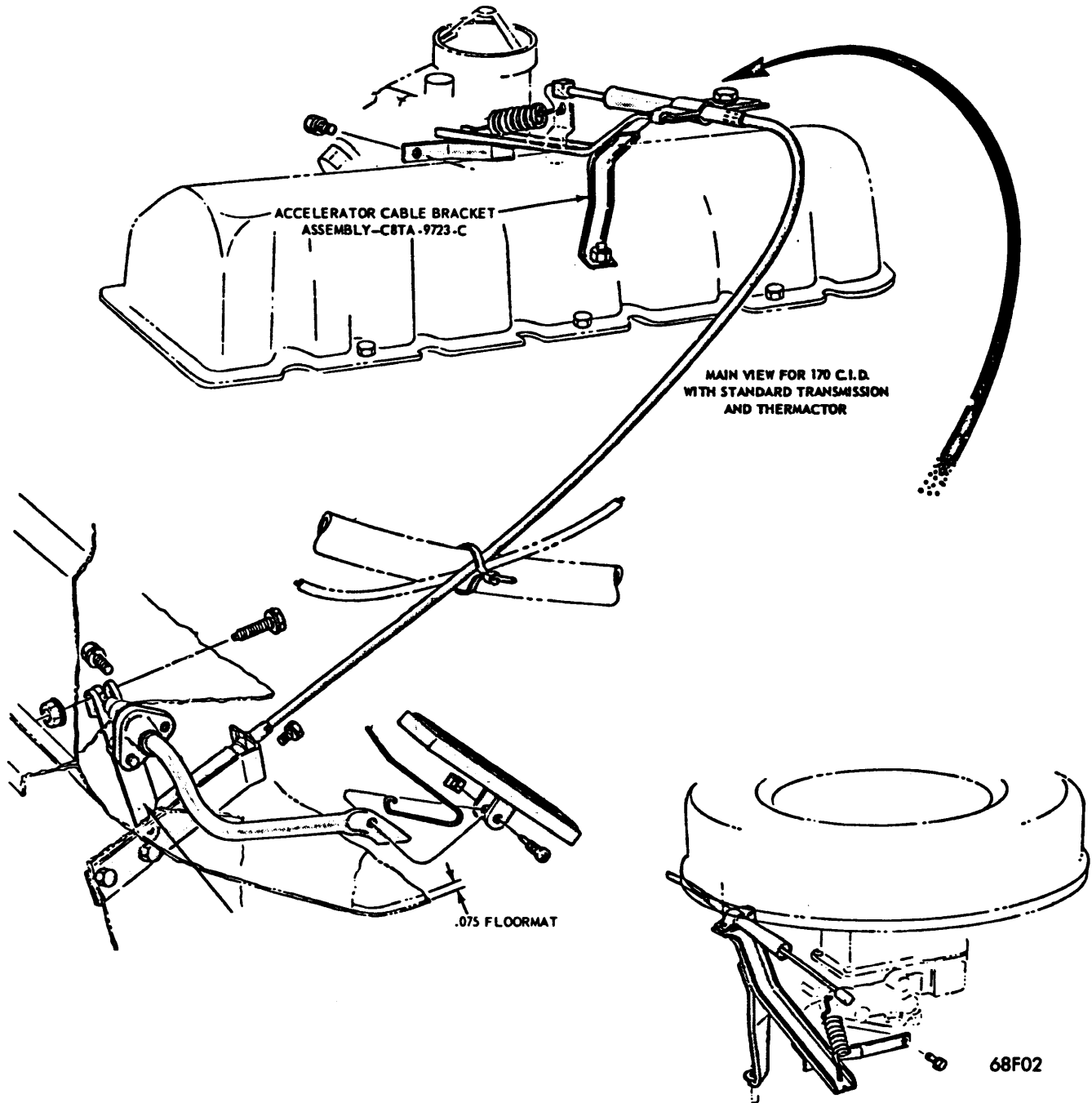


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ACCELERATOR & DOWNSHIFT LINKAGE E100 240"

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CARBURETION (Cont.)

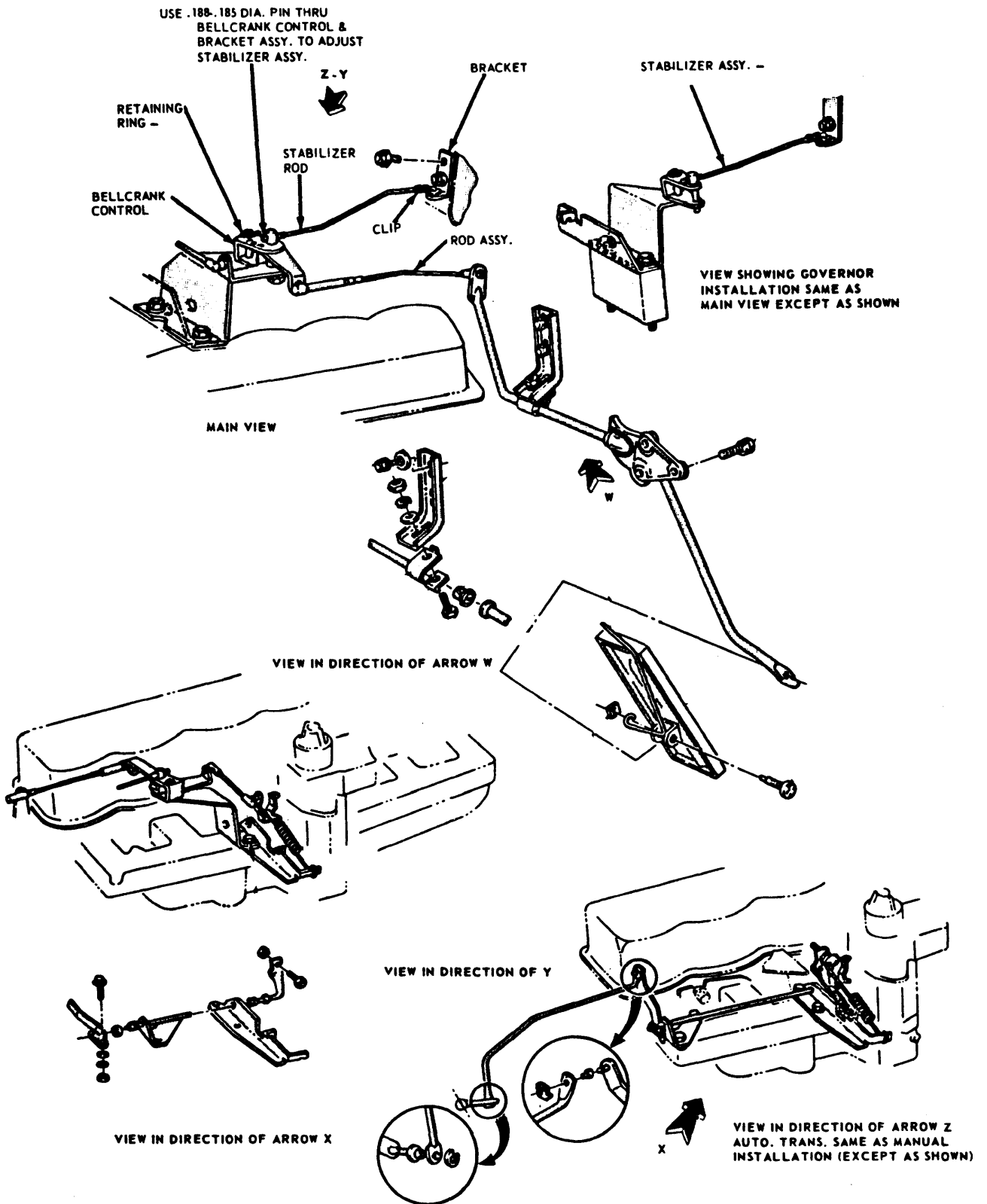


ACCELERATOR LINKAGE E100 170" (MAN. TRANS.)

F100/350, F100 & 250 (4x4) 240" & 300" (Man. Trans.) - Disconnect clip at end of stabilizer rod. Insert .185-.188" diameter pin thru three holes in bellcrank and bracket assembly. Adjust length of stabilizer assembly so rod enters bracket freely. Install clip at end of stabilizer rod and

remove .185-.188" pin. Depress the accelerator pedal to floor. Bring carburetor throttle lever to wide open position (against stop), by pushing rearward on bellcrank assembly. Adjust rod assembly to install on ball studs, shorten one turn and install rod.

CARBURETION (Cont.)

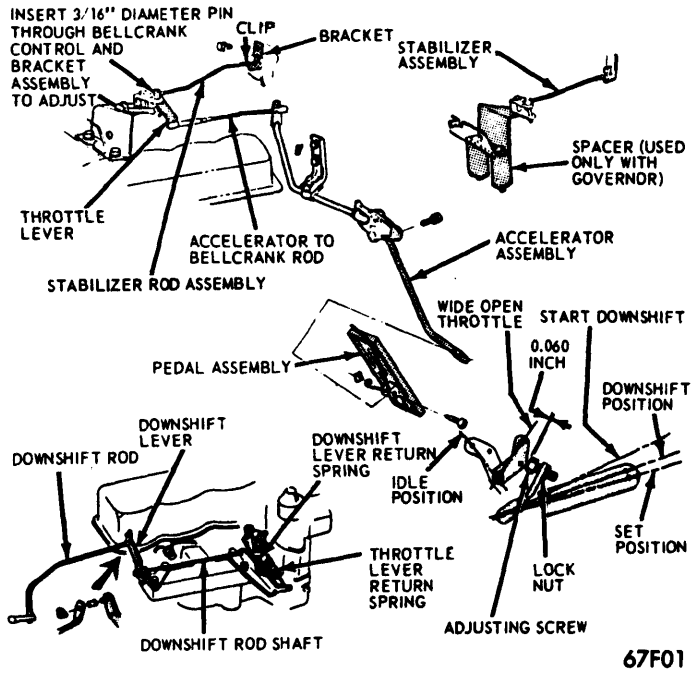


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**ACCELERATOR LINKAGE F100/350, F100 & 250
(4x4) 240" & 300" (MAN. TRANS.)**

CARBURETION (Cont.)

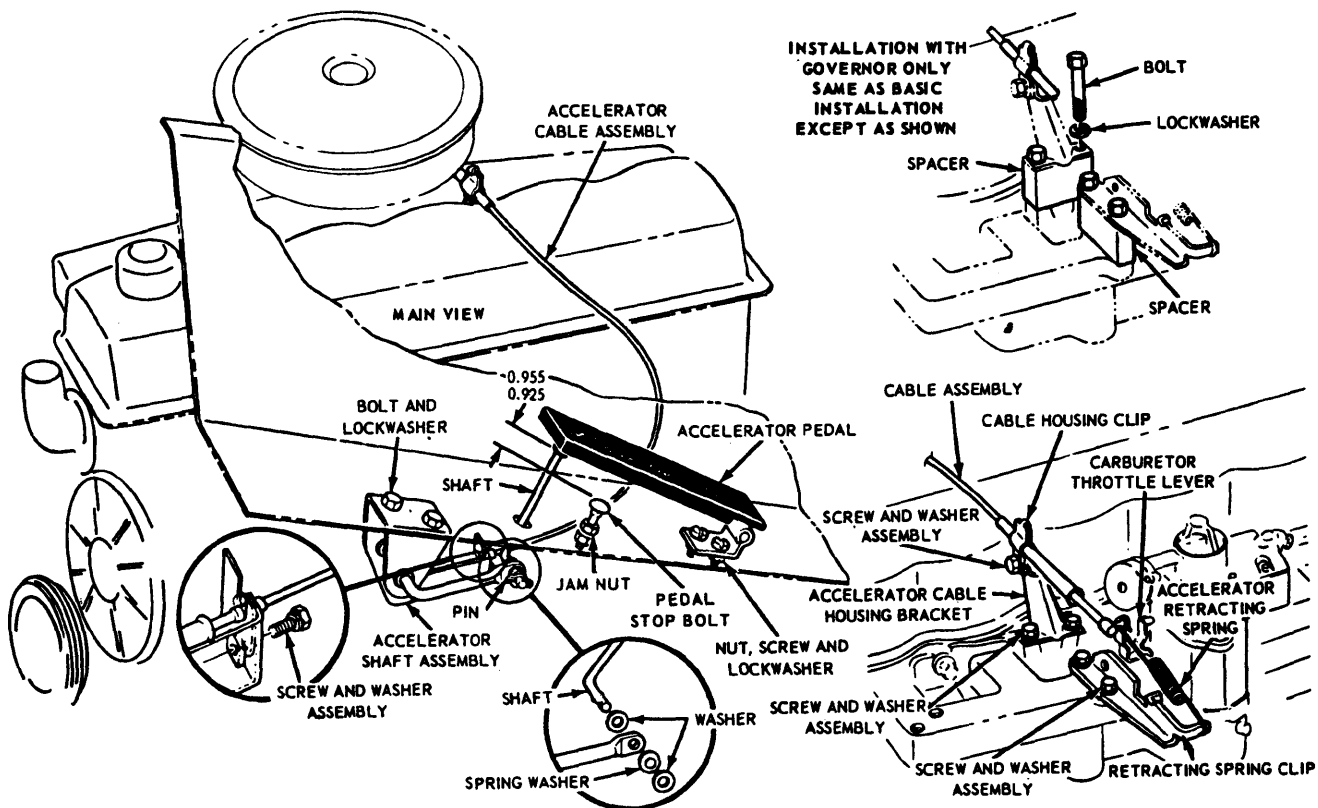
F100/350 (Auto. Trans.) - Disconnect clip from bracket assembly. Insert $\frac{3}{16}$ " diameter pin through holes in bellcrank assembly. Adjust bellcrank stabilizer so that rod fits freely into bracket. Install clip and remove pin. Disconnect accelerator-to-bellcrank rod from bellcrank. Depress accelerator pedal to floor. Move throttle lever to wide open position. Adjust so that rod fits freely on ball stud, then shorten rod one complete turn and install. Hold throttle in wide open position. Hold a .060" feeler gauge between throttle lever and adjustment screw (see illustration). Loosen adjusting screw lock nut. Turn adjusting screw to place downshift lever on transmission against internal stop. Tighten adjusting screw lock nut.



67F01

ACCELERATOR LINKAGE F100/350 (AUTO. TRANS.)

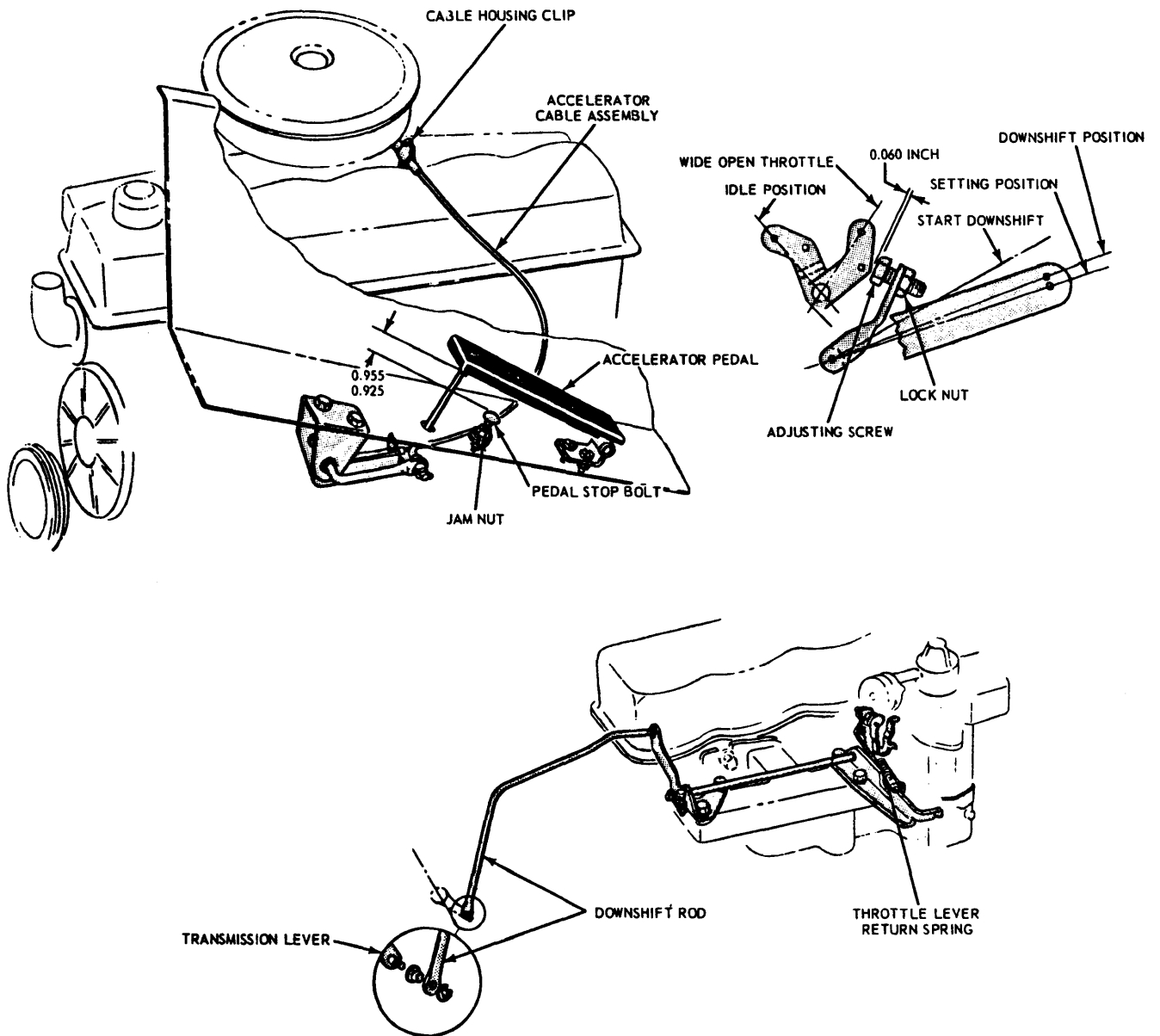
P350 240" & 300" - With idle speed and fuel mixture properly adjusted, loosen jam nut and adjust pedal stop bolt (see illustration). Tighten jam nut. Disconnect accelerator return spring and loosen accelerator cable clamp. Depress accelerator pedal to stop and slide cable rearward until throttle is wide open. Tighten cable clamp and reinstall return spring. On automatic transmission, hold throttle in wide open position. Place a .060" feeler gauge between throttle lever and adjusting screw. Loosen lock nut and adjust screw until downshift lever on transmission is against internal stop. Tighten lock nut and remove feeler gauge.



66F02

ACCELERATOR LINKAGE P350 240" & 300" (MAN. TRANS.)

CARBURETION (Cont.)



68F04

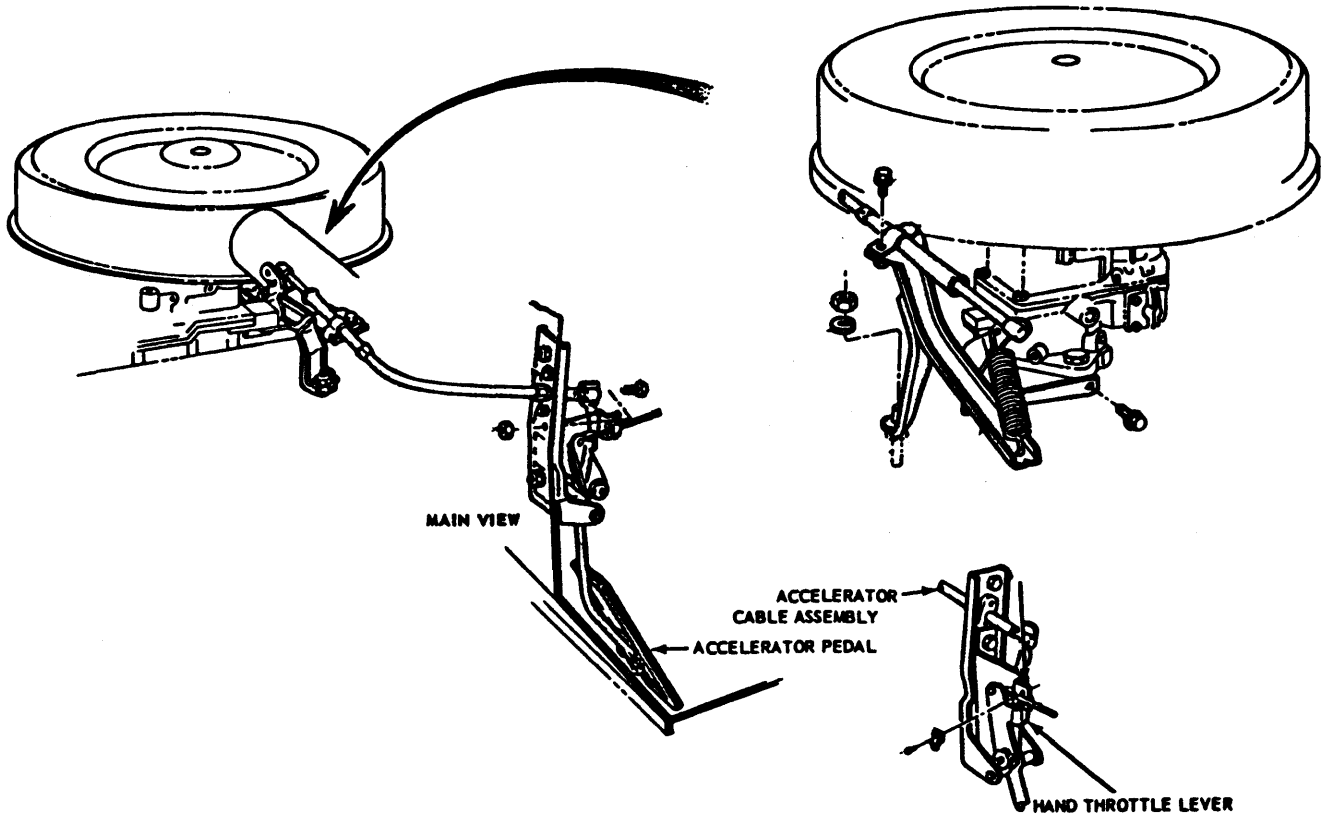
ACCELERATOR LINKAGE P350 240" & 300" (AUTO. TRANS.)

U100 - Loosen accelerator cable clamp. With choke valve fully open and throttle valve completely closed, slide cable housing rearward until accelerator cable bottoms against cable sleeve. Tighten cable clamp.

U100 Hand Throttle - With throttle valve completely closed and throttle knob pressed against instrument panel, loosen hand throttle cable clamp at accelerator lever. Loosen hand throttle lever clevis to cable screw. Hold hand throttle lever stop against accelerator lever and bracket. Pull hand throttle cable tight in clevis. Tighten clevis screw and cable clamp screw.

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CARBURETION (Cont.)



66F06

ACCELERATOR LINKAGE U100 170"

ELECTRICAL

BATTERY

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

STARTER

Application	①Ford Part No.
E100 170"	C30Z-C
U100	C60Z-A
E, P, F100/350 (Man. Trans.) 240" & 300"	C5TZ-D
E, P, F100/350 (Auto. Trans.) 240" & 300"	C20Z-B

① - Basic part number is 11002.

Other Data & Specifications - See Ford Starters in ELECTRICAL Section.

ALTERNATOR

Application	Amps. & I.D. Color	①Ford Part No.
F100/350	38 Purple	D0AZ-E
U100	38 Purple	D2AZ-C
U100	42 Orange	D2AZ-C
P,F100/350	42 Orange	D0AZ-E
E,P,F100/350, U100	55 Red	D0AZ-F
P350 & F100/350	70	D1AZ-A

① - Basic part number is 10346.

Other Data & Specifications - See Motorcraft Alternators in ELECTRICAL Section.

ALTERNATOR REGULATOR

Application	①Ford Part No.
All Models	C3SZ-B
All Models (Exc. Alt. No. D0AZ-F & D2AZ-C)	②C6AZ-A

① - Basic part number is 10316.

② - Transistorized.

Other Data & Specifications - See Motorcraft Alternator Regulators in ELECTRICAL Section.

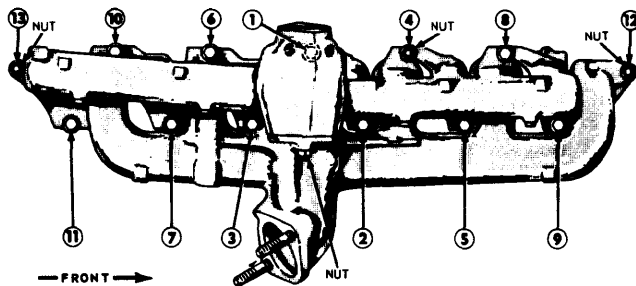
ENGINE

INTAKE MANIFOLD TIGHTENING

Working from the center outward, tighten nuts and bolts to specifications.

Intake Manifold Tightening (Ft. Lbs.)

Application	Intake	Exhaust
170"		13-18
240"	28-33	23-28
300"		20-25



65F06

INTAKE & EXHAUST MANIFOLD TIGHTENING SEQUENCE 240" & 300"

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	①6000
Air Cleaner (Oil Bath)	①6000
Air Cleaner (Dry Type)	12,000
A.I.R. Filter	12,000
Crankcase Breather	①6000
Fuel Filter	②12,000

- ① - More often under dusty conditions. P350 4000 miles.
- ② - 24,000 miles on F100/350 & P350.

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

New	110-140 lbs.
Used①	80-110 lbs.

- ① - Belt run for a minimum of 10 minutes is considered used.

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase①	
170"	③3.5 qts.
240"	④5 qts.
300"	5 qts.
Fuel Tank	
U100	14.5 gal.
E100	24 gal.
F100/350 (Cab Models)	19.5 gal.
P350	17 gal.
F250 & 350 (Cowl or Windshield Models)	17 gal.
T-89F	3.3 pts.
New Process 435	6.75 pts.
Drive Axles.....②	
Transfer Case	
F100	1.75 pts.
F250	4.5 pts.
U100	2.75 pts.
Automatic Transmission	
Ford C-4	10.25 qts.
Ford C-6	12.75 qts.
MX-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.

- ① - Add 1 qt. with filter change.
- ② - Fill to bottom of filler hole.
- ③ - Bronco is 6 qts.
- ④ - F100/250 (4x2) are 4 qts.

COOLING CAPACITIES

Application	①Quantity (Qts.)
E100 & U100 170"	9.2
E100 240"	14.4
E100 240" A/C	16.7
F100/250 240" & 300" (4x4) Man. Trans.	14.4
F100/250 240" Man. Trans.	13.2
F100/250 240" & 300" Auto. Trans.	14.4
F100/250 240" & 300" E.C. W/Auto. Trans.	16.7
F100/250 240" & 300" A/C	16.7
F100/250 240" E.C. W/Man. Trans.	14.4
F100/250 300" Man. Trans.	14.4
F100/250 300" E.C. W/Man. Trans.	16.7
F350 Man. Trans.	②14.4
F350 E.C. W/Man. Trans.	③16.7
F350 Auto. Trans.	16.7
F350 E.C. & A/C	18.3
P350	18.1

- ① - Includes 1 qt. for std. heater.
- ② - With dual rear wheels 16.7 qts.
- ③ - With dual rear wheels 18.3 qts.