

## TUNE-UP

### ENGINE IDENTIFICATION

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

<b>Application</b>	<b>Code</b>
200" 6-Cyl. ....	T
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.

**U100** - Rating Plate is located on 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.

**F25YLQ00000**

**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 TAPPET CLEARANCE

<b>Application</b>	<b>Clearance</b>
200" .....	⓪.079-.129"
240" & 300" .....	⓪.124"

⓪ - Clearance is with tappet collapsed.

### VALVE ARRANGEMENT

**200"** - E-I-I-E-I-E-E-I-E-I-E-I-E (front to rear).

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

### SPARK PLUGS

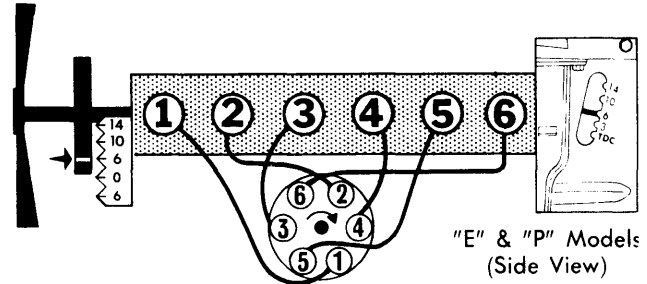
Gap .....	.032-.036"
Torque.....	15-20 ft. lbs.

<b>Application</b>	<b>Spark Plug Type</b>	<b>Autolite No.</b>
200" .....		BRF-82
240" .....		BRF-42
300" .....		⓪BRF-41, 42

⓪ - BRF-31 used on 6000-10,000 GVW vehicles.

### DISTRIBUTOR

Point Gap.....	.027"
Cam Angle.....	33-39°
Breaker Arm Spring Tension .....	17-21 ozs.
Condenser Capacity .....	.21-.25 mfd.



### 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 600 RPM.

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

#### 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. Turn headlights to high beam and air conditioning "OFF". With air cleaner installed, adjust curb idle RPM to specifications. On engines equipped with idle stop solenoid, turn solenoid plunger screw in or out to obtain specified RPM. Disconnect solenoid lead wire to bullet connector, then adjust carburetor throttle stop screw to obtain 500 RPM. Reconnect solenoid lead wire and open throttle slightly by hand so solenoid plunger may extend. Adjust mixture screw for smoothest idle within range of idle limiter caps.

**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 screw within range of limiter cap to specified air/fuel ratio or CO percentage. 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** - If proper air/fuel or CO percentage cannot be achieved within limits of idle limiter cap, remove cap and adjust mixture screw until proper air/fuel or CO percentage is achieved. Replace with a colored limiter cap.

<b>Application</b>	<b>Percentage of CO</b>
200" .....	N/A
240" .....	.05
300" .....	N/A

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

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## TUNE-UP (Cont.)

### COLD (FAST) IDLE RPM

With hot (slow) idle speed properly adjusted, install a tachometer and bring engine to normal operating temperature. Manually rotate fast idle cam until fast idle screw rests on proper step of cam. Adjust fast idle screw until specified cold (fast) idle RPM is achieved.

**NOTE** — When setting fast idle speed, all vacuum distributor and EGR control must be by-passed to insure proper speeds during cold operation. Use a jumper hose from carburetor "Dist." port to vacuum advance port on distributor. Disconnect and plug EGR vacuum source.

#### Fast Idle Speed

Application	Cam Step	RPM
All Models	ⓐ	1750

ⓐ — See Emission Control Tune-Up Decal in engine compartment.

### 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 completed, stop engine and seal cap.

### 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

Application	ⓐ Ford Part No.	
	Man. Trans.	Auto. Trans.
200"	D3BF-AA, CA	
240"	D3UF-AA, BA, LA, MA	D3UF-LA, MA
300"	D3TF-GA	D3TF-GA

ⓐ — Basic part number is 12127.

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

### IGNITION COIL

Application	ⓐ Ford Part No.
Conventional	B6A-B

ⓐ — Basic part number is 12029.

Resistance	Ohms @ 75°F
Primary	1.40-1.54
Secondary	7600-8800

## CARBURETION

### CARBURETORS

Carter Model YF 1-Bbl.

Application	ⓐ Ford Part No.	
	Man. Trans.	Auto. Trans.
200"	D3BF-DC	
240"	D3TF-JA, TA, AAA,	D3UF-XA,
	D3UF-HA, UA, VA	D3TF-KA, ABA
300"	D3HF-HA, D3TF-LA	D3HF-HA, D3TF-LA

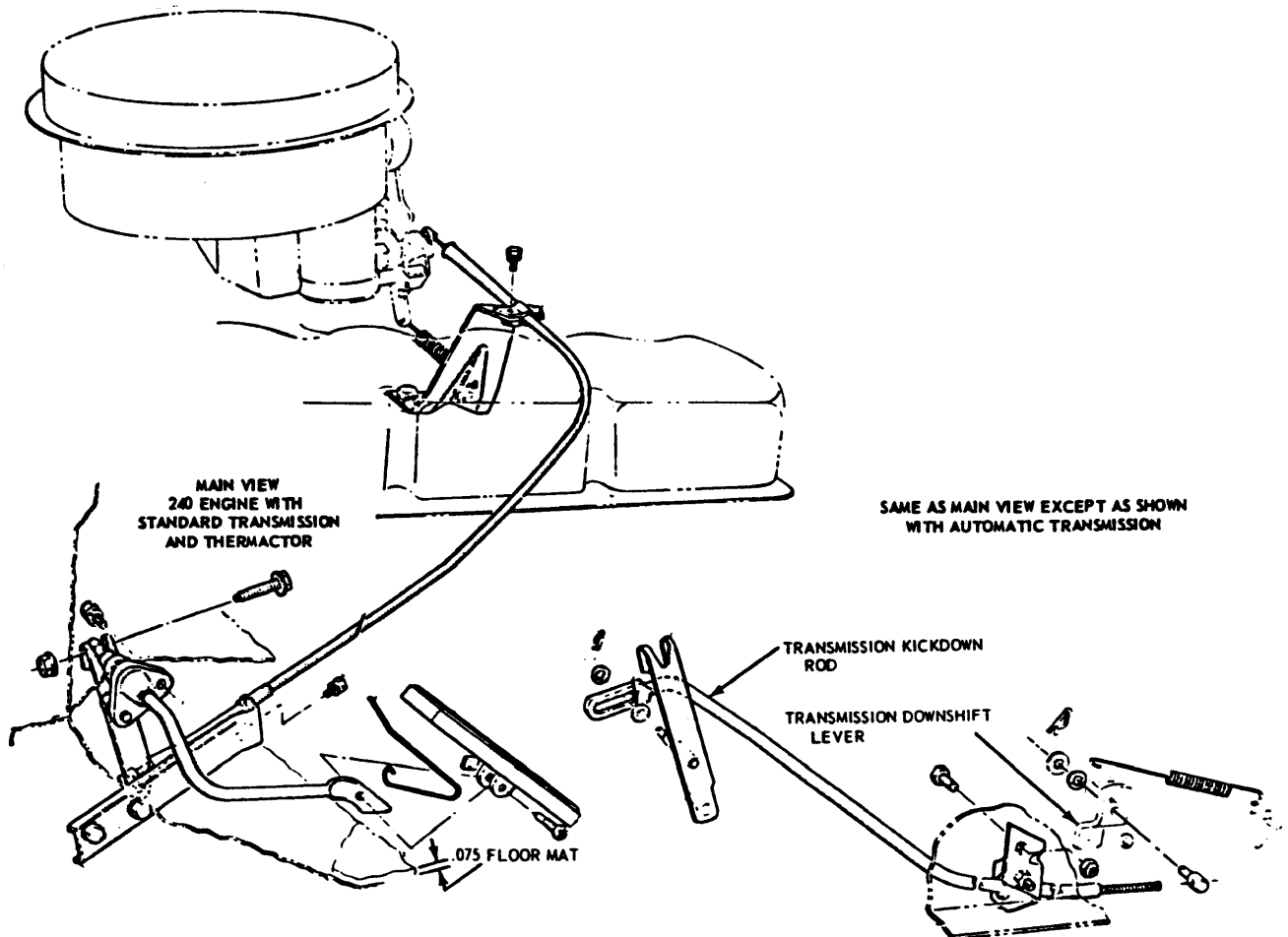
ⓐ — Basic part number is 9510.

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

### ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

**E100 240" & 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.

## CARBURETION (Cont.)



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### ACCELERATOR & DOWNSHIFT LINKAGE E100 240"

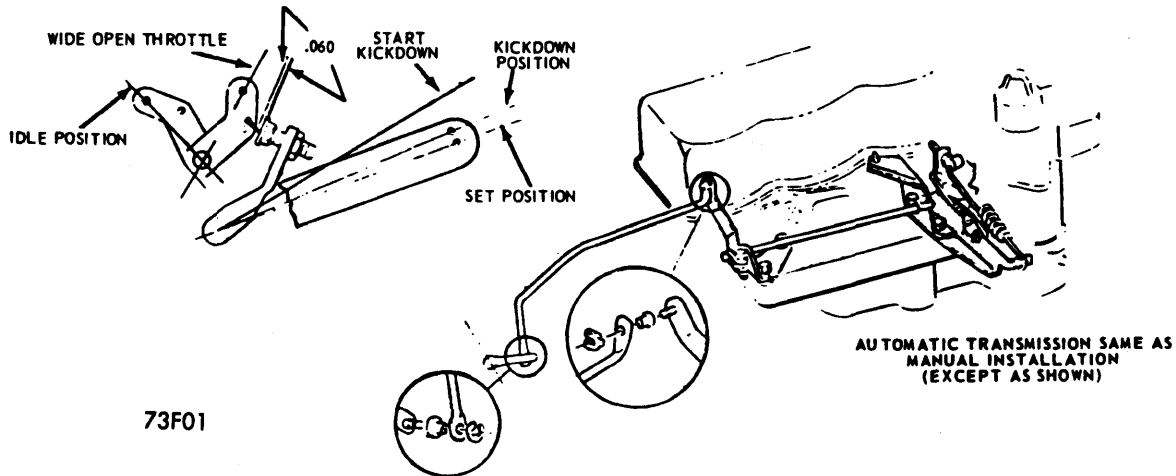
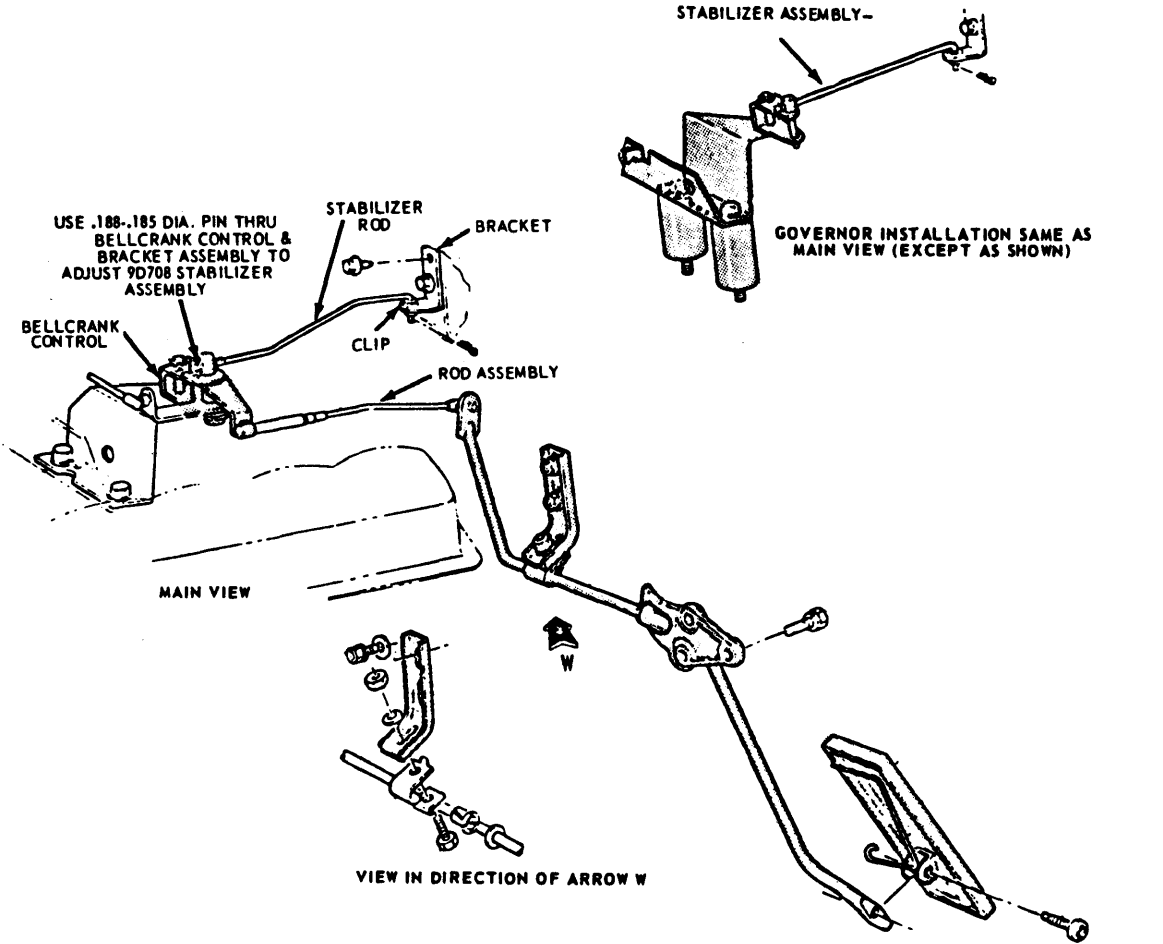
**F100/350, F100 & 250 (4x4) 240" & 300"** — Disconnect stabilizer rod at firewall and rod assembly at bellcrank assembly. Insert a .188-.185" diameter pin through three holes in bellcrank and bracket assembly. Thread stabilizer rod into bellcrank assembly until stabilizer rod will enter firewall mounted bracket. Install stabilizer rod and remove .188-.185" pin. With accelerator shaft assembly pressed to floor and carburetor throttle arm in wide open position, adjust length of rod assembly so that forward end surface just touches side of bellcrank assembly ball. Reconnect rod assembly. On automatic transmission rotate throttle to wide open position. Insert a .060" feeler gauge between throttle lever and adjusting screw. Rotate downshift lever until it reaches internal stop. Do not use downshift rod to rotate lever. Adjust screw un-

til it contacts .060" feeler gauge. Tighten lock nut and remove feeler gauge.

**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.

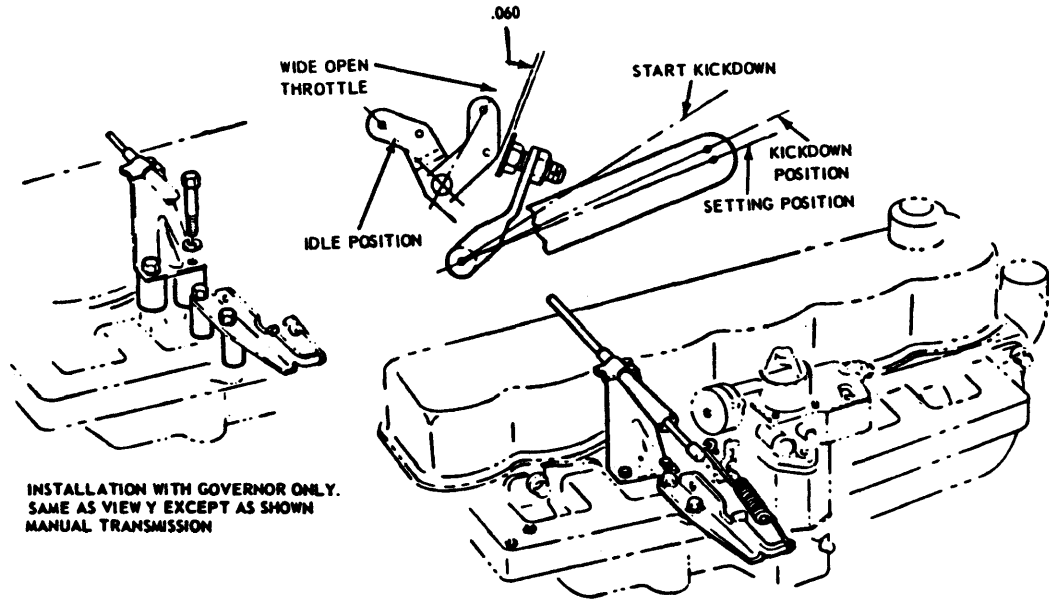
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## CARBURETION (Cont.)



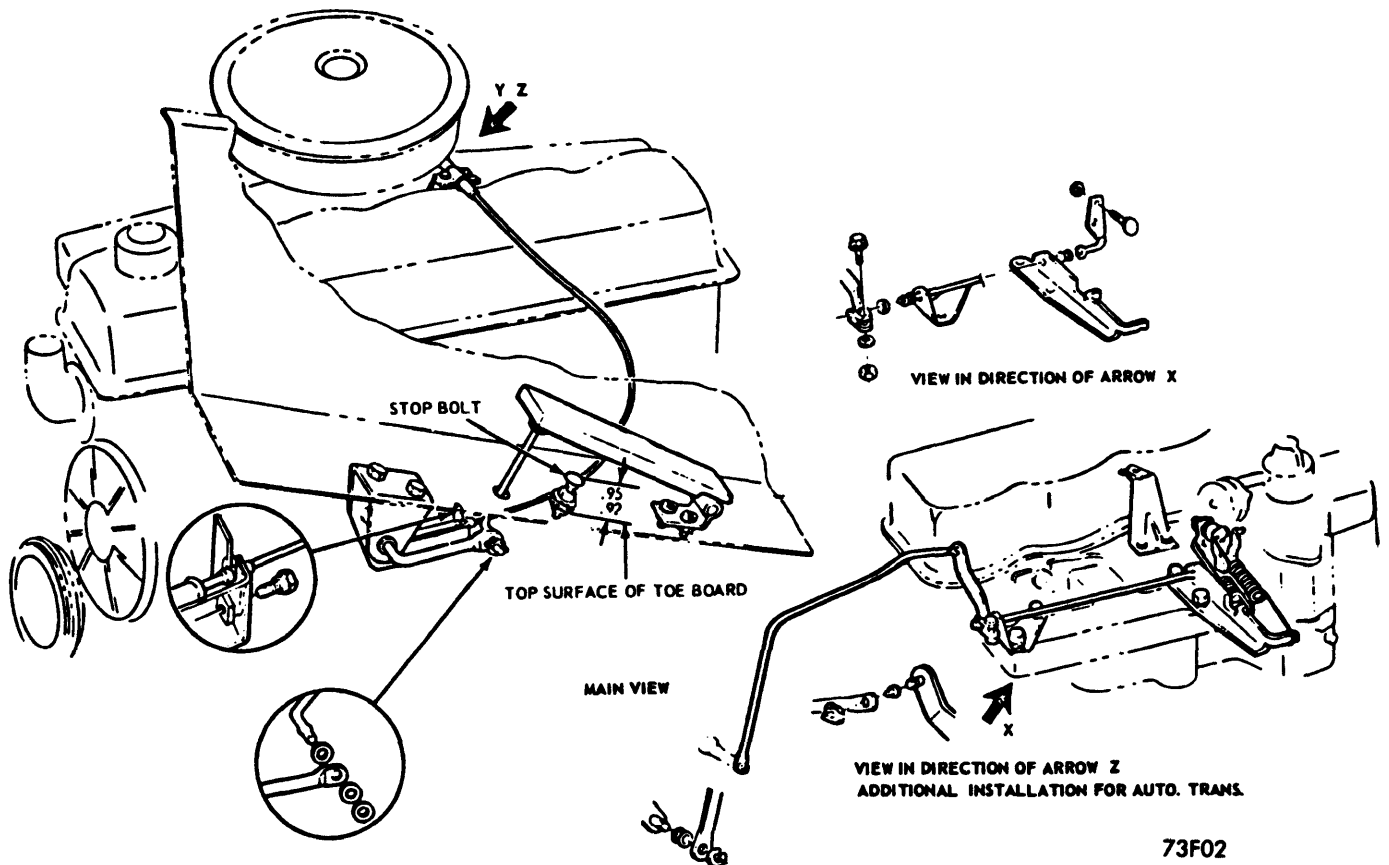
**ACCELERATOR LINKAGE F100/350, F100 & 250  
(4x4) 240" & 300"**

## CARBURETION (Cont.)



INSTALLATION WITH GOVERNOR ONLY.  
SAME AS VIEW Y EXCEPT AS SHOWN  
MANUAL TRANSMISSION

VIEW IN DIRECTION OF ARROW Y  
BASIC INSTALLATION FOR  
MANUAL & AUTO. TRANSMISSION



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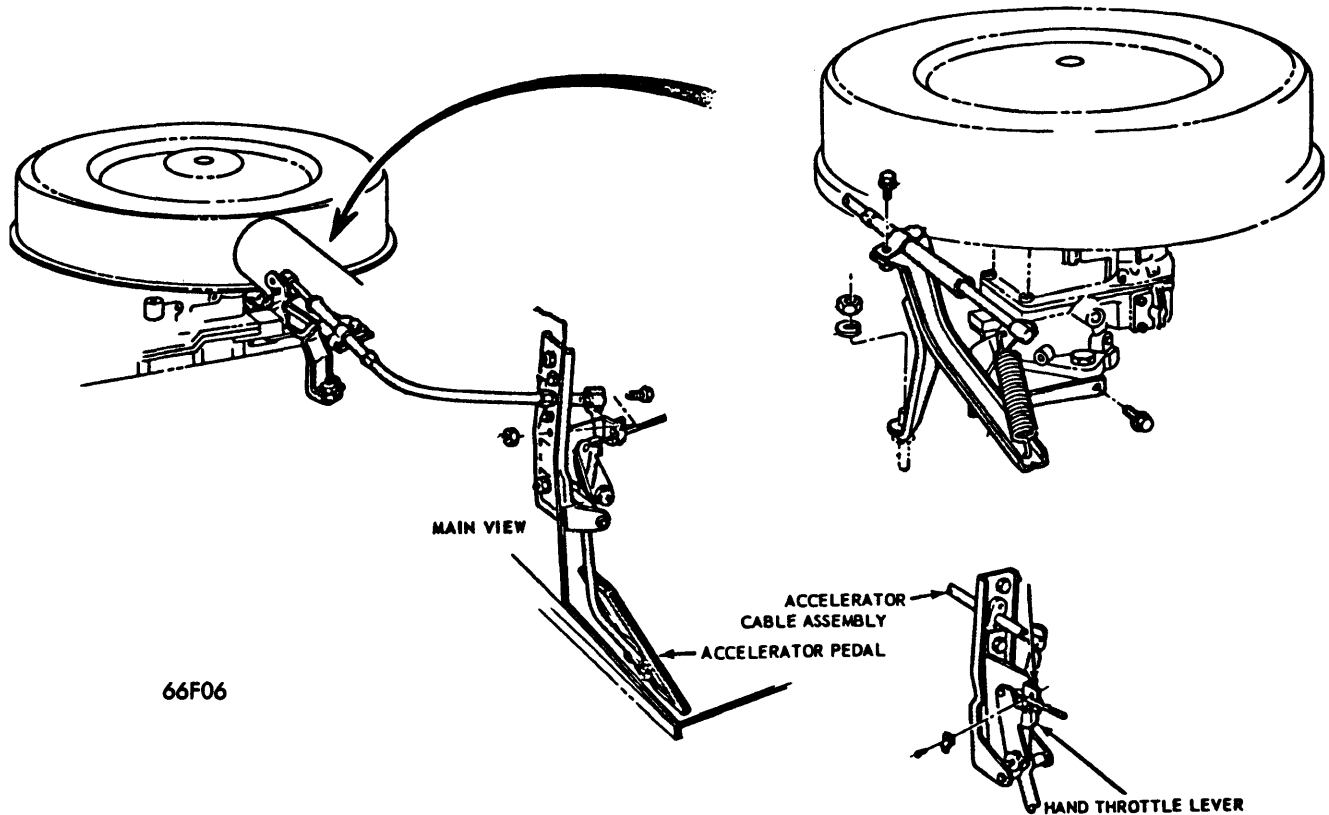
### ACCELERATOR LINKAGE P350 240°

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## CARBURETION (Cont.)

**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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ACCELERATOR LINKAGE U100 200"

## ELECTRICAL

### BATTERY

12 Volt — Negative Ground.

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

### STARTER

Application	①Ford Part No.
U100 (Man. Trans.) .....	C60Z-A
U100 (Auto. Trans.) .....	C30Z-C
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.
All Models .....	38 Purple .....	D2AZ-C
All Models .....	42 Orange .....	D2AZ-C
All Models .....	55 Red .....	D2AZ-D
E100/300 .....	61 Green .....	D2TZ-B

① — Basic part number is 10346.

**Other Data & Specifications** — See Motorcraft Alternators in ELECTRICAL Section.

### ALTERNATOR REGULATOR

Application	①Ford Part No.
All Models .....	D3TZ-A

① — Basic part number is 10316.

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

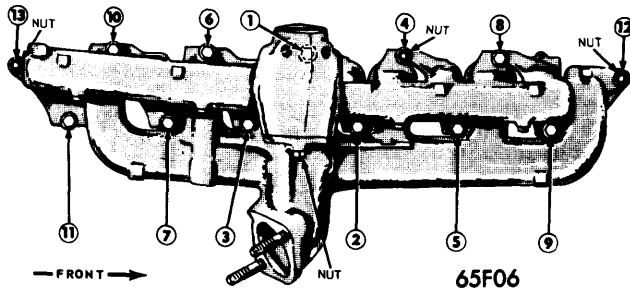
## ENGINE

### INTAKE MANIFOLD TIGHTENING

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

#### Intake Manifold Tightening (Ft. Lbs.)

Application	Intake	Exhaust
200"		13-18
240" & 300"	28-33	23-28



INTAKE & EXHAUST MANIFOLD TIGHTENING SEQUENCE 240" & 300"

### BELT ADJUSTMENT

#### Tension (Lbs.) Using Strand Tension Gauge

New	110-140 lbs.
Used <sup>①</sup>	80-110 lbs.

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

### FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	①③8000
Air Cleaner (Oil Bath)	②8000
Air Cleaner (Dry Type)	②12,000
Crankcase Breather	12,000
Fuel Filter	12,000
Emission Breather (In Air Cleaner)	②8000

- ① — 4000 miles under dusty conditions, trailer towing or stop and go driving.  
 ② — More often under dusty conditions.  
 ③ — 4000 miles on F350 and P350 with dual wheels.

### FUEL TANK CAPACITIES

Application	Quantity
U100	12.25 gal.
E100 (Exc. E300 Van)	20.25 gal.
E100 (E300 Van)	23 gal.
F100 & F250 (Calif.)	19.2 gal.
F250	20.5 gal.
F250 (4x4)	19.3 gal.
F250 (4x4) (Calif.)	17.5 gal.
F350 (Stake, Cab & Platform)	19.3 gal.
F350 (Stake, Cab & Platform) (Calif.)	17.5 gal.
F350 (Cow)	22.5 gal.
F350 (Cow)(Calif.)	20.2 gal.
F350 (Camper Special)	20.6 gal.
F350 (Camper Special) (Calif.)	19.3 gal.
P350 (104" Wheelbase)	17 gal.
P350 (122" Wheelbase)	30 gal.
P350 (122" Wheelbase) (Calif.)	23.5 gal.

### CAPACITIES (EXCEPT COOLING & FUEL)

Application	Quantity
Crankcase <sup>①</sup>	
200"	6 qts.
240"	②5 qts.
300"	5 qts.
Drive Axles	③
Transfer Case	
F100	4.5 pts.
F250	4.5 pts.
U100	2.75 pts.
Automatic Transmission	
Ford C-4	10.25 qts.
Ford C-6	12.25 qts.
FMX	11 qts.
Manual Transmission	
Ford 3.03	3.5 pts.
T-18	7 pts.
T-87G	5.5 pts.
New Process 435	6.75 pts.

- ① — Add 1 qt. with filter change.  
 ② — F100/250 and E100 are 4 qts.  
 ③ — Fill to bottom of filler hole.

### COOLING CAPACITIES

Application	①Quantity (Qts.)
E100 300"	14.5
E100 300" E.C.	16.25
U100 200"	9
E100 240" A/C	16.75
E100 240" Man. Trans. W/E.C. or Auto. Trans.	14.5
F100/250 240" & 300" (4x4) Man. Trans.	14.4
F100/250 240" & 300" (4x4) E.C. or Auto. Trans.	16.7
F100 240" Man. Trans.	14.1
F100/250 240" & 300" Auto. Trans.	14.4
F100/250 240" & 300" E.C. W/Auto. Trans.	16.3
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. W/Auto. Trans.	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.