TUNE-UP

ENGINE IDENTIFICATION

Engine can be identified by eighth digit of Vehicle Identification Number, stamped on metal plate attached to left hand side of firewall. Also on machined surface of cylinder block between numbers two and three cylinders.

232" ..... E
258" ..... A

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION PLATE

A thirteen digit Vehicle Identification Number is stamped on a metal plate affixed to left hand side of firewall under hood. Number is decoded as follows:

J3A154CA00001

First Digit – Manufacturer.
Second Digit – Model Year.
Third Digit – Transmission Type & Assembly Plant.
Fourth & Fifth Digits – Chassis Type.
Sixth Digit – Body Style.
Seventh Digit – Group (G.V.W.).
Eighth Digit – Engine Code.
Remaining Digits – Sequence Build Number.

COMPRESSION PRESSURE

With engine at normal operating temperature, spark plugs removed, throttle and choke wide open and engine at cranking speed, variation between cylinders should be no more than 10 psi.

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.

VALVE TAPPET CLEARANCE

Hydraulic Lifters ..... Zero Lash

VALVE ARRANGEMENT

E-I-I-E-I-E-E-I-E-I-I-E (front to rear).

SPARK PLUGS

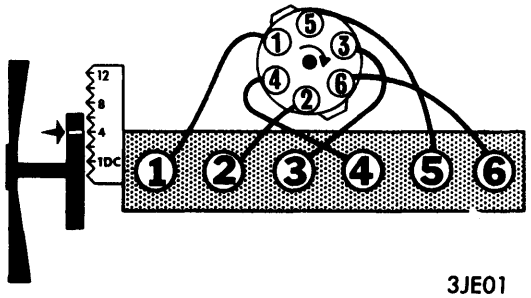
Gap ..... .033-.037"
Torque ..... 22-33 ft. lbs.

Spark Plug Type

Application	Champion No.
All	N-12Y

DISTRIBUTOR

Point Gap ..... .016"
Cam Angle ..... 31-34°
Breaker Arm Spring Tension ..... 17-21 ozs.
Condenser Capacity ..... .18-.23 mfd.



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FIRING ORDER & TIMING MARKS

IGNITION TIMING

With engine at operating temperature and running at 500 RPM, and vacuum line disconnected and plugged, set timing to specifications.

Application	Timing
232"	5° BTDC
258"	3° BTDC

HOT (SLOW) IDLE RPM

NOTE – Do not idle engine for over three minutes at a time. If idle mixture adjustment is not completed within three minutes, run engine at 2000 RPM for one minute before continuing, repeat as necessary.

To adjust idle RPM, engine must be at normal operating temperature and air cleaner installed. Idle RPM can be adjusted by either a standard tachometer procedure or a preferred "IR" Infrared Analyzer procedure. An idle limiter cap is installed on the idle mixture screw to effectively control exhaust emission levels at idle speed. This cap must be removed to perform the standard tachometer or "lean drop idle" setting. Cap does not normally need removal in "IR" procedure. To remove cap, install a sheet metal screw in center of cap and turn clockwise. Discard cap.

Idle Speed RPM

Application	Man. Trans.	Auto. Trans.
All (W/O EGR)	700	600
All (W/EGR)	600	550

NOTE – If limiter cap is removed during either procedure a new (blue) cap must be installed. Install cap over idle mixture screw, with ear positioned against full rich stop. Do not turn mixture screw when installing new cap as it will change setting. Press cap squarely on mixture screw.

INFRARED "IR" ANALYZER PROCEDURE

With engine at normal operating temperature, Auto. Trans. in "D" and Man. Trans. in "N", insert probe of analyzer 18" into tailpipe. *NOTE – Exhaust system must be free of leaks to obtain proper reading.* Adjust idle to specified RPM. To set idle

TUNE-UP (Cont.)

mixture adjustment, observe CO level, if less than specified, turn screw counterclockwise 1/16 turn at a time until specified CO level is obtained. If greater than specified, turn screw clockwise until specified CO level is obtained. Allow ten seconds for meter to stabilize after each adjustment. If idle speed changed more than 30 RPM during mixture adjustment, reset to specified RPM and repeat adjustment.

Specified CO Level

Application	% CO
All (W/O Air Guard)	1.0-1.5
All (W/Air Guard)	0.5-1.0

TACHOMETER PROCEDURE

With engine at normal operating temperature and limiter cap removed, adjust idle speed 30 RPM above specified RPM. To adjust idle mixture, turn idle mixture screw from full rich stop clockwise until a loss of RPM is noted, then turn mixture screw counterclockwise until highest RPM reading is obtained at "lean best idle" setting. *NOTE — If idle speed changes more than 30 RPM during mixture adjustment, reset idle RPM as previously outlined, and repeat adjustment.* As a final adjustment, turn mixture screw clockwise until specified RPM drop is obtained.

COLD (FAST) IDLE RPM

With engine at normal operating temperature and fast idle screw in contact with second step of fast idle cam, turn fast idle adjusting screw to obtain specified RPM.

Application	Fast Idle RPM
All	1600

AUTOMATIC CHOKE SETTING

To adjust automatic choke, loosen choke cover retaining screws and rotate cover in desired direction as indicated on cover to specified setting.

Application	Setting
All	1 Notch Rich

FUEL PUMP PRESSURE & VOLUME

Pressure	① 4-5 psi
Volume	①1 qt. in 1 minute

① — Measured at 500 RPM.

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

IGNITION

DISTRIBUTOR

Application	Delco-Remy No.
All (W/O EGR)	1110522
All (W/EGR)	1110523

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

IGNITION COIL

Delco	1115294
American Motors	201691

Resistance	Ohms @ 75°F
Primary	1.40-1.65
Secondary	3000-20,000
Ballast Resistor Loom	1.75-1.85

Current Draw (Engine Stopped) ..... 3-3.5 Amps.

CARBURETION

CARBURETORS

Carter YF

Application	Man. Trans.	Auto. Trans.
All (Except CJ/DJ)	6299	6300
CJ/DJ	6401	N/A

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

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

NOTE — Accelerator linkage is cable type and no adjustment is required.

Downshift Switch Adjustment — With carburetor throttle lever held in wide open throttle position, adjust switch so switch plunger is fully depressed.

ELECTRICAL

BATTERY

12 Volt — Negative Ground

Application	Amp. Hr. Rating
Standard	50
Optional	70

STARTER

Application	Ford No.
All	DOFF-11001-B

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

ENGINE (Cont.)

ALTERNATOR

Application	Amps
Standard	37
Optional	55

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

ALTERNATOR REGULATOR

Application	Motorola No.
All	8RD2001

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

ENGINE

INTAKE MANIFOLD TIGHTENING

Tighten manifold attaching bolts in sequence shown to 23 ft. lbs.

BELT ADJUSTMENT

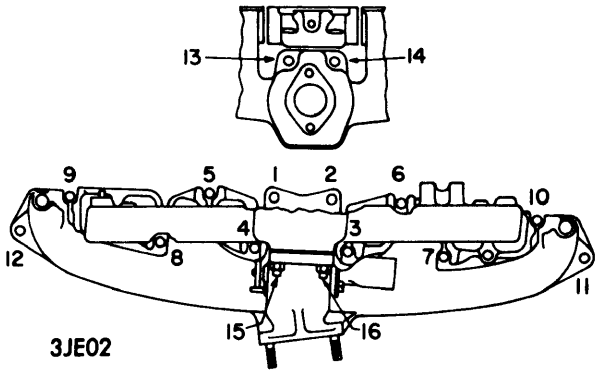
Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
All	① 125-155	① 90-115

① – If A.I.R. Pump is driven by power steering pump, maximum belt tension of 50 lbs.

CAPACITIES

Cooling System (Includes Heater)	10.5 qts.
Crankcase (Includes Filter)	6 qts.
Man. Trans.	
3-Speed	2.5 pts.
4-Speed	6.5 pts.
Auto. Trans.	
Oil Change	10 pts.
Overhaul	22 pts.
Transfer Case	3.25 pts.
Differential	Fill to bottom of filler plug hole.
Fuel Tank	
CJ, DJ, Commando	15.5 gals.
Wagoneer	22.0 gals.
Truck	19.0 gals.



INTAKE MANIFOLD TIGHTENING SEQUENCE

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	Replace 5000
Air Filter	① Clean 5000
Fuel Filter	Replace 15000
Auto. Trans. Filter	Replace 25000
Fuel Vapor Canister Filter	Replace 15000
PCV Valve	Replace 15000
Oil Filler Cap	Clean 15000

① – Replace 15000