TUNE-UP

ENGINE IDENTIFICATION

Engine can be identified by fourth digit of engine Date Code number stamped on machined surface on right side of block between number two and three cylinders and by eighth digit of Vehicle Identification Number.

Application	Code
232"	E
258"	A

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

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:

J4A154CA00001

First Digit – Manufacturer.
Second Digit – Model Year.
Third Digit – Transmission Type & Assembly Plant.
Fourth & Fifth Digit – Chassis Type.
Sixth Digit – Body Style.
Seventh Digit – Gross Vehicle Weight.
Eighth Digit – Engine Code.
Remaining Digits – Sequence Build 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

With engine at normal operating temperature, spark plugs removed, throttle and choke valves wide open and engine at cranking speed, variation between cylinders should be no more than 15 psi.

Application	PSI
232"	140
258"	150

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

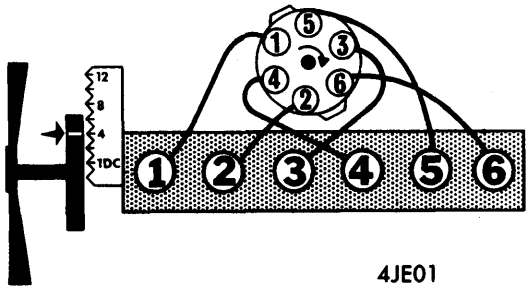
Gap ..... 033-.037"
Torque ..... 25-30 ft. lbs.

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 normal 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 with air cleaner installed. Idle RPM can be adjusted by either a standard tachometer procedure or a preferred "IR" Infared 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	RPM
232"	550-650
258" (Man. Trans.)	550-650
258" (Auto. Trans.)	500-600

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.

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TUNE-UP (Cont.)

INFARED "IR" ANALYZER PROCEDURE

With engine at normal operating temperature, Auto. Trans. in "D" and Man. Trans. in "N", insert probe of analyzer into tailpipe. *NOTE — Exhaust system must be free of leaks to obtain proper reading.* Adjust idle to specified RPM. To set idle 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 With A.I.R.	0.5-1.0
All Without A.I.R.	1.0-1.5

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.

Lean Drop RPM

Application	RPM
Man. Trans.	35
Auto. Trans.	20

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 cover retaining screws and rotate cover in desired direction as indicated on cover to specified setting.

Application	Setting
All	1 Rich

FUEL PUMP PRESSURE & VOLUME

Pressure	①4-5.5 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	1110529

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

IGNITION COIL

Resistance	Ohms @ 75°F
Primary	1.40-1.65
Secondary	3,000-20,000
Ballast Resistor	1.75-1.85

CARBURETION

CARBURETORS

Carter Model YF 1-Bbl.

Application	Carb. No.
232"	
Man. Trans. (Except Calif.)	N/A
Man. Trans. (Calif.)	7029S
258"	
Man. Trans. (Except Calif.)	6431S
Man. Trans. (Calif.)	6511S, 7029S
Auto. Trans. (Except Calif.)	7001S
Auto. Trans. (Calif.)	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 position, adjust switch so that switch plunger is fully depressed.

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ELECTRICAL

BATTERY

12 Volt – Negative Ground.

Application	Amp. Hr. Rating
Standard	50
Optional	70

ALTERNATOR

Application	Amps.	Motorola No.
Standard	37	8AL2015K
Optional	51	8AL2016K

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

STARTER

Application	Jeep No.
All	321 2235

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

ALTERNATOR REGULATOR

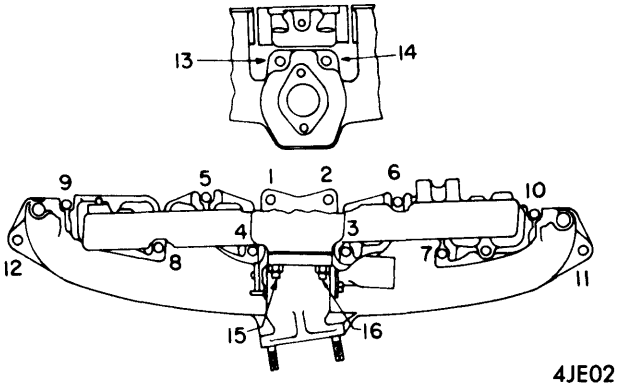
Application	Motorola No.
All	8RH2003

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

ENGINE

INTAKE MANIFOLD TIGHTENING

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



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INTAKE MANIFOLD TIGHTENING SEQUENCE

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	
Model 20	3.25 pts.
Quadra-Trac	3.5 pts.
Quadra-Trac (W/Reduction Unit)	4.5 pts.
Differential	Fill to bottom of filler plug hole.
Fuel Tank	
CJ Series	15.5 gals.
Cherokee & Wagoneer	22.0 gals.
Truck	19.0 gals.

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
All①	125-155	90-115

① – A.I.R. Pump belt on vehicles w/A.C., maximum tension is 50 lbs.

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	Replace 5,000
Air Filter	①Clean 5,000
Fuel Filter	Replace 15,000
Auto. Trans. Filter	Replace 25,000
Fuel Vapor Canister Filter	Replace 15,000
PCV Valve	Replace 15,000
Oil Filler Cap	Clean 15,000

① – Replace 15,000

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