TUNE-UP

ENGINE IDENTIFICATION

Engine can be indetified by prefix of engine identification number stamped on water pump boss on front of engine on **F4** engines and on machined surface adjacent to distributor on **232"** 6 cylinder engines.

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Vehicle identification number is stamped on metal plate affixed to left side of firewall on CJ5, CJ6, CJ5A and CJ6A models. It is affixed to right side of firewall on all other models.

54 5 4 8 13 10001

First & Second Digit – Series Code.
Third Digit – Body Style.
Fourth Digit – Engine Type.
Fifth Digit – Drive Type.
Sixth & Seventh Digit – Special Equipment 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 10 psi.

Application	PSI
F4	120-130
232"	145

VALVE TAPPET CLEARANCE

Application (Cold)	Intake	Exhaust
F4	.018"	.016"
232" (Hydraulic)	Zero Lash	Zero Lash

VALVE ARRANGEMENT

F4 – E-I-I-E-E-I-I-E (front to rear).
232" – E-I-I-E-I-E-E-I-E-I-I-E (front to rear).

SPARK PLUGS

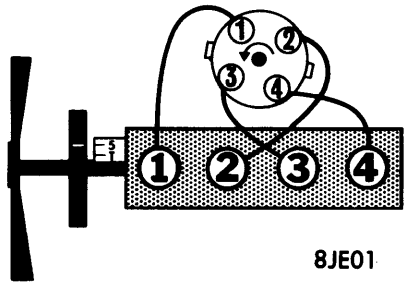
Gap	
F4	.030"
232"	.035"
Torque	
F4	25-33 ft. lbs.
232"	25-30 ft. lbs.

Spark Plug Type

Application	Champion No.
F4	J-8
232"	N-14Y

DISTRIBUTOR

Point Gap	
F4	.020"
232"	.016"
Cam Angle	
F4	42°
232"	31-34°
Breaker Arm Spring Tension	
F4	17-20 ozs.
232"	17-21 ozs.
Condenser Capacity	
F4	.25-.28 mfd.
232"	.18-.23 mfd.



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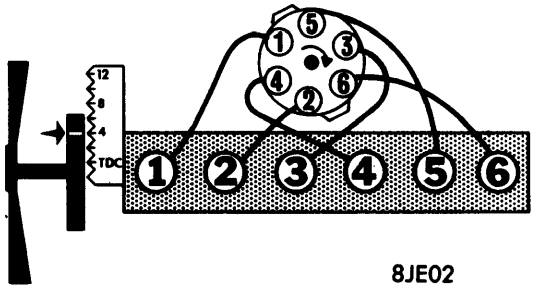
F4 FIRING ORDER & TIMING MARKS



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232" FIRING ORDER & TIMING MARKS

IGNITION TIMING

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

Application	Timing
F4	
W/O Emission Control	5° BTDC
W/Emission Control	TDC
232"	
W/O Emission Control	5° BTDC
W/Emission Control	TDC

TUNE-UP (Cont.)

HOT (SLOW) IDLE RPM

F4 W/O Limiter Caps – With engine at normal operating temperature, set idle speed to specified RPM. Turn idle mixture screw counterclockwise until a loss of engine RPM is noted, then slowly turn mixture screw clockwise until specified RPM is obtained. Continue turning screw in until engine speed begins to drop, then turn mixture screw out until maximum RPM is regained at "lean best idle" setting.

F4 W/Limiter Caps – With engine at normal operating temperature, set idle speed to specified RPM. With idle mixture screw at full (rich) stop, turn screw clockwise (approximately ¾ turn) to "lean best idle" setting. If engine RPM changes more than 30 RPM during mixture adjustment, reset idle speed to specified RPM and repeat mixture adjustment.

232" – With engine at normal operating temperature and headlights ON, adjust throttle stop screw to obtain specified RPM. Adjust idle mixture screw to obtain smoothest possible idle at specified RPM.

Idle Speed RPM

Application	Man. Trans.	Auto. Trans.
F4 (W/O Limiters)	600 RPM	600 RPM
F4 (W/Limiters)	650-700 RPM	650-700 RPM
232" (W/O Emission)	550 RPM	500 RPM
232" (W/Emission)	650-700 RPM	650-700 RPM

COLD (FAST) IDLE RPM

F4 – With choke held in wide open position, lip on fast idle rod should contact boss on body casting. Adjust by bending fast idle link at offset.

232" – Bench adjustment. *See appropriate article in CARBURETION Section.*

AUTOMATIC CHOKE SETTING

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

Application	Setting
232"	1 Notch Rich

FUEL PUMP PRESSURE & VOLUME

Pressure	
F4	2.25-3.75 psi
232"	4-5.5 psi
Volume	
F4	.5 pts. in 20 strokes
232"	1 qt. in 1 min. @ idle speed

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

IGNITION

DISTRIBUTOR

Application	Make	Model No.
F4 ①	Prestolite	IAY-4401
F4 ②	Prestolite	IAY-4401A
232" ①	Delco-Remy	1110320
232" ②	Delco-Remy	1110366

① – W/O Emission Control.
② – W/Emission Control.

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

IGNITION COIL

Resistance	Ohms @ 75°F
Primary	
F4	3.9-4.2
232"	3.2-4.0
Secondary	
F4	9,400-11,700
232"	8,000-20,000

CARBURETION

CARBURETORS

Carter Model YF 1 Bbl.

Application	Carb. No.
F4	4366S

Carter Model RBS 1 Bbl.

Application	Carb. No.
232" Man. Choke	4252S
232" Auto. Choke	4253S

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

THROTTLE LINKAGE ADJUSTMENT

F4 – Loosen lock nut and adjust length of accelerator rod so that throttle valve is wide open when accelerator pedal strikes floorboard.

232" – Adjust length of accelerator rod at threaded end so that carburetor throttle is fully open when accelerator pedal is fully depressed and returns to hot (slow) idle position when pedal is released.

DASHPOT ADJUSTMENT

F4 – With throttle set at hot (slow) idle position, loosen dashpot lock nut and turn dashpot assembly until dashpot plunger contacts throttle lever without plunger being depressed. Turn dashpot assembly 2½ turns toward throttle lever, depressing dashpot plunger. Tighten lock nut.

1968 Jeep 4 & 6 Tune-Up

ELECTRICAL

BATTERY

12 Volt – Negative Ground.

Application	Amp. Hr. Rating
All	50

STARTER

Application	Make	Model No.
F4	Delco-Remy	1107746
232"	Prestolite	MDY-8102A

Other Data & Specifications – *See Delco and Prestolite Starters in ELECTRICAL Section.*

ALTERNATOR

Application	Amps.	Motorola No.
F4	35	A12NW 526
232"	35	A12NAM 451

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

ALTERNATOR REGULATOR

Application	Motorola No.
F4	R2K1 or TVR 12 W 14
232"	TVR 12 W 14

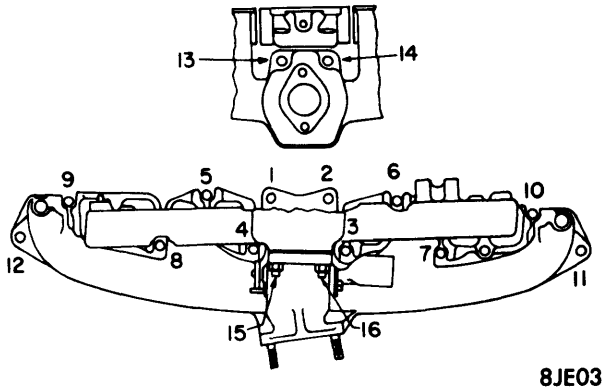
Other Data & Specifications – *See Motorola Alternator Regulators in ELECTRICAL Section.*

ENGINE

INTAKE MANIFOLD TIGHTENING

Tighten intake manifold bolts evenly to specifications.

Application	Torque (Ft. Lbs.)
F4	29-35
232"	20-25



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6 CYL. INTAKE MANIFOLD TIGHTENING SEQUENCE

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
All	110-135	80-105

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	Replace 6,000
Air Filter	
Oil Bath	Clean 2,000
Dry Type	Replace 10,000

CAPACITIES

Application	Quantity
Cooling System (Includes Heater)	
F4	12 qts.
232"	10.5 qts.
Crankcase (Includes Filter)	
F4	5 qts.
232"	6 qts.
Transmissions	
3-Speed (T-96)	3.5 pts.
3-Speed (T-90C)	6.5 pts.
3-Speed (T-85)	2.25 pts.
3-Speed (T-14A, T-15A)	2.5 pts.
4-Speed (T-98A)	6.75 pts.
4-Speed (T-18)	6.5 pts.
Automatic	19 pts.
Transfer Case	3.5 pts.
Differential	Fill to bottom of filler plug hole.
Fuel Tank	
F4	10.5 gals.
232"	18.0 gals.