

1973 International V8 Tune-Up

TUNE-UP

ENGINE IDENTIFICATION

All (Exc. 400") - Engine Identification Number is located on right bank, upper front corner of engine. The first four digits indicate engine displacement.

400" - Engine Identification Number is located on tag on front of right cylinder head cover. The fifth digit, a letter, indicates engine displacement.

Application	Digits
304"	V-304
345"	V-345
392"	V-392

Application	Letter
400"	V

MODEL IDENTIFICATION

Number is located on rear face of left front door.

613105H587201

First Four Digits - Model Code.

Fifth Digit - Engine Type.

Sixth Digit - Cab or Body Type.

Remaining Digits - Chassis Serial 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.

NOTE - Due to changes and corrections, always refer to Engine Tune-Up Decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, decal specifications prevail.

COMPRESSION PRESSURE

With engine warm, all spark plugs removed and throttle wide open, the variation between cylinders should not exceed 10 psi.

Application	PSI
304"	145
345"	140
392"	143
400"	①

① - Not available.

VALVE TAPPET CLEARANCE

Application	Clearance (Hot)
Hydraulic Lifters.....	Zero Lash

VALVE ARRANGEMENT

All (Exc. 400")

E-I-E-I-E-I-E-I (Front to rear, right bank.)

I-E-I-E-I-E-I-E (Front to rear, left bank.)

400"

E-I-I-E-E-I-I-E (Front to rear, both banks.)

SPARK PLUGS

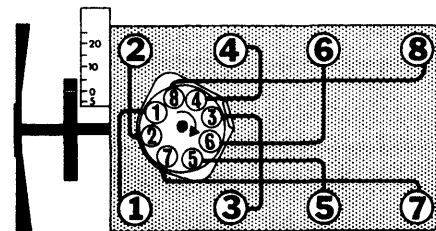
Gap (All Exc. 400").....	.030"
400"035"
Torque (All Exc. 400")	28-30 ft. lbs.
400"	28 ft. lbs.

Spark Plug Type

Application	Champion No.
304", 345", & 392"	
Scout & 1010 to 1310	RJ-10Y
Metro & Motor Home Chassis.....	RJ-6
400"	N-12Y

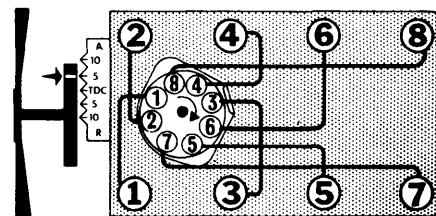
DISTRIBUTOR

Point Gap (All Exc. 400").....	Used .016", New .019"
400"016"
Cam Angle (All Exc. 400").....	28-32°
400"	29-31°
Breaker Arm Spring Tension	17-21 ozs.
Condenser Capacity (All Exc. 400")21-.25 mfd.
400"18-.23 mfd.



31HA01

304", 345" & 392" FIRING ORDER & TIMING MARKS



31HA02

400" FIRING ORDER & TIMING MARKS

IGNITION TIMING

Check or adjust timing with engine at normal operating temperature, distributor vacuum advance line disconnected and plugged, transmission in Neutral and idle speed set to specifications. Connect timing light to number 1 cylinder on 400" engine and to number 8 cylinder on all others.

Application	Timing
All (Exc. 400")	TDC
400"	5° BTDC

TUNE-UP (Cont.)

HOT (SLOW) IDLE RPM

NOTE — This procedure applies to all engines except 400". Procedure for 400" engine was not available at time of publication. With engine at normal operating temperature, choke open, air cleaner installed, high beam headlights "ON", and transmission in specified position, adjust idle speed to specifications. Adjust idle mixture screws to obtain "lean best idle", the point at which intake manifold vacuum starts to drop due to leanness. Readjust idle speed screw to 25 RPM higher than specifications. Readjust idle mixture screws lean to reduce idle speed back to specifications.

Application	Idle Speed	RPM
2-Bbl.		
W/Auto. Choke.....		①700
W/Man. Choke.....		②700
W/Governor.....		③450-500
4-Bbl.		
Man. Trans.		③700
Auto. Trans.		③550
W/Governor.....		②450-500
400" 2-Bbl. & 4-Bbl.		④

- ① — Transmission in Neutral, air conditioning "ON".
- ② — Transmission in Neutral.
- ③ — Man. Trans. in Neutral, Auto. Trans. in "D".
- ④ — Information not available.

COLD (FAST) IDLE RPM

2-Bbl. (Exc. W/Governor) — Place fast idle adjusting screw on top step of fast idle cam. With engine running, adjust screw to obtain 2000 RPM.

2-Bbl. W/Governor — With engine at normal operating temperature, adjust fast idle stud to obtain .018-.020" clearance between stud and fast idle cam.

4-Bbl. (Exc. W/400") — With engine at normal operating temperature, adjust fast idle screw to obtain .025" clearance between screw and fast idle cam.

4-Bbl. W/400" — With engine at normal operating temperature, set fast idle screw on middle step and against shoulder of high step of fast idle cam. Turn fast idle adjusting screw to obtain 1600 RPM.

GOVERNOR ADJUSTMENTS

NOTE — All governor adjustments are made with engine tuned and at normal operating temperature.

CENTRIFUGAL-TYPE GOVERNOR

Connect tachometer and race engine to determine maximum, no-load RPM. If adjustment is necessary, stop engine, remove governor clamp and gasket assembly. Turn engine over until adjusting screw hole plug appears in the opening. Remove plug and insert suitable tool (SE-2072-2) engaging adjusting tang. Turn tool handle clockwise to decrease speed and counterclockwise to increase speed; ¼ turn will change engine RPM approximately 100 RPM.

Application	Governed Speed (No Load)	RPM
All		3800

FUEL PUMP PRESSURE & VOLUME

Pressure (At 500 RPM) 5-6.5 psi
 Volume (At 500 RPM)..... 1 qt. in 1 min.

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

IGNITION

DISTRIBUTOR

IHC Model 1510

Application	①IHC Part No.
304" Without A.I.R.	
With Governor.....	428078-C91
With Governor & Tachometer.....	428079-C91
All Others	428095-C91
345" Without A.I.R.	
With Governor.....	427964-C91
With Governor & Tachometer.....	427966-C91
All Others	433142-C91
392" Without A.I.R.	
With Governor.....	427965-C91
With Governor & Tachometer.....	427967-C91
All Others	379282-C91
All With A.I.R.	
345" Travelall.....	436869-C91
All Others	427908-C91

① — Manufactured by Holley.

Application	Delco Part No.
400"	1112215

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

IGNITION COIL

Application	IHC Part No.
All	191455-R91

Resistance	Ohms @ 80°F
Primary	1.28-1.42
Secondary.....	7,200-9,500
Ballast Resistor (Loom).....	1.75-1.85

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CARBURETION

CARBURETORS

Holley Series 2300 2-Bbl.

Application	Holley Part No.
Man. Trans. W/Man. Choke	6379, 6391
Man. Trans. W/Auto. Choke	6380, 6393
Auto. Trans. W/Auto. Choke.....	6380, 6394
W/Governor.....	4310

Holley Series 4150 4-Bbl.

Application	Holley Part No.
Man. Trans.	4312
Auto. Trans.	4313
Man. Trans. W/Governor.....	4323
Auto. Trans. W/Governor.....	4324

NOTE — Carburetor information for the 400" engine was not available at time of publication.

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

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

Downshift Linkage Adjustment — Block choke in full open position, and disconnect transmission throttle rod at adjustable end. With transmission throttle rod held in its full forward position, adjust yoke so that it freely slides onto attachment point at bellcrank assembly. Reassemble and road test vehicle. If transmission does not downshift, lengthen throttle rod one turn and repeat road test.

CHOKE ADJUSTMENT

NOTE — Automatic choke specifications for carburetors used on 400" engines were not available at time of publication.

Man. Choke — Loosen choke cable adjusting screw on choke lever at carburetor. With choke knob in cab all the way in, pull choke cable at carburetor to remove excess slack. Release cable and tighten screw. Work knob in and out several times and check that choke is full open when knob is all the way in.

Auto. Choke — Loosen cover retaining screws and rotate assembly to specified setting. Tighten cover retaining screws.

Automatic Choke Setting

Application	Setting
2-Bbl. Carb. No. 6393 & 6394	One Notch Lean
2-Bbl. Carb. No. 6380	
Summer	Four Notches Lean
Winter	One Notch Lean
4-Bbl.	Two Notches Lean

DASHPOT ADJUSTMENT

NOTE — Dashpot specifications for carburetors used on 400" engine were not available at time of publication.

With idle speed set, hold throttle in closed position and turn dashpot adjusting screw out until head of screw pushes dashpot rod up to end of its travel. Hold dashpot rod in this position and back off adjusting screw four turns to obtain specified clearance between adjusting screw and dashpot rod when rod is fully compressed.

Application	Clearance
2-Bbl. Carb. (Exc. No. 6394).....	.075-.095"
2-Bbl. Carb. No. 9394.....	.090-.120"
4-Bbl.060-.090"

ELECTRICAL

BATTERY

12 Volt — Negative Ground.

STARTER

Application	Delco Part No.
All (Exc. 400").....	1107709
400"	1108515

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

ALTERNATOR

Application	Amps.	Delco Part No.
All (Exc. 400").....	37	1100588
All (Exc. 400").....	61	1100544

ALTERNATOR (Cont.)

Application	Amps.	①IHC Part No.
400"	37	444500-C91
400"	62	444502-C91

① — Manufactured by Motorola.

Other Data & Specifications — See *Delco or Motorola Alternators* in **ELECTRICAL** Section.

ALTERNATOR REGULATOR

Application	Part No.
All With Delco Alternator.....	①
All With Motorola Alternator.....	444919-C91

① — Nonadjustable, integral with alternator.

Other Data & Specifications — See *Delco or Motorola Alternator Regulators* in **ELECTRICAL** Section.

ENGINE

INTAKE MANIFOLD TIGHTENING

Manifold bolts are tightened to 40-45 ft. lbs.

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter.....	① Replace 3,000-4,000
Air Filter	
Oil Bath	② Clean 5,000
Dry Type	③ Clean 4,000
Fuel Filter	④
Gasoline Vapor Canister Filter.....	Replace 12,000
PCV Valve.....	Check 12,000

- ① - Or every oil change.
- ② - Oil with same viscosity oil in crankcase.
- ③ - Replace at 15,000-20,000 miles.
- ④ - Clean when bowl shows sediment.

COOLING CAPACITIES

Application	Quantity W/Heater
304"	19 qts.
345"	20 qts.
392"	21 qts.
400"	①

- ① - Information not available.

BELT ADJUSTMENT

Adjust power steering belt tension to obtain $\frac{3}{8}$ inch deflection at belt midpoint; adjust all other belts for $\frac{1}{2}$ inch deflection.

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase (Includes Filter)	
All (Exc. 400")	6 qts.
400"	5 qts.
Automatic Transmission.....	9.5 qts.
Man. Trans. & Rear Axle	①
Front Axle & Transfer Case	①
Four-Wheel Drive Knuckle Ends.....	①
Fuel Tank	
Scout.....	19 gals.
Travelall	
1010 & 1110.....	20 gals.
1210.....	21 gals.
Utility Body.....	13 gals.
Motor Home	
1310.....	35 gals.
1510.....	45 gals.
Metro	
Std.	23 gals.
Opt.	35 gals.
Conventional Cab	
1010 & 1110.....	15 gals.
1210 & 1310.....	16 gals.

- ① - Fill to bottom of filler plug hole.