

## TUNE-UP

### ENGINE IDENTIFICATION

Engine Identification Number is located on right bank, upper front corner. The first four digits indicate displacement.

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

### 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.

### 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

### VALVE TAPPET CLEARANCE

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

### VALVE ARRANGEMENT

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.)

### SPARK PLUGS

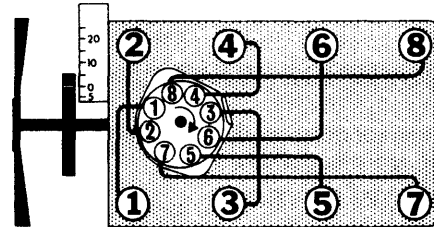
Gap .....	.030"
Torque.....	28-30 ft. lbs.

### Spark Plug Type

Application	Champion No.
All .....	RJ-6

### DISTRIBUTOR

Point Gap.....	.016"
Cam Angle.....	28-32°
Breaker Arm Spring Tension .....	17-21 ozs.
Condenser Capacity .....	.21-.25 mfd.



21HA01

### 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 "8" cylinder.

Application	Timing
All .....	TDC

### HOT (SLOW) IDLE RPM

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.

### Idle Speed

Application	RPM
2-Bbl.	
W/Auto. Choke.....	① 700
W/Man. Choke.....	② 700
W/Governor.....	③ 450-500
4-Bbl.	
Man. Trans. ....	③ 700
Auto. Trans. ....	③ 550
W/Governor.....	② 450-500

- ① - Transmission in Neutral, air conditioning "ON".
- ② - Transmission in Neutral.
- ③ - Man. Trans. in Neutral, Auto. Trans. in "D".

### 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.

## TUNE-UP (Cont.)

**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.** - With engine at normal operating temperature, adjust fast idle screw to obtain .025" clearance between screw and fast idle cam.

## 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.

## Governed Speed (No Load)

Application	RPM
All .....	3800

## FUEL PUMP PRESSURE &amp; VOLUME

Pressure (At 1000 RPM) .....	4.5-5.75 psi
Volume (At 4000 RPM).....	3.6 pts. in 1 min.

## EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

## IGNITION

DISTRIBUTOR  
IHC Model 1510

304" Without A.I.R.	
With Gov. ....	428078-C91
With Gov. & Tachometer .....	428079-C91
All Others .....	428095-C91
345" Without A.I.R.	
With Gov. ....	427964-C91
With Gov. & Tachometer .....	427966-C91
All Others .....	433142-C91
392" Without A.I.R.	
With Gov. ....	427965-C91
With Gov. & Tachometer .....	427967-C91
All Others .....	379282-C91
All With A.I.R.	
All (Exc. 345" Travelall) .....	427908-C91
345" Travelall .....	436869-C91

**Other Data & Specifications** - See Tune-Up 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

## 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

**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

**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.

## CARBURETION (Cont.)

### 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

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"

## BATTERY

12 Volt - Negative Ground.

## STARTER

Application	Delco Part No.
All .....	1107709

Other Data & Specifications - See Delco Starters in ELECTRICAL Section.

## ELECTRICAL

### ALTERNATOR

Application	Amps.	Delco Part No.
All .....	37	1100588

Other Data & Specifications - See Delco Alternators in ELECTRICAL Section.

### ALTERNATOR REGULATOR

Delco - Nonadjustable, integral with alternator.

Other Data & Specifications - See Delco 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
Scout .....	19.5 qts.
All Others	
304" .....	20 qts.
345" .....	21 qts.
392" .....	22 qts.
All W/Increased Cooling.....	①

- ① - Fill to one inch below top of radiator upper tank.

### CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase (Includes Filter).....	6 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.

### BELT ADJUSTMENT

Adjust power steering belt tension to obtain 3/8 inch deflection at belt midpoint; adjust all other belts for 1/2 inch deflection.