

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

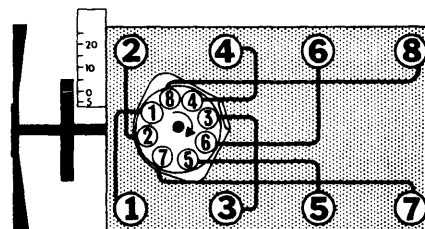
Gap025-.030"
Torque.....	28-30 ft. lbs.

Spark Plug Type

Application	Champion No.
Gas	J-10Y

DISTRIBUTOR

Point Gap.....	New .019", Used .016"
Cam Angle.....	28-32°
Breaker Arm Spring Tension	17-21 ozs.
Condenser Capacity21-.25 mfd.



11HA01

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

Models 1000 & 1100 W/2-Bbl. Carb. - With engine at normal operating temperature, choke open, air cleaner installed, air conditioning "ON", and manual transmission in Neutral or automatic transmission in "D", connect tachometer and turn idle mixture screws out against tab stop. Adjust idle speed to 20 RPM higher than specifications for carburetor numbers 4078 to 4084, and 40 RPM higher than specifications for carburetor numbers 4574 and 4593 to 4595. Then turn idle mixture screws in (lean) to reduce speed to specified RPM. If idle limiter caps prevent proper idle adjustment, remove them and connect a suitable vacuum gauge. Turn idle mixture screws to obtain "lean best idle" and install colored plastic limiter caps with tab fully counterclockwise against tab stop. Adjust idle speed screw to higher than specified RPM as stated in the beginning of this paragraph and repeat adjustment procedure.

Models 1200 & 1300 W/2- & 4-Bbl. Carbs. - With engine at normal operating temperature, choke open, air cleaner installed, air conditioning "ON", and manual transmission in Neutral or automatic transmission in "D", connect tachometer and vacuum gauge and adjust idle speed to specifications. Adjust idle mixture screws to obtain "lean best idle" and adjust idle speed screw to 25 RPM higher than specifications. Turn mixture screws in to reduce idle speed to specifications.

Models 1000 & 1100 W/4-Bbl. Carb. - With engine at normal operating temperature, choke open, air cleaner installed, air conditioning "ON", and transmission in Neutral, connect tachometer and turn idle mixture screws out against tab stop. Adjust idle speed to 20 RPM higher than specifications

TUNE-UP (Cont.)

for carburetor numbers 4237, 4264, 4312, and 4313, and 40 RPM higher than specifications for carburetor numbers 4572, 4599, 4601, and 4602. Then turn idle mixture screws in (lean) to reduce speed to specified RPM. If idle limiter caps prevent proper idle adjustment, remove them and connect a suitable vacuum gauge. Turn idle mixture screws to obtain "lean best idle" and install colored plastic limiter caps with tab fully counterclockwise against tab stop. Adjust idle speed screw to higher than specified RPM as stated in the beginning of this paragraph and repeat adjustment procedure.

Idle Speed W/2-Bbl. Carburetor

Application	RPM
All Trans. W/Carb. No. 2976, 2977, 3679, 3696, 3937, 4306, 4307, 4308, 4309	450-500
All W/Governor	450-500
Man. Trans. W/Carb. No. 4574, 4593	600
4078, 4081, 4082	700
Auto. Trans. W/Carb. No. 4079, 4080, 4083, 4084, 4594, 4595	550

Idle Speed W/4-Bbl. Carburetor

Application	RPM
All (Exc. Carb. No. 4264 & 4314 or W/Governor)	700
W/Carb. No. 4264 & 4313 (Auto. Trans. in "D")	550
All W/Governor	450-500

COLD (FAST) IDLE RPM

Without Governor — Set idle speed screw so that screw just touches fast idle cam at hot (slow) idle.

With Governor — Adjust fast idle stud for specified clearance between stud and fast idle cam with choke plate full open and hot (slow) idle set.

Application	Clearance
All018-.020"

FUEL PUMP PRESSURE & 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.

GOVERNOR ADJUSTMENTS

NOTE — All governor adjustment 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
304"	3900
345" & 392"	3800

IGNITION

DISTRIBUTOR
IHC Model 1510

Application	ⓐIHC Part No.
304" & 345" W/Gov.	359217-C91
W/Gov. & Tachometer	383150-C91
All Others	359206-C91
392" W/Gov.	359218-C91
W/Gov. & Tachometer	383151-C91
All Others	379282-C91

ⓐ — Manufactured by Holley.

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., Man. Choke	3991, 4081, 4574
Man. Trans., Auto. Choke	4078, 4082
Man. Trans. W/Governor	4310
Auto. Trans., Man. Choke	4079, 4083, 4308, 4594
Auto. Trans., Auto. Choke	4080, 4084
Auto. Trans. W/Governor	4311

Holley Series 4150 4-Bbl.

Application	Holley Part No.
Man. Trans., Man. Choke	4237, 4318, 4572
Man. Trans., Auto. Choke	4319, 4312, 4599
Man. Trans. W/Governor	4323
Auto. Trans., Man. Choke	4264, 4320, 4601
Auto. Trans., Auto. Choke	4321, 4313, 4599
Auto. Trans. W/Governor	4325

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

CARBURETION (Cont.)

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

Accelerator Adjustment - With accelerator linkage clean and lubricated, adjust pedal stop screw so that pedal will just strike screw when carburetor throttle plate is wide open.

Downshift Adjustment - The downshift switch is located under pedal. Loosen lock nut and adjust screw so that there is 1/4" between switch and pedal when is lightly depressed to the floor.

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 screw.

Automatic Choke Setting

Application	Setting
2-Bbl. Carb. (Exc. No. 4593).....	One Notch Lean Carb. No. 4593.....
4-Bbl. Carb. (Exc. Nos. 4599 & 4602).....	Two Notches Lean Carb. Nos. 4599 & 4602.....

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
All100"

ELECTRICAL

BATTERY

12 Volt - Negative Ground.

STARTER

Application	Delco Part No.
All	1107709

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

ALTERNATOR

Application	Amps.	Delco Part No.
All	37	ⓐ1100588

ⓐ - Regulator is integral with alternator.

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

ENGINE

INTAKE MANIFOLD TIGHTENING

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

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.

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter.....	ⓐReplace 3,000-4,000
Air Filter	
Oil Bath	ⓐClean 5,000
Dry Type	ⓐClean 4,000
Fuel Filter.....	ⓐ
Distributor Shaft & Pivot Point.....	Oil 3,000-5,000
Distributor Cam	Lubricate 3,000-5,000
PCV Valve.....	Check 12,000

- ⓐ - Or every oil change.
- ⓑ - Oil with same viscosity oil in crankcase.
- ⓒ - Replace at 15,000-20,000 miles.
- ⓓ - 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.....	ⓐ

ⓐ - 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	ⓐ
Front Axle & Transfer Case	ⓐ
Four Wheel Drive Knuckle Ends	ⓐ
Oil Bath Air Cleaner	1 qt.
Fuel Tank	
Scout	10 gals.
1010 & 1110.....	15 gals.
Panel Body.....	20 gals.
1210 & 1310.....	16 gals.
Panel Body.....	21 gals.
Utility Body.....	13 gals.
Metro	
Std.	23 gals.
Opt.	35 gals.

ⓐ - Fill to bottom of filler plug hole.