TUNE-UP

505

ENGINE IDENTIFICATION

Engine in all 505 models is referred to as XN6 version. Engine codes are stamped on camshaft tunnel on left side of block.

505
Man. Trans. ..... M5 BVM
Auto. Trans. ..... M3 BVA

VALVE CLEARANCE

Valves must be set with engine cold. To adjust valves, rotate crankshaft until valve listed in first column of table is fully open, then adjust valves listed in second column of table. Note that valves (and cylinders) are numbered from REAR to FRONT.

Valve Open	Valves to Adjust
No. 1 Exh.	No. 3 Int. & No. 4 Exh.
No. 3 Exh.	No. 4 Int. & No. 2 Exh.
No. 4 Exh.	No. 2 Int. & No. 1 Exh.
No. 2 Exh.	No. 1 Int. & No. 3 Exh.

Valve Clearance

Valve	①Clearance
Intake	.004" (.1 mm)
Exhaust	.010" (.25 mm)

① – +.002" (.05 mm)

VALVE ARRANGEMENT

All Models
Right Side – All Exhaust.
Left Side – All Intake.

SPARK PLUGS

Gap ..... .024" (.6 mm)

Spark Plug Type

Application	Bosch No.
All Models	WR7DS

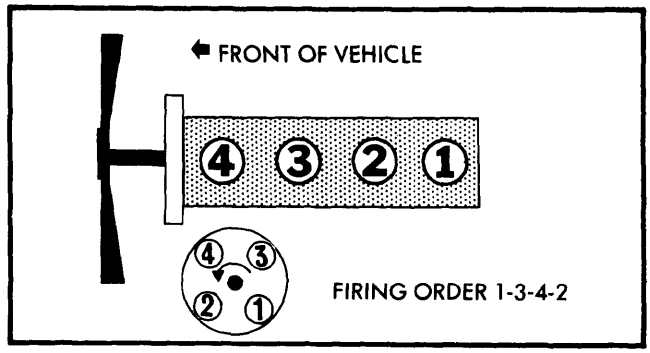

Fig. 1 Firing Order and Distributor Rotation

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check high tension wire resistance while gently twisting wire. If resistance is not to specification, or fluctuates from infinity to any value, replace wire(s).

Resistance (Ohms) Per Wire

Application	Ohms
All Models	6000

DISTRIBUTOR

All models use a Ducellier single pickup breakerless distributor in conjunction with an AC Delco coil and transistorized amplifier module. The only adjustment provided is for air gap between the reluctor and pickup coil in the distributor. Measure gap using a non-magnetic feeler gauge. If gap is not to specifications, loosen pickup coil screws and adjust gap.

Air Gap ..... .012-.020" (.30-.50 mm)

IGNITION TIMING

1) Disconnect vacuum advance hose and plug it. Connect timing light, dwell meter and tachometer. Start engine and check dwell angle.

2) With engine idling at 900 RPM, check ignition timing. The 8° reference mark should align with notch on pulley. To adjust timing, loosen distributor flange and turn distributor until timing is to specifications. Tighten flange. Reconnect vacuum hose to distributor.

Ignition Timing Specifications

Application	RPM	Timing
All Models	900	8°BTDC

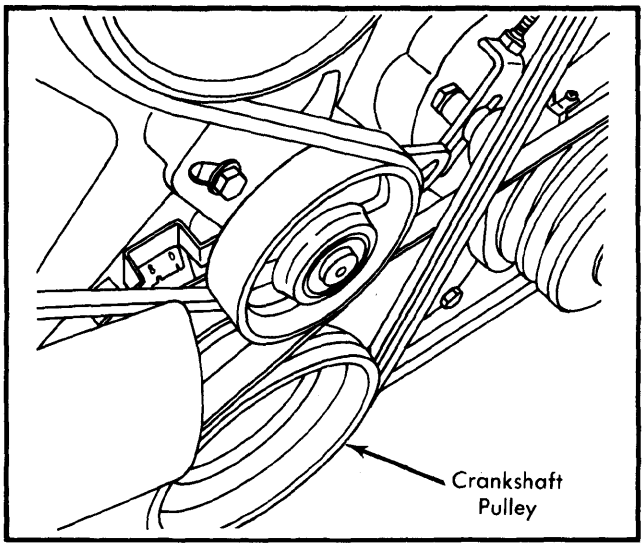

Fig. 2 Timing Marks Illustrated

IDLE SPEED & MIXTURE

1) With engine at normal operating temperature, turn off all electrical accessories and air conditioning. Connect tachometer, and connect CO meter to front tap in catalytic converter.

TUNE-UP (Cont.)

2) With transmission in neutral and air cleaner in place, adjust idle speed at air bleed screw on throttle housing using special tool 8.0141 BA. Accelerate engine and return to idle, then check CO level.

3) If CO is incorrect, disconnect wire from air slide valve thermal switch (top rear of engine). Disconnect and plug vacuum supply hose to canister purge valve and air injection hose at diverter valve. Use Allen wrench to adjust mixture after removing plug from fuel distributor (below brake master cylinder).

NOTE – *Do not push down on wrench while adjusting or readings will be incorrect. Remove wrench and plug access hole before accelerating engine or checking CO level.*

4) Accelerate engine and recheck CO%. If not correct, repeat adjustment. Remove equipment and reconnect thermal switch wire, canister purge hose and air injection hose.

Idle Speed & CO Level

Application	RPM	CO%
All Models	900-950	0.5-1.5

COLD (FAST) IDLE RPM

1) With engine at operating temperature and idle correctly adjusted, place transmission in neutral and turn off all accessories. Stop engine.

2) Disconnect hose with green ring from vacuum "T" near Solex valve (right fender panel). Disconnect hose with red ring from Solex valve and connect it to "T". This applies vacuum to idle speed diaphragm.

3) Remove domed nut "1" in *Fig. 3*. Loosen lock nut "2" and start engine. Engine speed should be 1500-1550 RPM.

4) If engine speed is not correct, adjust screw "3" to specification, using a 3 mm Allen wrench. Tighten lock nut "2" and install domed nut "1", making sure gasket is in place.

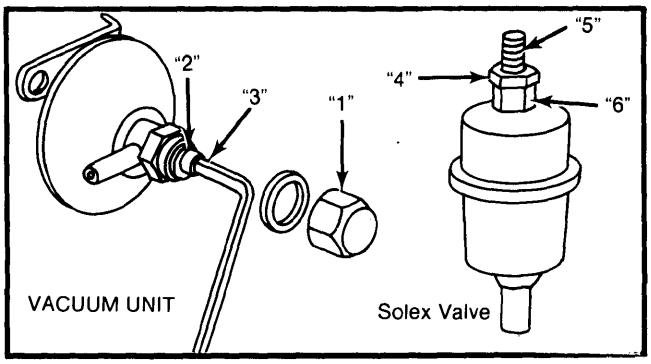

Fig. 3 Adjusting Fast Idle at Deceleration Vacuum Unit

5) Return vacuum hoses to original locations. Loosen lock nut "4" on Solex valve (not vacuum unit). Screw in threaded rod "5" to obtain 1500 RPM idle.

NOTE – *Always hold part "6" with wrench when loosening or tightening lock nut on deceleration valve, so as not to exert force on diaphragm.*

6) Increase engine speed to 3000 RPM without load, and allow engine speed to decrease. Unscrew threaded rod "5" one-half a turn at a time until normal idle (900 RPM) is obtained.

7) Then unscrew threaded rod one additional half turn and tighten lock nut.

Fast Idle RPM

Application	RPM
All Models	1500-1550

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with Ducellier breakerless electronic ignition systems.

Other Data & Specifications – *See Tune-Up article and appropriate article in DISTRIBUTORS & IGNITION SYSTEMS section.*

IGNITION COIL

Coil Resistance (Ohms@68°F)

Application	Primary	Secondary
All Models	.48-.61	9000-11,000

FUEL SYSTEMS

FUEL INJECTION

All models are equipped with Bosch Lambda Continuous Injection System (CIS) fuel injection with oxygen sensor.

Other Data & Specifications – *See Tune-Up and Bosch Lambda CIS Injection Systems in FUEL SYSTEMS Section.*

ELECTRICAL

BATTERY

Application	Amp. Hour Capacity
All Models	60

Battery Location – Left side of engine compartment.

STARTER

All models use Paris Rhone starters.

GENERAL SERVICING (Cont.)

ALTERNATOR

All models are equipped with Paris Rhone Alternators.

Application	Rated Amp. Output
All Models	75

ALTERNATOR REGULATOR

A solid state, integral alternator regulator is used on all models.

FILTERS

Filter	Service Interval (Miles)
Oil Filter	Replace every 10,000
Fuel Filter	Replace every 30,000
Air Filter	Replae every 30,000

BELT ADJUSTMENT

Loosen idler pulley mounting bolts and apply 36 ft. lbs. (5 mkg) to pivot nut above idler pulley. Tighten bolts, then turn engine one revolution. Loosen bolts and apply 58 ft. lbs. (8 mkg) to pivot nut. Tighten idler pulley mounting bolts.

Air conditioning belt is tightened by pivoting compressor. The belt from crankshaft pulley to water pump is a force-fit and no adjustment is possible.

CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	4.2 qts.
Cooling System	7.6 qts.
Man. Trans. (SAE 10W-40)	3.4 pts.
Auto. Trans. (Dexron)	5.4 qts.
Rear Axle (SAE 80)	3.2 pts.
Fuel Tank	18.0 gals.