

**Ignition System****22**

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TECHNICAL DATA

Coil

Manufacturer	..	..	..	..	..	..	..	Motorcraft
Type	..	..	..	..	..	..	..	High output breakerless ignition coil
Output	..	..	..	..	..	..	..	25,0 kilovolts (minimum) - open circuit condition
Primary resistance	..	..	..	..	..	..	..	0,72 to 0,88 ohms
Secondary resistance	..	..	..	..	..	..	..	4500 to 7000 ohms

Spark Plugs

Type	..	..	..	..	..	..	..	AGPR901C
Electrode gap - all territories	..	..	..	..	..	..	..	0,75 mm (0,030 in)
Firing order	..	..	..	..	..	..	..	1-3-4-2

Distributor

Manufacturer	..	..	..	..	..	..	..	Marelli
Type	..	..	..	..	..	..	..	Breakerless
Automatic Advance	..	..	..	..	..	..	..	Totally controlled by Engine Management Module
Drive	..	..	..	..	..	..	..	Skew gear from auxiliary shaft
Dwell angle	..	..	..	..	..	..	..	It is totally controlled by the electronic module and cannot be adjusted
Idle advance initial	..	..	..	..	..	..	..	16° BTDC

HT Leads

Resistance	..	..	..	..	..	..	..	30,000 ohms maximum per lead
Heat sink compound	..	..	..	..	..	..	..	81SF-12103-AA

Tightening Torques

								<u>Nm</u>	
TDC sensor bracket to sump	..	..	..	..	..	..	..	8 to 10	
TDC sensor to bracket	..	..	..	..	..	..	..	4 to 6	Loctite 270
Distributor clamp to cylinder block	..	..	..	..	..	..	..	18,5 to 21,5	

Clearance Settings

TDC sensor to pulley teeth	..	..	..	..	..	..	..	0,6 to 1,0 mm
Distributor cam to phase sensor	..	..	..	..	..	..	..	0,2 to 0,3 mm

SERVICE AND REPAIR OPERATIONS

22 214 0 DISTRIBUTOR - REMOVE AND INSTALL

SPECIAL TOOLS REQUIRED: NONE

To Remove

1. Fit fender covers and disconnect battery earth cable. Remove air hose from intercooler to throttle body.
2. Unclip distributor cap and position clear of distributor. Remove rotor arm and dust cover. Refit rotor arm.
3. Using a spanner on the crankshaft pulley bolt, rotate the engine clockwise until No.1 cylinder is at T.D.C. No.1. cylinder is at T.D.C. when the lug nearest the groove on the pulley is in line with pointer and the rotor is pointing to the distributor body scribe mark.

NOTE: If rotor is 180° degrees out, continue rotating engine until both marks align.

4. Disconnect distributor multiplug. Remove distributor retaining bolt and plate, and remove distributor from engine.

To Install

Note: If refitting the old distributor, go to Sub-Operation No.6.

5. Remove cap, rotor and dust cover from new distributor and refit rotor. Transfer HT leads from old distributor cap to the new.
6. Check that 'O' ring on distributor body is in good condition, fit a new 'O' ring if necessary.
7. Turn distributor shaft until the rotor is aligned with the cap retaining clip, as shown in Fig.2.
8. Insert distributor into engine. Rotate distributor body until rotor aligns with scribe mark. Fit retaining plate and bolt, and tighten bolt.
9. Remove rotor and refit dust cover, rotor and distributor cap.
10. Reconnect distributor multiplug and refit air hose.
11. Reconnect battery and remove fender covers.

Note: Ignition timing is totally controlled by the module and does NOT require checking with a timing light.

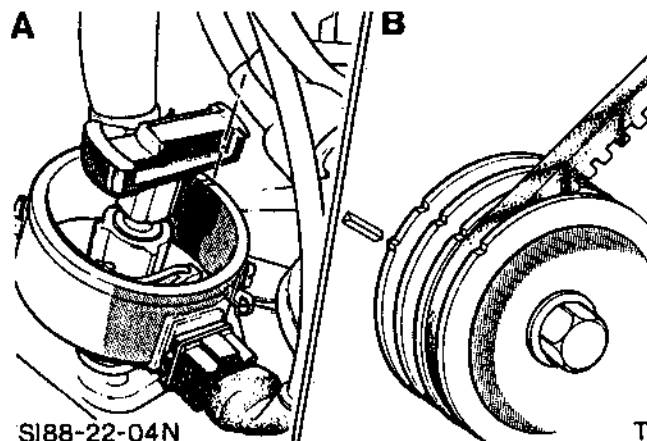


Fig.1. No.1. cylinder at T.D.C.
A - Distributor mark
B - Crank pulley lug inline with pointer

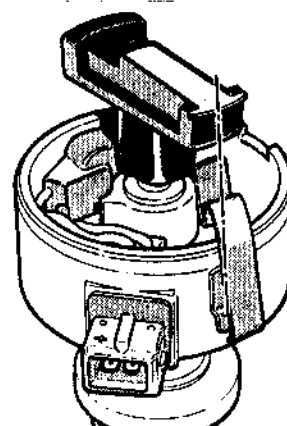


Fig.2. Before installing distributor, align rotor with distributor cap retaining clip.

22 215 4 PHASE SENSOR - DISTRIBUTOR - REMOVE AND
INSTALL
(Distributor removed)

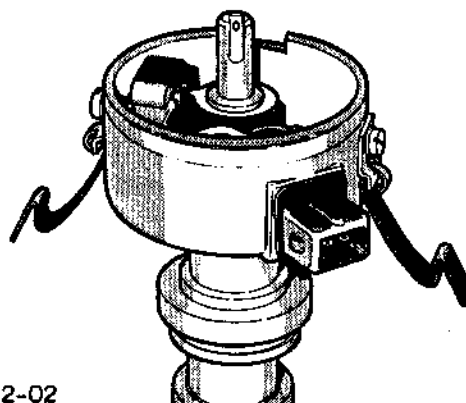
SPECIAL TOOLS REQUIRED: NONE

To Dismantle

1. Remove rotor arm, disconnect phase sensor plug and remove from base plate.
2. Remove base plate and phase sensor from distributor housing (2 bolts).

To Reassemble

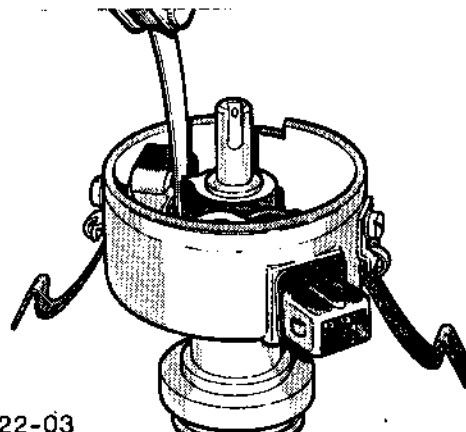
3. Fit base plate and phase sensor to distributor housing (2 bolts).
4. Fit phase sensor plug to base plate.
5. Adjust phase sensor (distributor)
Slacken the base plate, Fig.4. and adjust phase sensor to a distance of 0,2 to 0,3 mm from the distributor shaft cams. Tighten base plate. Refit rotor arm.



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Fig.3. Distributor removed.

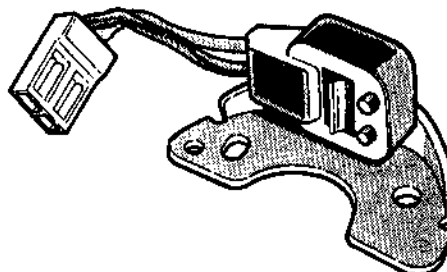
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Fig.4. Adjust distributor phase sensor to obtain the correct clearance.

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Fig.5. Phase sensor removed.

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22 292 0 IGNITION AMPLIFIER MODULE - REMOVE AND INSTALL

SPECIAL TOOLS REQUIRED: NONE

To Remove

1. Fit fender covers and disconnect battery earth cable.
2. Depress locking clip on multiplug and disconnect multiplug.
3. Remove two screws, lock washers and plain washers.

To Install

4. Coat rear face of ignition amplifier module with heat sink compound, refer Technical Data.
5. Position and secure module with two screws, lock washers and plain washers.
6. Reconnect module multiplug.
7. Reconnect battery and remove fender covers.

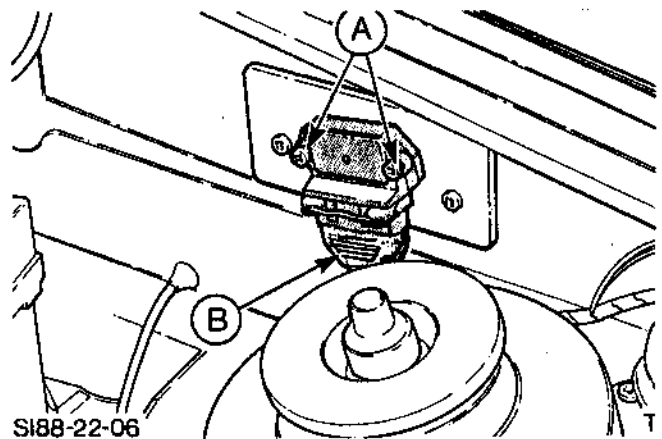


Fig.6. Ignition amplifier module.
A - Multiplug connection
B - Two securing screws

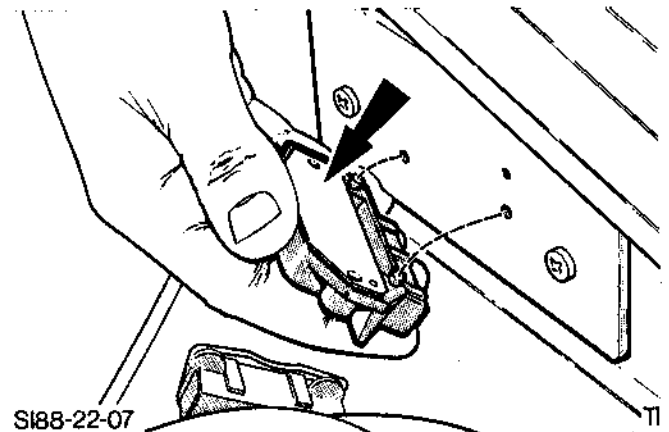


Fig.7. Coat rear face of module with heat sink compound.

22 414 0 IGNITION COIL - REMOVE AND INSTALL

SPECIAL TOOLS REQUIRED: NONE

To Remove

1. Fit fender covers and disconnect battery earth cable.
2. Disconnect HT and LT connections at coil. Remove two screws and detach coil with strap assembly and suppression capacitor.

To Install

3. Position coil, strap assembly and suppression capacitor, secure with two screws. Reconnect HT and LT connections.
4. Reconnect battery earth cable. Start engine check coil operation. Remove fender covers.

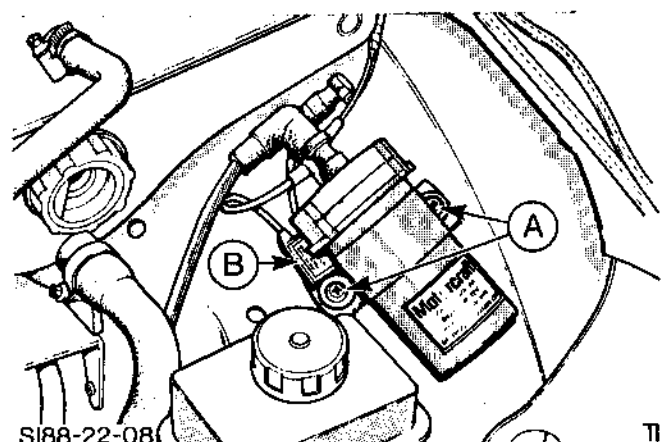


Fig.8. Ignition coil.
A - Mounting screws
B - Suppression capacitor

22 619 0 SPEED SENSOR - ENGINE - REMOVE AND INSTALL

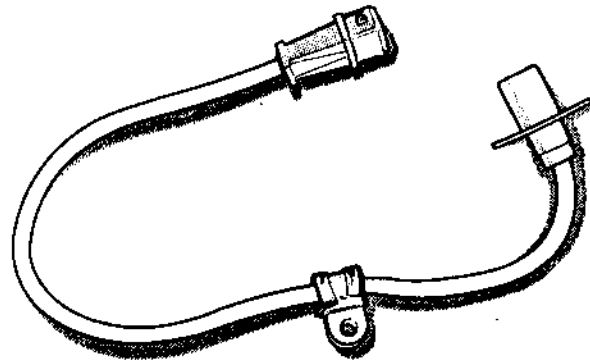
SPECIAL TOOLS REQUIRED: NONE

To Remove

1. Disconnect battery earth cable.
2. Raise vehicle.
3. Remove engine speed/TDC sensor from sump (2 bolts).
4. Disconnect multiplug plug, from wiring harness and remove cable from retainer. Remove cable clip from sump (1 bolt) and remove engine speed/TDC sensor.

To Install

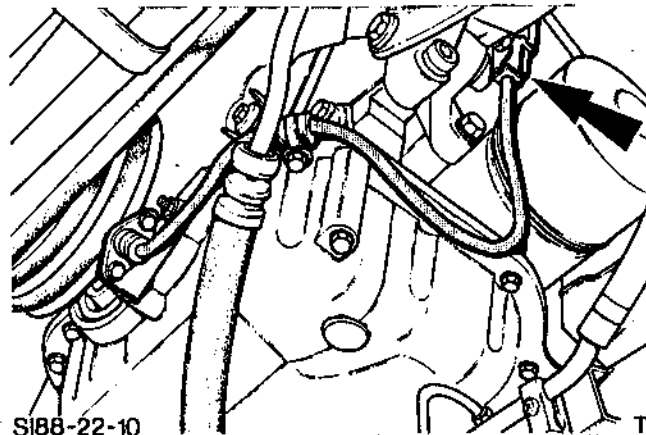
5. Clip engine speed/TDC sensor cable into retainer and connect multiplug.
6. Fit engine speed/TDC sensor to mounting. Align crankshaft pulley teeth with sensor and set sensor clearance, 0,6 to 1,0 mm.
7. Lower vehicle.
8. Re-connect battery earth cable.



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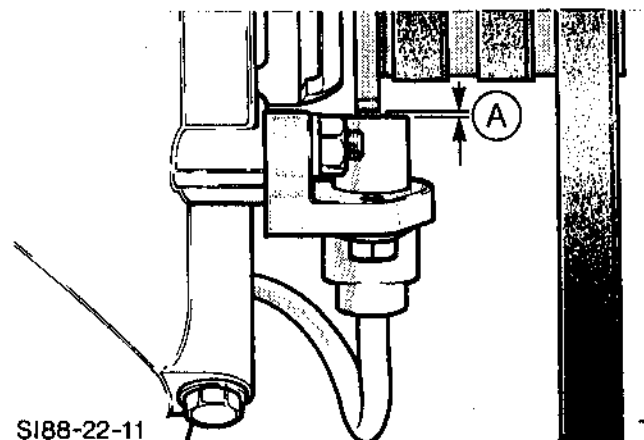
Fig.9. Engine speed/TDC sensor removed.



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Fig.10. Engine speed/TDC sensor cable plug.



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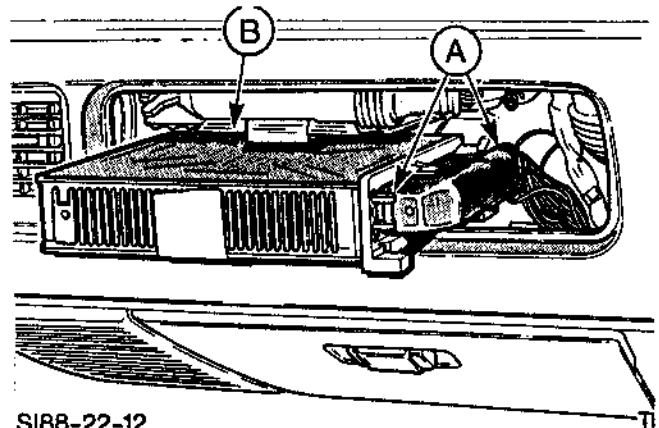
Fig.11. Engine speed/TDC sensor.
A - 0,6 to 1,0 mm

29 200 0 CONTROL MODULE - ENGINE MANAGEMENT REMOVE AND INSTALL

SPECIAL TOOLS REQUIRED: NONE

To Remove

1. Disconnect battery earth cable.
2. Unclip trim above glove compartment.
3. Remove module and remove multiplug from module.
 - Push back plug retainer,
 - Lift up multiplug and remove from retainer.

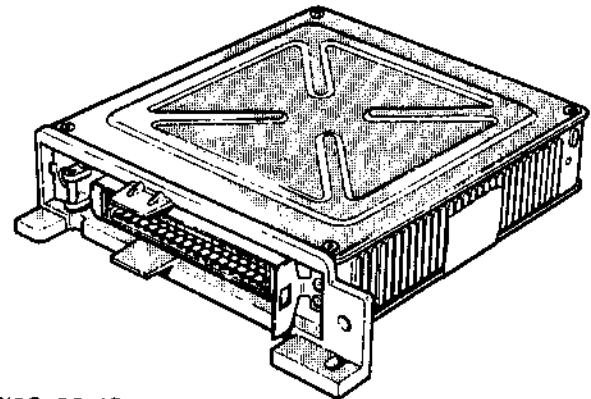


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Fig.12. Engine management module.
A - Multiplug retainer
B - Retainer

To Install

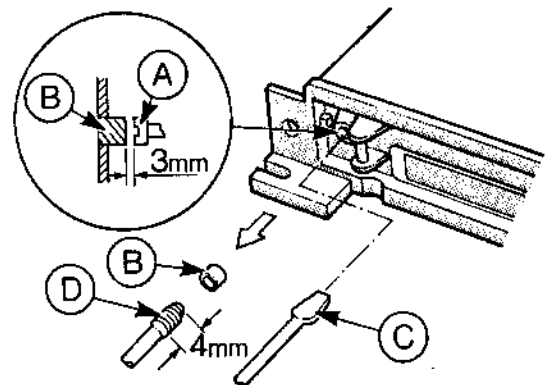
4. Connect multiplug to module:
 - Refit retainer and
 - Push in multiplug so that clip engages.
5. Insert module into holder, connect battery earth cable.
6. Check CO content and adjust if necessary:
 - Connect CO meter and check CO content at normal operating temperature.
 - If required, remove CO adjustment tamperproof plug, on module and turn adjusting screw to correct CO content. Fit new tamperproof plug to adjusting screw.



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Fig.13. Engine management module.

IMPORTANT NOTE: When performing this operation, note that the depth of the tamperproof plug remover should not exceed 4 mm as this will result in damage to the CO - adjustment potentiometer.



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Fig.14. A - CO - adjustment screw
B - Tamperproof plug
C - Screwdriver
D - Extractor tamperproof plug

7. Fit trim above glove compartment.

