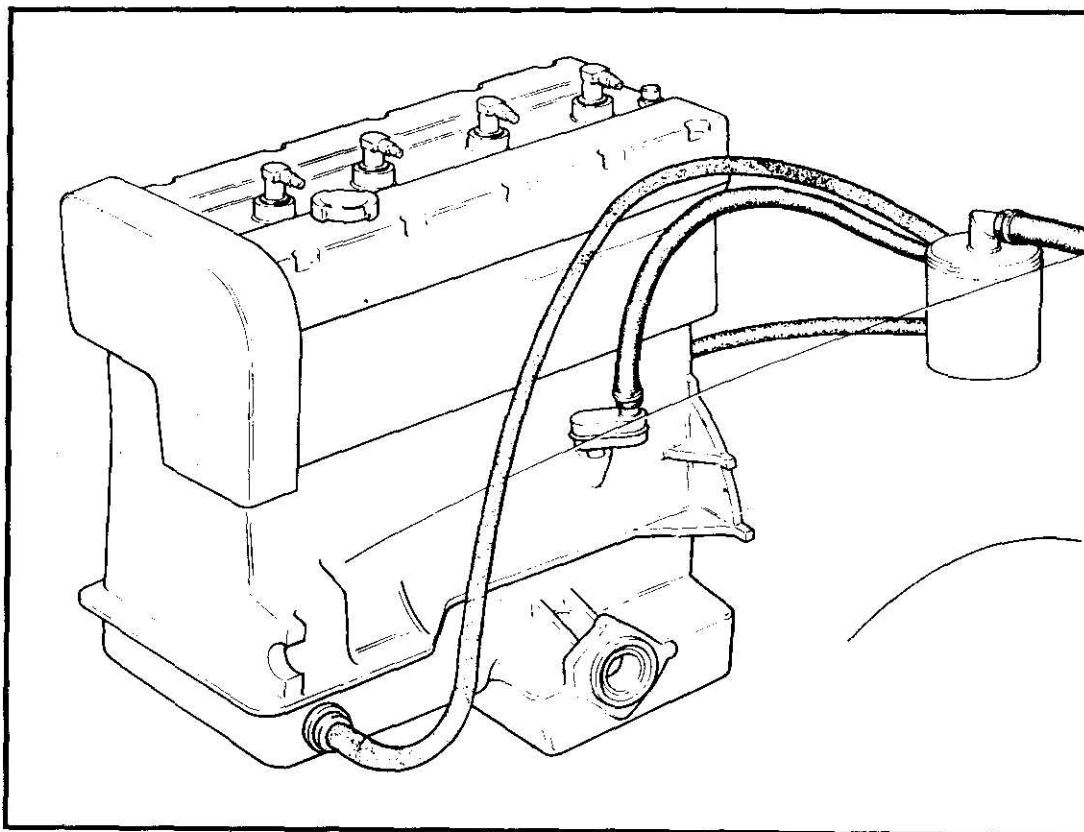


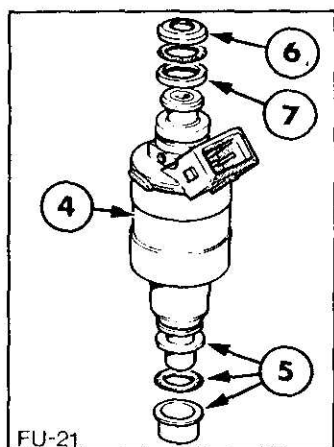
ENGINE





The basic engine is virtually a carry over from the Sierra Cosworth 4x4, but with a larger turbo, and a water-cooled intercooler. Water injection (I.S.S) is also fitted to the initial production runs. This can only be activated with the correct EPROM.

It is strongly recommended that the group 'A' engine is built by a professional tuning company who will optimise the compression ratio and cam timing on a dynamometer. Fit the recommended injectors, spark plugs, map sensor and fuel pump. Set the boost to (TBE) bar peak. Excessive boost will raise the water temperature and shorten turbo and gasket life. The turbocharger will normally last for 800km between rebuilds. Ensure air filter element is replaced regularly in dusty conditions or if wet. Seal gaps around radiator/intercooler with tape.



Description	Finis Code	Comments	Qty.
1 Restrictor Turbo	9095445	38mm diameter	1
2 CHRA Turbo Core	9095477	Balanced	1
3 Compressor Hsg.	9095446	To suit restrictor	1
4 Fuel Injector	9092402	Grey	4
5 Fitting Kit Injector	9092400		4
6 Adaptor Ring, Injector,	9092397	Upper	4
7 Adaptor Ring Injector,	9092396	Lower	4
8 Eprom, Rally	TBE	Level '8' ECU	1
or			
9 Eprom, Rally	T B E	P8 ECU (Alt.)	1
10 Spark Plug	9094884	AGP 601	4
11 Cyl. Head Gasket	9092431		1
12 Bolt - Turbo Mounting	9095143	Quick release	1
13 Nut - Turbo Mounting	9095144	Quick release	3
14 Fuel Rail	TBE		1
15 Bracket - Regulator	TBE		1
16 Fuel Regulator	9095101		1
17 Piston Ring Pack	9093153		4
18 Flywheel	9095548	Modified	1
19 Seal Kit	9095561	Turbo O/Haul	1

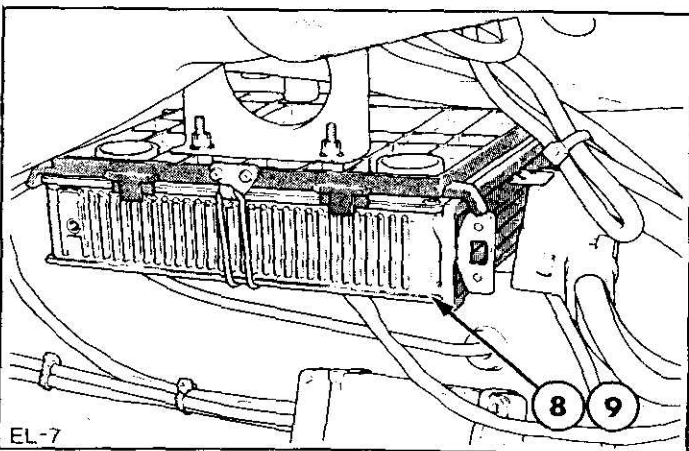
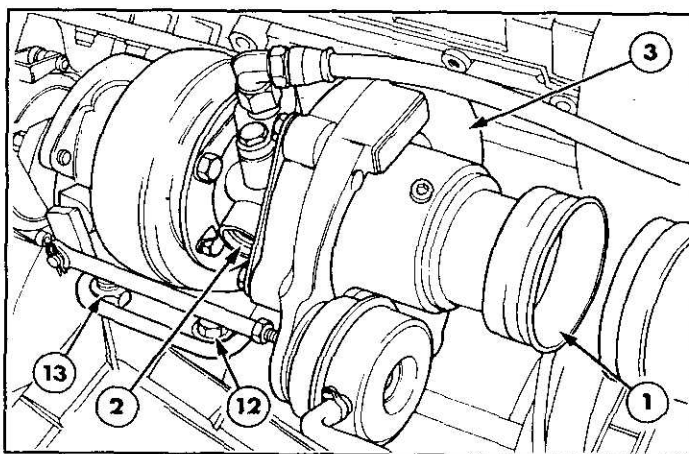
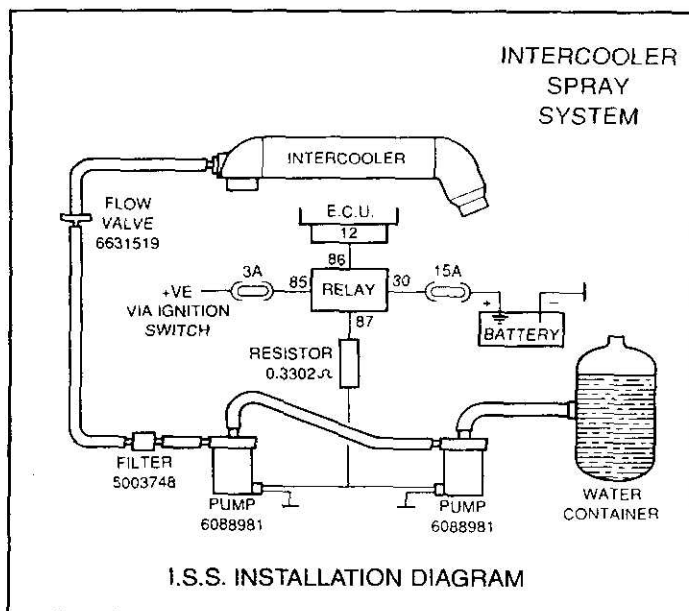
ONLY SUPER UNLEADED FUEL (98 OCTANE) SHOULD BE USED

Wastegate Setting	:	TBE
Max. Boost	:	TBE (Overboost)
† Fuel Pressure (Idle)	:	3.5 Bar
Engine Oil	:	Mobil 1 (Change after 1000km)

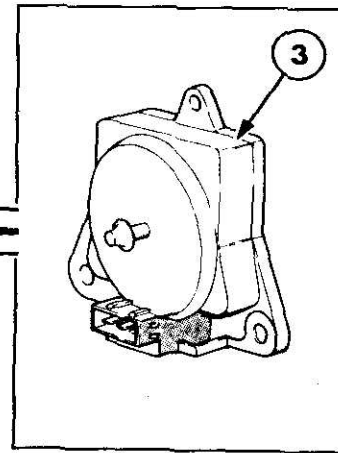
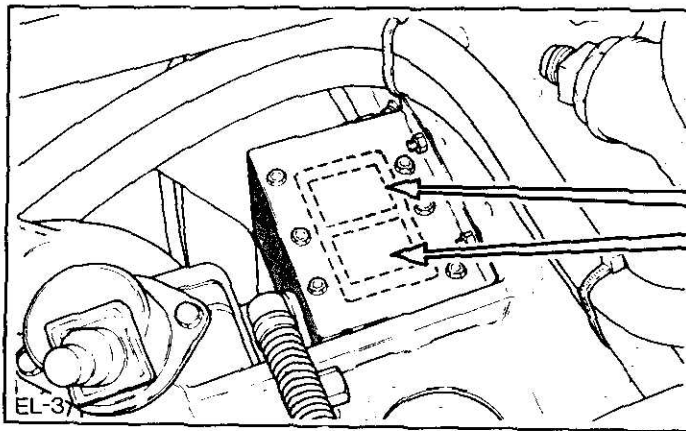
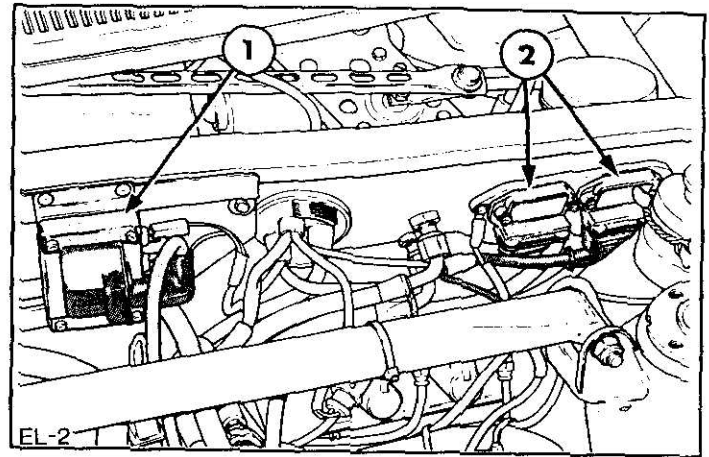
† Sensor pipe removed

The water temperature should be approx. 90°C at 20°C ambient. In warm climates, run the radiator fans continuously (fit an override switch). The intercooler spray system (ISS) will keep the plenum temperature at 40°C (ensure container is refilled at service points) The thermostat can be modified or replaced. Use new cylinder head bolts at each rebuild.

The turbocharger exhaust housing can be modified by slotting three holes to help quick removal. Use one bolt and three studs.



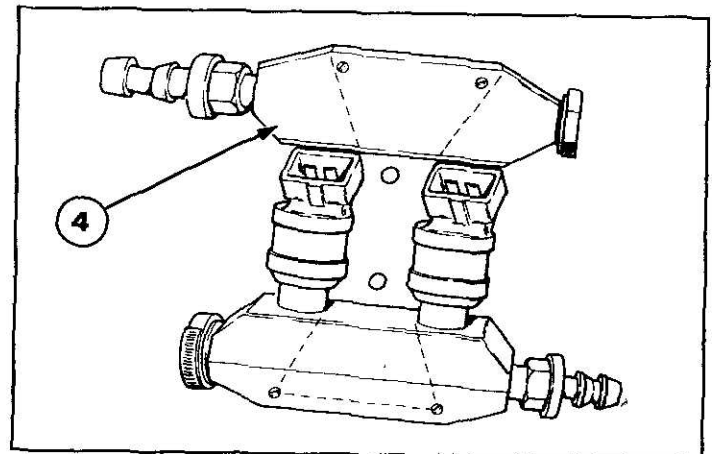
Description	Finis Code	Comments	Qty.
1 Ignition Coil	9095085		1
2 TFI - Ignition	*1637546	Earth to engine	2
3 MAP Sensor	9092433	3.0 Bar	2
4 Kit - Wastegate Control	9095147		1

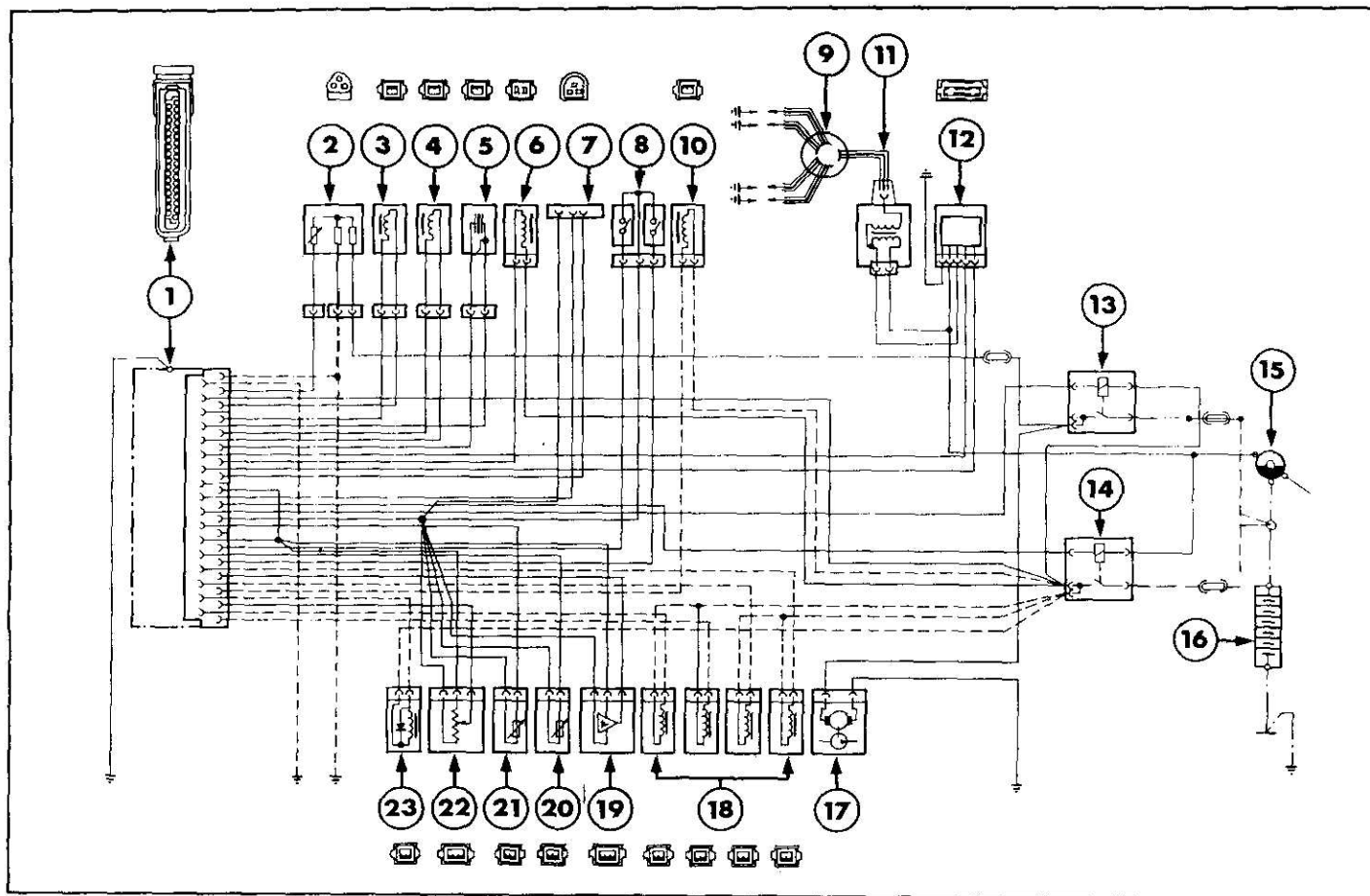


NOTE:

The HT leads must NOT be allowed to make contact with any sensor wires.

Fit the 2 MAP sensors inside a metal box as shown, to reduce the possibility of electronic interference.





- | | |
|---------------------------------|--|
| 1 ECU | 13 Fuel Pump Relay |
| 2 Lambda Sensor | 14 ECU Relay |
| 3 Vehicle Speed Sensor (VSS) | 15 Ignition Switch |
| 4 Phase Sensor | 16 Battery |
| 5 Knock Sensor | 17 Fuel Pump |
| 6 Canister Purge Solenoid Valve | 18 Injectors |
| 7 Diagnostic | 19 Manifold Pressure Sensor |
| 8 Octane Adjustment | 20 Air Temperature Sensor |
| 9 Ignition Distribution | 21 Coolant Temperature Sensor |
| 10 Wastegate Control | 22 Throttle Position Sensor |
| 11 Ignition Coil | 23 Idle Speed Control Valve with Diode |
| 12 TFI Module | |

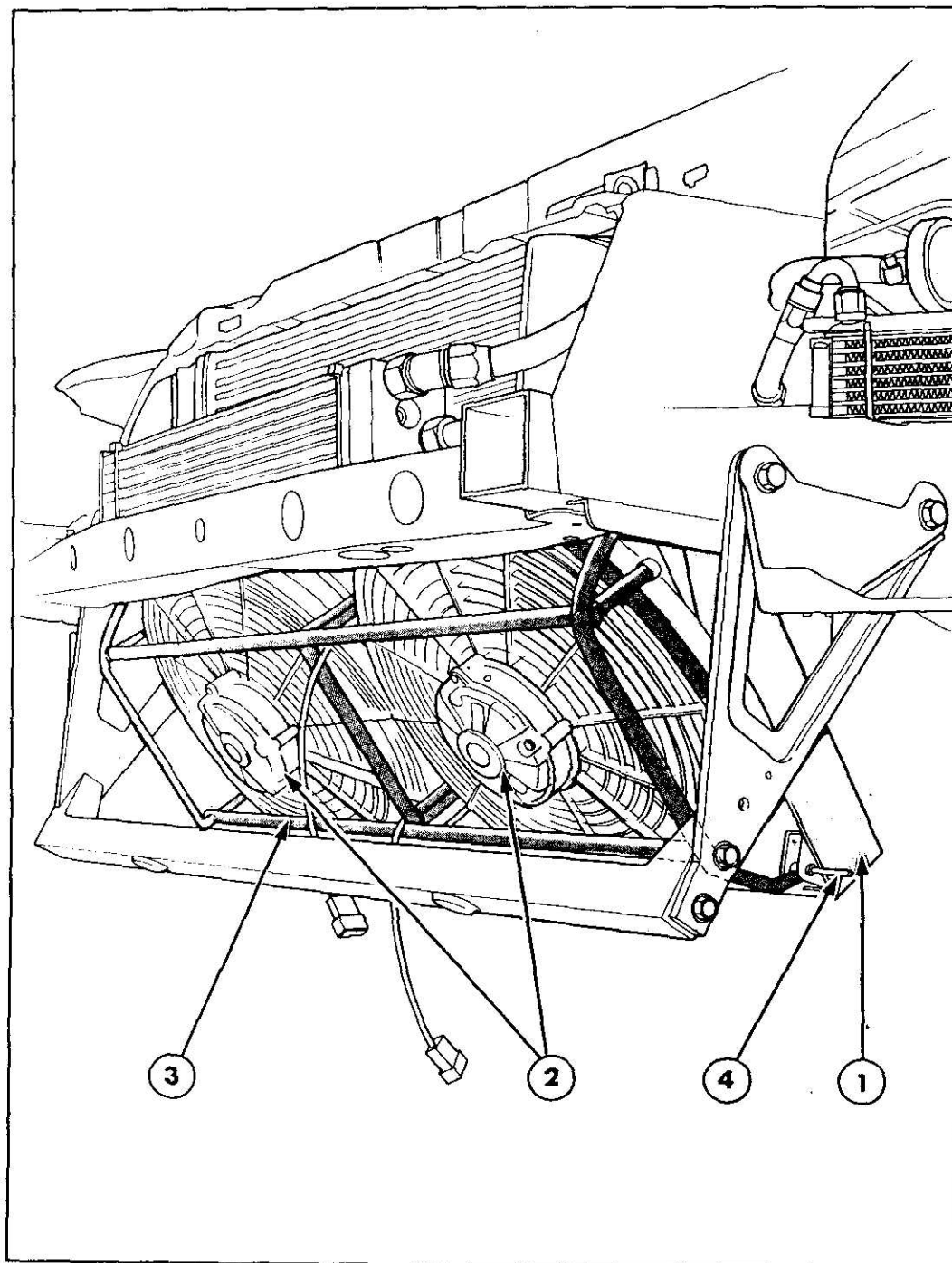
NOTE 1: The ECU body should be connected to the chassis making sure of a perfect electrical connection. A RF connection is allowed. Max length = 150mm.

NOTE 2: These connections should be made at a different location. Max distance = 150mm.

NOTE 3: Chassis connection. Max length = 100mm.

NOTE 4: Joint is inside ECU connector.

NOTE 6: This connector must have the indicated polarity to avoid damage at the ECU module.



Description	Finis Code	Comments	Qty.
1 Radiator	9095521		1
2 Fan	9095524		2
3 Fan Mounting Frame	9095523		1
4 Pin - Fan Mounting	9095522		4

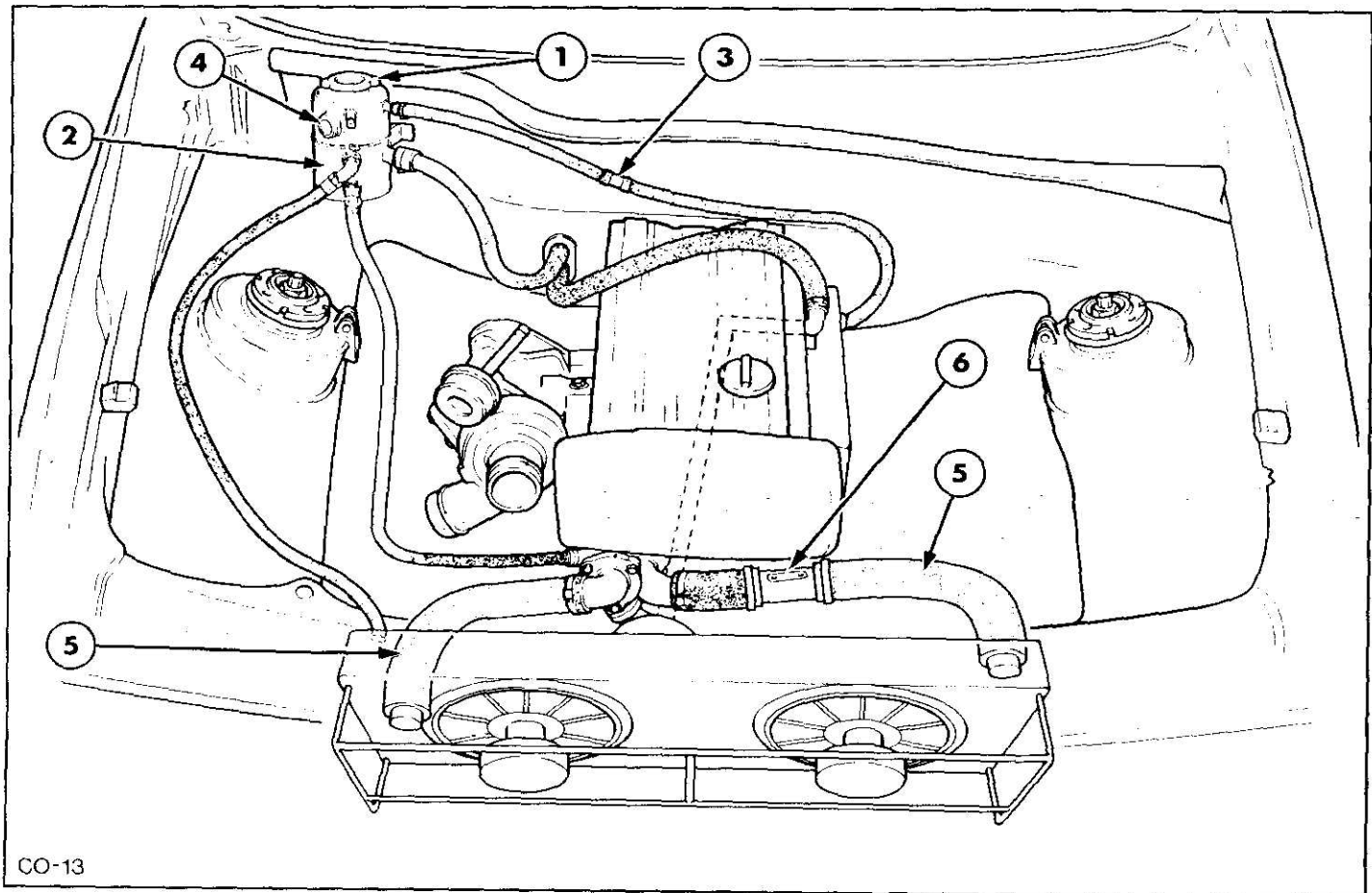


The water system is piped up as shown.

The sensor tube carries the fan switch and the engine coolant temperature sensor if no thermostat is fitted.

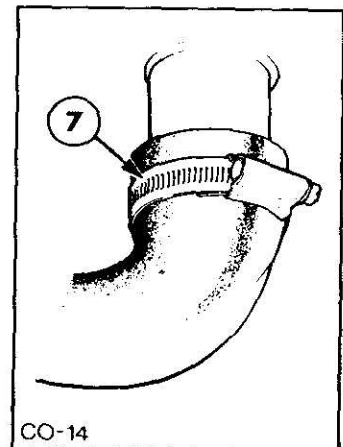
Use a mix of 50% water / 50% antifreeze and fill to the centre of the window. Keep all hoses clear of the belts. The system is fully pressurised using engine boost (or via the schrader valve).

Do not remove cap when engine is hot!

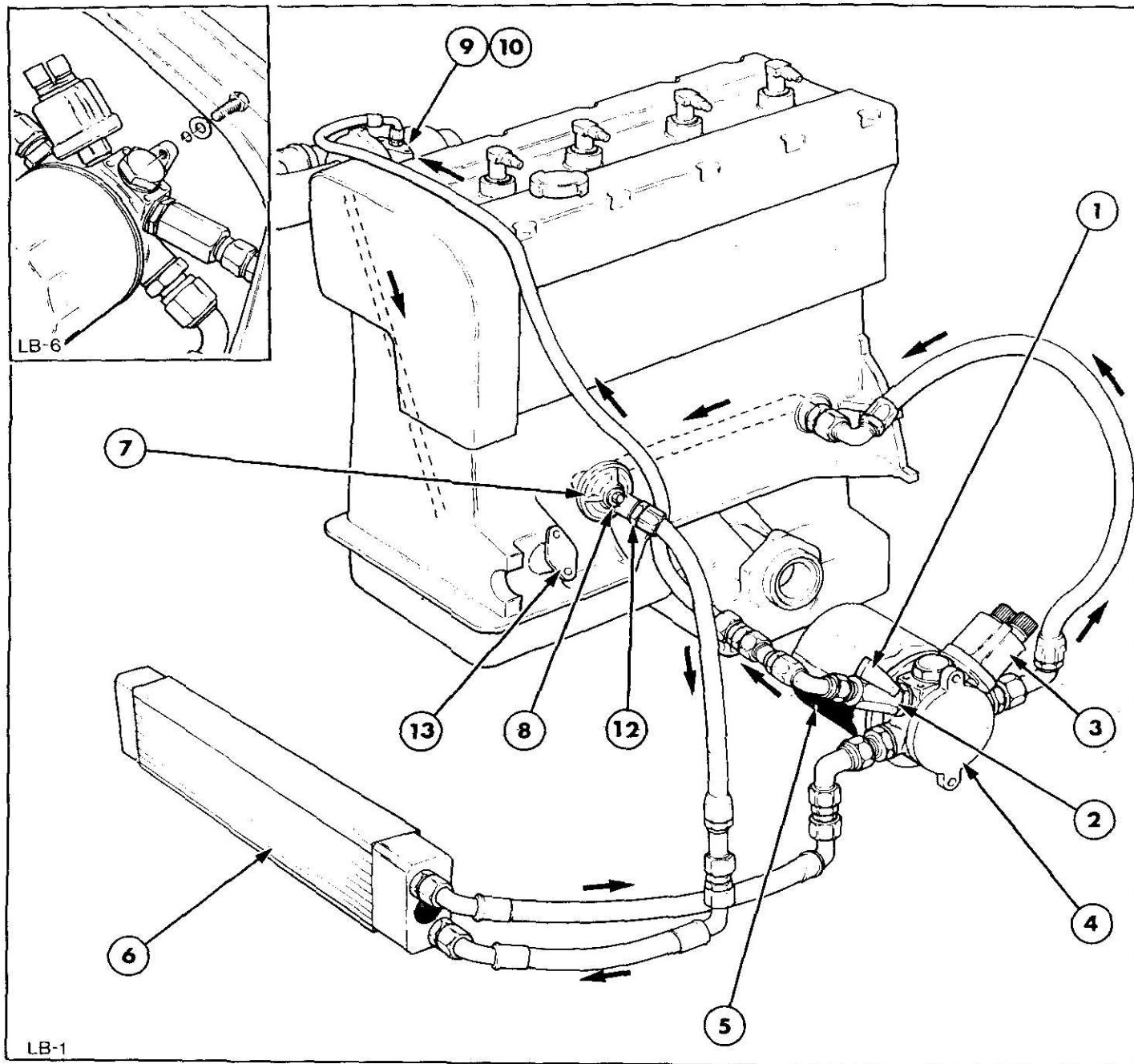


CO-13

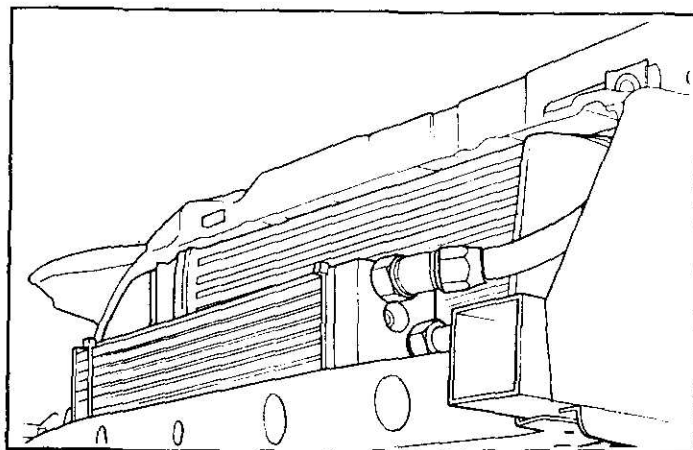
Description	Finis Code	Comments	Qty.
1 Cap - Header Tank	9095183	2 Bar	1
2 Header Tank	9095195		1
3 Valve - one Way	9095182	Manifold boost	1
4 Window - Header	9095197		1
Seal - window	9095196		1
5 Hose - water	9095159	Cut to length	2
6 Tube - sensor	9095343		1
7 Clip - hose	5007669		A/R
Alt.	5007666		A/R
Alt.	5007665		A/R

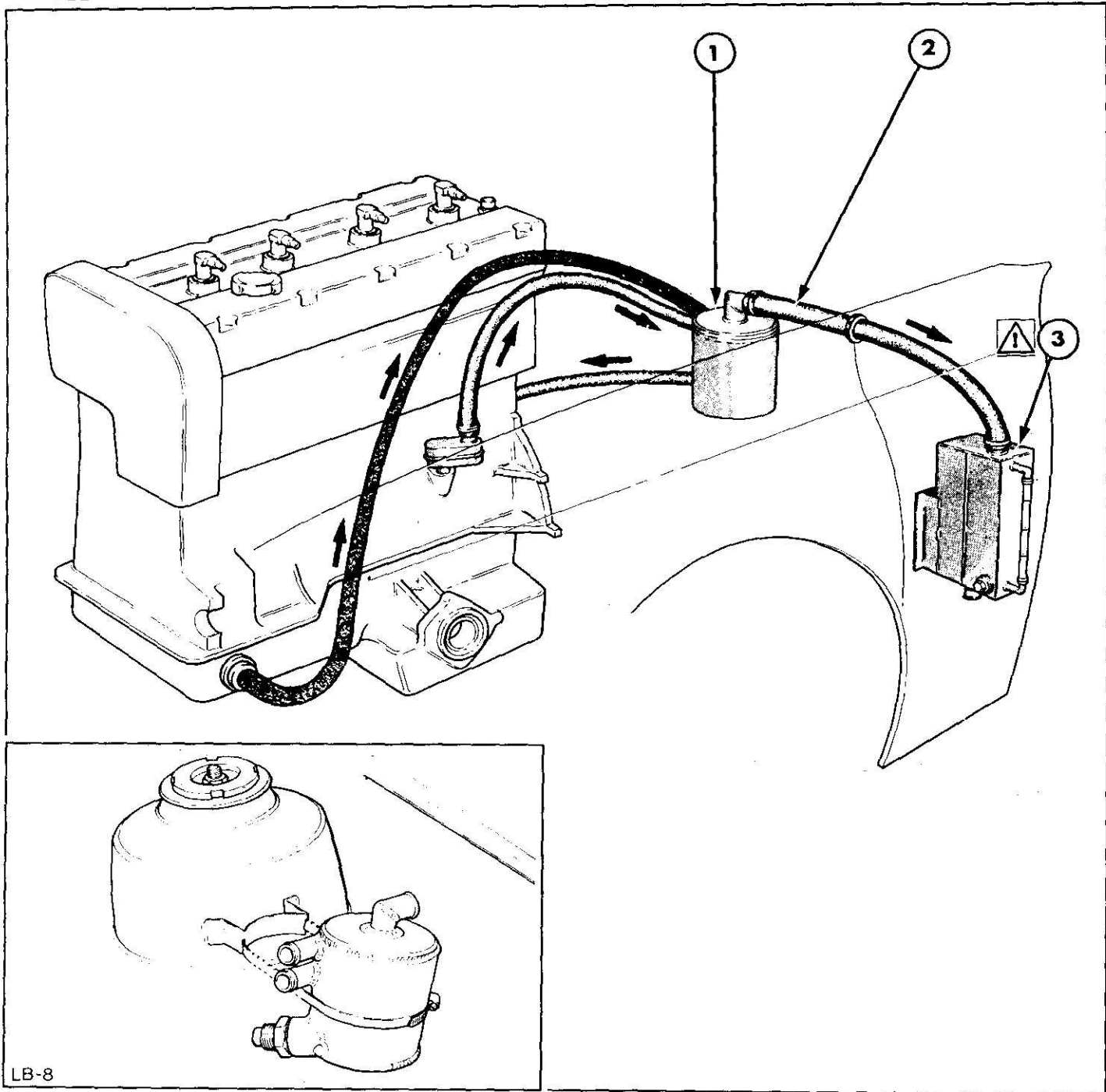


CO-14

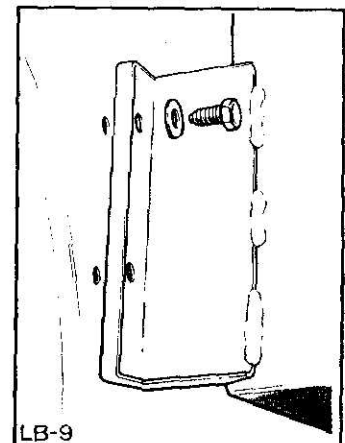
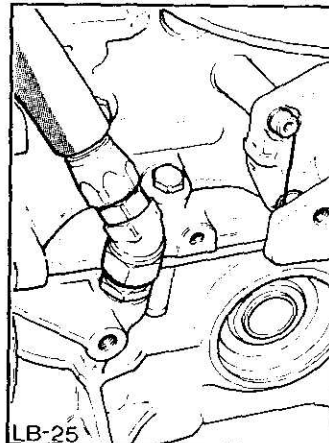


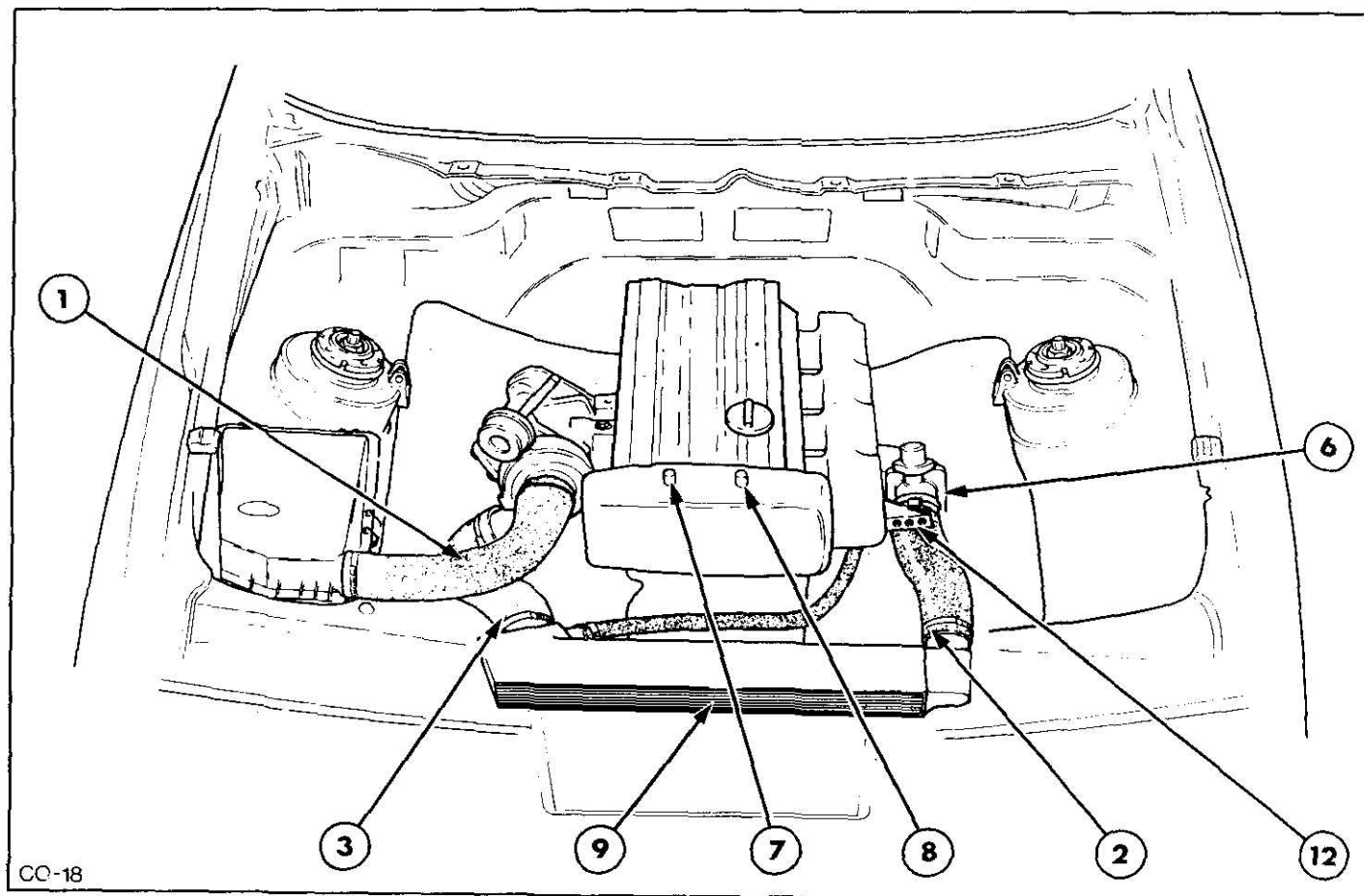
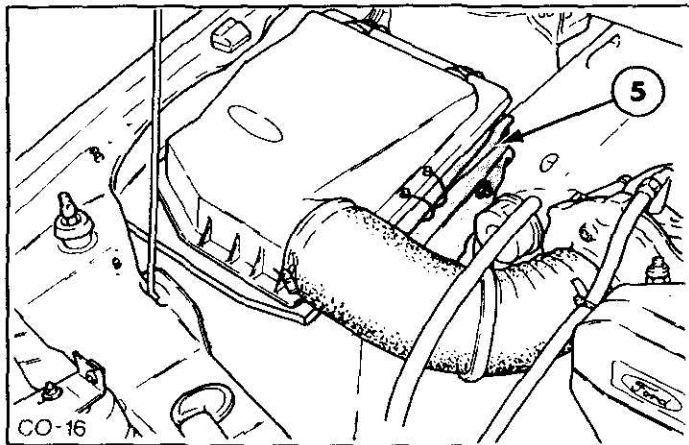
Description	Finis Code	Comments	Qty.	Note: For sump see P57 (Front Axle).
1 Turbo Cut Off Valve	9094842		1	
2 Union	9094841		1	
3 Sender - Oil Pressure	9091956		1	
4 Bracket - Oil Filter	9094920		1	
5 Oil Filter	9094911		1	
6 Oil Cooler	9093258		1	
7 Adaptor Plate	9094901	(Use seal 1579875)	1	
8 Nut - Blind	9094880		1	
Seal 'O' Ring	9094887		1	
9 Connecting Flange	9095367		1	
10 'O' Ring Connecting Flange	9095369		1	
11 Seal	9095071	Service	1	
12 Union Adaptor	9094882		1	
13 Plate - Fuel Pump	9095151	Blanking plate	1	
14 Spring - Oil Pump	9095139	Increased pressure	1	
15 Oil Pick Up	9095140	Including spray rail	1	



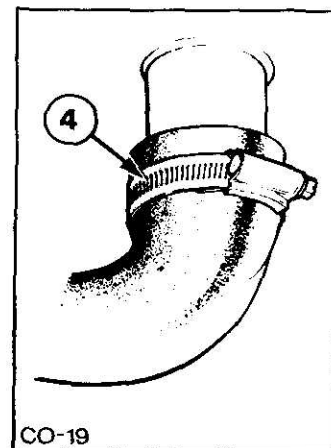


Description	Finis Code	Comments	Qty.
1 Tank Oil Separator	T B E		1
2 Hose - Breather	T B E		1
3 Oil Catch Tank	9095081		1

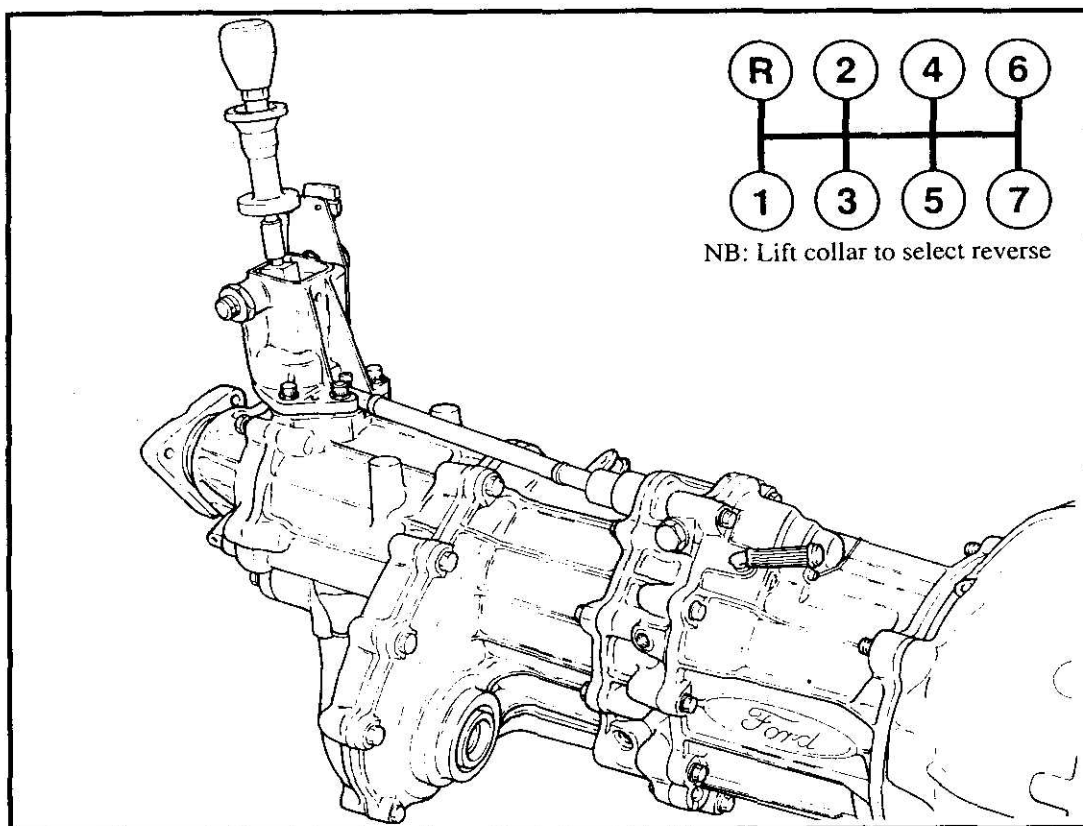




Description	Finis Code	Comments	Qty.
1 Hose - A/C to Turbo	*6698040		1
2 Hose - I/C to Engine	9093652		1
3 Hose - Turbo to I/C	*6883520		1
4 Hose Clip	*6130115		A/R
5 Heat Shield	9092616	Air Cleaner	1
6 Throttle Body	9095234	Modified lever	1
7 Spacer - Cover	9095149		1
8 Spacer - Cover	9095150	Threaded	1
9 Intercooler	*6683878		1
10 Camshaft In	9094773	Virgin Lobes	1
11 Camshaft Ex	9094774	Virgin Lobes	1
12 Throttle Bracket	9094892	Modified	1



TRANSMISSION





The transmission homologated for use in the Escort RS Cosworth group 'A' is the MS90.

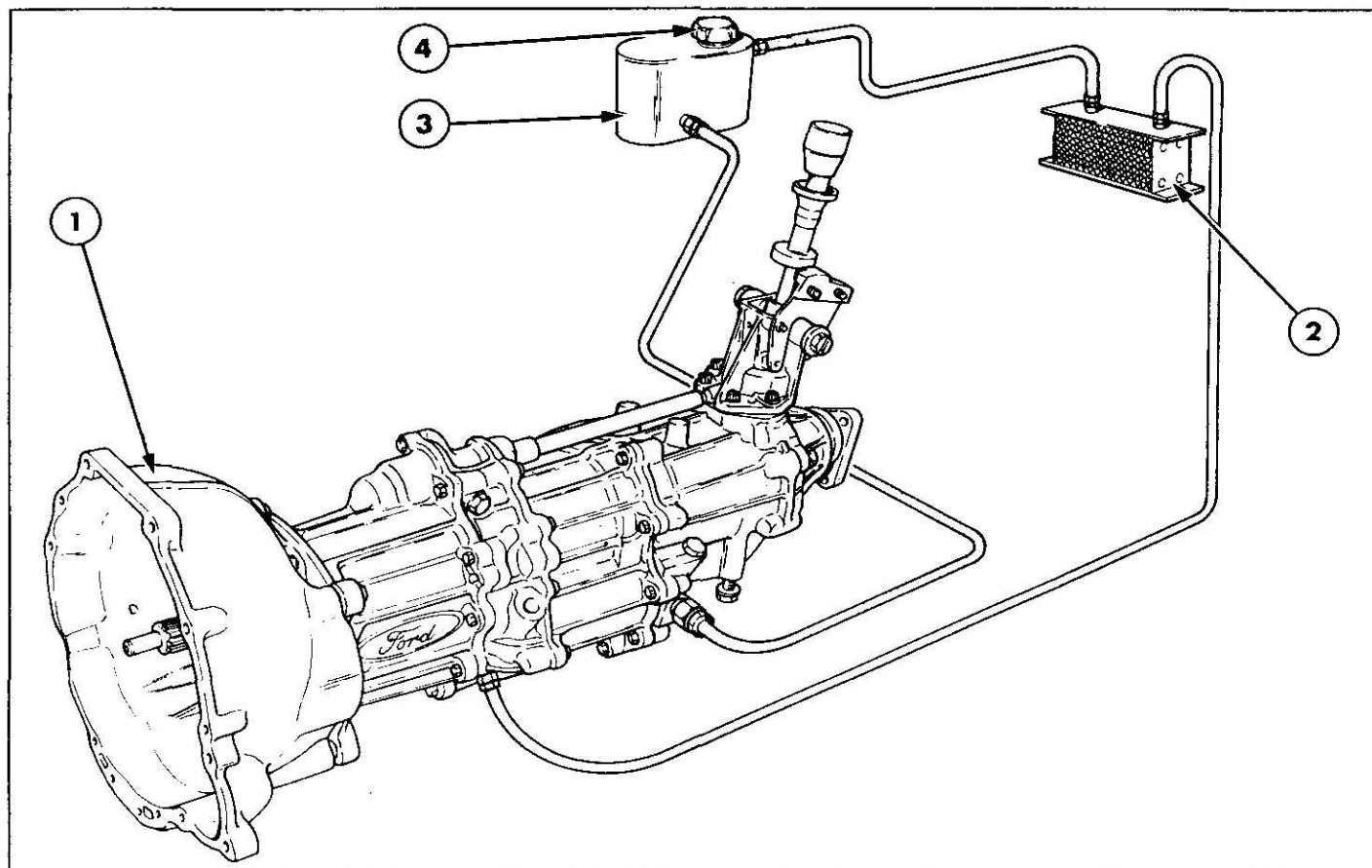
This is a seven speed unit with dry sump lubrication via a built-in oil pump, and remote reservoir. The gears are selected by clutch rings ("dogs"). There is no synchromesh available.

The MS90 transmission is supplied with a detachable (four bolts) clutch housing. Clutch actuation is normally hydraulic.

The overall ratio can be changed by replacing the primary gearset. The MS90 is supplied with the torque split set at 50% front, 50% rear, Alternative torque splits are also available.

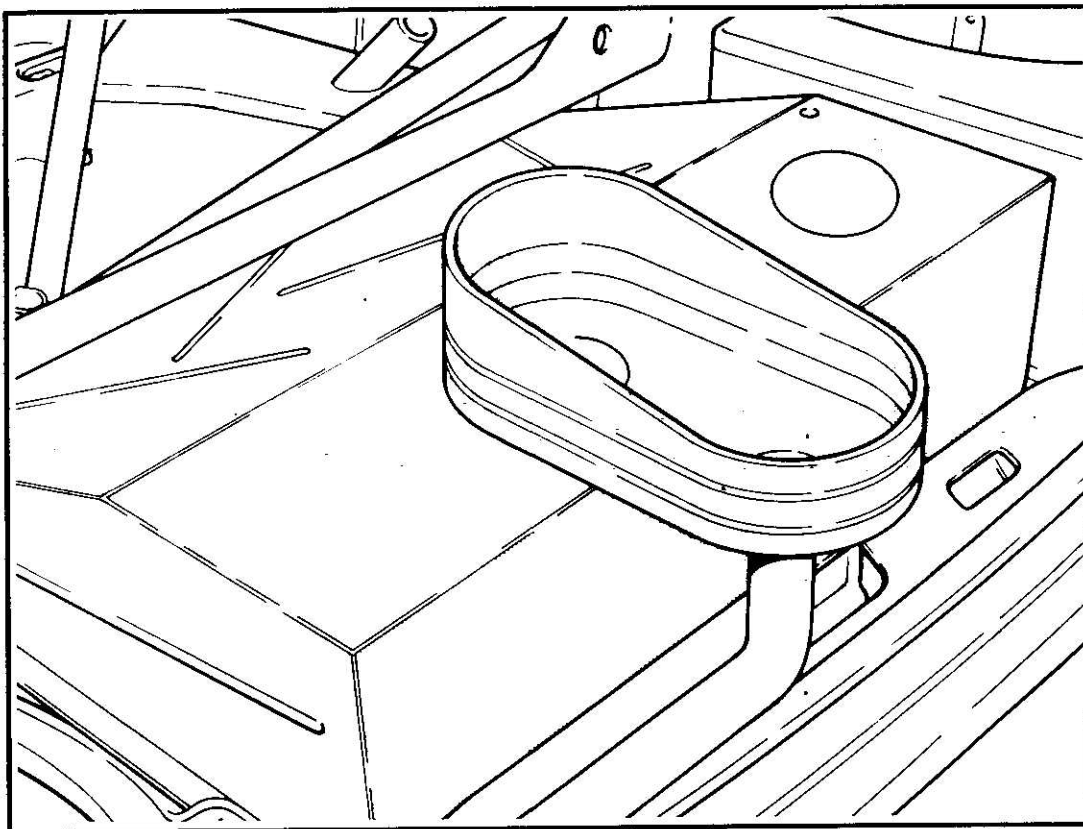
GEAR	RATIO	TEETH
1	2.071	14/29
2	1.529	17/26
3	1.200	20/24
4	0.955	22/21
5	0.792	24/19
6	0.654	26/17
7	0.536	28/15
REV.	2.143	14/30

INPUT RATIOS	TOP SPEED (640 Dia TYRES)
17/26 Standard Rally	149 mph (240 kph)
16/27 Alt. Rally	135 mph (217 kph)
18/25 Race	164 mph (264 kph)
19/24 Race	180 mph (290 kph)



Description	Finis Code	Comments	Qty.
1 Transmission Assy. Service details for 9095326 available from: F.F. Developments Ltd. Wolston Business Park Main Street Wolston Coventry CV8 3LR Tel: 44 (0) 203 544 048	9095326	MS90	1
2 Cooler - Transmission	9095084		1
3 Oil Tank - Transmission	9095520		1
4 Cap - Oil Tank	*5005508		1

FUEL SYSTEM

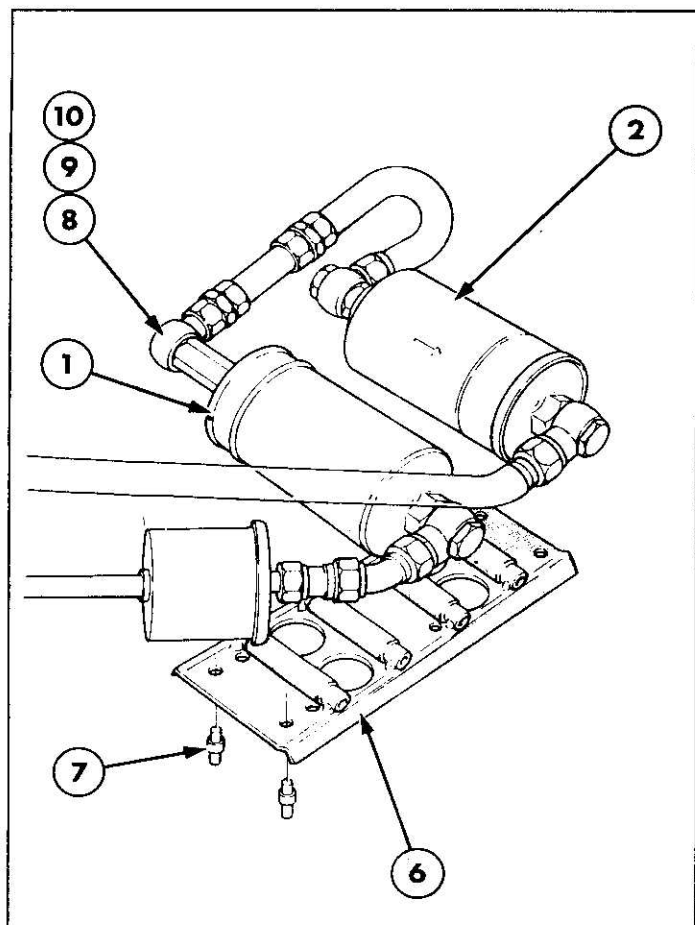




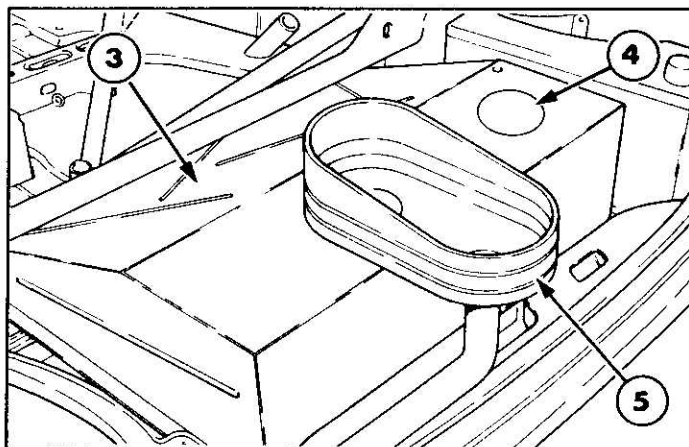
The fuel system comprises an FT3 fuel tank mounted in the luggage compartment, with an electric pump and filter situated near the base of the tank.

To enable the tank to be fitted, the detachable hatch on the right side of the luggage compartment floor is removed and the edges of the opening turned down to prevent damage to the rubber tank. The fuel tank must be enclosed in a fire and liquid proof cover (usually aluminium).

The pump and filter can be mounted on the underside of the floor and both fuel tank and pumps protected by a stone shield. Fuel lines must be aviation type with protective braiding and should be routed through the vehicle.



Description	Finis Code	Comments	Qty.
1 Fuel pump	9092162	FT3 Tank	1
2 Filter	9090275	FT3 Tank	1
3 Fuel Tank	T B E	FT3 Tank	1
4 Fuel Sender	9094750	FT3 Tank	1
5 Fuel Filler	9094851	FT3 Tank	1
6 Bracket - Fuel Pump	9095235		1
7 Insulator - Bracket	*1570495		4
8 Banjo - Fuel Pump	—		1
9 Banjo Bolt	6054980		1
10 Washer M14	—		1





The standard alternator fitted to the Escort Cosworth is rated at 90 amps.

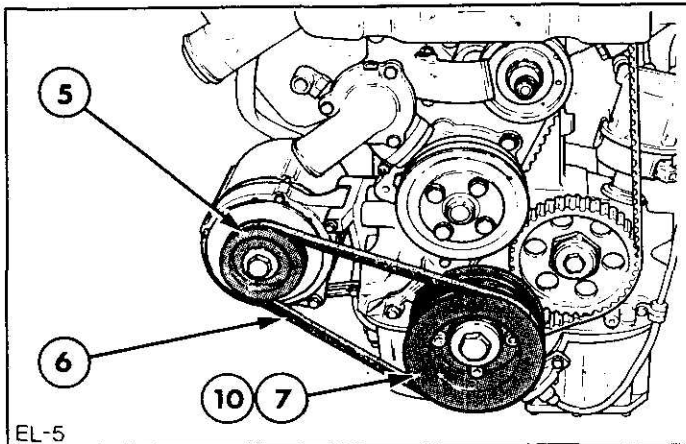
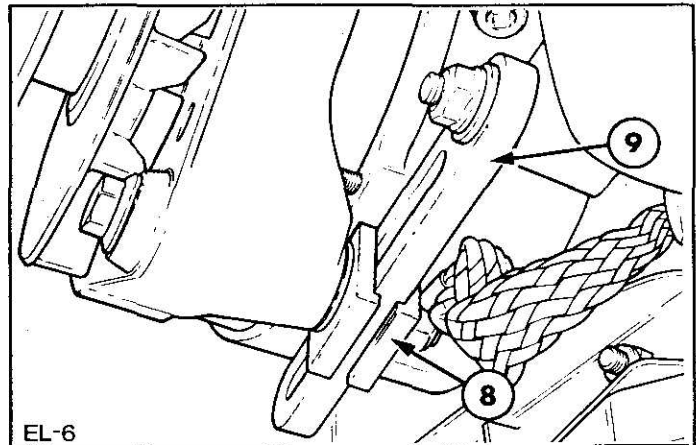
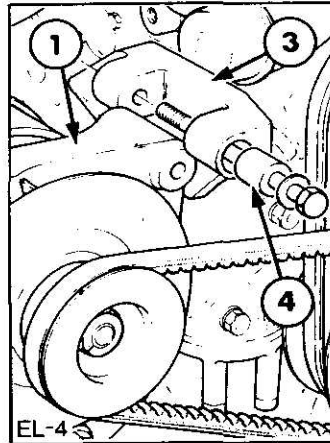
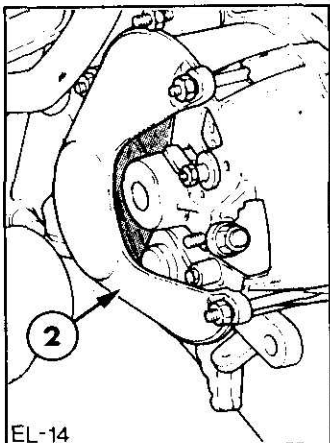
This can be replaced by a 150 amp alternator which will have enough capacity for a lamp pod, heated screen etc.

The alternator should be earthed to the bodyshell.

The battery can be fitted inside the car but must be enclosed in a box with ventilation to the atmosphere.

Use a sealed racing-type battery, and fit heavy duty jack-plugs to allow quick-change.

Disconnect battery and engine control unit when welding on car.

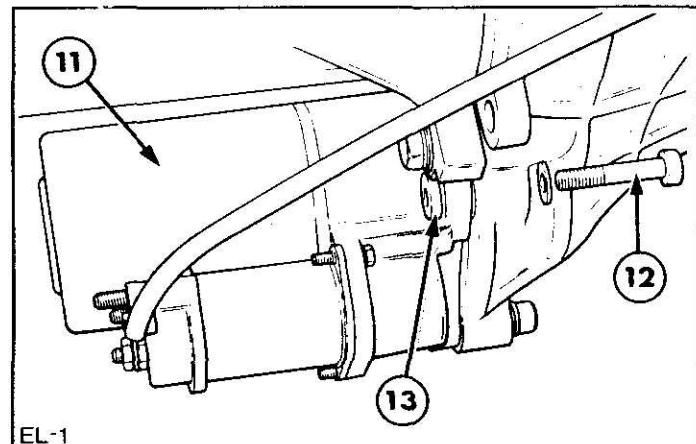


NOTE:

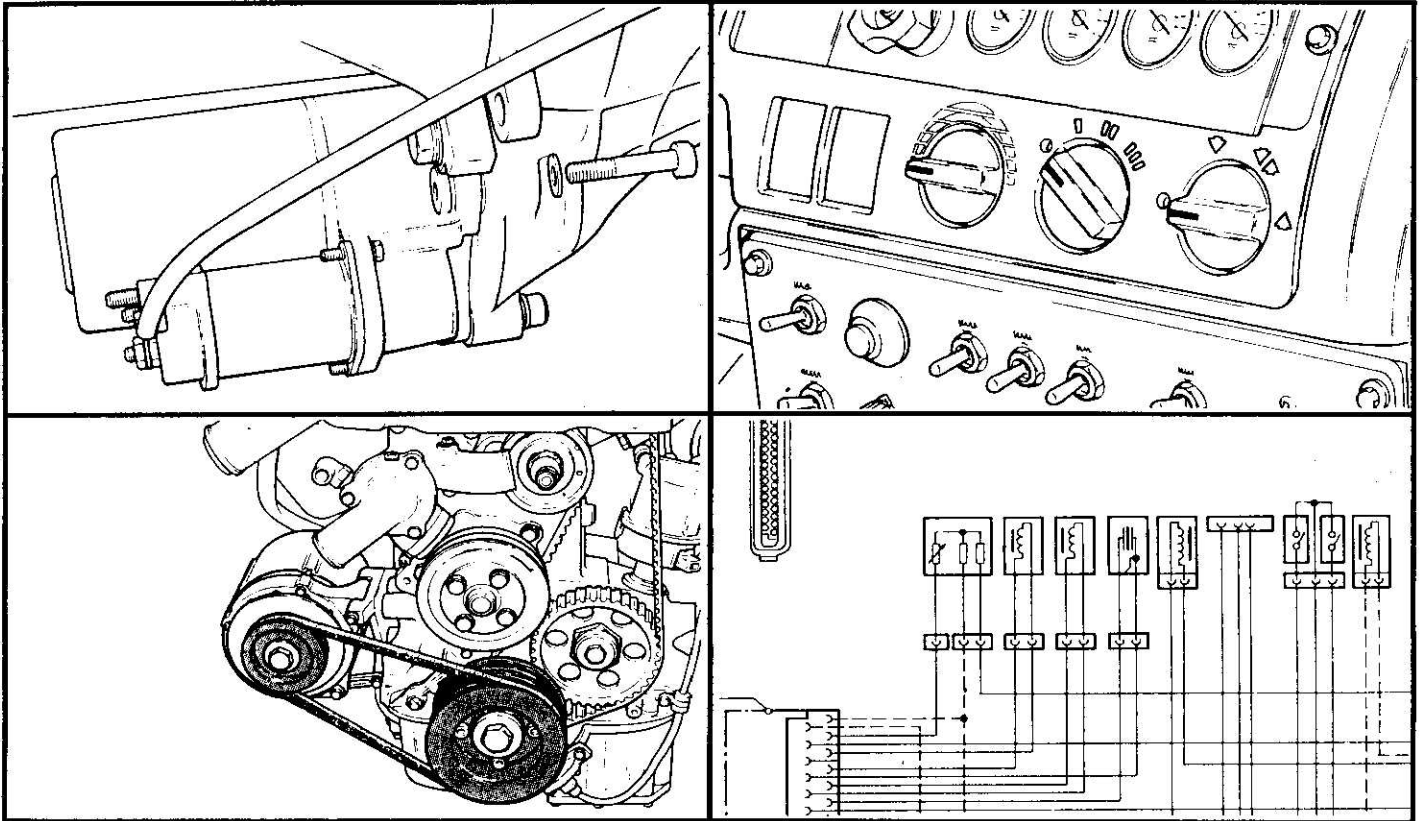
This starter motor has been modified to enable ease of removal as follows:

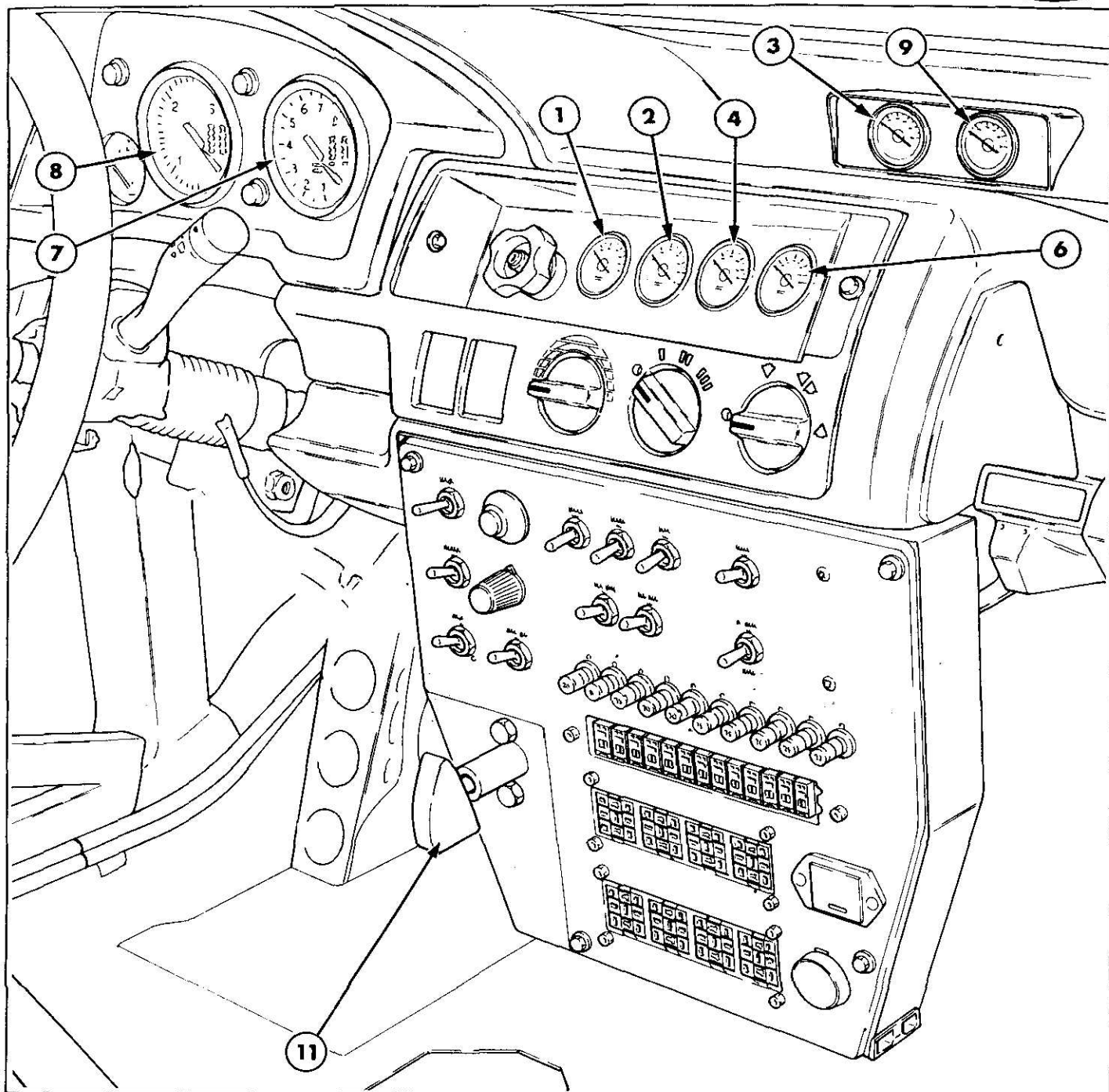
- Clutch housing drilled out to remove thread.
- Starter motor mounting flange tapped to accept mounting bolts from the rear of the bell housing.

Description	Finis Code	Comments	Qty.
1 Alternator	9092574	150 Amp	1
2 Heatshield - Alternator	*6553448		1
3 Bracket - Alternator	9094793		1
4 Bush - Alternator Mounting	9093115		2
5 Pulley - Alternator	9095110		1
6 Belt - Pulley Alternator	9092933		2
7 Pulley - Crankshaft	9095107		1
8 Clamp - Alternator Strap	9091941		2
9 Strap - Alternator Adjust	9092600		1
10 Adaptor - Crank	9095067		1
11 Starter Motor	*1659138		1
12 Bolt - Starter	*1515841		3
13 Insert - Starter	9093121		2



ELECTRICAL





Description	Finis Code	Comments	Qty.
1 Gauge - Oil Pressure	9091435	0 - 10 bar	1
Oil Pressure Sender	9091956		1
2 Gauge - Water Temperature	9090777		1
3 Gauge - Turbo Boost	9090788		1
4 Gauge - Fuel Pressure	9091435		1
5 Fuel Pressure Sender	9091956		1
6 Gauge - Fuel Level	9090776		1
7 Tachometer	9091326		1
8 Speedometer	9091407		1
9 Voltmeter	9090779		1
10 Kit - Air Horns	*5006122		1
11 Switch - Master Cut-off	9092629		1

Additional Auxiliary gauges "may be freely installed, provided that their fitting is not likely to create any danger".

The horn may be changed or an additional one added "possibly for passenger use". The air horn kit is ideal for this purpose, with a foot operated button on the navigators footrest.

Ensure any additional lamps are wired through separate relays to avoid overloading the standard wiring. Problems are caused by chafing wires or radio interference. Keep radio equipment away from engine electronics.



WARNING

Disconnect battery and engine control module **before** commencing any welding on the vehicle.



MS NUMBERS APPLICABLE TO STICKERS, BADGES AND LITERATURE

STICKERS:

MS13	3"	Ford Oval
MS14	8"	Ford Oval
MS15	10"	Ford Oval
MS16	14"	Ford Oval
MS17	20"	Ford Oval
MS18	30"	Ford Oval
MS19	40"	Ford Oval
MS23	4 1/2"	Ford Oval
MS24	6"	Ford Oval
MS30	6" x 3"	Ford Motorsport
MS31	8" x 4"	Ford Motorsport
MS32	4" x 1 3/4"	Ford Motorsport

BADGES:

MS26	Oval Cloth
9091528	Rectangular with Ford in Oval

LITERATURE:

MS36	Escort Group 'N' Preparation Manual (Illustrated)
MS37	Escort Group 'A' Preparation Manual (Illustrated)

YOUR CONTACTS AT FORD MOTORSPORT:

Charlie Mead	Sales Manager	0245 451906
Sue Southcott	Order Control	0245 451901
Mike Ringwood	Sales/Technical Enquiries	0245 451902
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**BELGIUM**

FLORAL AUTO
TIELSTRAAT 155
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Tel: 051 488568
Fax: 051 489390

Contact: Kris Vanparys

FINLAND

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Contact: Mauro Ghislieri

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Tel: 011/8223616
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PORTUGAL

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