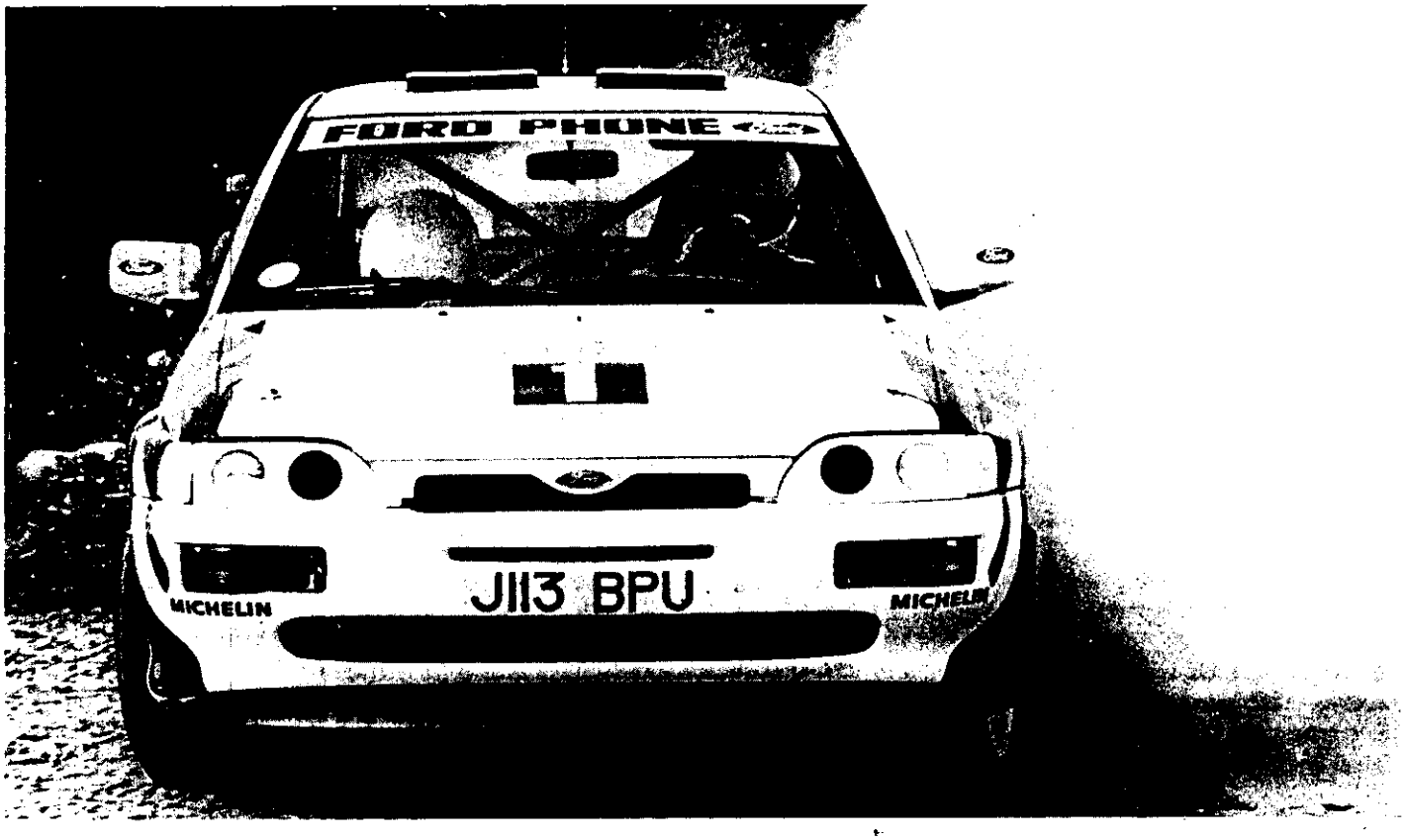
ESCORT RS COSWORTH GROUP 'A'



The Ford Escort RS Cosworth is scheduled for Homologation into group 'A' and 'N' on Jan. 1st 1993. This publication details the modifications necessary or recommended for group 'A' competition. It should be read in conjunction with the F.I.S.A. yearbook and bulletins for international events. A copy of the standard workshop manual "Ford Sierra RS Cosworth and Escort RS Cosworth" (order code No CG1503/EN) is also useful and can be ordered via a Ford dealer. This covers normal service and repair procedures.

Ford Motorsport have developed and tested the Group 'A' Escort during 1992. The car has been driven by Ford Works Drivers on Tarmac and on gravel. A wide range of parts have been tested in all conditions to determine component 'Life' as well as performance. Where possible an indication of safe working life will be shown as a guide, but it must be stressed that this varies widely with conditions and driving technique. In any case, every critical component should be checked regularly during the event, and replaced if wear or damage is evident. A system of preventative maintenance will help avoid costly failure.

The Escort RS Cosworth is based mechanically on the Sierra RS Cosworth 4x4 with minor changes to engine and driveline. The bodyshell is unique, with interior trim based on the Escort model range. The 'Roadsport' version is sold without radio, sunroof, foglamps and electric windows to provide an ideal base vehicle for the competitor. The front spoiler incorporates an airsplitter which should be retracted for use on gravel and extended for Tarmac/race.

It is recommended that users register with the Ford Motorsport 'Performance News' service by contacting:
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WORKSHOP INFORMATION

1. Health and Safety

Many procedures associated with vehicle build and repair involve physical hazards or other health risks. The following list is not exhaustive and all operations should be carried out with health and safety in mind.

A) ADHESIVES: May be flammable and/or toxic.

B) ASBESTOS: Dust may be carcinogenic. Avoid inhalation.

C) BATTERY: Acid can cause burns. Explosive gases released during charging.

D) DUST: Wear respiratory masks when cleaning brakes etc.

E) ELECTRICITY: Can cause severe burns or electrical shocks. Disconnect battery during repairs, and keep electrical tools in good condition.

F) FUEL/OIL: Fuel is flammable and toxic. Can be explosive. Used oil can be harmful to skin. Have a fire extinguisher on hand during refuelling. Do not refuel car while other people are working on it.

G) VITON: Some seals or 'O' rings contain viton. When heated above 400°C these become extremely corrosive and can cause severe skin damage. After a fire, handle all components with plastic gloves.

H) WELDING: Extreme care must be taken when welding on a vehicle. Ensure all flammable material is removed from the area and wear eye and skin protection.

I) JACKING: Never work under a car unless it is supported on axle stands.

2. Tightening Torques

Torques are quoted in Nm (1Nm = 0.7376 lbs f ft)

Metric Bolt Torques

Bolt Strength:	Grade 8.8		Grade 10.9	
Finish: S72 zinc plate				
Size	Nm	lbft	Nm	lbft
M4	2.5 to 3.0	1.8 to 2.2	4.5	3.3
M5	5.0 to 6.0	3.7 to 4.4	9.5	7
M6	8.5 to 10	6.3 to 7.4	15	11
M8	20 to 25	15 to 18	35	26
M10	40 to 51	30 to 38	70	51.5
M12	70 to 90	52 to 66	130	96
M14	114 to 146	84 to 108	205	150
M16	175 to 220	129 to 162	300	220
M18	252 to 317	186 to 233	430	315
M20	345 to 430	254 to 317	600	440
M22	470 to 590	347 to 435	–	–
M24	600 to 750	443 to 553	–	–

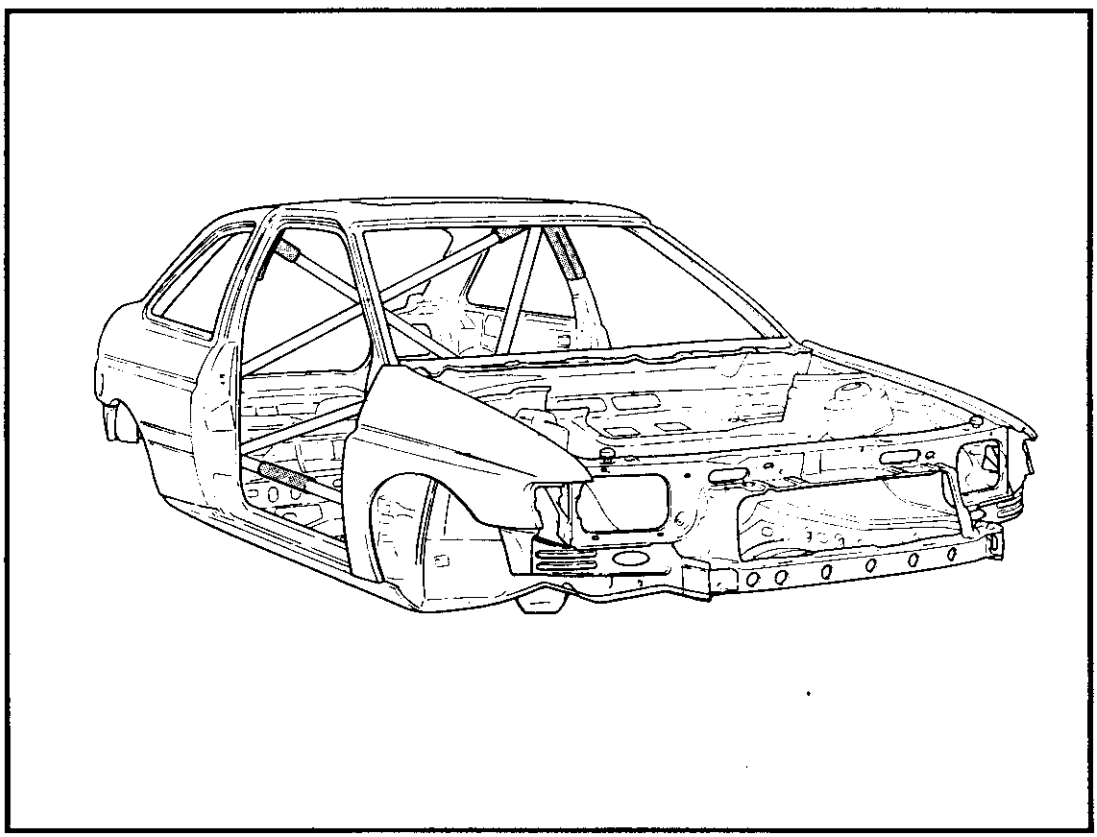
2. Tightening Torques (continued)

Pipe union and connector torques

	Nm	kgm	lbft
Pipe Unions into connectors:			
6mm tube to M10 thread	15 to 18	1.5 to 1.8	11 to 13
9mm tube M16 thread	30 to 34	3.1 to 3.5	22 to 25
12mm tube M18 thread	45 to 49	4.6 to 5.0	33 to 36
Bundy Tube Unions and Connectors:			
4.7mm tube diameter M10 thread	15 to 18	1.5 to 1.8	11 to 13
6.0mm tube diameter M12 thread	20 to 24	2.0 to 2.4	15 to 18
.0mm tube diameter M16 thread	27 to 31	2.8 to 3.2	20 to 23
10.0mm tube diameter M16 thread	30 to 34	3.1 to 3.5	22 to 25
12.0mm tube diameter M18 thread	45 to 49	4.6 to 5.0	33 to 36

NOTE: After torquing bolts and nuts, mark each with a dab of paint. This will ensure all parts are correctly torqued, and provide a means of identifying bolts which are coming loose during the event.

BODY



BODYSHELL

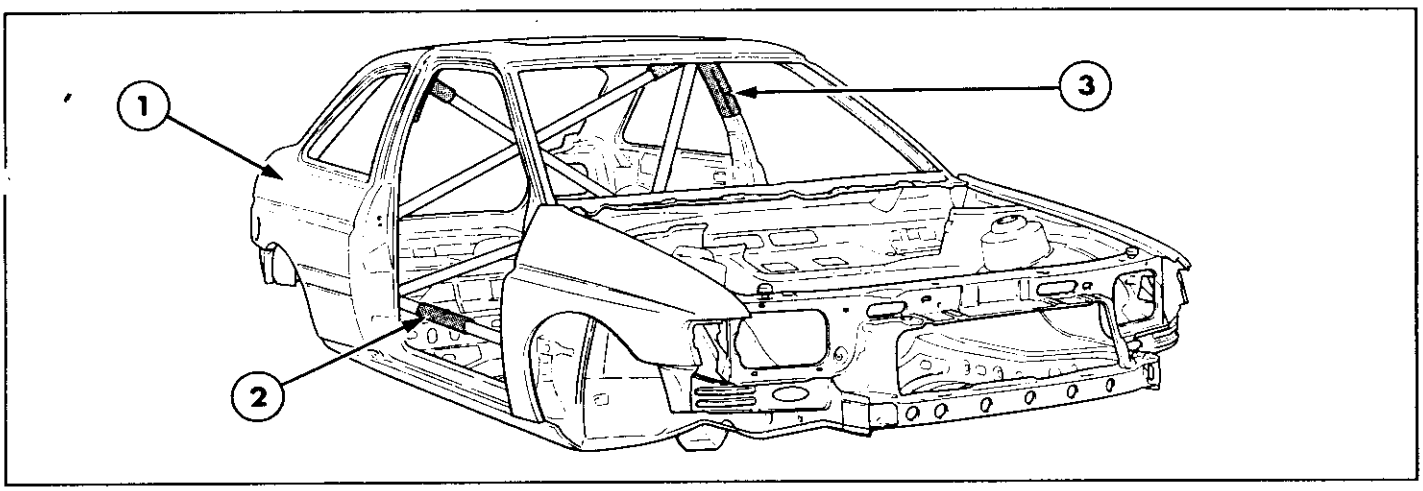
The Motorsport Escort RS Cosworth bodyshells are seam welded, strengthened and fitted with a welded in safety roll cage to give high torsional rigidity, long life and inherent safety.

Bonnet locking pins should be fitted to the hood top and the tailgate. The best location for the tailgate fixing is on the rear window pillars.

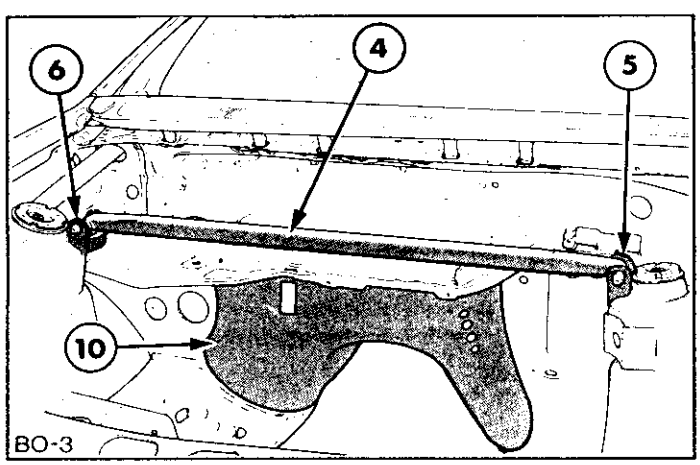
Roll cage sleeving is available in two sizes. Use 9092652 on door bars, and 9095218 on the main roll hoop near the occupant's head.

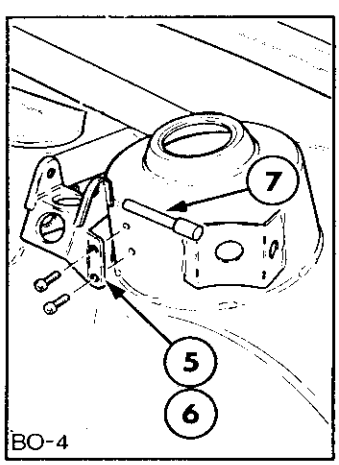
The netting is useful for carrying helmets and jackets in the rear, or as a map container on the navigator's door.

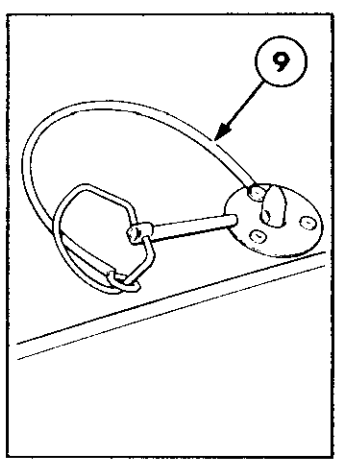
Note: The 1994 rollcage changes proposed by FISA will not be applied retrospectively to bodyshells bought during 1993.



	Description	Finis Code	Comments	Qty.
1	Bodyshell – LHD	9095455	Without roll cage	1
	Bodyshell – RHD	9095456	Without roll cage	1
	Bodyshell – RHD	T B E	Fully prepared including	1
	Bodyshell – LHD	9095373	welded in roll cage	1
2	Sleeving, Roll Cage	9092652	2 x 2 metre lengths	1
3	Sleeving, Roll Cage	9095218	54mm 1 x 2M length	1
4	Crossbrace, Turret	9093717	Lightweight Support	1
5	Bracket, Crossbrace, LH	9094871	Included on prepared shell	1
6	Bracket, Crossbrace, RH	9094875	Included on prepared shell	1
7	Pin, Turret Brace Fixing (Quick Releasing)	9094870	Use with 9093717 9094871 and 9094875	2
8	Netting, Side Storage	*6122596		2
9	Bonnet Pin Set	9095221	Aluminium	2
10	Heatshield – Transmission Tunnel	9094778		1
11	Seat Rail	9092968		4
12	Front Plate	9095412	Seat Mounting	4
13	Rear Plate	9095411	Seat Mounting	4



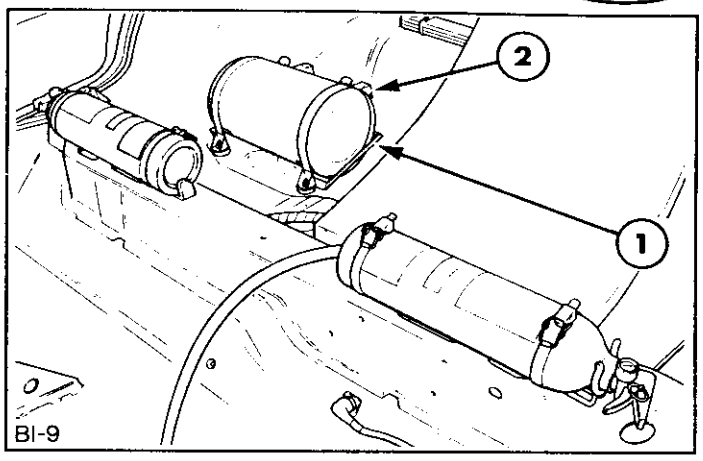


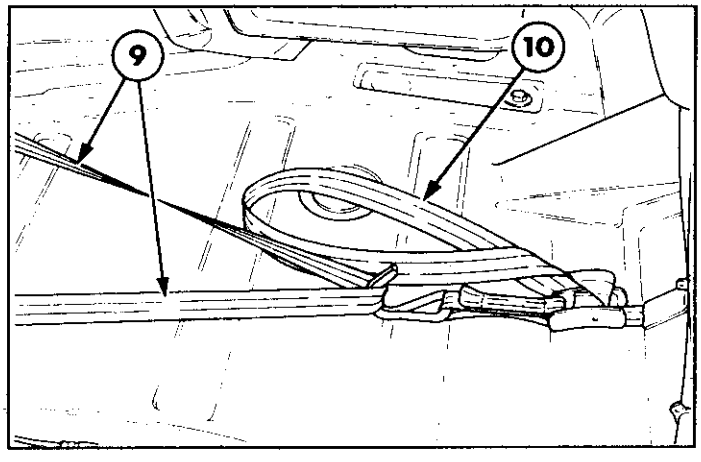


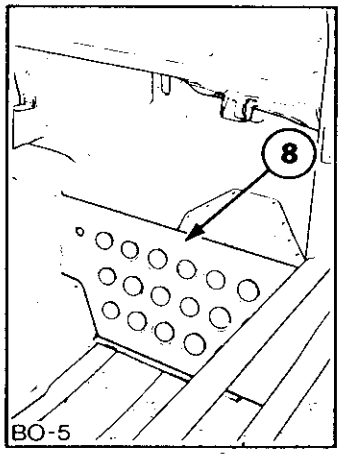
FISA require an automatic 'plumbed in' extinguisher system of 7.5kg. (2.5kg cockpit, 5kg engine). The system should be "powder or an agent of similar efficiency and non-toxicity". Currently, Halon 1211 or 1301 (BCF-BTM) is common.

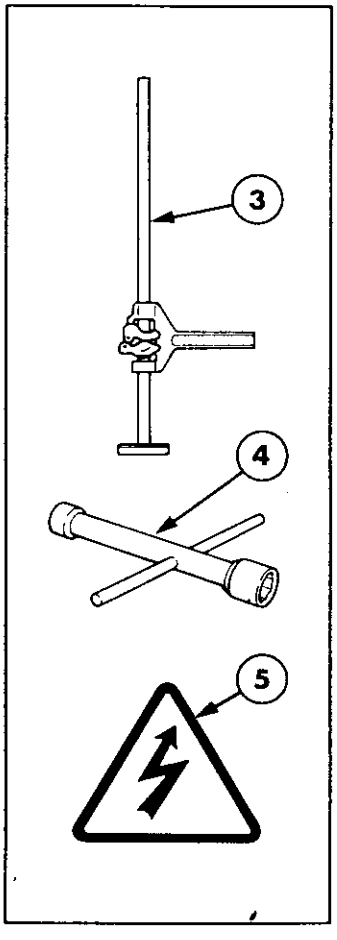
In addition, the car must be equipped with one or two hand held bottles containing 4kg minimum extinguishant.

Rally cars must carry First Aid kit and warning triangles in most European countries to comply with traffic laws.

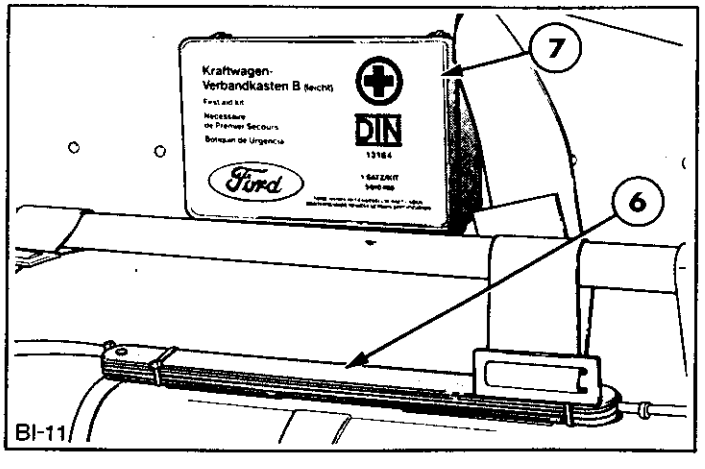








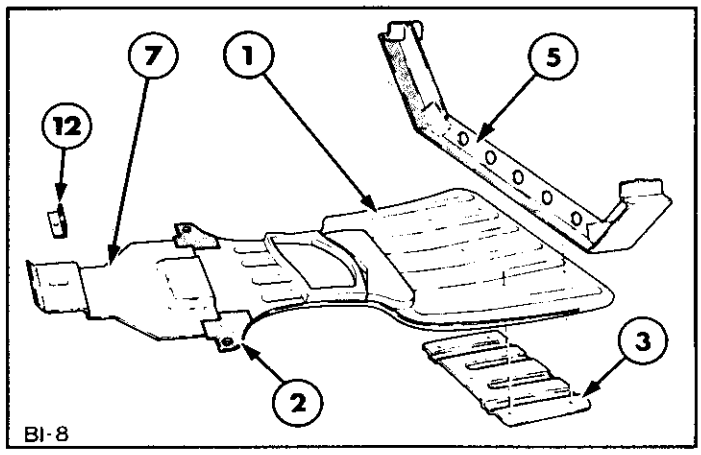
	Description	Finis Code	Comments	Qty.
1	Bracket, Fire Extinguisher	9092884		2
2	Strap, Fire Extinguisher	9092938		2
3	Jack, Short, (Quicklift) Complete with Handle	9091324		1
4	Wheelbrace – High	T B E	14mm Nuts	1
	Speed Spinner Type	9090628	12mm Nuts	1
5	Decal – Ignition Cut – Out	9092875		1
6	Warning Triangle	*1528336		1
7	First Aid Kit	*5010466		1
8	Footrest LHD	9095258	Kevlar	1
9	Spare Wheel Strap	9090630		1
10	Spare Wheel Strap	9090631		1

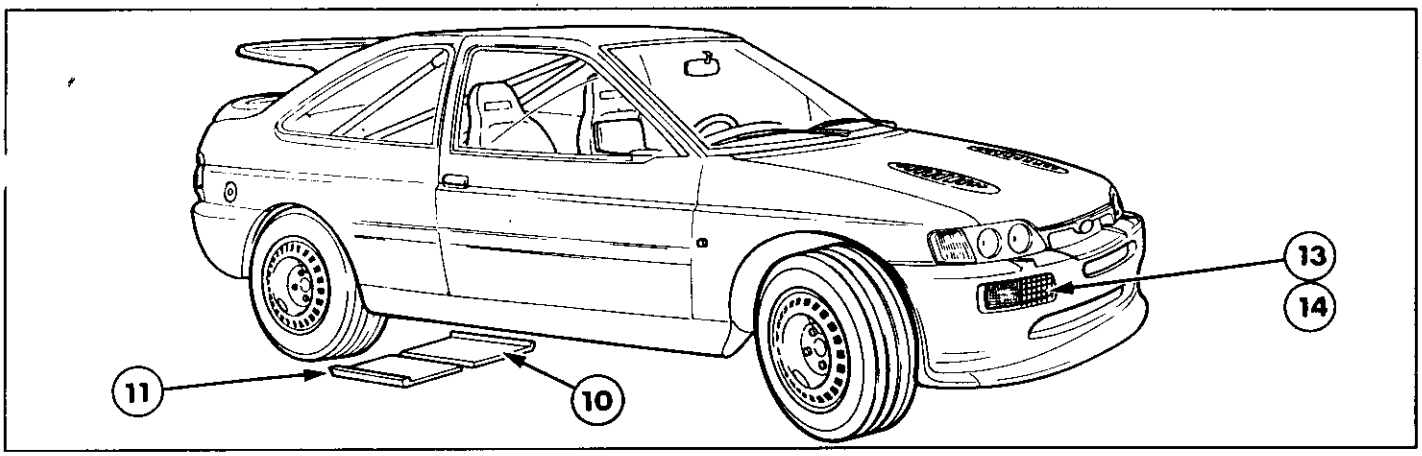


The under shield is mounted onto a front bracket supported by two aluminium side brackets, a centre support fitted just ahead of the suspension crossmember, and two bolts into the chassis rails. The removable outer cap will protect the undershield from stone damage. A foam pad should be fitted between the undershield and the suspension cross member/ sump.

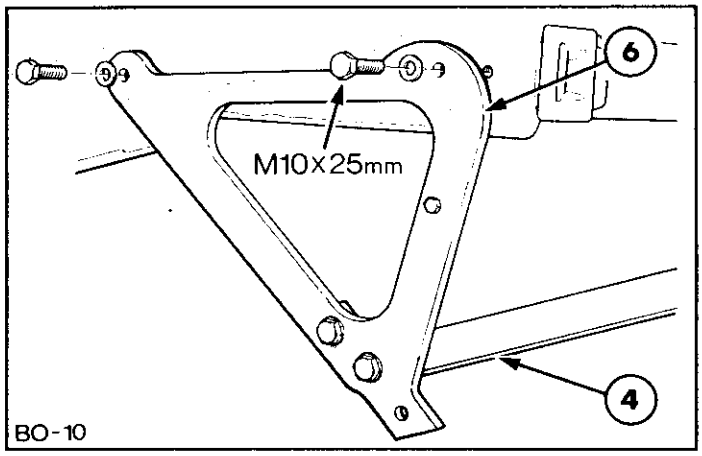
A heatshield (item 2) is fitted on the right hand corner to protect the undershield from exhaust heat damage.

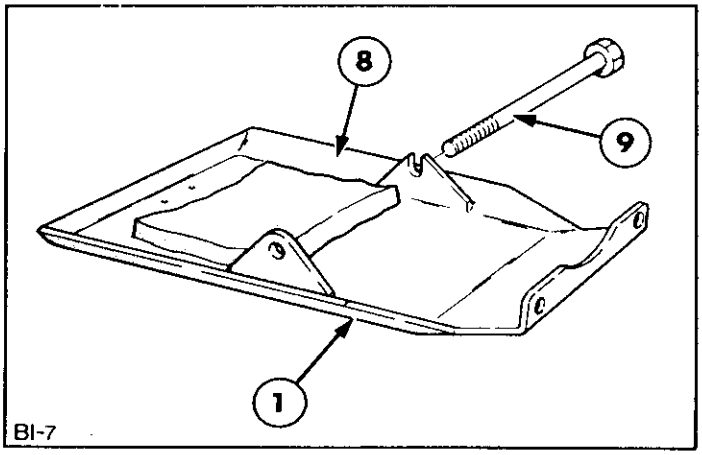
The foglamp aperture grilles allow airflow to the P.A.S. and transmission coolers.



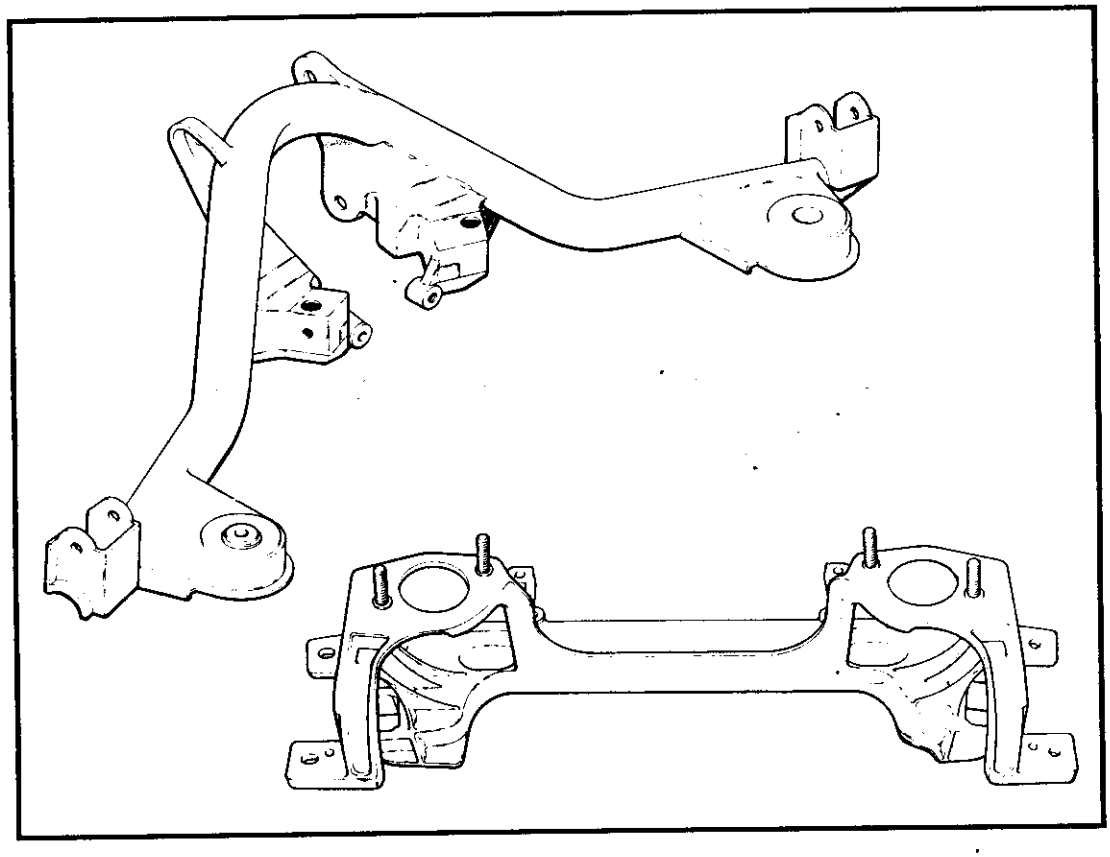


	Description	Finis Code	Comments	Qty.
1	Undershield, Front Kevlar	9095458	Tarmac or Gravel	1
2	Heatshield, Under – shield Mounting	9095187	Exhaust heat protection	1
3	Undershield, Outer Cap	9095135	Use in conjunction with 9095458	1
4	Undershield Support Bracket, Front	9095504	Tarmac	1
		TBE	Gravel	1
5	Undershield Support – centre	9095079	Tarmac	1
	Undershield Support – centre	9095080	Gravel	1
6	Bracket, Sump Shield, Side	9095503	Tarmac	2
		TBE	Gravel	2
7	Transmission Shield	9095192	Gravel	
8	Undershield, 9" Axle	9095193		1
9	Bolt – Axle	9093217		1
10	Floor Pan Shield LH	9095186	Gravel use	1
11	Floor Pan Shield RH	9095185	Gravel use	1
12	Bkt – trans. Shield Mount	9095194	Use with 9095192	1
13	Grille LH	9092971	Replaces foglamp	1
14	Grille RH	9092972	Replaces foglamp	1



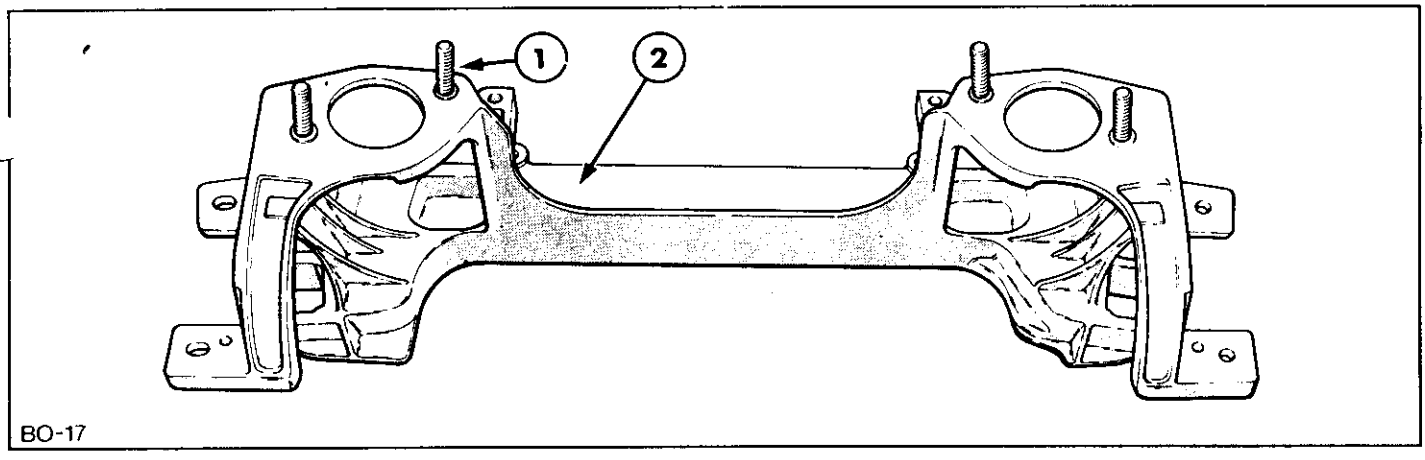


MOUNTINGS

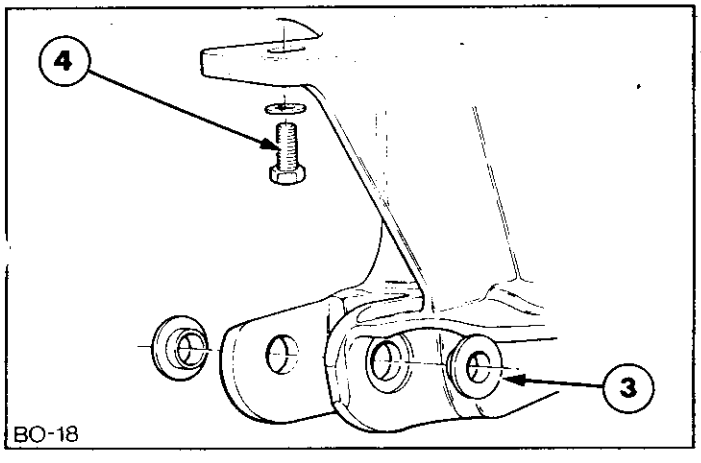


When installing the front crossmember, ensure that it is fitted centrally in the chassis and square to the vehicle centreline. This is essential to ensure accurate suspension geometry.

Check for cracks after each rally.



BO-17



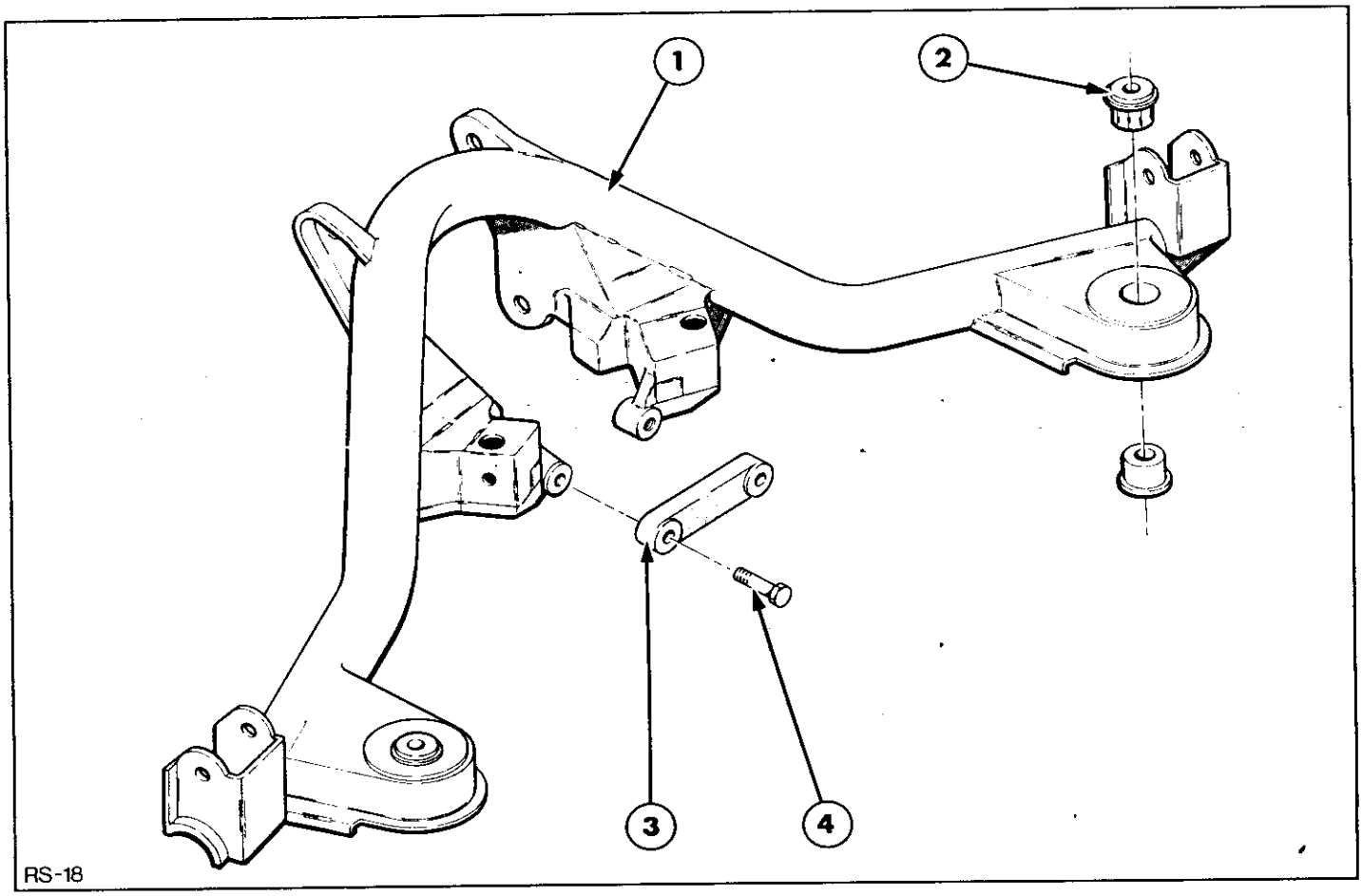
BO-18

	Description	Finis Code	Comments	Qty.
1	Stud – Front Crossmember	9094754	Incl. in 9094775	4
2	Front Crossmember	9094775	Tarmac & Gravel	1
3	Bush – Front Crossmember	9094758	Incl. in 9094775	5
4	Bolt – M12 x 1.75 x 130mm (cap head)		Fitting Crossmember to Body	4

Torques	
Bolt – Crossmember to Body	90 Nm

The rear crossmember should be removed and checked for cracks, damage or corrosion after approx. 800km stage distance, or after any rear end impact damage. Replace the bushes at regular intervals.

The crossmember mounting bolts can be chamfered at the ends to aid assembly.

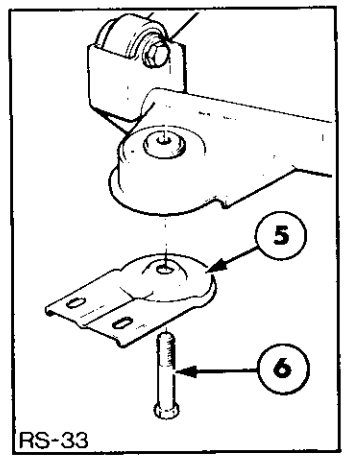


RS-18

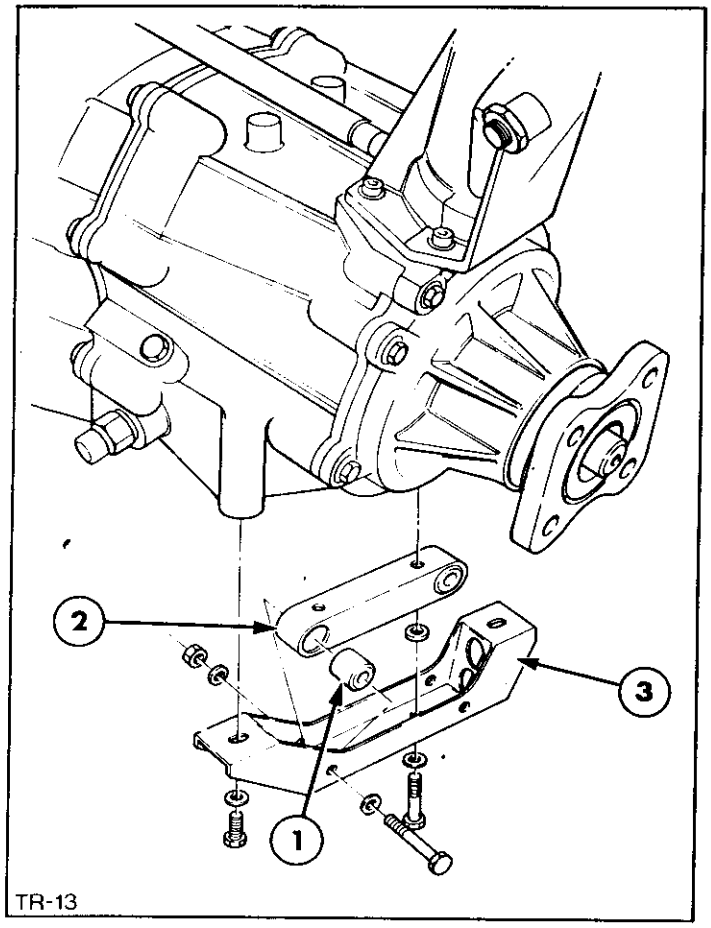
	Description	Finis Code	Comments	Qty.
1	Rear Crossmember	9095237	Tarmac (Red)	1
	Rear Crossmember	9095238	Gravel (Green)	1
2	Bush	9093781	Tarmac (Nylon)	4
	Bush	9091464	Gravel (Flanbloc)	4
3	Brace	9094780		1
4	Bolt – M12 x 30	—		1
5	Plate – Rear Beam	9095134		2
6	Bolt – M14 x 140	—		2

Torques

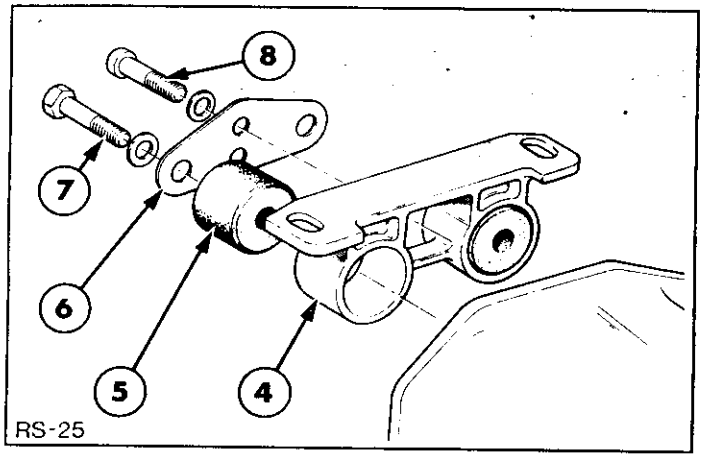
Rear Crossmember to Bodyshell	88 Nm



RS-33



TR-13



RS-25

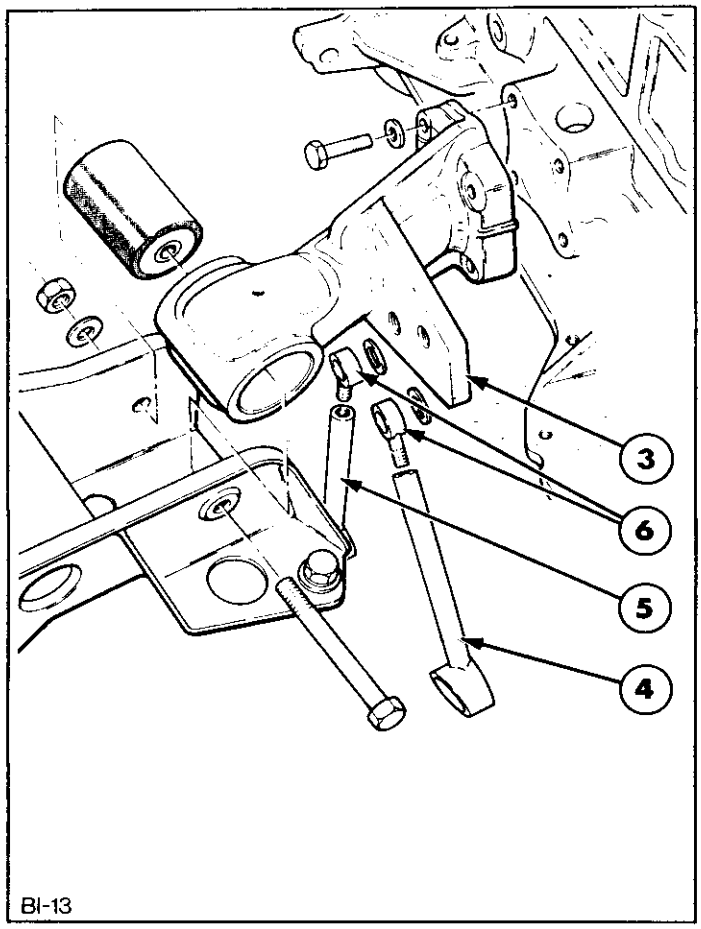
	Description	Finis Code	Comments	Qty.
1	Bush – Transmission Mount	*1619120		2
2	Crossmember – Gearbox	9094719		1
3	Tiebar – Gearbox	9094718		1
4	Support – Rear Axle	9093772		1
5	Bush – Flanbloc	9093208	Gravel (Rubber)	2
	Bush	9093778	Tarmac (Nylon)	2
6	Plate	9092504		1
7	Bolt – M12 x 70			2
8	Bolt – M10 x 25			2

Torques

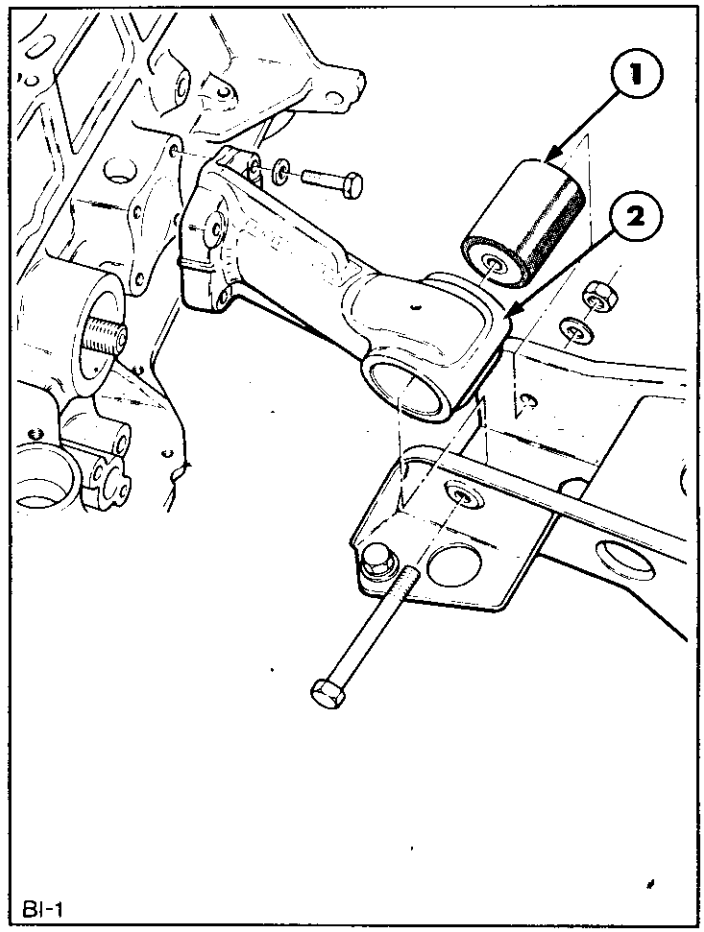
Rear axle support to axle	50Nm

The engine mounting bushes are pressed into the arms. The arms can be prewarmed to 100°C if required.

For gravel use or where heavy landings are experienced, the block can be counter-bored and fitted with dowels (2 places on each side). Ensure bolt length is correct for maximum thread engagement. Check tightness regularly or wire lock in position.



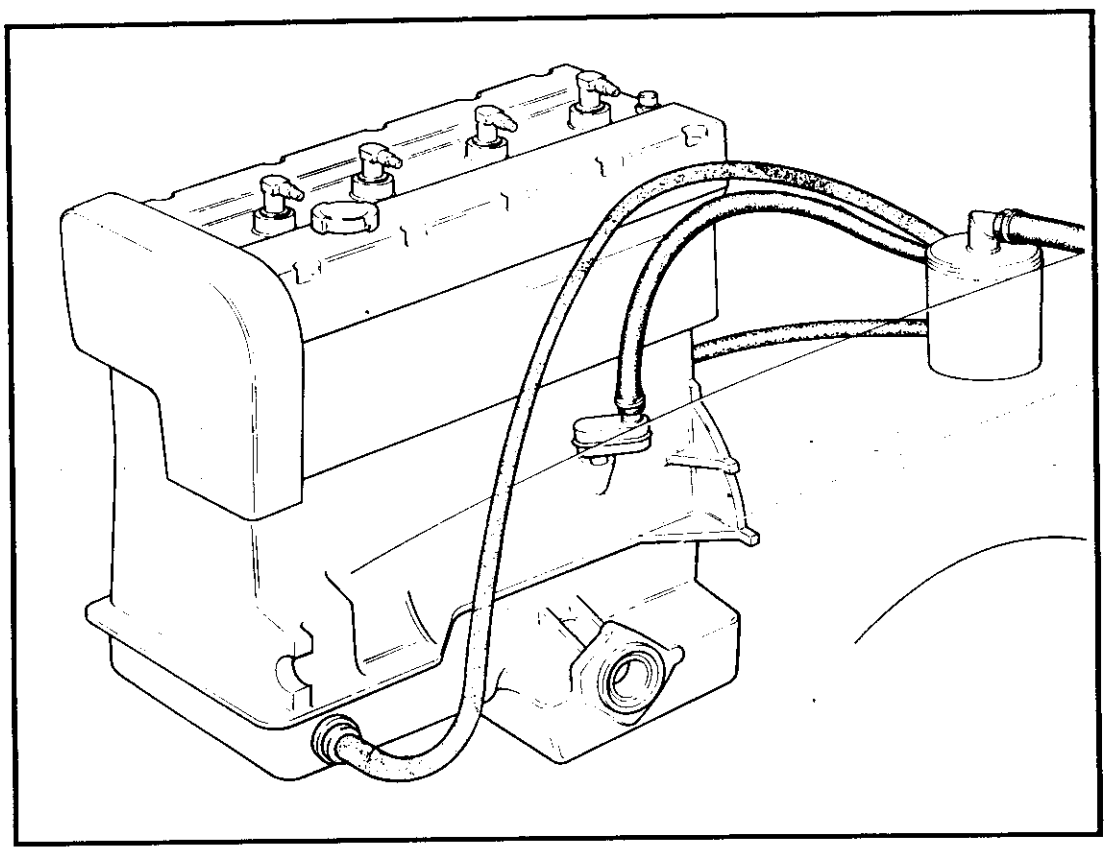
BI-13



BI-1

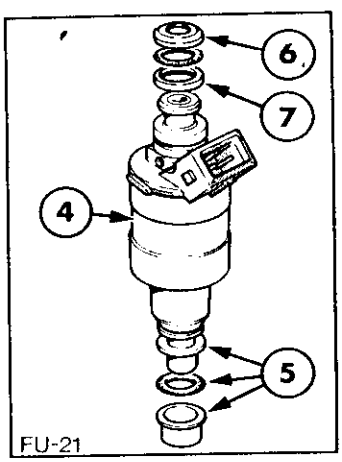
	Description	Finis Code	Comments	Qty.
1	Bush	*6045486		2
2	Engine Mount LH	9094749		1
3	Engine Mount RH	9094748		1
4	Support – Front Axle	9095077		1
5	Support – Front Axle	9095078		1
6	Joint – Frt Axle Support	9095075		2
7	Spacer – Frt Axle Support	9095076		2
8	Heatshield	9095285	R.H. Engine mount	1
	Torques			
	Engine mounting to block	22Nm		

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 dynomometer. 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

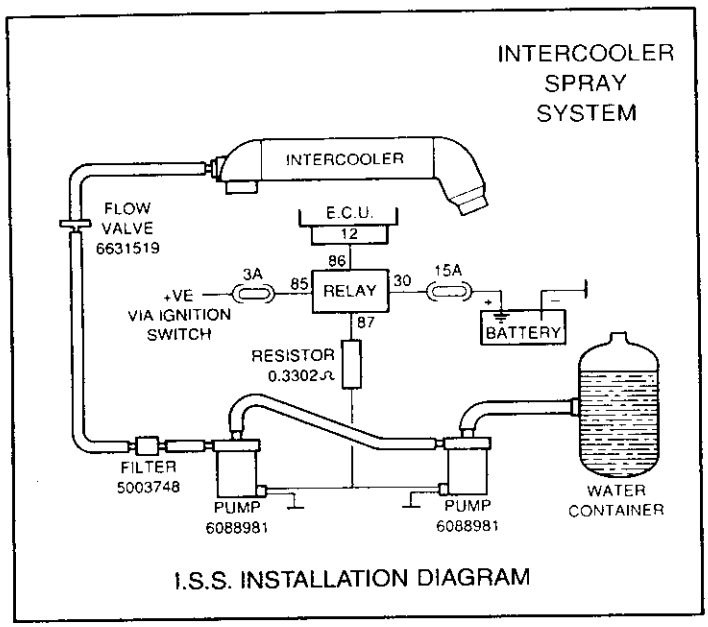
ONLY SUPER UNLEADED FUEL (98 OCTANE) SHOULD BE USED

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

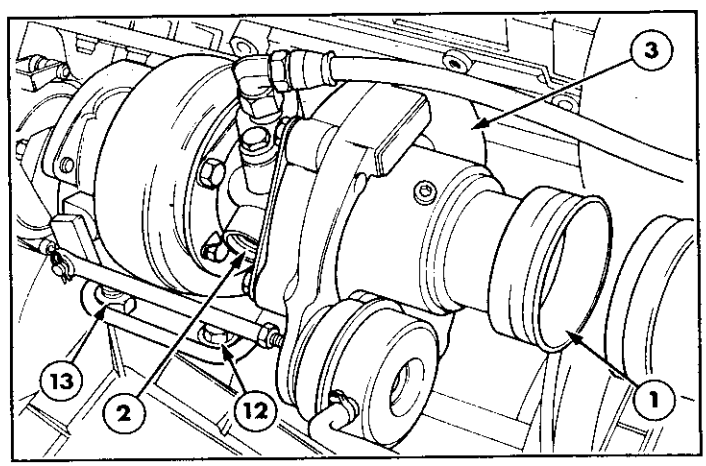
† Sensor pipe removed

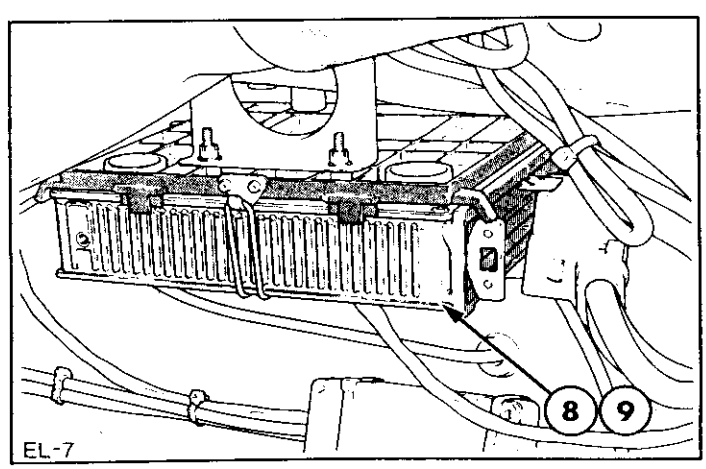
The water temperature should be approx. 90°C at 20°C ambient. In warm climates, run the radiator fans continuously (fit an override switch). The intercooler spray system (ISS) will keep the plenum temperature at 40°C (ensure container is refilled at service points) The thermostat can be modified or replaced.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

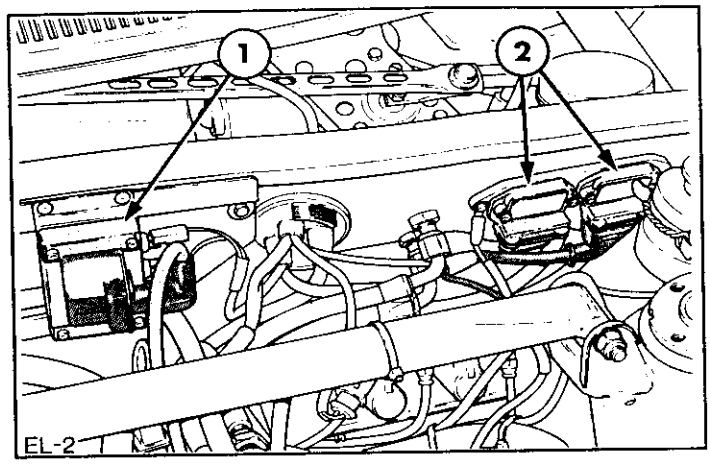


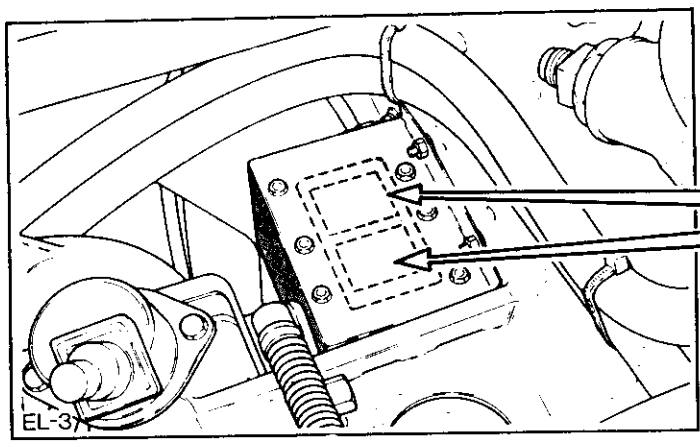
I.S.S. INSTALLATION DIAGRAM

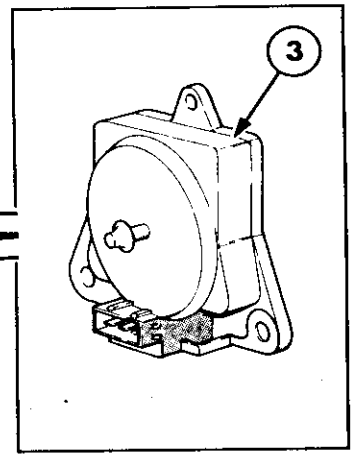




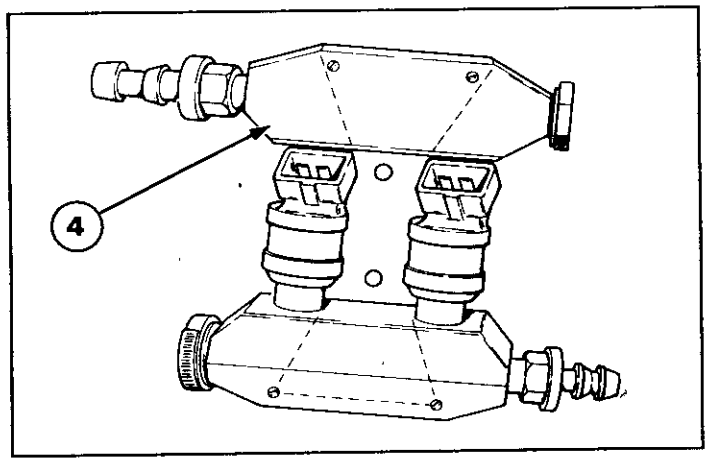
	Description	Finis Code	Comments	Qty.
1	Ignition Coil	9095085		1
2	TFI – Ignition	*1637546	Earth to engine	2
3	MAP Sensor	9092433	3.0 Bar	2
4	Kit – Wastegate Control	9095147		1

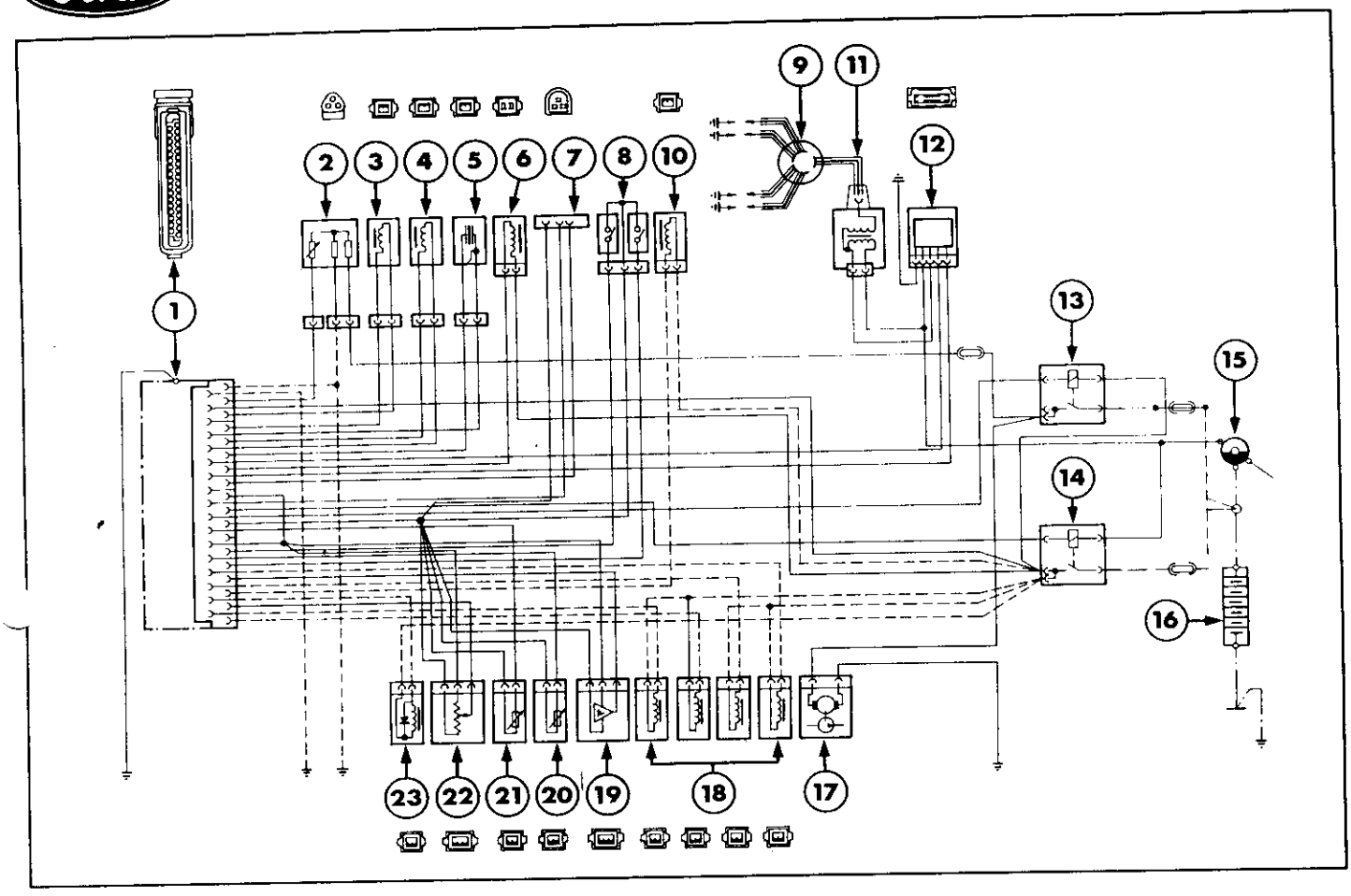






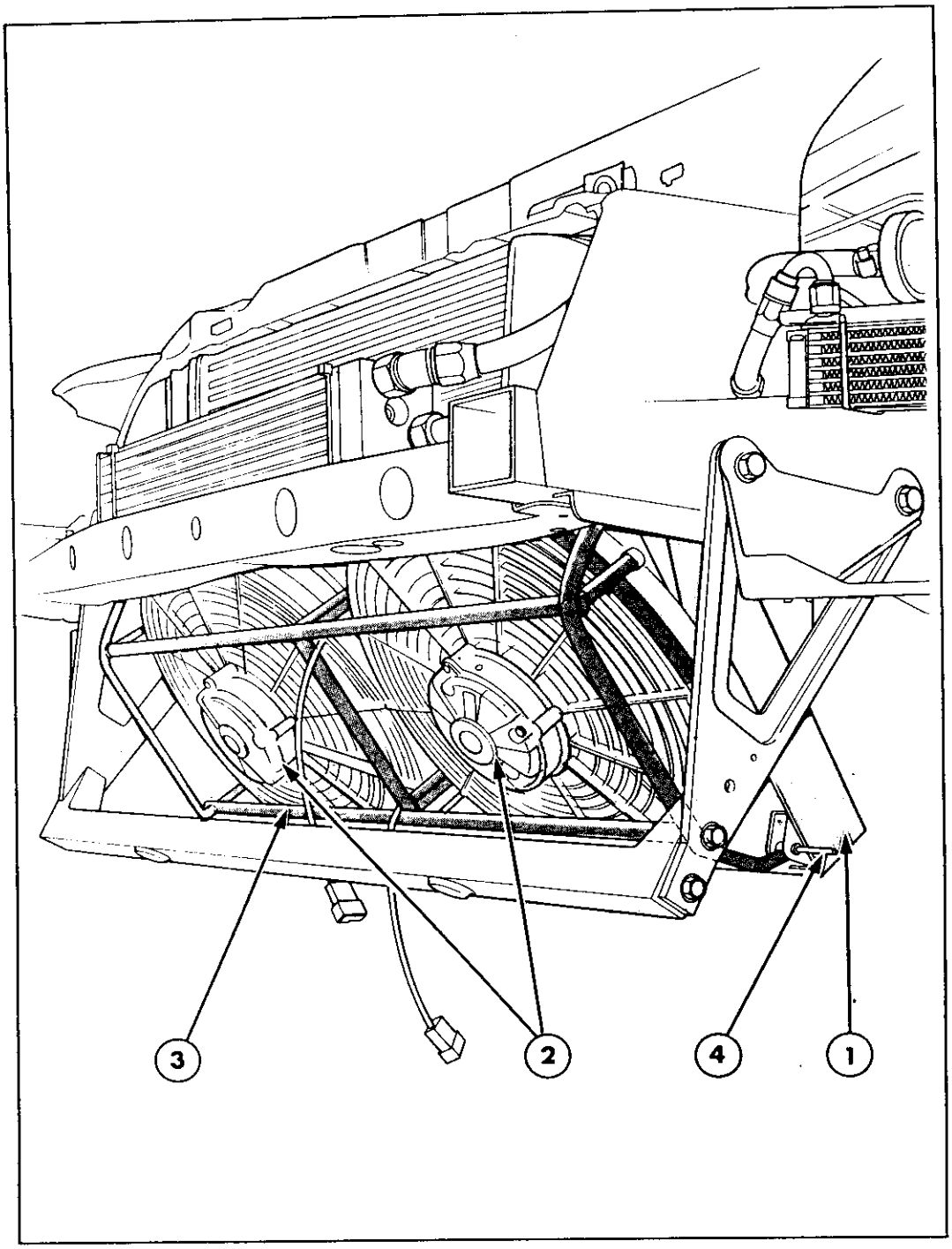
NOTE:
The HT leads must NOT be allowed to make contact with any sensor wires.
Fit the 2 MAP sensors inside a metal box as shown, to reduce the possibilty of electronic interference.





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

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.



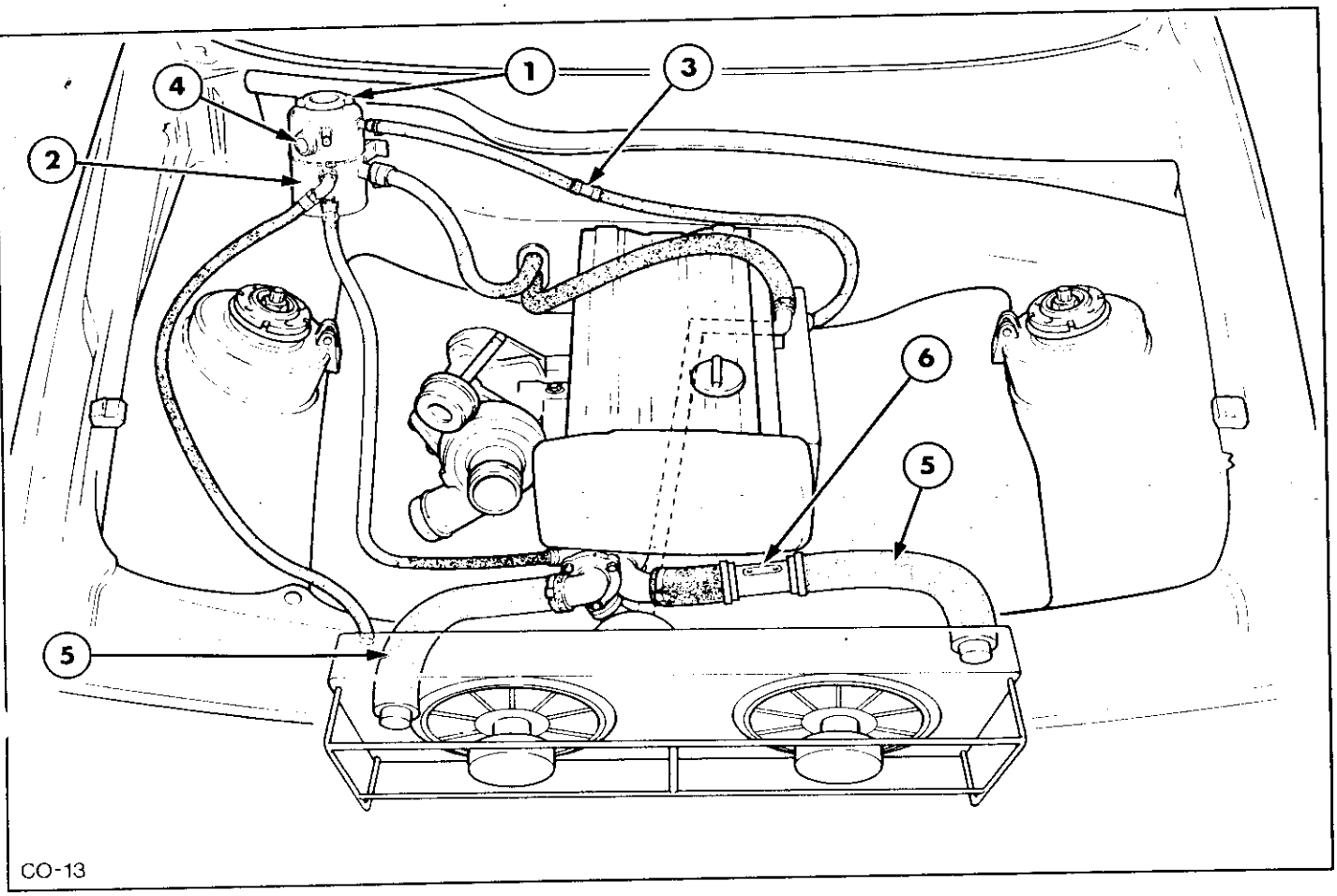
	Description	Finis Code	Comments	Qty.
1	Radiator	9095521		1
2	Fan	9095524		2
3	Fan Mounting Frame	9095523		1
4	Pin – Fan Mounting	9095522		4

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.

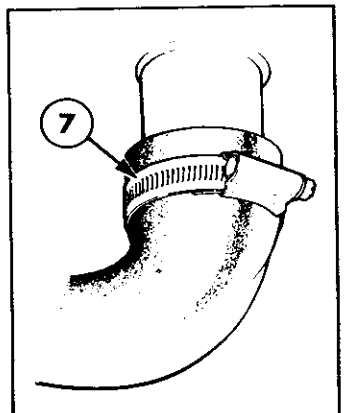
Use a mix of 50% water / 50% antifreeze and fill to the centre of the window. Keep all hoses clear of the belts. The system is fully pressurised using engine boost (or via the shrader valve).

Do not remove cap when engine is hot!

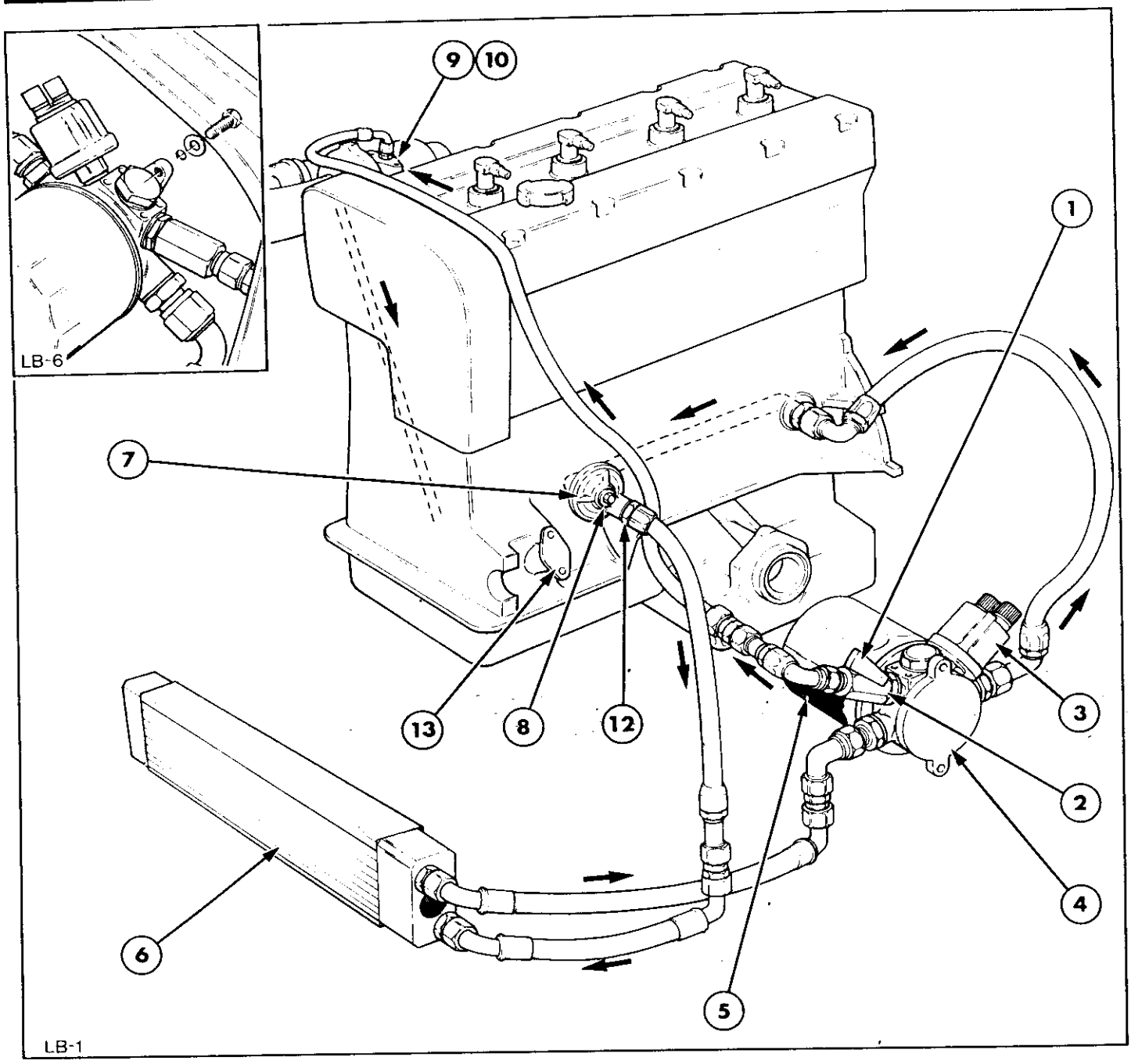


CO-13

	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

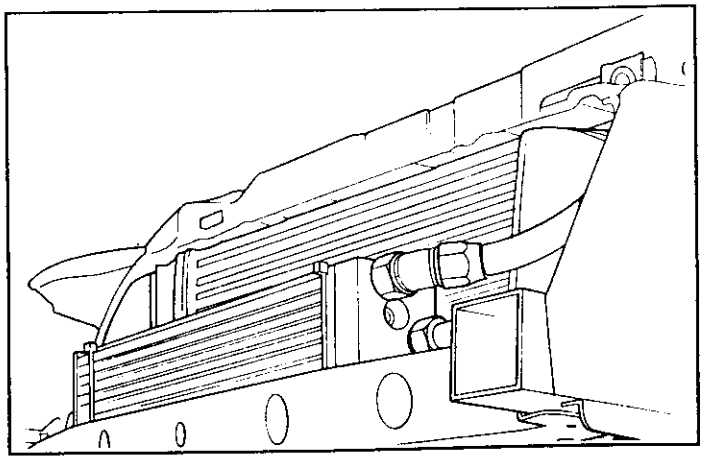


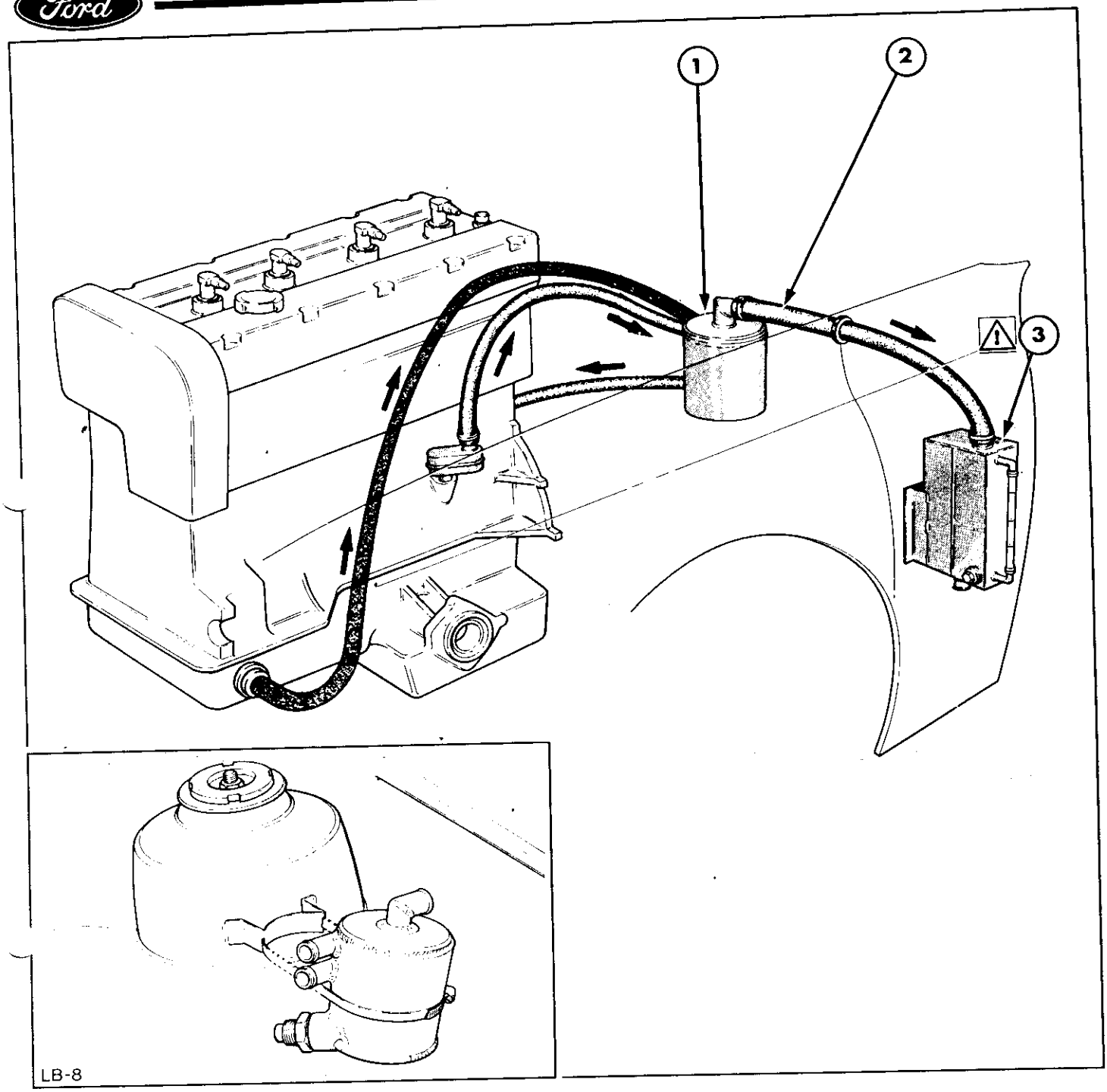
CO-14



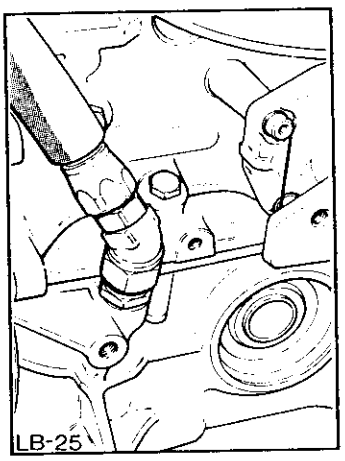
	Description	Finis Code	Comments	Qty.
1	Turbo Cut Off Valve	9094842		1
2	Union	9094841		1
3	Sender – Oil Pressure	9091956		1
4	Bracket – Oil Filter	9094920		1
5	Oil Filter	9094911		1
6	Oil Cooler	9093258		1
7	Adaptor Plate	9094901	(Use seal 1579875)	1
8	Nut – Blind	9094880		1
	Seal 'O' Ring	9094887		1
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

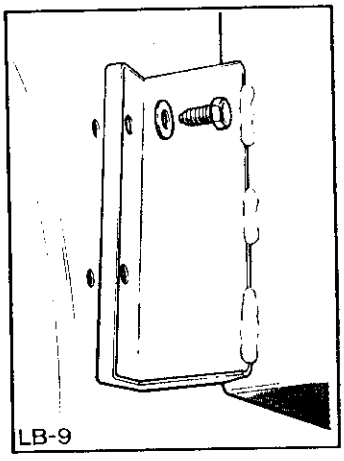
Note: For sump see P57 (Front Axle).

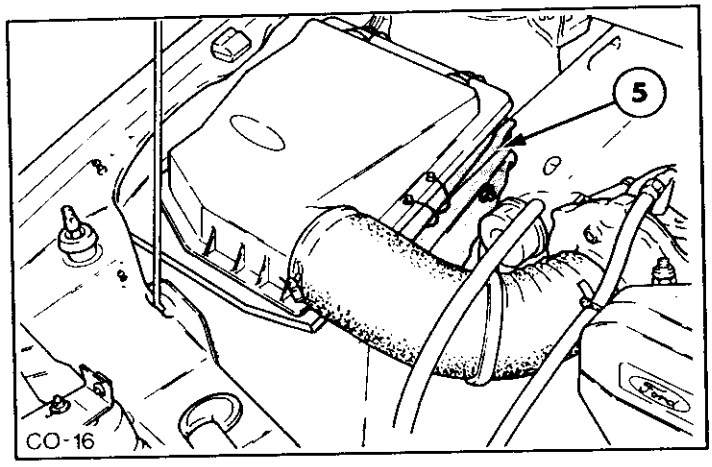


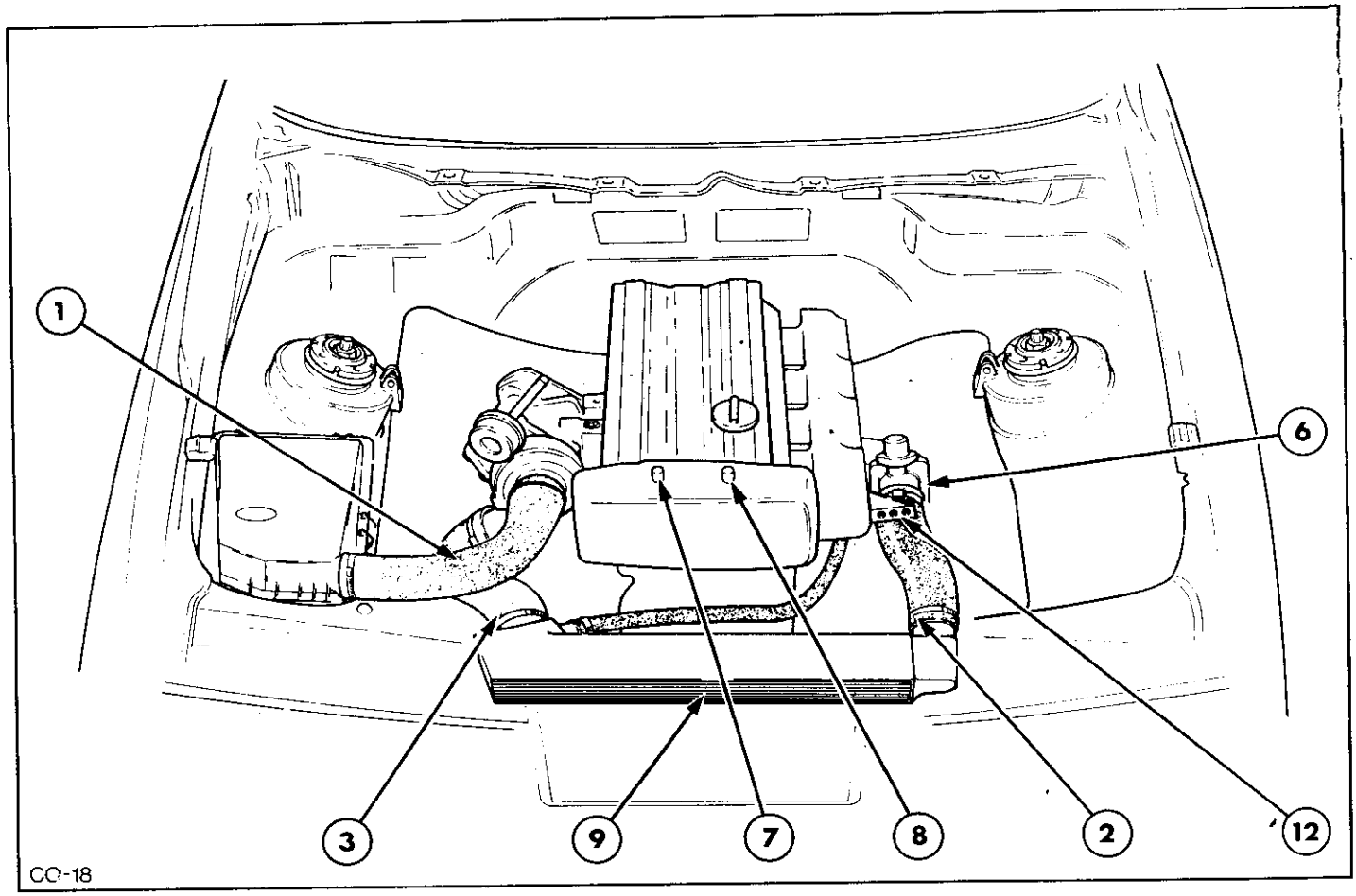


	Description	Finis Code	Comments	Qty.
1	Tank Oil Separator	TBE		1
2	Hose – Breather	TBE		1
3	Oil Catch Tank	9095081		1

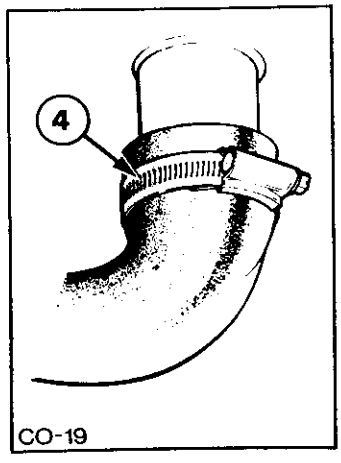




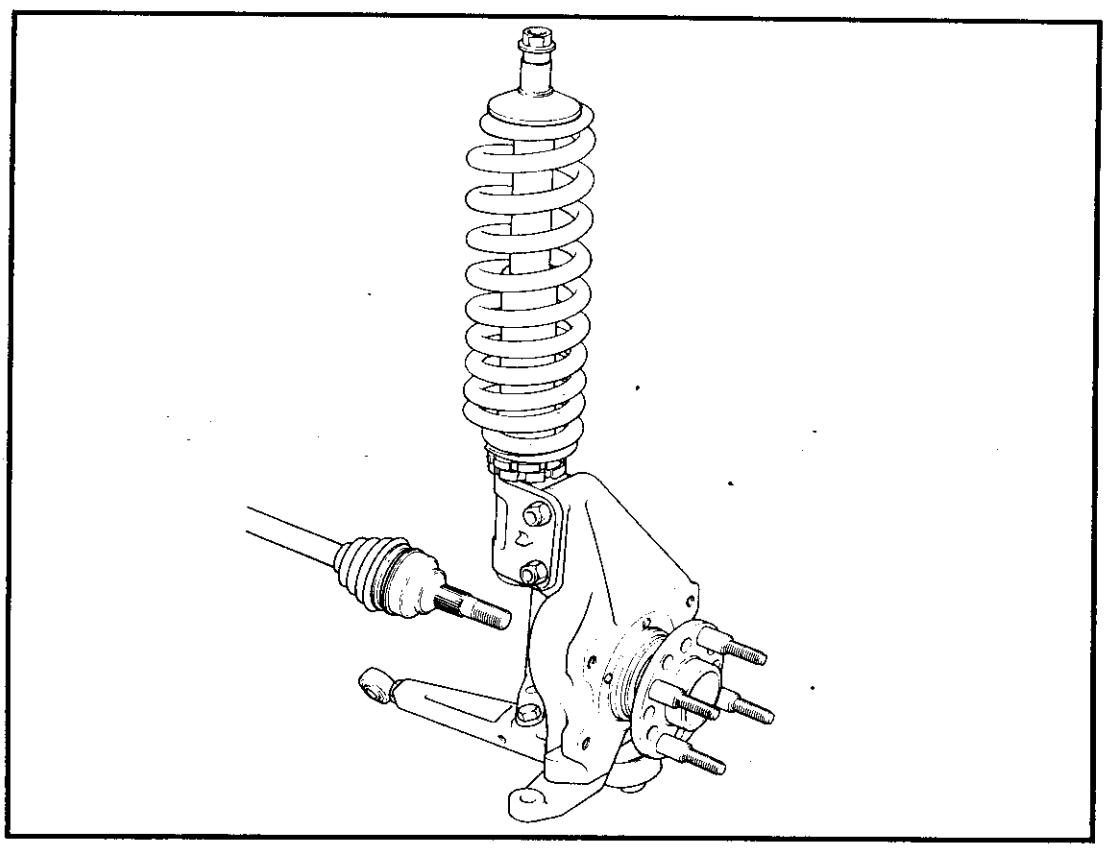




	Description	Finis Code	Comments	Qty.
1	Hose – A/C to Turbo	*6698040		1
2	Hose – I/C to Engine	9093652		1
3	Hose – Turbo to I/C	*6883520		1
4	Hose Clip	*6130115		A/R
5	Heat Shield	9092616	Air Cleaner	1
6	Throttle Body	9095234	Modified lever	1
7	Spacer – Cover	9095149		1
8	Spacer – Cover	9095150	Threaded	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

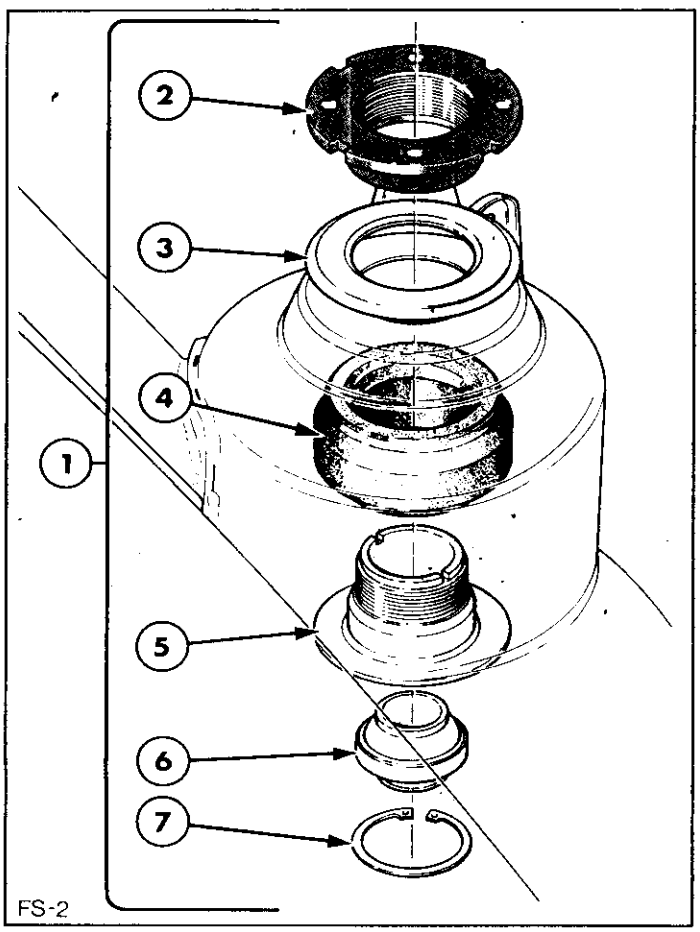


FRONT SUSPENSION

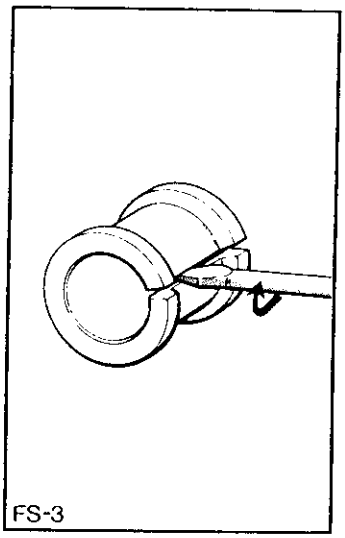


The Front suspension homologated into Group 'A' for the Escort RS Cosworth is basically carried over from the very successful Sierra Cosworth 4x4. It consists of an alloy upright, adjustable track control arm and compression strut with a separate, adjustable - blade anti - roll bar. Each blade has 3 positions – 'SOFT', 'HALF' and 'FULL STIFF'.

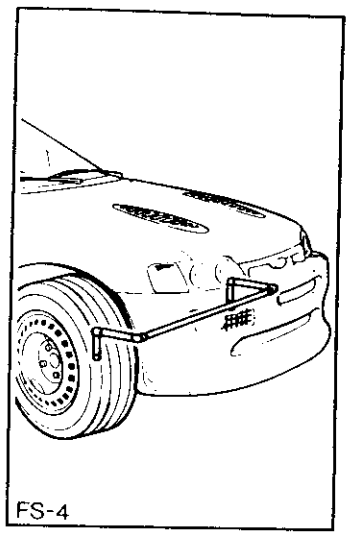
The front hubs have been recently uprated to incorporate 14mm wheelstuds. Hubs and bearings should be inspected at regular intervals. Clean all components regularly and protect from corrosion.

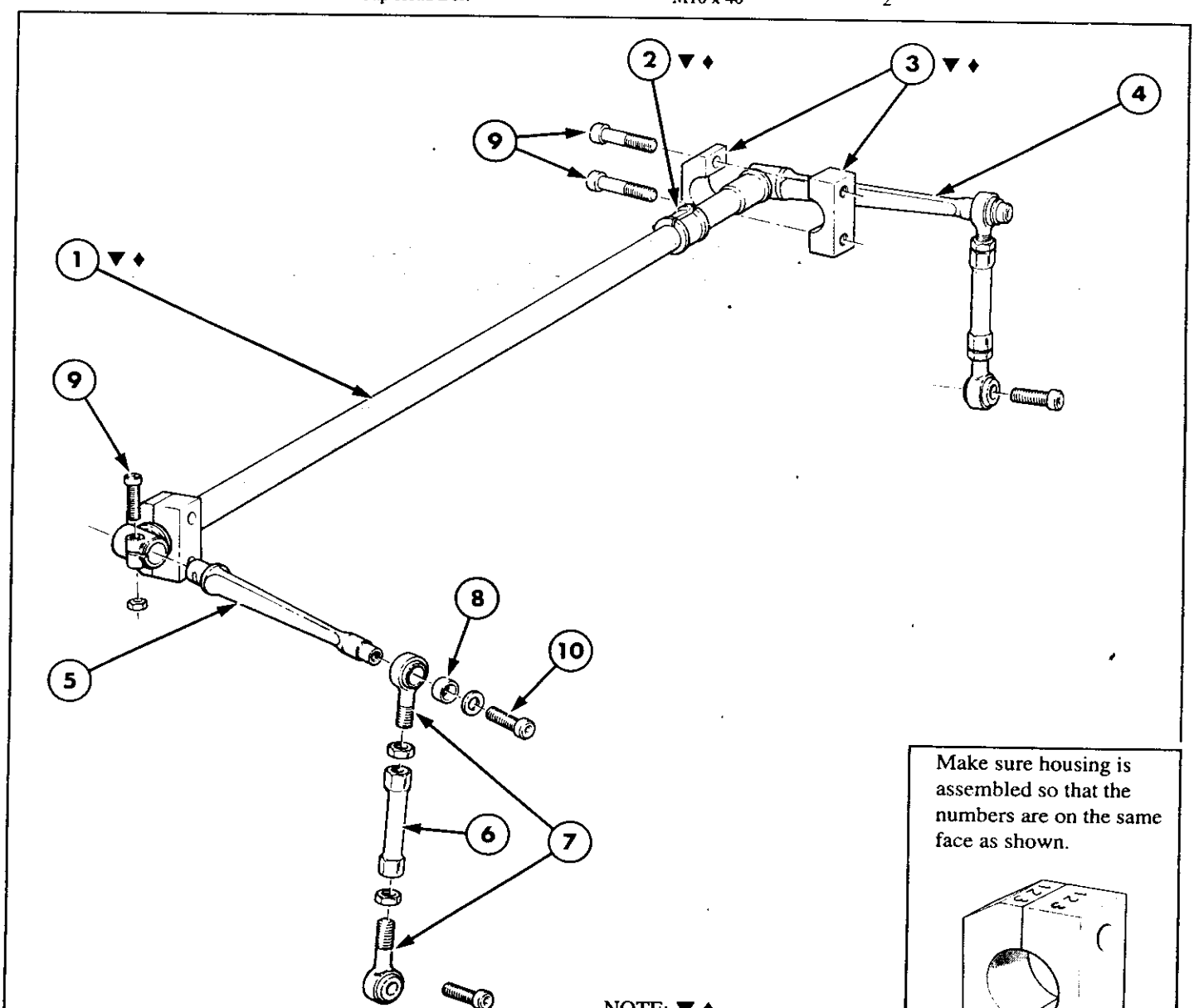


	Description	Finis Code	Comments	Qty.
1	Strut – Top Mounting	9092953		2
	Assembly Kit		Comprises:	
2	Cap	9092492		2
3	Retainer	9090137		2
4	Insulator	9095389		2
5	Bearing Housing	9092493		2
6	Bearing	9092809		2
7	Circlip	9095505	(Replaces 9092808)	2


FS-3

	Description	Finis Code	Comments	Qty.
1	Anti-roll Bar – Front	9095244	Tarmac 1⅛" x 14 SWG	1
1	Anti-roll Bar – Front	9094812	Tarmac 31mm	1
1	Anti-roll Bar – Front	9094810	Tarmac 31.75mm	1
1	Anti-roll Bar – Front	9092950	Gravel 1" x 10 SWG	1
1	Anti-roll Bar – Front	9094814	Gravel 1" x 14 SWG	1
2	Bearing – Anti-roll Bar	9094029	Tarmac	2
2	Bearing – Anti-roll Bar	9090660	Gravel	2
3	Clamp – Anti-roll Bar	9094702	Tarmac	2
3	Clamp – Anti-roll Bar	9094703	Gravel	2
4	Blade – Anti-roll Bar RH	9092232	Adjustable	1
5	Blade – Anti-roll Bar LH	9092233	Adjustable	1
6	Drop Link – Anti-roll Bar	9090662		2
7	Kit – Ball Joint	9092450		2
8	Spacer – ARB Blade	9092716		2
9	Cap Head Bolt		M6 x 35	6
10	Cap Head Bolt		M10 x 40	2

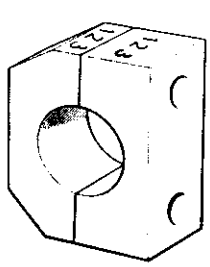

FS-4

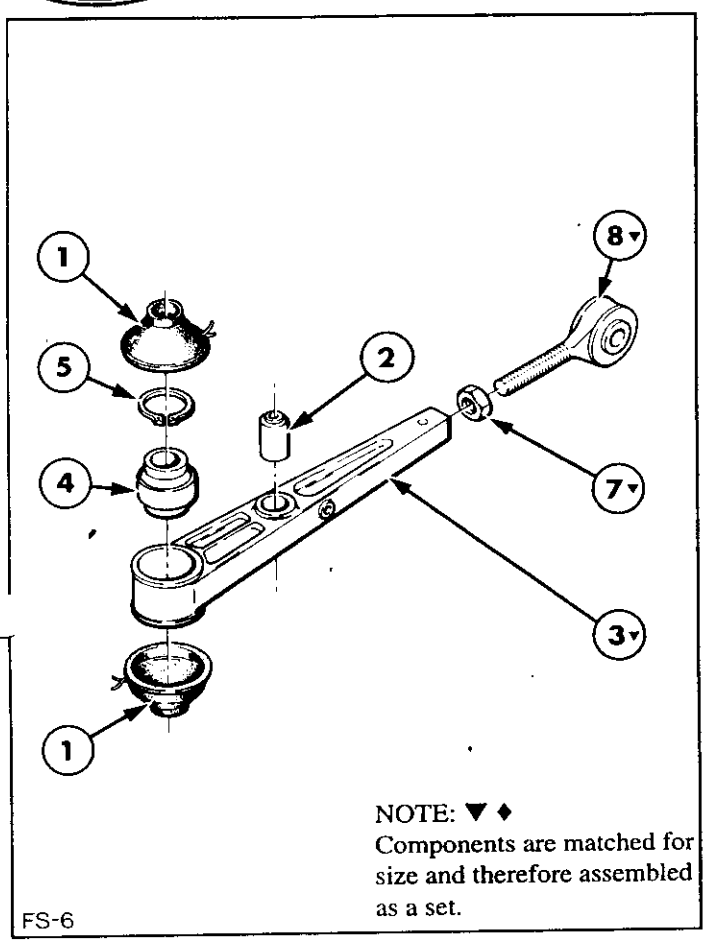


FS-5

NOTE: ▼♦
Components are matched for size and therefore assembled as a set.

Make sure housing is assembled so that the numbers are on the same face as shown.



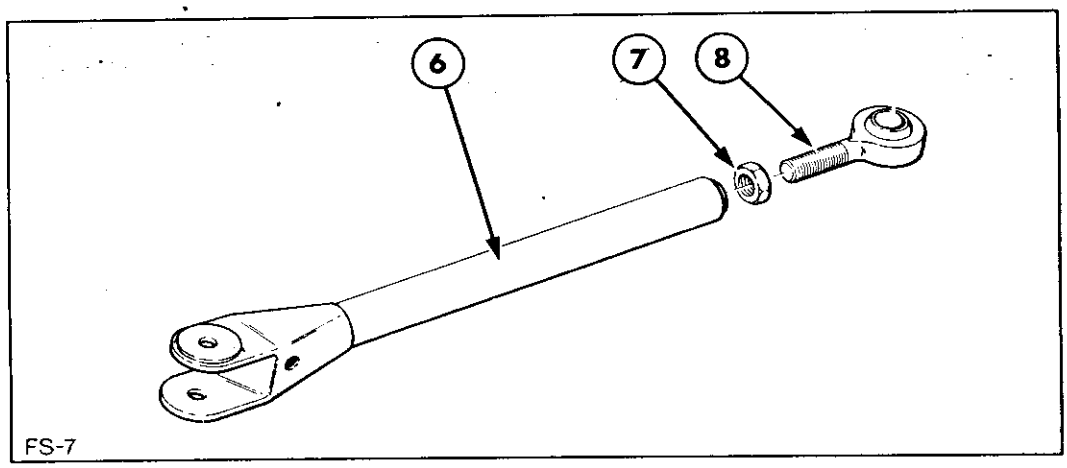


FS-6

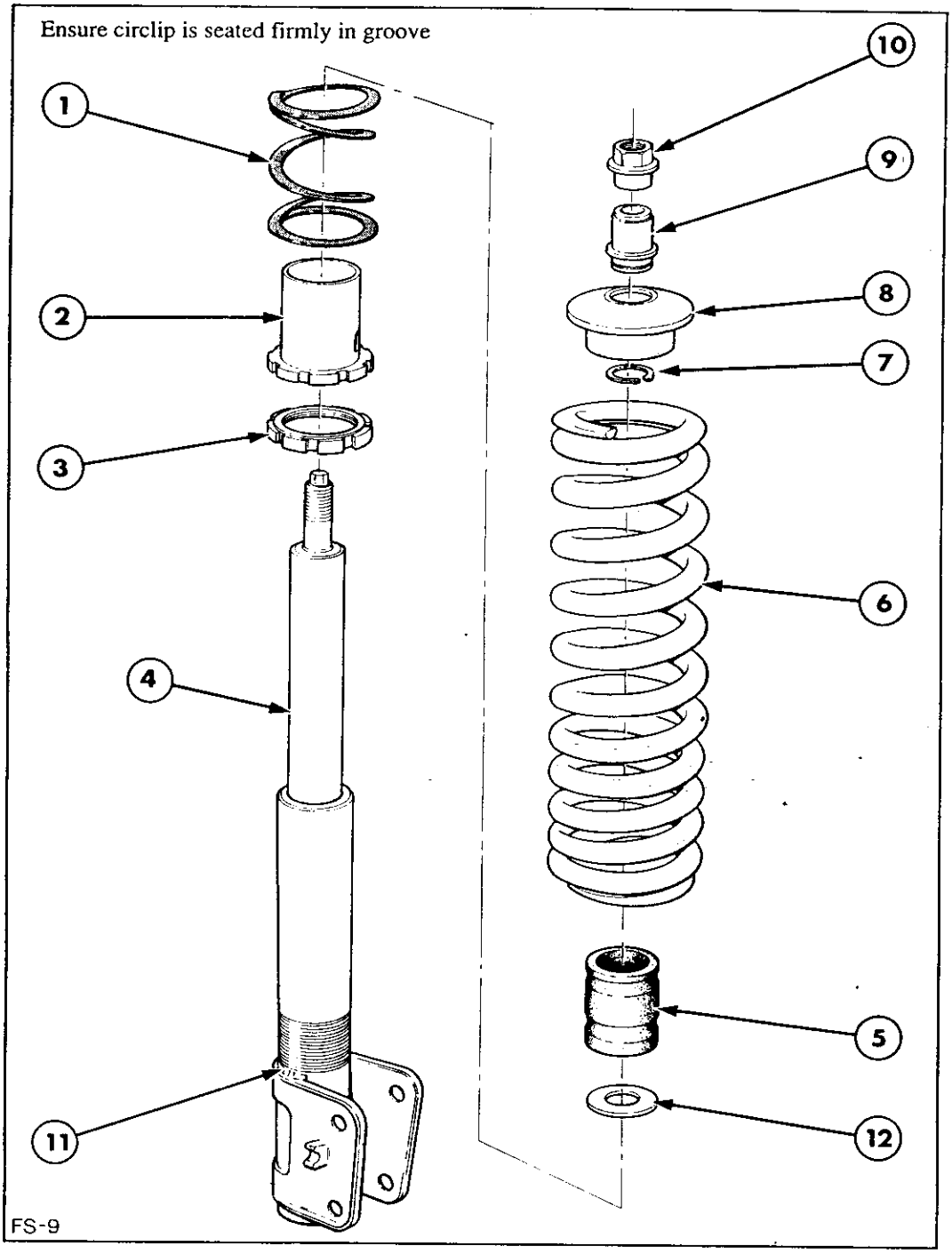
NOTE: ▼ ♦
Components are matched for size and therefore assembled as a set.

	Description	Finis Code	Comments	Qty.
1	Gaiter – TCA	9093181	Secure with lockwire	4
2	Bush – Rubber	9092366	Gravel	2
2	Bush – Nylon	9093775	Tarmac	2
3	Track Control Arm	9095310	Green	2
4	Bearing – TCA Outer	9095525	Replaces 9092308	2
5	Circlip – TCA Brg.	9092954		2
6	Compression Strut	9095153	Tarmac 16 SWG	2
6	Compression Strut	9095306	Gravel 14 SWG	2
7	Nut – Inner Joint	9090063	TCA + Comp. Strut	4
8	Joint – Inner	9090064	TCA + Comp. Strut	4

NOTE:
Use high quality grease.



FS-7



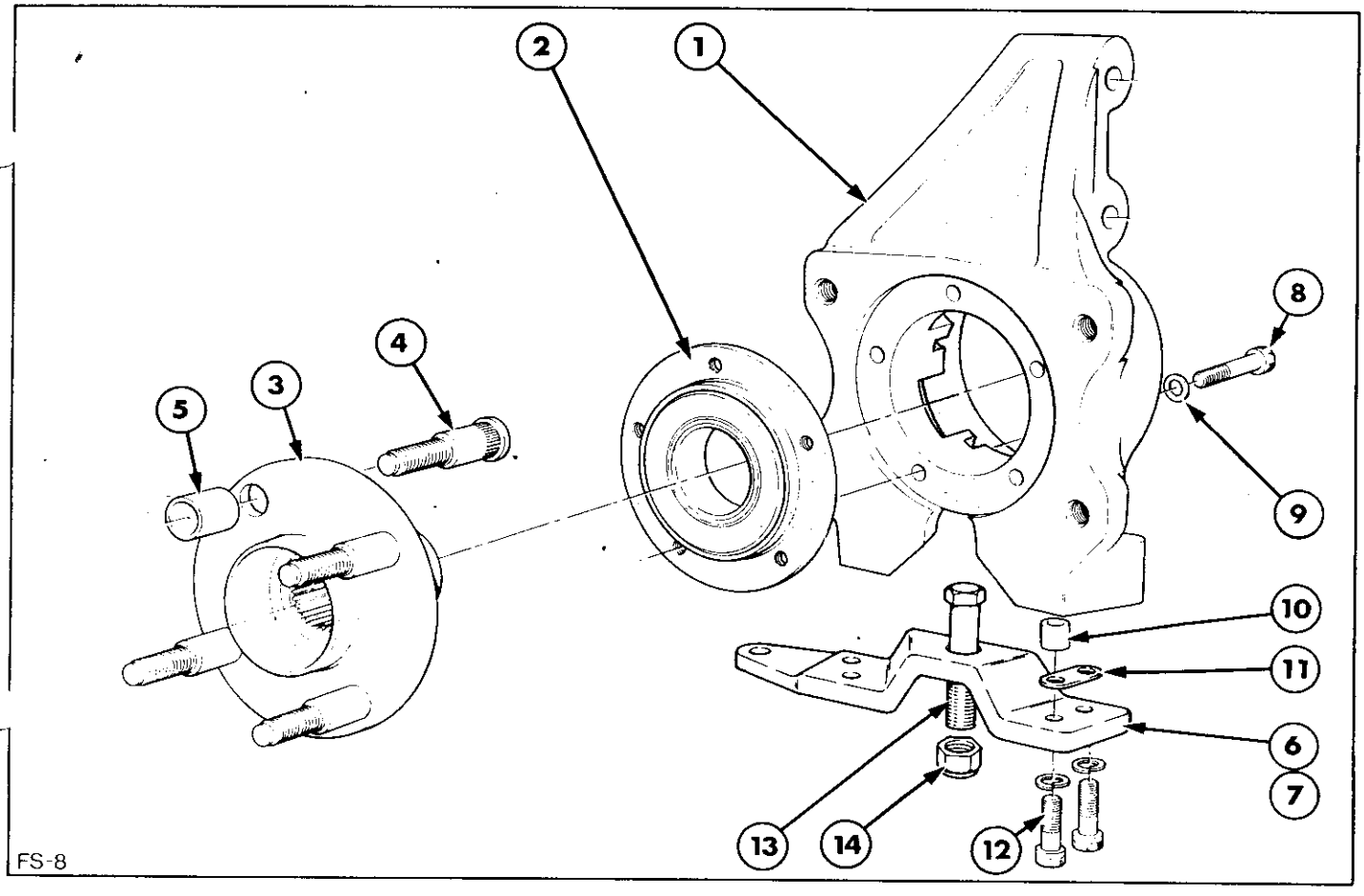
	Description	Finis Code	Comments	Qty.
1	Helper Spring	9090265		2
2	Spring Seat – Lower	9093328		2
2	Water Cooling Jacket	9095295	Alt. To 9093328	2
3	Lock Ring	9093179		2
4	Insert – Front	9093157	Tarmac 325/150	2
4	Insert – Front	9093158	Tarmac 340/160	2
4	Insert – Front	9095162	Tarmac 500/200	2
4	Insert – Front	9093160	Gravel 300/90	2
4	Insert – Front	9093163	Gravel 320/100	2
4	Insert – Front	9093162	Gravel 340/120	2
5	Bump Stop	9094714	98mm long – cut to length	2
6	Spring – Front	9092559	Tarmac – 80 Nm	2

	Description	Finis Code	Comments	Qty.
6	Spring – Front	9092558	Tarmac – 85 Nm	2
6	Spring – Front	9092556	Tarmac – 90 Nm	2
6	Spring – Front	9092557	Gravel – 49-66-99 Nm	2
6	Spring – Front	9092561	Gravel – 54-73-109 Nm	2
6	Spring – Front	9093724	Gravel – 63-76-109 Nm	2
7	Circlip – Top Mount	9092814		2
8	Spring Seat – Upper	9092487		2
9	Sleeve Bearing	9093260		2
10	Nut – Retaining	9092489		2
11	Strut Body	9095004	Tarmac Red 3½°	2
11	Strut Body	9095003	Gravel Green 2½°	2
12	Spacer – Bump Stop	9095297	6mm	2

The front upright casting is available in aluminium or magnesium. Magnesium is lighter, but should not be used where road salt is present, due to the risk of severe corrosion.

The wheelstuds are pressfit into the hub and sleeve. To ensure they are fitted accurately, an old wheel centre fitted with steel inserts can be modified as a jig.

Check wheel bearings regularly, replace after 1000 km approx. or as soon as play is evident.

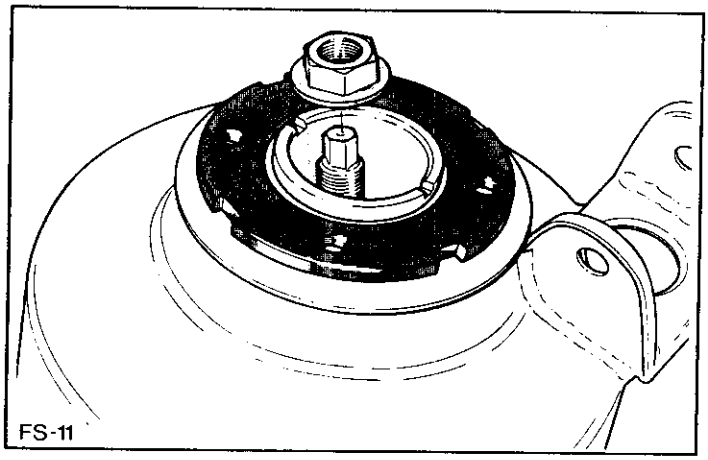


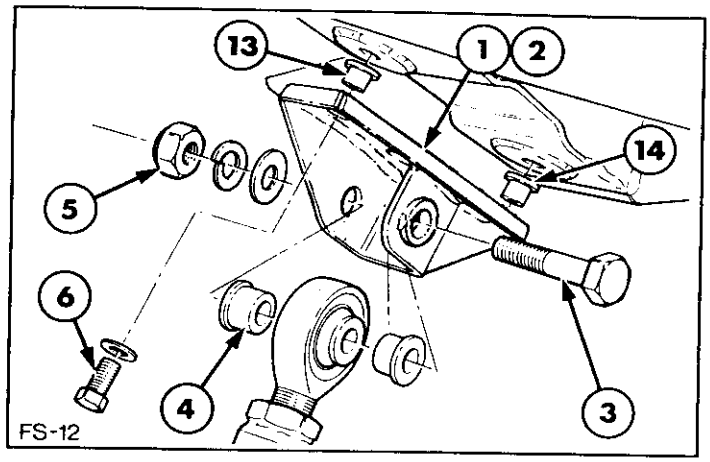
FS-8

	Description	Finis Code	Comments	Qty.
1	Front Upright – Aluminium	9094698	Gravel	2
1	Front Upright – Magnesium	9094622	Tarmac	2
2	Bearing – Front	9094448		2
3	Hub – Front	9095407	30T / M14	2
4	Stud – Wheel	9095413	M14	8
5	Sleeve – Wheel	9095414	M14	8
6	Steering Arm LH	9095308		1
7	Steering Arm RH	9095307		1
8	Cap Screw	9091858		10
9	Washer	*1502839	Service use only	10
10	Dowel – Stg. Arm	9091585		4
11	Spacer – Stg. Arm	9095302	16"/17" Wheels	4
12	Cap Head Bolt	—	M10 x 40	8

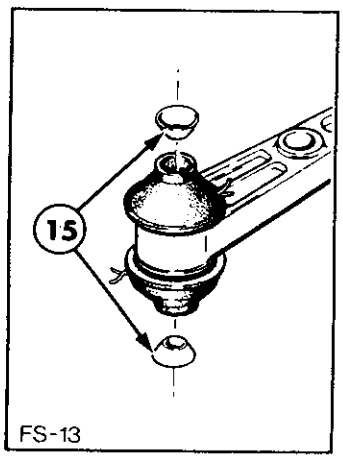
	Description	Finis Code	Comments	Qty.
13	Pin – TCA	9093774	Titanium	2
14	Locknut – TCA Pin	9093779		2

	Torques	
8	Cap Screw – Bearing	31-34 Nm
12	Bolt – Steering arm	48-53 Nm
13	Bolt – TCA pin	140 Nm

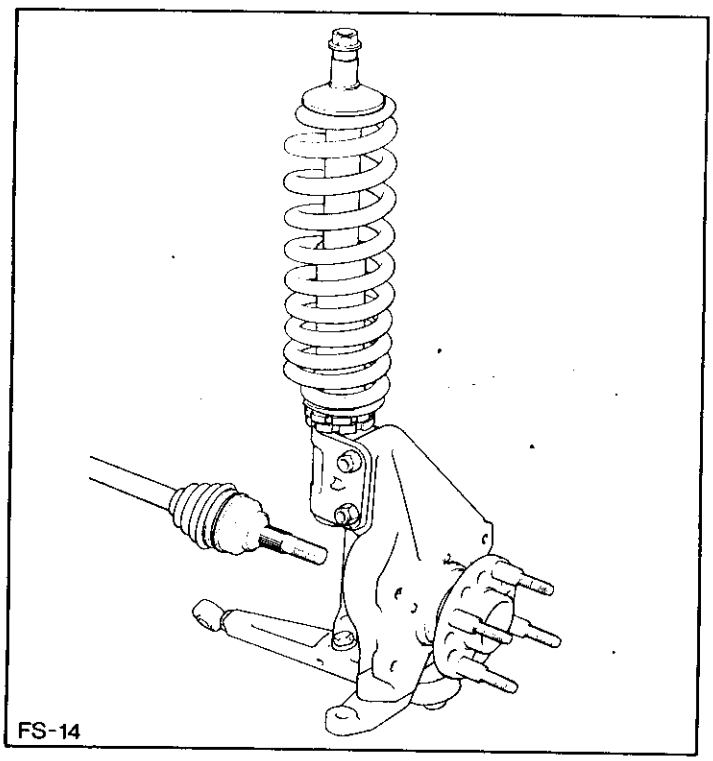

FS-11

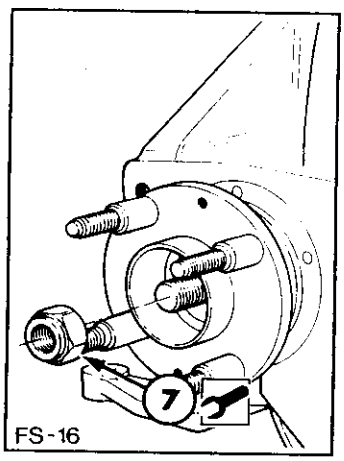


FS-12

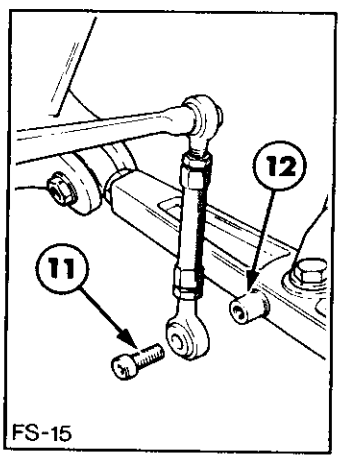


FS-13

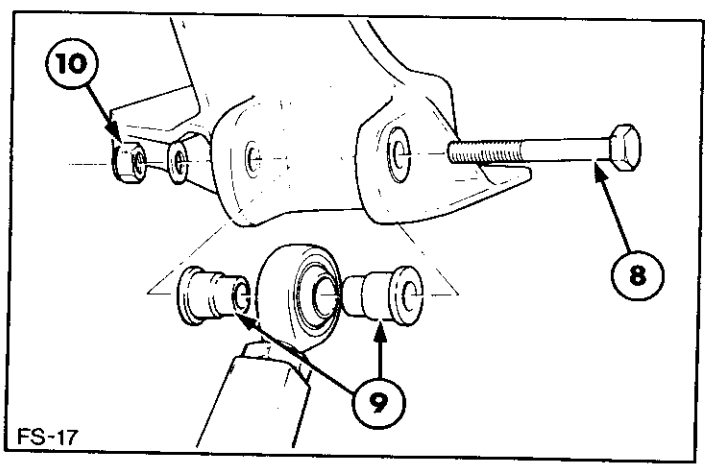

FS-14



FS-16



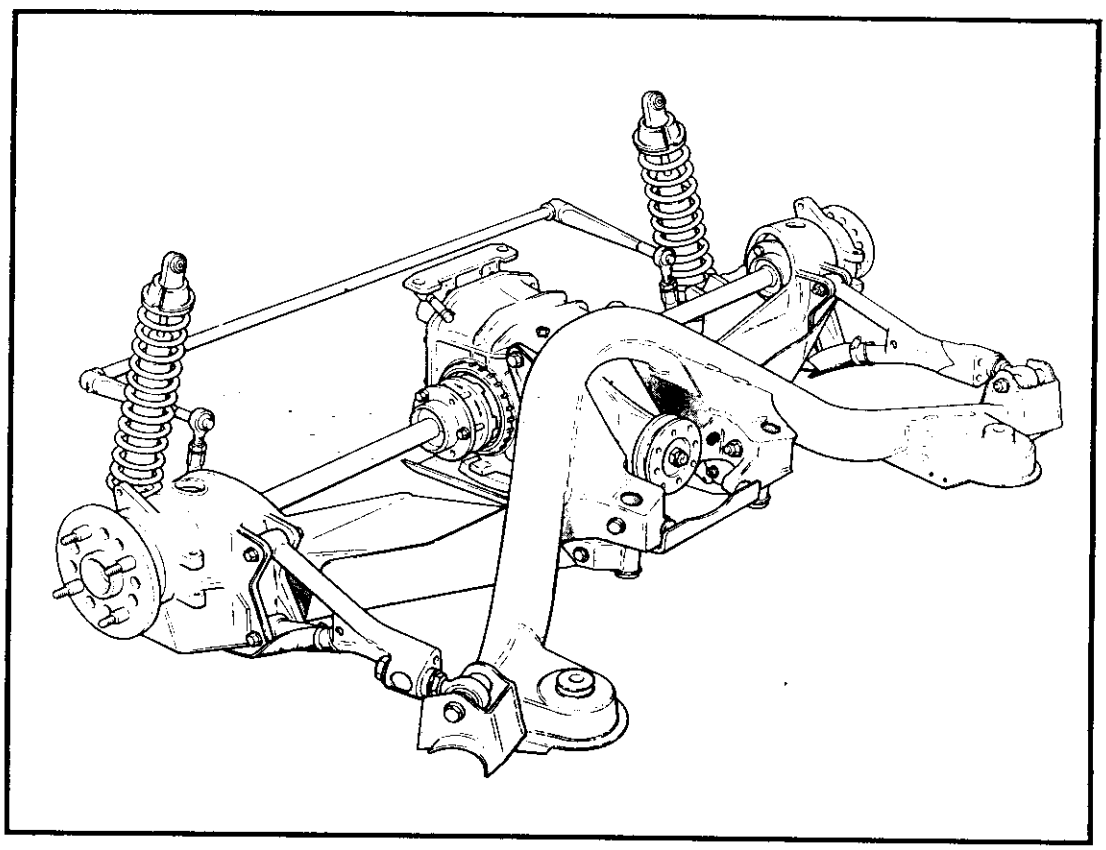
FS-15



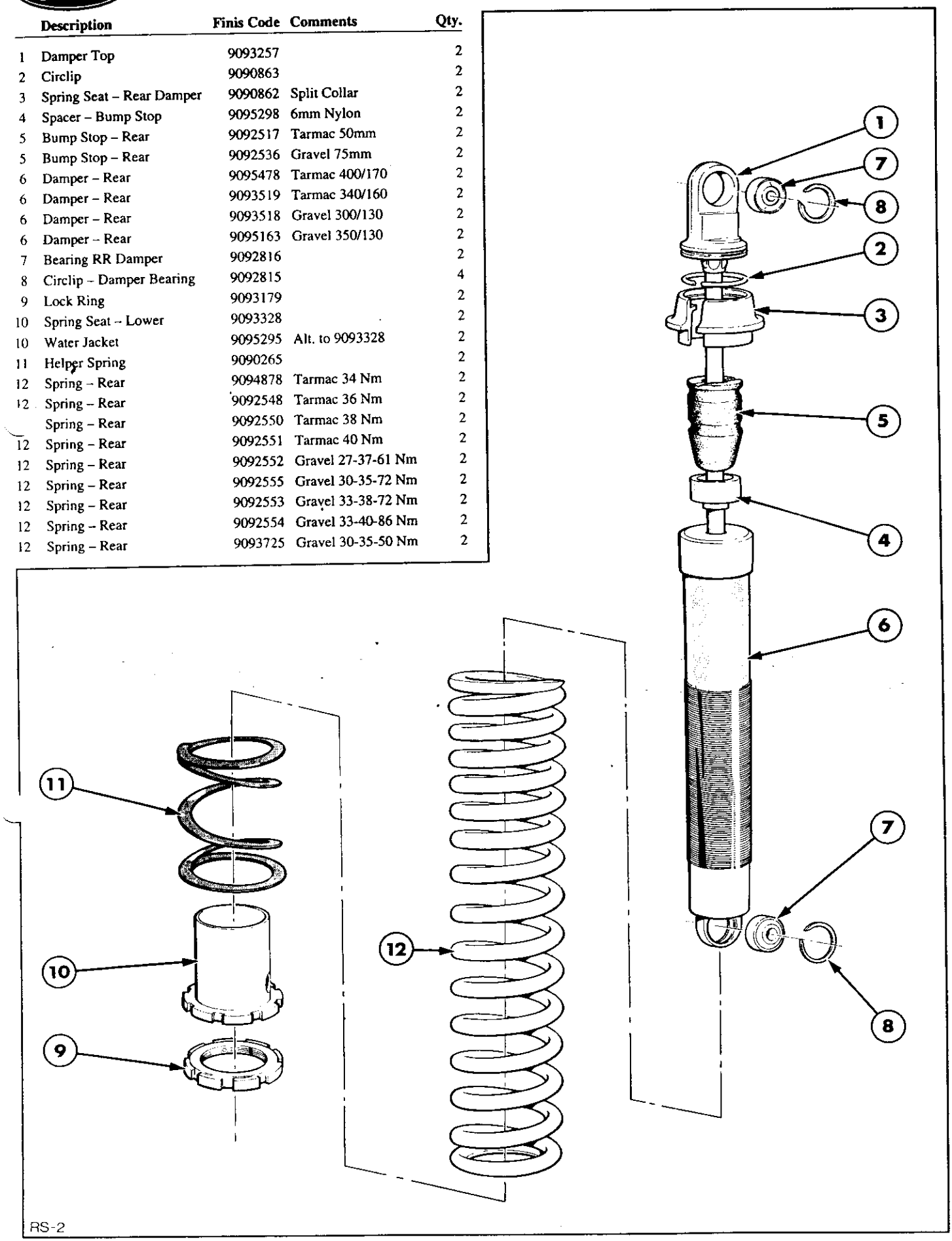
FS-17

	Description	Finis Code	Comments	Qty.
1	Chassis Bracket LH	9094815		2
2	Chassis Bracket RH	9094816		2
3	Bolt		M12 x 55 – 10.9 Grade	2
4	Insert – Compression Strut	9092546	Gravel – Steel	4
4	Insert – Compression Strut	9092547	Tarmac – Aluminium	4
5	Nut	6078595	M12	2
6	Bolt		M10 x 30 – 10.9 Grade	4
7	Nut – Hub	9095410		2
8	Bolt		M12 x 85 – 10.9 Grade	2
9	Insert TCA	9094756		4
10	Nut	1629583		2
11	Caphead Bolt		M8 x 45 – 10.9 Grade	2
12	Spacer – ARB to TCA	9093776		2
13	Spacer – Chassis Bracket	9094817		2
14	Spacer – Chassis Bracket	9094818		2
15	Spacer – TCA.PIN	9095199		4
	Torques			
7	Hub Nut M24 Wire Lock Bolts Item 6		475 Nm	

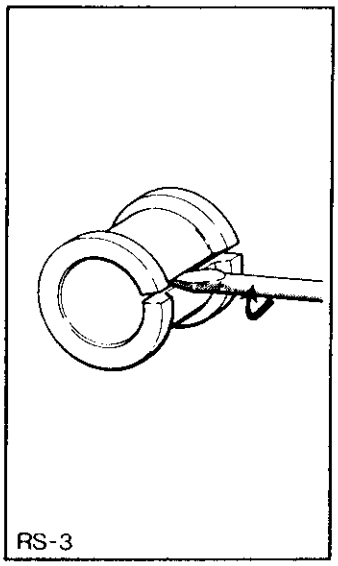
REAR SUSPENSION



	Description	Finis Code	Comments	Qty.
1	Damper Top	9093257		2
2	Circlip	9090863		2
3	Spring Seat – Rear Damper	9090862	Split Collar	2
4	Spacer – Bump Stop	9095298	6mm Nylon	2
5	Bump Stop – Rear	9092517	Tarmac 50mm	2
5	Bump Stop – Rear	9092536	Gravel 75mm	2
6	Damper – Rear	9095478	Tarmac 400/170	2
6	Damper – Rear	9093519	Tarmac 340/160	2
6	Damper – Rear	9093518	Gravel 300/130	2
6	Damper – Rear	9095163	Gravel 350/130	2
7	Bearing RR Damper	9092816		2
8	Circlip – Damper Bearing	9092815		4
9	Lock Ring	9093179		2
10	Spring Seat – Lower	9093328		2
10	Water Jacket	9095295	Alt. to 9093328	2
11	Helper Spring	9090265		2
12	Spring – Rear	9094878	Tarmac 34 Nm	2
12	Spring – Rear	9092548	Tarmac 36 Nm	2
	Spring – Rear	9092550	Tarmac 38 Nm	2
12	Spring – Rear	9092551	Tarmac 40 Nm	2
12	Spring – Rear	9092552	Gravel 27-37-61 Nm	2
12	Spring – Rear	9092555	Gravel 30-35-72 Nm	2
12	Spring – Rear	9092553	Gravel 33-38-72 Nm	2
12	Spring – Rear	9092554	Gravel 33-40-86 Nm	2
12	Spring – Rear	9093725	Gravel 30-35-50 Nm	2

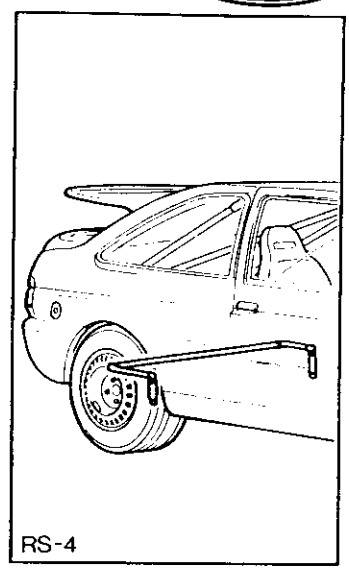


RS-2

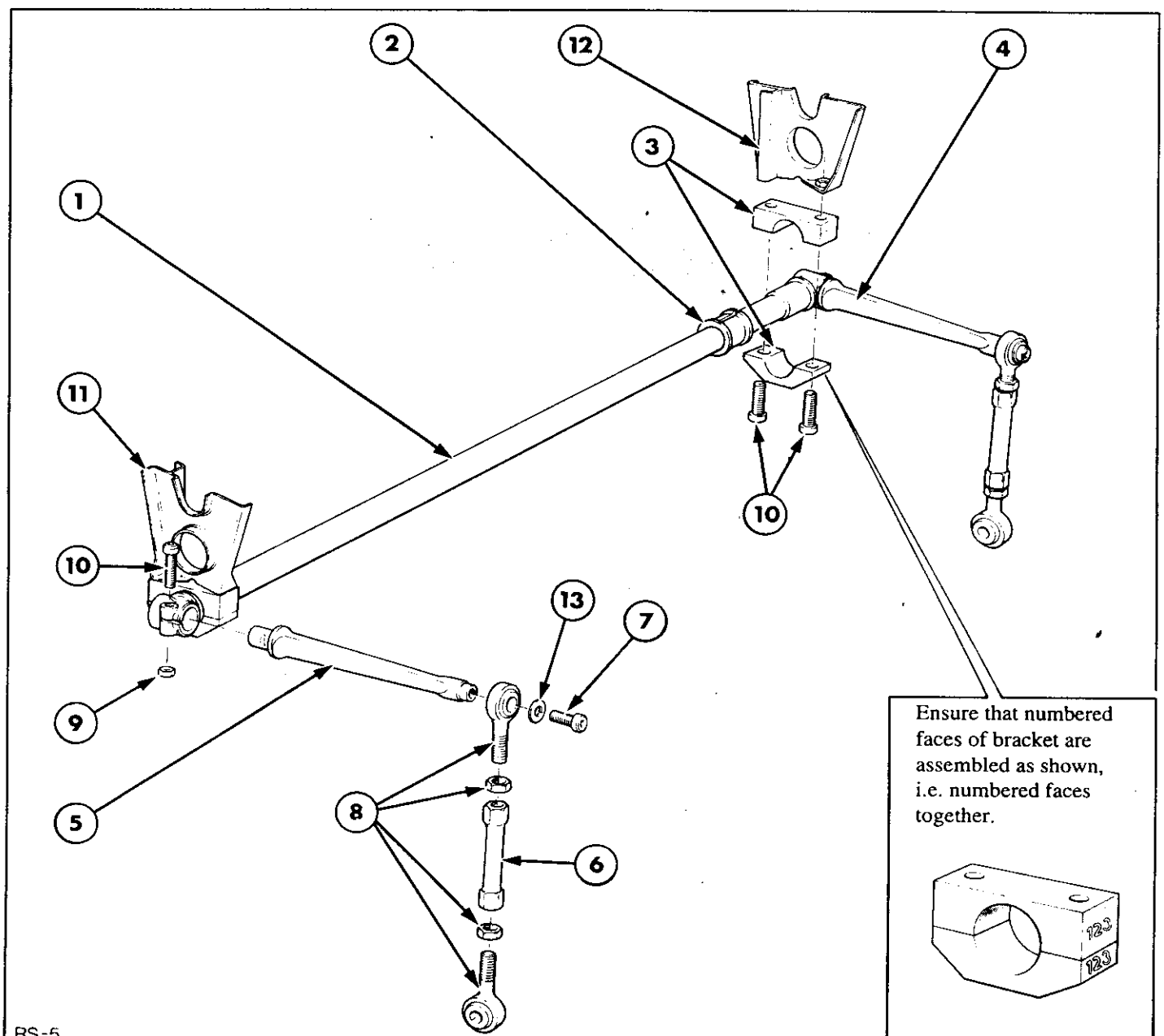


RS-3

	Description	Finis Code	Comments	Qty.
1	Anti-roll Bar	9095245	Tarmac 1" x 14 SWG	1
1	Anti-roll Bar	9094811	Tarmac 7/8" x 14 SWG	1
1	Anti-roll Bar	9092947	Tarmac 3/4" x 14 SWG	1
1	Anti-roll Bar	9094813	Gravel 5/8" x 14 SWG	1
2	Bearing Sleeve	9090660		2
3	Clamp – Anti-roll Bar	9094703		2
4	Blade ARB LH	9092233		1
5	Blade ARB RH	9092232		1
6	Drop Link	9092223		1
7	Cap Head Bolt		M10 x 40	2
8	Kit – Ball Joint	9092450		2
9	Nut – Anti-roll Bar Clamp	1471512		2
10	Bolt – Anti-roll Bar Clamp	1470247		6
11	Bracket – ARB to Chassis RH	9093256	(part of body/cage assy)	1
12	Bracket – ARB to Chassis LH	9093255	(part of body/cage assy)	113
13	Spacer – ARB Blade	9092716		2



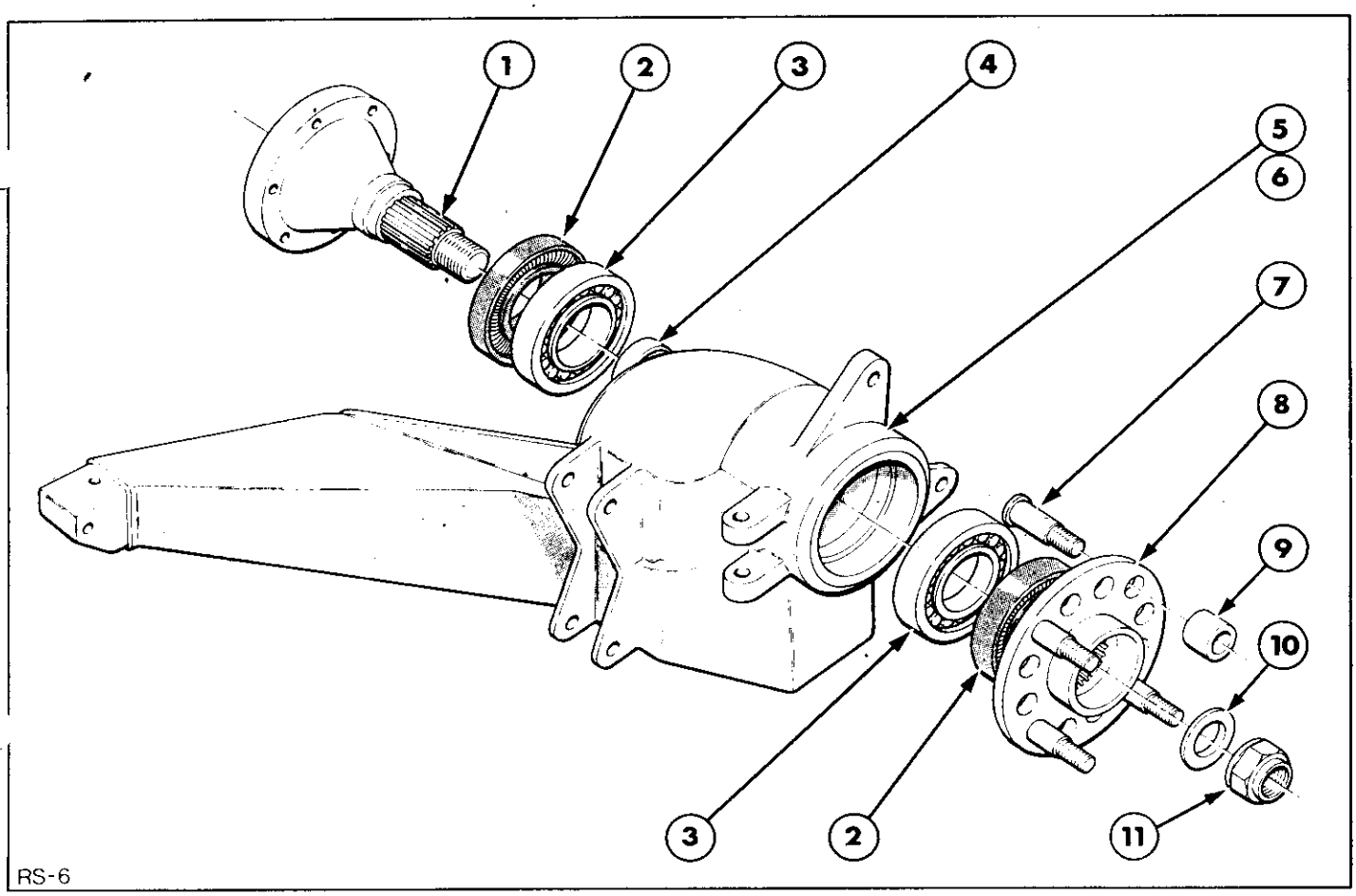
RS-4



Ensure that numbered faces of bracket are assembled as shown, i.e. numbered faces together.

RS-5

The semi trailing arms are manufactured in magnesium. Where road salt is encountered, wash and clean throughly and repaint bare metal. On gravel rallies, protect the arms from stone damage using rubber or plastic sheet.
After setting the bearings and torquing to specification, run in the bearings, retorque the hub nuts and stake them.
Check hubs and bearings regularly, and stamp hubs 'LH' or 'RH'. When refitted ensure they are used on the correct side with the mating stub shaft.



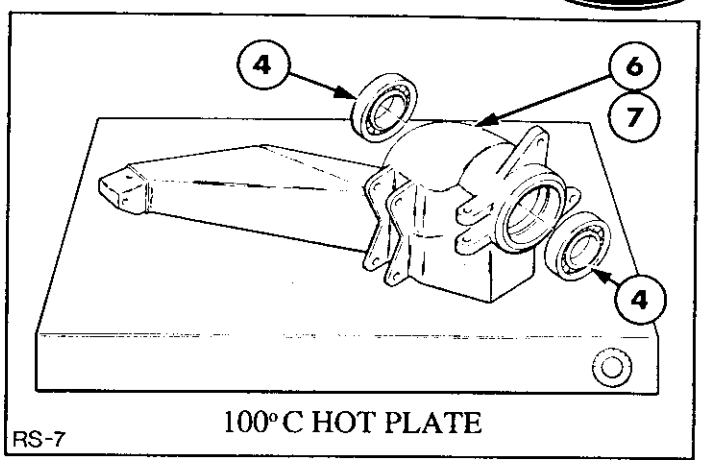
RS-6

	Description	Finis Code	Comments	Qty.
1	Stub Shaft	9095459	RH Thread	2
2	Seal	9092817		4
3	Bearing	9092367		4
4	Shim	9092519	9.144	2
4	Shim	9092521	9.196	2
4	Shim	9092523	9.248	2
4	Shim	9092525	9.300	2
4	Shim	9092527	9.352	2
4	Shim	9092529	9.404	2
5	Semi Trailing Arm LH	9095131		1
6	Semi Trailing Arm RH	9095132		1
7	Stud – Wheel	9095413	M14	8
8	Flange – Hub	9095409		2

	Description	Finis Code	Comments	Qty.
9	Sleeve – Wheel Stud	9095414	M14 Studs	8
10	Washer – Hub	9092620		2
11	Nut – Hub	9095410	Stake after torquing	2

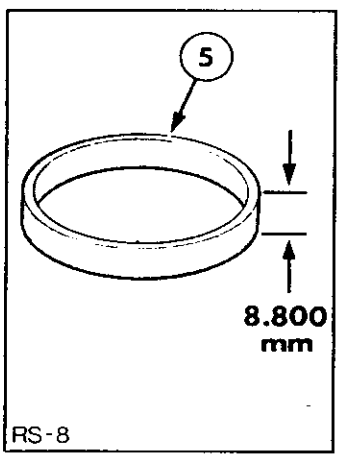
Torques	
Hub Nut – Rear	475 Nm

Items 6 and 7 must be heated to fit items 4. They must be heated uniformly on a hotplate **not** with a naked flame, to a temperature of 100°C.

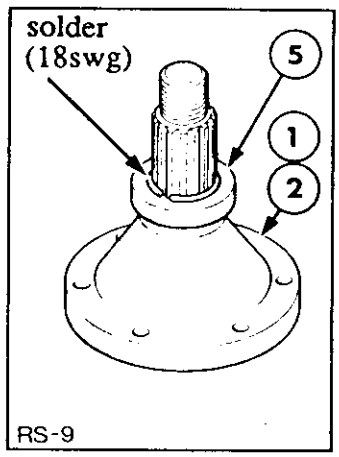


The pre-loading of bearings will be to suit individual preference, therefore the following steps are intended for **guidance** during set-up **only**.

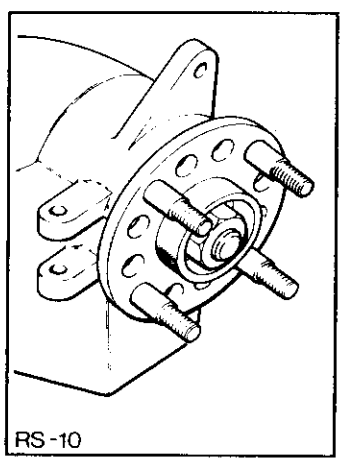
Make a spacer (5) 8.800 mm thick.



Fit spacer to stub axle (1), and make a ring of light solder (18 swg) - ensure it is tight against the spacer.



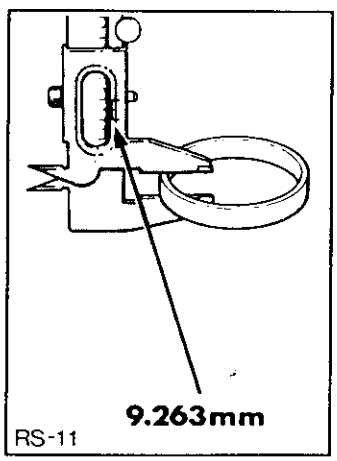
Using nut without any locking device, i.e. free running, then carefully remove item 1 or 2, without disturbing the solder.



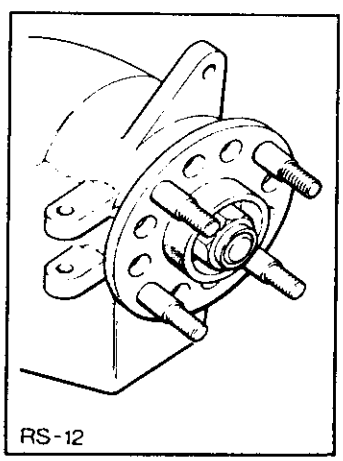
Measure the thickness of item 5 and solder e.g. 9.263 mm. Deduct 0.05 - 0.08 mm (for pre-load) and select closest the spacer

9.263
- 0.080
= 9.183

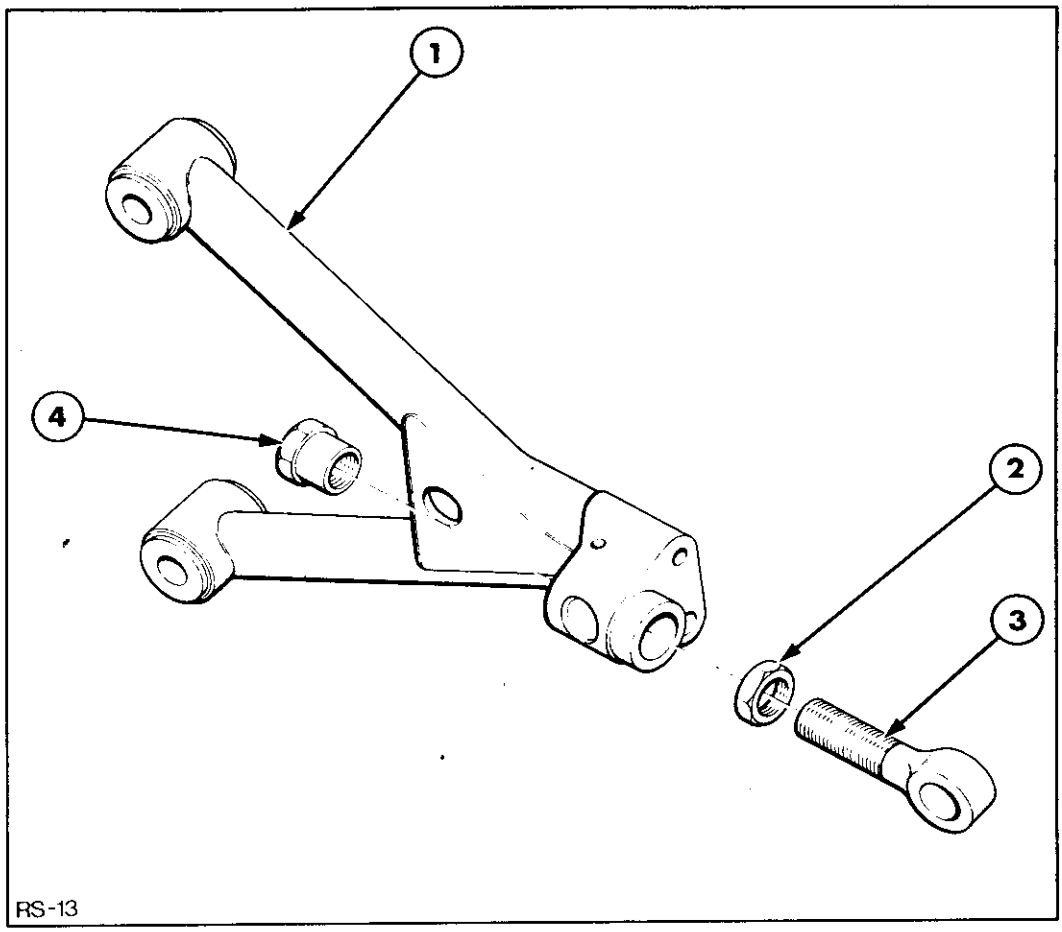
Nearest size spacer
= 9.196 mm



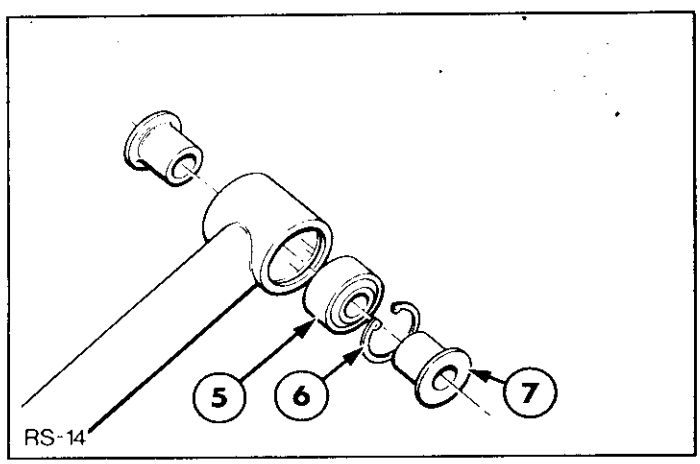
Fit spacer, and adjust if necessary.



NOTE:
Stake nut after torque setting.

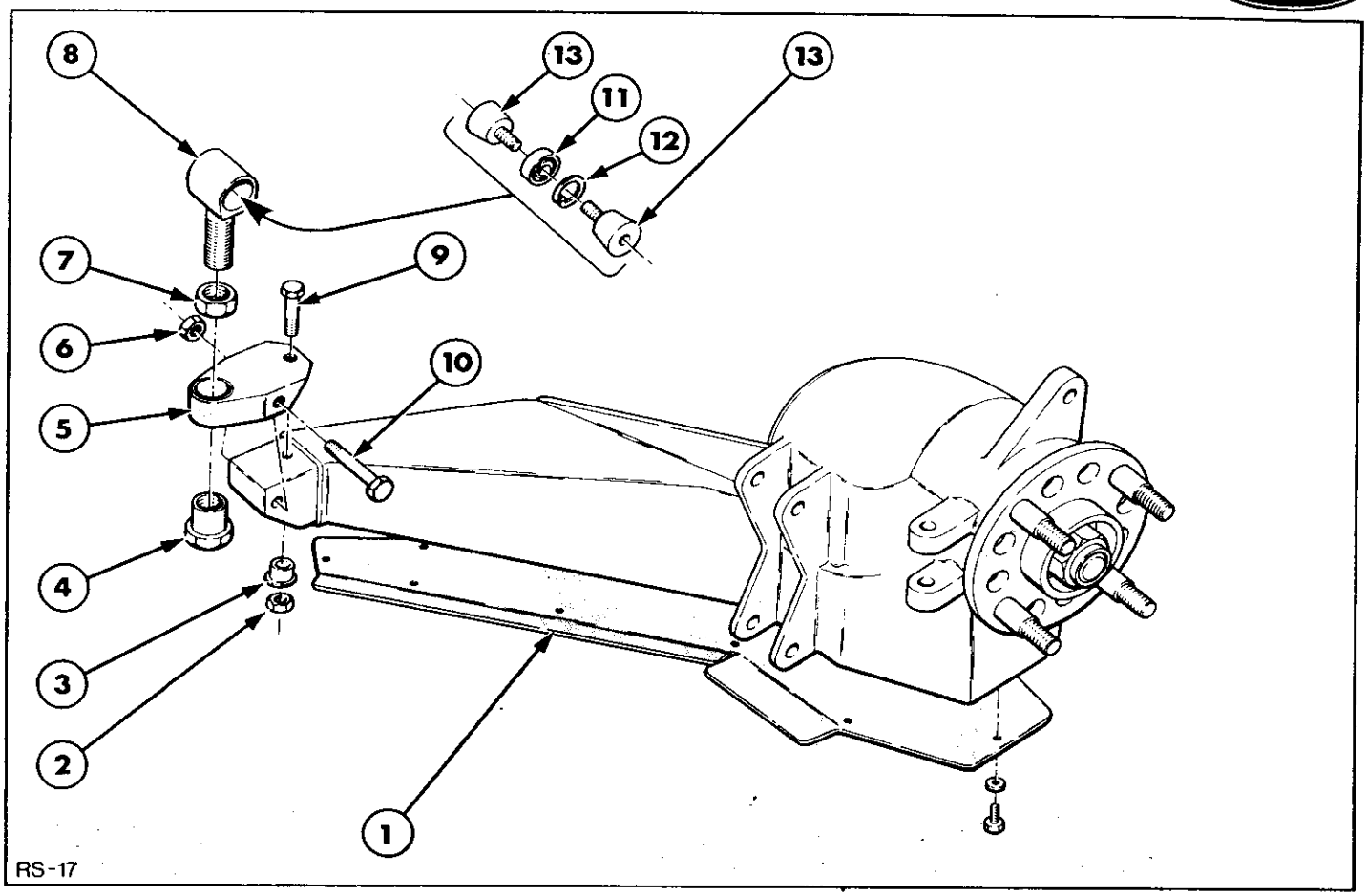


RS-13



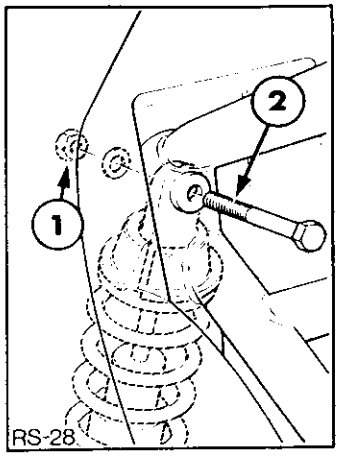
RS-14

	Description	Finis Code	Comments	Qty.
1	Toe Link	9094761	Tarmac 16 SWG	2
1	Toe Link	9095309	Gravel 14 SWG	2
2	Lock Nut	9094429		2
3	Rod End Bearing	9092562		2
4	Sleeve Nut	9094430		2
5	Bearing STA	9093757		4
6	Circlip	9094777		4
7	Spacer	9093728		8

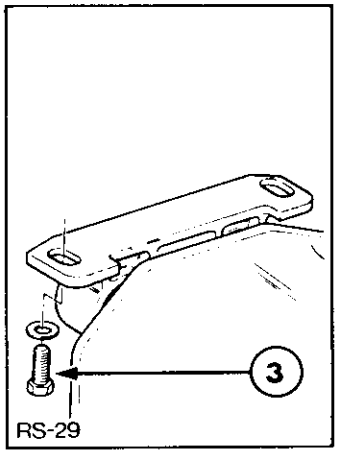


RS-17

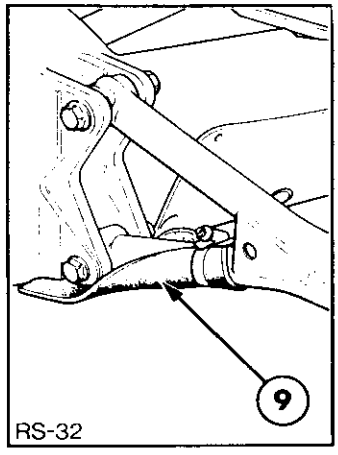
	Description	Finis Code	Comments	Qty.
1	Protection Plate	9093650	Aluminium	2
2	Nyloc Nut	—	M10	2
3	Insert	9093658	press into arms	2
4	Sleeve Nut	9095312		2
5	Bracket – Inner Mount	9095311		2
6	Nyloc Nut	—	M10	2
7	Nut	9093648		2
8	Bearing Housing	9095248		2
9	Bolt	—	M10 x 55 – 10.9 Grade	2
10	Bolt	—	M10 x 85 – 10.9 Grade	2
11	Bearing	9095225		2
12	Circlip	9095224	(Included in9095225)	2
13	Spacer	9095226		4



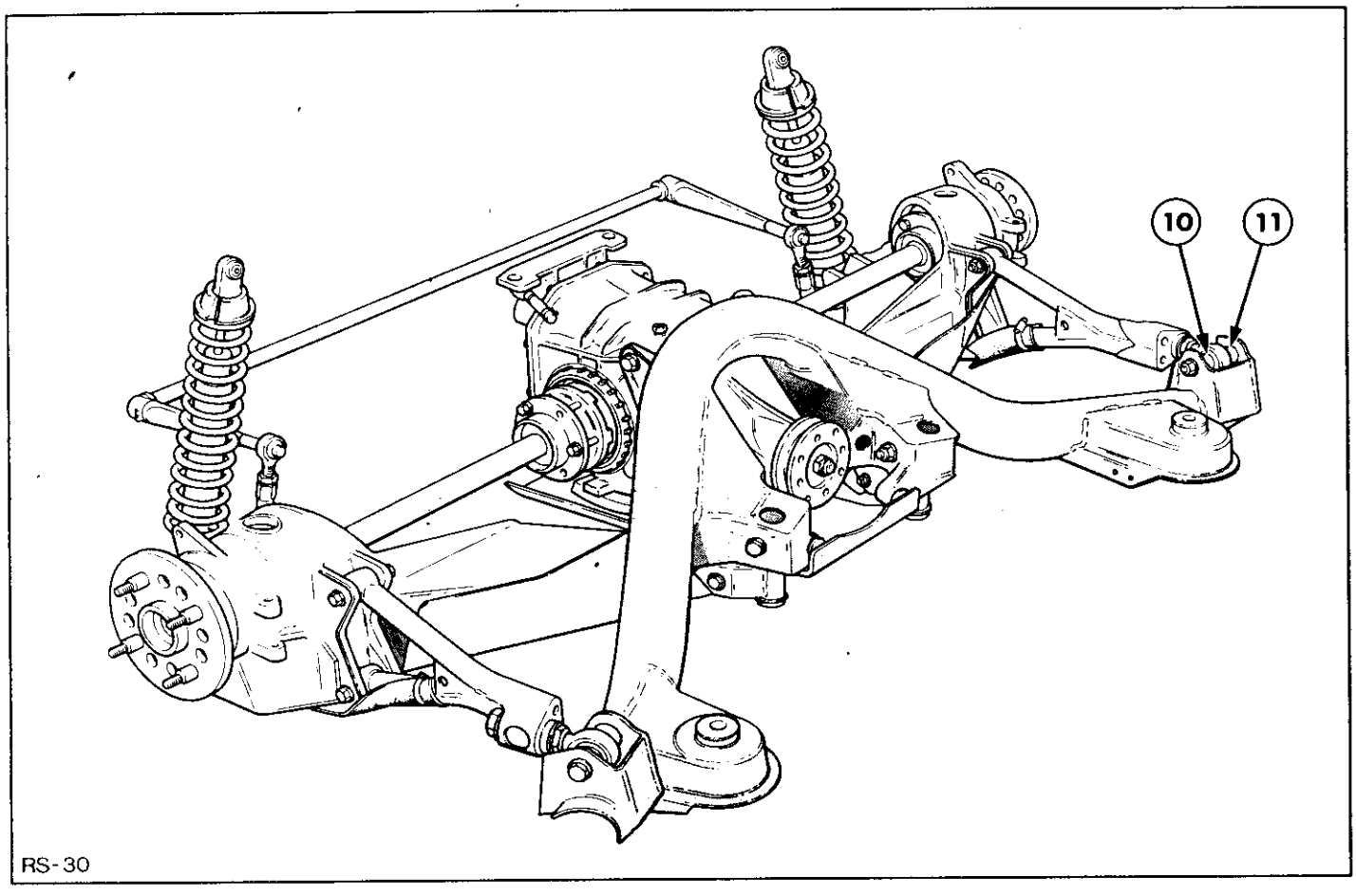
RS-28



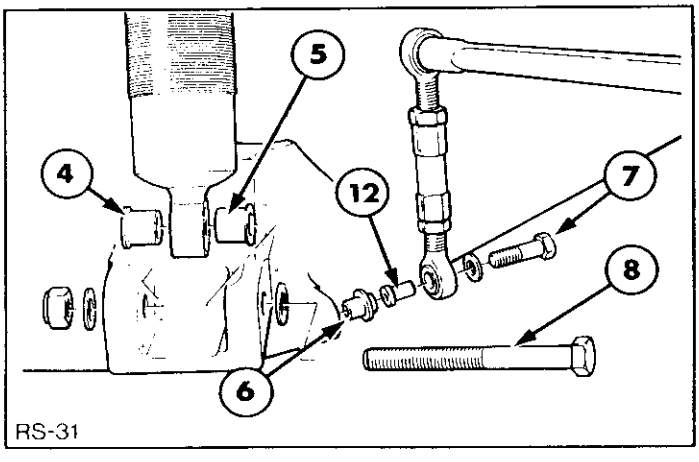
RS-29



RS-32



RS-30



RS-31

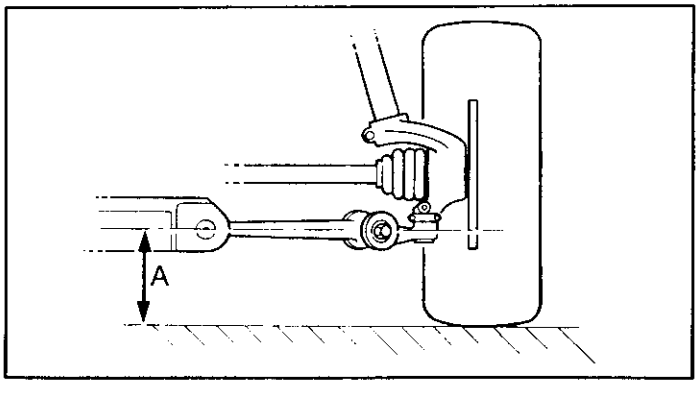
	Description	Finis Code	Comments	Qty.
1	Nut	6060695		2
2	Bolt	1596262		2
3	Bolt	—	M14 x 40	2
4	Spacer – Damper	9093274	Gravel – 4 upper, 2 lower	6
4	Spacer – Damper	9094330	Tarmac – 4 upper, 2 lower	6
5	Spacer – Damper	9093272	Gravel – Lower	2
5	Spacer – Damper	9094859	Tarmac– Lower	2
6	Spacer ARB	9093645	Press into arm	2
7	Cap Head Screw		M8 x 45	2
8	Bolt – Damper		M12 x 100 – 10.9 Grade	2
9	Protector – Toe Links	9095299	Clamp to lower link	4
10	Spacer – Inner	9095288		2
11	Spacer – Outer	9095289		2
	Alt. Spacer (Steel)	9092945		4
12	Spacer – ARB	9092741		2

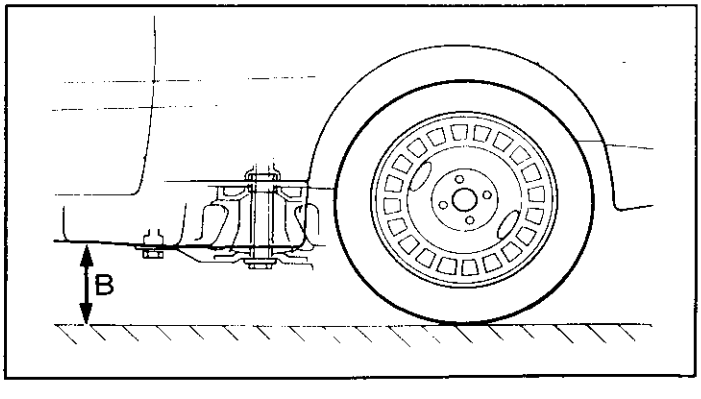
SPECIFICATIONS

FORD MOTORSPORT VEHICLE BUILD SPECIFICATION

EVENT	TARMAC		GRAVEL	
SPECIFICATION	**FRONT**	**REAR**	**FRONT**	**REAR**
SUSPENSION Springs Dampers Bump Rubbers Anti–Roll Bar Blade Position	 80 N/mm 500/200 70mm + 6mm Ø 31,75 Full Stiff	 40 N/mm 400/170 50mm Ø 7/8"–14swg Full Stiff	 49 – 66 – 99 N/mm 380/160 94mm + 6mm Ø – –	 30 – 35 –50 N/mm 350/130 75mm + 6mm Ø – –
CASTOR	3° 30'	–	3° 30'	–
CAMBER	3° 00'	2° 45'	2° 30'	1° 45'
TOE IN	2mm	3mm	2mm	3mm
RIDE HEIGHT	160mm	170mm	230mm	240mm
BRAKES Master Cylinder Brake Pad Material	Ø 355mm 0.8125" Blue Carbon	Ø 285mm 0.8125" Blue Carbon	Ø 315mm 0.8125" Blue Carbon	Ø 315mm 0.8125" Blue Carbon
CLUTCH	7¼" Paddle		7¼" Paddle	
WHEELS Tyre Compound Pressure	8" x 17" Ø 640 x 225mm – 2.0 Bar	8" x 17" Ø 640 x 225mm – 2.0 Bar	7" x 16" Ø 650mm – 2.0 Bar	7" x 16" Ø 650mm – 2.0 Bar
CENTRE DIFF. FRONT AXLE V.C. REAR AXLE V.C.	60 Nm V.C. 65 Nm V.C. 520 Nm V.C.		220 Nm V.C. 65 Nm V.C. 200 Nm V.C.	

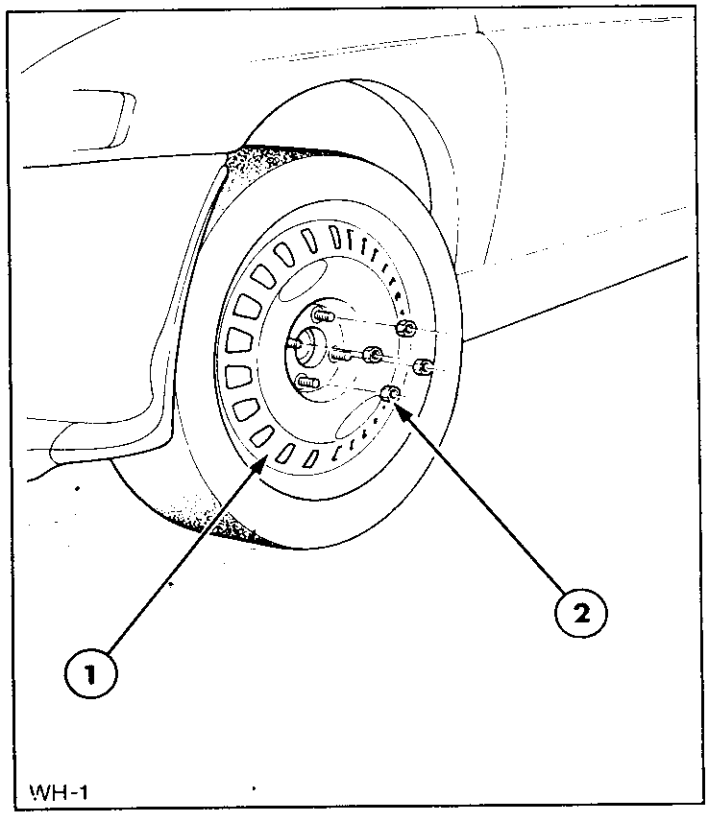
NOTE: Front ride height is measured from centre line T.C.A. joint to ground on recommended tyre. (A) Rear ride height is measured from steady plate mounting face to ground on recommended tyre. (B) . Ride heights should be increased by 10 – 15mm on rough gravel or bumpy tarmac. Spring/Damper rates shown are typical but should be verified in testing, to suit local conditions and driver preference.





WHEELS

In 1993, group 'A' regulations stipulate a maximum wheel and tyre width of 9" (228mm), with a maximum overall diameter of 650mm.
Additional wheel fans are not allowed.
Recommended wheel size is 16" x 7½" gravel, 17" x 8" tarmac both with 33mm offset. Magnesium wheels should be regularly cleaned, inspected and repainted to combat corrosion.

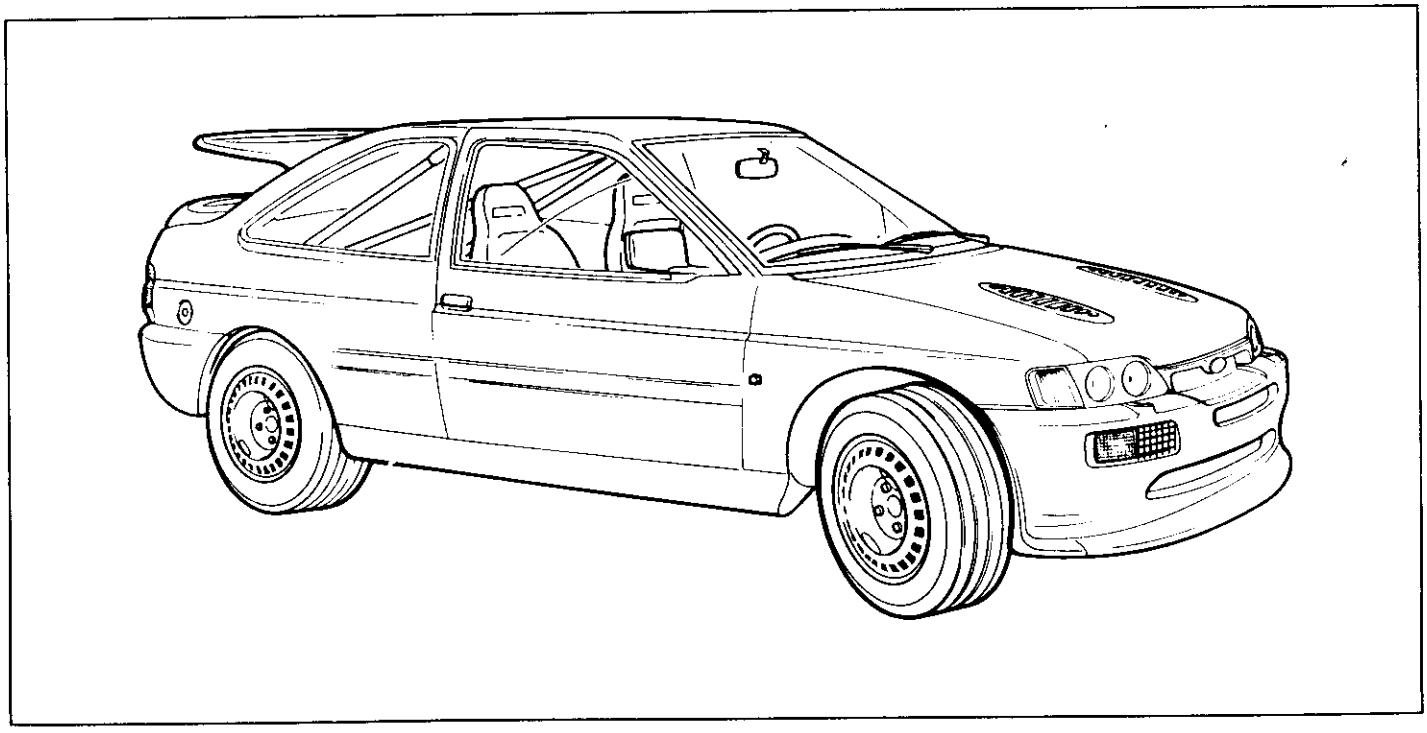


WH-1

	Description	Finis Code	Comments	Qty.
1	Wheel	TBE	7" x 16"	
1	Wheel	TBE	8" x 17"	
2	Wheel Nut M14	9095345	aluminium	

Torque	
Wheel Nut	65lb/ft 88 Nm

Tyre Pressures	
(Michelin)	2.0 Bar



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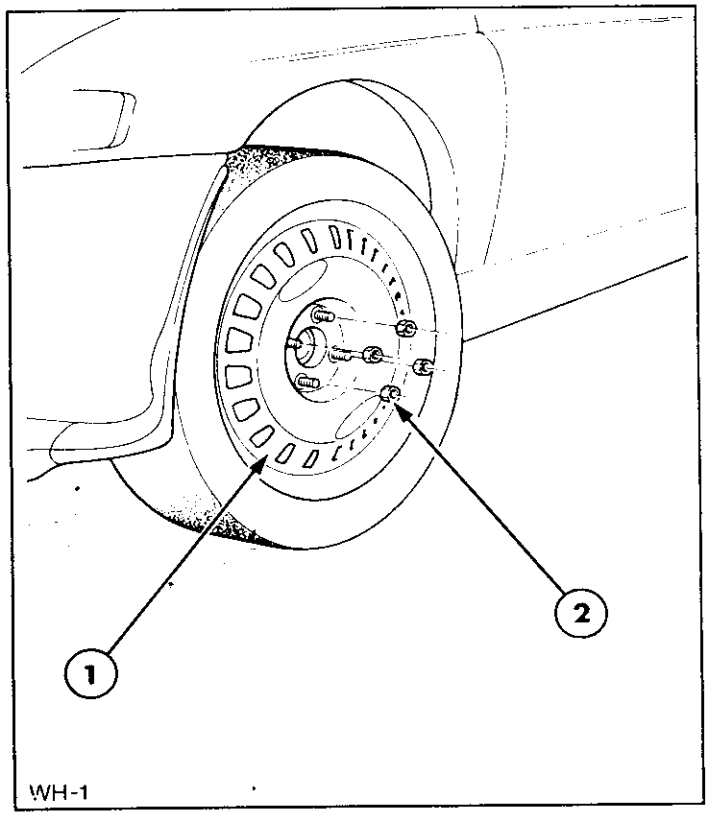

WH-1

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1	Wheel	TBE	7" x 16"	
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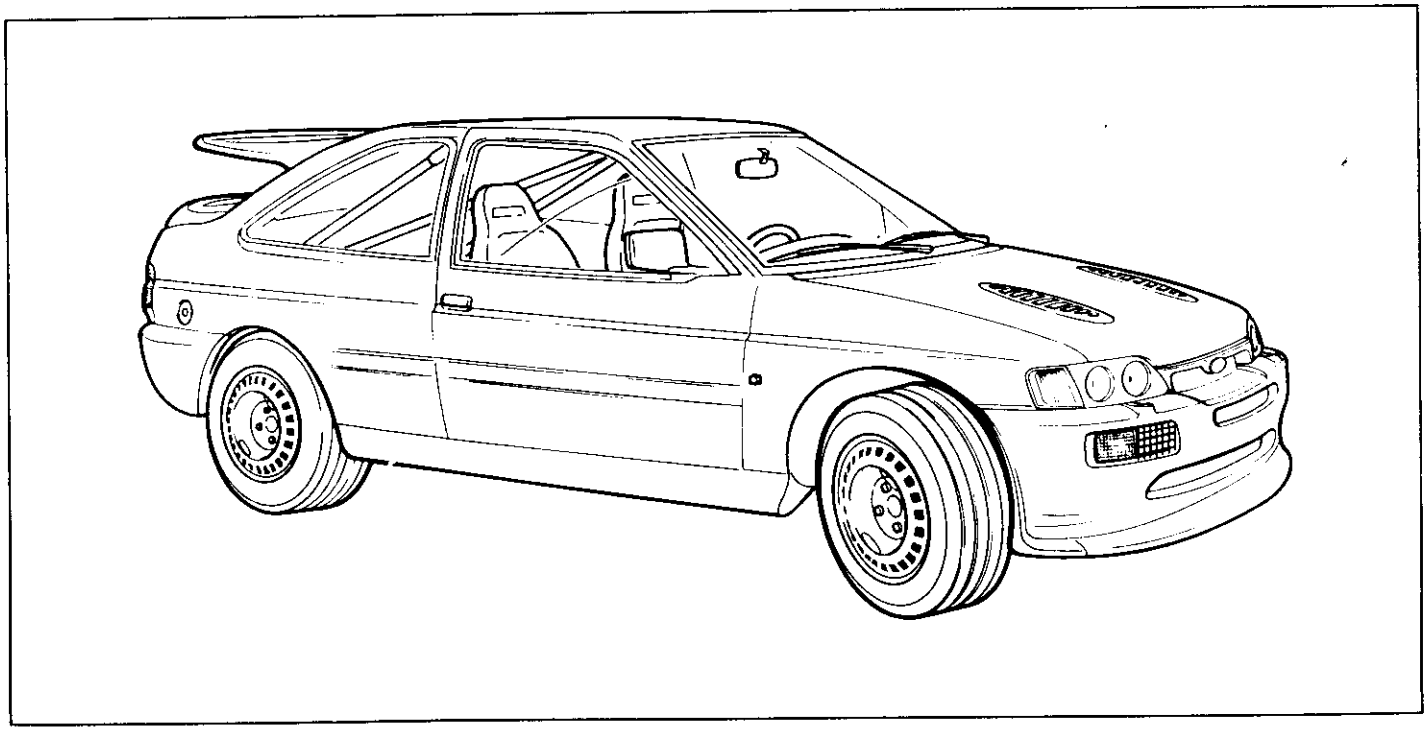
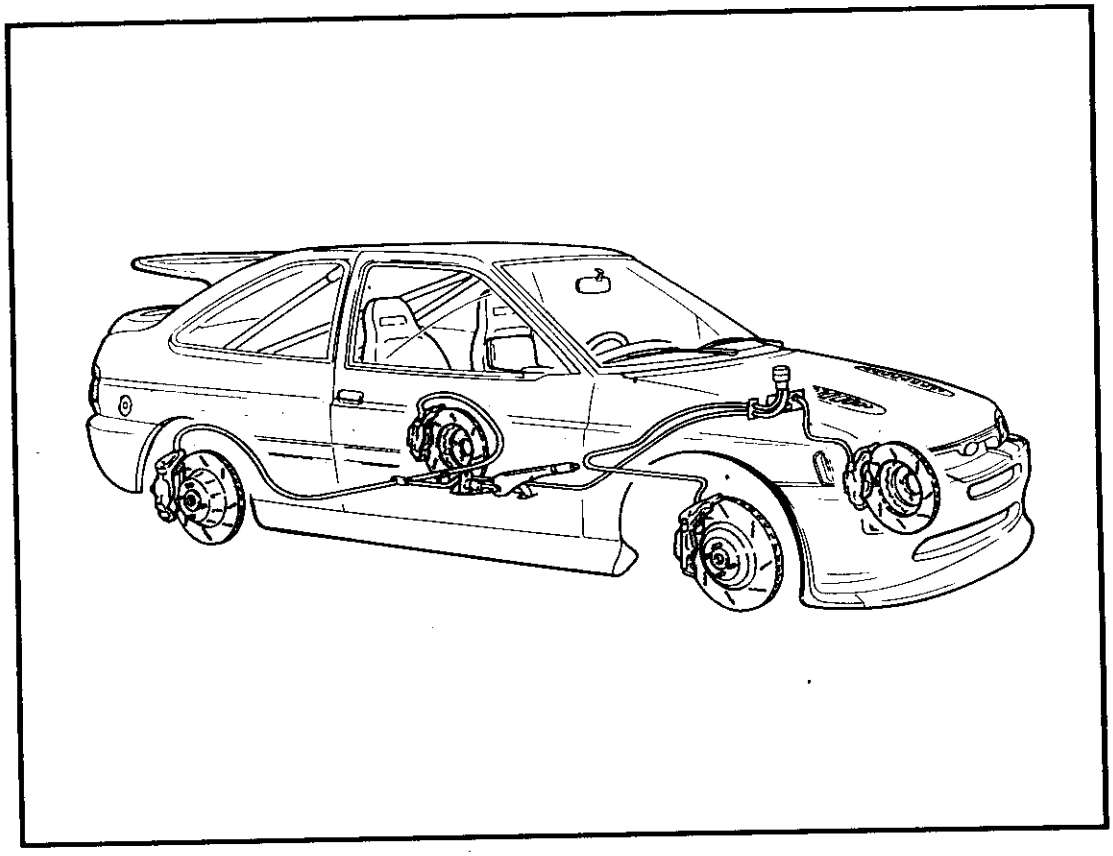
2	Wheel Nut M14	9095345	aluminium	

Torque	
Wheel Nut	65lb/ft 88 Nm

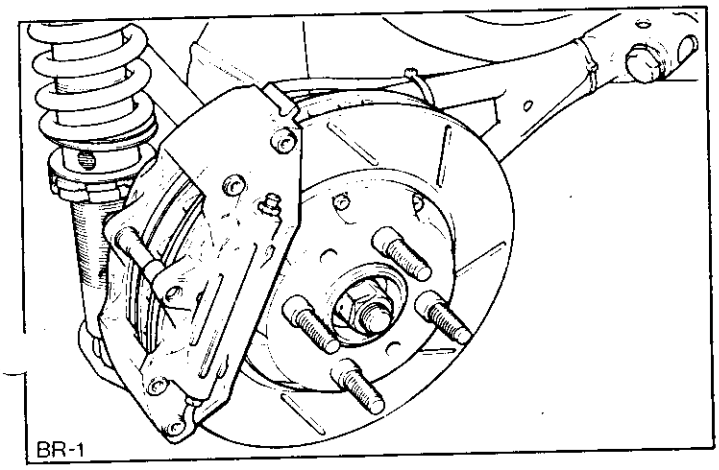
Tyre Pressures	
(Michelin)	2.0 Bar

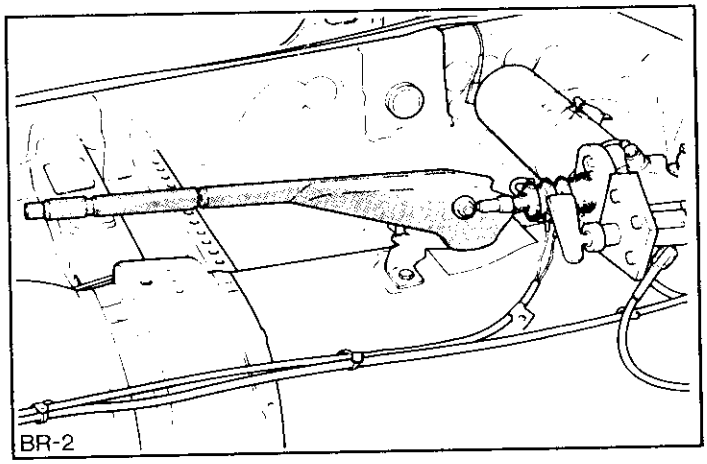


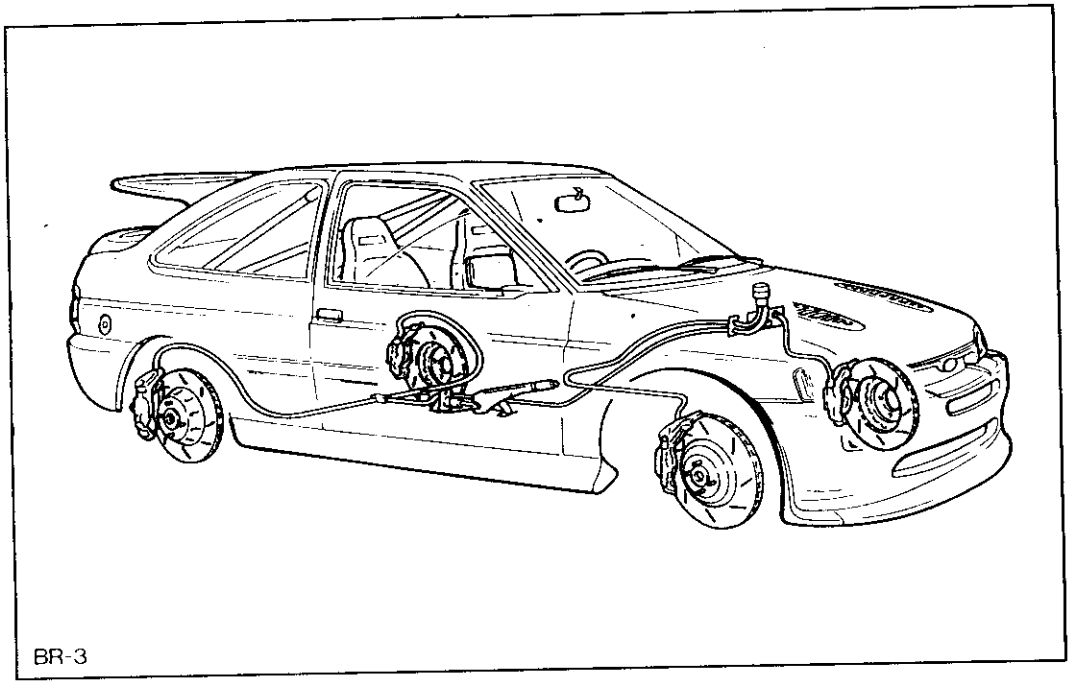
BRAKES

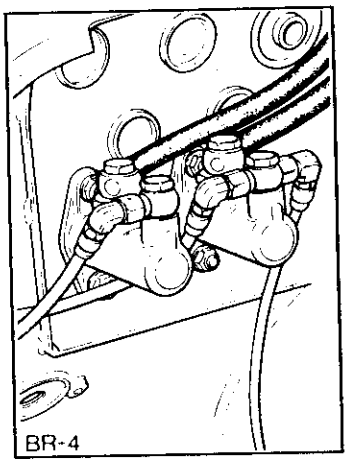


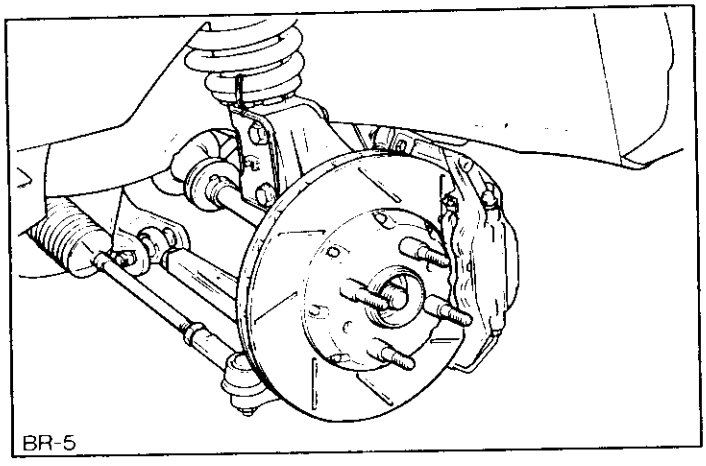
The braking system is a two line system which operates from two individual master cylinders. These are split front and rear brakes. The braking effort can be biased from front to rear by a dash mounted control. The parking brake operates by a separate master cylinder positioned in the rear brake circuit. Cooling, where allowed, of the front brake discs is effected by an air duct mounted on the rear of the front spoiler.

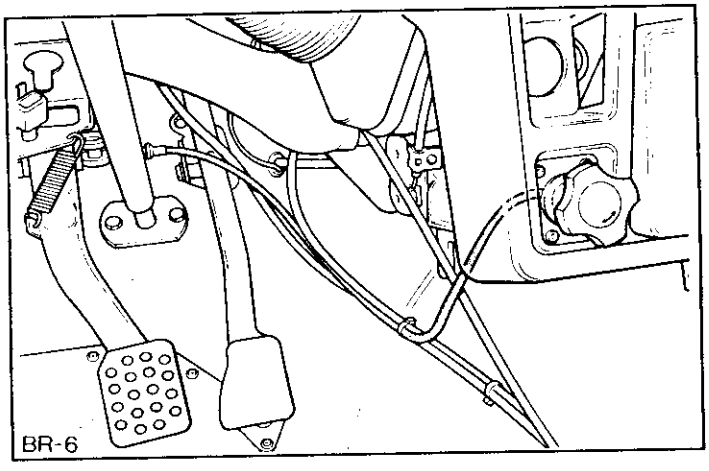

BR-1


BR-2


BR-3

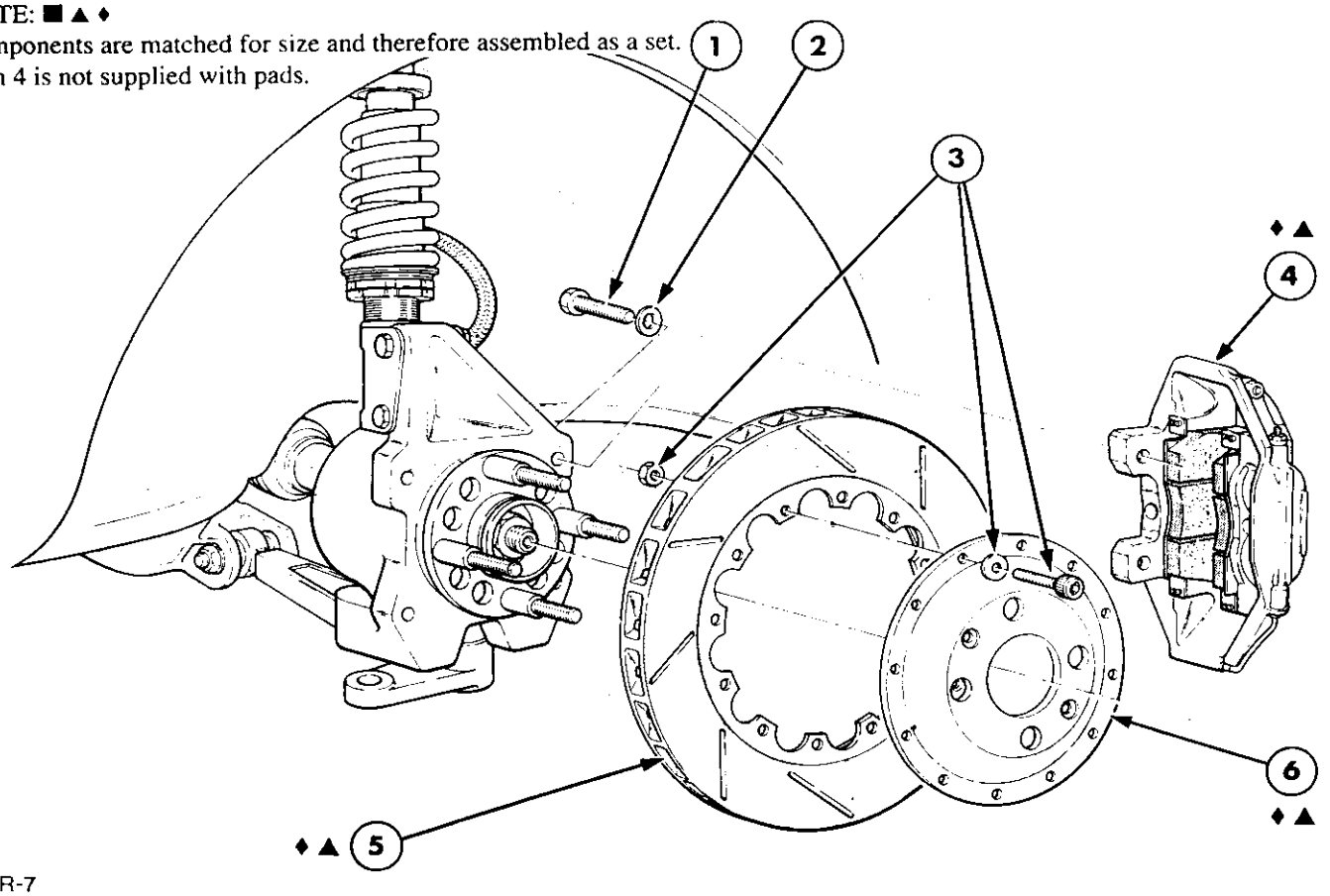

BR-4


BR-5


BR-6

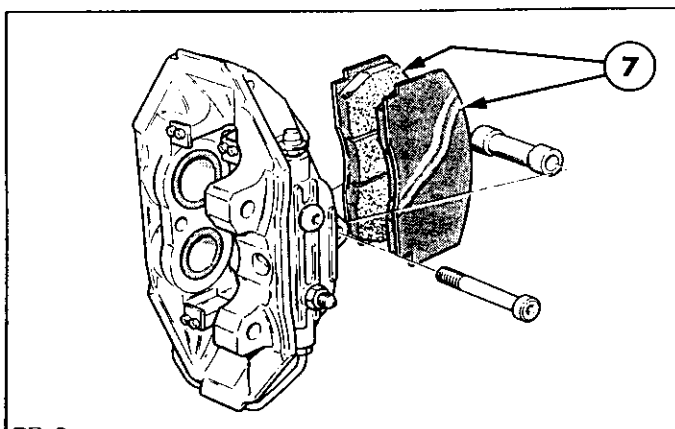
Brake discs and calipers should be carefully bedded-in before use.
To bed in: Make a few gentle stops to remove high spots, then several hard applications from high speed down to 30kph, with recovery in between, continue until fade is no longer apparent,. Drive until brakes cool down.
Bed new pads with used discs and with new discs with used pads.
NOTE: in 1993, all brake discs and calipers must be stamped with the vehicle manufacturer's trade mark. (International events).

NOTE: ■ ▲ ♦
Components are matched for size and therefore assembled as a set.
Item 4 is not supplied with pads.

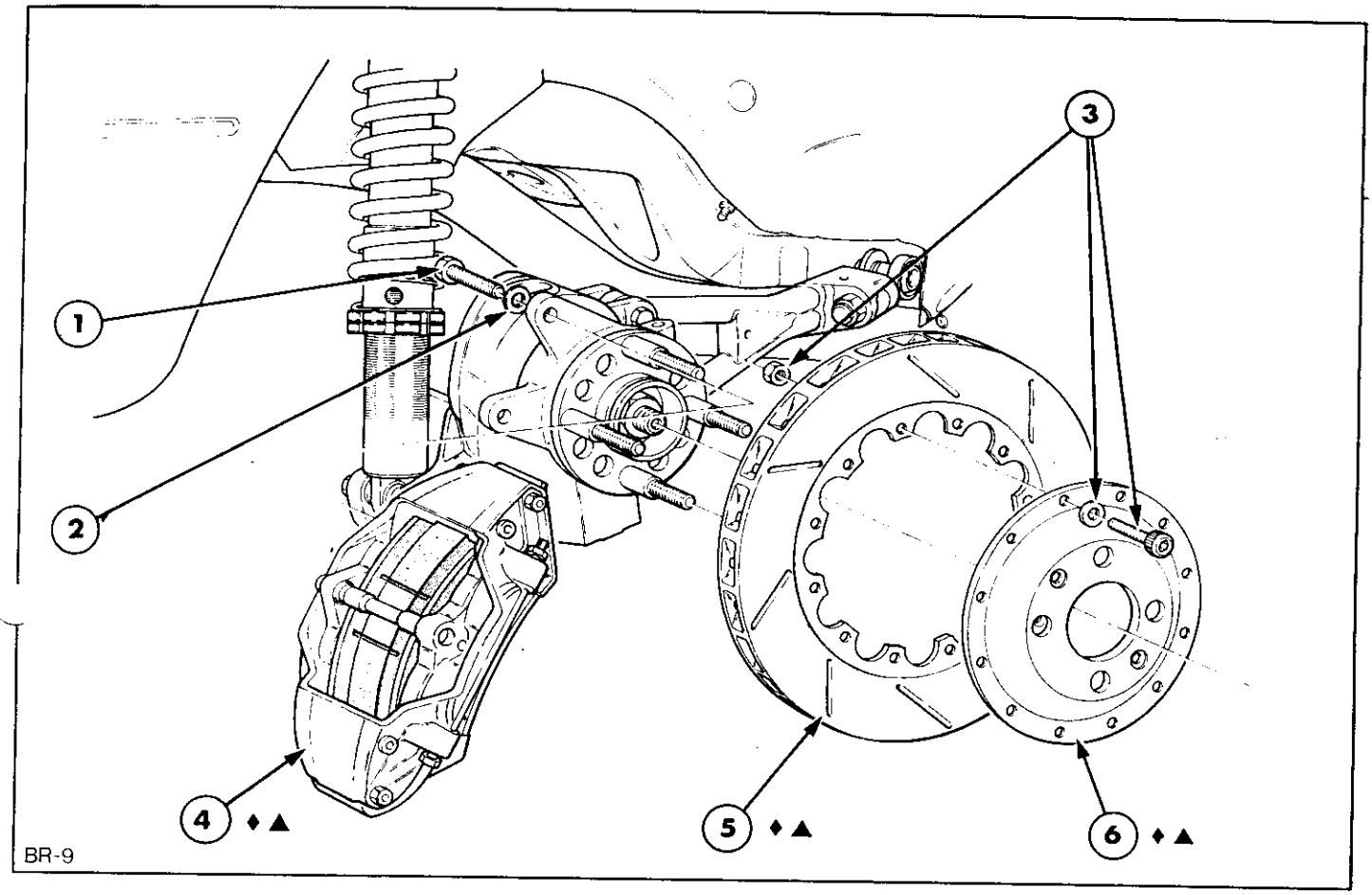


BR-7

	Description	Finis Code	Comments	Qty.
1	Bolt – Caliper Mounting		M12 – 1.75 x 45	4
2	Washer	*1484284		4
3	Kit – Disc Bolt	9092107	Bolt, nut & washer	24
4	▲ Caliper LH	9094828	Gravel – 315	1
4	▲ Caliper RH	9094829	Gravel – 315	1
4	♦ Caliper LH	9095256	Tarmac, radial – 355†	1
4	♦ Caliper RH	9095257	Tarmac, radial – 355†	1
5	▲ Disc LH	9094832	Gravel – 315	1
5	▲ Disc RH	9094833	Gravel – 315	1
5	♦ Disc LH	9095254	Tarmac – 355†	1
5	♦ Disc RH	9095255	Tarmac – 355†	1
6	▲ Bell	9095364	Gravel – 315	2
6	♦ Bell Front	9095335	Tarmac – 355†	2
7	Brake Pad – Front	9095363	Carbon metallic	4
8	Adaptor – Caliper to upright	9095284	† 355 Brakes	2
9	Spacer – Adaptor	9095264	† 355 Brakes	4

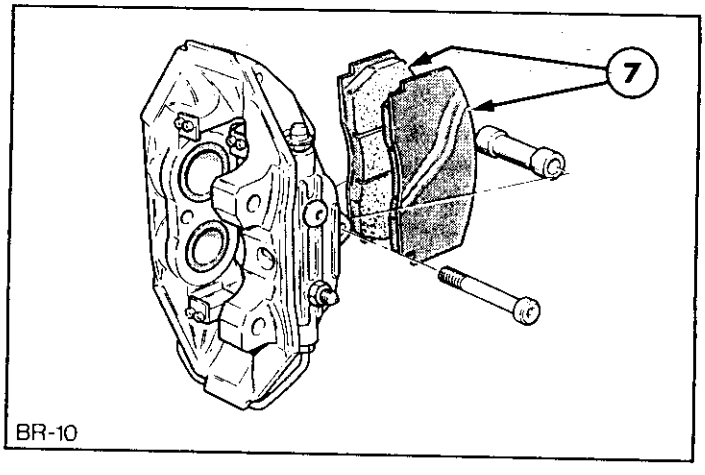


BR-8

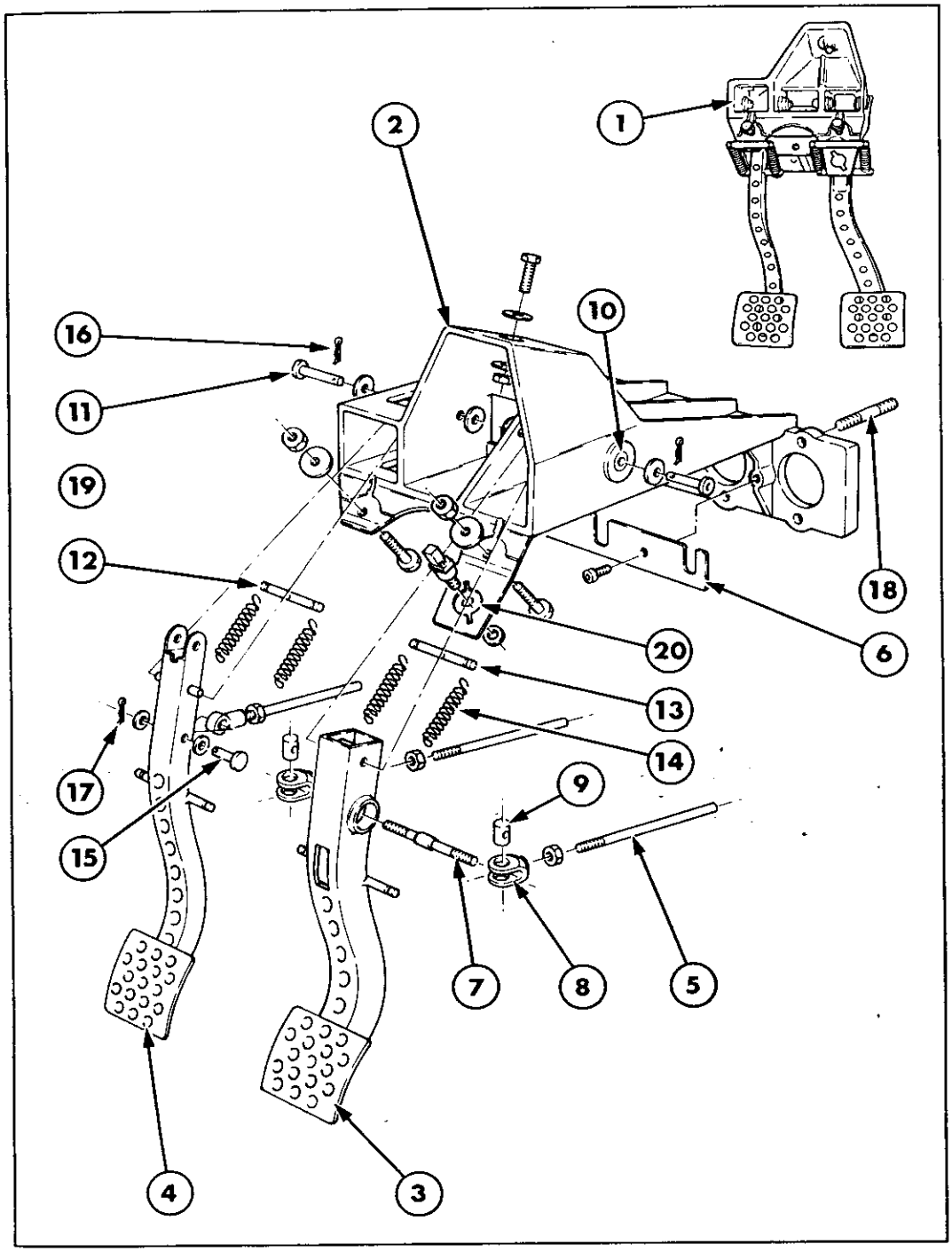


BR-9

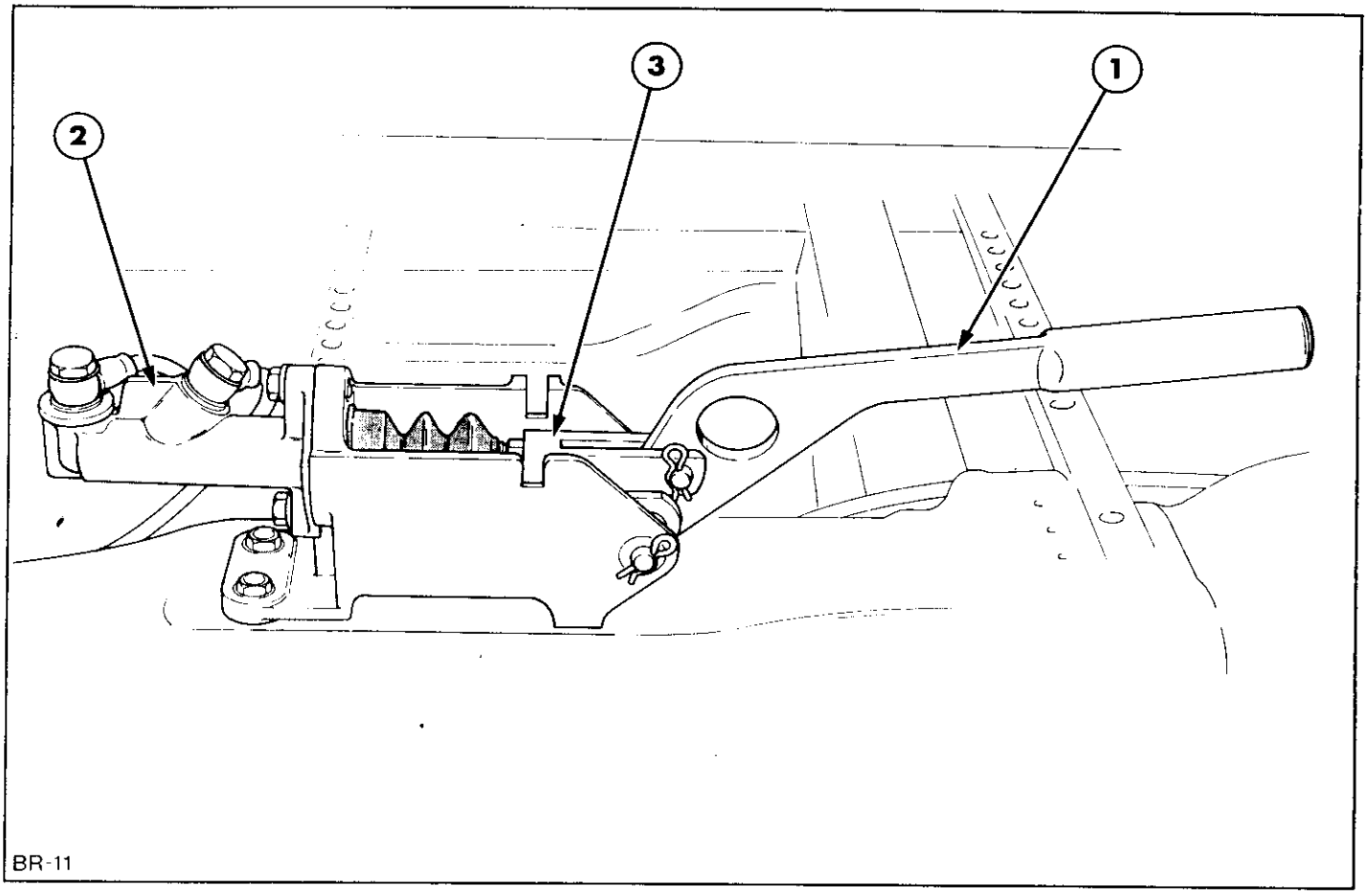
	Description	Finis Code	Comments	Qty.
1	Bolt – Caliper Mounting		M12 – 1.775 x 45	4
2	Washer	*1484284		4
3	Kit – Disc Bolt	9092107	Bolt, nut & washer	24
4	▲ Caliper LH	9094828	Gravel – 315	1
4	▲ Caliper RH	9094829	Gravel – 315	1
4	♦ Caliper LH	9094830	Tarmac – 285	1
4	♦ Caliper RH	9094831	Tarmac – 285	1
	▲ Disc LH	9094832	Gravel – 315	1
5	▲ Disc RH	9094833	Gravel – 315	1
5	♦ Disc LH	9095423	Tarmac – 285	1
5	♦ Disc RH	9095424	Tarmac – 285	1
6	▲ Bell	9095364	Gravel	2
6	♦ Bell	9095421	Tarmac	2
7	▲ Brake Pad	9095363	Gravel (315 Caliper)	4
7	♦ Brake Pad	9094827	Tarmac (285 Caliper)	4



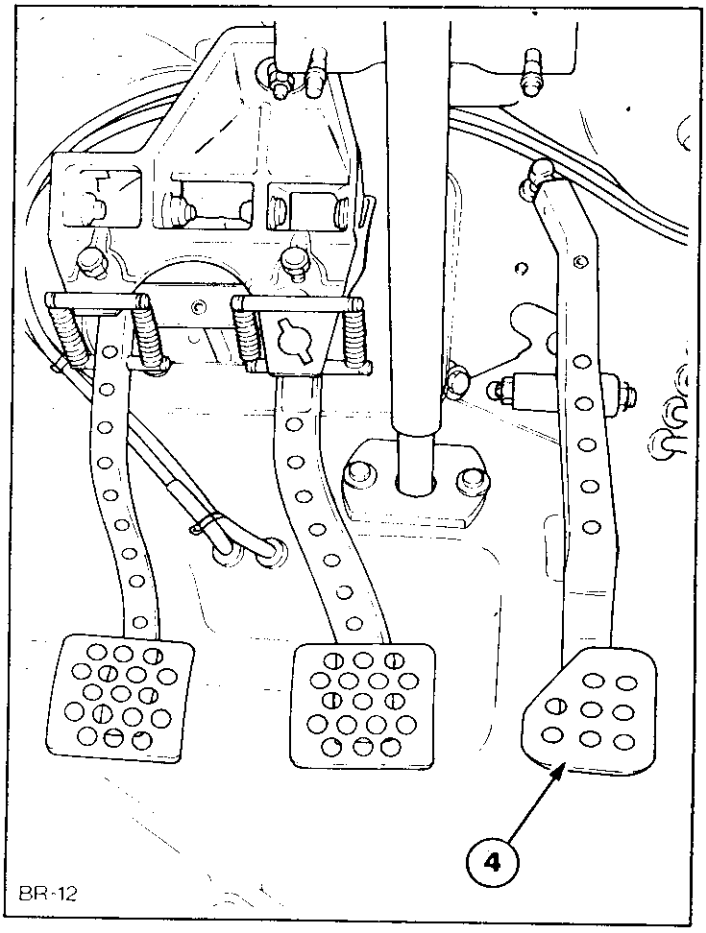
BR-10



	Description	Finis Code	Comments	Qty.
1	Pedal Box Assembly	9095430		1
Service Items				
2	Pedal Box Casting	9095439		1
3	Brake Pedal	9095440		1
4	Clutch Pedal	9095438		1
5	Push Rod	9095420		3
6	Support – Push Rod	9095434		1
7	Shaft – Brake Balance	9093140		1
8	Clevis – Brake Balance	9093320		2
9	Clevis – Pin	9093317		2
10	Bush	9095432		4
11	Pedal Pivot Pin	9095431		2
12	Spring Post	9095436		1
13	Spring Post	9095437		1
14	Spring – Pedal Return	9095433		4
15	Clevis Pin	1584319		1
16	'R' Pin	1443787		2
17	'R' Pin	1762257		1
18	Stud	0242360	M8	4
19	Switch – Brake Light	6089985		1
20	Bush – Switch	6089984		1

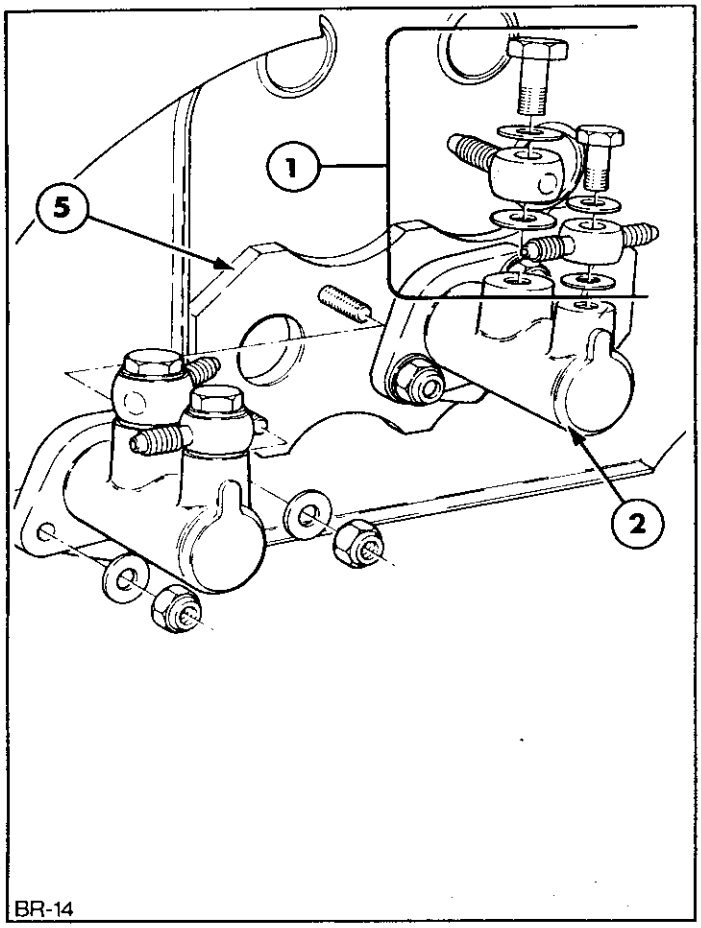


BR-11

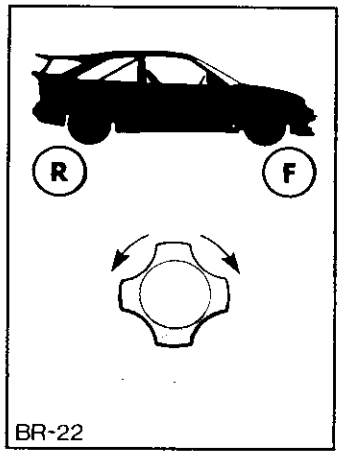


BR-12

	Description	Finis Code	Comments	Qty.
1	Handbrake	TBE		1
2	Master Cylinder	9092895	0.75" Ø	1
3	Clevis	TBE		1
4	Accelerator Pedal	9094822	High Ratio	1

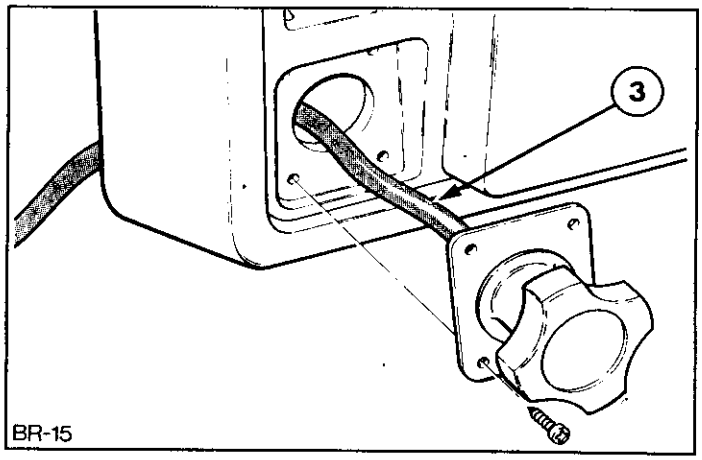


BR-14

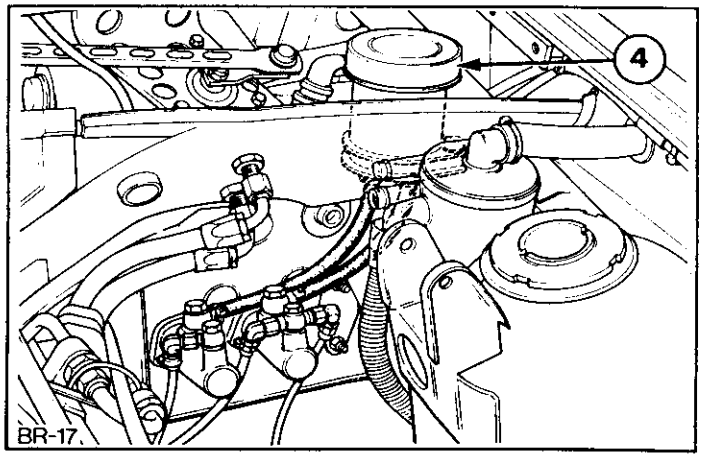


BR-22

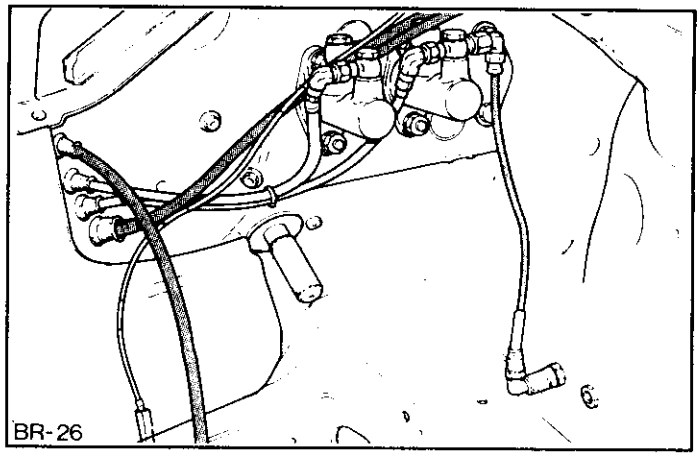
	Description	Finis Code	Comments	Qty.
1	Banjo Kit	9093487		1
2	Master Cylinder	9095354	0.625" Ø	1
2	Master Cylinder	9095355	0.700" Ø	1
2	Master Cylinder	9095356	0.750" Ø	1
2	Master Cylinder	9095357	0.812" Ø	1
2	Master Cylinder	9095371	0.875" Ø	1
3	Balance Cable	9093142		1
4	Reservoir	9095212	Direct Fitting	2
	Or			
	Reservoir – Duel	9093569	Remote	1
	Bellows	9093570	Use With 9093569	1
5	Plate	9095418		1

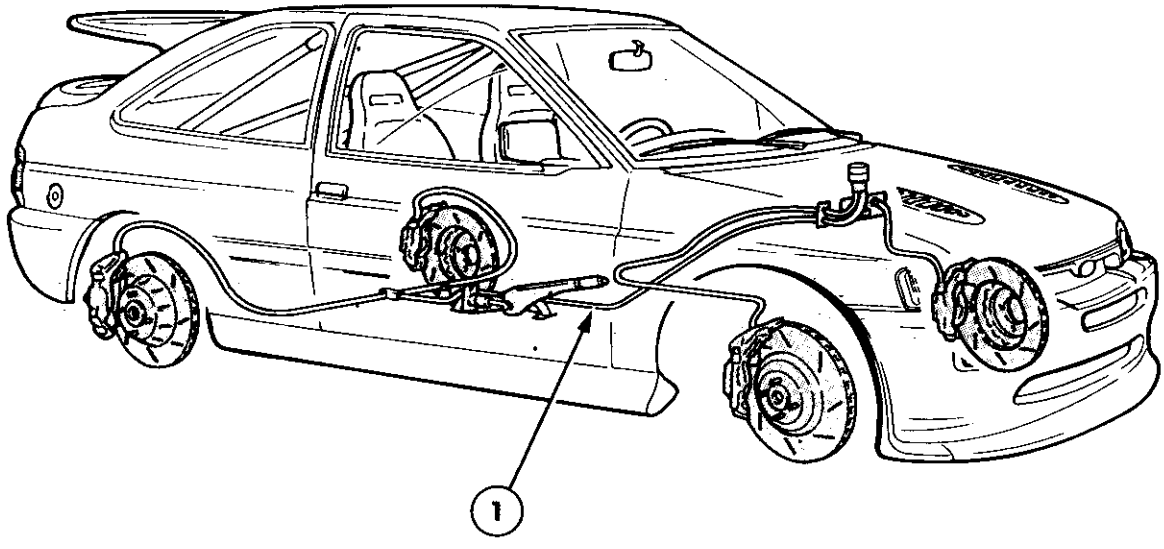


BR-15



BR-17

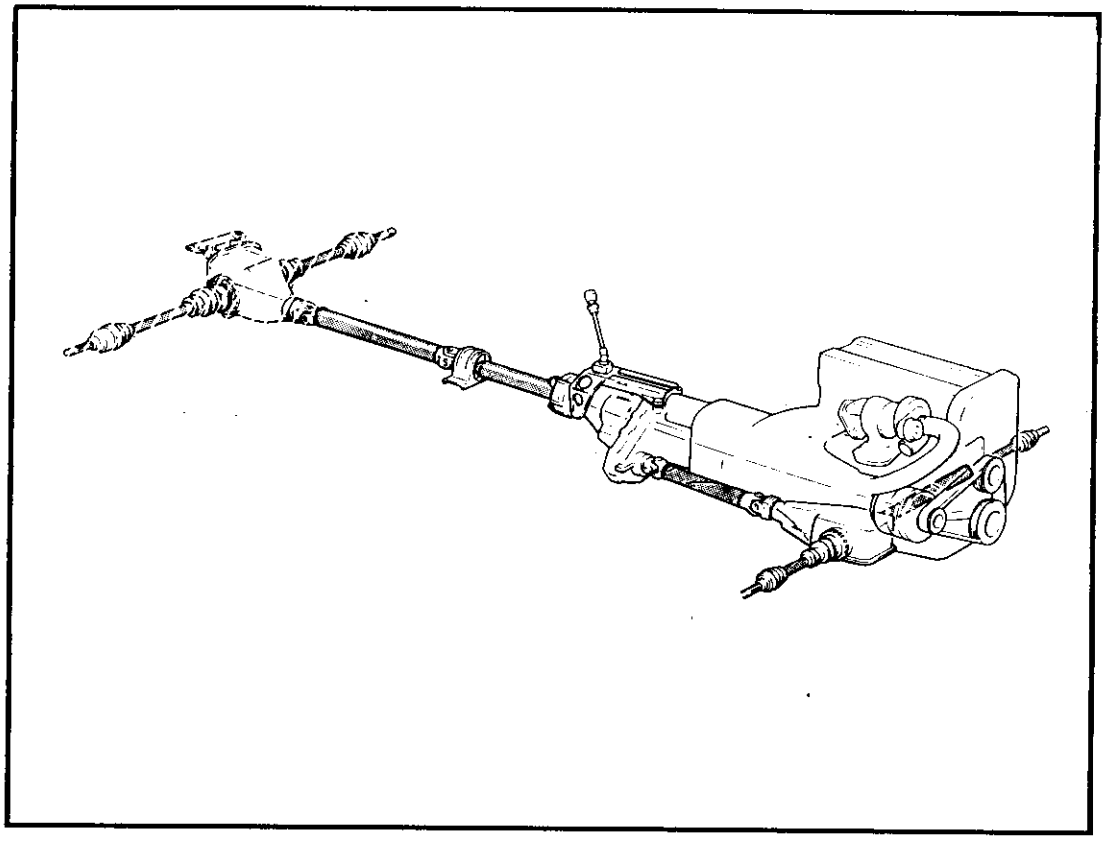

BR-26

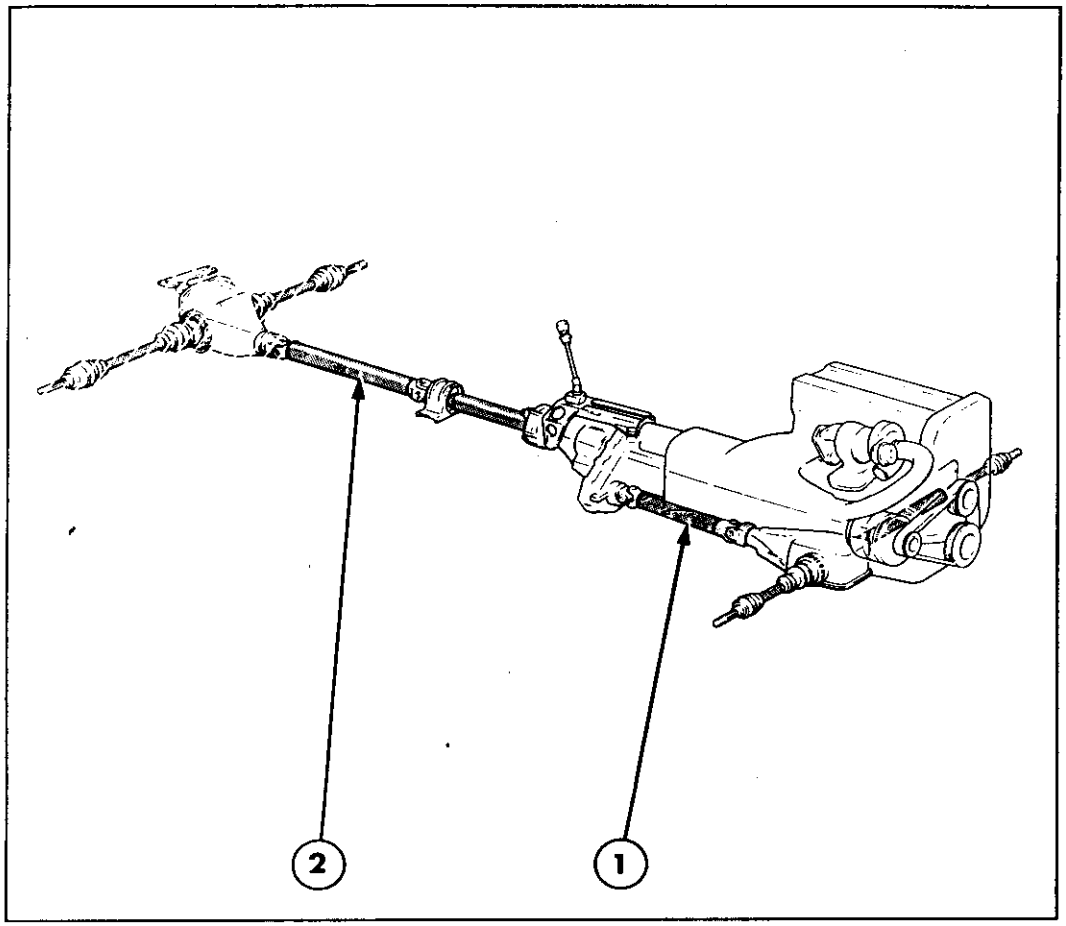


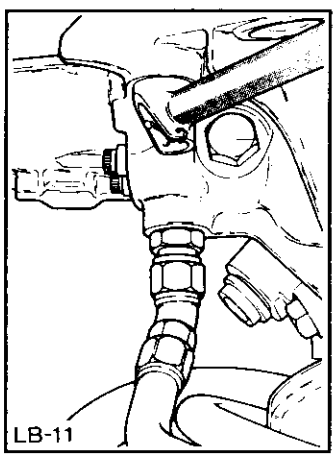
BR-19

	Description	Finis Code	Comments	Qty.
1	Kit – Brake Hose	9095417	Front & rear	1

FRONT AXLE AND DRIVESHAFTS





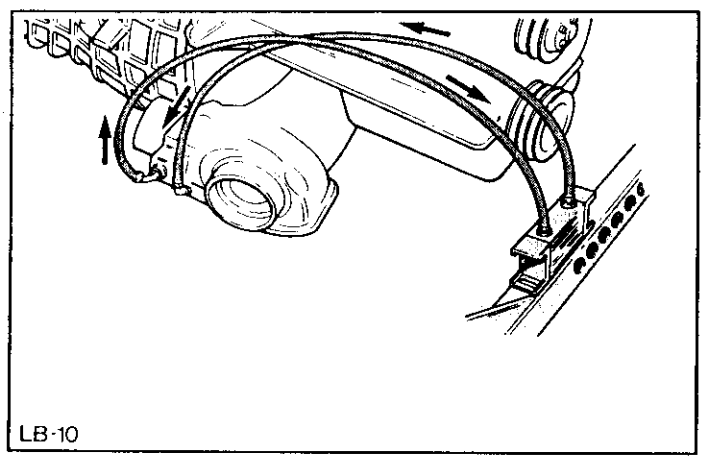


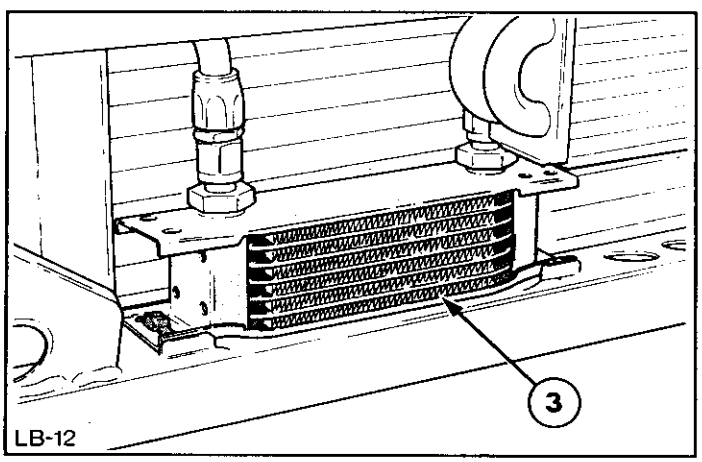
	Description	Finis Code	Comments	Qty.
1	Front Propshaft	9095406	(MS90)	1
2	Rear Propshaft	9095514	(MS90)	1
3	Oil Cooler	9095084		1

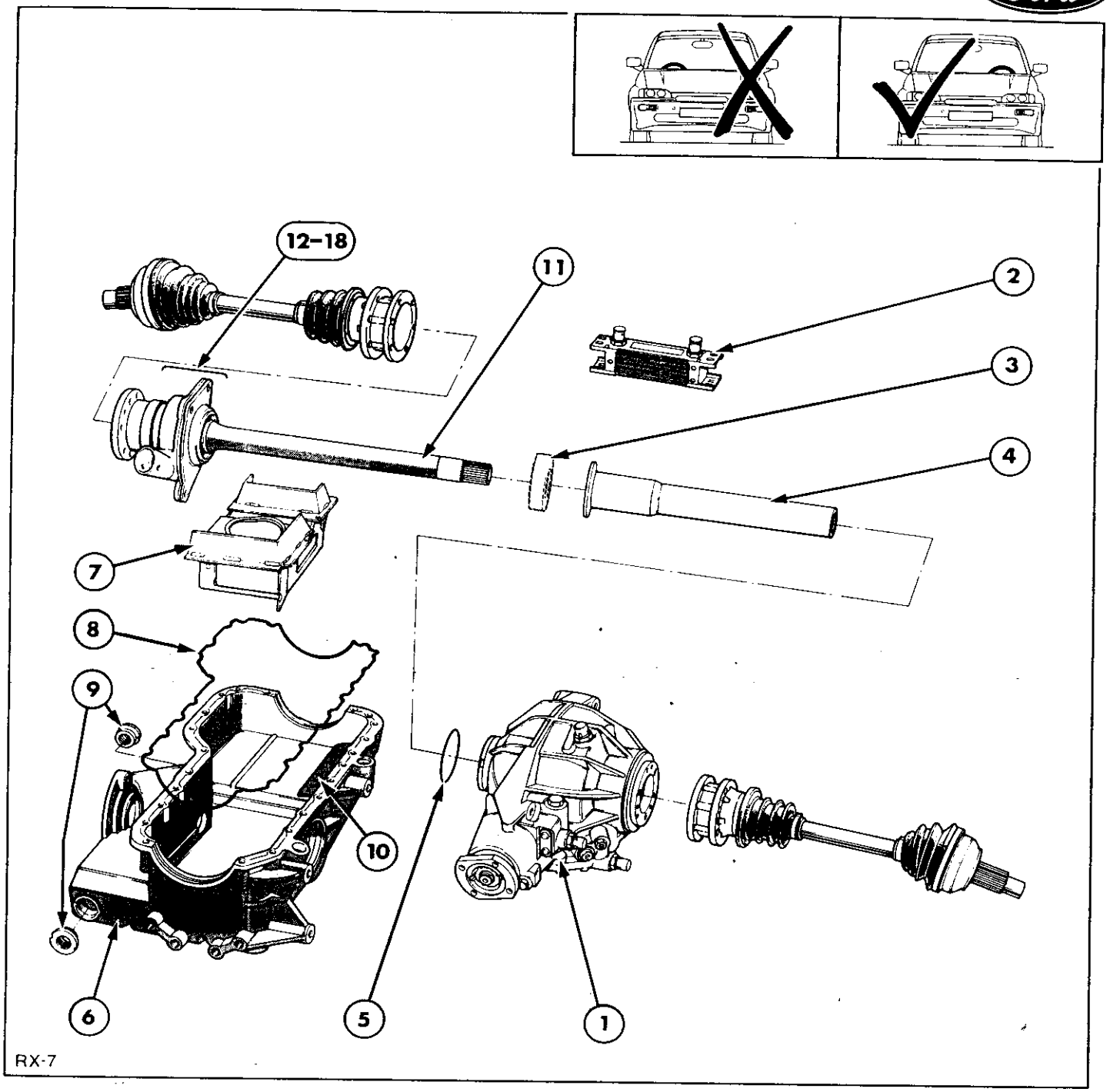
NOTE :
The 7 ½" axle is only available for LHD cars. It is impossible to fit this on a RHD vehicle as it fouls the steering rack.

It will be necessary to fit the following items as a package:

- 7 ½" axle,including crown wheel pinion, viscous coupling limited slip differential.
- Magnesium sump, including baffles and pick up
- Cross shaft assembly, including bearings
- Driveshafts

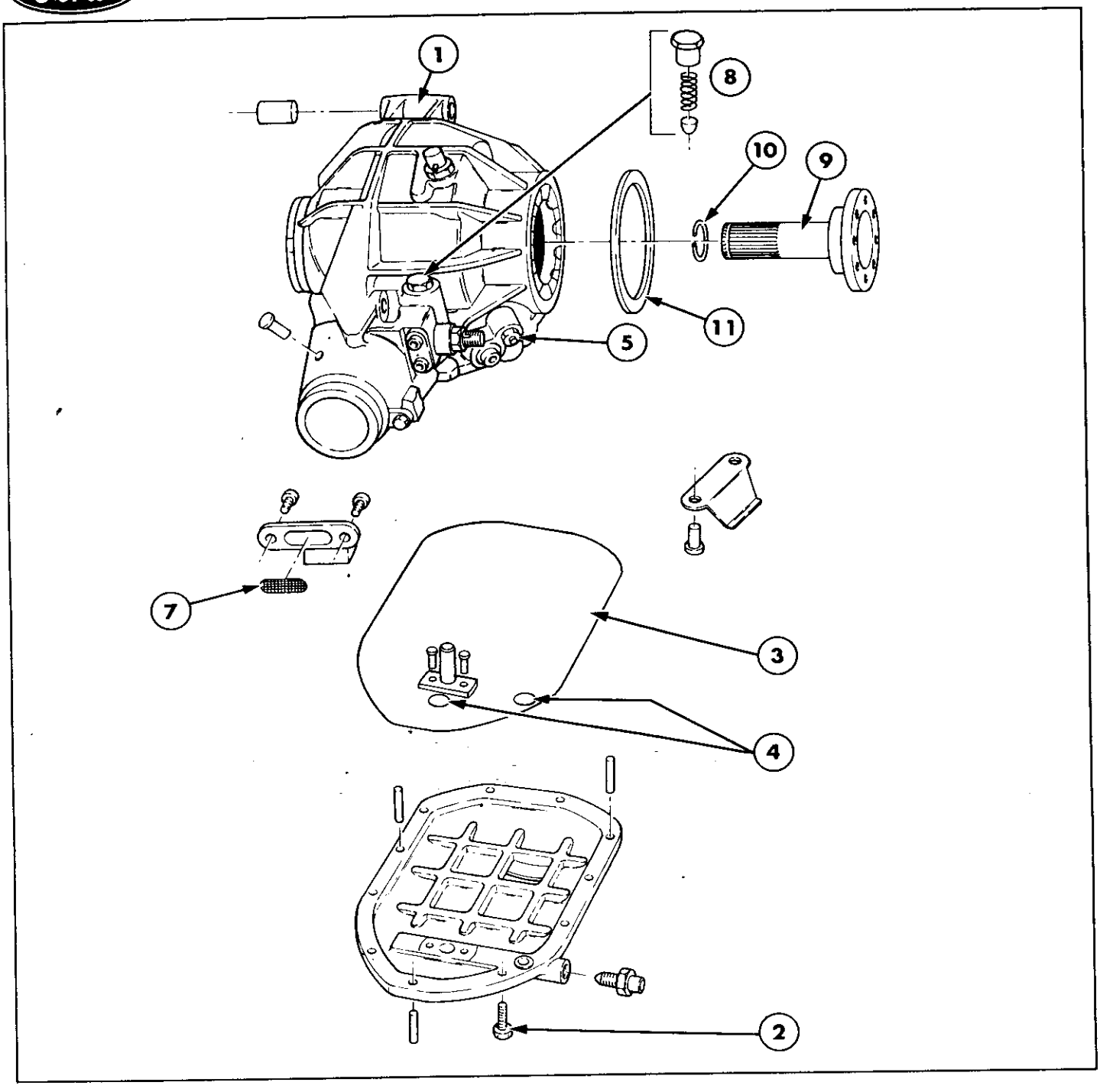






	Description	Finis Code	Comments	Qty.
1	Axle Assembly 7 1/2"	9095425	4.44 ratio	1
2	Oil Cooler	9095084		1
3	Cap (dummy BRG)	9095145	Transit only	1
4	Cross-shaft Tube	9095146		1
5	Seal	9095204		1
6	Oil Pan	9095444	Magnesium	1
7	Baffle	9095201		1
8	Seal – Oil Pan	9095142		1
9	Core Plug	9095148		2
10	Separator	9095207		1

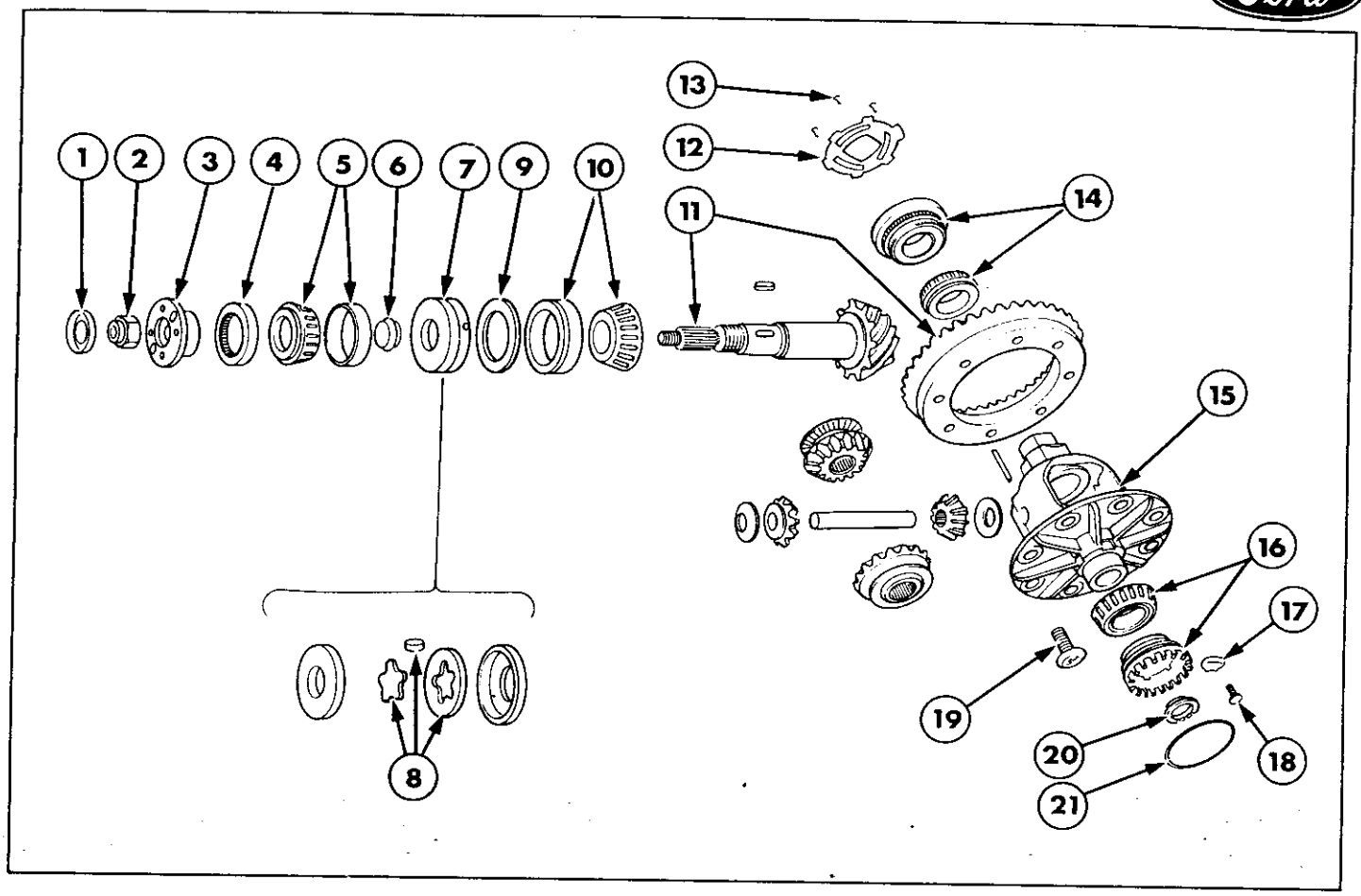
	Description	Finis Code	Comments	Qty.
11	Cross – Shaft	9095265		1
12	Dust Shield	9095051	Cross – Shaft	1
13	Bearing	*1634748	Cross – Shaft	1
14	Circlip	*6008347	Cross – Shaft	2
15	Speed Gear	*1637272	Cross – Shaft	1
16	Oil Seal	9095018	Cross – Shaft	1
17	Bearing Retainer	9095020	Cross – Shaft	1
18	Cover	9095056	Cross – Shaft	1



Service Details of Front Axle Asy 9095425

	Description	Finis Code	Comments	Qty.
1	Case And Cover Assy.	9095352	7½"	1
2	Bolt – Case	*6005047		13
3	Gasket – Case	9095039		1
4	'O' Ring	9095057		2
5	Washer – Level Plug	9095062		1
6	Washer – Sealing	9095061	9/16"	4
7	Filter – Oil	9095025		1
8	Pressure Relief Valve	9095028		1
9	Output Flange RH	9095415		1
10	Snap Ring	9095019		1
11	Dust Shield RH	9095050		1

Torques	
Case to cover M6	12Nm



Service Details of Front Axle Asy 9095425 continued

	Description	Finis Code	Comments	Qty.
1	Shield		(not serviced seperately)	1
2	Pinnion Nut	*6144617		1
3	Flange	*1634756		1
4	Oil Seal	*6107894		1
5	Bearing	*1634754		1
6	Spacer	*1634755	Collapsible	1
7	Oil Pump Assy.	9095027		1
8	Gears – Oil Pump	9095026		1
9	Shim	*6131373	Grind to size	1
10	Bearing	9095043		1
11	C. W. P.	9095353	7:31 (4.44)	1
12	Lock Ring LH	9095036		1
13	Screw	—	M4 x 8	3
14	Bearing Housing	9095055	LH	1
15	Diff Assy.	9095024	65Nm	1
16	Bearing Housing	9095053	RH	1
17	Lock Plate RH	9095030		1
18	Screw	—	M6 x 10	1
19	Bolt – CWP	1619170		10
20	Oil Seal	9095017	'Viton'	1
21	'O' Ring	9095058	'Viton'	1

Torque

Crownwheel Bolts	58Nm
Pinion Nut	2.5 – 3.5Nm (see text)

7½" Front Axle Supplementary Notes

1. **To select shim size.**
   a. Measure widths of items 10 and 7.
   b. Add the summation of values recorded at a. to the mounting distance (100nom) 100± figure marked on pinion.
   c. Subtract the accumulative figure at b. from the value stamped on the casing.
   d. Grind shim to value nominated at c. and fit to position pinion within .05 of true position.

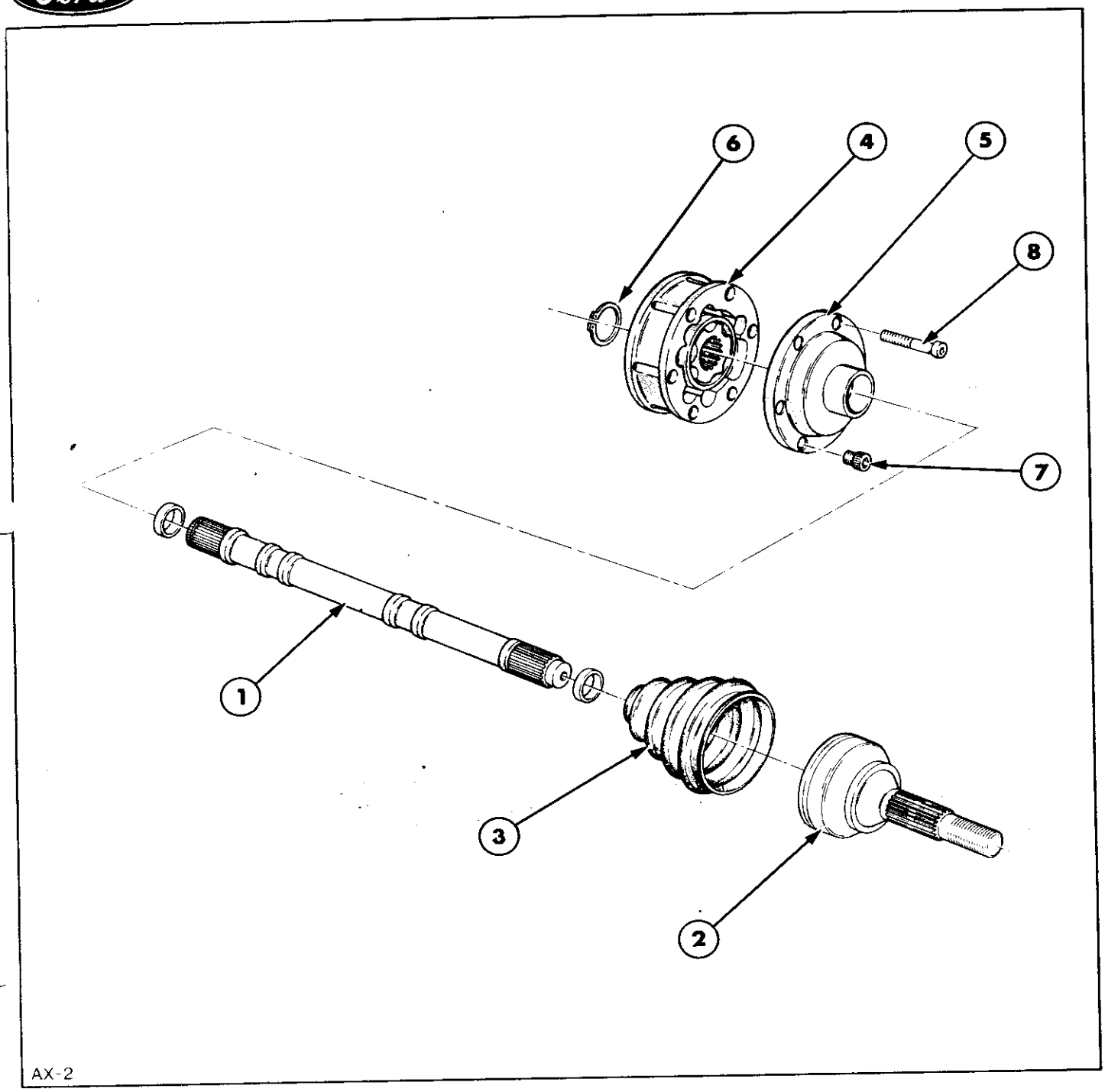
2. **To set preload of pinion shaft bearings.**
   a. Assemble all relevant components onto the pinion shaft.
   b. Progressively tighten pinion nut until a value of 2.5 – 3.5Nm is required to turn the pinion shaft.

NB: 2.5 – 3.5Nm is the torque value for **new** bearings **only**. Re-used bearing should have a value of 1.5 – 2.5Nm.

3. **To set preload for differential cage bearings.**

NB: i) Fit axle cover to casing prior to exerting any pre-load on axle shaft bearings to eliminate any casing deflections influencing pre-load setting.
ii) Always release pre-load of axle shaft bearings prior to removing axle cover to reduce the possibility of shaving dowel holes in axle cover.

a. Assemble axle and position bearing adjuster item 16 to give zero backlash for crownwheel/pinion gear mesh.
b. Position bearing adjuster item 14 to eliminate all the end float.
c. Tighten bearing adjuster item 14 through 70 degrees, measured via tapped holes, to give .03 bearing preload and .13 – .2 crownwheel/pinion gear backlash.

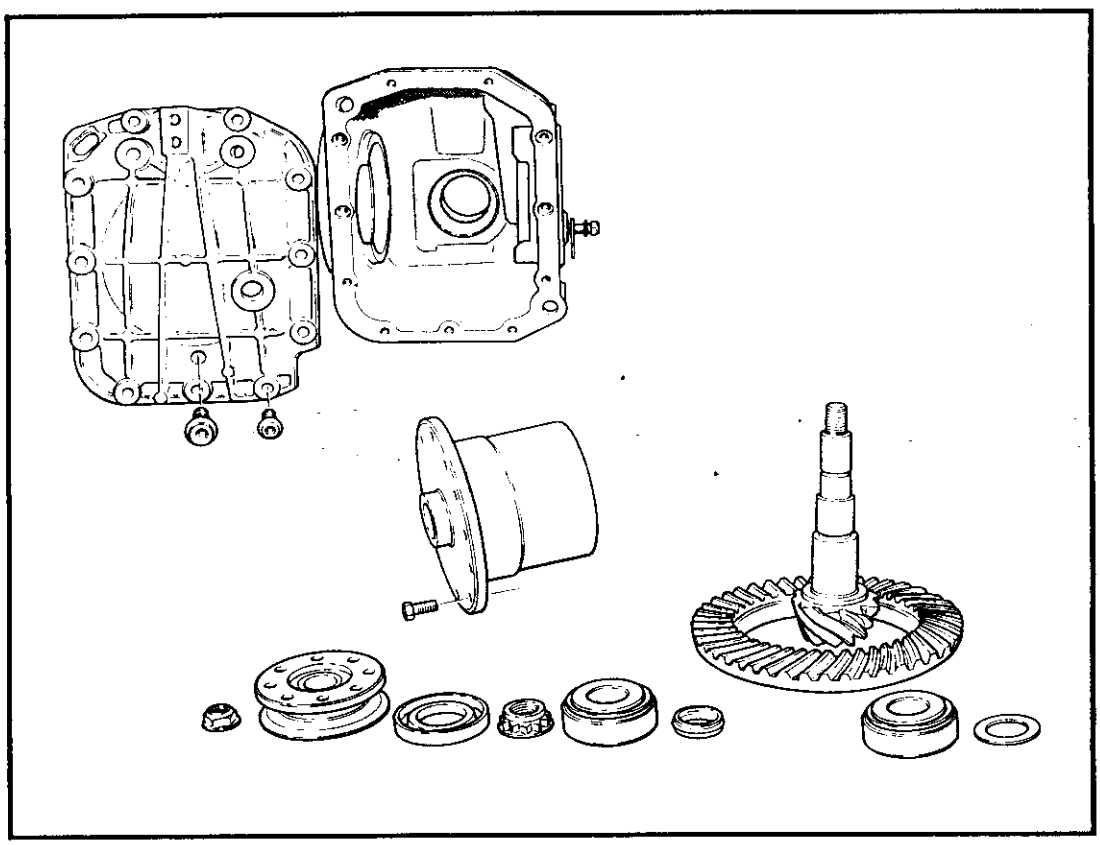


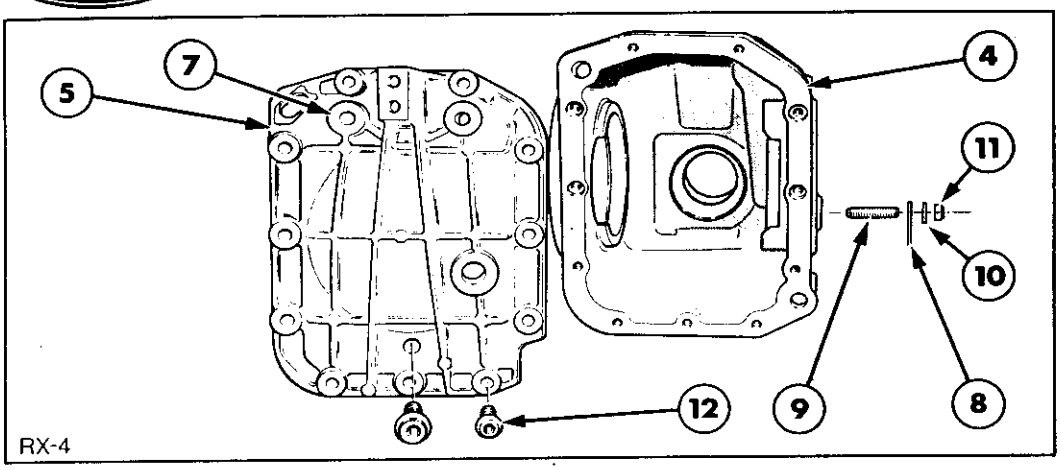
AX-2

	Description	Finis Code	Comments	Qty.
1	Driveshaft – Front	9095416		2
2	CV Joint – Outer	9095426		2
3	CV Gaiter – Outer	9095428		2
4	CV Joint – Inner	9095301		2
5	CV Gaiter – Inner	9095427		2
6	Circlip – Inner	9095384		2
7	Dowel Stud	9090650		6
8	Bolt	9095300		6

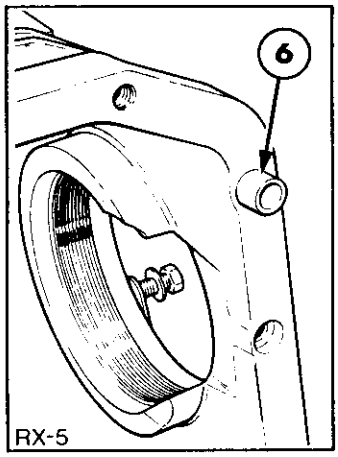
Torque	
Driveshaft Bolt	75 Nm

9" REAR AXLE AND DRIVESHAFTS





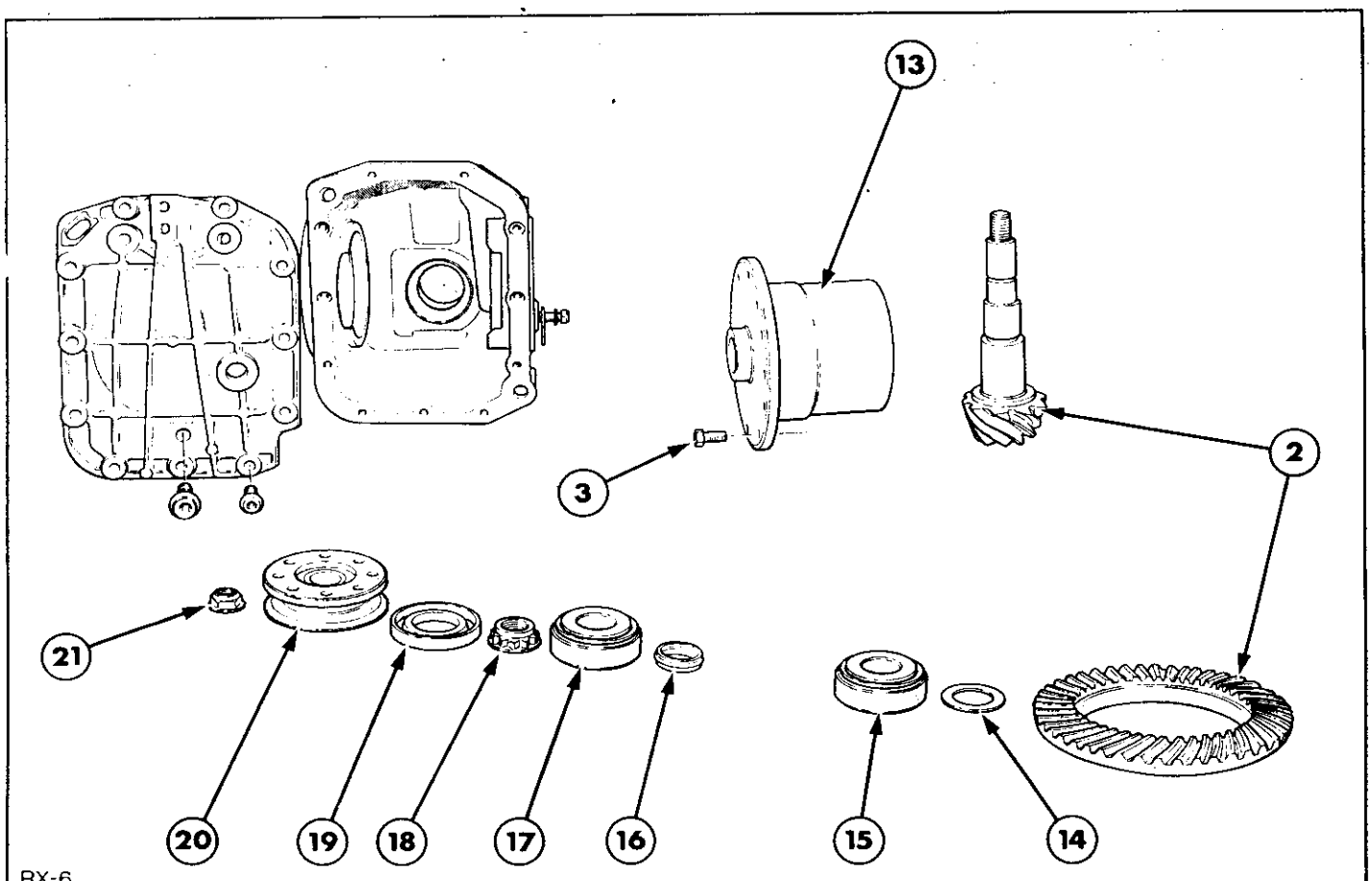
RX-4



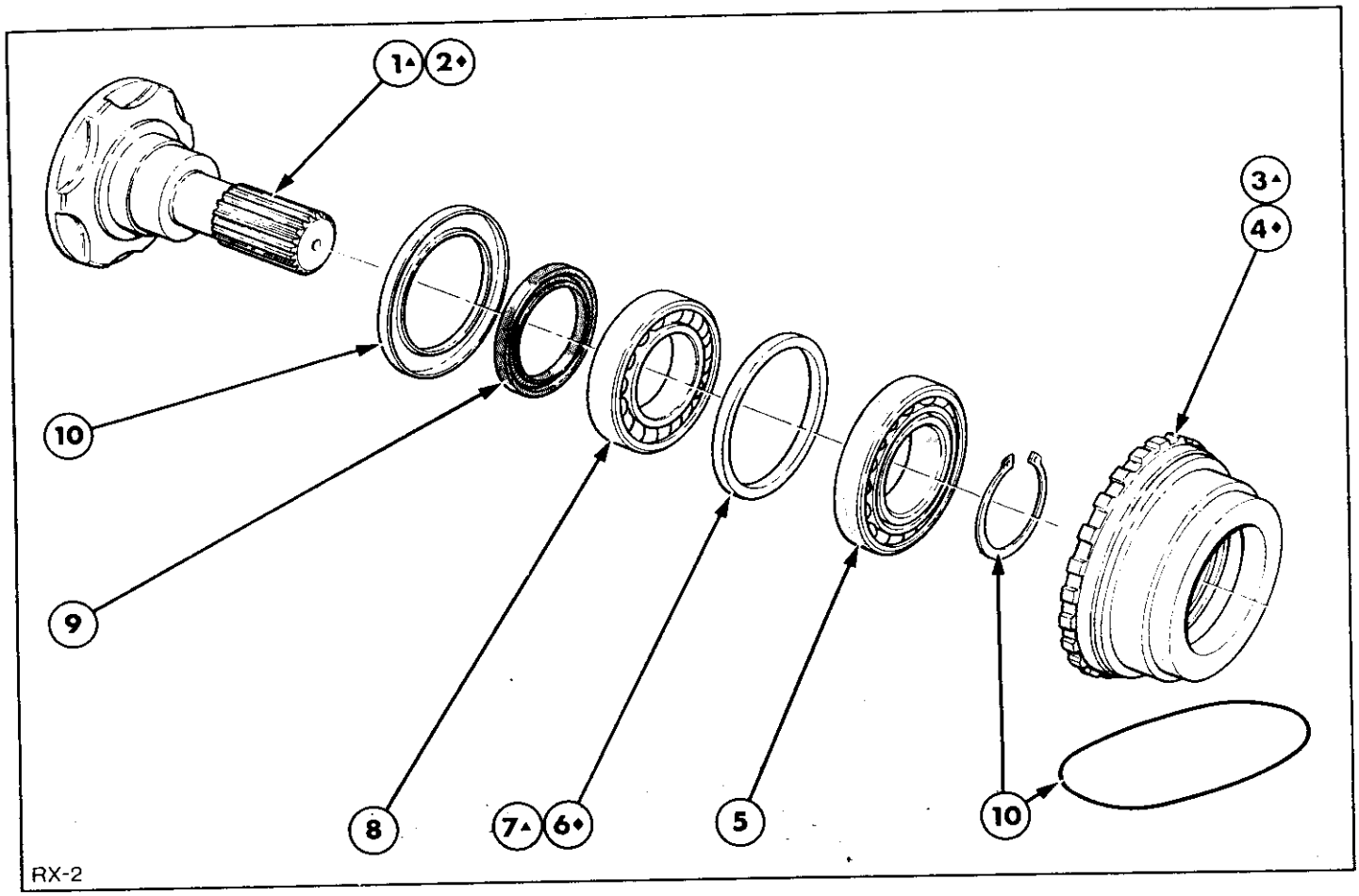
RX-5

	Description	Finis Code	Comments	Qty.
1	Complete Axle (less CWP) 9"	9092970		1
	Service Parts:			
2	CWP 9"	9095467	31/7 teeth (4.44)	1
3	Bolt c/wheel	9093506		10
4	Case Assy	9093242	Aluminium	1
	or			
	Case Assy (Incl. Cover)	9095506	Magnesium (Tarmac)	1
5	Cover Assy	9093322	Aluminium	1
6	Dowel	9093240		4
7	Insert Rear Cover	9092537		2
8	Locking Plate	*6093240		2
9	Stud-locking Plate	9092509		2

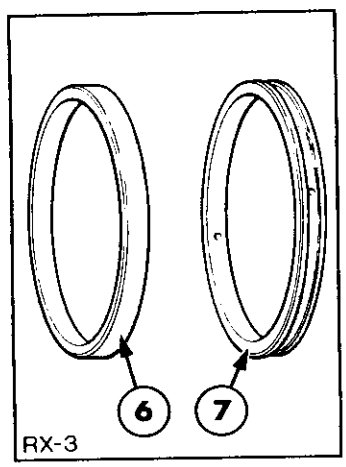
	Description	Finis Code	Comments	Qty.
10	Washer-locking Plate	*1477027		2
11	Nut-locking Plate	*1436267		2
12	Allen Screw	*6132498		11
13	V.C. Diff	9093244	400Nm	1
		9094054	500Nm (Alternative)	1
14	Shim	*0417000-025		Select as required
15	Pinion Brg. Frt	*0440375		1
16	Spacer Pinion	*1498537	Collapsible	1
17	Bearing Pinion	*0440378		1
18	Nut-pinion	*6136522		1
19	Oil Seal	*6099522		1
20	Pinion Flange	*6123938		1
21	Nut M16	*6122453		1



RX-6

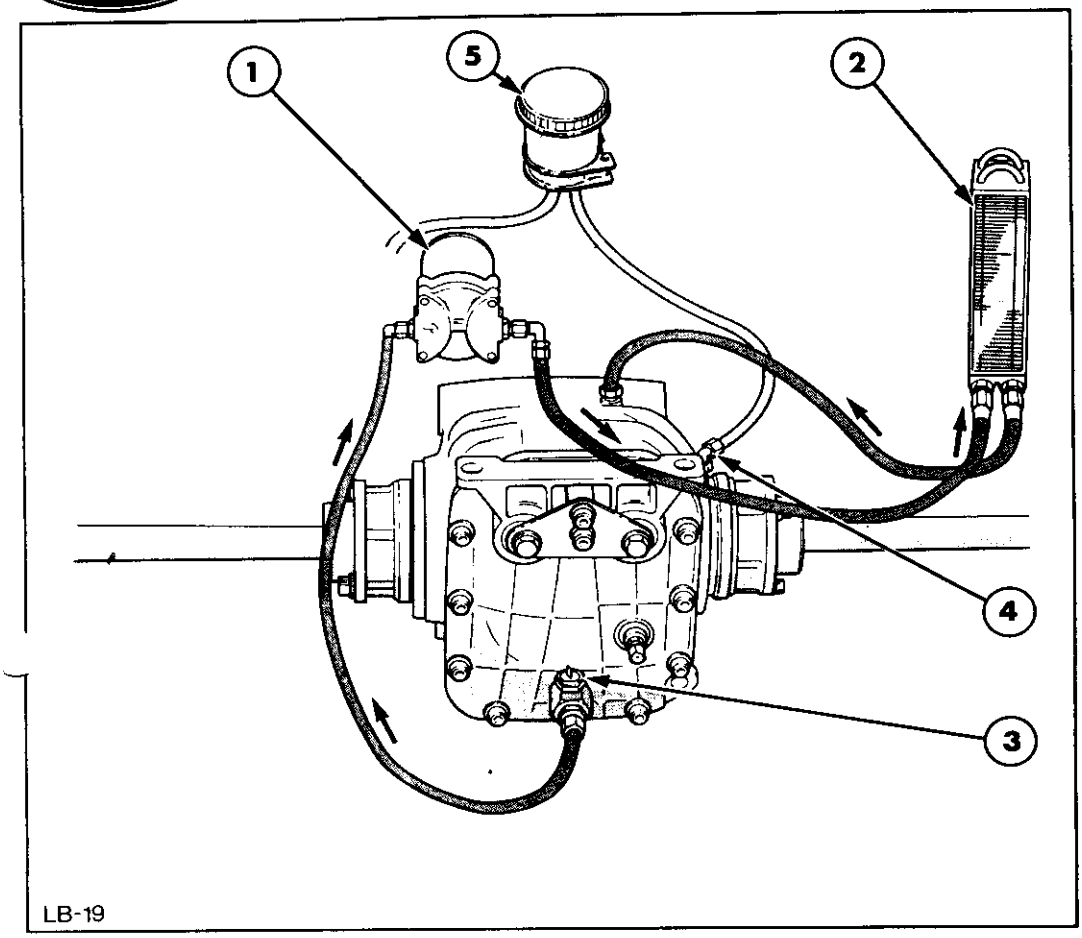


RX-2



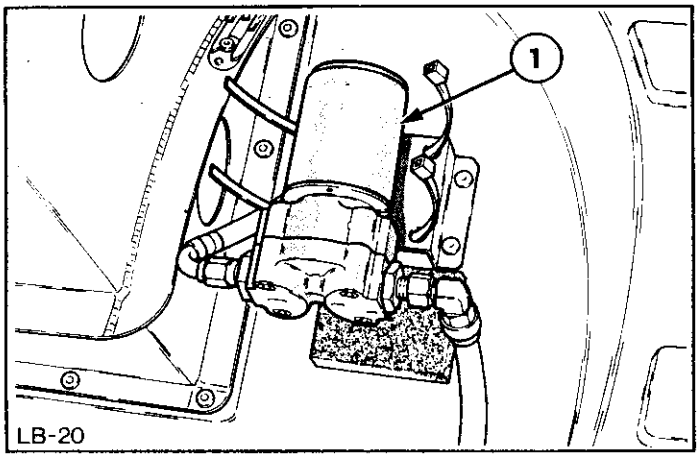
RX-3

	Description	Finis Code	Comments	Qty.
1	Output Shaft LH	9093250		1
2	Output Shaft RH	9093251		1
3	Bearing Housing LH	9093253		1
4	Bearing Housing RH	9093252		1
5	Bearing Assy Inner	9093246		1
6	Spacer RH	9093247		1
7	Spacer LH	9093248		1
8	Bearing Assy Outer	9093245		1
9	Seal Kit	9092512	Includes seal circlip and 'O' ring	1
10	Dust Shield	9093254		2



LB-19

	Description	Finis Code	Comments	Qty.
1	Pump	—	Tilton	1
2	Cooler	9093259		1
3	Switch	—	Otter 50°C	1
4	Breather	9093709		1
5	Reservoir	9090998		1



LB-20

ESCORT 9" REAR AXLE : SETTING AND ADJUSTMENT PROCEDURE

Special Service Tool Required For Rebuilds

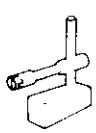
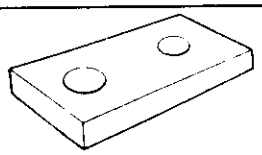
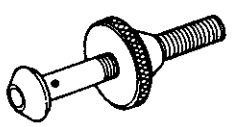
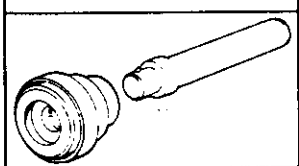
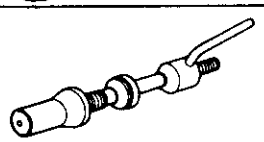
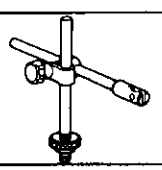
These Tools May Be Obtained From

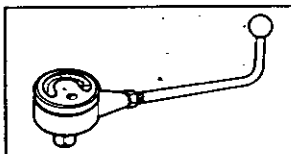
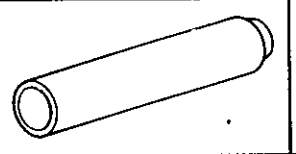
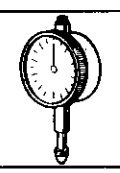
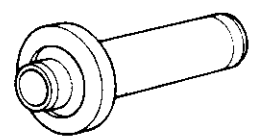
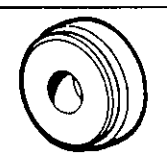
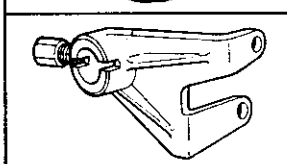
V. L. Churchill & Co. Ltd.
P.O. Box No. 3
London Road
Daventry
NORTHANTS NN11 4NF

V. Löwener
Industriestrasse 67
Postfach 2071
D-4018 Langefeld
GERMANY

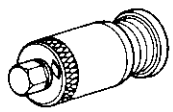
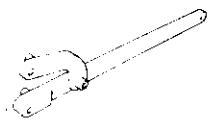
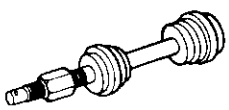
O.P.T.O.M.S.A.
Calle Alphonso Gomez 42
(Esquina Emilio Munez 41)
MADRID 17
SPAIN

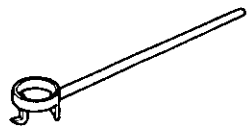
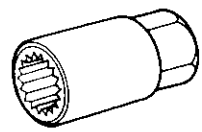
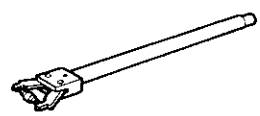
Churchill tools required:

	Dial test indicator mounting block	15-008
	Dial test indicator holding fixture adaptor	15-008-01
	Gauge bar	15-019
	Oil seal and bearing cup installer	14-019
	Master pinion	15-020
	Dial test indicator holding fixture	15-022-A

	Preload gauge	15-041
	Pinion bearing installer	15-042
	Dial test indicator (graduated in mm)	15-046
	Pinion oil seal installer	15-047
	Pinion bearing cup installer	15-068
	Rear axle mounting bracket	15-070

Churchill tools required (continued):

	Preload sleeve	15-023
	Universal flange holding wrench	15-030
	Bearing cup installer	15-033

	Pinion oil seal remover	15-072
	Pinion preload socket	15-073
	Pinion bearing cup remover	15-074

Use proprietary Installers and Removers to:

i) Remove oil seals from differential bearing housings
ii) Remove both the bearings from the housings

At this point, please note that the spacers between the ball bearing and the differential bearing cups, in the bearing housings, are of different thicknesses on each side. When rebuilding an axle, do **not** interchange these spacers from side to side.

Recommended Tightening Torques:

Operation	Torque-Nm	lb.ft.
Drive pinion turning torque when adjusting with special tool 5-041 (Aim for lower torque value of 1.6 Nm/1.2lb.ft. when re-using old bearings)	2.5 to 3.0	1.8 to 2.2
Crown wheel to differential housing	85 to 90	63 to 66
Pinion bearing nut (minimum)	140	103
Pinion flange (drive pinion flange) self-locking nut	110 to 130	80 to 96
Bearing housing retainer	19 to 25	14 to 18
Rear axle casing to rear axle cross member mounting	70 to 90	52 to 66
Axle casing cover	45 to 60	33 to 44
Oil filler plug	35 to 45	26 to 33

Recommended sealants and grease:

Liquid sealant - rear axle case	Use FORD Specification SQM 4G 9523 A
Grease - bearing housing	Use FORD Specification ESEAM 1C 1014 A

Build Procedure:

Fit Pinion bearing cups. At the same time, fit a new standard shim (2mm thick) with the chamfered outer edge facing towards the casing.

NOTE: The shim originally fitted to the production car must be removed and scrapped. Replace the outer bearing cup in the same way.

To determine the Drive Pinion Shim Thickness:

Pull the inner taper roller bearing from the drive pinion using a standard puller

Install the bearings on a Master Pinion, Tool No. 15-020. Install this in the housing using Preload Sleeve 15-023, tightening it to:

i) The **lower** line, for new bearings.
ii) The **upper** line, for used bearings.

NOTE: Lubricate the taper-roller bearing with hypoid oil.

To install Gauge Bar:

Install the right and left-hand bearing housings without the O-ring seals, as a pair with the bearings and the gauge bar into the rear axles.

Lubricate the bearings with hypoid oil. Screw in the bearing housings uniformly, finger tight, until they abut against the bearing cups.

Hold the gauge bar with a suitable drift and unscrew the gauge bar adjusting nut by hand (having removed the drift). Rotate the gauge bar a number of turns to settle the bearings.

To Centralise the Drive Pinion:

Secure the dial test indicator and mounting to the rear axle casing.

Position the plunger of the dial test indicator against the outer edge of the Master pinion close to the gauge bar.

Slowly rotate the Master pinion one full revolution and note the **total deflection** on the dial test indicator.

Then rotate the Master pinion until the dial test indicator reading is **half** the value of the **total deflection.**

The master pinion must not be rotated any more after this operation.

To Centralise the Gauge Bar

Position the plunger of the dial test indicator on the middle of the gauge bar.

Slowly rotate the gauge bar one full turn and note the total deflection on the dial test indicator.

Rotate the gauge bar until the dial test indicator reading is half the total deflection.

The gauge bar must not be rotated any more after this.

Remove the dial test indicator from the fixture and fit it to the mounting block 15-008.

Place the mounting block and dial test indicator on to a surface plate and set the dial test indicator at '0' using a block precisely 32.9 mm high.

NOTE: A dial test indicator with a pointer which rotates clockwise when the plunger is pressed must be used for this operation.

NOTE: The millimetre scale of the dial test indictor must be set to '2' and the large pointer of the dial test indicator to '0'.

Position the mounting block and dial test indicator on the centre of the Master pinion end face and slowly move the plunger of the dial test indicator transversely across the gauge bar.

Observe the dial test indicator and note the measurement at the precise position at which the pointer changes direction.

Repeat this process a number of times as accurately as possible.

NOTE: Add the value to the **right** of the '0' to the 1 mm shim under the pinion head.

Subtract the value to the **left** of the '0' from the shim thickness.

Example:

Thickness of shim	1.00 mm
Dial test indicator reading to the left of the '0' (eg 95)	– 0.05 mm
	= 0.95 mm

This value is the thickness of shim required between the large taper roller bearing and the pinion head.

To Centralise the Gauge Bar (continued)

Remove the Master pinion.

Remove the taper roller bearing from the master pinion.

Using a micrometer, select a new shim of the required thickness established by the above procedure.

Fit the shim onto the Master pinion.

Refit the Master pinion as described above.

Centralise the Master pinion as described above.

Check that the dial test indicator on the mounting block is still at 'o' using the step gauge on the ground surface plate.

Place the mounting block and dial test indicator on the end of the Master pinion and move the plunger of the dial test indicator transversely across the gauge bar.

The dial test indicator must read 'O' if the preceding measurements have been carried out accurately.

A maximum deviation of +/-0.01mm from 'o' is permissible. However, if great deviations are indicated, repeat the entire measuring process.

NOTE: If the indicator reading is to the **right** of 'on', fit a thicker shim: if the reading is to the **left** fit a thinner shim. The new shim **must** be selected by measurement

When the correct thickness shim has been established, remove the Master pinion from the rear axle housing and remove the bearing housings, bearings and gauge bar.

NOTE: The taper roller bearings and bearing housings must not be intermixed. They must be refitted to the differential on the same side during assembly.

Press both taper roller bearings onto the differential, using a suitable tool.

Remove the pinion form the rear axle housing.

To install the Drive Pinion:

Remove the bearing and spacer from the Master pinion and instal them on to the drive pinion, using Special Tool 15-042.

Insert the drive pinion into the rear axle casing with a new collapsible spacer and outer taper roller bearing and lubricate the bearings with the specified hypoid oil.

NOTE: The drive pinion nut has a left-hand thread.

Screw on a new drive pinion nut, holding it with tool GV-1504 , and tighten using special tool 15-073.

As the nut is tightened. continuously check the turning torque of the drive pinion, using torque gauge 15-041.

NOTE: If the specified torque is exceeded, the drive pion must be removed and the process repeated with a new collapsible spacer. The turning torque must **not** be corrected by slackening the pinion nut.

Tighten the pinion nut (don't forget the left-hand thread) until the specified turning torque is obtained.

Lock the pinion nut by staking the collar of the nut into the two grooves in the drive pinion.

Fit the drive pinion oil seal using special tool 15-047A.

NOTE: The grease packing of the new oil seal (as Supplied) must not be removed.

Slide the drive flange on to the pinion. Fit a **new** nut and tighten it to the specified torque (See **Tightening Torques,** above).

Hold the drive shaft flange with special tool 15-030.

To install the Differential

The following procedure has been evolved by the 'works' Motor sport Dept.:

1) Smear the threads of both bearing housings, with specified grease (see 'Recommended Sealants and Greases' above), insert the differential in the rear axle casing and fit the bearing housings with new O-rings on the right and left-hand side.
[A special tool is required to engage in the adjusting teeth. It is **not** recommended that a C-spanner be used for adjustment, as single teeth may easily be broken off]

2) Tighten up the bearing adjusters uniformly until they make contact with the taper roller bearings and give excessive preload, ensuring that there is backlash between the crown wheel and pinion.

3) Strike the casing in several places, near to the bearing on each side, with a soft hammer, to settle the bearings.

4) Rotate the drive pinion a number of turns to settle the bearings. There must be appreciable backlash between the pinion and crown wheel.

5) Slacken off both adjusters.

6) Tighten both adjusters equally until bearing play is taken up, making sure that excessive Crown Wheel/Pinion backlash is maintained.

7) Attach a dial indicator from one side of the case to the other, to indicate the point at which preloading of the bearings begins. Find the zero preload position by this method.

8) Rotate the pinion several times.

9) Reduce the backlash almost to zero (0.01mm) by gradual equal adjustments of adjusters. Mark the flange and corresponding case position, so that it indicates the lowest backlash position.

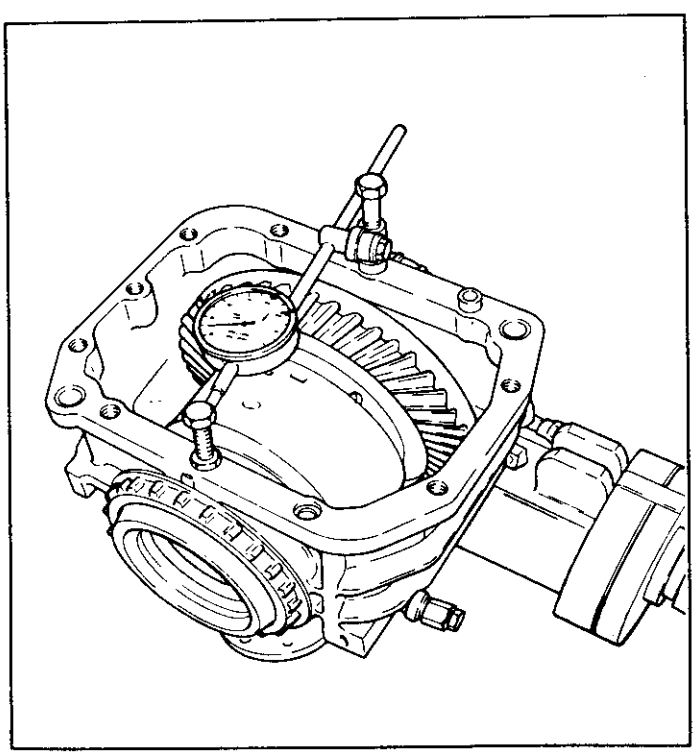
10) Completely rotate the pinion at least six (6) times, to completely rotate the crown wheel and check that there are no tight spots. Adjust the backlash if necessary, to eliminate tight spots.

11) Preload the differential bearings by tightening the adjuster on the differential side by six (6) teeth (1/4 turn)

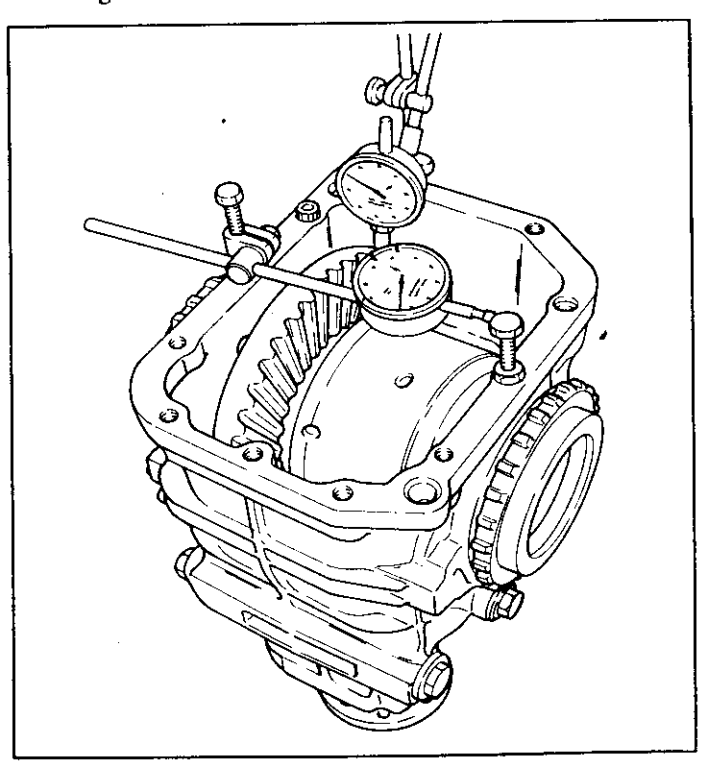
12) Observe the deflection of the casing during adjustment (the expected deflection if 0.25mm). [Refer back to item 7 in this procedure]

13) Strike the casing several times to settle the bearings.

14) Check the backlash, in the marked positions on the flange.



Zeroing the 'spread' on the axle casing, before setting the backlash, to eliminate end float.



Checking the backlash by adding a dial test indicator gauge.

To install the Differential (Continued)

15) Slacken the differential side adjuster again and check the zero preload position.

16) Preload again, by Six (6) teeth, using the new Zero position.

17) Strike the case, once again to settle the bearings.

18) Rotate the pinion several times.

19) Check the backlash in the marked positions on the flange.

20) Adjust the backlash h to 0.08 mm by equal adjustments to left and right adjusters. Do not go below 0.08-0.30mm, then the gears should be rejected.

21) Fit the lock plates to the bearing adjusters and fit the axle cover, using 11 cap screws. Use liquid sealer 1110B

22) When fitting the axle to the car, fill with hypoid oil to FORD (or equivalent) standards - see **Recommended Sealants and Greases.**

Running In the Assembly:

After fitting the axle to the car, run the car gently for 60 miles/100km. Use no more than 3,800 rpm in fifth gear.

Then return the car to the workshop and remove the rear cover.

Check the backlash.

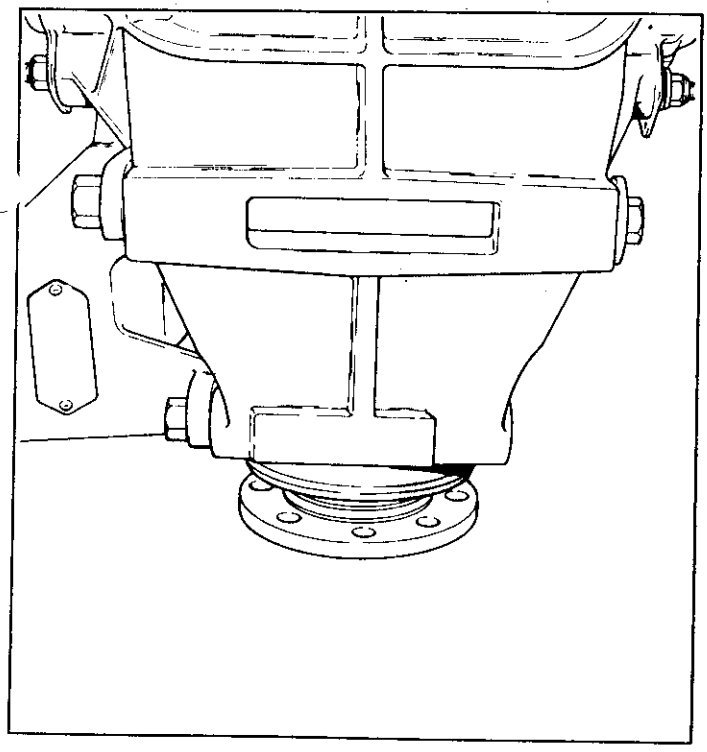
Fit a dial indicator to the rear of the case.

Check the zero bearing preload position.

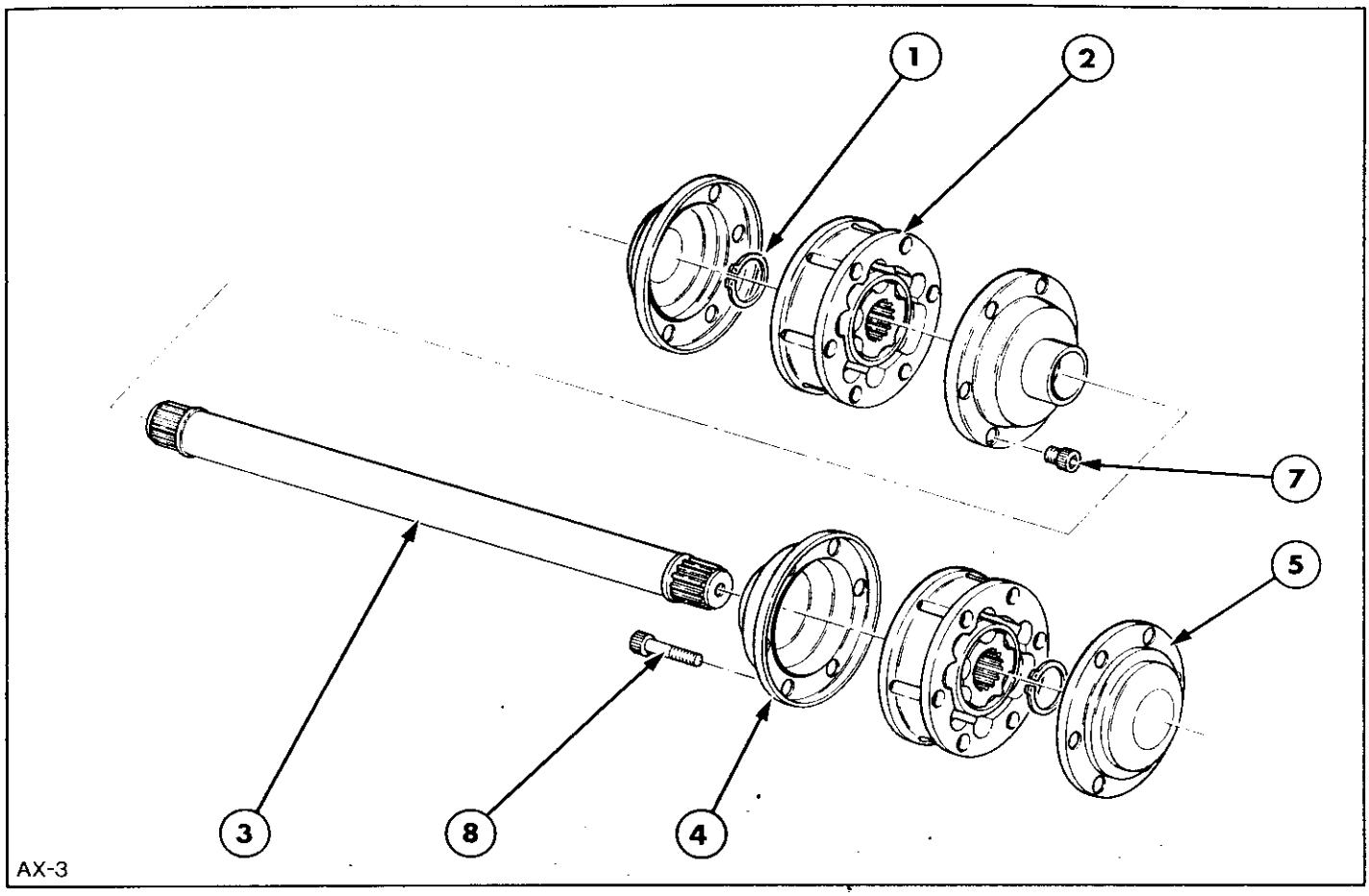
Re-set the bearing preload to six (6) teeth from the new zero position.

Re-set the backlash and reassemble as before.

The axle is now ready for competition use. **Never use a new axle in competition until the above procedure has been followed.**

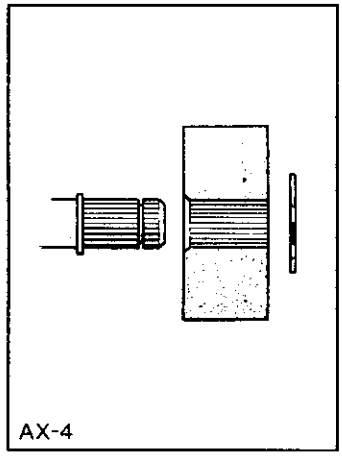


Checking the backlash by adding a dial test indicator gauge.



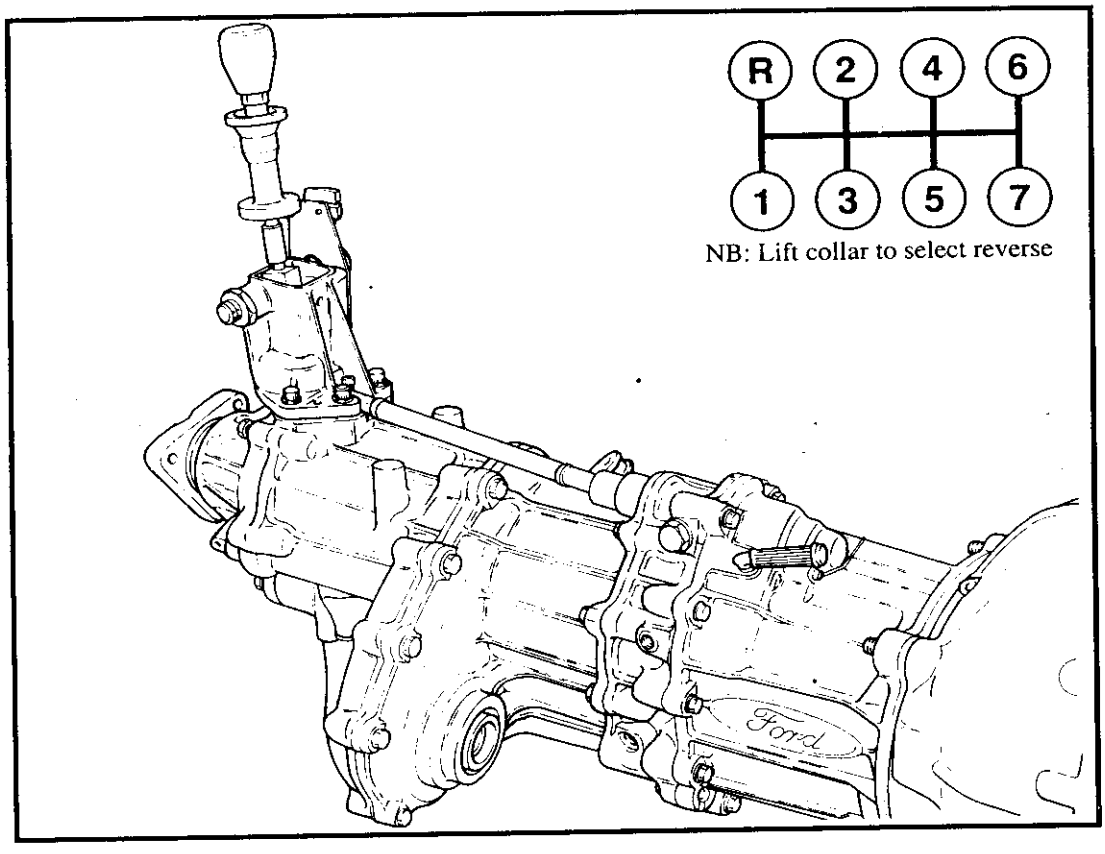
AX-3

	Description	Finis Code	Comments	Qty.
1	Circlip	9093237		4
2	Joint CV	9093233	Solid shaft only	4
	or			
	Joint CV	9095327	For lightweight shaft	4
3	Shaft (Solid)	9094575		2
4	Gaiter	9093236		4
5	Cap	9095168		4
6	Driveshaft Assy.	9095189	Lightweight Tubular	2
7	Dowel Stud	9090650	3 per joint	12
8	Bolt CV	9093490	Use with 9093233	12
	Bolt CV	9095300	Use with 9095327	12


AX-4

Torque	
Driveshaft Bolts	75 Nm

TRANSMISSION



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

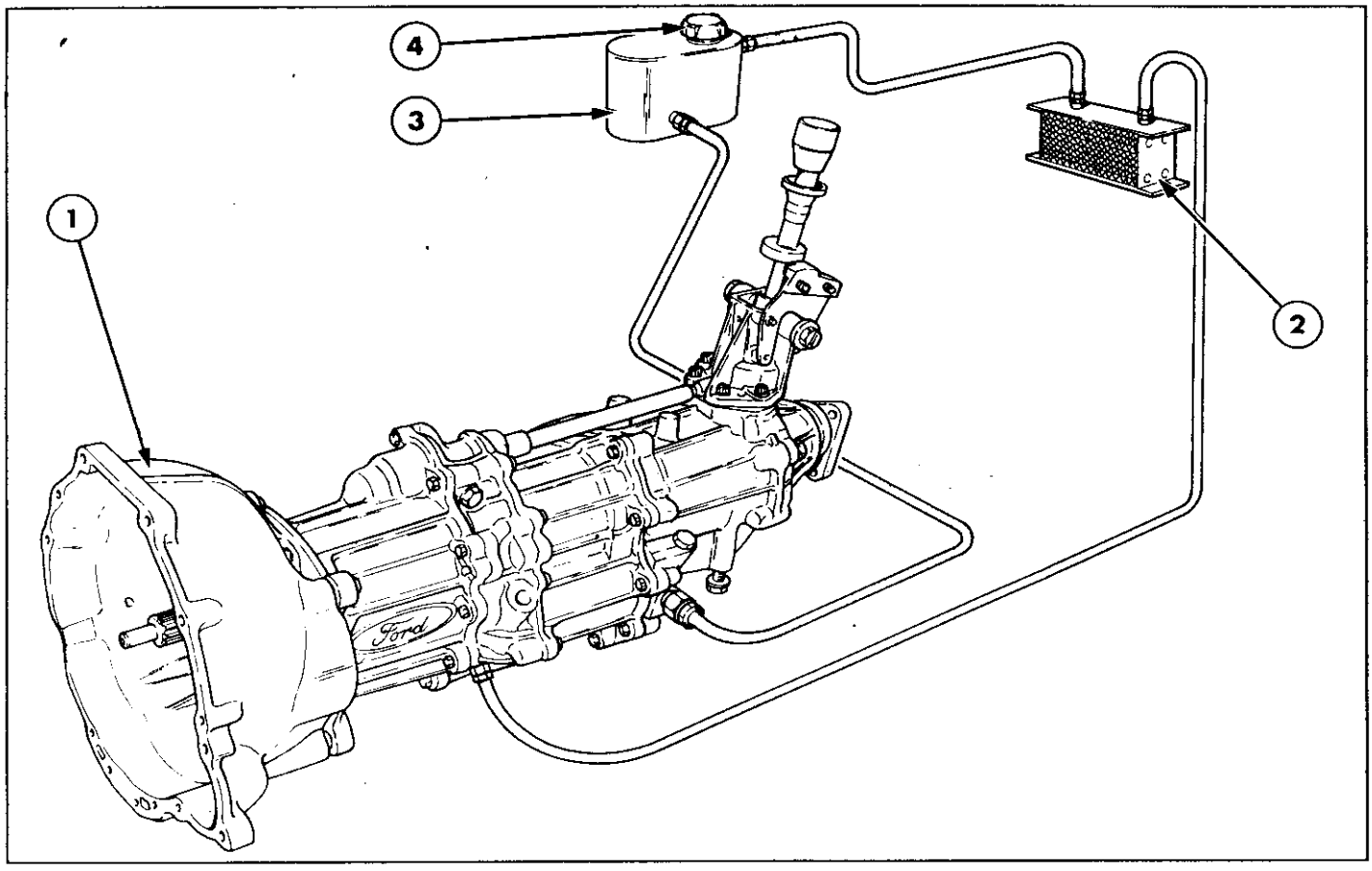
This is a seven speed unit with dry sump lubrication via a built-in oil pump, and remote reservoir. The gears are selected by clutch rings ("dogs"). There is no synchromesh available.

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.

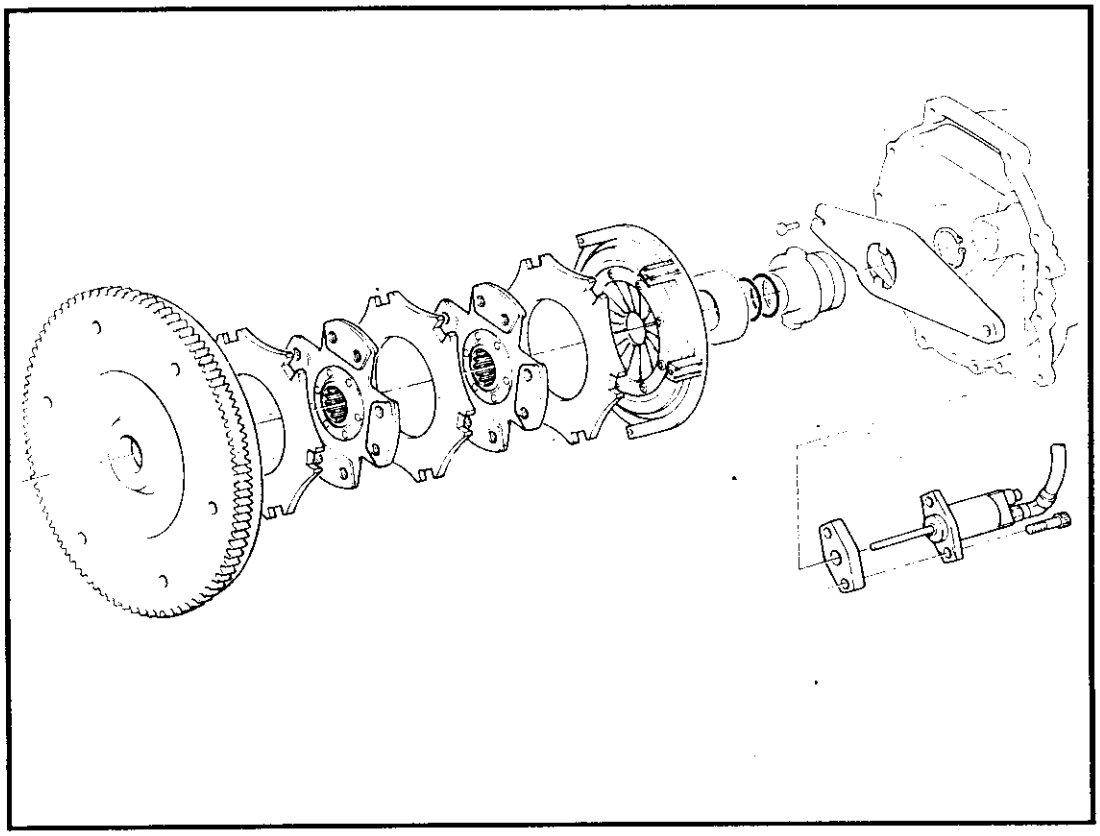
GEAR	RATIO	TEETH
1	2.071	14/29
2	1.529	17/26
3	1.200	20/24
4	0.955	22/21
5	0.792	24/19
6	0.654	26/17
7	0.536	28/15
REV.	2.143	14/30

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)

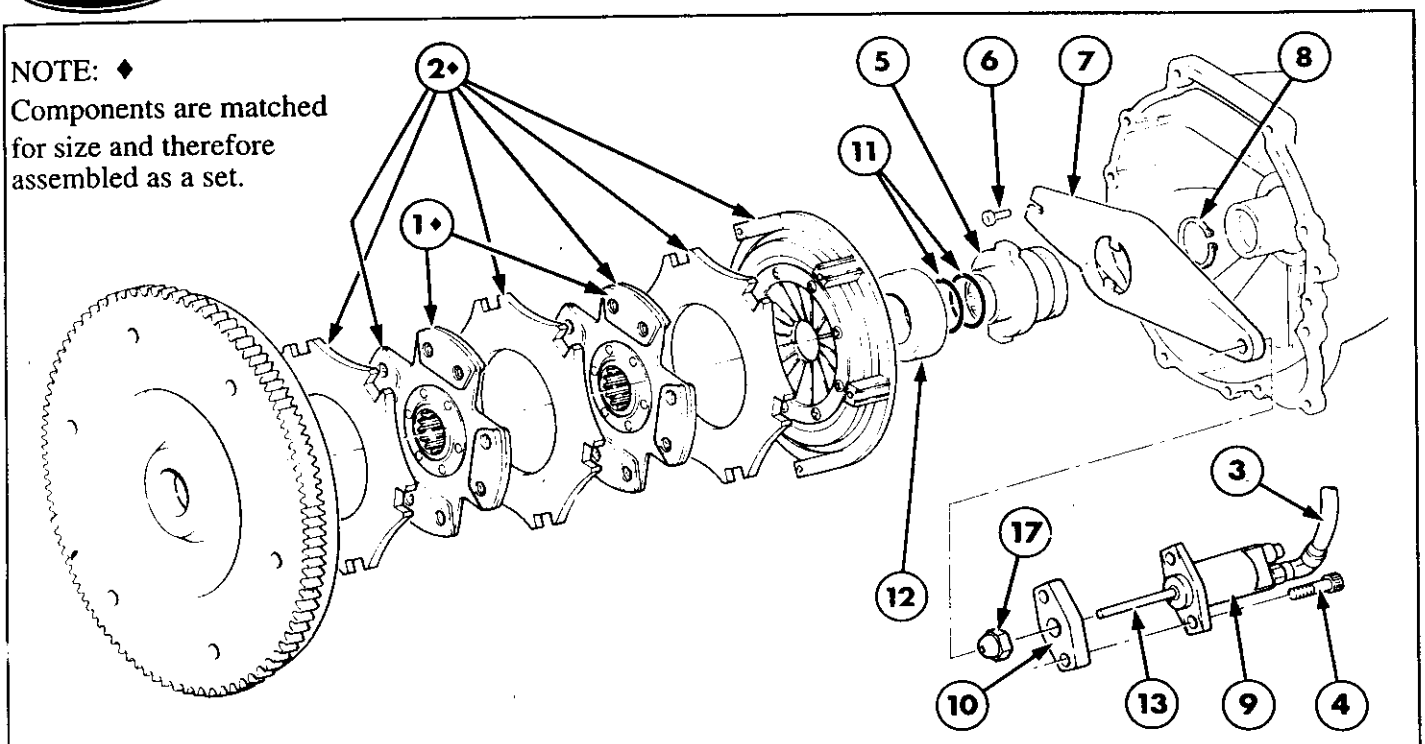


	Description	Finis Code	Comments	Qty.
1	Transmission Assy.	9095326	MS90	1
	Service details for 9095326 available from:			
	F.F. Developments Ltd.			
	Wolston Business Park			
	Main Street			
	Wolston			
	Coventry CV8 3LR			
	Tel: 44 (0) 203 544 048			
2	Cooler - Transmission	9095084		1
3	Oil Tank - Transmission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

CLUTCH

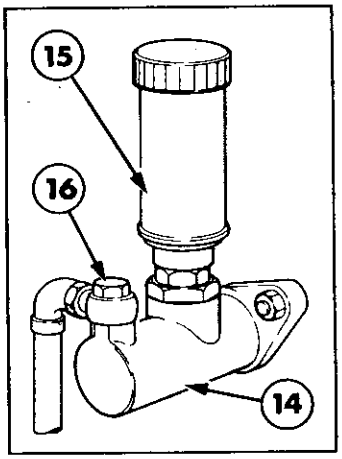


NOTE: ♦
Components are matched for size and therefore assembled as a set.

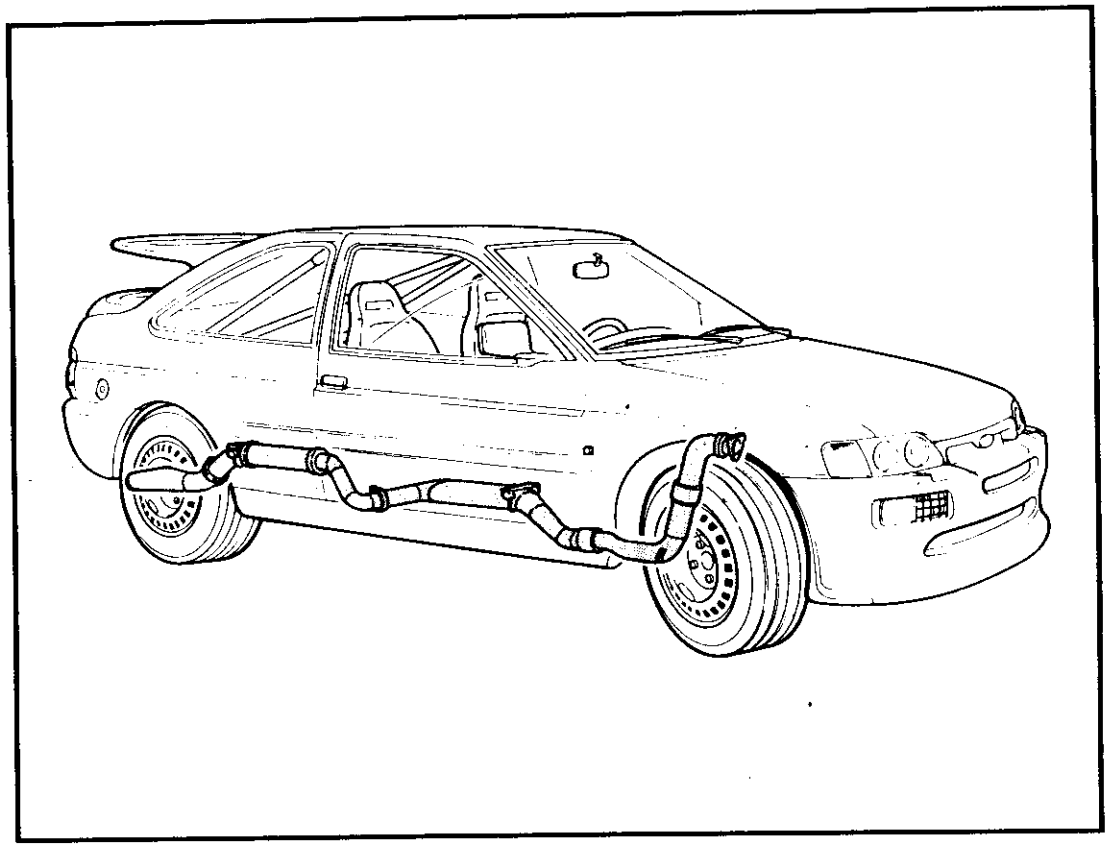


CL-1

	Description	Finis Code	Comments	Qty.
1	Clutch Plate	9095442	7¼" Cerrametallic	2
2	Clutch Cover	9095441	7¼"	1
3	Hose - Clutch Feed	9095217		1
4	Bolt			2
5	Bearing Carrier	9095287	Clutch release	1
6	Pin	9095293	Clutch release	1
7	Lever	9095292	Clutch release	1
8	Circlip	9095253	Clutch release	1
9	Slave Cylinder	9093223	Clutch release	1
10	Spacer	9095294	Clutch release	1
11	'O' Ring	9095253	Clutch release	2
12	Bearing	9091518	Clutch release	1
13	Push Rod	9095291	Clutch release	1
14	Master Cyl	9095355	15/16"	1
15	Reservoir	9095212		1
16	Banjo Kit	9093487		1
17	Nut Adjuster	TBE		1



EXHAUST



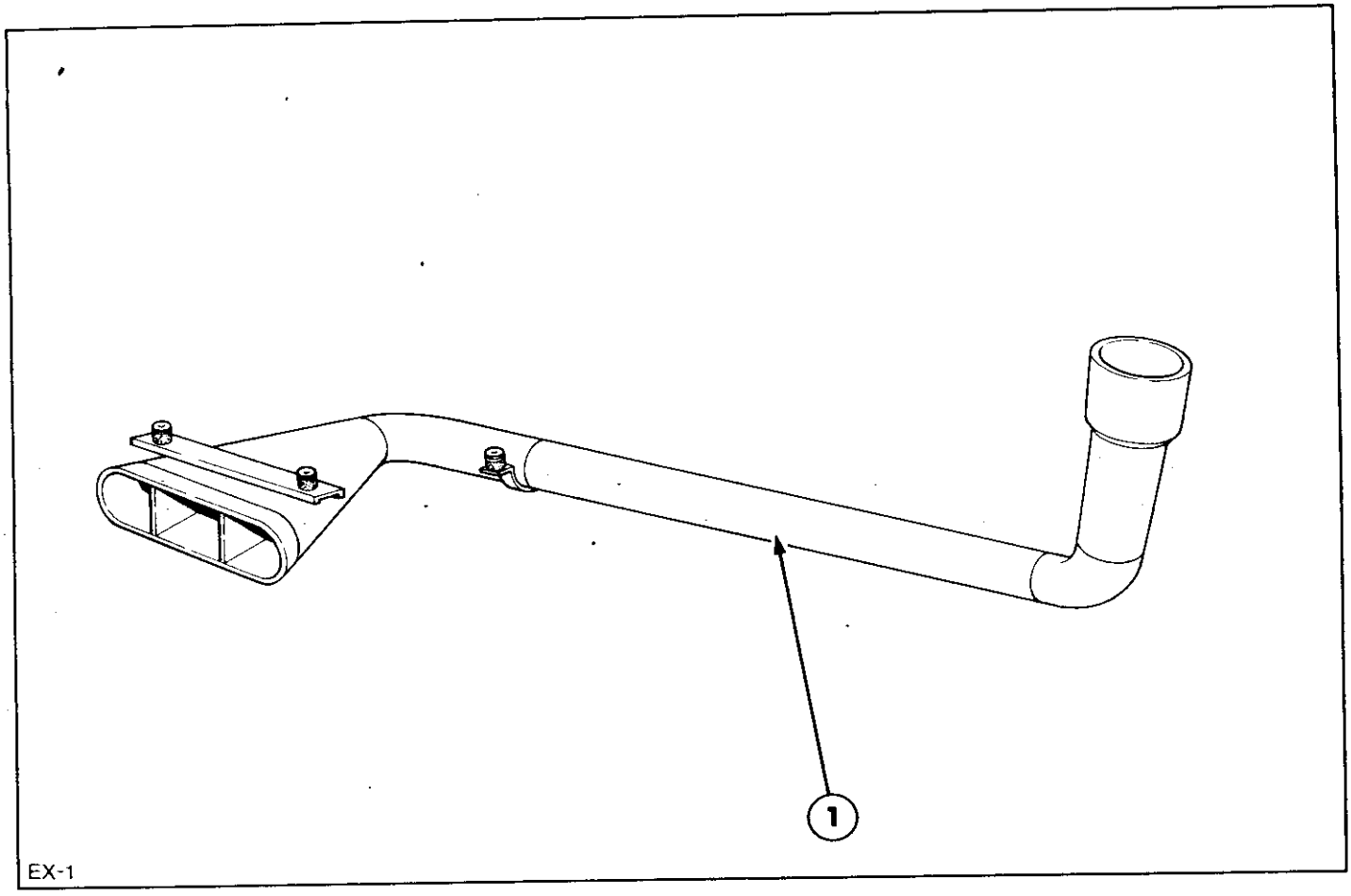
The exhaust shown is the tarmac Sierra Cosworth 4x4 version.

Modification may be required to fit this system to the Escort RS Cosworth.

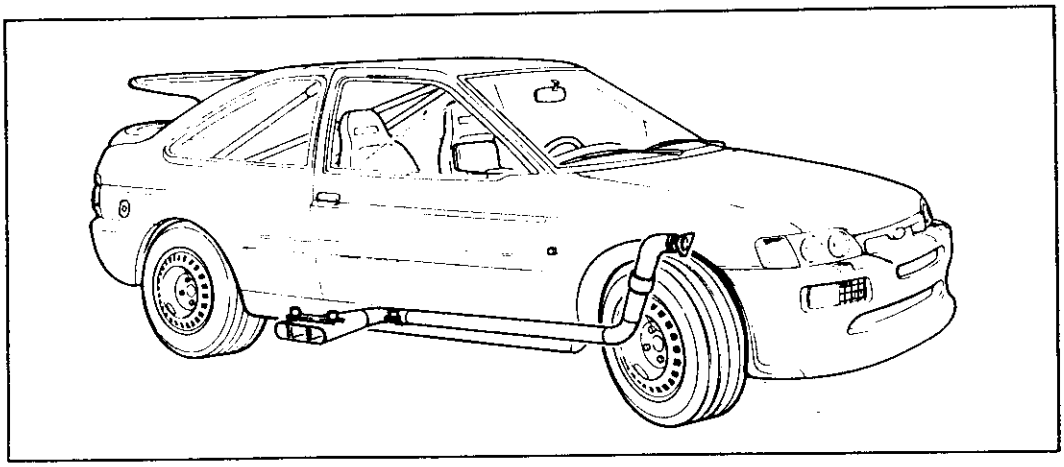
A revised system is under development and will be made available in 1993.

Prctect the sill from heat damage with a fireproof shield.

	Description	Finis Code	Comments	Qty.
1	Exhaust – Tarmac	9095436		1



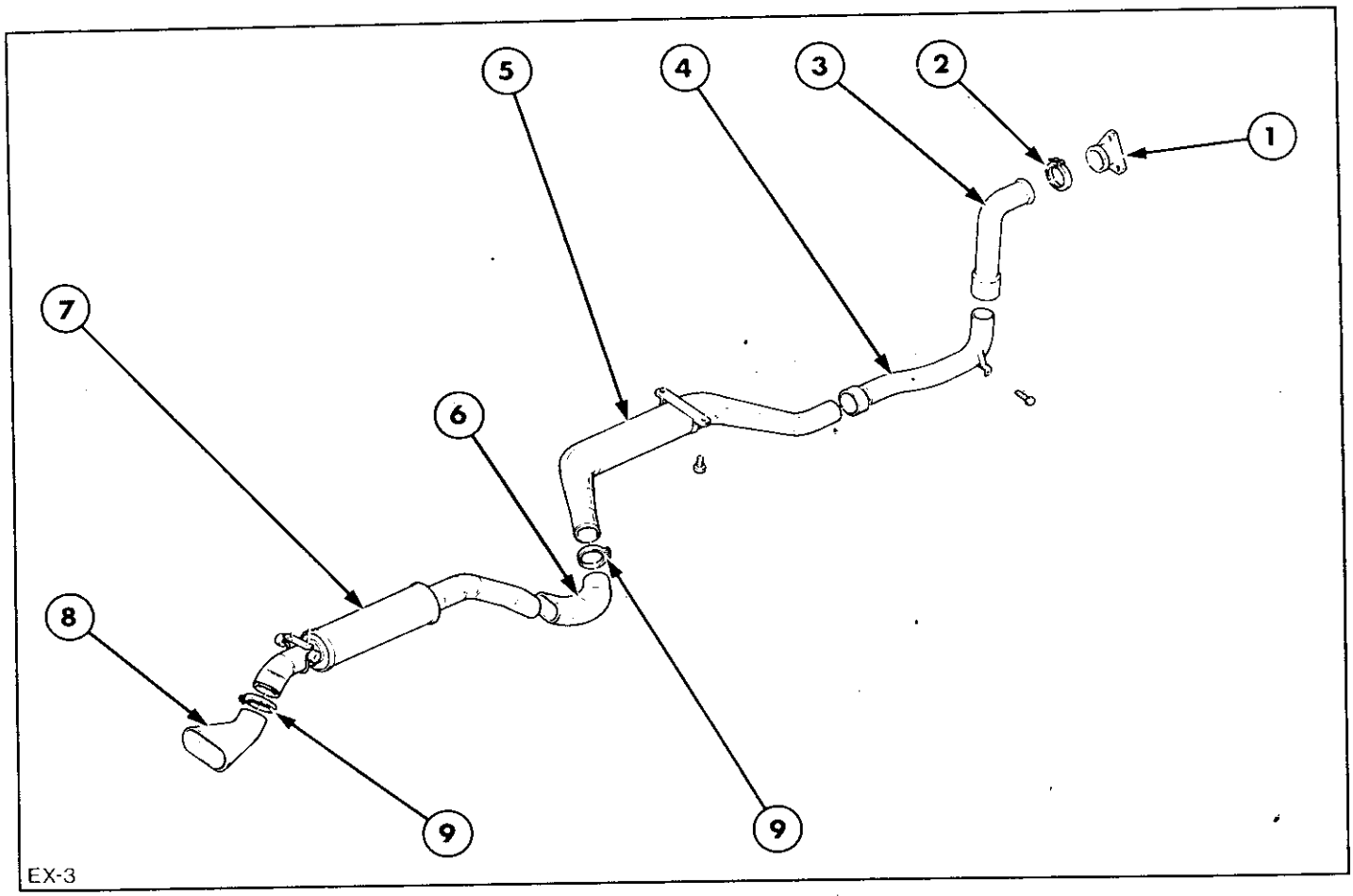
EX-1



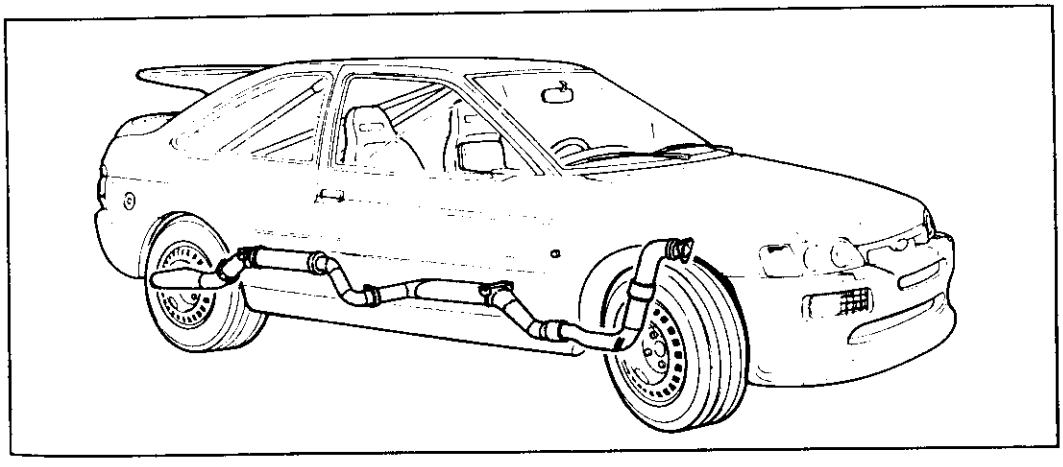
The exhaust shown is the gravel Sierra Cosworth 4x4 version.

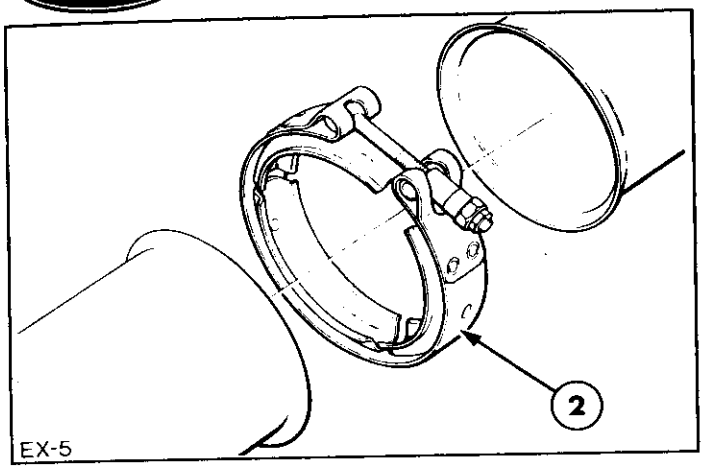
Modification may be required to fit this system to the Escort RS Cosworth. A revised system is under development and will be made available in 1993.

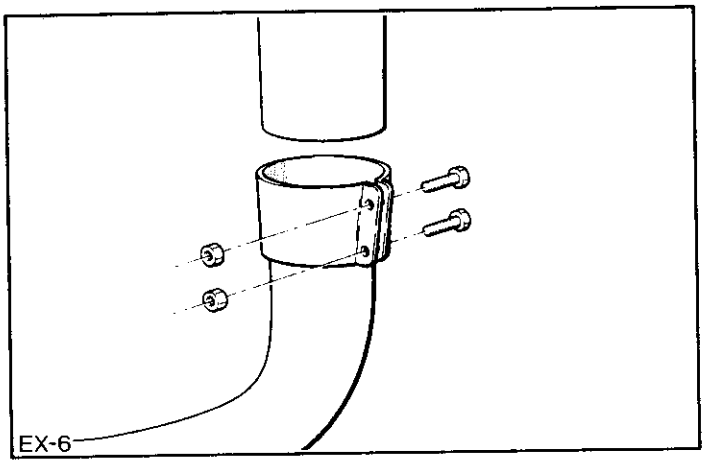
	Description	Finis Code	Comments	Qty.
1	Adaptor	9094923		1
2	Clamp	9093104		1
3	Downpipe	9095001	Tarmac and Gravel	1
4	Front Pipe	9095000		1
5	Centre Pipe Front	9094998		1
6	Centre Pipe Rear	9094997		1
7	Rear Pipe	9094996		1
8	Exit	9095349		1
9	Clamp	9094992		A/R

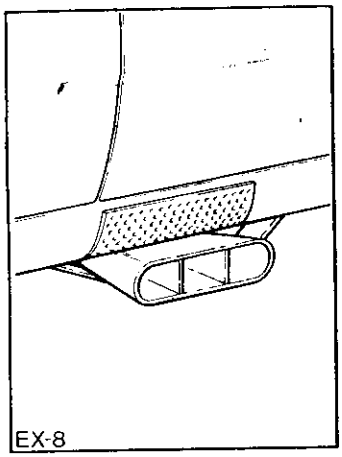


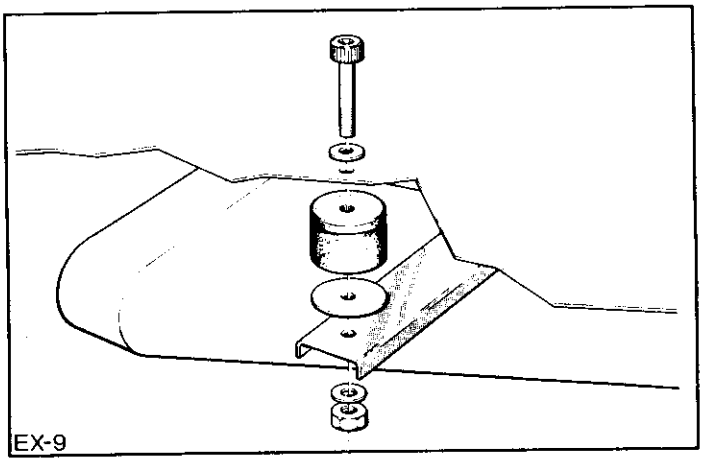
EX-3

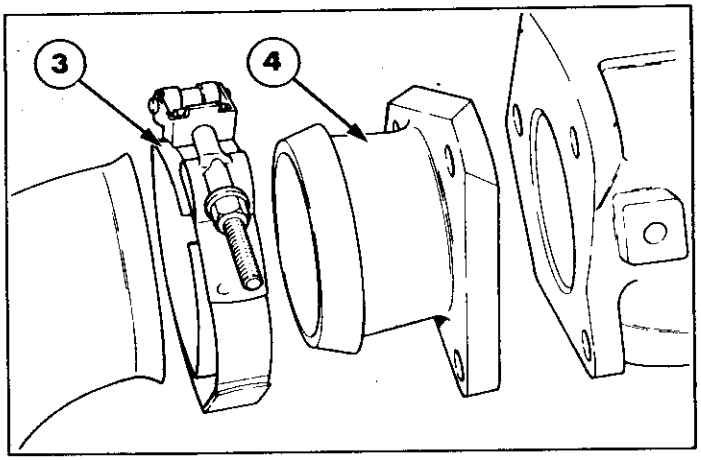


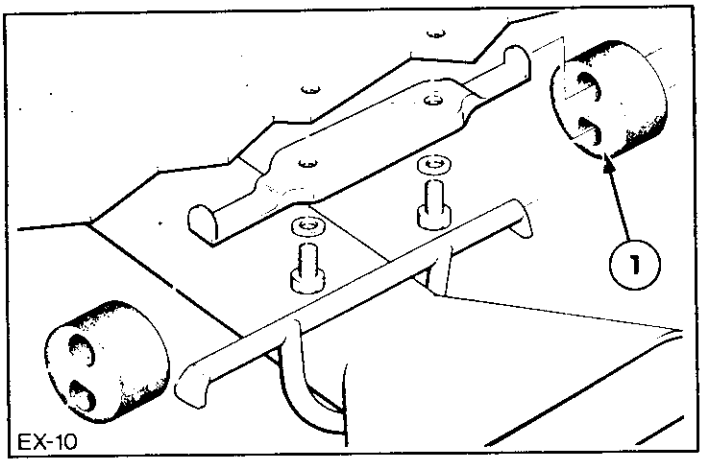






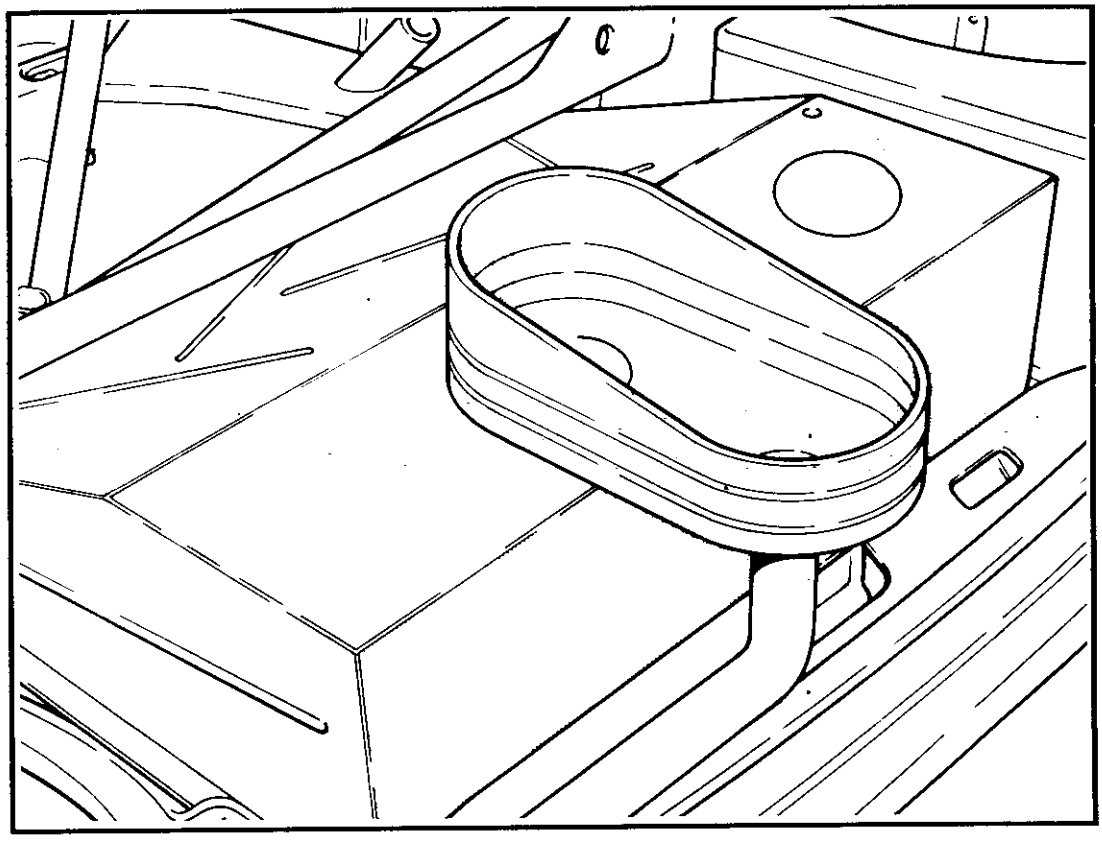






	Description	Finis Code	Comments	Qty.
1	Exhaust Mounting Rubber	*6053849		4
2	Clamp - Exhaust 3"	9094992		A/R
3	Clamp - Exhaust 3½"	9093104		1
4	Adaptor - Turbo to Exhaust	9094923		1

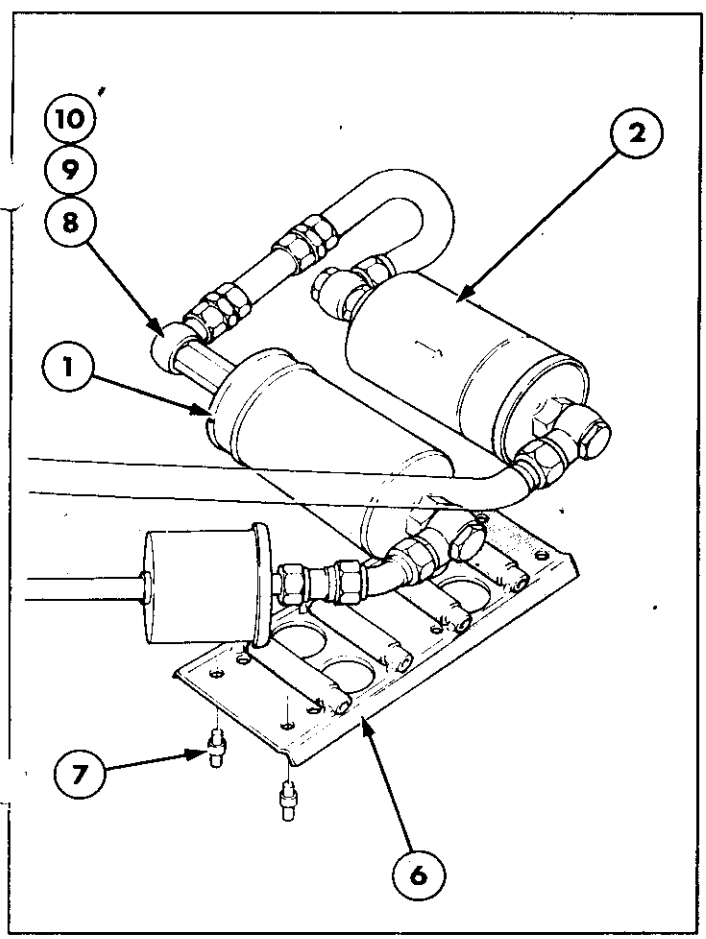
FUEL SYSTEM



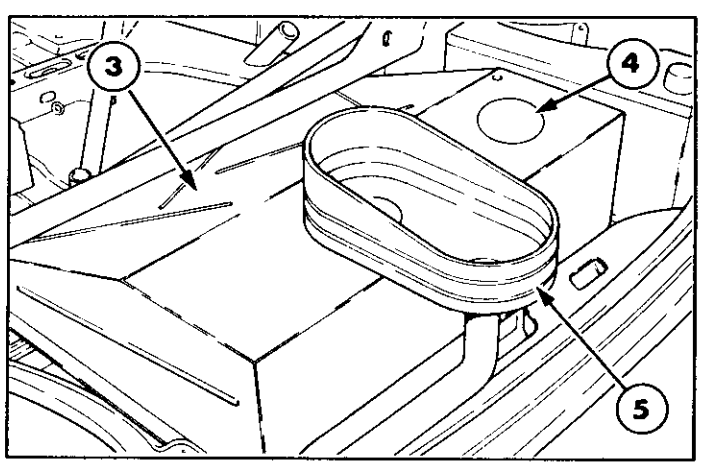
The fuel system comprises an FT3 fuel tank mounted in the luggage compartment, with an electric pump and filter situated near the base of the tank.

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).

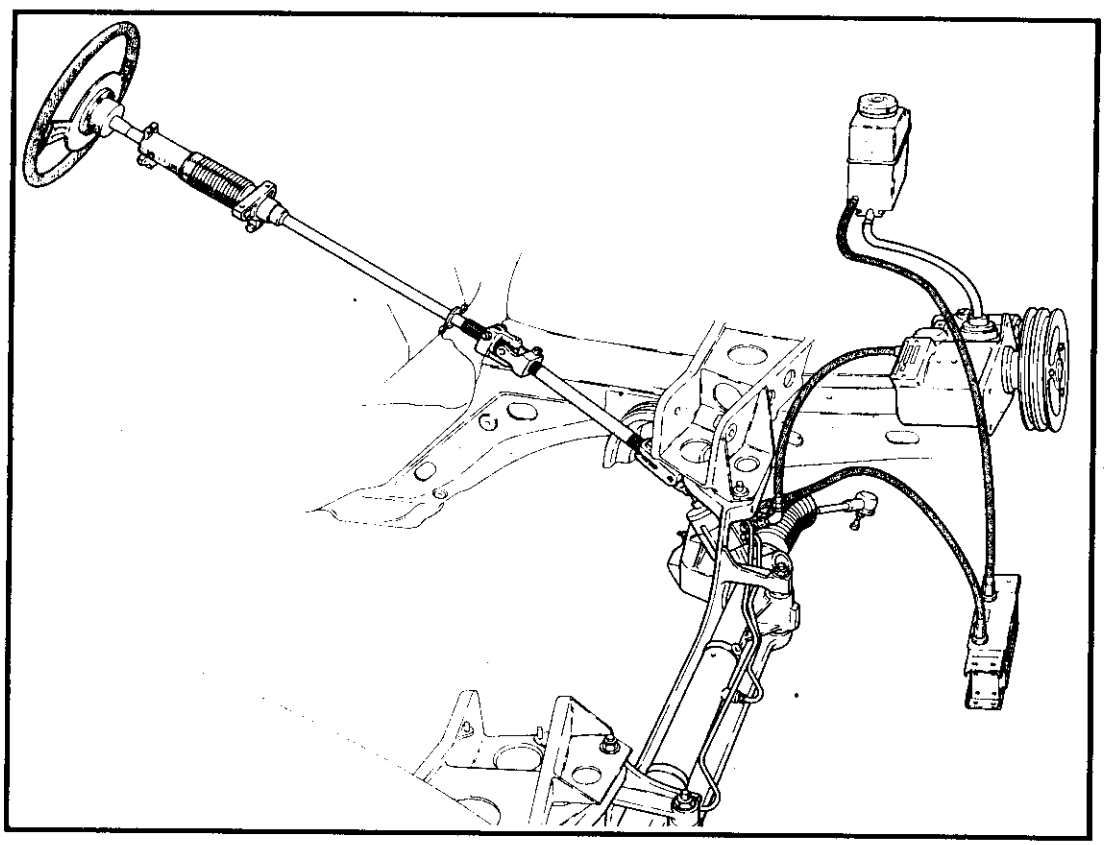
The pump and filter can be mounted on the underside of the floor and both fuel tank and pumps protected by a stone shield. Fuel lines must be aviation type with protective braiding and should be routed through the vehicle.



	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



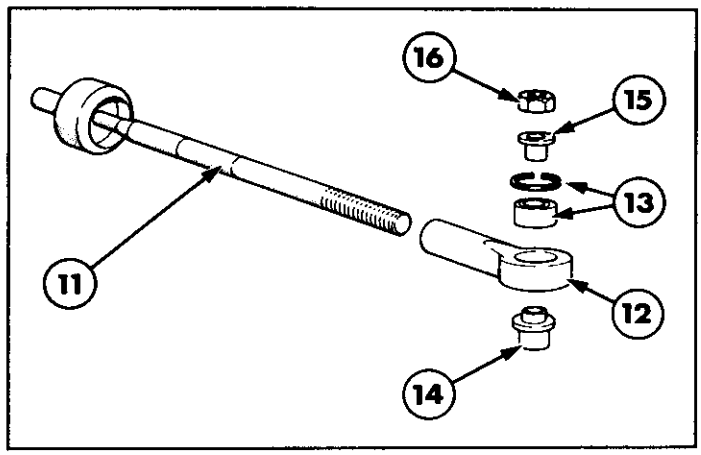
STEERING

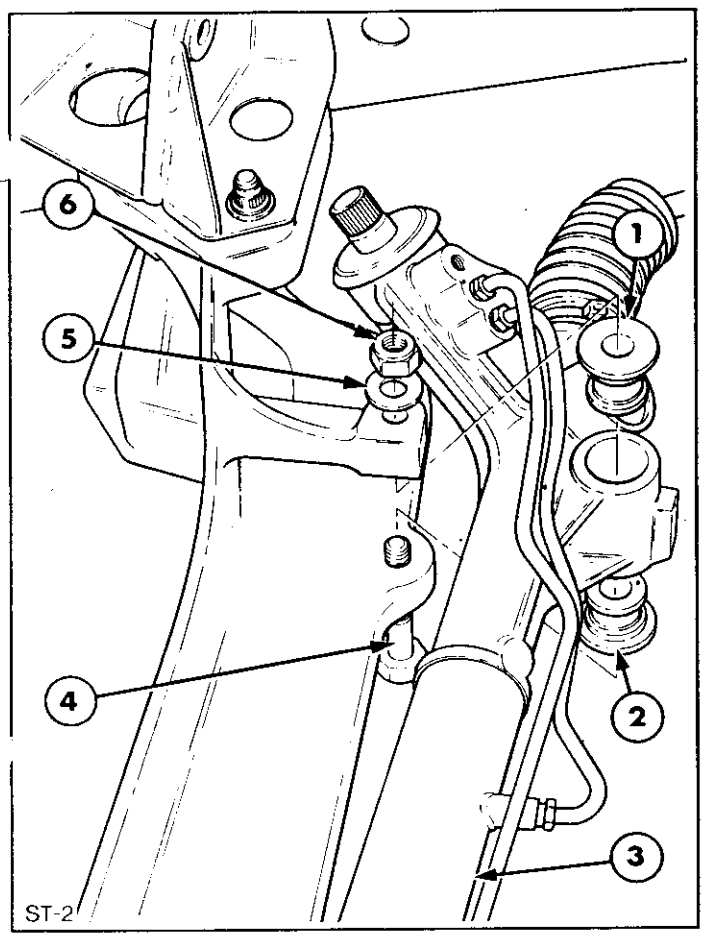


The steering rack is mounted on the front crossmember in a similar way to standard, but with alloy spacers instead of rubber bushes.

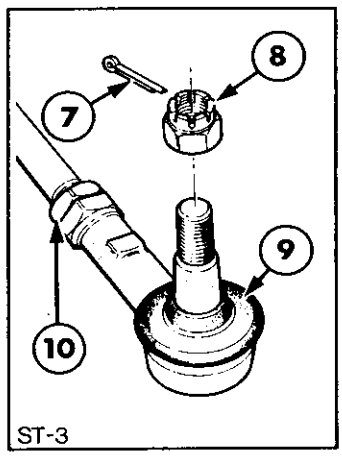
The heavy-duty trackrod has an improved inner joint and is particularly suitable for rough gravel. The tarmac track rod ends have replaceable spherical bearings and are bolted to the steering arms with a cap screw M12 x 65 long.

Check wheel clearances on full lock and insert lock stops if necessary.





ST-2



ST-3

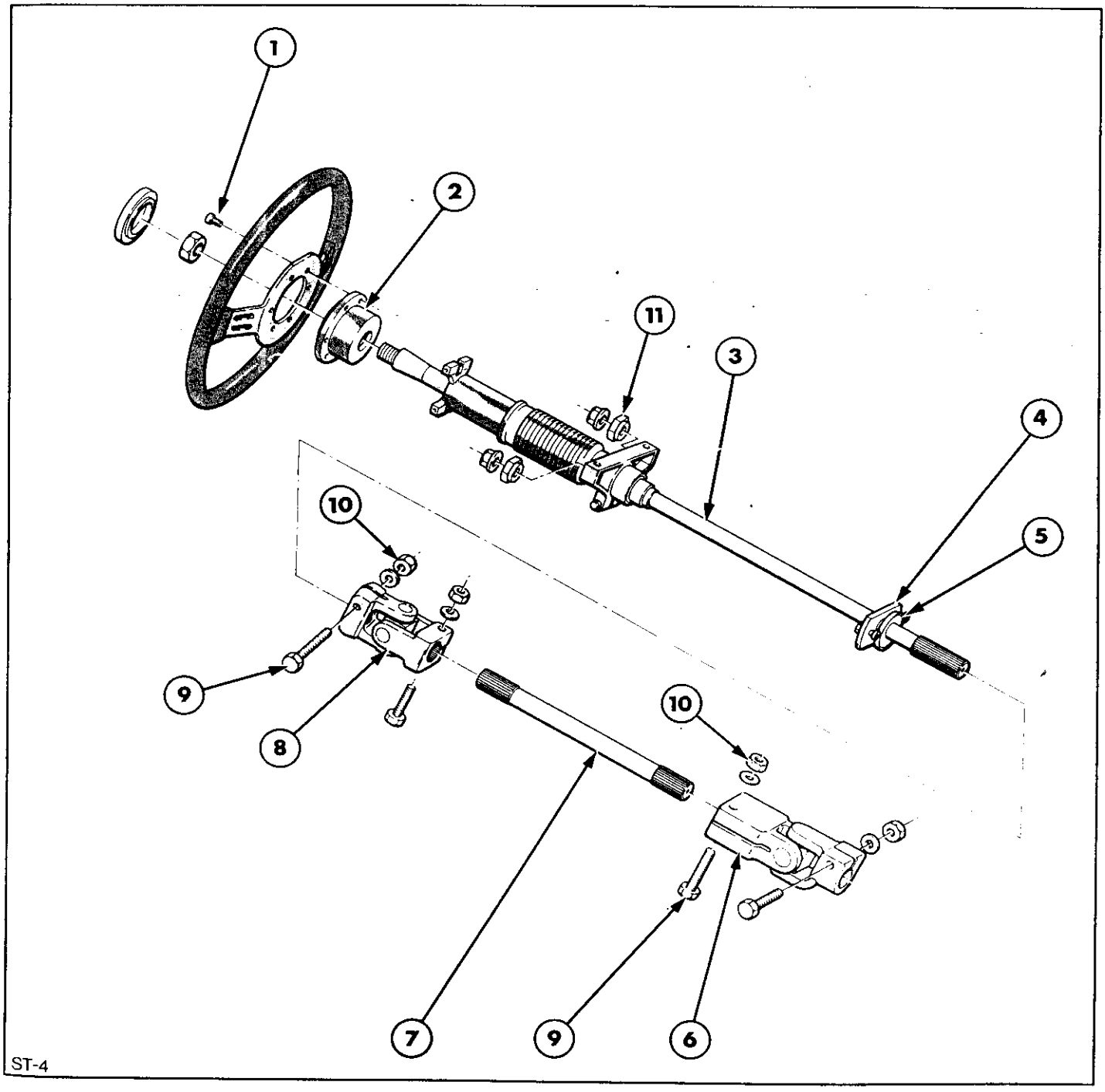
	Description	Finis Code	Comments	Qty.
1	Insert – Upper	9094755	(gold)	2
2	Insert – Lower	9094768	(blue)	2
3	Steering Rack – LHD	9094883		1
3	Steering Rack – RHD	9094765		1
4	Bolt – Rack Mounting		M12 x 140	2
5	Washer	*6082617		2
6	Nut	*1536468	M12	2
7	Split Pin	*0209935		2
8	Castle Nut	*1443796		2
9	Track Rod End	*1476246		2
10	Lock Nut	*1472933		2
11	Track Rod	9095344	Heavy Duty	2
12	Housing – Track Rod End	9095325	(red) Tarmac	2
13	Bearing – Track Rod End	9095350	Tarmac	2
14	Spacer – Track Rod End	9095324	Tarmac	2
15	Spacer – Track Rod End	9095323	(upper)	2
16	Nut – Track Rod End	9095320	Tarmac	2
17	Lockstop	9093780	4mm	2
17	Lockstop	9095251	10mm	2

Torques	
Track Rod Inner Joint	88 Nm
Track Rod to Stg. Arm	30 Nm
Steering Rack Mounting	45 Nm

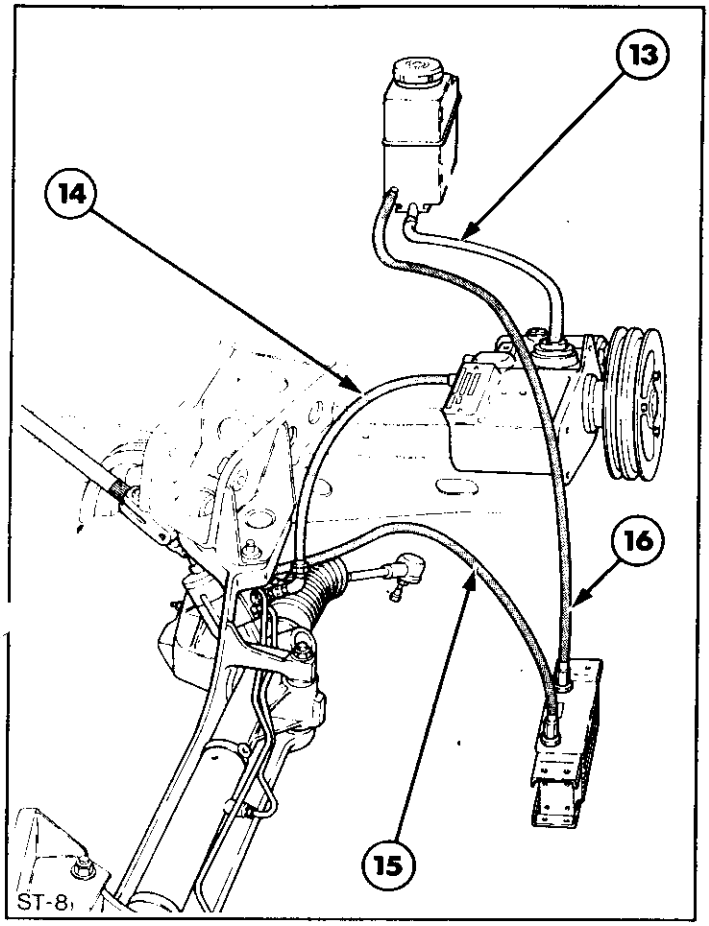
The steering column asy. is based on the Sierra Cosworth 4 x 4 and uses Sierra column tube and switch gear.

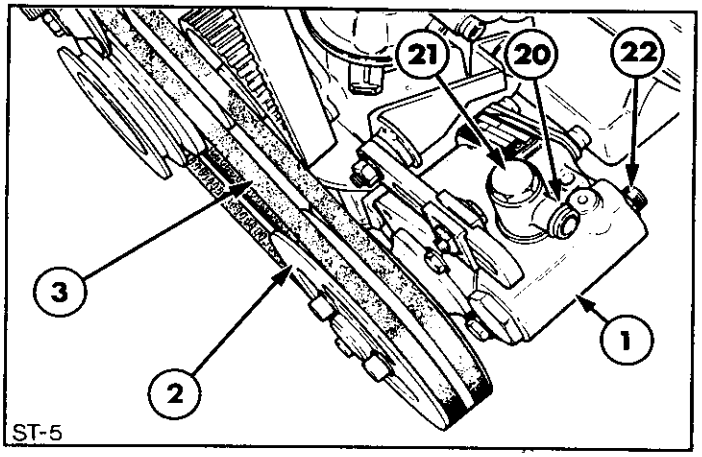
A modified version using Escort switch gear is under development.

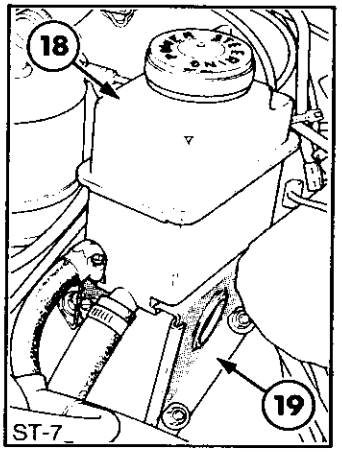
	Description	Finis Code	Comments	Qty.
1	Bolt – Counter-sunk		M5 x 0.8 x 12	6
2	Boss – Steering Wheel	9092897	Long	1
2	Boss – Steering Wheel	9092898	Short	1
3	Steering Column – Upper	9094619		1
4	Brg. – Steering Column	9094620		1
5	Seal	9094618	(fit to 9094620)	1
6	Universal Joint – Lower	9092563		1
7	Steering Shaft – Lower	9094616		1
8	Universal Joint – Upper	9092564		1
9	Bolt	1542046	M8 x 40	4
10	Nut	1474529	M8	4
11	Cam Nut	9094614		2

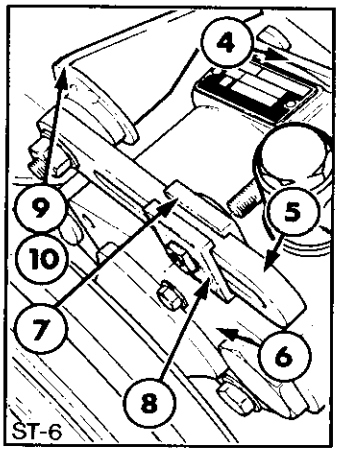


ST-4

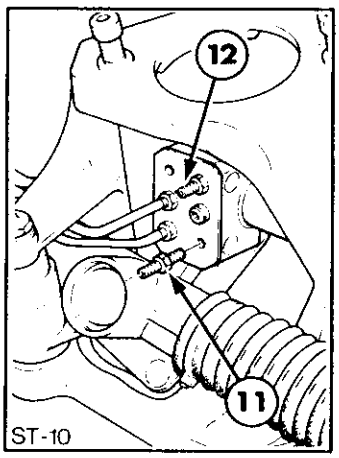


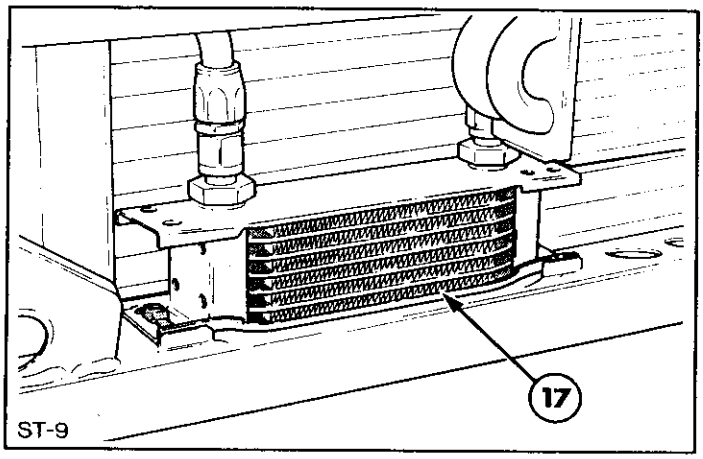




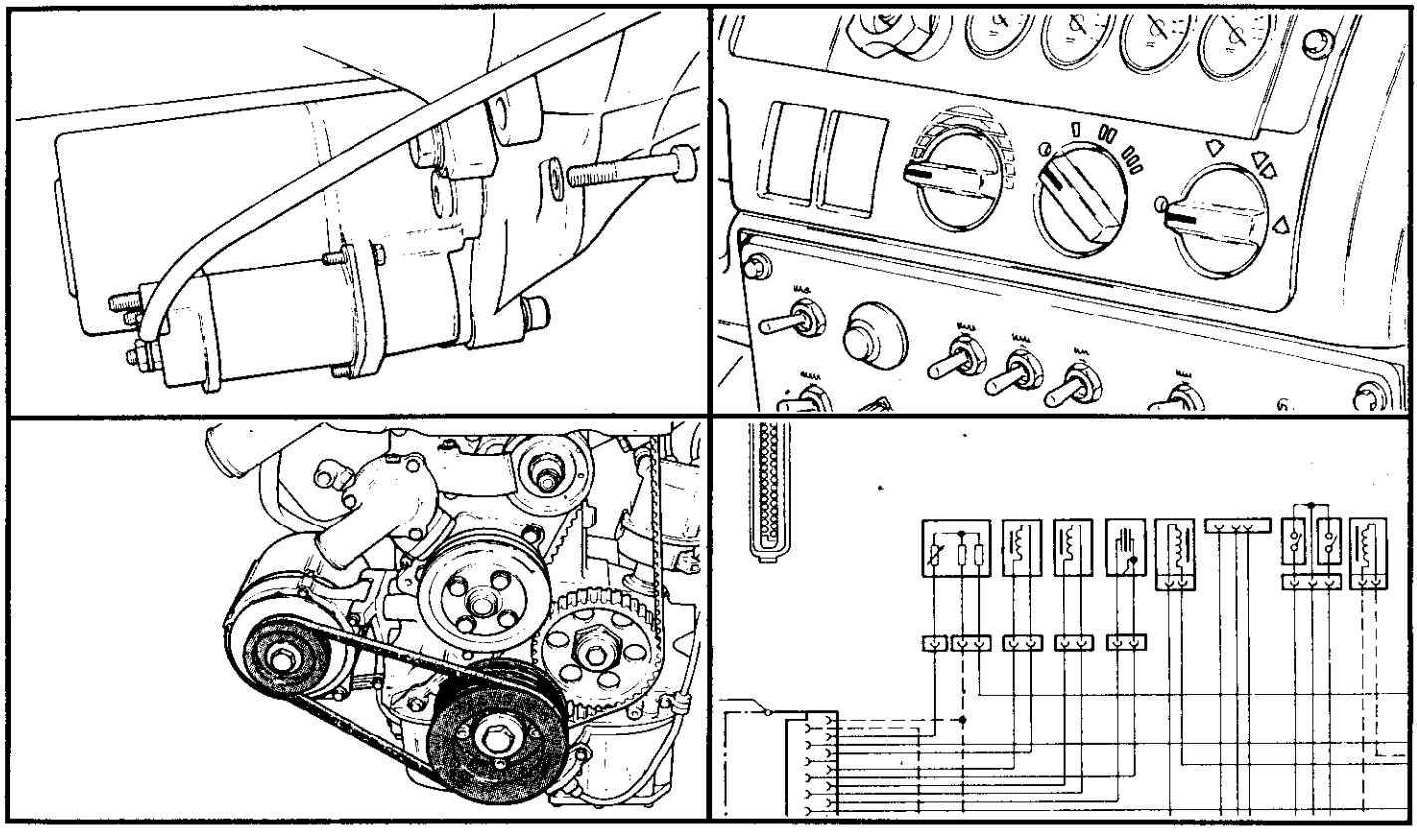


	Description	Finis Code	Comments	Qty.
1	Pump – PAS	9093182	75 Bar	1
2	Pulley – PAS	9092839		1
3	Belt – PAS	9092575		2
4	Plate – Rear PAS Pump	9094790		1
5	Strap	9092600	Nylon	1
6	Plate – Front PAS	9094791		1
7	Clamp – PAS Strap	9091941		1
8	Clamp – PAS Strap	9095158		1
9	Bracket – PAS	9095246		1
10	Spacer – PAS Bracket	9095089		1
11	Connector – Rack Feed	9094890	(red)	1
12	Connector – Rack Return	9094889	(blue)	1
13	Hose – Oil Feed	*1637856		1
14	Hose – PAS Pump to Rack	9094789		1
15	Hose – Return	9093263		1
16	Hose – Cooler Return to PAS	TBE		1
17	Cooler – PAS	9095084		1
18	Reservoir – PAS	*6193721		1
19	Bracket – Reservoir	*1637854		1
20	Banjo – PAS Feed	9093277		1
21	Banjo Bolt – PAS Feed	9092383		1
22	Adaptor – PAS Pump	9093284		1





ELECTRICAL



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

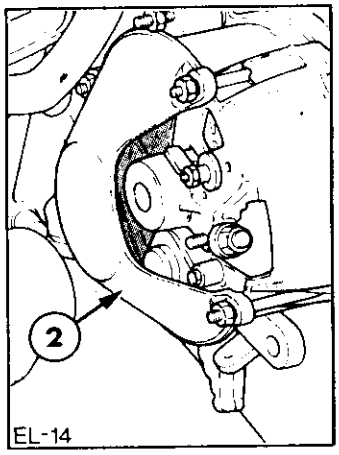
This can be replaced by a 150 amp alternator which will have enough capacity for a lamp pod, heated screen etc.

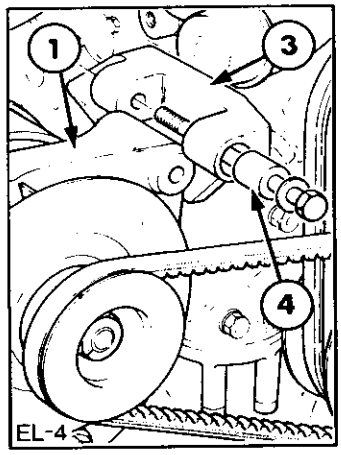
The alternator should be earthed to the bodyshell.

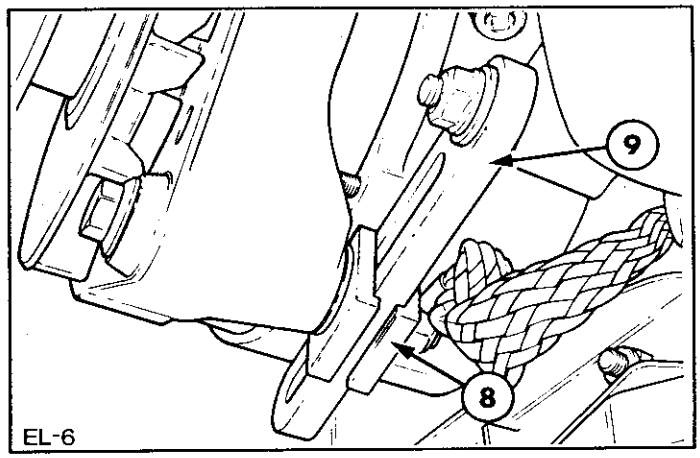
The battery can be fitted inside the car but must be enclosed in a box with ventilation to the atmosphere.

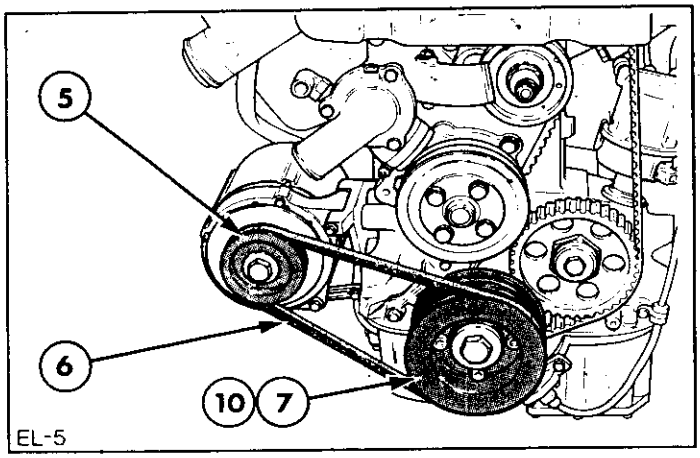
Use a sealed racing-type battery, and fit heavy duty jack-plugs to allow quick-change.

Disconnect battery and engine control unit when welding on car.





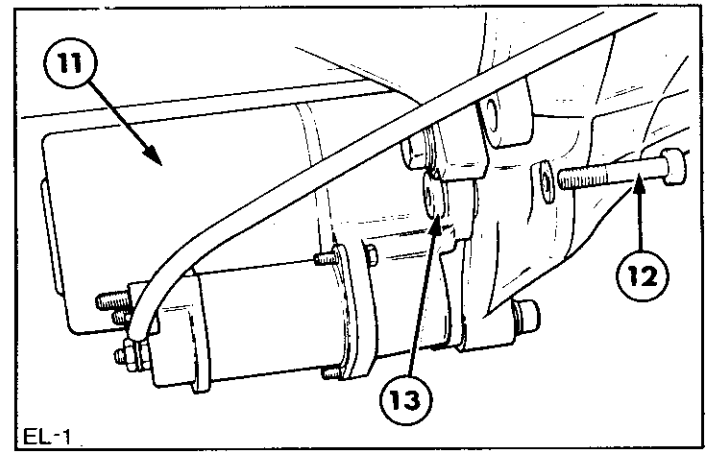


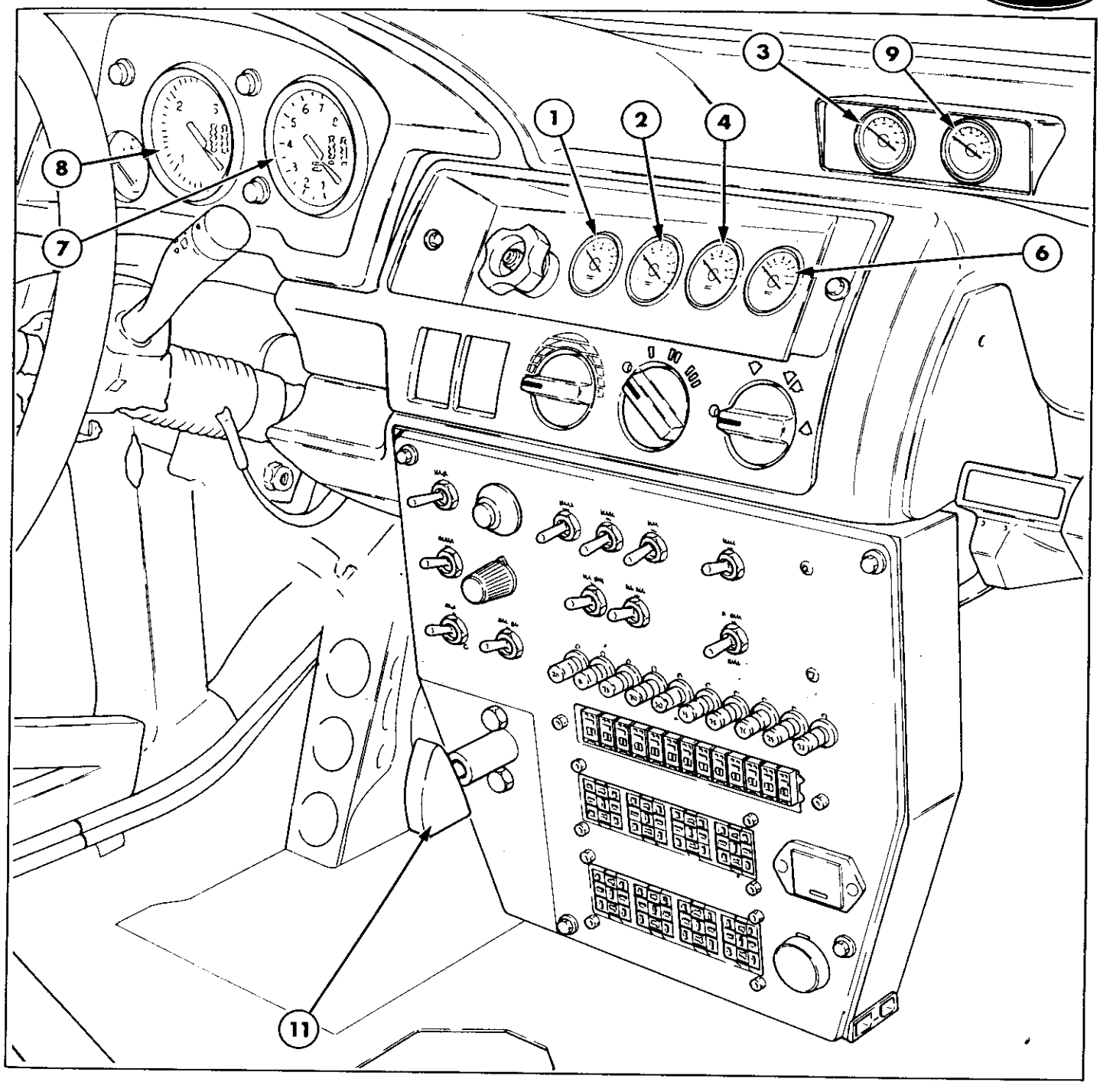


NOTE:
This starter motor has been modified to enable ease of removal as follows:

- 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





	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	4½"	Ford Oval
MS24	6"	Ford Oval
MS30	6" x 3"	Ford Motorsport
MS31	8" x 4"	Ford Motorsport
MS32	4" x 1¾"	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)

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