Series 3 T-Series & XR8 Pursuit 250 Ute (Supplement)

BACK

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T-Series Club of Australia

by Ford

SERIES III AU
T SERIES &
XR8 PURSUIT
250 UTE

REPAIR
MANUAL
SUPPLEMENT

PART No. WM 50FTE

INDEX	GROUP

FORD MOTOR COMPANY OF AUSTRALIA LIMITED
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FSERIES Club of Australia

INTRODUCTION

IMPORTANT NOTE

This Repair Manual Supplement only covers vehicle features specific to the Series III AU T Series range and the XR8 Pursuit 250 Ute. Refer to the contents page for a list of which sections have been included in this Supplement.

For all other information, refer to the AUII Falcon Repair Manual (WM 50) or the T Series Repair Manual Supplement (WM 43 FTE).

IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all motor vehicles as well as the personal safety of the individual doing the work. This Repair Manual Supplement provides general directions for accomplishing service and repair work with tested, effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools and parts for servicing vehicles, as well as in the skill of the individual doing the work. This manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, if you depart from the instructions provided in this manual, first establish that you do not compromise personal safety, Australian Design Rules, or the vehicle integrity by your choice of methods, tools or parts.

- Always wear safety glasses for eye protection.
- Use safety stands whenever a procedure requires you to be under the vehicle.
- Be sure that the ignition switch is always in the OFF position, unless otherwise required by the procedure,
- Set the parking brake and security chock the wheels when working on the vehicle.
- Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide inhalation.
- Keep yourself and your clothing away from moving parts when the engine is running.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe and muffler.
- Do not smoke while working on a vehicle.
- To avoid injury, always remove rings, watches, loose hanging jewellery and loose clothing before beginning to work in a vehicle.

REPLACEMENT PARTS

Replacement parts are made to the same exacting standards and tolerances as the original factory-fitted components. Only genuine FORD and MOTORCRAFT replacement parts, or parts meeting specifications of the Ford Motor Company, should be used as service replacements.

SPECIAL TOOLS AND EQUIPMENT

Special Tools and Equipment may be required to successfully complete a particular repair operation.

New and previously released tools are detailed in the Special Tools Sections of the AUII Falcon Repair Manual.

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T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

BRAKES	GROUP 2

T SERIES Club of Australia

GENERAL BRAKE SERVICE (PREMIUM BRAKES)

PART 2-1A

Introduction

The following brake system components are unique to T-Series and XR8 Pursuit 250 Ute Premium Brakes:

- Front rotors, calipers, pads and hoses
- Rear rotors and hoses
- Master cylinder and booster

Front brakes

Squeeze cast aluminium, twin piston PBR Mustang Cobra calipers are used. Piston diameter is 40.5 mm. These are supplied with fluid via braided flexible hoses that exhibit reduced expansion and maximise pedal feel. The braided hoses follow a unique routing to avoid wheel and suspension contact and are handed (left and right).

Larger rotors incorporate curved cooling vanes designed to improve brake cooling and reduce cracking of the disc under extreme operating temperatures. The groove pattern on the rotor face is designed to give improved wet weather braking and fade performance. The grooves are machined to a depth of 1.5 mm.

Brake pads

A high performance pad material is used on the front brakes for improved braking performance, fade resistance and feel.

Rear brakes

Grooved rotors and braided hoses are also used on the rear. Rotors are 287 mm in diameter and 16.0 mm thick; standard Series III size. Rear calipers are standard Series III with standard Series III pads.

Front suspension spindle

Front suspension spindle, hub, bearing, seals and ABS tone wheel are standard Series III Falcon components.

Brake master cylinder

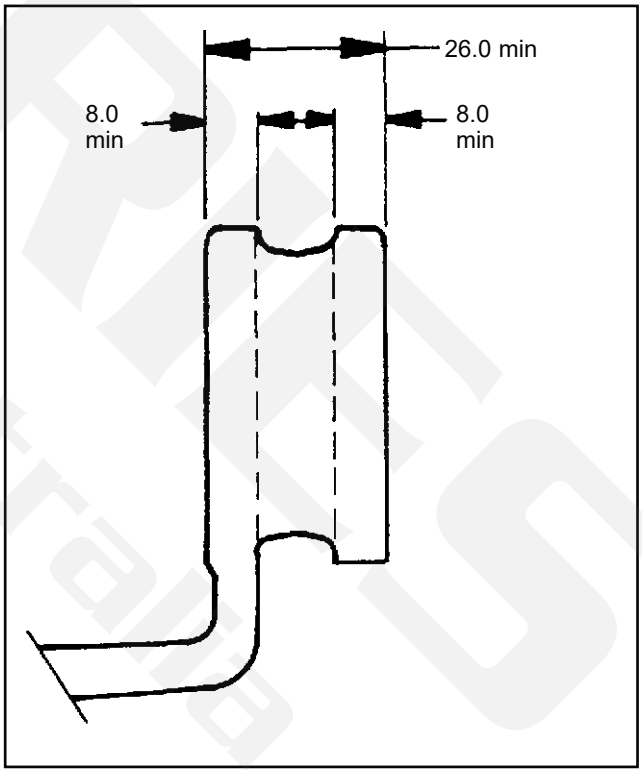
Master cylinder and booster design is the same as Series III, but the master cylinder crack point and boost ratio are unique to Tickford. This is designed to give a shorter pedal travel and greatly improved feel.

Rotor Refinishing

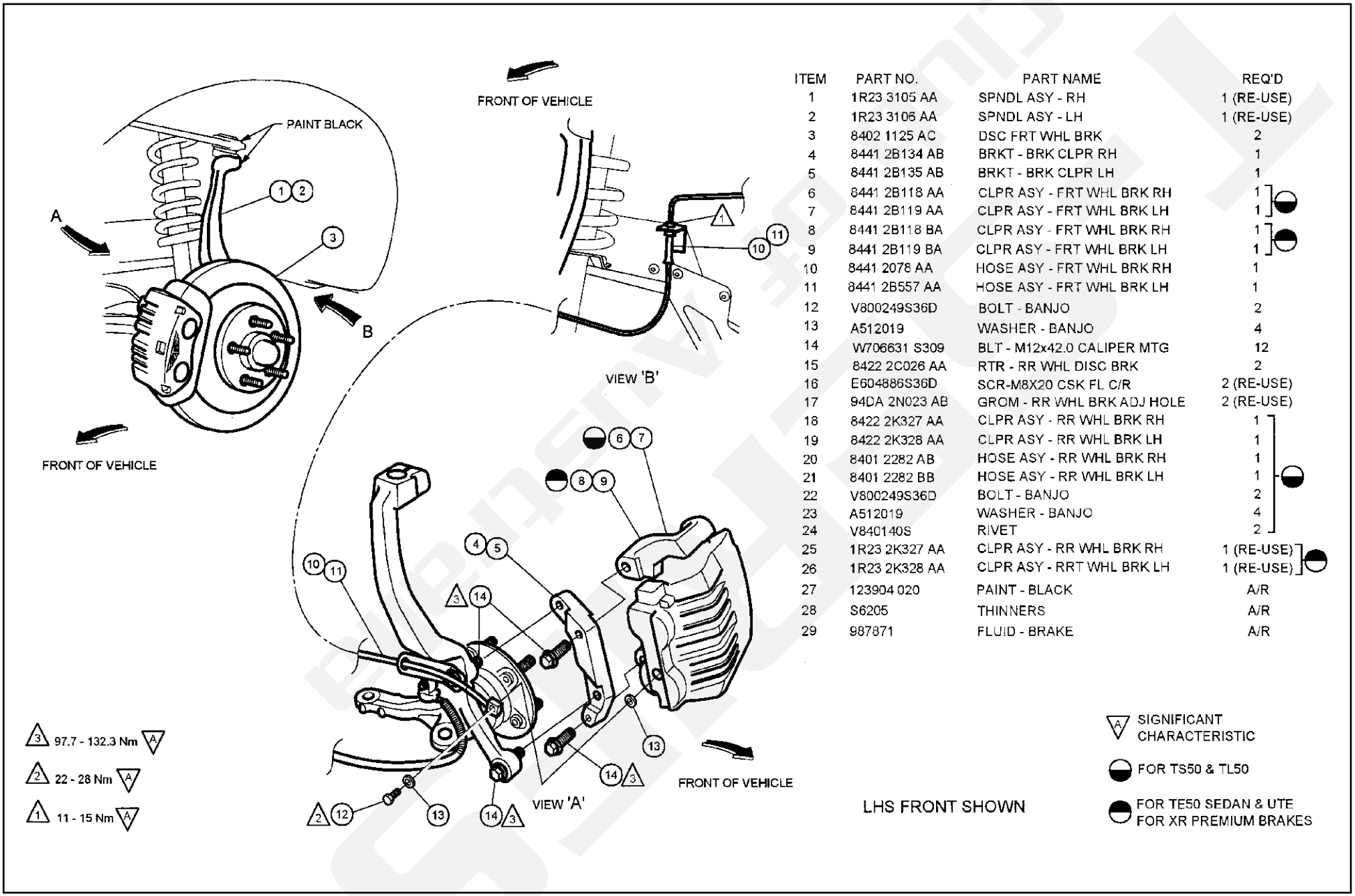
The finished braking surfaces of the rotor must be flat and parallel within 0.0076mm, lateral runout must not exceed 0.05mm total indicator reading and the surface finish of the braking surfaces are to be 0/1.6 micrometres.

The minimum dimensions for re-finishing rotors are:

- Individual braking surface thickness (front) 8.0mm
- Overall thickness across braking surfaces (front) 26.0mm
- Overall thickness (rear): 14.5mm

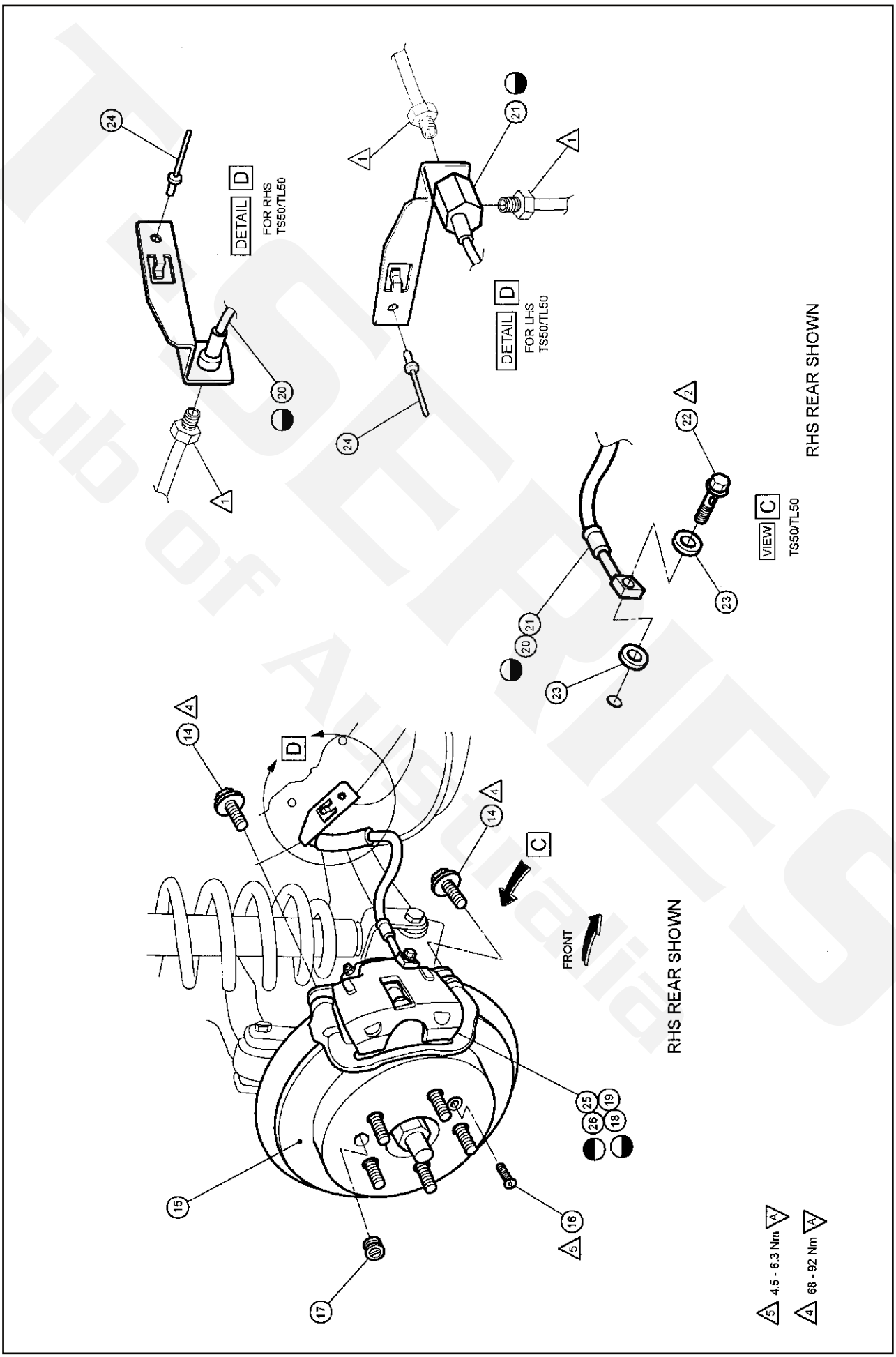


Front Disc Brake Resurfacing Limits (Dimensions in mm)

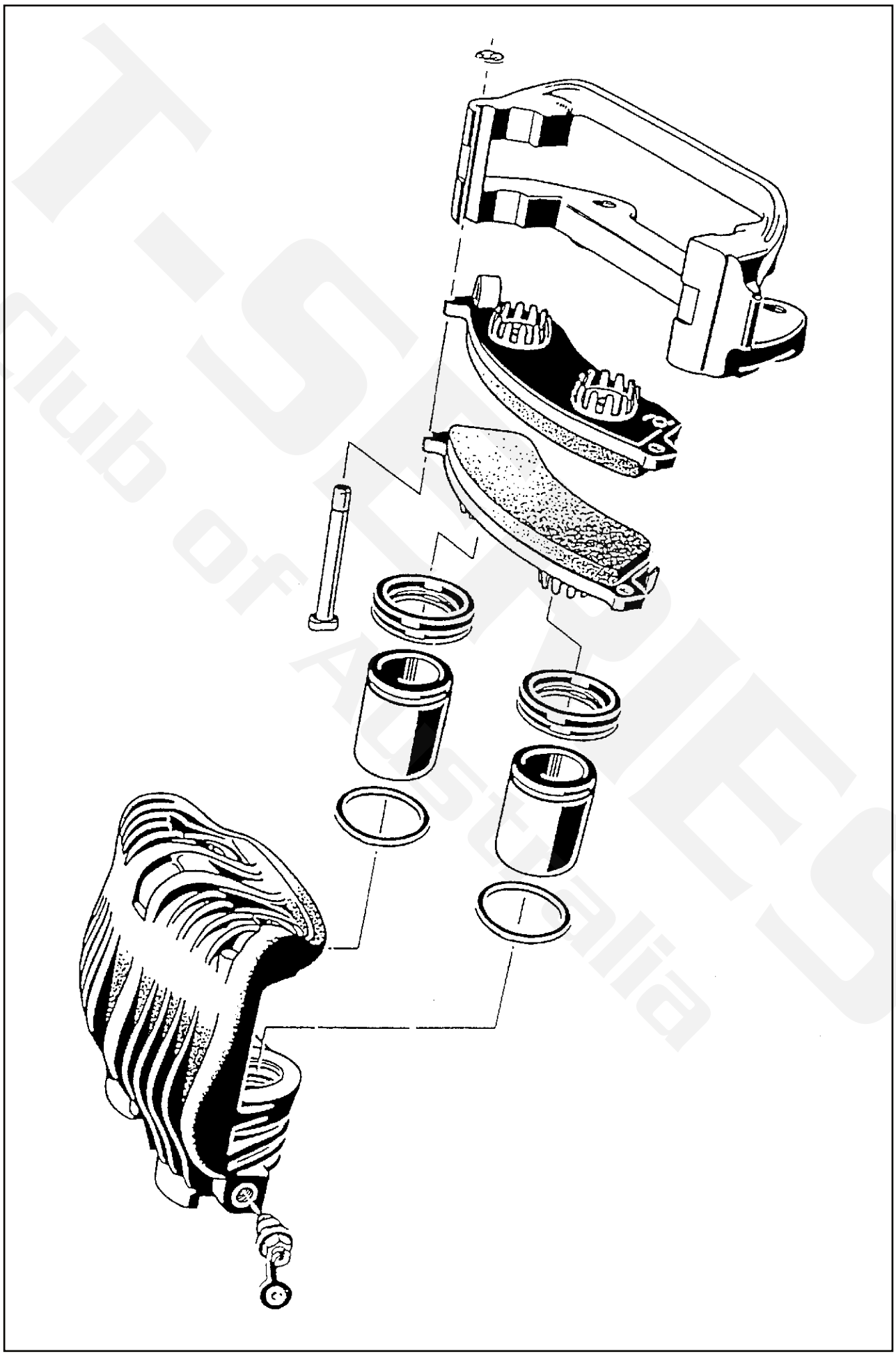


ITEM	PART NO.	PART NAME	REQ'D
1	1R23 3105 AA	SPNDL ASY - RH	1 (RE-USE)
2	1R23 3106 AA	SPNDL ASY - LH	1 (RE-USE)
3	8402 1125 AC	DSC FRT WHL BRK	2
4	8441 2B134 AB	BRKT - BRK CLPR RH	1
5	8441 2B135 AB	BRKT - BRK CLPR LH	1
6	8441 2B118 AA	CLPR ASY - FRT WHL BRK RH	1
7	8441 2B119 AA	CLPR ASY - FRT WHL BRK LH	1
8	8441 2B118 BA	CLPR ASY - FRT WHL BRK RH	1
9	8441 2B119 BA	CLPR ASY - FRT WHL BRK LH	1
10	8441 2078 AA	HOSE ASY - FRT WHL BRK RH	1
11	8441 2B557 AA	HOSE ASY - FRT WHL BRK LH	1
12	V800249S36D	BOLT - BANJO	2
13	A512019	WASHER - BANJO	4
14	W706631 S309	BLT - M12x42.0 CALIPER MTG	12
15	8422 2C026 AA	RTR - RR WHL DISC BRK	2
16	E604886S36D	SCR-M8X20 CSK FL C/R	2 (RE-USE)
17	94DA 2N023 AB	GROM - RR WHL BRK ADJ HOLE	2 (RE-USE)
18	8422 2K327 AA	CLPR ASY - RR WHL BRK RH	1
19	8422 2K328 AA	CLPR ASY - RR WHL BRK LH	1
20	8401 2282 AB	HOSE ASY - RR WHL BRK RH	1
21	8401 2282 BB	HOSE ASY - RR WHL BRK LH	1
22	V800249S36D	BOLT - BANJO	2
23	A512019	WASHER - BANJO	4
24	V840140S	RIVET	2
25	1R23 2K327 AA	CLPR ASY - RR WHL BRK RH	1 (RE-USE)
26	1R23 2K328 AA	CLPR ASY - RRT WHL BRK LH	1 (RE-USE)
27	123904 020	PAINT - BLACK	A/R
28	S6205	THINNERS	A/R
29	987871	FLUID - BRAKE	A/R

Premium Brake Assembly



Premium Brake Assembly



Front Caliper Assembly - Premium Brakes

BRAKE SPECIFICATIONS

Component **Master cylinder**	1” master cylinder with 1.25” fast-fill, 2.5 MPa crack point
Booster	8”/9” dual diaphragm vacuum booster. Boost ratio 6.6:1
Brake Pedal	AUII XR Pedal ratio 3.19:1
Brake Fluid	DOT 4, bp 280°C
Front caliper	Twin piston, pad-guided Sliding Caliper Piston diameter: 40.5 mm Brake Pads: Bendix BM709
Rear caliper	Single piston, pin-guided Sliding Caliper Piston diameter: 40.5 mm Brake Pads: JBI B942
Front rotor	DBA Ø 329 X 28.0 mm vented (curved vents) Check thickness: 9.0 mm Rotor faces grooved with twin intersecting circular grooves
Rear rotor	DBA Ø 287 X 16.0 mm Solid rotor. Faces grooved with twin intersecting circular grooves

TORQUE LIMITS

Brake hose to caliper	25 Nm
Front caliper mounting bolts	115 Nm
Rear caliper mounting bolts	80 Nm
Brake hose to brake pipe	13 Nm
Front and Rear caliper bleed screw	11.5 Nm

T-SERIES
club of Australia

GENERAL BRAKE SERVICE (BREMBO BRAKES)

PART 2-1B

Introduction

The following brake system components are unique to T-Series and XR8 Pursuit 250 Ute Brembo Brakes:

- Front rotors, calipers, pads and hoses
- Rear rotors, calipers, pads and hoses
- Master cylinder and booster

Front brakes

Die cast aluminium, four piston Brembo calipers are used. Piston diameters are 40.0mm and 44.0 mm. These are supplied with fluid via braided flexible hoses that exhibit reduced expansion and maximise pedal feel. The braided hoses follow a unique routing to avoid wheel and suspension contact and are handed (left and right).

Larger rotors incorporate Brembo's cooling vanes designed to improve brake cooling and reduce cracking of the disc under extreme operating temperatures. The rotor faces are cross-drilled to assist with ultimate fade performance.

Brake pads

Brake pad is made out of a European material that gives excellent stopping power, fade performance and feel.

Rear brakes

Die cast aluminium four piston Brembo calipers are used. Piston diameters are 28.0 mm and 30.0 mm. These are supplied with fluid via braided hoses.

Rotors are 330 mm in diameter and 28.0 mm thick and incorporate curved cooling vanes to improve brake cooling and reduce cracking.

The rotor faces are cross-drilled to assist with ultimate stopping power and fade performance.

Front suspension spindle

Front suspension spindle, hub, bearing, seals and ABS tone wheel are standard Series III Falcon components.

Brake master cylinder

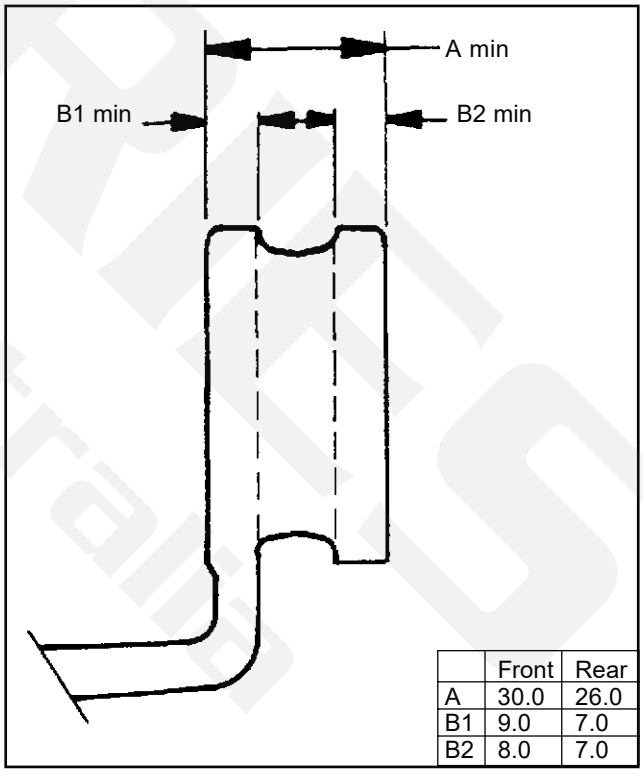
Master cylinder and booster design is the same as Series III Falcon, but the master cylinder crack point and boost ratio are unique to Tickford. This is designed to give a shorter pedal travel and greatly improved feel.

Rotor Refinishing

The finished braking surfaces of the rotor must be flat and parallel within 0.0076mm, lateral runout must not exceed 0.05mm total indicator reading and the surface finish of the braking surfaces are to be 0/1.6 micrometres.

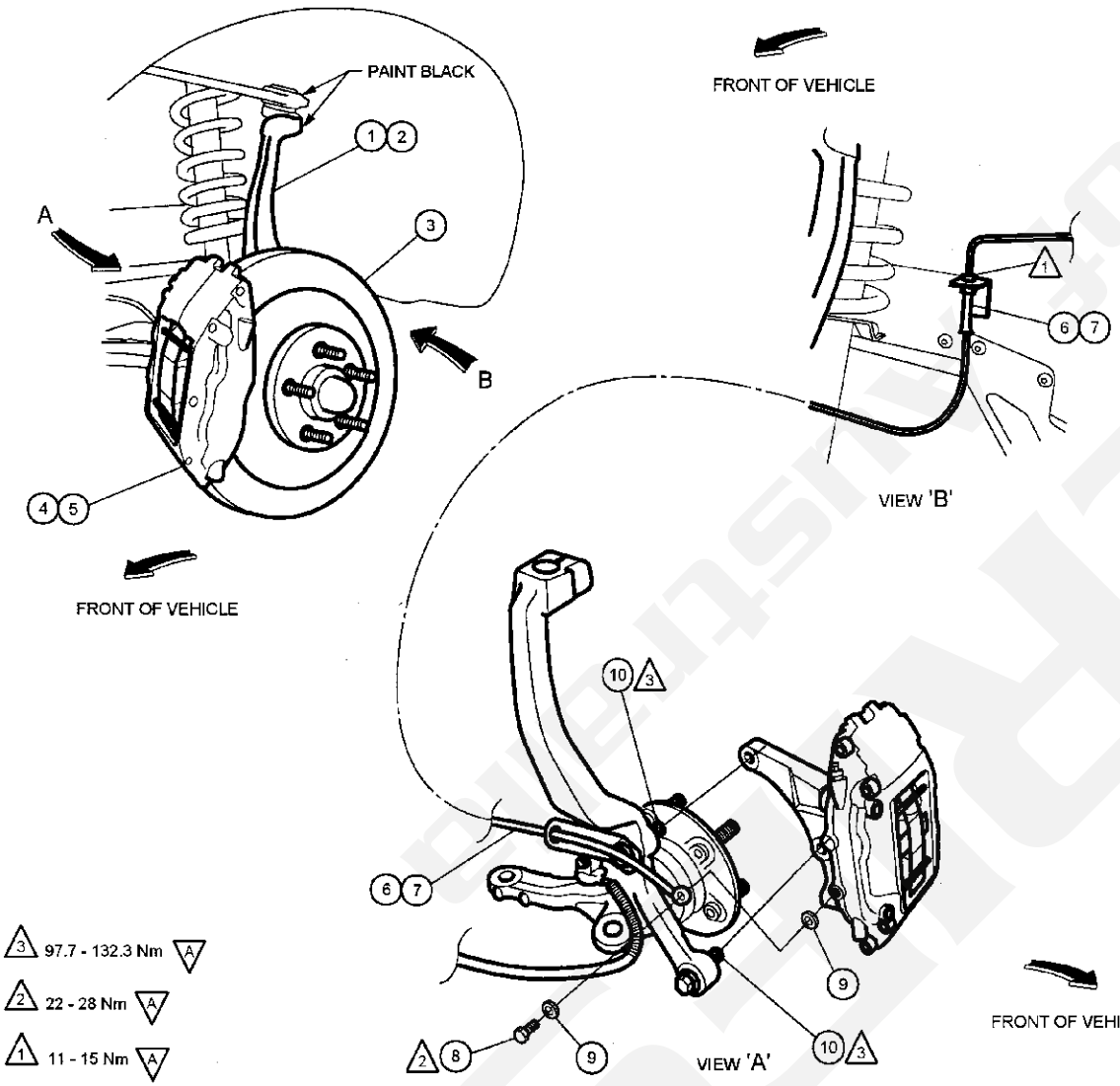
The minimum dimensions for re-finishing rotors are:

- Individual braking surface thickness (front) 9.0mm (outer) and 8.0mm (inner)
- Overall thickness across braking surfaces (front) 30.0mm
- Individual braking surface thickness (rear) 7.0mm
- Overall thickness (rear): 26.0mm



	Front	Rear
A	30.0	26.0
B1	9.0	7.0
B2	8.0	7.0

Disc Brake Resurfacing Limits (Dimensions in mm)



ITEM	PART NO.	PART NAME	REQ'D
1	1R23 3105 AA	SPNDL ASY - RH	1 (RE-USE)
2	1R23 3106 AA	SPNDL ASY - LH	1 (RE-USE)
3	8414 1125 AA	DSC FRT WHL BRK	2
4	8414 2B118 AB	CLPR ASY - FRT WHL BRK RH	1
5	8414 2B119 AB	CLPR ASY - FRT WHL BRK LH	1
6	8414 2078 AA	HOSE ASY - FRT WHL BRK RH	1
7	8414 2B557 AA	HOSE ASY - FRT WHL BRK LH	1
8	K486-028	BOLT - BANJO	4
9	A512019	WASHER - BANJO	8
10	W706631 S309	BLT - M12x42.0 CALIPER MTG	8
11	8414 2C026 AA	RTR - RR WHL DISC BRK RH	1
12	8414 2C027 AA	RTR - RR WHL DISC BRK LH	1
13	E604886S36D	SCR-M8X20 CSK FL C/R	2 (RE-USE)
14	94DA 2N023 AB	GROM - RR WHL BRK ADJ HOLE	2 (RE-USE)
15	8414 2K327 AA	CLPR ASY - RR WHL BRK RH	1
16	8414 2K328 AA	CLPR ASY - RR WHL BRK LH	1
17	8414 2282 AA	HOSE ASY - RR WHL BRK RH	1
18	8414 2282 BA	HOSE ASY - RR WHL BRK LH	1
19	8414 2282 DA	HOSE ASY - RR WHL BRK RH	1
20	8414 2282 EA	HOSE ASY - RR WHL BRK LH	1
21	V840140S	RIVET	2
22	987871	FLUID - BRAKE	A/R
23	123904 020	PAINT - BLACK	A/R
24	S6205	THINNERS	A/R

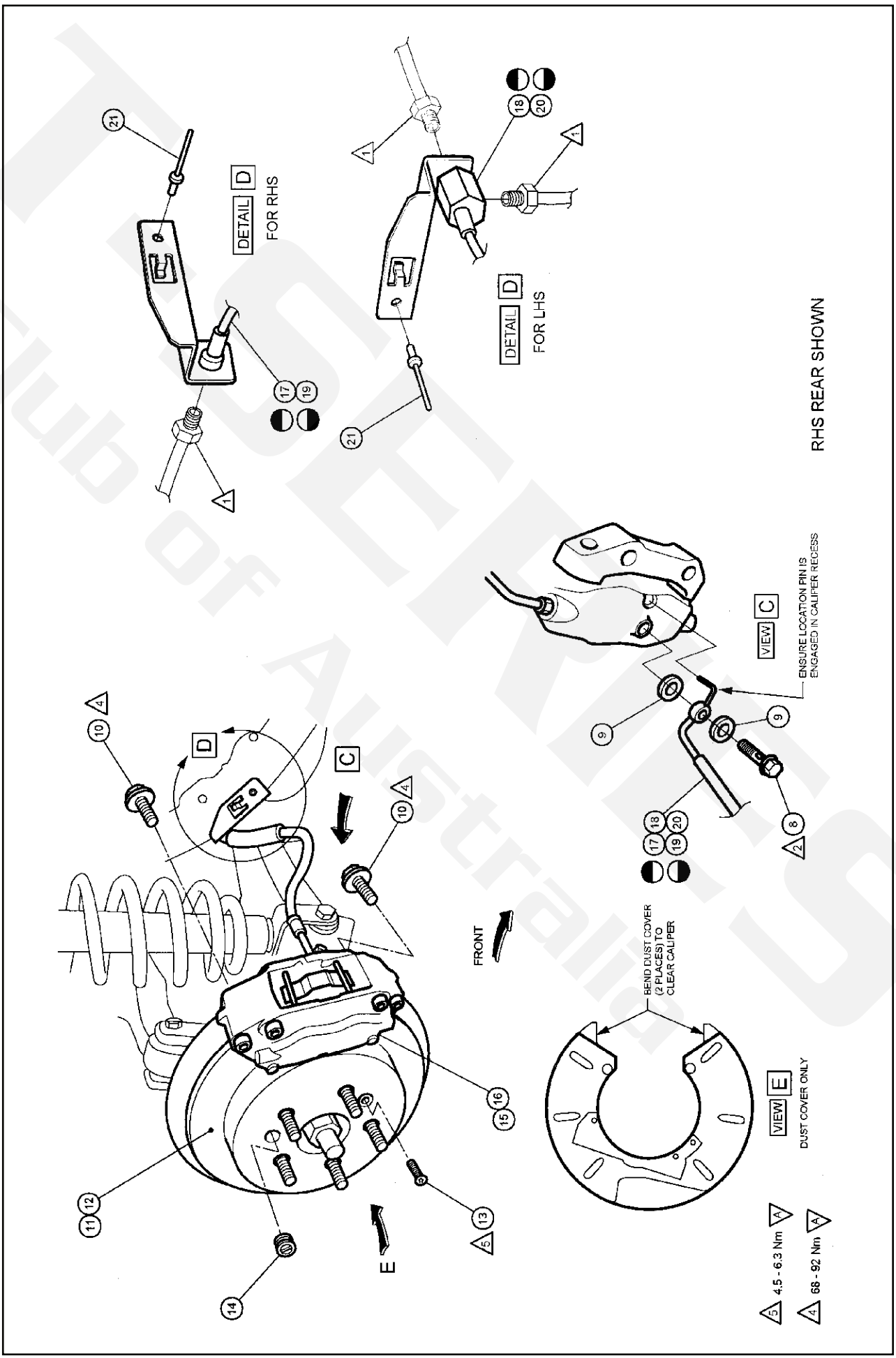
◓ FOR T-SERIES / XR SEDAN

◒ FOR T-SERIES / XR UTE

▽A SIGNIFICANT CHARACTERISTIC

LHS FRONT SHOWN

Brembo Brake Assembly



Brembo Brake Assembly

BRAKE SPECIFICATIONS

Component **Master cylinder**	1” master cylinder with 1.25” fast-fill, 2.5 MPa crack point
Booster	8”/9” dual diaphragm vacuum booster. Boost ratio 6.6:1
Brake Pedal	AUII XR Pedal ratio 3.19:1
Brake Fluid	DOT 4, bp 280°C
Front caliper	Brembo four piston fixed Caliper Piston diameters: 40.0/44.0 mm Brake Pads: Textar T4000
Rear caliper	Brembo four piston fixed Caliper Piston diameters: 28.0/30.0 mm Brake Pads: Textar T4000
Front rotor	Brembo Ø355 X 32.0 mm vented (curved vents) Check thickness: 10.0 mm (outer) and 9.0 mm (inner) Rotor faces cross-drilled
Rear rotor	DBA Ø330 X 28.0 mm vented (curved vents) Check thickness: 9.0 mm (inner and outer) Rotor faces cross-drilled

TORQUE LIMITS

Brake hose to brake pipe	13 Nm
Brake hose to caliper	25 Nm
Front caliper head mounting screws	115 Nm
Front caliper mounting bolts	115 Nm
Rear caliper mounting bolts	80 Nm
Rear caliper head mounting screws	115 Nm
Front and Rear caliper bleed screws	14 Nm
Front and Rear caliper cross-pipe nuts	18.5 Nm

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

SUSPENSION, STEERING, WHEELS AND TYRES	GROUP 3

T SERIES Club of Australia

FRONT SUSPENSION

PART 3-2

INTRODUCTION

All T-Series models feature a sports handling suspension package based on the multi link independent rear suspension (IRS).

TE50 vehicles are fitted with XR suspension as standard but may be optioned with the TS50 Koni suspension package (see below).

TS50 vehicles feature a special Koni suspension package consisting of Koni 82 series hydraulic dampers for significantly improved damper control. The dampers are NOT gas charged. The package also consists of lowered front and rear springs - the rear spring being variable rate. A revised front stabiliser bar complements the package.

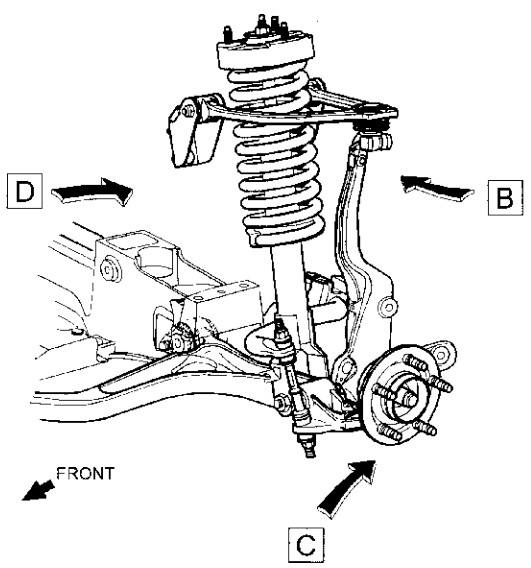
The TL50 has a modified version of the TS50 Koni suspension. It has the same front and rear springs, but with urethane spring spacers to account for the additional vehicle mass. The dampers have revised valving for a more refined/luxurious image.

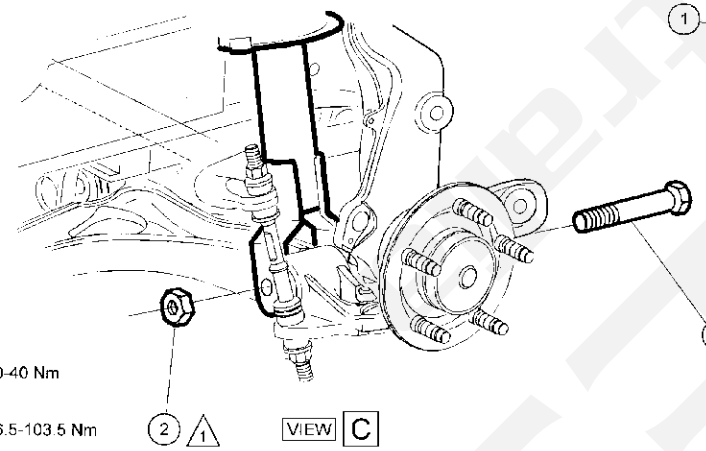
XR8 Pursuit 250 Ute is fitted with unique XR suspension which has lowered the ride height.

Wheel Alignment

All T-Series and XR8 Pursuit 250 Ute vehicles are fitted with a front camber/caster kit. Front camber/caster and toe are adjustable. The IRS on all T-Series vehicles features adjustable camber and toe. The front and rear alignment specifications are unique to T-Series and the front alignment specifications for the XR8 Pursuit 250 Ute are also unique (refer specifications section).

T-SERIES Australia

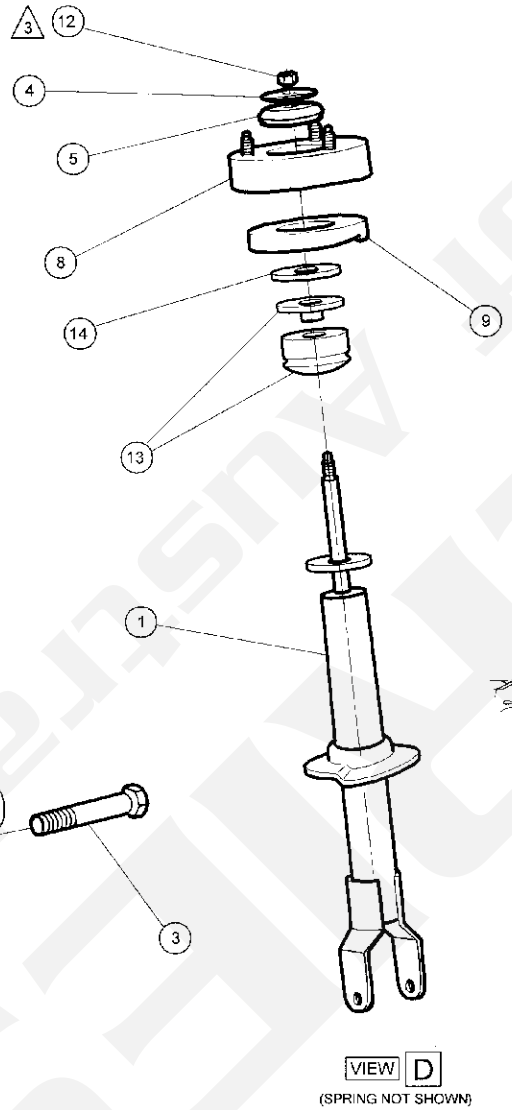




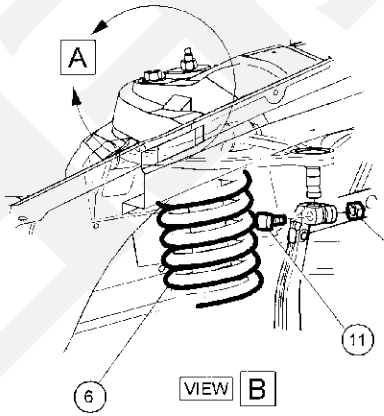
3 30-40 Nm

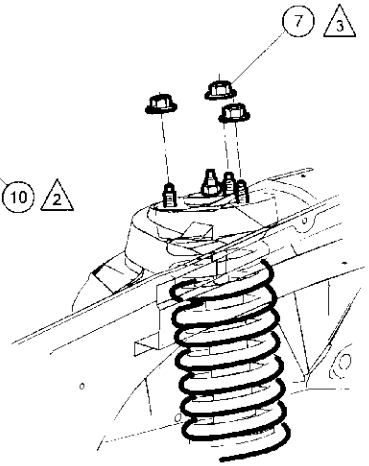
2 76.5-103.5 Nm

1 68-92 Nm

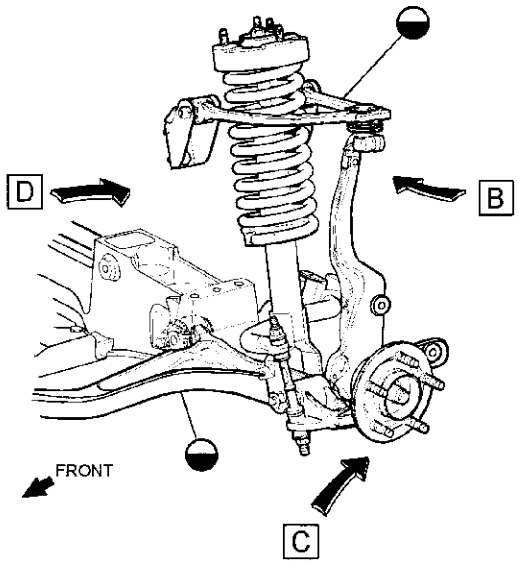


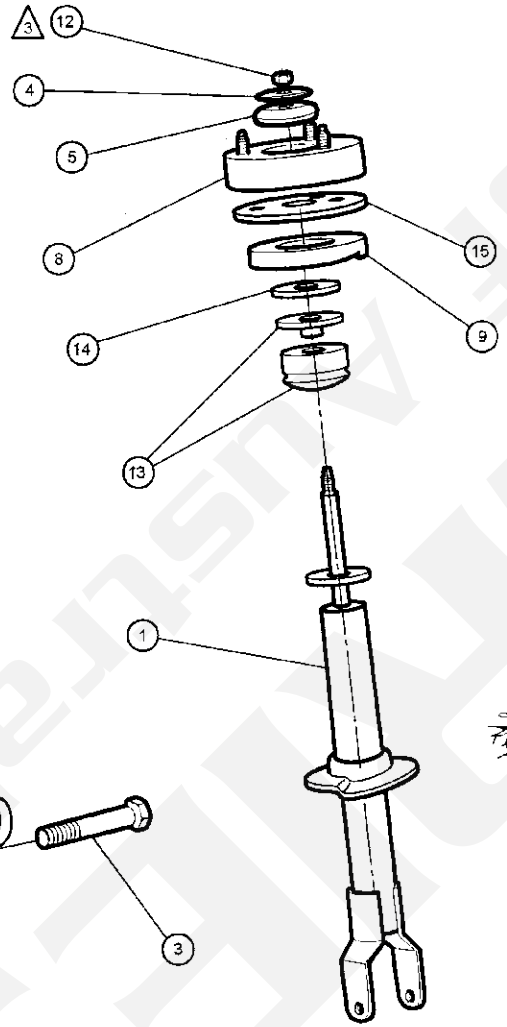
ITEM	PART NO.	PART NAME	REQ'D
1	8402 18045 AA	SHCK ABSORBER ASY FRT	2
2	E620441S36D	NUT M14 HEX P/T	2
3	V800485S36D	BOLT-HEX M14-2X104 CONE PT	2
4	82DA 18041 AA	WSHR SHCK ABSORBER	RE-USE
5	91DA 18198 AA	INSULATOR UPPER	RE-USE
6	8402 5310 AA	SPRING FRT SUSP COIL	2
7	V820231S36D	NUT HEX FLG M10 P/T	6
8	P91DA 5B300 AB	RETAINER ASY - FRT SPRING MT	RE-USE
9	91DA 5415 AB	INSULATOR FRT SPRING	RE-USE
10	V820177S36D	NUT M12X1.75 HEX NYLOC	2
11	N806579S428	BOLT M12X1.75X64 SQ HD	RE-USE
12	V820014S36D	NUT-M10 HEX LOCK	2
13	8402 3025 AA	BMPR ASY SUSP REBOUND	2
14	87DA 18A065 AA	WSHR SHOCK ABSORBER	2





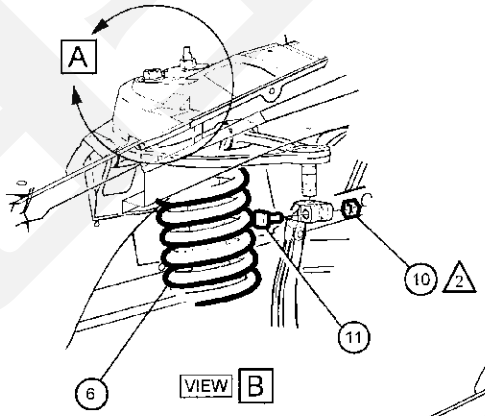
Koni Front Suspension (TS50/TE50 Option)





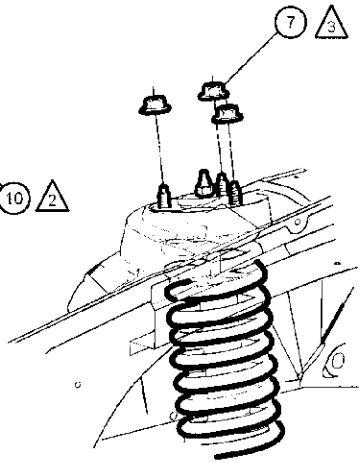
VIEW D
(SPRING NOT SHOWN)

ITEM	PART NO.	PART NAME	REQ'D
1	8403 18045 AA	SHCK ABSORBER ASY FRT	2
2	E620441S36D	NUT M14 HEX P/T	2
3	800 SBM14001 S36D	BOLT-HEX M14-2X104 CONE PT	2
4	82DA 18041 AA	WSHR SHCK ABSORBER	RE-USE
5	91DA 18198 AA	INSULATOR UPPER	RE-USE
6	8402 5310 AA	SPRING FRT SUSP COIL	2
7	V820231S36D	NUT HEX FLG M10 P/T	6
8	P91DA 5B300 AB	RETAINER ASY - FRT SPRING MT	RE-USE
9	91DA 5415 AB	INSULATOR FRT SPRING	RE-USE
10	V820177S36D	NUT M12X1.75 HEX NYLOC	2
11	N806579S428	BOLT M12X1.75X64 SQ HD	RE-USE
12	V820014S36D	NUT-M10 HEX LOCK	2
13	8402 3025 AA	BMPR ASY SUSP REBOUND	2
14	87DA 18A065 AA	WSHR SHOCK ABSORBER	2
15	8403 5A343 AA	SPACER - FRONT SPRING	2
16	123904 020	PAINT - BLACK	A/R
17	S6205	THINNERS	A/R

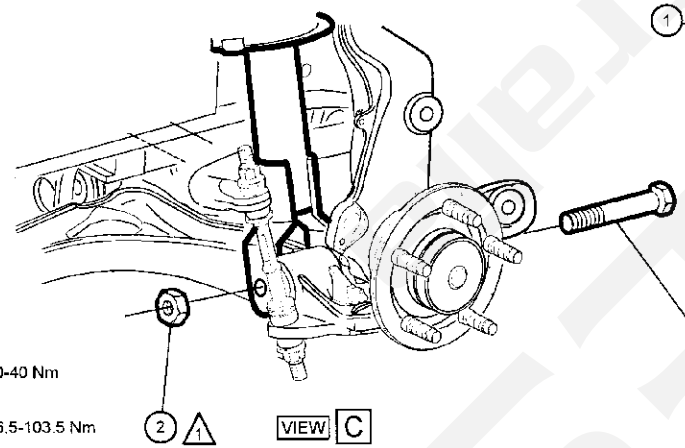


VIEW B

NOTE : WHERE SHOWN THUS
FINISH WITH ITEMS 16 & 17



DETAIL A



VIEW C

3 30-40 Nm

2 76.5-103.5 Nm

1 68-92 Nm

Koni Front Suspension (TL50)

SUSPENSION COMPONENT SUMMARY

Component	TE50	TS50/TE50 OPTION	TL50	XR8 PURSUIT 250 UTE
Suspension	XR8 sports suspension	Koni hydraulic dampers 23.5 mm front stabiliser bar (ILO 24 mm) Standard rear bar	Koni hydraulic dampers 23.5 mm front stabiliser bar (ILO 24 mm) Standard rear bar	Dampers: Monroe - standard XR
Springs		Linear front springs-softer Variable rate rear springs	Linear front springs-softer Variable rate rear springs	Same rate as XR but lower: -15mm front -30mm rear
Alignment adjustment	same as TS50	Front - camber caster kit Rear - camber bolt	Front - camber caster kit Rear - camber bolt	Front - camber caster kit
Steering	XR8	Fairmnt/Ghia strg. rack	Fairmnt/Ghia strg. rack	XR8

FRONT WHEEL ALIGNMENT

Front	TE 50 (Standard Suspension)	TE50, TS50 & TL50 (Koni Suspension)	XR8 Pursuit 250 Ute	Maximum variation
Caster	7.3° ± 0.5°	7.3° ± 0.5°	6.4° ± 0.5°	0.7°
Camber	-0.25° ± 0.3°	-0.25° ± 0.3°	-0.4° ± 0.3°	0.7°
Toe	2.0mm ± 1.0mm	2.0mm ± 1.0mm	+2.0mm ± 1.0mm	-
KPI	9.5°	9.5°	9.5°	-
Fender opening	367 mm	360 mm	360 mm	-

REAR WHEEL ALIGNMENT

RearTE	50 (Standard Suspension)	TE (Koni Suspension)	50	& variation
Camber	-0.75° ± 0.25°	-0.75° ± 0.25°	-1.25° ± 0.25°	0.7°
Toe	2.0mm ± 1.2mm	2.0mm ± 1.2mm	2.0mm ± 1.2mm	-
Fender opening	377 mm	370 mm	370 mm	-

Note: Values specified are at normal ride height and at kerb weight.

INDEPENDENT REAR SUSPENSION
(T-Series Vehicles only)

PART
3-2B

INTRODUCTION

All T-Series models feature a sports handling suspension package based on the multi link independent rear suspension (IRS).

TE50 vehicles are fitted with XR suspension as standard but may be optioned with the TS50 Koni suspension package (see below).

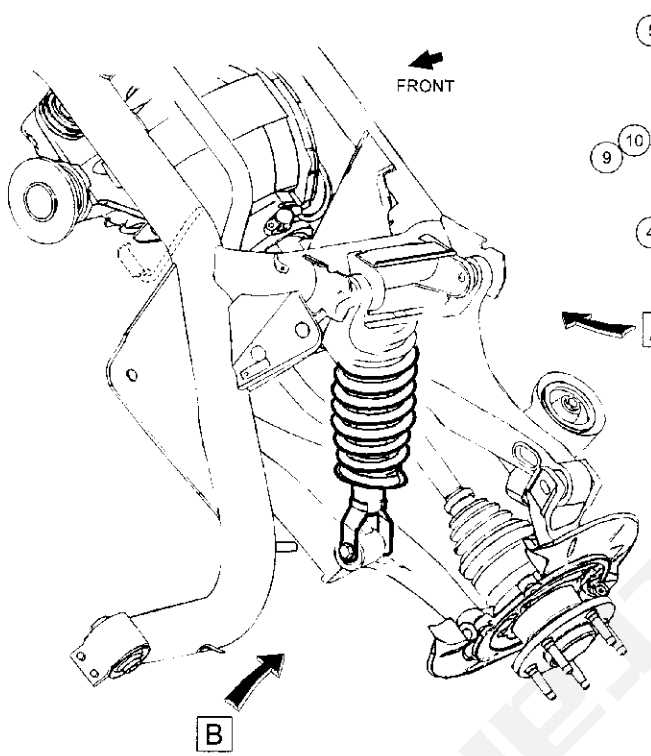
TS50 vehicles feature a special Koni suspension package consisting of Koni 82 series hydraulic dampers for significantly improved damper control. The dampers are NOT gas charged. The package also consists of lowered front and rear springs - the rear spring being variable rate. A revised front stabiliser bar complements the package.

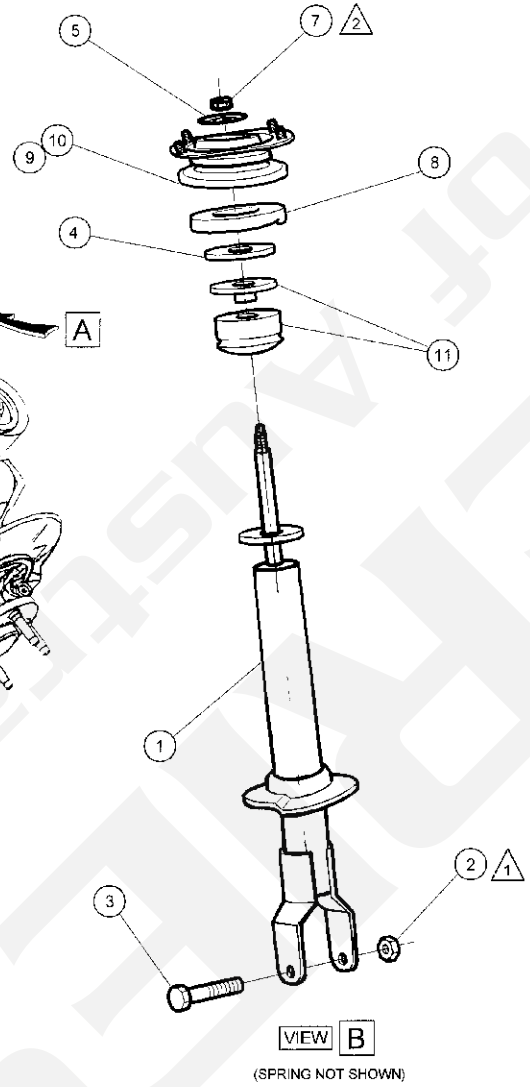
The TL50 has a modified version of the TS50 Koni suspension. It has the same front and rear springs, but with urethane spring spacers to account for the additional vehicle mass. The dampers have revised valving for a more refined/luxurious image.

Wheel Alignment

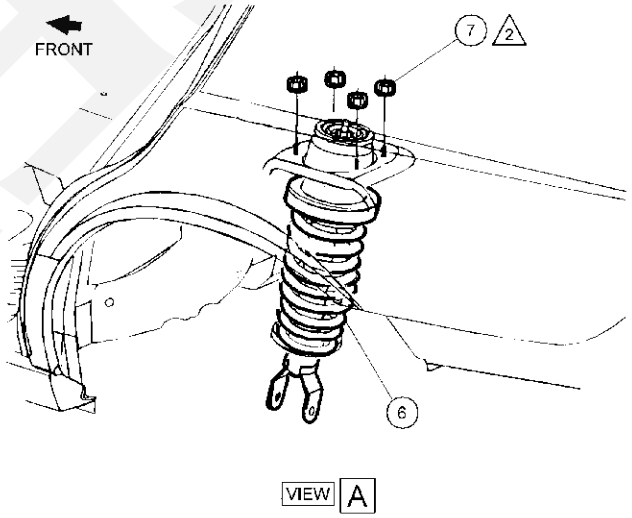
All T-Series vehicles are fitted with a front camber/caster kit. Front camber/caster and toe are adjustable. The IRS features adjustable camber and toe. The front and rear alignment specifications are unique to T-Series (refer specifications section).

T-SERIES Australia





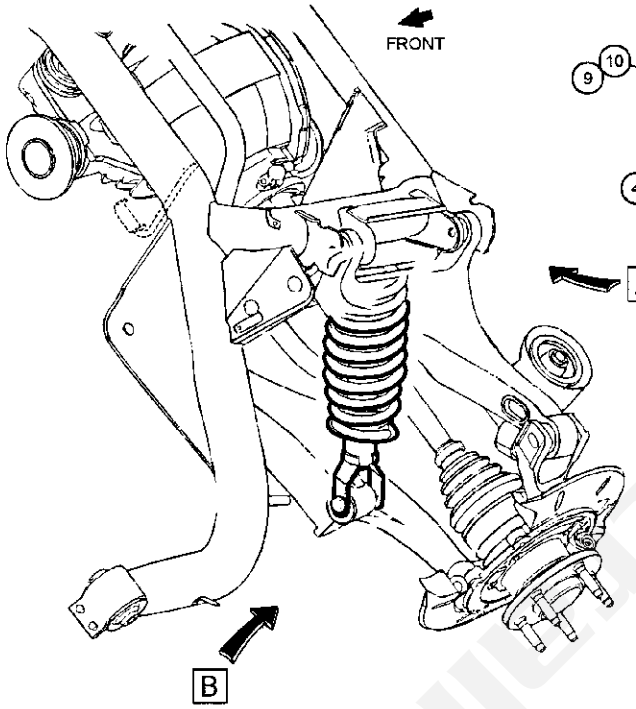
ITEM	PART NO.	PART NAME	REQ'D
1	8402 18080 AA	SHCK ABSORBER ASY RR	2
2	E620441S36D	NUT M14 HEX P/T	2
3	V800485S36D	BOLT-HEX M14-2X104 CONE PT	2
4	82DA 18039 AA	WSHR SHCK ABSORBER	2
5	WR2A 18041 AC	WASHER	RE-USE
6	8402 5534 AA	SPRING RR SUSP COIL	2
7	V820231S36D	NUT HEX FLG M10 P/T	10
8	WR2A 5536 AB	INSULATOR RR SPRING	RE-USE
9	WR2A 5T120 AD	DUAL PATH SHEAR MOUNT RH	RE-USE
10	WR2A 5T121 AD	DUAL PATH SHEAR MOUNT LH	RE-USE
11	8402 3025 AA	BMPR ASY SUSP REBOUND	2

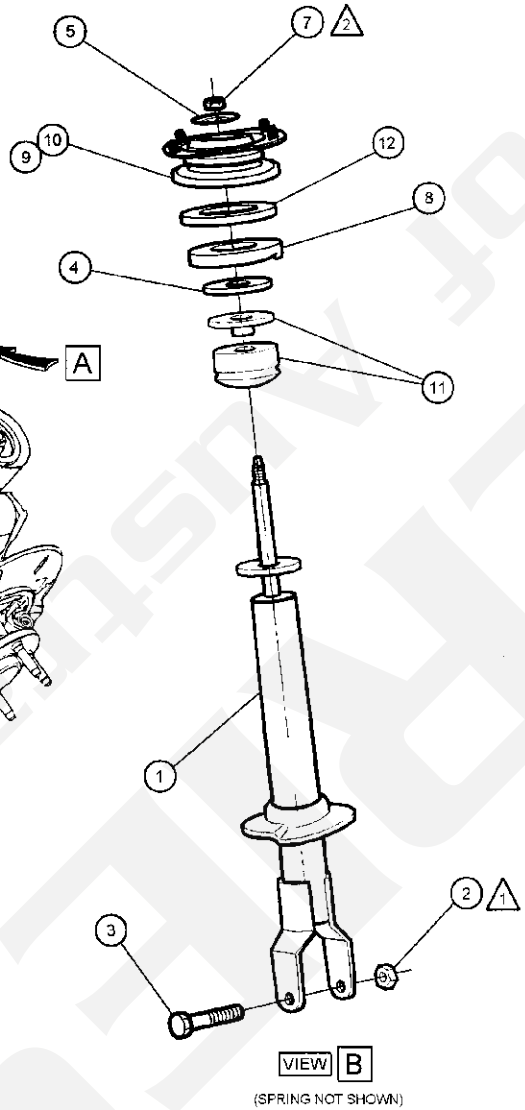


2 30-40 Nm

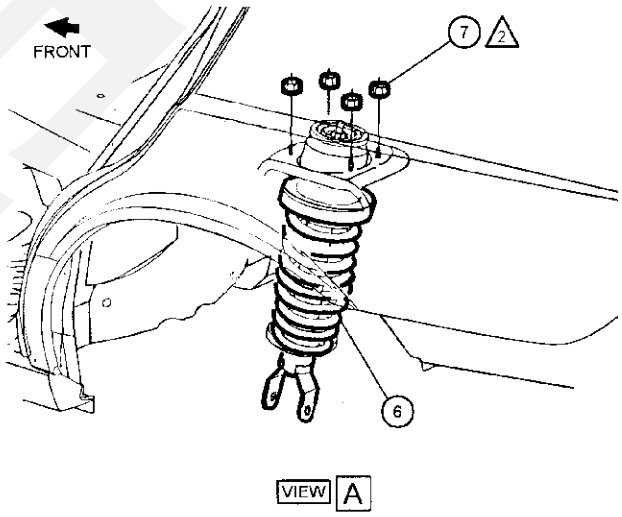
1 68-92 Nm

Koni Rear Suspension (TS50/TE Option)





ITEM	PART NO.	PART NAME	REQ'D
1	8403 18080 AA	SHCK ABSORBER ASY RR	2
2	E620441S36D	NUT M14 HEX P/T	2
3	800 SBM14001 S36D	BOLT-HEX M14-2X104 CONE PT	2
4	82DA 18039 AA	WSHR SHCK ABSORBER	2
5	WR2A 18041 AC	WASHER	RE-USE
6	8402 5534 AA	SPRING RR SUSP COIL	2
7	V820231S36D	NUT HEX FLG M10 P/T	10
8	WR2A 5536 AB	INSULATOR RR SPRING	RE-USE
9	WR2A 5T120 AD	DUAL PATH SHEAR MOUNT RH	RE-USE
10	WR2A 5T121 AD	DUAL PATH SHEAR MOUNT LH	RE-USE
11	8402 3025 AA	BMPR ASY SUSP REBOUND	2
12	8403 5598 AA	SPACER - RR SPRING	2



2 30-40 Nm

1 68-92 Nm

Koni Rear Suspension (TL50)

SUSPENSION COMPONENT SUMMARY

Component	TE50	TS50/TE50 OPTION	TL50
Suspension	XR8 sports suspension	Koni hydraulic dampers 23.5 mm front stabiliser bar (ILO 24 mm) Standard rear bar	Koni hydraulic dampers 23.5 mm front stabiliser bar (ILO 24 mm) Standard rear bar
Springs		Linear front springs-softer Variable rate rear springs	Linear front springs-softer Variable rate rear springs
Alignment adjustment	same as TS50	Front - camber caster kit Rear - camber bolt	Front - camber caster kit Rear - camber bolt
Steering	XR8	Fairmnt/Ghia strg. rack	Fairmnt/Ghia strg. rack

FRONT WHEEL ALIGNMENT

Front	TE 50 (Standard Suspension)	TE50, TS50 & TL50 (Koni Suspension)	Maximum variation
Caster	7.3° ± 0.5°	7.3° ± 0.5°	0.7°
Camber	-0.25° ± 0.3°	-0.25° ± 0.3°	0.7°
Toe	2.0mm ± 1.0mm	2.0mm ± 1.0mm	-
KPI	9.5°	9.5°	-
Fender opening	367 mm	360 mm	-

REAR WHEEL ALIGNMENT

RearTE	50 (Standard Suspension)	TE (Koni Suspension)	50	& variation
Camber	-0.75° ± 0.25°	-0.75° ± 0.25°	-1.25° ± 0.25°	0.7°
Toe	2.0mm ± 1.2mm	2.0mm ± 1.2mm	2.0mm ± 1.2mm	-
Fender opening	377 mm	370 mm	370 mm	-

Note: Values specified are at normal ride height and at kerb weight.

WHEELS, TYRES AND FRONT HUBS

PART 3-7

WHEELS AND TYRES

TE50

ROH Azzurro style 18" X 8" alloy wheel with 245/40ZR18 Dunlop SP Sport 9000 directional tyres. The wheels are of reverse mount design. All wheels have +36.5mm offset (as per standard Falcon).

TS50 and TL50

Unique design 5 spoke 18" X 8" alloy wheel with 245/40ZR18 Dunlop SP Sport 9000 directional tyres. The front wheels have standard Falcon offset of +36.5mm. The rear wheels have +28.5mm offset to increase the rear track by 16mm.

CAUTION: The rear wheels **MUST NOT** be fitted to the front axle.

XR8 Pursuit 250 Ute

Unique design 5 spoke 18" X 8" alloy wheel with 245/40ZR18 Dunlop SP Sport 9000 directional tyres. All wheels have +36.5mm offset (as per standard Falcon).

SPARE WHEEL

TE50 and XR8 Pursuit 250 Ute

The spare wheel is a full size matching alloy wheel. The tyre is mounted to the wheel as a left hand assembly. The spare may be fitted to the vehicle in the reverse direction, but should be corrected as soon as possible.

TS50 & TL50

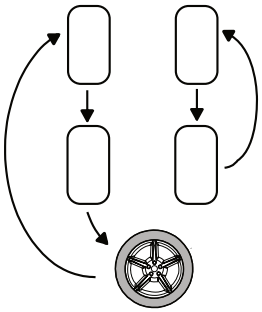
The spare wheel supplied with these vehicles is the same offset as those fitted to the front axle. It may be used on the front or rear axle, but the standard wheel and tyre should be repaired and replaced as soon as possible.

TYRE ROTATION

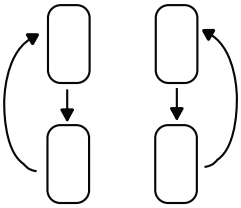
TE50 and XR8 Pursuit 250 Ute

Tyre rotation should be performed every service interval as detailed in the service schedule. The following sequence should be used:

TE50 and XR8 Pursuit 250 Ute (Option 1)



XR8 Pursuit 250 Ute (Option 2)



TS50 & TL50

The rear wheels fitted to TS50 and TL50 vehicles have a different offset to the front wheels and **MUST NOT** be fitted to the front axle. Consequently, tyre rotation must be performed by removing the tyres from the rims. The TE50 sequence above then applies to the TYRES alone.

Balancing

All T-Series and XR8 Pursuit 250 Ute wheel and tyre assemblies should be balanced using stick-on wheel weights only.

Locking Wheel Nuts

Locking wheel nuts are fitted to all T-Series and XR8 Pursuit 250 Ute vehicles. Do not use impact tools to install the locking wheel nuts. The locking wheel nuts should be installed using hand tools and torqued to 100-145 Nm.

Wheel Nuts

TS50 and TL50 vehicles have longer wheel nuts fitted to the rear wheels to compensate for the reduced offset. For aesthetic reasons only, the front and rear wheel nuts should not be interchanged.

Tyre Pressures

The following cold inflation pressures should be used:

Tyre pressures (cold) - kPa (psi)				
	Normal load		Maximum load	
	Front	Rear	Front	Rear
245/40ZR18	210 (30)	210 (30)	240 (35)	270 (39)

DRIVELINE - XR8 PURSUIT 250 UTE

PART 5-1

DESCRIPTION AND OPERATION

DRIVESHAFT

The driveshaft is the means of transferring power from the engine to the differential in the rear axle and then on to the rear wheels.

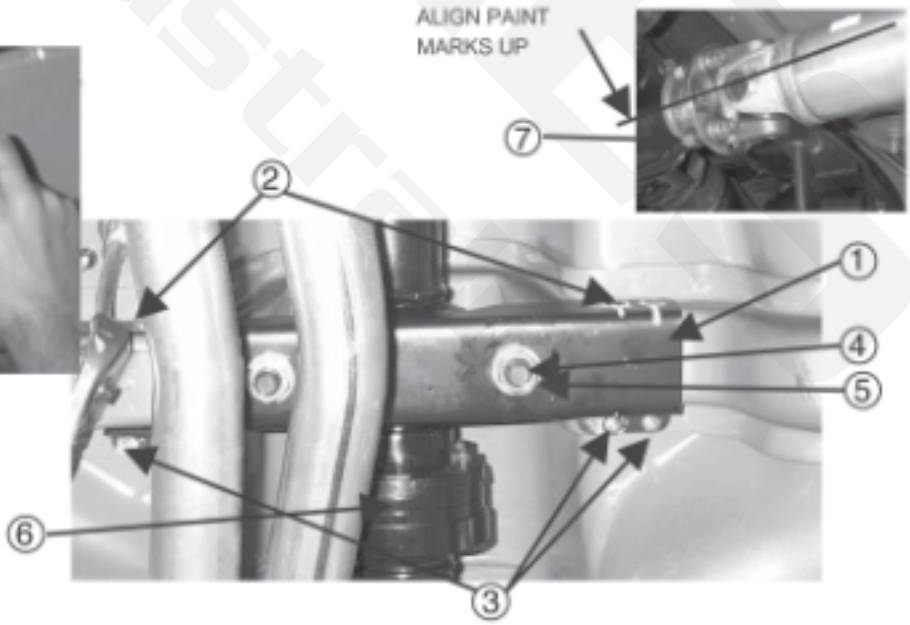
All driveshafts are balanced. It the vehicle is to be undercoated, cover the driveshaft to prevent application of the undercoating material.

2-PIECE TAIL SHAFT:

INSTALLATION

NOTE: To zero level hold calibrate button down, CAL 1 will appear then hold again for CAL 2.

1. Place the drill jig on cross member and drill through the hole. Cold gal hole.
2. Fit the bracket to the cross member with Rivet (6.4x4.8–6.8) through drilled hole.
3. Drill rear rivets holes and cold gal. Then insert rivets (6.4x4.8–6.8).
4. Use the level and zero level off the chassis rail.
5. Place level on bracket and adjust to 3.0 – 3.5 degrees up at the front.
6. Drill through front holes, apply cold gal and rivet in place with rivets (6.4x2.8-4.8).
7. Align yellow paint mark on front flange with mark on out put shaft of auto.
8. Place two-piece auto drive shaft over bracket and into trans.
9. Place a washer (M16x2.0) under each side of centre bearing bracket and fit bolt (M16x30) and nut (8.8) through brackets. Measure angle of front shaft and use washers to obtain an angle of 3.0 – 3.5 degrees. Place a washer (M16x2.0) and nut with Loctite onto bolt. Tighten.
10. Align yellow paint mark on rear flange with mark on shaft. Reuse hardware; add Loctite and torque to 68 – 82Nm.
11. Refit exhaust with original nuts to flange.



1. Brk Assy Drive Shaft
2. Rivet 6.4 X 2.8-4.8
3. Rivet 6.4 X 4.8-6.8
4. M16 X 30 Bolt and Nut 8.8
5. Washer M16 X 2.0
6. 2 Piece Drive Shaft Auto
7. Loctite

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

AUTOMATIC TRANSMISSION	GROUP 7

PART 7-1 BTR Model 97LE Automatic Transmission

T SERIES Club of Australia

BTR MODEL 97LE AUTOMATIC TRANSMISSION

PART 7-1

General description

The T Series and XR8 Pursuit 250 Ute 97LE transmission is similar in most aspects to the AU Falcon 97LE unit with the exception of various internal upgrades including:

- Improved lubrication in planetary gearset
- Unique pump cover to increase line pressure, maintains better control of fluid during shifting, providing sharper shifts.
- Valve body changes improve engine braking (ESS models only) and sharper response without harshness.
- Improved torque capacity, revised h/duty friction material on front band
- Improved durability

Electronic Sport Shift

All TS50 & TL50 automatic transmissions are equipped with Electronic Sport Shift (ESS). A Mode switch in the console allows the driver to switch between ESS and normal Adaptive mode.

ESS Shift Buttons

Buttons mounted in the steering wheel are used to upshift, downshift and apply torque converter lock-up in ESS mode.

Large upper buttons for upshift and converter lockup, smaller buttons for down shifts.

To accommodate these controls with existing clockspring, audio controls have been deleted from the steering wheel on automatic versions.

Automatic Transmission Modes

The modes of operation are:

- Adaptive Shift Strategy
  - Maximum performance mode
  - Maximum economy mode
  - ADP
- Electronic Sport Shift (ESS)

Mode Switch

With the engine running and selector in Drive, press the switch to toggle the automatic transmission shift mode between Adaptive Shift Strategy and Electronic Sport Shift. Adaptive Shift Strategy is always the default mode when starting the engine, ESS must always be selected whilst in Drive.

1. Adaptive Shift Strategy Mode (ADP)

The PCM continuously monitors the driver's accelerator inputs, determines the driving style being used and modifies the gearshift feel and speeds to suit that style. ADP can choose from 5 shift maps depending on driver characteristics.

Cluster LCD display

In adaptive mode, the instrument cluster indicates the position of the gear selector (PRND321).

The cluster will also display the mode of operation; ADP, PEF, ECO or ESS (TS50 & TL50) or flash ECO (TE50 and XR8 Pursuit 250 Ute).

ADP sub-modes:

There are two sub-modes of ADP operation:

- Maximum Performance Mode
- Maximum Economy Mode

Selecting ADP sub-modes (TS50 & TL50)

1. Stop the vehicle, apply Park Brake and turn Ignition Off
2. Apply Foot Brake and move gear selector to:
   - "1" for Maximum Performance Mode
   - "2" for Maximum Economy Mode
   - "3" for Adaptive Shift Strategy
3. Turn the ignition On and wait for the air bag warning light to turn off
4. Move the selector to "R" and wait for the segment on the cluster to confirm the mode selected:
   PEF - Maximum Performance Mode
   ECO - Maximum Economy Mode
   ADP - Adaptive Shift Strategy
5. Return gear selector to "P" and start the engine.
6. Programmed modes will remain unless the EEC is reprogrammed by the above procedure or the vehicle battery power is removed.
   Default mode after battery reconnection is ADP.

Selecting ADP sub-modes (TE50 and XR8 Pursuit 250 Ute)

1. Stop the vehicle, apply Park Brake and turn Ignition to off (0)
2. Apply Foot Brake and move gear selector to:
- "1" for Maximum Performance Mode
- "2" for Maximum Economy Mode
- "3" for Adaptive Shift Strategy
3. Turn the ignition key to on (II) and wait for the air bag warning light to turn off.
4. Move the gear selector to "R" (reverse). The "ECON" light will flash three times to indicate a successful mode change.
5. Return the gear selector to "P" (Park) and start the engine. Observe the operation of the "ECON" light to confirm the programming of the correct mode.

- One flash after turning the key to "on" (II) - indicates Maximum Performance mode is selected.
- Continuous illumination - indicates Maximum Economy mode is selected.
- No illumination - indicates Adaptive Shift mode is selected.

ECON

6. Programmed modes will remain unless the EEC is reprogrammed by the above procedure or the vehicle battery power is removed.

2. Electronic Sport Shift Mode (ESS) (TS50 & TL50)

In ESS mode, switches on the steering wheel allow sequential up and down shifting between forward gears and torque converter lock-up.

The transmission will automatically over-ride driver demand and up-shift at 5800 rpm in all gears. When decelerating, the transmission will again over-ride and down-shift automatically through the gears down to first gear.

If the T bar is moved to 3, 2 or 1 whilst in ESS mode, the maximum gear state available will be limited by the position of the T bar.

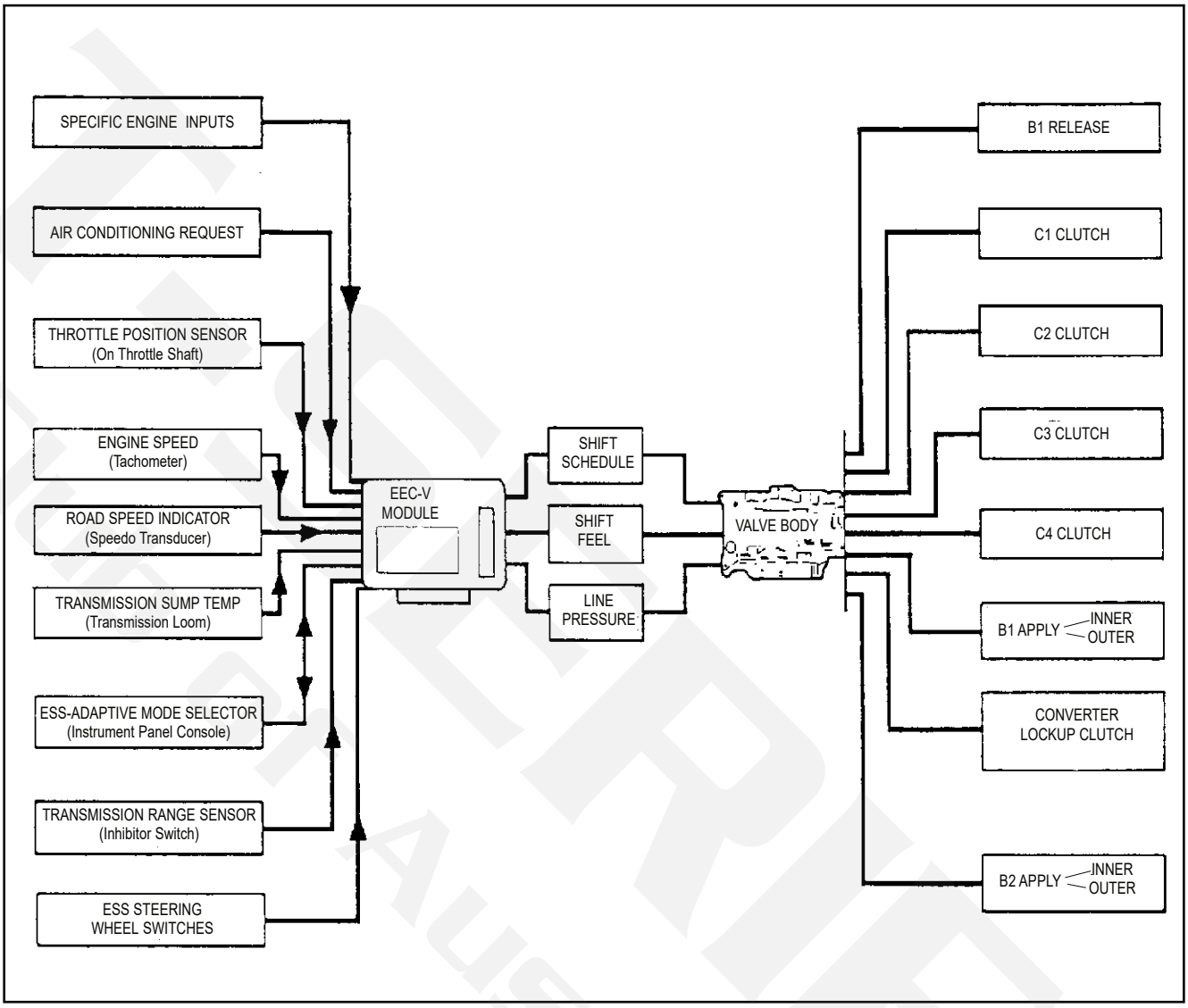
In ESS mode, the transmission **state** is displayed in the cluster to indicate the following conditions:

"P" - Park
"R" - Reverse
"N" - Neutral
"1" - 1st gear selected
"2" - 2nd gear selected
"3" - 3rd gear selected
"4" - 4th gear selected
"5" - Torque converter lock-up - 4th gear

Selecting ESS Mode (TS50 & TL50)

1. Press mode selector switch
2. Vehicle must be in Drive, and may be moving
3. Instrument cluster will display "ESS"
4. Pressing either upper button causes an up-shift
5. Pressing either lower button causes a down-shift
6. The T bar must be used to select between Park, Reverse and Neutral.
7. To return to ADP mode, (default), press the Mode switch or turn the Ignition Off.

ESS inhibited shift speeds - km/h			
Minimum inhibited upshift speed		Maximum inhibited downshift speed	
1 - 2	14	5 - 4	No limit
2 - 3	22	4 - 3	150
3 - 4	38	3 - 2	102
4 - 5	75	2 - 1	66



Transmission Management System - 97LE

ESS wiring circuit

Changes to the wiring to accommodate ESS is in two parts. These are:

1. Wires and a resistor contained within the steering wheel to connect the shift button switches to the clockspring (former radio switch circuits).
2. A new harness runs from 4 pin plug at steering column to the PCM via the Mode switch.

This circuit contains three resistors, two are cable tied to the loom behind the glovebox. These can only physically fit one way, otherwise the transmission won't shift. The 8k ohm is located behind the driver's air bag.

PCM PIN FUNCTION

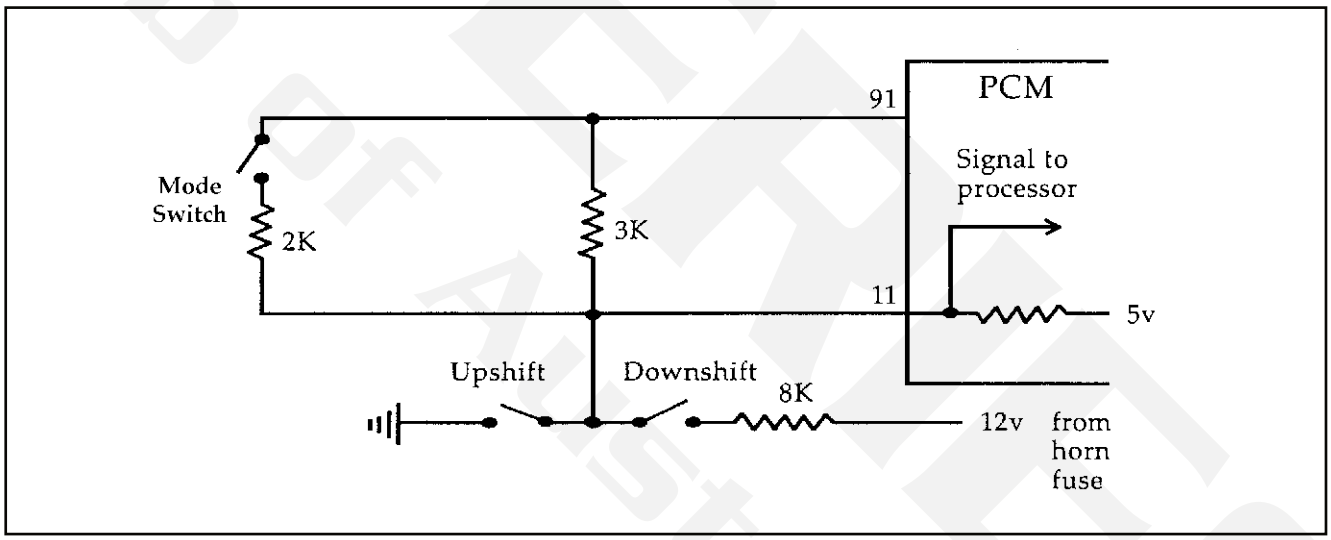
ESS switching input

The function of PCM pin 11 has changed from being the Power/Economy switch input to become the ESS switching input. Pin 91, is Signal Return.

Circuit operation

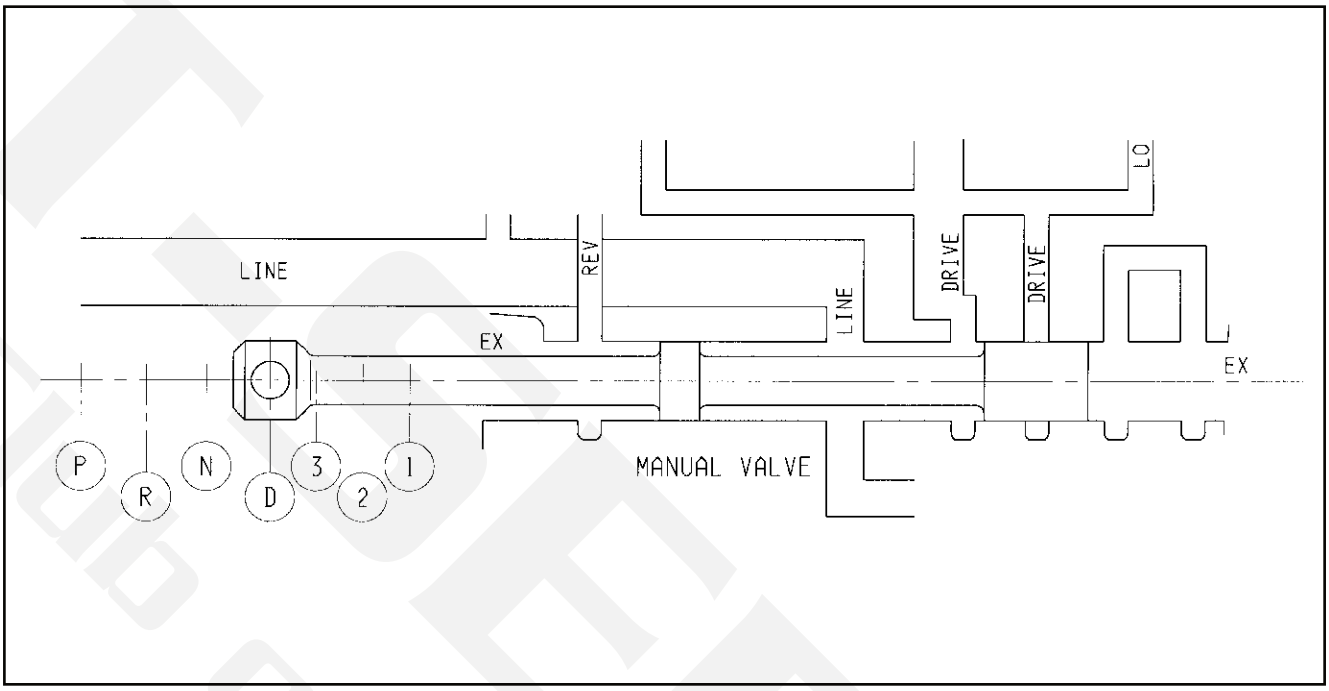
V Ref (5v) is applied internally within the PCM to pin 11, through a current limiting resistor. A signal voltage will be created by the external circuit depending on the status of the individual switches.

There are four different voltage conditions that the PCM will recognise as a particular shift or mode request.



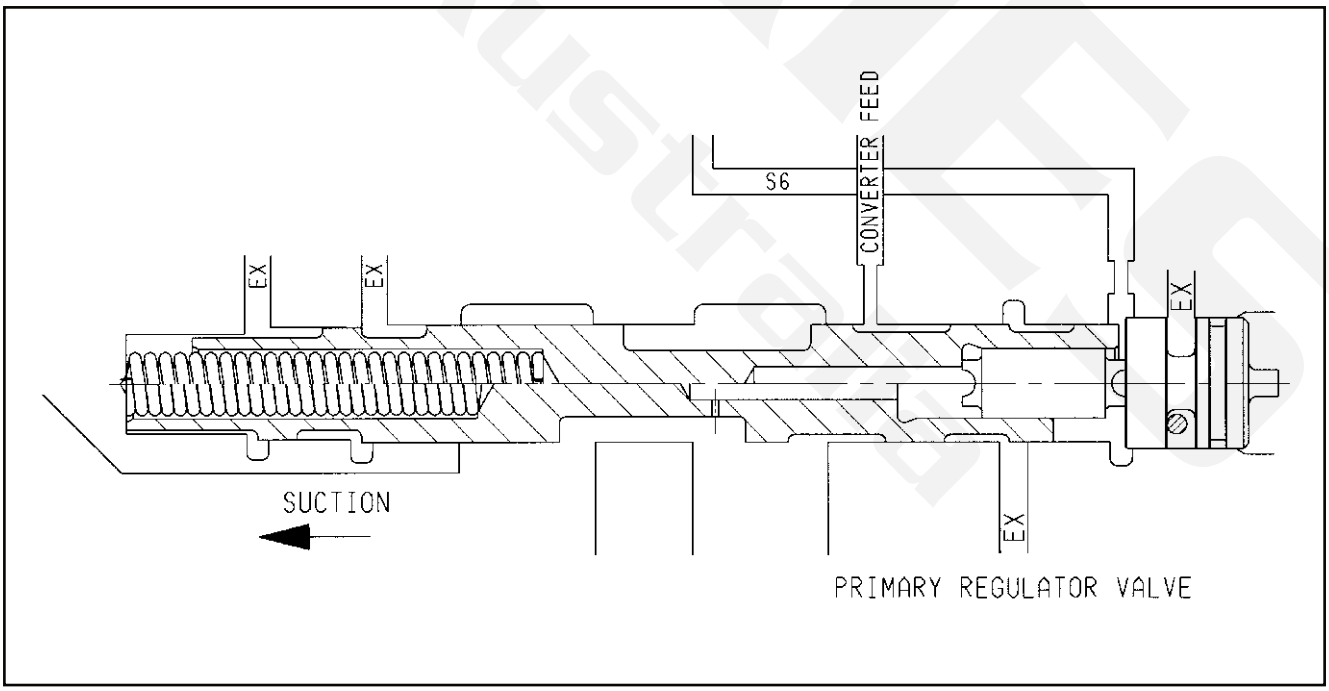
ESS PCM pin voltages (approximate)				
ECU pin #	Ignition On	Mode switch pressed	Upshift button pressed	Downshift button pressed
11 ESS	3.8	2.8	0	4.5
91 Sig. Ret.	0	0	0	0

HYDRAULIC VALVES -



Manual Valve

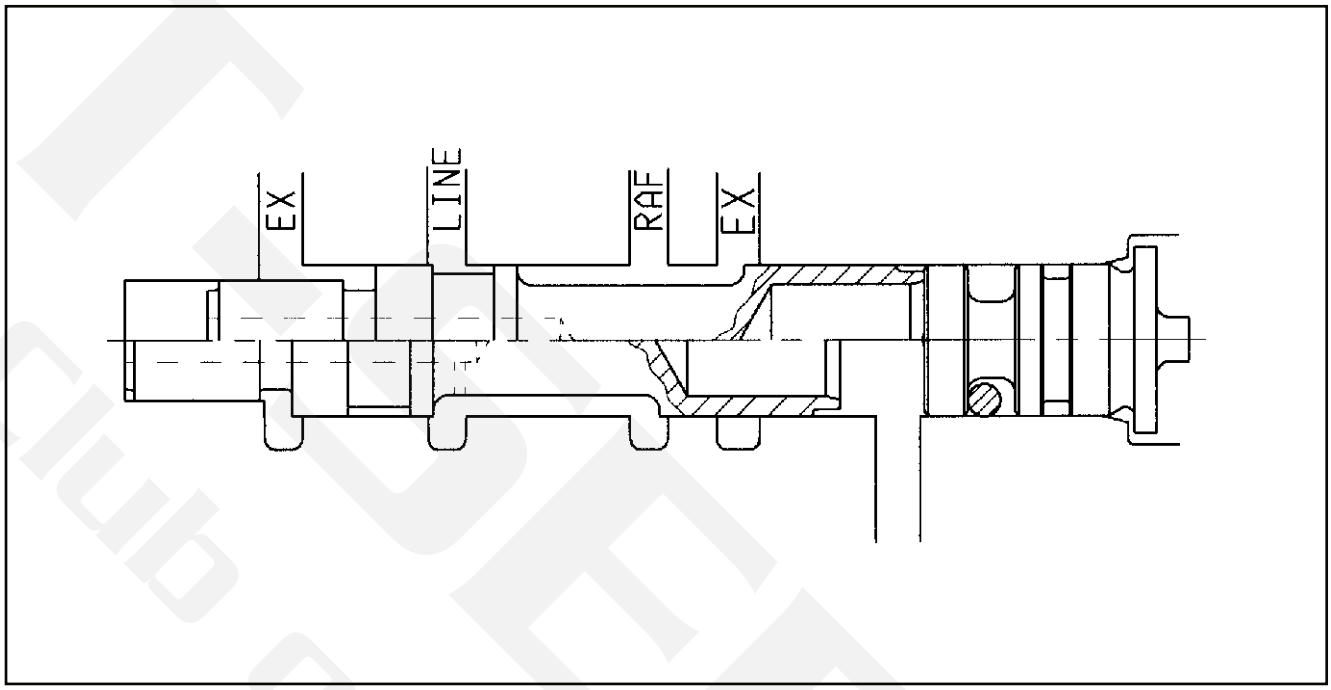
The T Series and XR8 Pursuit 250 Ute valve body tracking has been modified so that drive oil is fed to the LO track when the T Bar is in D, M3, M2 and M1. This enables engine braking in ESS 1st gear.



Primary Regulator Valve

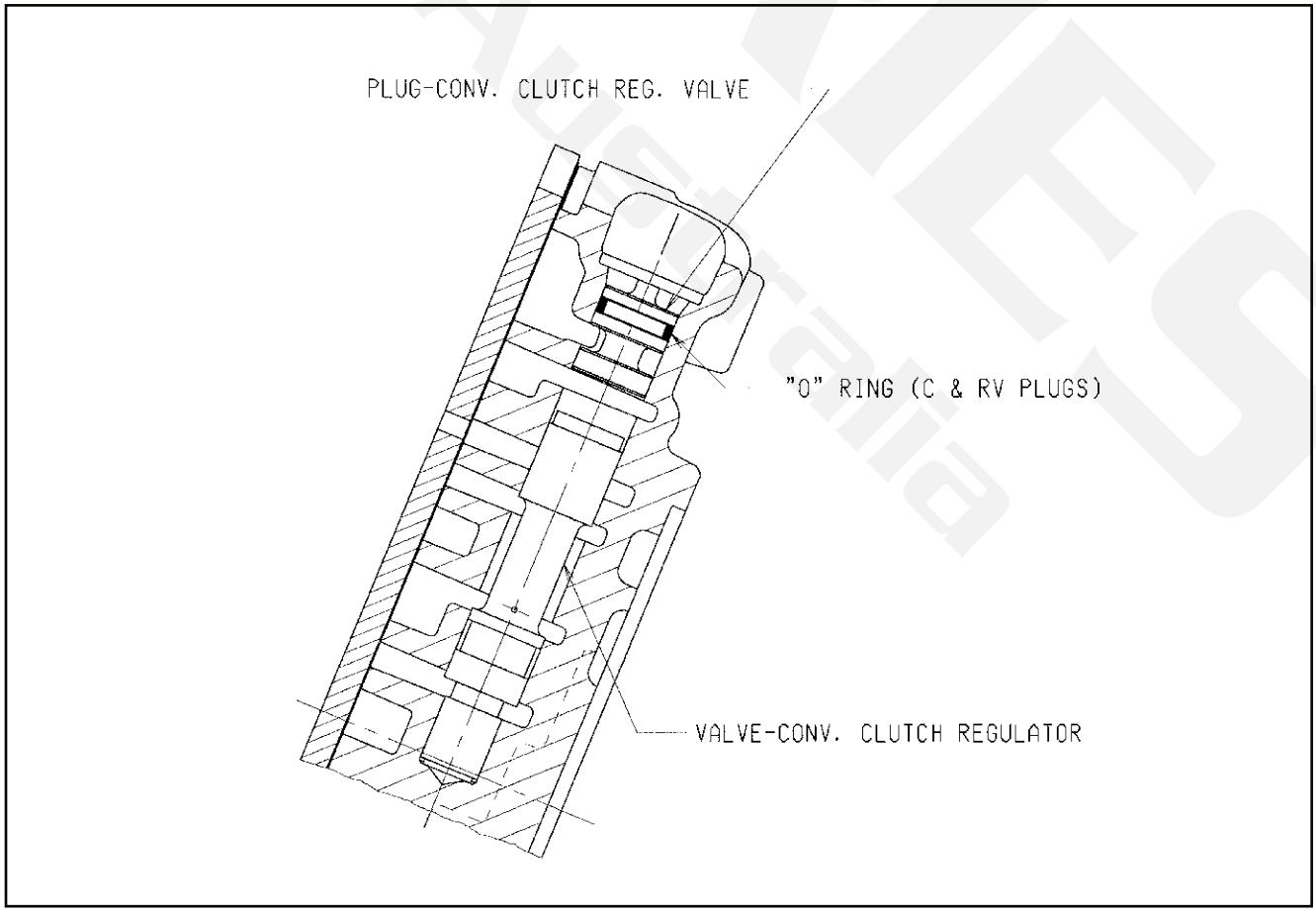
Line pressure is not boosted in reverse in the T Series and XR8 Pursuit 250 Ute transmission

HYDRAULIC VALVES -



Converter Clutch Regulator Valve

This valve regulates the pressure of the oil supplied to the converter clutch. The input oil to this valve is from the line pressure circuit and the output is variable according to the 1.65x signal pressure from the S5 circuit.



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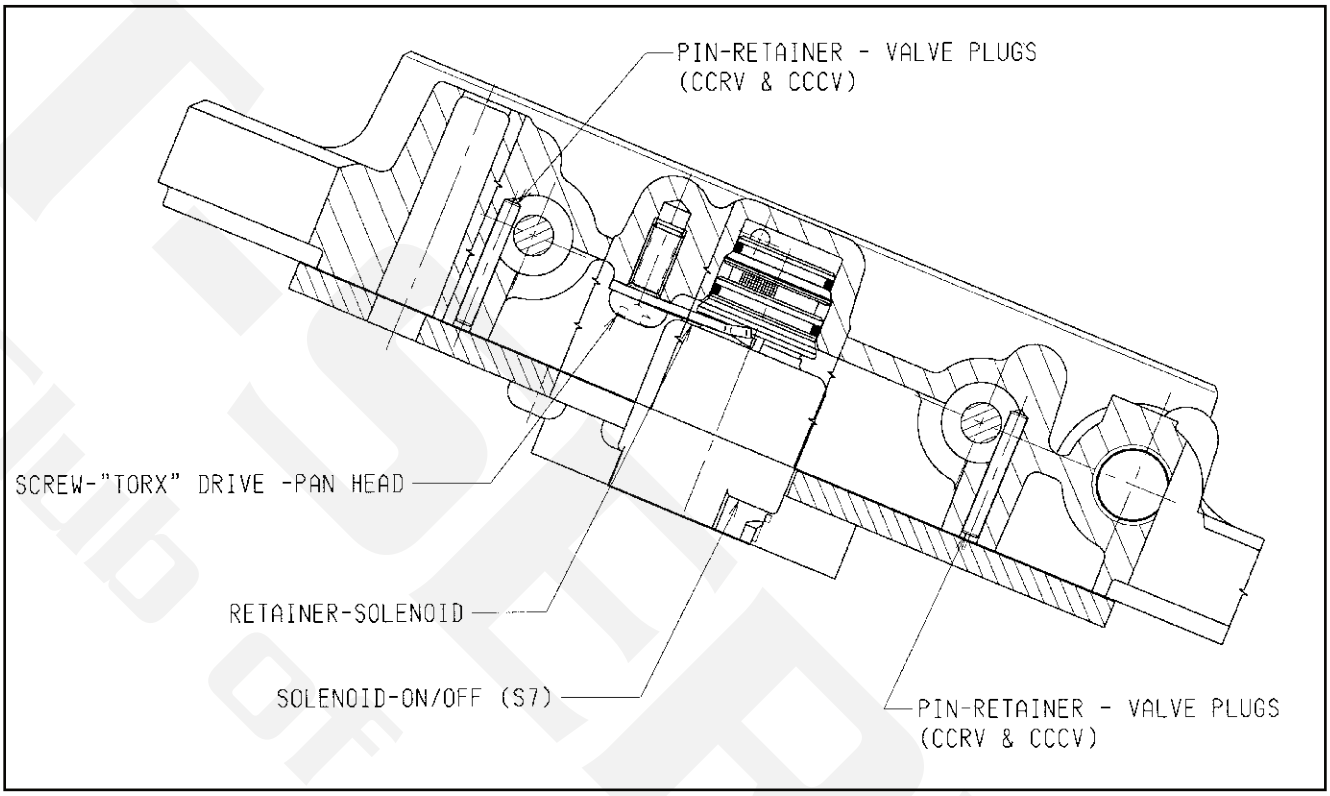
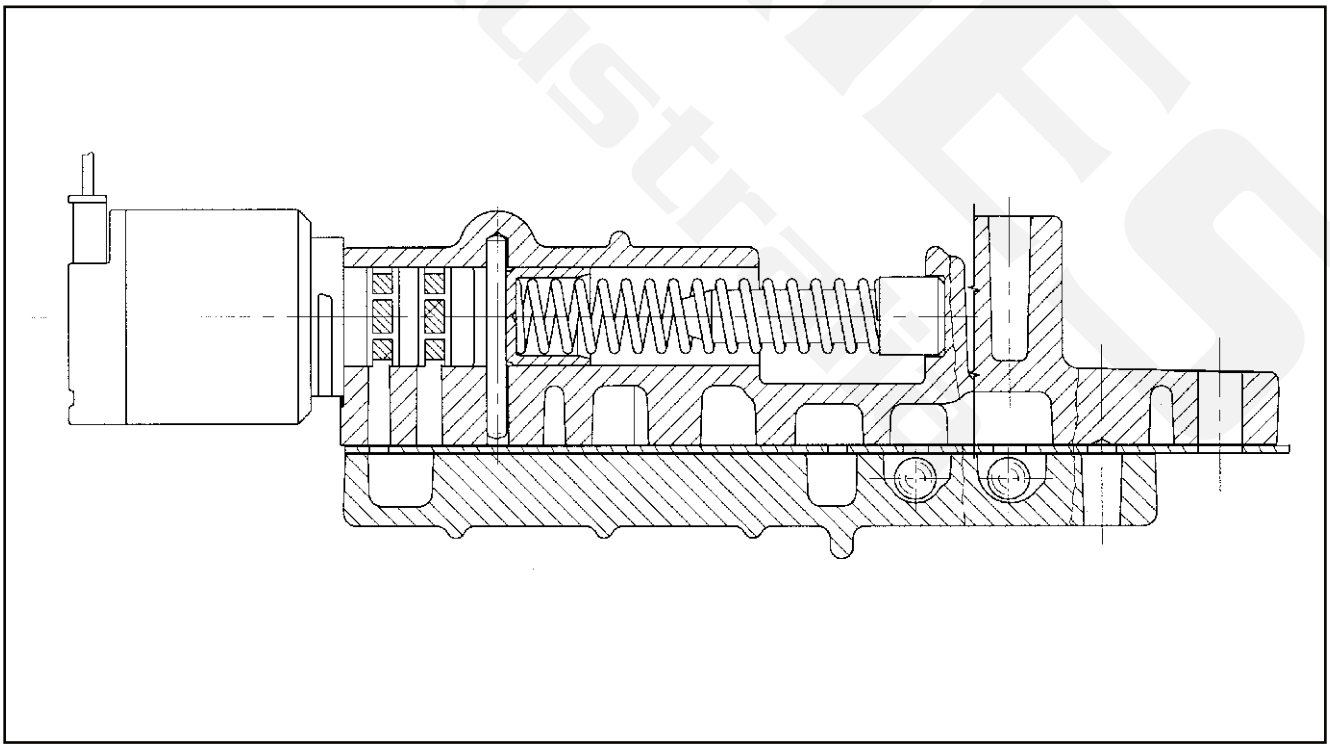


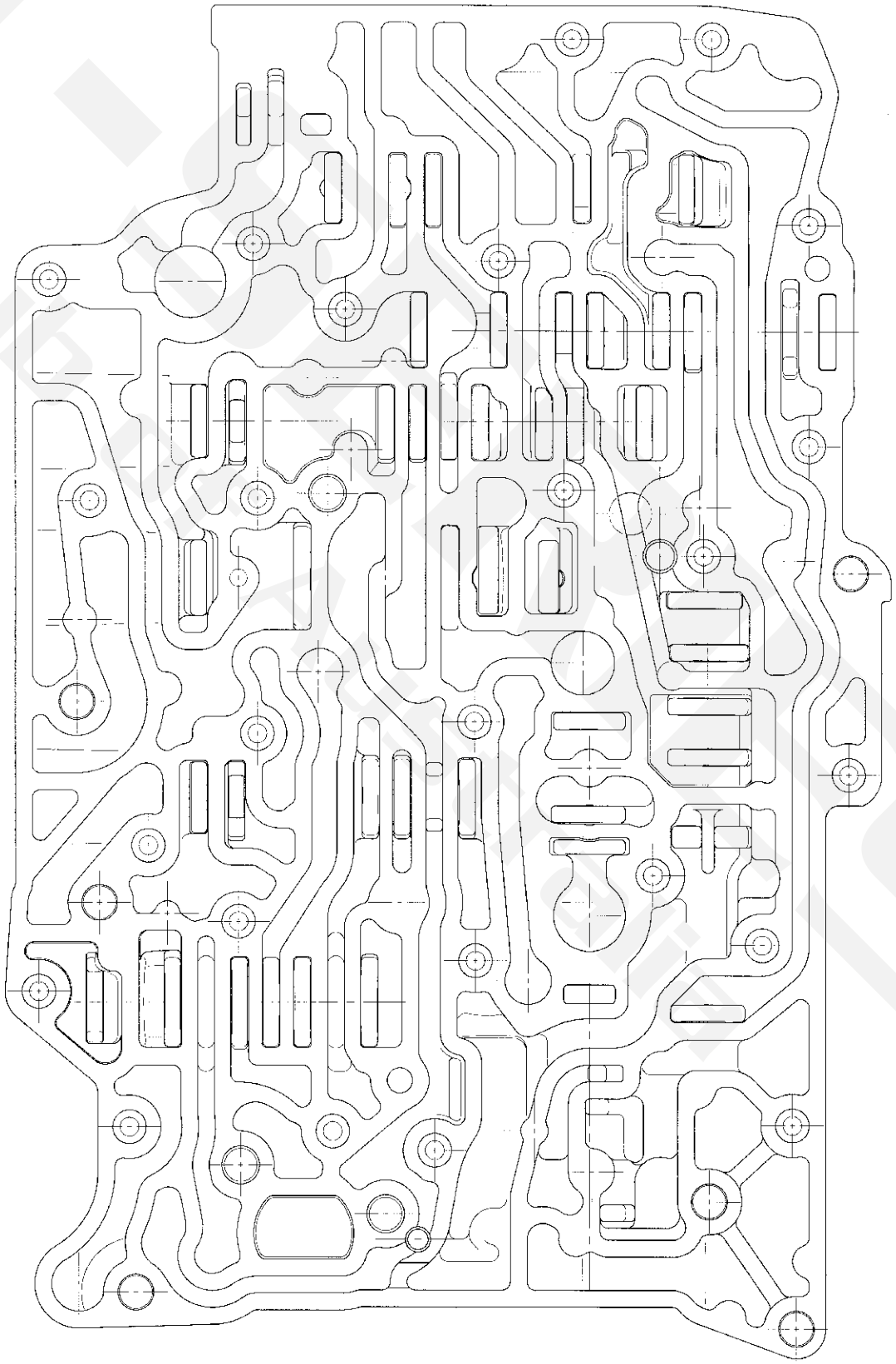
Valve retaining pins



S5 Solenoid and Damper

HYDRAULIC VALVES -

Lower Valve Body



DEFAULT TRANSMISSION OPERATING MODES

These are additional modes to the current AU 97LE program.

Throttle Fault

In ESS mode, the gear state display on the cluster may stay in 5, but gears may still be changed via steering wheel shift buttons.

Gear Lever Fault

ESS mode not available.

S7 Fault - Lock-up Converter

In ESS mode, the gear state display on the cluster may stay in 5, but gears may still be changed via steering wheel shift buttons.

ADAPTIVE MODE SHIFT POINTS - KM/H

	Maximum Economy Mode				Maximum Performance Mode			
Throttle	Shift				Shift			
opening	1/2	2/3	3/4	LU	1/2	2/3	3/4	LU
0%	15	23	38	70	15	32	39	78
40%	28	54	78	102	45	78	108	125
100% (WOT)	60	108	150	160	80	132	185	205

SPEEDO GEAR COMBINATIONS

Engine	Trans	Axle ratio	Driving gear no. of teeth	Driving gear no. of teeth	Gear colour
All T Series	Auto	3.45 :1	8	22	Grey

Manual Table of Contents

SECTION 308-00Manual Transaxle/Transmission — General Information

CONTENTS PAGE

TSERIES Club of Australia

DIAGNOSIS AND TESTING

Manual Transmission and Clutch

Inspection and Verification

It is important to get an accurate description of the concern before any diagnosis can be carried out. Ask questions as to whether it occurs when hot or cold, during shifting, driving at a particular speed or in a particular gear. If possible, have the customer demonstrate the concern.

- With the vehicle at a complete stop, shift through all the gears and evaluate the noise at different engine rpm. Check for any noises in NEUTRAL at different engine rpm.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• Hard Shifting	• Manual transmission concern. • Loose pressure plate to flywheel bolts.	• GO to Pinpoint Test F.
• Excessive Noise	• Pilot bearing worn or damaged. • Excessive crankshaft end play.	• GO to Pinpoint Test G.
• TransmissionDifficult to Shift	• Lubricant.	• ADD or DRAIN AND FILL with specified lubricant.
	• Internal shift mechanism.	• CHECK the internal shift mechanism for smooth operation. REPAIR or INSTALL a new mechanism as necessary.
	• Sliding gears, synchronizers.	• CHECK for free movement of gears and synchronizers. REPAIR or INSTALL new components as necessary.
	• Housings, shaft.	• CHECK for binding condition between the input shaft and the engine crankshaft pilot bearing or bushing. REPAIR or INSTALL new components as necessary. For additional information, REFER to Section 308-03A.
	• Loose pressure plate to flywheel bolts.	• CHECK for loose bolts at the pressureplate. INSTALL new components as necessary. For additional information, REFER to Section 308-01.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart (Continued)

Condition	Possible Sources	Action
• **NOTE:** While verifying the condition, determine whether the noise is gear rollover noise, release bearing rub or some other transmission-related noise. Gear rollover noise, inherent in manual transmissions, is caused by the constant mesh gears turning at the engine idle speed while the clutch is engaged and the transmission is in NEUTRAL. Release bearing rub is sometimes mistaken for mainshaft bearing noise. Gear rollover noise will disappear when the clutch is disengaged or when the transmission is engaged in gear. Release bearing rub will disappear when the clutch is engaged. In the event that a bearing is damaged, the noise is more pronounced while engaged in gear under load or coast than in NEUTRAL. Noisy in Forward Gears	• Lubricant.	• ADD or DRAIN AND FILL with specified lubricant.
	• Components grounding out on the transmission.	• CHECK for screws, bolts, etc., of body or other components grounding out. CORRECT as necessary.
	• Components housing bolts.	• CHECK the torque on the transmission-to-flywheel housing bolts and the flywheel housing-to-engine block bolts. TIGHTEN the bolts to specification. For additional information, REFER to Section 308-01.
	• Bearings or gears.	• INSPECT the bearings. INSPECT the gears and gear teeth for wear or damage. INSTALL new components as necessary. For additional information, REFER to Section 308-01.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart (Continued)

Condition	Possible Sources	Action
• Gears Clash When Shifting From One Forward Gear to Another	• Pilot bearing.	• CHECK for a binding condition between the input shaft and the engine crankshaft pilot bearing. INSTALL new components as necessary. For additional information, REFER to Section 308-01.
	• Gear teeth and/or synchronizer.	• REPAIR or INSTALL new components as necessary. For additional information, REFER to Section 308-03A.
	• Engine idle speed too high.	• REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual [1].
• Transmission Jumps Out of Gear	• Transmission range selector lever boot.	• INSTALL a new boot if exceptionally stiff. For additional information, REFER to Section 308-03A.
	• Transmission-to-engine mounting bolts.	• TIGHTEN the bolts to specification.
	• Crankshaft pilot bearing.	• INSTALL a new bearing.
	• Internal damage.	• INSPECT the synchronizer sleeves for free movement on their hubs. INSPECT the synchronizer blocking rings for widened index slots, rounded clutch teeth and smooth internal surface. CHECK countershaft cluster gear for excessive end play. CHECK shift forks for worn or loose mounting on shift rails. INSPECT the synchronizer sliding sleeve and the gear clutch teeth for wear or damage. REPAIR or INSTALL a new component as necessary.
	• Gear teeth.	• If worn or damaged, INSTALL new gears. For additional information, REFER to Section 308-03A.
• Transmission Will Not Shift Into One Gear—All Others OK	• Manual shift linkage.	• REPAIR or INSTALL new components as necessary.
	• Backup switch ball.	• If REVERSE is the problem, CHECK backup switch for ball frozen in extended position.
	• Internal components.	• INSPECT the shift rail and fork system, synchronizer system and the gear clutch teeth for restricted travel. REPAIR or INSTALL new components as necessary.

1 Can be purchased as a separate item.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart (Continued)

Condition	Possible Sources	Action
• Transmission Is Locked In One Gear And Cannot Be Shifted Out Of That Gear	• Internal components.	• INSPECT the problem gears, shift rails, forks and the synchronizer for wear or damage. REPAIR as necessary. For additional information, REFER to Section 308-03A.
	• Fork on rail.	• CHECK the shift rail interlock system. For additional information, REFER to Section 308-03A.
• Transmission Leaks	• Lubricant. • Other component leaking.	• CHECK the level and type. • IDENTIFY leaking fluid as engine, power steering, or transmission fluid. REPAIR as necessary.
	• False report.	• REMOVE all traces of lube on the exposed transmission surfaces. CHECK the vent for free breathing. OPERATE the transmission and INSPECT for new leakage. REPAIR as necessary. For additional information, REFER to Section 308-03A.
	• Internal components.	• INSPECT for leaks at the input shaft bearing retainer seal and the shift rail expansion plug. For additional information, REFER to Section 308-03A. INSPECT for leaks at the top cover gasket. INSPECT the case for sand holes or cracks. REPAIR or INSTALL a new case as necessary. For additional information, REFER to Section 308-03A.
	• Fill and drain plugs.	• CHECK fill and drain plugs and bore threads. REPAIR as necessary. TIGHTEN plugs to specified torque value. For additional information, REFER to Section 308-03A.

DIAGNOSIS AND TESTING (Continued)

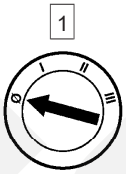
Symptom Chart (Continued)

Condition	Possible Sources	Action
• Bearing Failure	• Other part failure. • Raceways or rollers. • Lubricant. • Towing vehicle further than 80 km (50 miles) with driveshaft installed. Mainshaft tapered bearing and needle caged bearings are especially susceptible to damage.	• REMOVE, DISASSEMBLE and CLEAN the transmission. Inspect for damaged parts and install new components as necessary. (Note: RESET the bearing preload if any new tapered bearings are installed). For additional information, REFER to Section 308-03A.
	• Vibration break-up of retainer and brinelling of races. • Bearing(s). • Shafts or bore. • Overloading of vehicle. • Incorrect preload.	• DETERMINE the cause of vibration and CORRECT. Otherwise PROCEED as above.
	• Input shaft oil dam.	• Install new components as necessary and verify the oil dam installation is correct. For additional information, REFER to Section 308-03A. CHECK for correct installation of the snap ring on the mainshaft next to the oil dam.
	• Oil baffle in the input bearing shim pack.	• INSTALL a new oil baffle, making sure it is not damaged during assembly. For additional information, REFER to Section 308-03A.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Tests

PINPOINT TEST F: HARD SHIFTING

CONDITIONS	DETAILS/RESULTS/ACTIONS
F1 CHECK TRANSMISSION SHIFTING-ENGINE OFF	
	1 Depress the clutch pedal. 2 Shift the transmission. • Does the transmission shift smoothly? fi **Yes** VERIFY customer concern. RETURN to the Symptom Chart if necessary. fi **No** F2.
F2 CHECK THE TRANSMISSION FLUID LEVEL	
	1 Inspect the fluid level in the transmission. • Is the fluid level at the specified level? fi **Yes** F3. fi **No** FILL the transmission to specified level. For additional information, REFER to Section 308-03A.
F3 CHECK THE TRANSMISSION INTERNAL COMPONENTS	
	1 Visually inspect the internal transmission components for indications of excessive wear or damage. • Are there any signs of damage or wear? fi **Yes** REPAIR or INSTALL new components. REFER to Section 308-03A. fi **No** VERIFY customer concern.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: EXCESSIVE NOISE

CONDITIONS	DETAILS/RESULTS/ACTIONS
G1 TRANSMISSION NEUTRAL GEAR ROLLOVER TEST	
	1 Start the engine and let it idle with the transmission in neutral and the clutch engaged (pedal up). If noise is excessive, depress the clutch pedal to stop the transmission input shaft from rotating. • Does the noise stop when the clutch pedal is depressed? fi **Yes** INSPECT the clutch component for damage. REFER to General Procedures in this section. fi **No** **G2**.
G2 CHECK THE PILOT BEARING	
	1 Inspect the pilot bearing for damage. For additional information, REFER to Bearing. • Is the pilot bearing OK? fi **Yes** **G3**. fi **No** INSTALL a new pilot bearing. For additional information, REFER to Section 308-01.
G3 CHECK TORSION SPRINGS	
	1 Inspect the torsion springs for fatigue or breakage. • Are there any signs of fatigue or breakage? fi **Yes** INSTALL a new clutch disc. For additional information, REFER to Section 308-01. TEST the system for normal operation. fi **No** INSPECT the crankshaft end play. For additional information, REFER to Section 303-01A, Section 303-01B, or Section 303-01C.

Manual Table of Contents

SECTION 308-03B Manual Transaxle/Transmission — TR3650

CONTENTS PAGE

SPECIFICATIONS

General Specification

Item	Specification
Inspection Standards and Tolerances	
Synchronizer blocking ring to conical face runout	0.5 mm (0.02 in)
Assembly Standards	
Input shaft end play	0.0254 mm - 0.1270 mm
Countershaft cluster gear end play	0.0254 mm - 0.1270 mm
Output shaft end play	0.0254 mm - 0.1270 mm
Reverseidler gear end play	0.0200 mm - 0.1500 mm
Lubrication/Adhesive/Cleaner Specifications	
Premium Long-Life Grease XG-1-C, K or T	ESA-M1C75-B
Threadlock and Sealer E0AZ-19554-AA	WSK-M2G351-A5
Black Silicone Rubber D6AZ-19562-BA	ESB-M4G92-A
PipeSealantwithTeflon D8AZ-19554-A	ESR-M18P7-A
SyntheticMERCON MERCON transmission (ATF) TransmissionFluid E6AZ-19582-B	bolt
Lubricant Refill Capacities	
CASTROL syntrans 75W-85 Transmission Fluid *	3.8L

*** A fluid/oil meeting the exact specification may also be used.**

Torque Specifications

Description	Nm	lb-ft	lb-in
Gearshift lever to extension housing bolt	23	13	—
Gear shift lever to gear shift stub shaft bolt	37	27	—
OSS to case bolt	10	—	89
Reverse idler gear bolt	27	20	—
Fifth/reverse lockout bolt	20	15	—
Clutch housing to transmission main case bolt	31	23	—
Spacer block to transmission main case bolt	31	23	—
Drain plug	23	17	—
Reversing lamp switch	37	27	—
Fill plug	17	13	—
Transmission to engine bolt	75	55	—
Engine plate to	27	20	—
Crossmember to frame bolt	41	30	—
Crossmember to transmission support bolt	58	43	—
Driveshaft flange to pinion flange bolt	112	83	—

DESCRIPTION AND OPERATION

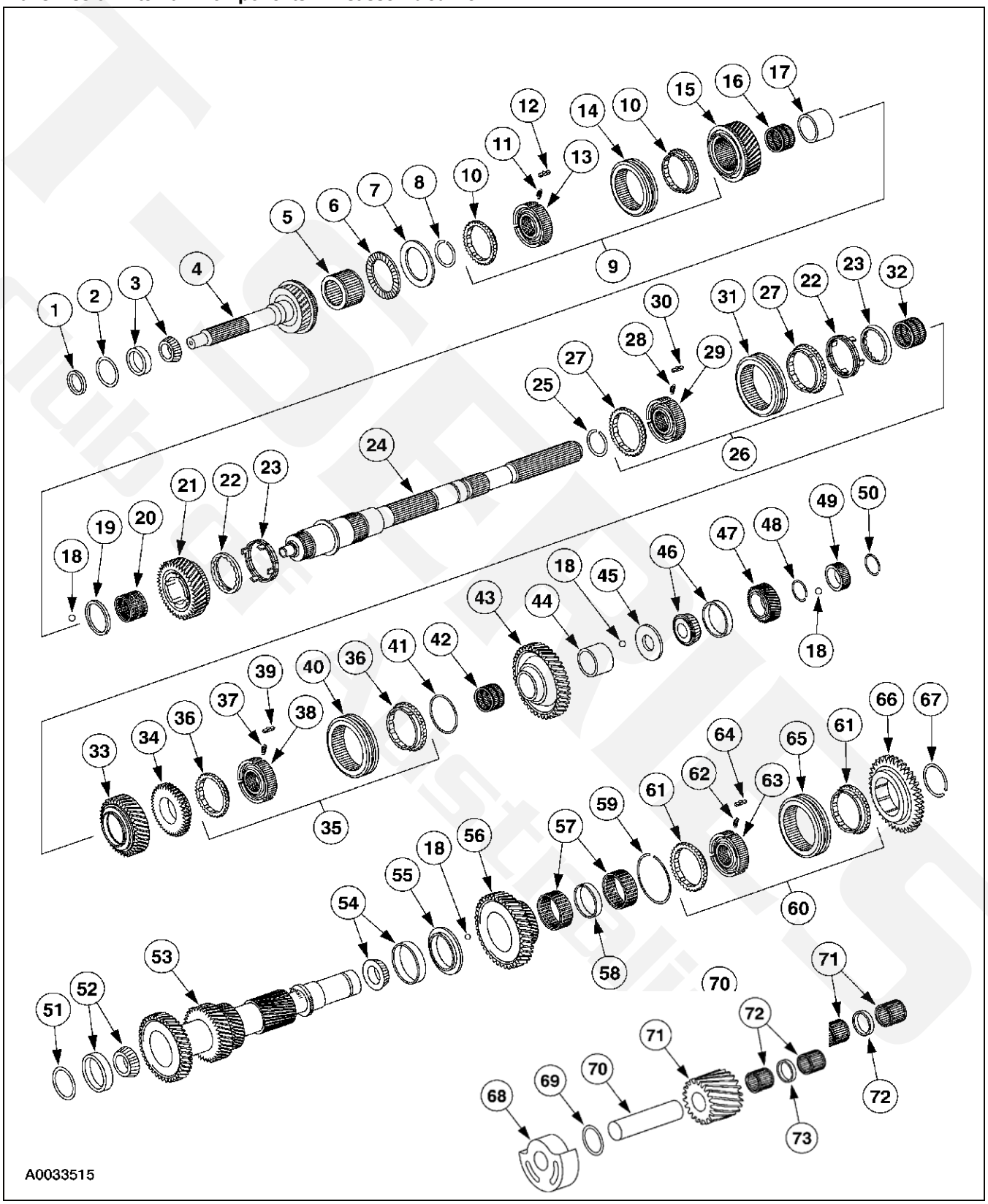
Manual Transmission

The TR3650 five-speed manual transmission features the following:

- The fifth speed gear functions as an overdrive gear.
- The forward gears are synchronized and helical cut.
- The reverse gear operates through a constant-mesh, fully synchronized system.
- The shift interlock system prevents the engagement of more than one gear.
- The countershaft is serviced as an assembly.
- An aluminum main case, extension housing and bell housing.

DESCRIPTION AND OPERATION (Continued)

Transmission Internal Components —Disassembled View



DESCRIPTION AND OPERATION (Continued)

Item	Part Number	Description
1	7052	Input shaft seal
2	7L172	Shim
3	7025	Input shaft front bearing and cup
4	7017	Input shaft
5	7025	Input shaft pocket bearing
6	—	Thrust bearing
7	—	Thrust washer
8	7064	Retaining ring
9	7124	Third/fourth gear synchronizer assembly
10	7107	Third/fourth gear synchronizer blocking ring
11	—	Third/fourth gear synchronizer spring (part of 7124)
12	—	Third/fourth gear synchronizer insert (part of 7124)
13	—	Third/fourth gear synchronizer hub (part of 7124)
14	—	Third/fourth gear synchronizer sleeve (part of 7124)
15	7B340	Third gear
16	7B369	Third gear needle bearing
17	—	Third gear bushing
18	—	Check ball
19	—	Thrust washer
20	—	Second gear needle bearing
21	7102	Second gear
22	7175	First/second gear synchronizer inner cone
23	7174	First/second gear synchronizer outer cone
24	7061	Output shaft
25	—	Retaining ring
26	7124	First/second gear synchronizer assembly
27	7107	First/second gear synchronizer blocking ring
28	—	First/second gear synchronizer spring (part of 7124)
29	—	First/second gear synchronizer hub (part of 7124)
30	—	First/second gear synchronizer insert (part of 7124)

(Continued)

Item	Part Number	Description
31	—	First/second gear synchronizer sleeve (part of 7124)
32	7127	First gear needle bearing
33	7100	First gear
34	—	Reverse clutch cone
35	7124	Reverse gear synchronizer assembly
36	7107	Reverse gear synchronizer blocking ring
37	—	Reverse gear synchronizer spring (part of 7124)
38	—	Reverse gear synchronizer hub (part of 7124)
39	—	Reverse gear synchronizer insert (part of 7124)
40	—	Reverse gear synchronizer sleeve (part of 7124)
41	—	Retaining ring
42	7N168	Reverse needle bearing
43	7C238	Reverse driven gear
44	—	Reverse gear bushing
45	—	Selector gate
46	7025	Mainshaft rear bearing and cup
47	7K316	Mainshaft fifth gear
48	—	Retaining ring
49	7H150	Output shaft speed (OSS) sensor
50	—	Retaining ring
51	7L172	Shim
52	7025	Countershaft front bearing and cup
53	7113	Countershaft
54	7025	Countershaft rear bearing and cup
55	—	Thrust bearing
56	7144	Countershaft fifth gear
57	—	Countershaft fifth gear needle bearing
58	—	Countershaft fifth gear bearing spacer
59	—	Retaining ring
60	7124	Fifth gear synchronizer assembly
61	7107	Fifth gear synchronizer blocking ring

(Continued)

DESCRIPTION AND OPERATION (Continued)

Item	Part Number	Description
62	—	Fifth gear synchronizer spring (part of 7124)
63	—	Fifth gear synchronizer hub (part of 7124)
64	—	Fifth gear synchronizer insert (part of 7124)
65	—	Fifth gear synchronizer sleeve (part of 7124)
66	—	Fifth gear clutch cone
67	—	Retaining ring
68	—	Reverse idler gear support
69		Shim
70	7140	Reverse idler gear shaft
71	7141	Reverse idler gear
72	—	Reverse idler gear needle bearing
73	—	Reverse idler gear bearing spacer

(Continued)

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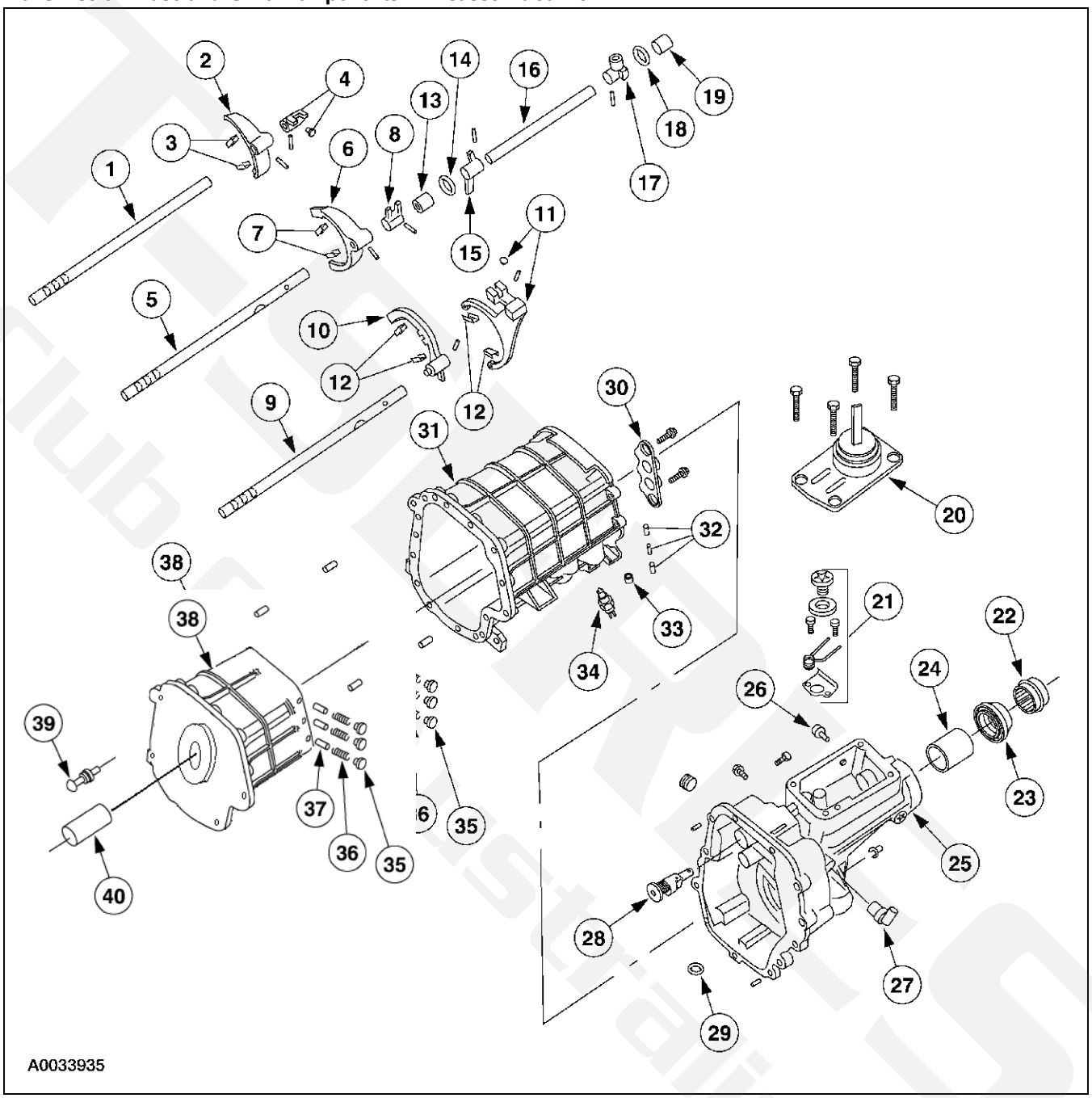
DESCRIPTION AND OPERATION (Continued)

Transmission Case and Shift Components — Disassembled View



Item	Part Number	Description
1	7358	First/second shift rail
2	7239	First/second shift fork
3	7L082	Shift fork inserts
4	—	First/second shift finger
5	7241	Third/fourth shift rail
6	7230	Third/fourth shift fork
7	7L082	Shift fork inserts
8	—	Third/fourth shift finger

(Continued)

Item	Part Number	Description
9	7242	Fifth/reverse shift rail
10	—	Reverse gear shift fork
11	—	Fifth gear shift fork
12	7L082	Shift fork inserts
13	—	Shift arm bearing
14	—	Spacer
15	—	Shift arm selector inhibitor
16	7240	Main shift rail

(Continued)

DESCRIPTION AND OPERATION (Continued)

Item	Part Number	Description
17	7F018	Gearshift offset lever
18	—	Spacer
19	—	Bearing
20	7210	Gearshift lever
21	—	Gearshift plate and spring
22	—	Shipping seal
23	7052	Output shaft seal
24	—	Extension housing bushing
25	7A039	Extension housing
26	7034	Vent
27	—	Vehicle speed sensor (VSS)
28	—	Fifth/reverse gear lockout
29	7L027	Magnet
30	7K201	Shift interlock plate
31	7005	Transmission main case
32	—	Interlock pins
33	7A010	Drain plug
34	15520	Reverse lamp switch
35	—	Detent plug
36	—	Detent spring
37	—	Detent
38		Spacer block
40		Bearing

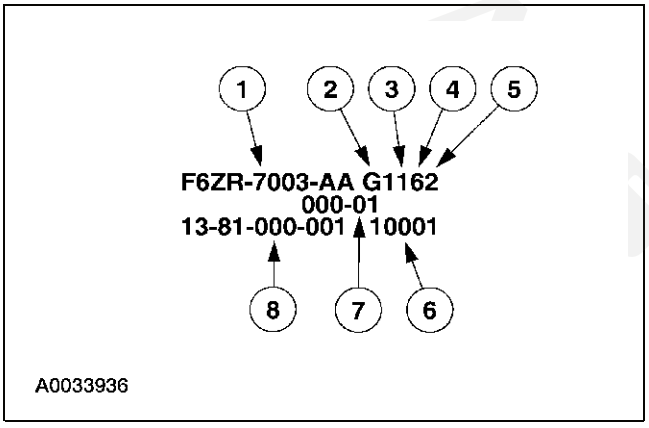
(Continued)

Transmission Identification

The transmission identification tag is located under the lower bolt that retains the extension housing to the main case.

Item	Part Number	Description
1	—	Transmission assembly number
2	—	Build date code—month
3	—	Build date code—day
4	—	Build date code—year
5	—	Shift number
6	—	Serial number
7	—	Service repair code
8	—	Identification number located on left lower side of transmission case

Transmission Identification



DIAGNOSIS AND TESTING

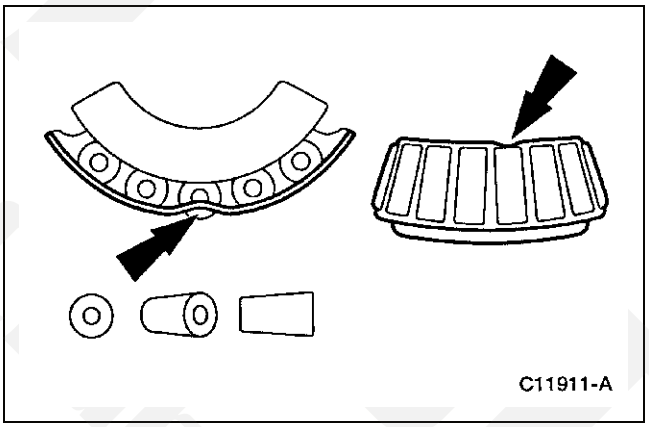
Manual Transmission

Refer to Section 308-00.

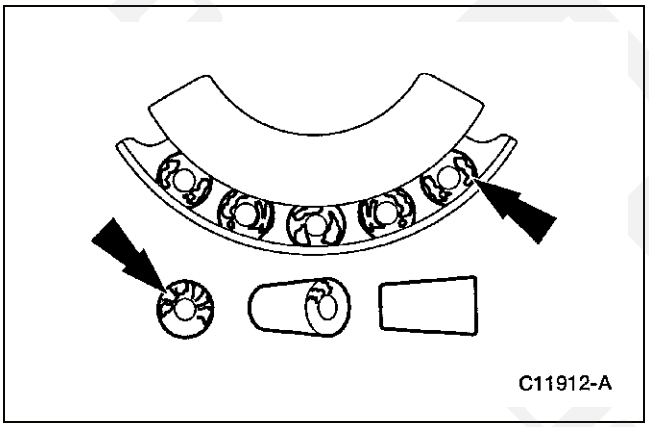
GENERAL PROCEDURES

Bearings —Inspection

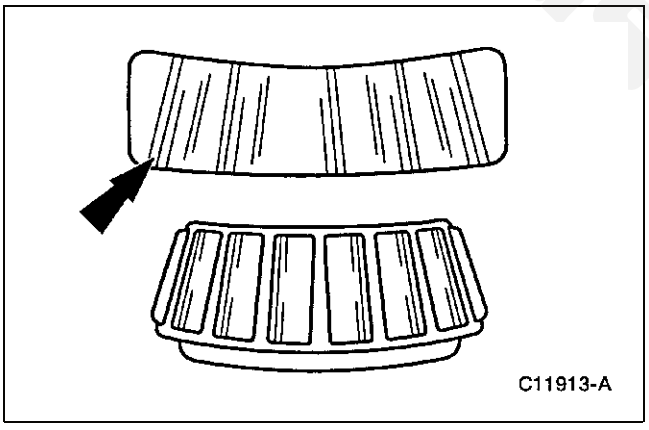
NOTE: If any of the following conditions exist, install a new bearing.



1. Inspect the bearing for a bent cage.

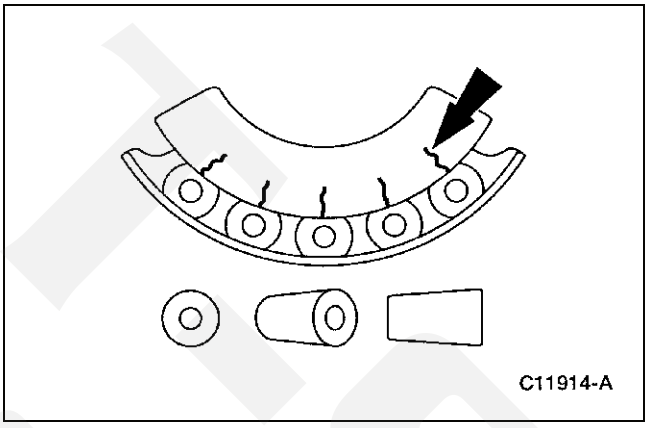


2. Inspect bearings for galling (metal smears on roller ends).
   - Galling is caused by overheating, poor lubrication or an overload situation.
   - If galling is found, install a new bearing and inspect the seals.

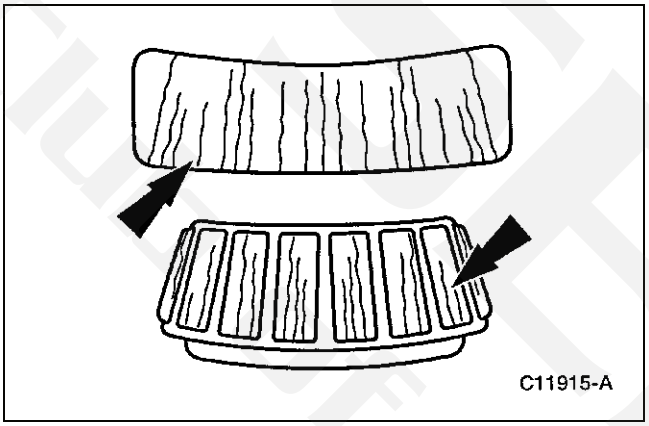


3. Inspect the bearing for brinelling (surface indentations in the raceway).

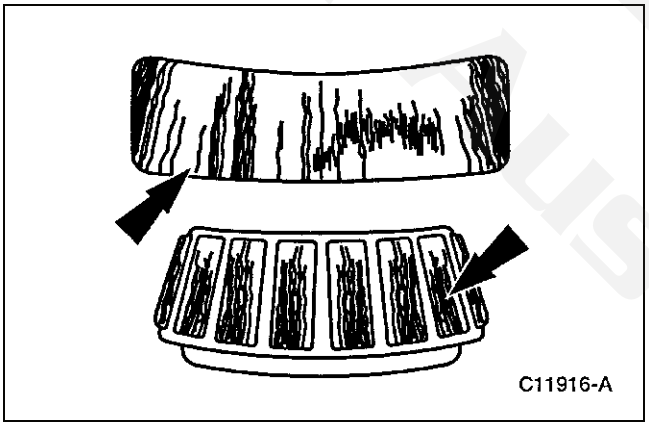
GENERAL PROCEDURES (Continued)



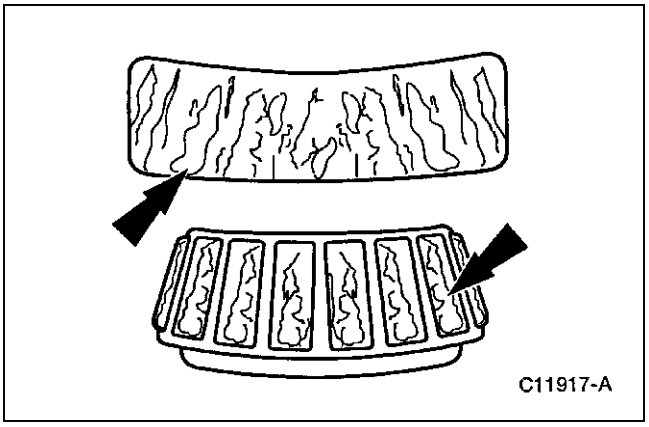
4. Inspect bearing for cracked inner race.



5. Inspect the bearing and raceway for etching.
   - If etching is present, inspect the seals.



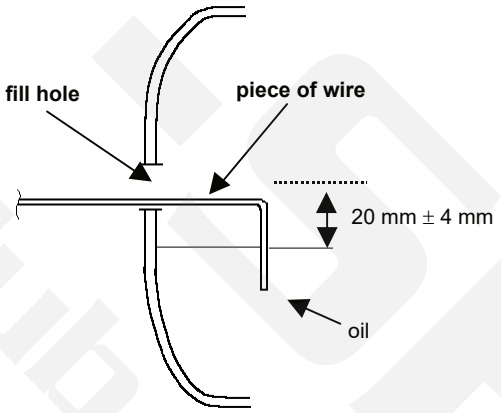
6. Inspect the bearing for heat discoloration (dark blue).
   - If heat discoloration is evident, check the bearing and race for loss of temper. Draw a file across the component. If the file cuts the metal, there is a loss of temper.



7. Inspect the bearing for fatigue spalling (metal flaking).

GENERAL PROCEDURES (continiued)

Transmission —Oil Inspection



1. Clean around the filler plug and remove the plug.
2. With the vehicle in a vertical position, insert a piece of wire in the fill hole to measure the oil level in the transmission case.

⚠ **WARNING:Do notoverfillthe transmission as excessiveoil will create foaming and leak out.**

3. The oil level must be 20mm below the bottom of the hole.
4. Clean the plug, inspect the gasket condition and replace where necessary.
5. Install the plug.

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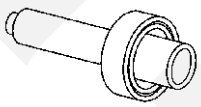
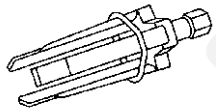
IN-VEHICLE REPAIR

Seal

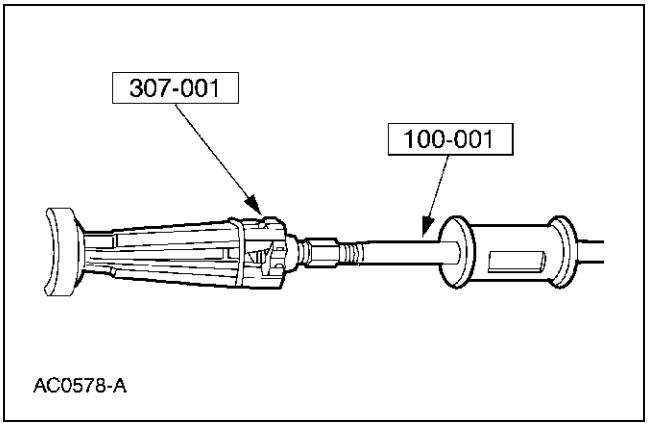
Special Tool(s)

 ST2199-A	Installer, Transmission Extension Housing Oil Seal 308-227 (T94P-7657-A)
 ST1185-A	Slide Hammer 100-001 (T50T-100-A)
 ST2200-A	Remover, Bushing 307-001 (TOOL-1175-AC) or Equivalent

Removal

1. With the vehicle in NEUTRAL, raise and support the vehicle.

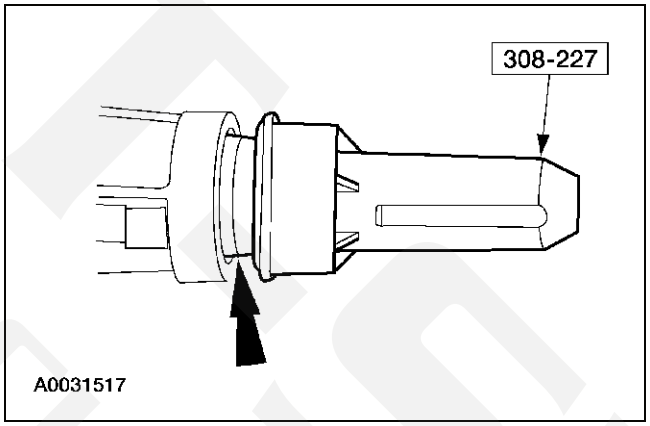
2. ⚠ **CAUTION: Index-mark the driveshaft flange and pinion flange, and the driveshaft slip yoke and transmission output shaft.**
   Remove the driveshaft.



3. Using the special tools, remove the extension housing fluid seal.

IN-VEHICLE REPAIR (Continued)

Installation



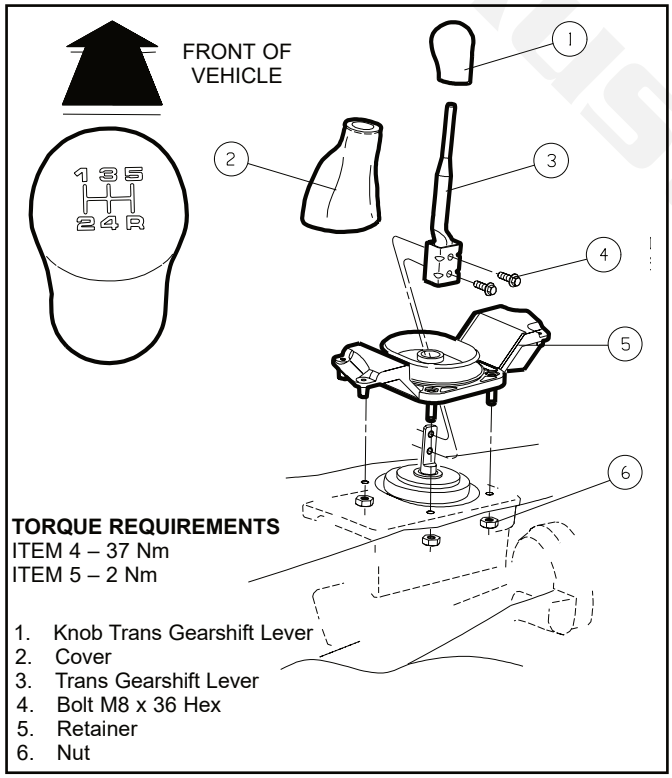
1. Using the special tool, install the extension housing fluid seal.

2. ⚠ **CAUTION: Align the index marks.**
   Install the driveshaft.

3. Check the transmission fluid level, add fluid if necessary.

4. Lower the vehicle.

Gearshift Lever and Boot



TORQUE REQUIREMENTS
ITEM 4 – 37 Nm
ITEM 5 – 2 Nm

1. Knob Trans Gearshift Lever
2. Cover
3. Trans Gearshift Lever
4. Bolt M8 x 36 Hex
5. Retainer
6. Nut

Removal

1. Unscrew the gearshift knob from the gear lever.
2. Gently prise the boot retaining panel from the console and lift the boot and retaining panel from the lever.
3. Working through the console aperture remove the two bolts securing the shift lever to the transmission and remove the lever.

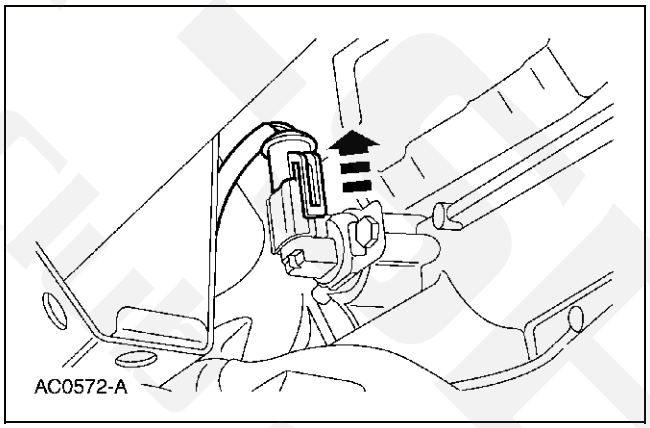
Installation

1. Position the shift lever on the left hand side of the transmission lever, install and torque the bolts to specification.
2. Locate the boot and retainer over the shift lever and press the retainer lugs into the console.
3. Screw the knob onto the shift lever until it starts to tighten, continue tightening until the graphics on the knob are correctly aligned.

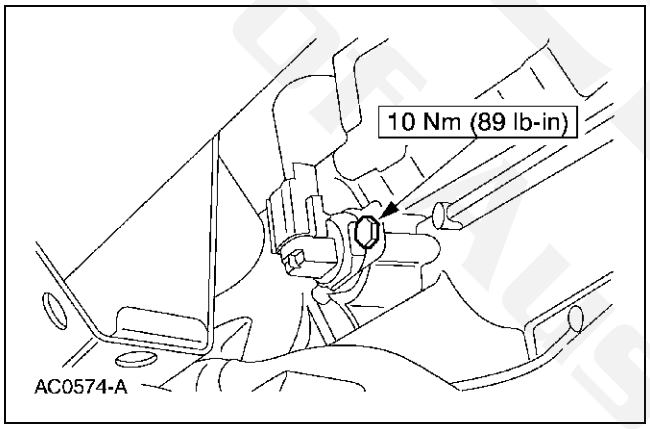
Output Shaft Speed (OSS) Sensor

Removal and Installation

1. With the vehicle in NEUTRAL, raise and support the vehicle.



2. Disconnect the electrical connector.

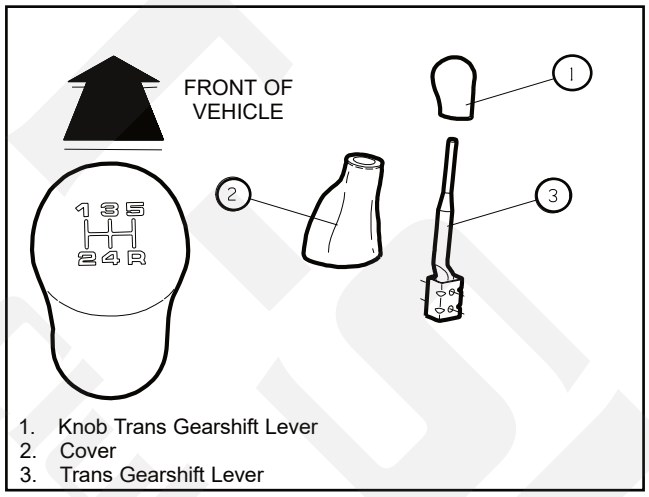


3. Remove the output shaft speed (OSS) sensor.

4. To install, reverse the removal procedure.

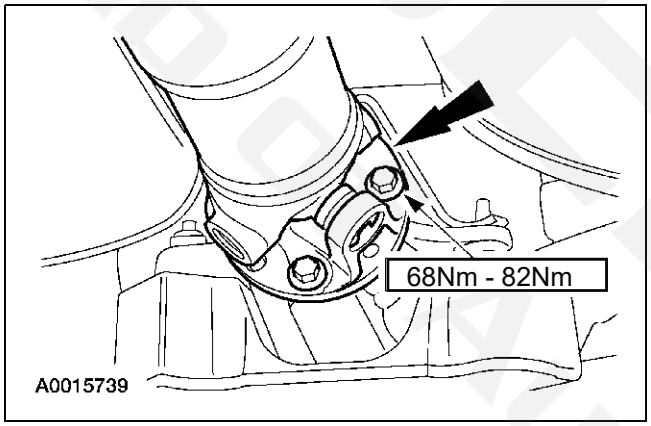
REMOVAL

Transmission

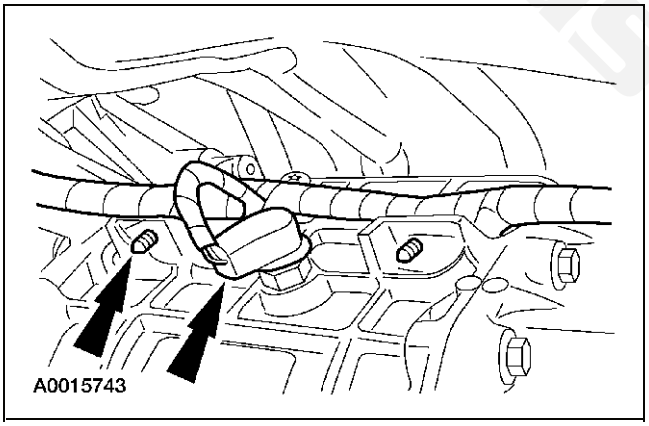


1. Knob Trans Gearshift Lever
2. Cover
3. Trans Gearshift Lever

1. Disconnect the battery ground cable.
2. Unscrew the gearshift knob (1) from the gear lever.
3. Remove the boot (2) from the lever.

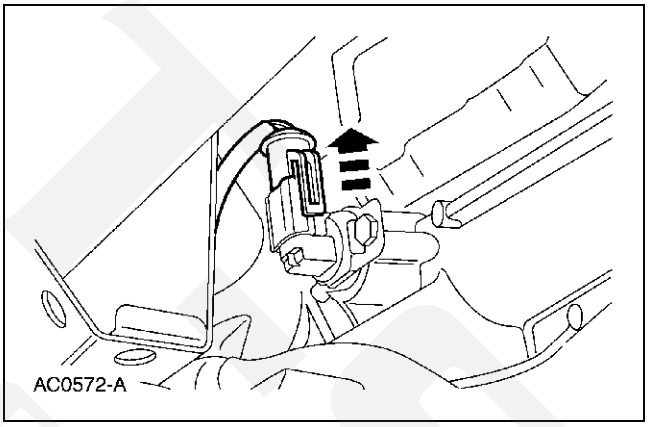


4. **CAUTION: Index-mark the driveshaft flange and pinion flange, and the driveshaft slip yoke and transmission output shaft.**
   Remove the driveshaft.

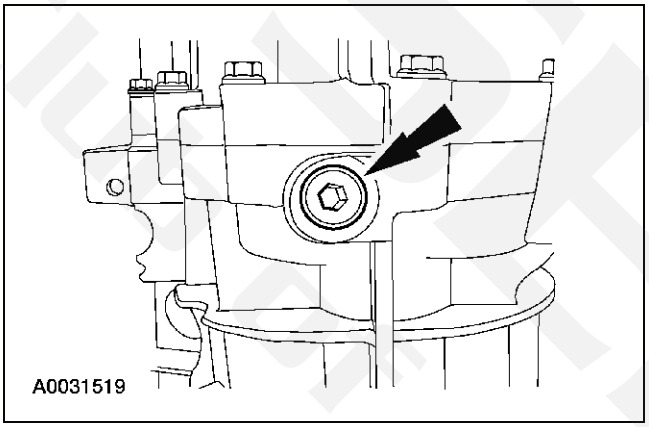


5. Disconnect the reversing lamp switch electrical connector. Disconnect the wiring harness from the transmission.

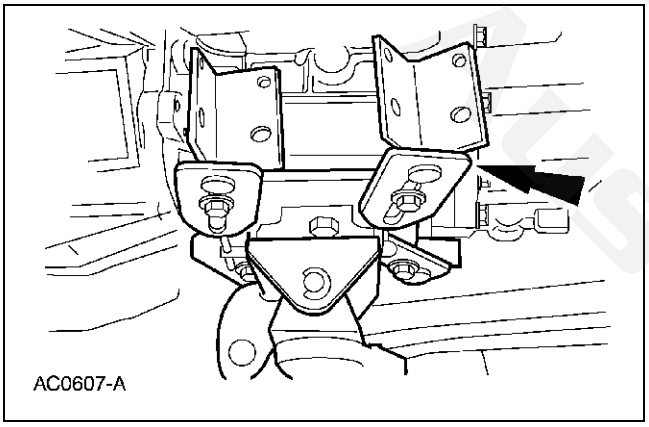
REMOVAL (Continued)



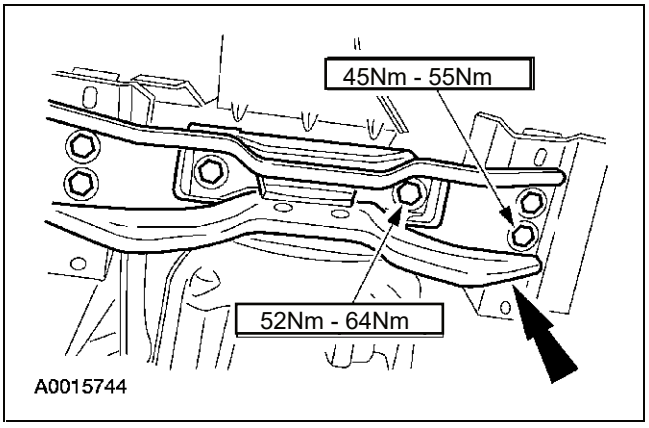
6. Disconnect the OSS sensor electrical connector. Disconnect the wiring harness from the transmission.



7. If transmission disassembly is necessary, drain the transmission fluid.

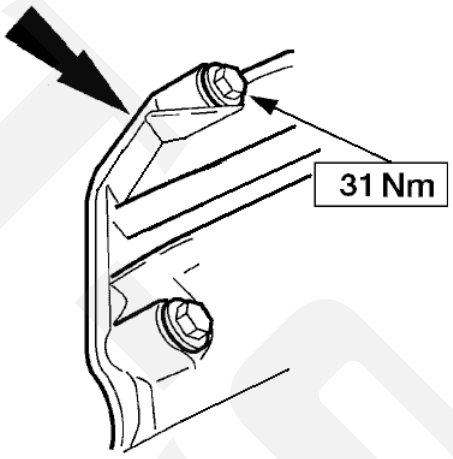


8. Position a transmission jack and support the transmission.



9. Remove the bolts and the transmission crossmember.

REMOVAL (Continued)



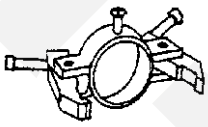
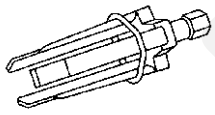
10. Remove the 4 bolts from the spacer block .

TSERIES Club of Australia

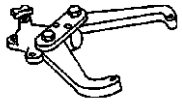
DISASSEMBLY

Transmission

Special Tool(s)

 ST1305-A	Remover, Mainshaft Bearing 308-058 (T77J-7025-H)
 ST1304-A	Screw, Bearing Removal tube 308-092 (T84T-7025-B)
 ST2200-A	Remover, Bushing 307-001 (TOOL-1175-AC)
 ST1303-A	Remover/Installer, Bearing Tube 308-024 (T75L-7025-B)

Special Tool(s)

 ST1186-A	Holding Fixture, Transmission 307-003 (T57L-500-B)

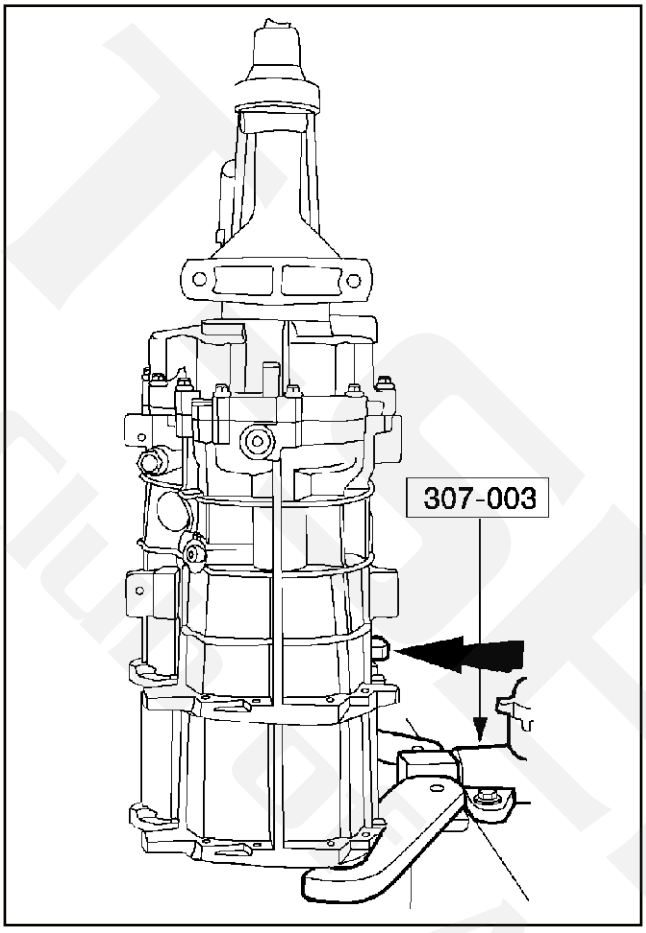
Disassembly

NOTE: During disassembly, if any roll pins, retaining rings or bearings are removed, install new components. Install bearings and bearing cups as a set.

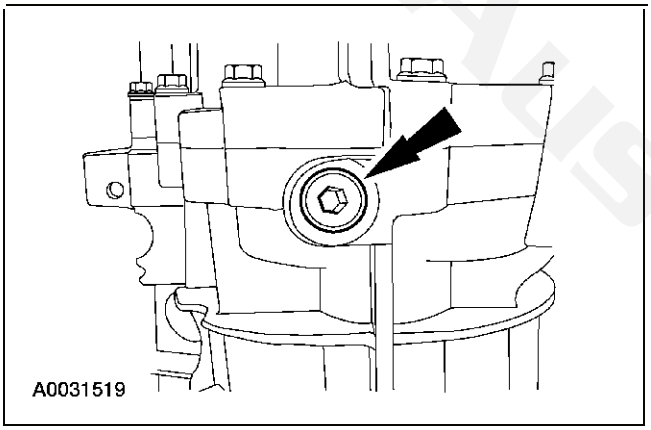
⚠ WARNING: Make sure protective eye wear is in place.

1. Clean the transmission exterior with solvent and dry with compressed air. During disassembly, clean all components with solvent and dry with compressed air.

DISASSEMBLY (Continued)

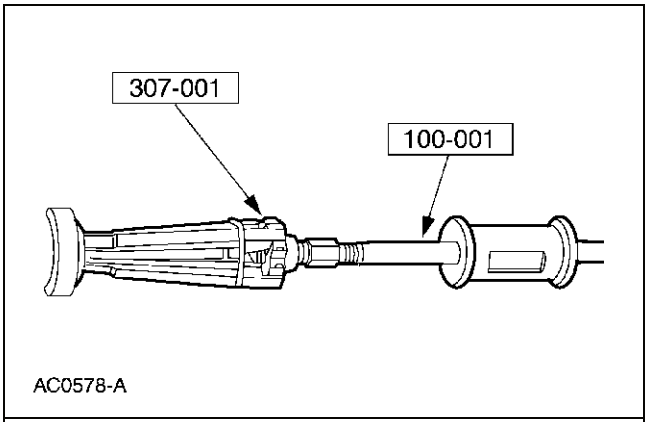


3. Attach the transmission to the special tool.



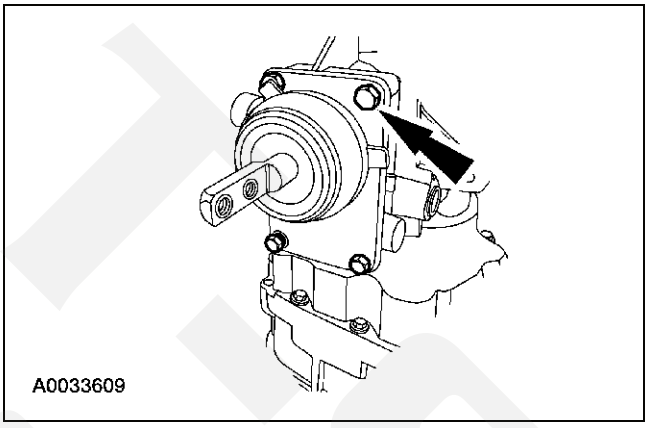
4. **NOTE:** Position a drain pan under the transmission.

   Remove the case plug, then rotate the transmission to a horizontal position.



5. Using the special tools, remove the extension housing fluid seal.

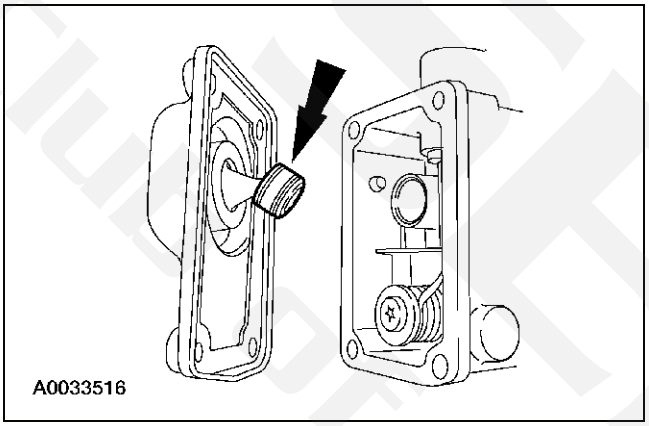
DISASSEMBLY (Continued)



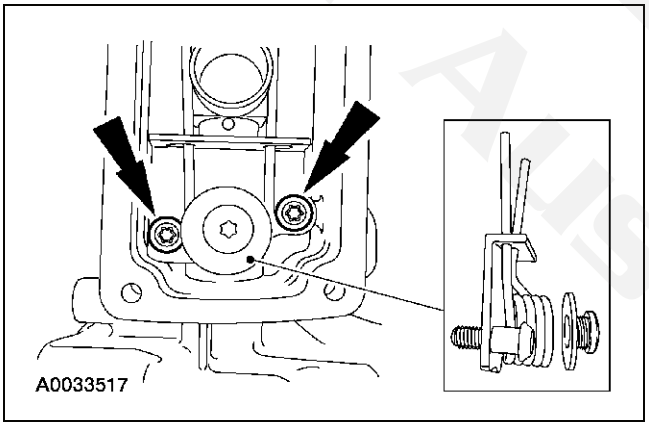
6. **NOTE:** Rotate the transmission to a vertical position.

   NOTE: Position the gearshift lever in NEUTRAL.

   Remove the bolts and the gearshift lever.

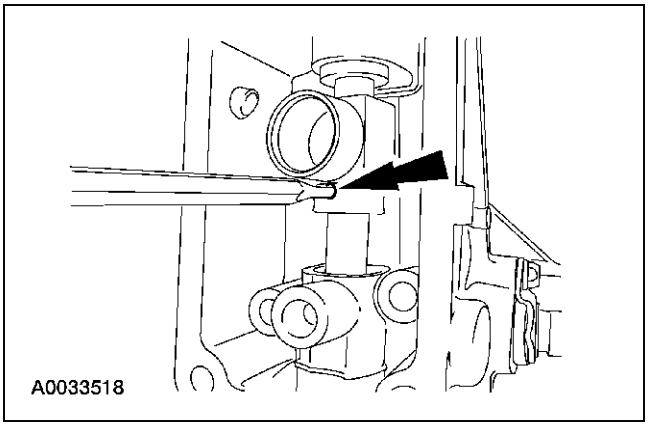


7. Inspect the gearshift offset lever insert and O-ring for wear or damage. Install a new insert as necessary.



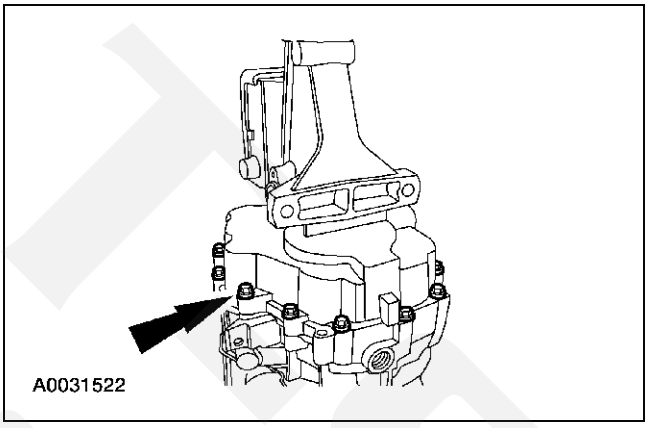
8. **NOTE:** If necessary, remove the spring and plate for disassembly.

   Remove the bolts and the shift spring and plate.

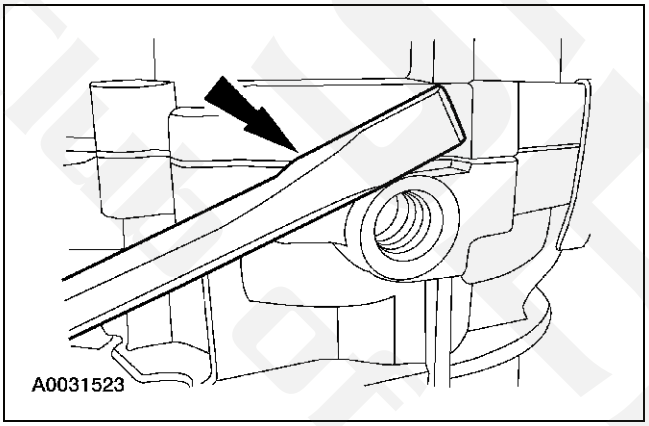


9. Using a 5/32-inch drift and a hammer, drive the split pin downward.

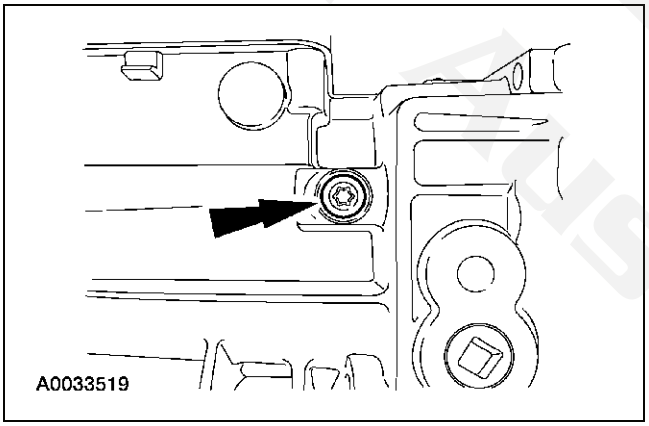
DISASSEMBLY (Continued)



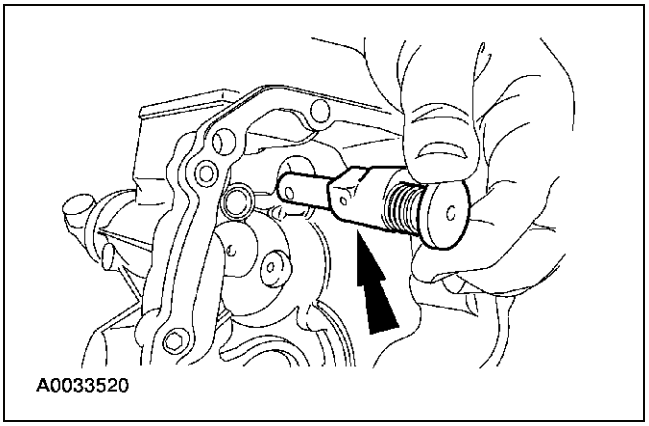
10. Remove the 12 bolts.



11. Using a flat-blade screwdriver, separate the extension housing, then remove the gearshift offset lever from the transmission case.
    - Remove and discard the split pin from the gearshift offset lever during removal.

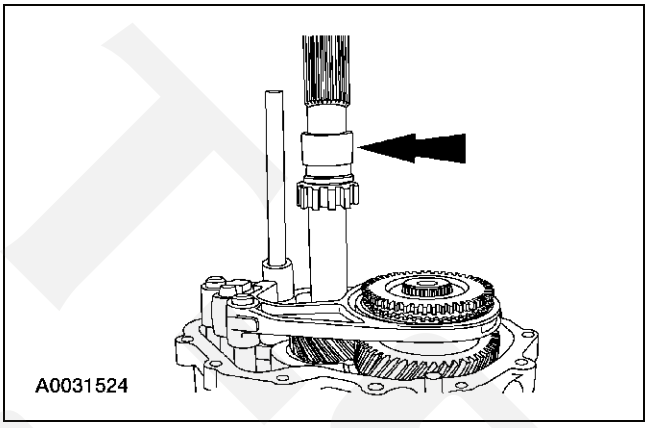


12. Remove the fifth/reverse gear lockout bolt.

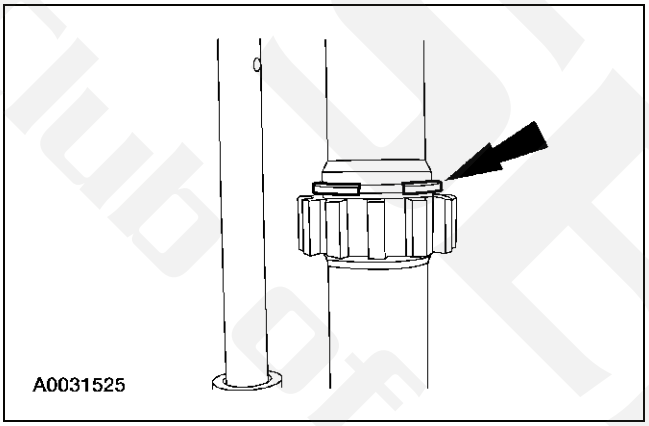


13. Remove the fifth/reverse gear lockout.

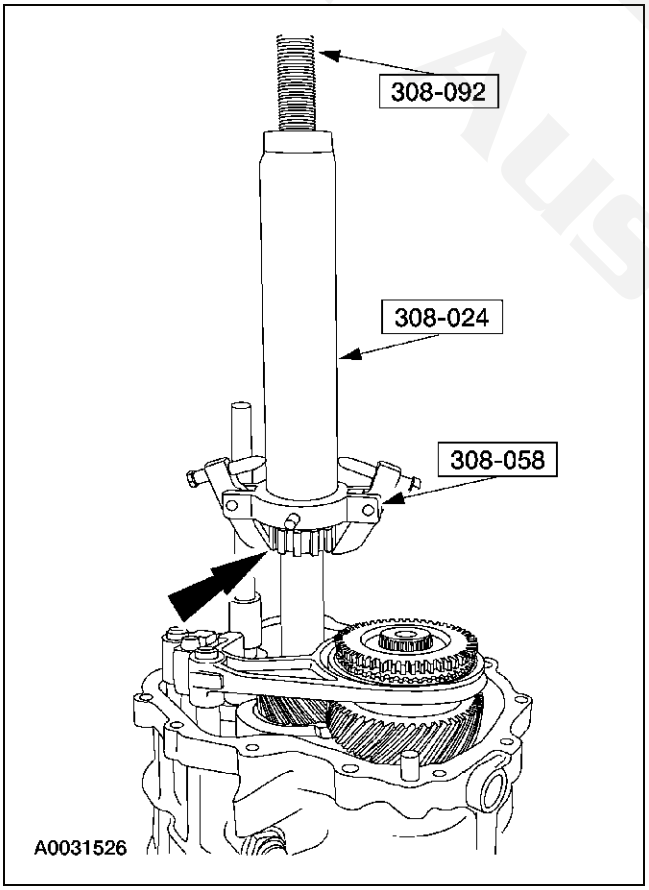
DISASSEMBLY (Continued)



14. Remove the shipping seal.

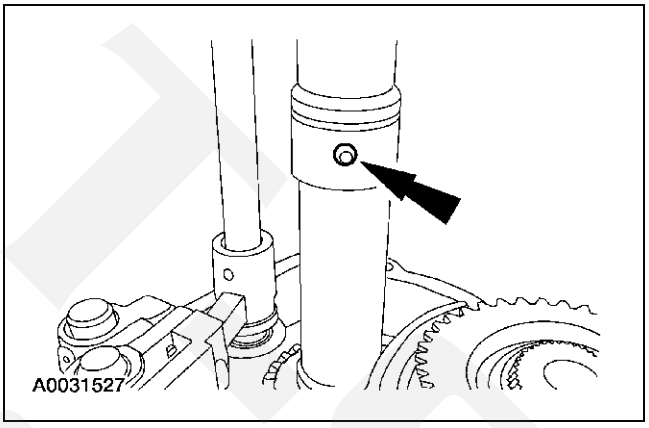


15. Remove the OSS sensor tone wheel retaining ring.

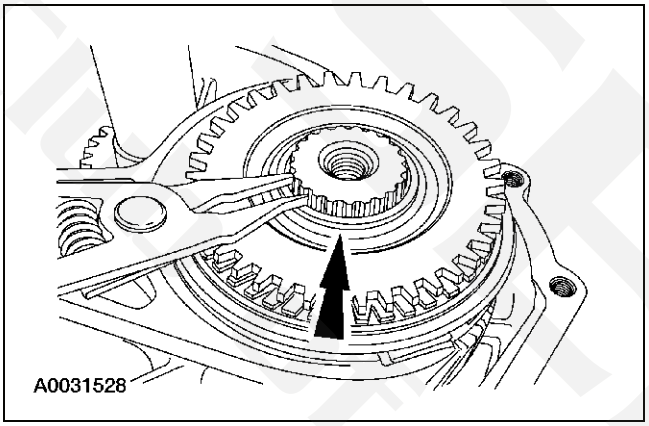


16. Using the special tools, remove the OSS sensor tone wheel.

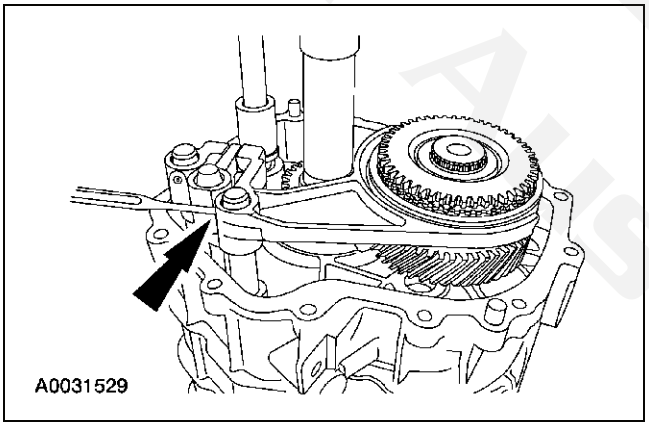
DISASSEMBLY (Continued)



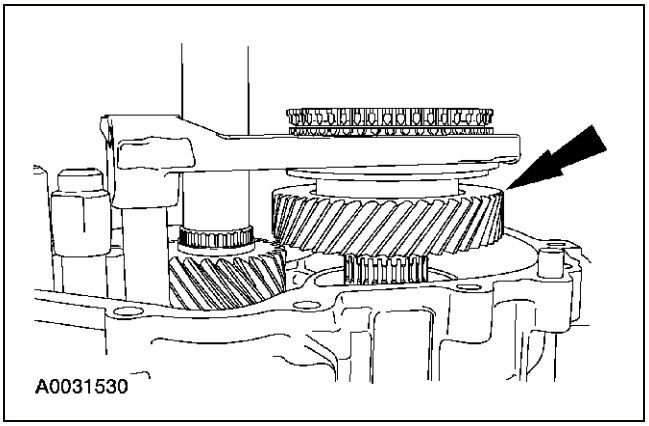
17. Remove the OSS sensor tone wheel check ball.



18. Remove and discard the fifth gear synchronizer retaining ring.

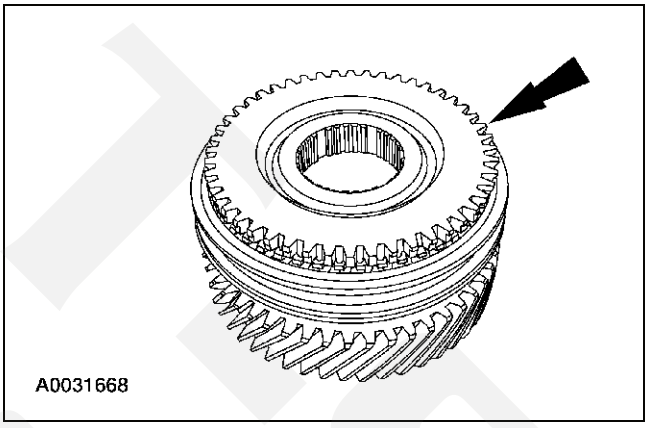


19. Using a 5/32-inch drift and a hammer, remove and discard the pin from the fifth gear shift fork.

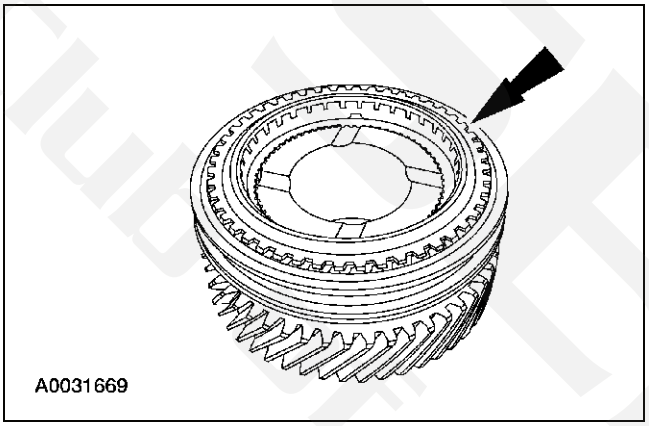


20. Remove the fifth gear shift fork, synchronizer assembly, synchronizer cone and the fifth gear as an assembly.

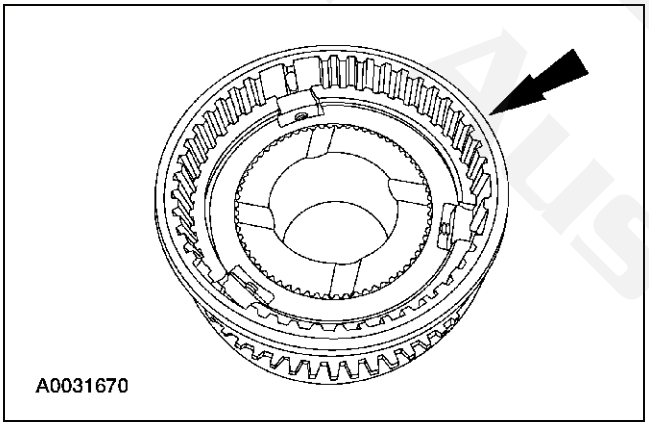
DISASSEMBLY (Continued)



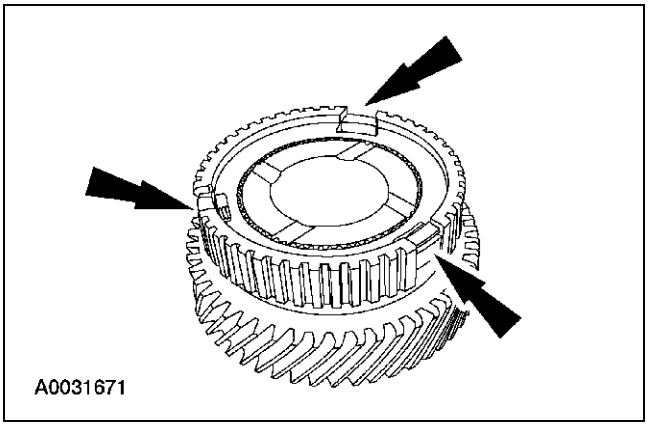
21. Remove the fifth gear clutch cone.



22. Remove the fifth gear synchronizer blocking ring.
    - Inspect the blocking ring for wear or damage. Install new blocking rings as necessary.

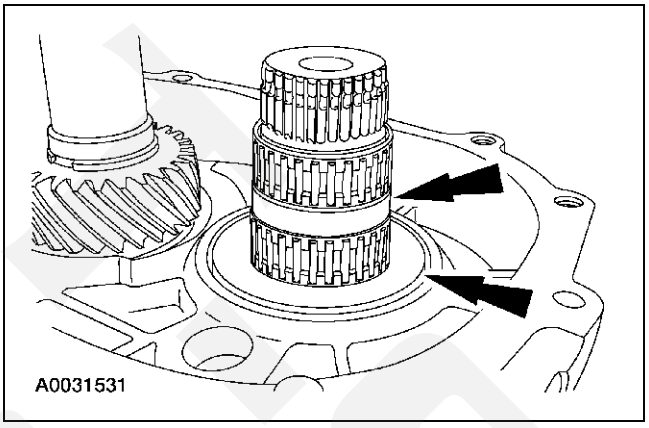


23. Remove the fifth gear synchronizer sleeve from the synchronizer hub.

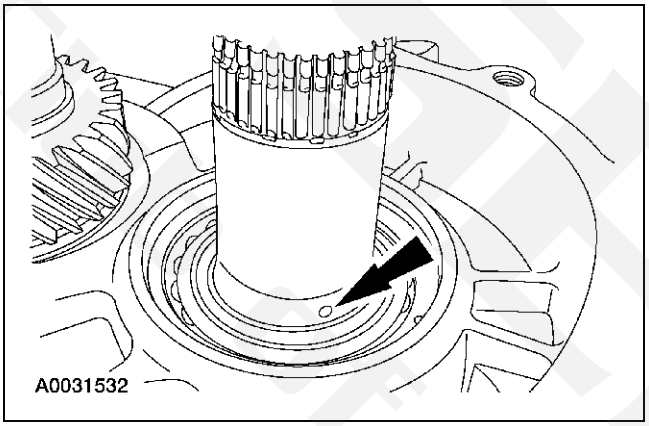


24. Remove the synchronizer inserts and the springs.

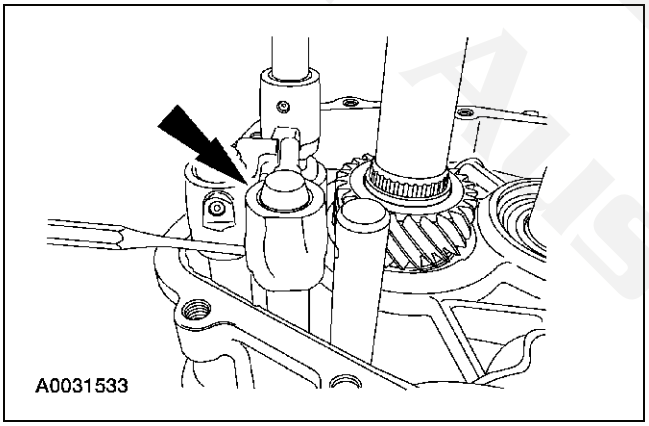
DISASSEMBLY (Continued)



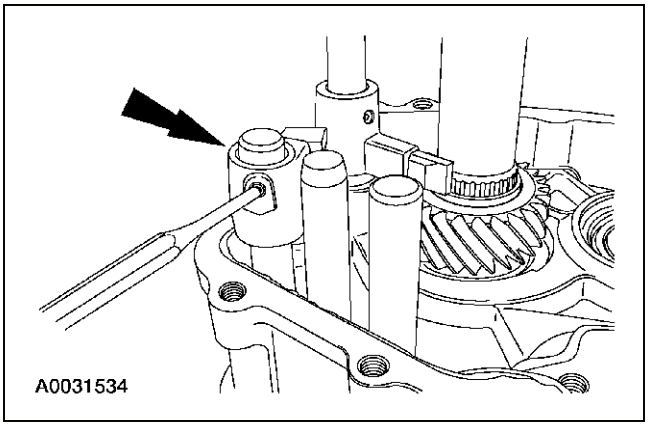
25. Remove the needle bearings and the thrust washer.
    - The fifth gear needle bearing is three separate pieces: bearing, spacer, bearing
    - Inspect the needle bearing for wear or damage. Install new bearings as necessary.



26. Remove the check ball.

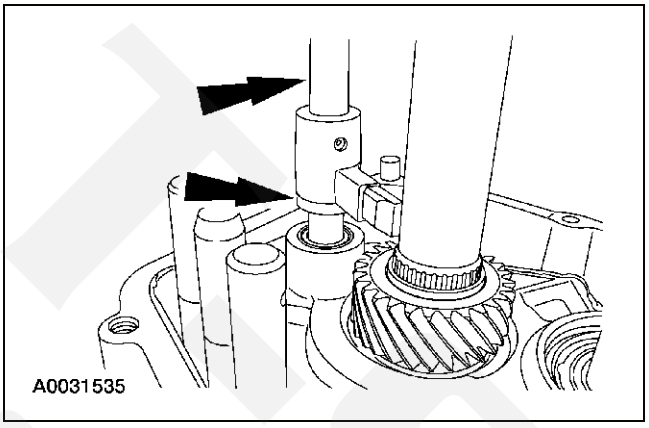


27. Using a 5/32-inch drift and a hammer, drive out the split pin, then remove the third/fourth shift finger. Discard the split pin.

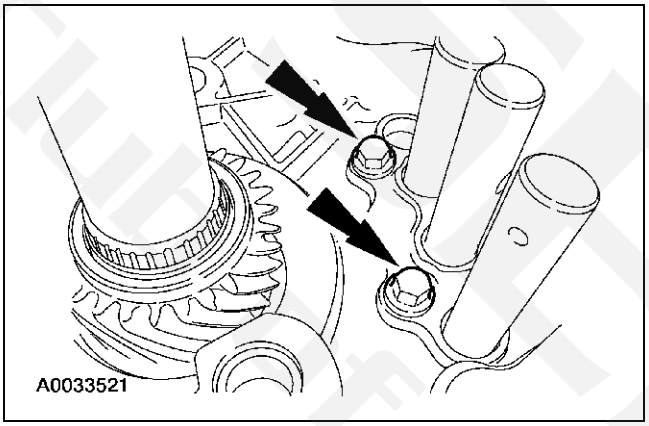


28. Using a 5/32-inch drift and a hammer, drive out the split pin, then remove the first/second shift finger. Discard the split pin.

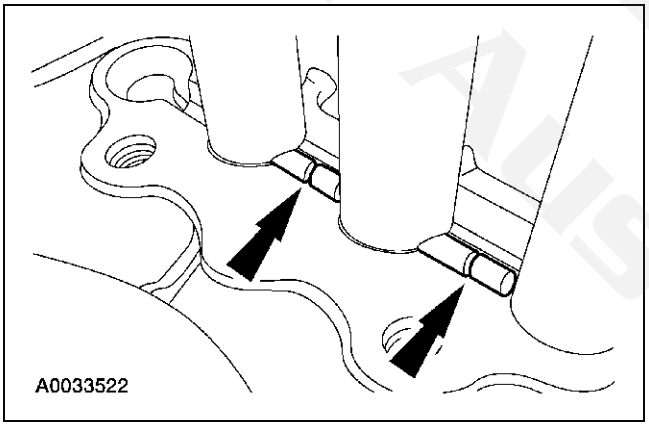
DISASSEMBLY (Continued)



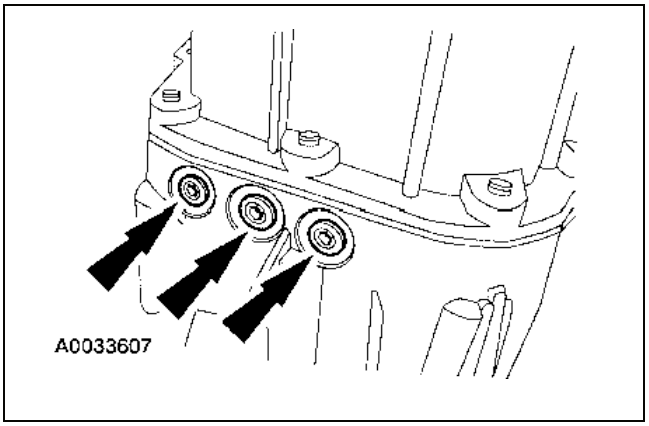
29. Remove the main shift rail and the plastic spacer.



30. Remove the bolts and the shift interlock plate.

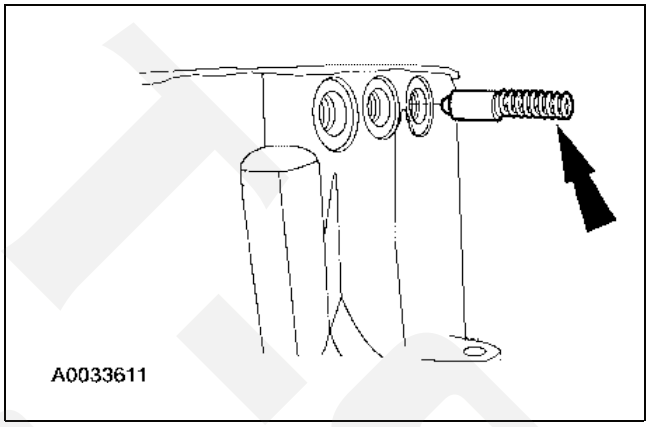


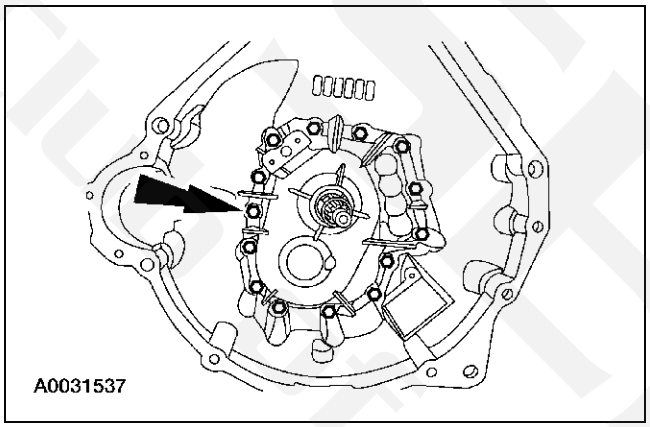
31. Using a magnet, remove the interlock pins.
    - One lock pin in the center rail, two between the rails.



32. Remove the three detent plugs, springs and the detents from the spacer block.

DISASSEMBLY (Continued)

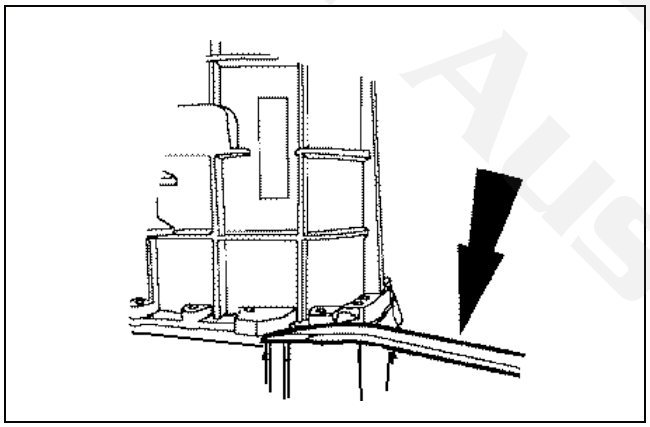




33. ⚠ **CAUTION: Do not remove all the bolts while in the horizontal position.**

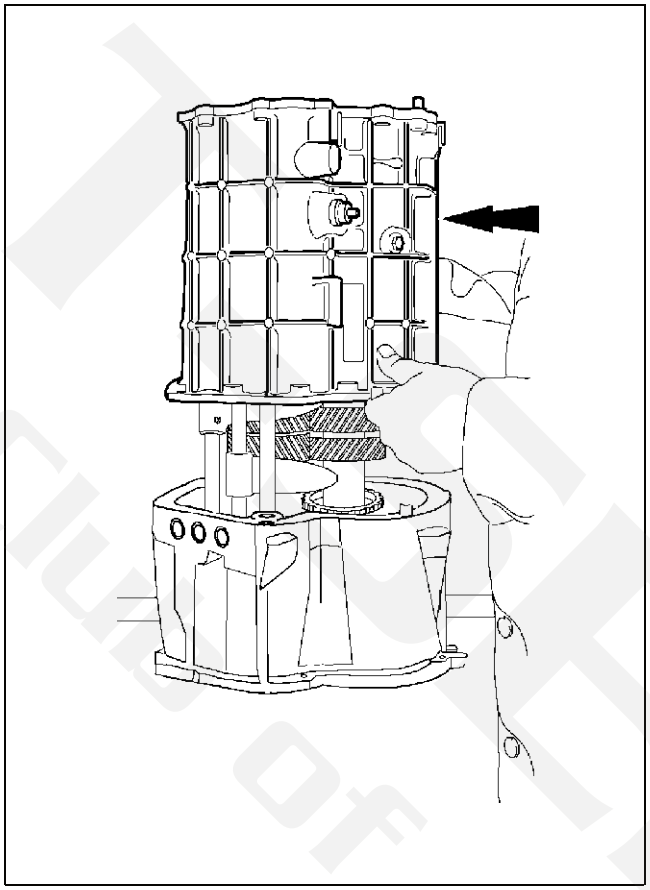
    Remove the bolts.

    - Rotate the transmission to a horizontal position. Remove 12 bolts, leaving two opposing bolts in. Rotate the transmission to a vertical position, then remove the remaining two bolts.

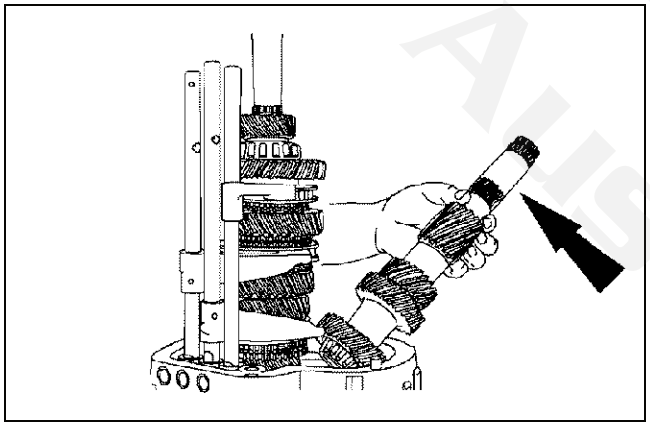


34. Carefully pry the spacer block from the transmission main case.

DISASSEMBLY (Continued)



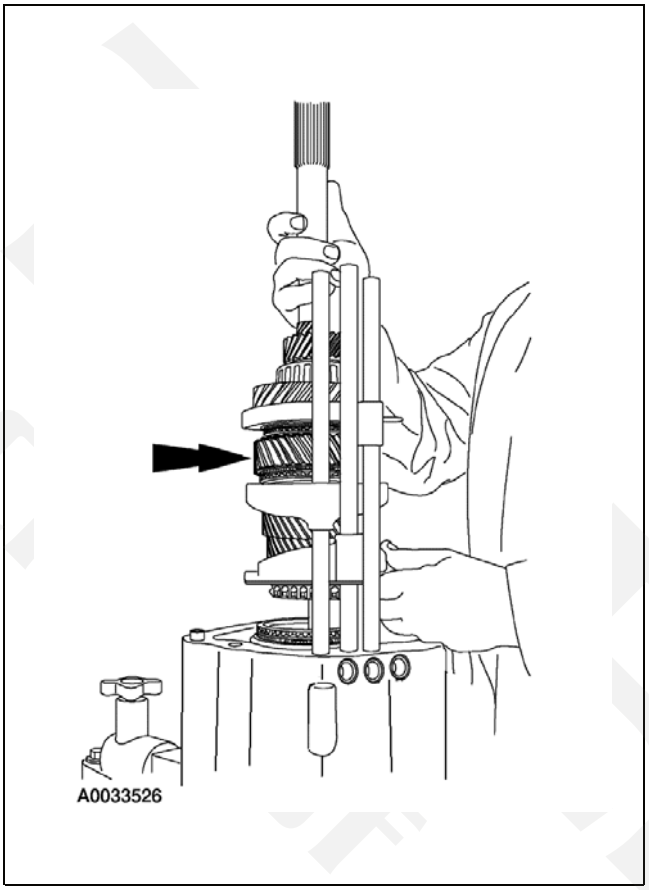
35. Remove the transmission main case from the spacer block.



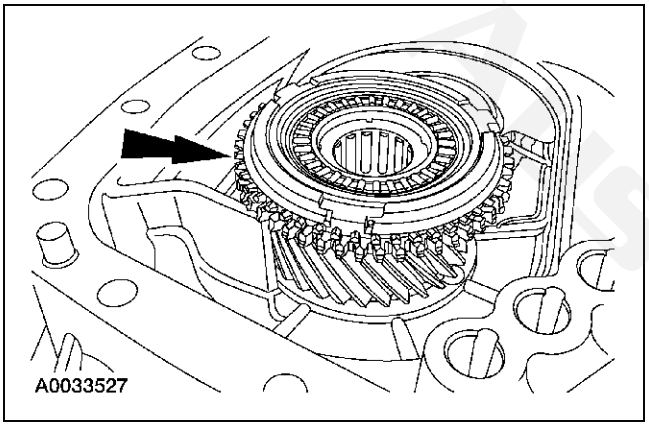
36. Lift the mainshaft 13 mm (0.50 in) upward, tilt the countershaft outward and remove the countershaft.

Rovers Club of Australia

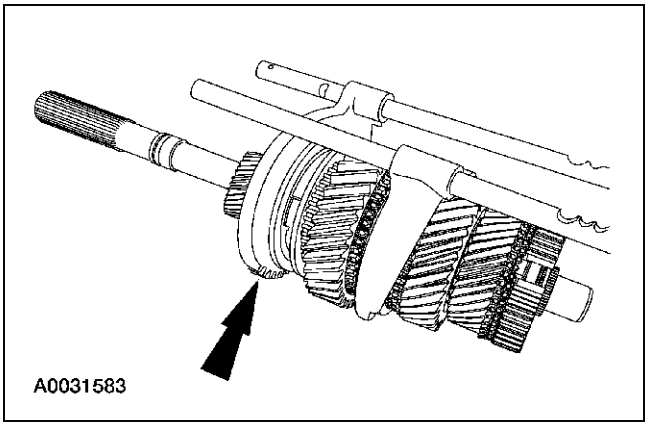
DISASSEMBLY (Continued)



37. Remove the mainshaft and shift assembly.

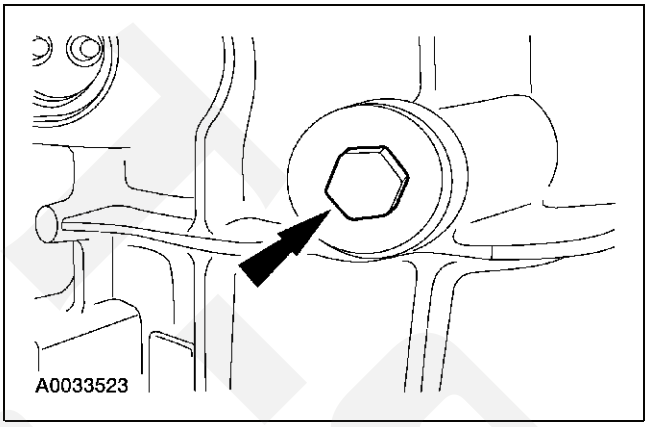


38. Remove the input shaft. For input shaft disassembly, refer to Input Shaft and Bearing in this section.



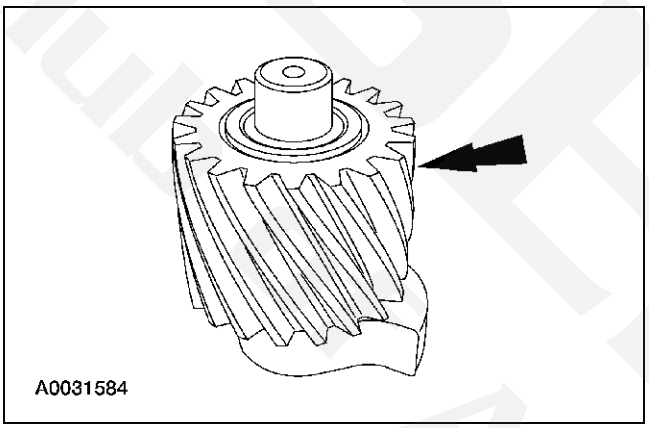
39. Remove the shift rails and shift forks from the main shaft. For gearshift rail and fork disassembly, refer to Gearshift Rail and Fork in this section.

DISASSEMBLY (Continued)

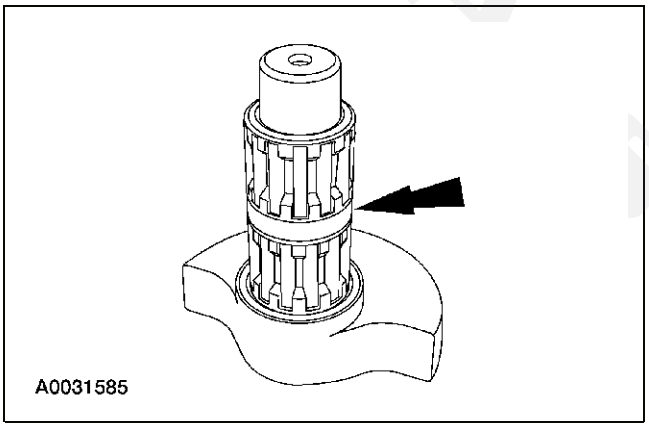


40. Remove the reverse idler shaft bolt. Remove and discard the seal.

41. Remove the reverse idler gear assembly.

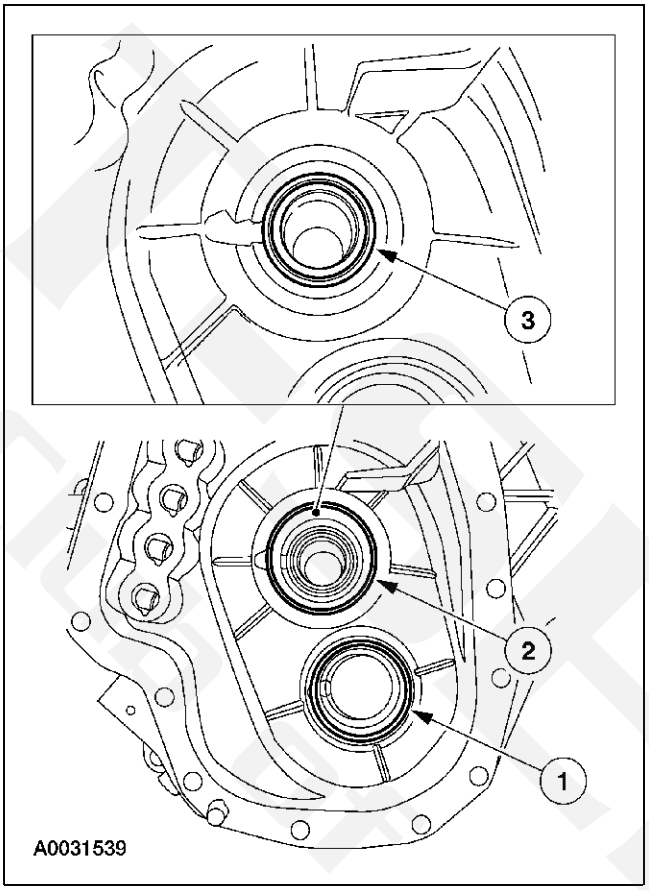


42. Remove the reverse idler gear from the shaft.
    - Inspect the gear for wear or damage. Install a new gear as necessary.

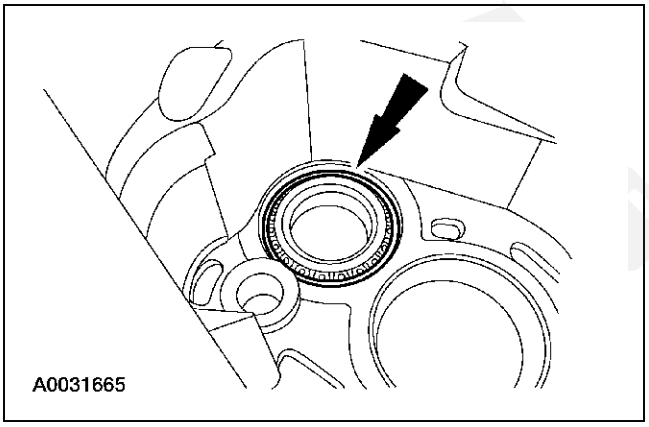


43. Remove the reverse idler gear bearing.
    - The reverse idler gear is three separate pieces: bearing, spacer, bearing.
    - Inspect the bearing for wear or damage. Install new bearings as necessary.

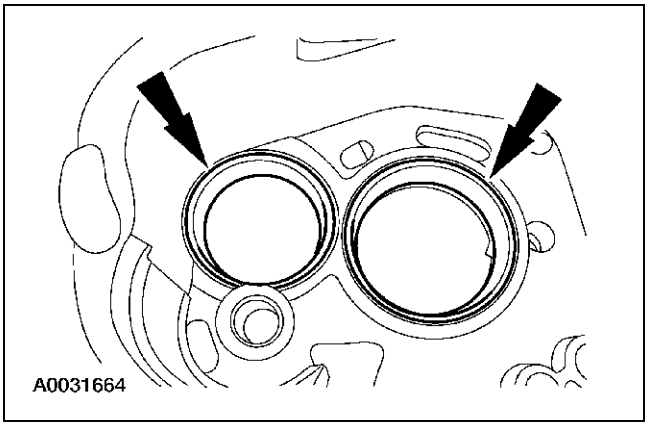
DISASSEMBLY (Continued)



44. Disassemble the spacer block.
    1 Remove the countershaft bearing cup and shim.
    2 Remove the input shaft bearing cup and shim.
    3 Remove the input shaft seal.
        - Carefully pry out from the inside of the case.



45. Remove the rear countershaft bearing.

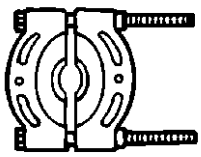
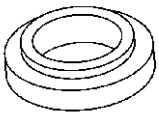


46. Remove the rear countershaft bearing cup and the rear output shaft bearing cup.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

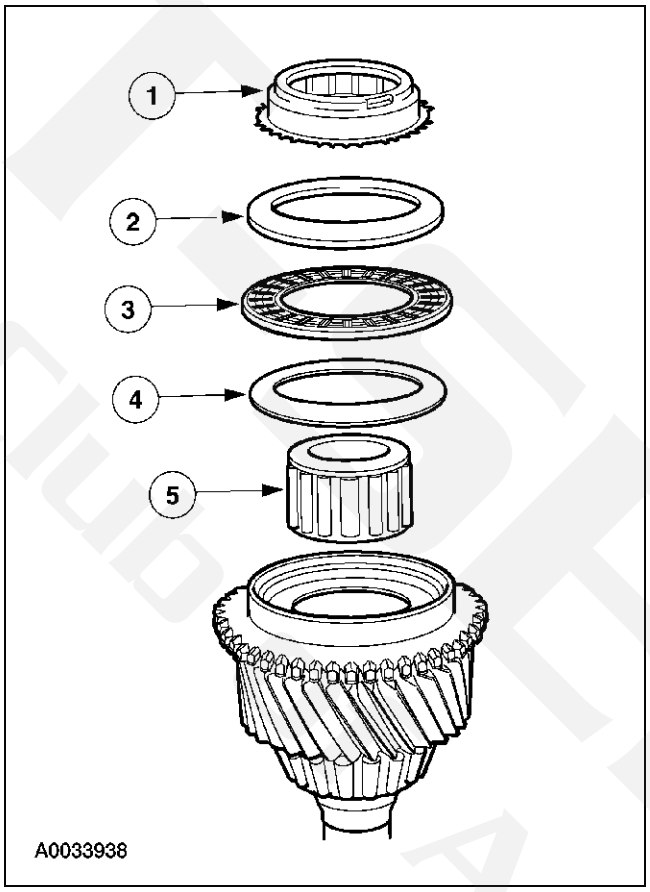
Input Shaft and Bearing

Special Tool(s)

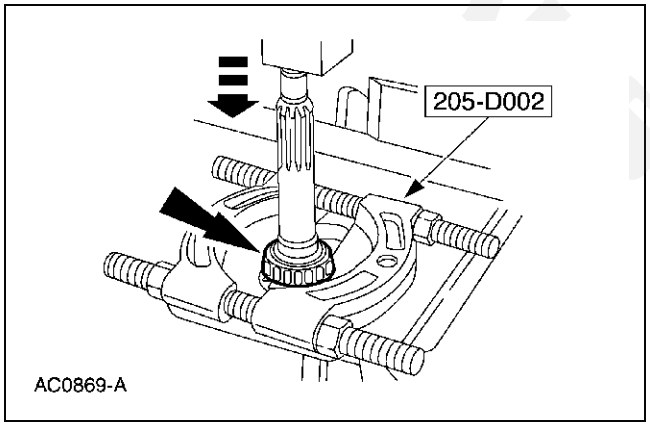
 ST1895-A	Remover, Driver Pinion Bearing Cone 205-D002 (D79L-4621-A) or equivalent
 ST2388-A	Installer, Drive Pinion Bearing Cone 205-011 (T57L-4621-B)
 ST1303-A	Remover/Installer, Bearing Tube 308-024 (T75L-7025-B)

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

Disassembly and Assembly



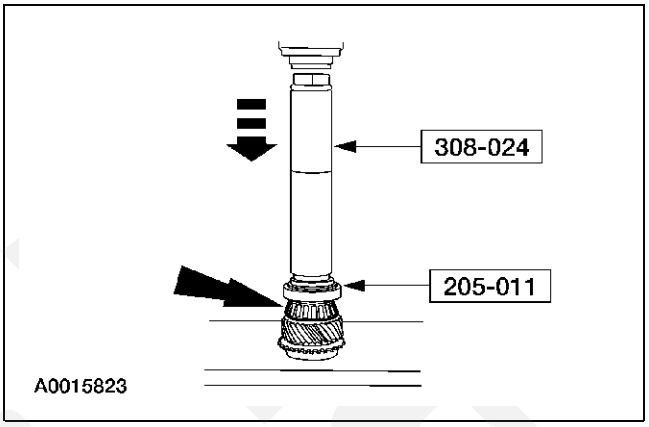
1. Disassemble the input shaft.
   1 Remove the third/fourth synchronizer blocking ring.
   2 Remove the input shaft bearing race.
   3 Remove the input shaft bearing.
   4 Remove the input shaft washer.
   4 Remove the input shaft needle bearing.
   - Inspect all components for wear or damage. Install new components as necessary.



2. Using the special tool and a press, remove the input shaft front bearing assembly. Discard the bearing.

3. Inspect the input shaft and bearings for wear or damage. Install new components as necessary.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

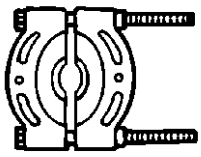
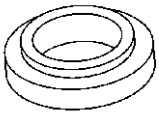


4. Using the special tools and a press, install the new input shaft front bearing.

5. Install the input shaft needle bearing, the washer, input shaft bearing, the bearing race and the third/fourth synchronizer blocking ring.
   - Lubricate the bearing and bearing race with petroleum jelly.

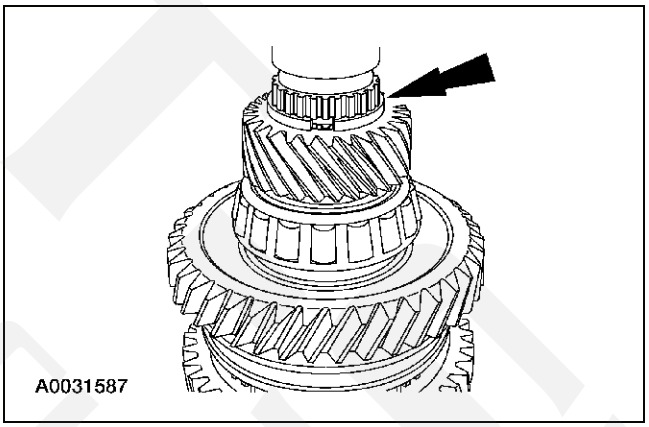
Output Shaft

Special Tool(s)

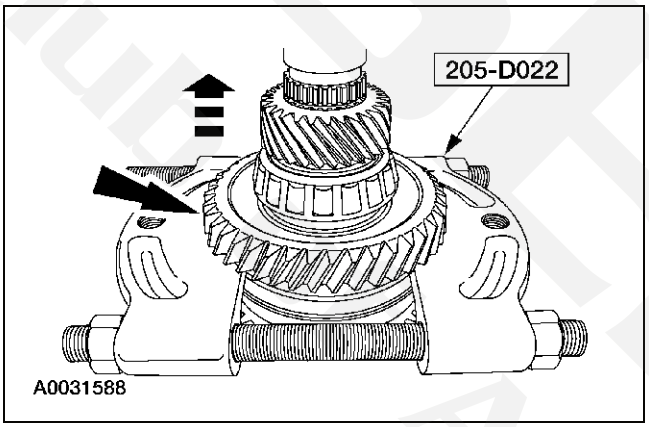
 ST1895-A	Remover, Drive Pinion Bearing Cone 205-D002 (D79L-4621-A) or equivalent
 ST2388-A	Installer, Drive Pinion Bearing Cone 205-011 (T57L-4621-B)

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

Disassembly



1. Remove the retaining ring above fifth gear.

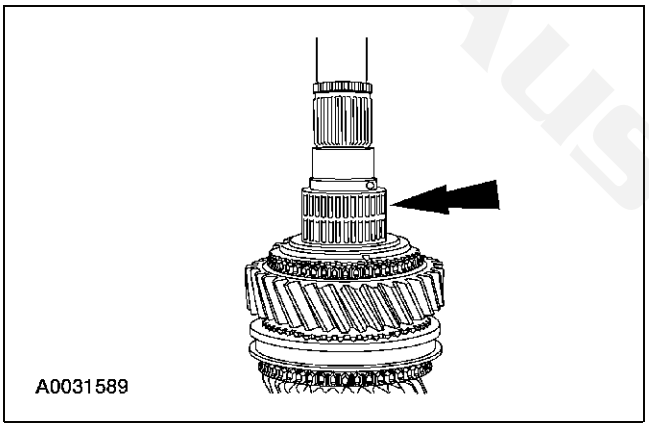


2. **CAUTION: Hand tighten the special tool to prevent gear damage.**

   CAUTION: Support the output shaft while using the press to prevent damage to the shaft or gears.

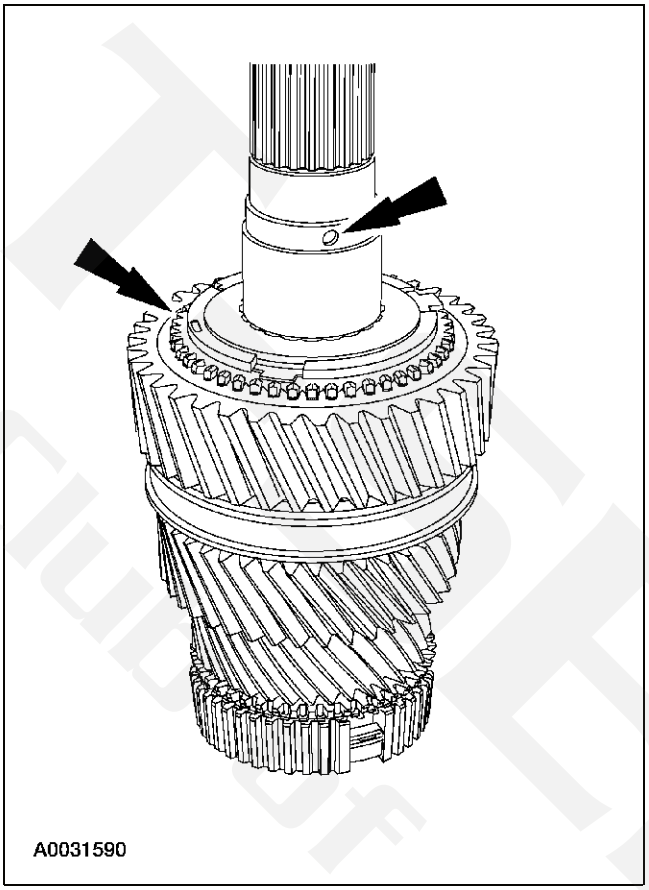
   Using the special tool, press fifth gear, the spacer, the output shaft bearing and reverse gear from the output shaft.

   - Discard the output shaft bearing.

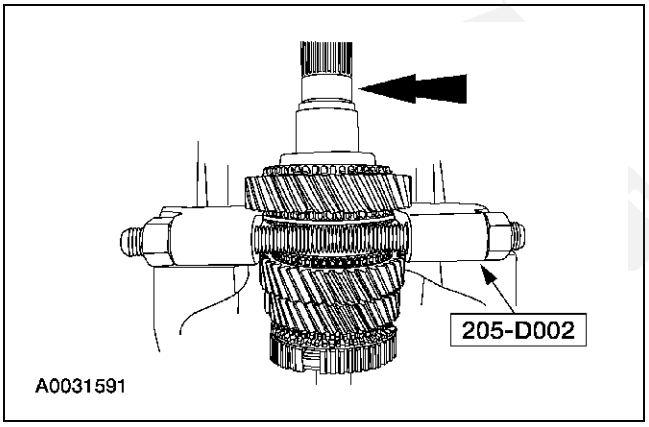


3. Remove reverse gear needle bearing.
   - Inspect the needle bearing for wear or damage. Install a new needle bearing as necessary.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)


A0031590

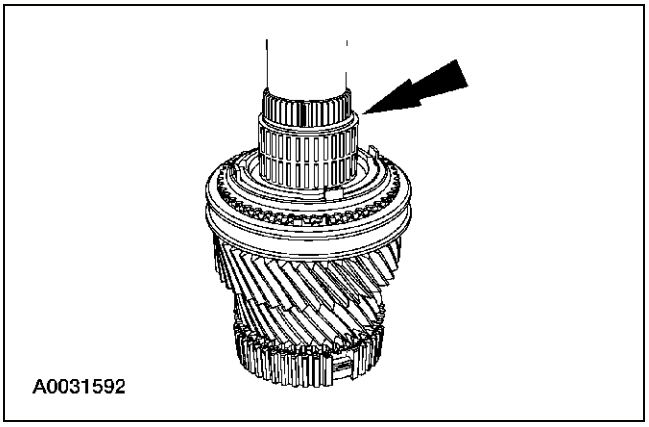
4. Remove the check ball and the blocking ring.
   - Inspect the blocking ring for wear or damage. Install new blocking rings as necessary.



A0031591

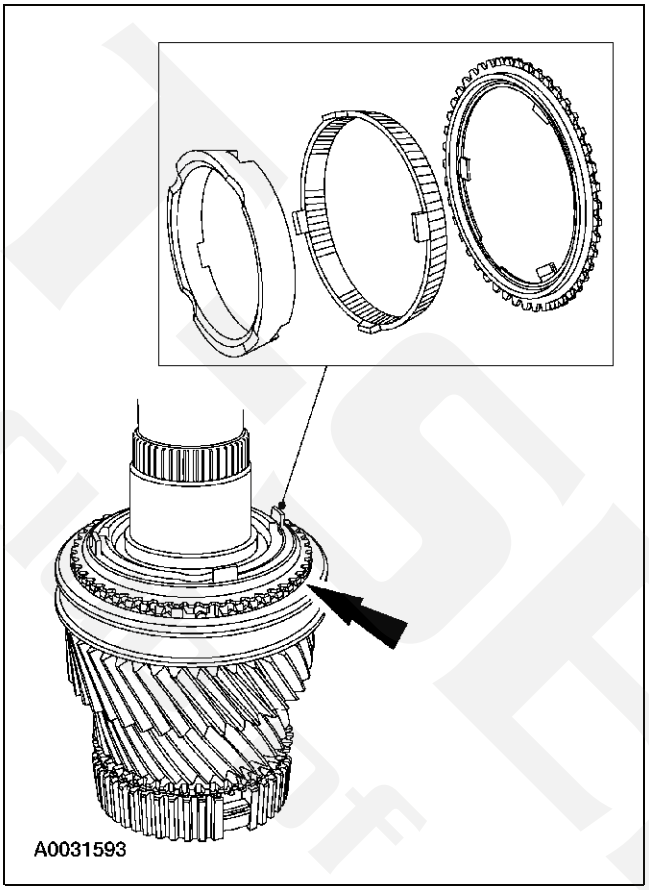
5. **NOTE:** Install the special tool with the flat side facing first gear.

   Using the special tools, press the bearing spacer, the reverse gear synchronizer cone and first gear from the output shaft.

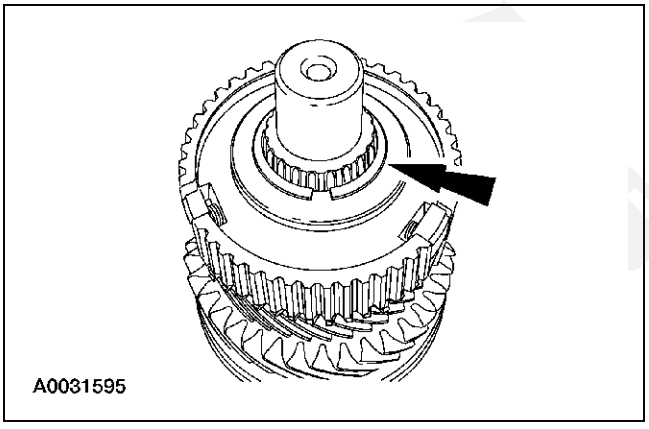

A0031592

6. Remove the first gear needle bearing.
   - Inspect the needle bearing for wear or damage. Install a new needle bearing as necessary.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

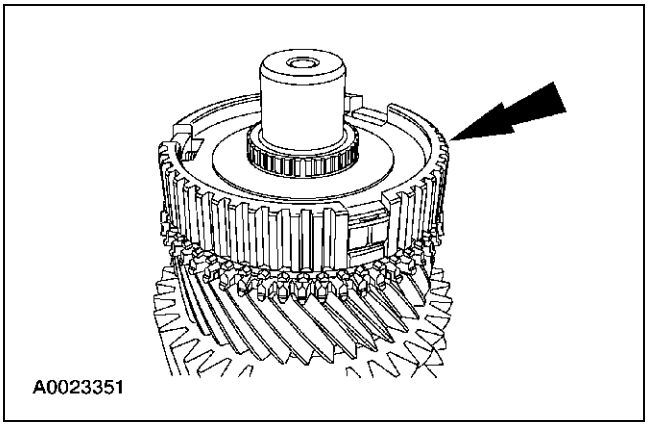


7. Remove the first gear synchronizer inner cone, the first gear synchronizer outer cone and the first gear synchronizer blocking ring.
   - Inspect all components for wear or damage. Install new components as necessary.



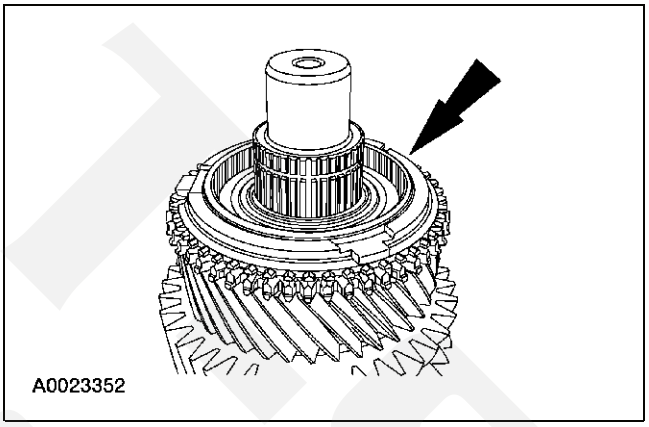
8. **NOTE:** Reposition the output shaft on the press with the input shaft end facing upward.

   Remove and discard the retaining ring.

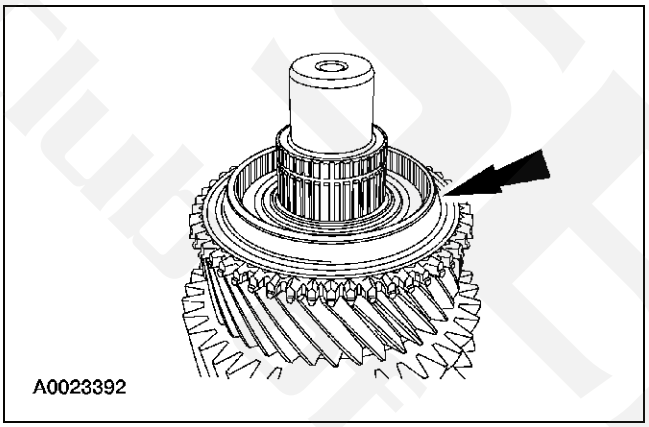


9. Remove the third/fourth synchronizer hub.

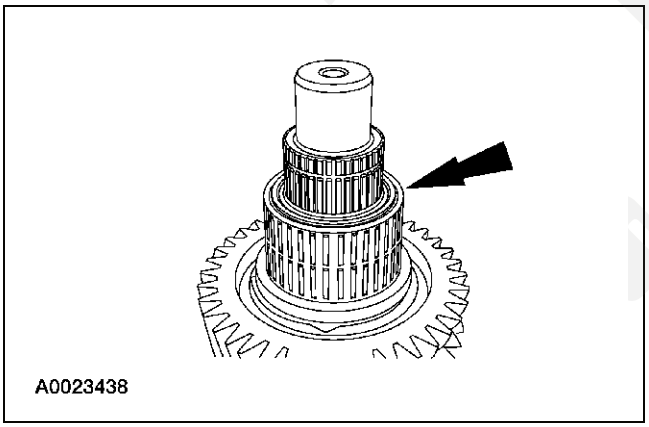
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



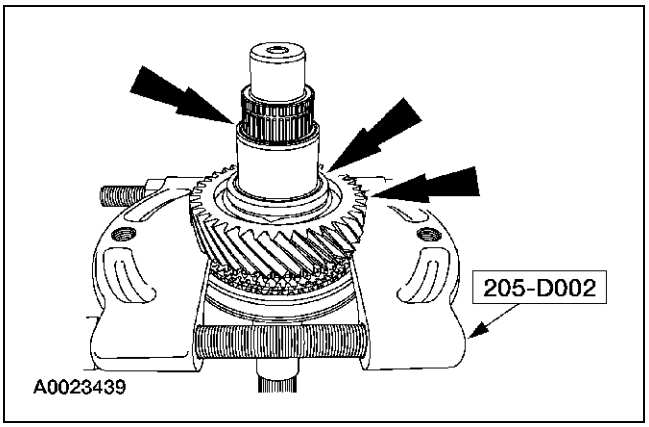
10. Remove the third/fourth blocking ring.



11. Remove the third gear.
    - Inspect the gear for wear or damage. Install a new gear as necessary.



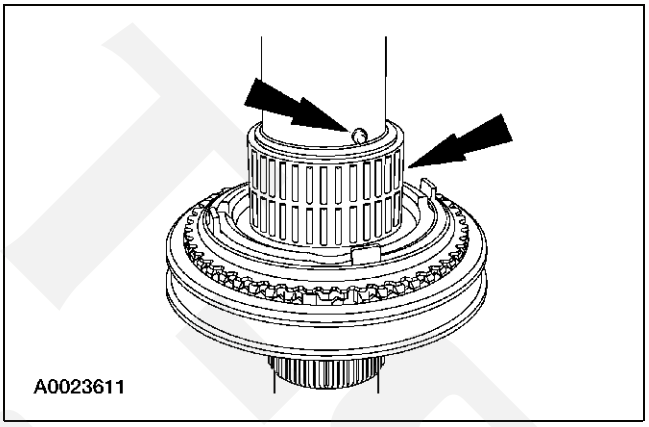
12. Remove the third gear needle bearing.
    - Inspect the needle bearing for wear or damage. Install a new needle bearing as necessary.



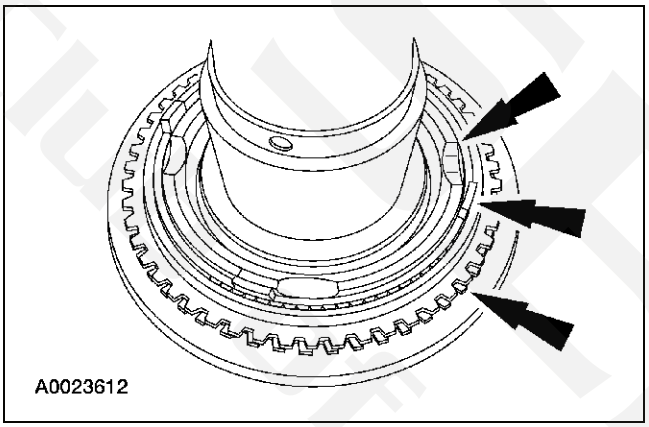
13. **NOTE:** Install the special tool behind second gear with the flat side of the tool facing second gear.

    Using the special tool, remove the spacer, second gear thrust washer and second gear.
    - Inspect the gear for wear or damage. Install a new gear as necessary.

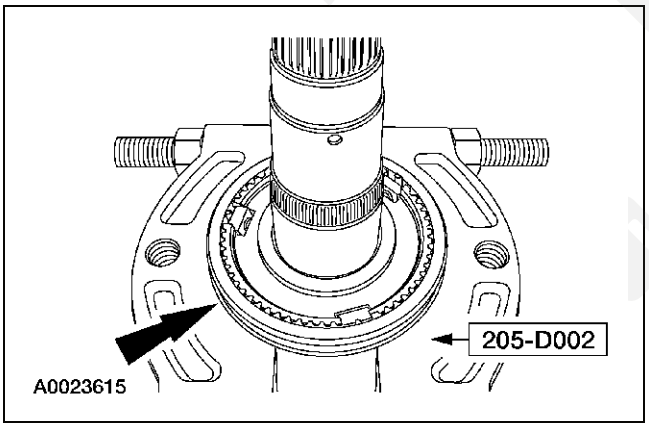
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



14. Remove the check ball and second gear needle bearing.
    - Inspect the needle bearing for wear or damage. Install a new needle bearing as necessary.



15. Remove the second gear synchronizer inner cone, second gear synchronizer outer cone and the second gear synchronizer blocking ring.
    - Inspect all components for wear or damage. Install new components as necessary.



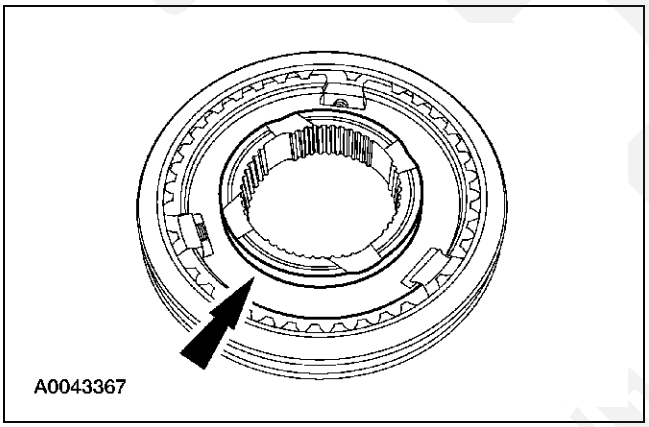
16. Remove the snap ring, then using the special tool, press off the first/second gear synchronizer.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

Assembly

1. Carry out the following before reassembling:
   - Inspect the gears for broken or cracked teeth. Check for unusual wear patterns.
   - Inspect the thrust washers for face wear, cracks, scoring and for signs of heat damage.
   - Inspect the bearings, bearing cups and the synchronizers for wear or damage.
   - Inspect the output shaft for scoring or worn or damaged splines. Install new components as necessary.

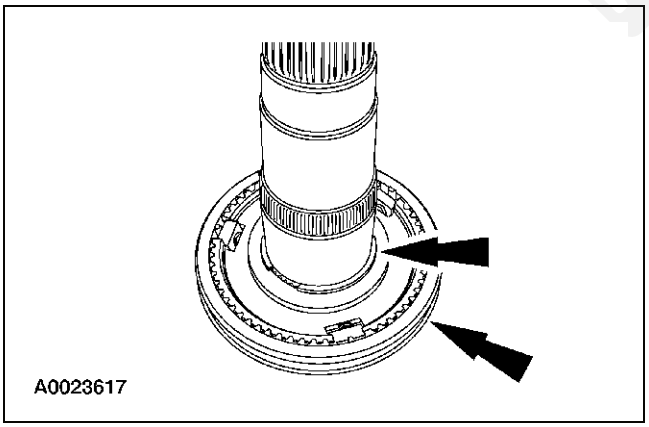
2. Lubricate all components with the recommended transmission fluid when reassembling.


A0043367

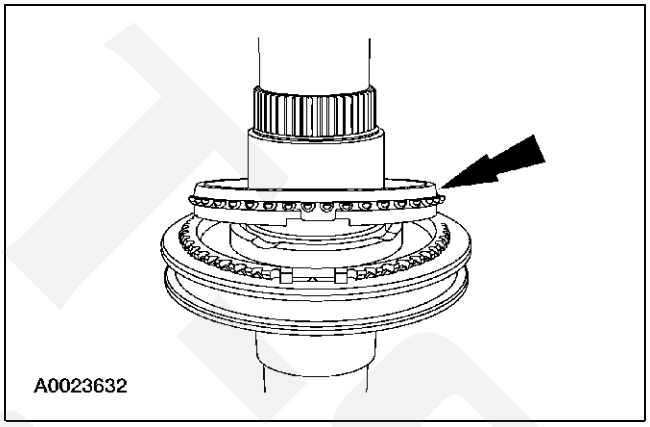
3. **NOTE:** Position the output shaft with the output end facing upward.

   NOTE: Install the synchronizer assembly with the deeper center flange of the synchronizer hub facing toward the rear of the output shaft.

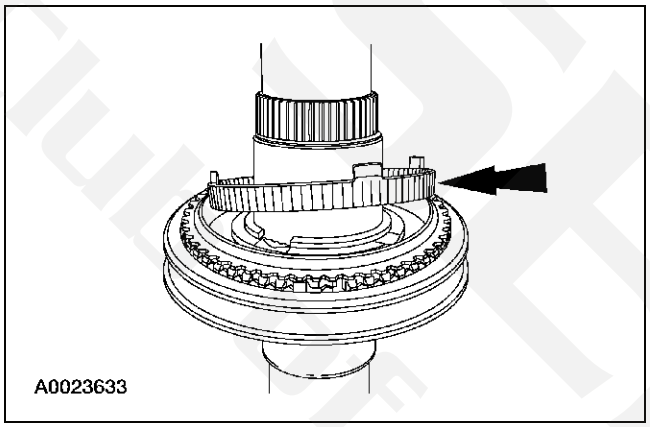
   Install the first/second synchronizer assembly on the output shaft, then install a new retaining ring.
   - It may be necessary to press the hub into position on the shaft.


A0023617

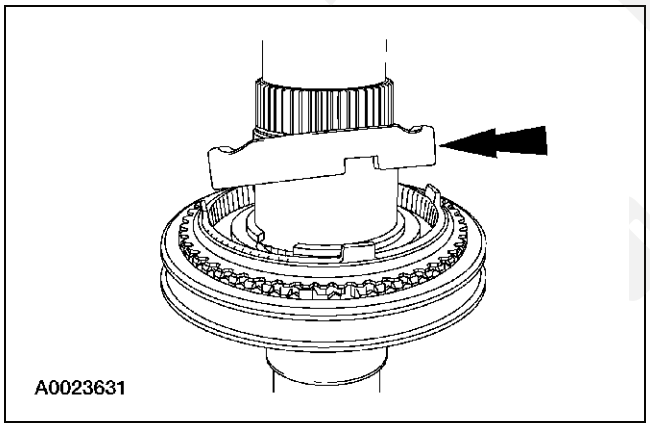
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



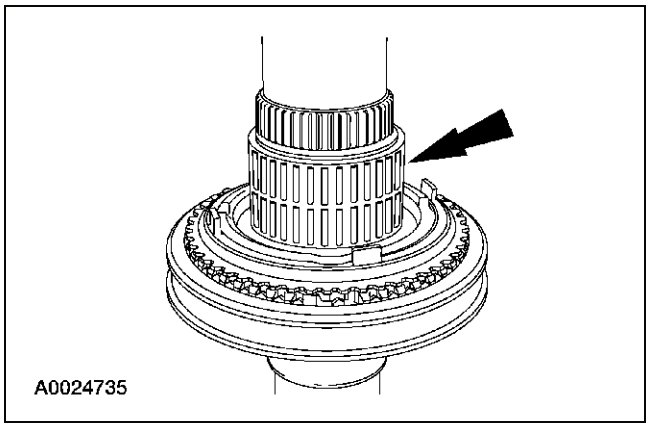
4. Install the first gear synchronizer blocking ring.
   - Align the blocking ring tabs with the synchronizer assembly.



5. Install the outer first gear synchronizer cone.

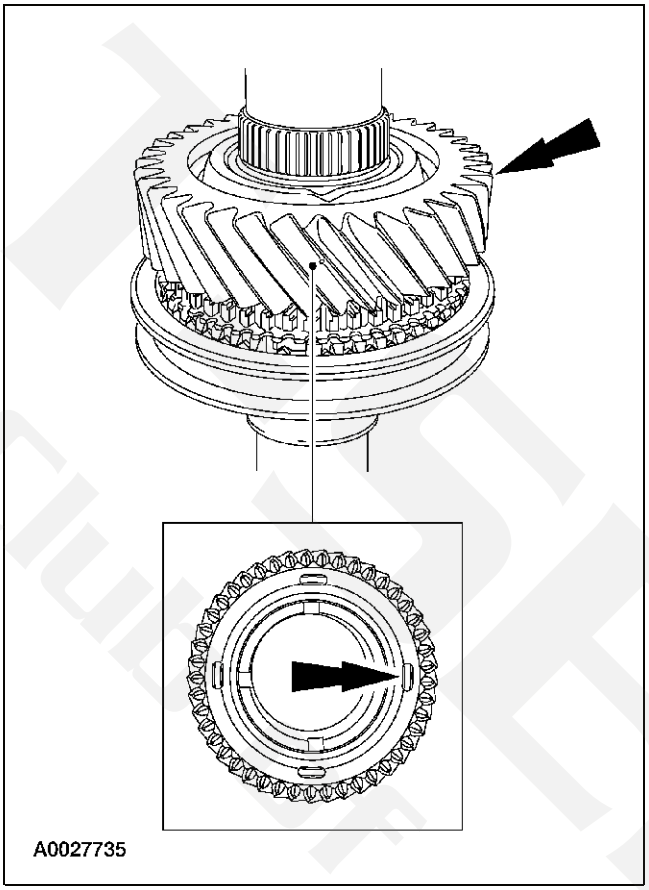


6. Install the inner first gear synchronizer cone. Rotate the inner cone till it is seated.

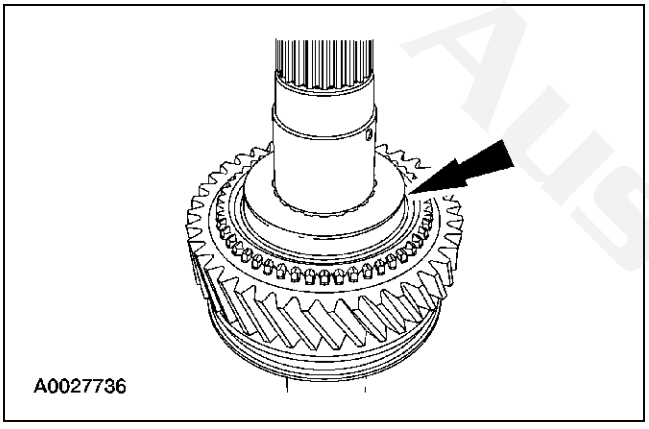


7. Install the first gear needle bearing.
   - Apply petroleum jelly to the bearing.

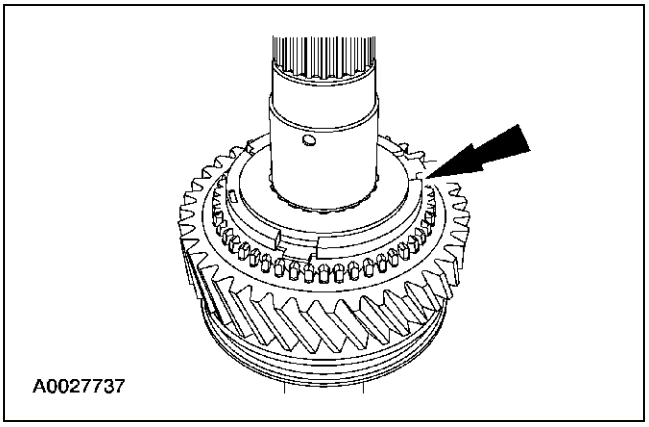
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)


A0027735

8. Install first gear.
   - Rotate the gear to align the gear slots with the inner cone tabs.

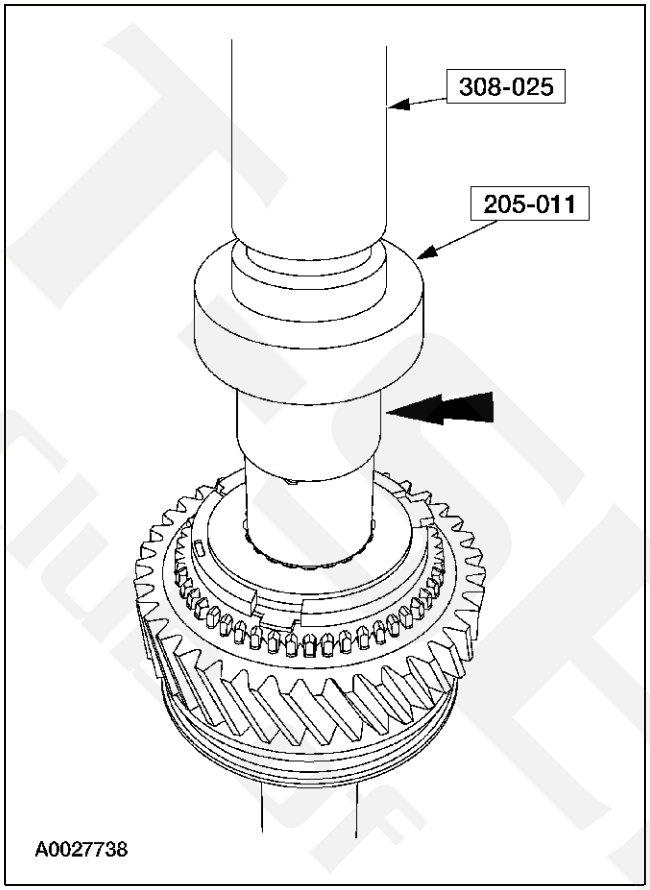

A0027736

9. Install the reverse synchronizer cone.

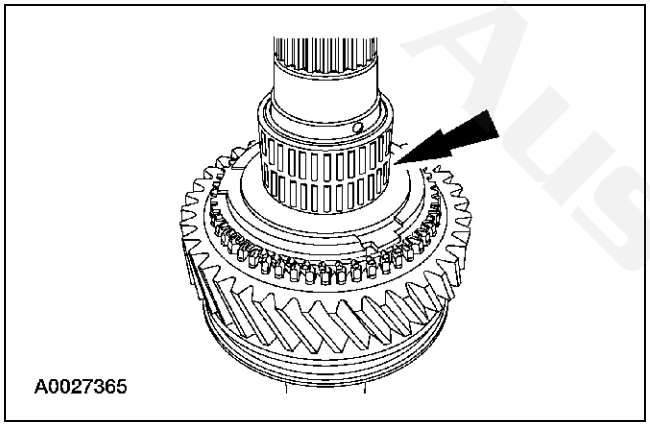

A0027737

10. Install the reverse gear blocking ring.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

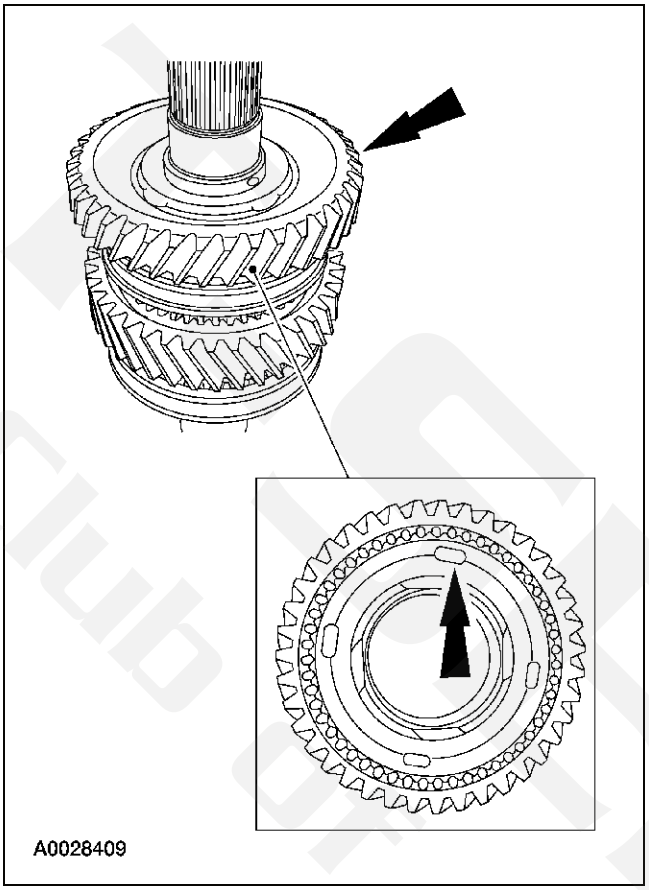


11. Using the special tools, install the reverse gear bearing spacer.

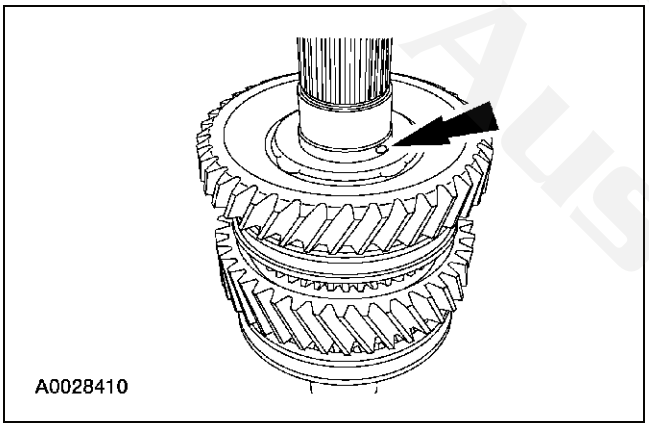


12. Install reverse gear needle bearing.
    - Apply petroleum jelly to the bearing.

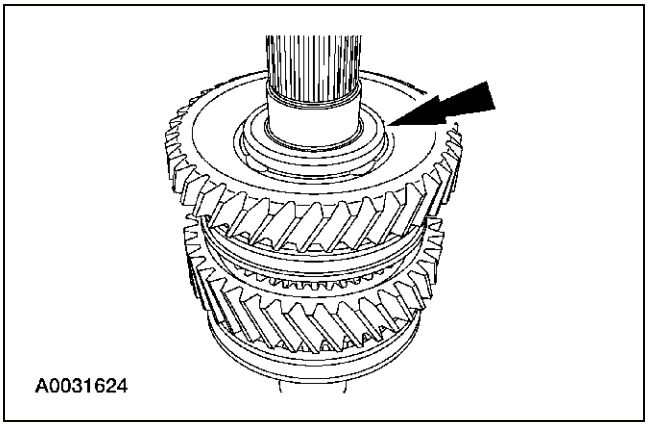
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



13. Install reverse gear.
    - Rotate the gear to align the gear slots with the inner cone tabs.

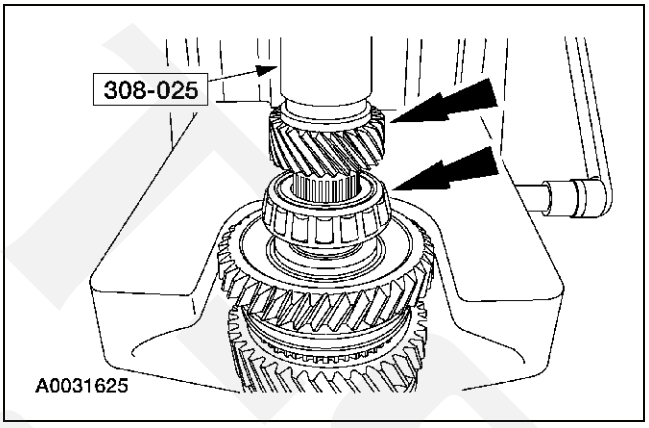


14. Install the check ball.
    - Use petroleum jelly to hold the check ball in place.



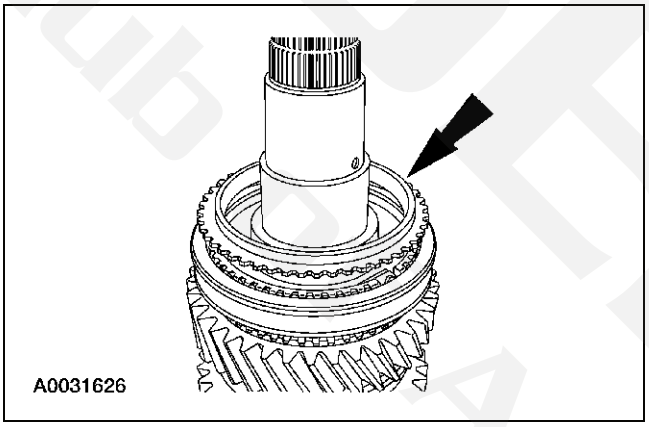
15. Install the thrust washer. Be sure to align the slot in the washer with the check ball.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

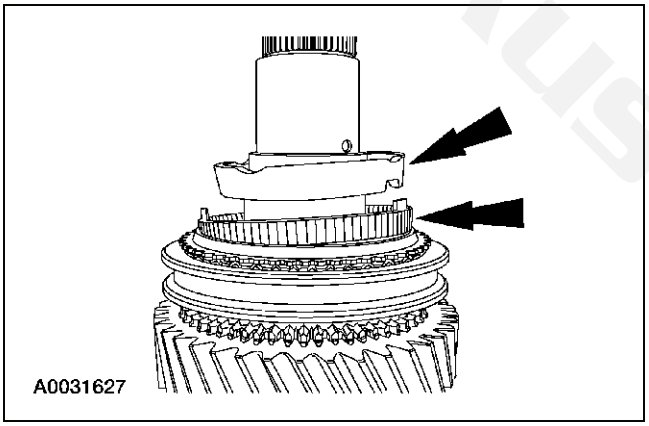


16. Install a new rear output shaft bearing, then fifth gear. Using the special tool, press both the bearing and gear into place.

17. Reposition the output shaft with the input end facing upward.

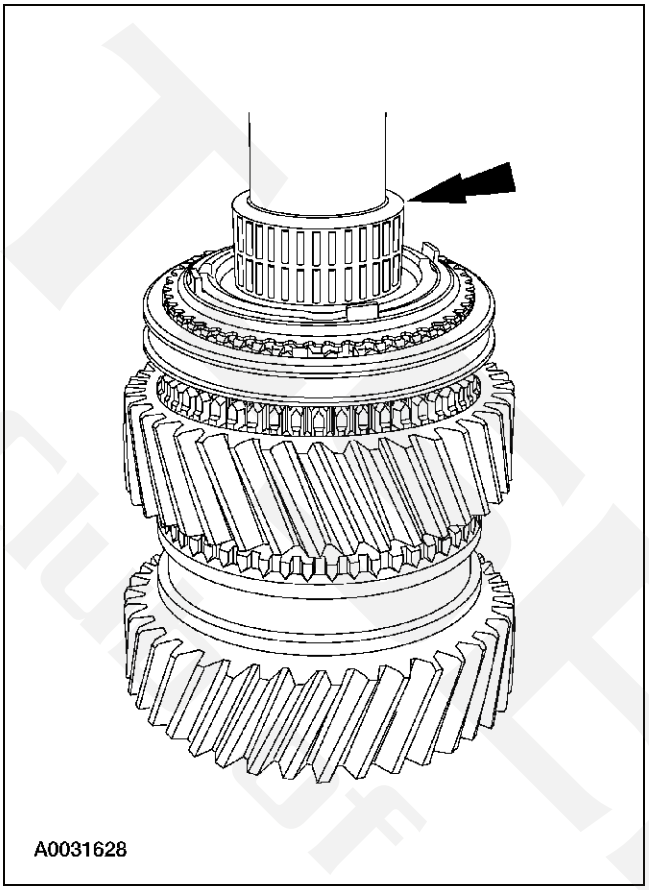


18. Install the second gear synchronizer blocking ring. Rotate the blocking ring until seated.

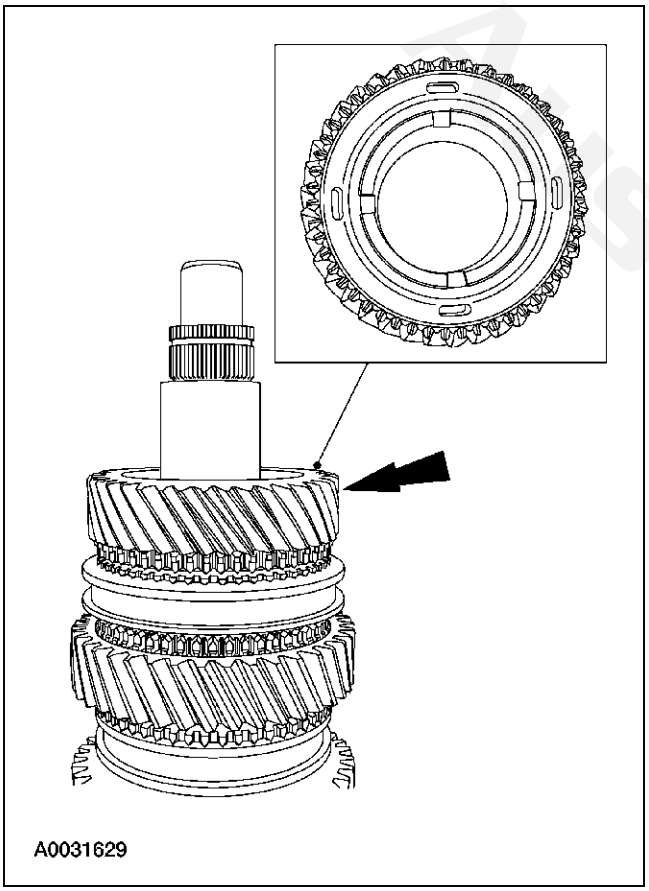


19. Install the second gear synchronizer outer cone and the second gear synchronizer inner cone.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

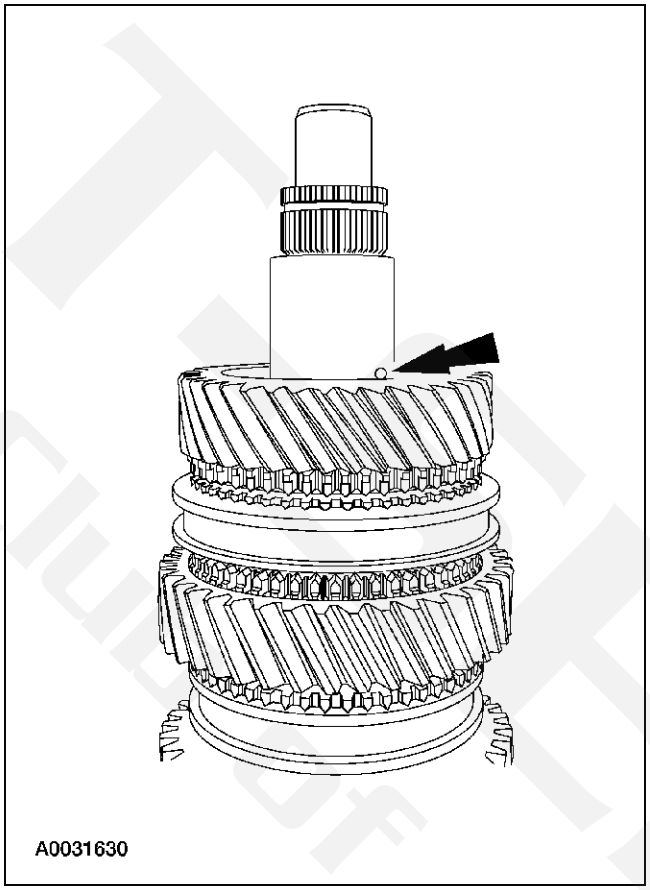

A0031628

20. Install the second gear bearing.
    - Apply petroleum jelly to the bearing.


A0031629

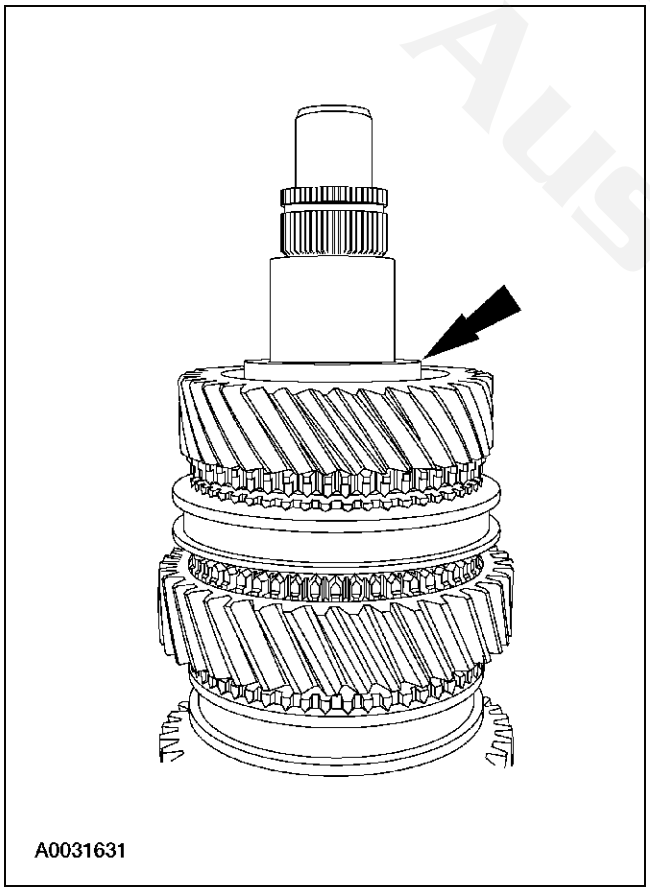
21. Install second gear.
    - Rotate the gear to align the gear slots with the inner cone tabs.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



A0031630

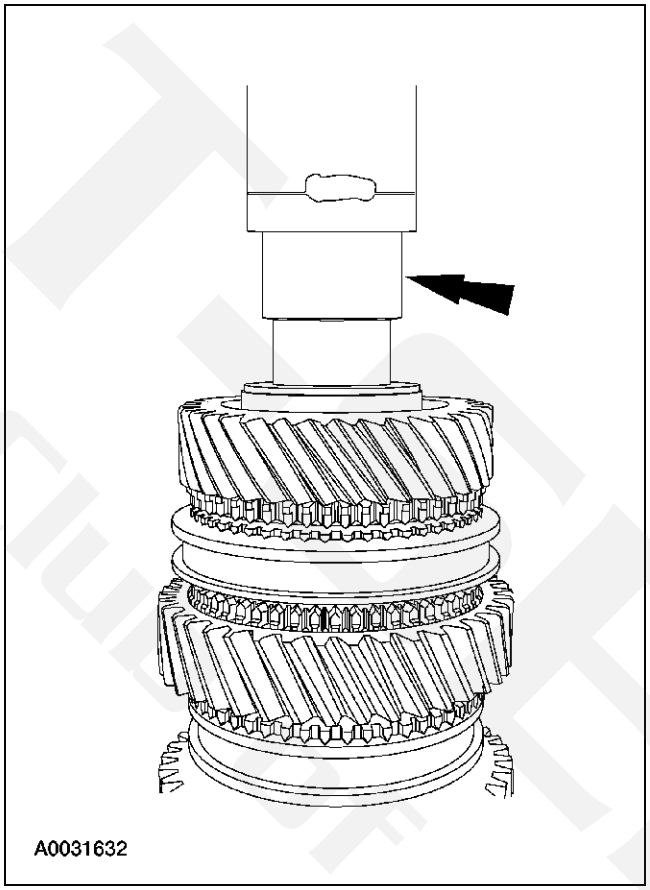
22. Install the check ball.
    - Use petroleum jelly to hold the check ball in place.



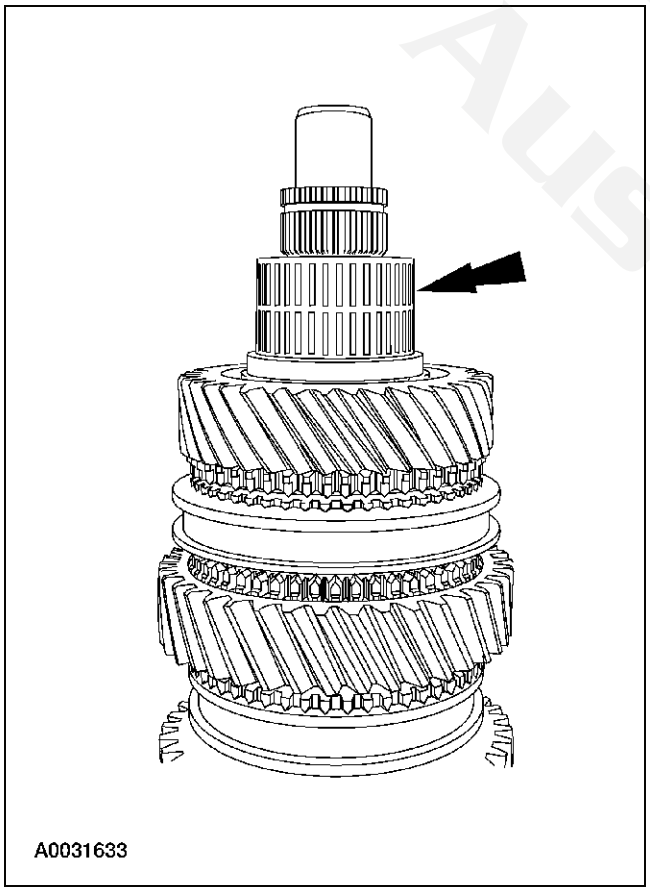
A0031631

23. Install the thrust washer. Be sure to align the slot in the washer with the check ball.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

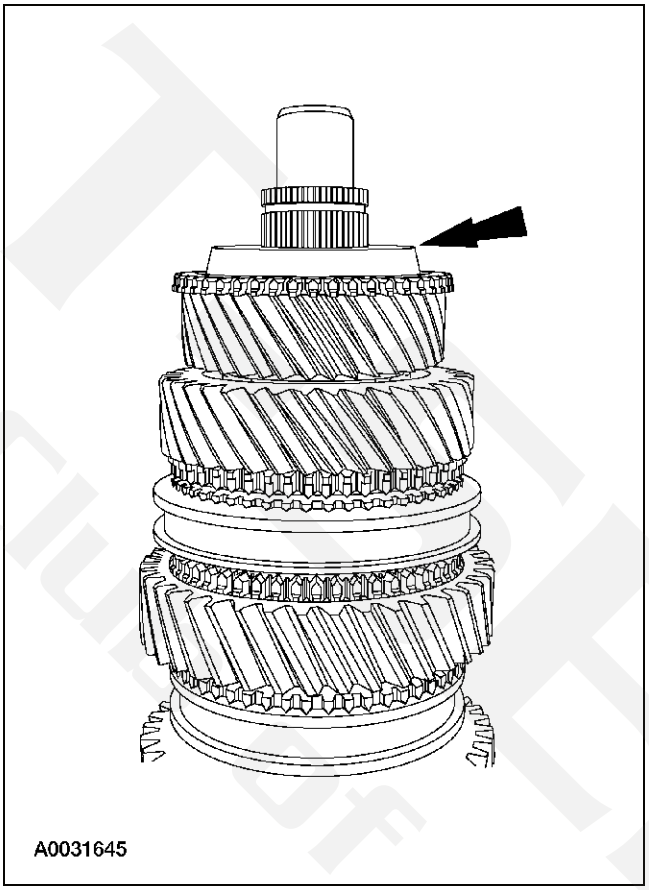

A0031632

24. Press the bearing spacer onto the output shaft.

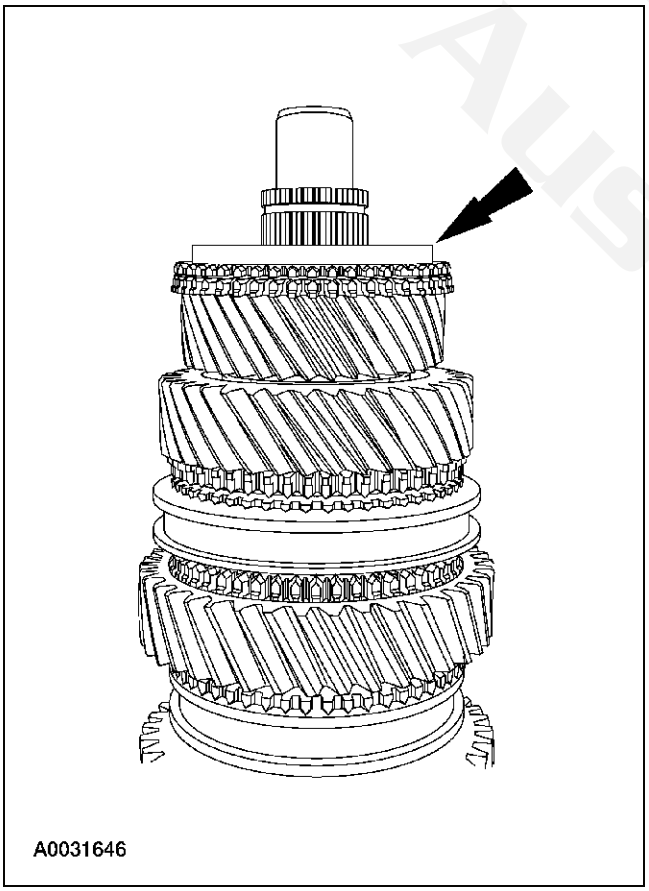

A0031633

25. Install the third gear bearing.
    - Apply petroleum jelly to the bearing.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

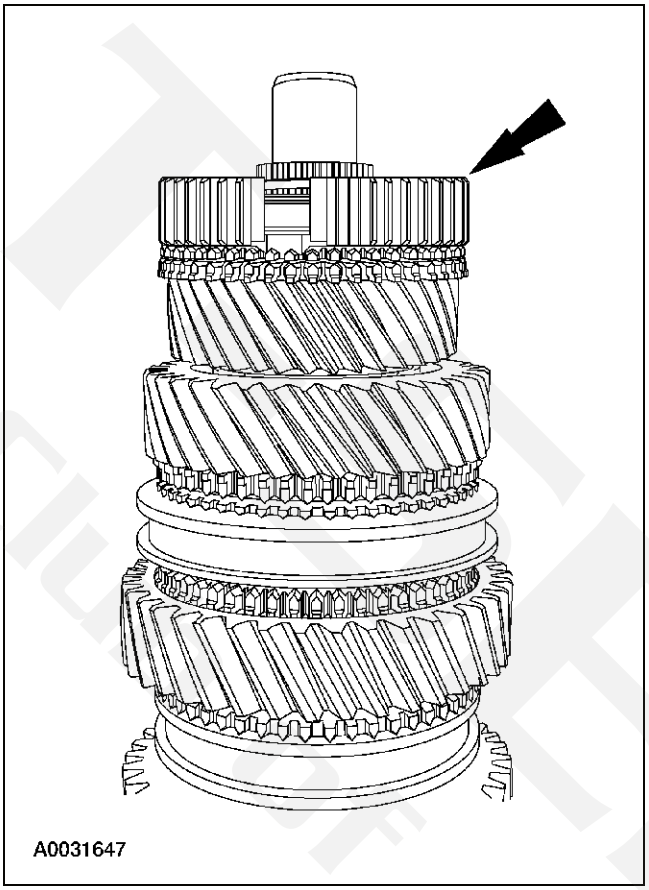

A0031645

26. Install third gear.

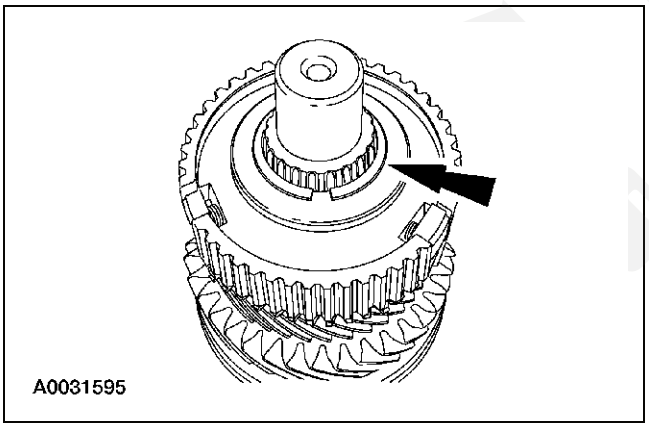

A0031646

27. Install the third gear synchronizer blocking ring.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)


A0031647

28. Install the third/fourth gear synchronizer body.
    - Install the synchronizer body with the raised center facing downward.
    - Rotate the blocking ring until seated.

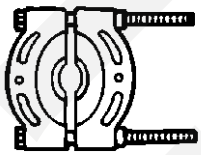
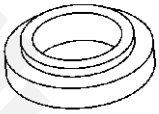

A0031595

29. Install a new retaining ring.

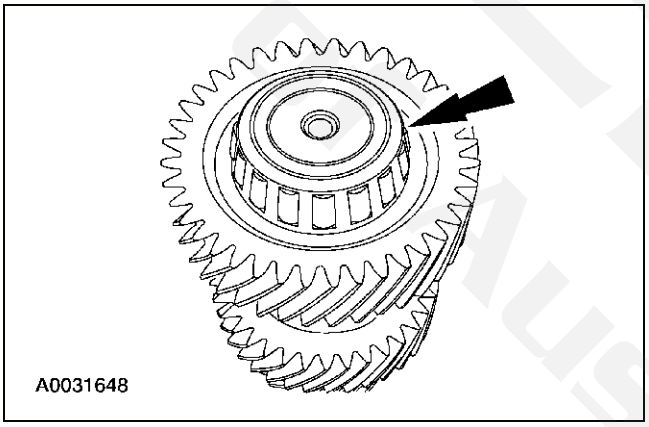
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

Countershaft Bearing

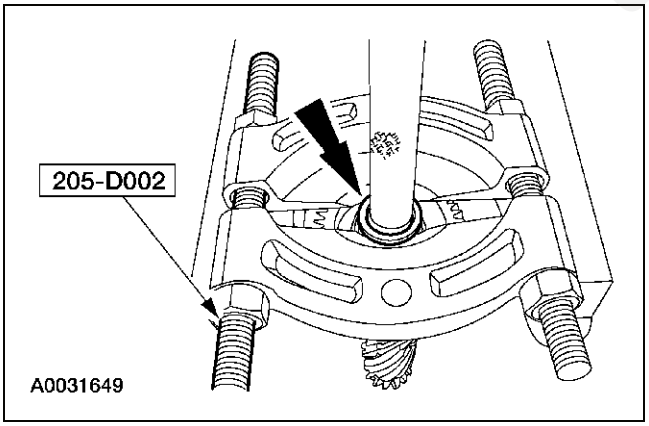
Special Tool(s)

 ST1895-A	Remover, Drive Pinion Bearing Cone 205-D002 (D79L-4621-A) or equivalent
 ST2388-A	Installer, Drive Pinion Bearing Cone 205-011 (T57L-4621-B)

Disassembly and Assembly

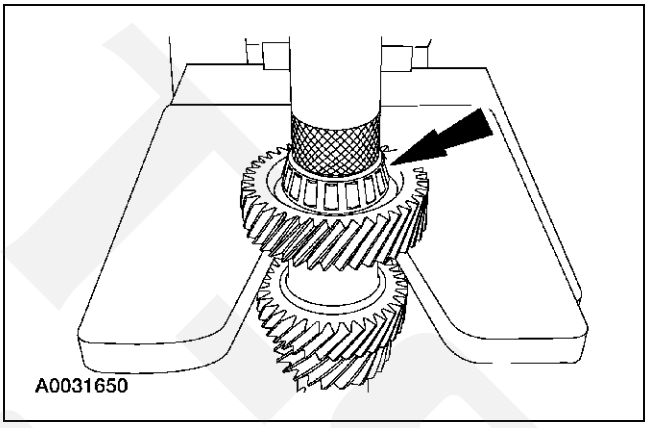


1. Cut the outer cage, then remove the outer cage and rollers.



2. Using the special tool and a press, remove the inner bearing.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



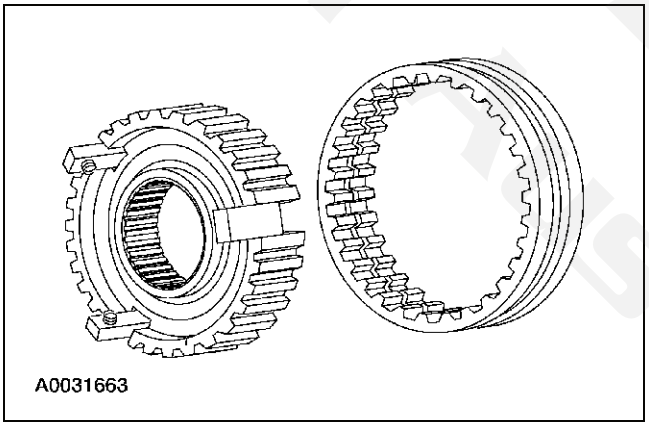
3. Using the special tools, install the new countershaft bearing.

Synchronizers

Disassembly and Assembly

NOTE: This procedure applies to all synchronizer assemblies.

1. Scribe an alignment mark on the sliding sleeve and the hub for assembly reference.



2. Remove the sliding sleeve, then remove the synchronizer struts and the springs.

3. Install the synchronizer struts and the springs.

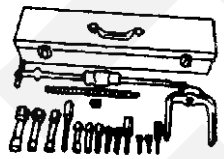
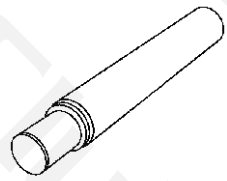
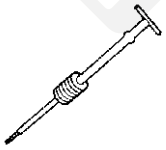
4. ⚠ **CAUTION: Match the alignment marks made during disassembly. The sleeve and the hub have an extremely close fit. Hold the sleeve and hub square to prevent jamming. Do not force the sleeve onto the hub.**

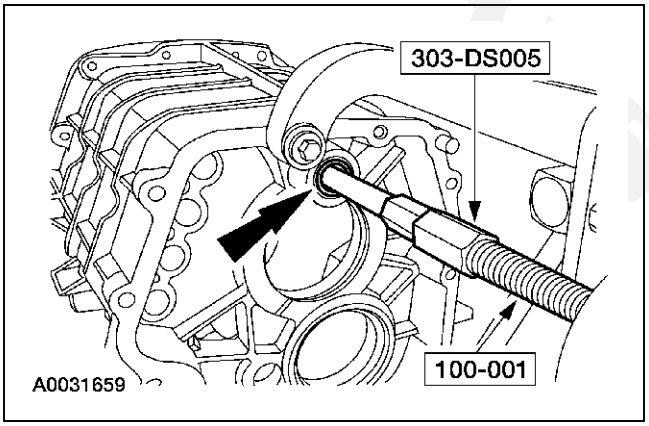
   Install the sliding sleeve.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)

Gearshift Rail Bushing

Special Tool(s)

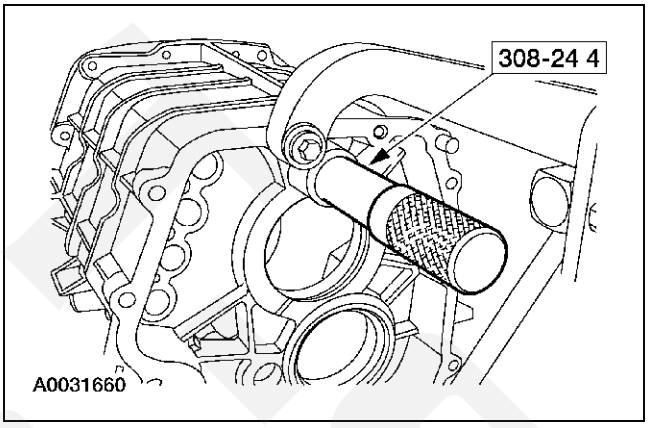
 ST1144-A	Universal Puller Set 303-DS005 (D80L-100-A) or equivalent
 ST1085-B	Installer, Shift Rail Bushing 308-244 (T96P-7025-F)
 ST1185-A	Slide Hammer 100-001 (T50T-100-A)



Disassembly and Assembly

1. Using the special tools, remove the gearshift rail bearing from the transmission case. Discard the bearing.

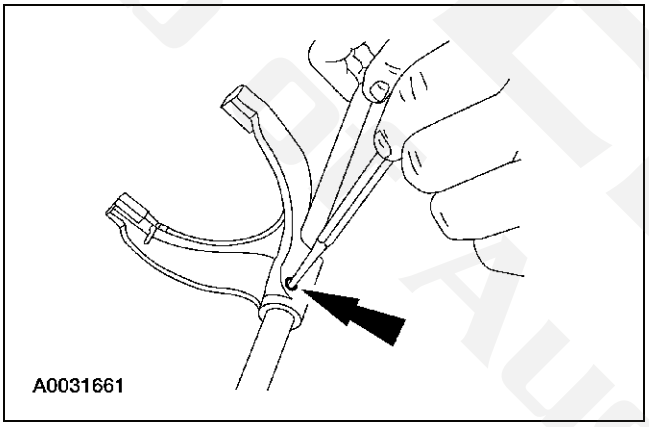
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



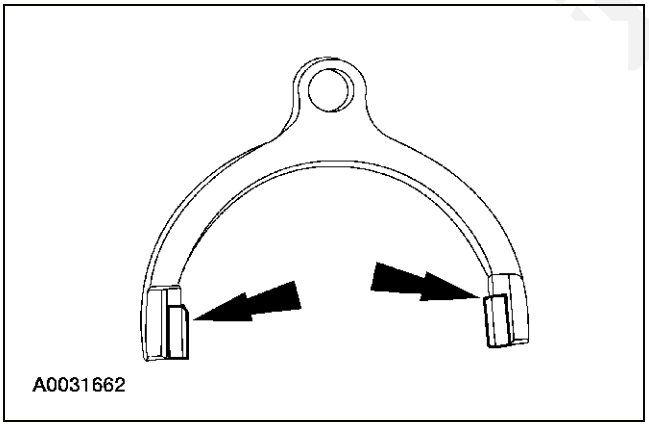
2. Using the special tool, install the main shift rail bearing.

Gearshift Rail and Fork

Disassembly and Assembly

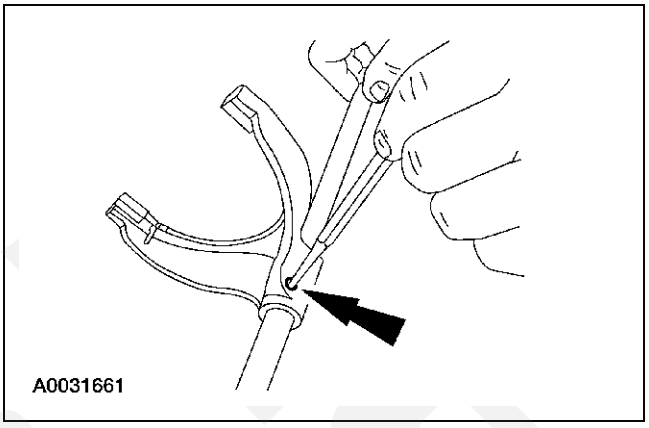


1. Using a 5/32-inch drift and a hammer, remove and discard the split pin. Slide the shift fork from the shift rail.

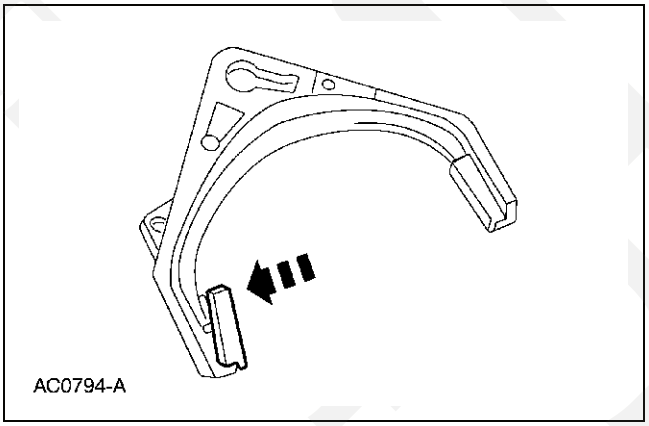


2. Remove the gearshift fork inserts.

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES (Continued)



3. ⚠ **CAUTION: Support the shift rail to prevent damage to the parts.**
   Position the gearshift fork on the shift rail. Align the split pin hole and install a new split pin.

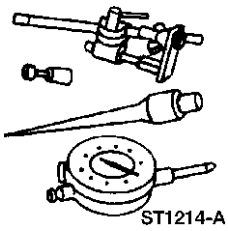
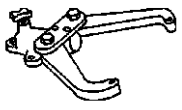


4. Install the gear shift fork inserts.

ASSEMBLY

Transmission

Special Tool(s)

 ST1214-A	Dial Indicator Gauge with Holding Fixture 100-002 (TOOL-4201-C) or equivalent
 ST1186-A	Holding Fixture, Transmission 307-003 (T57L-500-B)

(Continued)

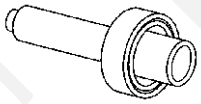
Special Tool(s)

 ST1303-A	Remover/Installer, Bearing Tube 308-024 (T75L-7025-B)

(Continued)

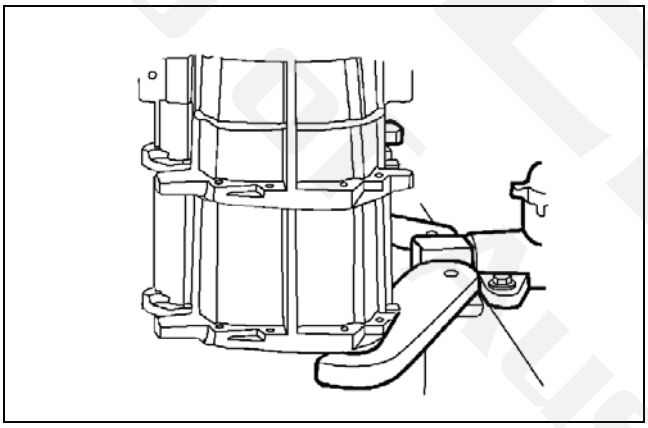
ASSEMBLY (Continued)

Special Tool(s)

 ST2338-A	Replacer/Adapter 308-239 (T96P-7025-A)
 ST2199-A	Installer, Transmission Extension Housing Oil Seal 308-227 (T94P-7657-A)

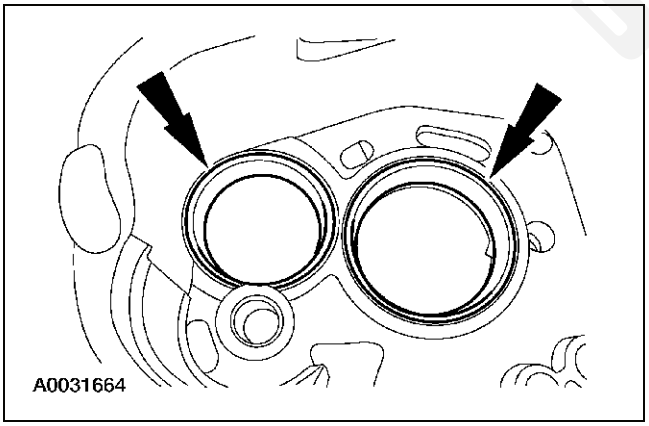
Materials

Item	Specification
MERCON Multi-Purpose (ATF) Transmission Fluid XT-2-QDX or equivalent	MERCON
Premium Long Life Grease XG-1-C, K or T	ESA-M1C75-B



1. Lubricate all components with transmission fluid during assembly.

2. Attach the spacer block to the special tool.

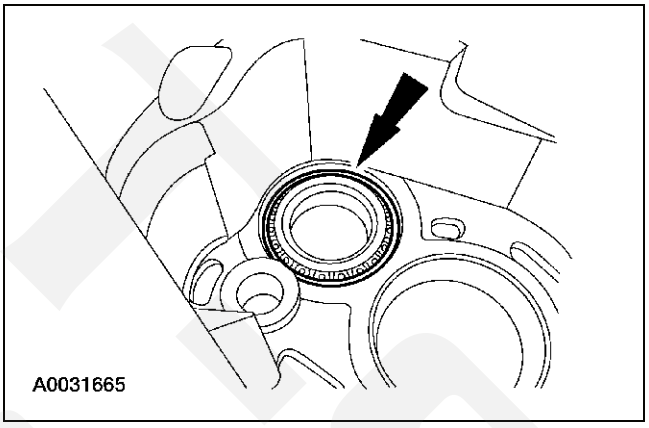


3. **NOTE:** If a new rear output shaft bearing was installed or a new rear countershaft bearing is being used, install new bearing cups.

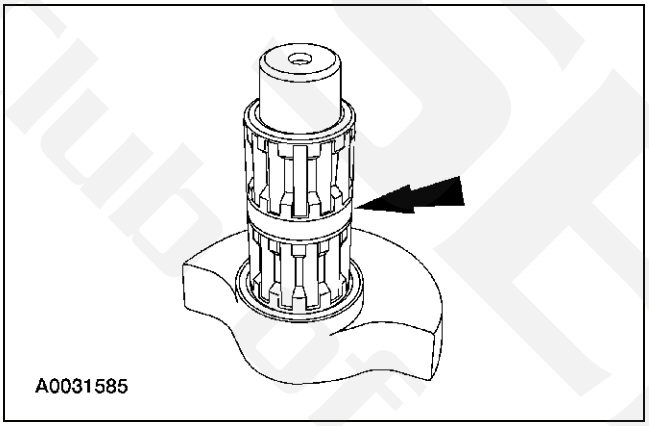
   Install the rear countershaft bearing cup and the rear output shaft bearing cup.

   - Lubricate the bearing cups and the shift rail bearing with petroleum jelly.

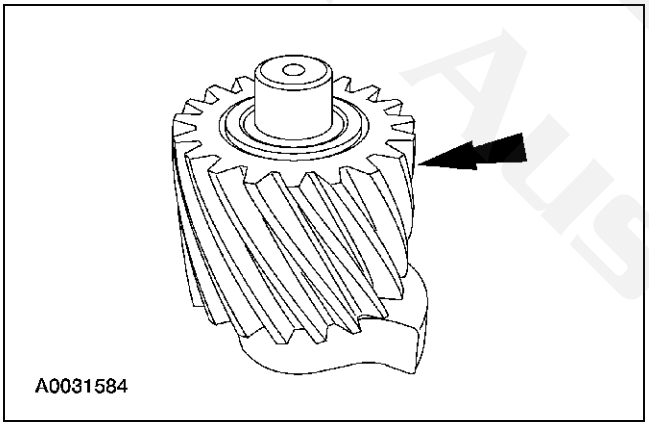
ASSEMBLY (Continued)



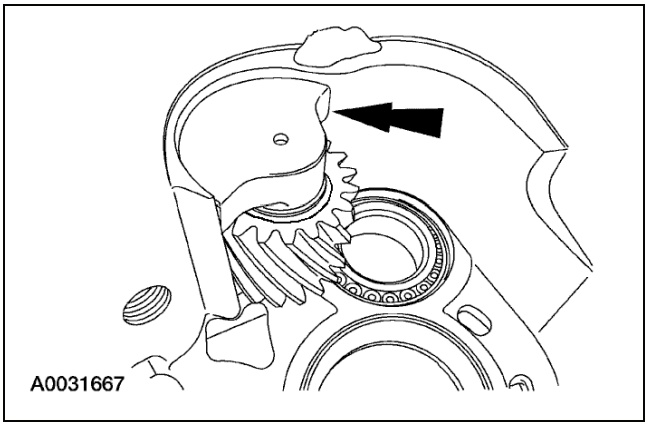
4. Install the rear countershaft bearing.



5. Install the reverse idler gear bearings and spacer on the shaft.

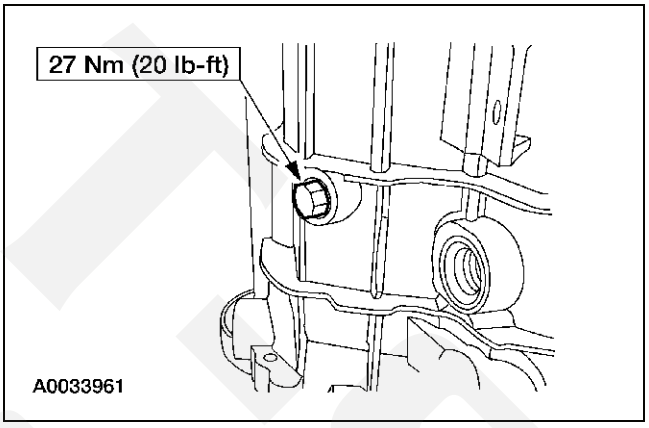


6. Install the reverse idler gear on the shaft.

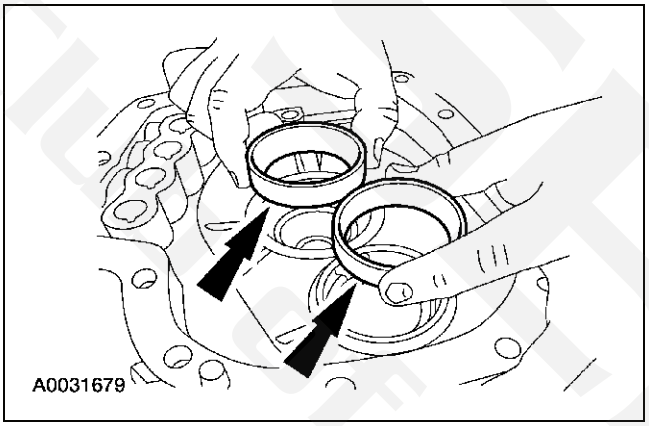


7. Install the reverse idler gear into the case.

ASSEMBLY (Continued)



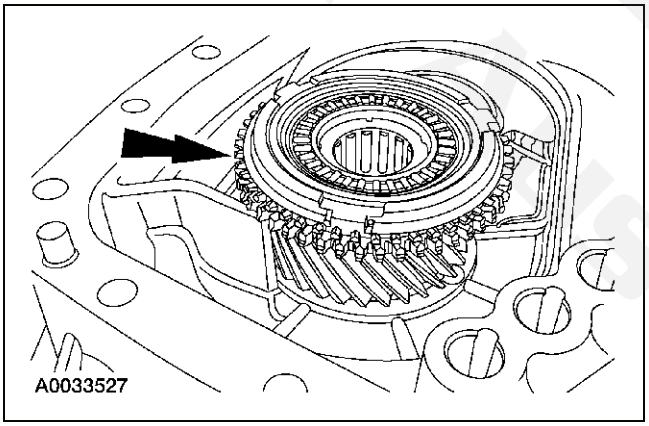
8. Install a new seal on the reverse idler bolt, then install the bolt in the transmission case.



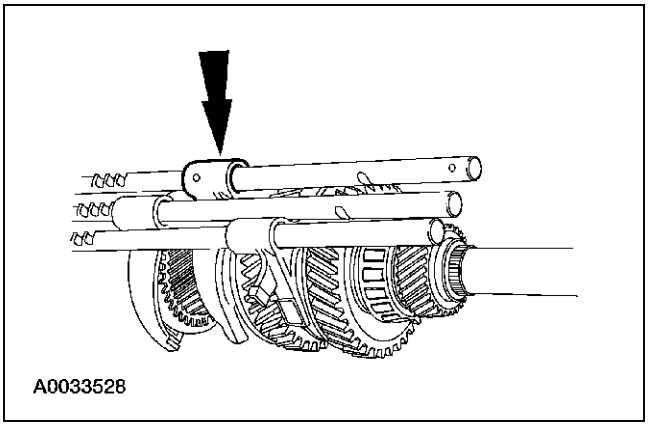
9. **NOTE:** If a new front input shaft bearing or front countershaft bearing was installed, install new bearing cups.

   Install the front input shaft bearing cup and the front countershaft bearing cup. Do not install the shims at this time.

   - Install the transmission main case.

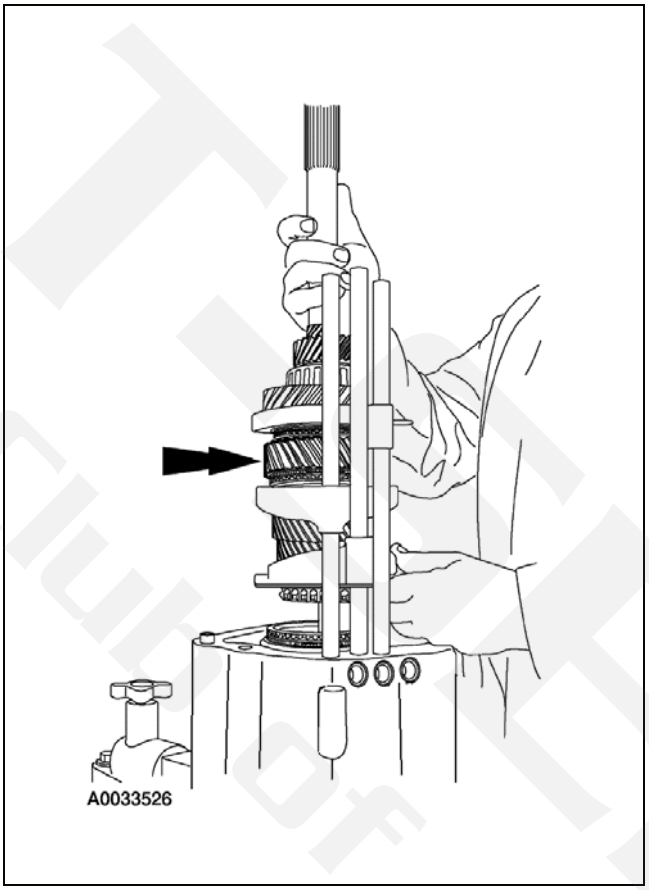


10. Install the input shaft.

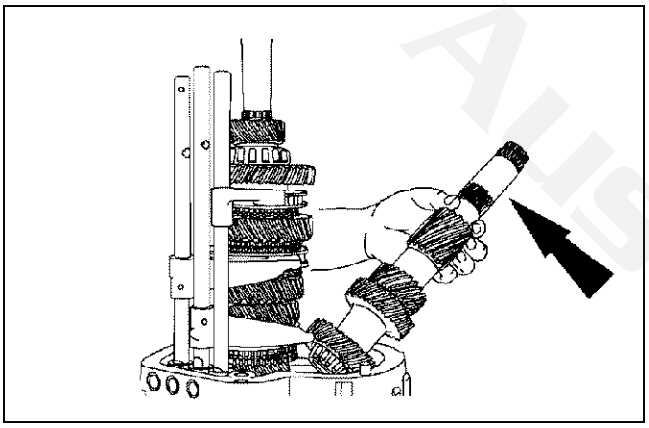


11. Install the shift rails and shift forks on the mainshaft.

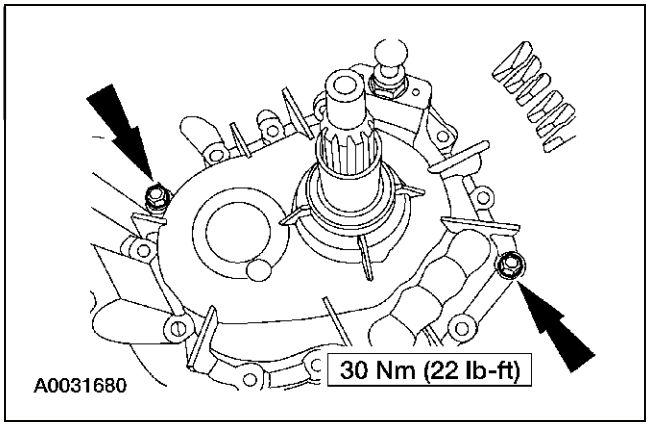
ASSEMBLY (Continued)



12. Install the mainshaft onto the spacer block.
    - The notches on the shift rail should be pointing upward.
    - Align the shift rails in the bores.

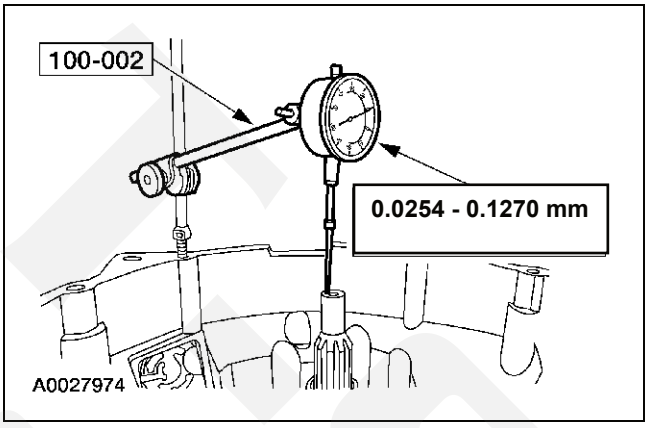


13. Install the countershaft.
    - Lift the mainshaft upward, tilt the countershaft and install.



14. Install the case with two opposing bolts.

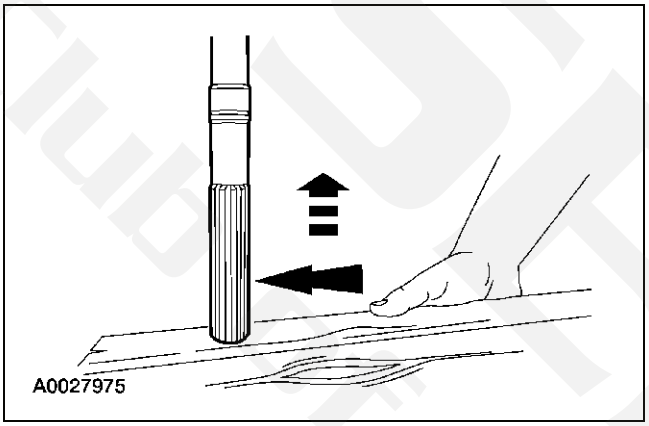
ASSEMBLY (Continued)

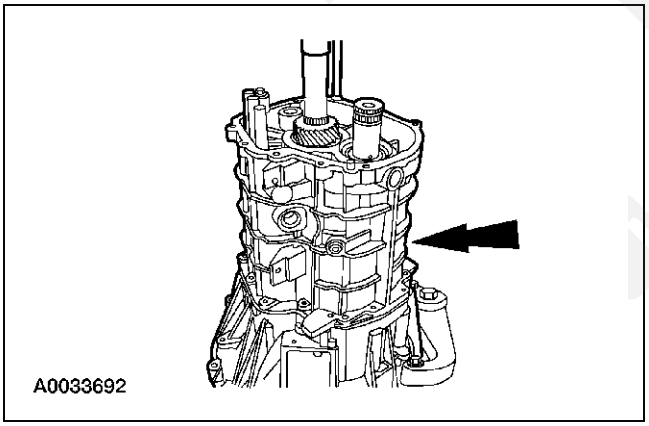


15. **NOTE:** Rotate the transmission so that the input shaft is pointing upward.

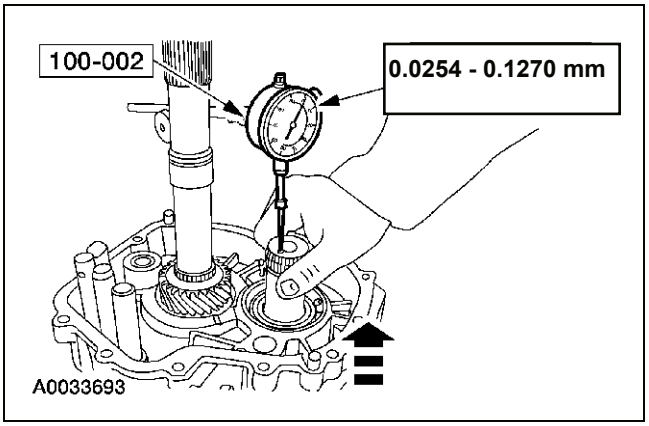
    NOTE: Rotate the input shaft to seat the bearings.

    Using the special tools, measure the input shaft end play by applying an upward load on the output shaft. Record the measurement.





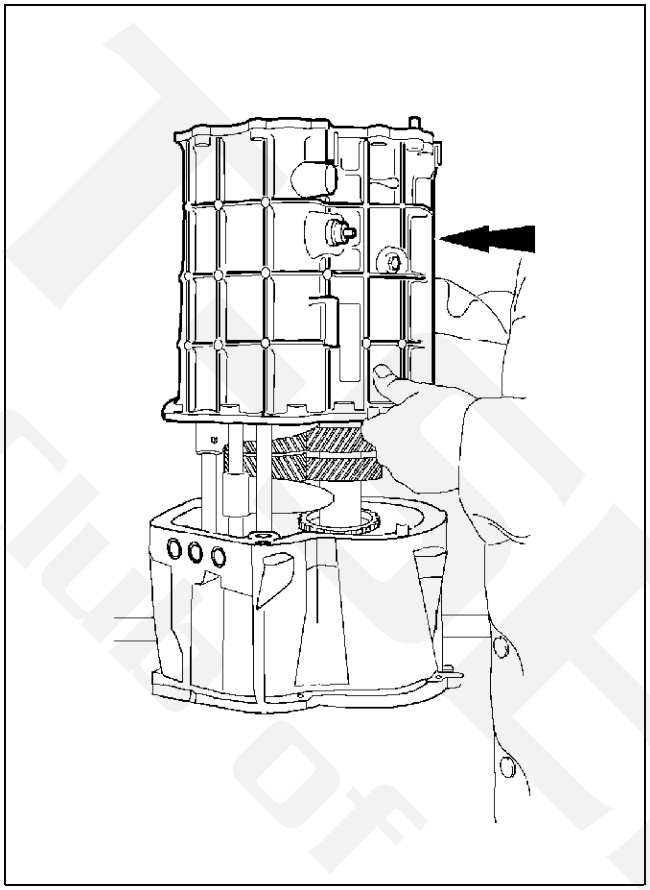
16. Rotate the transmission so that the input shaft is pointing downward.



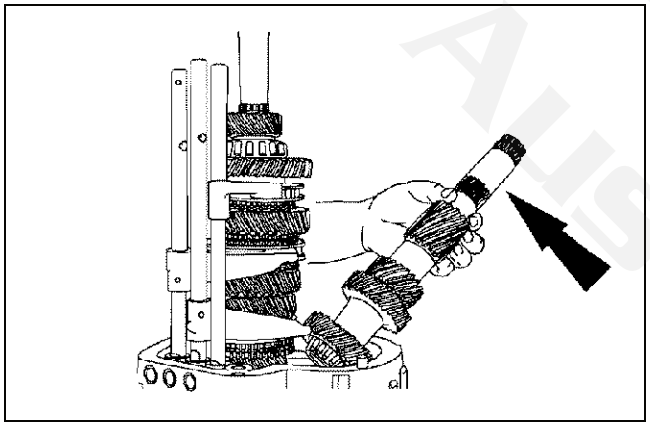
17. **NOTE:** Rotate the countershaft to seat the bearings.

    Using the special tools, measure the countershaft gear end play by pulling upward on the countershaft. Record the measurement.

ASSEMBLY (Continued)

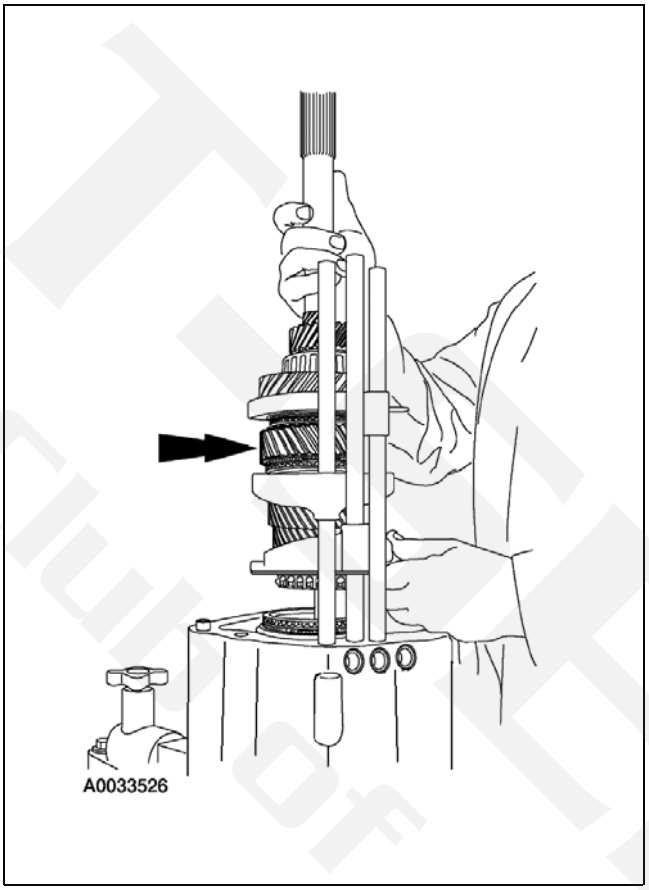


18. Remove the two bolts and lift the transmission main case off.

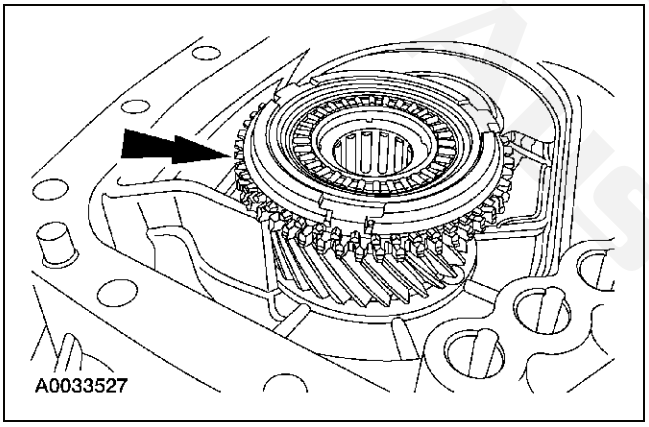


19. Remove the countershaft.

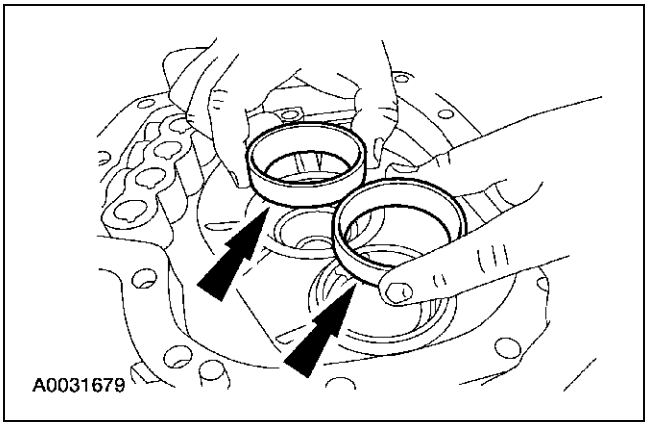
ASSEMBLY (Continued)



20. Remove the mainshaft.

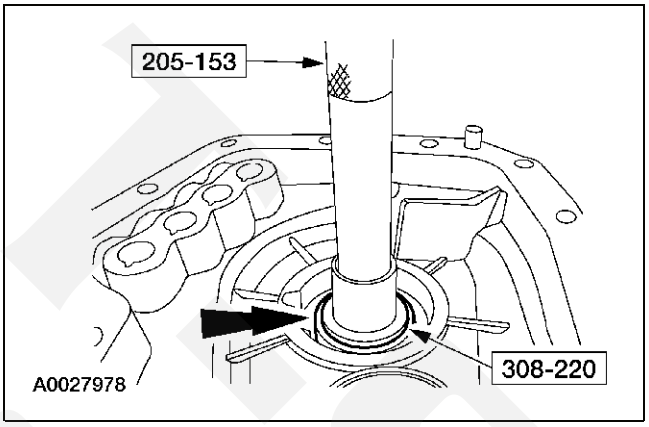


21. Remove the input shaft.

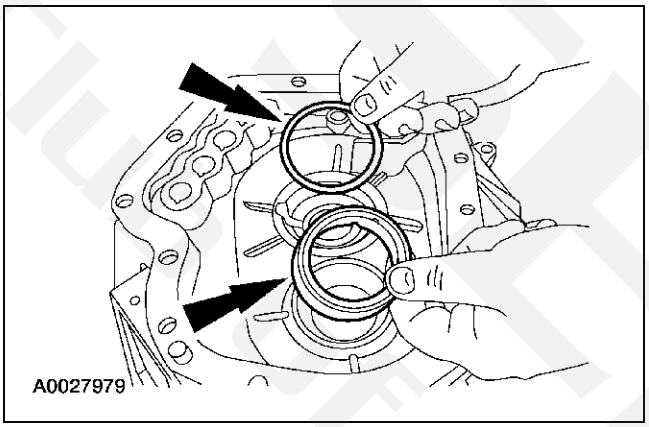


22. Remove the front input shaft bearing cup and the front countershaft bearing cup.

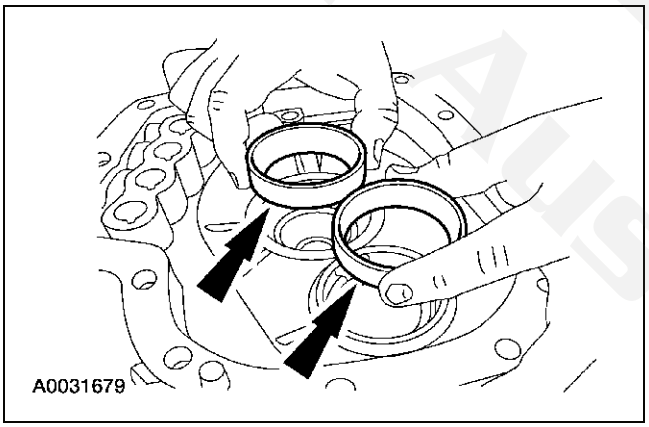
ASSEMBLY (Continued)



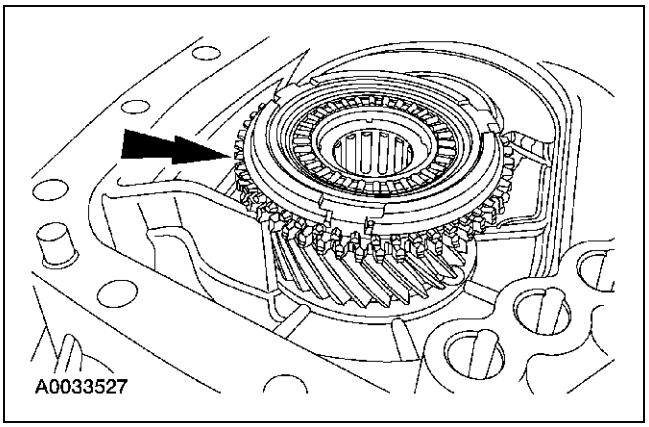
23. Using the special tools, install the new input shaft seal.



24. Using the recorded end play measurements, select and install the appropriate shims to achieve the proper end play.

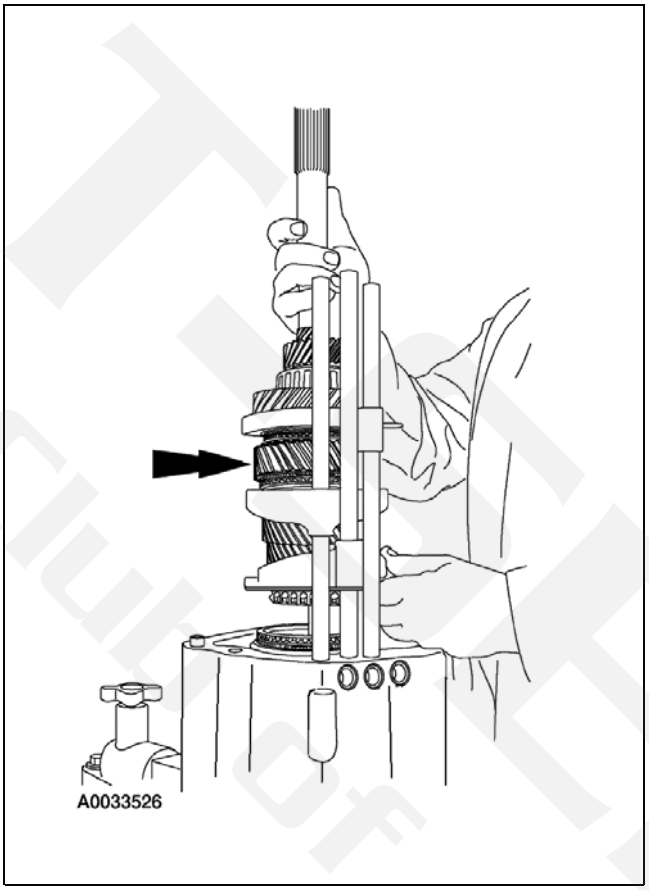


25. Install the front input shaft bearing cup and the front countershaft bearing cup.

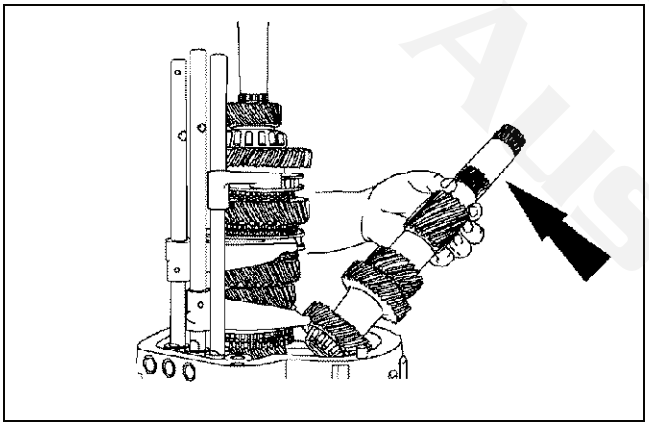


26. Install the input shaft.

ASSEMBLY (Continued)



27. Install the mainshaft.



28. Install the countershaft.

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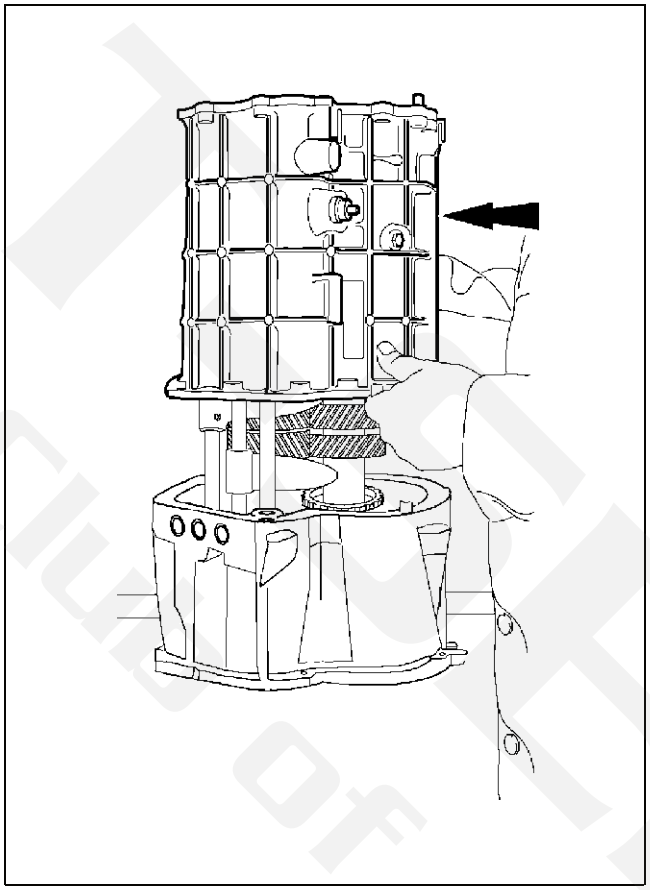
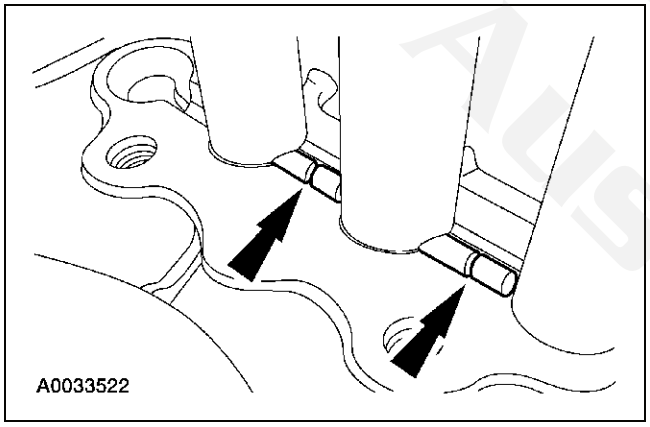
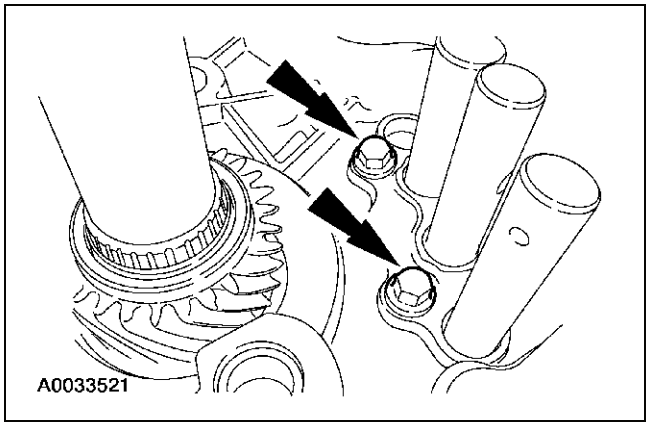
ASSEMBLY (Continued)



29. Clean the mating surfaces of the transmission main case and the spacer block. Apply a bead of silicone rubber to the sealing surface on the spacer block then install the transmission main case. Tighten the bolts in a star pattern.

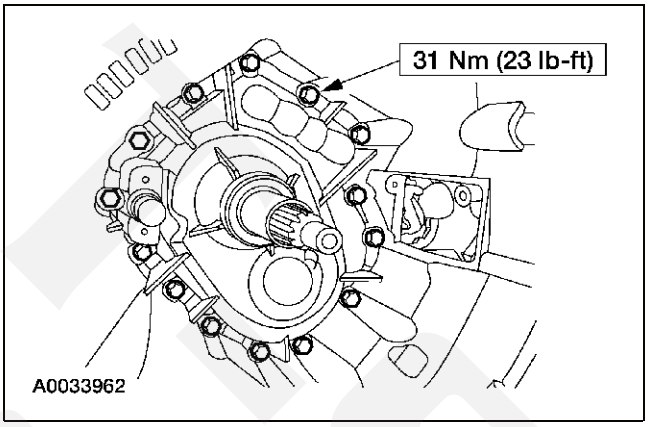


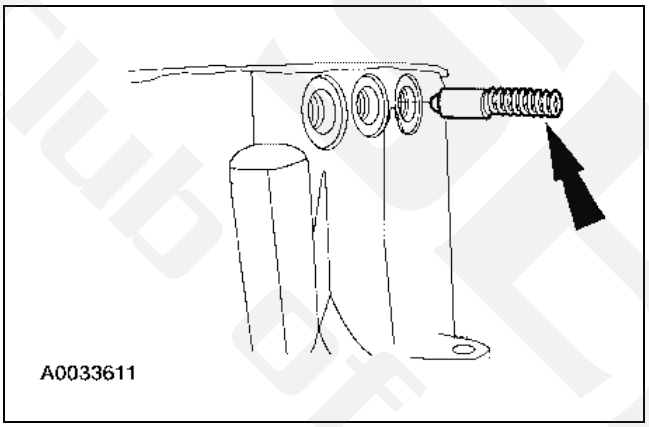
30. Install the lock pins.



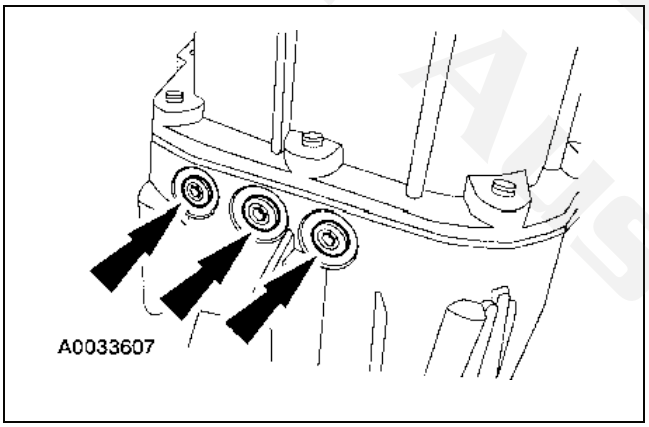
31. Install the lock plate.

ASSEMBLY (Continued)

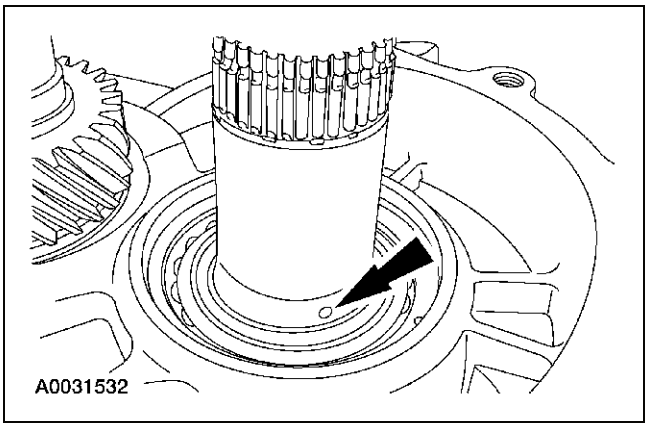




32. Install the detents and the detent springs.

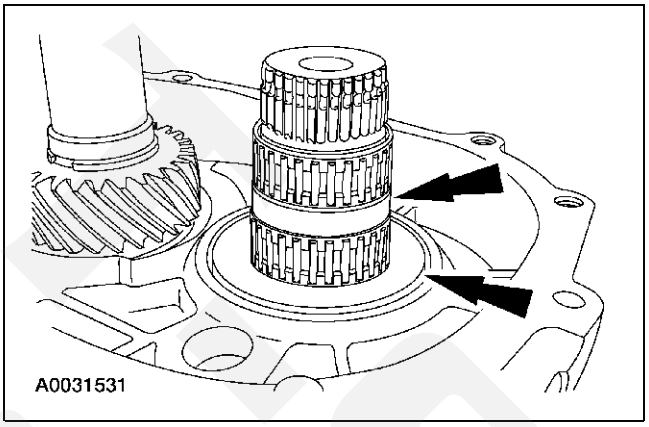


33. Install the detent plugs.

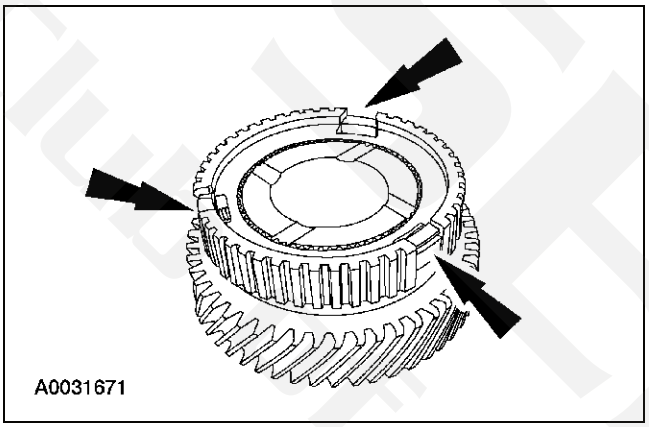


34. Install the check ball.
    - Use petroleum jelly to hold the check ball in place.

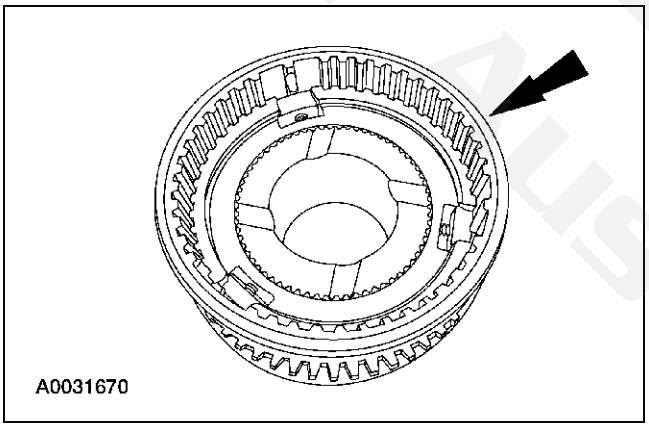
ASSEMBLY (Continued)



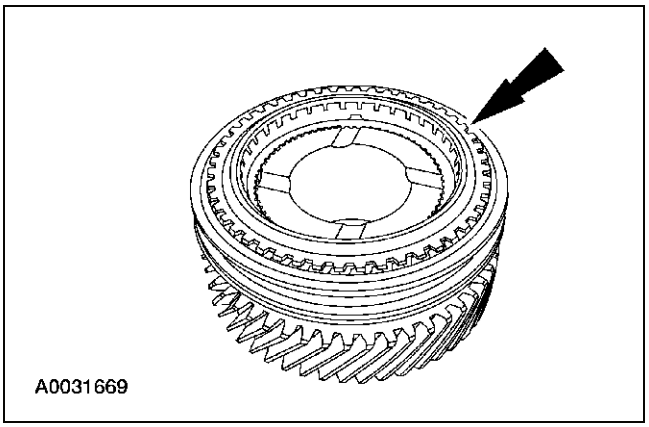
35. Install the thrust washer and the three-piece fifth gear needle bearing.



36. Install the synchronizer springs and inserts.

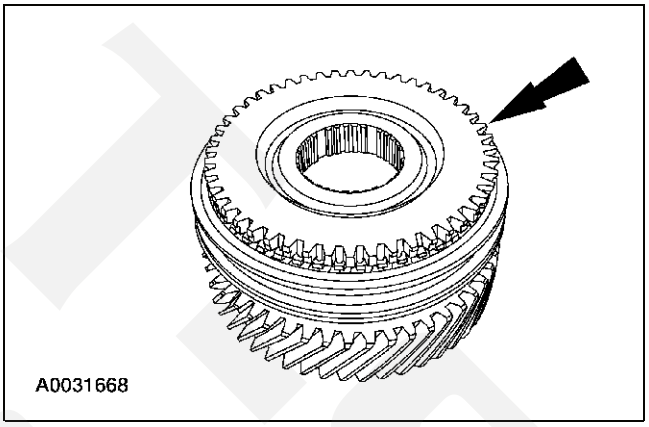


37. Install the sliding sleeve on the synchronizer hub.
    - Align the pockets in the blocking ring with the struts in the synchronizer.
    - The sliding sleeve is not reversible. Install the sleeve with the bevel edge away from the gear.

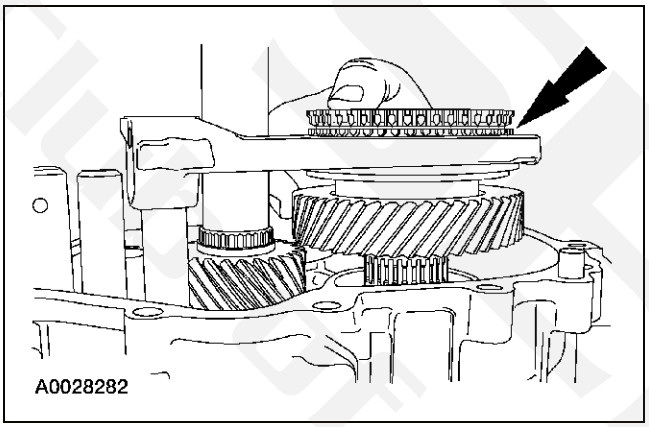


38. Install fifth gear blocking ring.

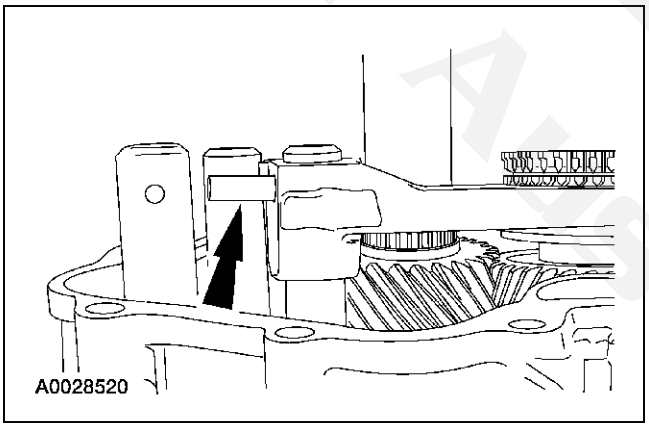
ASSEMBLY (Continued)



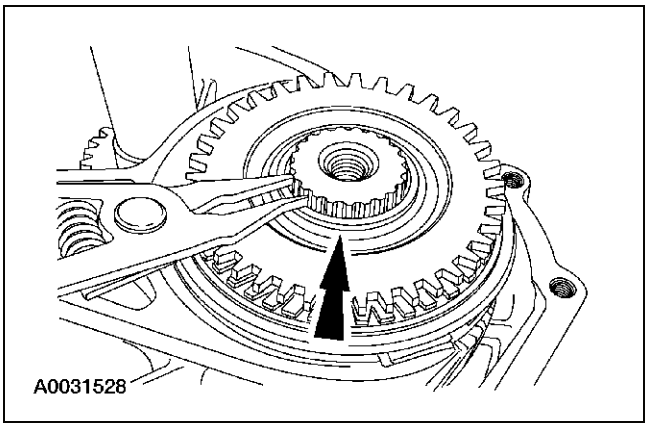
39. Install the fifth gear synchronizer cone.



40. Install the fifth gear shift fork, the synchronizer assembly, the synchronizer cone and fifth gear as an assembly.

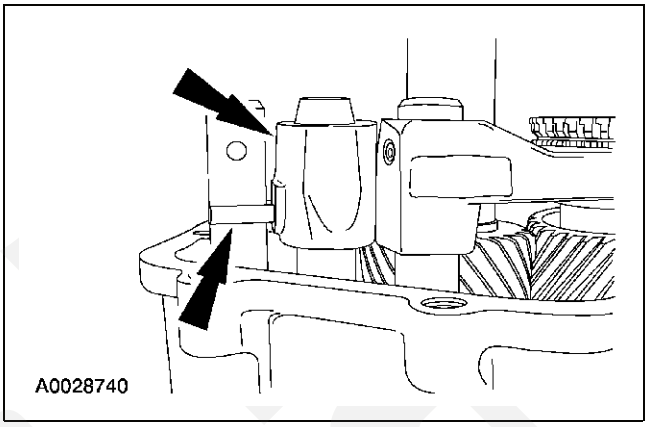


41. Install a new split pin.
    - Install the pin until it is flush with the fork.

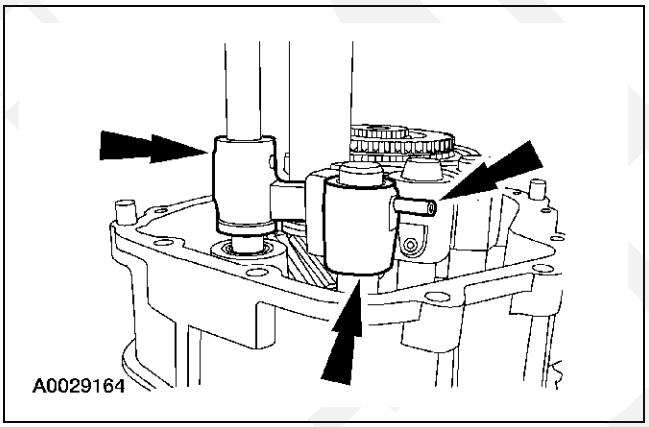


42. Install a new snap ring.

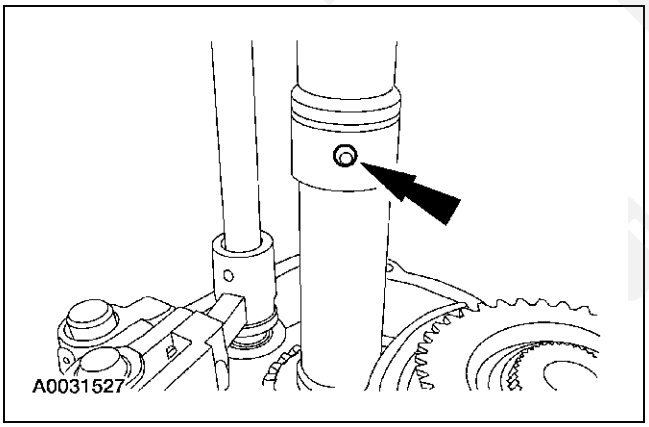
ASSEMBLY (Continued)



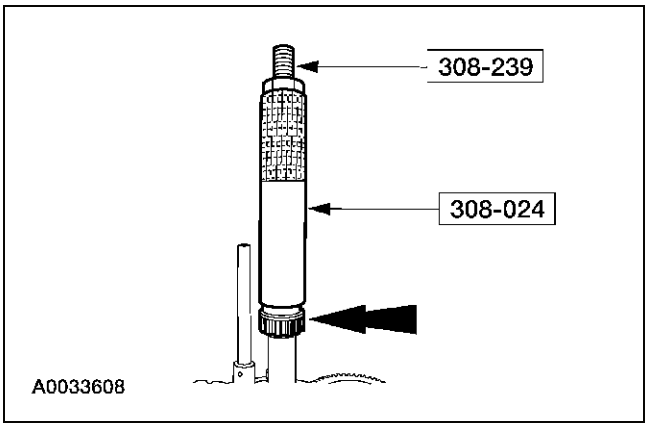
43. Install the third/fourth shift finger, then install a new split pin.
    - Install the split pin until it is flush with the shift finger.



44. Install the control rail and the plastic spacer, then install the first/second shift finger. Install a new split pin.
    - Install the split pin until it is flush with the shift finger.

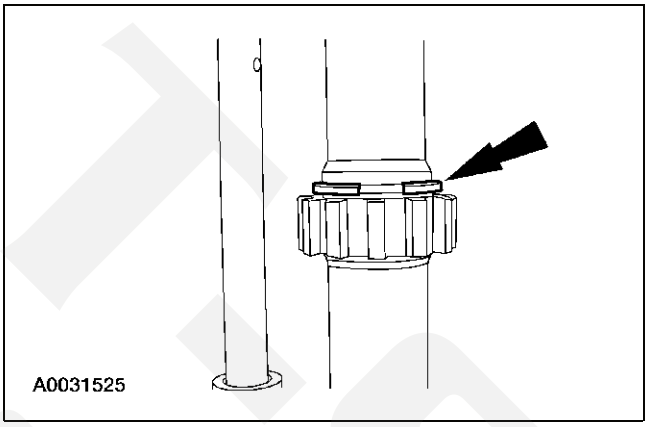


45. Install the OSS sensor tone wheel check ball.
    - Use petroleum jelly to hold the check ball in place.

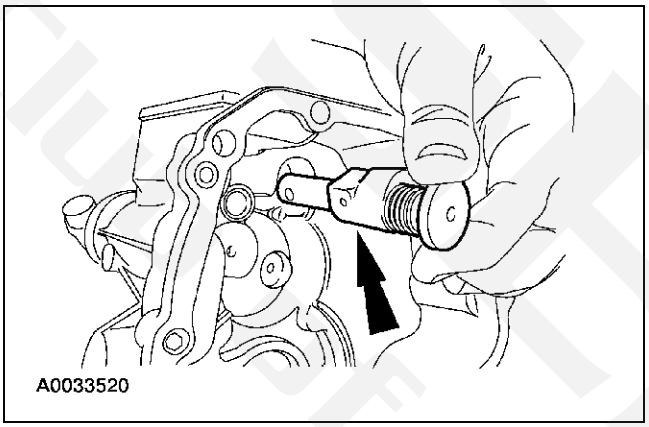


46. Place the OSS sensor tone wheel on the output shaft, aligning the slot in the OSS wheel with the check ball. Using the special tool, install the OSS sensor tone wheel.

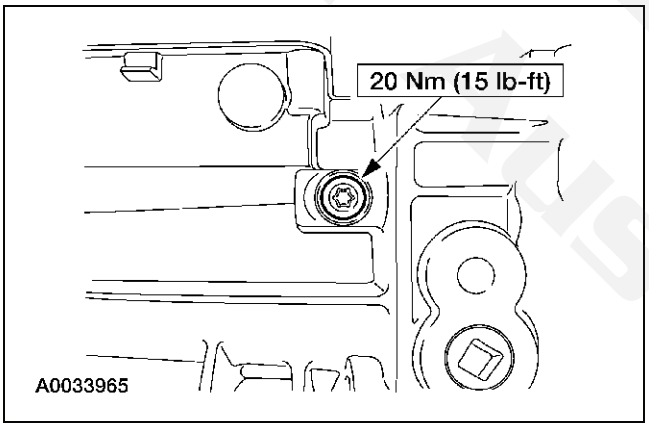
ASSEMBLY (Continued)



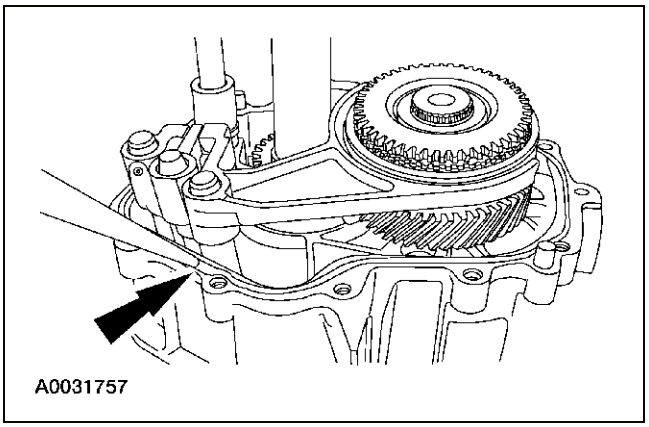
47. Install a new OSS sensor tone wheel retaining ring.



48. Install the fifth/reverse gear lockout.

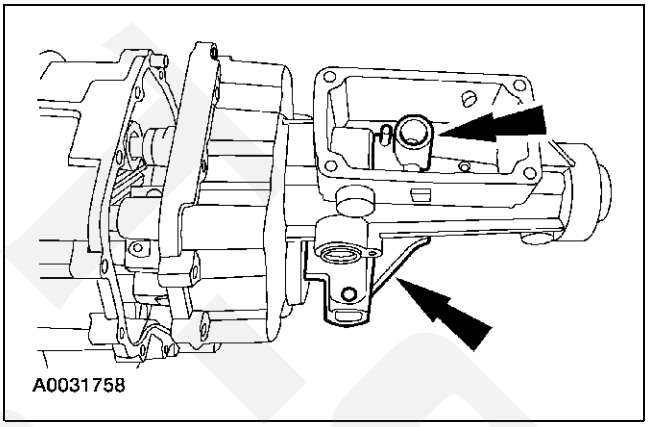


49. Install the bolt.

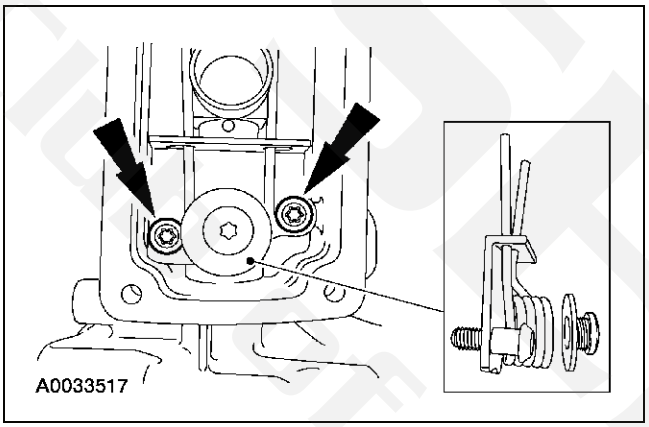


50. Clean the mating surfaces of the transmission main case and the extension housing. Apply a bead of silicone rubber to the sealing surface of the transmission case.

ASSEMBLY (Continued)

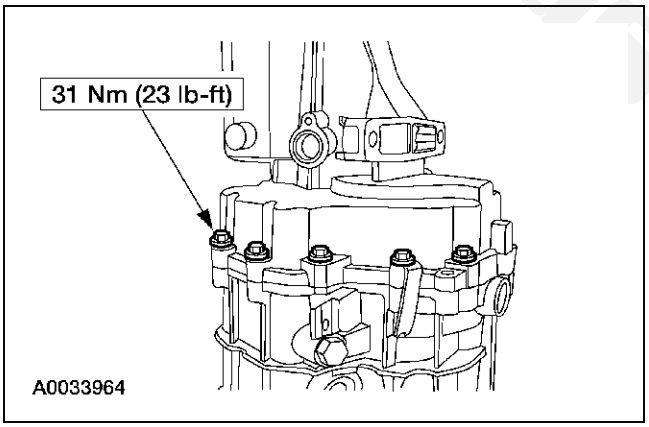


51. Install the extension housing and at the same time install the gear shift off-set lever.



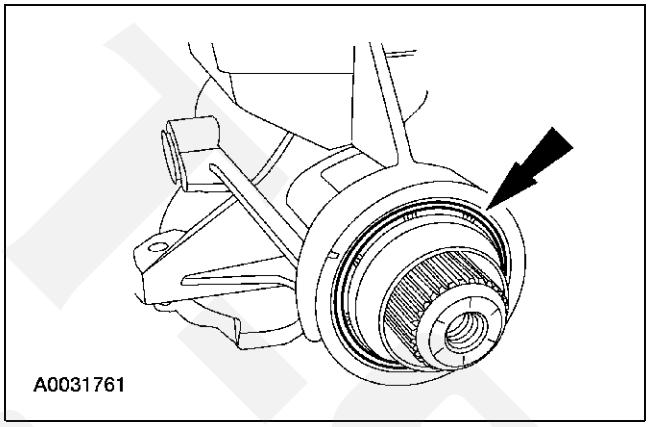
52. Install the shift spring and bracket.

53. Install a new split pin in the gear shift off-set lever.
    - The split pin should be flush in the gear shift off-set lever.

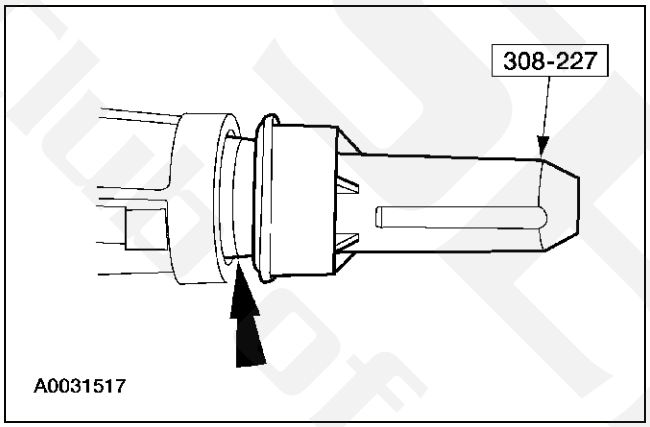


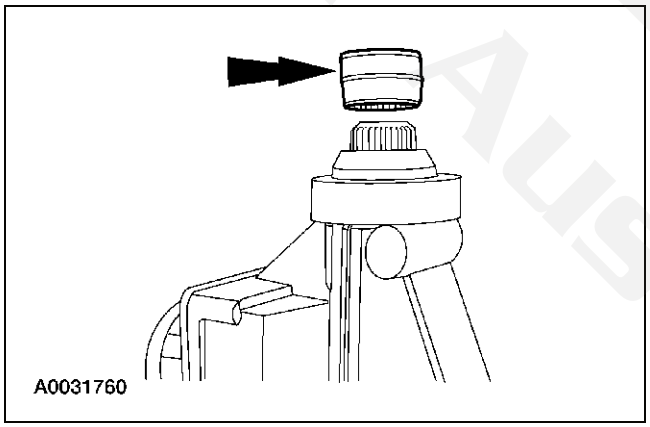
54. Seat the extension housing and tighten the bolts to specification.
    - Fill the gear shift off-set lever with petroleum jelly.

ASSEMBLY (Continued)



55. Using the special tool, install a new extension housing seal.
    - Lubricate the seal with transmission fluid.



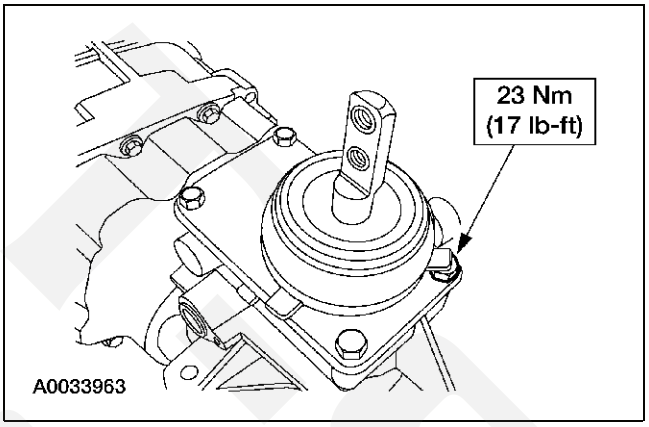


56. Install the shipping seal.

57. Rotate the transmission to a horizontal position.

58. Clean the mating surfaces of the shift cover opening surface and the shift cover. Apply a bead of silicone rubber to the shift cover opening surface.

ASSEMBLY (Continued)



59. Install the gear shift lever.

60. **NOTE:** Before installing the transmission, the ball stud, the and the input shaft guide tube must be cleaned and lubricated.

61. Fill the transmission with transmission fluid to the specified level.
    - Transmission capacity is 3.8 litres.

INSTALLATION

Transmission

Materials

Item	Specification
CASTROL Syntrans 75W-85 Transmission Fluid *	
Pipe Sealant with Teflon D8AZ-19554-A or equivalent	WSK-M2G350-A2
Premium Long Life Grease XG-1-C, K or T or equivalent	ESA-M1C75-B

*** A fluid/oil meeting the exact specification may also be used.**

INSTALLATION (Continued)

1. **NOTE:** Before installing the transmission, the ball stud, and the input shaft must be cleaned and lubricated. Use a grease which meets the Ford specification ESA-M1C75-B or equivalent.

   To install, reverse the removal procedure. For additional information, refer to Transmission in this section.

   - Check, and as necessary, fill the transmission with transmission fluid. The total fill capacity is 3.8L.

2. Apply sealant to the fill plug threads and install the fill plug.
   - Use pipe sealant with Teflon□.

T-SERIES Club of Australia

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

ENGINE	GROUP 8

PART 8-7 Engine 250kW 5.6L V8

T SERIES Club of Australia

ENGINE
250kW 5.6L V8

PART
8-7

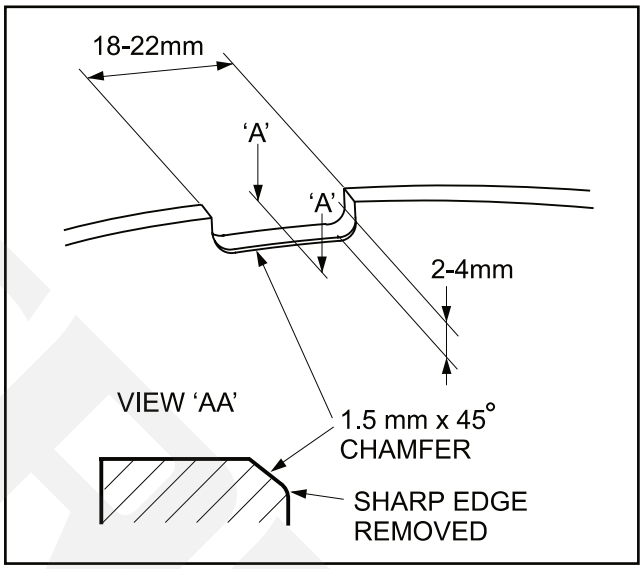
NEW PARTS IN 250kW 5.6L V8 ENGINE

Unique parts in the 250kW 5.6L V8 engine include:

- Reworked block
- Pistons and conrods
- Crankshaft
- Cylinder block stud kit including:
  - 2 short studs
  - 8 long studs
  - 3 double hex nuts
  - 7 single hex nuts with washers
- Spacers fitted between bearing caps and brace
- Cylinder block brace
- Piston pin and ring kit
- Conrods and bearings
- Oil pan
- Camshaft
- Crankshaft vibration damper
- Cylinder head assembly
- Roller rocker kit
- Rocker covers
- Lower intake manifold
- Pressure regulator
- Throttle body
- Upper intake manifold including:
  - Upper intake manifold (subassembly with fittings)
  - Plenum (subassembly with fittings)
  - Bracket Accelerator Cable
  - Purge Line
  - Purge Tube
  - Brake Booster Hose
  - PCV Hoses
  - Fuel Regulator Hose
  - PCV Baffle
- Air cleaner
- Accelerator cable
- Throttle return spring
- Mobil1 0W-40 Synthetic engine oil

REWORKED CYLINDER BLOCK

A notch has been ground out of each barrel.



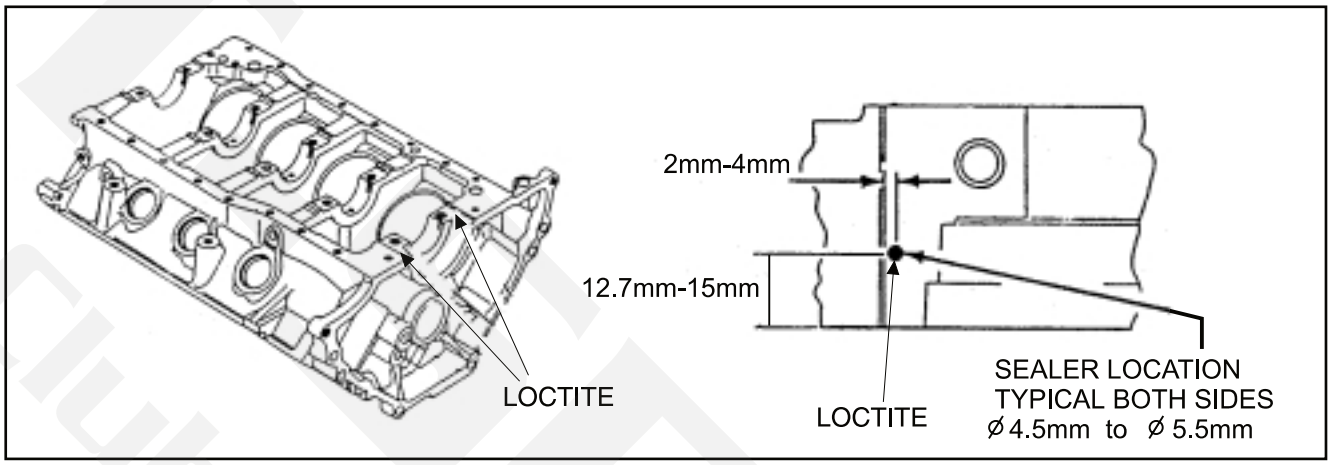
Each cylinder has been honed. Refer to Specifications.

CRANKSHAFT

NOTE: Where necessary, crankshaft must be balanced with the original balancer and flywheel fitted.

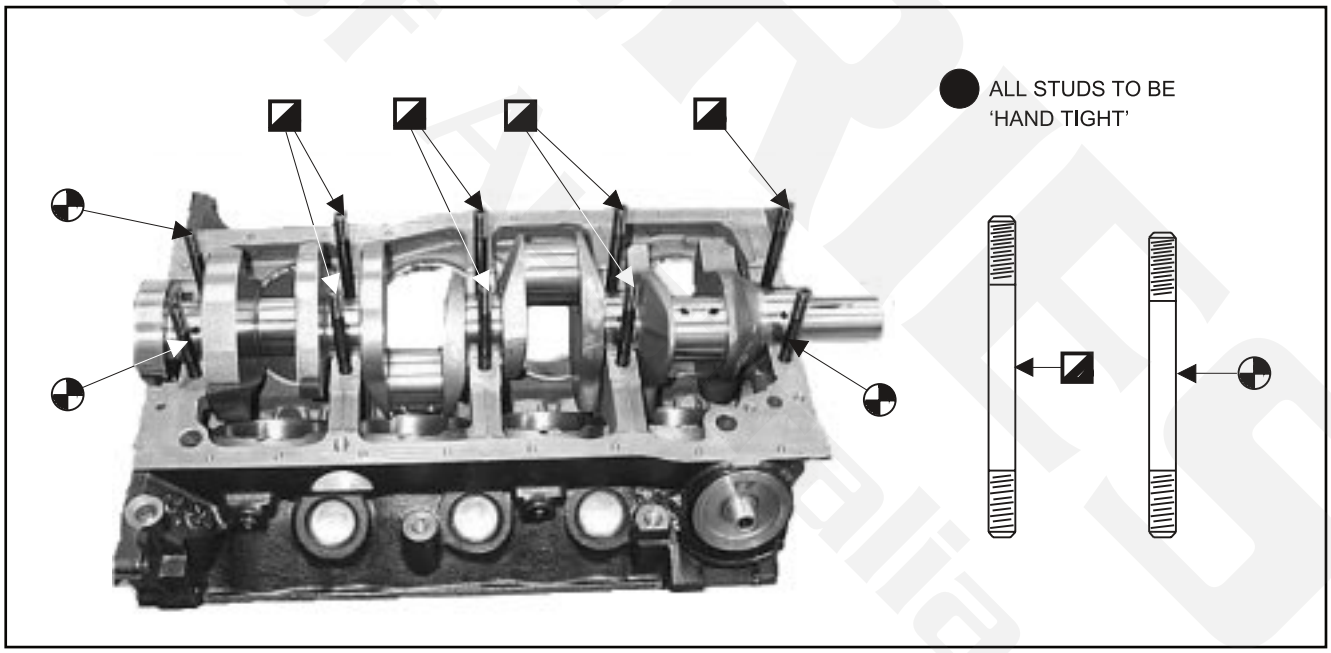
INSTALLATION – additional instructions

1. Before installing the rear main bearing cap, apply loctite as shown below.



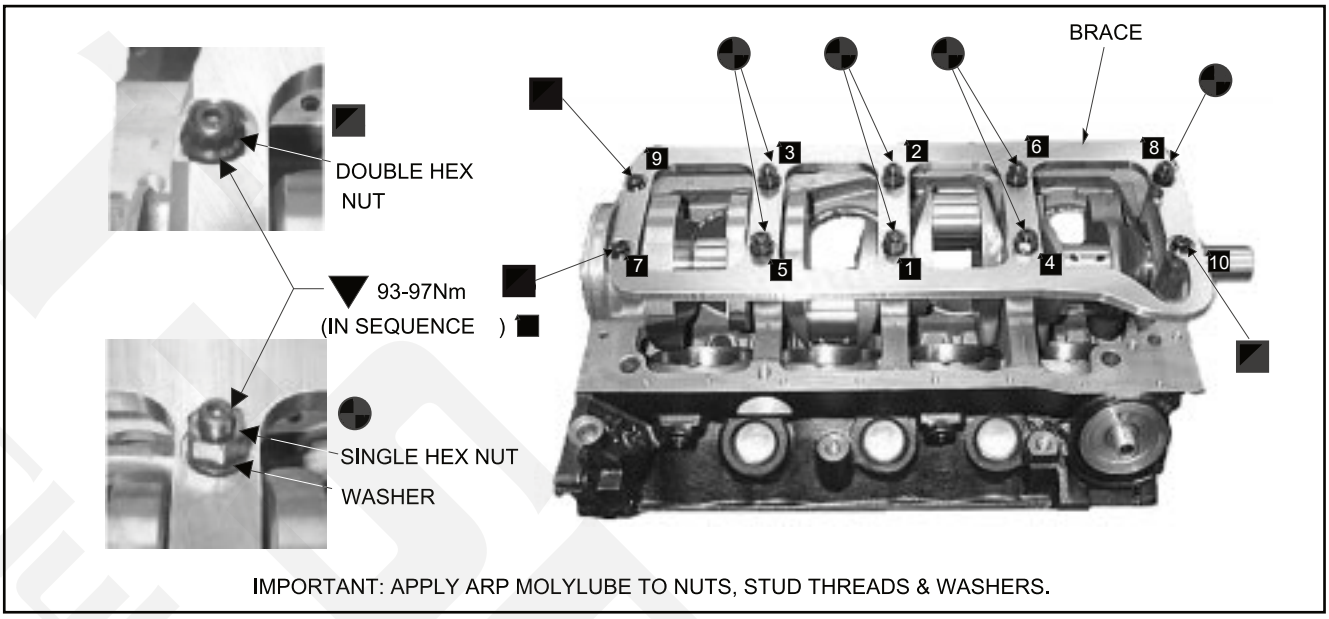
2. Fit the cleaned bearings to the cylinder block, apply engine oil to the bearing faces then fit the crankshaft.
3. Screw the short studs into the rear and front oil pump side of the block, as shown below, and HAND TIGHTEN.
4. Screw the long studs into all other positions, as shown below, and HAND TIGHTEN.

WARNING: Tightening the studs greater than hand tighten torques may cause damage to the block.



5. Fit the cleaned bearings to the caps, apply engine oil to the bearing faces then fit the caps over the studs paying attention to the arrows that point forward and the numbers 1 to 5 which should be fitted from front to rear.
6. The rear main bearing cap is to be installed 0.18mm forward of the rear face of the block.
7. For the main bearing assembled clearances, refer to Specifications.
8. Fit the spacers over the 10 studs.
9. Fit the brace, as shown below, then apply ARP MOLYLUBE to all clamp faces of nuts, washers and stud threads.
10. Fit the double hex nuts in 3 places and the single hex nuts with washers in 7 places, as shown below.
11. Tighten all nuts in sequence, as shown below, to 40Nm.
12. Check the crankshaft for correct end play with a dial indicator. Refer to specifications.
13. Tighten and torque all nuts in sequence, as shown below, to 93 – 97Nm.

WARNING: Failure to apply ARP MOLYLUBE to clamps prior to tightening the nuts will result in the crankshaft installation being out of specification.



IMPORTANT: APPLY ARP MOLYLUBE TO NUTS, STUD THREADS & WASHERS.

CRANKSHAFT REAR MAIN OIL SEAL

INSTALLATION – additional instructions

NOTE: When installing the seal using the seal installation tool, ensure that the rear face of the seal is within 0.13 – 0.25mm of the rear face of the block.

1. Using a dial vernier, ensure that the squareness of the rear seal face surface is no more than 0.25mm in relation to the rear face of the crankshaft.

PISTONS AND CONNECTING RODS

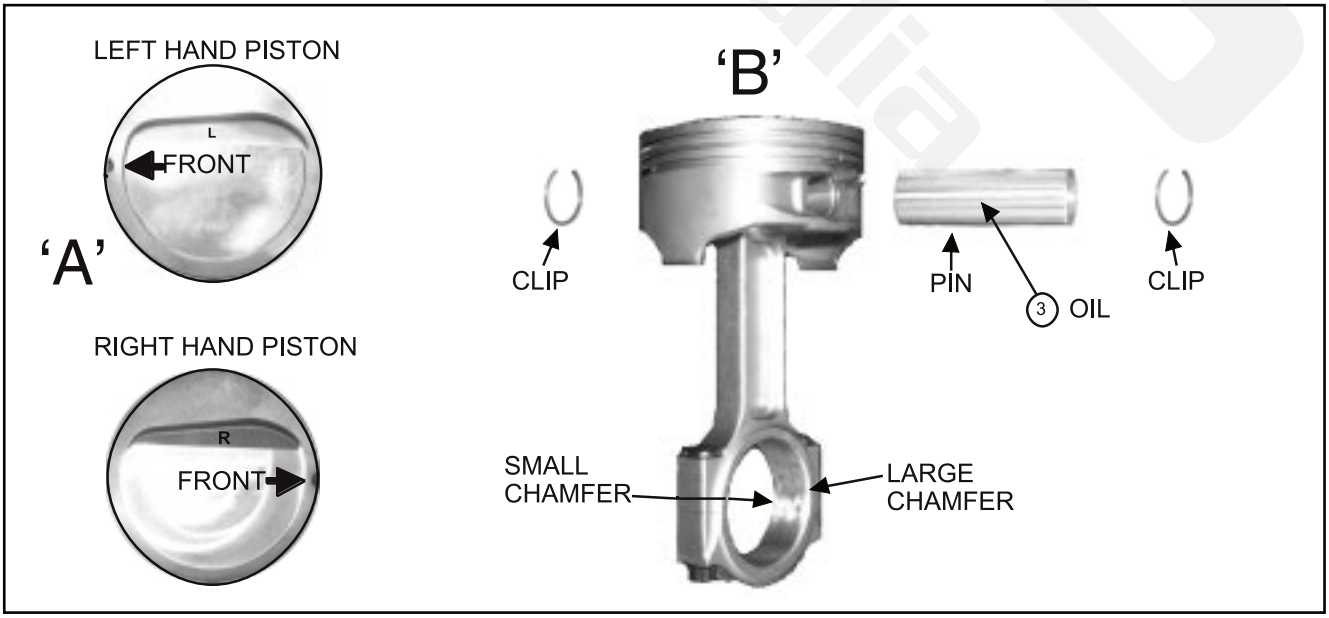
ASSEMBLY

Right hand conrods to pistons

1. Fit the conrods to the RIGHT hand pistons with the LARGE chamfer facing to the FRONT of the motor, as shown below.
2. With the front marker, as shown below, facing the front of the motor apply engine oil to the pin and fit the piston to the conrod.
3. Fit the clips to the piston, 2 places, making sure they are fully seated in the grooves.

Left hand conrods to pistons

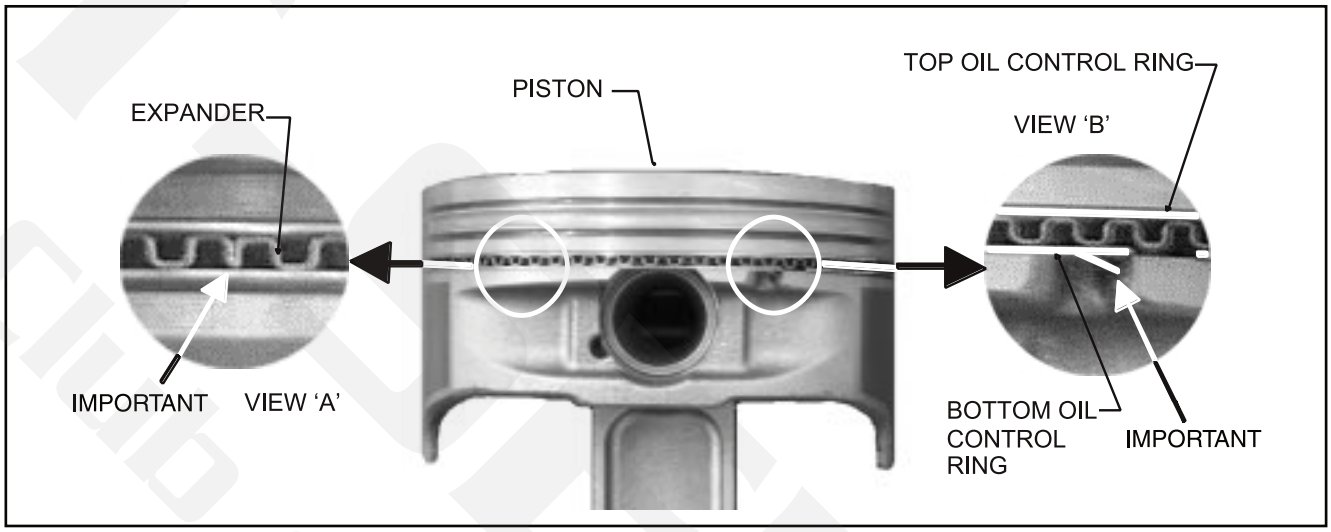
1. Fit the conrods to the LEFT hand pistons with the SMALL chamfer facing to the FRONT of the motor, as shown below.
2. With the front marker, as shown below, facing the front of the motor apply engine oil to the pin and fit the piston to the conrod.
3. Fit the clips to the piston, 2 places, making sure they are fully seated in the grooves.



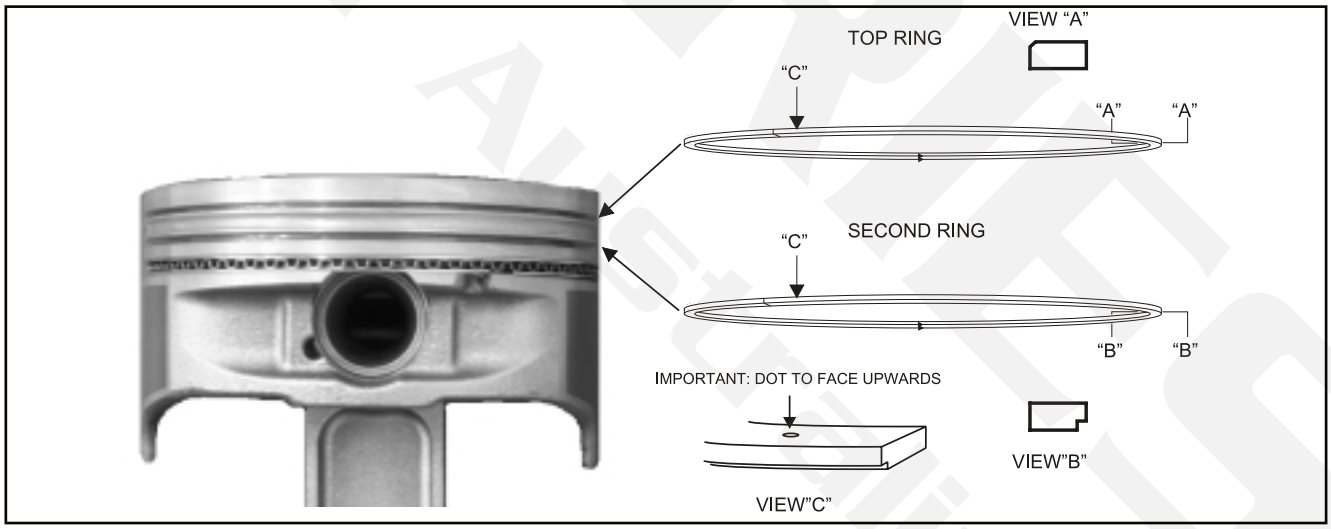
Piston rings to pistons

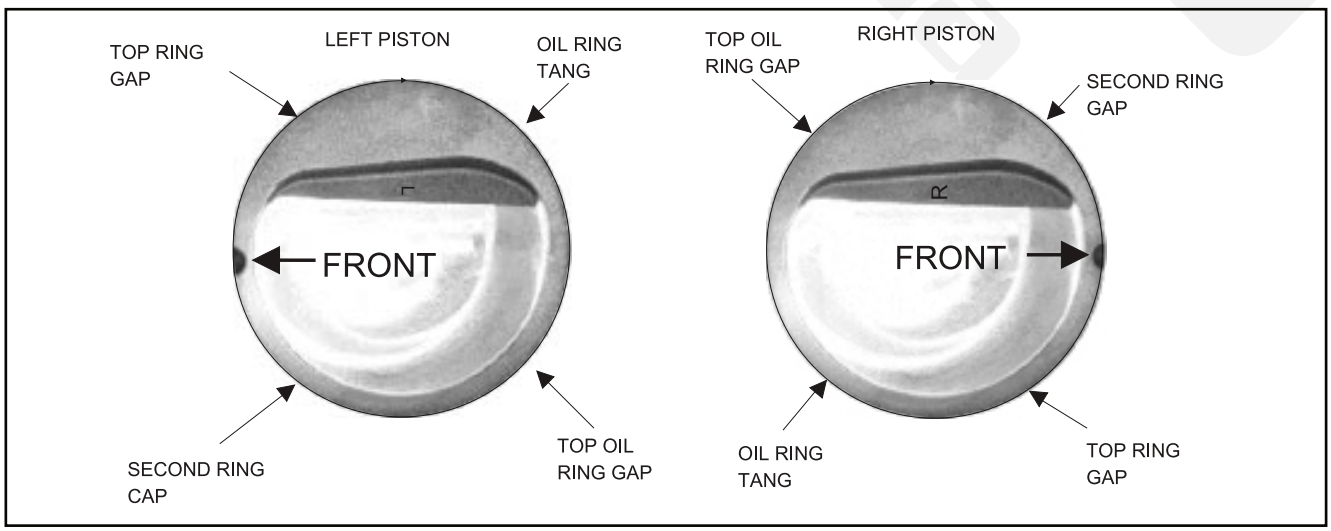
NOTE: Piston must first be assembled to conrod before installing the piston rings.

1. Fit the expander to the piston making sure that the closed section of the expander ring is pointing downwards, as shown below in View 'A'.
2. Fit the lower oil control ring making sure that the tang is pointing down, as shown below in View 'B'.
3. Fit the upper oil control ring with the gap positioned as per the Ring Gap diagram on next page.



4. Fit the second ring making sure that the dot is facing upwards, as shown below in View 'C', with the groove at the bottom, as shown below in View 'B'.
5. Fit the top ring making sure the dot is facing upwards, as shown below in View 'C', with the inner chamfer at the top, as shown below in View 'A'.





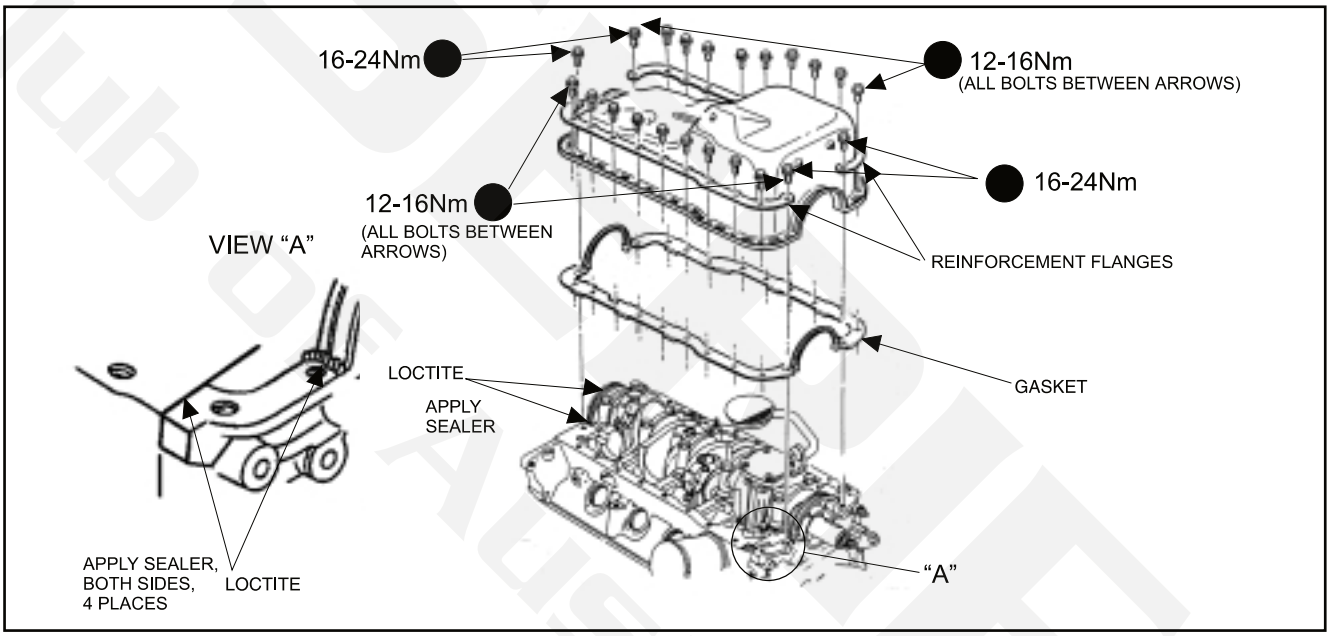
After fitting the conrod big end onto the crankshaft journal and prior to fitting the conrod caps and nuts, apply ARP MOLYLUBE to the faces of the nuts and the bolt threads then tighten and torque the nuts. Refer to Specifications.

WARNING: Failure to apply ARP MOLYLUBE to the nuts prior to tightening will result in the installation of the pistons and connecting rods being out of specification.

OIL PAN

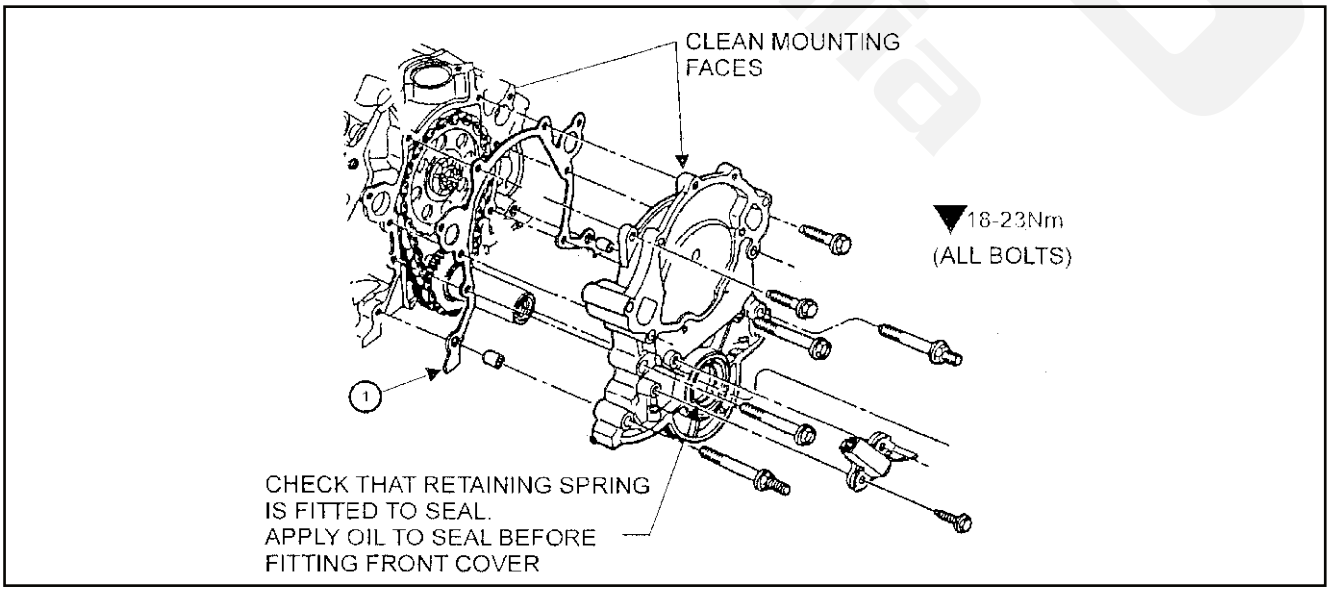
REMOVAL – additional instructions
1. Remove all bolts, reinforcement flanges and the gasket.
2. Remove all traces of sealer from the engine block, timing chain cover and oil pan.

INSTALLATION – additional instructions
1. Apply loctite in 6 places as shown below in View 'A' and at the rear of the engine block.
2. Fit a gasket to the engine block.
3. Fit the oil pan to the engine block.
4. Fit the reinforcement flanges.
5. Fit all bolts to the oil pan and tighten. Refer to Specifications.



CYLINDER FRONT COVER

INSTALLATION – additional instructions
1. Clean all mounting surfaces and remove all traces of sealer.
2. Fit a gasket to the engine block.
3. Fit the front cover and refit all bolts in the correct position, as shown below.
4. Tighten all bolts. Refer to Specifications.



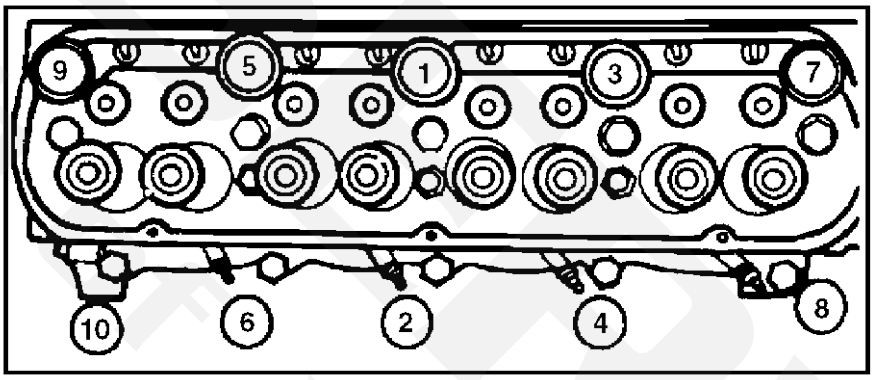
CRANKSHAFT VIBRATION DAMPER

INSTALLATION – additional instructions
1. Apply engine oil to the oil seal rubbing surface of the vibration damper inner hub to prevent damage to the seal.
2. Apply loctite to the key way groove in the damper before installing onto the crankshaft.
3. Fit the bolt and washer then tighten and torque the bolt. Refer to Specifications.

CYLINDER HEADS

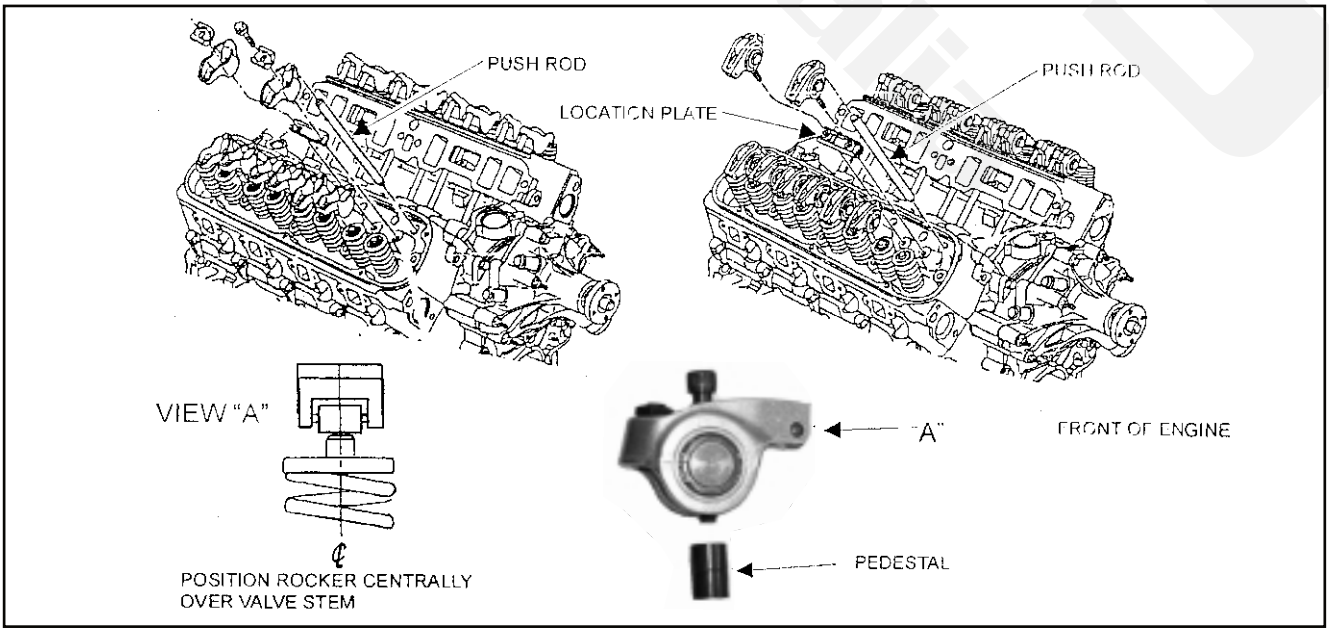
GASKET– additional instructions
Note that the gaskets have "FRONT" marked on one end to show which end needs to be at the front of the engine.

INSTALLATION – additional instructions
1. Apply engine oil to the clamping face and thread of the bolts.
2. Torque the bolts in sequence to 48Nm.
3. Torque the bolts in sequence to 75Nm.
4. Tighten the bolts in sequence an additional 90∞.



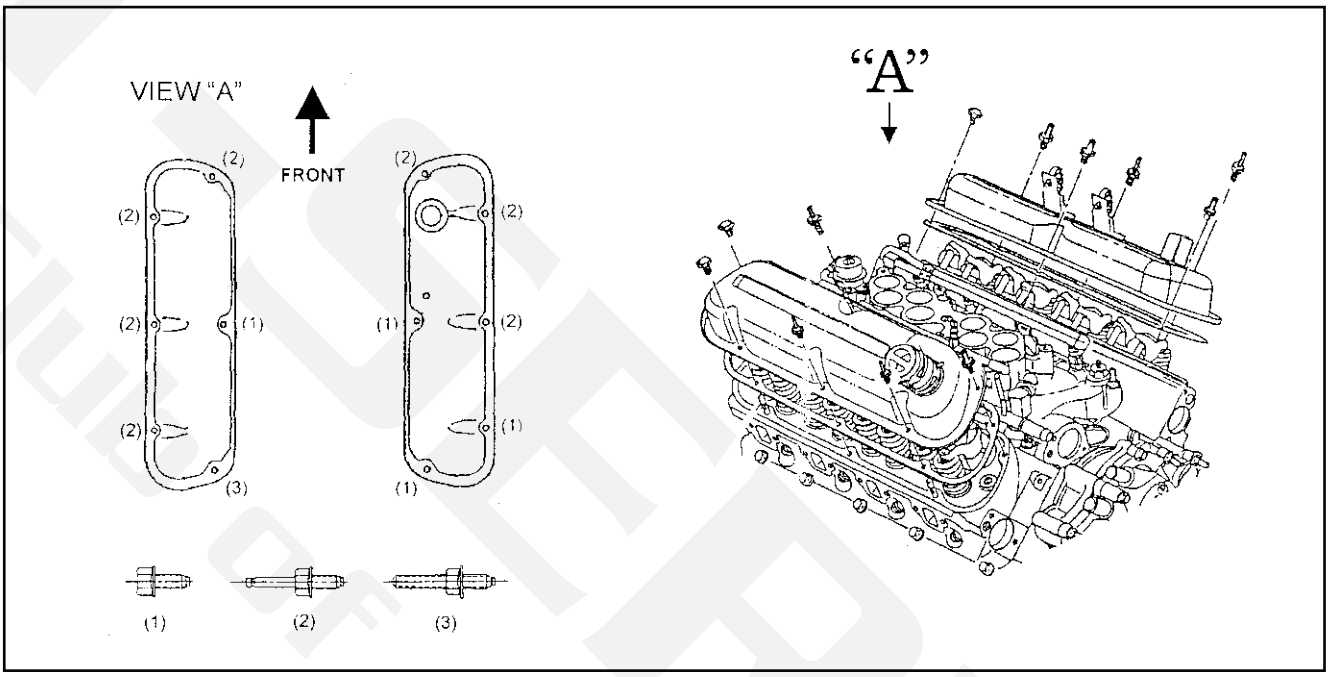
ROLLER ROCKERS

INSTALLATION
1. Set no. 1 piston at TDC.
2. Fit pushrods through heads to the valve tappets making sure they are in their original locations.
3. Add a small amount of engine oil to the top of the no. 1 cylinder valve stem and the top of the push rod.
4. Fit bolt and pedestal to the roller rocker, then the roller rocker to the cylinder head makin sure that the rocker is positioned centrally over the valve stem, as shown below in View 'A'.
5. HAND TIGHTEN the bolt until it is firm to achieve zero lash.
6. Apply pre-load to the rocker by tightening the bolt with a torque wrench. Refer to Specifications. The bolt MUST achieve the specified torque between _ to one full turn.
7. Turn the crankshaft _ turn and repeat steps 3 – 6 for the no. 3 cylinder.
8. Repeat step 7 in order for cylinders 7,2,6,5,4 and 8.



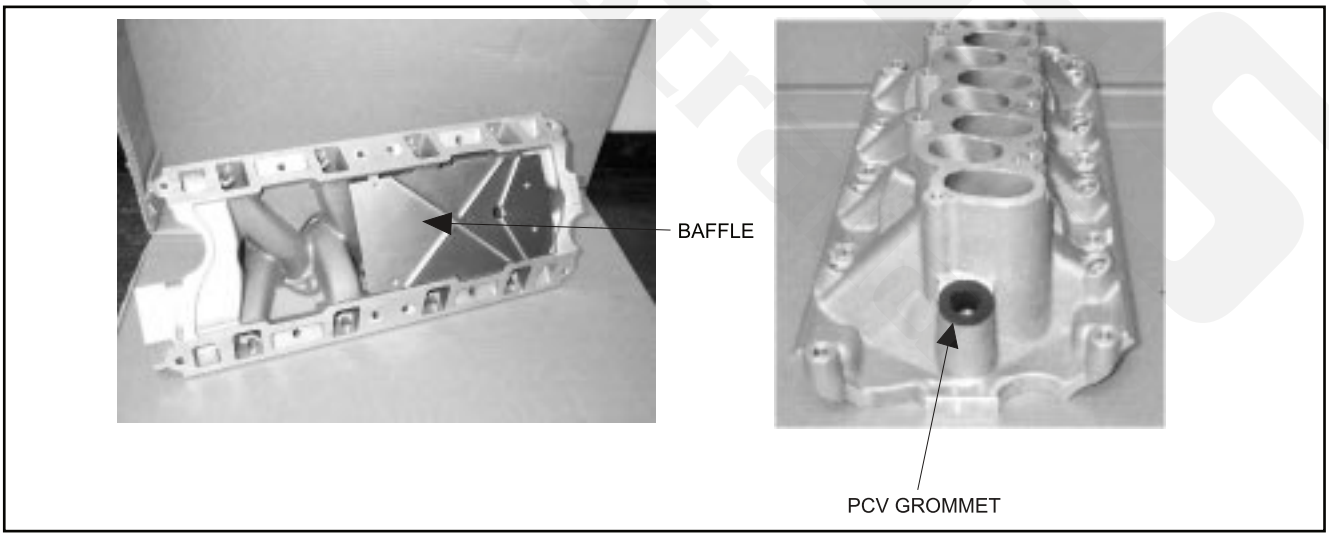
ROCKER COVERS

INSTALLATION
1. Clean the mounting surface of the rocker covers and cylinder heads with a solvent and rag.
2. Fit new gaskets to the cylinder heads.
3. Fit the bolts, as shown below in View 'A'.
4. Tighten the bolts. Refer to Specifications.

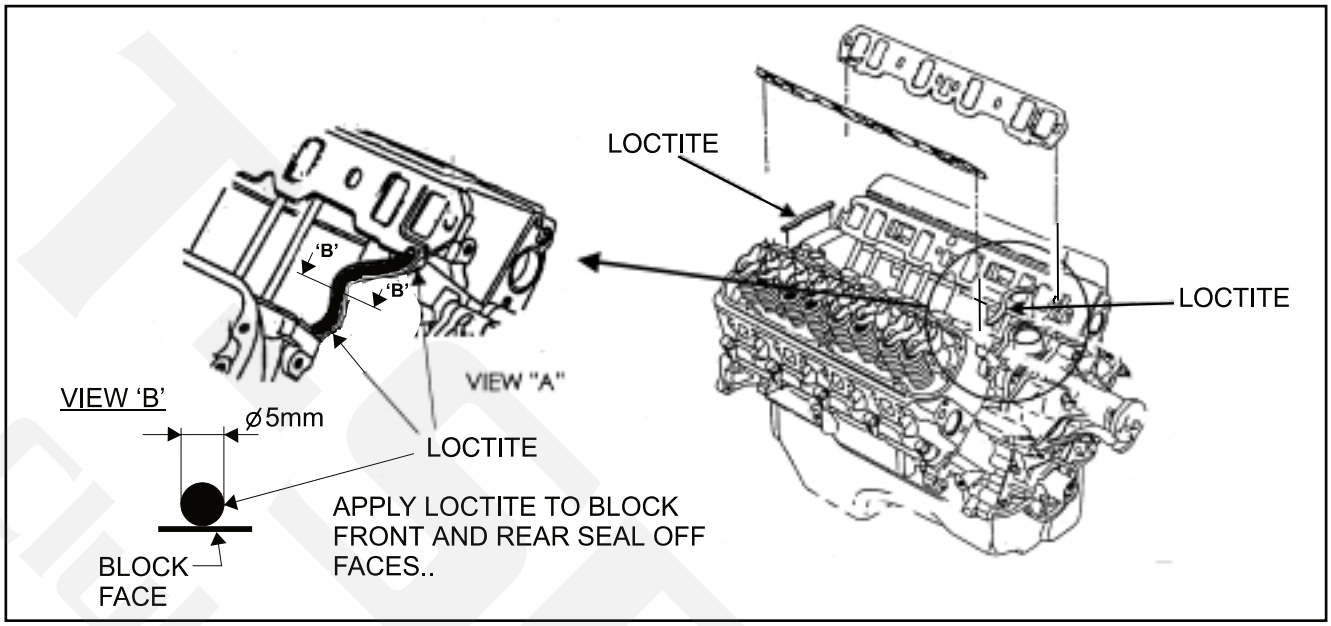


INTAKE MANIFOLD and FUEL INJECTORS

ASSEMBLY – PVC Baffle to Lower Intake Manifold
1. Fit the baffle to the underside of the lower intake manifold and secure with the 4 bolts, as shown below. Refer to Specifications.
2. Fit the PCV grommet to the lower intake manifold.

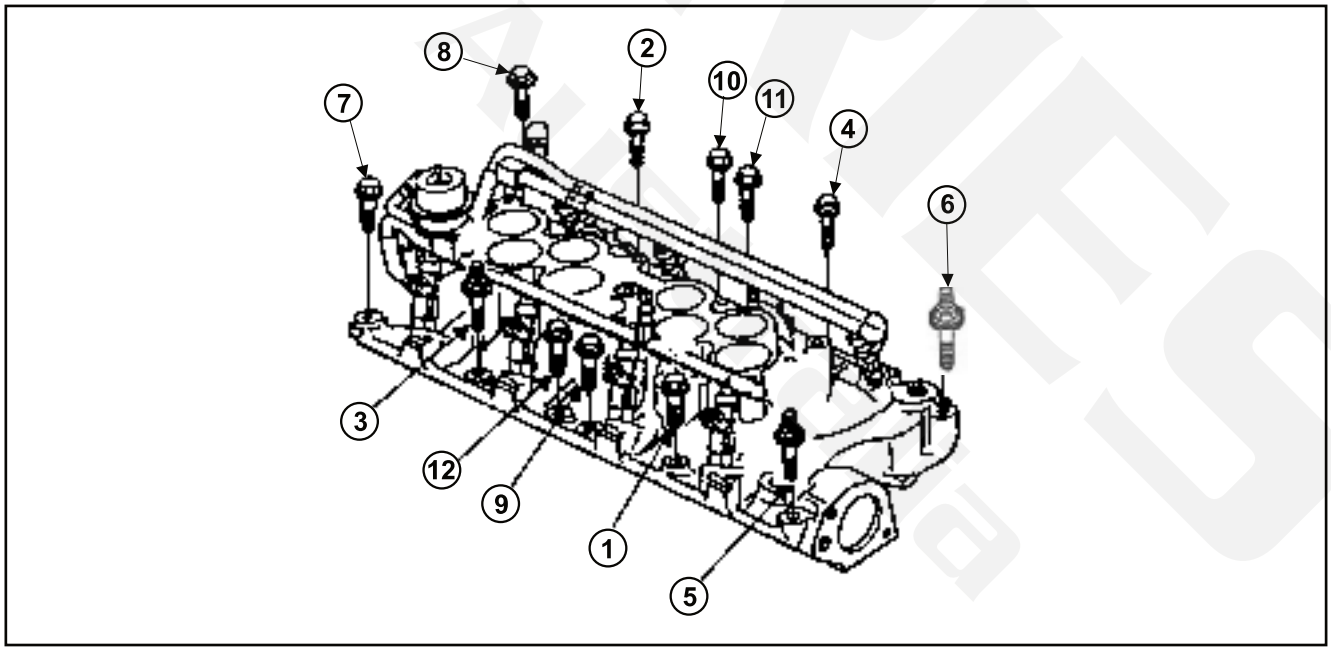


INSTALLATION – Lower Intake Manifold Gaskets
1. Remove seals and sealant from the block and clean with a solvent.
2. Position the gaskets to the cylinder heads.
3. Apply loctite to the block, as shown below in View 'A'.



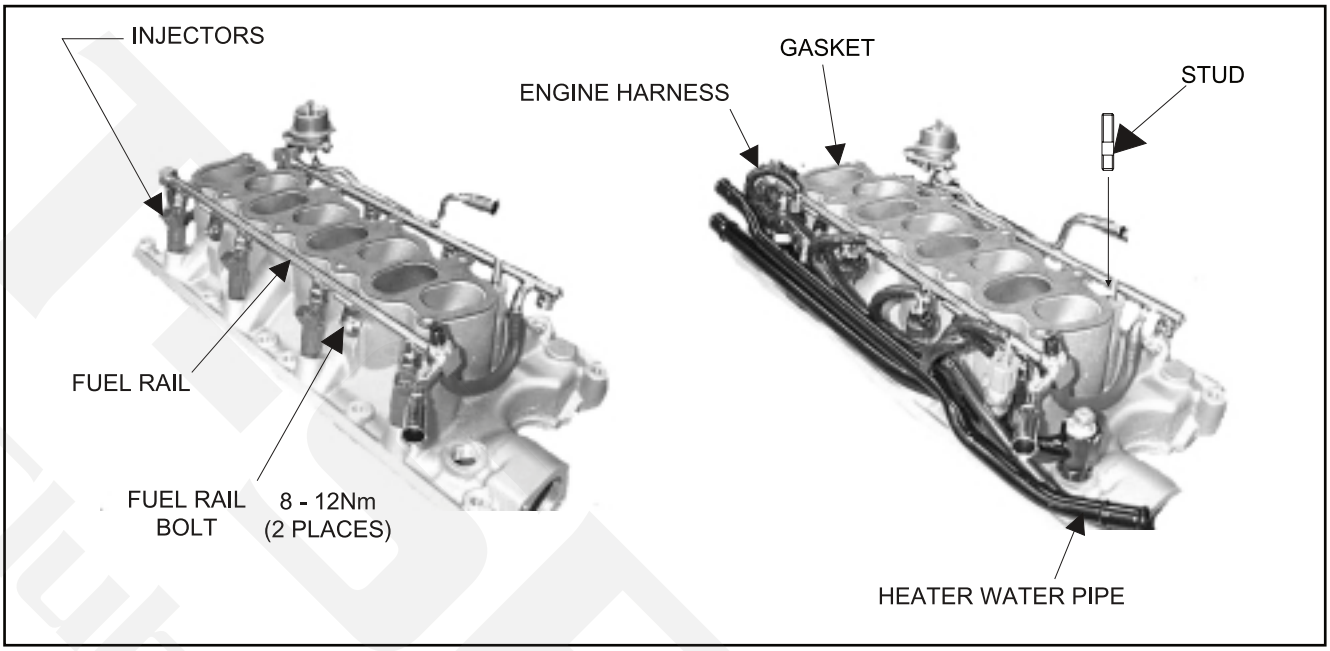
INSTALLATION – Lower Intake Manifold

1. Clean the lower intake manifold mounting surface and make sure that the lower manifold intake ports are free from any swarf or gasket waste.
2. Position the lower intake manifold onto the engine locating pins.
3. Remove the locating pins.
4. Torque the bolts in sequence, as shown below, to 25Nm **TWICE.**
5. Torque the bolts in sequence to 34Nm. **REPEAT THIS PROCESS THREE TIMES.**

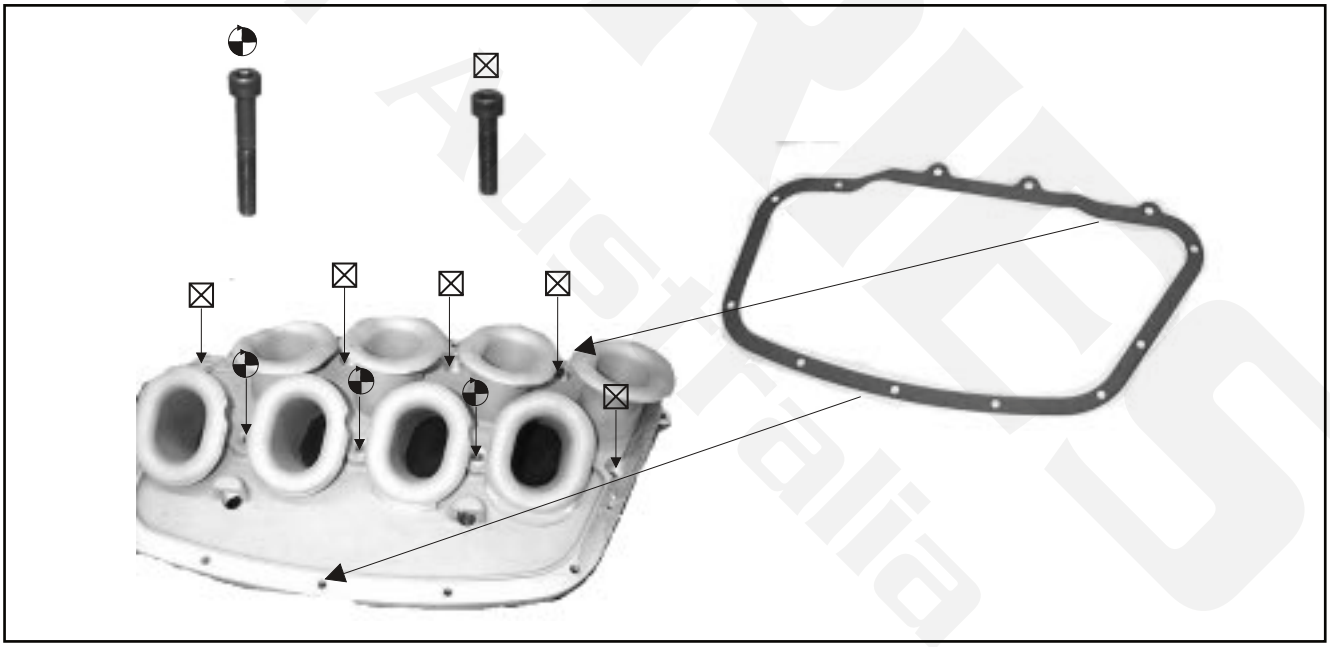


INSTALLATION - Right Side Injectors, Fuel Rail, Heater Water Pipe, Harness and Gasket

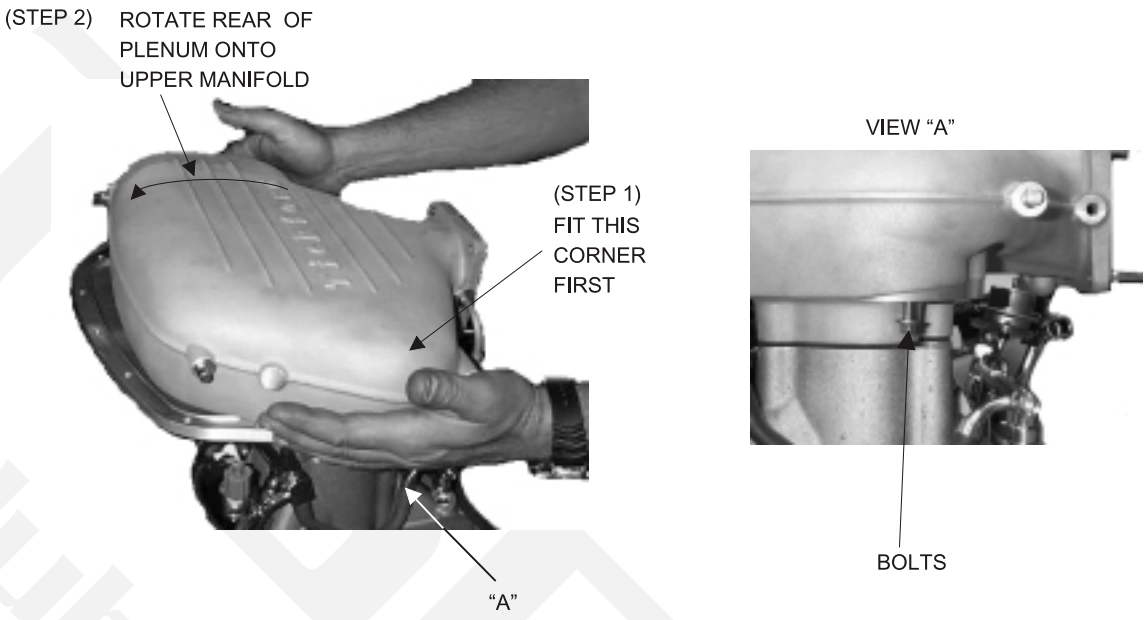
1. Fit the injectors (right side only) to the lower manifold, as shown below.
2. Fit the fuel rail (right side only) and secure with bolts. Refer to Specifications.
3. Fit the Heater Water pipe.
4. Fit the engine harness to the injectors and heater water pipe (right side only).
5. Position the gasket onto the lower manifold.
6. Fit the stud to the lower manifold, as shown below, and HAND TIGHTEN.



INSTALLATION – Upper Intake Manifold
1. Fit the upper intake manifold.
2. Secure it with bolts, noting the bolt locations as shown below. Refer to Specifications.
3. Fit the gasket to the upper intake manifold.

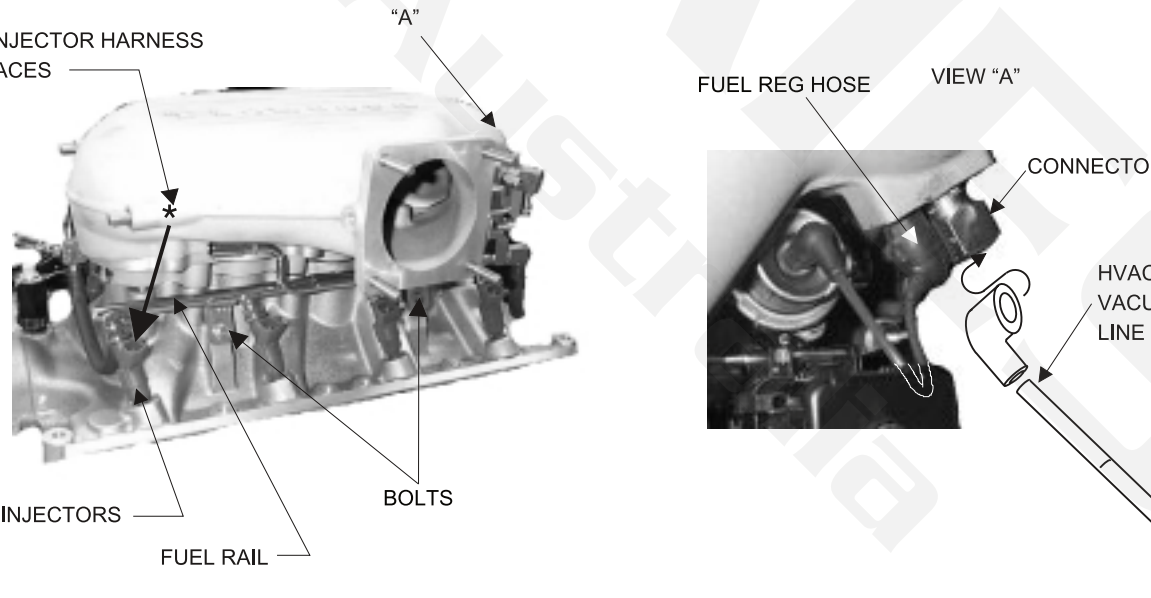


INSTALLATION – Upper Intake Manifold Plenum Cover
1. Fit the plenum cover to the upper intake manifold, as shown below (STEP 1).
2. Rotate the rear of the plenum cover onto the upper manifold, as shown below (STEP 2).
3. Secure the plenum cover to the upper intake manifold with the 12 bolts. Refer to Specifications.



INSTALLATION - Left Side Injectors, Fuel Rail, Harness, Fuel Regulator Hose and HVAC Line

1. Fit the injectors (left side only) to the lower intake manifold, as shown below.
2. Fit the fuel rail (left side only) and secure with bolts. Refer to Specifications.
3. Fit the engine harness to the injectors and heater water pipe (left side only).
4. Fit the fuel regulator hose.
5. Fit the HVAC line.



UNIQUE 250kW 5.6L V8 ENGINE

SPECIFICATIONS

Note: For other specifications, refer to part 8-6 Specifications and Special Tools (8Cylinder) of the AUII Workshop Manual.

Cylinder block – cylinder diameter 101.67±0.01mm

Crankshaft
- main journal bearings diameter 57.104 – 57.124mm
- big end journals/pins diameter 53.919 – 53.939mm
- thrust bearing width 28.879 – 28.930mm
- main bearing assembled clearances 0.02 – 0.04mm MAX 0.06mm
- crankshaft end play 0.1 – 0.2mm
- main bearing cap studs to block – HAND TIGHTEN

WARNING: Tightening the studs greater than hand tighten torques may cause damage to the block.

- main bearing cap nuts 93 – 97Nm
- vibration damper bolt 150 – 176Nm

Conrod
- small end diameter 23.564 – 23.574mm
- big end diameter 56.87 – 56.89mm
- big end width 21.120 – 21.145mm
- conrod nuts 42.5 – 43.5Nm
- conrod side clearance (assembled to crank) 0.254 – 0.508mm

Oil pump – bolts to block 29 – 53Nm

Oil pan
- side bolts 16 – 24Nm
- end bolts 12 – 16Nm

Camshaft
- thrust plate bolts 13 – 16Nm
- sprocket bolt 54 – 61Nm
- lobe lift:
  - intake 7.053mm
  - exhaust 7.043mm
  - allowable loss 0.127mm
- theoretical valve lift at zero lash:
  - intake 11.991mm
  - exhaust 11.974mm
  - collapsed lifter clearance
- Valve head diameters
  - intake 49.310mm
  - exhaust 39.420mm

Rockers
- roller rocker bolts 34 – 46Nm
- rocker cover bolts 10 – 15Nm

PVC Baffle to Lower Intake Manifold – 10 – 15Nm

Lower intake manifold bolts – refer to INSTALLATION procedure

Upper intake manifold bolts – 24 – 26Nm

Plenum cover to upper intake manifold bolts – 8 – 12 Nm

Fuel pressure regulator – bolts to fuel rail 5 – 7Nm
– fuel pressure 435 kPa

Fuel Rails – bolts to intake manifold 8 – 12 Nm

Spark plugs
- AGSF 22 PP or AGSF 22 PPM
- torque 15 – 18Nm
- gap 1.3mm

Engine oil
- Mobil1 0W-40 synthetic
- capacity 6.45 litres (including filter)

Power – 250kW @ 5250RPM

Torque – 500Nm @ 4250RPM

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T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

IGNITION SYSTEM	GROUP 9

T SERIES Club of Australia

IGNITION SYSTEM

PART 9-1

Spark plugs

Type	250 kW
Motorcraft	AGSF-22 PP OR AGSF-22 PPM
Size	M14 X 1.25
Hex	20.6 AF
Reach	17 mm
Gap	1.3-1.4 mm
Torque	20 Nm
Gasket	Taper seat

USERIES Club of Australia

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

ELECTRONIC ENGINE MANAGEMENT AND FUEL SYSTEM	GROUP 10

PART 10-1 EEC-V Electronic Engine Management

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EEC-V ELECTRONIC ENGINE MANAGEMENT

PART 10-1

INTRODUCTION

Apart from the Electronic Sport Shift control, PCM operation and strategy is standard EEC-V. Calibration is modified to suit the unique needs of each engine running on Premium Unleaded Petrol.

ROAD SPEED LIMITATION

XR8 Pursuit 250 Ute	Not limited
TE50	Not limited
TS 50	Not limited
TL 50	180 km/h

Engine speed limitation is to 6000 rpm on all engines.

PCM ALLOCATION

TE 50 Manual	2R23 12A650 HX
TE 50 Automatic	2R23 12A650 GX
TS 50 Manual	2R23 12A650 HX
TS 50 Automatic	2R23 12A650 KX
TL 50 Automatic	2R53 12A650 AX
XR8 Pursuit 250 Ute Man.	2R53 12A650 HX
XR8 Pursuit 250 Ute Auto.	2R53 12A650 GX

FUEL PRESSURE REGULATOR

A unique fuel pressure regulator on the 250 kW engine raises fuel pressure to 435 kPa. This regulator is identified with an blue paint mark.

THROTTLE BODY

The 250 kW engine is fitted with a Tickford produced throttle body that has an increase in diameter of 17 mm (to 82 mm) and a revised throttle plate angle. This significantly increases airflow and improves throttle response.

The throttle stop screw is set in production for correct air flow and must not be altered in service.

BASE IDLE SPEED

CAUTION: With the engine running, there are rotating and HOT components within the engine compartment. Use extreme care to avoid entanglement and personal injury.

NOTE: The Idle Air Control Valve controls idle speed. The throttle stop screw is factory set and should not require adjustment.

1. Operate the vehicle until it reaches normal operating temperature. The engine and components must be in good condition prior to adjusting the base idle speed.
2. Connect an accurate tachometer to the diagnostic connector.
3. Turn the air conditioning system OFF.
4. Initiate an Ignition Timing test as described in Diagnosis. During the test the Powertrain Control Module (PCM) will fix and hold, the ignition timing at a fixed point.
5. Insert a suitable 0.30 mm thick spacer (feeler gauge, etc.) between the throttle lever stop tab and the throttle stop adjusting screw on the throttle body.
6. Disconnect the harness from the Idle Air Control Valve (IAC) connector.
7. The idle speed specification is shown in the following table. DO NOT adjust the idle speed if it is not within specification. An incorrect base idle speed is caused by either a faulty component or a damaged or restricted intake air system. Rectify any faults and re-check the base idle speed.

250 kW	1050 ± 50 RPM

8. Switch the engine OFF.
9. Reconnect the harness to the IAC valve connector.
10. Remove the tachometer.

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

EXHAUST SYSTEM	GROUP 12

PART 12-3 Exhaust Pipes and Mufflers 8 Cylinder

T SERIES Club of Australia

EXHAUST PIPES AND MUFFLERS 8 CYLINDER

PART 12-3

DESCRIPTION

250 kW engine

Ceramic coated tubular exhaust manifolds are combined with 1.8 litre high flow catalysts. Catalyst inlet and outlets are 64 mm in diameter.

Mufflers

Unique mufflers are used to meet noise requirements.

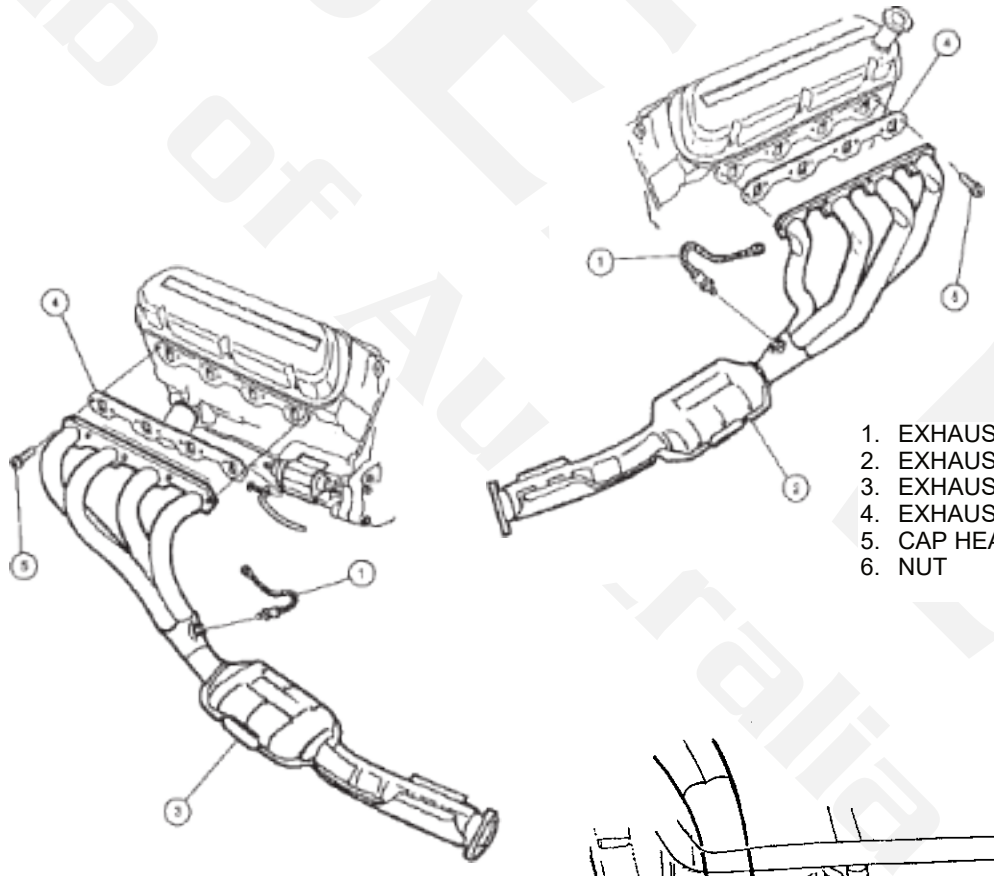
Exhaust outlets

TL50

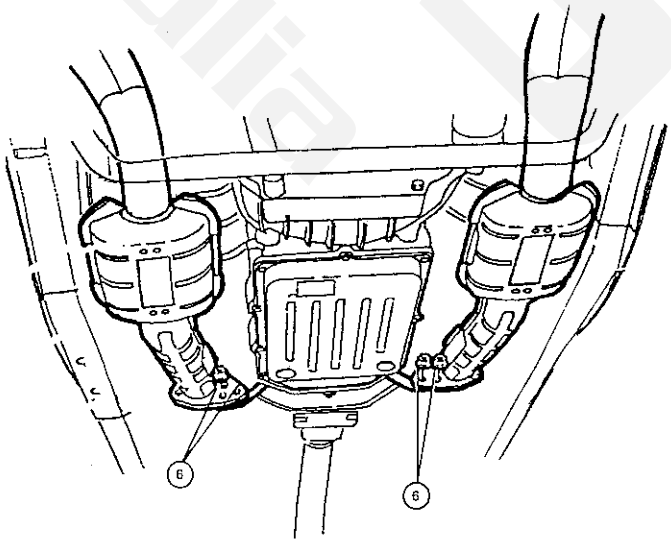
Downward pointing twin exhaust outlets are discretely positioned behind the rear bumper panel.

TE50/TS50/XR8 Pursuit 250 Ute

Twin chrome rectangular outlets.

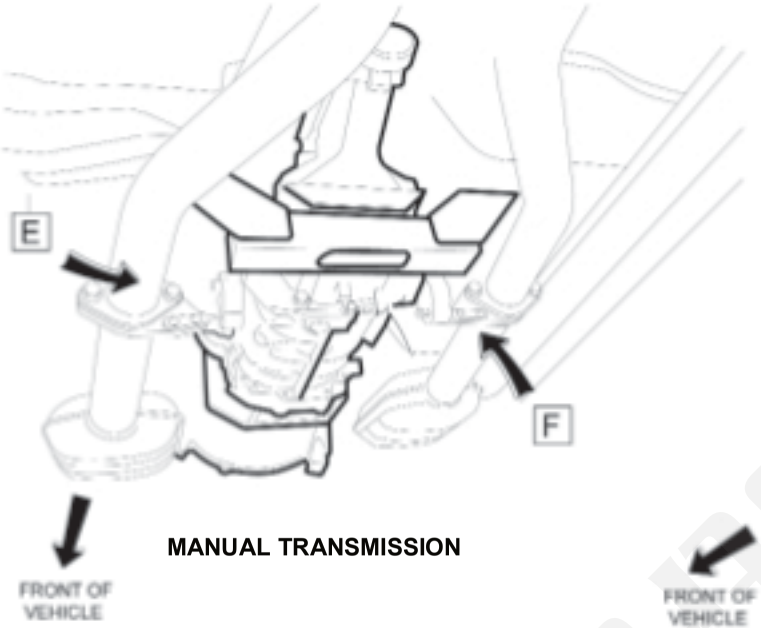


1. EXHAUST GAS SENSOR
2. EXHAUST MANIFOLD ASSY RH
3. EXHAUST MANIFOLD ASSY LH
4. EXHAUST MANIFOLD GASKET
5. CAP HEAD SOCKET
6. NUT

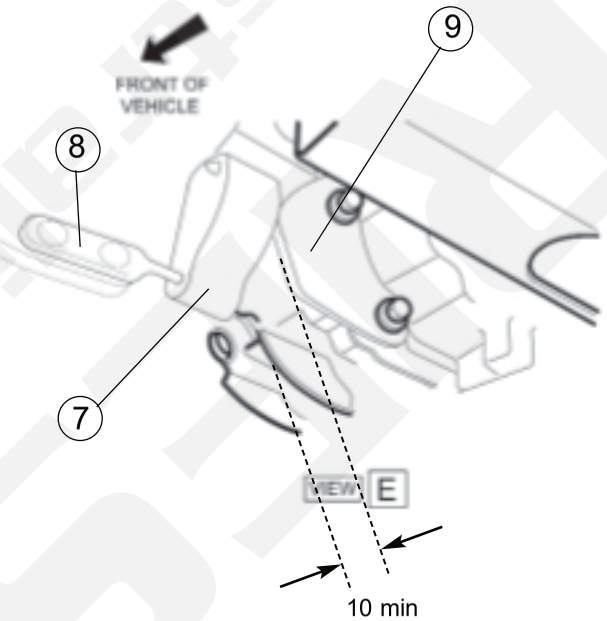


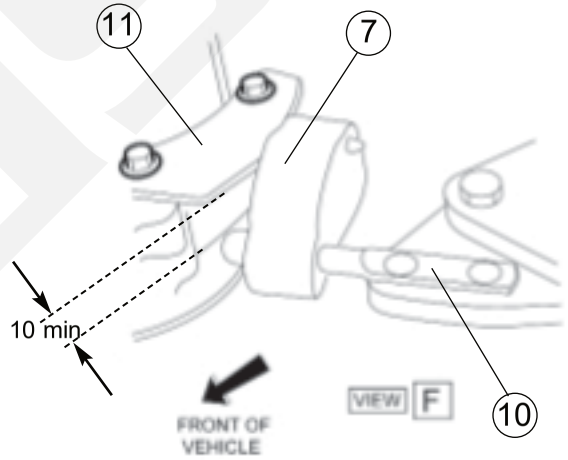
TORQUE REQUIREMENTS
Item 1 – 25Nm
Item 5 – 37Nm
Item 6 – 25Nm

AUTOMATIC TRANSMISSION

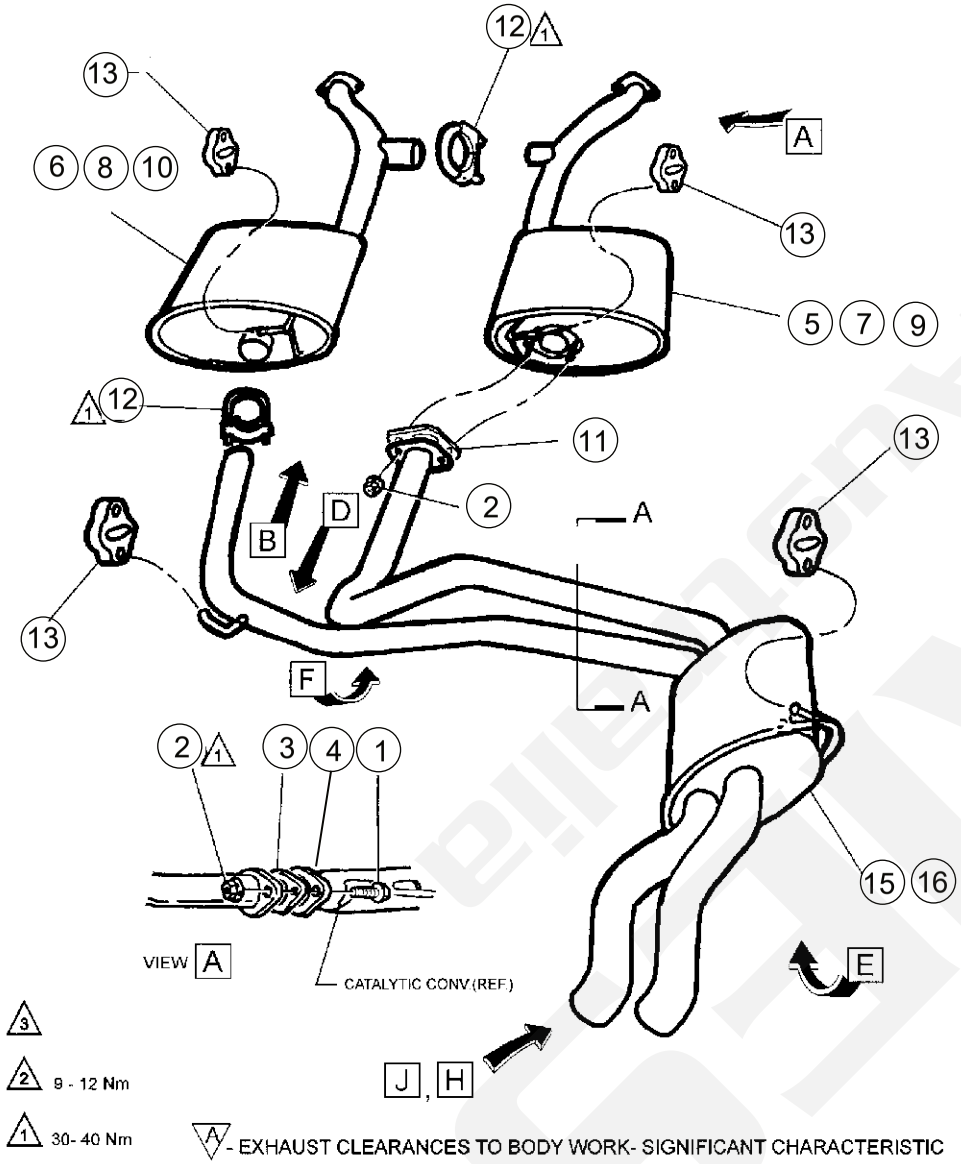


MANUAL TRANSMISSION

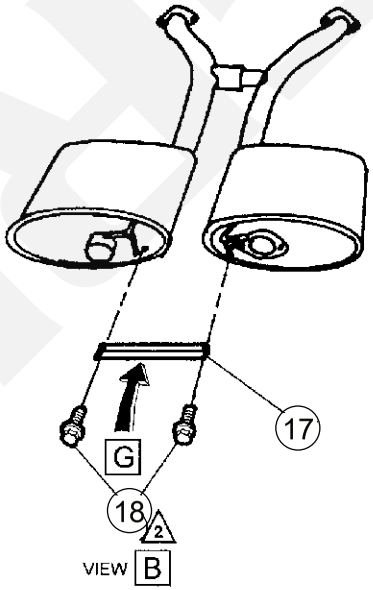


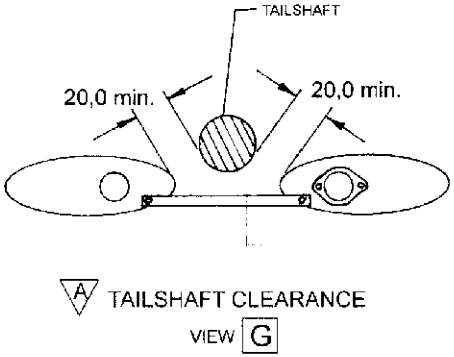


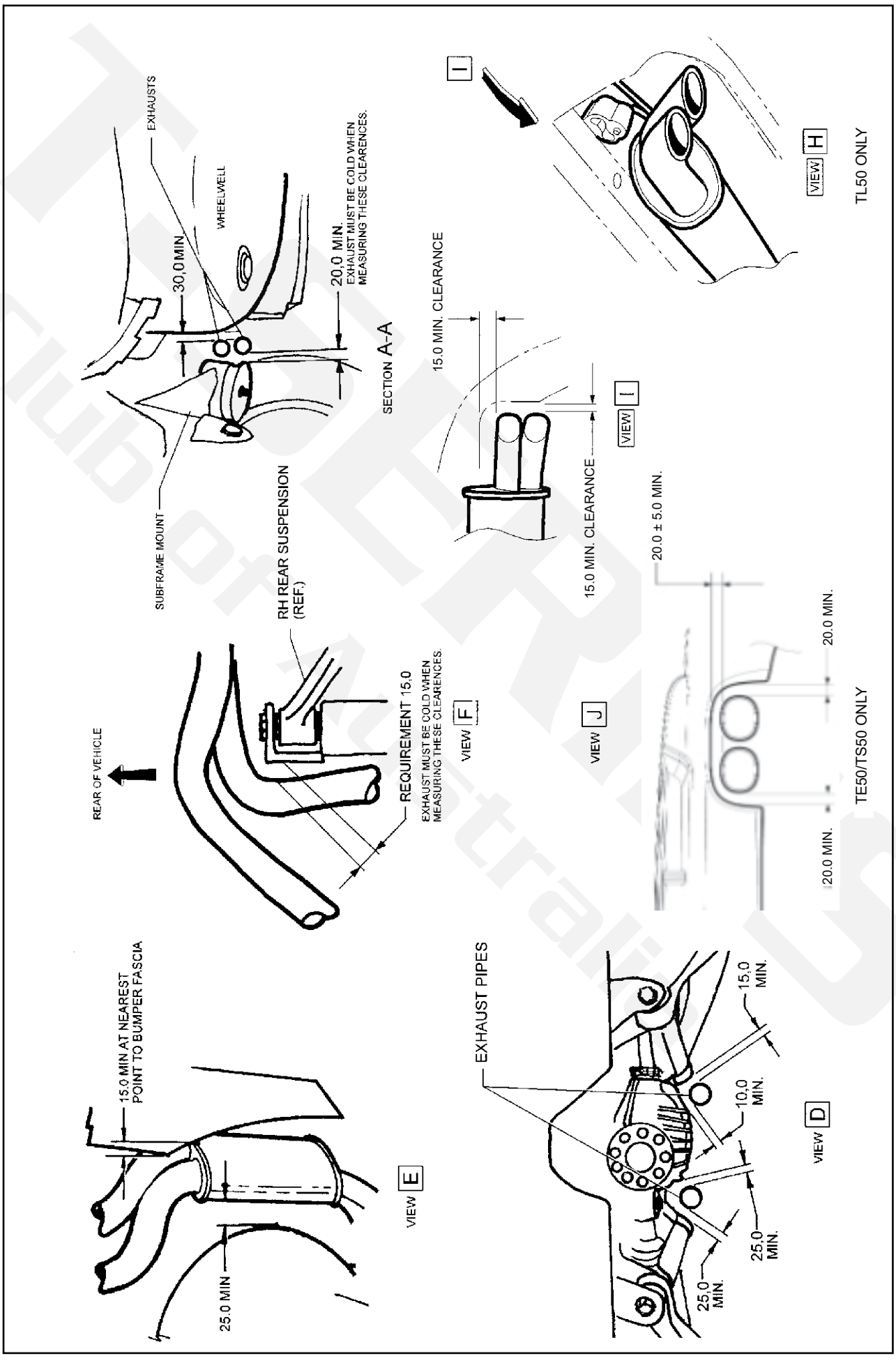
7. RUBBER (MANUAL ONLY)
8. SUPPORT - EXHAUST CONVERTER LH (MANUAL ONLY)
9. BRACKET ASSY. MUFFLER SUPPORT LH (MANUAL ONLY)
10. SUPPORT - EXHAUST CONVERTER RH (MANUAL ONLY)
11. BRACKET ASSY. MUFFLER SUPPORT RH (MANUAL ONLY)



ITEM	PART NO.	PART NAME	REQ'D
1	V800312-S36D	BOLT M10X35 HEX HEAD	REUSE
2	858401000	NUT FLANGED M10	6
3	96DA 5C260 BA	GASKET MUFFLER PIPE	2
4	8441 5C250AA	GASKET MUFFLER PIPE (AUTO TE50/TS50)	2
5	8401 5230 AA	MUFFLER & PIPE ASSY. RH (AUTO TE50/TS50)	1
6	8401 5232 AA	MUFFLER & PIPE ASSY. LH (AUTO TE50/TS50)	1
7	8500 5230 AB	MUFFLER & PIPE ASSY. RH (MANUAL TE50/TS50)	1
8	8500 5232 AB	MUFFLER & PIPE ASSY. LH (MANUAL TE50/TS50)	1
9	8403 5230 AA	MUFFLER & PIPE ASSY. RH (TL50)	1
10	8403 5232 AA	MUFFLER & PIPE ASSY. LH (TL50)	1
11	8500 5C250 AA	GASKET MUFFLER INLET PIPE	1
12	846 5252 AA	CLAMP & U-BOLT ASSY. - MUFFLER	2
13	86DA 5F262 AA	INSULATOR	4
14	8441 5K2148A	MUFFLER & OUTLET PIPE ASSY. (AUTO TE50/TS50)	1
15	8441 5K214 AA	MUFFLER & OUTLET PIPE ASSY. (TE50/TS50)	1
16	8401 6K214 AB	MUFFLER & OUTLET PIPE ASSY. (TL50)	1
17	8600 6A294 AA	BRACKET MUFFLER SUPPORT	1
18	V810069 S580	SCREW HEX M8X20	2






EXHAUSTS
WHEELWELL
30.0 MIN.
20.0 MIN.
EXHAUST MUST BE COLD WHEN MEASURING THESE CLEARENCES.
SUBFRAME MOUNT
SECTION A-A
RH REAR SUSPENSION (REF.)
REAR OF VEHICLE
REQUIREMENT 15.0
EXHAUST MUST BE COLD WHEN MEASURING THESE CLEARENCES.
VIEW F
15.0 MIN. CLEARANCE
15.0 MIN. CLEARANCE
VIEW I
I
VIEW H
TL50 ONLY
VIEW J
20.0 ± 5.0 MIN.
20.0 MIN.
20.0 MIN.
TE50/TS50 ONLY
15.0 MIN AT NEAREST POINT TO BUMPER FASCIA
25.0 MIN
VIEW E
EXHAUST PIPES
15.0 MIN.
10.0 MIN.
25.0 MIN.
25.0 MIN.
VIEW D

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

LIGHTING	GROUP 15

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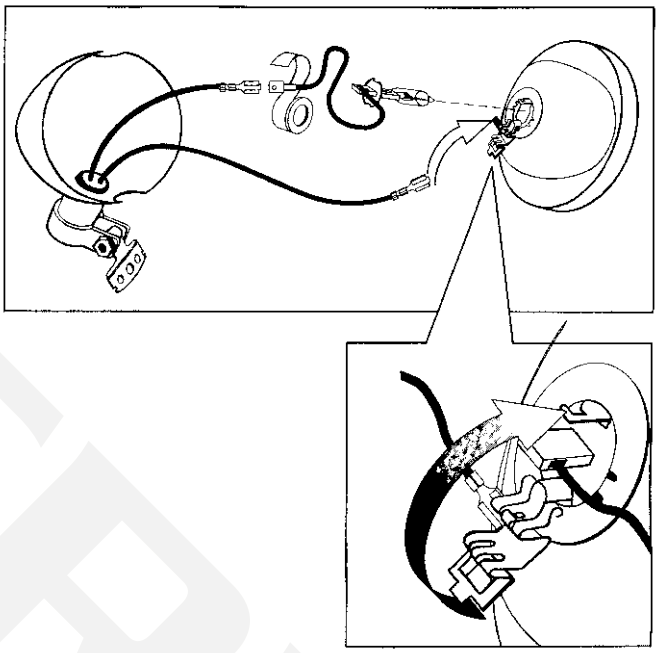
LIGHTING SYSTEM

PART 15-1

DRIVING LAMPS

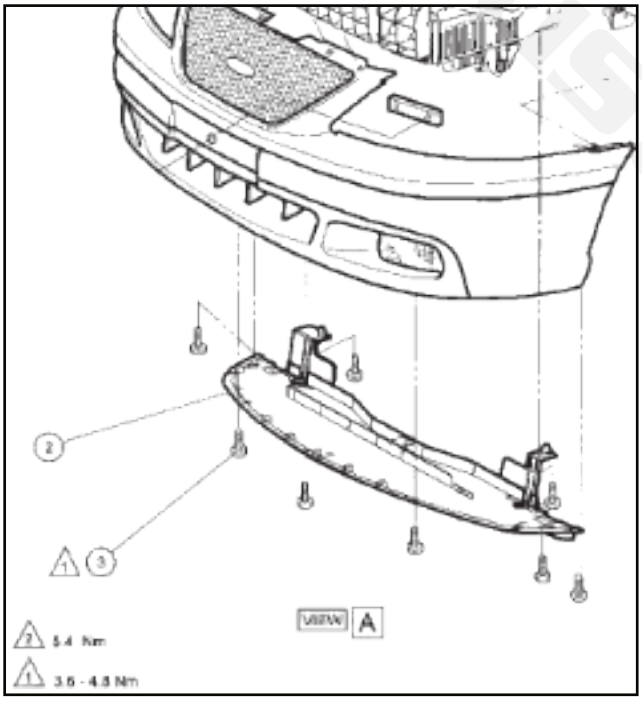
TS50 is fitted with driving lamps mounted in the lower bumper cover.



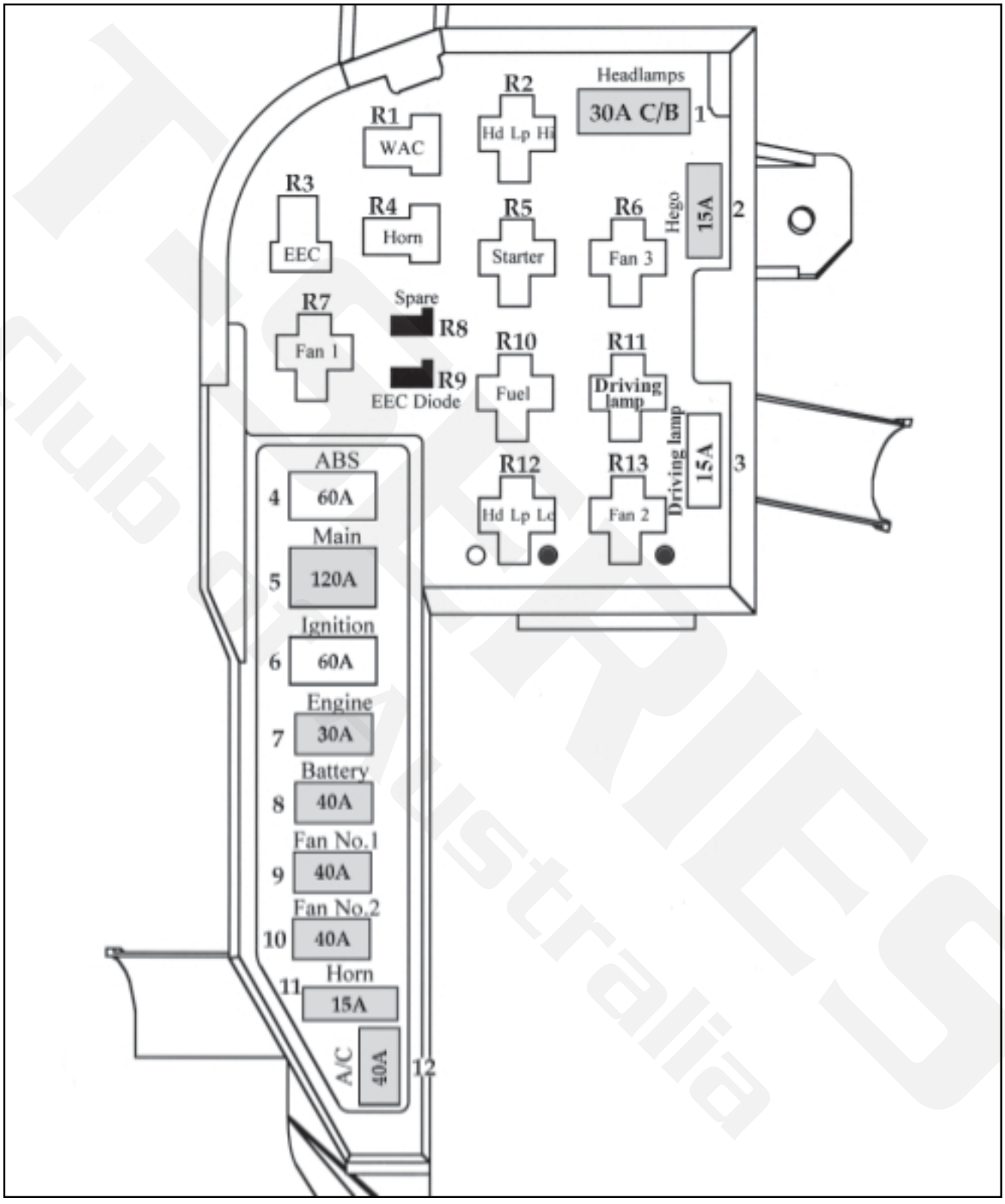
Replacing the driving lamp bulb

- Switch off lights and allow to cool.
- Remove the windage tray from under the front bumper bar.
- Undo the three retaining bolts holding the lamp assembly to the bumper retaining bracket.
- Remove the lap assembly and remove the driving light lens from the housing.
- Replace the blown bulb (as per the diagram); do not hold the bulb by the glass.
- Replace the lens into the housing - it should 'click' into place.
- Fit the lamp assembly onto the bumper retaining bracket, replace and hand tighten the three retaining bolts.
- Position the driving lamp in the bumper opening.
- Tighten the three retaining bolts.
- Replace the windage tray.

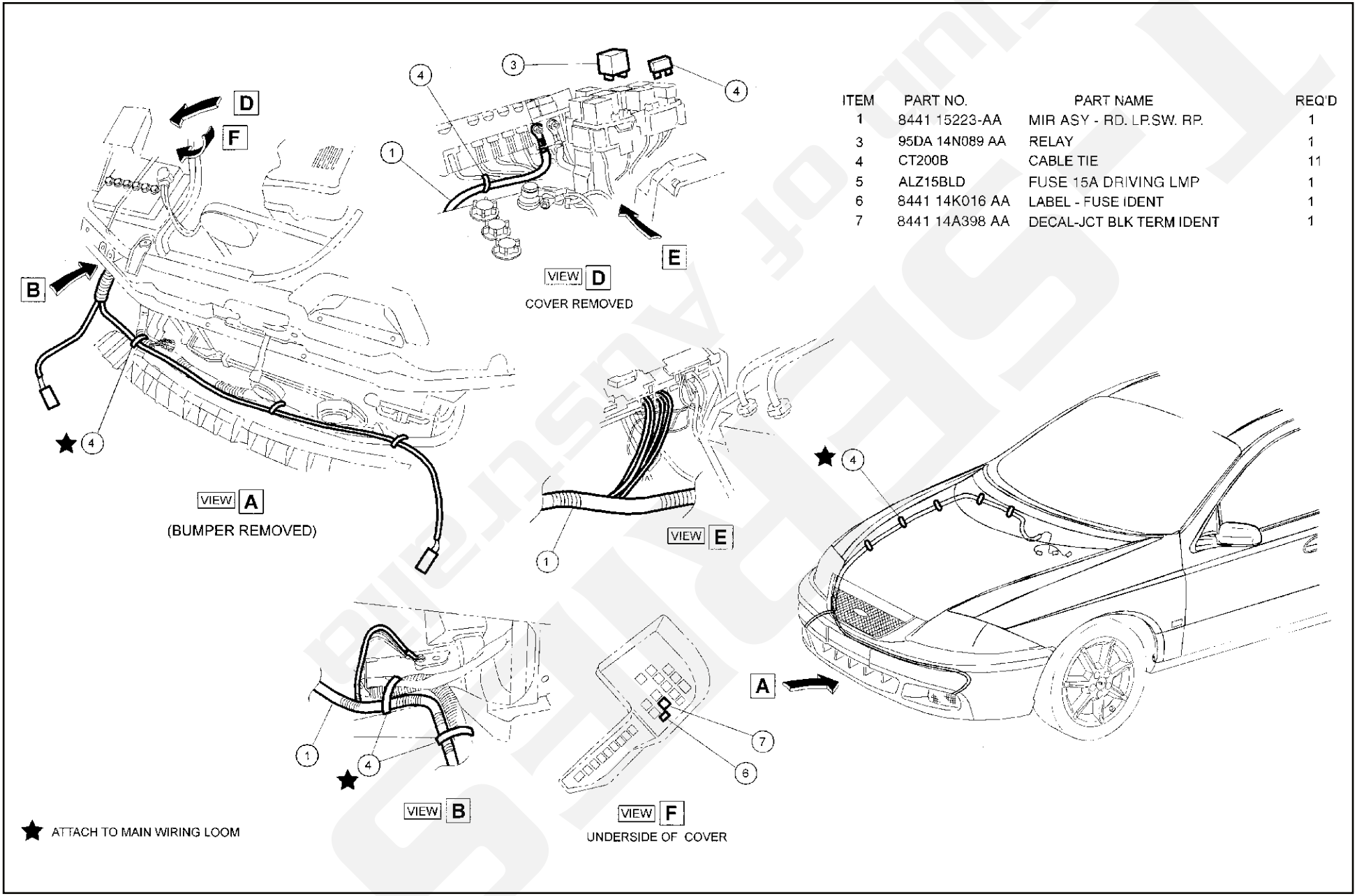
Driving lamp globes are 55 Watt H3.



Windage Tray Removal



Fuse and Relay Box (Engine Compartment)



ITEM	PART NO.	PART NAME	REQ'D
1	8441 15223-AA	MIR ASY - RD. LP.SW. RP.	1
3	95DA 14N089 AA	RELAY	1
4	CT200B	CABLE TIE	11
5	ALZ15BLD	FUSE 15A DRIVING LMP	1
6	8441 14K016 AA	LABEL - FUSE IDENT	1
7	8441 14A398 AA	DECAL-JCT BLK TERM IDENT	1

TS50 Fog Light Wiring

T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

BODY	GROUP 17

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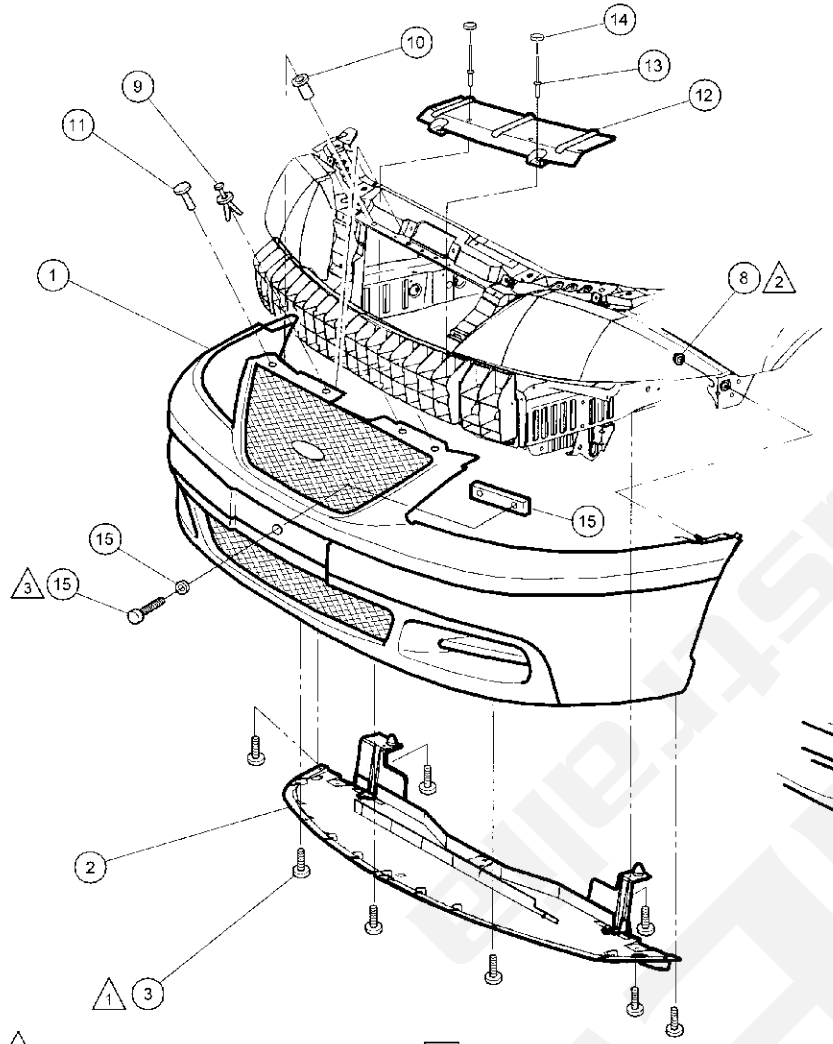
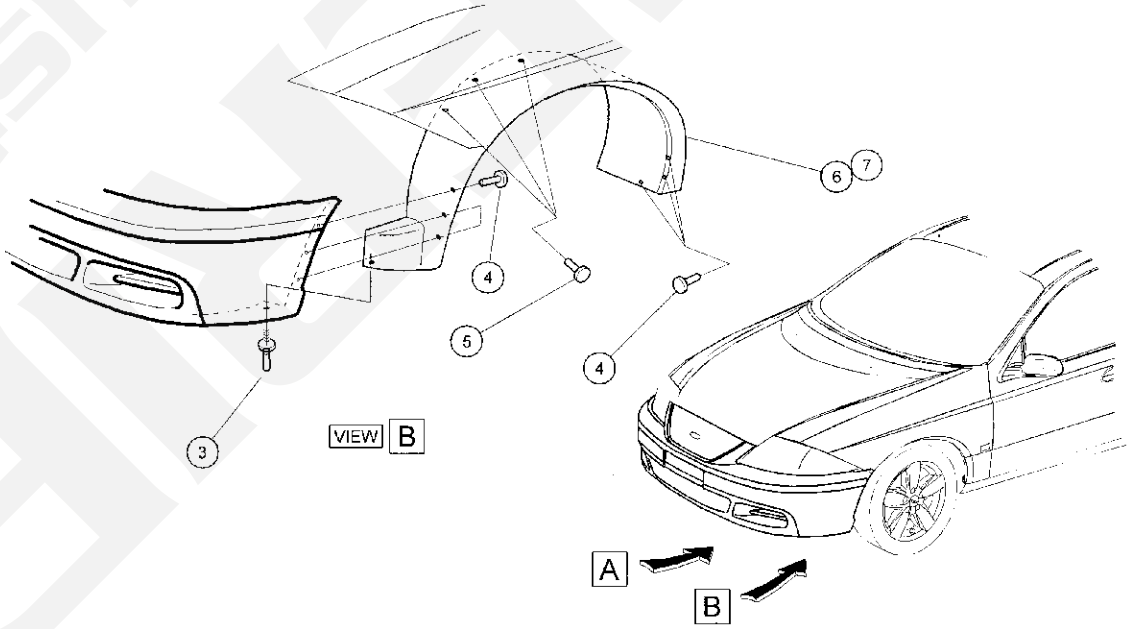
FRONT & REAR BUMPER

PART 17-5

TSERIES Club of Australia

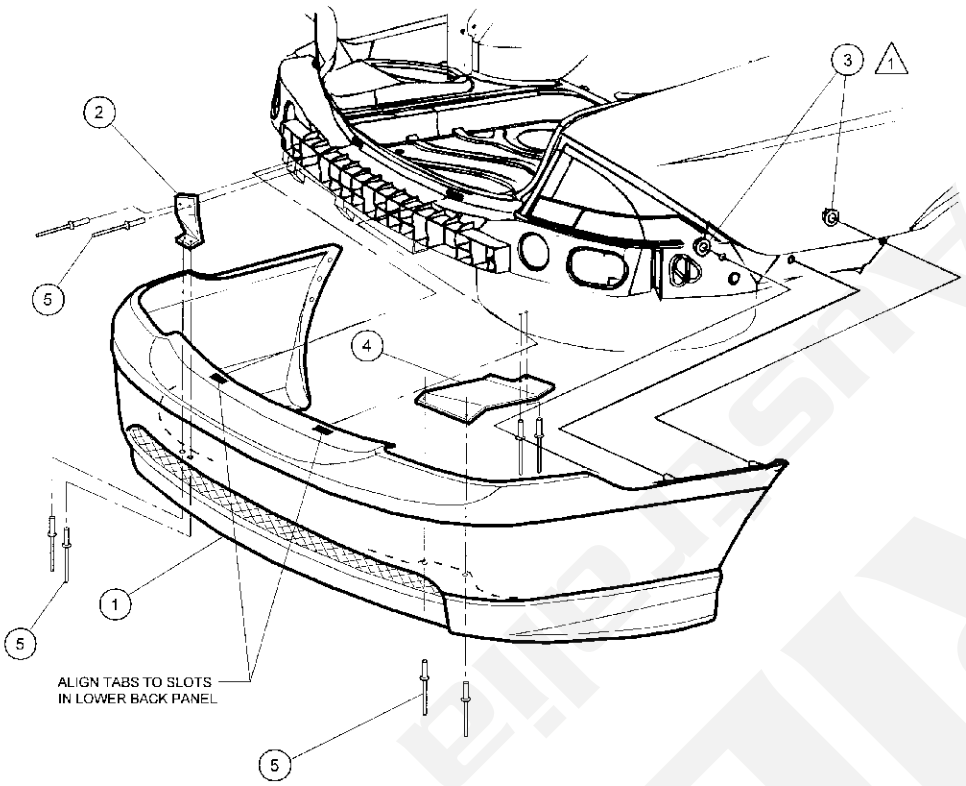


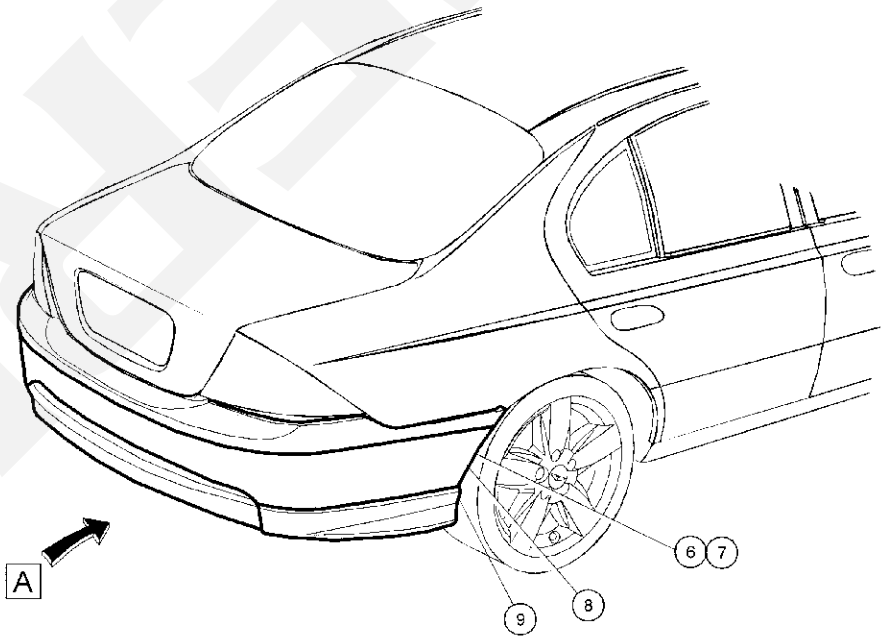
ITEM	PART NO.	PART NAME	REQ'D
1	8441 17750 AAW	BMPR ASY FRT COMP	1
2	WR2A 8B407 AA	DEFL ASY - RAD AIR LWR	1
3	V810130S57B	SCREW #10 X15 HEX WSH	10
4	PC47564	CLIP- XMAS TREE 27MM	16
5	V860243STFA	CLIP BARB	6
6	WR2A 16B560 AB	FRT FNDR SPLS SHLD RH	1
7	WR2A 16B561 AB	FRT FNDR SPLS SHLD LH	1
8	V820247S36D	NUT & WASHER M8 X 1.25	2
9	840122S	SCRIVET	2
10	96580619	NUTSERT M6	2
11	FDC227	SCRW & WSHR ASY M6 X 20	2
12	8401 8B384 AA	DEFL RAD AIR LOWER	1
13	V840067S	RIV BLD 4.8 x 9 BLB	6
14	001196-00601	CAP RIVET	6
15	8401 17C826 AA	BRKT ASY FRONT BMPR REINF	1

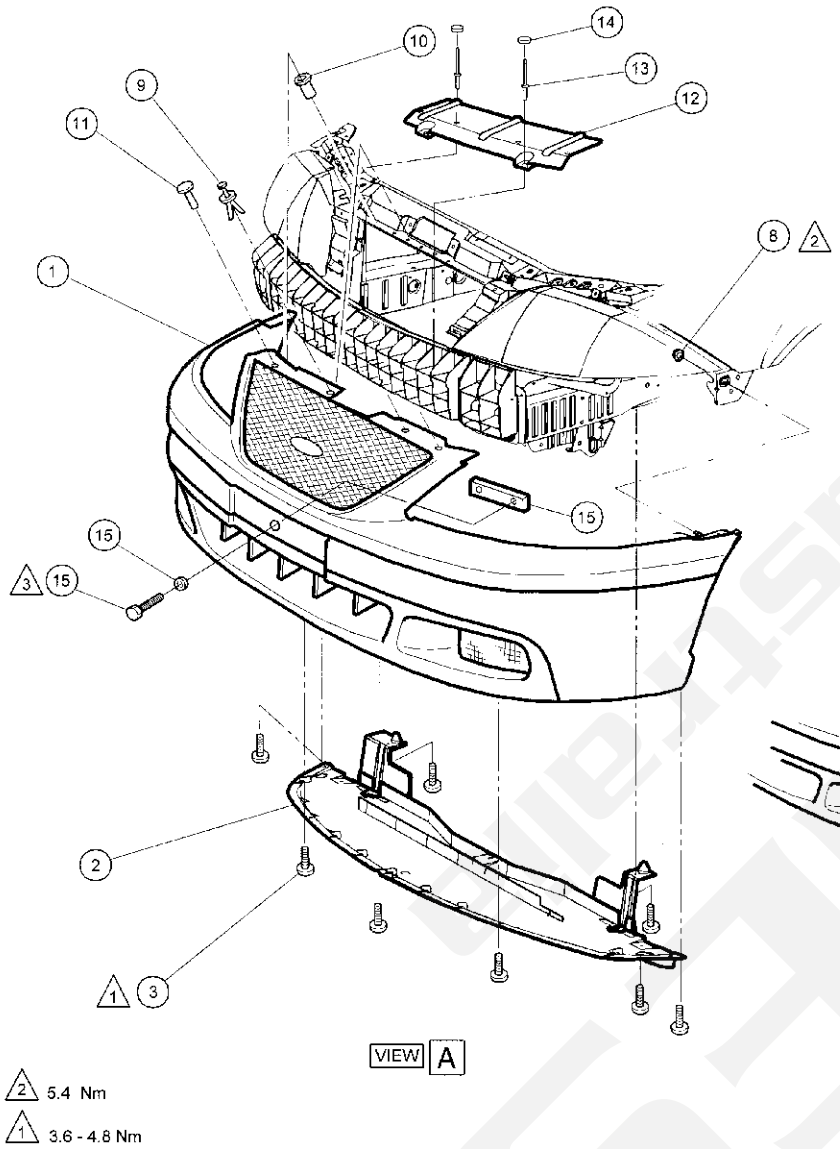


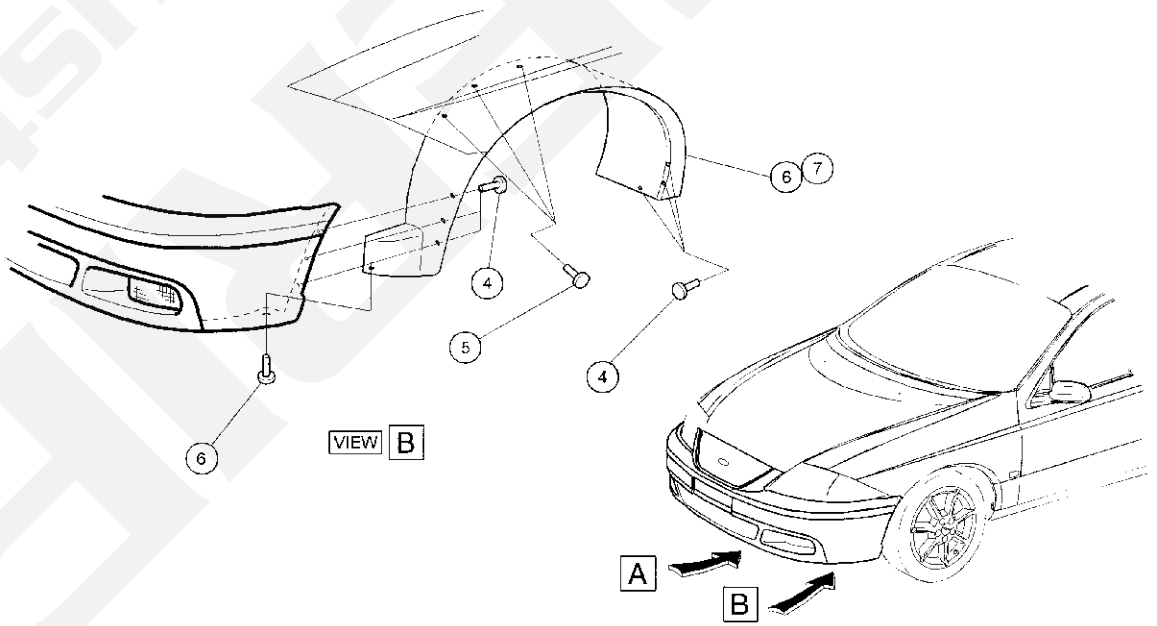
TE 50 Front Bumper

ITEM	PART NO.	PART NAME	REQ'D
1	8441 17775 AAW	BMPR ASY - REAR	1
2	8441 17B995 AA	BRKT ASY - RR BMPR SUPT LH	1
3	V820247S36D	NUT WSHR M8X1.25	4
4	8441 17C999 AA	RETAINER - RR BMPR	1
5	E647677S	RIVET	8
6	WR2A 17B938 AC	SPLASH SHIELD RH	1
7	WR2A 17B939 AB	SPLASH SHIELD LH	1
8	V840096S100	RIVET	4
9	PC 47564	CLIP BARB	8





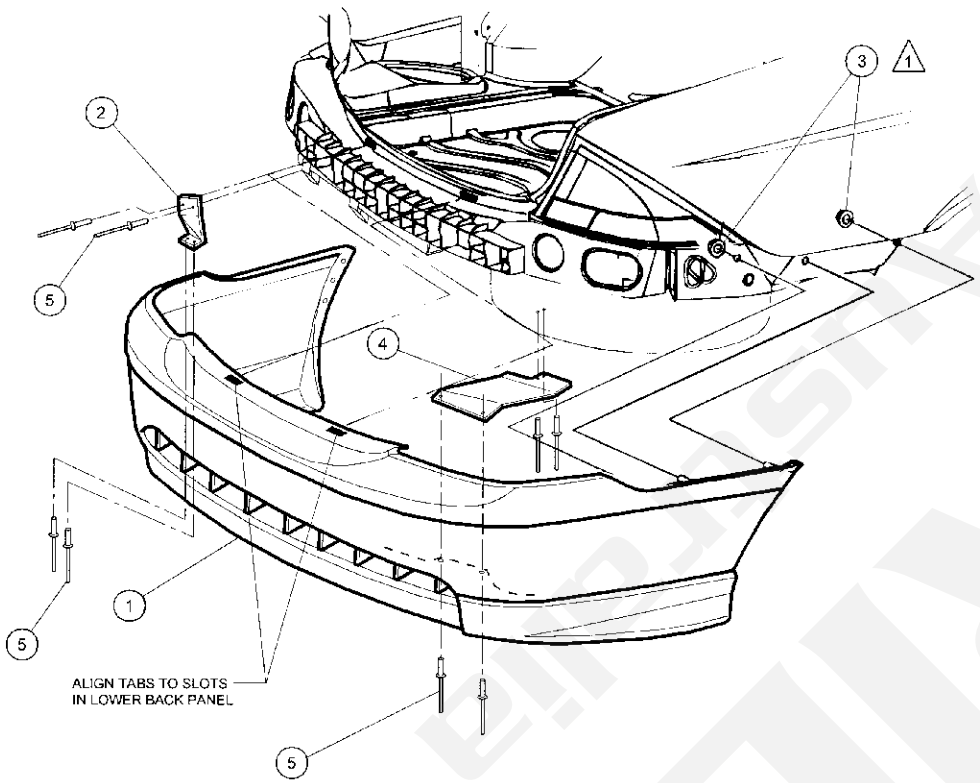


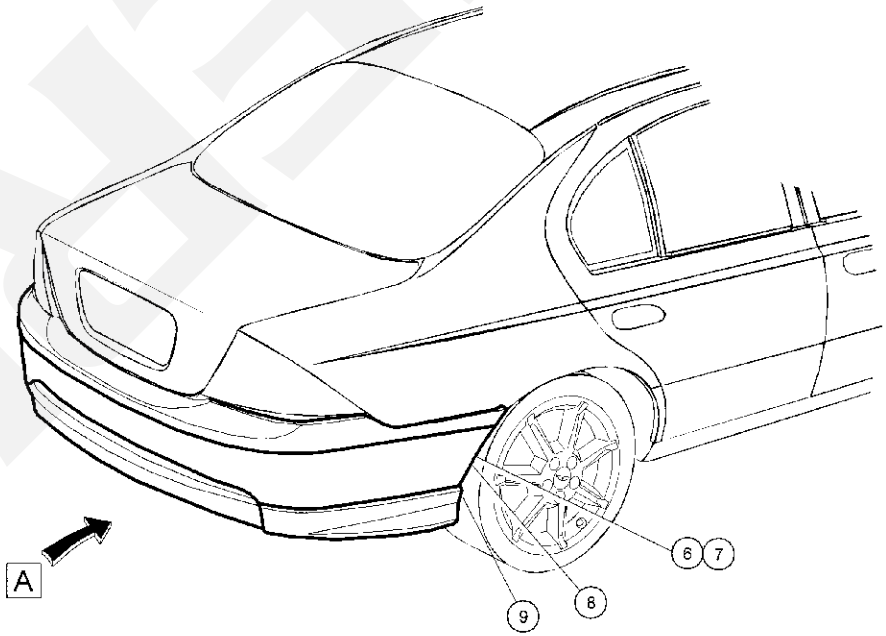


ITEM	PART NO.	PART NAME	REQ'D
1	8441 17750 AAW	BMPR ASY FRT COMP	1
2	WR2A 8B407 AA	DEFL ASY - RAD AIR LWR	1
3	V810130S57B	SCREW #10 X15 HEX WSH	10
4	PC47564	CLIP- XMAS TREE 27MM	16
5	V860243STFA	CLIP BARB	6
6	WR2A 16B560 AB	FRT FNDR SPLS SHLD RH	1
7	WR2A 16B561 AB	FRT FNDR SPLS SHLD LH	1
8	V8202447S36D	NUT & WASHER M8 X 1.25	2
9	840122S	SCRIVET	2
10	96580619	NUTSERT M6	2
11	FDC227	SCRW & WSHR ASY M6 X 20	2
12	8401 8B384 AA	DEFL RAD AIR LOWER	1
13	V840067S	RIV BLD 4.8 x 9 BLB	6
14	001196-00601	CAP RIVET	6
15	8401 17C826 AA	BRKT ASY FRONT BMPR REINF	1

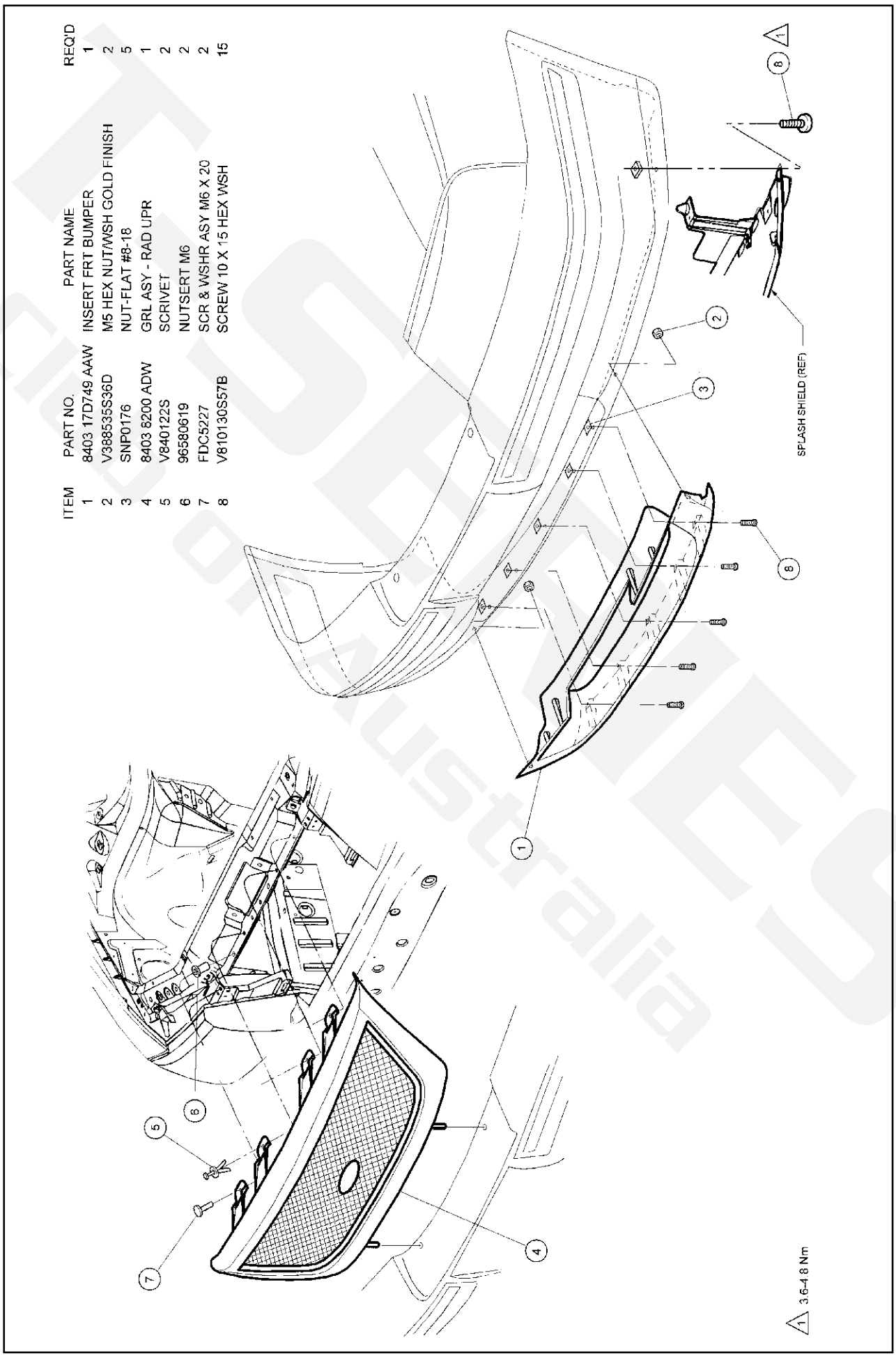
TS 50 Front Bumper

ITEM	PART NO.	PART NAME	REQ'D
1	8441 17775 AAW	BMPR ASY - REAR	1
2	8441 17B995 AA	BRKT ASY - RR BMPR SUPT LH	1
3	V820247S36D	NUT WSHR M8X1.25	4
4	8441 17C999 AA	RETAINER - RR BMPR	1
5	E647677S	RIVET	8
6	WR2A 17B938 AC	SPLASH SHIELD RH	1
7	WR2A 17B939 AB	SPLASH SHIELD LH	1
8	V840096S100	RIVET	4
9	PC 47564	CLIP BARB	8



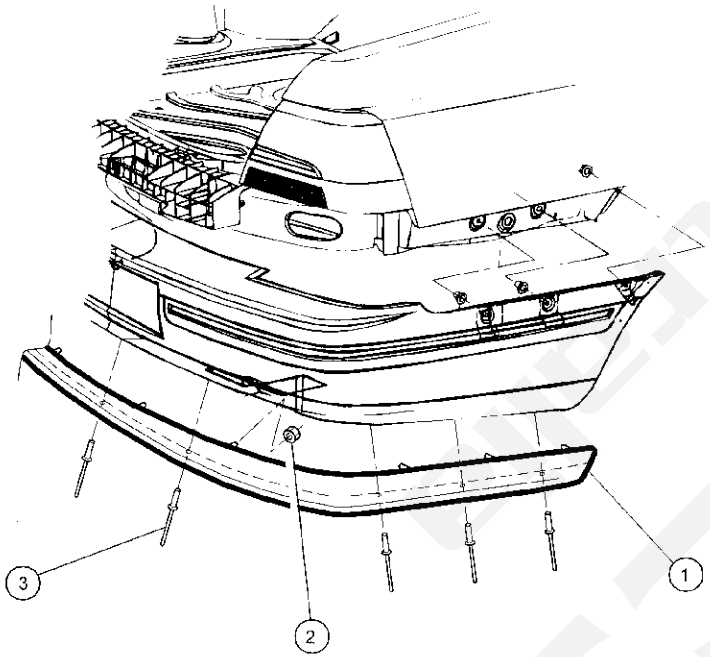


1 5.4 Nm



TL 50 Front Bumper Insert Gnd Grille

ITEM	PART NO.	PART NAME	REQ'D
1	8403 F17E858 AAW	EXT ASY - RR BMPR	1
2	V388535S36D	M5 HEX NUT/WSH GOLD FINISH	9
3	V840067S	RIVET - BLND 4.8x9 BLB	10



TL 50 Rear Bumper Insert

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REAR BUMPER BAR - XR8 PURSUIT 250 UTE

INSTALLATION

Tool required:

- Rivet gun.

1. Connect wiring loom to reverse lamp and numberplate lamps at rear bumper assembly as shown in view A.
2. Secure wiring to bumper skin using gaffer tape (view A).
3. Place bumper onto vehicle (view B), securing bumper skin with rivet gun and rivets (view C and D).
4. Secure side panels (view B) with rivet gun and insert rivets.
5. Place rear insert to rear bumper and insert washer neoprene and stud to locating holes (view E).

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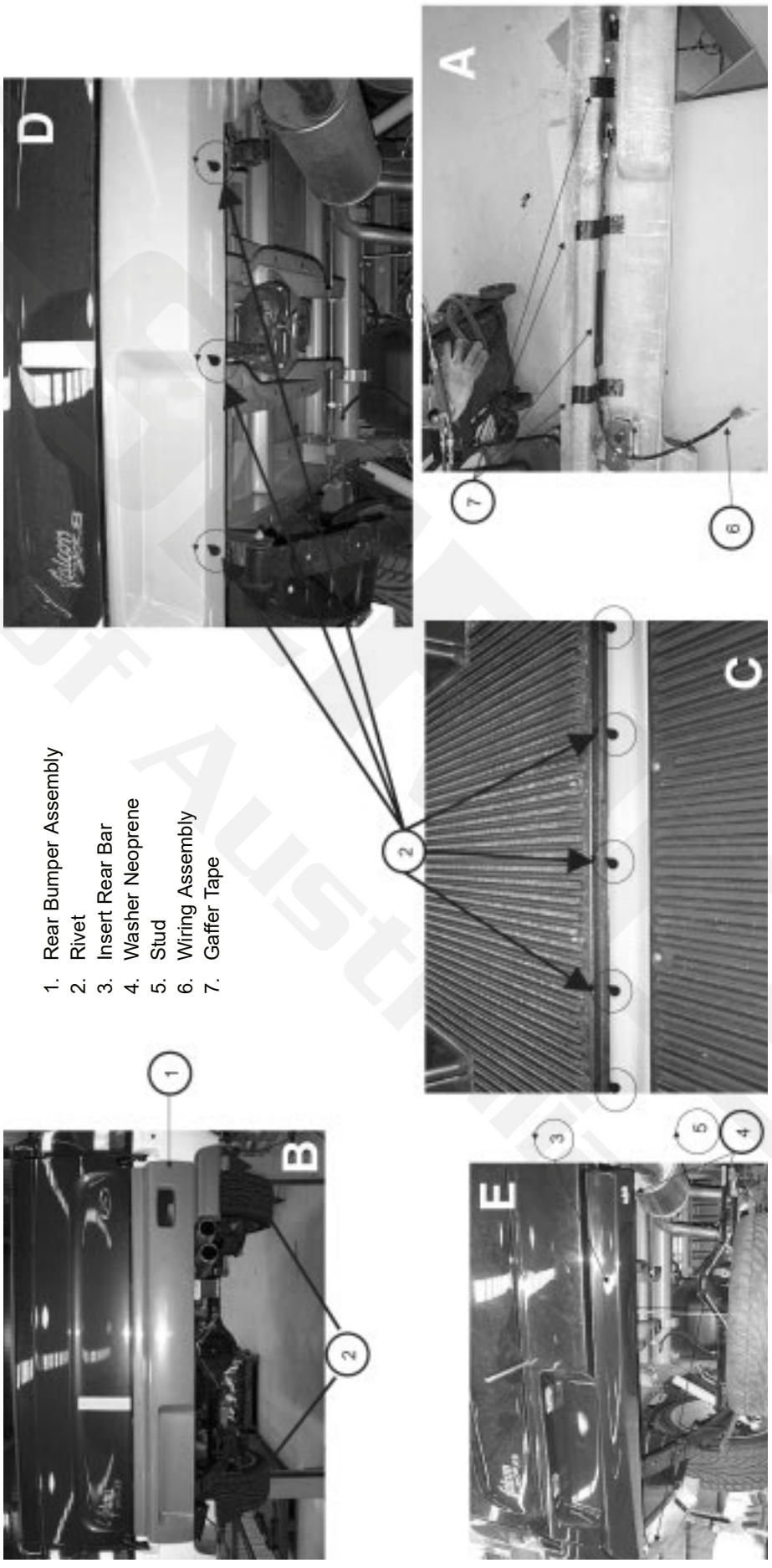
1. Rear Bumper Assembly
2. Rivet
3. Insert Rear Bar
4. Washer Neoprene
5. Stud
6. Wiring Assembly
7. Gaffer Tape
A
B
C
D
E

REAR BUMPER BRACKET - XR8 PURSUIT 250 UTE

INSTALLATION

1. Remove plastic dust shield as shown in view A.
2. Place rear bumper bracket onto rear of vehicle making sure all 4 studs protrude through the body holes (view B).
3. Hand start nuts onto studs. Prior to tightening nuts push bracket all the way to the left then tighten and torque to 29.7 – 40.3Nm.
4. Replace plastic dust shields.

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1. Rear Bumper Bracket
2. Nut

Club of Australia

EXTERIOR MOULDINGS - XR8 PURSUIT 250 UTE

PART 17-6

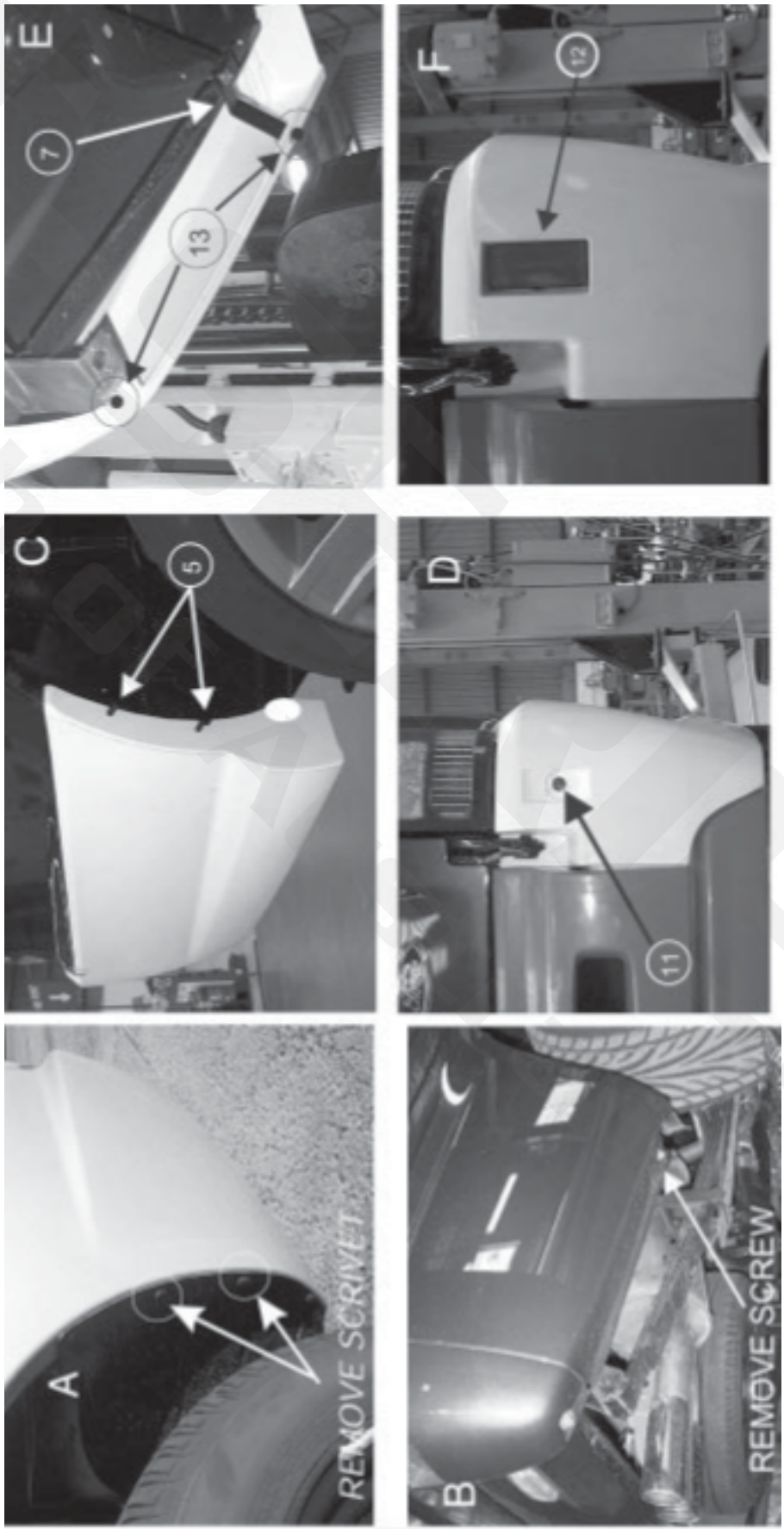
REAR STYLE BODY KIT COMPONENTS:

INSTALLATION

Tools required:

- 10mm socket
- Air rivet gun
- Sika gun

1. Remove the two scrivets using the socket that secures the splash shield shown in view A, and the screw that secures the fender brace (view B).
2. Clean glue track off body rocker panel – rear panel with sika cleaner. Clean surface of vehicle body with X55 solvent. Allow a couple of minutes to dry and apply sika primer with brush.
3. Apply sika primer to glue trail. Allow 15 minutes to dry. Apply 255sikaflex with sika gun to part and place part on vehicle.
4. Fit X-tree clips to inner wheel flange (view C).
5. Fit rear retaining bolt and screw (view D).
6. Fit bracket to inner rear rocker panel reusing screw from the fender brace (view B) and new rivet.
7. Clean surface area of rear bumper extension with X55 solvent where the reflector is to be positioned. Allow solvent to dry before pealing protective paper off rear reflector and positioning onto rear extension (view F).



5. X-Tree Clips
7. Bracket
11. Screw
12. Reflector
13. Rivets

SIDE STYLE BODY KIT COMPONENTS:

INSTALLATION

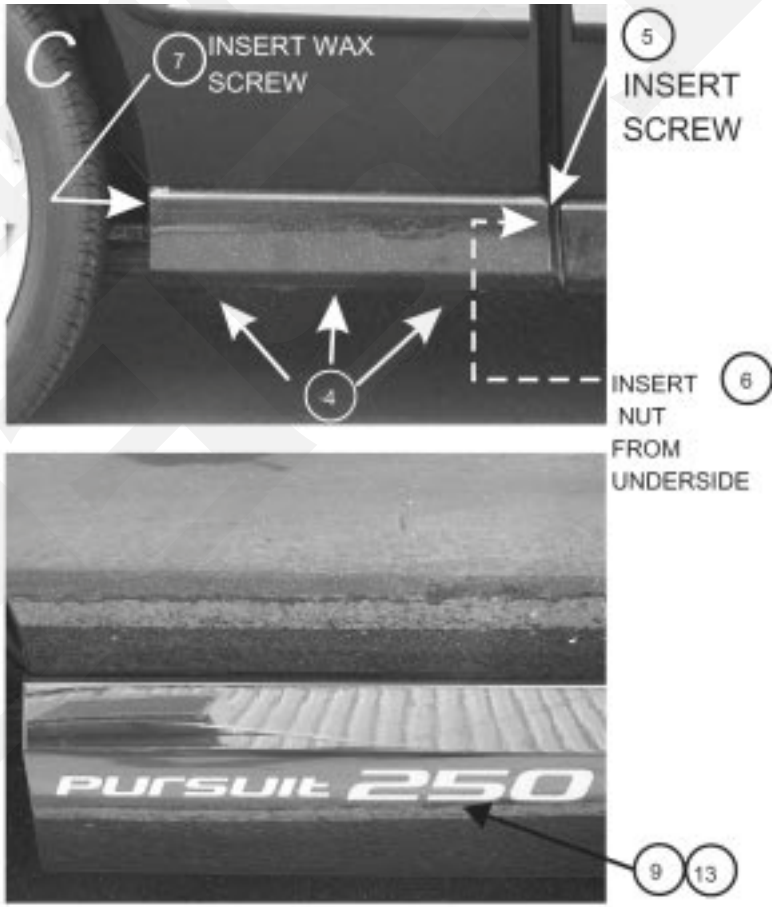
Tools required:

- Air screwdriver
- Sika gun
- Drill
- Brush

1. Place drill jig over the style side area. Drill 5.00mm hole using the drilling boss as the location. Enlarge drilled hole to 9.00mm. Apply cold galvanising compound to all drilled holes.
2. Clean the adhesive track with sika cleaner, then apply sika primer. Allow 15 minutes drying time.
3. Apply a small bead of sika using the sika gun to the adhesive track. Place part to vehicle, apply U-clips (black) to lower edge, insert screw and secure using nut.
4. Secure rear of part by inserting a wax tip screw through part into the wheel arch.
5. Clean the surface of the rocker with X55 solvent and apply the decal to the vehicle and press to make sure decal has stuck to panel.

LT SERIES Club of Australia

1. Sika Cleaner
2. Sika Primer
3. Sika
4. U-Clips (Black)
5. Screw
6. Nut
7. Wax Tip Screw
9. Decal (Except White & Silver)
11. Rocker Extension Right Hand
12. Rocker Extension Left Hand
13. Decal (White & Silver Vehicles)



Z-BRACKET:

REWORK

Tools required:

- Air hacksaw
- 6mm drill piece

1. Place rear Z-bracket from Right and Left hand end rocker panels onto cutting fixture. Place marking jig onto centre section of Z-bracket and mark centre cut line and extra 6mm hole location as shown in View A.
2. Using the air hacksaw cut along the outside of sika trail and down the centre of the Z-brackets. This will create the following adjusted rocker panels: Right hand end, Left hand end, right intermediate and left intermediate.
3. Using a 6mm drill piece, drill a hole into the intermediate rocker panels as shown in view A.
4. Turn intermediate rocker panels over. Where the additional hole has been drilled using the air hacksaw you need to trim off a 40mm section from the sika return flange as shown in view B.

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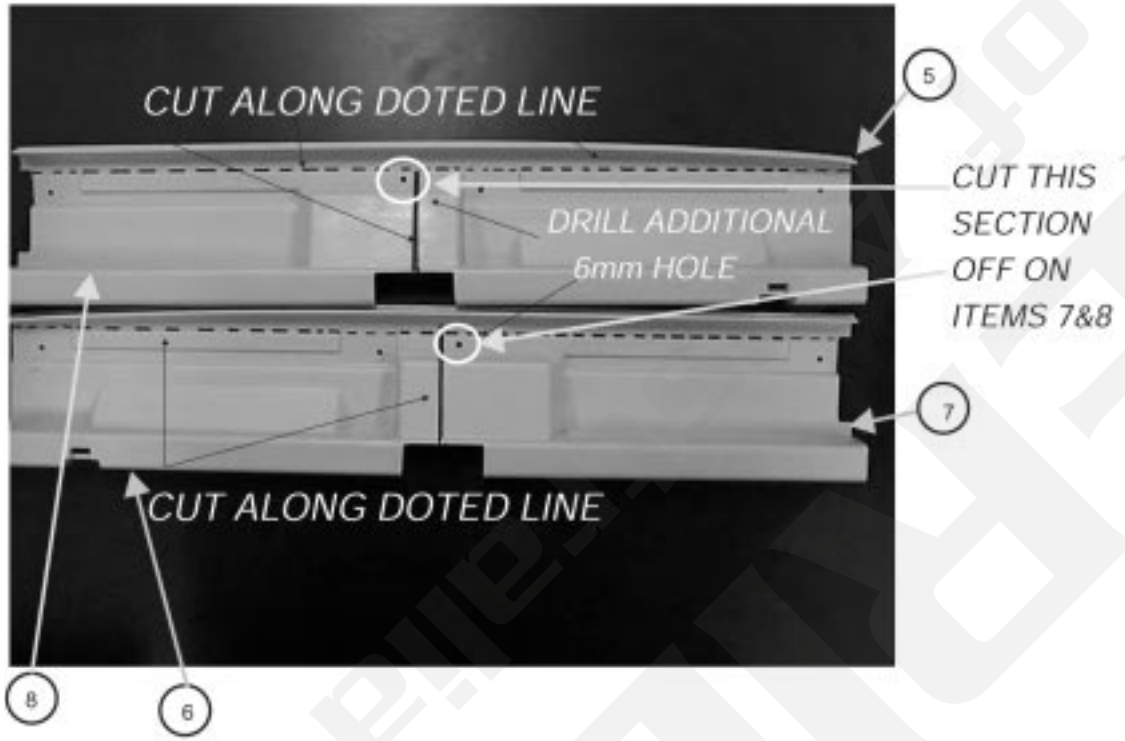
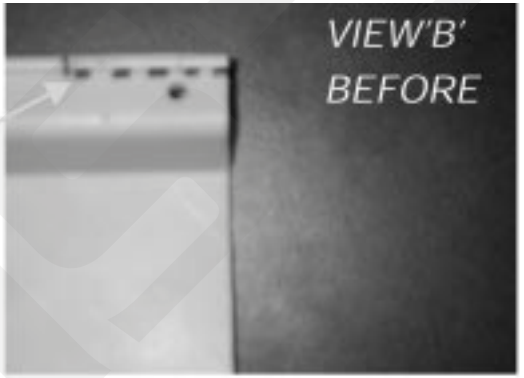




5. Bkt. Rocker Panel End Right Hand
6. Bkt. Rocker Panel End Left Hand
7. Bkt. Rocker Panel Intermediate Right
8. Bkt. Rocker Panel Intermediate Left

Z-BRACKET TO ROCKER PANEL

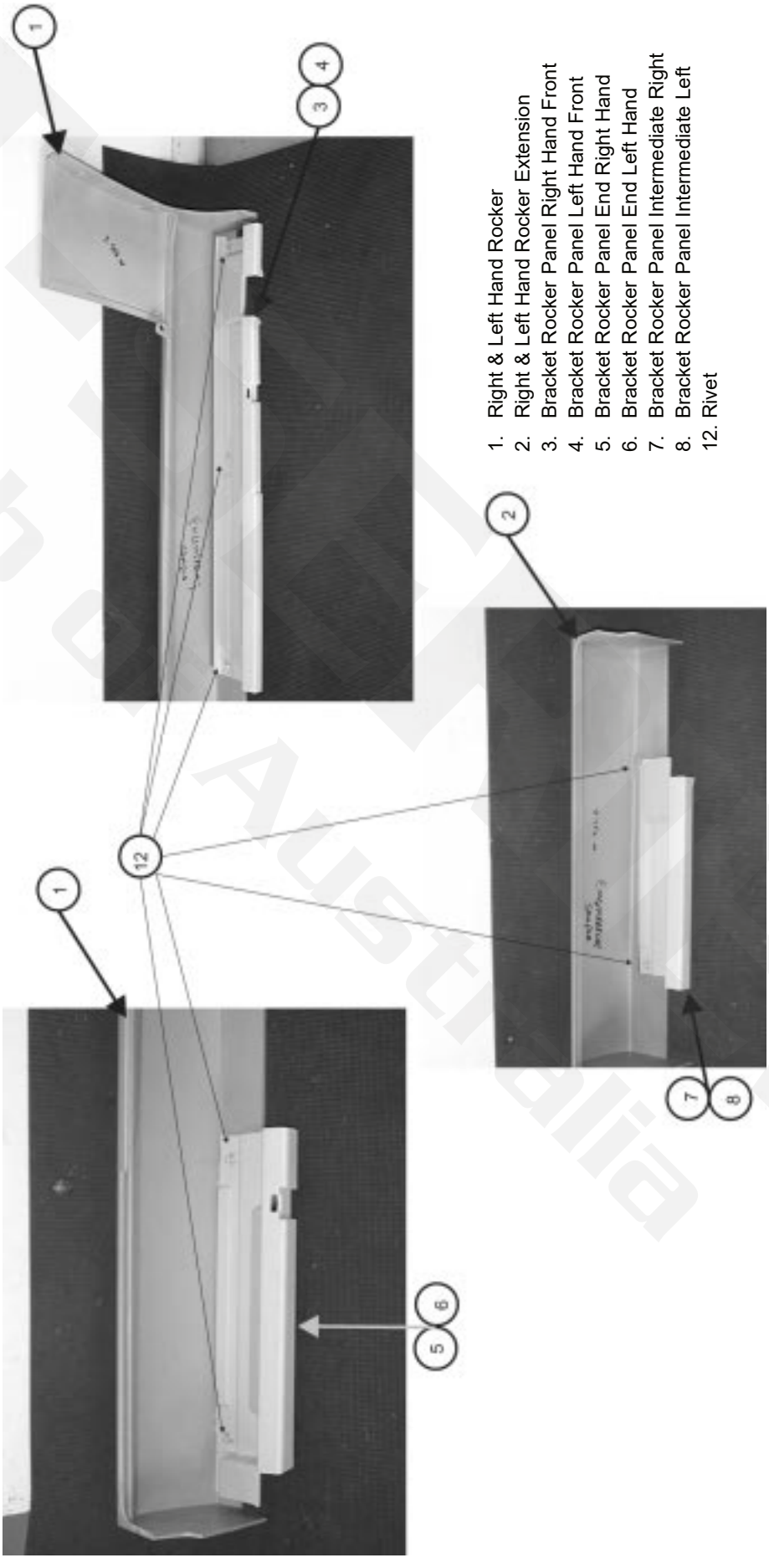
ASSEMBLY

Tools required:

- Sika gun
- Rivet gun
- 1” brush

1. Clean all sika trails on all rocker panels (Right hand front, Left hand front, Right hand end, Left hand end, Intermediate right and Intermediate left) using sika cleaner and all mating surfaces on hand rocker (Left and right) and hand rocker extension (Left and right). Allow to dry for 5 minutes.
2. Brush on sika primer to all sika trails on all rocker panels. Allow 15 minutes drying time.
3. Apply sikaflex with sika gun to all sika trails on all rocker panels.
4. Place Z-bracket on rocker panel (Right hand front and left hand front only) to the front of side skirt lining the 3 holes in the Z-bracket to the 3 mating holes of the side skirt. Push 3 rivets through the bottom of the side skirt and through the z-bracket. Once rivets are in place use the air rivet gun to squash the rivets bringing the two panels together.
6. Repeat step 4 for rocker panels (right hand end and left hand end) at the rear of the hand front rocker and also for intermediate rocker panels for the rocker extension.

CHEVROLET of Australia



1. Right & Left Hand Rocker
2. Right & Left Hand Rocker Extension
3. Bracket Rocker Panel Right Hand Front
4. Bracket Rocker Panel Left Hand Front
5. Bracket Rocker Panel End Right Hand
6. Bracket Rocker Panel End Left Hand
7. Bracket Rocker Panel Intermediate Right
8. Bracket Rocker Panel Intermediate Left
12. Rivet

Club Australia

BODY ROCKER PANEL MOULDINGS:

INSTALLATION:
Tools required:
• sika gun
• circlip pliers

1. Thoroughly clean glue tracks off rocker mouldings with sika cleaner and clean cloth. Allow 5 minutes to dry before applying sika primer.
2. Thoroughly clean with X55 solvent all mating surfaces on vehicle that sikaflex will adhere to.
3. Brush on sika primer to glue tracks of rocker moulding. Allow to dry for 15 minutes before applying sikaflex.
4. Apply a bead of sikaflex with sika gun to full length of glue track. Offer rocker moulding to vehicle.
5. Fit two christmas tree clips (domed) to front edge of moulding.
6. Fit spring clips (Clip “U” spring – Black) with circlip pliers to front edge moulding.

DSERIES Club of Australia

1
3
4
APPLY ITEMS
8
9
10
HERE
1. Rocker Mould Right Hand
3. Clip "U" Spring-Black
4. Christmas Tree Clip - Domed
8. Sikaflex

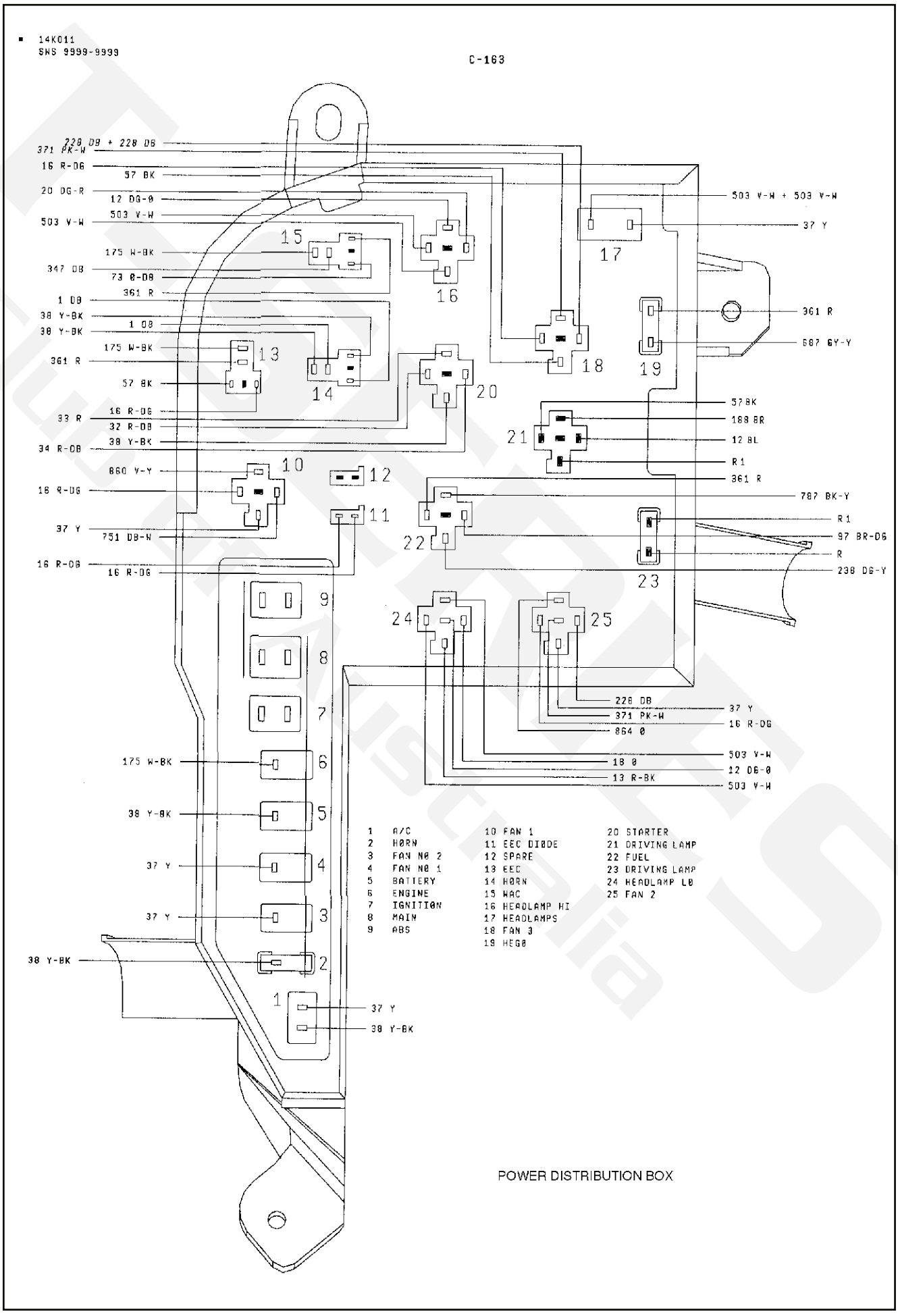
T SERIES & XR8 PURSUIT 250 UTE

REPAIR MANUAL

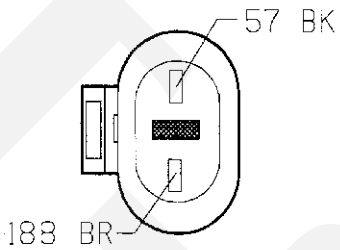
SCHEMATICS	GROUP 22

PART 22-1 Schematics

T SERIES Club of Australia

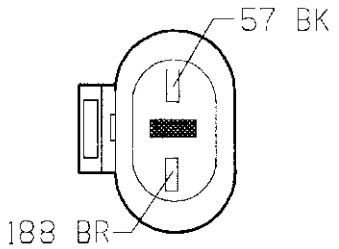

14K011
SNS 9999-9999
C-163
228 DB + 228 DB
371 PK-W
16 R-DG
57 BK
20 DG-R
12 DG-0
503 Y-W
175 W-BK
347 DB
73 0-DB
361 R
1 DB
38 Y-BK
1 DB
38 Y-BK
175 W-BK
361 R
57 BK
33 R
16 R-DG
32 R-DB
38 Y-BK
34 R-DB
860 Y-Y
16 R-DG
37 Y
751 DB-W
16 R-DG
16 R-DG
175 W-BK
38 Y-BK
37 Y
37 Y
38 Y-BK
37 Y
38 Y-BK
503 Y-W + 503 Y-W
37 Y
361 R
687 GY-Y
57 BK
188 BR
12 BL
R1
361 R
787 BK-Y
R1
97 BR-DG
R
238 DG-Y
228 DB
37 Y
371 PK-W
16 R-DG
864 0
503 Y-W
18 0
12 DG-0
13 R-BK
503 Y-W
1 A/C
2 HORN
3 FAN NO 2
4 FAN NO 1
5 BATTERY
6 ENGINE
7 IGNITION
8 MAIN
9 ABS
10 FAN 1
11 EEC DIODE
12 SPARE
13 EEC
14 HORN
15 WAC
16 HEADLAMP HI
17 HEADLAMPS
18 FAN 3
19 HEGO
20 STARTER
21 DRIVING LAMP
22 FUEL
23 DRIVING LAMP
24 HEADLAMP LO
25 FAN 2
POWER DISTRIBUTION BOX

RH DRIVING LAMP



C-1005

LH DRIVING LAMP



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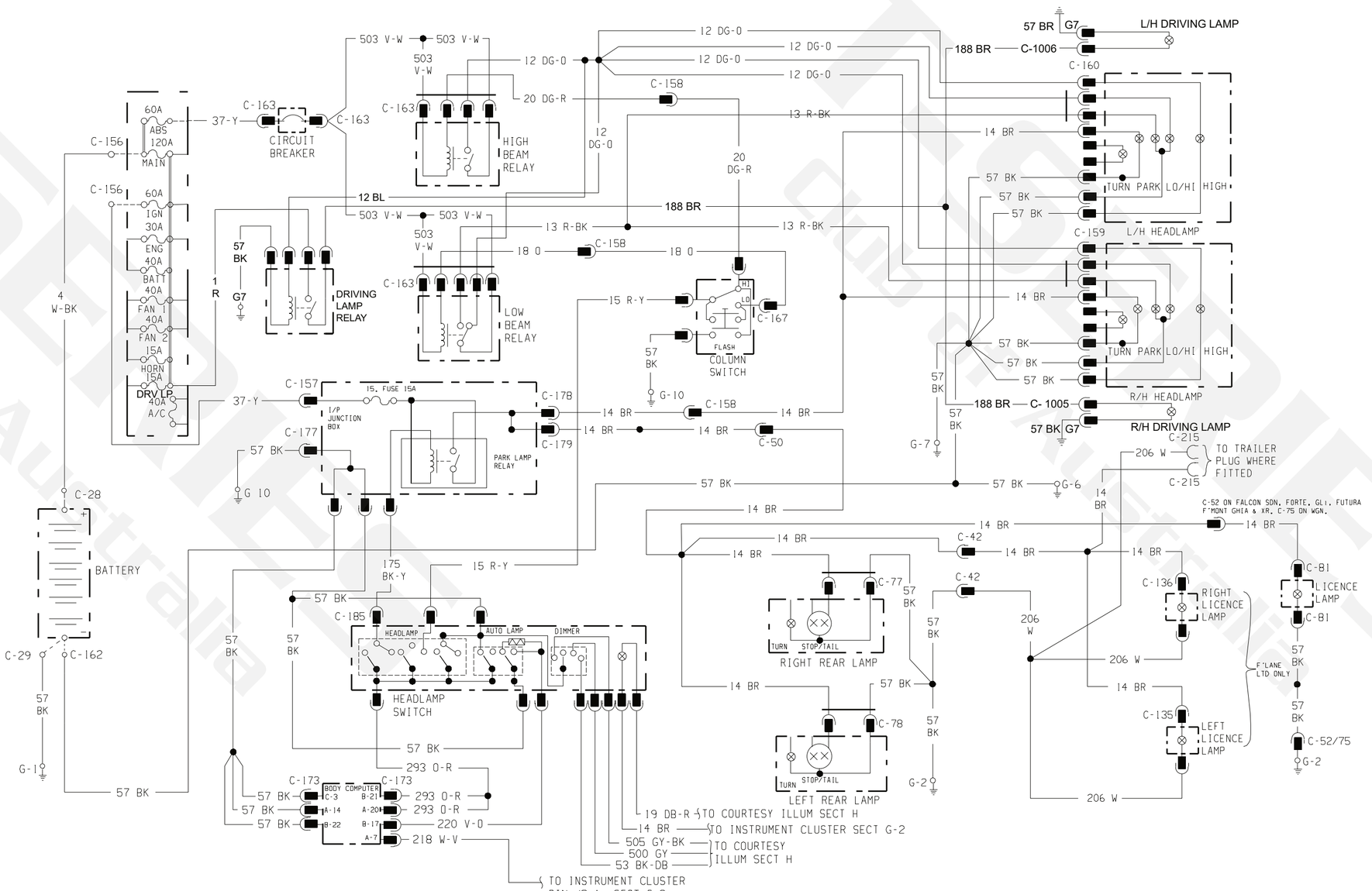
5SERIES Club of Australia

SECTION E–2 EXTERIOR LIGHTING – HIGH SERIES – SWB



SECTION G–2 INSTRUMENT CLUSTER – HIGH SERIES – SWB