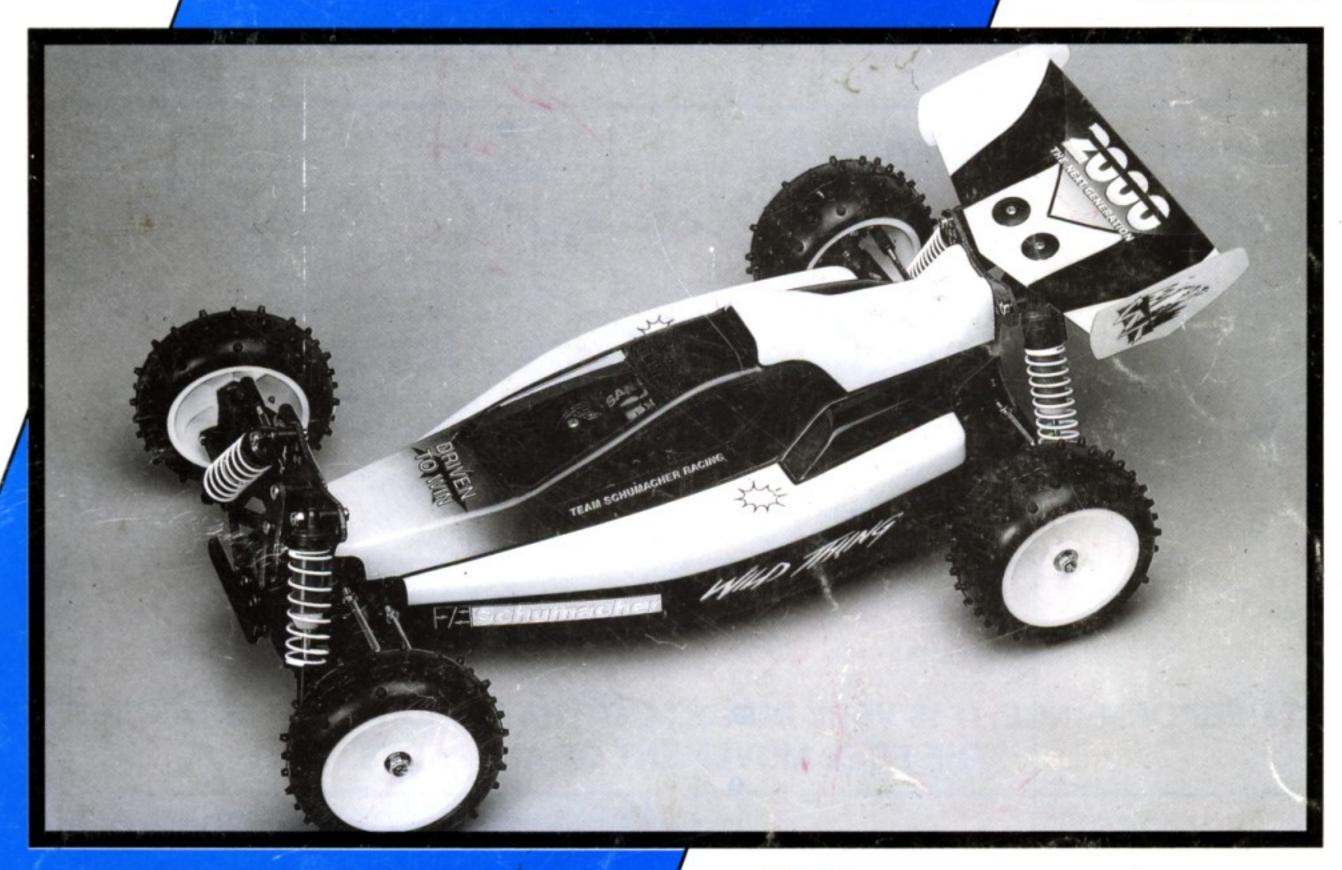


Schumacher

THE NEXT GENERATION

ISSUE 3



INSTRUCTION MANUAL

CHASSIS	1
REAR SUSPENSION	2
DIFFERENTIAL	3-4
TRANSMISSION	5-6
DRIVESHAFTS	7
FRONT SUSPENSION	8-12
SHOCK ABSORBERS	13-15
WHEELS & TYRES	16
BODYSHELL	17
BUMPER & UNDERTRAY	18
REAR WING & ARIEL	19
FITTING ELECTRICS	20
SERVICING	21
TRACK SETTINGS	22-25

SCHUMACHER RACING PRODUCTS LTD 71 - 73 Tenter Rd

Moulton Park Northampton NN3 GAX

The with our policy of continous development the exact specification of the kit may vary. MISSING OF PEFECTIVE PARTS

the mo-

and be

In the un''ll event of problems with your new kit you should contact the modern where purchased, quoting part number, bag number per for both the bag and the kit.

IMPORTANT SAFETY NOTES

- 1. This product is not suitable for children under 14 years of age unless supervised by an adult.
- Select an area for assembly that is away from reach of small children. The parts are small and can be swallowed by children causing choking and possible internal injuries.
- Shock fluids, grease and adhesives should be kept out of childrens reach. They are not toxic, but were not intended for human consumption.
- 4. Exercise care when using any hand tools, sharp instruments and power tools during construction.
- Carefully read all manufacturers warnings and cautions for any glues or paints that may be used for assembly purposes.



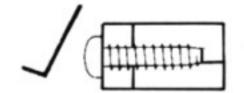




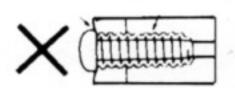
Places to put threadlock.
(It will prevent the screws and nuts vibrating loose.)

Points where grease should be applied. (It will reduce friction and assure smooth movement.) Points where oil should be applied (Light machine oil, 3 in 1 or similar.)

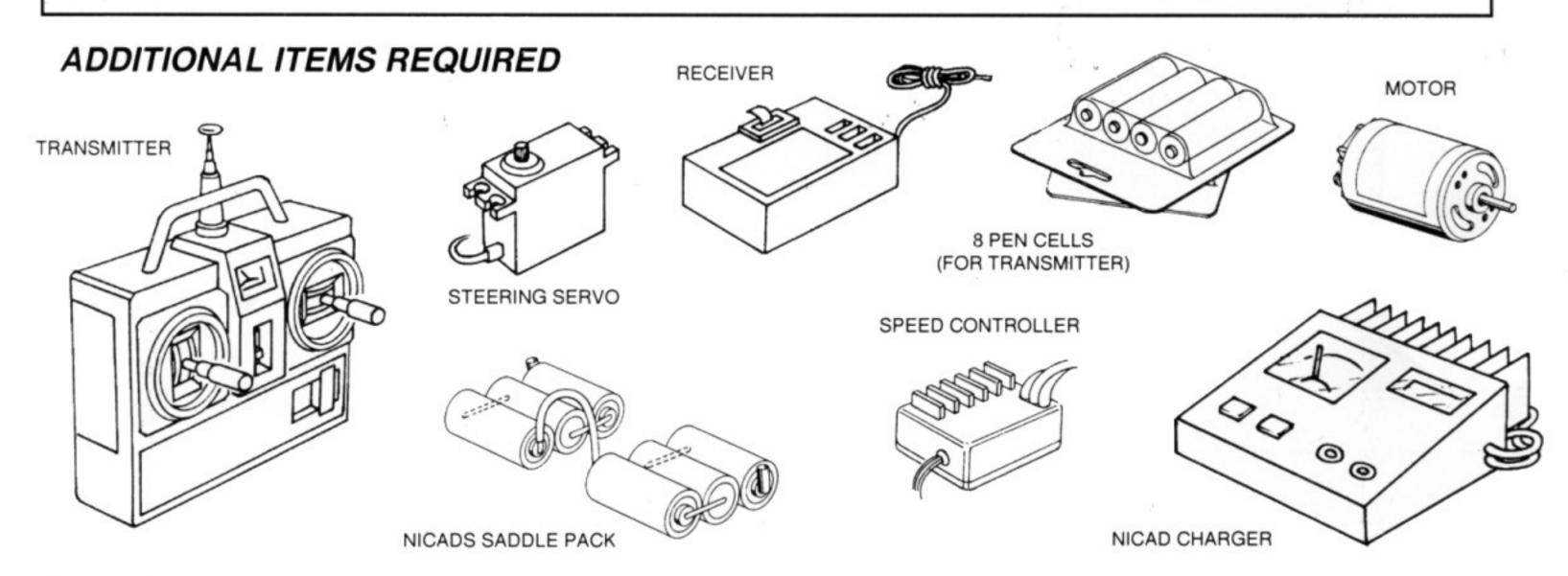
Do not use excessive force when tightening the self-tapping screws, or you may strip the thread in the plastic. It is recommended to stop tightening it when the threaded part on the screw goes into the plastic part and you feel some resistance from the tightening.



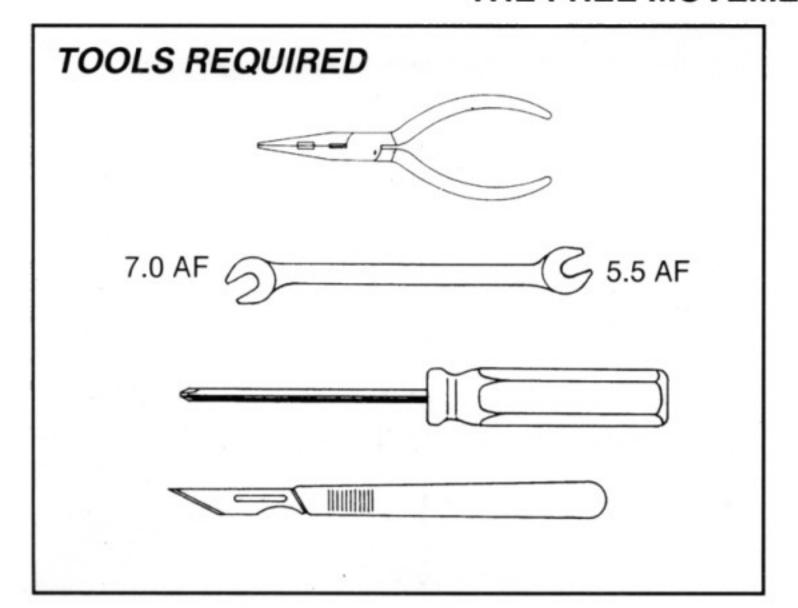
Good

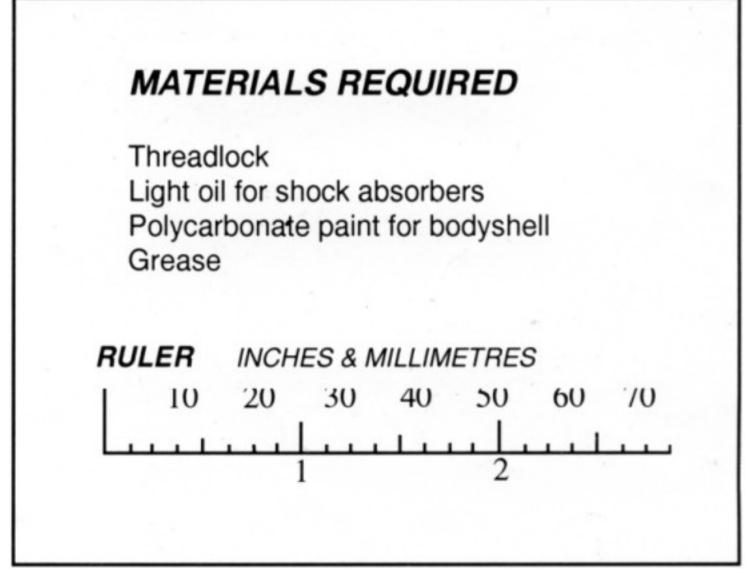


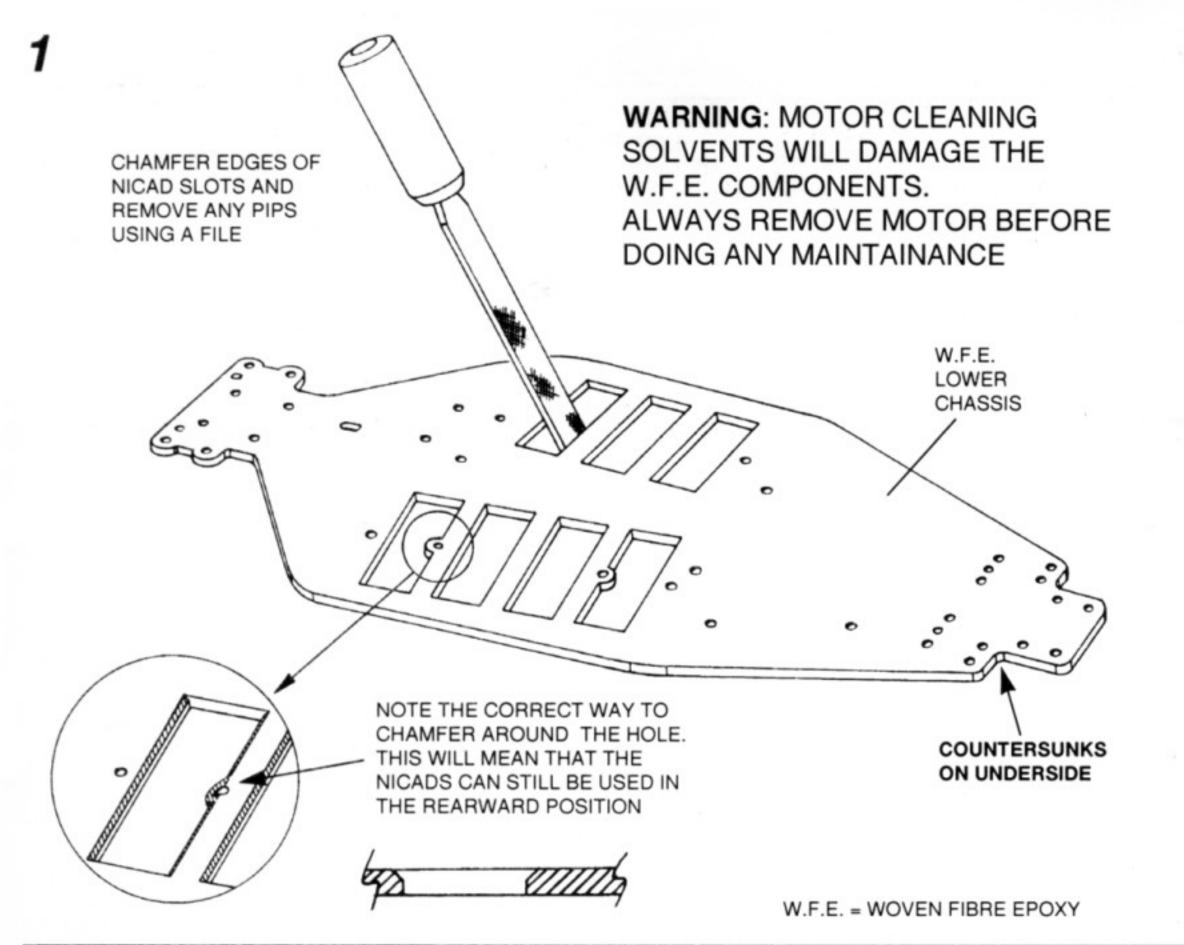
Over tighten and may strip the thread in the plastic

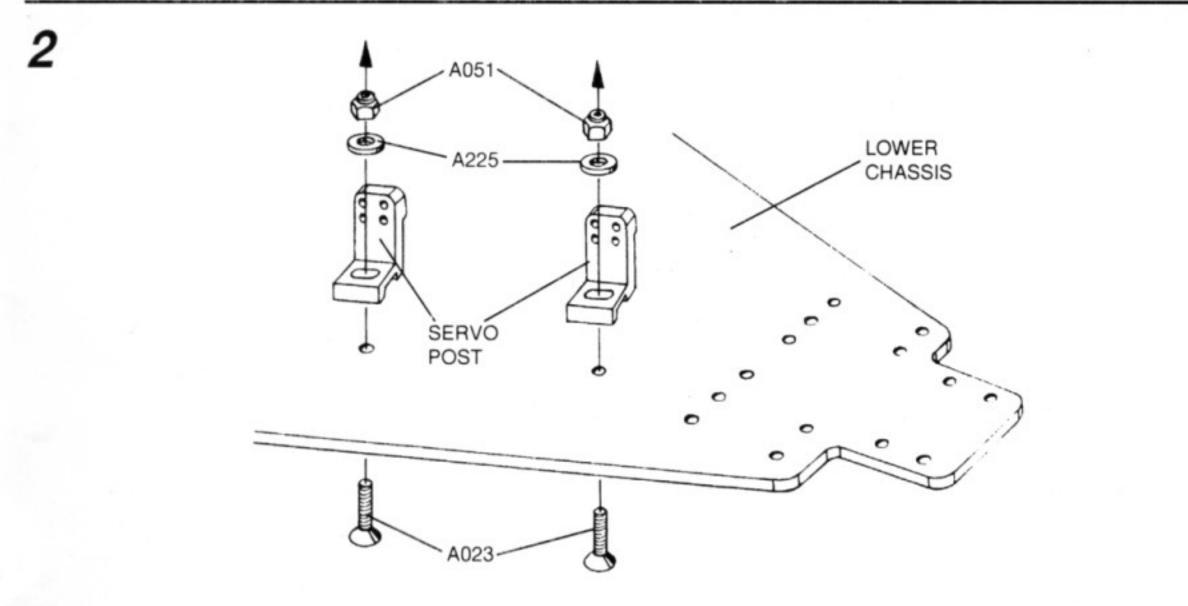


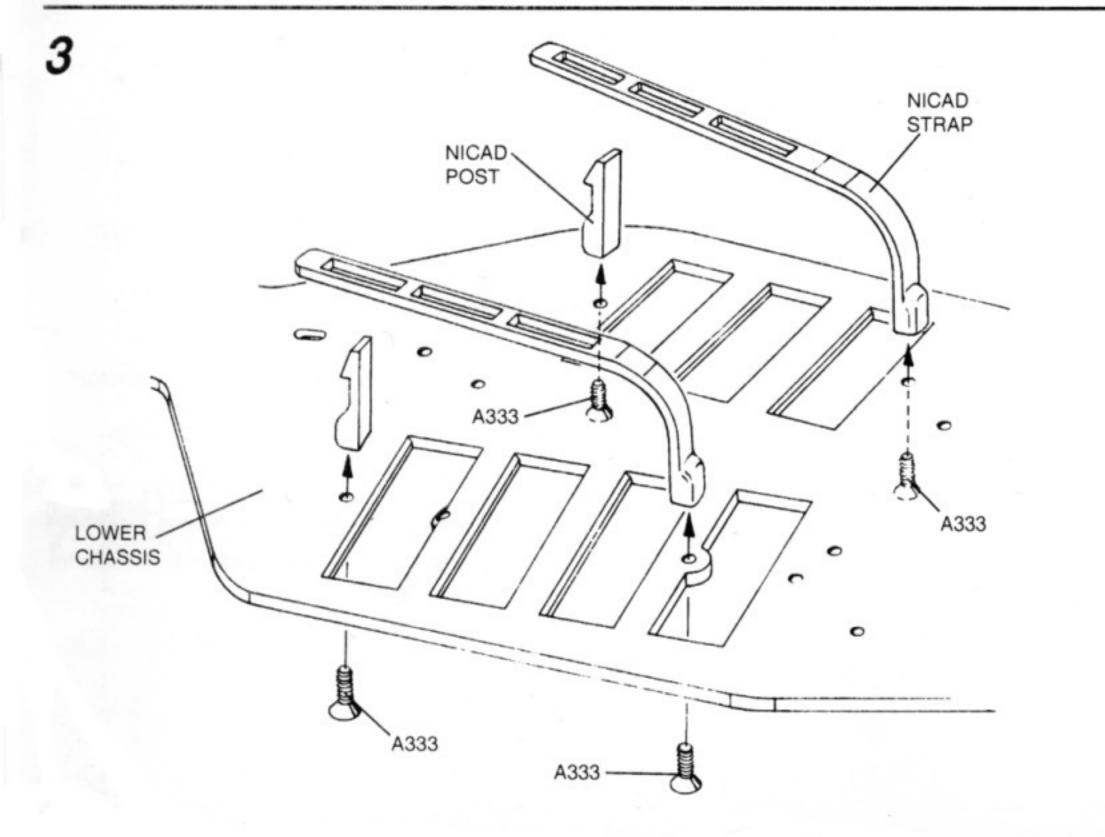
FOR BEST PERFORMANCE, IT IS VERY IMPORTANT THAT GREAT CARE IS TAKEN TO ENSURE THE FREE MOVEMENT OF ALL PARTS.









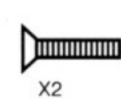






CHASSIS

HARDWARE



A023 M3x12mm CSK SCREW



A051 M3 NYLOC NUT

X2

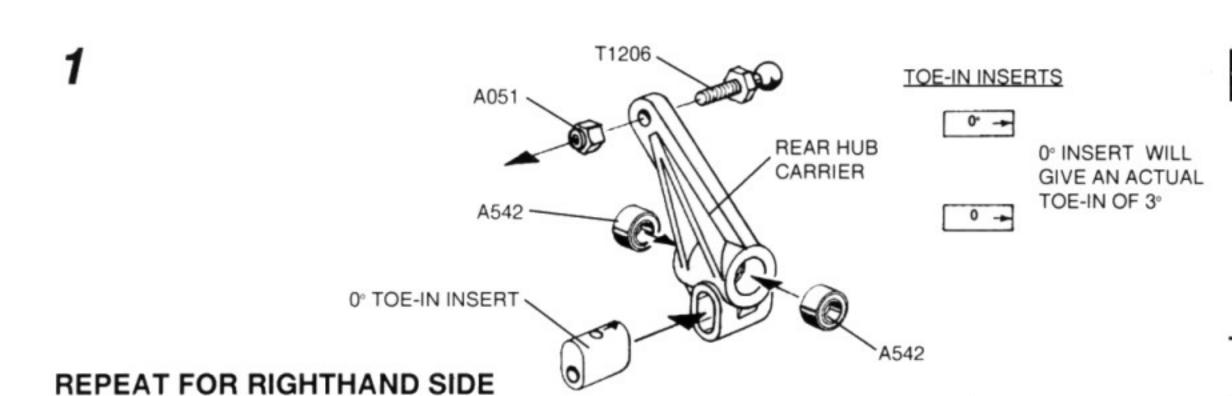


A225 M3 STEEL WASHER



A333 No4x3/8"
SELFTAP CSK SCREW

X4





REAR SUSPENSION

HARDWARE



A051 M3 NYLOC NUT



T1206 BALL STUD LONG X2



A542 BEARING 5x9x3



A103 'E' CLIP







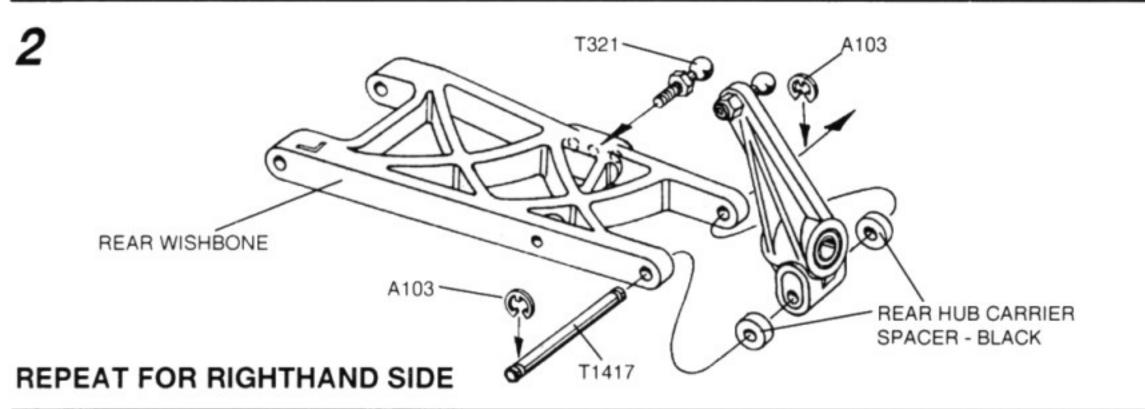


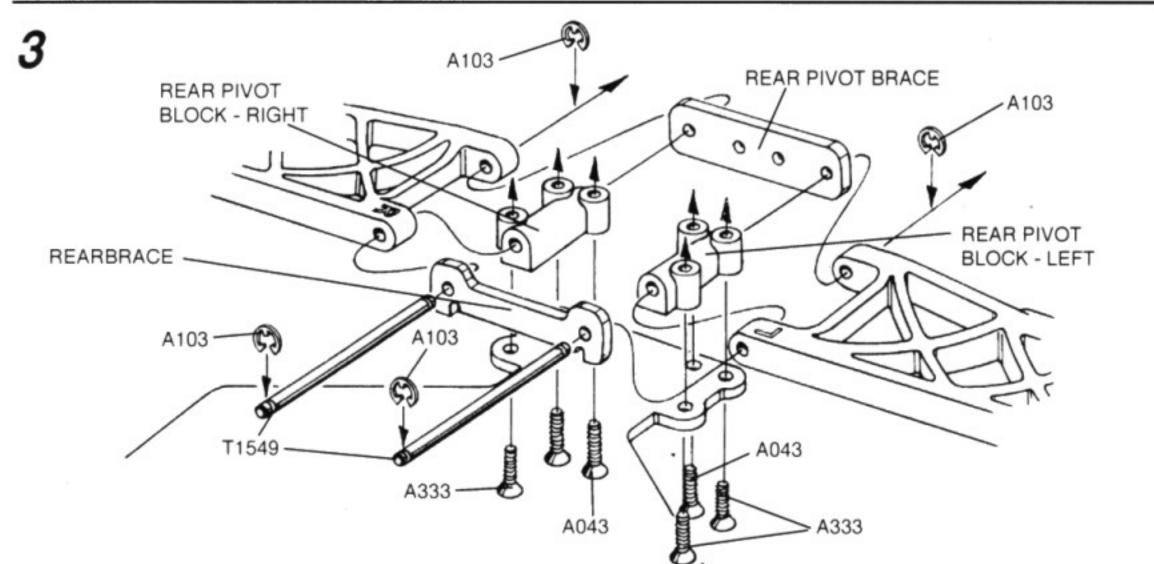


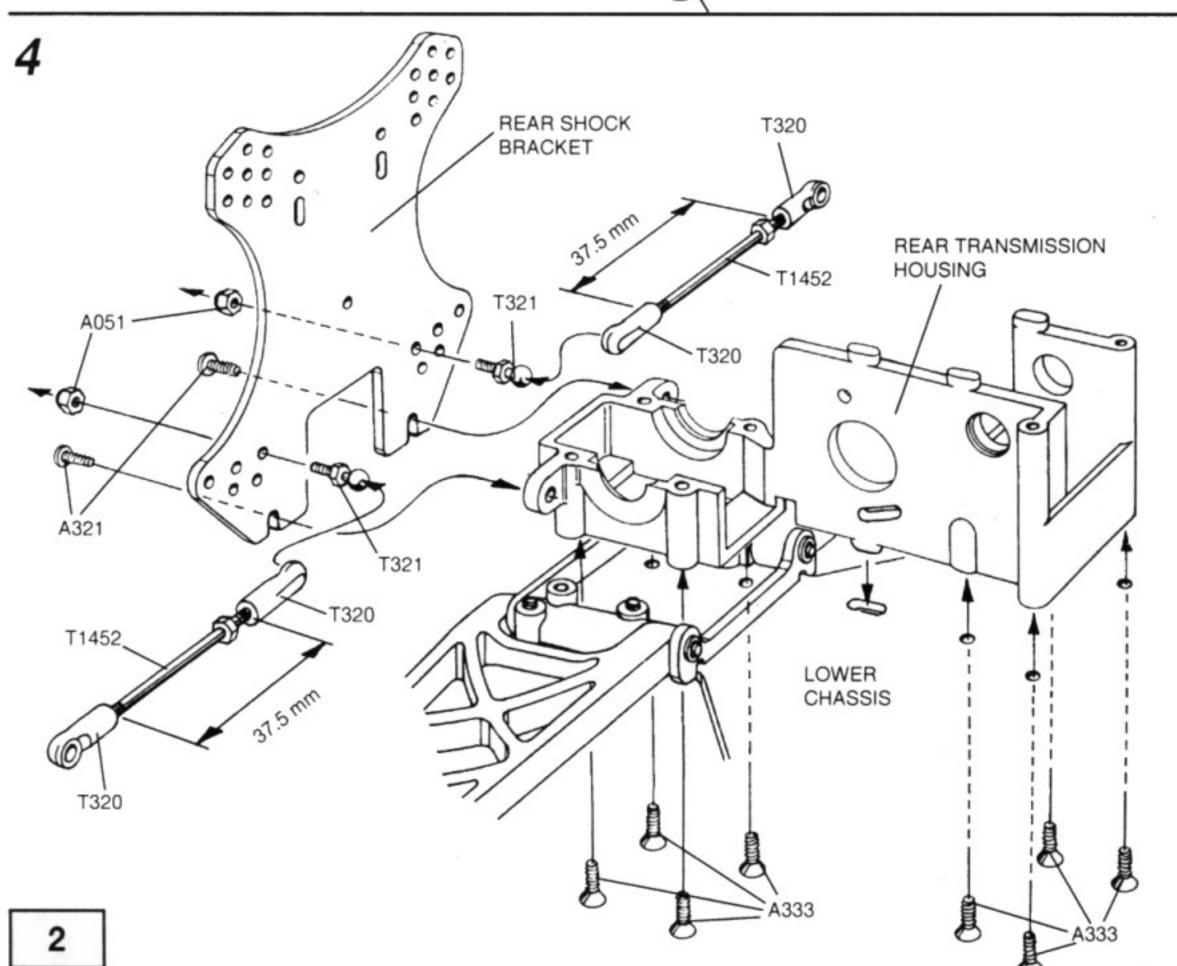




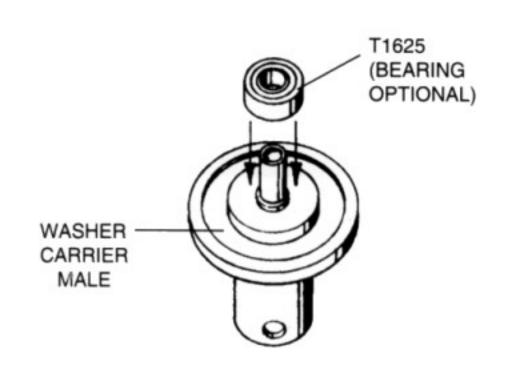


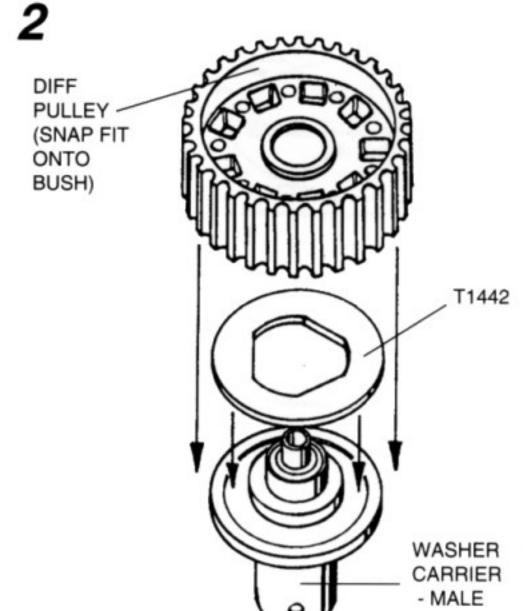
















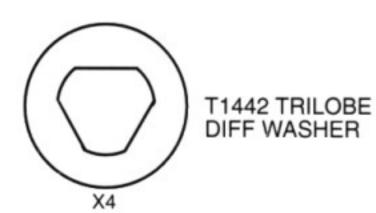


DIFFERENTIALS

HARDWARE



T1625 4x8x2 BUSH

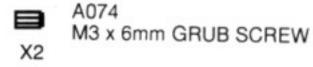


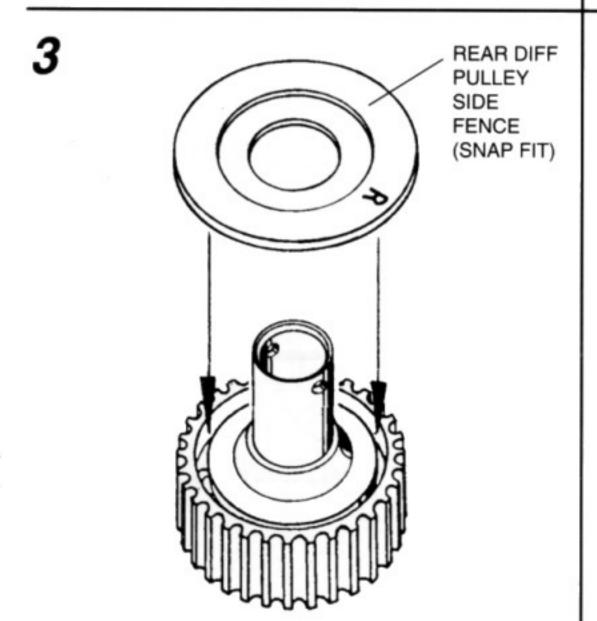


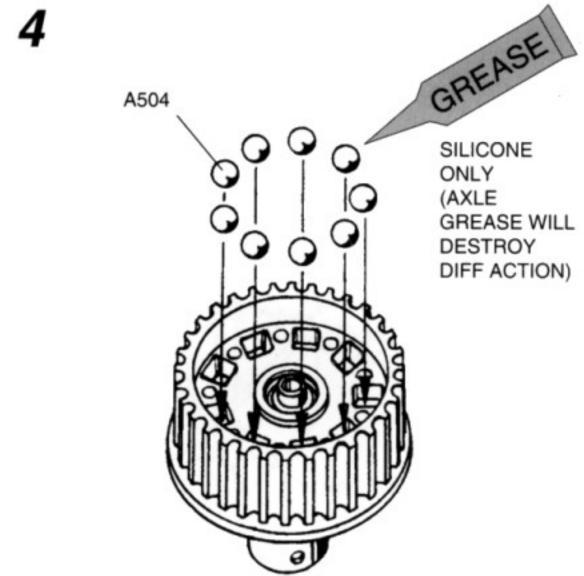


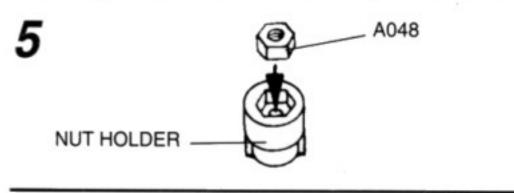


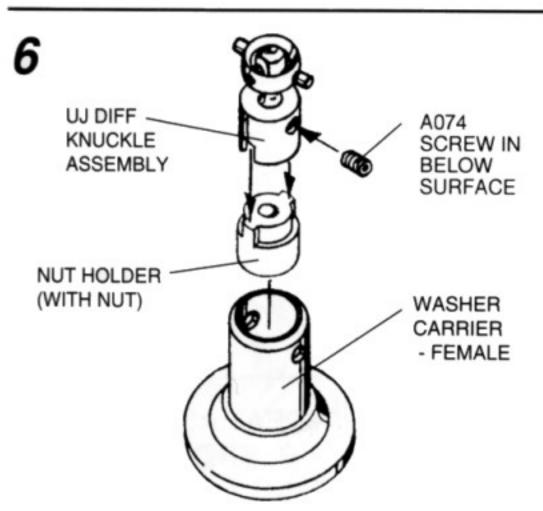


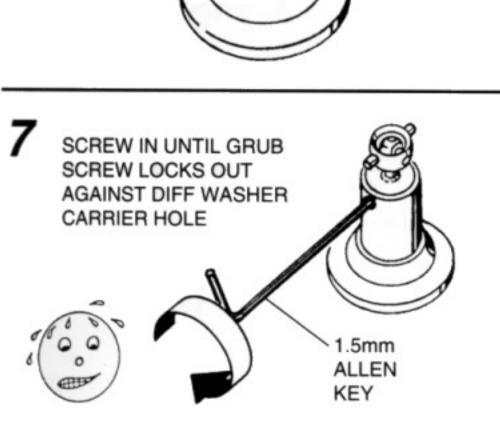


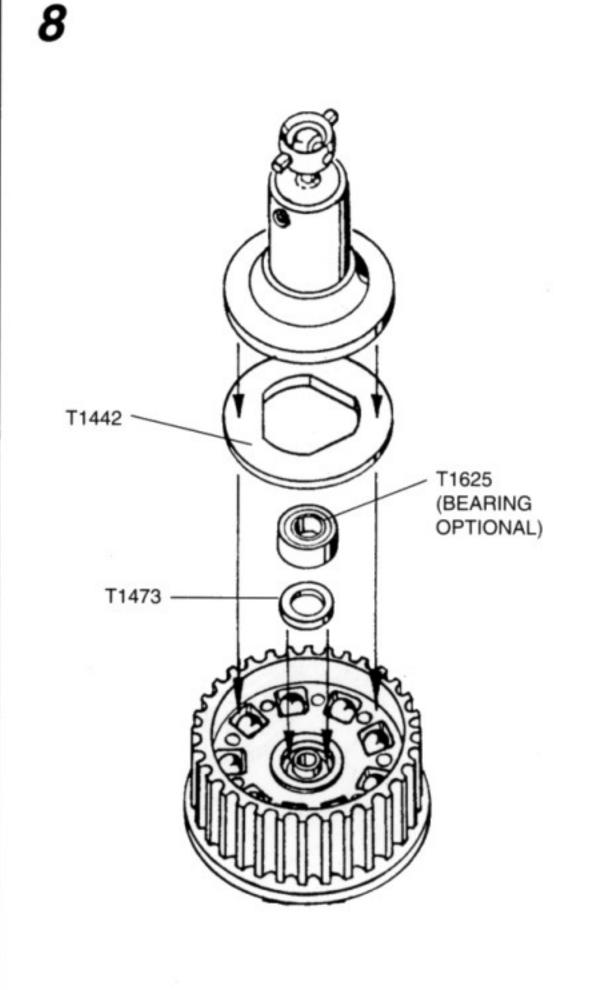


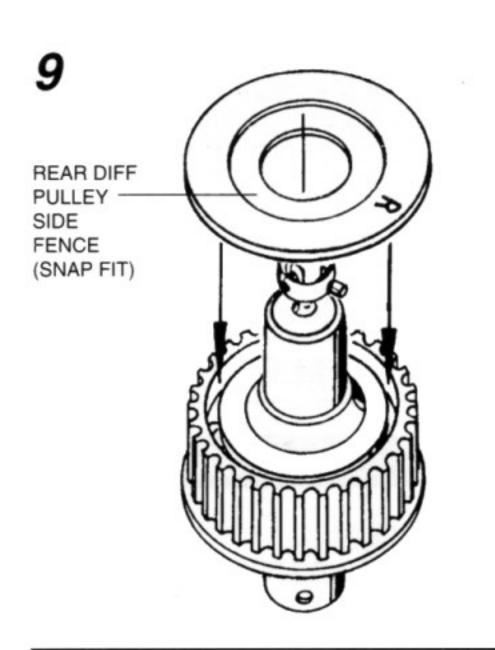




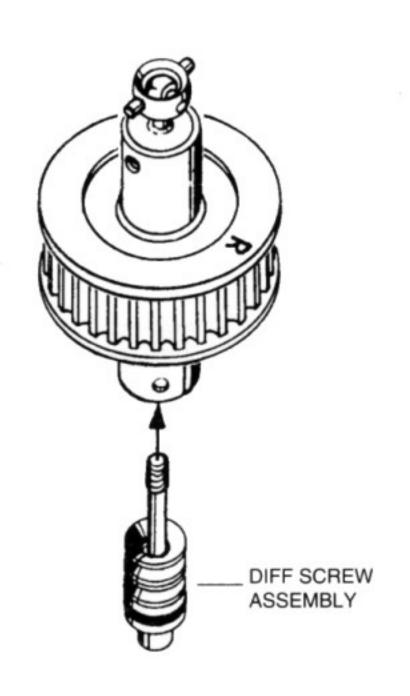


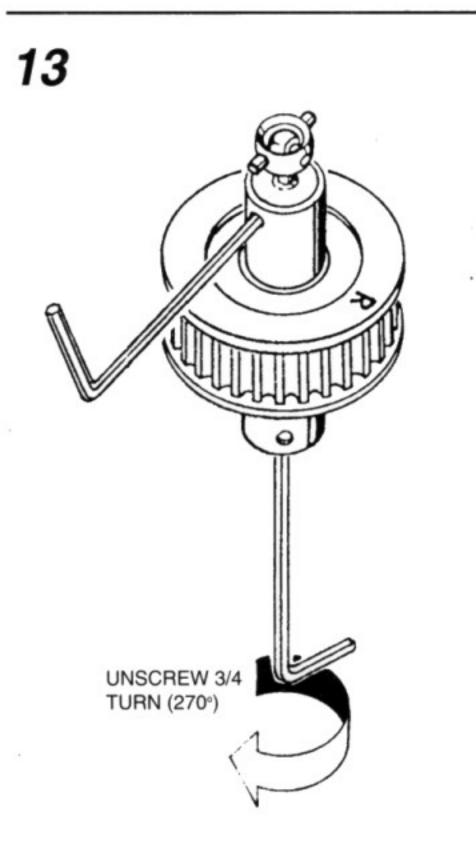


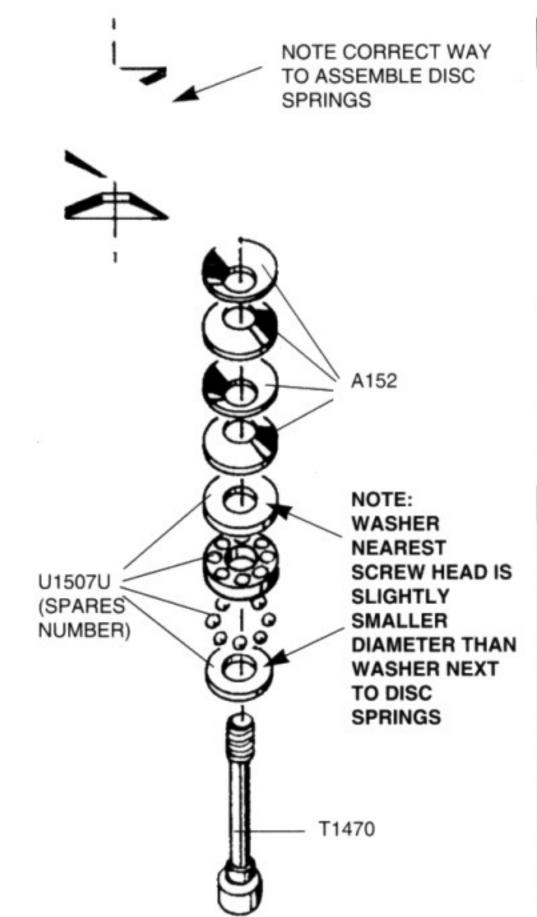


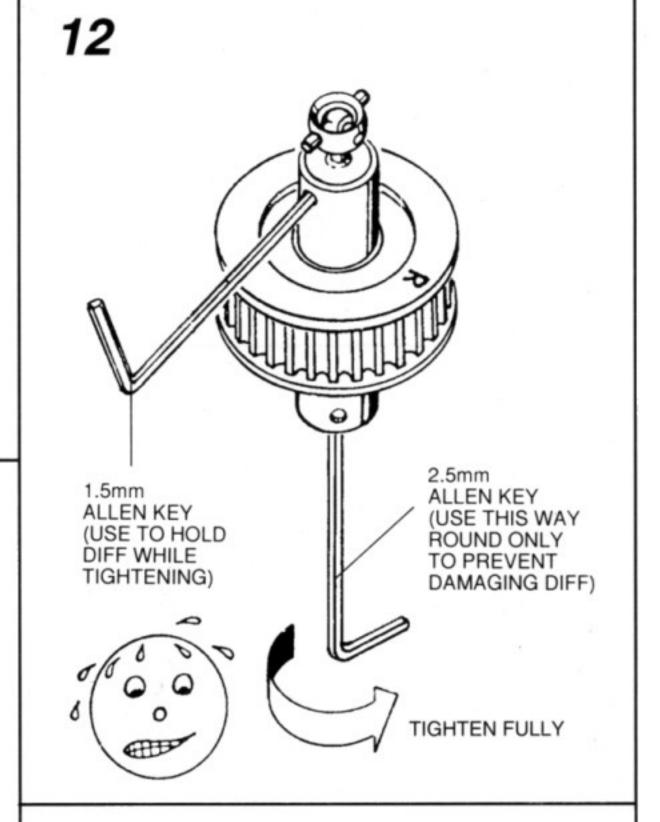


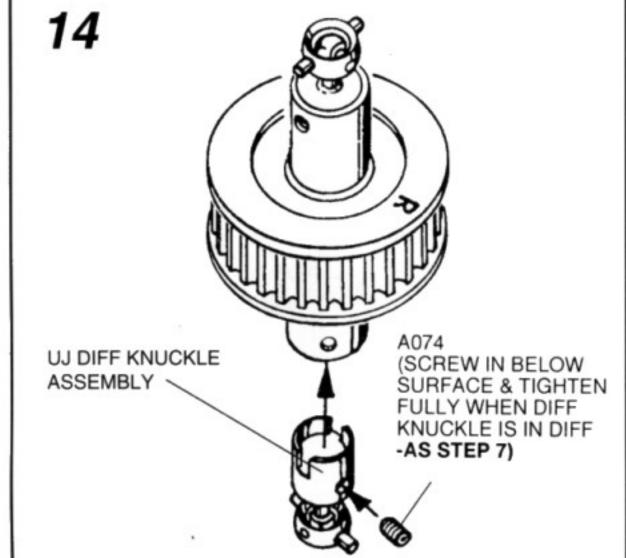
11









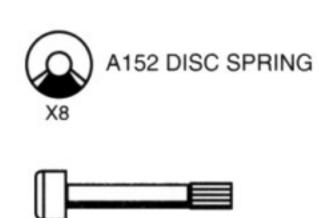






DIFFERENTIALS

HARDWARE



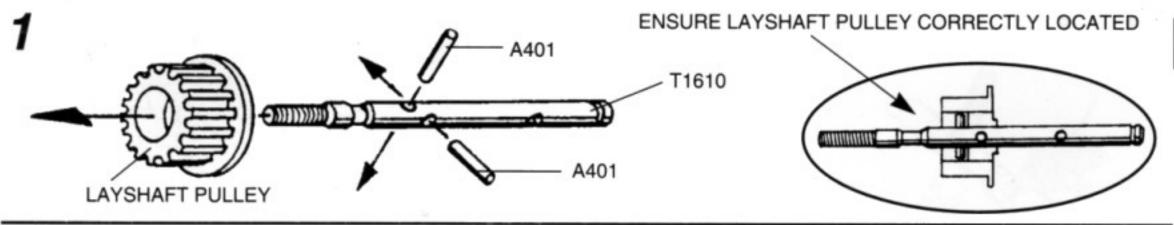
T1470

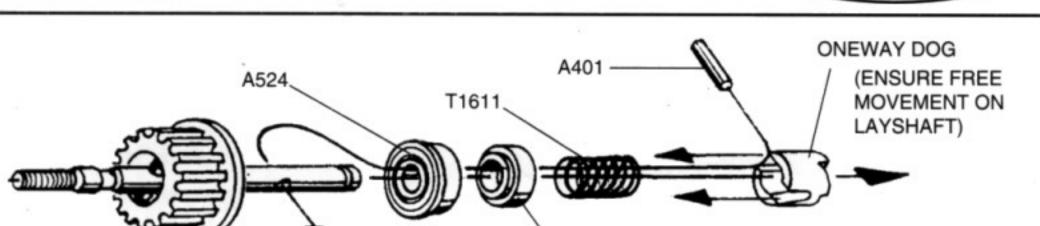
DIFF SCREW

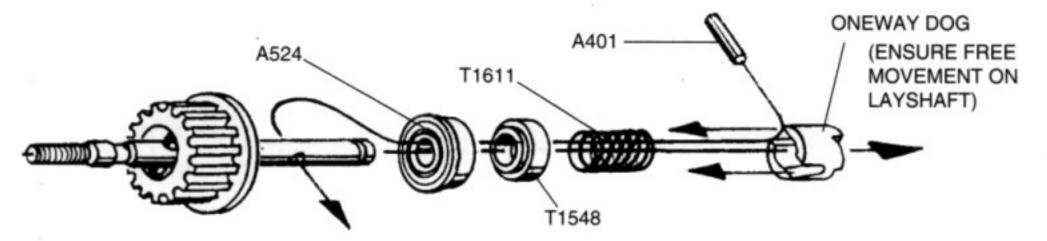


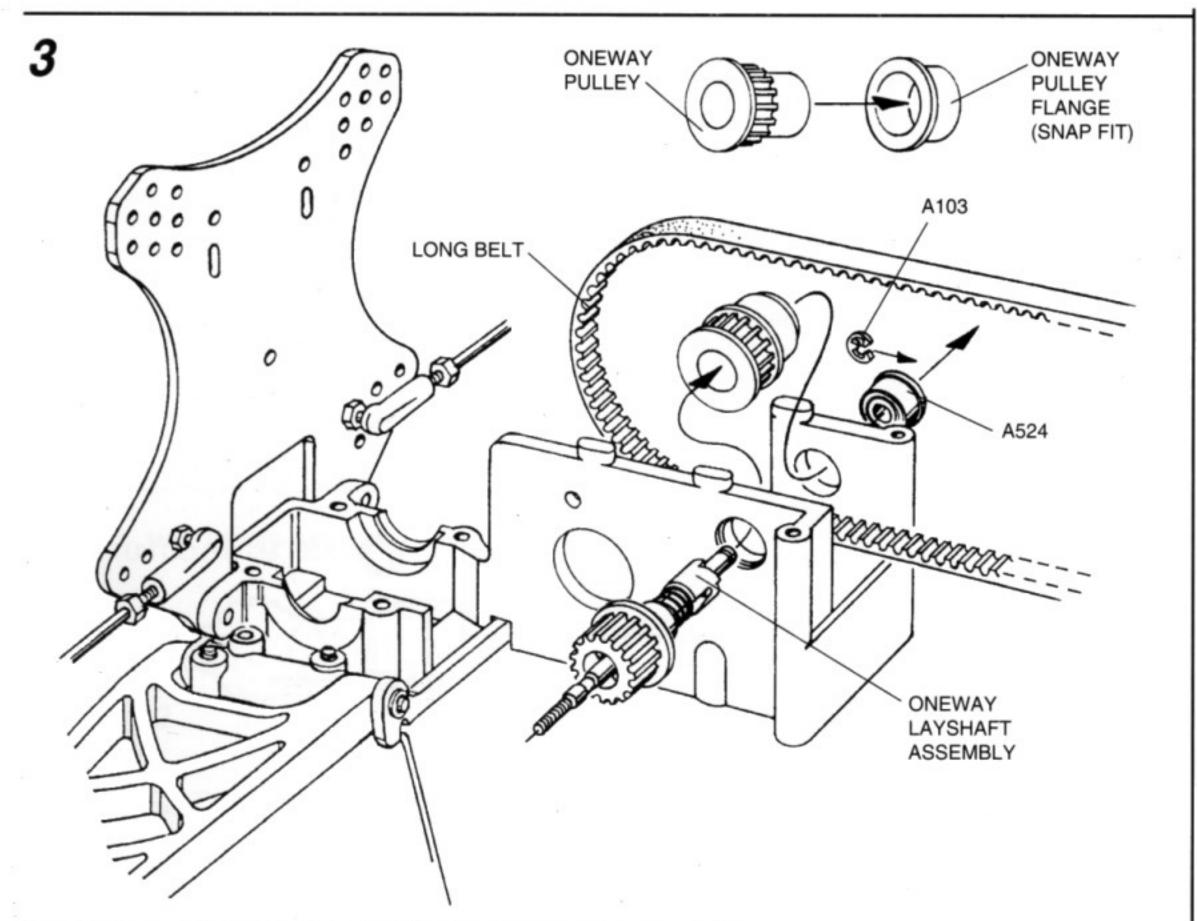


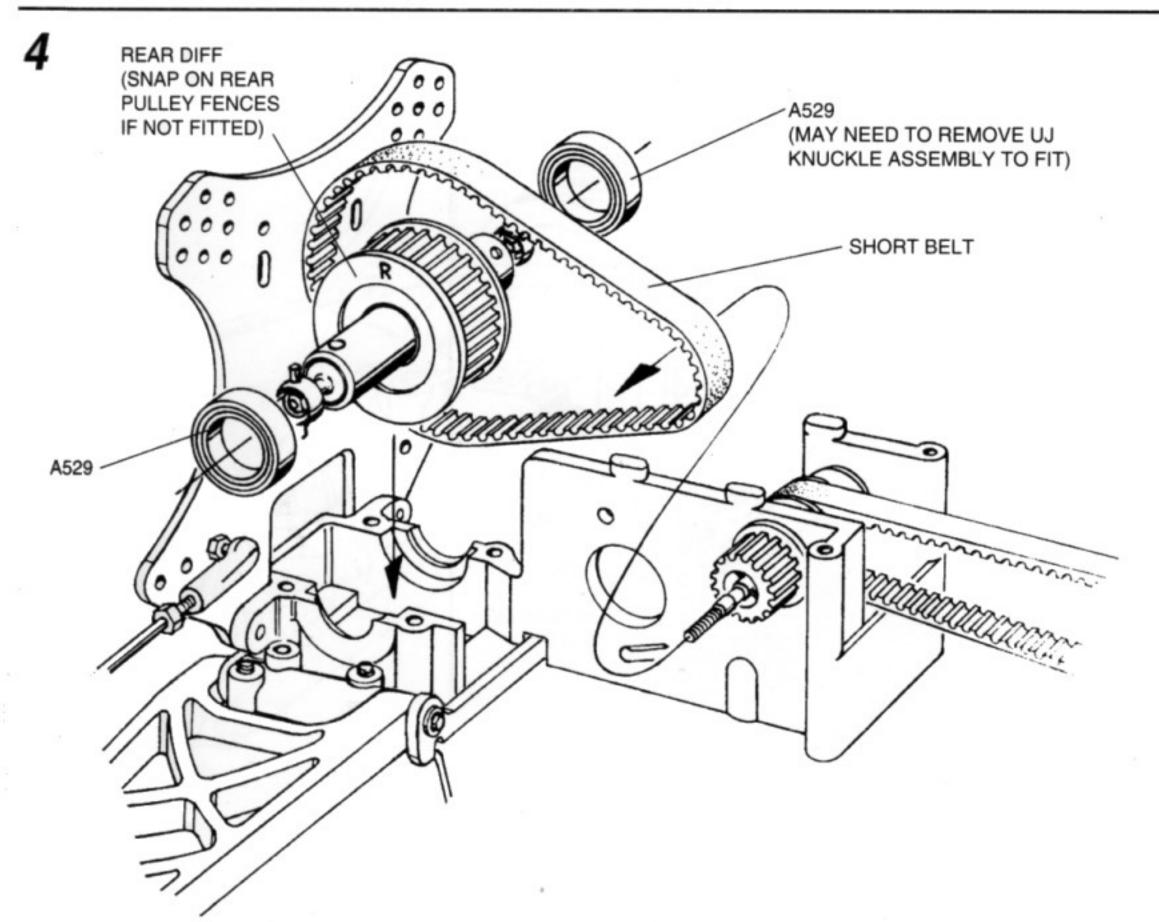
REPEAT ASSEMBLY
FOR FRONT DIFF
USING FRONT DIFF
PULLEY FENCES
(MARKED 'F')









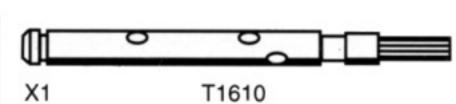


Schumacher



TRANSMISSION

HARDWARE



4WD

SLIPPER LAYSHAFT

LAYSHAFT ONEWAY SPRING

T1548 LAYSHAFT SPACER

A401 PIN 1.5mm DIA X3

A103 'E' CLIP X1

X1

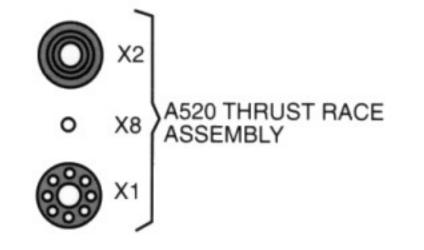
A524 8x4x3 FLANGED BEARING





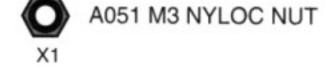
TRANSMISSION

HARDWARE



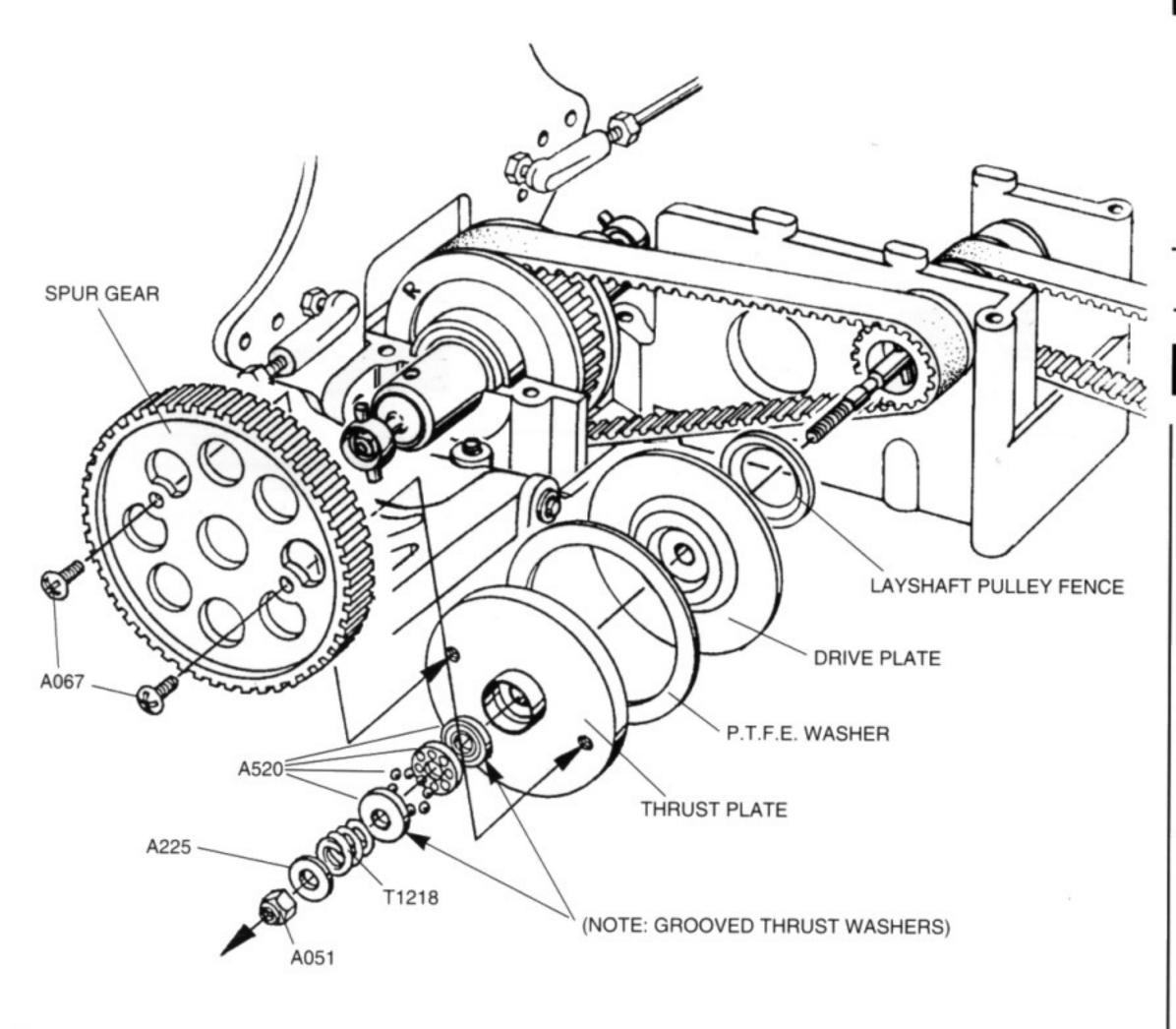
A225 M3 STEEL WASHER X1

T1218 SLIPPER CLUTCH SPRING





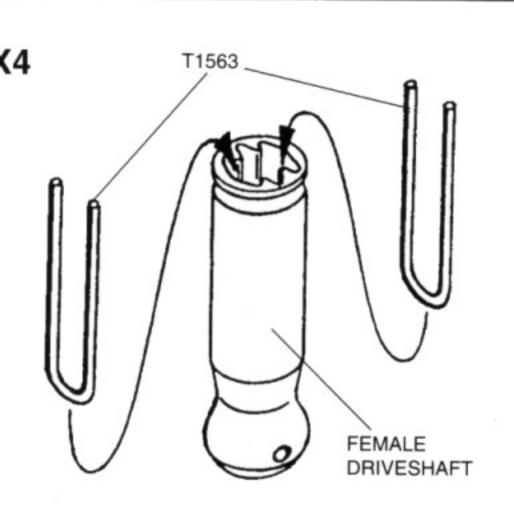


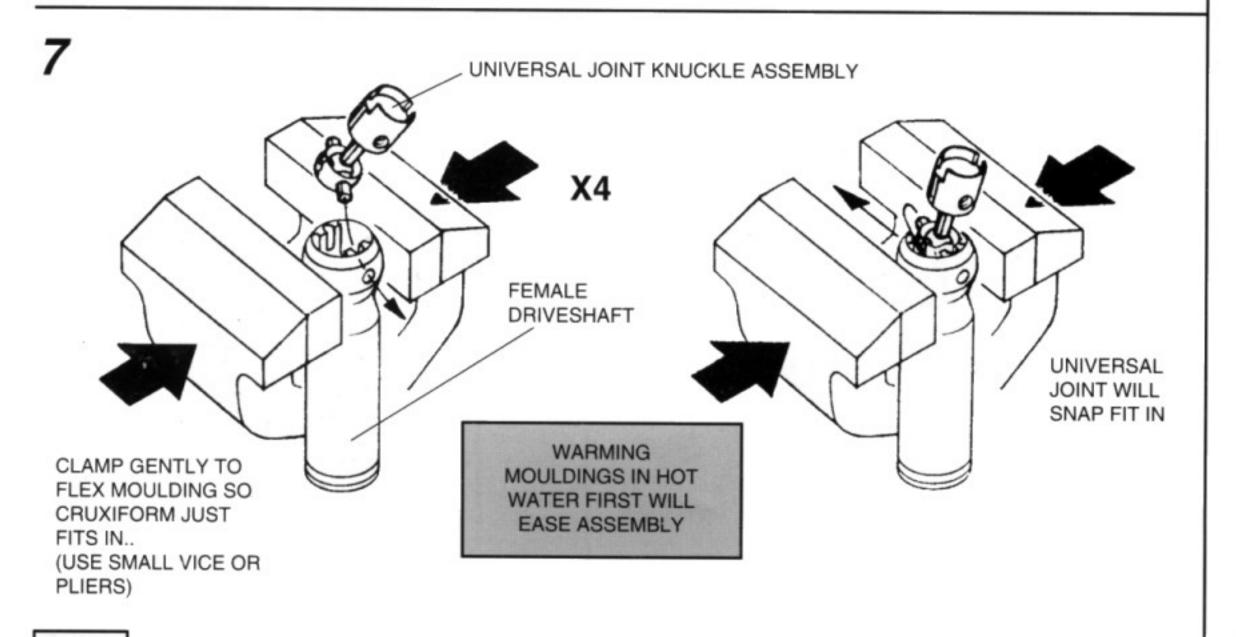


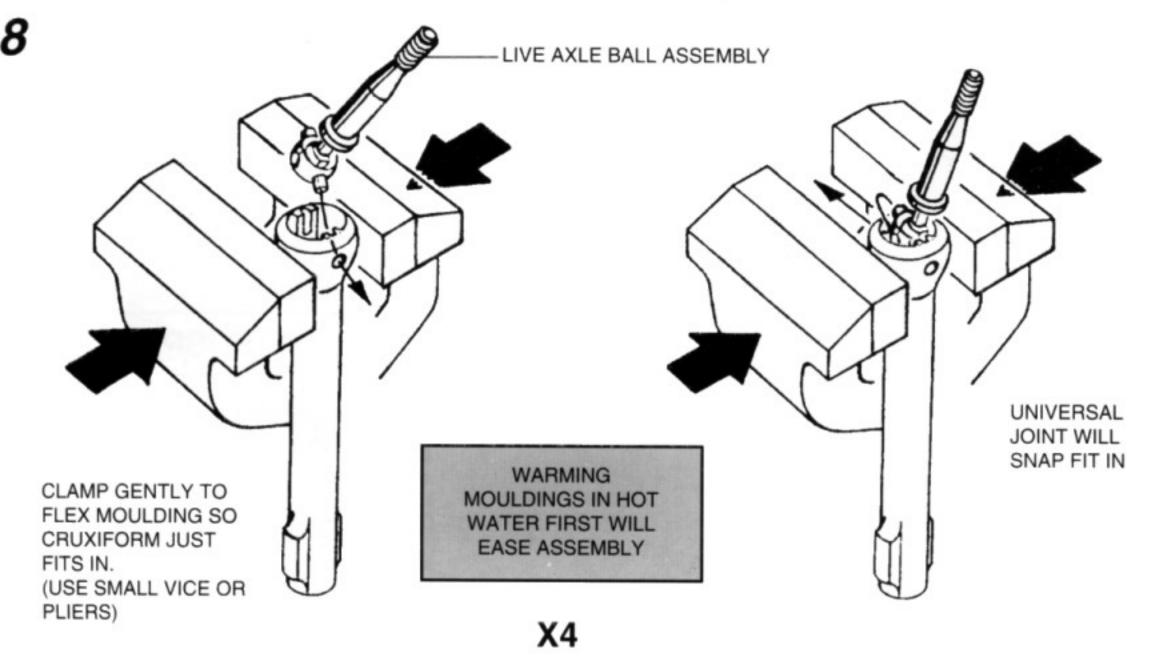
6 **CO-AXIAL DRIVESHAFTS**

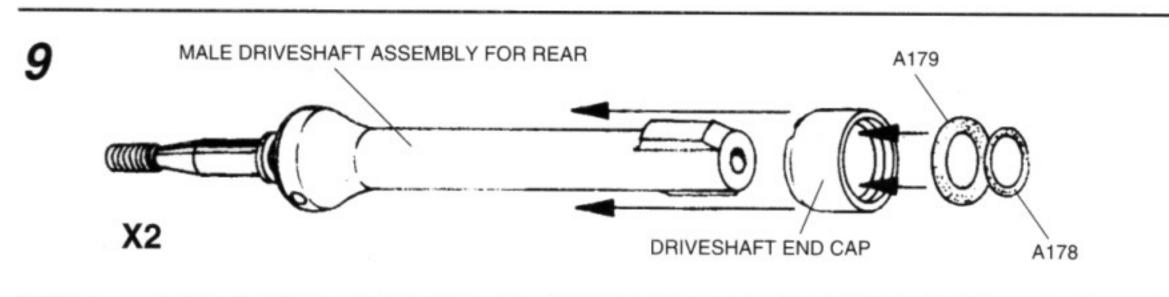
ASSEMBLE ONE DRIVESHAFT **AT A TIME**

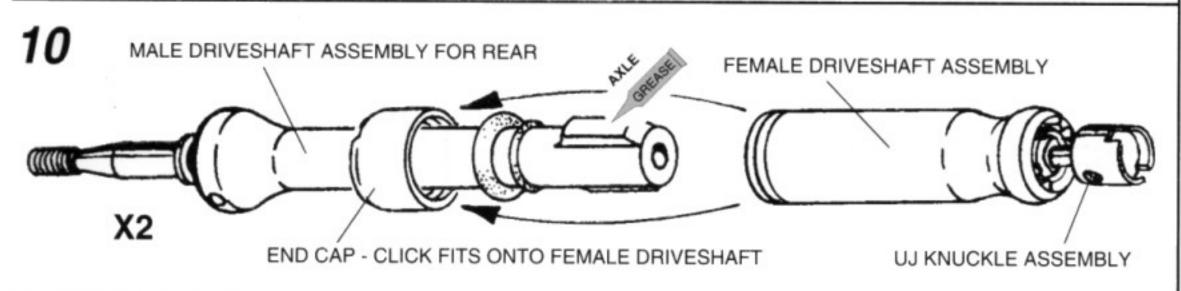
REMOVE DIFF KNUCKLE ASSEMBLY FROM ONE SIDE OF DIFF. ASSEMBLE DRIVESHAFT THEN RE-ATTACH TO DIFF.

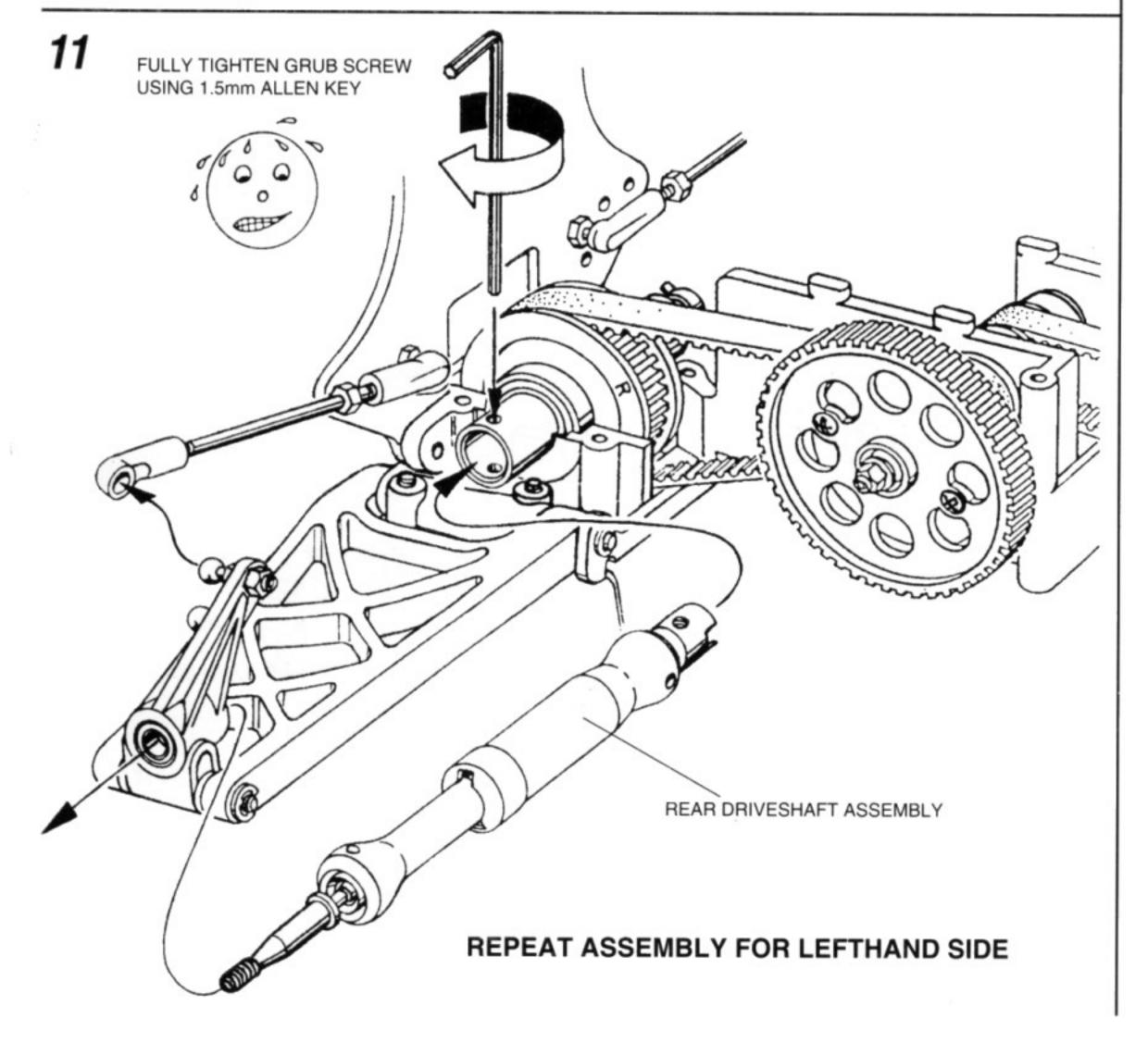












Schumacher

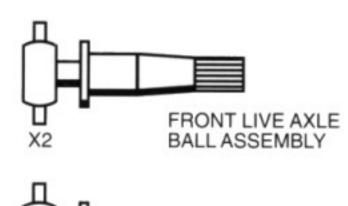


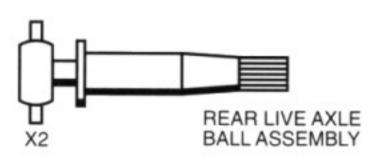
DRIVESHAFTS

HARDWARE

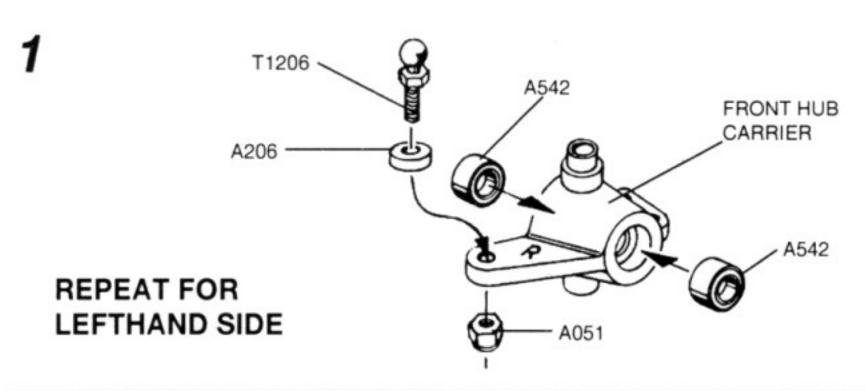


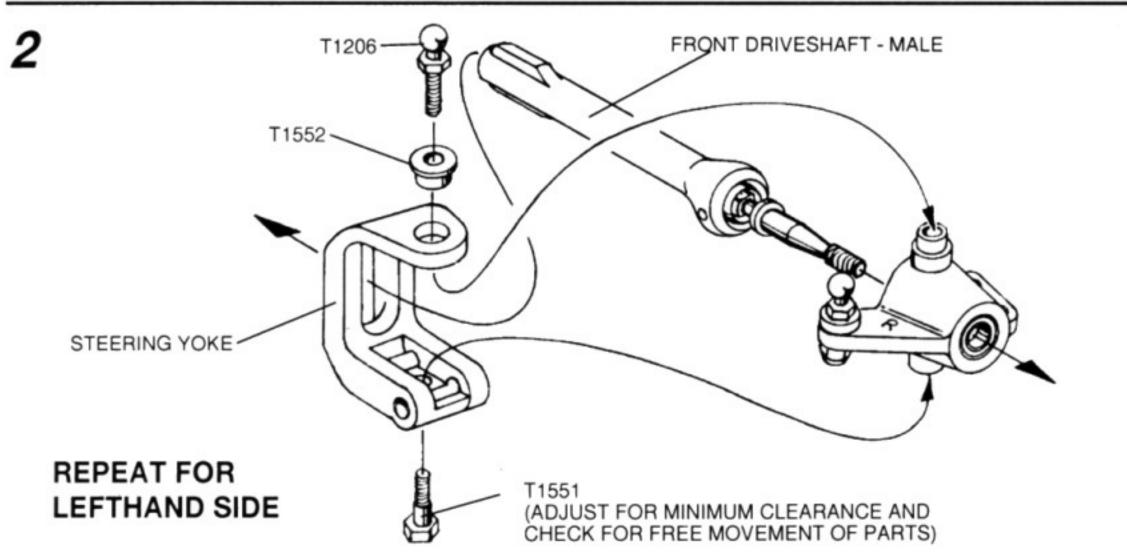


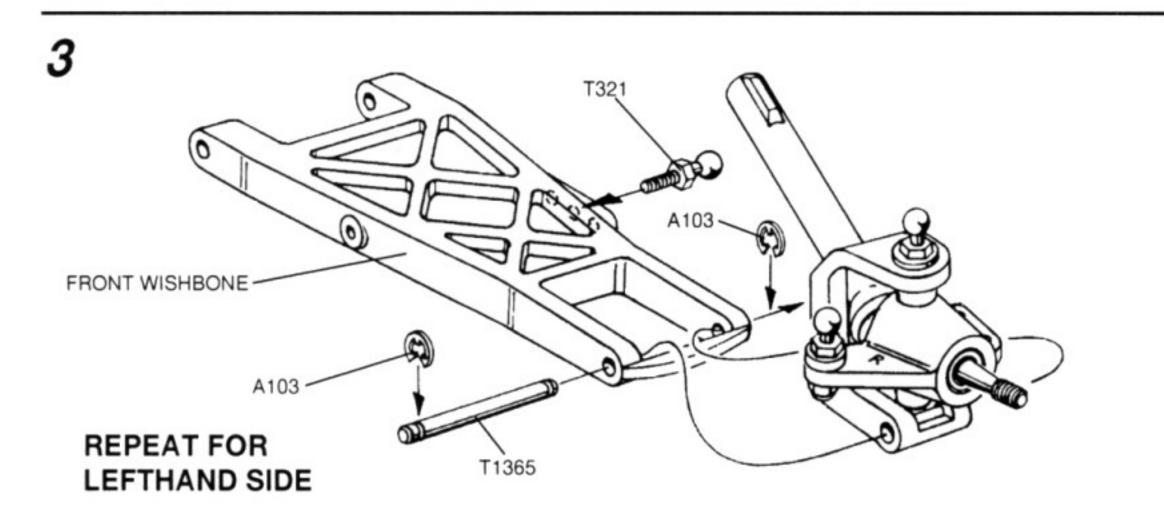




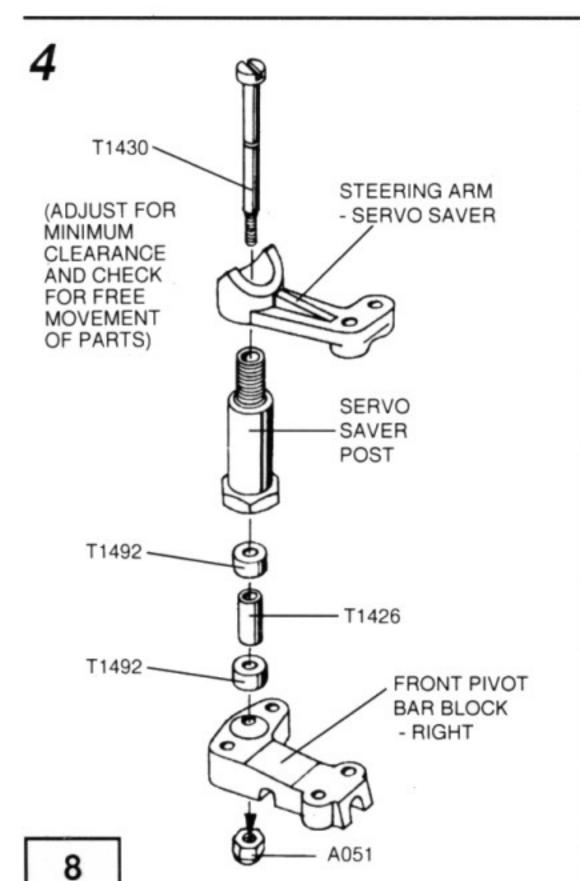
NOTE:
THE TWO FRONT
DRIVESHAFTS
HAVE TO BE
ASSEMBLED
LATER DURING
CONSTRUCTION
OF THE FRONT
SUSPENSION

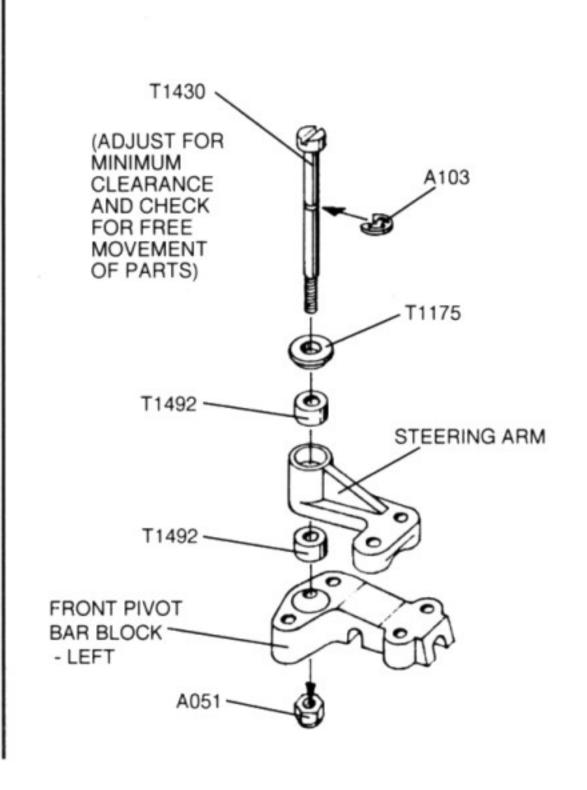






5









FRONT SUSPENSION

HARDWARE



T1206 BALL STUD LONG



A206 NYLON WASHER 1.6mm



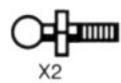
A524 8x4x3 FLANGED BEARING



T1552 STEPPED YOKE WASHER



T1551 SHOULDER SCREW

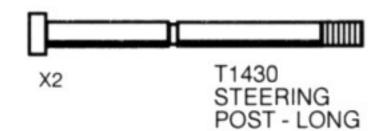


T321 BALL STUD SHORT



A103 'E' CLIP









T1462 SPACER TUBE

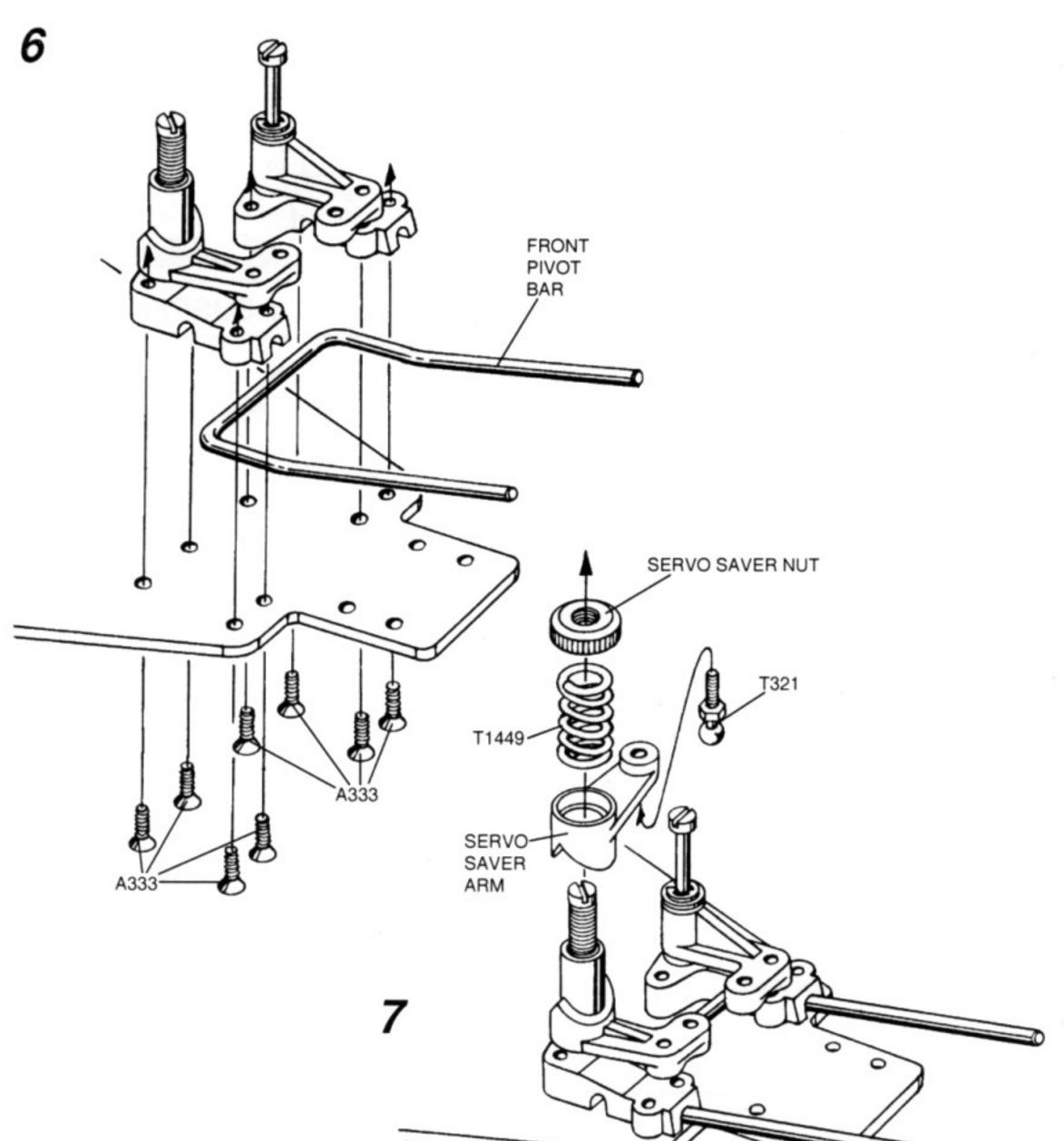


T1175 STEPPED WASHER



A051 M3 NYLOC NUT









FRONT SUSPENSION

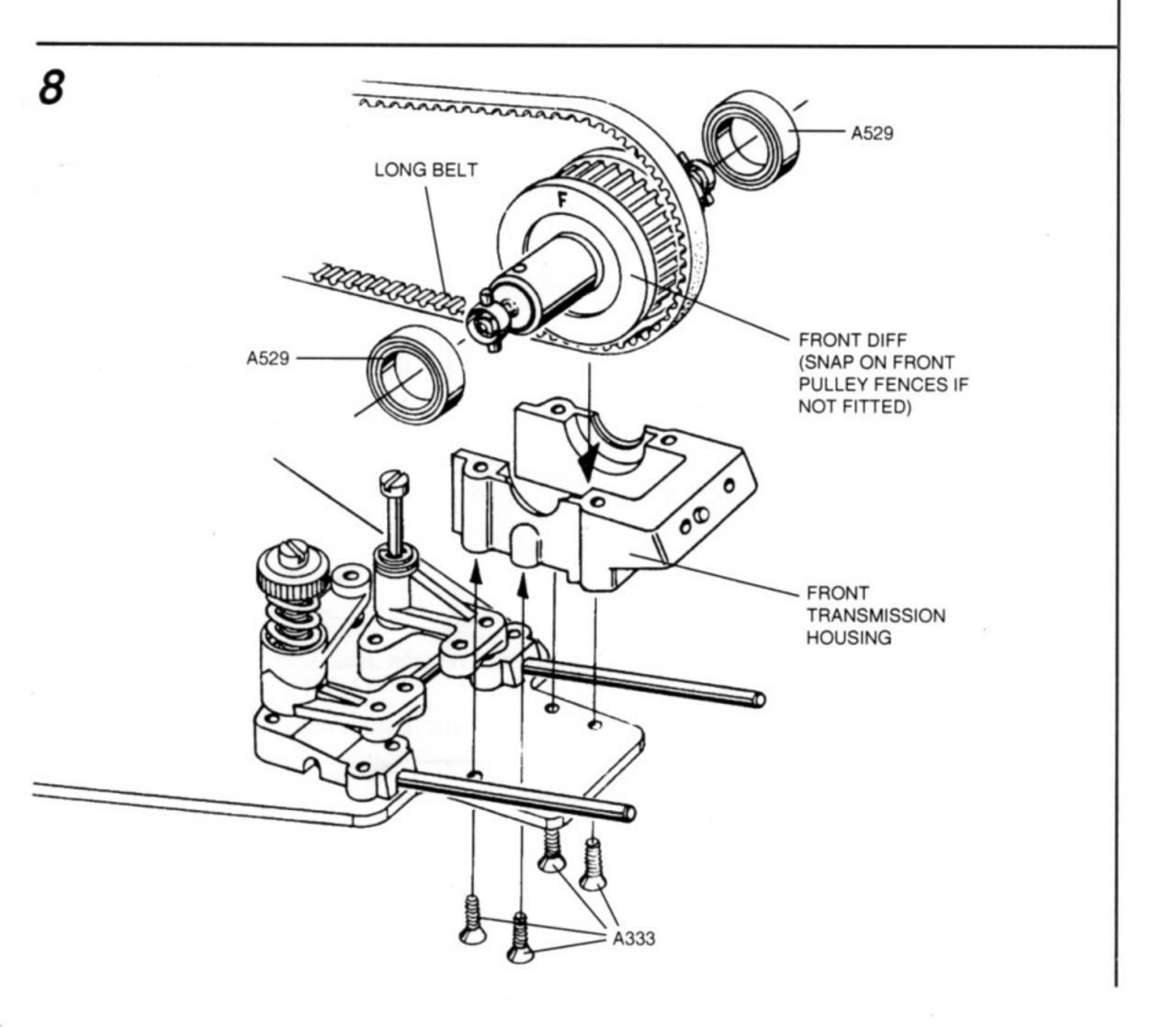
HARDWARE

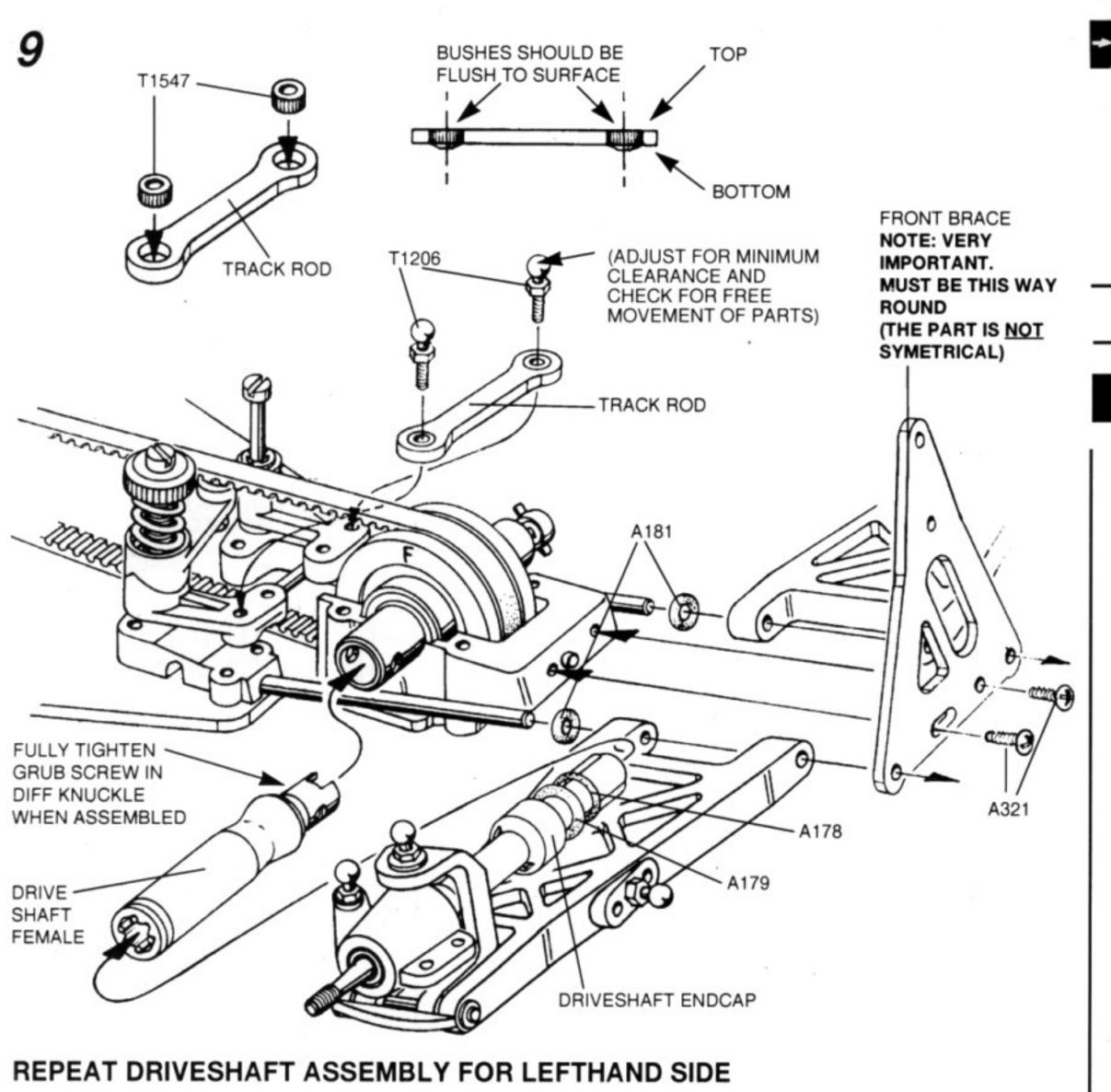


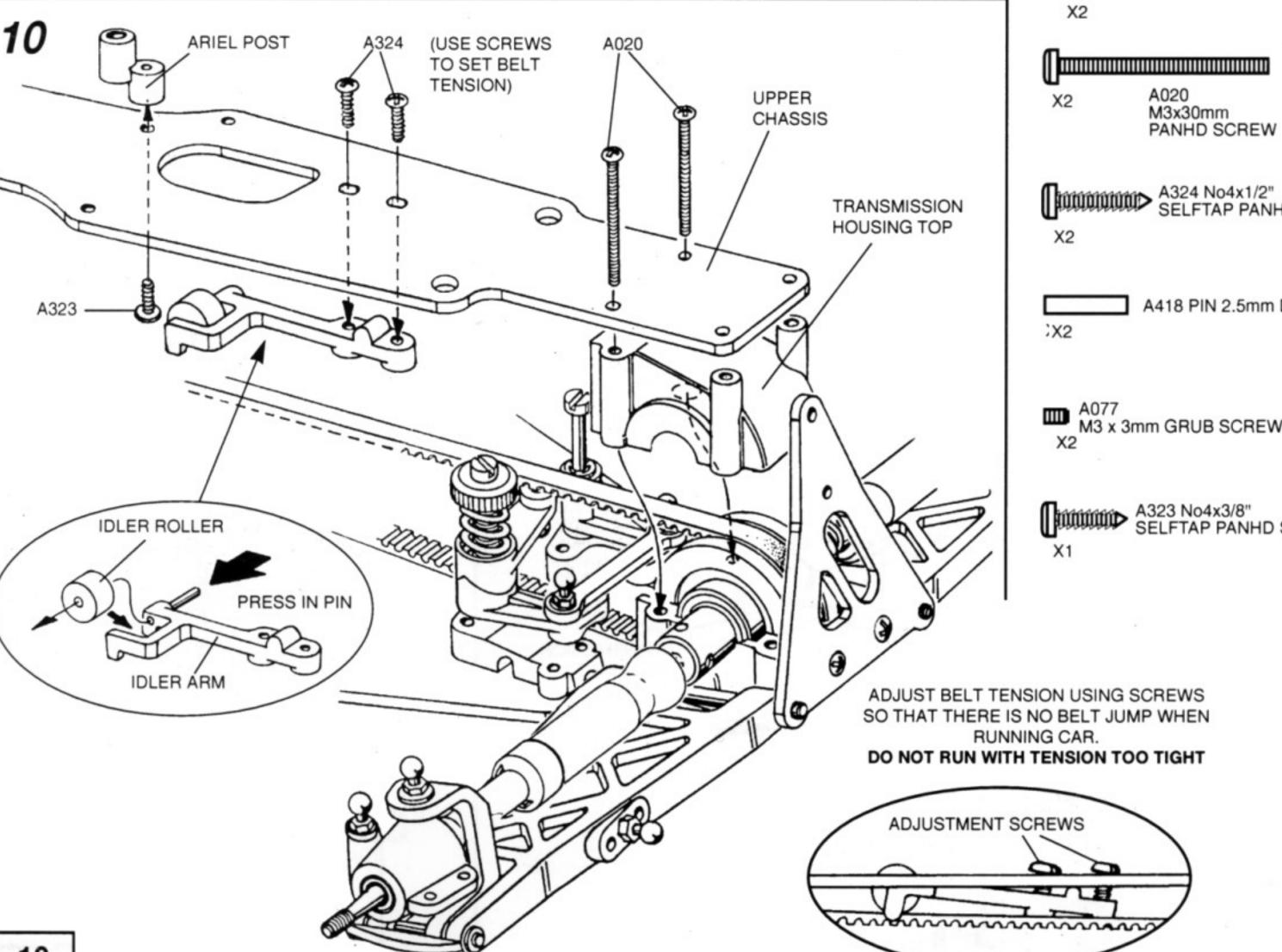
















FRONT SUSPENSION

HARDWARE

T1547 CENTRE TRACKROD BUSH X2

T1206 BALL STUD LONG

A181 'O' RING RED

A321 No4x1/4"
SELFTAP PANHD SCREW X2

A178 'O'RING - BLACK

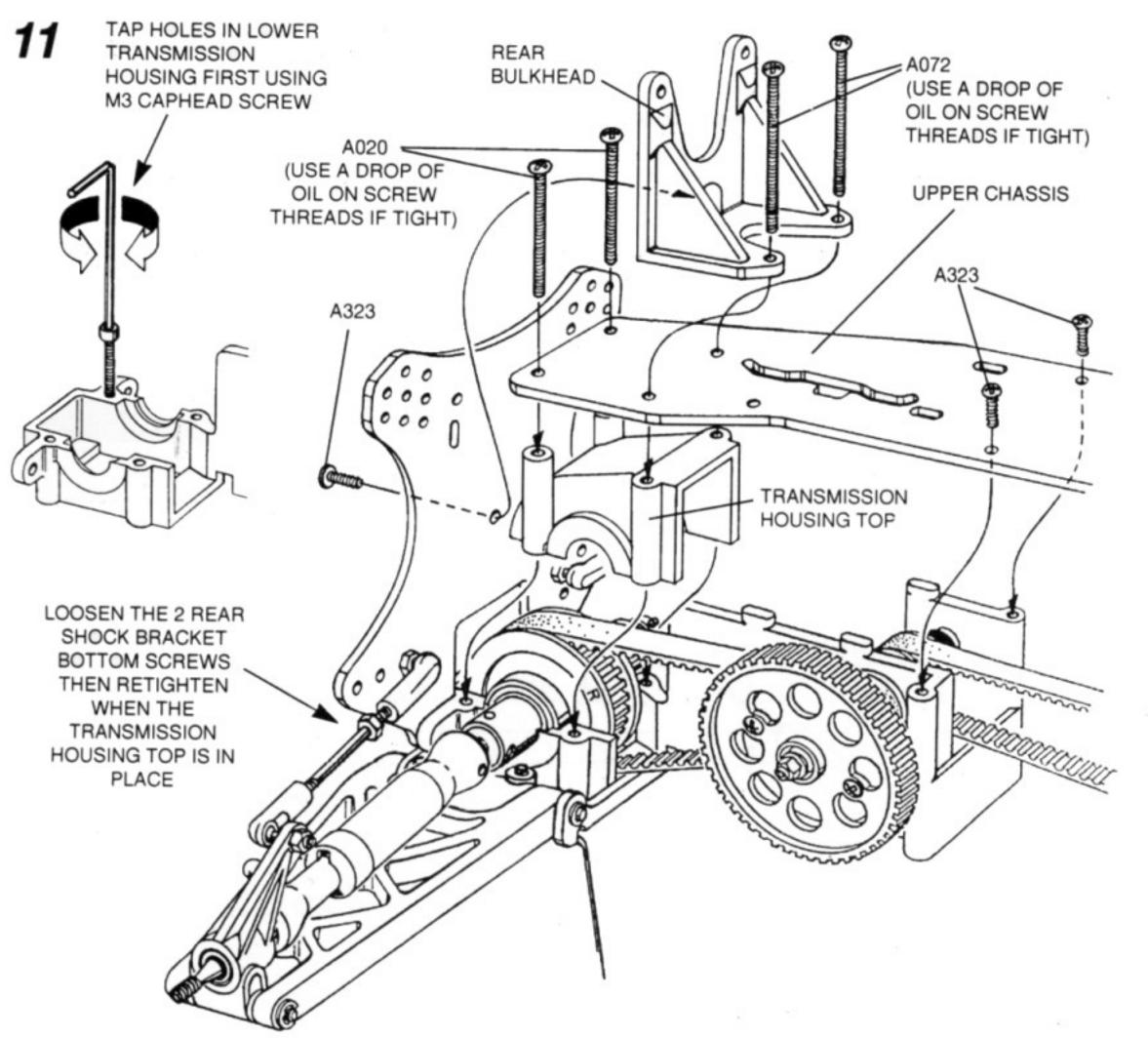
A179 'O'RING - BLACK

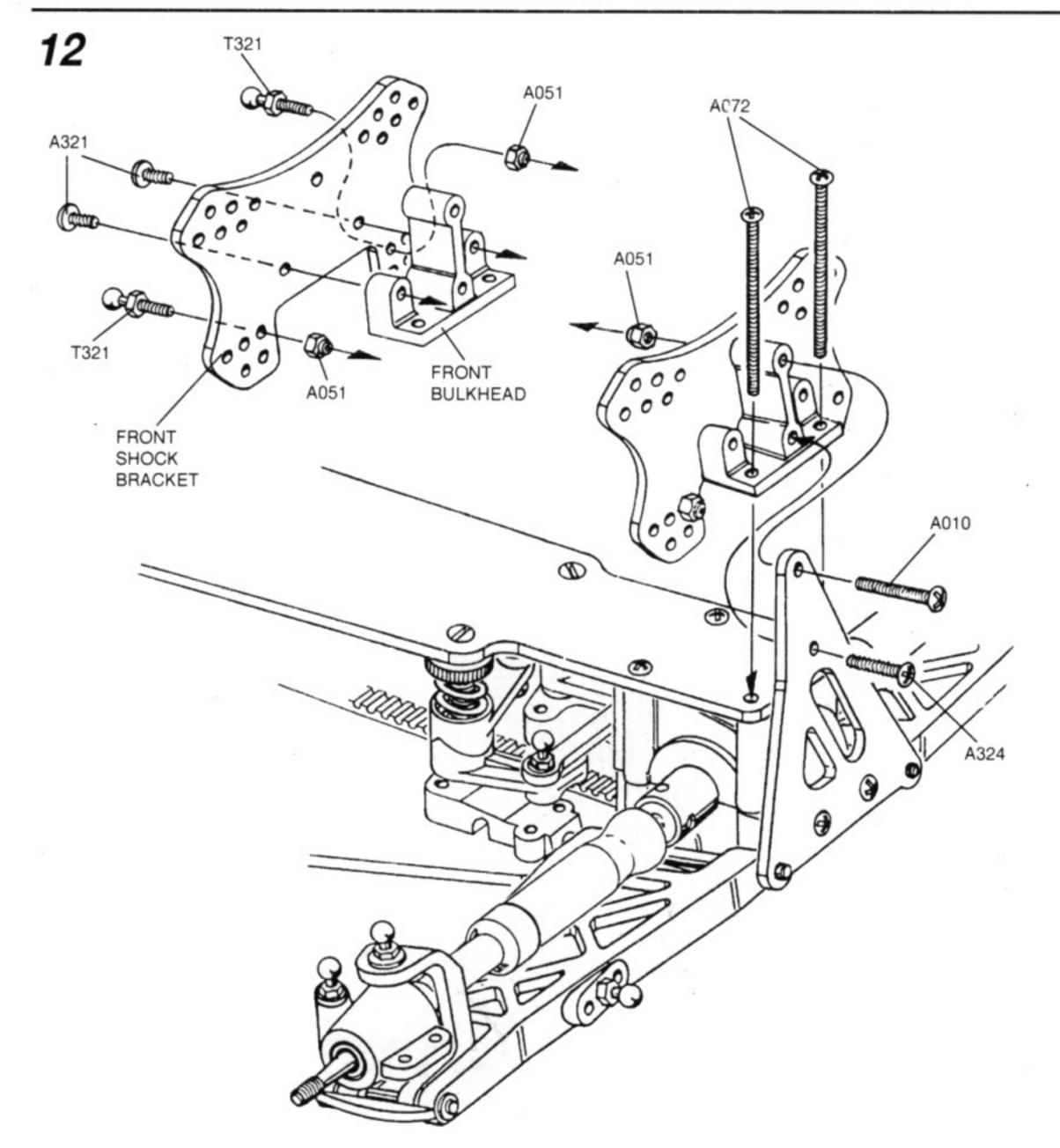
SELFTAP PANHD SCREW

A418 PIN 2.5mm DIA

M3 x 3mm GRUB SCREW

A323 No4x3/8"
SELFTAP PANHD SCREW





Schumacher



FRONT SUSPENSION

HARDWARE

X2 A020 M3x30mm PANHD SCREW

X4 A072 M3x35mm PANHD SCREW

A323 No4x3/8"
SELFTAP PANHD SCREW
X3

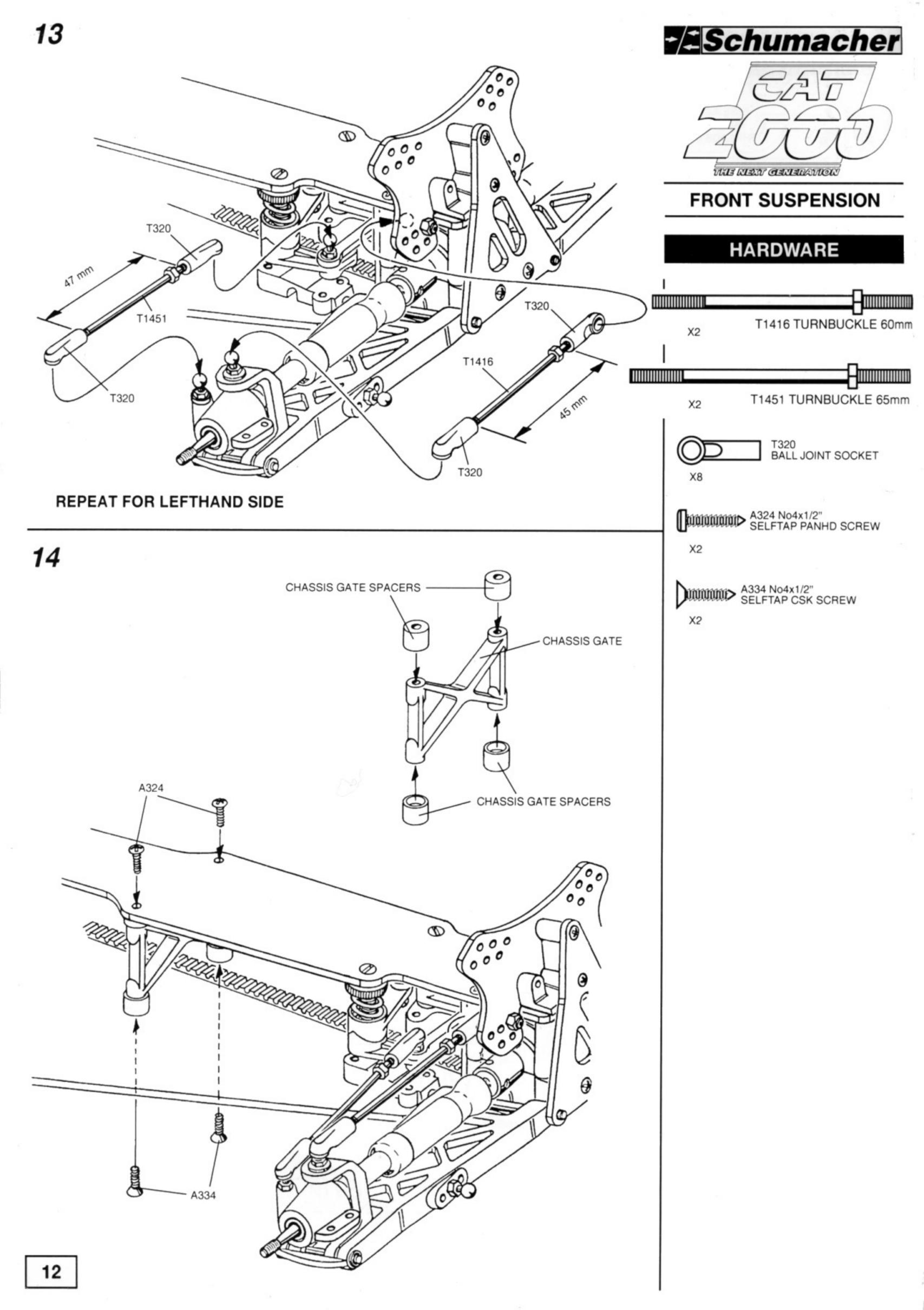
A324 No4x1/2"
SELFTAP PANHD SCREW

A010 M3x20mm PANHD SCREW

A321 No4x1/4"
SELFTAP PANHD SCREW

A051 M3 NYLOC NUT

T321 BALL STUD SHORT



1993 TYRE LIST

JANUARY 1994

2.2" OFF ROAD TYRES

TYRE COMPOUND -		BIBX		(GREEN	В	LUE	YE	LLOW	PRICE
	QTY	PART No	PRICE	QTY	PART No	QTY	PART No	QTY	PART No	
2.2" Front 8x20 Mini Spike	(U6566I			U6515J		U6517L		U6557Z	
2.2" Rear 12x20 Mini Spike		U6565H			U6516K		U6518M		U6558A	
2.2" Front 2x20 Stud					U6524S		U6523R			
2.2" Rear 8x10 Full Spike					U6528W		U6527V			
2.2" Front 6x10 Full Spike					U6530Y	- 3	U6529X			
2.2" Rear 8x10 Cut Spike		U6582Y			U6532A		U6531Z			
2.2" Front 6x10 Cut Spike		U6583Z			U6534C	4	U6533B			
2.2" Rear 22x34 Micro Spike		U6567J			U6536E		U6535D			
2.2" Front 14x 34 Micro Spike		U6568K			U6538G		U6537F		1	
2.2" Rear 6x 20Full Spike		U6584A			U6545N		U6544M			
2.2" Hi Profile Rear Mini Spike		U6561D					U6562E			
2.2" Hi Profile Front Mini Spike		U6563F		2 7			U6564G	-		-

CAT ORIGINALS

TYRE COMPOUND	-	BIBX			GREEN		BLUE		YELLOW	
	QTY	PART No	PRICE	QTY	PART No	QTY	PART No	QTY	PART No	
CAT Rear 4x20Full Spike					U6514I		T687E		T650T	
CAT Front 3x 20 Full Spike			4		U6513H		T688F		T652V	
CAT Rear 15x12 Mini Spike					U6512G		T679W			
CAT Front 11x12 Mini Spike					U6511F		T681Y			
CAT Front 2x20 Stud		U6574Q			U6519N		T689G			
CAT Rear 5x24 Mini Spike							T690H			-
CAT Front 4x24 Mini Spike							T691I			
CAT Rear 6x20 Block							T692J			
CAT Front 4x20 Block							T693K			
CAT Rear 6x20 Cut Spike							T694L			
CAT Front 1+20 Rib Spike							T695M			
CAT Front Rib		U6575R			U65460					

<u>SLIMS</u>

TYRE COMPOUND -	BIBX		GREEN		BLUE		YELLOW		PRICE	
	QTY	PART No	PRICE	QTY	PART No	QTY	PART No	QTY	PART No	
Slim 2WD Front - Stagger rib		U6569L			U6548Q		U6547P			
Slim 2WD Front - Mini Spike		U6570M			U6550S		116549R		116581X	

TRUCK

TYRE COMPOUND	-	BIBX			GREEN	В	LUE	YE	LLOW	PRICE
	QTY	PART No	PRICE	QTY	PART No	QTY	PART No	QTY	PART No	
Truck Racing VEE2		U6576S					U6502W			
Truck Racing VEE4		U6577T					U6503X			
Truck 20x15 Mini Spike		U6578U			U6520O		U6508C			
Truck 6x24 Stagger Rib		U6579V			U6526U		U6525T			
Truck 26x39 Micro Spike		6580W					116542K			

ON ROAD

QTY	PART No	DESCRIPTION	PRICE
	U6500U	Road & Track - RT1 Front	
	U6501V	Road & Truck - RT1 Rear	
	U6509D	Road & Track - RT2 Front	
	U6510E	Road & Track - RT2 Rear	
	U65720	Road & Track - RT2 Front Green	
	U6573P	Road & Track - RT2 Rear Green	
	U6553V	"Sponges" - 2.2" Aerodisc Rear	
	U6554W	"Sponges" - 2.2" Aerodisc Front	
	U6555X	"Sponges" - Slim - Front	
	U6556Y	"Sponges" - Truck	
	U6559B	"Sponges" - C2000 Rear 2 & 4wd	
17. 11.	U6560C	"Sponges - Cougar 2000 Front 2wd	
	U6571N	"Sponges" - CAT 2000 Front 4wd	
		All "Sponges" are trued & glued on wh	eels

FOAM TYRE INSERTS

QTY	PART No	DESCRIPTION	PRICE
	U6539H	CAT Foam Inserts - Front	
	U6540I	CAT Foam Inserts - Rear	
	U6541J	CAT Foam Inserts - Truck	

WHEELS

U1089R	Truck Wheel 2.2" (Fr&Rr)-Natural	
U396A	Truck Wheel 2.2" (Fr&Rr)-Yellow	
U224G	Front Wheel-Spoked White - (pr)	
U225H	Rear Wheel-\spoked White - (pr)	
U1147X	Aerodisc Rear Wheel - 2.2"	
U1148Y	Aerodisc Front Wheel - 2.2"	
U1228B	Slim Front Wheel - White (pr)	
U1457W	Front Wheel - 2.1" Cougar 2000	
U1458X	Rear Wheel 2.2" C2000 2 & 4 wd	
U1516D	Front Wheel 2.2" CAT 2000	

BIBX

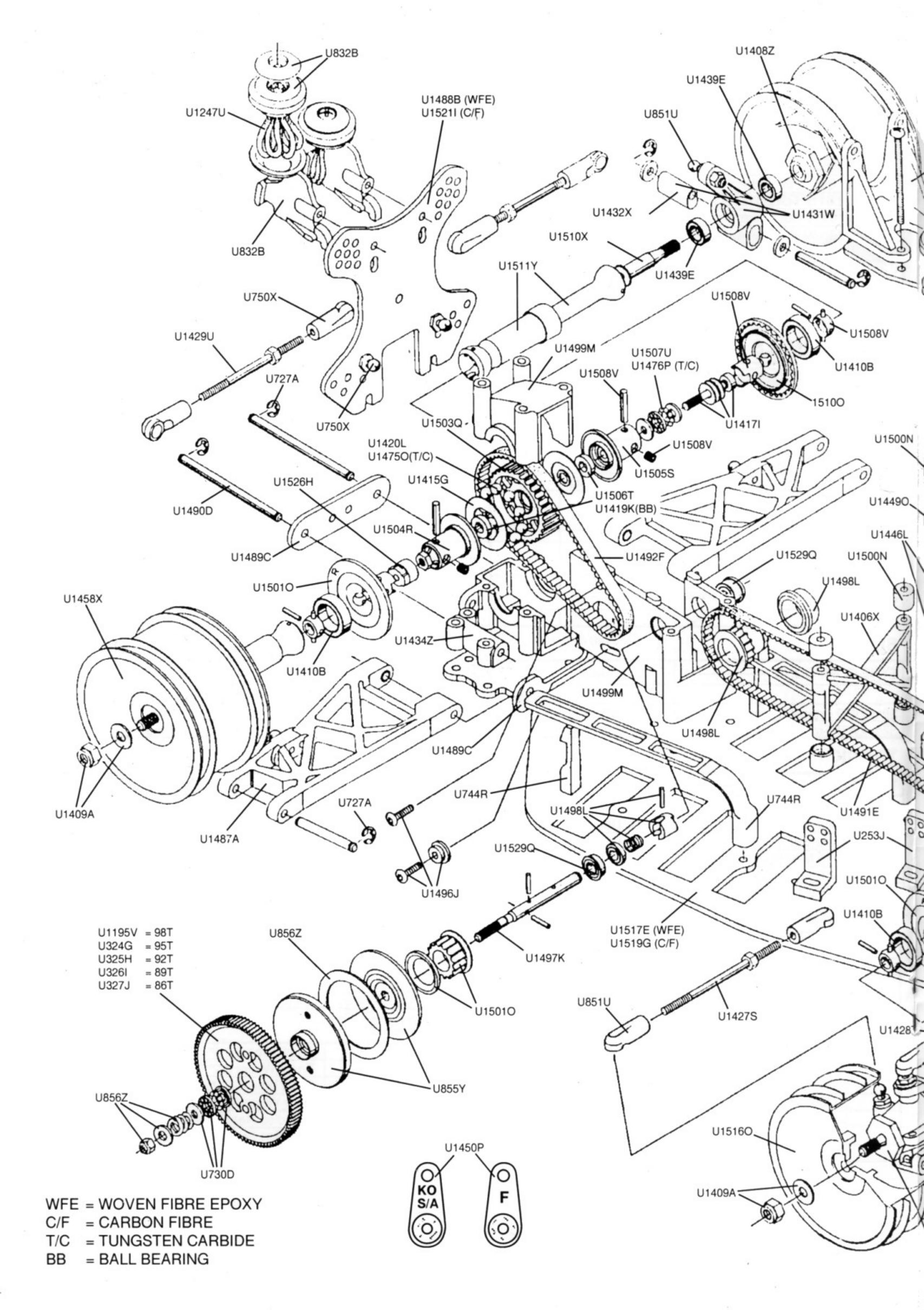
- New compound specially formulated for superb grip on hard clay tracks. 2nd & 3rd WORLDS!!! GREEN - Soft natural compound with high level of grip and natural damping.

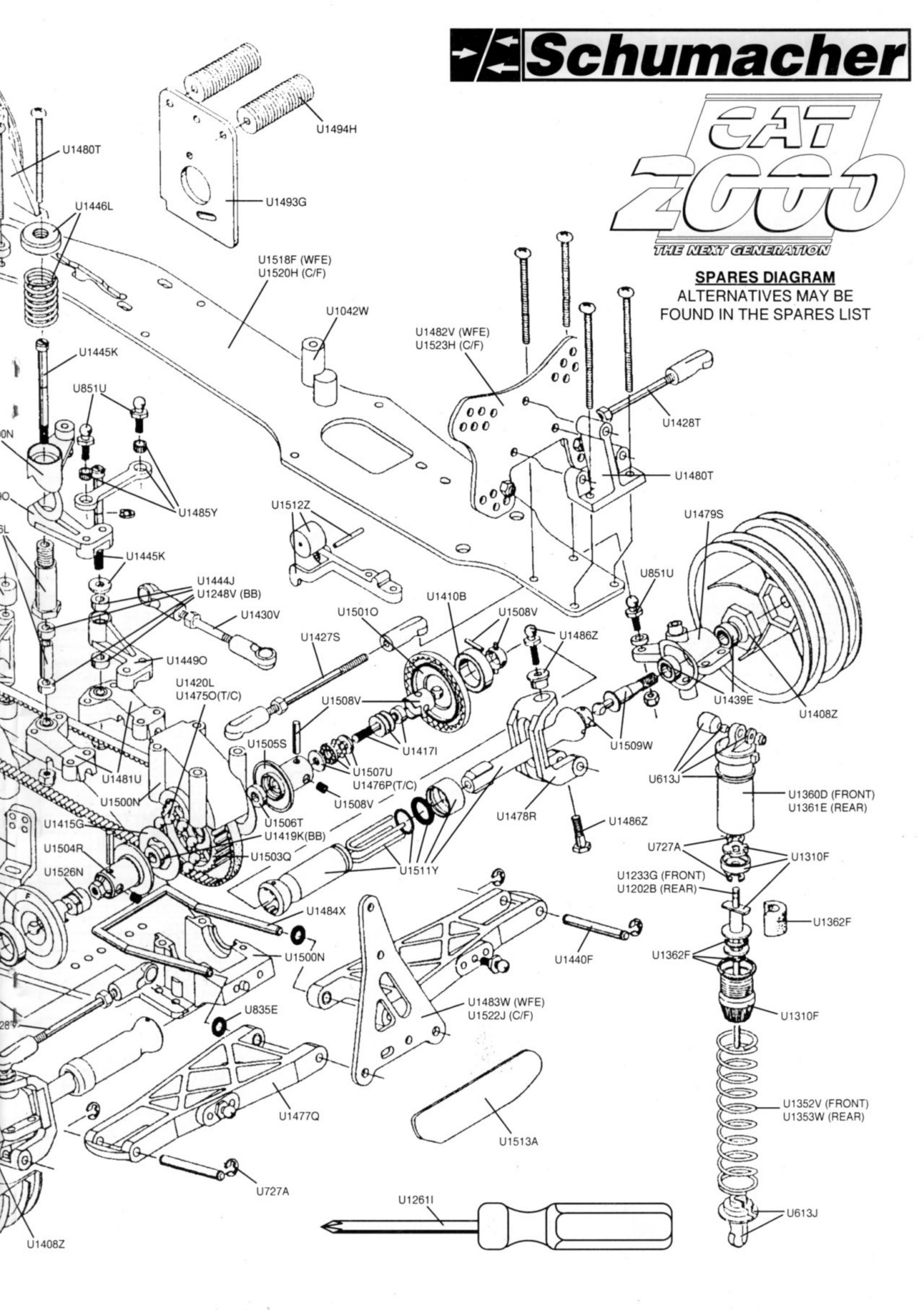
BLUE

- Natural compound for high traction tracks.

YELLOW - Special compound for indoor racing on polished floors.

BOLD = NEW

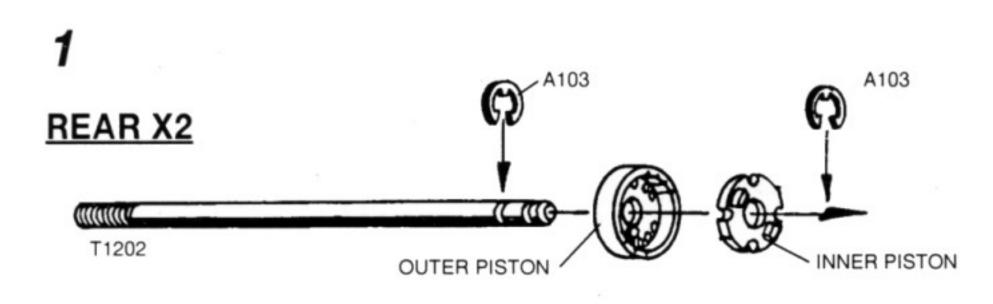


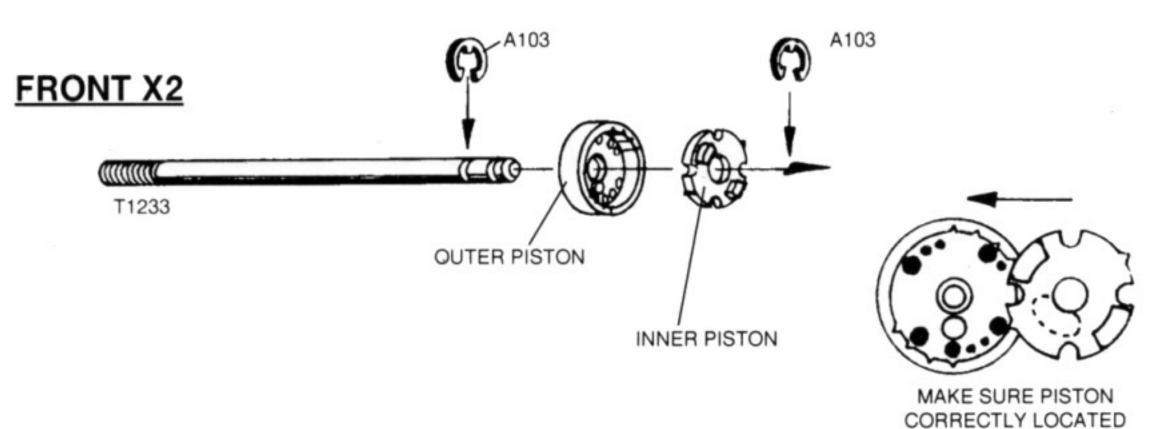


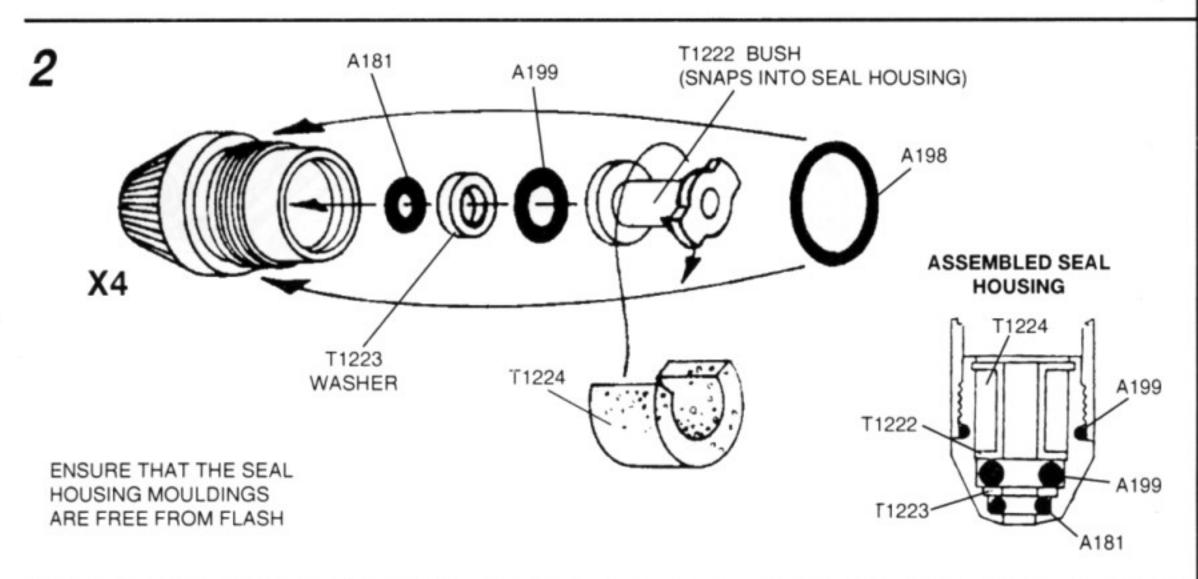


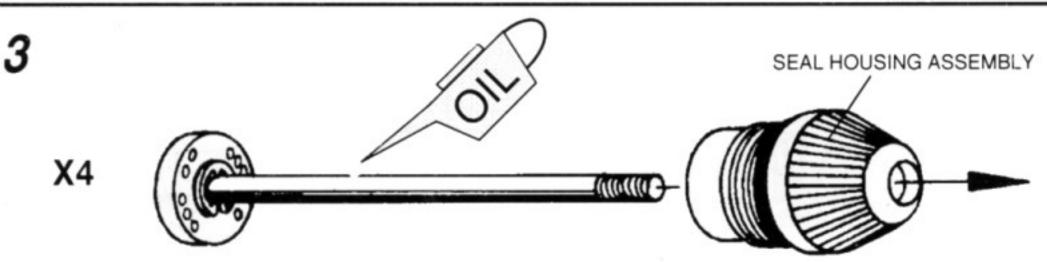
QTY REQ	SPARES NUMBER	DESCRIPTION	UK LIS PRICE
		KITS	
	U460M	CAT 2000 - 4WD Off Road	
		BODY & CHASSIS	
	U119J	Aerial Tube	
	U122M	Velcro 1/2metre x 10mm	
_	U1247U U1403U	Wing % Side Plates OFF BOAD	
_	U1406X	Wing & Side Plates - OFF ROAD Chassis Gates - C2000 (pk 5)	
	U1513A	Front Bumper - CAT2000	
	U1514B	Instruction Book CAT2000(NSD)	
	U1515C	Decal Sheet - CAT2000	
	U1517E		
	U1518F		,
	U253J	Servo Mounts (pr)	
	U5036M	Bodyshell - CAT2000	
	U5037N		
	U744R	Q.C. Saddle Pack Strap (pk 2)	
	U832B	Wing Mount Kit	
	LIAGOOD	SUSPENSION & STEERING	
	U1202B	Piston Rod, Long Shock (pr)	
	U1233G U1310F	, V ,	
	U1352V	Shock Mouldings-Vari Click Piston (pr) Med Spring Tuning Set - Colour (4prs)	
	U1353W		
	U1357A	PRO Shock Absorbers - medium (pr)	
	U1358B	PRO Shock Absorbers - long (pr)	
	U1360D	PRO Shock Body - medium (ea)	
	U1361E	PRO Shock Body - long (ea)	
	U1362F	PRO Shock Seal pack - (pr)	
	U1426R	Pivot Pin - Rear Outer - C2000	
	U1427S	Turnbuckle - 540unc x 65mm (pr)	
	U1428T	Turnbuckle - 540unc x 60mm (pr)	
	U1429U	Turnbuckle - 540unc x 53mm (pr)	
	U1430V	Turnbuckle - 540unc x 39mm (pr)	
	U1431W		
	U1432X		
	U1434Z	Rear Pivot Block- C2000 (pr)	
	U1439E	Ball Bearing 5x9x3 (pr)	
	U1440F	Pivot Pin - Front Outer & King Pin	
_	U1444J U1445K	Bush 1/8" x 1/4" (pk 4)	
	U1446L	Steering Posts & Washer-C2000 (pr) Servo Saver - C2000	-
	U1449O	Steering Levers - C2000 (pr)	
	U1450P	Track Rod and Servo Horns	
	U1458X	Rear Wheel 2.2" - C2000(pr)	
	U1477Q	Front Wishbones - CAT2000 4WD (pr)	
	U1478R	Steering Yokes - CAT2000 (pr)	
	U1479S	Front Hub Carriers - CAT2000 (pr)	
	U1480T	Front & Rear Bulkheads - CAT2000	
	U1481U	Front Pivot Blocks - CAT2000	
	U1482V	Front Shock Mount, WFE - CAT2000	
	U1483W		
	U1484X		
		Centre Track Rod - CAT2000(set)	
	U1486Z	Pivot Set-Front Hub Carrier - CAT2000	
	U1487A	Rear Wishbones - CAT2000 (pr)	
	U1488B	Rear Shock Mount, WFE - CAT2000 (pr)	
	U1489C U1490D	Rear Pivot Braces, WFE - CAT2000 (pr) Pivot Pin - Rear Inner - CAT2000(pr)	
	U1516D	Front Wheel 2.2" - CAT2000(pr)	
	U613J	Spring Stop & Spacer Moulding (pr)	
	U727A	'E' Clip 1/8" (pk 10)	
	U750X	Ball Joints- Short Stud Ball&Skt (8 prs)	
	U851U	Ball Joints- Long Stud Ball&Skt (8 prs)	
	330.0	TRANSMISSION	
	U1301W	Silicone Diff Grease - Tube	
	U1408Z	Hex Wheel Drive - C2000	
	U1409A	Wheel Nuts - C2000 (4 sets)	
10	U1410B	Ball Bearing - 10x15x4 (pr)	

QTY REQ	SPARES NUMBER	DESCRIPTION	UKLIST
	U1529Q	Ball Bearing - 4x8x3 flanged (pr)	
	U1415G U1417I	Diff Washer - 18mm - C2000 (pr) Diff Screw, Disc Springs & Spacer - C2	
	U1420L	Diff Balls - 4mm Carbon Chrome (pk10)	
	U1491E	Front Drive Belt, 170 T x 411.7	
	U1492F	Rear Drive Belt, 65 T x 6mm	
	U1493G	Motor Plate - CAT2000	
	U1494H	Motor Heatsinks - CAT2000 (pk 3)	
	U1496J	Motor Screw Set - CAT2000	
	U1497K	Cayshaft - CAT2000	
	U1498L U1499M	One Way Pulley Set - CAT2000 Rear Trans Housings - CAT2000	
-	U1500N	Front Trans Housings - CAT2000	
	U15010	Layshaft Pullley & Diff Flanges - CAT2000	
	U1502P	18mm Diff, Assembled - CAT2000	
	U1503Q	18mm Diff Pulley - CAT2000	-
	U1504R	Washer Carrier, Co-Ax U/J-C2000 (male)	
	U1505S	Washer Carrier, Co-Ax U/J-C2000 (Female)	
	U1506T	Bushings, 4x8x2mm - C2000(pr)	
	U1507U	Diff Thrust Bearing - C2000	
	U1508V U1509W	Inboard Co-Ax U/J - C2000 (ea) Front Ax Co-Ax U/J - CAT2000 (ea)	- (
	U1510X	Rear Ax Co-Ax U/J - C2000 (ea)	
	U1511Y	Driveshafts, Co-Ax U/J - C2000(pr)	
	U1512Z	Idler Set, Front Belt - CAT2000	
	U1526N	Diff Nut Lock, Co-Ax U/J - C2000	
	U730D	Thrust Bearing 1/8" x 5/16"	
	U855Y	Thrust Plate&Drive Hub Slipper	
	U856Z	Repair Kit - Q.C. Slipper	
	1144051/	SPEED SECRETS - TUNING PARTS	
	U1195V U1248V	98T Q.C. Slipper Gear - 48 D.P.	
	U1261I	Ballbearing - C2000 Steering (pk 2) Pozi Screw Driver No. 1	
	U1419K	Ball Bearing 4x8x2mm (pr)	
	U14750	Tungsten Carbide Diff Balls 4mm (pk 10)	S
	U1476P	Tungsten Carbide Balls 1/16" (pk 9)	
	U1530R	Rear Anti Roll Bar - CAT2000	
	U1531S	Bump Steer Set - CAT2000	
NEW	U1532T	Castor Blocks 5 Deg CAT2000 (pr)	
	U1519G	Lower Chassis, C/F - CAT2000	
	U1520H U1521I	Upper Chassis, C/F - CAT2000	
-	U1522J	Rear Shock Mount, C/F- CAT2000 Front Shock Brace, C/F - CAT2000 (set 3)	
	U1523K	Front Shock Mount, C/F - CAT2000 (Set 5)	
	U1524L	Lexan Gear Cover - CAT2000	
		RollerDrive Shaft Conversion(pr)-Co-AxU/J	
	U15270	4mm Rear Drive Belt - CAT2000	
	U1534V	Dual Rate Shock Pistons (2prs)	
	U1553O	Front Body Mount Bkts - CAT 2000	
	U1554P	Rear Body Shock Mount - CAT 2000	
	U1555Q U1556R	Ultra Short Fr. Shock Bkt - CAT 2000 Ultra Short Rr. Shock Bkt CAT2000	1000
	U1557S	Ultra Short Shock Rod (pr)	· ·
	U1558T	Ultra Short Shock Body (ea)	
	U1559U	Ultra Short Red Shocks (pr)	
NEW	U1560V	Touring Car Body Mount Set - CAT2000	
	U1561W	Circuit Buggy Conv. Set - CAT2000	
	U1562X	Touring Car Conversion CAT 2000	
NEW	U1563Y	Alloy Transmission Housing - CAT 2000	
	U324G	95T Q.C. Slipper Gear - 48 D.P.	
	U325H U326I	92T Q.C. Slipper Gear - 48 D.P.	
	U3251	89T Q.C. Slipper Gear - 48 D.P. 86T Q.C. Slipper Gear - 48 D.P	-
	U6559B	"SPONGES" - 2.2" C2000 - Rear (NSD)	
	U6571N	"SPONGES" - 2.2" CAT2000 - Front (NSD)	
	U818N	Ball Bearings - Roller D/Shaft (pr)	
	C2000	Fits CAT & Cougar 2000 Models	
_			

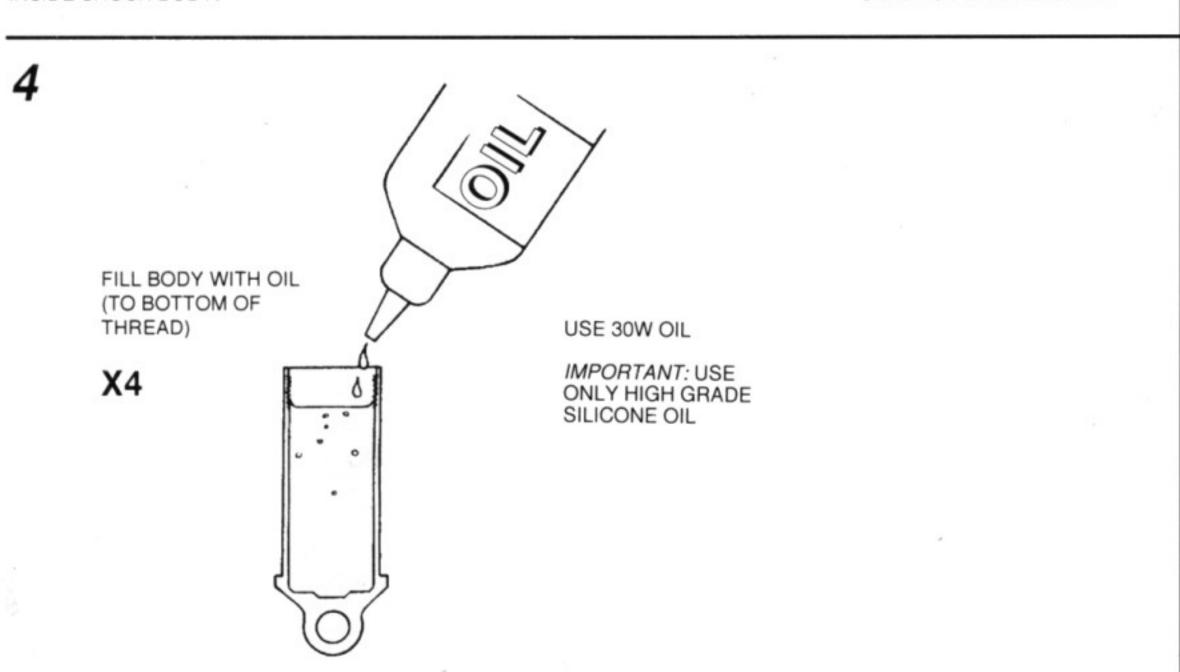








CAREFULLY REMOVE THE MOULDED PIP. CHECK FOR FREE PISTON MOVEMENT INSIDE SHOCK BODY. ENSURE THAT PISTON SLIDES FREELY IN THE THE SEAL HOUSING ASSEMBLY







SHOCK ABSORBERS

HARDWARE

X2 T1233 SHOCK ROD MEDIUM

X2 T1202 SHOCK ROD

LONG

A103 'E' CLIP

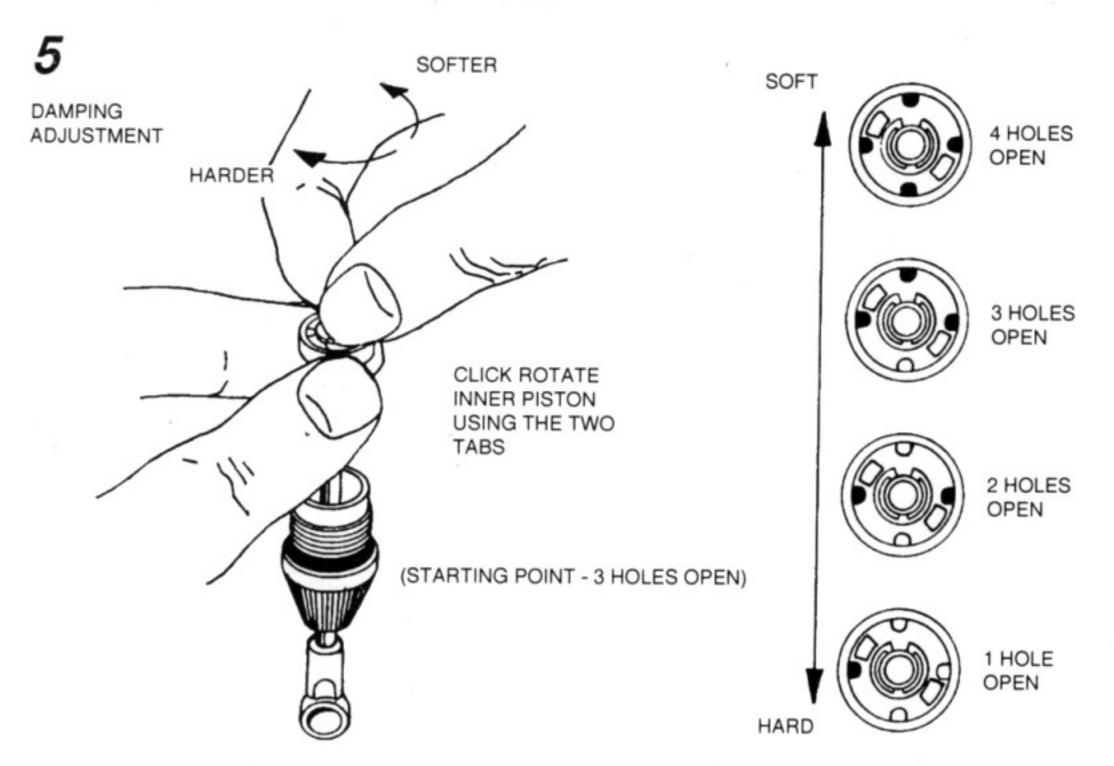
A181 'O' RING

A199 'O' RING

A198 'O' RING

T1224
FOAM VOLUME
COMPENSATOR

A225 M3 STEEL WASHER (FROM SHOCK MOULDINGS)



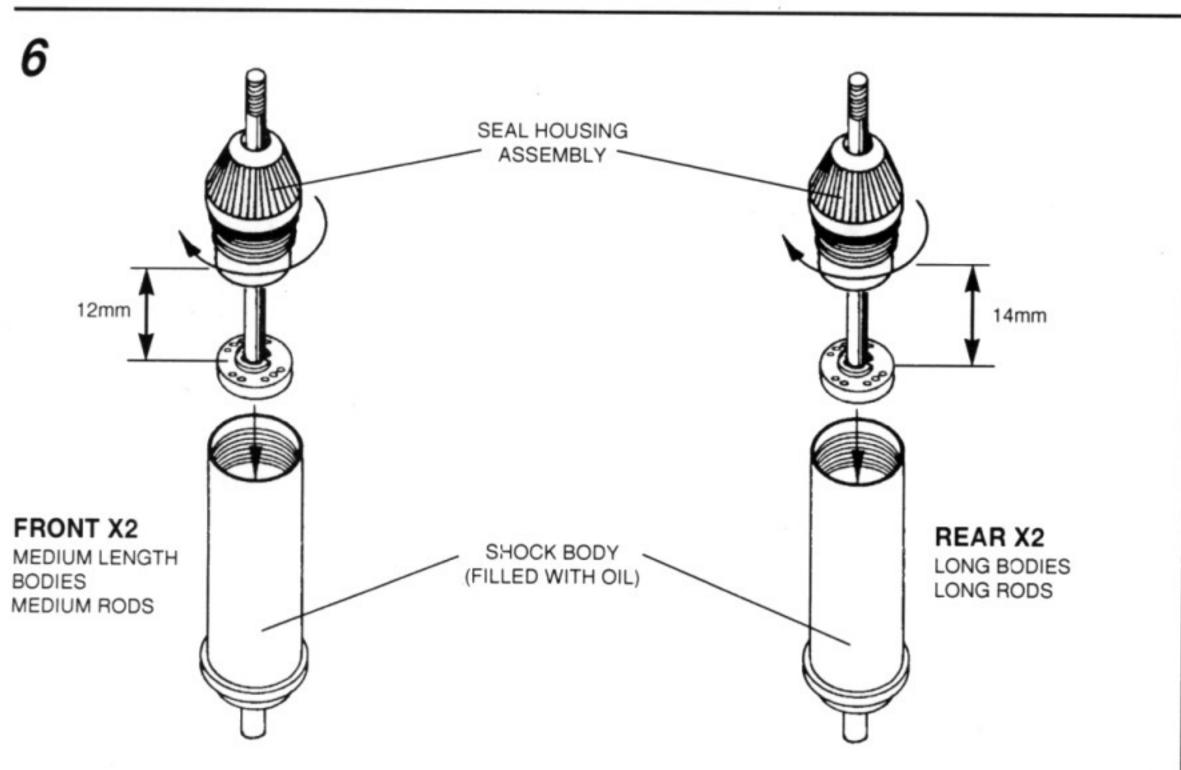


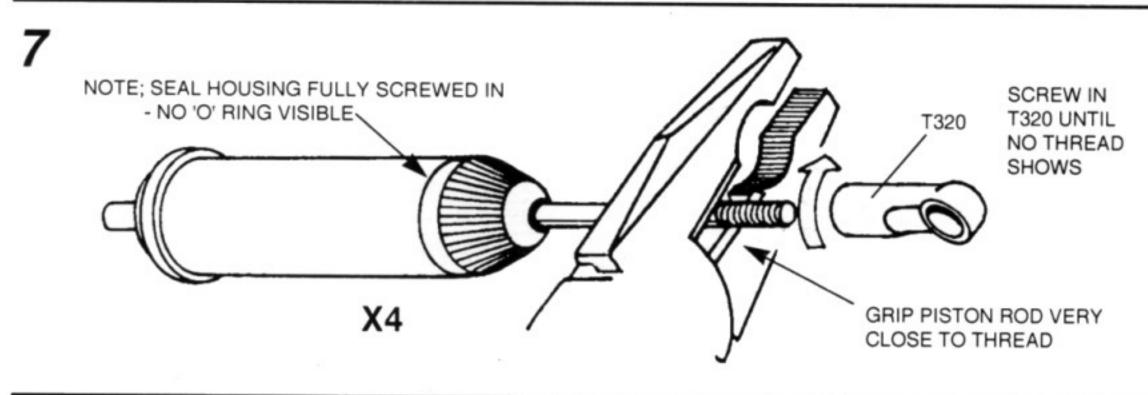


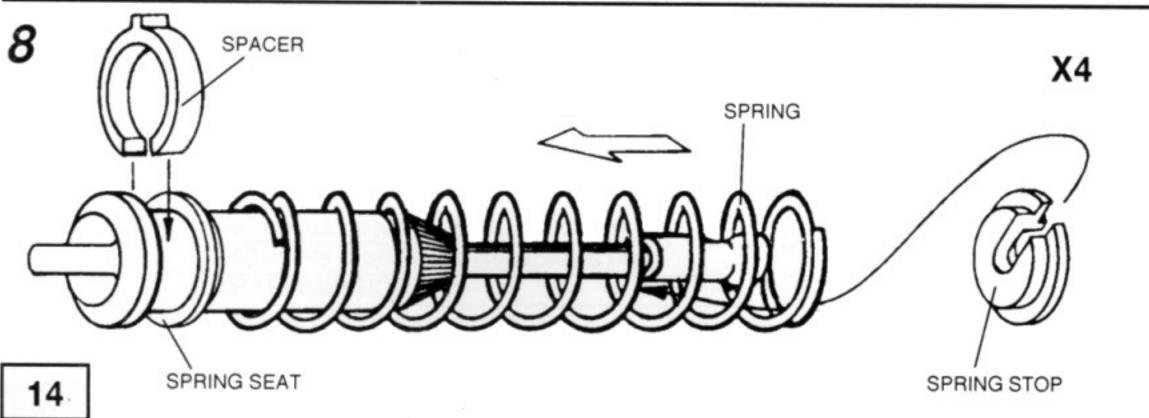
SHOCK ABSORBERS

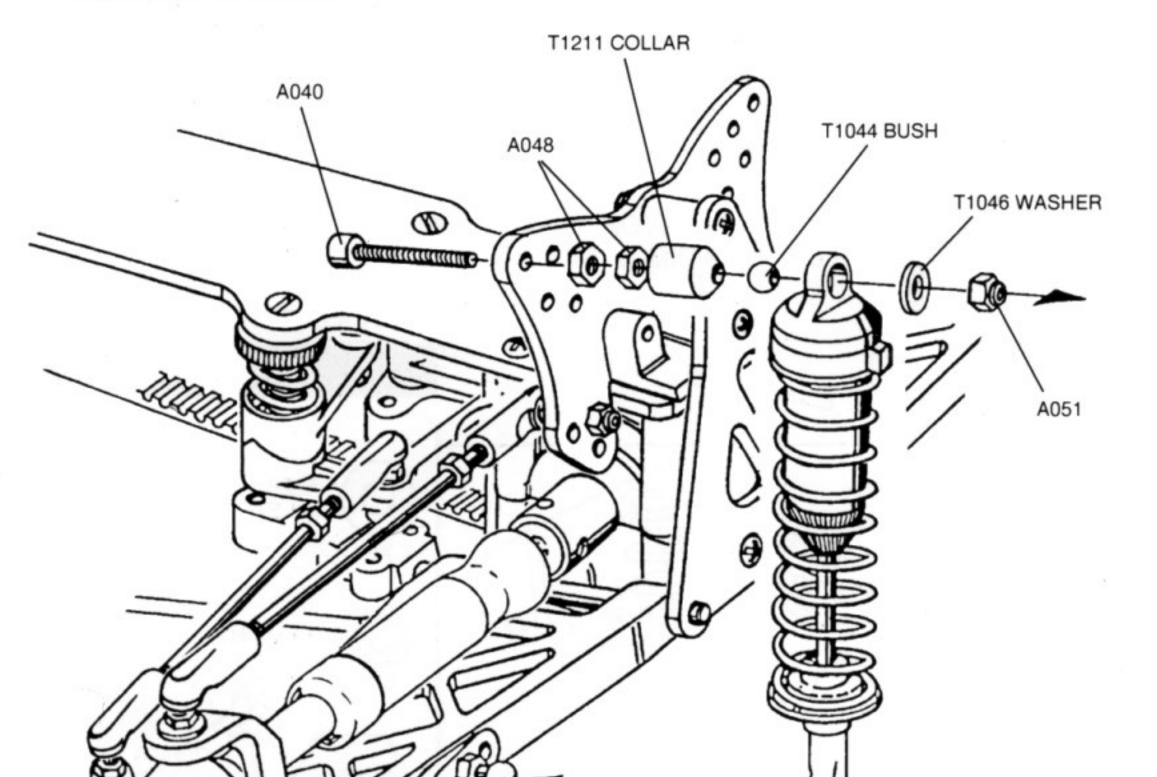
HARDWARE







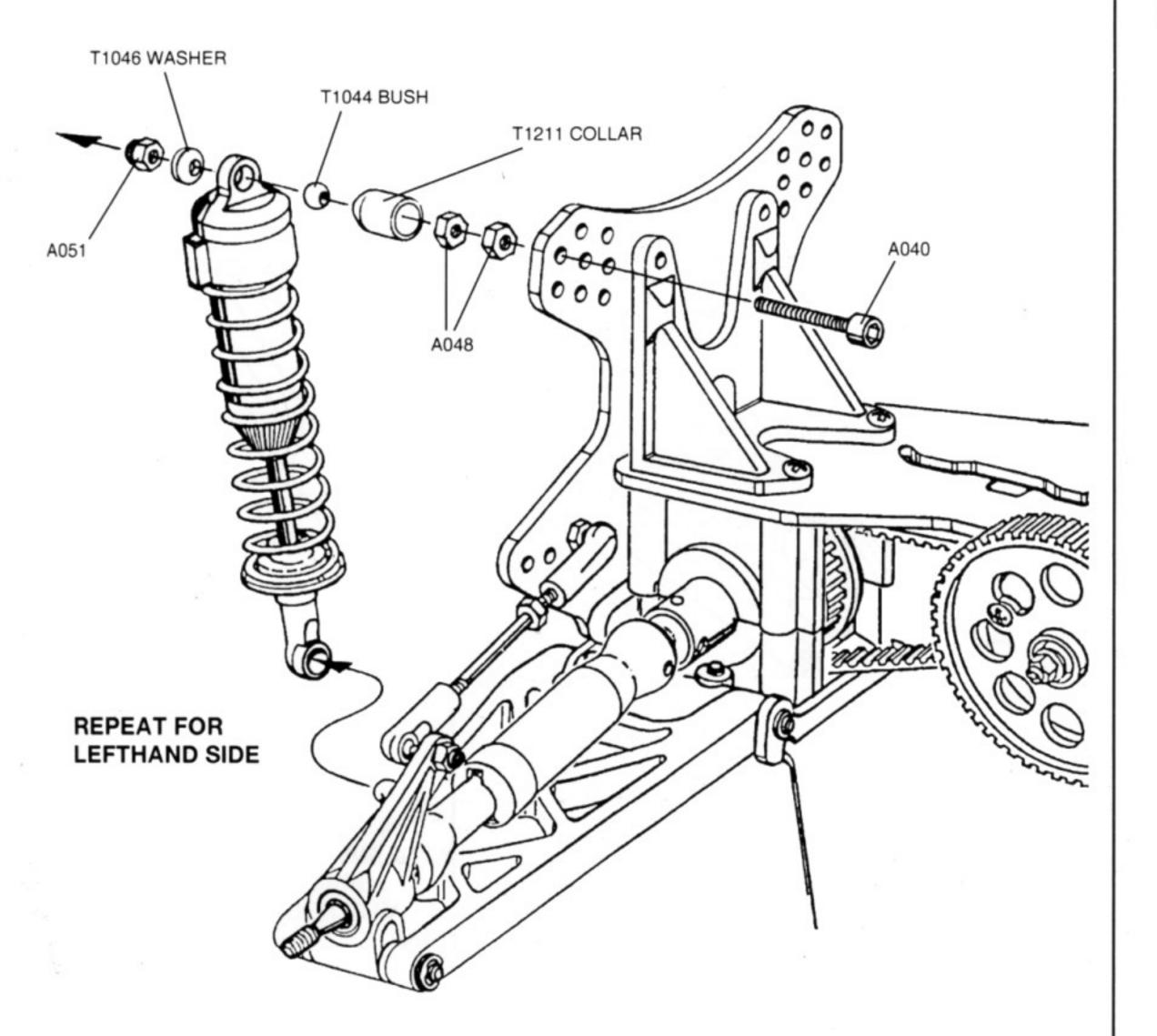




REPEAT FOR

LEFTHAND SIDE

10 FITTING REAR SHOCK ABSORBERS







SHOCK ABSORBERS

HARDWARE





A048 M3 NUT



A051 M3 NYLOC NUT

X4



T1044 SHOCK SPHERICAL BUSH

X4



T1211 SHOCK COLLAR

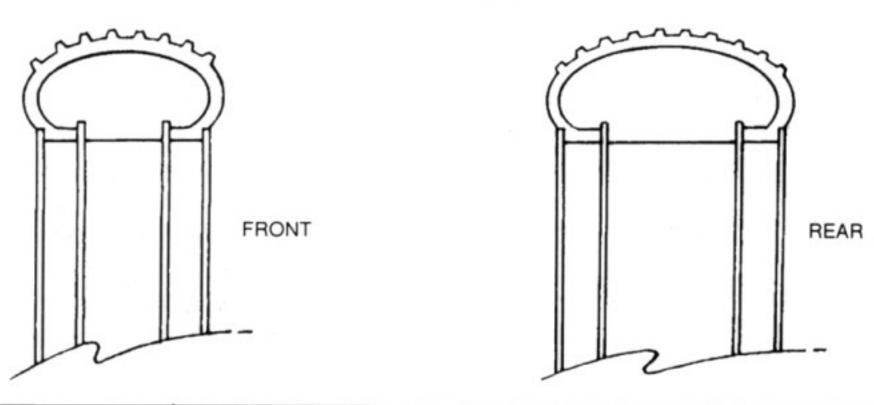


T1046 SHOCK MOUNT WASHER

X4

1 FITTING TYRES TO WHEELS

MAKE SURE TYRE BEAD SEATS PROPERLY IN GROOVES OF WHEEL NOTE: DO NOT BOIL CAT 2000 WHEELS - THEY WILL DISTORT.

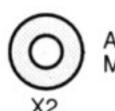






WHEELS & TYRES

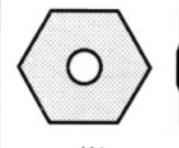
HARDWARE



A228 M4 STEEL WASHER

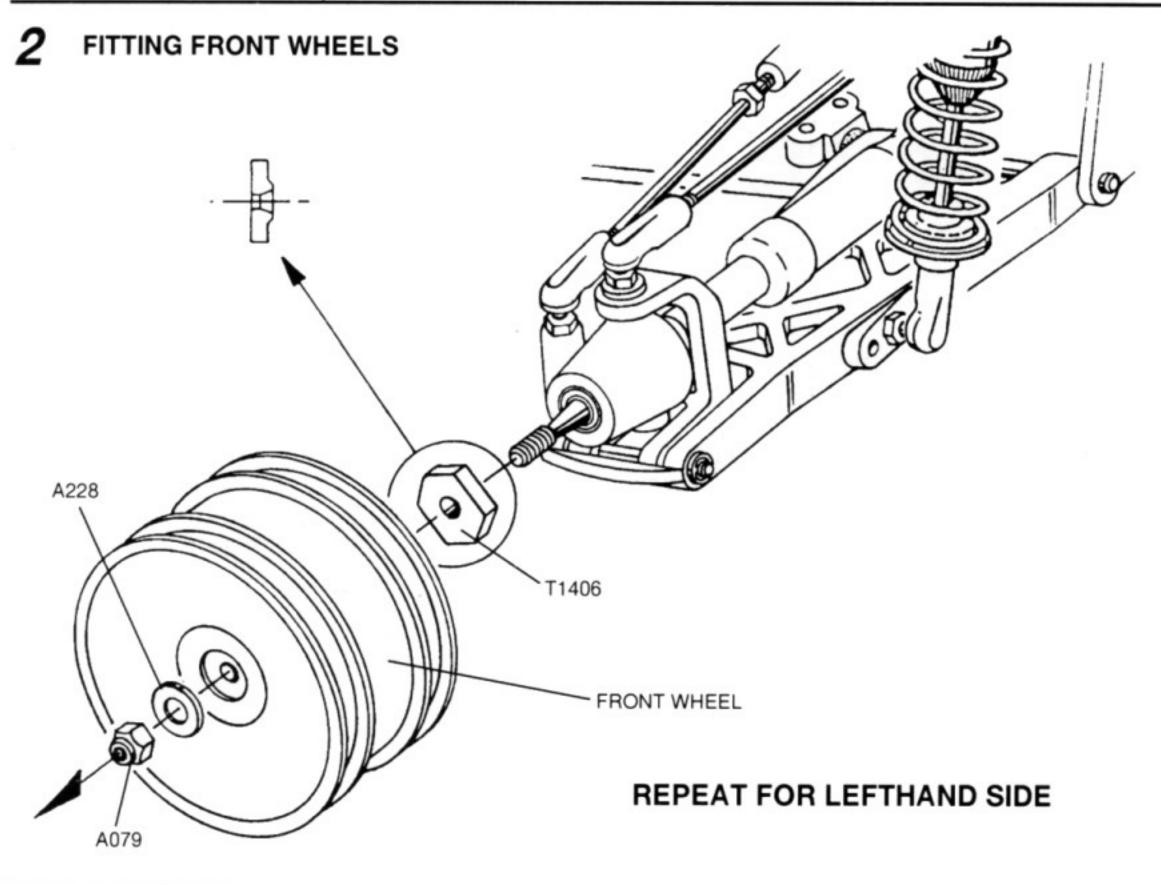


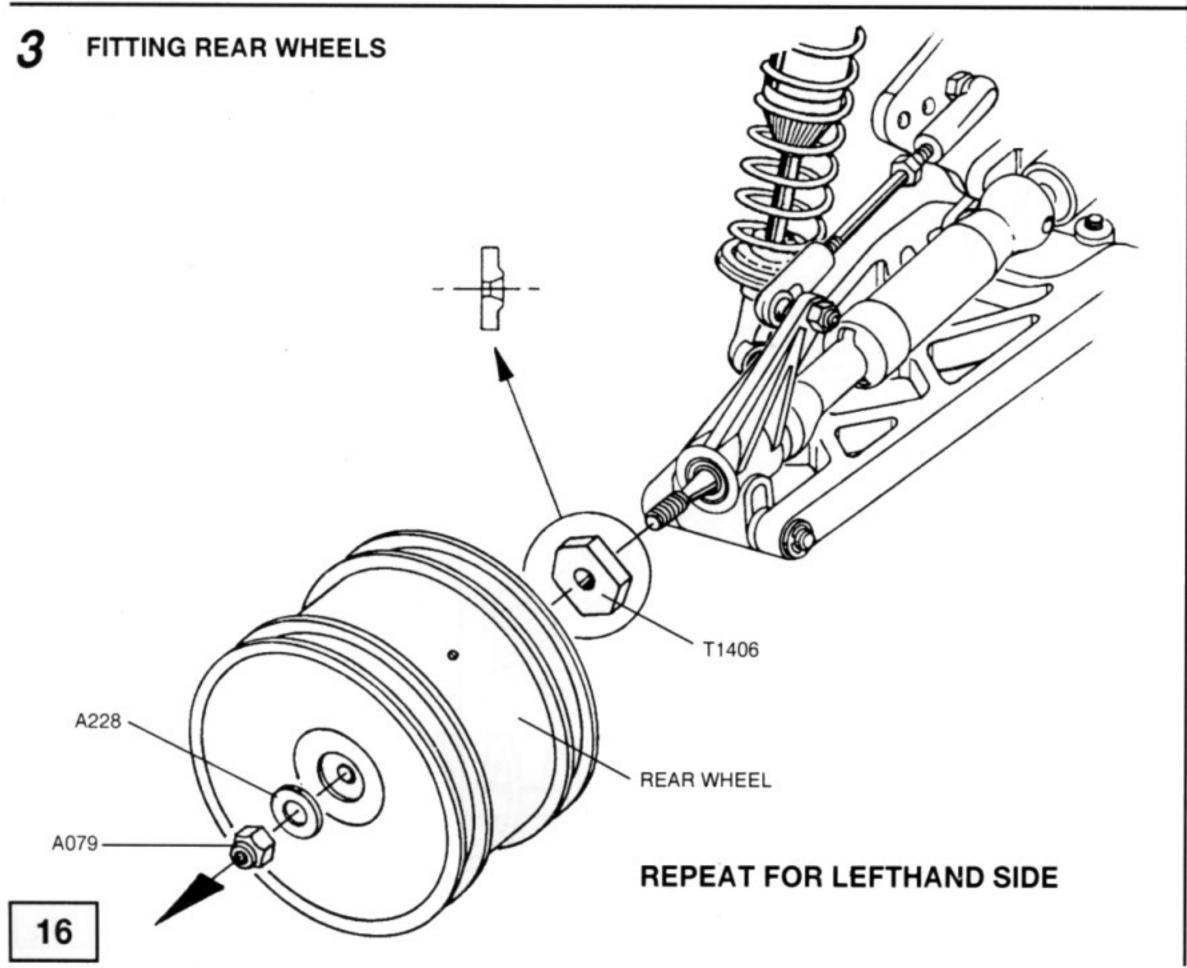
A079 M4 NYLOC NUT



T1406 NARROW TRACK DRIVE PLATE - HEX

X4





CUT AWAY SHADED AREAS.

USE A FILE OR ABRASIVE PAPER TO SMOOTH THE CUT EDGES. ANY RAGGED EDGES OR SCORE LINES MAY CAUSE THE

BODYSHELL TO CRACK OR SPLIT WHEN IN USE.

PAINTING: FIRST WASH THE BODYSHELL TO REMOVE ANY OIL OR DIRT. RINSE THOROUGHLY. PAINT THE INSIDE OF THE BODYSHELL AND WING.

YOU CAN OBTAIN A COLOUR SCHEME BY MASKING A SECTION WITH TAPE, PAINTING, THEN REMOVING THE TAPE AND PAINTING A DIFFERENT COLOUR.

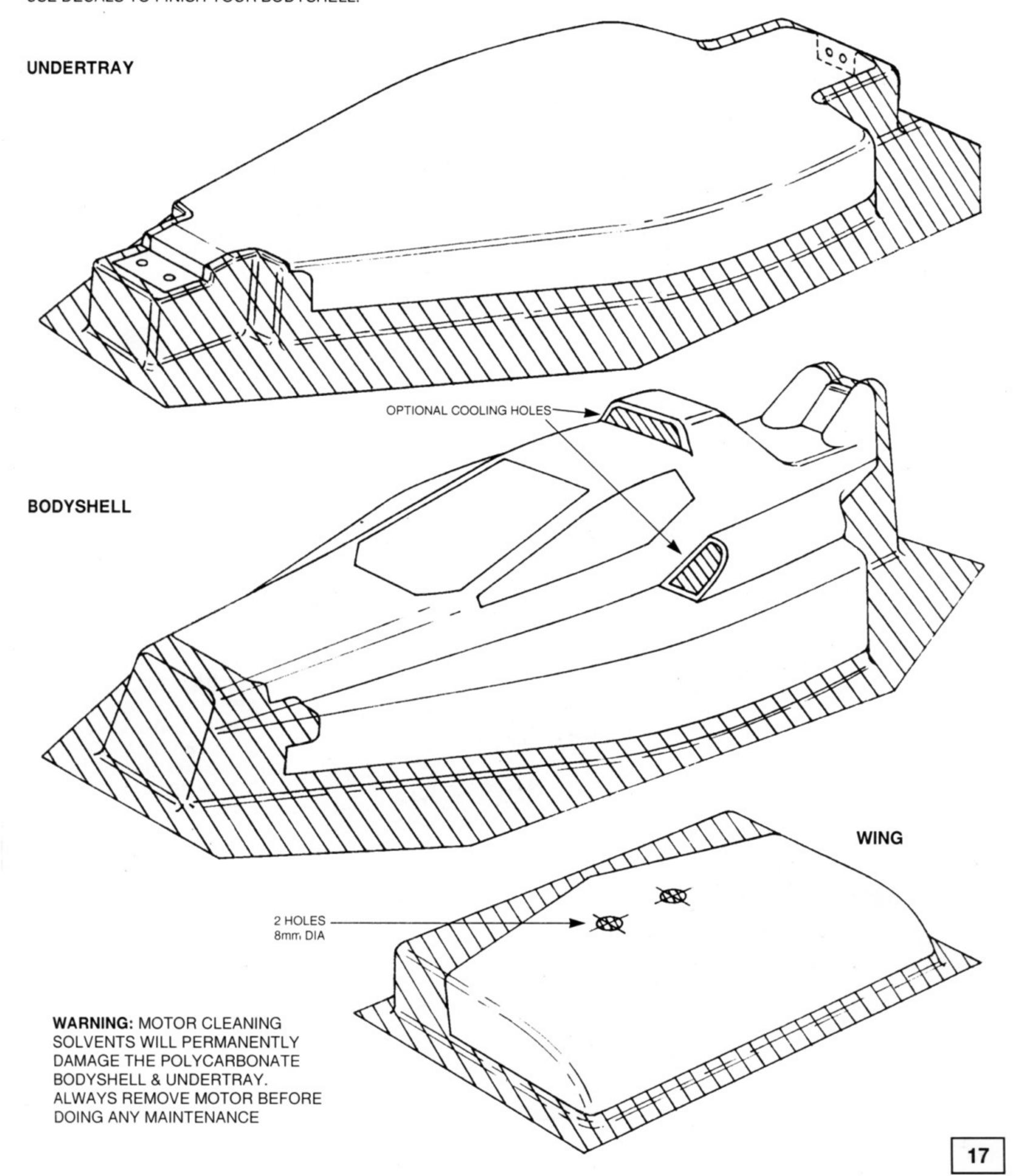
APPLY THE DARKEST COLOUR FIRST.

USE DECALS TO FINISH YOUR BODYSHELL.

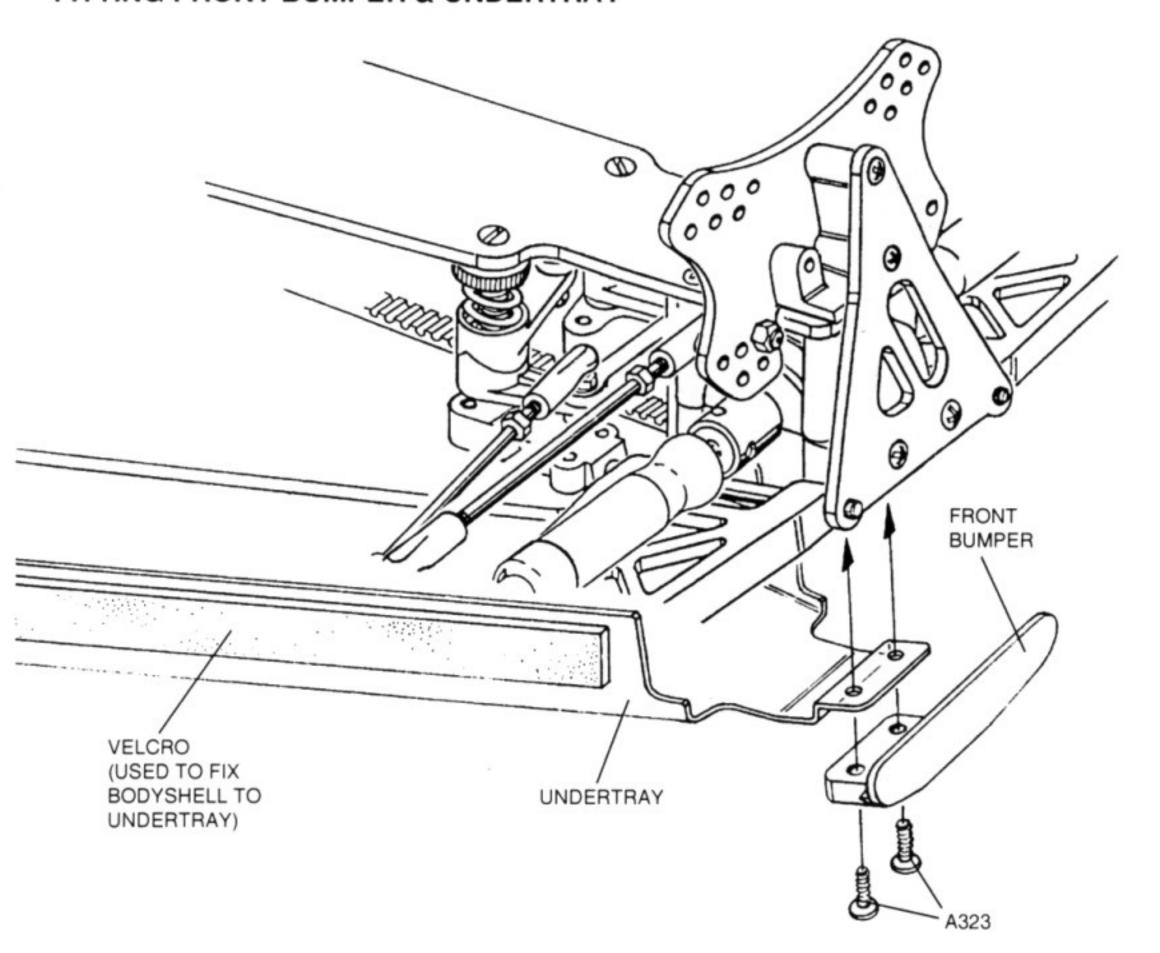


BODYSHELL

WIE WEST GENERATION



FITTING FRONT BUMPER & UNDERTRAY



Schumacher



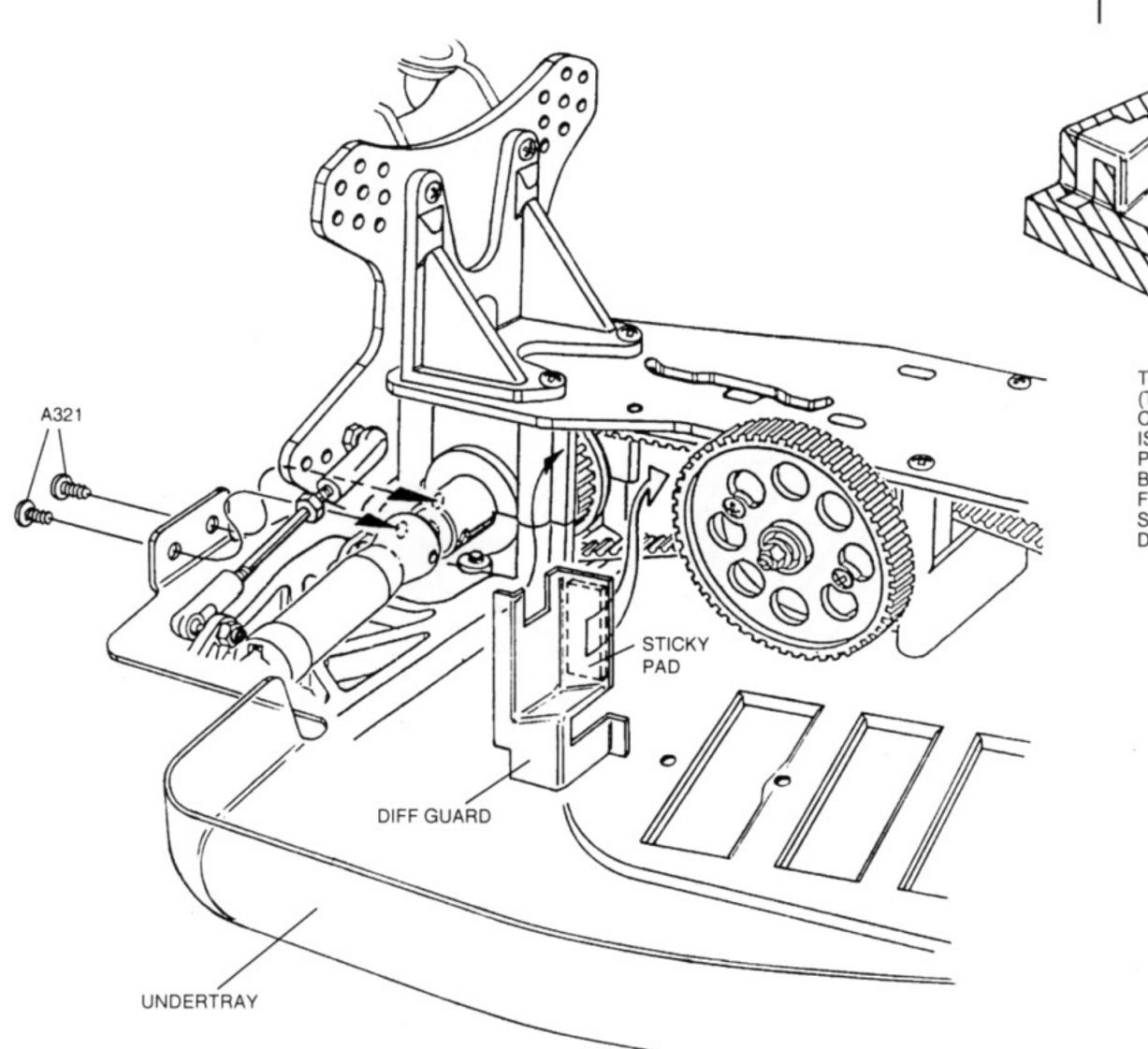
BUMPER & UNDERTRAY

HARDWARE

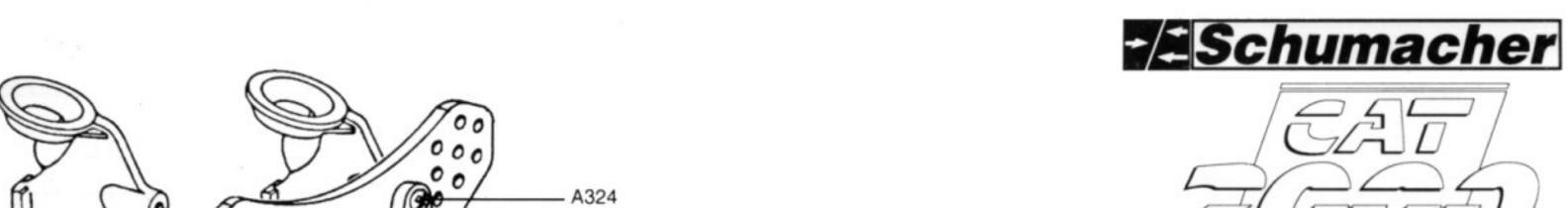




FITTING UNDERTRAY AT REAR & DIFF GUARD



THERE ARE 2 DIFF GUARDS (THEY ARE BOTH THE SAME) CUTAWAY SHADED AREAS. IT IS IMPORTANT TO TRIM THIS PART VERY CAREFULLY. THE BETTER THE LEXAN GUARD FITS THE LESS CHANCE OF STONES GETTING INTO THE DIFF.



REAR WING

WING MOUNT

BRACKET

FIX WING SIDE ~ PLATES TO WING

X2

USING STICKY PADS

CONSULT THE INDIVIDUAL

INSTRUCTION SHEETS

SUPPLIED WITH YOUR

OWN RADIO CONTROL

EQUIPMENT AND SPEED

CONTROLLER WHEN

FITTING INTO CAR

WING MOUNT 'O'RINGS

WASHER

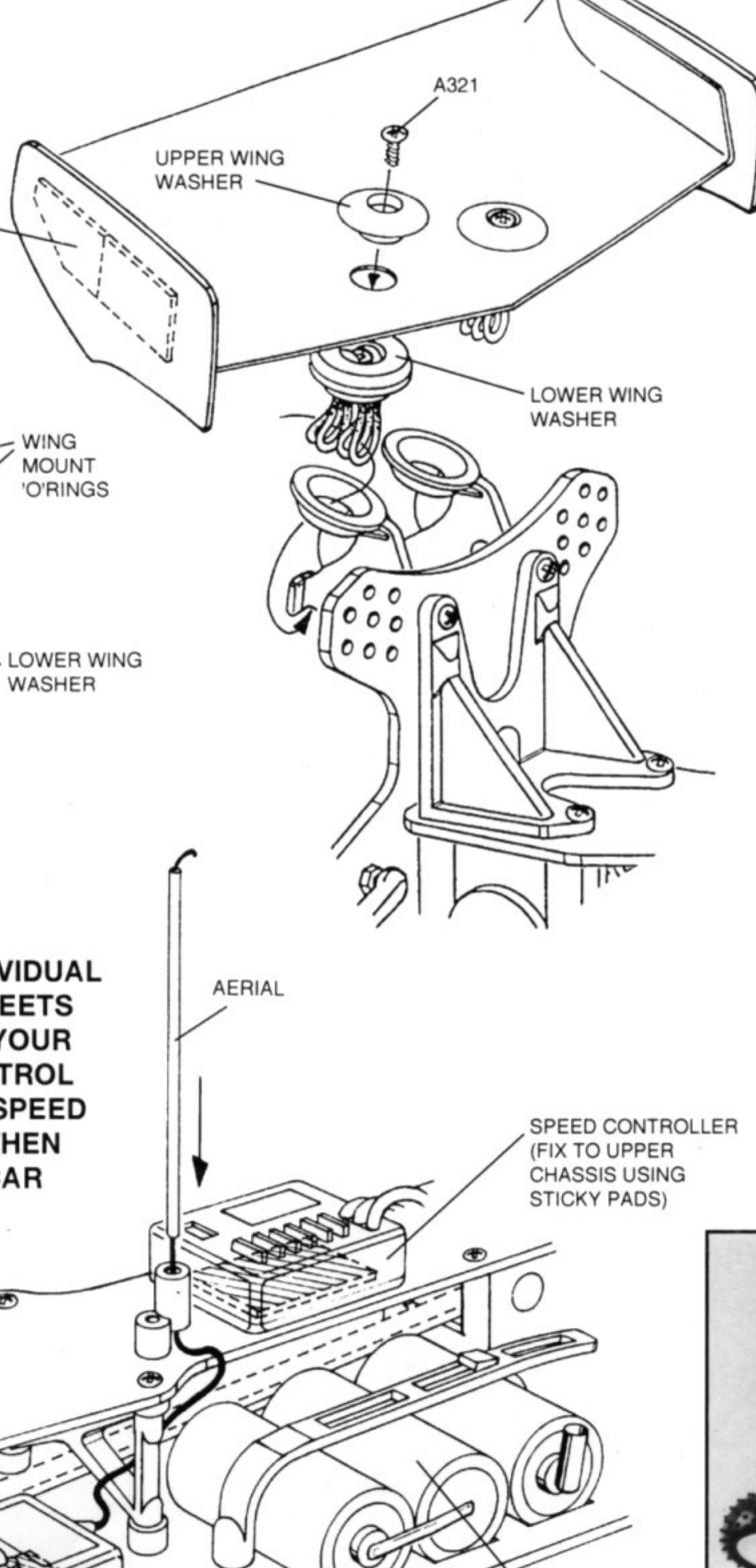
WOMANEINED VIEW EIN

WING

HARDWARE

A324 No4x1/2"
SELFTAP PANHD SCREW X2

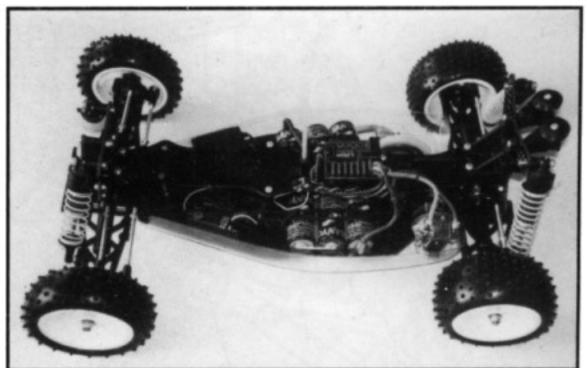
A321 No4x1/4"
SELFTAP PANHD SCREW X2



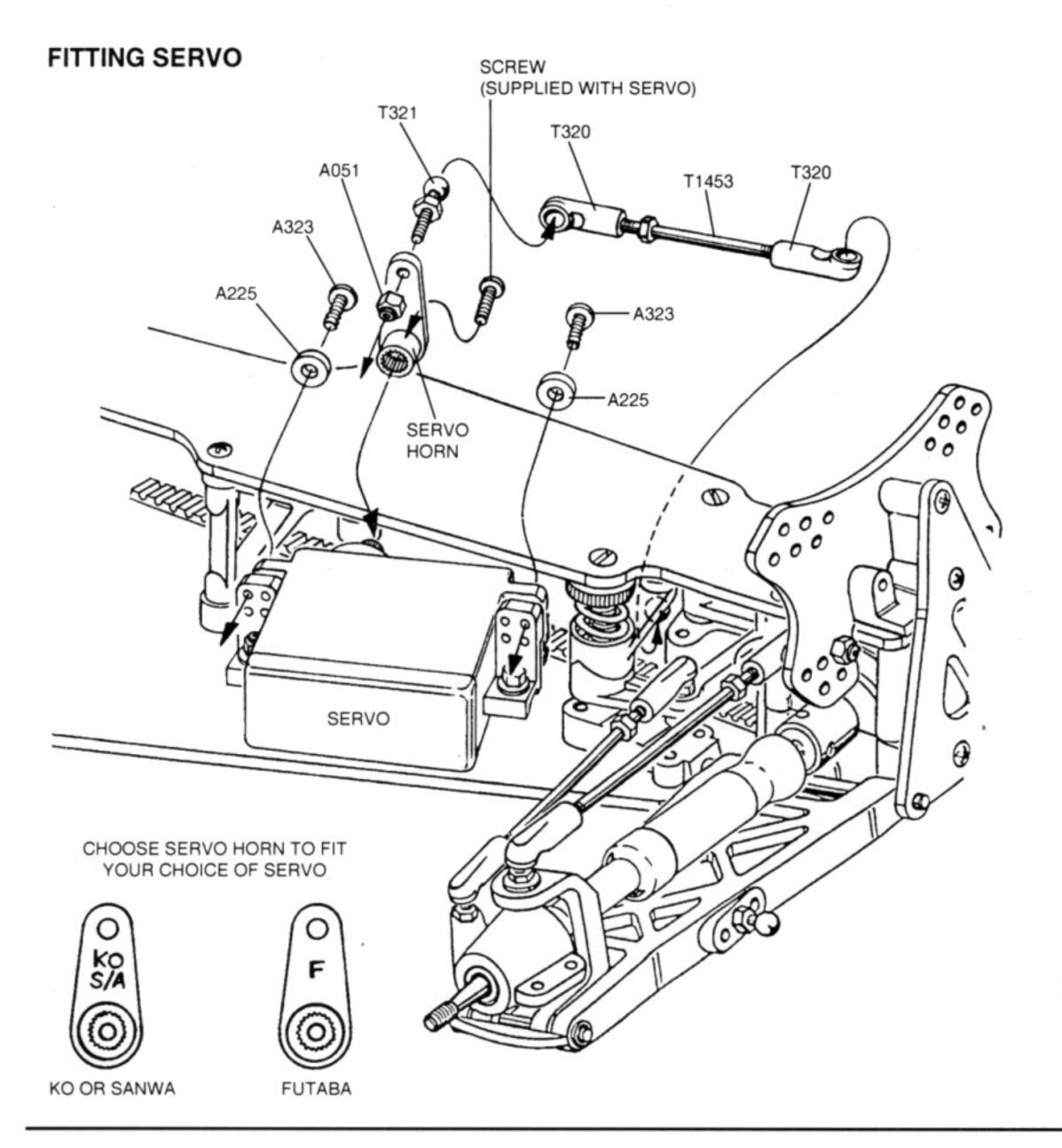
NICADS

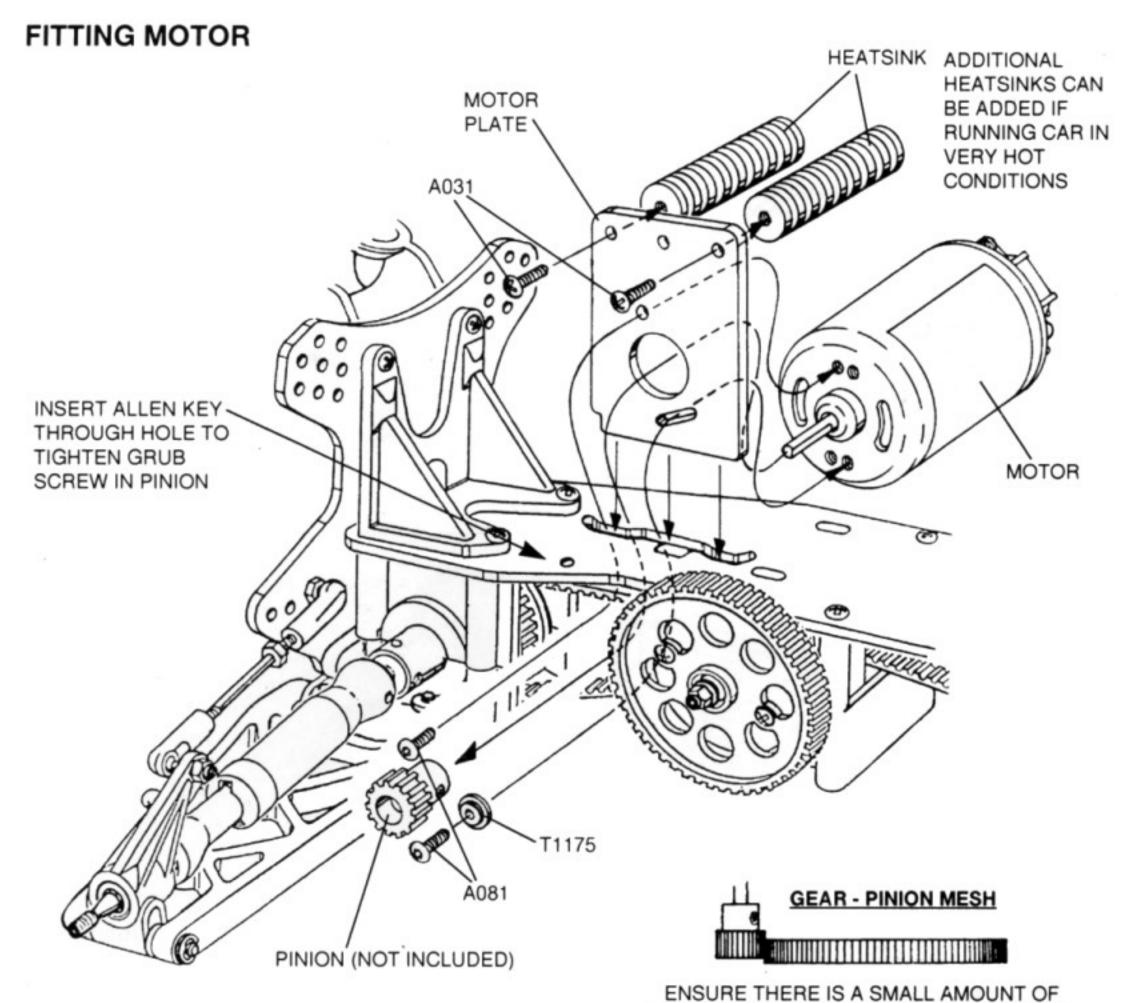
RECEIVER (FIX TO CHASSIS

USING STICKY PADS)



THIS PHOTO SHOWS A CAR FULLY WIRED UP AND READY TO RUN





PLAY BETWEEN GEARS TO REDUCE DRAG

Schumacher



FITTING ELECTRICS

HARDWARE



X1

T1453 TURNBUCKLE 39mm



T320 BALL JOINT SOCKET

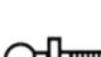


A323 No4x3/8" SELFTAP PANHD SCREW



X2

A051 M3 NYLOC NUT



T321 BALL STUD SHORT



A225 M3 STEEL WASHER

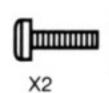


T1175 STEPPED WASHER

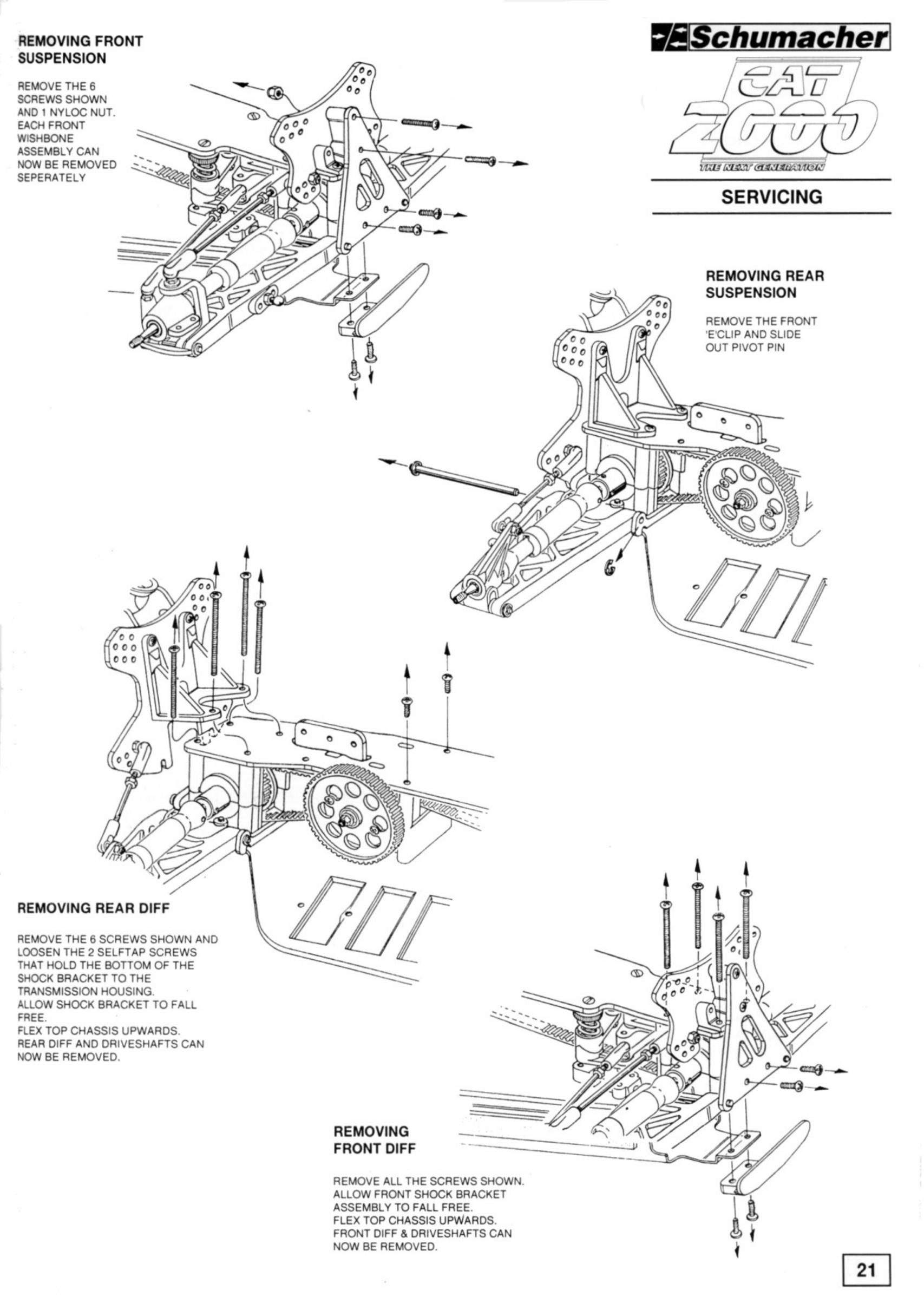


X2

A081 M3 x 8mm **BUTTONHEAD SCREW**



A031 M3x8mm PANHD SCREW



The table below shows the set up as kit build and set ups for certain types of track. Use these as starting points.

Pages 22, 23, 24 and 25 explain in detail how each adjustment affects the cars handling. Use these steps for fine tuning.

On the back cover is a set up sheet which can be photocopied and used to build up a reference record of track conditions and track settings.

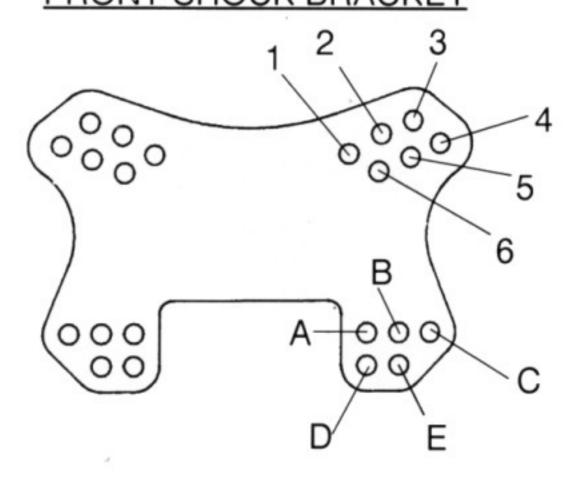


TRACK SETTINGS

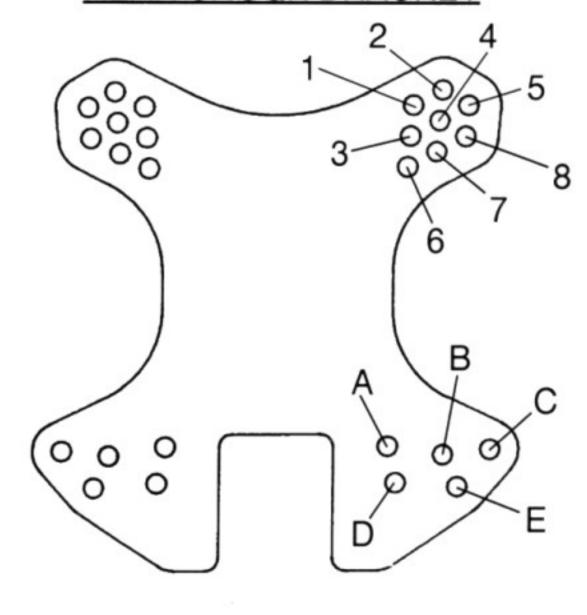
ADJUSTMENT	CAR BUILT AS BOOK	PACKED DIRT -DAMP	MULTI SURFACE. ASTRO TURF & ASPHALT	INDOOR FLAT CARPET	PACKED DIRT -DRY	GRASS	
FRONT SUSPENSION						- 21 H	
FRONT CAMBER	-1°	-1°	-2°	-1°	-1°	-2°	
FRONT CASTOR	0	0	0	0	+5°	+5°	
BUMP STEER SPACER	1.6mm	1.6mm	3.2mm	1.6mm	8mm	8mm	
FRONT TOE-IN	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	
FRONT RAKE ANGLE	15°	15°	15°	15°	10°	15°	
TOP LINK POSITION	A	D	D	В	D	D	
SHOCK ABSORBERS - FRONT							
SPRINGS	YELLOW	GREY	GREY	GREY	YELLOW	YELLOW	
OIL	30W	40W	30W	30W	40W	30W	
SHOCK POSITION - WISHBONE	MIDDLE (No2)	MIDDLE (No2)		OUTER (No3)		MIDDLE (No2)	
SHOCK POSITION - TOP	3	1	2	3	6		
HOLES OPEN IN PISTON	4	4	4	1	4	3	
(SUSPENSION STIFFNESS)	6.0	9.0	11.3	11.3	6.0	60	
(SUSPENSION DAMPING)	18.8	24.5	23.6	23.6	24.5	6.0	
REAR SUSPENSION	10.0	24.0	23.0	23.0	24.5	18.8	
REAR CAMBER	-1°	-1°	-2°	0°	10	00	
REAR TOE-IN (ACTUAL)	3°	3°	3°	10	-1°	0°	
REAR HUB CARRIER PIN LOCATION	LOW	HIGH	LOW	-	3°	3°	
TOP LINK POSITION	A			LOW	HIGH	HIGH	
WHEELBASE	MED	SHORT	A	B	CHODT	A	-
SHOCK ABSORBERS - REAR	IVIED	SHORT	MED	LONG	SHORT	SHORT	
SPRINGS	YELLOW	GREY	YELLOW	DILLE	VELLOW	VELLOW	
OIL	30W			BLUE	YELLOW	YELLOW	
SHOCK POSITION - WISHBONE		40W	40W	30W	40W	30W	
SHOCK POSITION - TOP	7	MIDDLE (No2)	7	OUTER (N03)	MIDDLE (No2)	MIDDLE (No2)	
HOLES OPEN IN PISTON	1	6	1	3	6	2	
(SUSPENSION STIFFNESS)	0.4	4	4	4	4	4	
(SUSPENSION DAMPING)	8.4	12.6	10.0	20.4	8.4	8.4	
TRANSMISSION	26.3	34.2	40.7	31.3	34.2	26.3	
SLIPPER CLUTCH (SLIP DIST)	0.05 matras	0.05	0.05	0.05	0.50		
PINION	0.25 metres SEE GEAR CHART	0.25 metres	0.25 metres	0.25 metres	0.50 metres	0.25 metres	
SPUR GEAR		15 T	18 T	16 T	18 T	16 T	
MOTOR TURN	SEE GEAR CHART	95 T	95 T	95 T	95 T	95 T	
CELLS POSITION	EODWARD.	FORMARR	12 x 2	12 x 2	13 x 3	11 x 2	
HEAT SINKS	FORWARD	FORWARD	REARWARD	REARWARD	FORWARD	FORWARD	
BODYSHELL CUTOUTS	SIDE & TOP	5 TOP	CIDE 4 TOD	0105 0 700	2	3	
TYRES	SIDE & TOP	TOP	SIDE & TOP	SIDE & TOP	SIDE & TOP	SIDE & TOP	
FRONT	1165240	LIGERGI - E	LIGETEL	LICEARI E	LIOSOO! E	HOEKE L. E.	
REAR	U6534C	U6566I + F		U6517L + F	U6566I + F	U6515J + F	
	U6532A	U6565H + F	U6516K + F	U6535D + F	U6565H + F	U6516K + F	
DEAD ANTI-DOLL BAD							
REAR ANTI-ROLL BAR							
FRONT ANTI-ROLL BAR							

TYRES: F = FOAM INSERT

FRONT SHOCK BRACKET



REAR SHOCK BRACKET



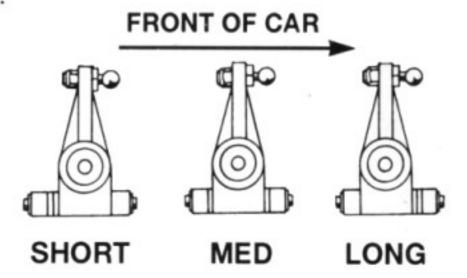
Make sure screws are tight, recheck after each race.

WHEELBASE

The cars wheelbase can be altered by moving the washers that sit between the rear hub carrier and the wishbone.

There are 3 possible settings.

Generally the shorter wheelbase gives more rear traction, a longer wheelbase improves steering response.





TRACK SETTINGS

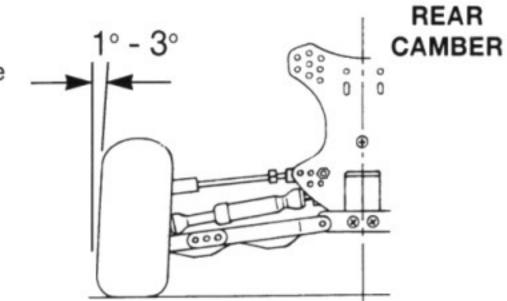
3 DIFF

If the transmission is correctly built you should hear a clicking sound when you spin the front wheels. If you don't, check layshaft assembly for free movement of oneway dog. If the differentials are correctly built as in the transmission steps they should not need adjusting during racing. Any slip adjustment should be done on the slipper clutch.

DO NOT LOOSEN THE THE DIFF TO ACHIEVE SLIP.

During maintenance when cleaning diffs be careful to reassemble the correct way.

If diff does become loose (noticeable by a 'squark' coming from the car when accelerating from standstill) tighten by following steps in Transmission section.



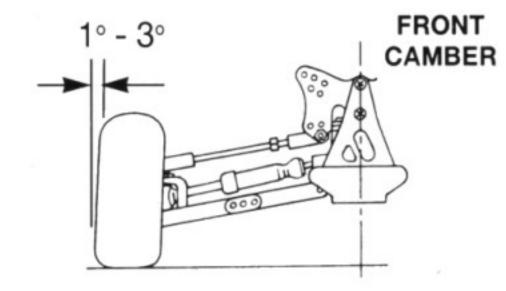
A REAR CAMBER

The rear wheels should be set at negative camber. This means that the top of the wheels lean inward. Adjustment is carried out by turning the top link. The righthand thread of the link is nearest the hex. Adjust to be the same both sides.

Too much negative camber and you will have begin to have less traction.



The front wheels should be set at negative camber. Adjust to be the same both sides. Generally the more negative camber, the more steering you will get at high and medium speeds. Too much negative camber and you will begin to have less steering.



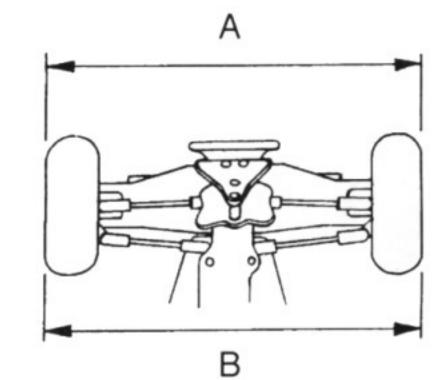
FRONT TOE IN

6

The front track rods are adjustable, similar to the suspension top links. Set the front wheels to be parallel to each other when pointing straight ahead. If conditions are slippery add 1 - 2 deg toe-in, this will make the car steer a little less. Toe-out will give more steering at low speed, but may make the car more unstable on corner exit.

A greater than B = toe-out A less than B = toe-in

A equal to B = parallel (standard setting)



HIGH

REAR TOE IN & OUT BOARD PIVOT PIN LOCATION

The rear hub carriers have inserts which alter the toe in and the height of the pivot pin. Each insert moulding has an arrow marked on it and a number, with or without a degree sign (°). There are 3 different inserts, marked 0, 1 and 2.

By putting the inserts in the hub carrier in different ways toe in can be varied from 1° to 5°, and the outboard pivot pin can be high or low.

The chart shows the possible settings, dealing with the righthand side only.

If the righthand side has an insert with a degree sign on it, the lefthand side must have the same value insert without a degree sign on it - and vice versa.

INSERT	PIVOT PIN	ACTUAL
	LOCATION	TOE IN
2	LOW	5°
1	LOW	4°
0	LOW	3°
O°	LOW	3°
1°	LOW	2°
2°	LOW	1°
2°	HIGH	5°
1°	HIGH	4°
O°	HIGH	3°
0	HIGH	3°
1	HIGH	2°

ENSURE TOE IN AND PIVOT PIN LOCATION ARE THE SAME BOTH SIDES.

More rear toe in will give more power understeer and more stability and traction at the rear, recommended for tracks with low traction.

LOW

The outboard pivot pin:

On low grip tracks run with the pivot pin high (close to the axle). This will give more stability and be better through bumpy corners.

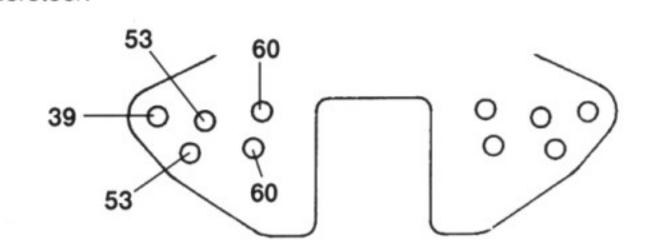
On high grip tracks run with the pivot pin low. This reduces the tendency of the car to understeer.



Altering the rear top link position changes the roll centre.

HIGH

Different length turnbuckles need to be used depending on the hole chosen. Using a shorter link in one of the lower holes will increase steering response.



SPRING SPACERS / RIDE HEIGHT

Spring spacers only adjust the ride height, not the suspension stiffness.

Adjust the spring spacers and shock positions so that your required ride height is achieved but always maintaining some droop travel.

SUSPENSION TUNING

When setting up your car for handling the choice of damping, spring rate and of mounting holes for the shock absorbers are all very important. These factors combine to give you 'Suspension Stiffness' and 'Damping Stiffness'

which you must consider when working on the suspension settings of your car.

The 'Suspension Stiffness' tables show what is achieved with various combinations of spring rate and wishbone holes. The 'Damping Stiffness' tables show what is achieved with various combinations of piston holes and wishbone holes.

The top shock mounting position should be chosen primarily to give the required ride height and is not very significant as far as 'Stiffness' and 'Damping' are concerned. However, as the shock absorber angle becomes more extreme the effective 'Stiffness' and 'Damping' are reduced slightly.

THE WEST GENERATION

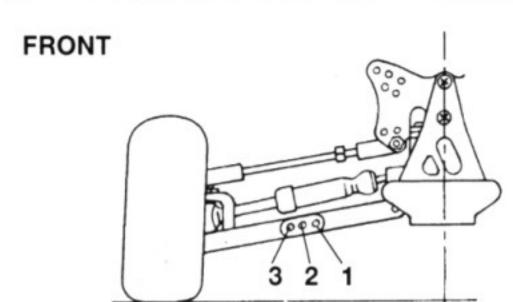
TRACK SETTINGS

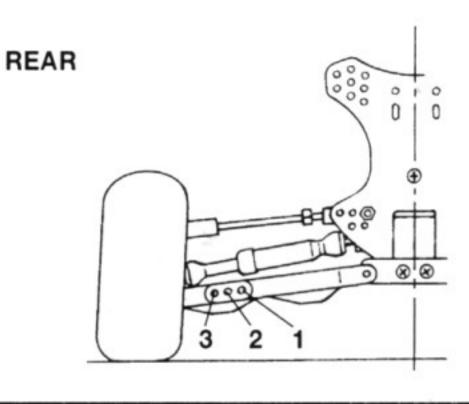
Schumacher

FRONT

SUSPENSION STIFFNESS	SPRING	WISHBONE HOLE No		
22.7 HARD	BLACK	3		
18.1 15.1	BLACK BLUE	2		
13.9	BLACK	1		
12.0	BLUE	5		
11.3 9.3	GREY BLUE	3		
9.0	GREY	2		
7.6	YELLOW	3		
7.0 6.0	GREY YELLOW	1 2		
5.7	WHITE	3		
4.6	YELLOW	1		
4.5 3.5 SOFT	WHITE	1		

WISHBONE HOLE	No OF HOLES IN PISTON	DAMPER STIFFNESS AT WHEEL		IESS	
			OIL W	EIGHT	
		10W	20W	30W	40W
3	1	34.4	54.0	75.6	111
	2	32.9	50.4	68.7	108
	3	19.4	36.0	58.2	80.4
	4	9.8	14.0	23.6	30.7
2	1	27.4	43.0	60.2	88.5
1	2	26.2	40.1	54.7	86.0
	3	15.4	28.7	46.3	64.0
	4	7.8	11.1	18.8	24.5
1	1	20.5	33.1	46.4	68.2
	2	20.0	30.9	42.2	66.3
	3	11.9	22.1	35.7	49.4
	4	6.0	8.6	14.5	18.9





REAR

SUSPENSION STIFFNESS	SPRING	WISHBONE HOLE No
20.4 HARD	BLUE	3
16.8	BLUE	2
15.0	GREY	3
13.9	BLUE	1
12.6	GREY	2
10.5	GREY	1
10.0	YELLOW	3
8.4	YELLOW	2
7.5	WHITE	3
6.9	YELLOW	1
6.3	WHITE	2
5.2 SOFT	WHITE	1

NOTE: AMBIENT TEMPERATURE AFFECTS DAMPER STIFFNESS

20w oil at 50° F (10° C) is approximately the same as 30w oil at 80° F (27° C)

WISHBONE	No OF HOLES IN PISTON	DAMPER STIFFNESS AT WHEEL OIL WEIGHT		ESS	
		10W	20W	30W	40W
3	1	45.5	71.6	100.2	147.4
	2	43.6	66.8	91.1	143.1
	3	25.7	47.7	77.0	106.6
	4	13.0	18.6	31.3	40.7
2	1	38.3	60.1	84.2	123.8
	2	36.6	56.1	76.5	120.3
	3	21.6	40.0	64.8	89.6
	4	10.9	15.6	26.3	34.2
1	1	31.6	49.7	69.6	102.4
	2	30.3	46.4	63.3	99.4
	3	17.8	33.1	53.5	74.1
	4	9.0	12.9	21.7	28.3

See chart on page 21 for actual set ups. Use these tables for fine tuning.

Use these tables every time you change the suspension settings and record the settings and results for future use. Experiment to find the settings that suit your driving style and the prevailing track conditions.

NOTE: All Schumacher springs are colour coded. The colour denotes the spring rate.

There are three sizes S (short), M (medium) L (long)

RATE	COL	OUR
DAIL	COL	.OUn

AIE	COLOUR
1.5	WHITE

2 YELLOW 3 GREY

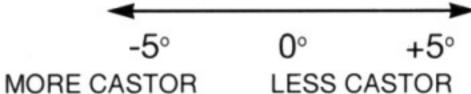
BLUE

BLACK

10 FRONT CASTOR - OPTIONAL EXTRA (SPEED SECRETS)

The front castor is the angle of the front king pin in relation to a perpendicular line to the ground. When running different castor angles and top link

positions a washer(s) will need to be added below the steering trackrod ball stud at the wheel to eliminate bump steer. (Bump Steer Kit available - Speed Secrets)



With more castor car is a little more stable coming out of corners and gives more high speed steering. With less castor the car has more low speed steering and sharper 'turn in'.



TRACK SETTINGS

11 FRONT RAKE ANGLE - OPTIONAL EXTRA (SPEED SECRETS)

The front rake angle can be changed by changing the front shock brace.

The kit comes with a brace which gives a rake angle of 15°. There are 2 other braces available which will give front rake angles of 10° and 20°

For most conditions 15° is generally preferred.

However, other rake angles may be more suitable to your driving style and the track conditions - experiment!

19 TYRES

The front and rear tyres in the kit will give safe predictable handling for most conditions. However, Schumacher CAT range of tyres offer a wide range of options to cover all extremes of operating conditions. The spikes on the tyres may be cut to adjust the handling. For the full range of Schumacher tyres see list on centre pages.

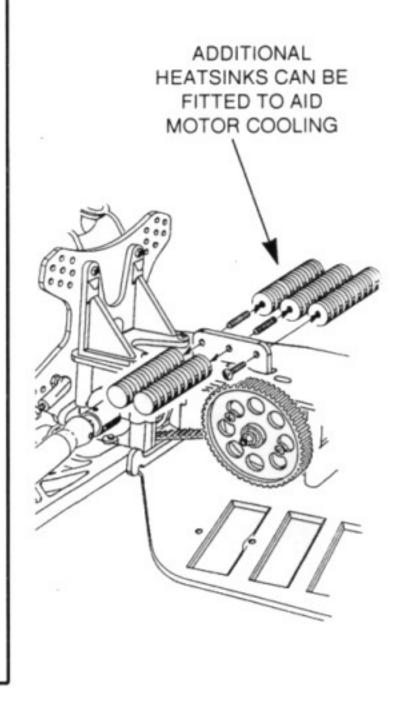
12 GEAR RATIO CHART - FOR 5 MINUTE RACE USING 1700 mAh NICADS

PINION	SPUR GEAR	OVERALL RATIO	APPROX MOTOR WIND	
28	86	6.14	27 T	_
28	89	6.36		
27	86	6.37	A	
27	89	6.59		
26	86	6.62		
26	89	6.85		
25	86	6.88		
25	89	7.12	20 T	
25	92	7.36	l ~ l	
24	86	7.17	5	
24	89	7.42	MILD MOTOR	
24	92	7.67	Σ	
23	86	7.48		
23	89	7.74	Ī	
23	92	8.00	17 T	
22	86	7.82		
22	89	8.09		
22	92	8.36	16 T	
22	95	8.63	15 T	
21	86	8.19		
21	89	8.48		
21	92	8.76		
21	95	9.05		

ı	PINION	SPUR	OVERALL	
ı		GEAR	RATIO	MOTOR WIND
	20	86	8.60	
ı	20	89	8.90	11 10 10 10 10 10 10 10 10 10 10 10 10 1
	20	92	9.20	15 T
	20	95	9.50	
	19	86	9.05	
	19	89	9.37	
	19	92	9.68	
	19	95	10.00	14 T
	18	89	9.89	· c
	18	92	10.22	HOT MOTOR
	18	95	10.55	6
	17	89	10.47	13 T ≥
	17	92	10.82	5
	17	95	11.18	
	16	89	11.13	12 T
	16	92	11.50	20.00
	16	95	11.86	
	15	92	12.27	11 T
	15	95	12.67	
				↓
				,
1				l .

ADDROY

DINIONI SPLIB OVERALL



1/1 LUBRICATION

All bearings must be lubricated, especially during wet weather. Always remove bearings and clean after running in wet conditions. Plastic parts should NOT be lubricated. Only use silicone grease inside the differential and only use axle grease in the thrust races.

4 C GENERAL

In general the car should understeer, - this means the front wheels slide more than the rear wheels during cornering. You can get this by cutting the spikes of the front tyres down. It helps to have two or three sets of front tyres with different levels of spikes to test for the best option.

Run the lowest ride height that track conditions allow - a low car always corners better than a high car. Use the softest damper settings that stop the wheels from bouncing. It is easy to over damp the car and cause bouncing at high speed.



SET UP SHEET

(CIRCLE THE SETTINGS USED)

DRIVER:

TRACK CONDITIONS:



RAKE CASTOR TOE-IN

FRONT

SHOCK

BRACKET

10° 0°

-1°

0000

000

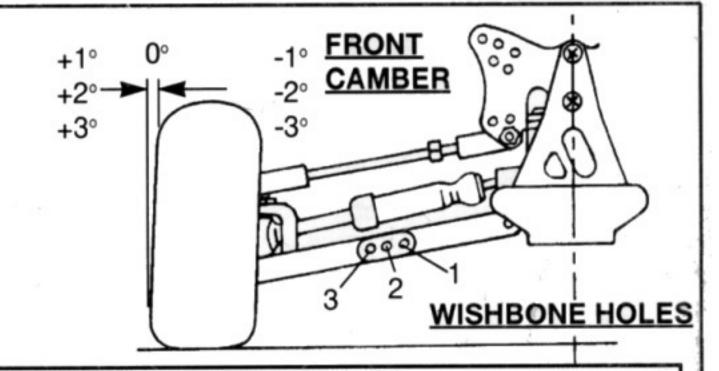
15° +5°

-2°

20° -5°

+8°

-8° +1°





OIL

HOLES OPEN

VALVED

SPRINGS **SPACERS**

50W 60W 70W 80W 30W 40W

YES NO

WHITE YELLOW GREY BLUE BLACK

mm

REAR SUSPENSION

TOE-IN INSERT OUTBOARD PIVOT PIN

REAR CAMBER

+1°

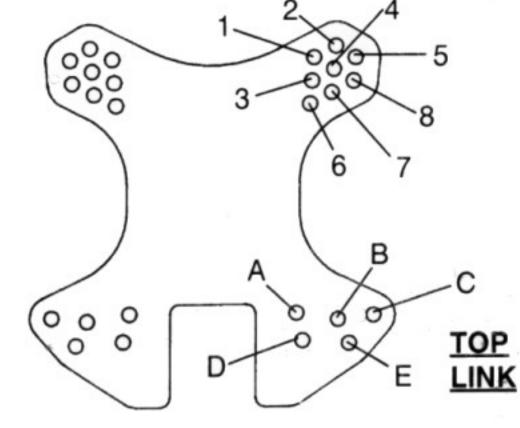
+2°

HIGH LOW

+1°

(ACTUAL TOE-IN = , 0° INSERT = 3° ACTUAL TOE-IN)

REAR SHOCK BRACKET

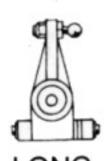


WHEELBASE

REAR OF CAR SHORT

MED





WISHBONE HOLES

SHOCKS - REAR OIL

HOLES OPEN VALVED SPRINGS

SPACERS

10W 20W 30W 40W 50W 60W 70W 80W

YES NO

WHITE YELLOW GREY BLUE BLACK

mm

TRANSMISSION & CHASSIS

CHASSIS - CELLS SPUR GEAR PINION **HEATSINKS**

SLIPPER (SLIP DIST) DRIVESHAFTS ROLLER

REAR FORWARD 92T 95T 98T 89T 18T 16T 17T 15T 4 0.25m 0.50m PLAIN

CELLS - TYPE

20T 21T 22T 19T **OTHERS**

0.75m

SERVO SPEED CONTROLLER

TYRES

RECEIVER

FRONT REAR

MOTOR TYPE / WIND

FOAMS - YES/NO

FOAMS - YES/NO FRONT HEX DRIVES - WIDE NARROW REAR HEX DRIVES - WIDE NARROW

BODYSHELL CUT OUTS TOP DUCT

SIDE DUCT

OTHERS

WING TYPE.....