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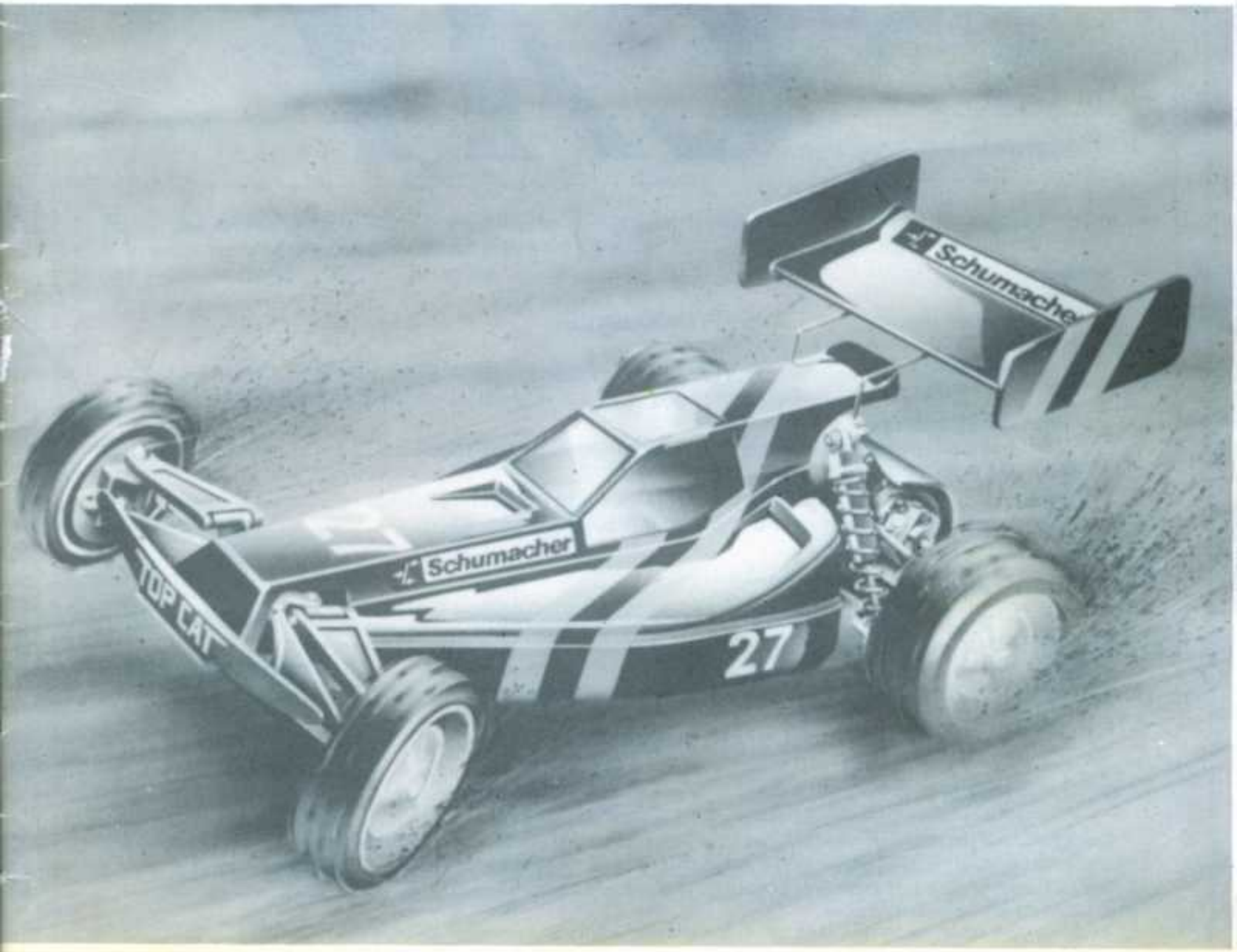
TOP CAT™

bred for success by World Champions



INSTRUCTION MANUAL

2nd ISSUE

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INTRODUCTION

Congratulations on choosing the TOPCAT. It is ideal for novice and expert alike and offers the latest off road technology combined with the highest quality materials and simple modular construction.
Whether you intend driving at home or competing on the race track, I am sure you will be more than satisfied.
We have spent many hours developing TOPCAT to give you reliability and performance.
We hope that you have fun and enjoy your racing.

Cecil Schumacher

IMPORTANT SAFETY NOTES

1. 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.
2. Shock fluids, grease and adhesives should be kept out of childrens reach. They are not toxic, but were not intended for human consumption.
3. Exercise care when using any hand tools, sharp instruments and power tools during construction.
4. Carefully read all manufacturers warnings and cautions for any glues or paints that may be used for assembly purposes.

THREAD LOCK

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

GREASE

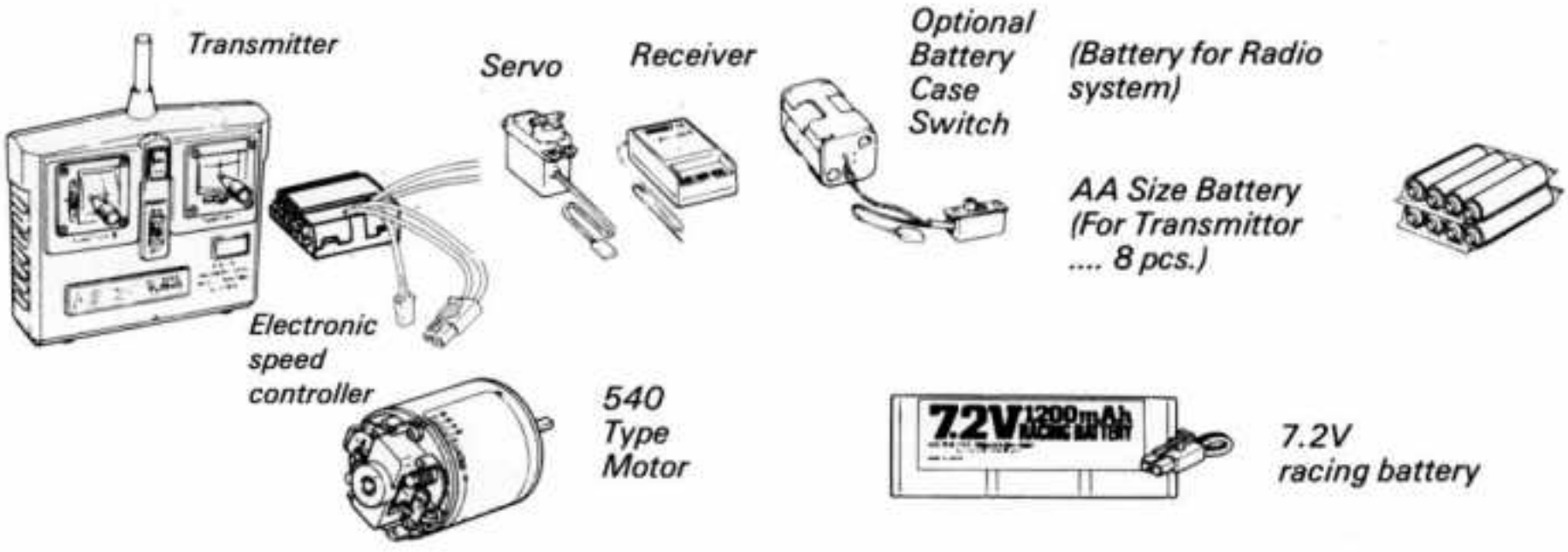
Points where silicone grease (MS 1 or equivalent) should be applied. (it will reduce friction and assure smooth movement.)

Points where oil should be applied. (Light machine oil, 3 in 1 or similar.)

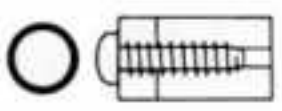
THINGS NEEDED BESIDES THE KIT

(2 Channel Radio System)

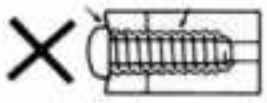
Two types of radio control sets are on the market, the stick type and the steering wheel type. Choose which ever you like.



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.

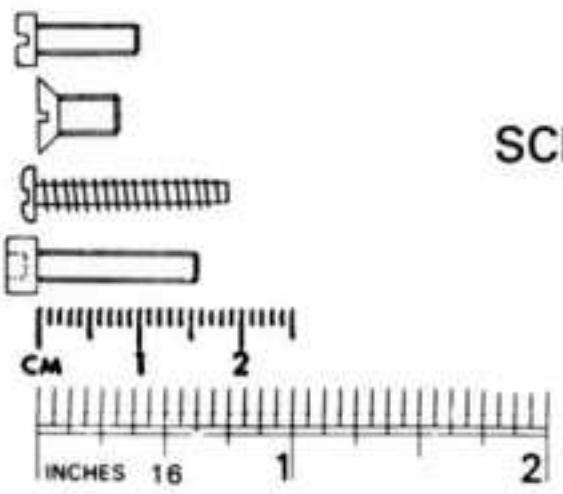


Good



Over tighten and may strip the thread in the plastic

CH HD Cheese head
CSK HD Countersunk head
PAN HD Self tap thread
CAP HD Cap head



SCREW IDENTIFICATION CHART

TOOLS REQUIRED FOR ASSEMBLY

Screwdriver
Spanner 5.5mm A/F
Spanner 1/4 A/F
Drill (for holes in bodyshell & covers)
Pliers
Vice
Sharp Knife
File
Pointed nose pliers or cutters

MATERIALS REQUIRED

(not in kit)

Threadlock
Light oil for shock absorbers
Polycarbonate paint for bodyshell
Motor, batteries, radio control equipment speed controller

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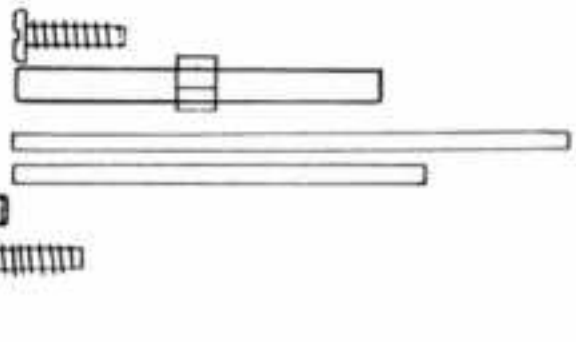
REAR SUSPENSION

Bag No. U552

HARDWARE

Self tap screw No.4 x 3/8 pan head
Stud M3 x 35mm long
A412 Stainless steel pin 2 x 54mm long
A411 Pivot pin 2 x 40mm
M3 x 20 Pan head screw
No.4 x 5/8 Pan head self tap screw
M3 x 10 pan head screw
M3 Nut
Nylon washer 8 x 3 x 1.6mm

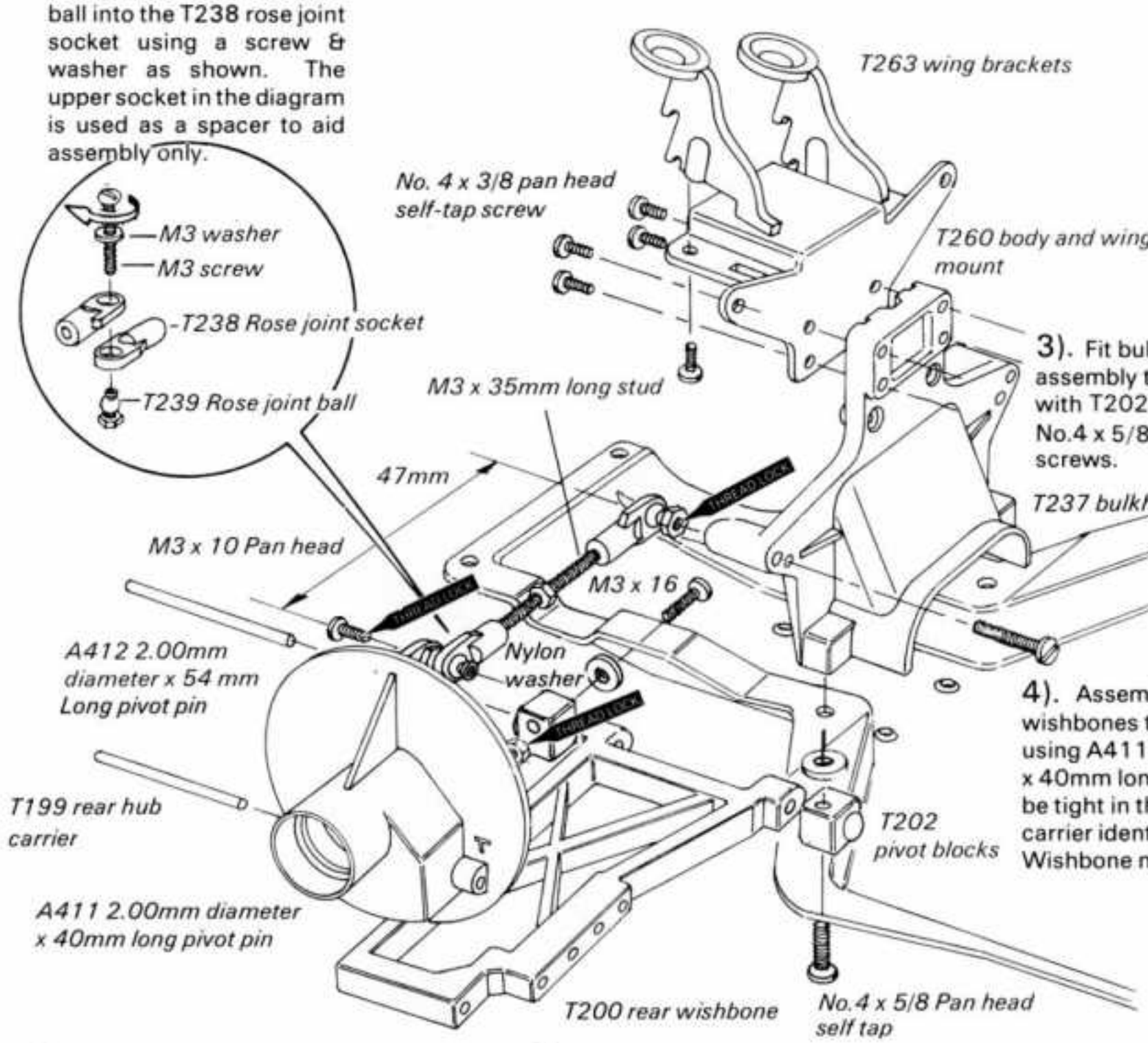


NOTE:
Before assembly it is advisable to smooth all the edges of the alloy chassis using a fine grade of abrasive paper.

1). Fit T260 body and wing mount to back of bulk-head using four No.4 x 3/8 pan head self-tap screws.

2). Fit T263 wing brackets to body and wing mount using No.4 x 3/8 pan head self-tap screws.

6). Assemble 4 rose joints by fitting the T239 rose joint ball into the T238 rose joint socket using a screw & washer as shown. The upper socket in the diagram is used as a spacer to aid assembly only.



3). Fit bulkhead assembly to chassis together with T202 pivot blocks using No.4 x 5/8 pan head self-tap screws.

4). Assemble rear wishbones to hub carriers using A411 2.00mm diameter x 40mm long pivot pin. Pin will be tight in the boss on the hub carrier identified by 'T'. Wishbone must pivot freely.

5). Assemble wishbones to chassis using A412 2mm diameter x 54mm long pins & T202 pivot blocks using M3 x 16 pan head screw, nylon washer & M3 nut; secure with threadlock. Wishbones must pivot freely.

7). Make both rear suspension top links by screwing rose joints on each end of the M3 x 35mm long stud. Equalise thread engagement & make length approximately 47mm between centres of holes.

8). Fit top links, seating on the hexagon end, using M3 x 20 pan head screws in the inboard hole in the bulkhead and M3 x 10 pan head screws in the hub carrier. Tighten securely using thread lock.

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SHOCK ABSORBERS

Bag No. T555

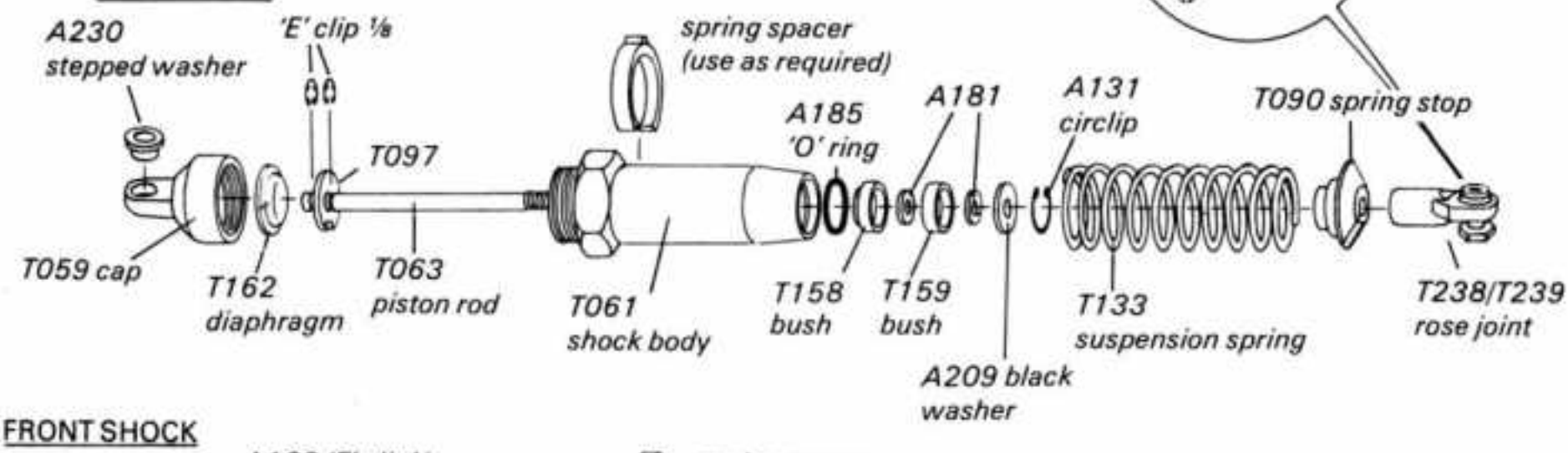
HARDWARE

A181 Silicone 'O' ring 1/8"
A185 'O' ring 5.0 x 1.6mm
T162 Shock absorber diaphragm
A209 Black washer 3.3 x 7.8 x 0.8
T059 Cap-shock absorber
T062 Piston rod 16mm stroke
T063 Piston rod 32mm stroke
T090 Spring stop
A230 Stepped washer
T092 Spring spacer 1.0
T093 Spring spacer 2.0
T094 Spring spacer 4.0
T095 Spring spacer 8.0
A038 M3 x 12 caphead

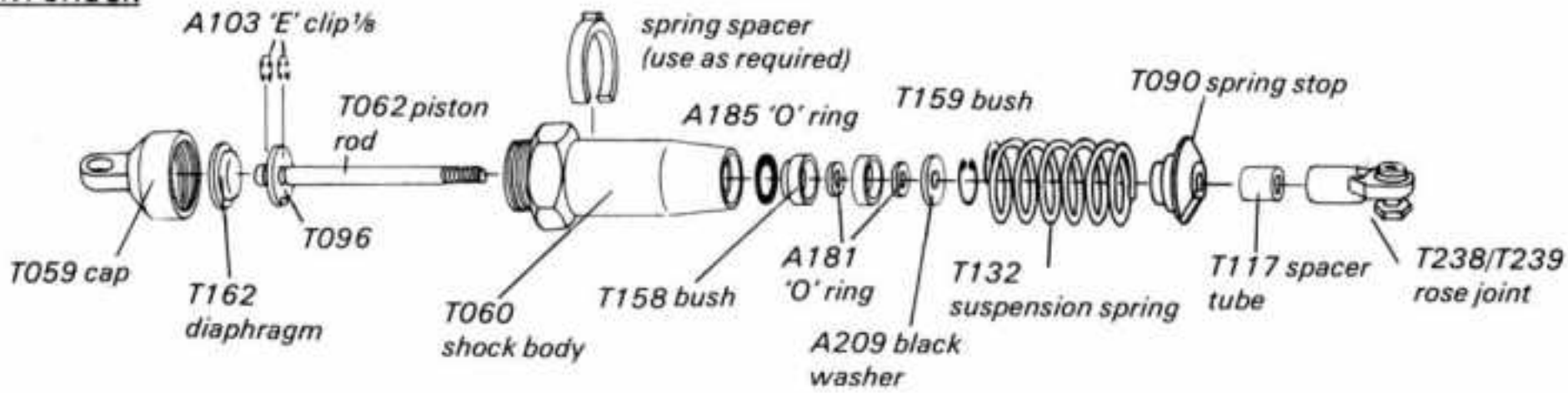
T238 Rose joint socket
T239 Rose joint ball
T096 Piston 1 sq.mm hole
T097 Piston 2 sq.mm hole
A208 Nylon washer
T117 Front spring stop spacer
T132 Suspension spring 045 x 8 x 1.5 front
T133 Suspension spring 045 x 11 x 2.5 rear
T158 Bush & seal housing
T159 Seal housing
A103 'E' clip 1/8 x 0.12"
A131 Circlip 8mm x 0.39
T060 Body short
T061 Body long
A039 M3 x 16 caphead

A048 M3 nut
A051 Nyloc nut

REAR SHOCK



FRONT SHOCK



Deburr circlip grooves and threads on piston rods T062/ T063 before assembly to avoid damage to the seals. Fit a small 'E' clip A103 to the lower groove in the front T062 piston rod, followed by a T096 piston (small notch) retained with a second 'E' clip.

Repeat the procedure with the T063 rear piston rod and T097 piston (large notch). Make sure all the 'E' clips are secure in their grooves; Check assembled piston in shock absorber body for clearance over the whole length of stroke.

Diagrams show the order of assembly for the shock absorber seals and bushes; the sequence being:- A185 'O' ring; T158 bush and seal housing; A181 'O' ring; T159 seal housing; A181 'O' ring A209 black washer; and finally, the A131 circlip to retain the assembly.

The above sequence is the same for all four shock absorbers. Lightly oil the four piston rods. Carefully push rods down through their respective shock absorber bodies to avoid damage to the seals. Screw two T239 rose joint assemblies to the bottom of the rear shock absorberpiston rods; do not damage the piston rod. Cut two 6mm lengths from the black T117 spacer tube and slide one of these onto each front piston rod before fitting the two T238 rose joint assemblies. Failure to do this will cause the spring stop to foul the centre trackrod. With the piston rods extended, fill the shock absorbers with a light oil. Work the pistons up and down to release any trapped air.

Fit the T162 shock absorber diaphragm, into the oil filled shock absorber body so that all air is expelled. Fit T059 cap and check for smooth action.

Fit the front suspension springs T132 to the front shock absorbers and retain with a T090 spring stop.

Repeat the procedure for the rear shock absorbers using the T133 rear suspension springs.

Insert spring spacers T092/ T093/T094/T095 as required to adjust the ride height.

Press the A230 stepped washer into the T059 cap of each rear shock absorber.

Fit M3 x 16 cap head screw to T260 mount and lock in place using M3 nuts.(see main diagram

Fit rear shock absorber and retain with one A208 nylon washer and one A051 nyloc nut. Do not fully tighten nut, shock absorber must have some clearance over the full range of suspension travel.

At the bottom, screw M3 x 12 cap head screw through rose joint ball and into the third hole out in the lower wishbone; hexagon head towards wishbone.

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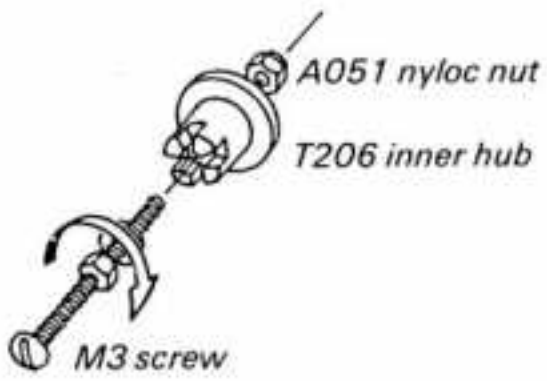
FRONT SUSPENSION

Bag No. U553

HARDWARE

Self tap screw No.2 x 3/8 pan head
M3 x 8 pan head screws
A051 Nyloc nut



1). Push an A051 nyloc nut into the two T206 inner hubs. Pull into position using an M3 screw, washer and nut as shown.

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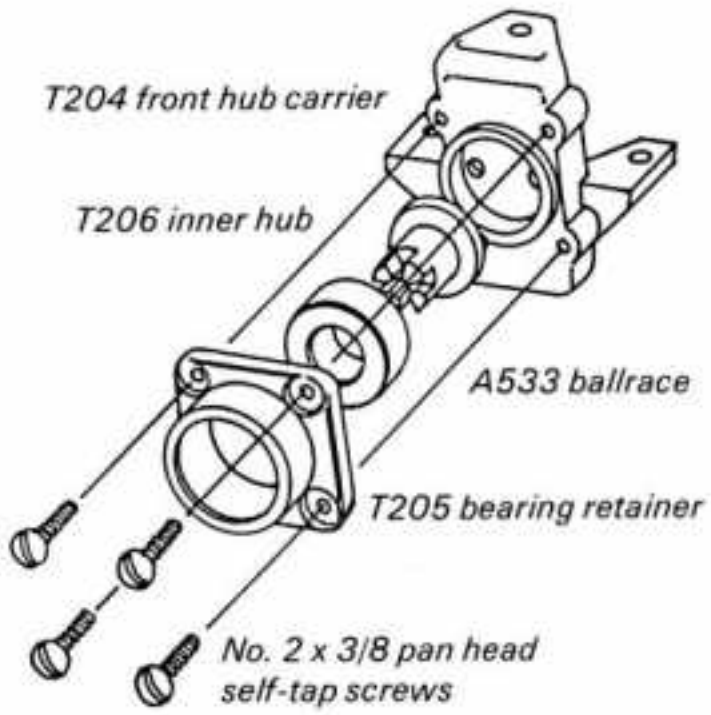
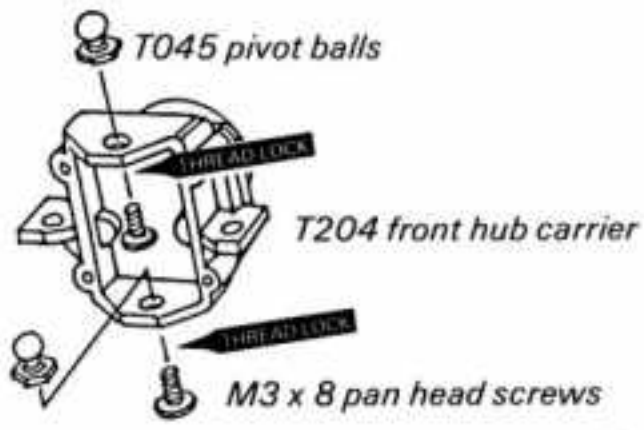
2). Push T206 inner hub into the A533 ballrace with the flange of the hub next to the brown bearing shield.



3). Push the bearing into the T205 bearing retainer.

4). Fasten the bearing retainer to the T204 front hub carrier using No.2 x 3/8 pan head self-tap screws. The black bearing seal should now be seen.
Make 2 off.



5). Fix T045 pivot balls to the top and bottom of the two hub carriers using M3 x 8 pan head screws; tighten securely and retain with a small amount of thread lock.

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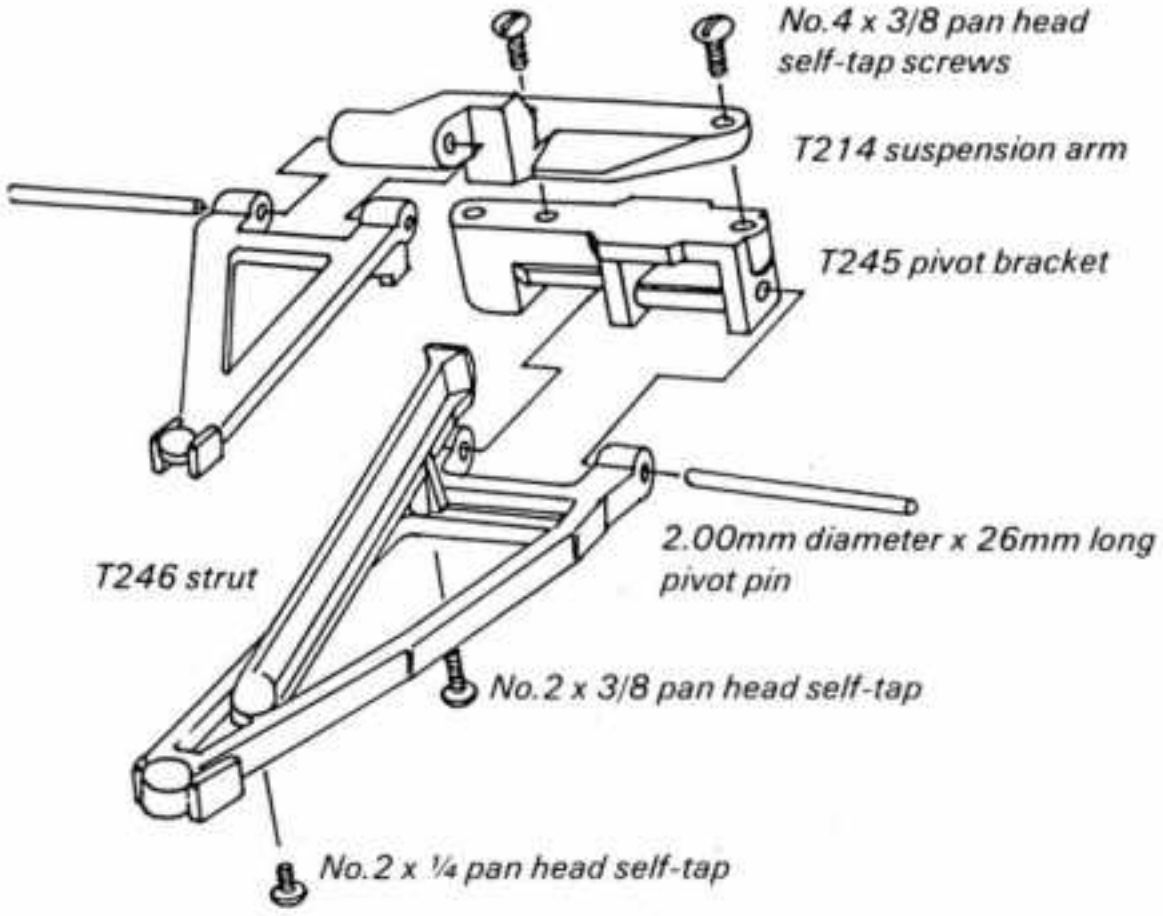
FRONT SUSPENSION

Bag No. U553

HARDWARE

Self tap screw No.4 x 3/8 pan head
Long pivot pin 2 x 26mm
Self tap screw No.2 x ¼ pan head
A413 Long pivot pin 2 x 14mm
A225 Steel washer
A042 Countersunk head screw M3 x 6

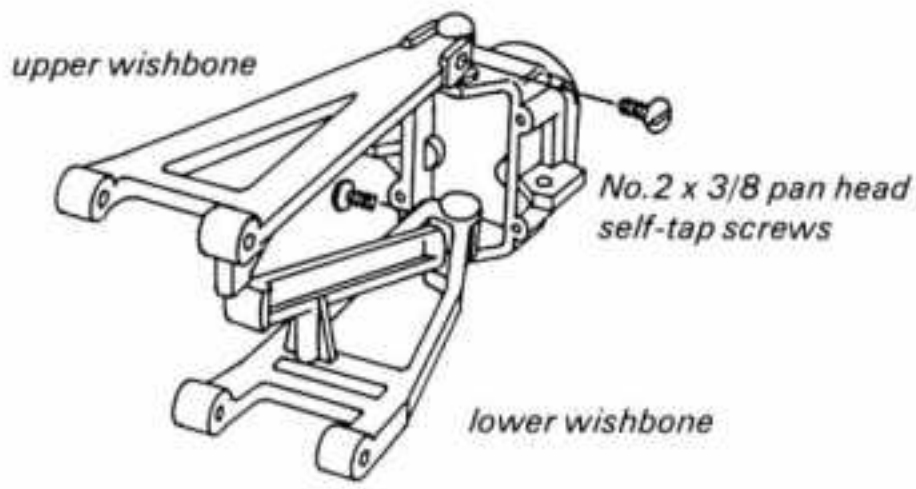


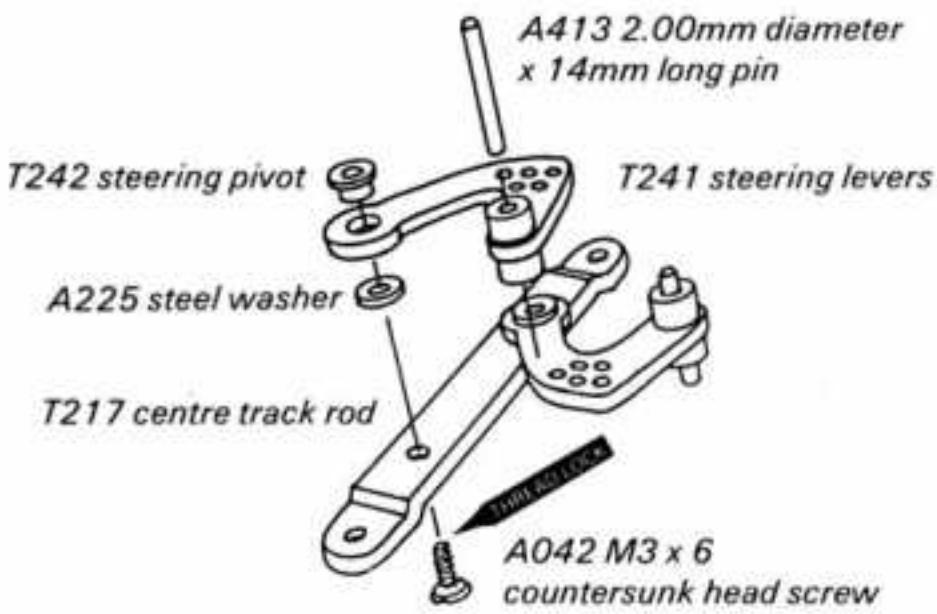
6). Fit a T245 pivot bracket to each of the suspension arms T213 and T214 using No.4 x 3/8 pan head self-tap screws.

7). Assemble T246 strut to each of the lower wishbones using No.2 pan head self-tap screws 3/8" long at the inner position and ¼" long at the outer position.

8). Fit the wishbones using 2.00mm diameter x 26mm long pivot pins. Wishbones must pivot freely. Pins are a tight fit in the suspension arms.

9). Fit the hub carrier assemblies into the wishbones by pressing the wishbone sockets into place on the ball pivots. The clamp screws, which secure the wishbones and provide adjustment in the case of wear, can now be fitted. They are No.2 x 3/8 pan head self-tap screws and should be fitted from the front for the upper wishbones and from the rear for the lower wishbones. Tighten screws sufficient to make ball slightly stiff then loosen a little until ball is free.





10). Fit the T241 steering levers to T217 centre track rod using T242 steering pivot, A225 steel washer and A042 M3 x 6 countersunk head screw. Levers must pivot freely. Fix screws firmly but do not overtighten and secure with thread lock. Push A413 2.00mm diameter x 14mm long pins into each steering lever leaving 3mm protruding each end of boss.

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FRONT SUSPENSION

Bag No. U553

HARDWARE

M3 x 12 Pan head screw

M3 x 8 Countersunk head screw

A095 Stud M3 x 45

Countersunk head self-tap screws No.4 x 3/8

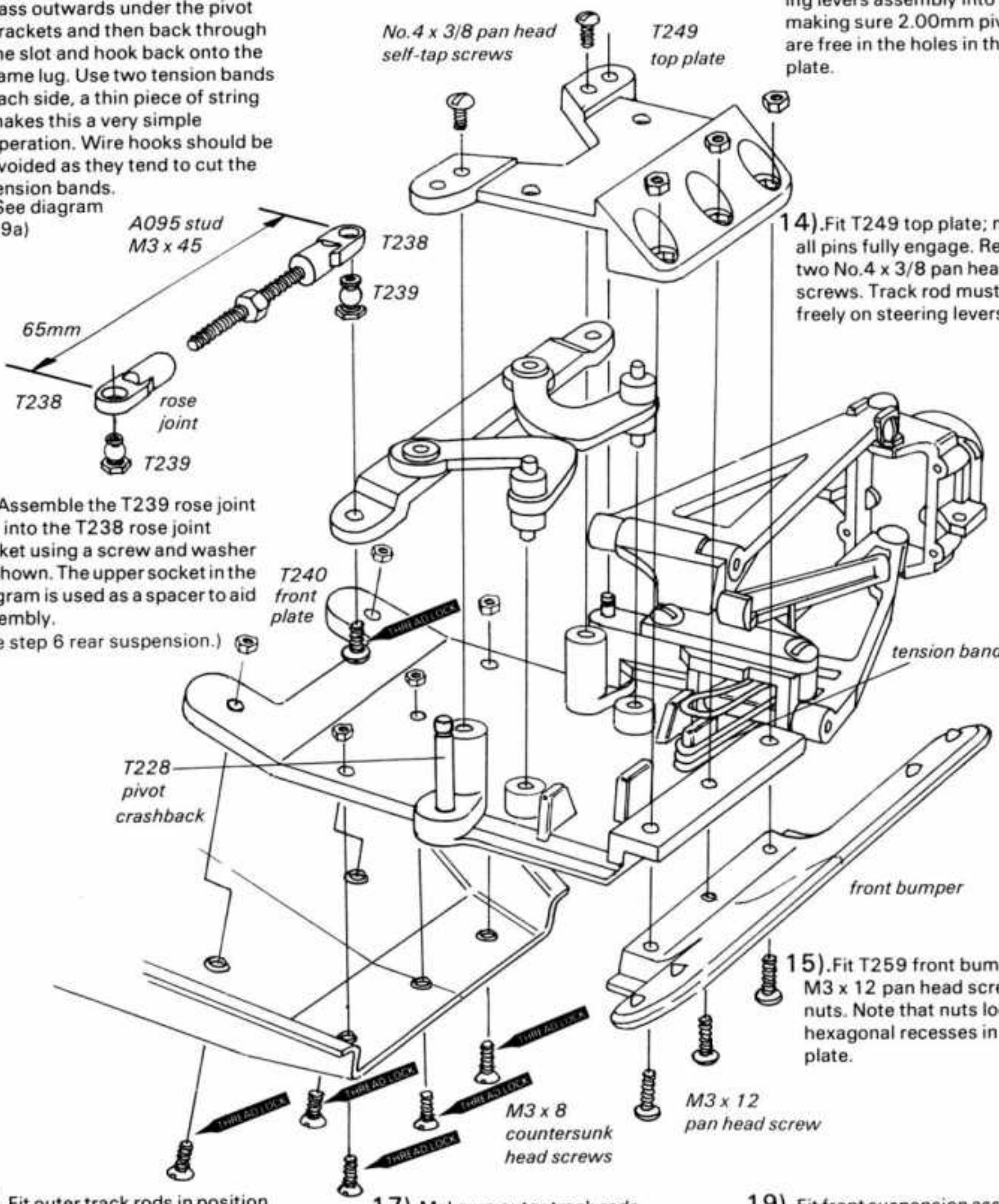
12). Fit left and right suspension assemblies in position on the crashback pins. Loop tension bands over lugs on front plate and pass outwards under the pivot brackets and then back through the slot and hook back onto the same lug. Use two tension bands each side, a thin piece of string makes this a very simple operation. Wire hooks should be avoided as they tend to cut the tension bands. (See diagram 19a)

11). Fit one circlip to each T228 pivot crashback and push right into the T240 front plate from the bottom.

13). Drop the track rod and steering levers assembly into position making sure 2.00mm pivot pins are free in the holes in the front plate.

14). Fit T249 top plate; make sure all pins fully engage. Retain with two No.4 x 3/8 pan head self-tap screws. Track rod must swing freely on steering levers.

16). Assemble the T239 rose joint ball into the T238 rose joint socket using a screw and washer as shown. The upper socket in the diagram is used as a spacer to aid assembly. (See step 6 rear suspension.)



15). Fit T259 front bumper using M3 x 12 pan head screws and nuts. Note that nuts locate into hexagonal recesses in the top plate.

18). Fit outer track rods in position above centre track rod and above lugs on hub carriers. Retain with M3 x 8 pan head srews hexagon ends of balls to seat on track rod and hub carrier. Secure with thread lock.

17). Make up outer track rods using A095 studs, M3 x 45, and rose joints. Equalise thread engagement each end and set length at 65mm between centre of holes.

19). Fit front suspension assembly to chassis using five M3 x 8 countersunk head screws and nuts which locate in the bottom plate. Tighten and secure with thread lock.

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FRONT SUSPENSION

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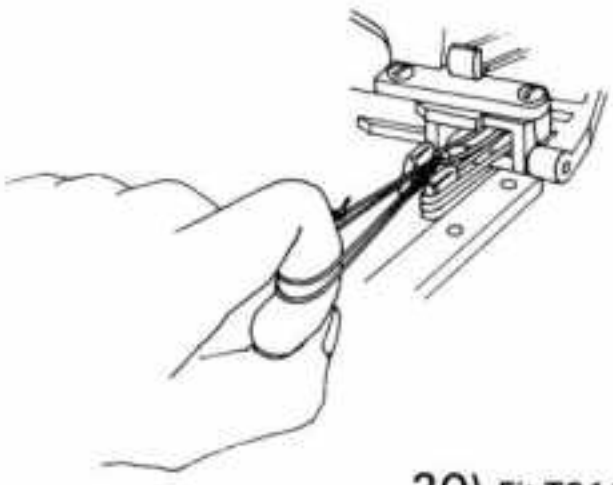
HARDWARE

Countersunk hd. self-tap screws No.4 x 3/8

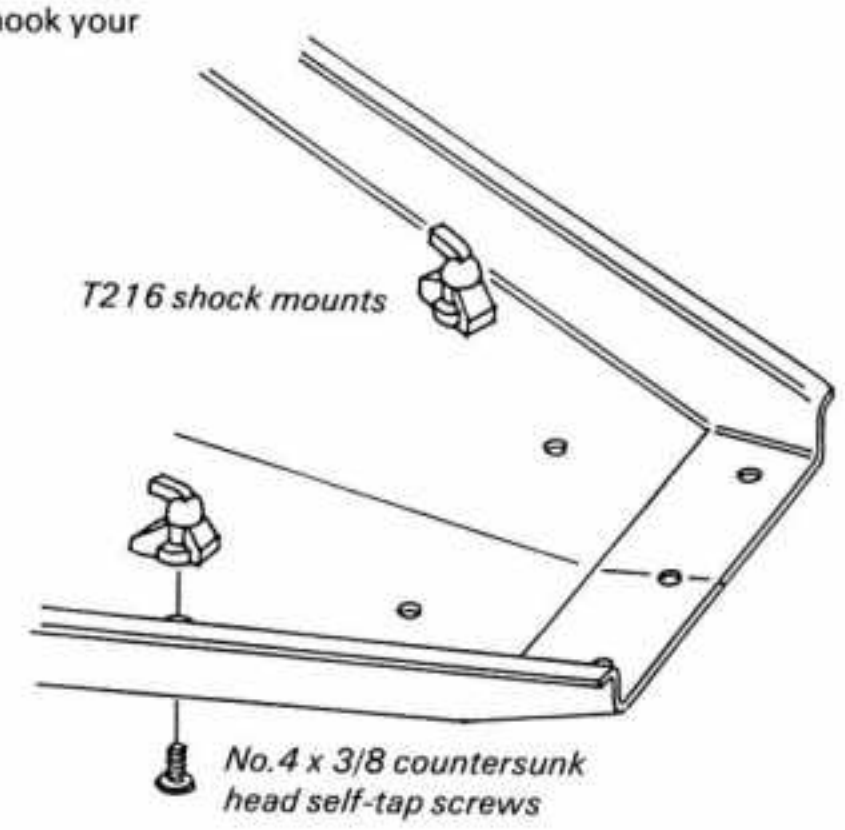
M3 x 8 pan head screw



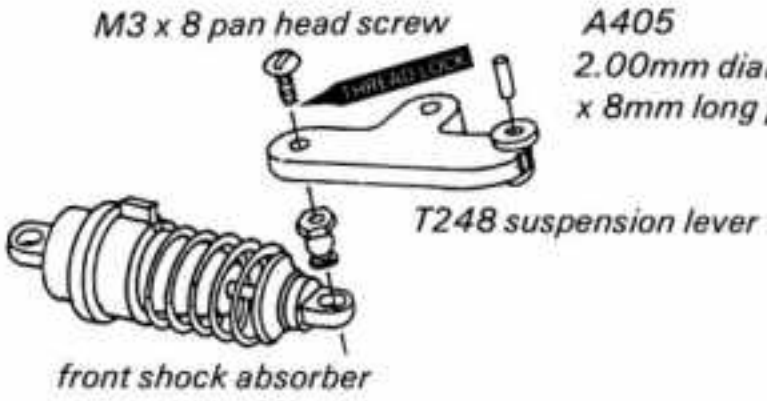
19a.) Fitting tension crashback 'O' rings by using piece of string looped through.

NOTE. First tie string to make a large loop in order to hook your finger through.

20). Fit T216 shock mounts to chassis using No.4 x 3/8 countersunk head self-tap screws horn should face rearwards.

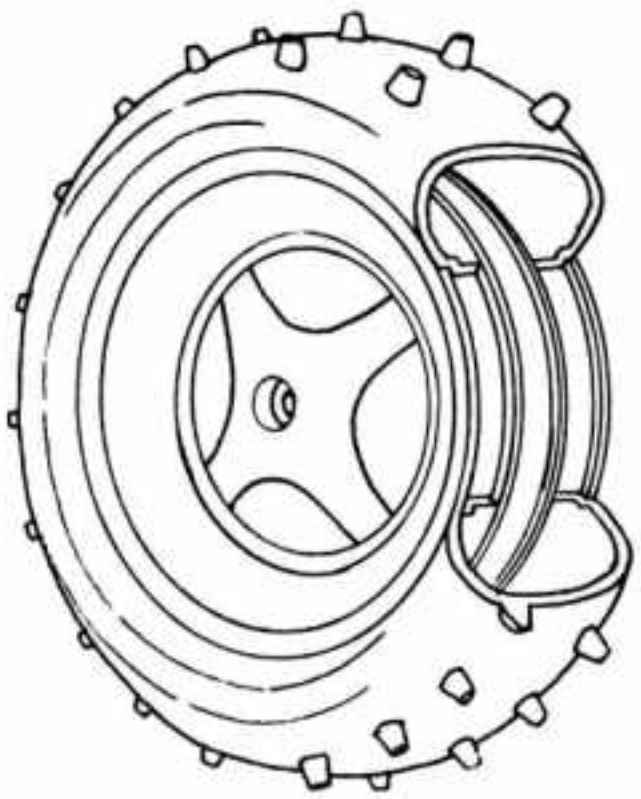


21.) Push A405 2.00mm diameter x 8mm long pin into suspension levers T247 and T248. Note that the pin should be exposed along its length to provide a sliding surface.



22). Assemble the front shock absorbers to the under side of the suspension levers by using an M3 x 8 pan head screw. The hexagon should be underneath and seating against the lever. Secure with thread lock.

23). Assemble the shock absorbers onto the chassis by passing the cap over the hook of the shock mount. Swing down and fit suspension levers onto crashback pivots. Retain using ⅛" 'E' clips.
(See main drawing)



24). Fit tyres to wheels taking care to ensure that the tyre bead properly seats in the grooves of the wheels. Make sure wheels do not have 'flash' at the joint line which could prevent tyre bead from sitting properly in position.

25). Fit front wheels by first assembling A037 M3 x 10 cap head screws into wheels. Then, with screw acting as a pilot, fit to hub carrier; push hard into place and feel engagement of dogs before tightening wheel retaining screw.
(See main drawing)

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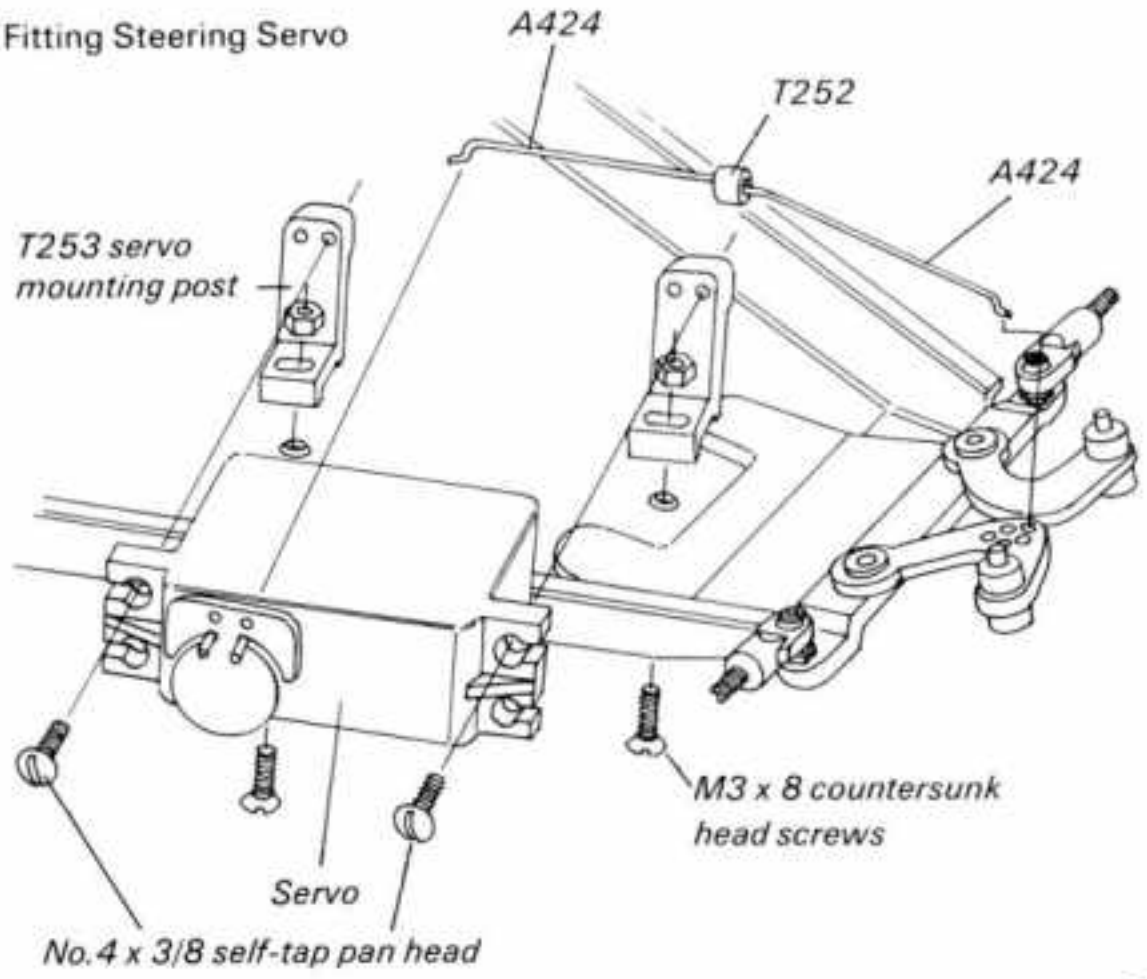
FRONT SUSPENSION

Bag No. U553

HARDWARE

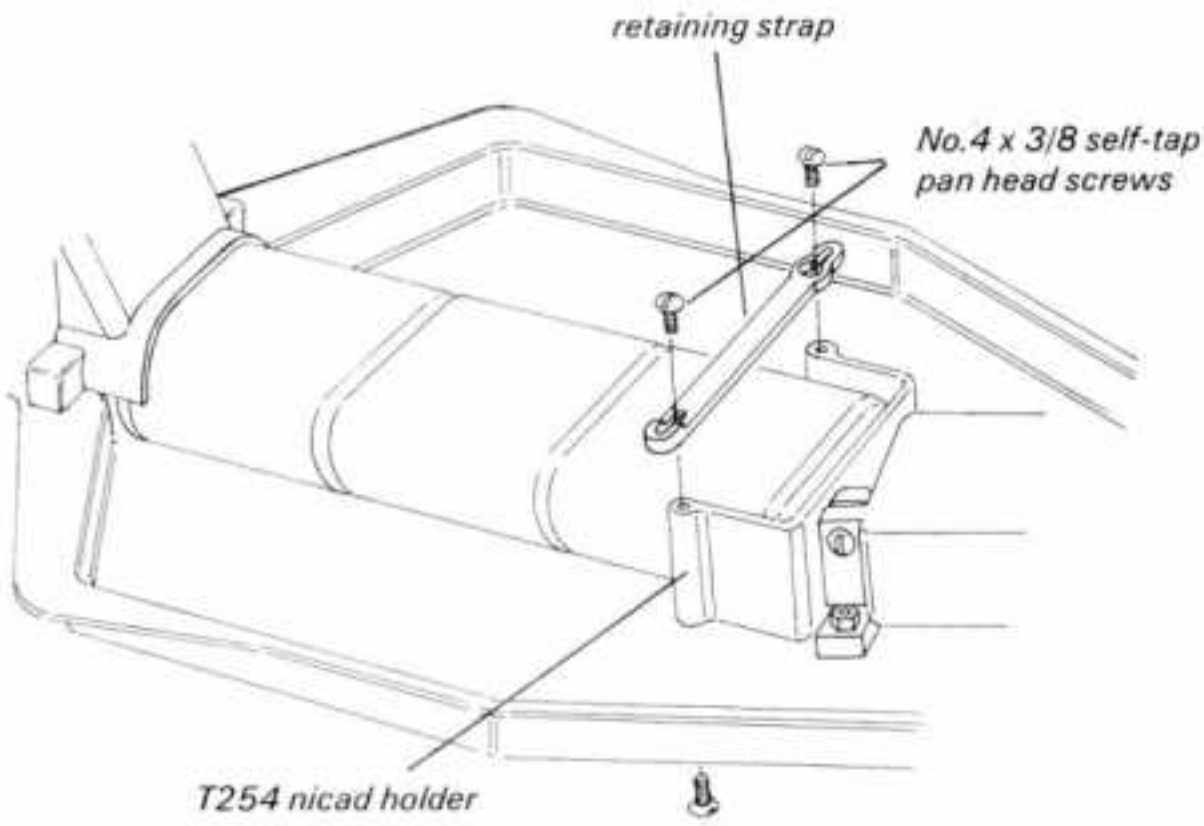
No.4 x 3/8 self-tap pan head
M3 x 8 countersunk head screw
No.4 x3/8 self-tap countersunk head screws

Fitting Steering Servo



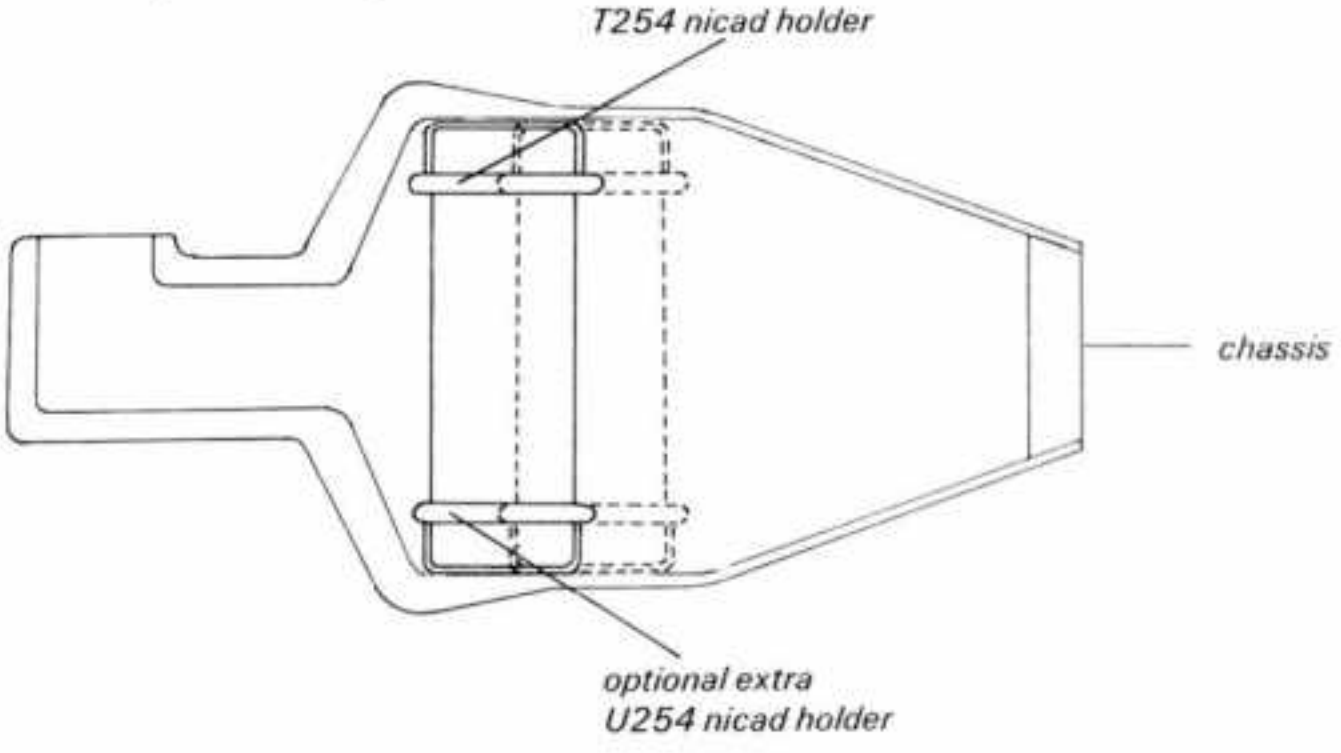
26.) Loosely assemble T253 servo mounting posts using M3 x 8 countersunk head screws, and nuts.

Fitting Nicads



27.) Fit T254 nicad holder to chassis using No.4 x 3/8 countersunk head self-tap screws. Add retaining strap using No.4 x 3/8 pan head self-tap screws.

Nicad-Optional Arrangement



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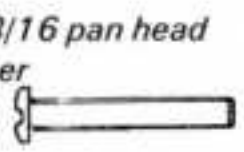
TRANSMISSION ASSEMBLY

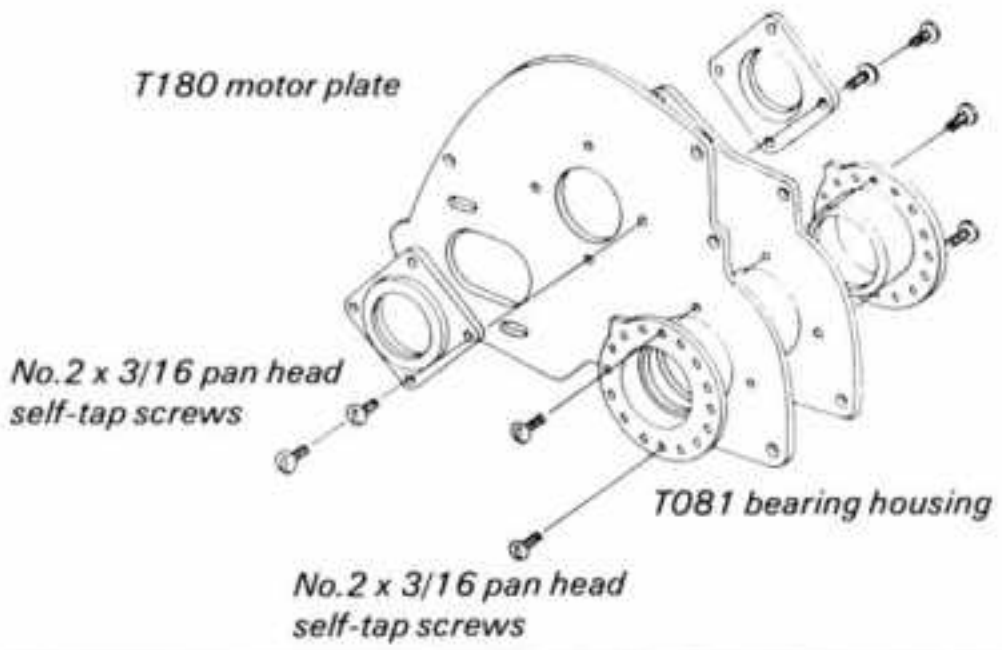
Bag No. U550

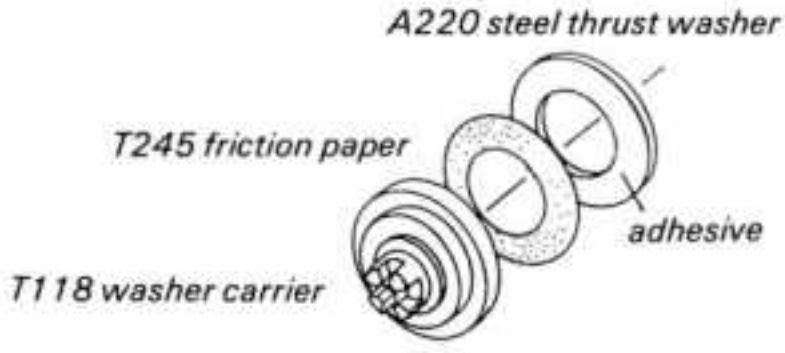
HARDWARE

Self-tap screws No.2 x 3/16 pan head
A220 Steel thrust washer
20mm Long M3 screw
A501 Nyloc nut



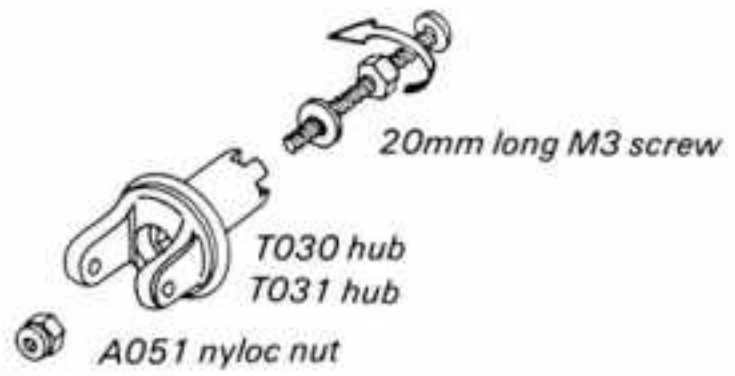
1). Fit the round T081 bearing housings using only two No.2 x 3/16 pan head self-tap screws in each housing for the time being. The other two screws will be fitted later when the drive belt is adjusted for correct tension. Note the angular position of the tags which should be the same on each side of the car. The position illustrated will will give the slackest belt adjustment. Fit the square bearing housings using only the two No.2 x 3/16 pan head self-tap in each.



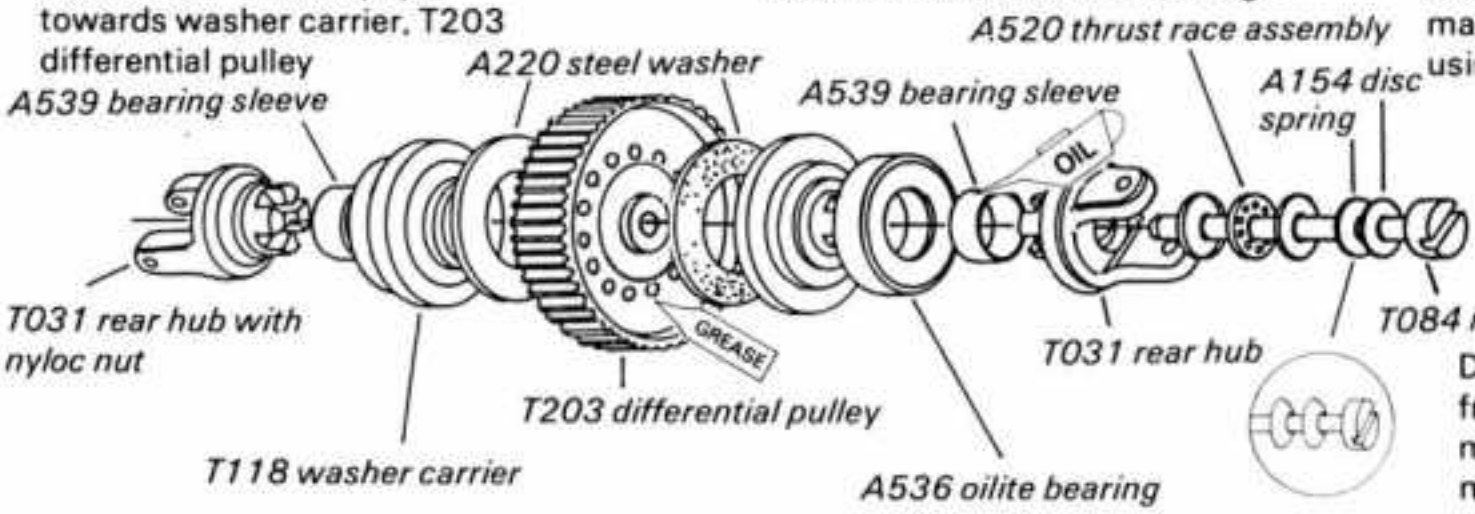


2). Using epoxy or superglue fix the T245 friction paper to the A220 steel thrust washer with the smooth surface towards the steel washer. Make sure both washers are concentric and press between two flat surfaces whilst adhesive is curing.

3). Fit A051 nyloc nut into the hexagon recess 2 x T030 wheel hub and 1 x T031 rear hub. Nut is a tight fit and should be pulled into position using a 20mm long M3 screw, washer and nut as shown.



4). Assemble differential parts onto the T084 rear axle as shown and in the following order: T084 axle, A154 disc spring (2 off), A520 thrust race assembly, T031 rear hub, without nyloc nut, A539 bearing sleeve, A536 oilite bearing, (U724 optional ball races replace A539,A536) T118 washer carrier, A220 steel washer with friction paper towards washer carrier, T203 differential pulley with 3mm diameter steel balls fitted into the fourteen holes and lightly lubricated with silicone grease, A220 steel washer(with friction paper towards washer carrier) T118 washer carrier, A539 bearing sleeve, A536 oilite bearing (U724 optional ballraces replace A539,A536) and finally, the T031 rear hub with nyloc nut fitted inside. Make sure the dogs of the washer carriers and the hubs correctly engage and that the thrust washers correctly locate on the spigot of the washer carriers. Screw up the axle until clearance is removed and washers are gently clamped. Whilst holding both hubs, force the pulley to skid round a few times. Apply a little more tension such that pulleys can only be made to skid with some difficulty using finger pressure only.



Differential action should now be free and smooth;(final adjustment of the differential will be made when the car is fully assembled.)

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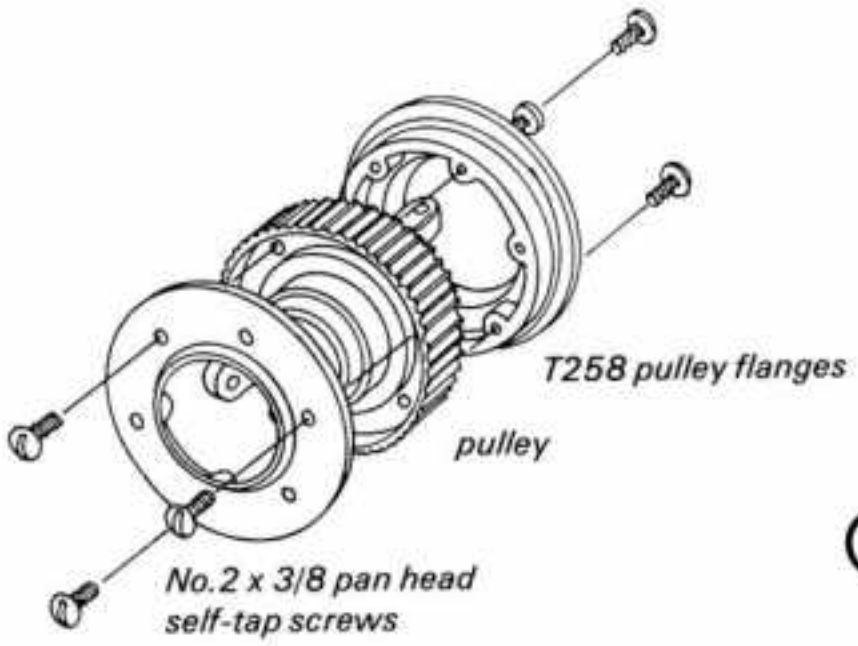
TRANSMISSION ASSEMBLY

Bag No. U550

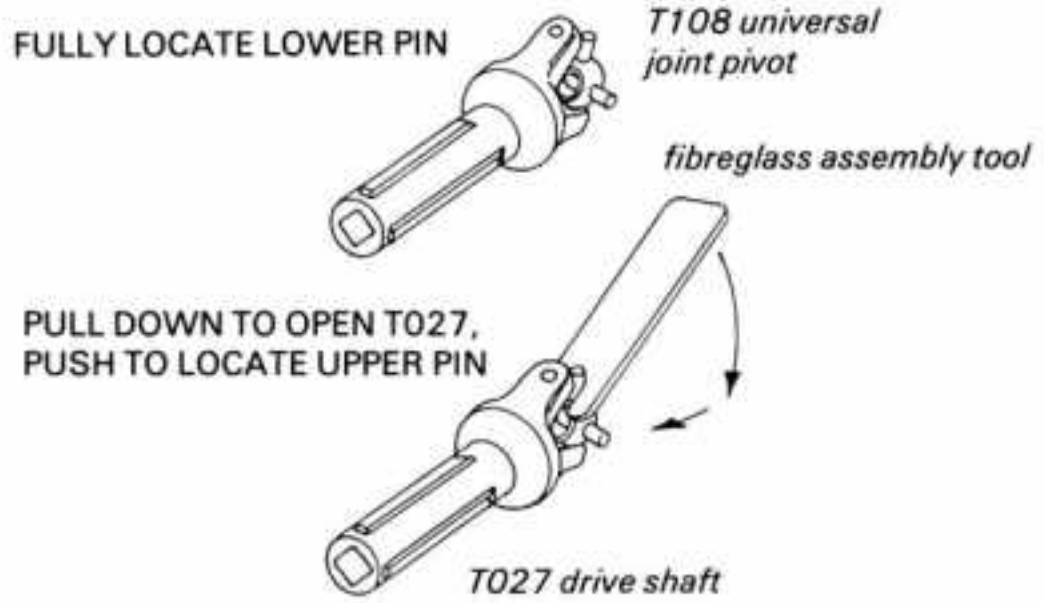
HARDWARE

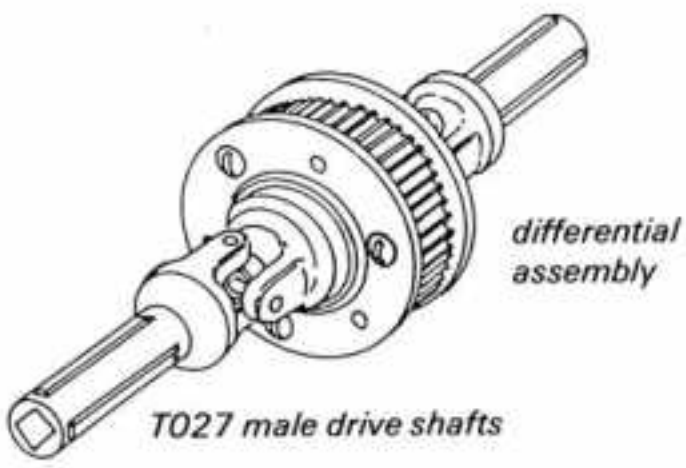
Self-tap screws No.2 x 3/8 pan head
Self-tap screws No.4 x 3/8 pan head



5). Fit T258 pulley flanges either side of the pulley and retain with No.2 x 3/8 pan head self-tap screws.

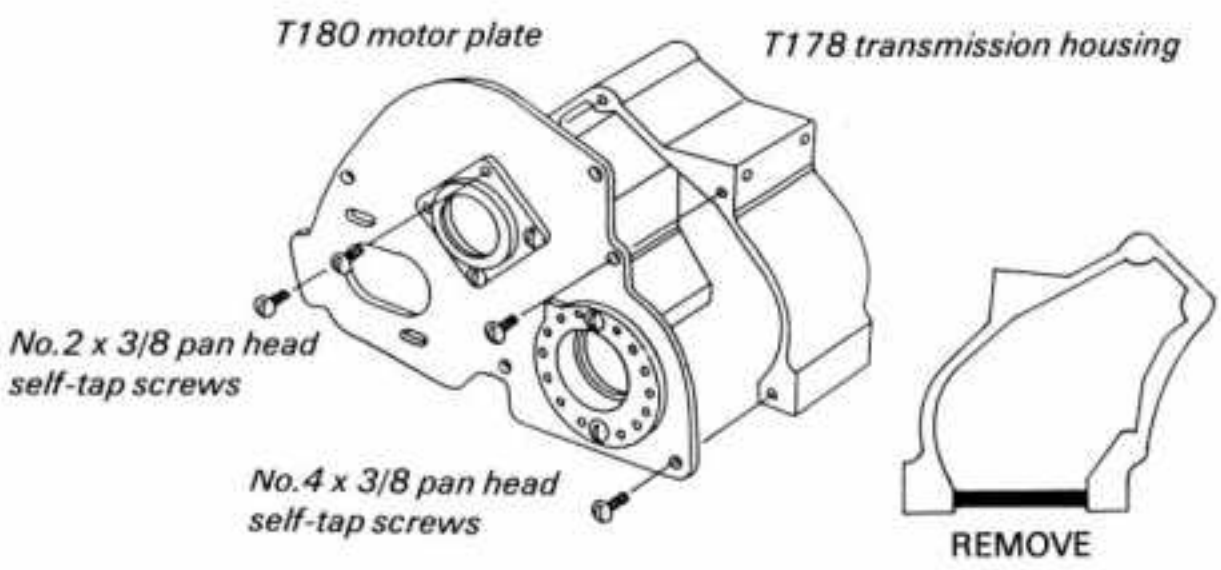
6). Refer to the illustration and fit the four T108 universal joint pivots into the four drive shafts T028 and T027. File the pips off the T131 fibreglass assembly tool before use. First time assembly is made easier by warming the moulded parts in hot water. Once the technique is aquired, joint assembly becomes a simple task.





7). Fit the T027 male drive shaft to the hubs on the differential assembly.
(as in 6 above.)

8). Fit the T180 motor plate to the T178 transmission housing using two No.4 x 3/8 pan head self-tap screws and two No.2 x 3/8 pan head self-tap screws each side.
Remove moulding sprue between transmission housing as shown.



HARDWARE

Self tap screw No.2 x 3/8 pan head

Self tap screw No.4 x 3/8 pan head

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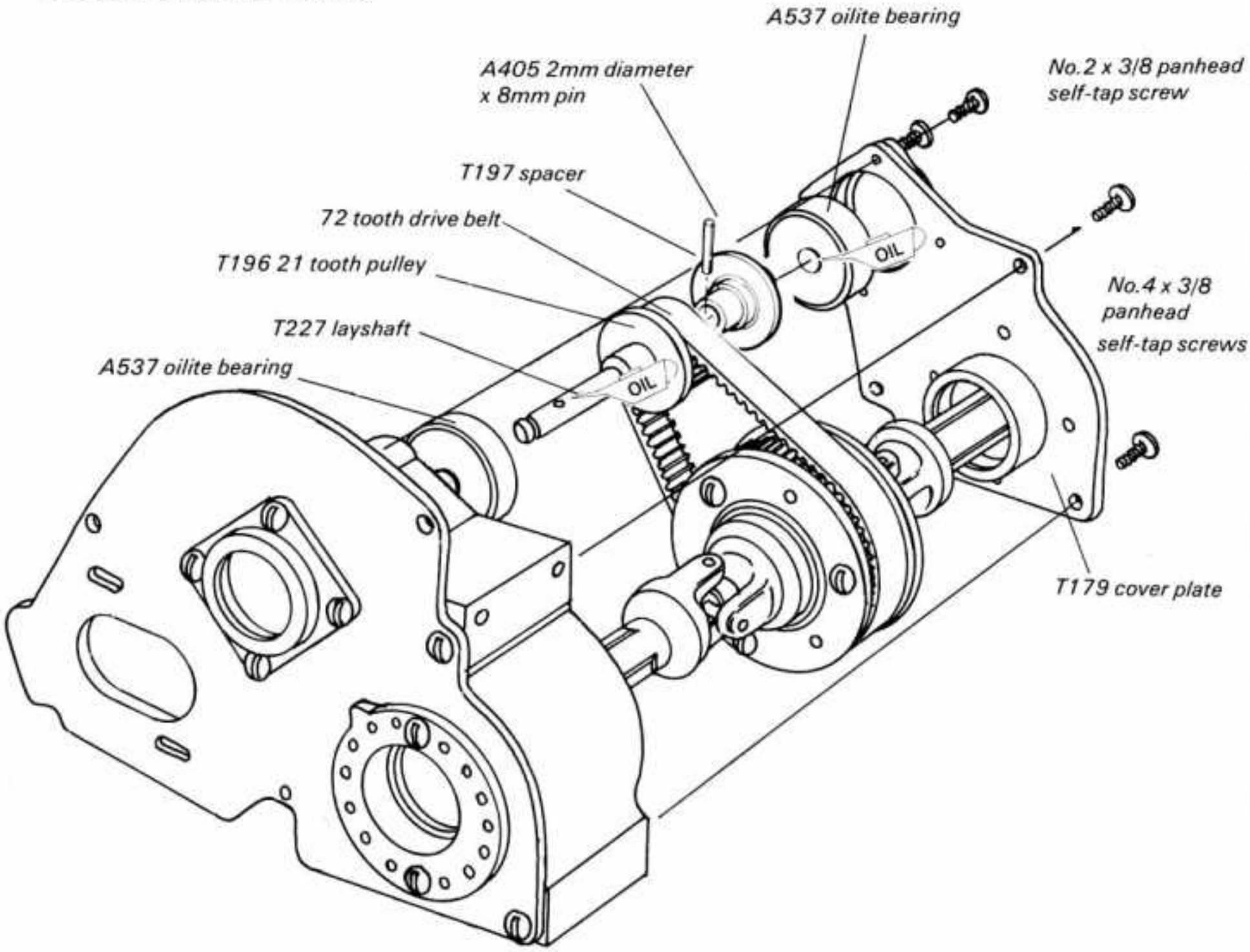
TOP CAT

TRANSMISSION ASSEMBLY

Bag No. U550

9). Fit A537 oilite bearings into the square bearing housings (optional U724 ballraces with T226 bushes replace A537. T226 not used with oilite bearing)



10). Assemble T227 lay shaft, A405 2mm diameter x 8mm pin, T196 21 tooth pulley and T197 spacer.

11). Fit 72 tooth drive belt around layshaft and differential assemblies and slide into postion inside transmission housing. Make sure that the slotted head of the T084 rear axle is on the cover plate side. This will allow easier adjustment of the differential when the car is fully assembled.

12). Fit cover plate using No.4 x 3/8 and No.2 x 3/8 pan head self-tap screws. Transmission assembly should now spin freely.

HARDWARE

No.2 x 3/16 pan head self-tap screws
No4 x 3/8 pan head self-tap screw

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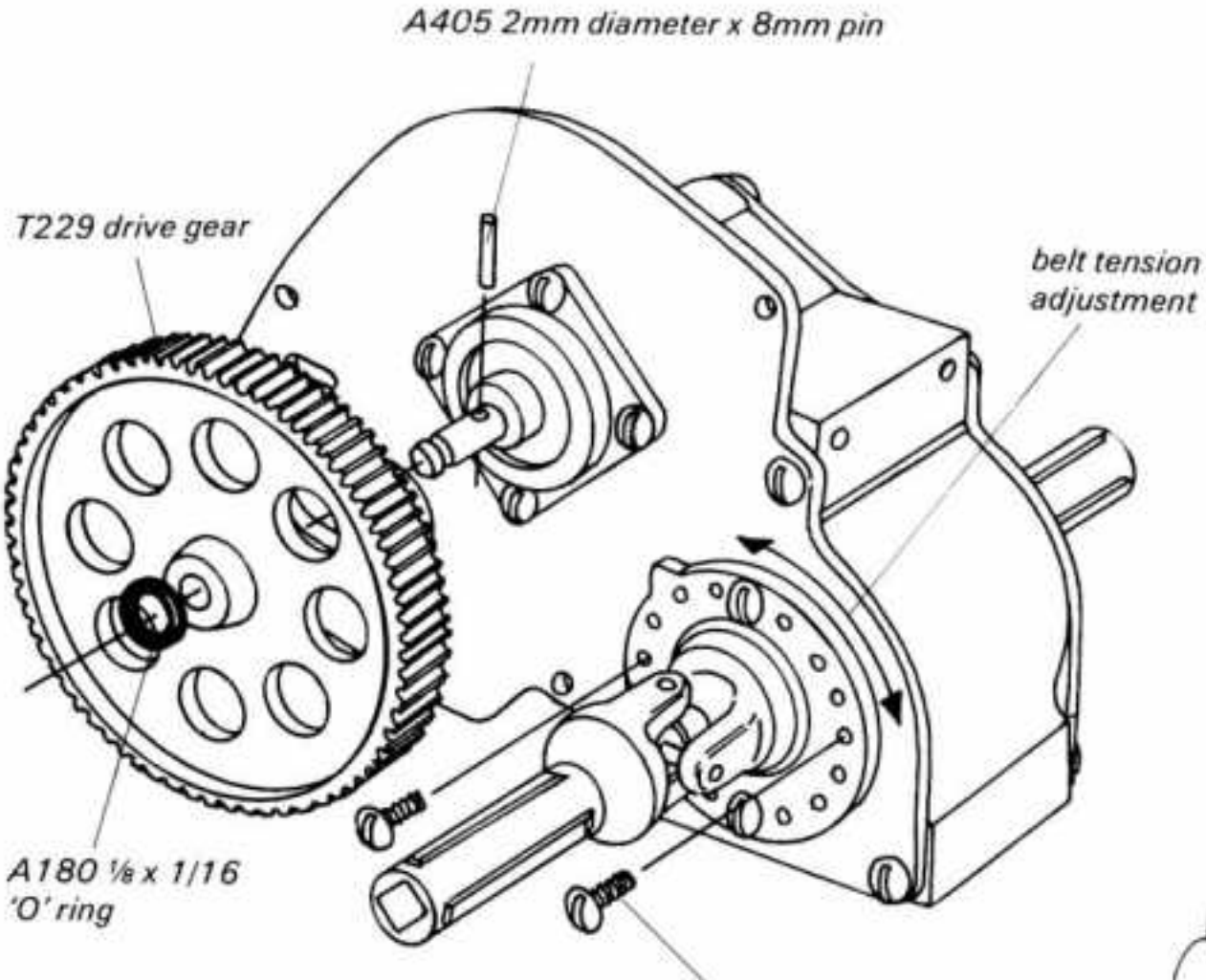
TOP CAT

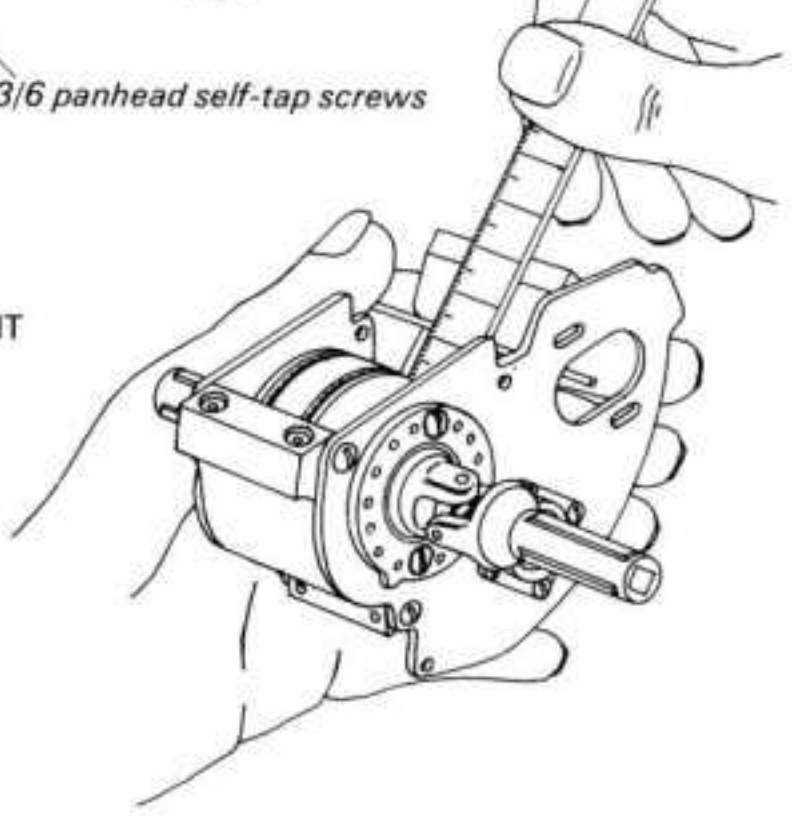
TRANSMISSION ASSEMBLY

Bag No. U550

13). Fit T229 drive gear, A405 2mm diameter x 8mm pin and retain with A180 ⅛ x 1/16 'O' ring.



BELT TENSION ADJUSTMENT



14).

Check belt tension by flexing rear part of transmission housing outwards as shown. Gently press on the belt midway between the pulleys, there should be 1-2mm of deflection. If there is too much remove the screws retaining the T081 eccentric bearing housings and rotate clockwise on the right hand side and anti-clockwise on the left hand side to increase the tension. At least two fully tightened screws must be fitted to each bearing housing whilst checking belt tension. Both bearing housings should be in the same position and then all four screws should be fitted.
Re-check the belt tension after all screws are fully tightened.
Finally bend transmission housing back to normal position and fit the two remaining No.4 x 3/8 panhead screws.

Schumacher **TOP CAT**

TOPCAT SPARES LIST

Part No	Qty in bag	Spares Bag No
A010	2	U723F
A010	2	U703C
A028	2	U732F
A028	2	U703C
A030	2	U732F
A030	2	U703C
A031	2	U732F
A031	10	U705E
A034	3	U705E
A034	2	U732F
A035	2	U732F
A035	2	U700Z
A037	2	U732F
A037	2	U705E
A039	2	U732F
A039	4	U555K
A040	4	U732F
A040	2	U700Z
A042	2	U732F
A042	2	U705E
A043	2	U732F
A043	2	U706F
A043	5	U705E
A048	4	U732F
A048	2	U706F
A048	8	U705E
A048	3	U703C
A048	2	U555K
A051	8	U732F
A051	2	U705E
A051	3	U700Z
A051	2	U555K
A093	2	U703C
A095	2	U705E
A103	10	U727A
A103	6	U705E
A103	10	U614K
A103	12	U555K
A131	4	U614K
A131	4	U555K
A141	1	U700Z
A143	1	U703C
A154	2	U700Z
A171	8	U725Y
A171	4	u705E
A180	1	U700Z
A181	8	U614K
A181	8	U555K
A181	10	U722V
A185	4	U614K
A185	4	U555K
A190	2	U712L
A190	10	U733G

Part No	Qty in bag	Spares Bag No
A206	3	U703C
A208	2	U555K
A209	4	U614K
A209	4	U555K
A220	2	U702B
A225	2	U705E
A225	2	U700Z
A230	4	U614K
A230	2	U555K
A301	12	U731E
A301	12	U700Z
A302	2	U713M
A302	2	U705E
A304	12	U731E
A304	2	U713M
A304	16	U705E
A304	10	U700Z
A304	6	U701A
A305	4	U731E
A323	12	U731E
A323	2	U712L
A323	4	U706F
A323	6	U705E
A323	8	U703C
A323	8	U700Z
A324	4	U731E
A325	4	U731E
A325	2	U703C
A326	4	U731E
A326	2	U700Z
A333	8	U731E
A333	2	U706F
A333	2	U705E
A333	4	U700Z
A405	2	U705E
A405	2	U702B
A407	2	U712L
A410	4	U705E
A411	2	U703C
A412	2	U703C
A413	2	U705E
A424	4	U717Q
A424	2	U706F
A500	30	U729C
A500	15	U702B
A520	1	U703D
A520	1	U702B
A532	2	U737K
A533	4	U724X
A536	4	U721U
A536	2	U720T
A537	2	U720T
A538	2	U721U

Part No	Qty in bag	Spares Bag No
A539	2	U720T
S472	1	U614K
S485	3	U254U
T027	2	U704D
T027	2	U550F
T028	2	U704D
T028	2	U550F
T030	2	U704D
T030	2	U550F
T031	2	U704D
T031	2	U550F
T045	4	U703E
T045	4	U636G
T059	4	U555K
T060	2	U555K
T061	2	U555K
T062	2	U062E
T062	2	U555K
T063	2	U063F
T063	2	U555K
T081	2	U550F
T081	2	U517R
T082	1	U550F
T082	1	U517R
T083	1	U550F
T083	1	U517R
T084	1	U084A
T084	1	U550F
T090	2	U613J
T090	2	U555K
T092	2	U613J
T092	2	U555K
T093	2	U613J
T093	2	U555K
T094	2	U613J
T094	2	U555K
T095	2	U613J
T095	2	U555K
T096	2	U637H
T096	2	U555K
T097	2	U637H
T097	2	U555K
T100	4	U636G
T108	4	U550F
T117	2	U555K
T118	2	U702B
T119	1	U119J
T120	2	U737K
T121	4	U706F
T121	4	U271F
T122	3	U706F
T122	4	U122M
T131	1	U550F

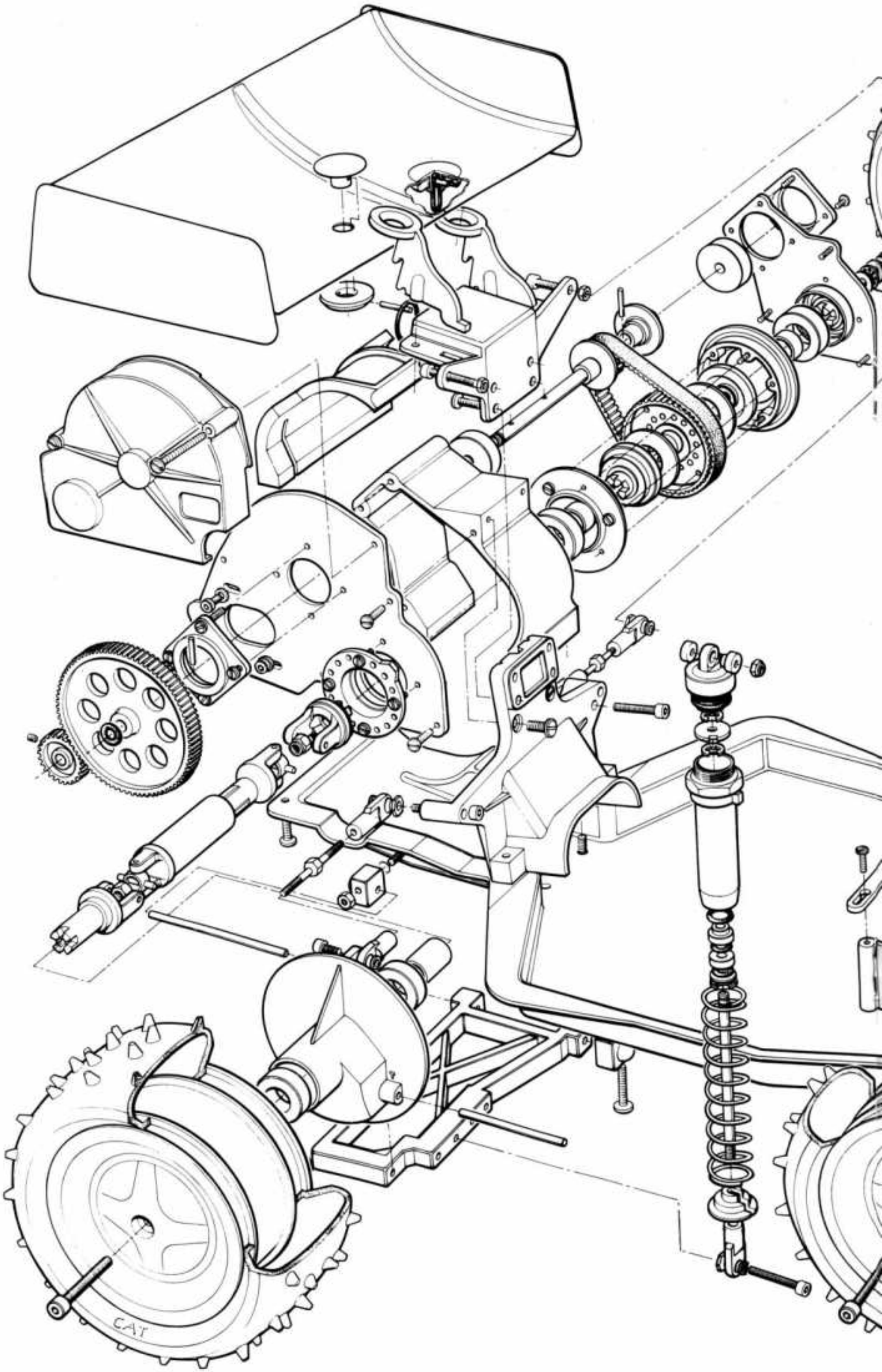
Schumacher **TOP CAT**

TOPCAT SPARES LIST

Part No	Qty in bag	Spares Bag No
T132	2	U132U
T132	2	U555K
T133	2	U133X
T133	2	U555K
T158	4	U555K
T158	4	U614K
T159	4	U614K
T159	4	U555K
T162	4	U162A
T162	4	U555K
T162	4	U164K
T178	1	U178P
T178	1	U550F
T179	1	U723W
T179	1	U550F
T180	1	U723W
T180	1	U550F
T195	1	U195G
T195	1	U550F
T196	1	U701A
T196	1	U550F
T197	1	U701A
T197	1	U550F
T197	1	U550F
T199	2	U199K
T199	2	U552H
T200	2	U552H
T202	1	U718R
T202	4	U552I
T203	1	U701A
T203	1	U550F
T204	2	U714N
T204	2	U553I
T205	2	U714N
T205	2	U553I
T206	1	U718R
T206	1	U553I
T207	1	U738L
T207	1	U553I
T208	1	U553I
T208	1	U728L
T209	1	U738L
T209	1	U553I
T210	1	U738L
T210	1	U553I
T211	2	U719S
T212	2	U719S
T213	1	U716P
T213	1	U553I
T214	1	U716P
T214	1	U553I
T215	1	U550F
T215	1	U215A

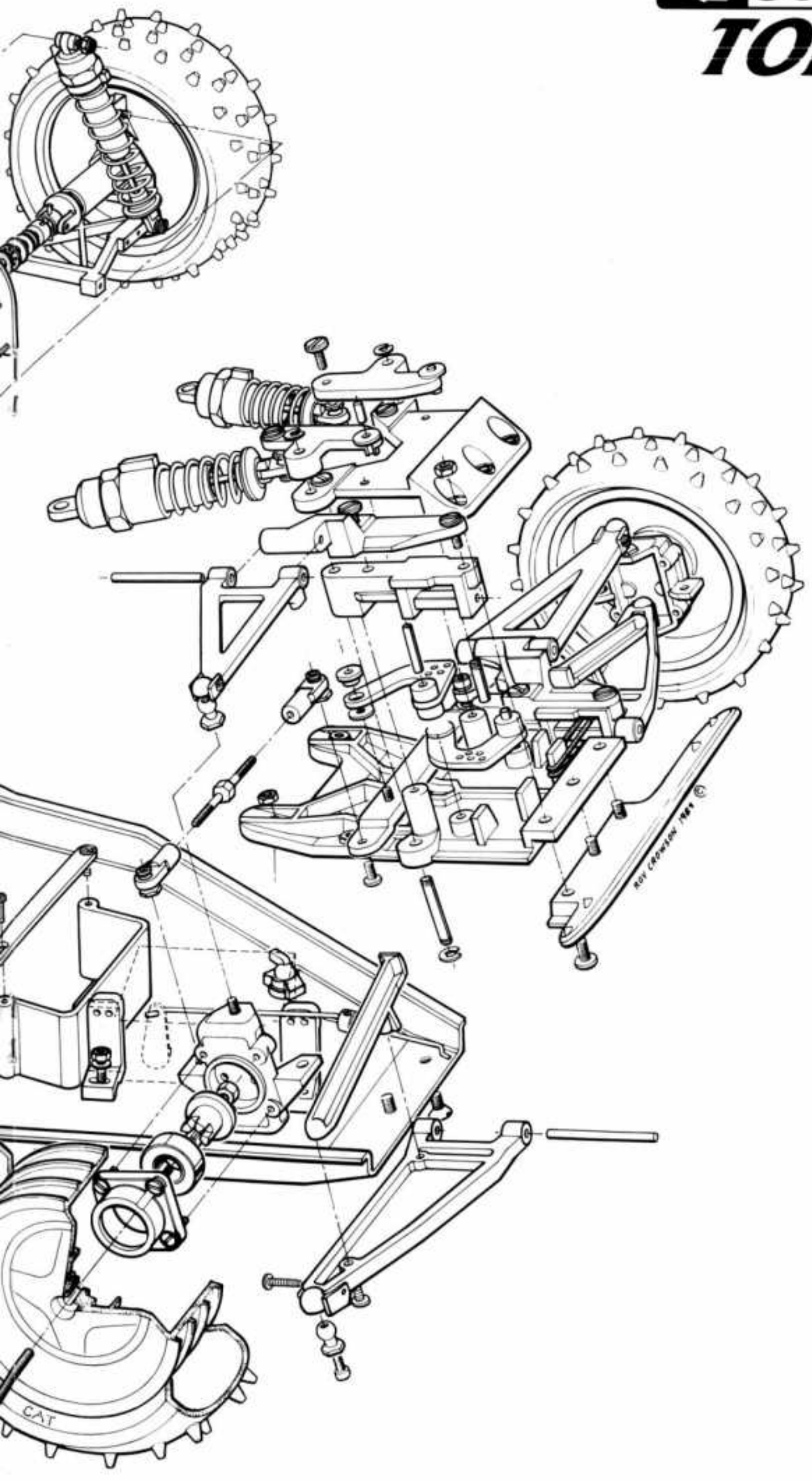
Part No	Qty in bag	Spares Bag No
T216	1	U718R
T216	2	U553I
T217	1	U705E
T221	1	U221D
T224	2	U224G
T225	2	U225H
T226	4	U226I
T227	1	U550F
T227	1	U227J
T228	2	U705E
T229	1	U550F
T229	1	U229L
T230	1	U230M
T231	1	U231N
T232	1	U232O
T233	1	U233P
T234	1	U550F
T234	1	U234Q
T235	1	U235R
T236	1	U236S
T237	1	U552H
T237	1	U237T
T238	4	U278B
T238	4	U705E
T238	4	U703C
T238	4	U555K
T238	4	U728B
T239	4	U705E
T239	4	T703C
T239	4	U555K
T240	1	U553I
T240	1	U240W
T241	2	U553I
T241	1	U7150
T242	2	U705E
T243	2	U702B
T245	2	U716P
T245	2	U553I
T246	2	U713M
T246	2	U553I
T246	1	U718R
T247	1	U553I
T247	1	U715O
T248	1	U553I
T248	1	U715O
T249	1	U553I
T249	1	U249F
T252	2	U717Q
T252	1	U706F
T253	2	U706F
T253	1	U706F
T253	1	U718R
T254	1	U706F

Part No	Qty in bag	Spares Bag No
T254	1	U254K
T255	1	U550F
T255	1	U255L
T258	2	U701A
T258	2	U550F
T259	1	U259P
T260	1	U552H
T260	1	U260Q
T261	2	U712L
T262	2	U712L
T263	2	U712L
T265	3	U265V
T271	4	U271F
T517	1	U550F
T517	1	U517R
T627	1	U627X
T700	1	U550F
T701	1	U701A
T701	1	U550F
T702	1	U550F
T703	1	U552H
T705	1	U553I
T706	1	U553I
T734	1	U715O
T736	1	U718R


CAT

Schumacher

TOP CAT



Schumacher **TOP CAT**

TOPCAT RETAIL PRICE LIST

Qty.Req	Spares No	Description	Price
	U405J	Topcat 2WD 1/10 off-road	
	U062E	Piston Rods - 16mm stroke	
	U063F	Piston Rods - 32mm stroke	
	U084A	Rear axle	
	U119J	Aerial tube	
	U122M	Velcro 50 x 20mm (pk of 4)	
	U132W	Spring 045 x 8 x 1.5 front (pr)	
	U133X	Spring 045 x 11 x 2.5 rear (pr)	
	U162A	Diaphragm - shock absorber (pk 4)	
	U178P	Transmission housing - Topcat	
	U195G	Hi Torque Drive Belt 72 X 8mm	
	U199K	Rear hub carriers (pr)	
	U200L	Rear wishbones - med W/B	
	U215A	Gear cover - Topcat	
	U221D	Chassis pan - Topcat	
	U224G	Front wheel - spoked white (pr)	
	U225H	Rear wheel - spoked white (pr)	
	U226I	Bush - layshaft (pk 4)	
	U227J	Layshaft	
	U229L	95T Gear - 48 D.P.	
	U230M	92T Gear - 48 D.P.	
	U231N	89T Gear - 48 D.P.	
	U232O	86T Gear - 48 D.P.	
	U233P	19T Pinion - 48 D.P.	
	U234Q	22T Pinion - 48 D.P.	
	U235R	25T Pinion - 48 D.P.	
	U236S	28T Pinion - 48 D.P.	
	U237T	Bulkhead - Topcat	
	U240W	Front plate - Topcat	
	U249F	Top plate - Topcat	
	U254K	Nicad holder - stick pack	
	U255L	Motor guard - Topcat	
	U259P	Bumper - Topcat	
	U260Q	Shock & Wing mount - Topcat	
	U264U	Decal sheets - 4 colour (pk 3)	
	U265V	Window masks - topcat (pk 3)	
	U271F	Wing and side plates	
	U517R	Bearing housings moulding	
	U544S	Topcat body & wing	
	U550F	Transmission set - Topcat	
	U552H	Rear suspension set - Topcat	
	U553I	Front suspension set - Topcat	
	U555K	Shock absorbers (set 4) - Topcat	
	U557M	Instruction book - Topcat	
	U613J	Spring stop & spacer moulding	
	U614K	Shock absorber seals (4 sets)	
	U627X	Servo Saver Assembly	
	U631B	Universal joints bag (8 pcs)	
	U636G	M3 ball joints bag (pk 4)	
	U637H	Shock absorber pistons (set 4)	
	U700Z	Transmission fixings bag - Topcat	
	U701A	Pulley set - Topcat (51T & 21T)	
	U702B	Diff. repair kit - Topcat	
	U703C	Rear suspension small parts - Topcat	

Qty.Req	Spares No	Description	Price
	U704D	Drive shaft set - Topcat	
	U705E	Front suspension small parts - Topcat	
	U706F	Chassis accessories - Topcat	
	U712L	Wing mount kit - Topcat	
	U713M	Front wishbones - Topcat	
	U714N	Front hub carriers (T204, T205)	
	U715O	Steering levers (T241, T247, T248)	
	U716P	Steering pivot bkts & arms	
	U717Q	Adjustable servo link (2 sets)	
	U718R	Mouldings - T246, 216, 206, 253, 201	
	U719S	Rear wishbones - short/long W/B 2pr	
	U720T	Oilite bearings - transmission - Topcat	
	T721U	Oilite bearings - wheel (pr)	
	U722V	'O' ring 1/8" - (pack 10)	
	U723W	Transmission side plates - black	
	U724X	Ball races 8 x 16 x 5 - (pk 4)	
	U725Y	Tension ring - crashback (A171)	
	U727A	'E' clip 1/8" - (pk 10)	
	U728B	M3 rose joints - (pk 4)	
	U729C	Steel balls 3mm dia. (pk 30)	
	U730D	Thrust race 1/8" x 5/16"	
	U731E	Self tap screws - spares pack	
	U732F	M3 fastenings - spares pack	
	U733G	'O' ring 9mm - wing mount (pk 10)	
	U737K	L/WT S.S. ballraces (= A533) pr	

HARDWARE

A040 M3 x 20mm Cap head screw

Schumacher

TOP CAT

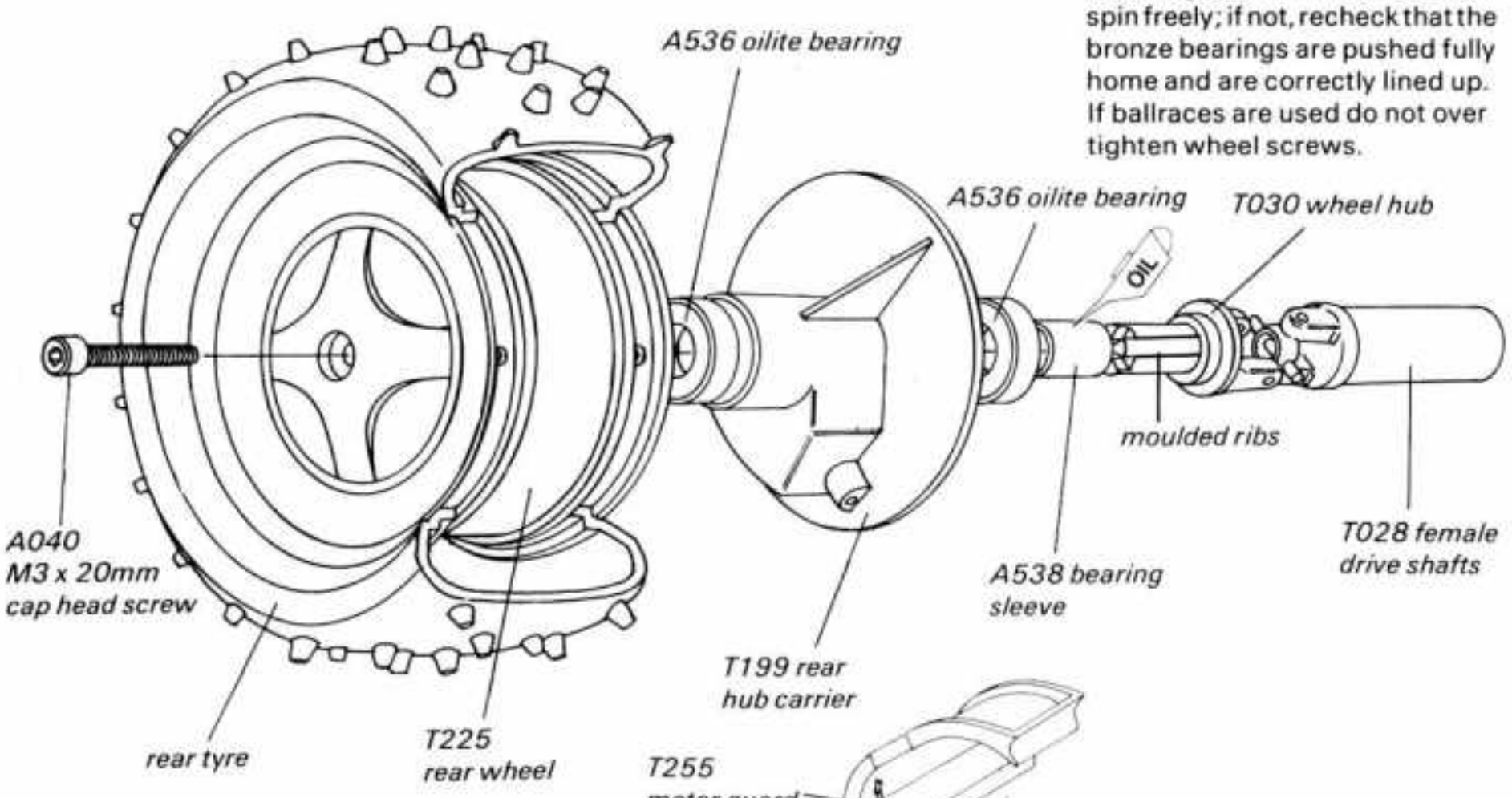
TRANSMISSION ASSEMBLY

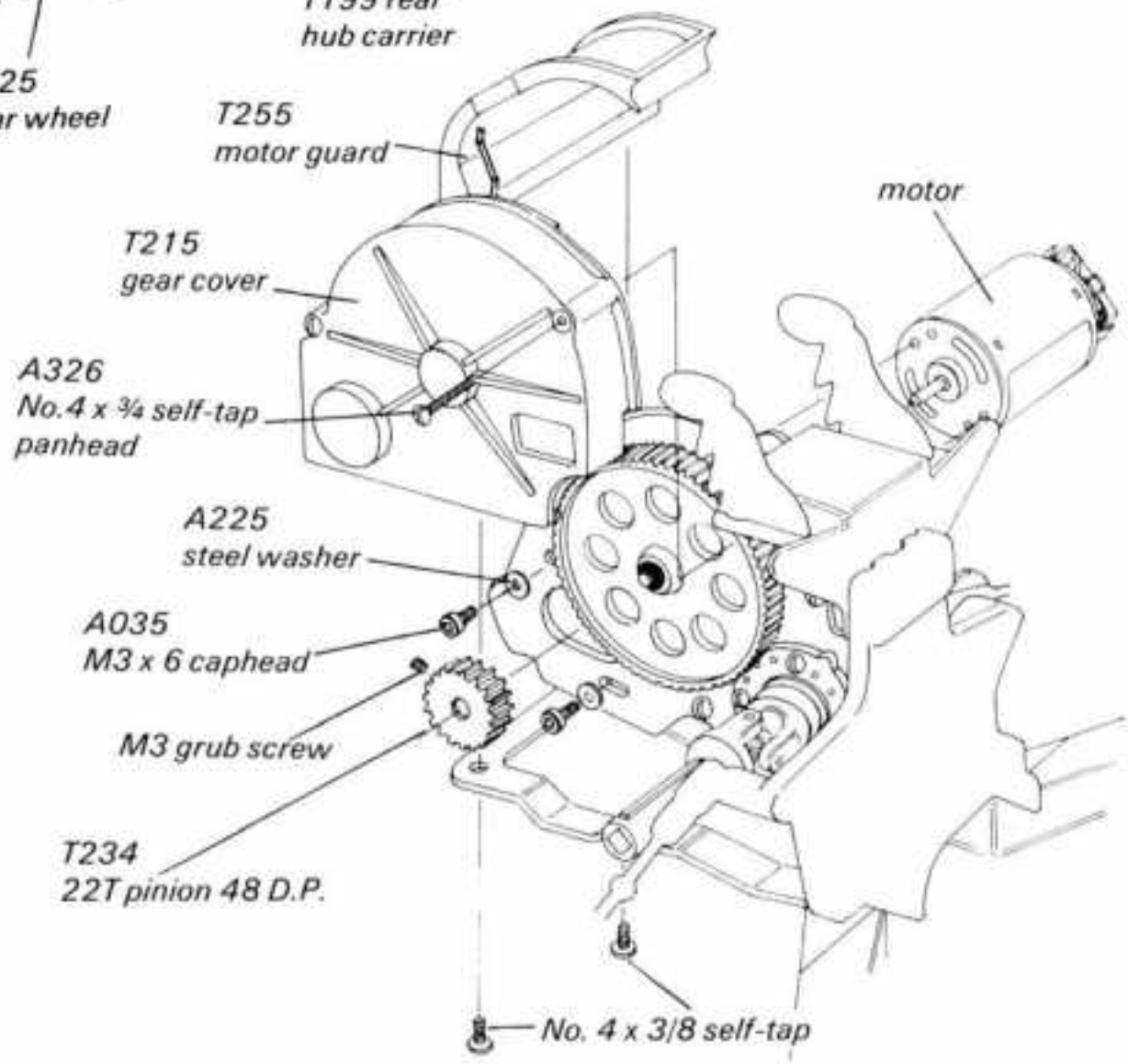
Bag No. U550

15). Fit the T028 female drive shafts to the T030 wheel hubs and assemble the A538 bearing sleeves(optional U724 ballraces replace A538 & A536 oilite bearing). Sleeves may be tight on hubs, if necessary scrape off moulded ribs on hubs to ease assembly.

16). Press A536 oilite bearings (optional U724 ballraces replace A538 & A536 oilite bearing) into each end of the rear hub. carriers making sure that they are both seated against the bearing abutment in the bore.

17). Apply a little light oil to the bearing sleeves; assemble into the hub carriers and fit the rear wheels using A040 M3 x 20 cap head screw. Hold the wheel hub whilst pushing the wheel into place in order to feel the engagement of the drive dogs before tightening the wheel retaining screw. Wheel must now spin freely; if not, recheck that the bronze bearings are pushed fully home and are correctly lined up. If ballraces are used do not over tighten wheel screws.





18). Fit motor using M3 x 6 cap head screws & washers and fit T234 pinion ensuring the grub screw clamps against the flat on the motor spindle. Make sure the pinion and gear are in line. Set motor position so that gears fully mesh but do not bind, check by rotating gears several times. Fit T215 gear cover using No.4 x ¾ self-tap screws.

Fit transmission assembly to chassis using No.4 x 3/8 counter-sunk head self-tap screws in the chassis and No.4 x 3/8 pan head self-tap screws in the bulkhead. (see main exploded diagram).

Finally fit T255 motor guard using No.4 x 3/8 panhead self-tap screws making sure that motor plate engages in the slot.

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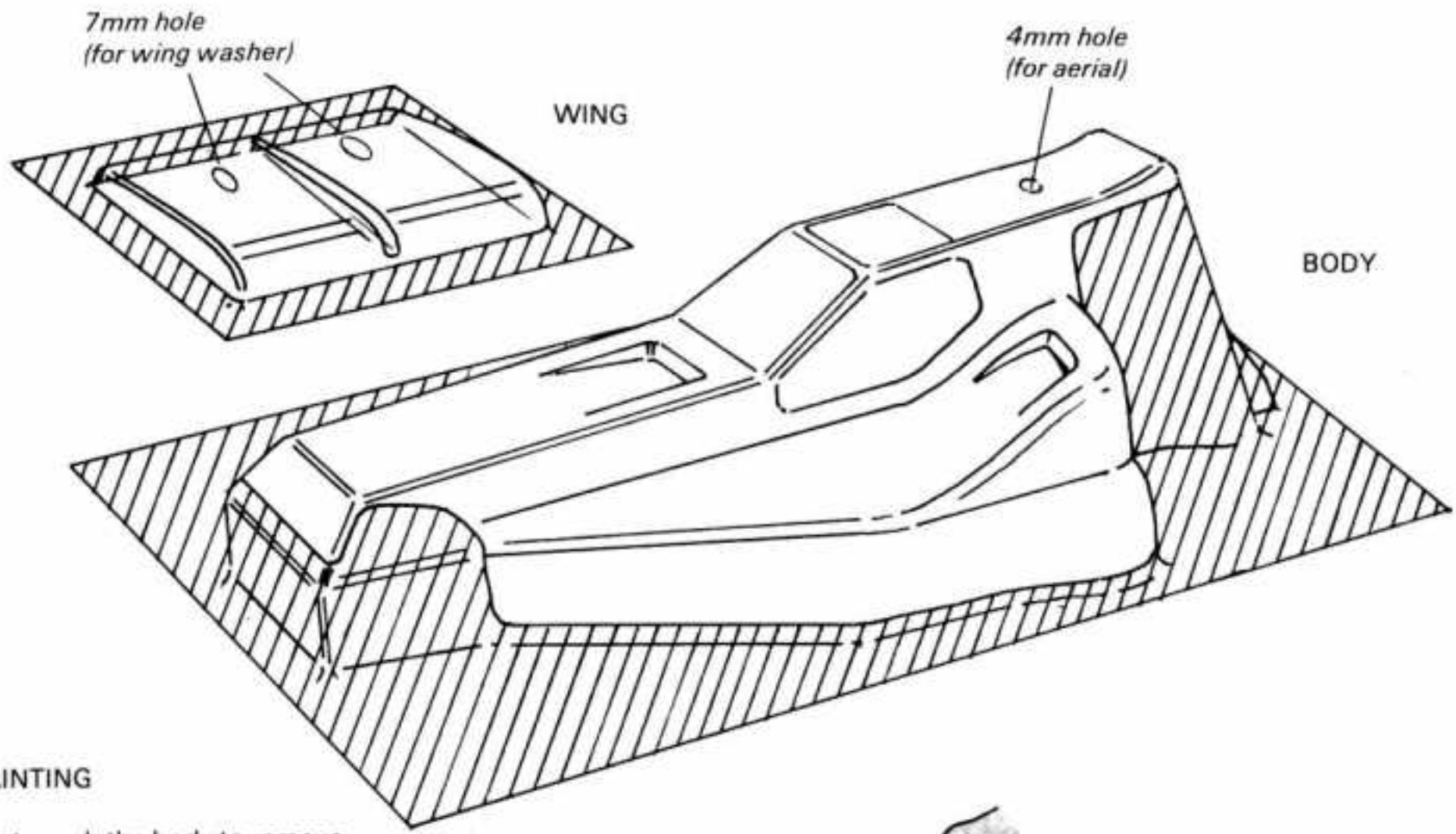
TOP CAT

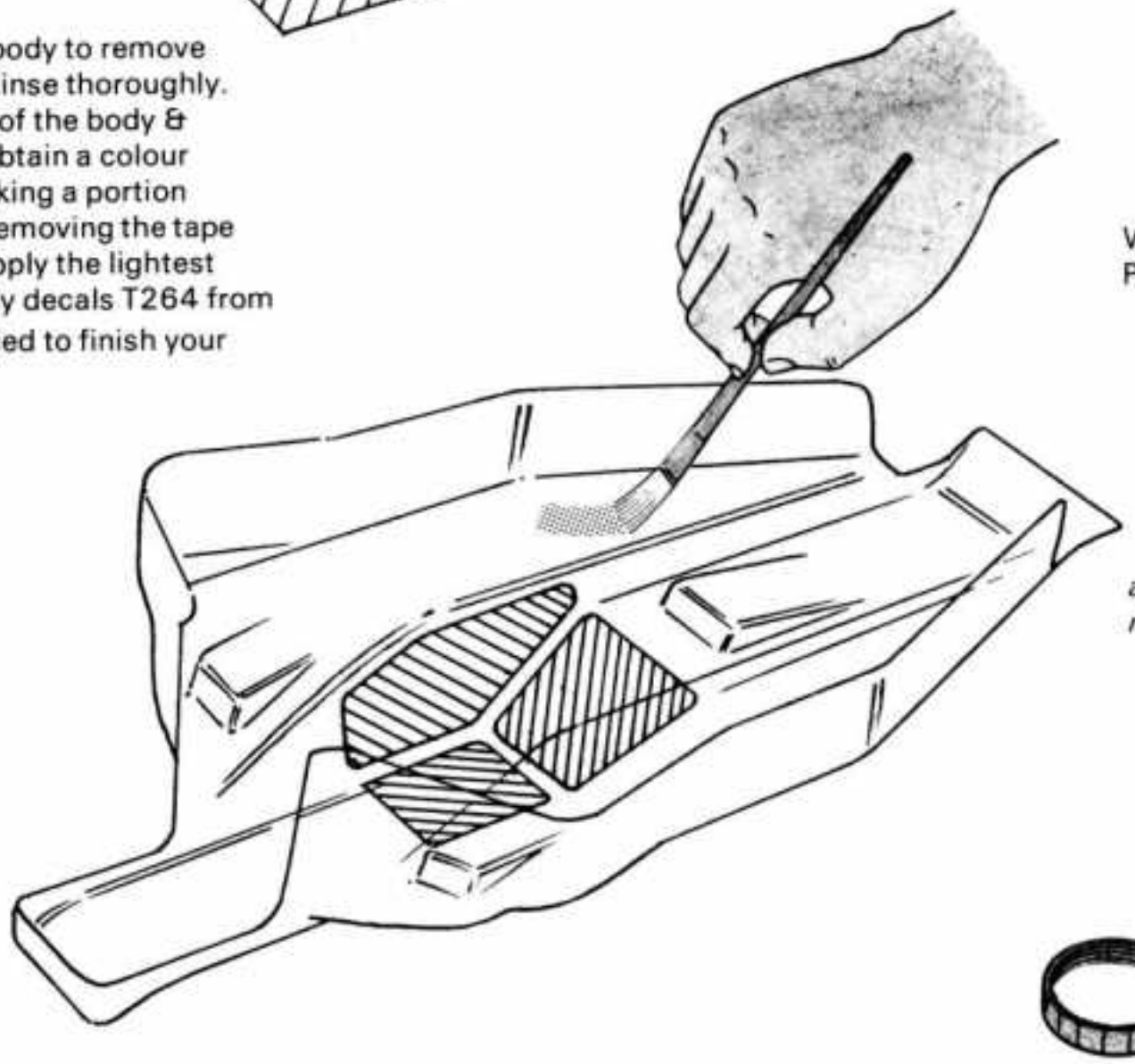
BODY & WING

BODY & WING
(cut away shaded areas)



PAINTING

First, wash the body to remove any oil or dirt. Rinse thoroughly. Paint the inside of the body & wing. You can obtain a colour scheme by masking a portion with tape then removing the tape and painting. Apply the lightest colour last, apply decals T264 from the sheet supplied to finish your bodyshell.



WINDOW MASKS FOR PAINTING BODYSHELL

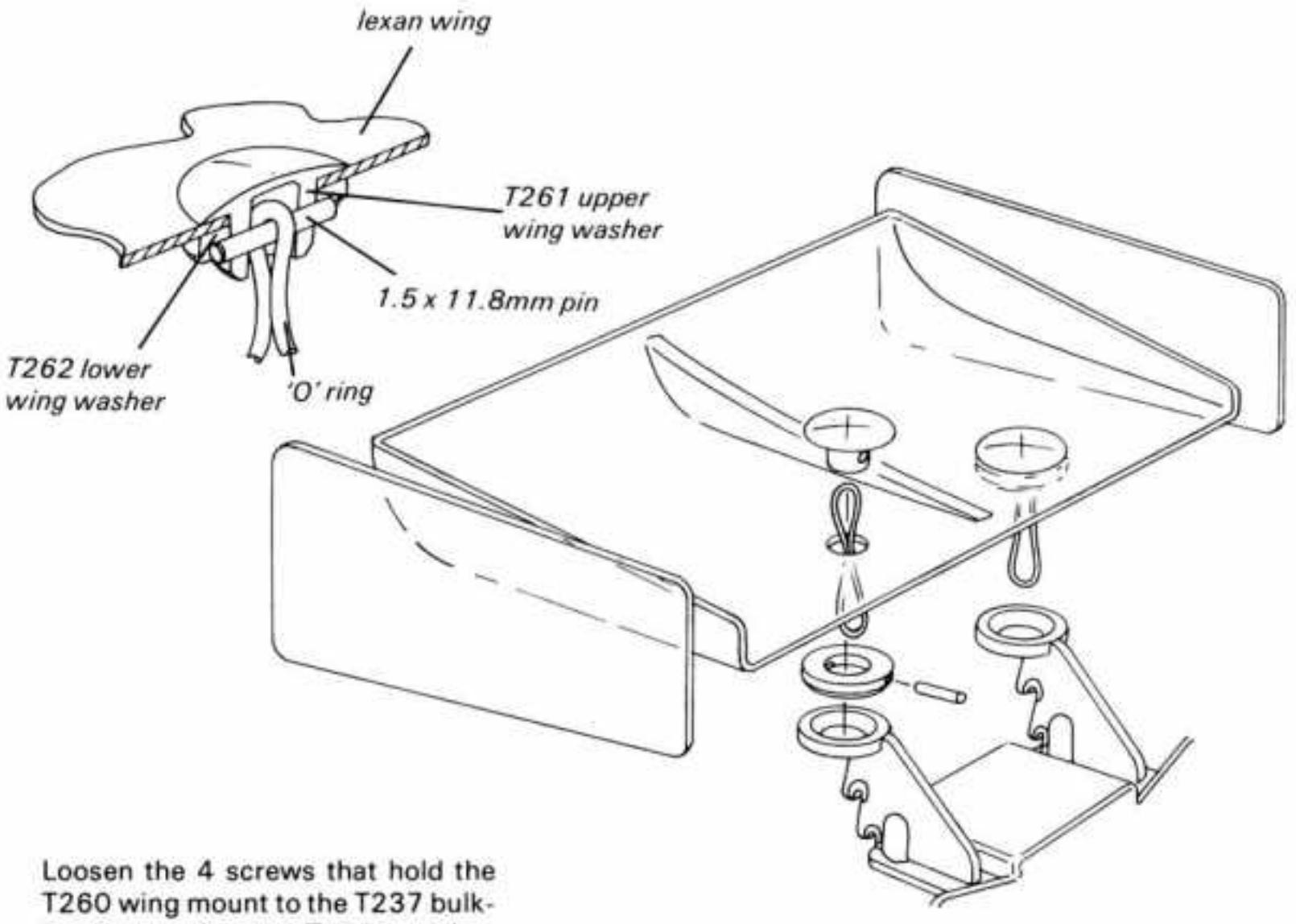
apply T265 window masks as shown

lexan paint

Schumacher

TOP CAT

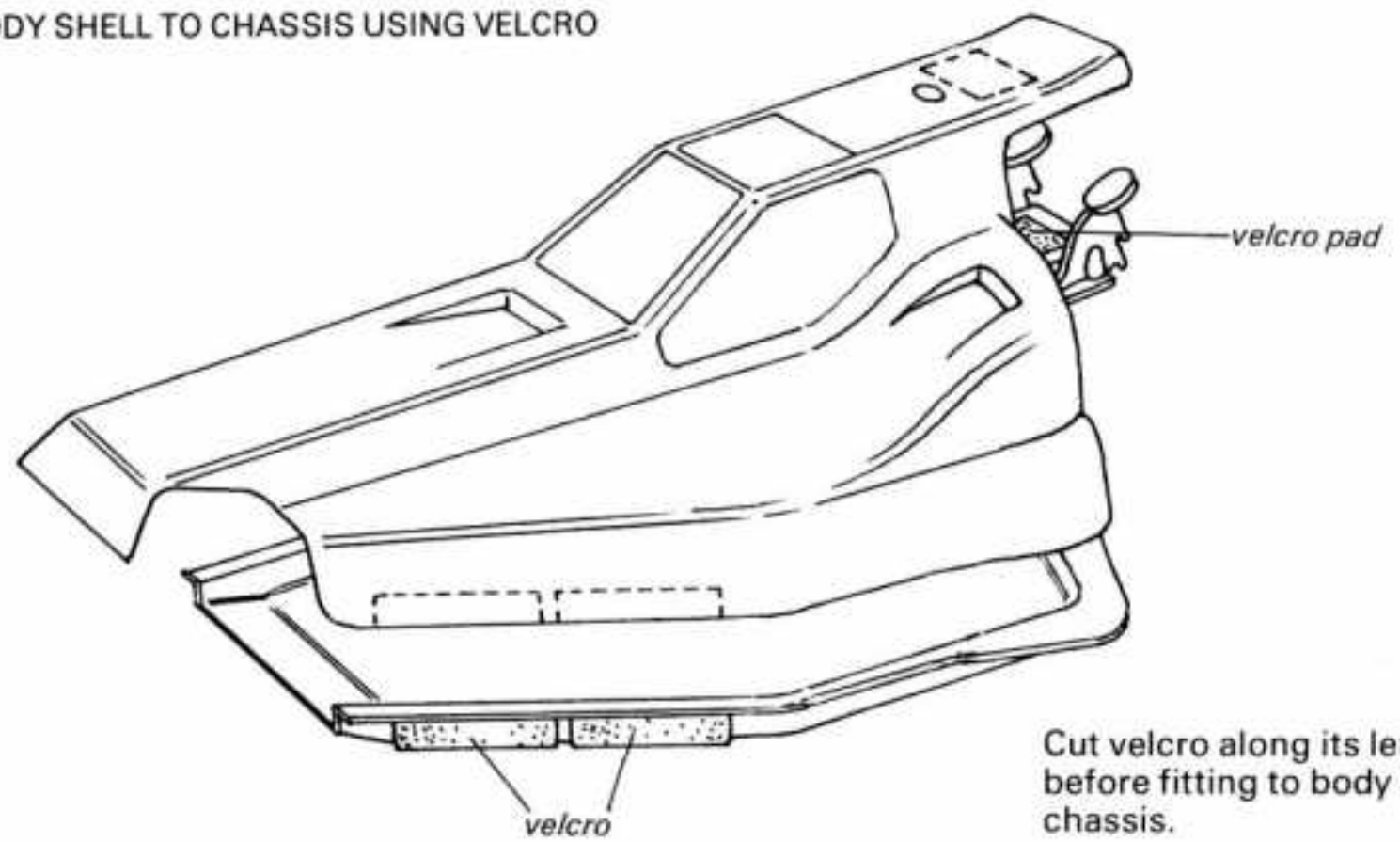
FITTING REAR WING



Loosen the 4 screws that hold the T260 wing mount to the T237 bulkhead to enable the T119 aerial to be inserted.

Fix wing sideplates using sticky pads

FITTING BODY SHELL TO CHASSIS USING VELCRO



Cut velcro along its length before fitting to body & chassis.

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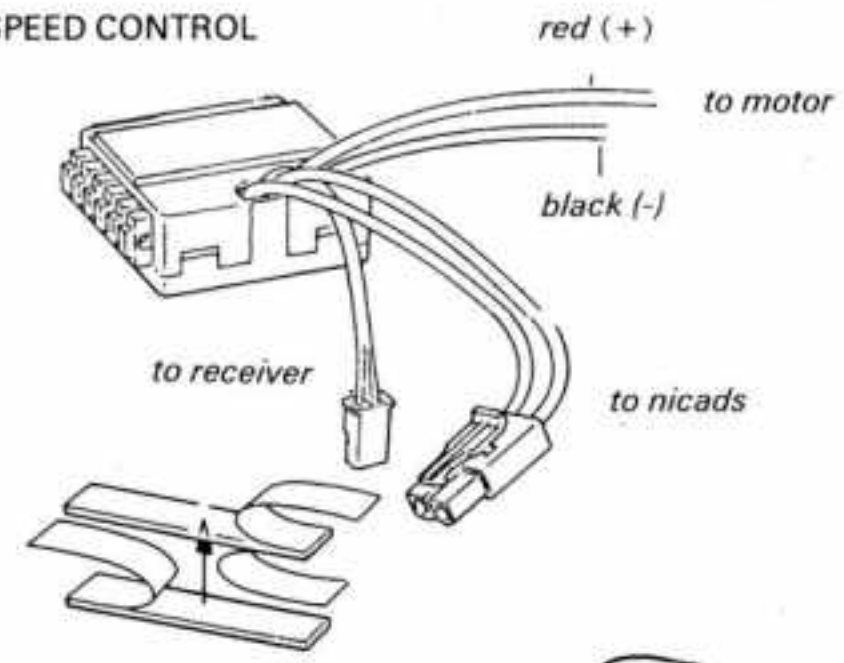
TOP CAT

RADIO INSTALLATION

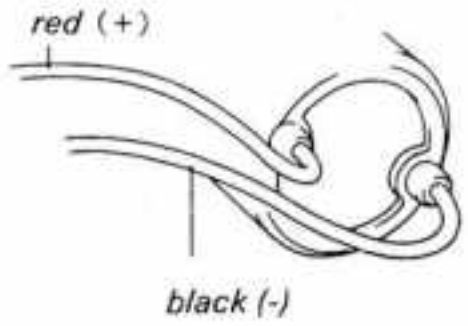
ARRANGEMENT OF RADIO EQUIPMENT

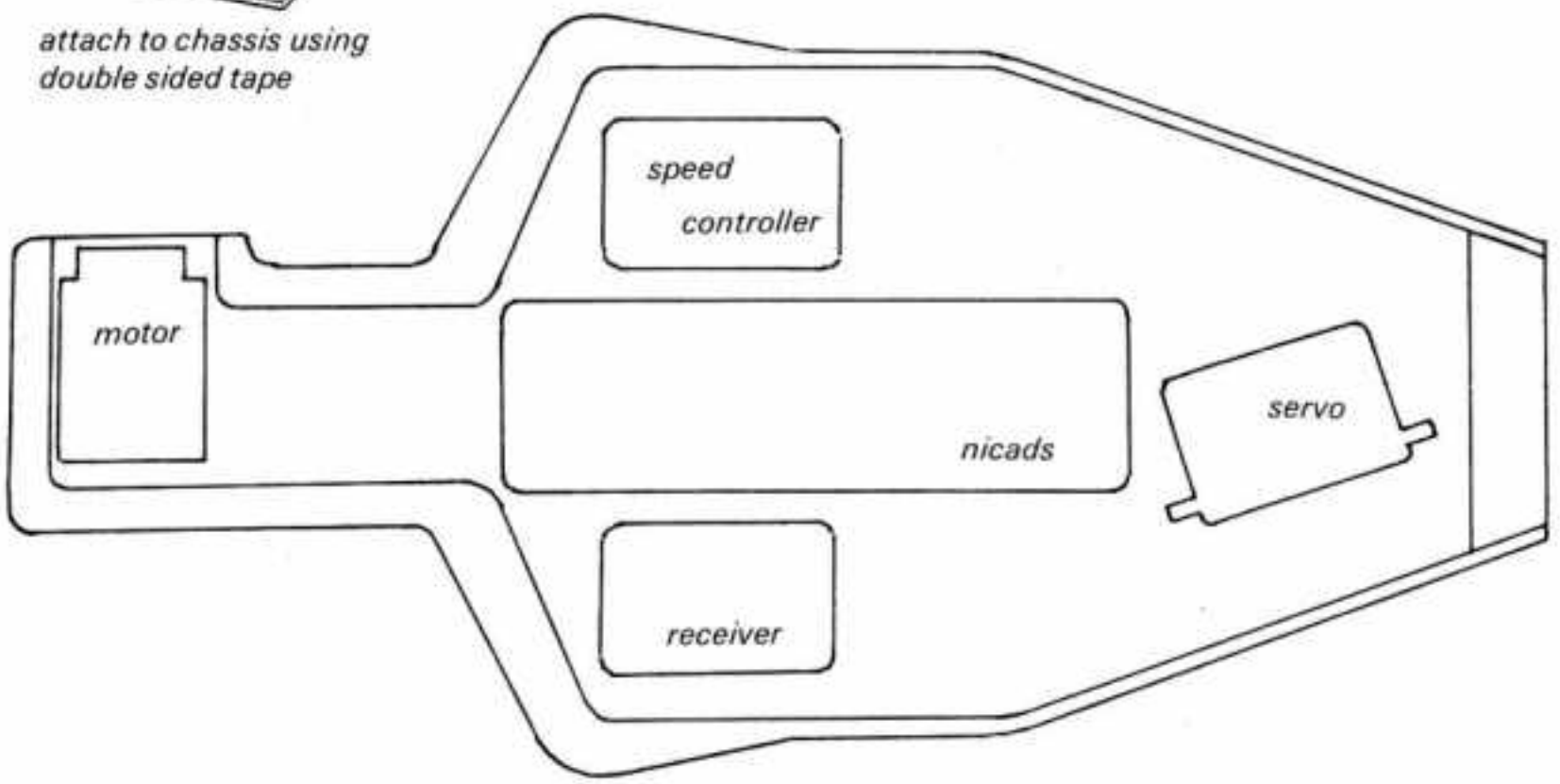
SPEED CONTROL

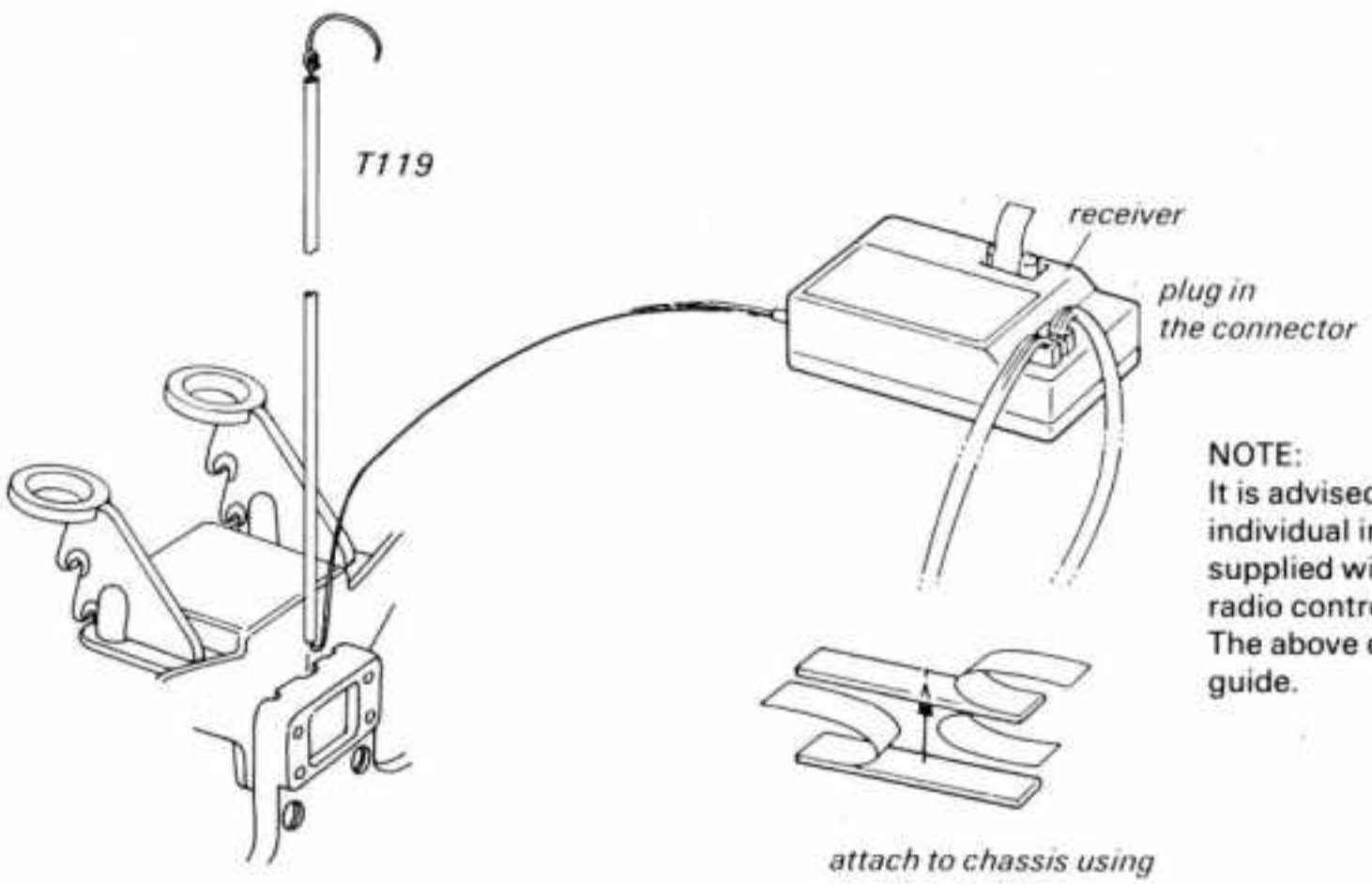


attach to chassis using
double sided tape

MOTOR







attach to chassis using
double sided tape

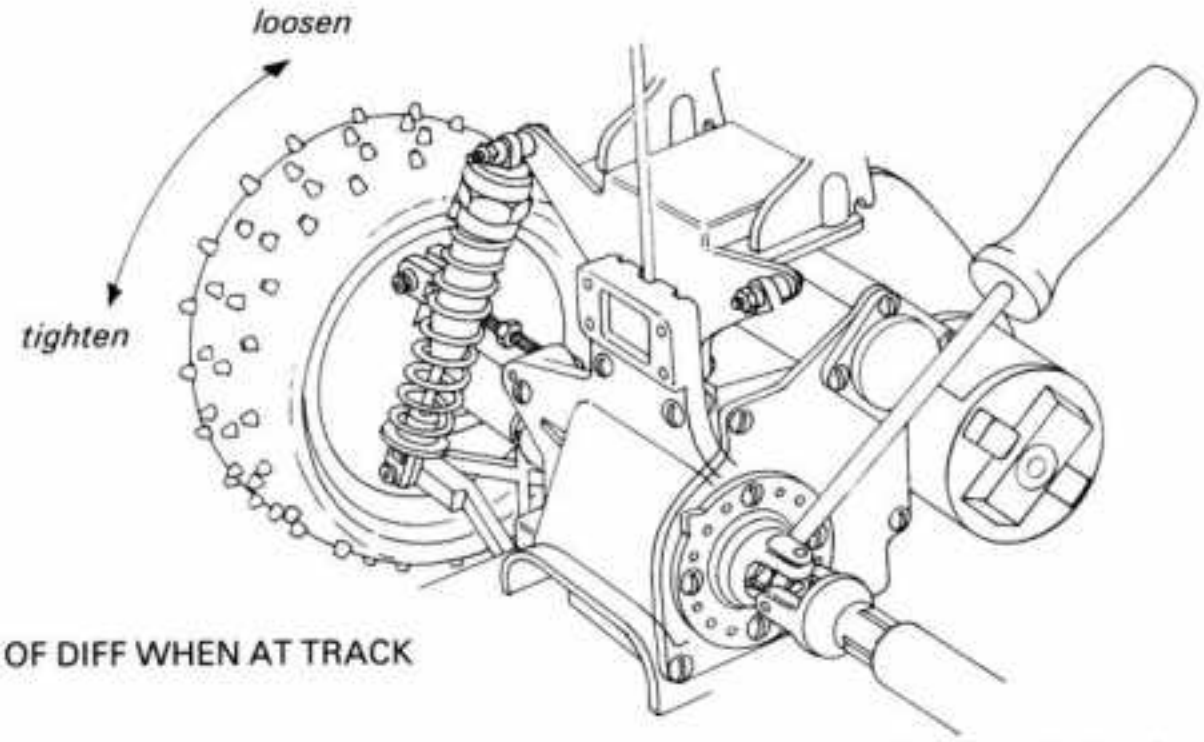
NOTE:
It is advised to consult the individual instruction sheets supplied with your own type of radio control and speed controls The above diagrams are only a guide.

TRACK SETTINGS

1) Make sure all screws are tight. Recheck after every race.

2) Differential adjustment

The differential should not slip under normal use. The correct tension is sufficient to give enough drive for the prevailing track conditions without slip and without excessive tension.
When you first run the car punch the throttle momentarily to find if there is slip, this sounds just like belt slip. If you have correctly adjusted the belt tension (Transmission Assembly section 14) then thighten differential until slip is eliminated. Tighten the differential by inserting a screwdriver in the slot of the rear axle (it should be located on the left side of the car) then turn the right rear wheel clockwise to tighten or anti-clockwise to loosen. When tightening make adjustment of no more than ¼ turn at a time.



ADJUSTMENT OF DIFF WHEN AT TRACK

3) Belt Adjustment: If correctly assembled and adjusted as shown in Transmission Assembly paragraph 14 it is most unlikely that trackside adjustment will be required.

Never run with a slipping belt as both pulleys and belt can be damaged. Belt slip sounds like a tearing noise when the throttle is opened wide. Always recheck differential adjustment first as in Paragraph 2 because differential slip and belt slip sound very similar. To adjust, remove transmission assembly from the car by first removing the motor guard and then the 4 counter sunk screws from underneath and finally the two screws which pass through the bulkhead. Belt tension is then adjusted as in Transmission Assembly paragraph 14.

4) Camber

The rear wheel should be set at 1-2 deg. negative camber. This means that the tops of the wheels lean inwards when viewed from the rear. Adjustment is carried out by turning the hexagon part of the top link The left hand thread of the link is nearest the small groove in the hexagon. Turning this end clockwise will increase length and reduce camber, turn anti-clockwise to increase camber.

5) Toe in

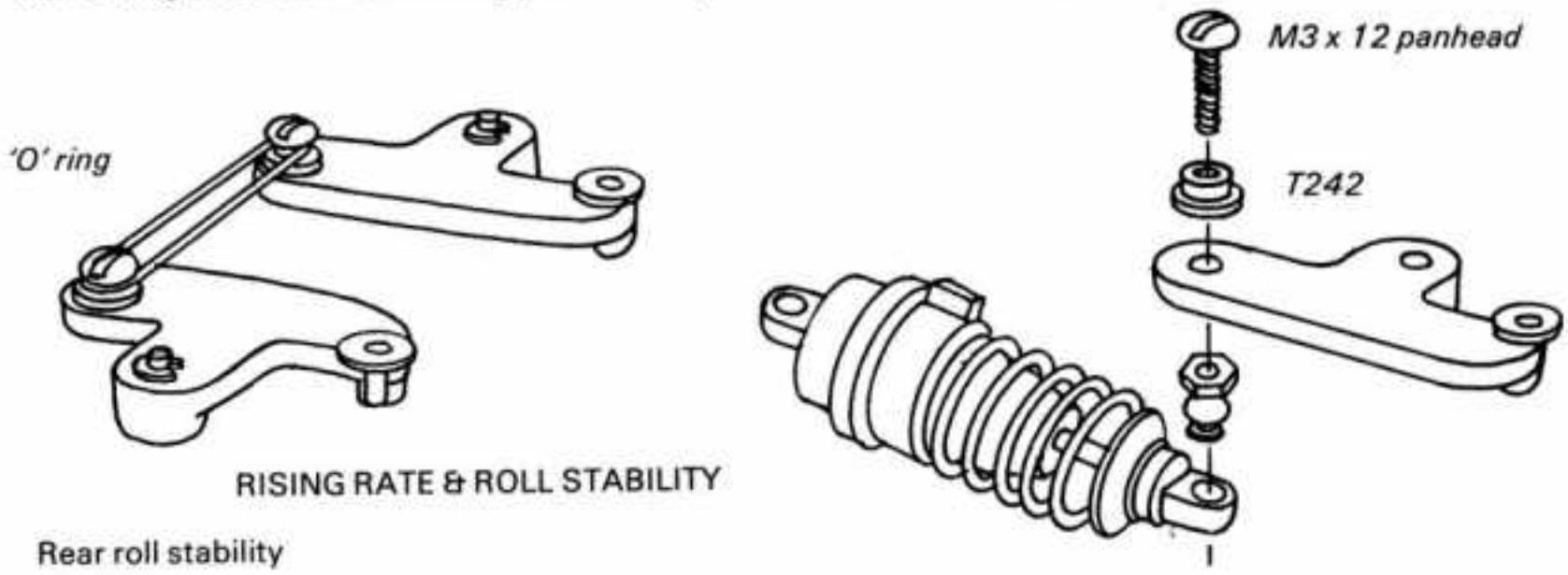
The front track rods are adjustable, similar to the top links at the rear. Set the front wheels up to be parallel to each other when pointing straight ahead.

6) Ride height and suspension drop

Ride height is the height the car runs at under normal loaded conditions. It can be adjusted by changing the spring spacers fitted on the shock absorbers. Run the lowest ride height that track conditions allow. Suspensions drop is the maximum downward movement of the wheel. It can be adjusted at the rear by fitting washers inside the shock absorbers under the pistons. The front suspension drop is set for average conditions. However it is possible to fit an adjusting screw as shown in diagram.

7) Front roll stabilizer and rate riser

An 'O' ring fitted as shown in diagrams below provides both roll stability and rising rate suspension.



RISING RATE & ROLL STABILITY

8) Rear roll stability

This is governed by the position of the shock absorber mounting point on the wishbone. Maximum roll stiffness occurs when outer most mounting holes are used. Bring shocks inboard to gain maximum rear end grip.

9) Damping

Run the lightest, thinnest shock fluid available so long as wheels do not bounce.

10) Tyres

The T651 rear and T655 front tyres in the kit will give safe predictable handling for normal 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. If on grass the car turns into corners too tightly, then try cutting down the spikes of the front tyres, or use a lower grip tyre from the chart below. On hard dusty surfaces, try using well worn tyres or cut all spikes down to approximately half height.
Consult the chart for your requirement.

HIGH PERFORMANCE OFF ROAD TYRE GUIDE

PART No.	WET GRASS	DRY GRASS	HARD DIRT	MUD	CARPET	POLISHED FLOOR	TYPE
T650 T652 T654	***	***	**	***	***	**	SOFT STD SPIKE STUD(Fr)
T651 T653 T655	**	**	**	**	***	***	HARD STD SPIKE STUD(Fr)
T658 T660	*	**	**	*	***	***	SOFT MINI SPIKE
T659 T661	*	**	***	*	**	**	HARD MINI SPIKE
T666 T668	**	**	**	**	***	***	SOFT CUT SPIKE(Rr) RIB SPIKE(Fr)
T667 T669	**	***	***	**	**	*	HARD CUT SPIKE(Rr) RIB SPIKE(Fr)
T670 T671	*	*	*	*	***	*	SPONGES T & G
T662 T664	**	**	**	*	***	***	SOFT BLOCKS
T663 T665	**	***	***	*	**	**	HARD BLOCKS
T672 T674	**	**	**	**	***	***	SOFT CUT SPIKE
T673 T675	**	**	***	**	**	**	HARD CUT SPIKE

*** *HIGH GRIP* ** *MEDIUM GRIP* * *LOW GRIP*

11) Gear rations for 5 minute Race Duration

Pinion	Gear	Pinion to gear Ratio	Overall ratio	Approx. motor wind	Schumacher Motor	
19	95	5.000	12.14	14T		
19	92	4.942	11.99			
19	89	4.684	11.36	15T	Pink Power	▲ Hot Motor
19	86	4.526	10.99			
22	95	4.318	10.48			
22	92	4.182	10.15	17T	Red Heat	
22	89	4.045	9.80			
22	86	3.909	9.49			
25	95	3.800	9.23	19T	Gold Rush	
25	92	3.68	8.94			
25	89	3.56	8.64			
25	86	3.44	8.35	21T	Quick Silver	Mild Motor
28	95	3.393	8.23			
28	92	3.286	7.99			
28	89	3.178	7.72	27T	Ultra	
28	86	3.071	7.45		Stock	▼

Dont forget car performance also depends on tyre diameter.
Most tyres are 85mm in diameter but minispike are 78mm diameter and need a reduction of approximately 10% on overall ratio to give the same car performance. In general cars run longer with smaller pinions. Excessively large pinions, particularly with hot i.e. low wind motors can cause overheating and damage. The gear ratio required will vary with race duration and track condition so you must experiment for best results.

12) Lubrication

All bearings must be lubricated, especially during wet weather. Alwasys remove bearings and clean after running in wet conditions. A533 ballraces may be cleaned by carefully removing the seals with a knife blade under the outside edge and pressed back into place after cleaning. Black contact seals may be removed to reduce drag in clean conditions. WARNING: Some aerosol oils and degreasers will expand bearings seals causing drag. Plastic parts should not be lubricated. Drive belts MUST NOT be lubricated. Ball differentials and thrust races should only be lubricated with silicone grease.

13) General
In general the car should understeer - this means the front wheels slide nore 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 will allow - a low car always corners better than a high car.
Use the softest damper settings that stop the wheels from bouncing. It is very easy to over damp the car and cause bouncing at speed.

Schumacher

TOP CAT

KIT CONTENTS LIST

Bag No.	Spares No.	Part No.	Description	No off	
U405	U405J		**Topcat 2WD 1/10 Off Road**		
	U221D	T221	Chassis & Pan	1	
	U544S	U544	Body & wing	1	
	U550F	T550	Transmission	1	
	U552H	T552	Rear suspension	1	
	U553I	T553	Front suspension	1	
	U555K	T555	Shock absorbers (pk 4)	1	
	U556L	T556	Topcat Wheels, Tyres & Bumper	1	
	U557M	T557	Instruction Book Set	1	
T550	U550F		**Transmission Topcat**		
		T178	Transmission Housing	1	
		T195	Drive Belt HTD 72 x 8mm loose	1	
		T215	Gear cover	1	
		T255	Motor Guard	1	
		T179	Cover plate	1	
		T180	Motor plate	1	
		T084	Rear Axle	1	
		A537	Oilite Bush (4 x 16 x 5)	2	
		A538	Oilite Bearing (9 x 16 x 5)	2	
		A539	Bearing Sleeve (5mm)	2	
		T108	U/J Pivot Assembly	4	
		T131	U/J Assembly Tool F/G	1	
		T227	Layshaft - Rear	1	
		T229	95T Gear 48 DP	1	
		T234	22T Pinion 48 DP	1	
	U701A	T701	Topcat Pulley Set		
		T203	Diff. Pulley 51T x 10mm	(1)	
		T196	21T Pullet - 2WD	(1)	
		T197	Spacer Pulley	(1)	
		T258	Pulley Flange	(2)	
	U704D	T704	Drive Shaft Mouldings 2WD		
		T027	Drive Shaft - Male	(2)	
		T208	Drive Shaft - Female	(2)	
		T030	Wheel Hub	(2)	
		T031	Rear Hub	(2)	
		T517	Bearing Housing Moulding		
		T083	Bearing Housing Diff. Closed	(1)	
		T081	Bearing Housing Rear Eccentric	(2)	
		T082	Bearing Housing Diff. Open	(1)	
T700	U700Z		**Topcat Transmission Fixings**		
		A035	St. St. Screws M3 x 6 Cp. Hd.	2	
		A225	Steel Washer M3	2	
		A301	Screw Self Tap No. 2 x 3/16 Pn. Hd.	12	
		A323	Screw Self Tap No. 4 x 3/8 Pn. Hd.	8	
		A326	Screw Self Tap No. 4 x 3/4 Pn. Hd	2	
		A040	St. St. Screw M3 x 20 Cp. Hd	2	
		A051	Nyloc Nut M3	3	
		A154	Disc Spring 1/8 x 0.23 x 0.012	2	
		A180	'O' Ring 1/8 x 1/16 Nitrile	1	
		A333	Srew Self Tap No. 4 x 3/8 Csk. Hd.	4	
		A304	Screw Self Tap No. 2 x 3/8 Pan Hd.	10	
		A141	Socket Wrench 1.5mm AF	1	
T702	U702B		**Diff. Repair Kit**		
		A520	Thrust Race 1/8 x 5/16	(1)	

Bag No.	Spares No.	Part No.	Description	No off	
		A220	Thrust Washer 3/8 x 13/16 x 1/32	(2)	
		T118	Washer Carrier - Large	(2)	
		T243	Friction Paper 3/8 x 13/16	(2)	
		A405	Needle Roller 2.0 dia x 7.8mm	(2)	
		A500	Steel Ball 3.0mm dia.	(15)	
T552	U552H		**Rear Suspension - Topcat**		
		T199	Rear Hub Carrier	2	
		T200	Rear Wishbone	2	
		T202	Pivot Block Rear Wishbone	4	
		T237	Bulkhead - Topcat	1	
		T260	Shock & Wing Mount	1	
		A536	Oilite Bearing (9 x 16 x 5)	4	
		A538	Bearing Sleeve (11mm)	2	
T703	U703C		**Topcat Rear Susp. Small Parts**		
		A028	Steel Screw M3 x 16 Pn. Hd.	2	
		A030	Steel Screw M3 x 10 Pn. Hd.	2	
		A010	Steel Screw M3 x 20 Pn. Hd.	2	
		A048	Steel Nut M3	3	
		A093	Stud M3 x 35mm	2	
		A323	Screw Self Tap No. 4 x 3/8 Pn. Hd.	8	
		A325	Screw Self Tap No. 4 x 5/8 Pn. H.d	2	
		A411	St. St. Pin 2.0 Dia. x 40mm	2	
		A412	St. St. Pin 2.0 Dia. x 54mm	2	
		T238	Rose Joint Socket	4	
		T239	Rose Joint Ball	4	
		A143	Socket Wrench 2.5mm AF	1	
		A206	Nylon Washer 3.3 x 8.0 x 1.6mm	5	
T712	U712L		**Wing Mount Kit - Topcat**		
		A407	Needle Roller 1.5 Dia. x 11.8mm	2	
		A190	'O' Ring 9.0 x 1.6 mm	2	
		A323	Screw Self Tap No. 4 x 3/8 Pn. Hd.	2	
		T735	Wing Mount Mouldings		
		T263	Wing Bracket	(2)	
		T262	Lower Wing Washer	(2)	
		T261	Upper Wing Washer	(2)	
T553	U553I		**Front Suspension - Topcat**		
		T204	Front Hub Carrier	2	
		T205	Retainer Bearing	2	
		T206	Inner Nut & Hub Holder	2	
		T207	Wishbone Lower LH Front	1	
		T208	Wishbone Lower RH Front	1	
		T209	Wishbone Upper LH Front	1	
		T210	Wishbone Upper RH Front	1	
		T213	LH Front Suspension Arm	1	
		T214	RH Front Suspension Arm	1	
		T216	Shock Mount Front	2	
		T217	Centre Track Rod	1	
		T240	Front Plate	1	
		T241	Steering Lever	2	
		T245	Pivot Bracket	2	
		T246	Strut Lower Wishbone	2	
		T249	Top Plate	1	
		T734	Front Suspension Levers	1	
		T247	Suspension Lever RH	1	

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PART No.- STORES NUMBER ONLY, NOT SALEABLE.
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TOP CAT

KIT CONTENTS LIST

Bag No.	Spares No.	Part No.	Description	No off	
		T248	Suspension Lever LH	1	
		A533	Ball Race 8 x 16 NF Seal/Sheild	2	
T706	U706F		**Chassis Accessories - Topcat**		
		T252	Wire Clamp with Fixing Screw	1	
		A424	Link Wire	2	
		T253	Servo Post	2	
		A333	Screw Self Tap. No 4 x 3/8 Csk. Hd	2	
		T254	Nicad Holder & Strap	1	
		A323	Screw Self Tap No. 4 x 3/8 Pan Hd.	4	
		A043	Steel Screw M3 x 8 Csk Hd.	2	
		A048	Steel Nut M3	2	
		T121	Sticky Pads 1" x 1/8"	4	
		T122	Velcro 40 x 20mm	3	
T705	U705E		**Topcat Front Suspension Small Parts**		
		A037	St. St. Screw M3 x 10 Cp. Hd.	2	
		A051	Nyloc Nut	2	
		A171	Tension rings (21.6 x 2.4)	4	
		A410	St. St. Pin 2.0 Dia x 26mm	4	
		T045	Pivot Ball	4	
		A225	Steel Screw M3 x 8	2	
		A302	Screw Self Tap No. 2 x 1/4 Pn. Hd.	2	
		A304	Screw Self Tap No. 2 x 3/8 Pn. Hd.	16	
		A031	Steel Screw M3	10	
		A323	Self Tap No. 4 x 3/8 Pn. Hd.	6	
		A333	Screw Self Tap No. 4 x 3/8 Csk. Hd.	2	
		A034	Steel Screw M3 x 12 Pn. Hd.	3	
		A048	Steel Nut M3	8	
		A095	Stud M3 x 45mm	2	
		T242	Steering Pivot	2	
		A042	Steel Screw M3 x 6 Csk. Hd.	2	
		T239	Rose Joint Ball	4	
		T238	Rose Joint Socket	4	
		A043	Steel Screw M3 x 8 Csk. Hd.	5	
		A103	'E' Clip 1/8 (0.012 thick)	6	
		A413	St. St. Pin 2.0 Dia. x 14mm	2	
		A405	Needle Roller 2.0 Dia. x 7.8	2	
		T228	Pivot Crashback 1/8"	2	
T555	U555K		**Shock Absorbers (pk 4) Topcat**		
		T059	Cap - Shock Absorber	4	
		T060	Shock Body 16mm Stroke	2	
		T061	Shock Body 32mm Stroke	2	
		T133	Suspension spring 0.045 x 11 x 2.5 rear	2	
		T132	Suspension spring 0.045 x 8 x 1.5 front	2	
		T062	Piston Rod - 16mm Stroke	2	
		T063	Piston Rod - 32mm	2	
		T162	Diaphragm Shock Absorber PG9114	4	
		A103	'E' Clip 1/8 (0.012 thick)	12	
		T117	Spacer Tube 25mm	1	
		T614	Shock Absorber Seals		
		T158	Bush - Shock Absorber	4	
		A185	'O' Ring 5.1 x 1.6mm Nitrile	4	
		T159	Seal Housing - Shock Absorber	4	
		A181	'O' Ring 1/8 x 1/16 Silicone	8	
		A131	Circlip 8.0 x 0.39 mm	4	

Bag No.	Spares No.	Part No.	Description	No off	
		A209	Nylon Washer 3.3/3.2 x 7.7/7.8 x 0.8	4	
		T238	Rose Joint Socket	4	
		T239	Rose Joint Ball	4	
		A039	St. St. Screw M3 x 16 Cp. Hd.	2	
		A038	St. St. Screw M3 x 12 Cp. Hd.	2	
		A051	Nyloc Nut M3	2	
		A048	Steel Nut M3	2	
		A230	Stepped Washer	2	
		A208	Nylon Washer		
	U613J	T613	Spring Stops & Spacers Moulding		
		T090	Spring Stop	(4)	
		T092	Spacer 1mm	(4)	
		T093	Spacer 2mm	(4)	
		T094	Spacer 4mm	(4)	
		T095	Spacer 8mm	(4)	
	U637H	T637	Shock Pistons (set of 4)		
		T096	Shock Absorber Piston (1sq. mm hole)	(2)	
		T097	Shock Absorber Piston (2sq. mm hole)	(2)	
T556	U556L		**Topcat Sheels, Tyres & Bumper**		
		T651	Cat Rear Tyres 4 x 20 Hard Spike	2	
		T655	Cat Front Tyres 2 x 20 Hard Spike	2	
		T224	Front Wheel - Spoked White	2	
		T225	Rear Wheel - Spoked White	2	
		T259	Topcat Bumper	1	
		T119	Aerial Tube - 13 inches	1	
T557	U557M		**Instruction Book Set Topcat**		
		T264	Decal Sheets - 4 Colour	1	
		T265	Window Masks - Topcat	1	

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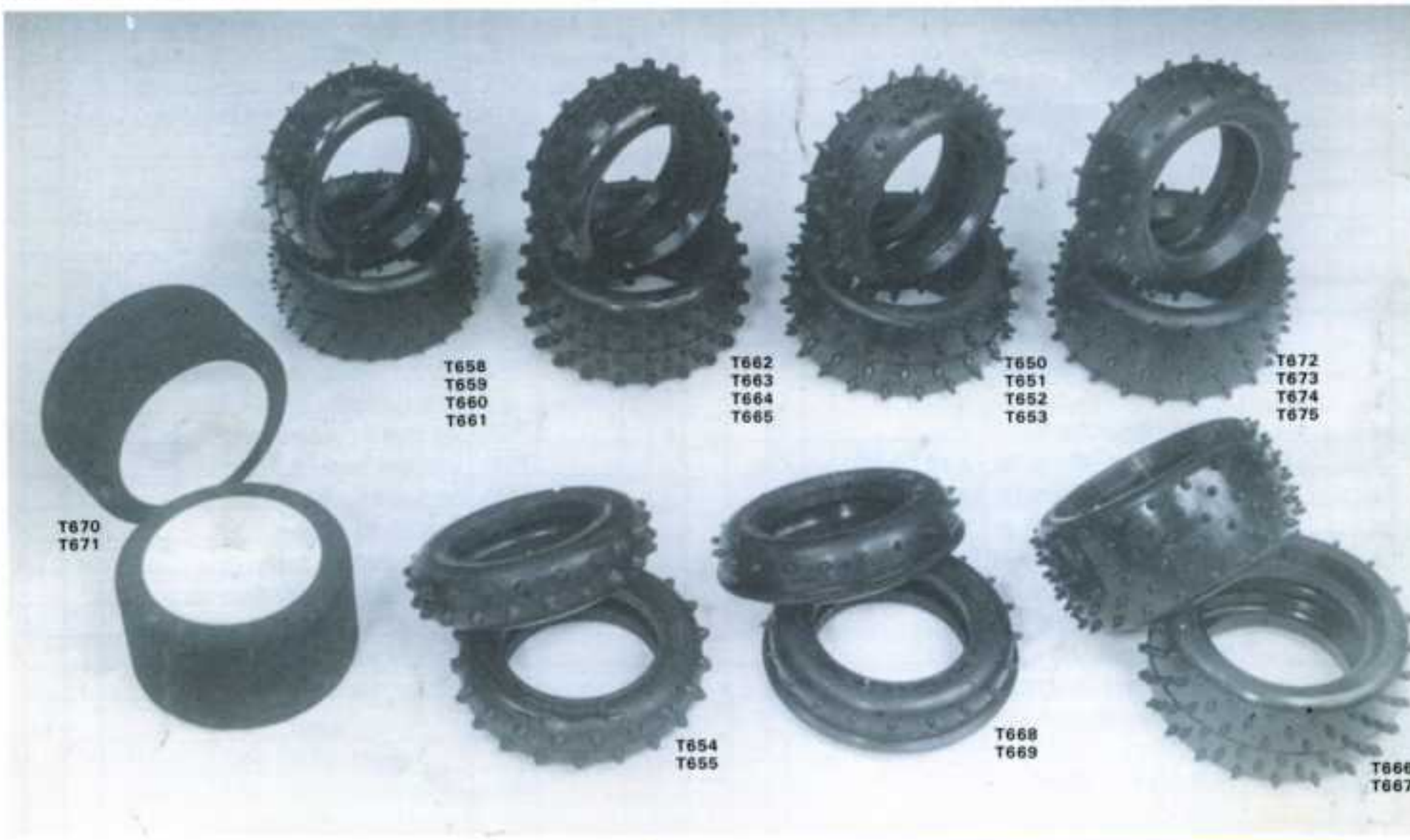
SPEED SECRETS

GET TO "GRIPS" WITH SUCCESS

WHEN IT COMES TO 'STATE OF THE ART' RACE WINNING TYRES, THE SERIES OF SCHUMACHER CAT TYRES IS THE STANDARD BY WHICH ALL OTHERS ARE JUDGED.
WHETHER YOU ARE RUNNING 2WD OR 4WD THE CAT TYRES OFFER THE HANDLING AND PERFORMANCE THAT UNTIL NOW HAS NOT BEEN AVAILABLE. TO DESIGN THESE TYRES IT TOOK MORE THAN JUST DRAWING A SPIKE PATTERN ON A PIECE OF PAPER, BECAUSE THAT IS NOT THE ONLY THING THAT CONTRIBUTES TO A TYRES PERFORMANCE. THE RUBBER COMPOUND IS ALL IMPORTANT IN A HIGH PERFORMANCE TYRE. SCHUMACHER DESIGNERS SPENT OVER A YEAR TESTING AND CONSULTING WITH ENGINEERS TO DEVELOP JUST THE RIGHT COMBINATION OF FLEX, GRIP AND WEAR TO PRODUCE THE BEST TYRE IN OFF-ROAD RACING!



T650	REAR	TYRES	4 x 20	SPIKE	(SOFT)
T651	REAR	TYRES	4 x 20	SPIKE	(HARD)
T652	FRONT	TYRES	3 x 20	SPIKE	(SOFT)
T653	FRONT	TYRES	3 x 20	SPIKE	(HARD)

T662	REAR	TYRES	6 x 20	BLOCKTREAD	(SOFT)
T663	REAR	TYRES	6 x 20	BLOCKTREAD	(HARD)
T664	FRONT	TYRES	4 x 20	BLOCKTREAD	(SOFT)
T665	FRONT	TYRES	4 x 20	BLOCKTREAD	(HARD)

T654	FRONT	TYRES	2 x 20	STUD	(SOFT)
T655	FRONT	TYRES	2 x 20	STUD	(HARD)

T670	FRONT	TYRES	SPONGE T & G ON WHEEL
T671	REAR	TYRES	SPONGE T & G ON WHEEL

T672	REAR	TYRES	4 x 20	CUT SPIKE	(SOFT)
T673	REAR	TYRES	4 x 20	CUT SPIKE	(HARD)
T674	FRONT	TYRES	3 x 20	CUT SPIKE	(SOFT)
T675	FRONT	TYRES	3 x 20	CUT SPIKE	(HARD)

T658	REAR	TYRES	5 x 24	MINISPIKE	(SOFT)
T659	REAR	TYRES	5 x 24	MINISPIKE	(HARD)
T660	FRONT	TYRES	4 x 24	MINISPIKE	(SOFT)
T661	FRONT	TYRES	4 x 24	MINISPIKE	(HARD)

T668	FRONT	TYRES	1 x 20	RIB SPIKE	(SOFT)
T669	FRONT	TYRES	1 x 20	RIB SPIKE	(HARD)

T666	REAR	TYRES	6 x 20	CUT SPIKE	(SOFT)
T667	REAR	TYRES	6 x 20	CUT SPIKE	(HARD)

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