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Assembly & Maintenance Manual



Issue 1

S1102

R/C Nitro - High Performance Stunt Truck

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www.racing-cars.com

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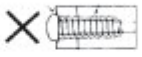
IMPORTANT SAFETY NOTES

1. This product is not suitable for children under 14 years of age unless supervised by an adult.
2. 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.
3. Shock fluids, grease and adhesives should be kept out of children's 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.
5. Carefully read all manufacturers warnings and cautions for any glues or paints that may be used for assembly purposes.

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. Screws can be made easier to tighten if a drop of oil is used.

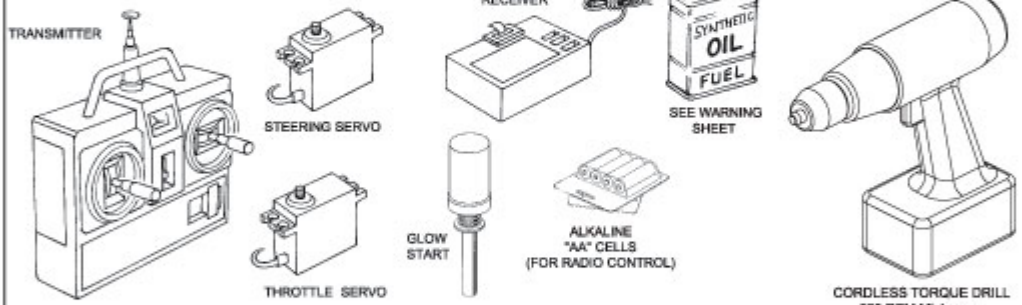


Good



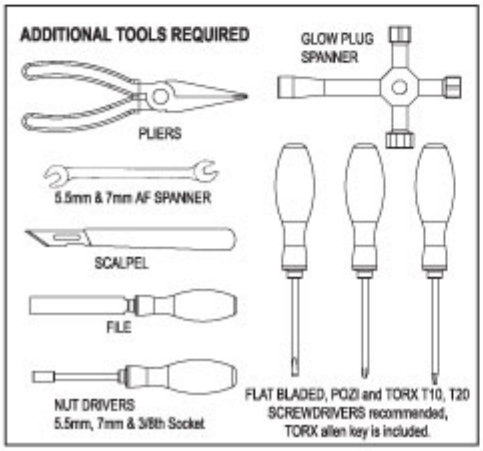
Over tighten and may strip the thread in the plastic

ADDITIONAL ITEMS REQUIRED



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

ADDITIONAL TOOLS REQUIRED





In line with our policy of continous development the exact specification of the kit may vary.
In the unlikely event of any problems with your kit please contact the model shop where you purchased it.

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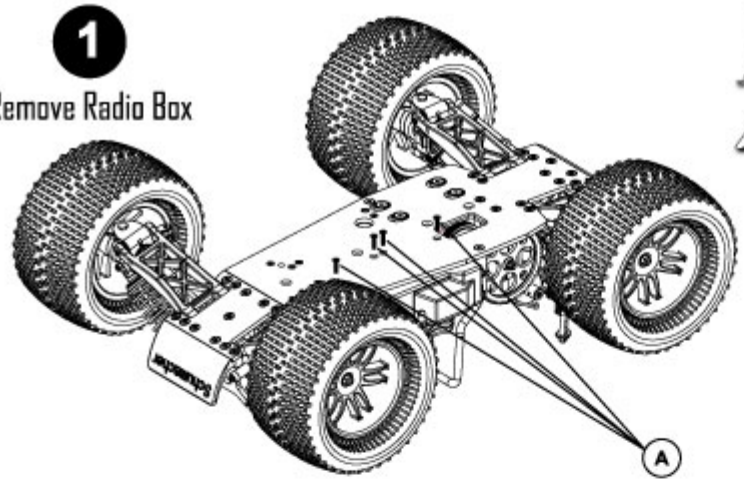
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RADIO INSTALLATION
Parts required:

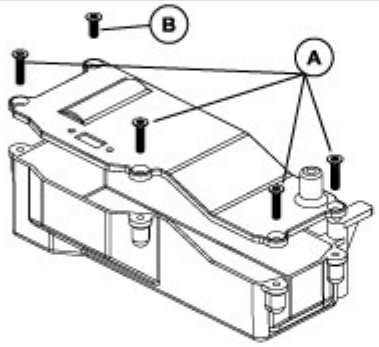
(A) M3 x 12mm Csk TORX Head x 8

(B) M3 x 10mm Csk TORX Head x 1

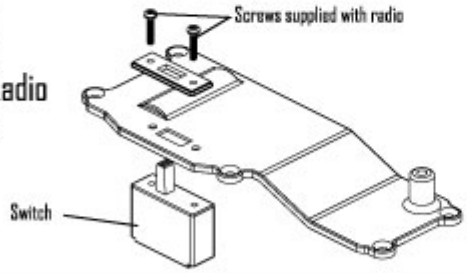
1 Remove Radio Box



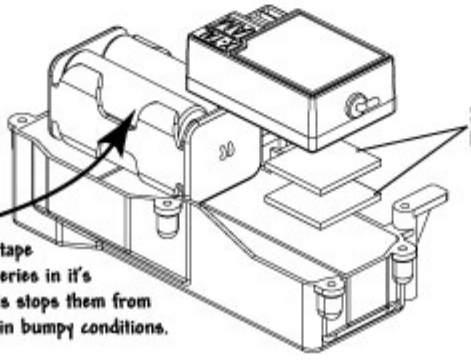
2 Remove Lid



3 Assemble Radio Switch

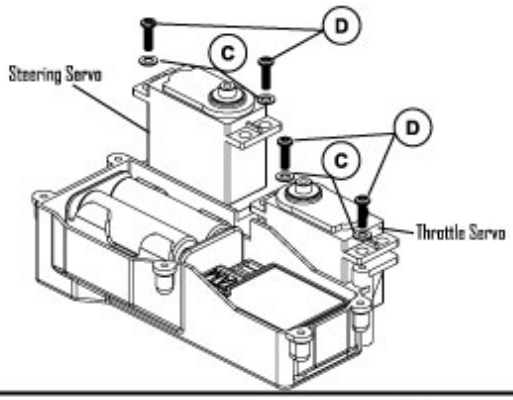


4 Install Battery & Receiver



Track Tip
Wrap electrical tape around the batteries in it's battery box. This stops them from vibrating loose in bumpy conditions.

5 Install Servos



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RADIO INSTALLATION Continued

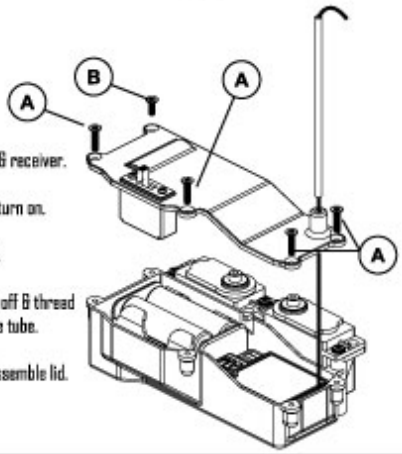
A — M3 x 12mm Csk TORX Head x 8

B — M3 x 10mm Csk TORX Head x 1

C — M3 Steel Washer x 4

D — M3 x 10mm Pan TORX Head x 4

6



Connect up servos, battery, switch & receiver.

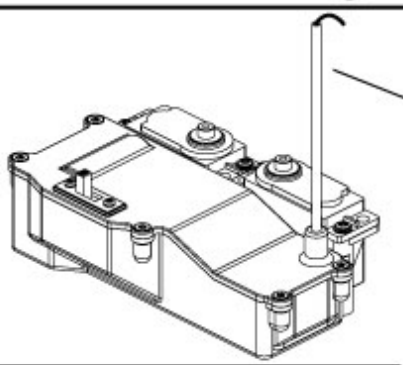
Install batteries into transmitter & turn on.

Set trims on transmitter to neutral.

Test both servos work. Then switch off & thread aerial wire through the lid & into the tube.

Arrange wires into the radio box. Assemble lid.

7

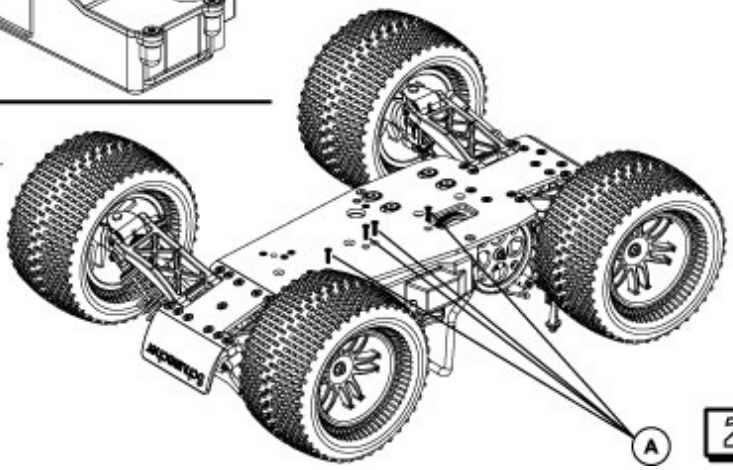


Secure lid to the box.

Re-test to ensure the servos work.

8

Reassemble radio box to car.



1



1a



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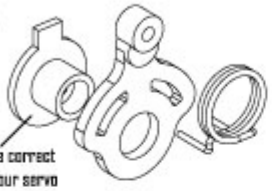
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STEERING LINK
Parts required:

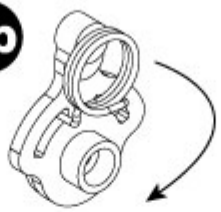
(A) 

Ball Stud Ultra Short M3 x 1

2



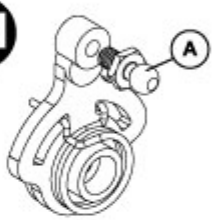
2b



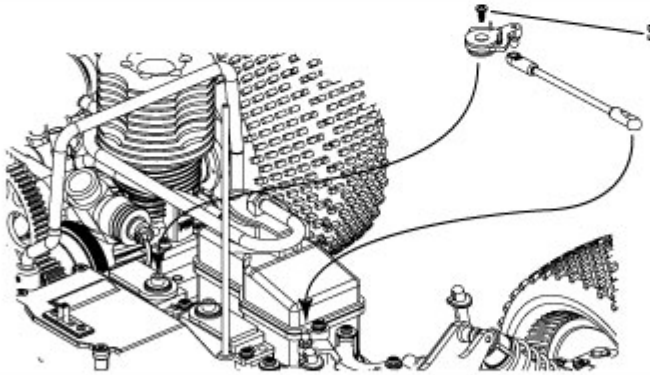
2c



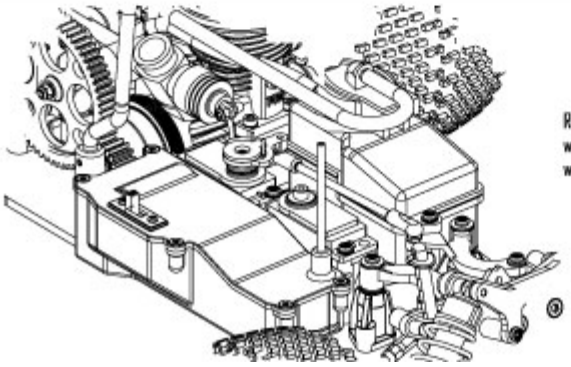
2d



3



4



Re-adjust the link length if the wheels do not point straight ahead when steering is at neutral.

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THROTTLE & BRAKE LINK

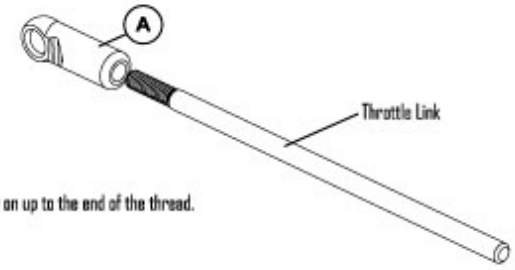
Parts required:

A — Ball Socket x 1

B — No2 3/8 Pan Head x 1

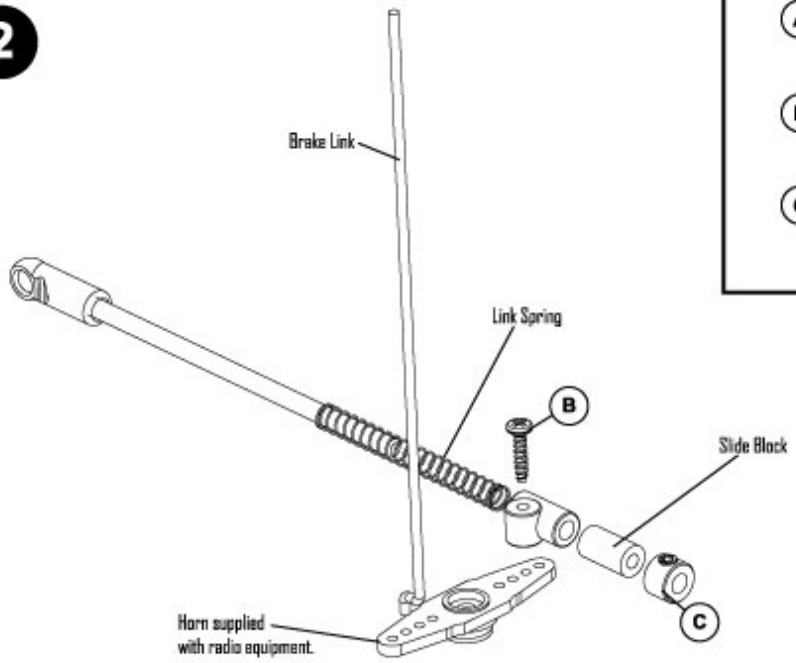
C — Collar & grub screw x 2

1

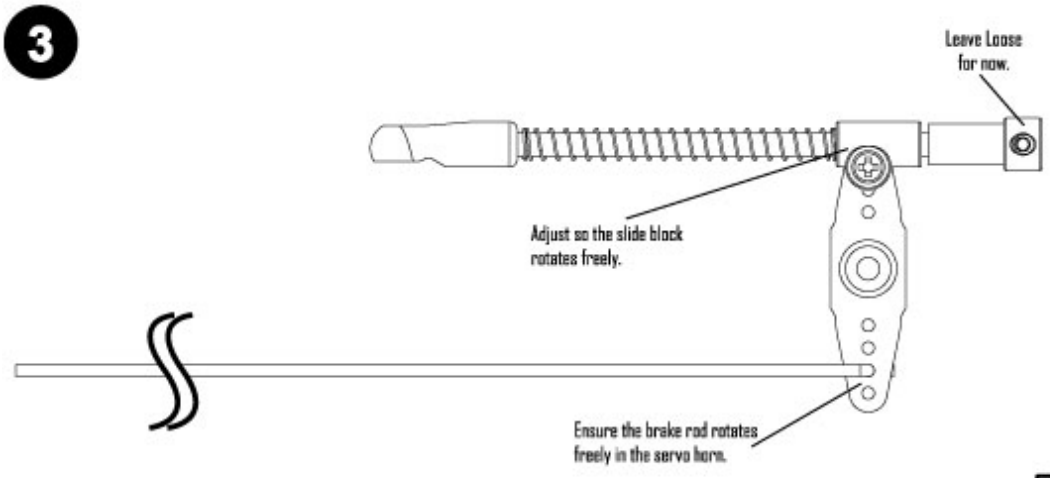


Screw on up to the end of the thread.

2



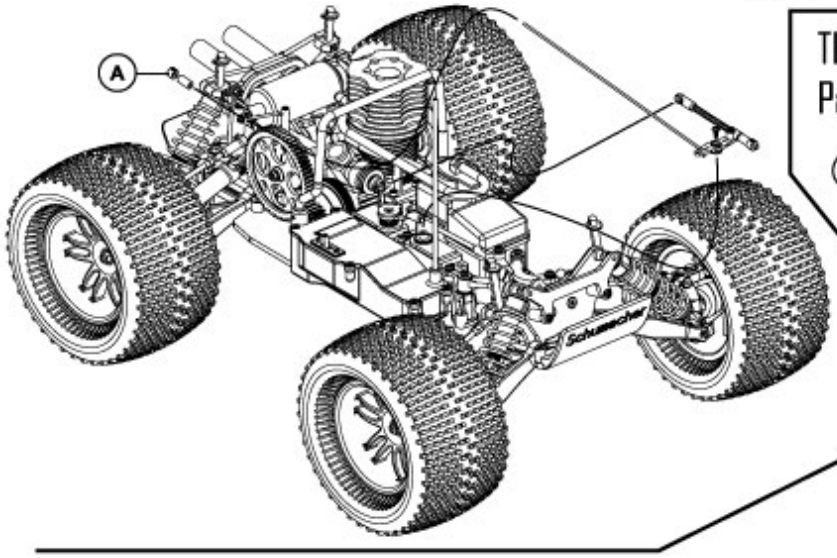
3



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4



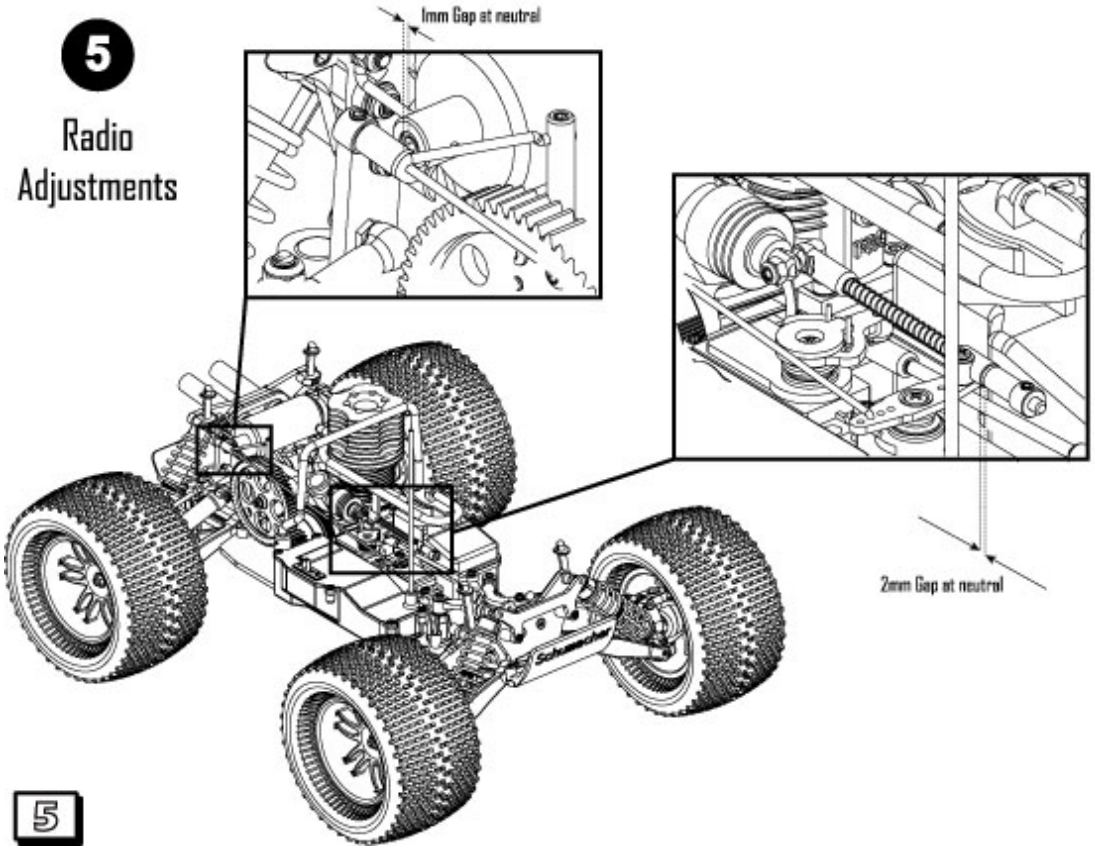
THROTTLE & BRAKE
Parts required:

A

Collar & grub screw x 1

5

Radio
Adjustments

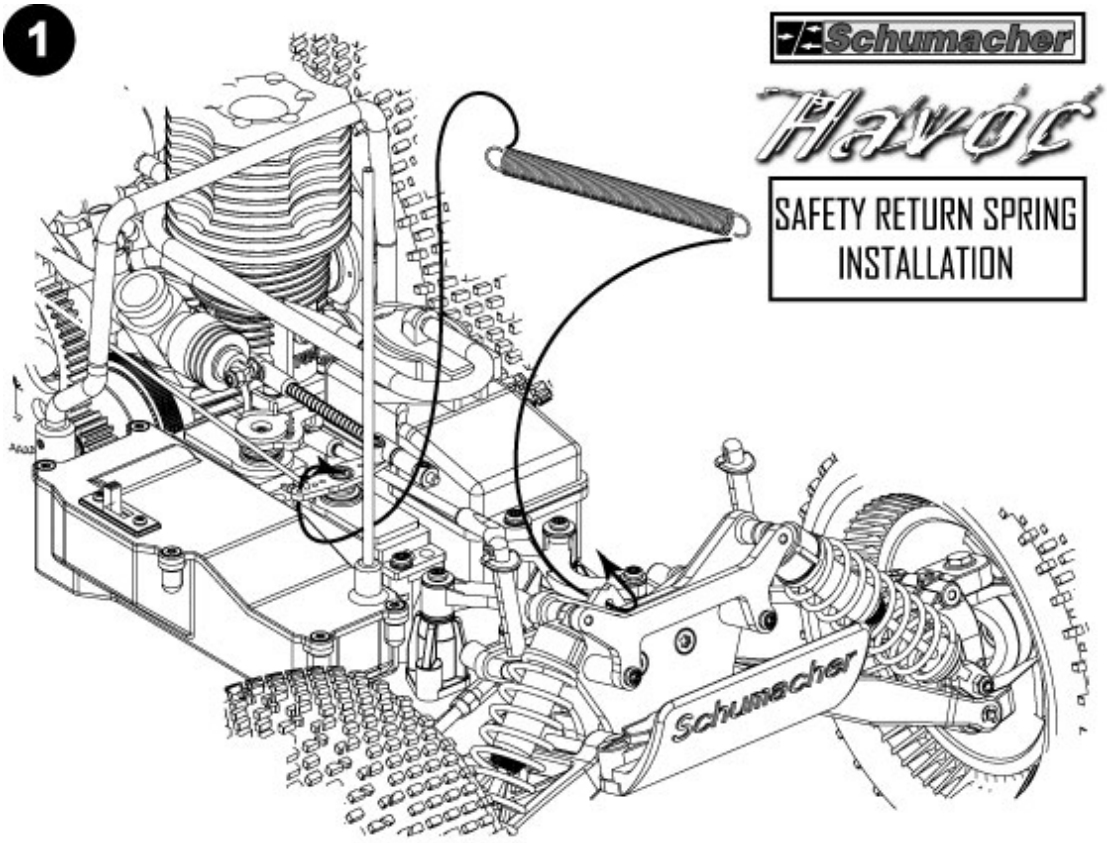


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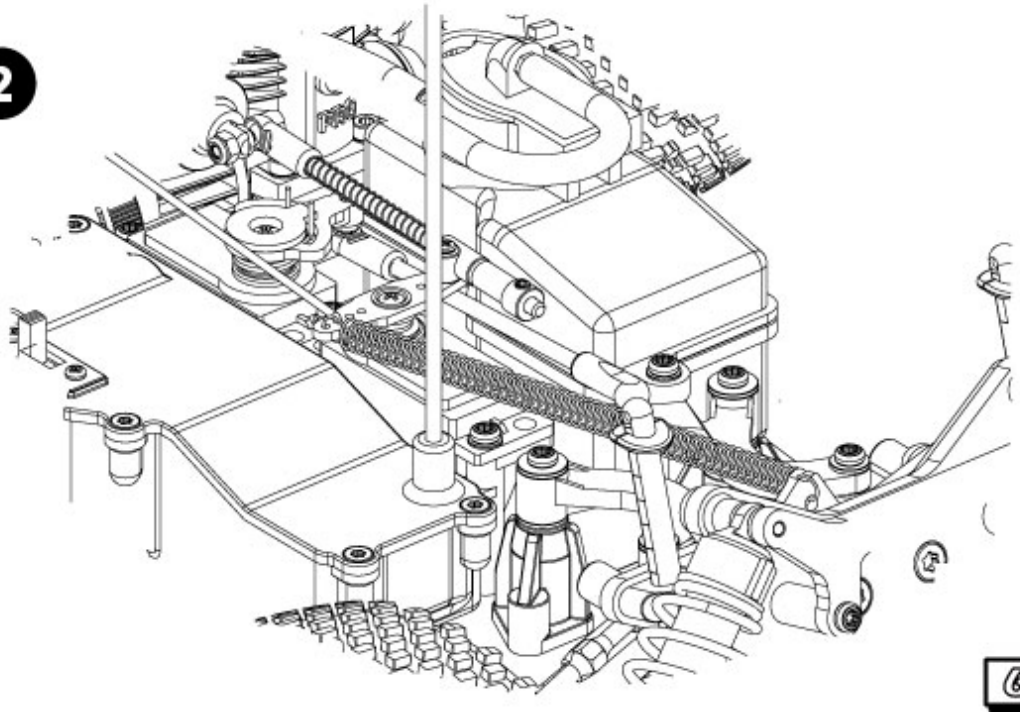
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SAFETY RETURN SPRING INSTALLATION

1



2

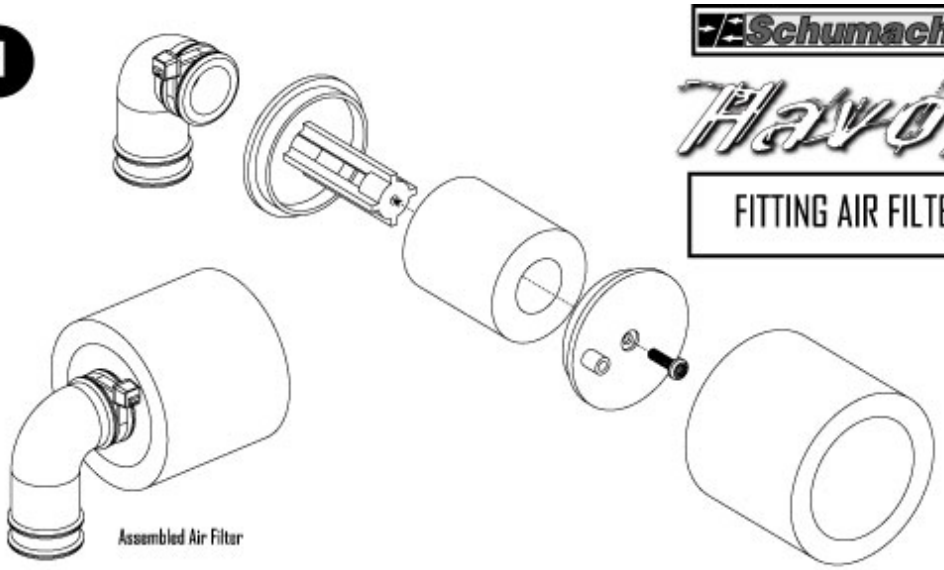


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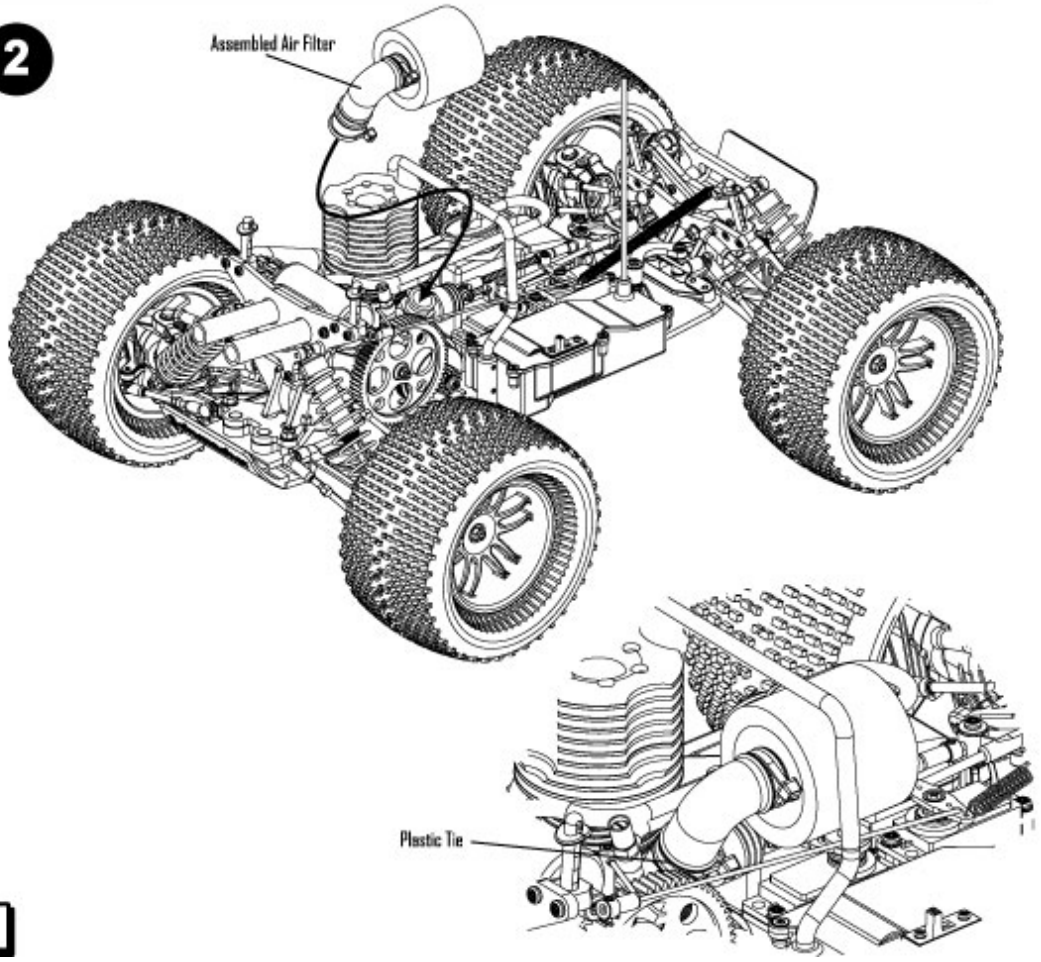
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FITTING AIR FILTER

1



2



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STARTING THE ENGINE

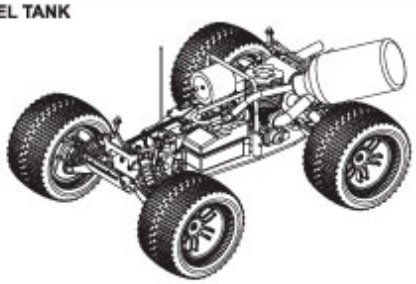
1 SET UP DRILL

After charging your drill, insert the "e-start" adaptor **(ball end out)** and tighten the chuck.
ENSURE THE DRILL ROTATES CLOCKWISE.

Set the torque setting to the lowest possible setting, that will turn the engine over.



2 FILL FUEL TANK





WE STRONGLY RECOMMEND MODEL TECHNICS DYNAGLOW, BLUE THUNDER, MAGNUM OR O'DONNEL 20% FUEL

3 PRIMING ENGINE

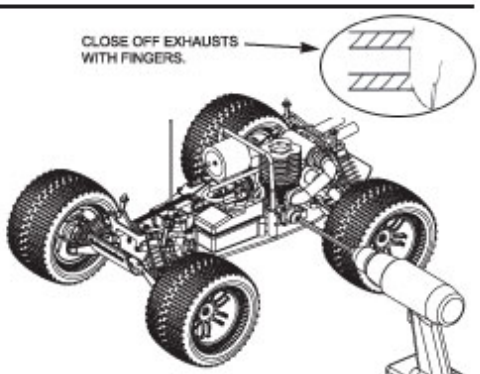
TURN ON TRANSMITTER.
SWITCH ON RECEIVER.
ENSURE BATTERIES ARE FULLY CHARGED.



ENSURE THROTTLE TRIM IS AT NEUTRAL, CHECK THROTTLE, BRAKE & STEERING ACTION.

With the drill STATIONARY
INSERT ball end INTO "e" START.
Turn on drill and watch for the fuel to enter the carb. Then keep going for 3 seconds more.
The engine is now primed.

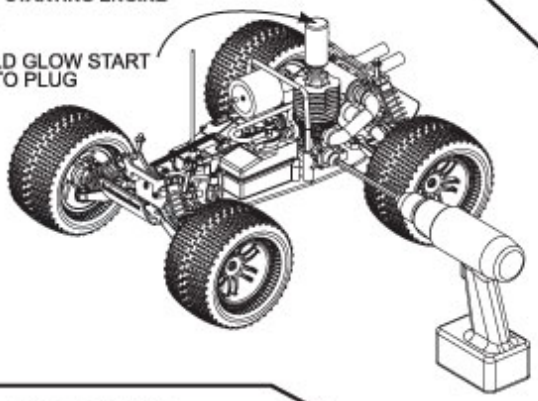
CLOSE OFF EXHAUSTS WITH FINGERS.



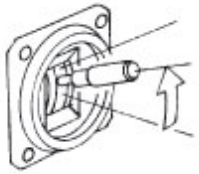
PLEASE NOTE:
1. Only insert the ball end of the driver into the engine.
2. NEVER insert the driver if the drill is spinning.

4 STARTING ENGINE

HOLD GLOW START ONTO PLUG



Turn on drill until the engines starts!



5 STOPPING ENGINE

ENSURE ENGINE IS AT IDLE BEFORE STOPPING.
Stop engine by blocking exhausts.

Pull out drill and gently rev the engine, then remove the glow clip.



WARNING: **ENGINE AND SILENCER WILL BE VERY HOT DO NOT TOUCH FOR SEVERAL MINUTES**

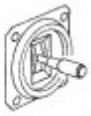
ENGINE SETTINGS

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SETTING IDLE SPEED

TRANSMITTER - ZERO/NEUTRAL







ENGINE STALLS = SCREW IN THROTTLE STOP SCREW TO INCREASE REVS



OK

CAR DOES NOT MOVE AND SOME SMOKE = OK



CAR EDGES FORWARD = UNSCREW THROTTLE STOP SCREW TO LOWER REVS



IDLE SPEED SETTING

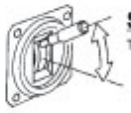
0.25mm to 0.50mm Slide Open

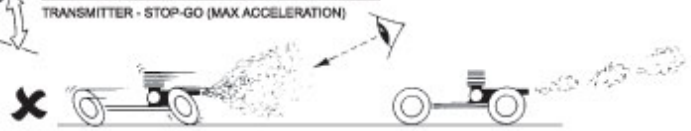


SET IDLE SPEED AS HIGH AS POSSIBLE WITHOUT CAR EDGING FORWARD

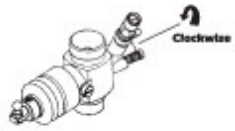
SETTING LOW SPEED MIXTURE

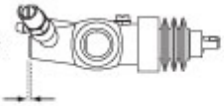
TRANSMITTER - STOP-GO (MAX ACCELERATION)



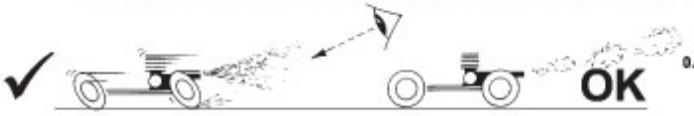


TOO MUCH SMOKE AND SLOW ACCELERATION = SCREW IN LOW SPEED MIXTURE SCREW (TOO RICH)





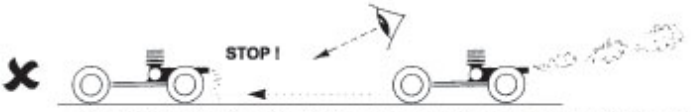
0.40mm out from flush



OK

SOME SMOKE AND GOOD ACCELERATION = OK

LOW SPEED MIXTURE SETTING



CAR EDGES FORWARD AND THEN STALLS = UNSCREW LOW SPEED MIXTURE SCREW (TOO LEAN)



SETTING HIGH SPEED MIXTURE

TRANSMITTER - MAX FULL SPEED



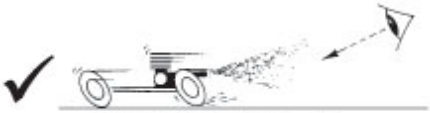




TOO MUCH SMOKE AND SLOW SPEED = SCREW IN HIGH SPEED MIXTURE SCREW (TOO RICH)

HIGH SPEED MIXTURE SETTING

2⅛ Turns Open to 3 Turns Open from fully closed.



OK



SOME SMOKE AND GOOD SPEED = OK



TOO LITTLE SMOKE AND SLOW SPEED = UNSCREW HIGH SPEED MIXTURE SCREW (TOO LEAN)

WARNING: IF CAR BEGINS TO LOSE PERFORMANCE AFTER A FEW MINUTES IT IS PROBABLY **OVERHEATING** AND YOU **MUST STOP** AND UNSCREW HIGH SPEED MIXTURE SCREW 90°

N.B. The settings given are for a starting point only.
SMALL adjustments may be required depending on conditions.

DO NOT ALLOW THE NOISE TO ANNOY OTHERS
DO NOT OPERATE THE "CAR" ON THE PUBLIC HIGHWAY
DO NOT OPERATE THE "CAR" IN A CONFINED SPACE OR CROWDED AREA
DO NOT RUN ENGINE WITHOUT AIR FILTER - SERIOUS DAMAGE WILL RESULT
DO NOT ALLOW THE TRANSMITTER OR RECEIVER BATTERIES TO RUN FLAT

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TROUBLE SHOOTING

RUNNING ENGINE IN FROM NEW

To ensure your engine has a long life the engine needs to be "run in" before being "raced".
Run the car for 2 or 3 tank fulls, at a rich
Carb setting on half throttle, do not use full throttle

AFTER RUNNING IN

After "running in" is complete, and you have re-tuned the high and low end mixture screws for maximum power, you may need to reset the idle speed to prevent the car from "creeping" forward at neutral. This must be done with the IDLE SPEED SCREW on the carburettor NOT with the throttle trim on the radio, which will only apply the brakes. Applying the brakes will leave the clutch dragging and lead to over-heating.

SEE PAGE NINE FOR HOW TO SET YOUR IDLE SPEED.

The following information will help solve any problems when running and maintaining your car

PROBLEM	CAUSE	REMEDY
ENGINE DOES NOT START	FUEL TANK EMPTY, ENGINE NOT PRIMED	FILL TANK AND REPRIME ENGINE
	FLAT GLOW BATTERY OR DEAD GLOW PLUG	RECHARGE BATTERY AND/OR REPLACE PLUG
	CLOGGED AIR FILTER	CLEAN OR REPLACE AIR FILTER
	OVER PRIMED, CYLINDER FLOODED WITH FUEL	REMOVE GLOW PLUG THEN TURN ENGINE OVER TO DISCHARGE FUEL
	INCORRECT CARBURETTOR ADJUSTMENT	CHECK SETTINGS
	INCORRECT LINKAGE ADJUSTMENT	RE ADJUST LINKS WITH SERVO IN NEUTRAL SEE MANUAL
	WORN ENGINE - PISTON LINER	REPLACE PISTON LINER
ENGINE STALLS	FUEL TANK EMPTY	FILL FUEL TANK
	CLOGGED AIR FILTER	CLEAN OR REPLACE AIR FILTER
	INCORRECT CARBURETTOR ADJUSTMENT	RE ADJUST CARBURETTOR SETTINGS
	ENGINE OVER HEATING	ALLOW ENGINE TO COOL DOWN AND OPEN HIGH SPEED MIXTURE SCREW 90°
POOR ENGINE RESPONSE	INCORRECT CARBURETTOR ADJUSTMENTS	RE ADJUST CARBURETTOR SETTINGS
	FUEL TANK PRESSURE PIPE LOOSE, DETACHED OR DAMAGED OR BLOCKED	REPLACE OR REFIT PRESSURE PIPE
	WORN ENGINE - PISTON LINER	REPLACE PISTON LINER
POOR CAR CONTROL	WEAK BATTERIES IN TRANSMITTER	RECHARGE OR REPLACE BATTERIES
	WEAK RECEIVER BATTERIES	RECHARGE OR REPLACE BATTERIES
	TRANSMITTER AERIAL NOT FULLY EXTENDED	EXTEND AERIAL
	POOR ADJUSTMENT OF LINKS	RE-ADJUST LINK TO INSTRUCTIONS

IMPORTANT - REGULAR MAINTENANCE

Check differential adjustment, check all screws are tight, check gear mesh
Adjustment. Oil bearings and keep car clean.

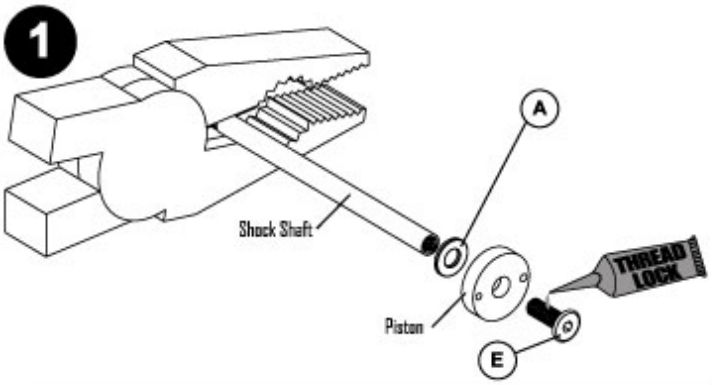
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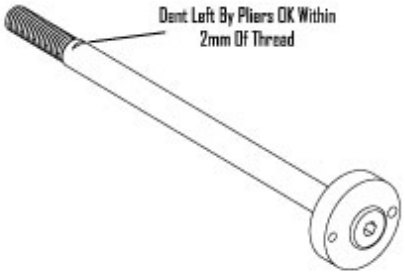
SHOCK ASSEMBLY
Parts required:

- (A) M2.5 Washer x 4
- (B) Spacer x 4
- (C) Bobbin x 4
- (D) Seal Housing x 4
- (E) M2.5 x 8 Csk x 4

1



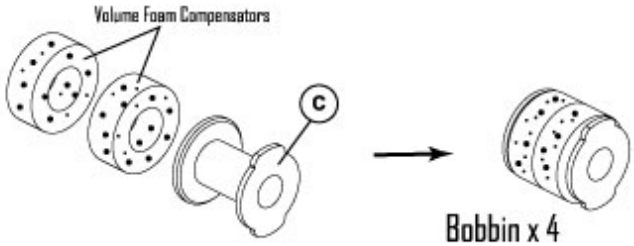
2



x 2

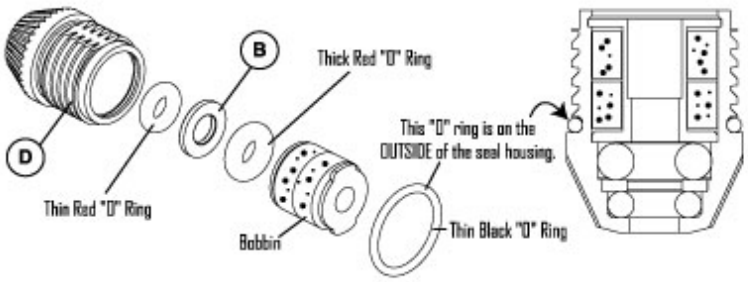
3

N.B.
Assemble 4 units.
2 Long Rear
2 Short Front



Bobbin x 4

4



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SHOCK ASSEMBLY
Parts required:



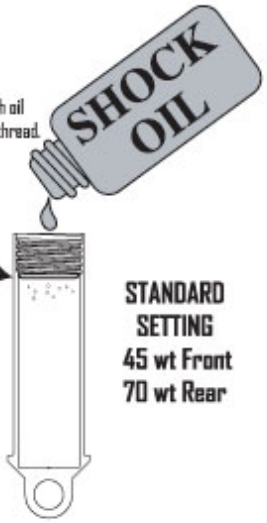
Rod End x 4

5



6

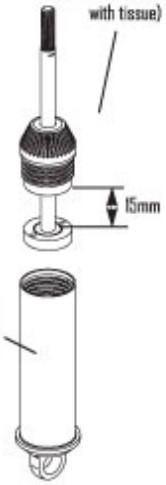
Fill shock body with oil to the bottom of the thread.

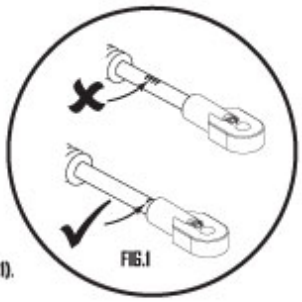


STANDARD SETTING
45 wt Front
70 wt Rear

7

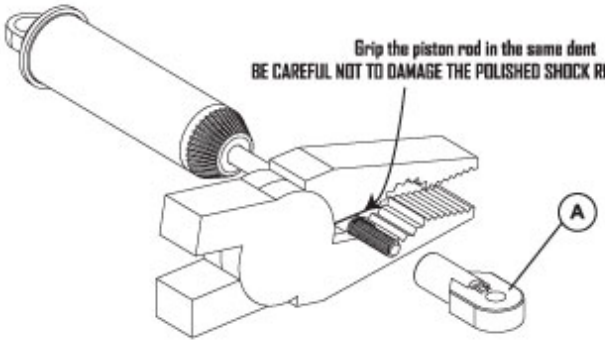
Position assembly as shown and carefully screw into the shock body. (some oil will spill from the body, clean with tissue)





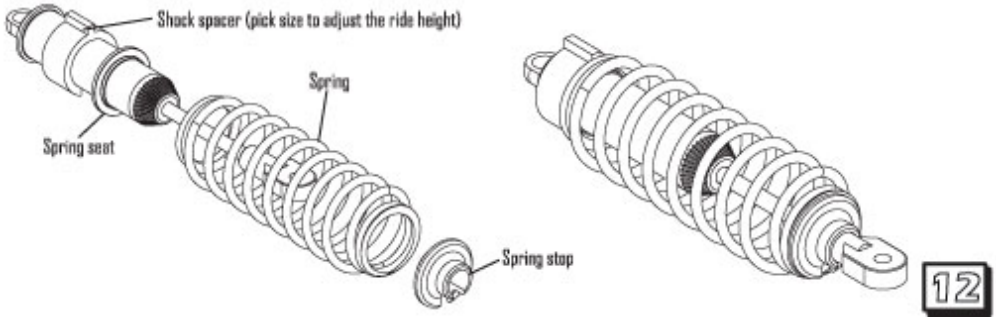
8

Grip the piston rod in the same dent
BE CAREFUL NOT TO DAMAGE THE POLISHED SHOCK ROD (See FIG.1).



Screw (A) on to shaft until no thread is showing. BUT NO MORE.

9

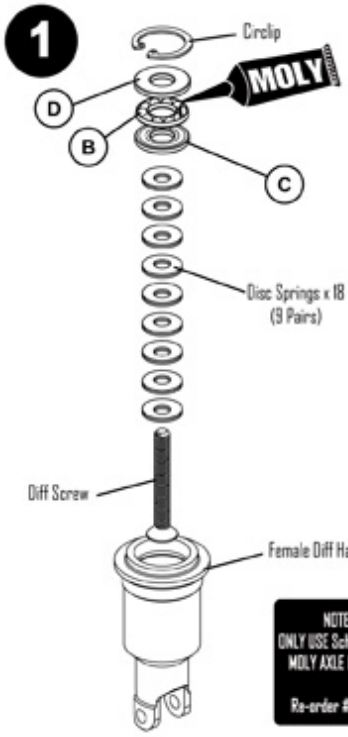


Havoc

Due to Schumachers policy of constant development and improvement please note the following changes to pages: **13, 14, 17** and **25**. We apologise for any inconvience.

AMENDMENT SHEET

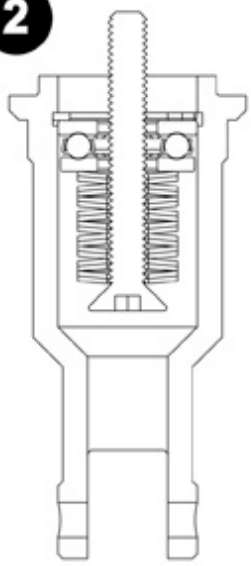
1



NOTE:
ONLY USE Schumacher
MOLY AXLE GREASE

Re-order # U1857

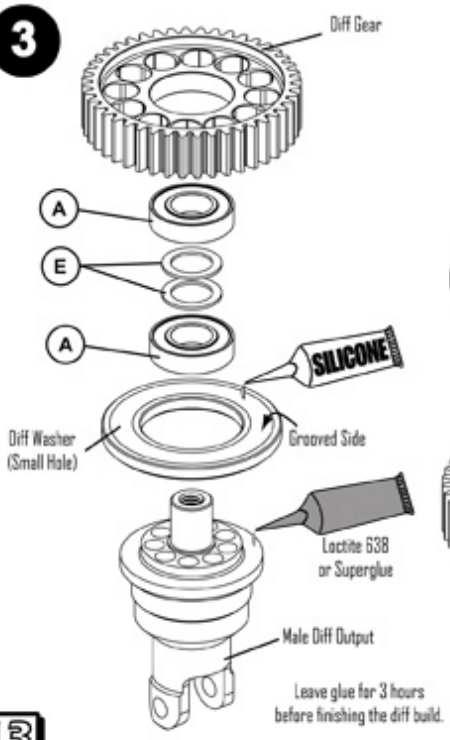
2



DIFFERENTIAL SERVICE

A	7 x 14 x 3.5 Ball Race
B	Thrust Race Assembly x 1
C	Thrust Washer (Smaller Hole) x 1
D	Thrust Washer (Bigger Hole) x 1
E	Shim 7 x 10 x 0.5
F	Diff Ball x 12

3

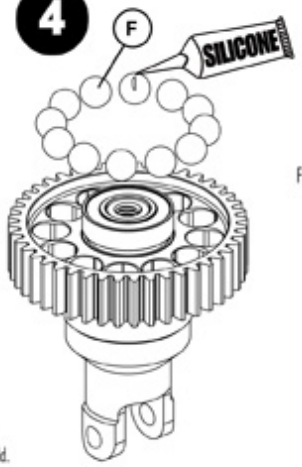


Leave glue for 3 hours before finishing the diff build.

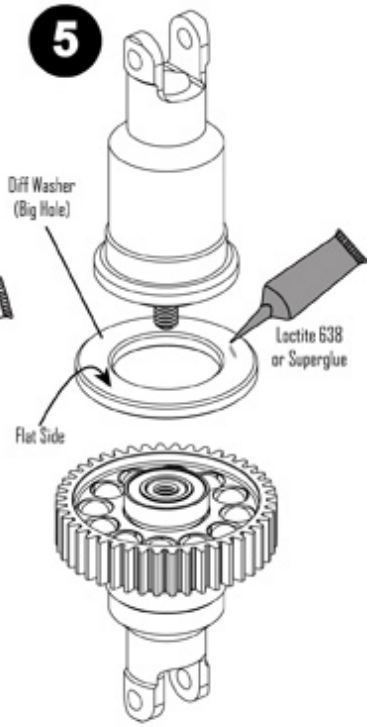
NOTE:
ONLY USE Schumacher
SILICONE DIFF LUBE

Re-order # U1301

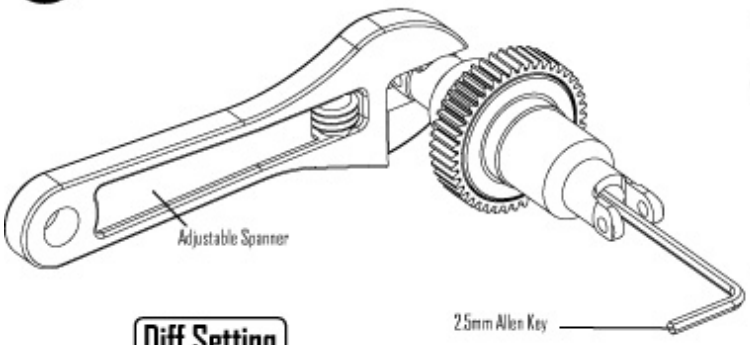
4



5



6



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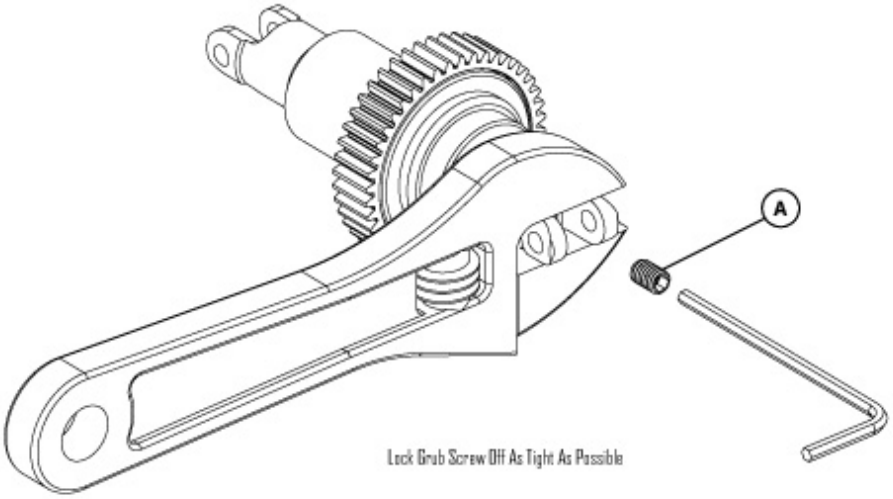
DIFFERENTIAL SERVICE

(A) M4 Grub Screw x 1

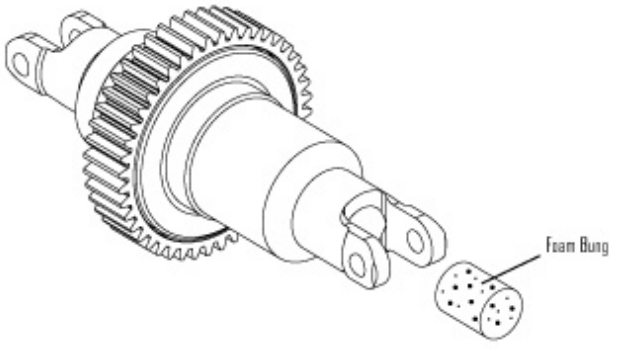
Diff Setting

Bottom Out Diff Springs
And Back Off Screw 90° (¼ turn)

7



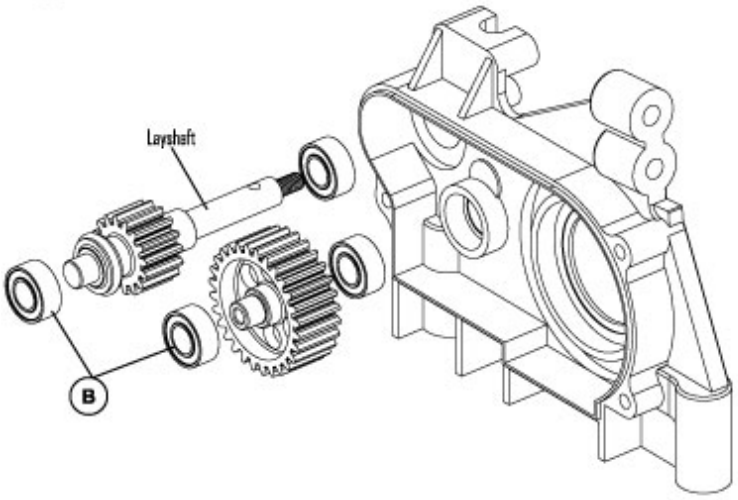
8



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1



TRANSMISSION

A

M3 x 25 Cap Head x 3

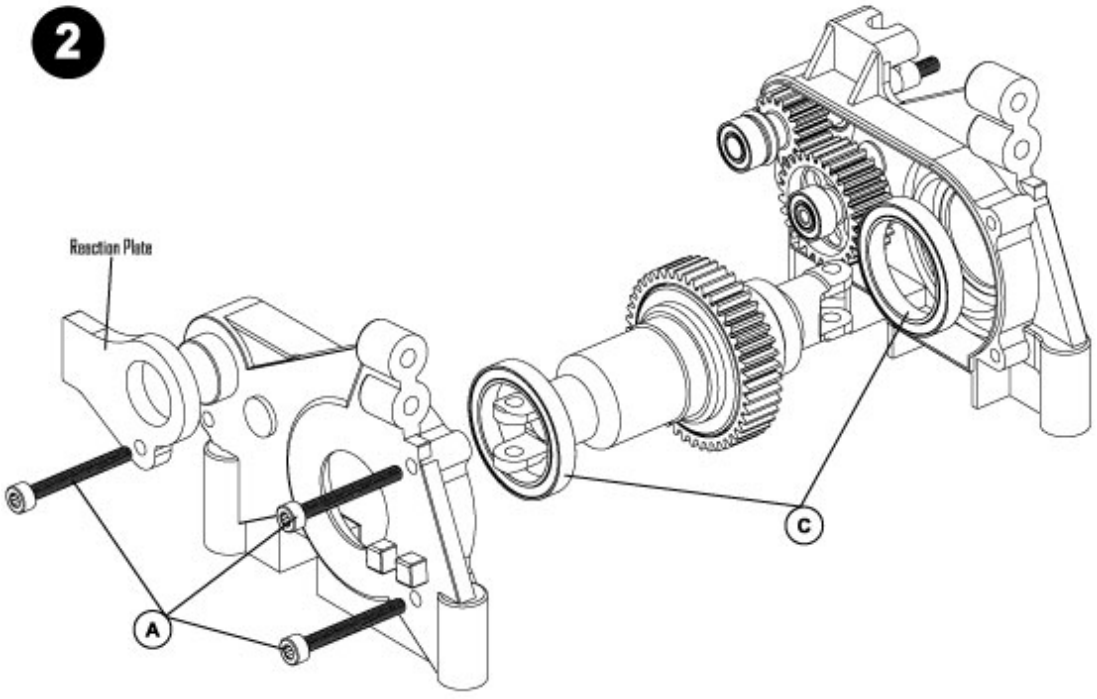
B

5 x 10 x 4 Ball Race x 4

C

20 x 27 x 4 Ball Race x 4

2

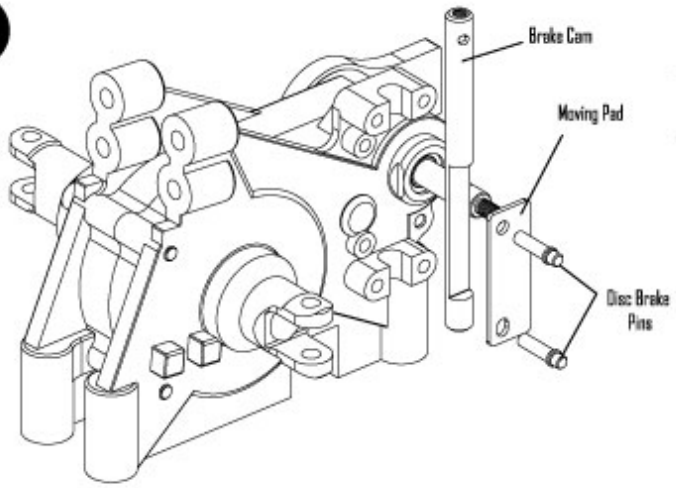


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TRANSMISSION Cont.

3



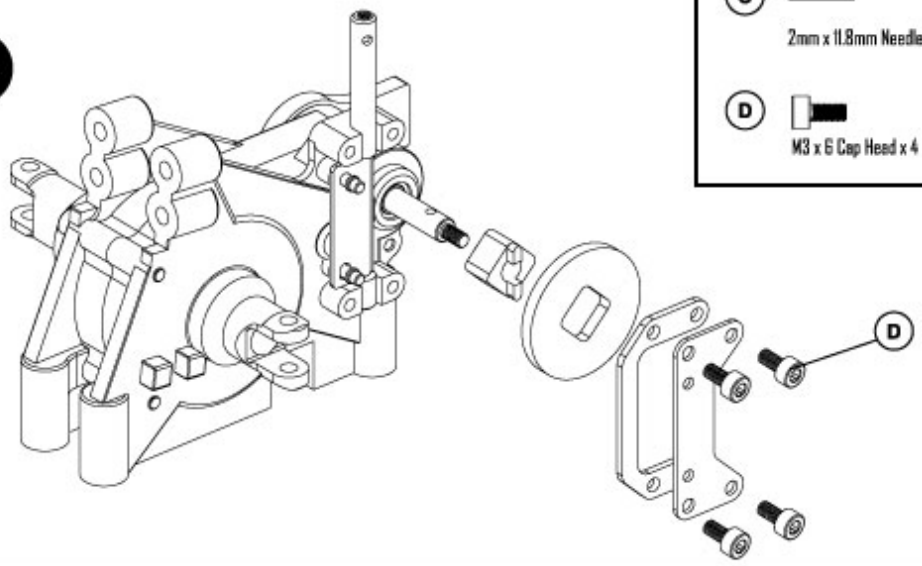
A — M3 Washer x 1

B — M3 Nyloc Nut x 1

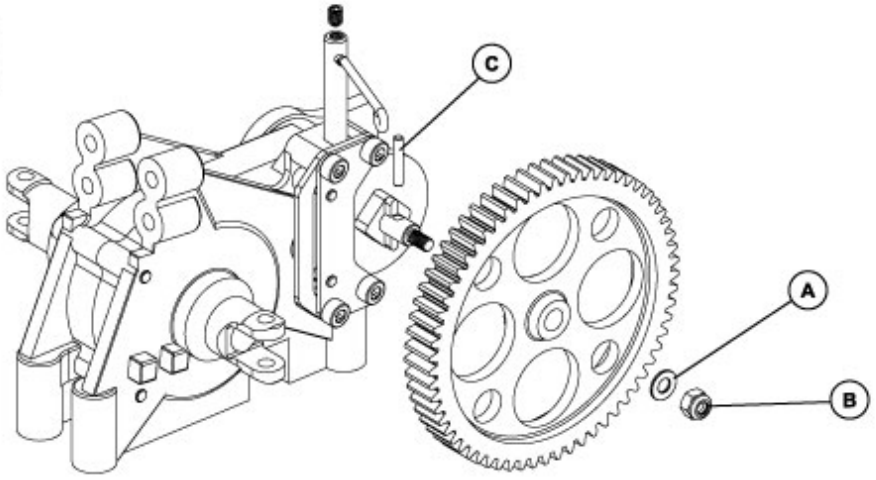
C — 2mm x 11.8mm Needle Roller x 1

D — M3 x 6 Cap Head x 4

4



5

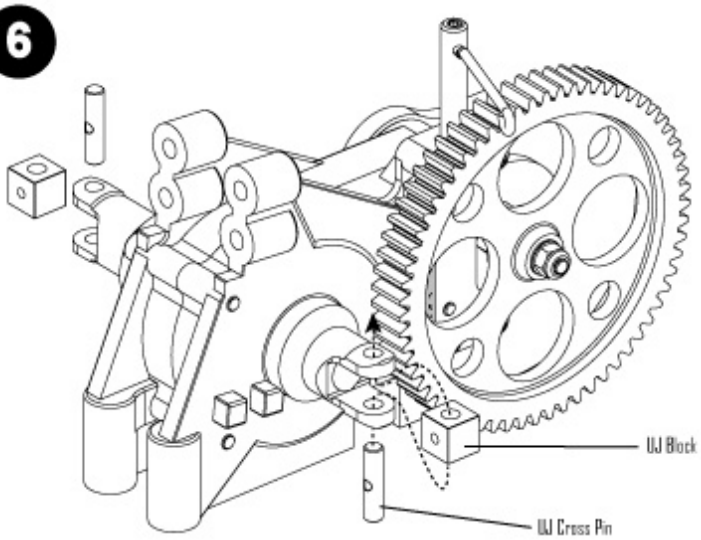


Schumacher

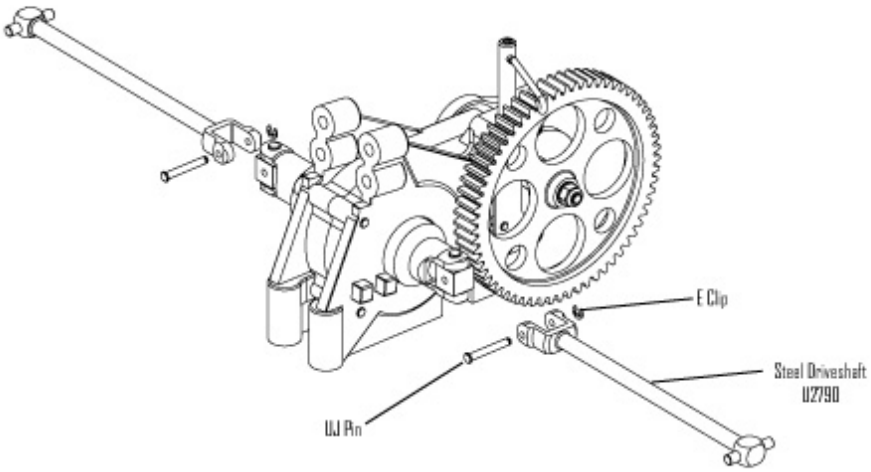
Havoc

TRANSMISSION Cont.

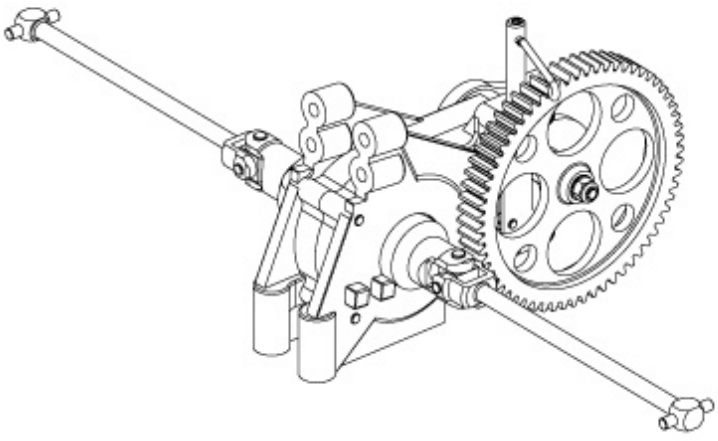
6



7



8



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STEERING

A — M3 x 12 Grub Screw x 2

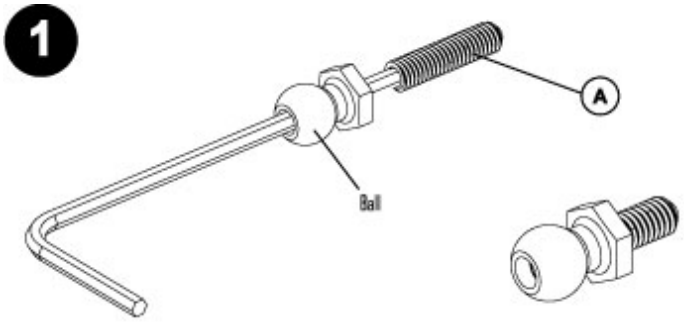
B — M3 x 16mm Pan TORX Head x 2

C — M3 Nyloc Nut x 2

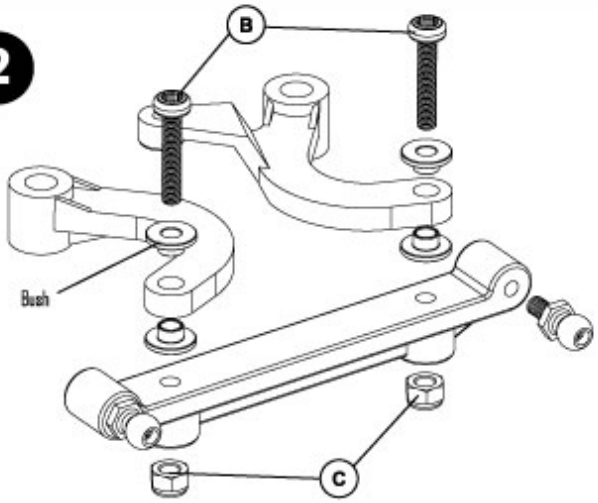
D — M3 x 30 Pan TORX Head x 2

E — Ball Stud Extra Short x 1

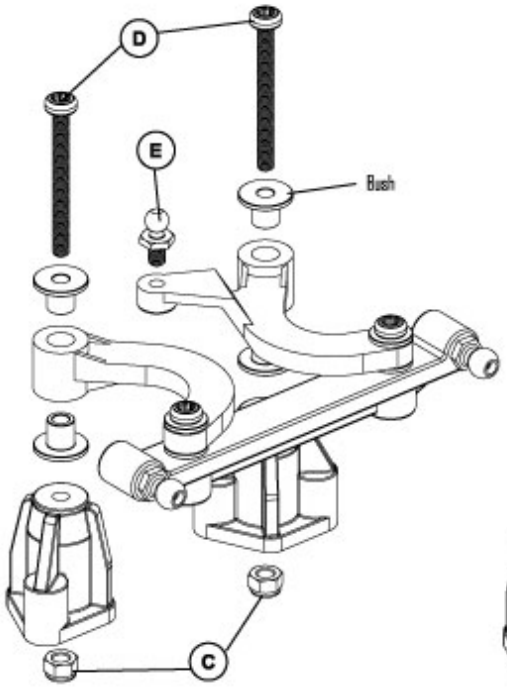
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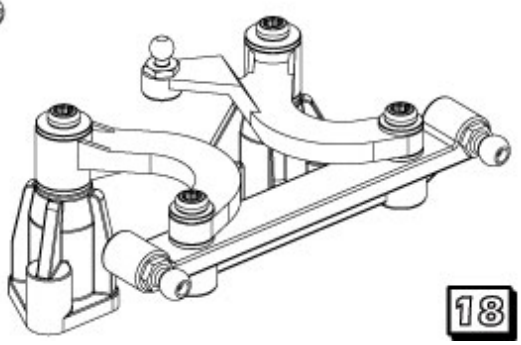


2



3





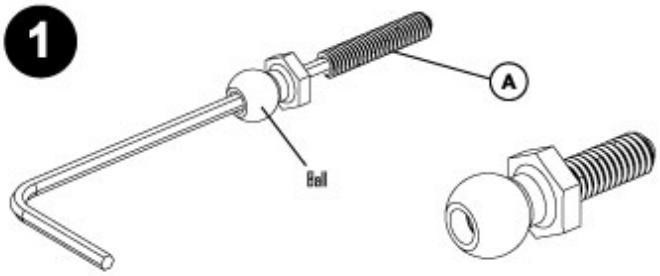
Schumacher

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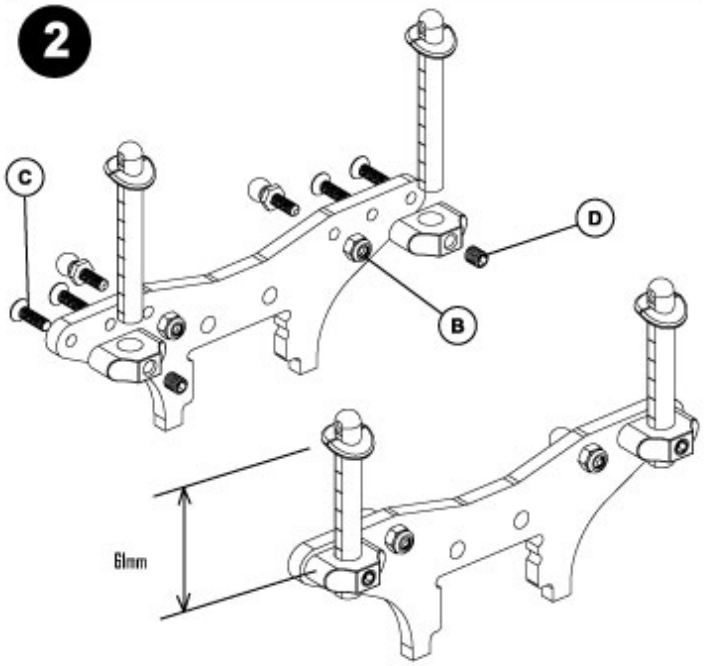
FRONT BULKHEAD

- A — M3 x 14 Grub Screw x 2
- B — M3 Nyloc Nut
- C — M3 x 10 Csk Head
- D — M4 x 6 Grub Screw x 2
- E — M3 x 25 Cap Head x 2
- F — M3 x 10 Pan TORX Head

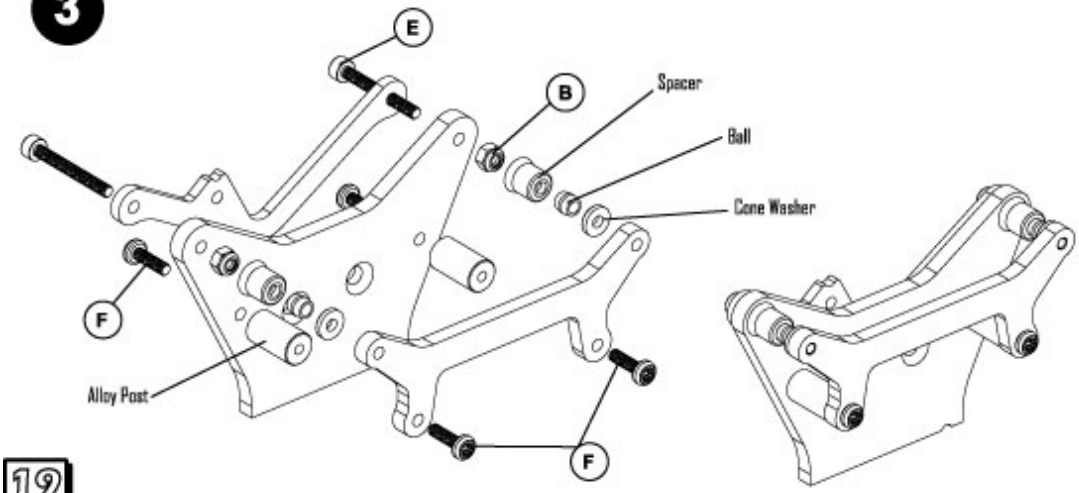
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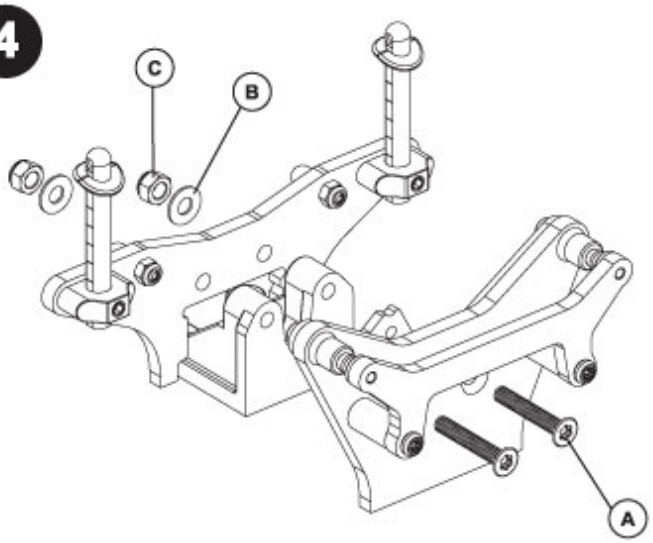
2



3



4



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FRONT BULKHEAD Cont.

A



M4 x 25 Csk TORX Head x 2

B



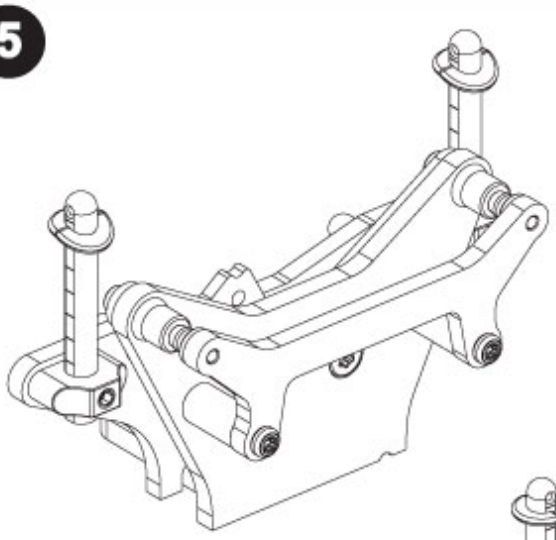
M4 Steel Washer x 2

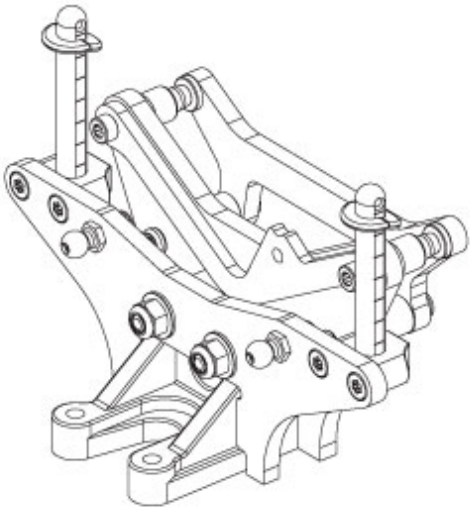
C



M4 Nylac Nut x 2

5





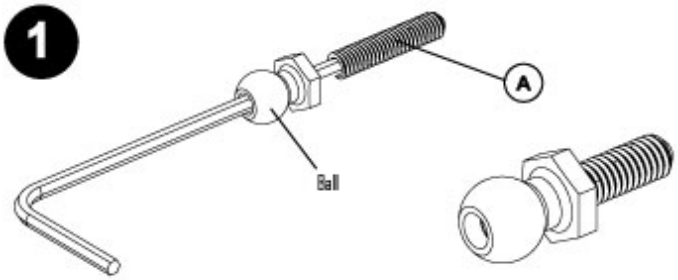
Schumacher

Havoc

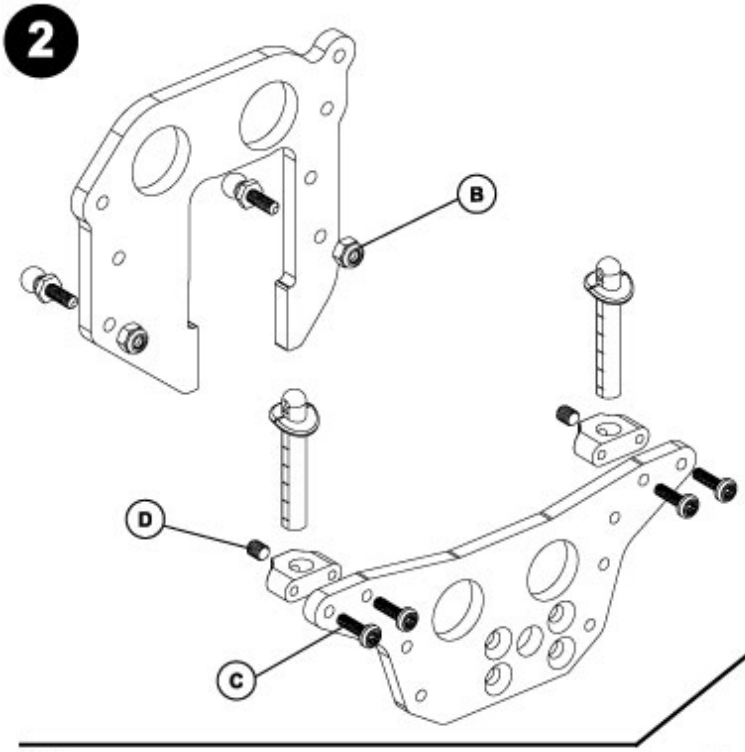
REAR BULKHEAD

- A — M3 x 14 Grub Screw x 2
- B — M3 Nylock Nut
- C — M3 x 10mm Pan TORX Head x 4
- D — M4 x 6 Grub Screw x 2
- E — M3 x 30 Cap Head x 2
- F — M3 Steel Washer
- G — M3 x 16 Pan TORX Head

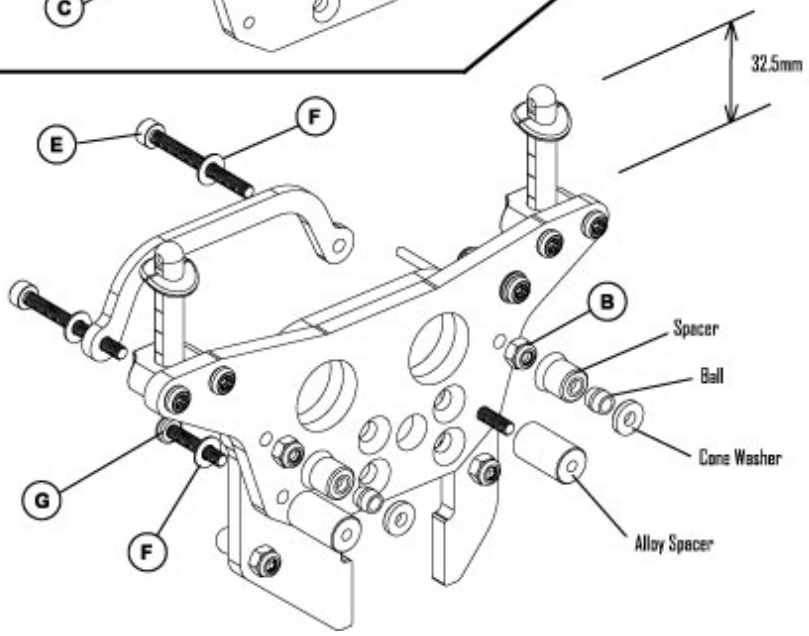
1



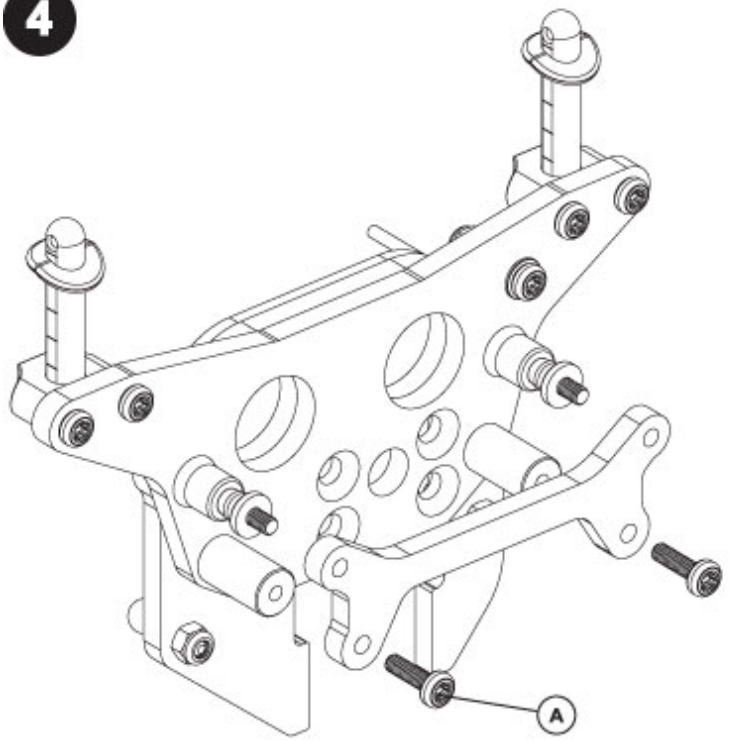
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3



4



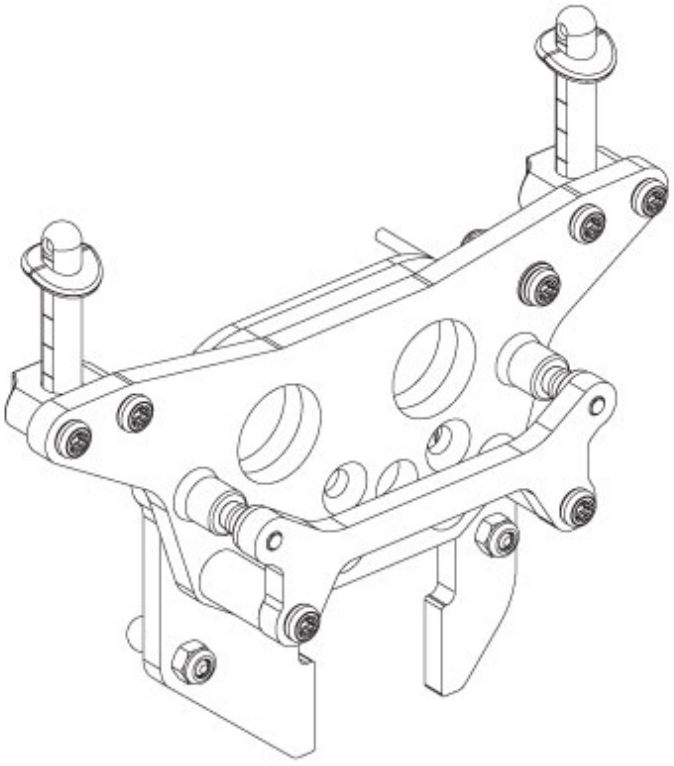
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REAR BULKHEAD Cont:

(A) M3 x 10mm Pan TORX Head

5



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FRONT SUSPENSION

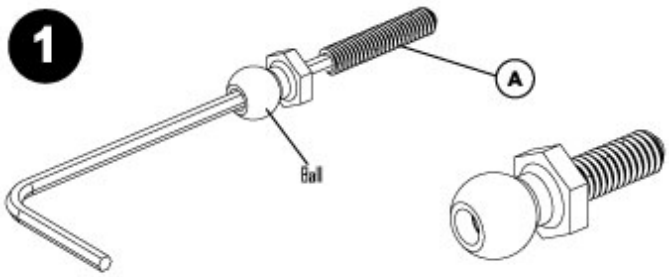
A — M3 x 12 Grub Screw x 2

B — M4 x 25mm Bolt

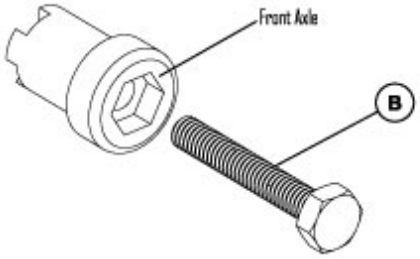
C — 10 x 19 x 5mm Ball Race

D — "E" Clip x 2

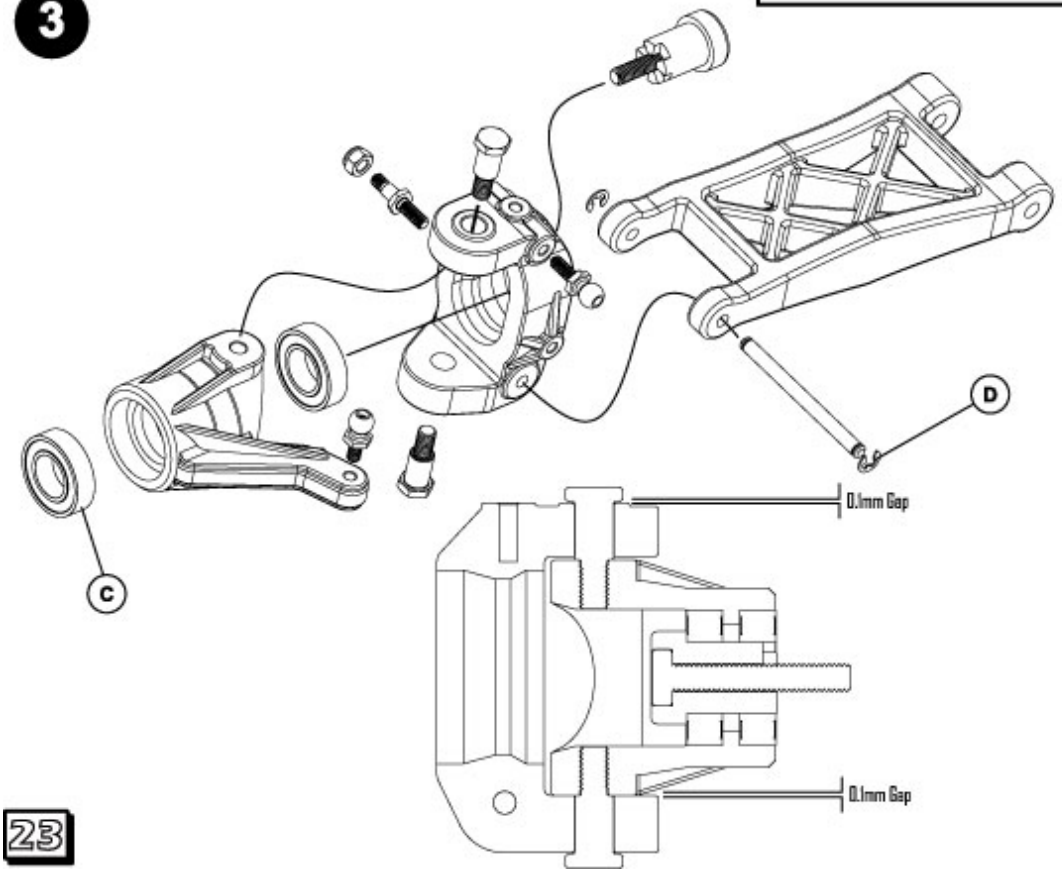
1



2



3

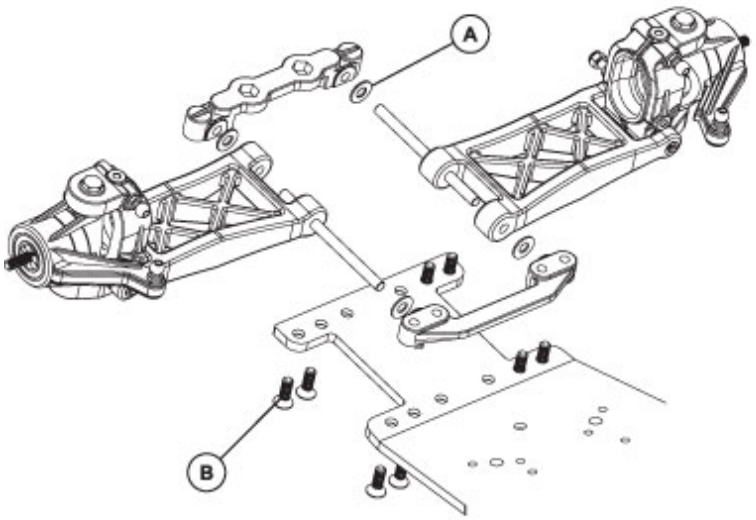


4

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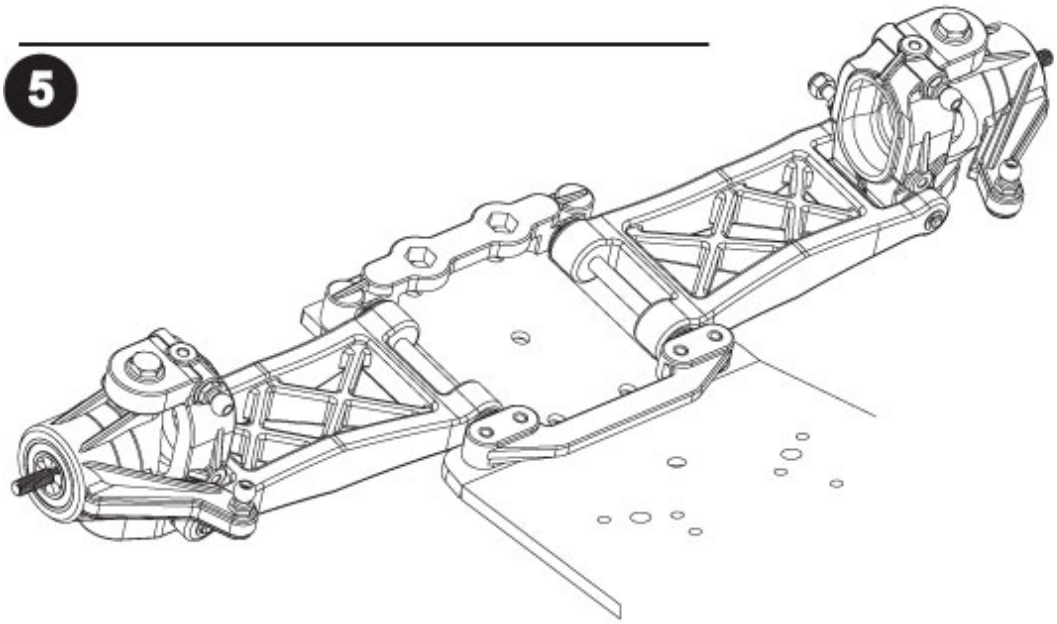
FRONT SUSPENSION
Cont.



A — M4 Steel Washer x 4

B — M4 x 12 Csk TORX Head x 8

5



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REAR SUSPENSION

A — M3 x 12 Grub Screw x 2

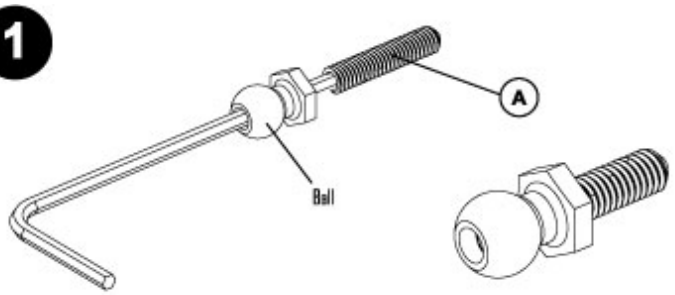
B — M4 x 25mm x 1

C — "E" Clip

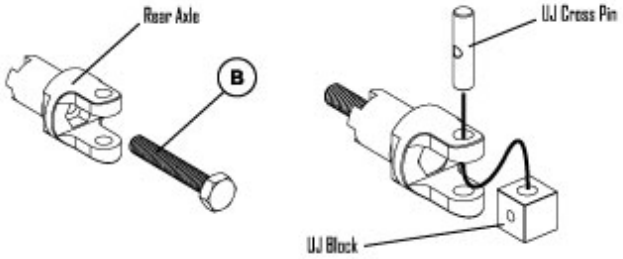
D — 10 x 19 x 5mm Ball Race

E — "E" Clip

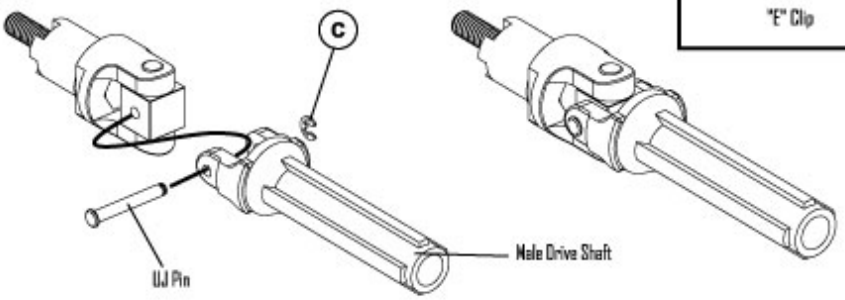
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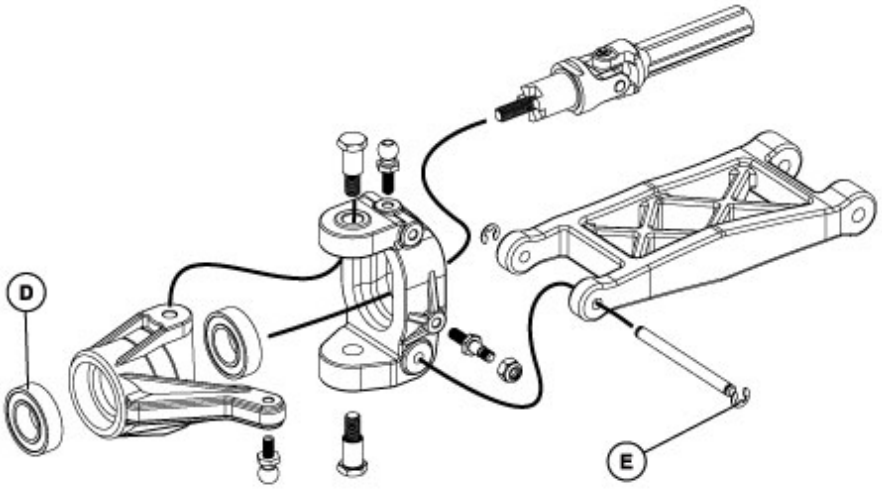
2



3



4



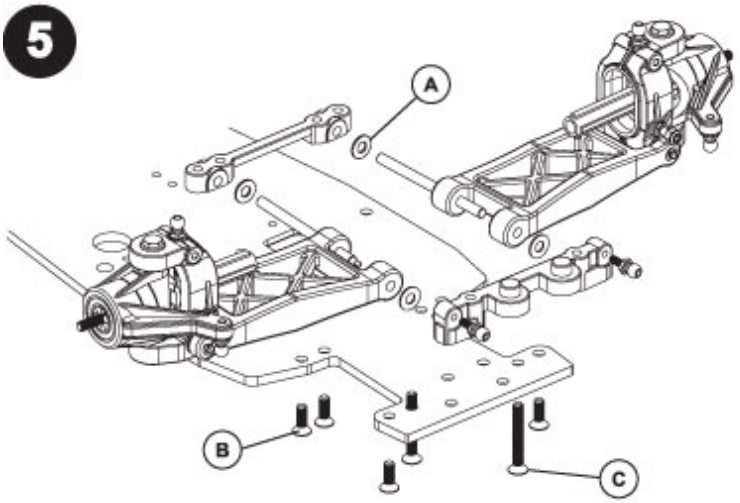
Schumacher

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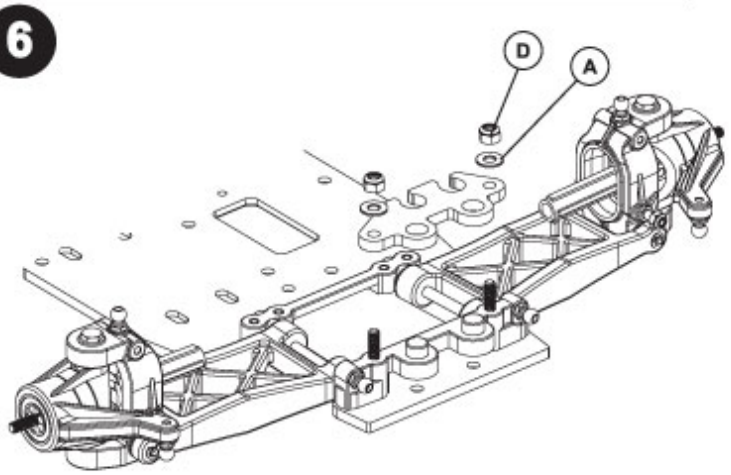
REAR SUSPENSION Cont:

- A — M4 Steel Washer x 6
- B — M4 x 12 Csk TORX Head x 6
- C — M4 x 30 Csk HEX Head x 2
- D — M4 Nyloc Nut x 2

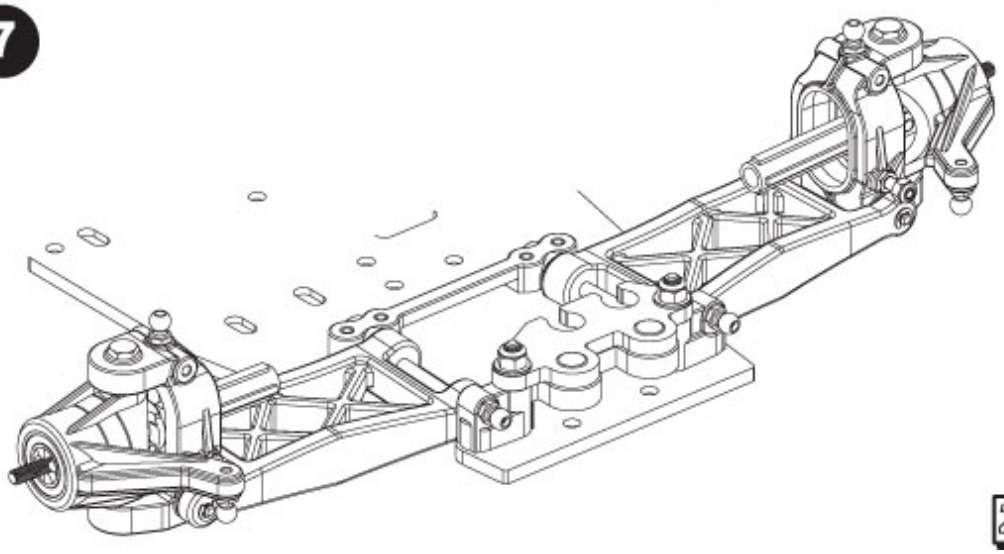
5



6



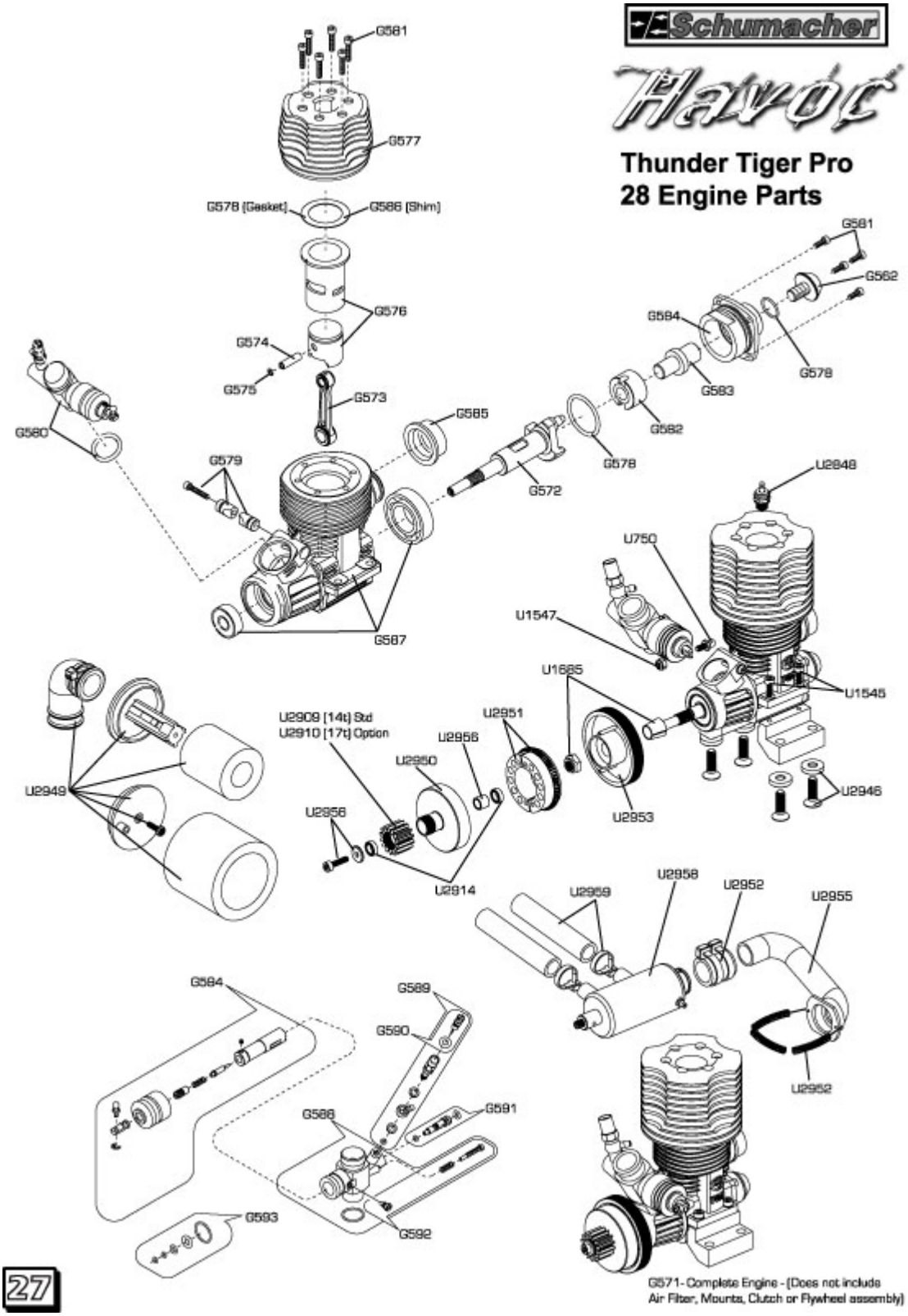
7



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Thunder Tiger Pro 28 Engine Parts



G571- Complete Engine - (Does not include Air Filter, Mounts, Clutch or Flywheel assembly)

Nitro Accessories



H1016 ~ 250cc Fuel Bottle
H1017 ~ 500cc Fuel Bottle
Both bottles feature a blue alloy pipe and include a stopper.



H1030 ~ Nitro Cleaner
Ideal for cars and engines. Just Spray, and wipe off!



G837 ~ Mini Temp Gun
Ideal for measuring tyre, track and head temperature.



H1033 -
Micro Waterproof Failsafe



U2848 ~ Fireball Glow Plug



H1018 ~ 5 Way Glow Plug Spanner
Chrome Plated Plug Spanner 7mm, 8mm, 10mm, 12mm and 17mm across flats.



MC1 ~ Mega Cargo Carrier - Monster Truck (H-755mm x W-595mm x D-350mm)
MC2 ~ Mega Cargo Carrier - 1/8th Rally X (H-600mm x W-595mm x D-350mm)
MC3 ~ Mega Cargo Carrier - 1/10th Touring (H-600mm x W-595mm x D-350mm)
All carriers include three boxes with plastic handles, quad wheels and kick stand!





U1552 ~ Silver Body Clips
H1010 ~ "Fluro" Yellow Body Clips
H1011 ~ "Fluro" Green Body Clips
H1012 ~ "Fluro" Red Body Clips
H1013 ~ "Metallic" Red Body Clips
H1014 ~ "Metallic" Blue Body Clips
H1015 ~ "Metallic" Purple Body Clips
All body clips come in packs of ten.



H1009 ~ Curved Scissors
Designed for cutting out polycarbonate bodies.



G020 ~ 20 weight (thin)
G025 ~ 25 weight
G030 ~ 30 weight
G035 ~ 35 weight
G040 ~ 40 weight
G045 ~ 45 weight
G050 ~ 50 weight
G055 ~ 55 weight
G060 ~ 60 weight
G070 ~ 70 weight
G080 ~ 80 weight
G100 ~ 100 weight
G120 ~ 120 weight (thick)
The best silicone shock oil you can buy!



H1023 ~ "D" Cell Glow Starter
Easy to use. Requires a "D" cell battery.



H1025 ~ 4 Way Glow Plug Spanner
Chrome Plated Plug Spanner 7mm, 8mm, 10mm, and 12mm across flats.



G728 ~ 1200 NiMh 6 volt RX Pack (5x1 Flat)
G729 ~ 1200 NiMh 6 volt RX Pack (3x2 Hump)
Complete with plug and lead.

Distributed By:
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Northampton ~ NN3 6AX ~ U.K.
Phone: 01604 790770 ~ Fax: 01604 790209
www.racing-cars.com



Purple Alloy Hub Carriers (Pr)
U2966
U2960 (Pins Only)



Purple Alloy Bulkhead
U2962



Purple Alloy Chassis Brace Set
U2963



Purple Alloy Wishbones (Pr)
U2968



Purple Alloy Front Strap Set (Pr)
U2964



Purple Alloy Rear Strap Set (Pr)
U2967



Purple Alloy Yokes (Pr)
U2965



Purple Alloy Body Mount Blocks and Posts (Pr)
U2165



Chrome Steel Wheelie Bar Set
U2969



Purple Alloy Shock Seal Housings (Pr)
U1818



Ball Raced Steering Set
U2961



Steel "Dog-Bone" Driveshaft Conversion Set (Pr)
U2970



High Speed Gear Set
U2910



Whia "Pro" T20 Torx Driver
HW009

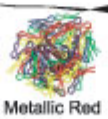


Purple Alloy 23mm Wheel Hex Adaptor + Wrench, Set of 4
U2971



U2135 **U2811** **U2810** **U2813** **U2812**
Flanged, coloured wheel nuts.

BODYCLIPS



Sliver
U1552

Fluro Yellow **H1010**	Metallic Red **H1013**
Fluro Green **H1011**	Metallic Blue **H1014**
Fluro Red **H1012**	Metallic Purple **H1015**



Purple Alloy Dual Stage Filter
U2839



Waterproof Dual Stage Filter
U2814

HAVOC Option Parts

WARNING

Schumacher

Havoc

Please read this.....

The following information is very important to the performance and reliability of your Schumacher Nitro Car. Please read it!

1. Read the instructions fully.

2. Use good quality fuel with synthetic oil such as Model Technics Dynaglow, Magnum, O'Donnel or Blue Thunder, with 10% to 20% nitro content. We do not recommend castor oil based fuels, as it leaves a "sticky residue" which can cause the "e" start one way bearing to slip. A higher nitro content fuel will give more power, but will make the engine run hotter.

3. NEVER run the engine without the air filter fitted. If running in wet conditions, we recommend fitting a waterproof air filter.

4. Don't run the car at full throttle with the wheels off the ground, the engine WILL blow up in a matter of seconds.

5. Learn to use your power with respect. Very few surfaces can cope with full power. If you use full power everywhere you WILL break things!

6. ALWAYS drive your car safely, away from public roads, and be aware of any people or animals near you. MODEL CARS CAN BE DANGEROUS!

7. Always ensure the transmitter & receiver batteries are fully charged before use.

8. Set the torque on your cordless drill to the lowest possible setting, that will turn the engine over. If you use too much torque, it is possible to break the engine.

9. Always ensure that all nuts and screws are tight.

10. Always ensure gear mesh adjustment is correct.

11. Run in a new engine by using a rich fuel mixture, to ensure plenty of lubrication, and use no more than half throttle for the first 2 or 3 tanks of fuel.

12. Running tyres with a larger diameter of those supplied with the kit will over-gear the car. This will cause excessive loads and thus un-due wear and tear.

13. Superglue the tyres to the wheels.

14. This product is not a toy. It is a hobby product capable of high performance, but will require regular maintenance. Learn to drive the car slowly at first, away from solid objects. The Havoc is capable of extreme jumps and stunts, but heavy impact can cause damage.

GUARANTEE:
All parts are guaranteed against defect in manufacture. Conditions of use of this product are out of our control and therefore we cannot guarantee parts against failure in use. This is an ultra high performance car, if used without due respect failure could occur. If you have any problems with this product your first point of contact should be the place of purchase.