

Hey All,

This is just a holding document until I can get the full tips and tricks section up and running. Also this list is by no means complete, so feel free to drop me an email to let me know your tips.

Finally, if you're really stuck, head over to the 416 thread on R/C Tech.net, lots of useful info and helpful drivers on there. Link here - [R/C Tech.net - TRF416 thread](#)

**Enjoy
Ed**

Build Tips

Threadlock

A simple tip, but use a good threadlock on all metal to metal contacts on the car (unsurprisingly, there are quite a few on the car). Tamiya make a blue thread lock that is perfect for the job. Part number is TAM87004.

Top Deck

Fit of the top deck should be checked during build. Due to very tight tolerances, it may require shaving of material from one edge to avoid bowing of chassis.

Shimming the car

The centre pulley has a large amount of play seemingly where there was a late design change in the car, removing the bearing holders from the centre pulley setup (Pre-production photos show the car fitted with 415MRE style bearing holders). To remove the play, ~0.5mm of shims need to be used either side for the centre shaft. There should be enough shims in the kit to achieve this, if not, you'll need TAM53586 (4mm \varnothing shim set).

To remove any extra axle play, shims can be used between drive pin and outside bearing to remove any axle play, or they can be placed on the inside of the inside bearing of the hubs, between axle and inner bearing. You'll need TAM54587 (5mm \varnothing shim set) to aid with this. The diff's can also be shimmed to remove any side to side play. The shims required are TAM53588 (10mm \varnothing shim set).

Dogbones

The aluminium 44mm drive shafts on the front of the 416 are not particularly durable, and prone to twisting. To get round this use the 46mm Steel ones from 415 on front (TAM51092). However, if using the front one-way, you'll need to remove the o-ring from outdrive cup to stop binding. It's tight, but the dogbone *just* clears, even with B/A front suspension blocks and the short LWT arms.

Right rear driveshaft blade

When using narrower rear suspension blocks and/or the short LWT arms the right rear drive shaft blade can touch the diff nut when running. Shave about 2mm of material from the blade to clear the nut. Alternatively, use 42mm aluminium dogbones (TAM53501) from the original 415.

Spare C-Hubs

The standard C-hubs are quite fragile. So either keep a good stock of standard carbon filled (TAM54031) ones, or look at using the plastic versions from TA05-IFS (TAM51293), which are more flexible, but more durable. Otherwise alloy versions are also available from 3Racing (3R-TA05-IF6/LB) and RC Square.

Front Rear block screws

To stop bending of the suspension block mounted in the front rear position (i.e. the one flipped over the front belt), it's recommended to run longer screws when mounting it. The kit manual says to use 3x10mm countersunk screws. However 3x12mm or 3x14mm leaves more screw in the block, making it stronger, and more resistant to bending.

Uber Diff

Follow these simple steps to achieve a very smooth, but tight diff.

Sand Diff rings with 600grit wet dry. This provides a key on the surface for the balls to grip, allowing a looser setting, without slip.

Use JAAD Racing 3mm Ceramic balls (JDRDB300) and ceramic thrust race (JDRCT0206), using Associated black stealth grease on thrust, and Schumacher diff grease. Ceramic balls are very hard and long lasting, and will stay the smooth for a very long time. The Associated grease is recognised as the best for thrust bearings, and the same goes for the Schumacher diff grease and the diff balls.

Cover with JAAD Racing diff covers (JDRTA0502). These keep the dirt out extremely well, avoiding your diff becoming gritty due to dirt between the rings, pulleys and balls. Remember to apply some grease to the region where the cover comes very close to the diff half, to avoid any binding in the diff action. To help avoid collecting any dirt in the out drives and thrust bearing, plug the long diff end with a foam pad (one of the red foams from the shocks works well), and tape over the hole for the diff setting screw. This will keep all the dirt out, and you won't have to rebuild your uber smooth diff for a long time.

Easy change ball joints

One useful tip to help aid easy of changing camber link shims is to cut a small amount of material of the top of the ball cup. Cut just enough off to allow a 2mm hex driver to be inserted into the hex headed ball joints. This also aids in reducing slop developing in the ball joints, as you don't have to pop the cups off to remove them.

Another useful tip, to change the lower shock ball joints over to the hex headed type. This helps to speed up shock position changes on the arms, and also aids in reducing slop development, as you can just unscrew the ball joint, rather than popping it off.

Battery Fitment

If you're using NiMh packs, check to make sure your battery bars are flat against the cells. When mounted in the car, the cells can rest against the centre motor mount and the inner servo mount. If the bars stand too proud, they could potentially short out if they touch the mounts. Better to be safe than sorry...

Recommended parts and upgrades

Short LWT Arms

2x TAM53928 – Each set contains 1 Front and 1 rear arm.

These are used everywhere now, indoors, outdoors, in space... if you get nothing else, get these.

Spring Set

2x TAM53440 (Standard Colours)

OR TAM49382 (White coloured),

OR TAM49389 (Milky Blue coloured)

Each set includes one pair each of soft (red), medium (yellow), hard (blue), extra hard (white). Coloured sets are all one colour, with small dots of colour to distinguish the rating.

Roll Bars

TAM53842 (standard colours)

OR TAM49383 (Black coloured)

OR TAM49414 (Milky Blue)

Each set contains three roll bars for both front and rear. Soft (red), medium (yellow), hard (blue). Coloured sets are all the same colour, with no distinguishing features bar thickness.

Suspension blocks

1x TAM53808 1XA

1x TAM51069 1X

1x TAM51067 1C

1x TAM51068 1D

1x TAM53896 1E

1x TAM53932 Suspension block spacers (0.5mm)

1x TAM53933 Suspension block spacers (1mm)

This gives a good range of settings for the 416, allowing you to run the favoured TRF drivers setup of D/D on the front, and XA/E on the rear. The 416 D block should be run on the front rear position, as it requires only 3mm of spacers in use, meaning less chance of bending in a heavy crash (see also Front Rear block screws build tip).

The block selection also gives a range of rear toe in options, from the kit 3°, down to 1° (C/E).

For those wanting to run a little front arm sweep, use a Serpent S400 3.0 block (part# 401016) with a 1D on the front front block to give 0.5° of sweep. The Serpent block required 4mm of shims (rather than the 416 3mm) to achieve the same height however.

The suspension block spacers are good for quick and easy adjustment of roll centre. More spacers under the blocks mean a higher roll centre. Just remember to re-set your droop afterwards.

Spool

Currently, Tamiya don't make a spool for the 416 (although the team drivers have been using a prototype one). However a spool can be made out of parts from the TRF415 MRE. Below is a list of the parts required.

1x TAM3454401 Direct Holder
1x TAM9804268 Delrin Drive Cup
1x TAM9804267 Alloy drive sleeve
1x TAM54023 37t One way pulley
1x TAM51278 K Parts

Simply build the spool up, with the 37t pulley on the left hand side of the mounting plate, so the pulley is offset to the left, instead of centrally mounted.
The bearing holders (included in the K parts) will need reaming out to provide enough clearance for the outdrive sleeves before mounting into the car.