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Clio 2 Adjustable Wishbone Package

This adjustable wishbone kit is a comprehensive tubular wishbone kit with sub-frame stiffening.

The kit allows a large adjustment of both track width and caster. The caster and track width adjustment is done using an 'in situ' adjuster mechanism which allows adjustment without removing any parts. There are two lengths of caster 'in situ' adjuster depending on the track width that you want to run e.g. Large increase in track width = long adjuster – these can be interchanged at any point and please contact us for more information.

The in situ adjusters aid in quick and accurate set up.

The wishbones are made from CDS steel tube with CNC machined threaded inserts for the inner rod end adjustment and a CNC spherical bearing housing for the outer link. Using a spherical bearing for the outer joint is far superior to using a rod end because a rod end is always under a bending load. The design of these wishbones with an outer spherical joint eliminates any bending load in the outer pickup point of the wishbone.

The outer joint spacers raise the roll centre to keep near the original suspension geometry when the car has significantly lower ride height.

The sub-frames on the Clio 2 are very weak, so this kit includes a large laser cut and TIG welded stiffening kit that welds onto the original sub-frame. This stiffening also houses the inner pick up points for the wishbones. The wishbone pick up points are placed as wide as possible to reduce the loading on the wishbones and to get the rear joint in the very strong, rear corner of the sub-frame.

WARNING:

The Clio subframe is galvanised which can be harmful to your health if welded. We strongly recommend getting the subframe blasted to remove all galvanising prior to welding in of the subframe stiffeners.

NOTES:

Pure Motorsport accept no responsibility whatsoever for incorrect fitment of this kit. It is highly recommended that a competent and suitably trained fabricator fits this kit and have access to the correct tools.

These instructions are offered as a guide only and further information may be required in the form of a workshop manual.

NS=left hand side of vehicle, OS=right hand side of vehicle
10mm bolt = 10mm hex. M10 bolt = metric 10mm thread

FITTING

Remove the subframe from the vehicle and strip all wishbones, rack and anti-roll bar from the subframe. Blast all of the galvanising from the frame prior to any welding.

Drill out the spot welds holding the original wishbone mounts on and remove the mounts.

Offer up the new subframe stiffeners and mark at the rear where material needs to be cut from the subframe.



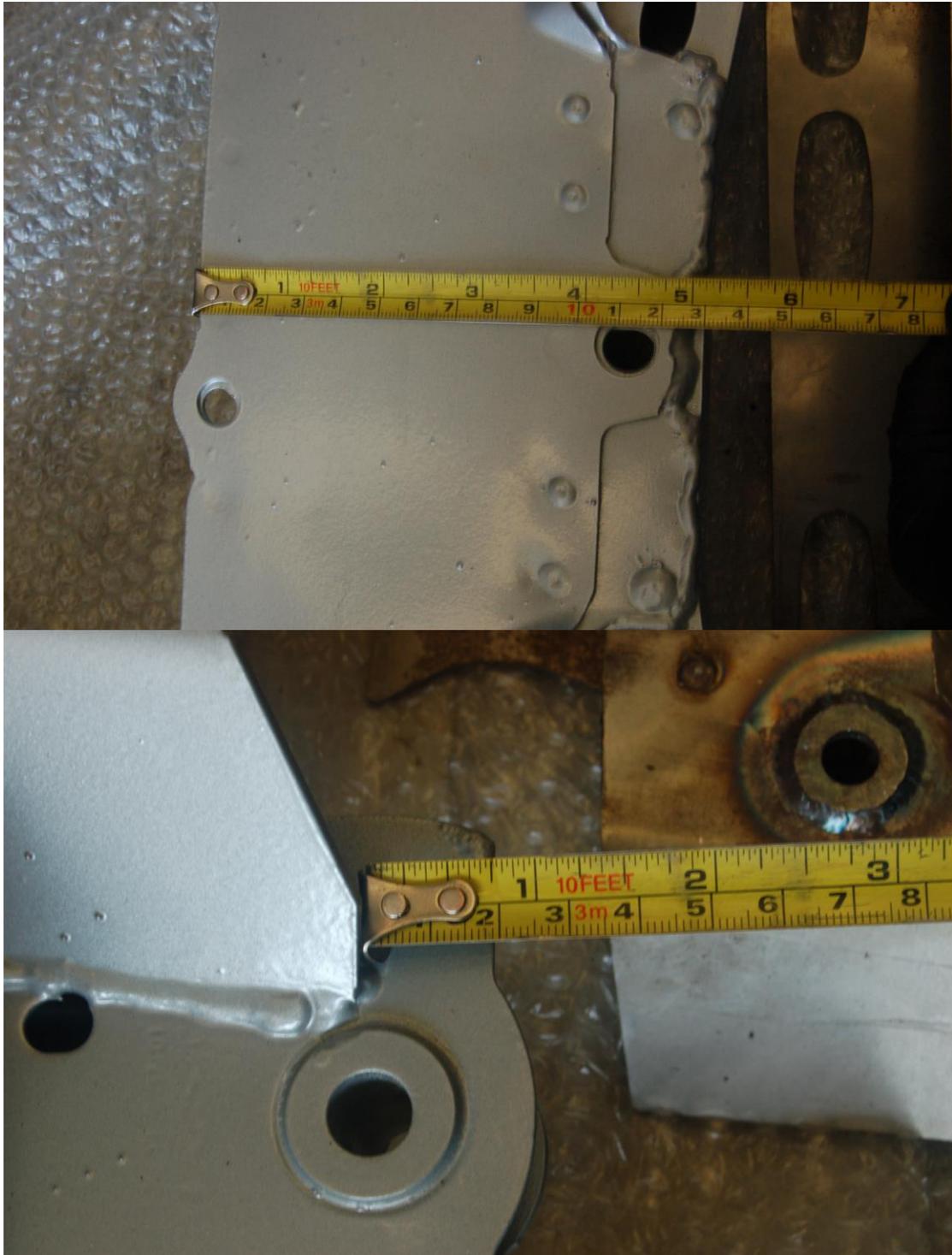
You may need to remove a small section at the front also



Once you can slot the stiffener in, align it using the holes in the stiffener and the holes in the subframe.



Double check the measurements shown below – don't worry if they are a few mm difference from what is shown here, just make sure both sides are the same.

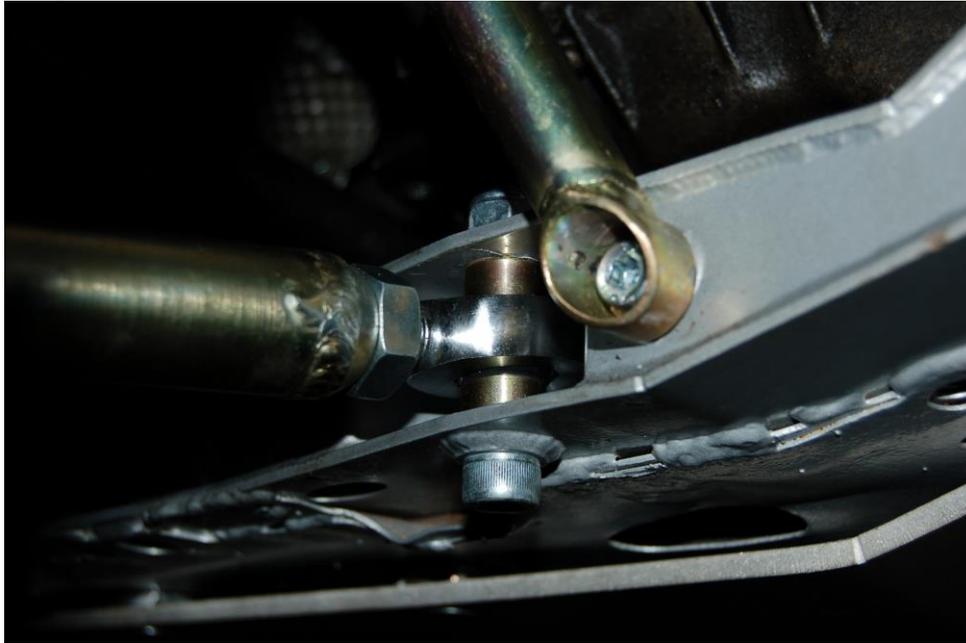


Once you are happy with the alignment, weld the stiffener in place around all edges and in the oval cut-outs on the top.

Paint or powder coat the subframe and refit the steering rack and fit to the car.

Fit the wishbones to the subframe using M10x60 bolts and nyloc nuts on the inner joints. The caster adjusters go to the rear of the subframe and the outer joint circlip should be facing down.

Torque to 66Nm.



Fit the subframe to body braces next. There are four braces, all of which are different. Three of them fit to the standard holes in the body and one will need a rivnut fitting. Fit the three others first using M10 bolts at the subframe and M8 bolts on the body.

Offer up the right hand rear brace and mark a hole on the body – drill and fit rivnut and bolt the brace up.



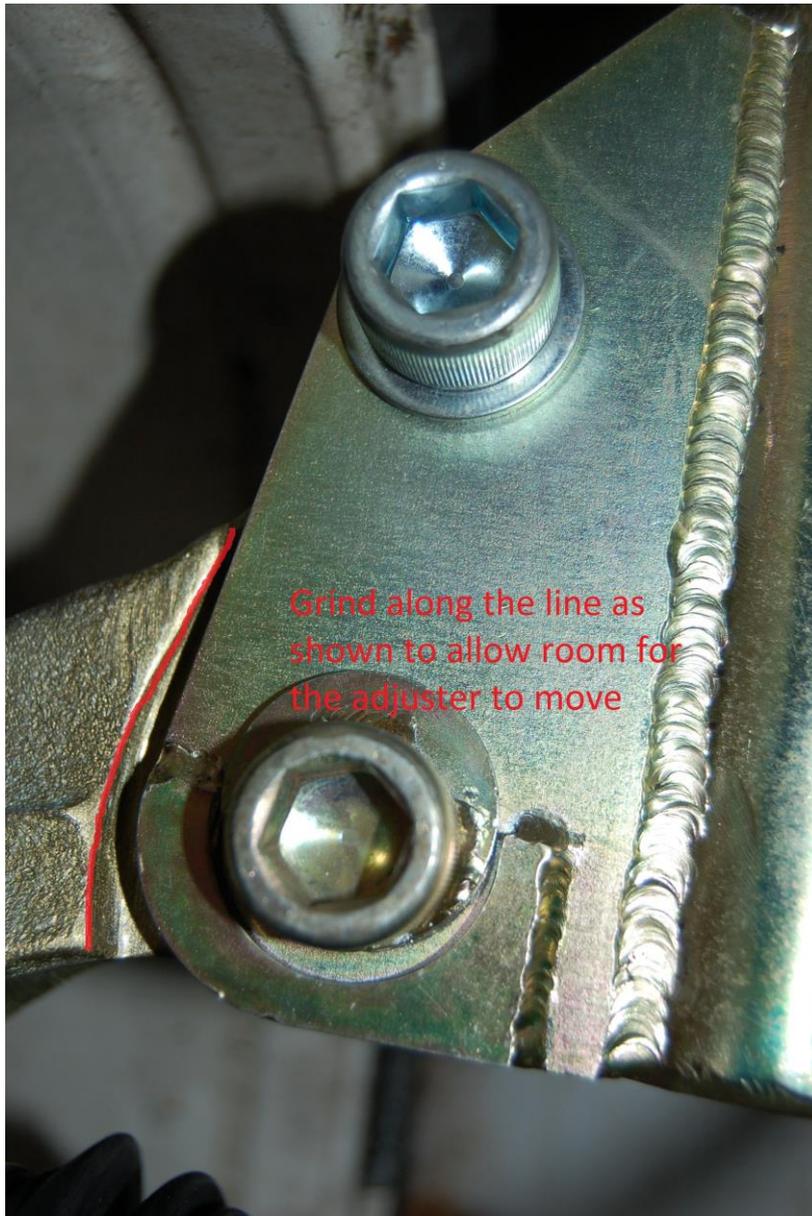
Next fit the Laguna uprights and hubs to the strut bodies. Don't fit springs at this stage.

If your struts require a change of mounting plate, weld these onto a bare strut body – remove all of the damper internals prior to welding.

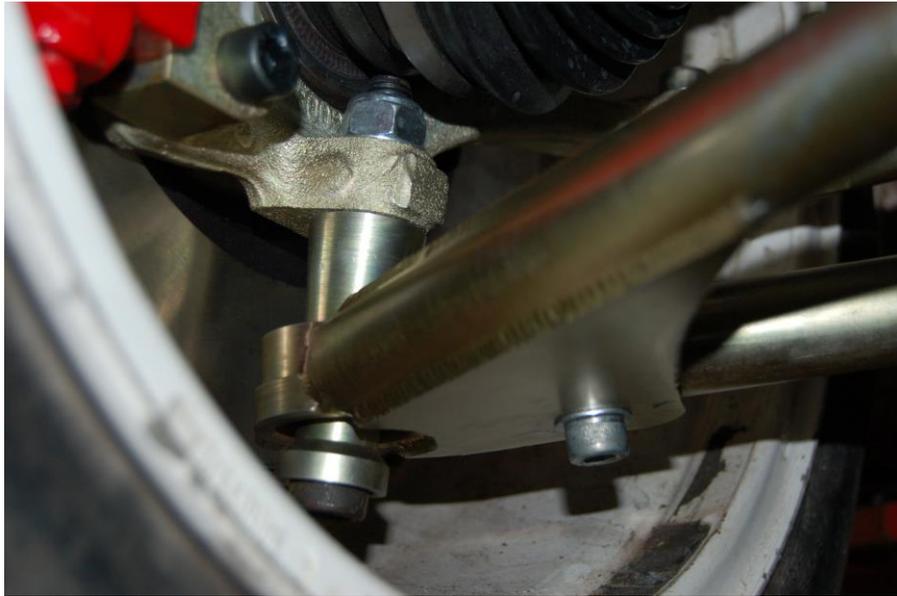
There is one camber adjustment ellipse per strut – fit these to the front.

If you are supplying your own Laguna uprights and using our strut mounting plates then you will need to grind a small amount from the upright to clear the plates – see below. You will also need to drill the bottom hole out to 14mm and the steering arm to 12mm.

Tighten up bolts enough to hold it in place – torque them after set-up.



Fit the spacers and bolt (as shown below) to the outer joint. Torque M14 bolt to 165Nm.



Fit the bump steer kit to the track rod:
Remove the front springs (if already fitted) and track rod ends.

Set the steering wheel straight ahead and fit the track rod adaptors and rod ends checking that there is adequate thread engagement.

Fit the bolt from the top, the large spacer on top and small spacer underneath and do the nut up.



Depending on how wide your front track width is, you will probably find that the track rod is too long to get back to parallel toe. If this is the case cut a few threads off the end of the track rod with a thin disc in an angle grinder.

Refit your brakes and wheels and it's time for setup.

Set vehicle at ride height by using blocks or have the car on a lift – don't fit springs yet.

Set desired track width by running a central string down the middle of the subframe to ensure both sides are the same. Adjust track width by screwing the front inner joint in or out.

Set desired caster angle at the same time - as track width will alter with caster angle. Adjust caster angle using the 'in situ' adjuster in the compression strut.

Once you are happy with the setup, tighten the lock nuts on the rod ends and caster adjuster.

With the wheels straight ahead, set the camber angle using the elliptic washer on the strut mounting plate. Tighten M16 bolts to 255Nm.

With the springs out check you have a full range of bump and droop travel on full steering lock both ways, without running out of misalignment on any of the rod ends or spherical bearings. If you do run out of misalignment, you may have to modify your dampers to limit droop travel.

Set front toe to desired setting or close to parallel for the bump steer set up procedure.

Apply the brakes with a pedal depressor, check steering is centred and set up your bump steer measuring equipment.

Measure bump steer and adjust using different amount of shims on top of the upper spacer until you reach the desired set up.

Repeat on the other side of the car.





If you have a very different track width from standard you may need to reduce the upper spacer thickness instead of increase it – if this is the case, swap the small lower spacer with the upper one and use shims as necessary above the small spacer.

Once you are happy with the bump steer set up, refit all the components, torque rod end bolt to 116Nm.

Set front toe to your final settings.

Once you have refitted the springs, set up corner weights.

Recheck: track width, caster, camber and toe settings.

Settings.

Due to the huge variation of suspension set ups and driver preference we cannot give 'recommended' settings for bump steer.

However, a good starting point is to reduce bump steer to the minimum possible with slight toe out in bump.



If you get stuck please ring for help and advice.

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