

Land Rover Defender/Discovery/RRC Wheel Alignment and Drop Arm Fitting advice

Regarding the letters, we are referring to the drawing on the second page

Tracking Adjustment (wheel alignment)

The Track Rod Bar **A** should measure **123cm** between ball joint centres, this is a guide measurement. Firstly, you need to fit the Track Rod Bar **A**. Secondly, you need to check and adjust the tracking, to do this you need the vehicle sat on all four wheels, use two straight edges **G**, fasten them to the wheels for example with cable ties, bungies or straps, if you have raised writing or blocky treads make sure the straight edge is sat the same on front and rear of the tyre. Just below the ½ way line is best to do this as the tape measure needs to get under the front suspension arms. Get the **passengers** wheel to point in line with the rear wheel as if you are driving in a straight line, now measure the gaps **C & D**, you need the two measurements to be the same. If not, then adjust the bar ½ a turn at a time until you get both measurements the same, if measurement **C** is more than **D** this means TOE IN. Once you are happy with the measurement tighten the bar locking nuts tight, make sure to re check the wheel alignment after a road test.

Drop Arm Fitting / Steering Wheel Position

This is the same if you are fitting a new drop arm or setting up your old drop arm. First, you need to check your drop arm position **F** to steering wheel position **E**. There is a slot in the back of older Drop Arms, this slot lines up with a hole in the bottom of the steering box, newer drop arms don't have this slot. If there is no slot then align the centre of the Ball Joint with the inside of the chassis leg as it looks on the drawing **F**. Now the drop arm is set the steering wheel **E** should be pointing straight ahead, if it is not you need to remove the steering wheel and turn on the splines. If you are fitting a new drop arm, they are master splined, which means you can't get it wrong, make sure all splines are cleaned. Tighten the 1.5/16" securing nut to **176NM**, it is very important to re-check the tightness of this nut after use as the drop arm can work up the tapered splines on the steering box.

Drag Link

This is the same or similar if you have our Defender Drop Arm Conversion kit or a standard Defender Steering setup. The Drag Link Bar **B** should measure **92.5cm** between ball joint centres, this is a guide measurement. The Drop Arm **F** does not point straight ahead, once the Drag Link Bar **B** is fitted you may need to slightly adjust the length to get the steering wheel **E** pointing straight ahead when driven in a straight line, the best way to do this is take it for a test drive and fine tune it until you are happy with the steering wheel position.

Steering Damper Mount

Fit the Steering Damper Mount last once you are happy that everything is set in the correct position. Separate fitting instructions are supplied with the steering damper mount.

Fitting Advice

With all our SUMOBARS the **Right-Hand Thread** is easily identified with a groove machined around the bar and the lock nut. At Gwyn Lewis 4x4 we always put the **RH Thread** on

the **RH** side of the vehicle, this makes adjusting easier (but on a Standard Defender Drag Link I know you can't do this as the swan neck is LH Thread) Always make sure plenty of grease is used on all track rod end threads and bar threads especially stainless steel bars.

Tracking

Please note I set the tracking dead straight, but it can depend on the driver and the vehicle needs. A driver that brakes heavily needs more toe in while a powerful engine and light braking driver needs to toe out.

Torque Settings

Drop Arm Locking Nut 176NM 1.5/16" socket required.

Track Rod End Nut tapered end 40NM to 45NM

Safety - VERY IMPORTANT

Always make sure the bar locking nuts are kept tight and checked occasionally, if left loose the track rod ends can chatter around in the bar and eventually wear out and strip the threads. **Drop Arm Nut**, it is very important to re-check the tightness of this nut after use as the drop arm can work up the tapered splines on the steering box.

- A)** The **Track Rod Bar** joins the two wheels together, (long bar behind the front axle). A rough measurement of the Track Rod bar length, between track rod end centres is **123cm. This bar adjusts the tracking (Front Wheel Alignment)**
- B)** The **Drag Link Bar** is the bar from the steering box to the opposite wheel, (short bar in front of the front axle). A rough measurement of the Drag Link bar length, between track rod end centres is **92.5cm. This bar adjusts the steering wheel position.**
- F)** Drop Arm, (**it does NOT POINT straight ahead**), it points slightly towards the driver's side when the front wheels and steering wheel are pointing straight ahead. (See Drawing)
- G)** You will need two Straight Edges, for example, two Builders Spirit Levels would be perfect.

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