

Hello, Thanks for buying the Gas Ram bonnet kit, if you have a TD5 then keep reading, if you have another variant of Land Rover then throw these instructions away and find the right ones.

In your kit you should check to make sure you have the following.

2 off Gas Rams

2 off Top Bonnet brackets

2 off wing brackets

4 off ball sockets

4 off ball socket washers

4 off M8 nylock nuts

6 off M5 countersunk Hex bolts

4 off M6 hex head bolts

6 off M6 washers

4 off M6 rivnut's

6 off M5 rivnut's

All the other bit's and pieces in the kit of parts put to one side as you don't need them for your TD5 but you never know they might well come in useful in the future !

Tools your going to need

8mm socket

10mm socket

50mm socket extension bar and wrench

3mm hex driver

7mm drill

9mm drill

rivnut tool

masking tape

13mm spanner

11mm spanner

A pencil

1 Cup of tea

1 bottle of beer

If you know what a rivnut and it's tool is then you can skip this paragraph if not then read on. Rivnut's are really great things they are a steel or aluminium tube with a thread down the middle. The rivnut tool screws into the thread in the tube and you then place the tube into a hole in sheet material, the tool pulls the thread against the tool and expands the outside diameter of the tube and so attaches it to the sheet material. You can easily find these tools on ebay just search for 'rivnut kit' and £15 will get you a tool with a selection of different size rivnuts. They are really well worth the effort and money and most of the time you find a nut and bolt on your TD5 you can replace the nut with a rivnut and you can't drop it on the floor.

So first job, we need to fit the brackets onto the bonnet, your hinges have a neat trick in that if you open the bonnet up to it's full extent and then carry on some more the hinges separate and you can remove the now loose bonnet and take it into your garage and in my case turn it upside down and rest it on a couple of plastic dustbins. Now find your left hand bonnet bracket fig 1 shows the right hand one.



Fig 1

We are going to install this so the part of the bracket with the four 9mm holes in sit's in the 2<sup>nd</sup> cut out from the back on the bonnet liner, fig 2 shows the right hand side one in position.



Fig 2

Get some masking tape and stick it on the edge of the bonnet, offer up the bracket and mark the tape where the three mounting holes are on the long edge of the bracket just like in fig 3.



Fig 3

Double check that the bracket places the small part of the bracket with the four 9mm holes into the second cut-out in the bonnet liner. Now drill three holes with your M7 drill to match the M5 rivnut's supplied. If you have used rivnuts before then crack on and install three rivnuts in these three holes, if this is your first time then drill a hole in some scrap metal somewhere and try out a rivnut so you DON'T learn on your bonnet.

Now take one of the Ball sockets, it's washer and an M8 nylock nut and install all this on the middle hole that's closest to the bend in the bracket marked as 'A' in fig 1 then take three of the countersunk M5 bolts and fit the bracket to the bonnet and then repeat the whole deal on the right hand side of the bonnet.

Now stop and drink the cups of tea.

Excellent and now for the wings, let's start with the driver side, The hose clip marked 'B' in fig 4 will be held in place with a plastic mushroom clip – one of those clips that apparently are re-usable.



Fig 4

Well this is rubbish remove the clip by whatever means takes your fancy and throw the destroyed clip away. Next to this plastic clip is a pot rivet at the location marked 'C' in the picture you need to drill this pot rivet out with the MX drill bit, while you're at it open up the hole that the plastic mushroom was in with the same drill. Now you can install two more rivnuts in these two holes – you can see them in fig 4. Now unscrew the bolt marked 'D' with your M8 socket, don't worry about the nut behind it as it's a rivnut attached to the bracket that's holding the inner wing in place.

Next take one of the Ball socket along with its washer and nylock nut and choose which hole in the wing bracket to install it in with the 13mm and 11mm spanners.

If your tall then use the hole marked 'F' in fig 5 and if your short then use the hole marked 'E' This choice will affect how high the bonnet lift's, one slightly above it's normal location when open and the other slightly below the normal position. Fig 5 shows the passenger side bracket.



Fig 5

Now take the bolt you removed from hole 'D' and feed it through the rear slot in the wing bracket then add a washer to space the bracket away from the wing a little and offer it all up to the hole in the wing and tighten it up with the M8 socket. Then using two of the M6 hex bolts and washers secure the bracket and tighten them up with the M10 socket. It should now look like Fig 6 & 7



Fig 6



Fig 7

The passenger side is similar but you have to deal with the heater air intake. My Defender has a snow guard on the outside of the wing, unscrew the five screws marked in Fig 8 that hold the guard in place and then the two small cross head screws under the guard so that the plastic body of the air intake for the heater becomes loose.



Fig 8

Now carefully drill out the pot rivets shown in the image as 'G' and 'H' with the M9 drill making sure that you push the air intake towards the outside wing and ensuring you don't accidentally drill a hole in the air intake. Install two M6 rivnuts and replace the screws on the air intake and the snow guard if you have one. Now your wing should look like the image in fig 9



Fig 9

Next fit the Ball socket with a washer and the nylock nut in the correct hole on the wing bracket that you have selected depending on how tall you are. Remove the bolt marked 'J' in fig 9 with the m8 socket and use that with a washer to attach the bracket to the inner wing, the washer spaces it away from the wing just like the other side to accommodate the heads of the rivnuts. Then use two more of the M6 hex bolts with washers to attach the bracket

to the two rivnuts you have just fitted to the wing. We are now ready for the gas ram's, push the socket that's on the end of the bar onto the ball socket attached to the bonnet bracket and then the other end pushes onto the ball socket on the bracket mounted on the wing's, you will need to open the bonnet quite wide to fit them, take care not to let the bonnet hinges slip out of place. End result should look like fig 10 and fig 11



Fig 10



Fig 11

Next remove the original bonnet support, you need to thread it through the bracket by the radiator and intercooler top left at the front of your TD5 as in Fig 12

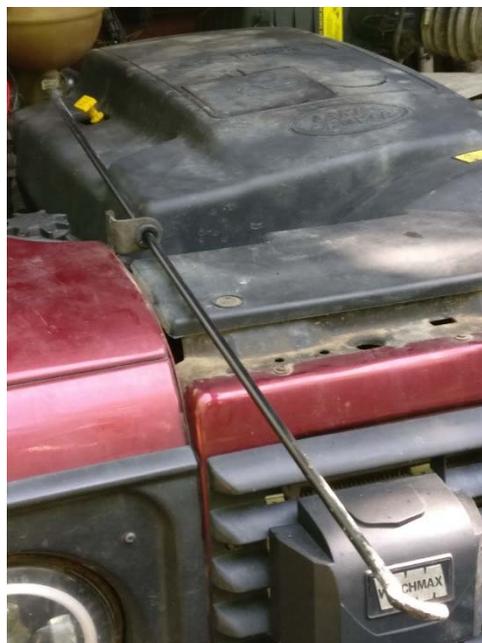


Fig 12

You can now test closing the bonnet, try it slowly a couple of times to make sure everything is lined up and nothing fowls as the bonnet closes. If it does not quite work then loosen everything off and adjust and tighten up again. By the time I was finished when I pulled the bonnet release in the cab and then just pushed to catch to the right and the bonnet floats up. Then I can close the bonnet with a bit of a slam and it all shuts nicely.

Last thing to do, clear up your tools and open the beer.