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Installation manual for RAID DESIGNS Mini Rally System

Congratulations to your purchase of Raid Designs Mini Rally System MRS.

Before you start.
MRS is a lightweight module based rally system, designed for any navigation equipment on your offroad motorcycle. The whole idea of the MRS is to be modified to your needs. Cut, weld, add, drill or modify in any way. We supply the basic platform and you build your own customized system.

General instructions.
Use this instruction with common sense. Your bike may look different and you need to decide for yourself on how to approach the installation. If you run into problems, take at minute to think about it and don't hesitate to contact us. All screws must be locked with thread lock and not overtightened.

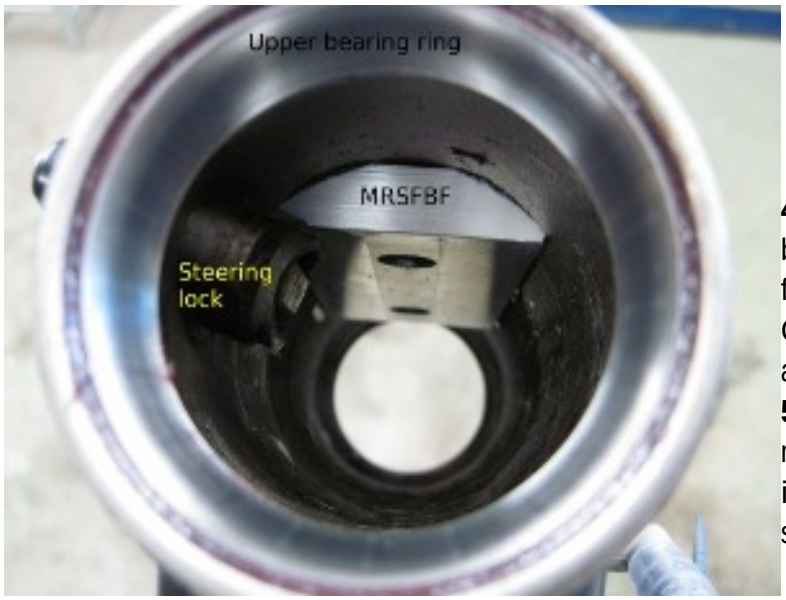
Raid Designs takes no responsibility for your installation.

Instructions

1: Place your bike upright on a bike stand or eq.

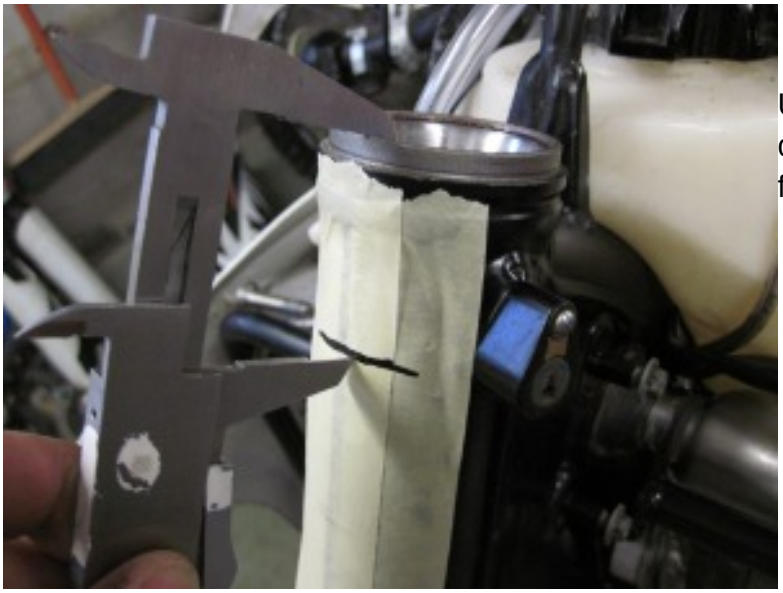
2: Remove the headlight, ODO-meter and everything in front of the triple clamps.

3: Remove the front wheel, brake and forks.



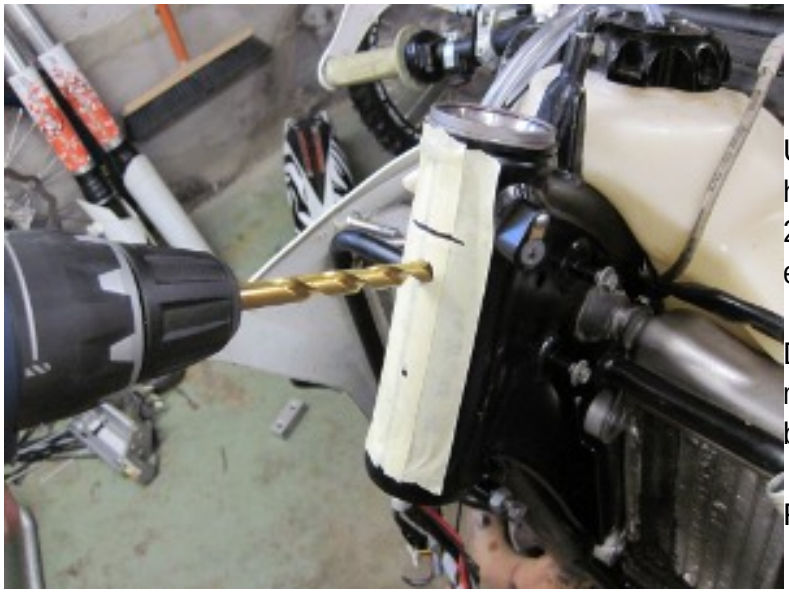
4: Remove the triple clamp and inner bearings. You should now have a clean frame and be able to see right through. Clean the grease from the outer bearing and the frame.
5: Now you need to mark for holes so mask the frame with tape. Hold the inner frame bracket inside, and make sure it clears the steering lock.

Measure from the inner frame bracket to the edge of the steering head. Remove the bracket.



Use this measurement for placing the outer frame bracket. Now do this again from the bottom to be sure.

6: Mark up the holes. From the edge of the brackets to the holes is 16 mm, so at least 16 mm from your marked line. You can use the plate (MRSP) to extend the frame bracket. In the picture I screwed a longer bar to clearly see where “straight” is. Measure this carefully and mark two small dots in the center of the holes.



Use a center punch and drill small holes, then widen them to 10 mm. The 2 extra mms is for adjusting and in the event of a crash this will work as play.

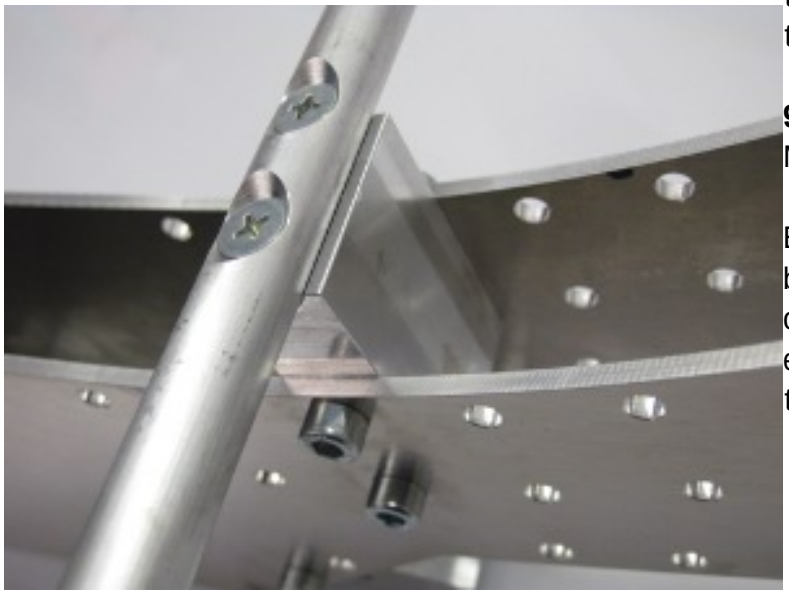
Don't worry about the holes, this is much better than welding around the bearings.

File the edges smooth.

7: Install the inner frame bracket together with the outer bracket, creating a sandwich with the frame between. You can "glue" the inner to the frame with silicone. That way you can later remove the outer frame bracket with the inner one still in place. You should end up with a complete frame bracket. Check that the bracket is straight several times and tighten the screws to 30 Nm.

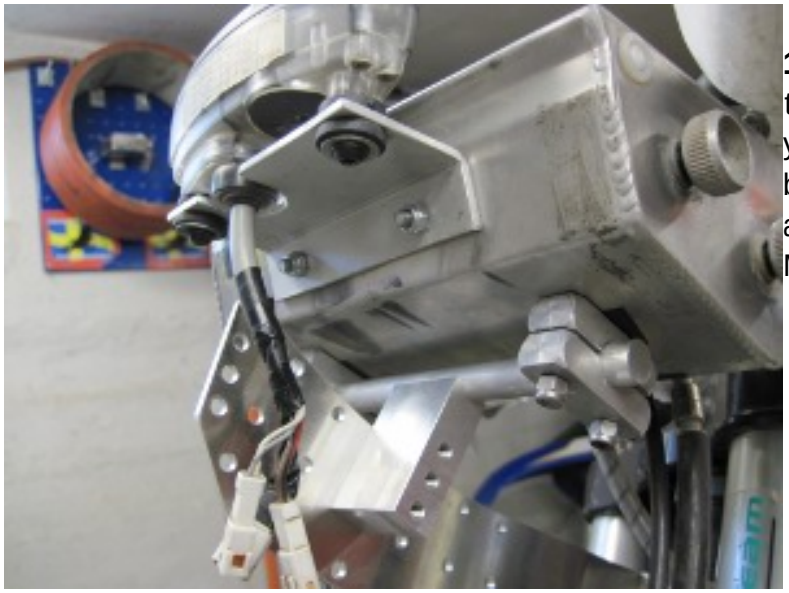
8: Clean the grease from the bearing and all other parts around the triple clamps. Grease it up again with new grease and reinstall the triple clamps, front fender, front brake and handle bars. You need all these parts to adjust the MRS later.

The frame bracket is the base of the MRS. From here on you install whatever you want, but the guide continues with an example of a roadbook holder, ODO-meter, light and fairing. From here on, just hand tighten all screws. They are all tightened at the end.



9: Install the right plate (MRSP) with 3 M6x12.

Every details added to the MRS should be fastened to the right or left plate only for now. That way, later you have easy access to the wiring by removing the other plate.



10: Roadbook holder. Tilt the steering to one side, and roughly measure where you want the roadbook holder. Use a bracket with suitable length (MRSBxx) and install the bar (MRSB) using two M5x20.

Fit the bar to your roadbook holder and loosely tighten it so you still can adjust it. Make sure the handle bar clears everything.

Screw the bracket to the plate using two M5x16 Allen bolts. All brackets are fastened this way.

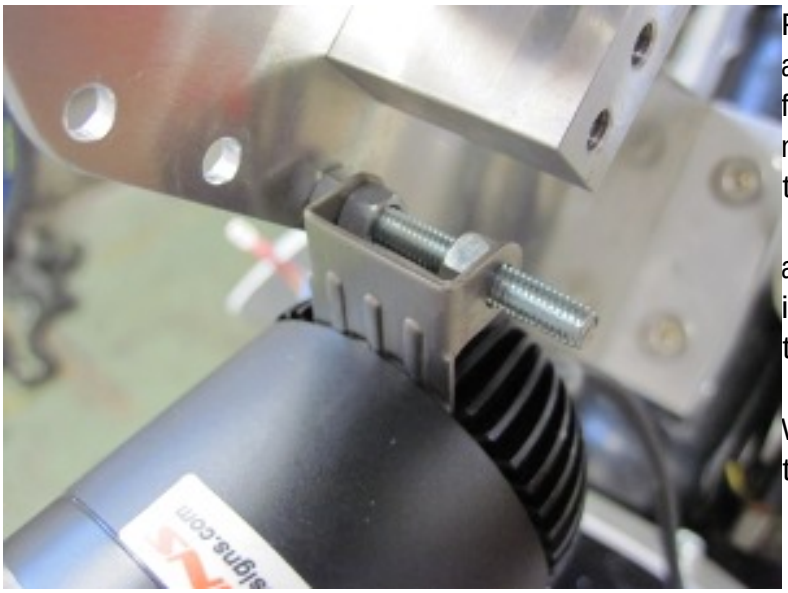
Since the roadbook holder is the heaviest part, the MRS has two holes for every bracket.

11: ODO-meter (Trip master).

The ODO-meter can be installed in several different ways. You can screw the stock bracket to a MRS-bracket or directly to your roadbook holder, or as I did here; on a bracket directly to the roadbook holder. When you're happy, tighten the bracket to 8 Nm and your other stuff so it feels steady.

12: Light.

When this manual is printed, Raid Designs uses the 66mm 600lm LED2 as the stock headlight. You can use any suitable light(s), HID, no lights etc.

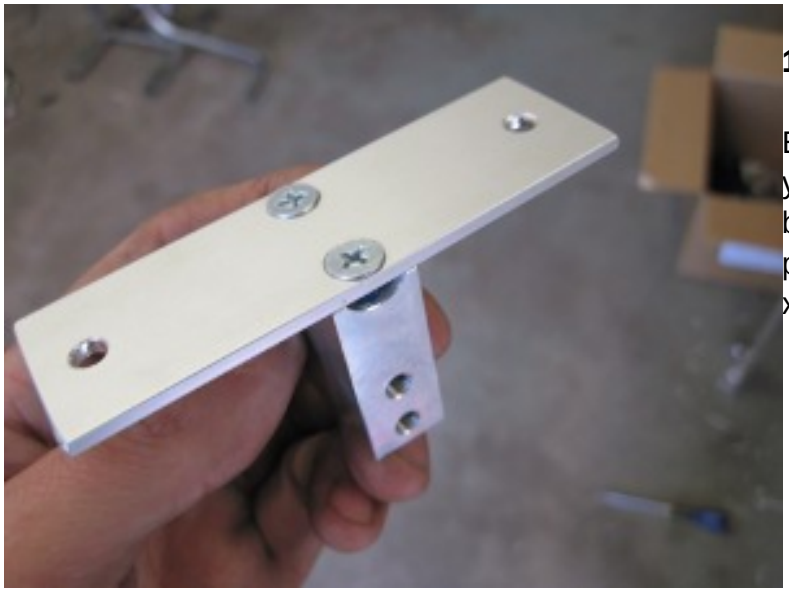


First, screw the M5x40 from the right and tighten with one nut. Install the first ear of the LED holder with two nuts between. Adjust angle and tighten the second one from the right.

The angle of the light is tricky to adjust after your system is complete, so if you can, adjust it now with you on the bike off the stand.

When you're satisfied, lock two nuts to the left ear (picture only shows one)

As you may have noticed, it's possible to have different lights, or several, or none.
With different lights you need to make your own holes in the fairing which of course is possible.

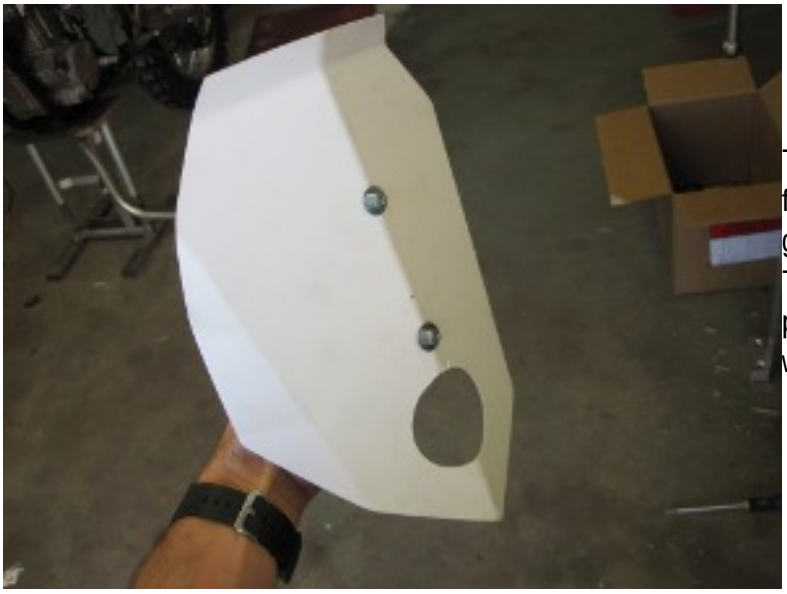


12: Fairing:

Begin by holding the fairing to where you like it and measure by eye the bracket length. Screw down the fairing plate to your bracket using the two M5 x 16 screws and tighten them.

Screw that plate to the fairing using two M5x16 Allen heads with washers on the outside and plastic spacer between, in this order:

- Screw
- washer
- fairing
- spacer
- plate
- pop nut



Tighten it so the metal plate meets the fairing, but not too much. The fibre glass will crack if you're not careful. Then attach the brackets to your MRS plates and adjust so the light lines up with the fairing hole.

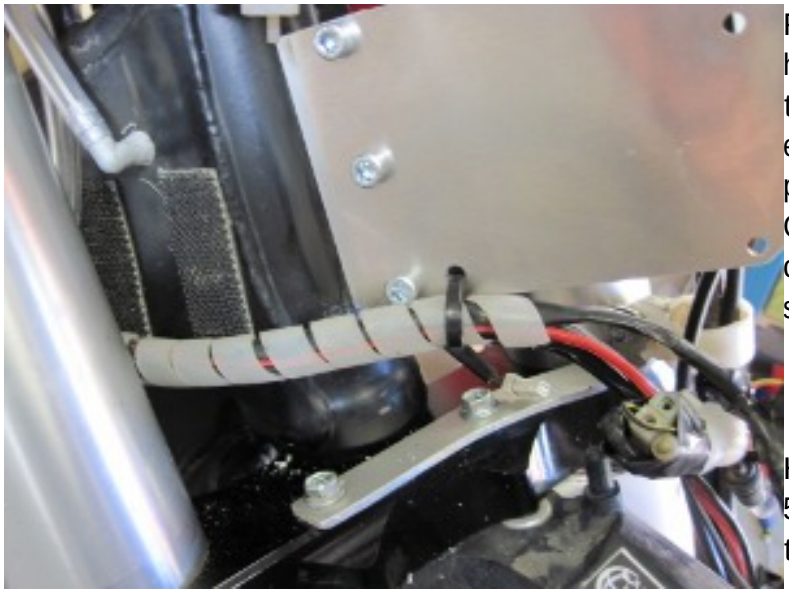
If you have ordered a fairing without holes, drill this as you please.

A tip before drilling in glass-fibre: Use a 2 mm drill bit first as guide holes. Then 6 mm for the M5, and a suitable drill for the light hole. Drill with high rev with very light pressure. Clean the edges with a metal file or sand paper.

That's pretty much it for hardware. Now test so everything feels ok and adjust if you need.

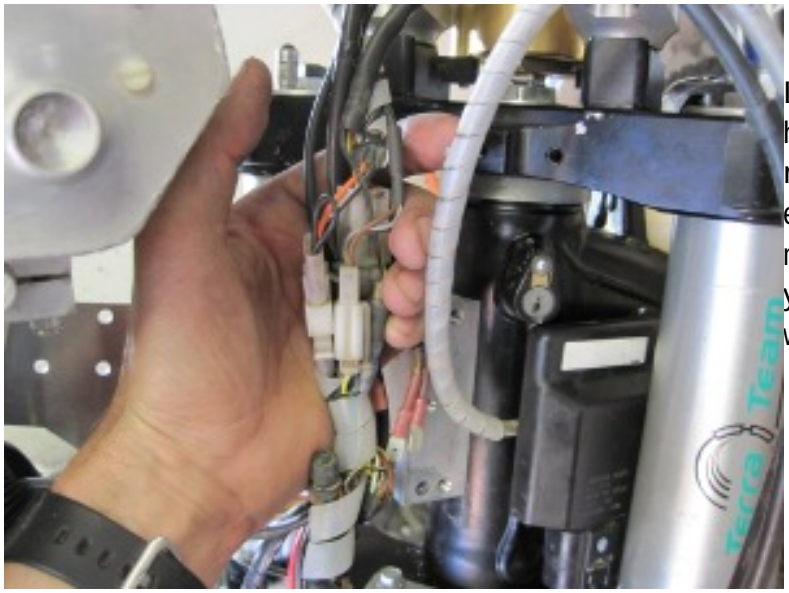
13: Electrical

This part is very different from one bike to another, so you have to make the best of your own wiring harness, but there are some general ideas. It might be easier to remove the fairing again.



First of all, you bring the wiring harness in under and through a hole in the right plate and then attach everything. KTM and Husaberg have plates holding the wiring connectors. Get rid of that and sort out your cables. Don't hesitate to drill to attach stuff on the plates.

Here's the wiring harness on our KTM 530EXC. It goes under and up inside the two plates.



Install everything you need on the handlebars; ODO-meter remote, roadbook remote, starter, kill switch etc. Try to bring them together in the middle, and downwads. That way, when you turn the handlebar, the cables won´t stretch.

The light is connected to the stock wiring harness.

KTM uses brown as earth and connects to RD's LED2´s black cable. Plus on the LED is white and connects to blue (high beam) or green (low beam). If you have an AC-system you have to bring a new plus from the battery with the light switch between. (not described in this instruction).

14: When done with the electrical, install the fairing and left plate.

You can find general building tips on raiddesigns.com.

Feel free to discuss anything about your build on facebook. Please post pictures and tell us (and the world) about your project. See you there.

IMPORTANT!

If you need to remove the MRS, you can leave the inner frame bracket inside the frame tube, but if you do so, screw it down with two M10 x 10, just to be sure it won't come loose inside.

Thank you for supporting Raid Designs!

DISCLAIMER: Raid Designs takes no responsibility for any damage that might occur due to the installation this product.

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