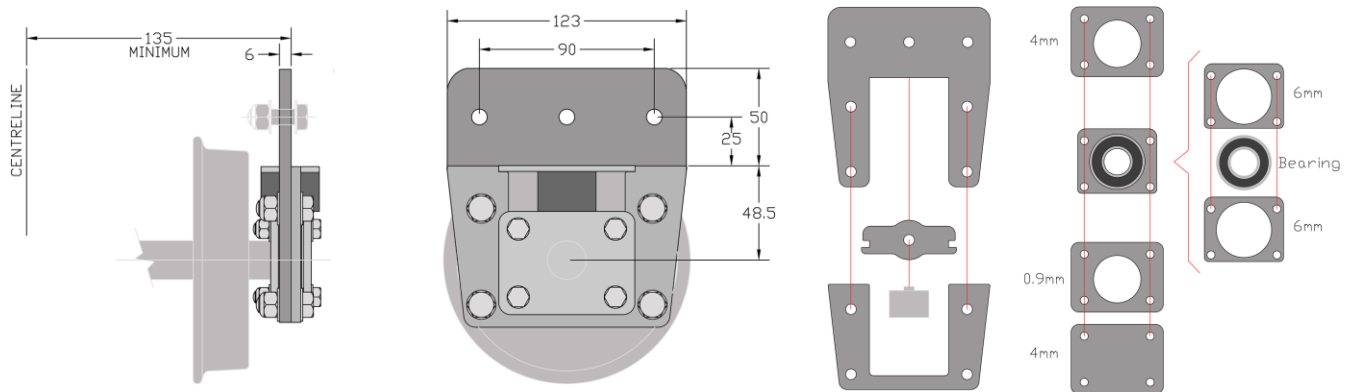


Instructions for assembling the flat axlebox

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Before painting the laser cut parts need all the cut edges cleaning up on to remove any black residue, a simple wire brushing is sufficient. Most parts will have a tiny tab where the cutting begins and ends, this isn't normally a problem but occasionally it occurs where two parts will mate together or a bearing needs to be fitted and needs to be filed flush.

The axlebox should be fitted to the frame with three M8 screws. The axlebox is designed to take 20mm bright round bar axles, there is room between the wheel and the axlebox to fit a shaft collar to limit side play in the axle so that the axle end doesn't rub on the outer axlebox cover.

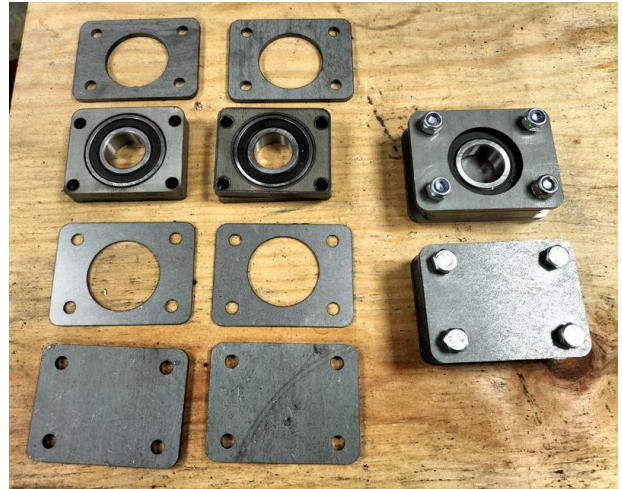


Axleboxes and springs



First clean the nibs left by the laser cutting process from the insides of all the 6mm thick axlebox bearing mounts. Take two axlebox pieces, sometimes the bearings will go in with finger pressure only, if so breathe a sigh of relief! If not continue as follows. Press a bearing into one piece using the vice as seen in the first photo above, doing your best to keep it square, turning it frequently and doing it a bit at a time. You should find it suddenly enters the hole and presses in smoothly. Then press a second piece on to the bearing, closing up the gap and finally setting them on top of the vice jaw and tapping them with a hammer to get them perfectly aligned. If they seem very reluctant to go in then use a half round file to ease the hole, if they are too tight it can compress the bearing leading to failure in service.

> Push four M6 x 30 screws through the axlebox outer covers, the thin spacers, the bearing housing you have just made and the inner cover. Make sure that you align the parts so that the tops of all four pieces are level, as this is the surface that the rubber spring sits on.



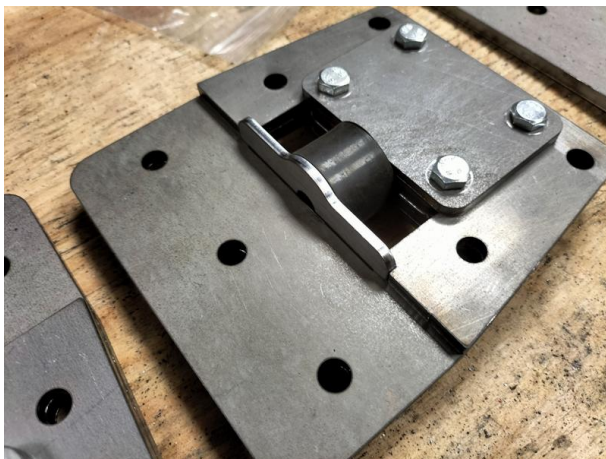
< Slot the spring mounting plates into position.



> The thread on the rubber bobbins needs to be cut down to just under 3mm long before assembly, cut them with a hacksaw or a cutting disc in the angle grinder.



< Place the rubber spring in position, slide the complete axlebox unit into place followed by the 'U' shaped keep.





< You may need to slightly compress the rubber spring to fit the M8 x 25 screws. Using washers helps to protect the paint during assembly. Fit the axlebox under the frame so that the spring mounting plate fits snugly under the frame.

> When fitting the wheels and axle the axles should be a few millimeters shorter than the distance between the outer axlebox covers, so that there is some side play and the axle ends don't rub hard against the outer covers. Don't cut the axle too short or it won't be fully engaged in the bearing. If you think it necessary to control the side play add a shaft collar to the axle end, slide the axle in until it hits the outer cover, pull it back a little, push the collar against the bearing and nip up the Allen screw.



A good dollop of grease should be used when fitting the axles into the bearings, it makes it so much easier to dismantle it in the future as it keeps water and muck out.

Shopping list

M6 x 30 hex head screw	16 off
M6 nyloc nut	16 off
M8 x 25 hex head screw	16 off
M8 nyloc nut	16 off
M8 form B washer	32 off
Bearings 20 x 42 x 12 rubber sealed	4 off



Shaft collars, 20mm	4 off
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vibration isolators 30 dia x 20 thick with male M8 thread one side only.	4 off
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Search for 'vibration mounts'. (These come from China, delivery times of a few weeks are not uncommon)

