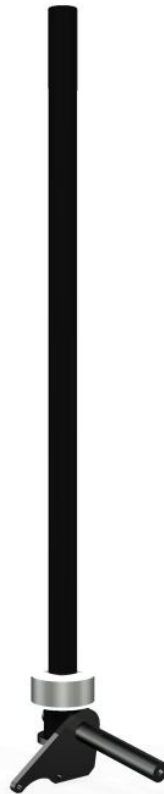


Dynamic Dampening Suspension User Installation Instructions

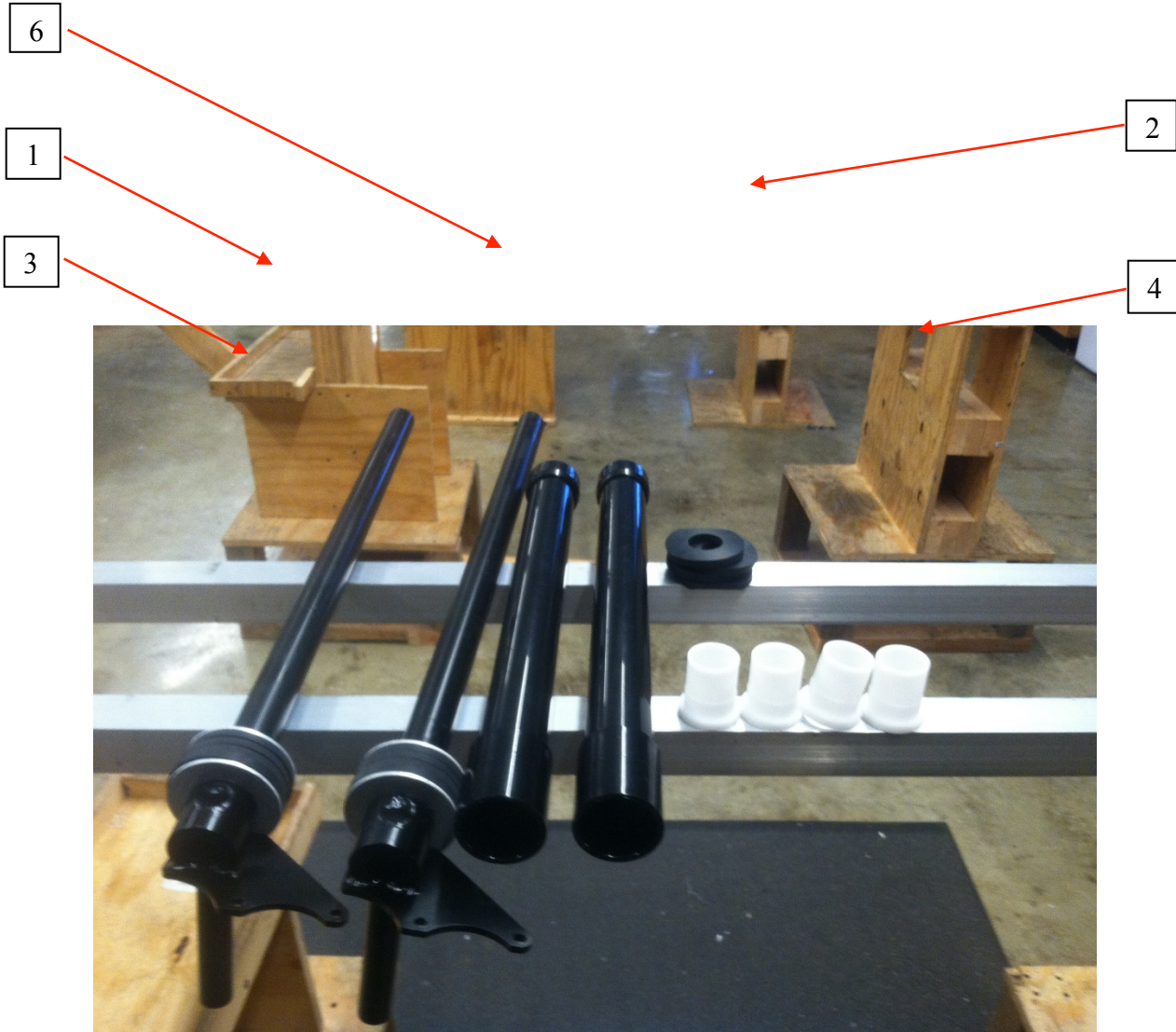


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Included Contents



Sr. No.	Item Description	Quantity
1	Steel Antler	2
2	Rubber Discs	12
3	Aluminum Washer	4

Sr. No.	Item Description	Quantity
4	Split Bushing	4
5	Roll Pins	2
6	PVC Pipe 1 ¼	2

Required Equipment

In addition to the included contents, you will need the following:

- Hand Drill
- 4mm Allen Wrench
- Small Hammer
- Drift or Punch
- Allen Wrench for Axle
- Allen Wrenches for Brakes
- Bearing Race Removal tool
- 11/64 inch drill-bit
- 4 zip-ties
- Loctite solution

Procedure

Note: It is highly recommended to carry out the whole procedure for 1 kingpin at a time.

1) Existing Kingpin Removal

1. Unscrew the 6 mm hex-headed lug nut that holds the wheel in place using a 6mm allen wrench.



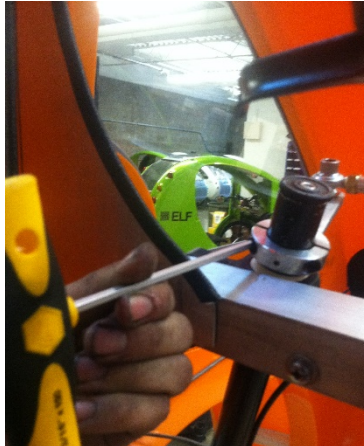
2. Remove the 2 5mm hex-headed bolts that fasten the caliper to the wheel using a 5mm allen wrench.



3. Allow brake caliper to dangle freely. Take wheel out of its sleeve.



4. Loosen the 4 hex-headed bolts in the collar assembly using a 3/16 allen wrench as shown in the photo.



5. Using a metal punch, remove the rear half of the collar which is being held in place by a dowel pin.



Leave steering arm in place.



Steering Arm

6. Unfasten the top cap of the kingpin using a 3/16 allen wrench as shown in the figure.



7. Repeat step 5 and 6 for the collar under the dashboard strut.



8. Unfasten the third collar at the bottom of the kingpin with a 3/16 allen wrench to allow the kingpin to slide out of the frame as shown in the next image.



9. Slide out the kingpin from the headtube from the frame assembly.



10. Remove bearings located on top of the headtube. These will not be used in the retrofitted dynamic dampening suspension system.



11. Place the bearing race removal tool inside the headtube and pass it right through. Knock the top end of the tool with a hammer to remove the bearing race (as shown in the photo).



12. Repeat the
the lower end



process on
of the

headtube by inserting the race removal tool upwards from the bottom.



13. Place 2 of the 4 white spacers at the top and bottom of the headtube.



14. Unfasten the M6 x 70 Philips headed bolts that fasten the pillow block to the dashboard strut. Set the pillow block, 2 bolts, 2 nuts, 2 neoprene washers and a wire clamp aside.



2) Mounting

15. Slide the kingpin that was received pre-assembled through the white spacers in the headtube.



16. Place the cut rubber spacer at the top of the kingpin. Slide pillow block over the



17. Pass pillow block through the top of the kingpin and align it with the holes drilled in the dashboard strut.



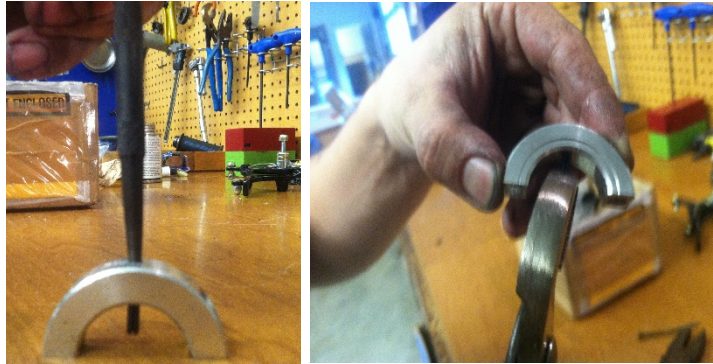
18. Pass last rubber washer over the top of the kingpin.



19. Attach to the kingpin the end of the collar that is attached to the steering arm as shown below.



20. Remove dowel pin from the other half of the collar. First use a metal punch and hammer to knock dowel pin partially out of the collar as shown. Once that is done, use pliers to pull the pin out of the collar.



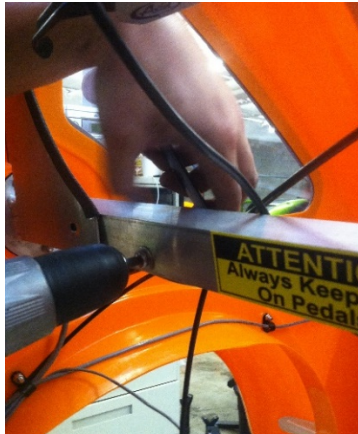
21. Apply Loctite solution between the 2 halves of the collar before fastening them together with the M6 hex-headed bolts that were previously removed. Fasten the bolts with 3/16 allen wrench.

Note: Do not tighten the bolts completely until after the alignment has been completed.



22. Fasten the pillow block to the back of the dashboard strut by drilling in the M6 x 70 Philips head bolts while holding the neoprene nut and washer in place with a wrench.

Note: The inner hole on the pillow block (the one closer to the steering column) will also have a wire clamp attached to it.

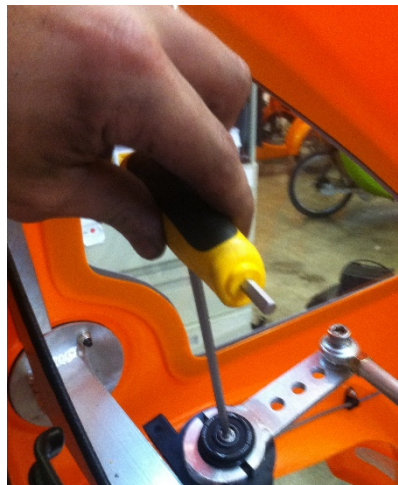


23. Place a 5mm kingpin spacer (that was previously removed from the headtube) on top of the rubber spacer. On top of that, place the top cap of the kingpin. Fasten with a 3/16 allen wrench.



Kingpin top-cap

5mm kingpin spacer



24. Place the wheel back on its axle.



25. Apply Loctite on the lugnut and fasten the wheel to the axle using a torque wrench. Set the torque wrench to 13.5 N.





26. Bolt the brake caliper onto the wheel hub with the 2 5mm bolts that were previously removed.



This direction should face
the front of the vehicle

27. Repeat process steps 1-26 for the other kingpin.

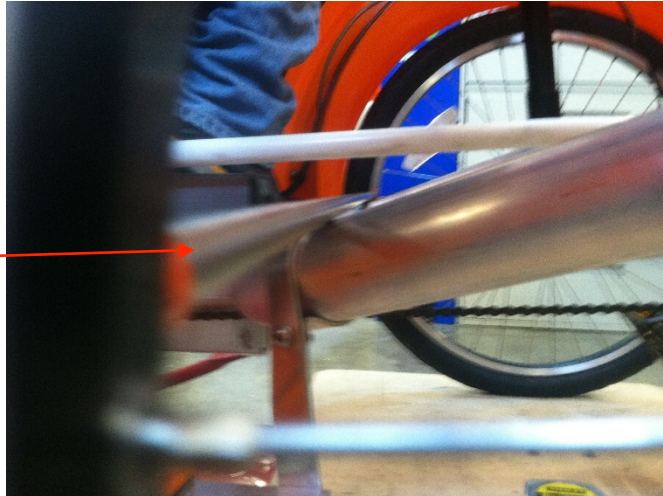
3) Alignment

Note: The alignment procedure must be carried out with the rider seated in the ELF.

28. To adjust the alignment and toe angle of the wheels, use 3 alignment bars. While doing this at home, alignment bars can simply be replaced by 1 40 inch bar and 2 18 inch bars.

Place the 40 inch bar across the rear of the front tires.

40'' alignment bars



Place 2 18 inch alignment bars running from the front of either wheel to the center strut.

18'' alignment bars

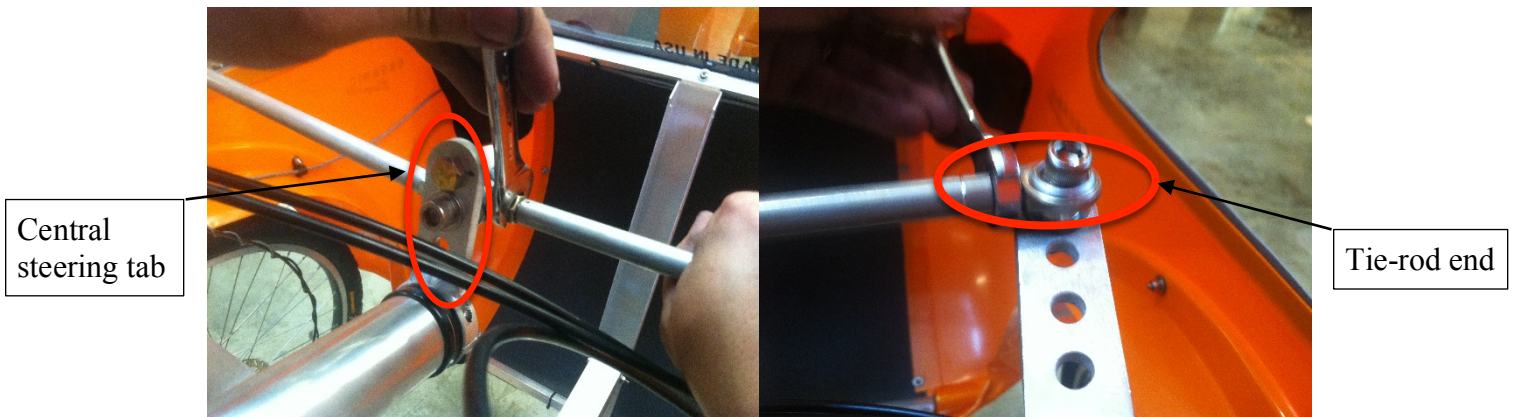


29. In order to get the toe of the vehicle right, use a slide rule as shown in the figure. Measure the distance across the rear of the front tires as well as the front of the front tires.



The difference between the distance between the rear and front of the front tires should be $\frac{3}{16}$ inch, with a linear tolerance of $\frac{1}{16}$ inch. In order to adjust this difference, follow steps 29 and 30.

30. Loosen the tie-rod ends and the attachment to the center steering tab in order to adjust the toe.



31. Rotate the loosened tie rod in order to reduce the difference between the front and rear ends of the front tire.



32. Fasten the loosened tie-rod ends and center tab connection.



33. Attach all the wiring harnesses along the kingpin using a zip-tie.



34. The old dowel pins will be replaced by larger roll pins. Hence, the hole in the collar needs to be drilled in order to make a larger slot for the roll pins. Drill using an 11/64 inch drill-bit. Insert roll pins using a metal punch and hammer.



35. Tighten the top caps and the collar clamps with a 3/16 allen wrench.

Notes

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