

Installation Instructions for the Kewlmetal Harley Pro Street Rake kit Item 542 AND 543

US Patent #7438307

CAUTION – Kit 542 is for 21 -26 inch front wheels ONLY when installed on a motorcycle!

CAUTION – Kit 543 is for 16 or 18 inch front wheels ONLY when installed on a motorcycle!

CAUTION - Kit 542 is for 16 or 18 inch front wheels ONLY when installed on a Trike or Sidecar.

Congratulations on your purchase of your new Kewlmetal bolt on pro street rake kit. Please read these instructions completely before beginning. You should have the service manual for your bike for a project of this magnitude. These instructions will provide a step by step sequence of dis-assembly and re-assembly and all details needed to install the Kewlmetal specific parts and assemblies. These instructions do not describe in detail the dis-assembly and re-assembly of the Harley Davidson specific parts and assemblies. A good example of that is the throttle cables. Since details can be model/year specific such as cable operated versus throttle by wire, it is assumed the installer has first hand knowledge and/or the appropriate service manual required to accomplish this task

There are 2 special tools you will most likely need.

- 1) The Ignition switch alignment tool.
- 2) A bearing puller to remove the bearing races from the steering neck.

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Step 1. You will need to support the bike on a lift such that you can completely remove the front end. We use a small jack screw type lift like the one shown in fig 1. A motorcycle/ATV type lift will also do the job.

Step 2. Remove the front fairing (front half with the headlight) and windshield from the bike.

Step 3. Dis-connect the main fuse near the battery/fuse panel.

Step 4. Dis-connect all electrical connectors between the bike and the fairing.

Step 5. Remove the turn signals.

Step 6. Remove the fairing from the bike.

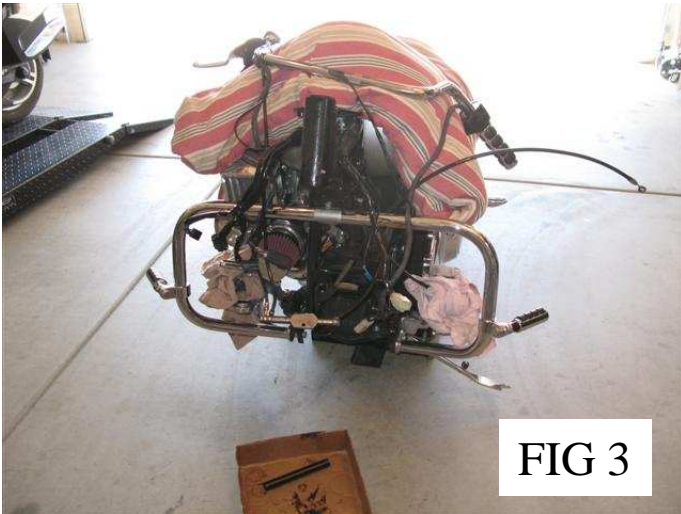
Step 7. Remove the ignition lock per the Harley service manual. Remove the Instruments from the instrument housing. Remove the instrument housing plastic from the bike. Don't forget to protect the gas tank with a nice thick blanket.

Step 8. Remove the OEM fairing mount bracket

Step 9. Remove the handle bars from the top triple tree. You can lay the bars back on the tank as long as you have a nice thick blanket protecting your tank.



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- Step 10. Remove the Brake Calipers.
- Step 11. Remove the front wheel.
- Step 12. Remove the Front Fender.
- Step 13. Remove the forks.
- Step 14. Remove the brake manifold from the bottom triple tree.
- Step 15. Remove triple trees from bike.



- Step 16. Now remove the bearing races from the frame. You will most likely need a bearing race puller to accomplish this task.



- Step 17. Now un-package your new Kewlmetal Kit. The kit is shipped assembled so take note on how everything goes together.

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FIG 6

Step 18. Assemble the top and bottom blocks to the frame neck. DO NOT install the inner spacer tube or front spacer tube YET! The objective of this step is to fully seat the BOTTOM block into the bearing race seat, and then remove the top block, THEN install the spacer tubes. Install the main $\frac{3}{4}$ inch bolt and washer from the bottom and tighten it down until it draws the top and bottom blocks fully into the bearing race cups.



FIG 7

Step 19. Now loosen the main bolt a bit and use a rubber mallet to adjust the left and right alignment of the bottom block to the frame. The alignment of the top block is not important at this step. Now back out the main bolt a few turns and rap on it from the bottom with a hammer and drive the top block back out of the frame.

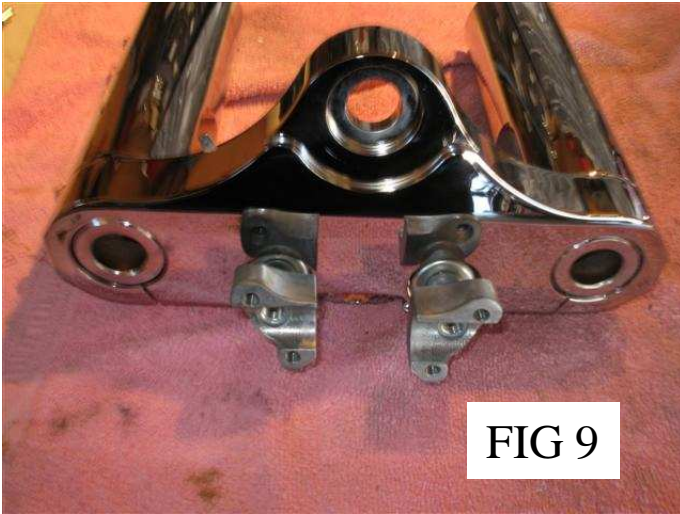


FIG 8

Step 20. Now install the inner spacer shaft and the front spacer shaft. The cutout on the inner spacer shaft (if yours has one) is for bikes with the steering lock built into the steering head on the bike. This cutout goes down and back. The tabs on the inner spacer shaft must engage the slots in the blocks. The flat on the front spacer shaft goes up and back.

Step 21. Tighten the main bolt slowly drawing the top block into the top bearing cup. Use a rubber mallet to adjust the alignment of the top block as the assembly comes together. The front shaft, bottom blocks, and top block should all line up once the top block is all the way down. Once the main bolt is tight, the front shaft should become trapped and tight. Once you are satisfied with the alignments, final torque the main bolt to 200 ft-lbs.

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Step 22. Remove the OEM risers and ground wire from the stock top triple tree and re-install them on your Kewlmetal top tree. The grounding screw is underneath on your Kewlmetal tree.

Step 23. NOTE: BEFORE installing your triple trees on the bike you must pack the steering bearings with grease. Any good wheel bearing grease will do. We prefer a fully synthetic grease on our builds.

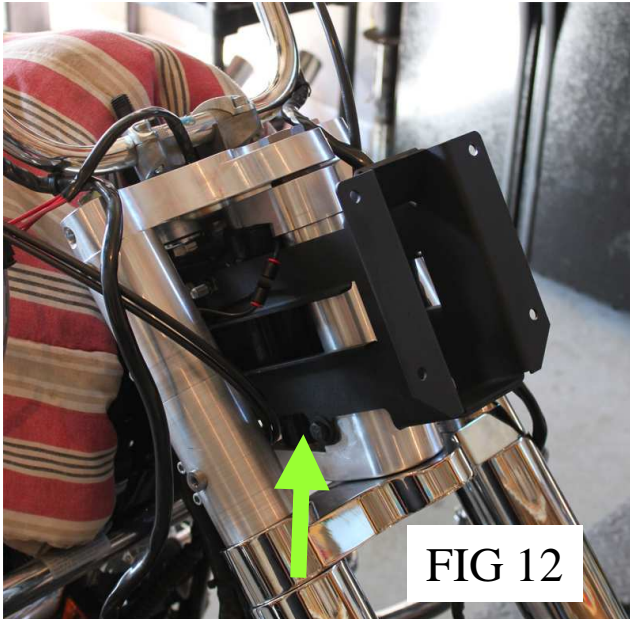


Step 24. Now install the bottom tree on the bike, the top of the shaft gets the top dust seal, and the 2 smaller nuts. Tighten the bottom nut to 10 – 12 FT-LBS of torque then work the lower tree back and forth and re-torque to seat the bearings. Use the double nuts to lock the top nut in place. After the double nuts are tightened together, re check the amount of force it takes to turn the bottom tree. It should take somewhere between 2 –3 LBS of force to turn the tree when pulling from the center of the fork tube hole. You can use a fish scale to check this.

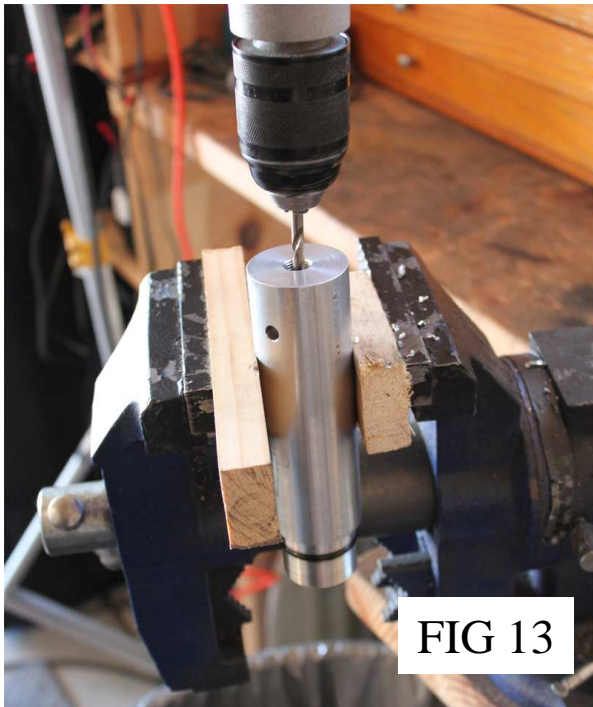


Step 25. Now install the top tree with the pinching fat fork tubes in place. BEFORE installing the top tree, be sure you have the clutch cable and throttle cable routed properly, the cables generally will pass in front of the top tree, and between the forks and frame. Install the washer and nut on top of the steering shaft. Only hand tighten the top nut at this point, we want that to be loose until the forks are installed into the pinching fat fork tubes so everything can line up. Install the 12mm flat head bolts and that hold the pinching fat fork tubes to the top tree. Rotate the pinching fat fork tubes so that the fairing mount studs point straight out.

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Step 26. Now install the Kewlmetal Fairing mount bracket as shown in fig 12. Re-Use the OEM bolts to mount the bracket to the frame. Don't forget to install the two 3/8-16 bolts that go through the bracket lower tabs and into the Kewlmetal lower block. These are item 23 on the parts list. These bolts are important as they positively lock the lower block from rotation in the frame. Your Kewlmetal fairing mount bracket also has some angle adjustment capability. Depending on how you set up the ride height of your bike, you will need to make this final adjustment after the bike is back on it's wheels.



Step 27. If you want the front forks to have air pressure capability, you will need to drill thru the Kewlmetal fork caps. The caps are made without a thru hole for use without the air connection. Use a 3/16 drill bit and a hand drill to carefully drill the air passage thru on your Kewlmetal fork caps.

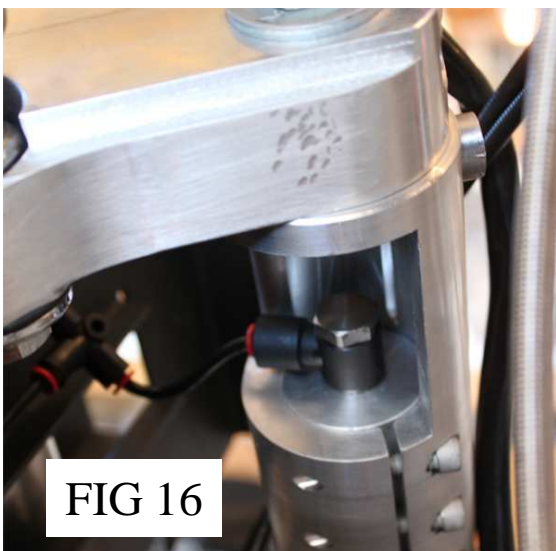
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Step 28. Replace the stock OEM fork caps with the Kewlmetal extended fork caps. Re use the OEM O-ring. Now slide the lower fork covers onto the forks, and then slide the forks up into the bottom triple tree and into the pinching fat fork tubes. The top of the fork cap should come flush with the bottom of the cutouts in the pinching fat fork tubes (see fig 15). The cutouts in the pinching fat fork tubes go INSIDE to provide steering clearance to the frame.



Step 29. Snug down the pinch bolts on the pinching fat fork tubes. Once both forks are in place, then final torque the top nut on the steering shaft to 50 FT-LBS, lastly tighten the lower tree pinch bolts while holding the lower fork covers up flush with the bottom tree. You should rotate the lower fork covers so the slots in the fork covers align themselves with the slots in the lower triple tree. Now you can final torque the Lower Triple Tree pinch bolts to 20 FT-LBS and the 1/4-20 Fat fork tube pinch bolts to 10 FT-LBS. Go up and down several times until they are completely snugged down.



Step 30. Now install the OEM air fittings onto the top of your Kewlmetal fork caps. Re-connect the air lines and check for binding and pinching when turning the handle bars from stop to stop.

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Step 31. Remove the OEM straps that hold the wire harness to the front of the frame near the steering neck. Zip tie the wiring harnesses up into the corner of the frame and the triangular plate on top of the frame as shown in fig 17. The cutouts in the Kewlmetal pinching fat fork tubes should provide clearance for the wire harness when the steering is turned to the stops..

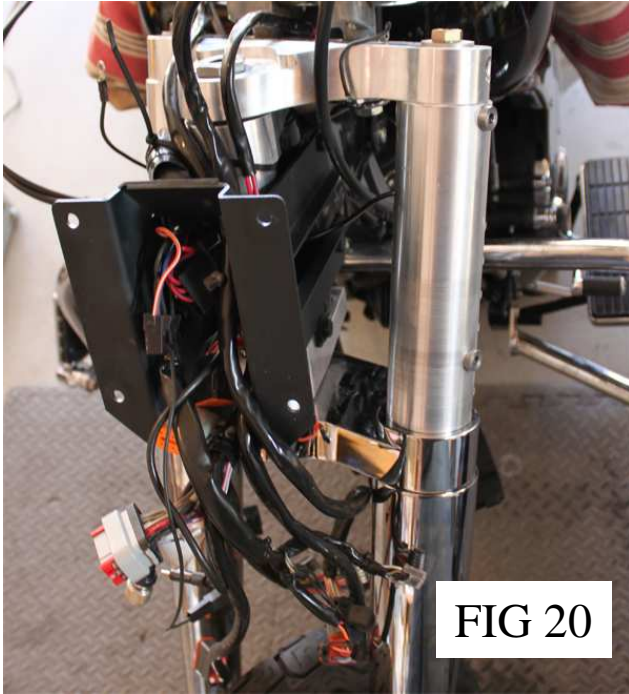


Step 32. Install the 4 fairing adaptors into the pinching fat fork tubes with some SEMI permanent loctite.

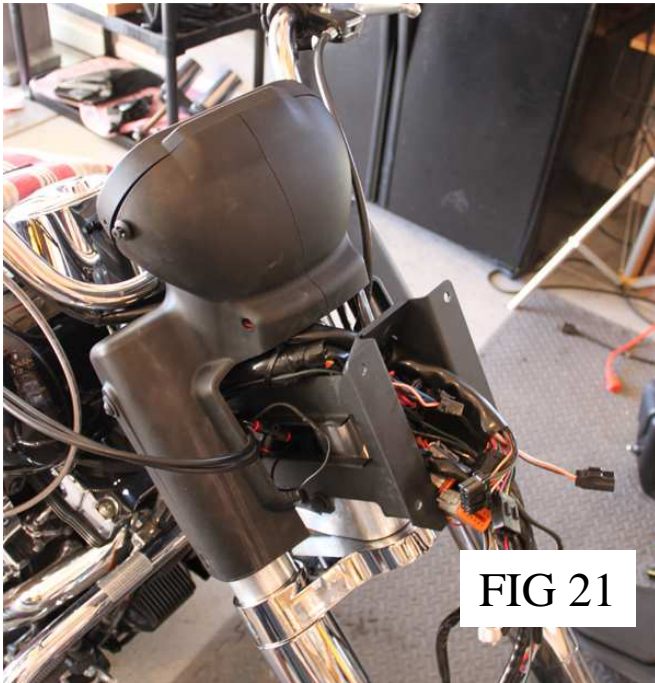


Step 33. re-install the Ignition on the top triple tree. Re-Install the handle bars and risers. Before installing the risers, don't forget to install the ground wire that grounds the handle bars. You can re-use the OEM wire. There is a 10-24 tapped hole in the bottom of the Kewlmetal top tree for this purpose.

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Step 34. Now is the time to route the wires from the main harness and the handle bars. The wires that need to go up into the fairing need to cone forward through the top and middle of the fairing mount bracket as shown in Fig 20.



Step 35. Re-Install the instrument housing. Pay particular attention to wire routing and clutch and throttle cable routing. Now is the time to get that all straightened out before buttoning things up any further.

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Step 36. re-install your front wheel, fender, brakes, etc. Please refer to your Harley service manual for any specifics on re-installing OEM parts. There is a 1/4 20 tapped hole in the back of the bottom triple tree for mounting your front brake manifold. Check your lower brake line lengths with the front suspension fully extended. You should wait to install the upper front brake line until the fairing is re-installed just for routing.



Step 37. Install the fairing onto the bike.

Step 38. Re connect all of the cables and wires that run to the handlebar controls. Refer to your Harley service manual for model specific instructions.

Step 39. Re connect all of the electrical connectors.



Step 40. Install the Kewlmetal lower fairing mount brackets to your crash bar. Install some turn signals to your new Kewlmetal turn signal brackets. The brackets have 2 sets of holes for driving lights and turn signals if desired. Bullet style signals with the wire running through the hollow mount stud work best. We recommend Kewlmetal small bullet lights for this. See fig 24.

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Step 41. Now is the time to wire your new front turn signals. Re-Install the main fuse and turn on the ignition and test all the electrical systems to make sure everything is working before we final install the front headlight shroud and fairing.

Step 42. Adjust the headlights down almost as far as they will go using the headlight adjuster screws. The screws will be out almost as far as they will go. **IMPORTANT NOTE :** You will have to trim the length of these screws because they will hit the inner fairing and not allow you to properly re-install the front fairing half when they are adjusted all the way out. Using a die cutter, you should cut off the screws removing just about all of the hex portion of the adjuster screw.

Step 43. Once you have tested all the electrical, re-install the front fairing with the headlight back on the bike. Don't forget to plug in the headlight when you are doing this. Re-install all the fairing screws per your Harley shop manual.

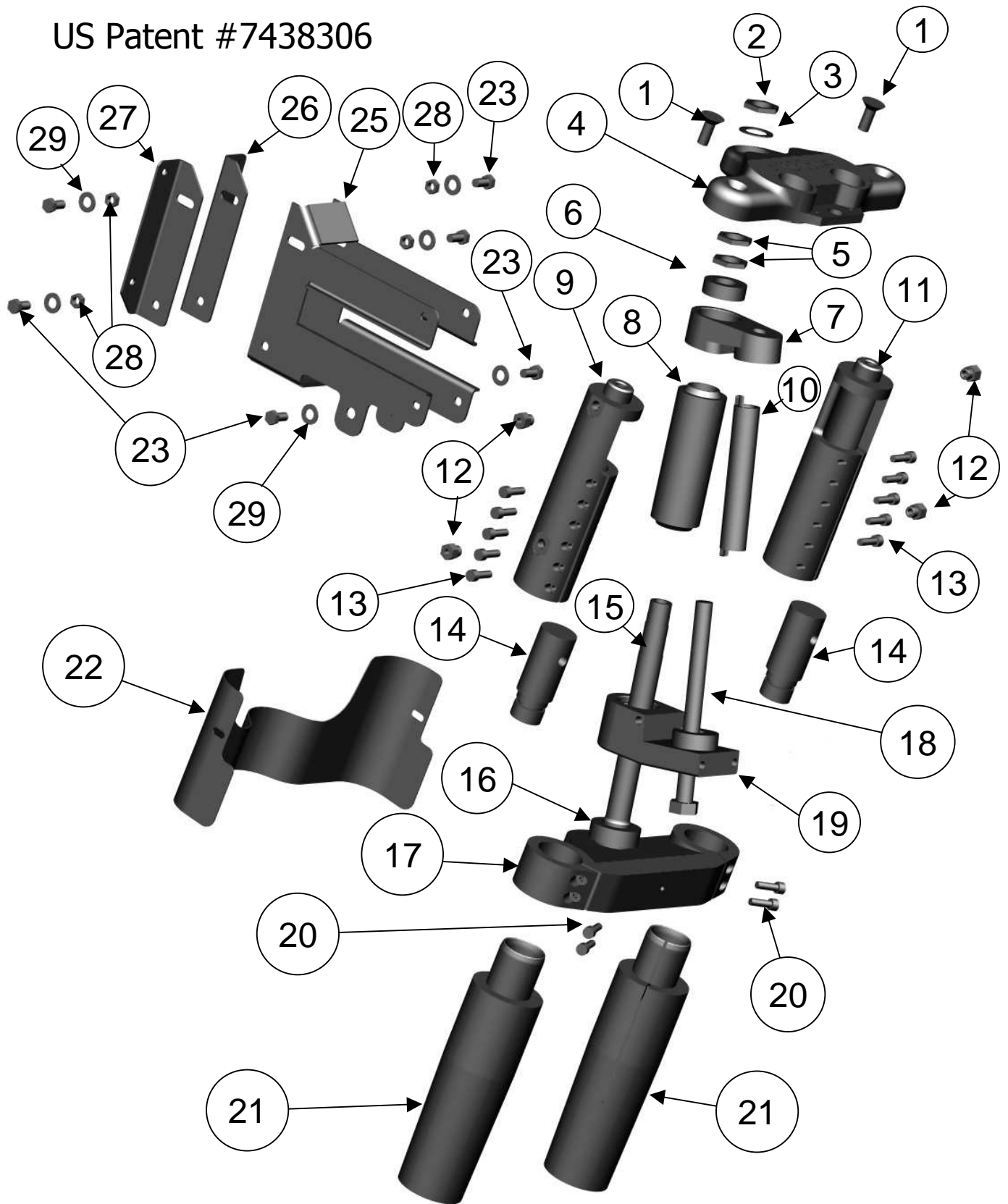
Step 44. Final install all the brake lines and bleed the front brake system. You should take this opportunity to drain all the old brake fluid and start with fresh fluid. A power brake bleeder is a BIG help when bleeding a newly assembled brake system. Refer to your service manual for model specific instructions.

Step 45. Double check all fasteners. Check for proper brake operation. Check for proper clutch and throttle operation with the bars full left and full right. Check no wires are being pinched or pulled.

Now take it outside for a test ride and be KEWL!

Kewlmetal Harley Road Glide KMPS Exploded View Gen 3 Kit

US Patent #7438306



Kewlmetal Harley Road Glide KMPS Parts List Gen 3 Kit

#	Part No. For 21-26 Inch Front Wheel Kit Item 542	Part No. For 16-18 Inch Front Wheel Kit Item 543	Description
1	OTS-1349	SAME	12mm FHCS
2	MC-100-1246	SAME	Nut, Upper Tree
3	OTS-1145	SAME	Washer, Upper Tree
4	MC-100-1599	MC-100-1586	Top Triple Tree
5	MC-100-1245	SAME	Nut, Lower Steering Stem
6	AB-99-3520	SAME	Top Bearing
7	MC-100-1597	MC-100-1584	Top Adaptor Block
8	MC-100-1587	SAME	Front Spacer Shaft
9	MC-100-1588-1	SAME	Pinching Fat Fork Tube, LH
10	MC-100-1593	SAME	Inner Spacer Tube
11	MC-100-1588-2	SAME	Pinching Fat Fork Tube, RH
12	MC-100-1637	SAME	Fairing Mount Stud
13	OTS-1335	SAME	¼-20 X 1 SHCS
14	MC-100-1591-3	MC-100-1591-5	Fork Extension Cap
15	MC-100-1404	SAME	Steering Shaft
16	AB-99-3519	SAME	Bottom Bearing
17	MC-100-1598	MC-100-1585	Bottom Triple Tree (with shaft, bearing, and seal)
18	OTS-1321	SAME	¾-10 Hex Head Grade 8 Bolt
19	MC-100-1596	MC-100-1583	Lower Adaptor Block
20	OTS-1309	SAME	5/16-18 X 1 SHCS
21	MC-100-1538	MC-100-1589	Lower Fat Fork Covers
22	MC-100-1595	SAME	Lower Shroud
23	OTS-1353	SAME	3/8-16 X .75
24	OTS-1337	SAME	3/8 Flat Washer
25	MC-100-1640	SAME	Fairing Mount Bracket
26	MC-100-1641-1	SAME	Fairing Mount Bracket Front Flange, RH
27	MC-100-1641-2	SAME	Fairing Mount Bracket Front Flange, LH
28	OTS-1352	SAME	3/8-16 Nut
29	OTS-1354	SAME	3/8 Flat Washer
31			