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How We Installed Our 3-Link Banana Bracket:

General Description

To avoid failure of your 3-link banana bracket, you will need to pay special attention to the installation. The clamp-on feature of the design with locating arm is well intended, but there are two features that render clamping alone inadequate. The first and subtle feature is the changing diameter of the axle tube in the area where the bracket clamps on. The tube flares out about .050" on the OD at about 3/8" from the outboard edge of the bracket. This means if both sets of clamp bolts are tightened evenly, the bracket will not be perpendicular to the axles. This can impart a side load in use, and in the worst case, cause the bracket to buckle and collapse sideways. The second feature is that the bracket and cap are powder-coated. The powder coat provides a surface that tends to skid, smear, or slip and prevents the desired metal-to metal contact. It looks great, but it causes people to not want to weld it, or think welding is not needed. You will need to grind off some powder coating and weld it. This is a great excuse to buy that MIG welder you've been thinking about. It is not difficult. Think of it as a hot melt glue gun for metal.

I. Parts Needed

- 1 ea. FFR Banana Bracket
- 1 ea. FFR Banana Bracket Cap
- 1 ea. FFR Banana Bracket Bolts and all-metal locknuts
- 1 ea. Screw, 1/2-13 x 2.5" Grade Hex Head
- 1 ea. Nut, 1/2-13 Self Locking
- 1 ea. Washer, 1/2" Split Lock

Note: The 3/8" cap screw provided by Factory Five Racing to attach the locating arm will not be used.

II. Tools and Other Items Supplied by the Builder

- Pair of jackstands to support rear end
- MIG Welder with associated safety gear, gas and wire
- Carpenter's Square (to check bracket alignment)
- Dremel or similar rotary tool with small diamond grinding burr (to remove powder coating into corners)
- Emery cloth strip for removing paint from the axle tube in the weld area
- Hand File for leveling weld bead
- 3/8" or larger corded drill
- Uni-Bit (for drilling rosette weld holes in banana bracket cap)
- 1/2" Bit (for drilling a new bolt hole in the differential flange)
- Spring Clamp to hold the locating arm against the housing flange

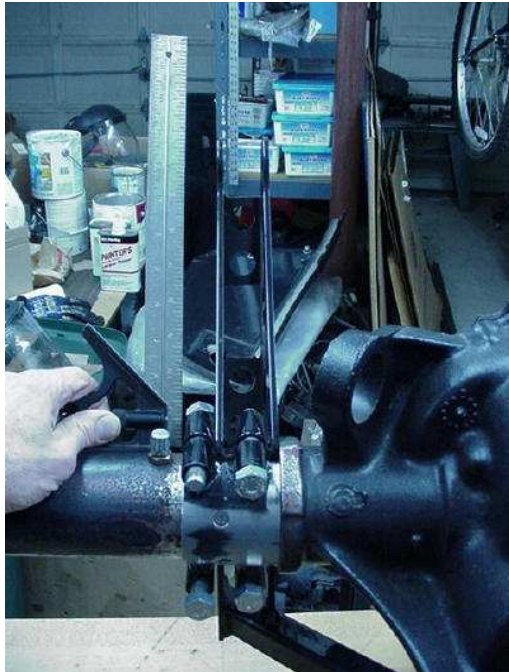


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III. Installation

1. Use the rotary tool to remove the powder coating on the ID of the bracket and clamp for the first half inch to the outboard side. These surfaces will be clamped directly to the axle housing.
2. Test fit the bracket. Push it against the housing casting and hold with the spring clamp. Check for perpendicularity with the axle housing.



Note the locating arm may not line up with the existing hole if you are using a donor rear end. If the rear end is new, it may not have a pre-drilled hole. This is OK. The main goal is to align the bracket perpendicular to the axle tube.

If the ID is too small to fit nicely on the larger OD of the axle tube, remove metal from the bracket and clamp with your rotary tool or a die grinder until a close fit is obtained.

Note: The inboard ends will not contact the tube but will butt up square with cast iron housing.

3. Note where the bracket contacts the housing and where to remove paint and powder coat in preparation for a clean weld.
4. Remove the bracket and clean the housing, the inboard edge of the bracket and clamp, the inside surface, outside surface and edges of the bracket and clamp.



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5. Drill two ½" holes in the clamp and remove powder coating to prepare for rosette welds.



View showing the bracket and clamp prepared for welding.

6. Test fit the bracket again. Note that it is still probably rocking and rolling. This is because the tube OD is smaller than the bracket ID for most of the intended clamping area. This area will be built up with weld bead in the next step.



Note the diameter change and the thickness needed to be built up with weld bead.

7. Apply 1" weld beads in 4 locations each under the bracket and the clamp.
8. Level the beads with the hand file until flush with the large OD. Check with straight edge.
9. Re-install the bracket and hold in place with the spring clamp on the locating arm.
10. Check for perpendicularity
11. Tack weld the bracket to the housing and axle tube.



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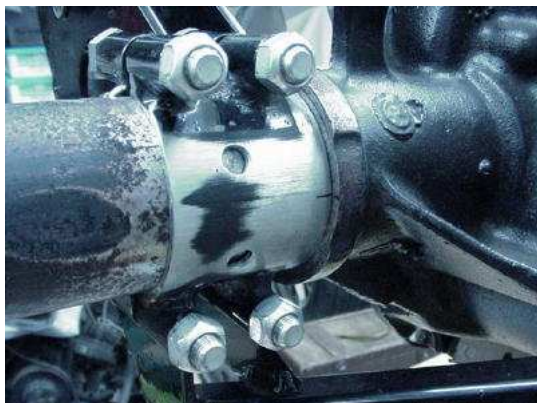
12. Install the clamp in a position where all 4 bolts will align and slide in easily.



13. Finish weld the bracket to the housing and axle tube.



14. Install the bolts and nuts and tighten to about 25 ft lb. There is no need to overdo it, because the weld is fastening the bracket rather than clamping force. Over-tightening (torquing to ½-20 specification will tear the ears off the cap.)





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15. Tack weld, finish weld and rosette weld the cap.

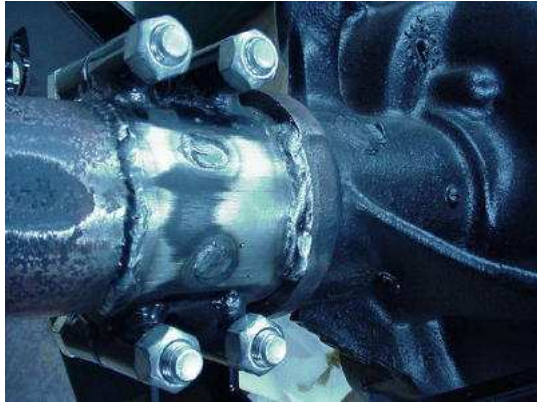


Photo showing clamp with rosette weld holes after welding

16. Using the locating arm as a guide, drill a 1/2" hole through the cast iron housing flange.



Notice the new 1/2" hole will probably not align with the factory hole in a donor rear end. This is OK. New rear ends from Ford Racing do not come with a hole.

17. Fasten the locating arm to the housing with the 1/2 -13 x 2.5" screw, self-locking nut and lock washer. (we prefer split lock-washers, not for their locking capability, but because they are thicker, harder and have a smaller OD than standard SAE washers)



18. Prime and paint the bare metal areas and you are good to go! **END**