Vertical Tire Carrier

2020+ HD Silverado and HD Sierra

INSTALLATIONGUIDE

NEW PRODUCT

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This is a new product and we want to make sure that you receive the latest and most accurate information based on customer feedback, product revisions, and/or model year updates. We value customer feedback, so we encourage you to contact our Technical Support department if you have any suggestions on how to make the installation of this product easier or if you have any questions regarding the installation of this product. AEV's Technical Support can be reached by email at tech@aev-conversions.com or by giving us a call at (248)-926-0256.

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PLEASE READ BEFORE YOU START

To guarantee a quality installation, we recommend reading these instructions thoroughly before beginning any work. These instructions assume a certain amount of mechanical ability and are not written nor intended for someone not familiar with auto repair.

INCLUDED PARTS	QTY
Vertical Tire Mount Main Assembly	1
Bulkhead Support Tube	1
Mounting Kit	1

REQUIRED TOOLS

- Common hand tools
- Drill
- Pilot Drill Bit
- 11mm or 7/16” Drill Bit
- Drill Stop
- Rust Preventative Coating/Spray
- Plastic Trim Tools
- Razor Blade or Utility Knife
- Paint Pen or Marker

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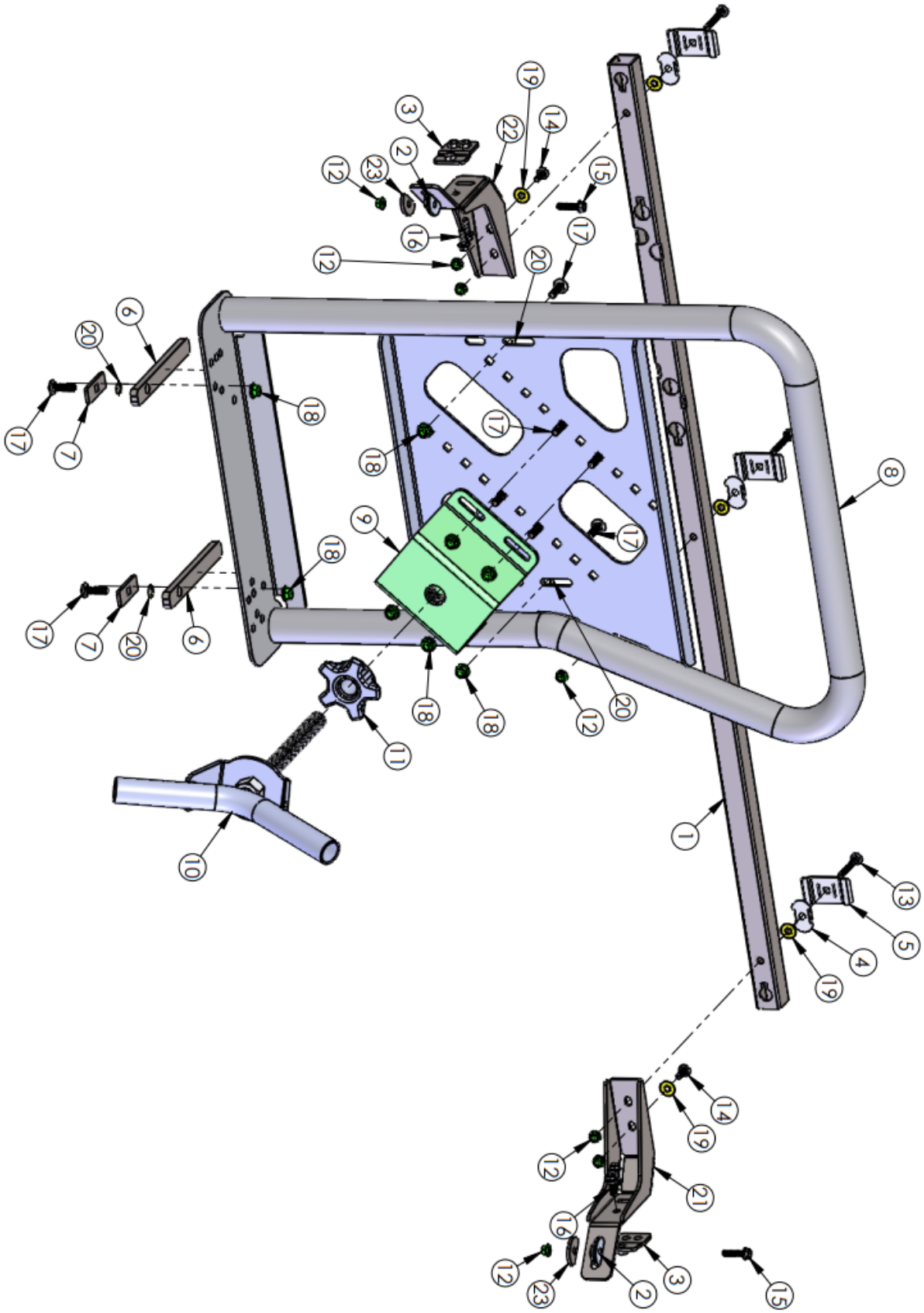
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ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	ATHV0102AA	BULKHEAD SUPPORT TUBE WELDMENT	1
2	ATHV1001AA	TIE DOWN PUCK	2
3	ATHV0103AA	STAKE POCKET NUT PLATE WELDMENT	2
4	A32V1642AA	BULKHEAD FILLER PLATE	3
5	A32V1610AA	BULKHEAD BACKING PLATE	3
6	ATHV1010AA	SPACER BASE PLATE	2
7	ACPR1037AA	UNDERBED PLATE	2
8	ACPR1032AD	TRUCK BED TIRE CARRIER WELDMENT	1
9	ACPR1033AB	CENTER BRACKET WELDMENT	1
10	ACPR1035AA	RETAINER HANDLE	1
11	ACPR1029AA	WHEEL BUSHING	1
12	11546377	M8 X 1.25 HEX FLANGE NUT	7
13	AEV91211AA	M8 X 1.25 X 65 CARRIAGE BOLT	3
14	AEV91176AA	M8 X 1.25 X 25 CARRIAGE BOLT	2
15	AEV91222AA	M8 X 1.25 X 35 HEX FLANGE BOLT	2
16	AEV91153AA	M8 X 1.25 X 25 HEX FLANGE BOLT	4
17	98930A217	M10 X 1.5 X 35 CARRIAGE BOLT	8
18	11546378	M10 X 1.5 HEX FLANGE NUT	8
19	138697003	M8 BOLT RETAINER	5
20	11612178	M10 BOLT RETAINER	4
21	ATHV1012AA	RH BULKHEAD GUSSET BRACKET	1
22	ATHV1013AA	LH BULKHEAD GUSSET BRACKET	1
23	ATHV1017AA	TIE DOWN PLATE	2

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1. VEHICLE PREPARATION

1. Begin to remove the bed rail trim panels on each side of the bed using a plastic trim panel removal tool. Pull directly upward and away from the bed rail. This can be made easier by pushing up on the locking tabs underneath the bed rail (Fig. 1).

Figure 1

2. Remove the plastic grommets with a trim tool (Fig. 2). There are three large grommets on the bed bulkhead and one on each bed sidewall (five total).

Figure 2

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3. Before beginning VTM installation, the wheel mount position needs to be set.
   A. Physically measure the diameter of the inflated tire that you plan on using on the VTM since the actual diameter of tire can vary depending on the manufacturer.

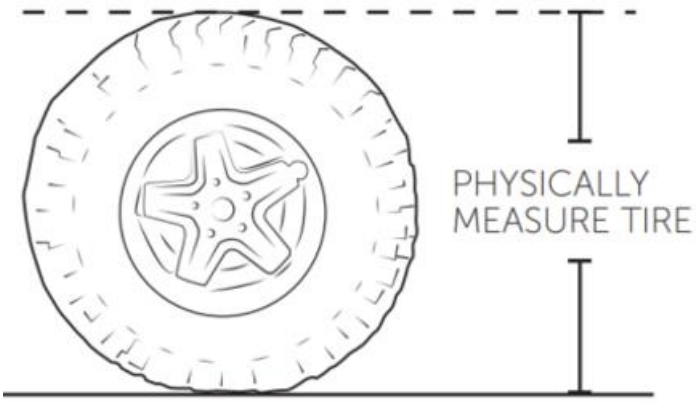

Figure 3

   B. Divide the diameter measurement in half to calculate the radius of the tire.
   C. Subtract ¼" from the radius. Use that dimension as the distance between the bed floor and the center of the wheel mount.

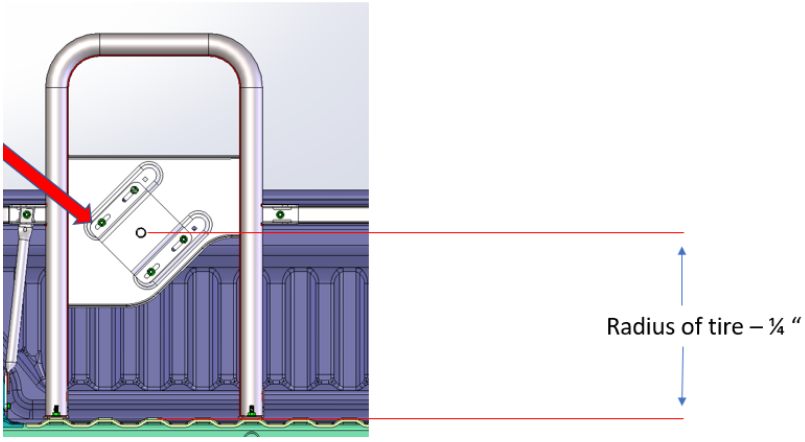

Figure 4

   D. Secure the wheel mount to the tire carrier weldment with the four M10 x 35mm carriage bolts and M10 flange nuts.

4. Insert the two round tubing plugs into the ends of the retainer handle (Fig. 5).

Figure 5

2. TIRE CARRIER INSTALLATION

1. Push bulkhead filler plates into the holes where the grommets were on the bed bulkhead (Fig. 6). NOTE: If your vehicle is equipped with a spray-in bedliner, removing some of the bedliner material with a razor blade on the inside edge may be required for the plates to fit.

Figure 6

2. Assemble three bulkhead backing plates and three M8 x 65mm carriage bolts as shown below. Install the three plate assemblies from behind the bulkhead (Fig. 7). Ensure the carriage bolt is seated in bulkhead backing plate to stop the bolt from spinning. The bulkhead plate should sit vertically behind the bulkhead of the bed.

Figure 7

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3. Install the M8 bolt retainers onto the three M8 x 65mm bolts sticking through the bed bulkhead. Using a deep well 10mm socket and holding the carriage bolt in place from the backside, push the retainer onto the M8 x 65mm bolt until the retainer is snug against the filler plate (Fig. 8).

Figure 8

Figure 9

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4. After the M8 bolt retainers are installed, place the bulkhead support tube weldment onto the three M8 x 65mm bolts. Install a M8 flange nut onto the center bolt to hold the bulkhead support tube in place (Fig. 10).


Figure 10

5. Next, install M8 x 25mm carriage bolts into the outer key slots of the bulkhead support tube (Fig. 11). Then, install M8 bolt retainers onto each of the M8 x 25mm carriage bolts to help hold them in place.

Figure 11

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6. Install the right-hand bulkhead gusset bracket onto the M8 x 25mm and M8 x 65mm carriage bolts. Then secure the gusset bracket to the bulkhead support tube with two M8 hex flange nuts. Repeat for the other side.

    a. NOTE: If your vehicle is equipped with a bedliner, a small amount of bedliner around the tie down loops may need to be removed with a razor blade to allow the slot in the gusset to fit around the loop.

    b. NOTE: To help distinguish the left and right-side gussets, refer to the slot location (Fig. 13). On both sides, the slot should be on the bottom half of the plate.

Figure 12

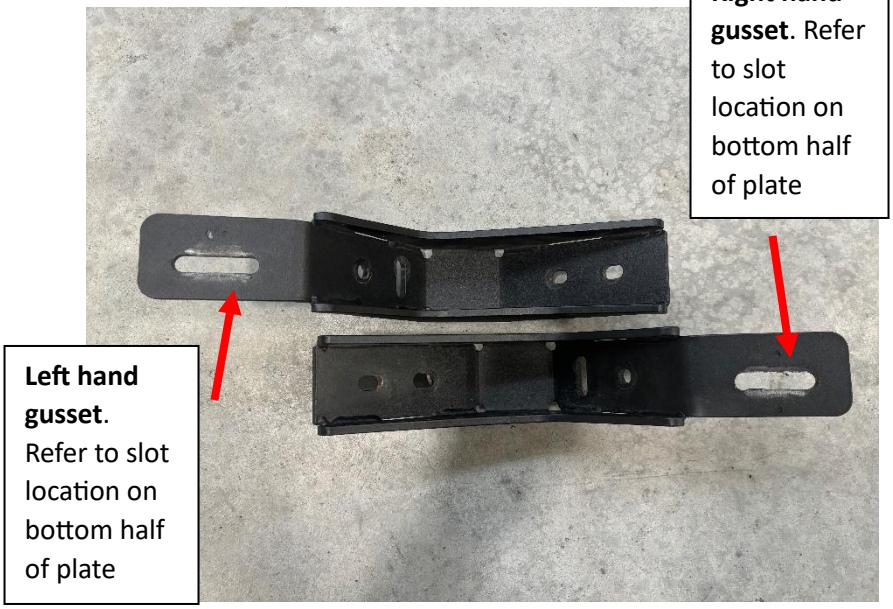

Figure 13

7. Push the tie down puck into the topside of tie down loop. Then, using a M8 x 35mm hex flange bolt and a tie down plate, bolt the tie down puck and the tie down plate together around the loop (Fig. 14). Repeat on the other side.
    a. NOTE: If your vehicle has a spray-in bedliner, some of the bed liner material may need to be removed for the tie down puck to fit into the tie down loop.

Figure 14

8. Once the gussets are mounted to the reinforcement tube and tie down loop, the drilling location for the rearward bolt can be marked. Using a paint pen and/or center punch, mark the center of the circled hole (Fig. 15). After holes are marked on both sides, remove the gussets.

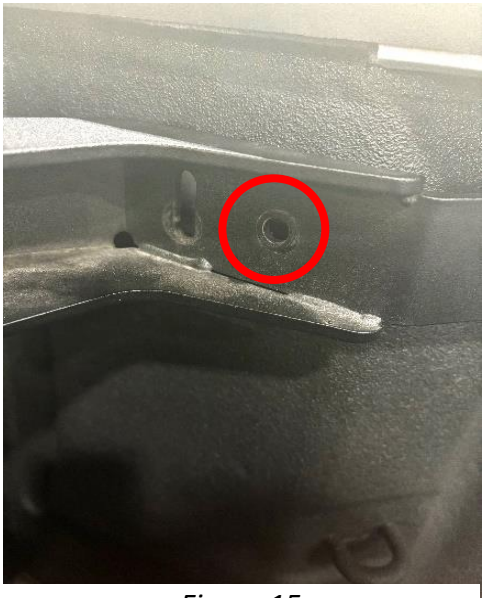

Figure 15

9. Drill on the marked location using a small pilot bit. Then, drill the pilot bit hole out to size using a 3/8” or 10mm drill bit. Apply rust preventative to the exposed bare metal, allowing time to dry before next step. Repeat for other side.

10. Re-install the bulkhead gussets on the reinforcement tube and tie down loops.

11. Next, install the stake pocket nut plate into the stake pocket on the topside of the bed rail. Align the stake pocket nut plate to the through holes in the gusset brackets and use two M8 x 25mm hex flange bolts to secure the nut plate inside of the bed rail (Fig. 16).

Figure 16

12. Next, install two M10 x 35mm carriage bolts into the key slots shown on the front side of the bulkhead tube (Fig. 17).

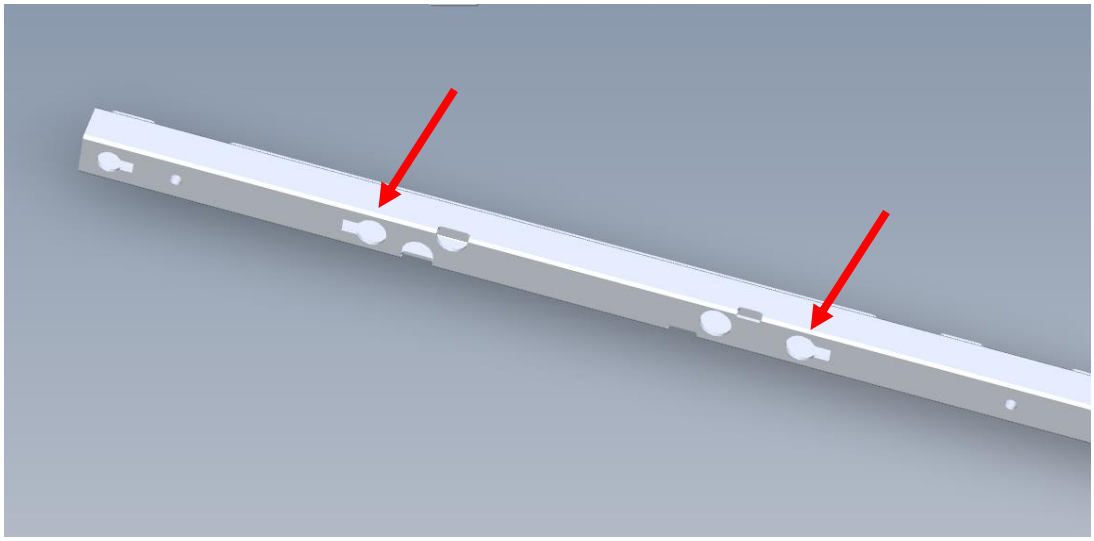

Figure 17

13. Slide the tire carrier weldment onto the carriage bolts. Secure the weldment to the bulkhead cross beam with two M10 hex flange nuts (Fig. 18).

Figure 18

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14. Once the weldment is secured to the bulkhead, mark the two drill locations on the tire carrier base plate that are circled (Fig. 19). After the holes are marked, remove the tire carrier weldment. Next, using a pilot bit, drill through the bed in the marked locations. Then, using an 11mm or 7/16” drill bit, drill the pilot holes out to size. Apply rust preventative coating to the exposed bare metal.
    a. NOTE: A drill stop is highly recommended for this step. Without using a drill stop, there is a risk of drilling too far and damaging components underneath of the bed.

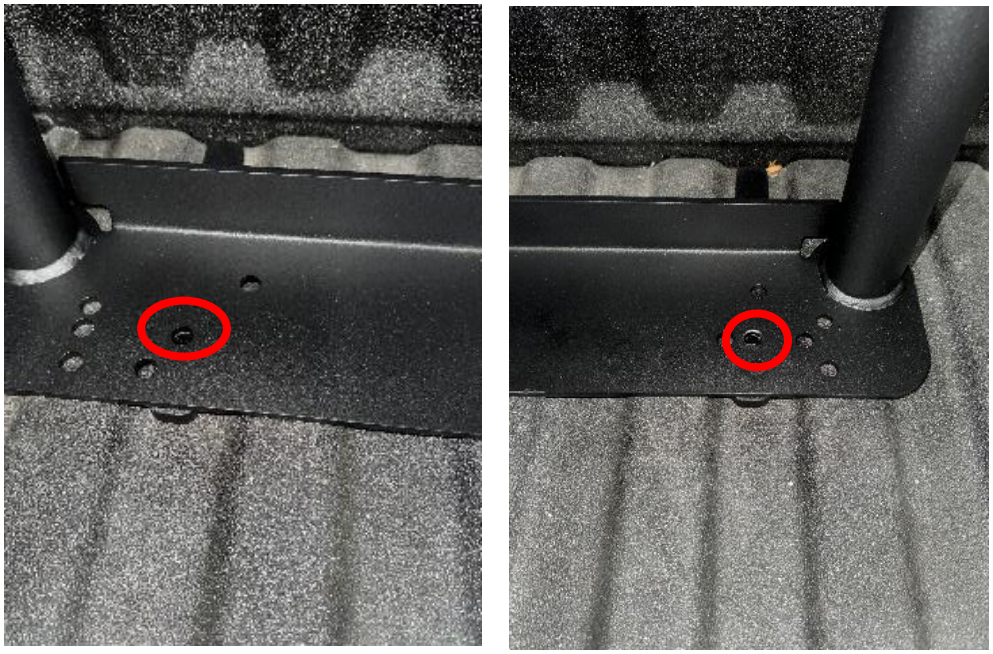

Figure 19

15. After letting the rust preventative coating dry, place the spacer base plates on the bed floor and align the through holes on the base plates with the newly drilled holes in the bed floor. Refer back to Fig. 14 for proper spacer plate orientation. Then, re-install the tire carrier weldment onto the M10 x 35mm carriage bolts and secure the weldment with the M10 hex flange nuts (Fig. 20).

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Figure 20

16. NOTE: Two people are recommended for this step. After the tire carrier weldment is mounted, assemble two M10 x 35mm carriage bolts and base plates. Secure together with M10 bolt retainer. Then, insert the base plates through the drilled holes on the underside of the bed floor. Have the other person thread the M10 hex flange nuts from the topside of the bed. Once tightened, ensure both plates on the underside of the bed are positioned correctly (Fig. 21).

Figure 21

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17. Torque all fasteners to the specified torque found in Table 1 below.

Table 1

Bolt Size	Torque Spec (NM)	Torque Spec (ft lb)
M8	22	16
M10	58	43
M12	100	73

18. Once the tire carrier weldment is in place and all fasteners are torqued to specification, the spare tire can be mounted. Slide the tire carrier bushing onto the retainer handle and insert the handle through the center of the wheel (Fig. 22). NOTE: If using with GM large ID bore wheels, a larger bushing may be preferred. In this case – Wilco offers a larger bushing option that is compatible with this kit and is available for purchase.
    a. Wilco Wheel Cone Part Number: UC60702
        i. https://wilcooffroad.com/collections/replacement-parts/products/wheel-cone

Figure 22

19. Reinstall the bed rail top cap that was removed in Step 1 of vehicle prep.

20. Tire Carrier Installation is Complete (Fig. 23).

Figure 23

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