

KLM 20800



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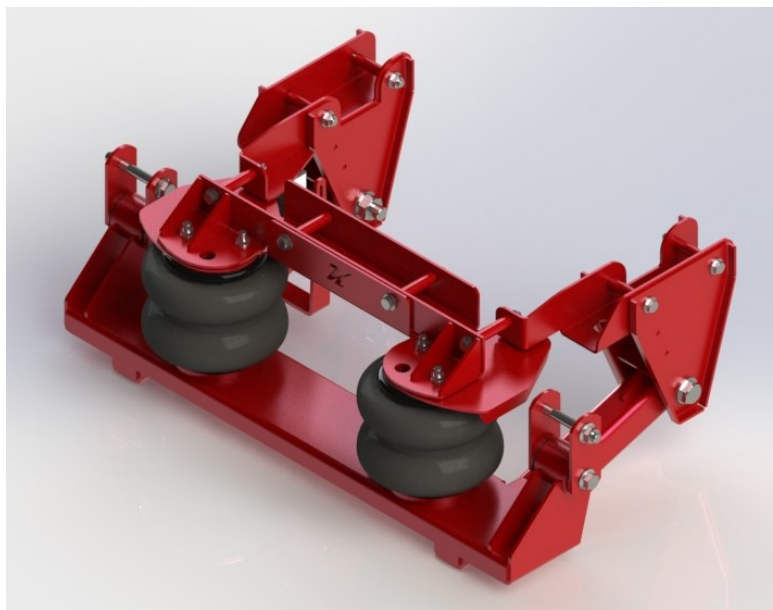
**AIR SUSPENSION SYSTEMS**

**2686 Highway 92 - Oskaloosa, IA 52577**

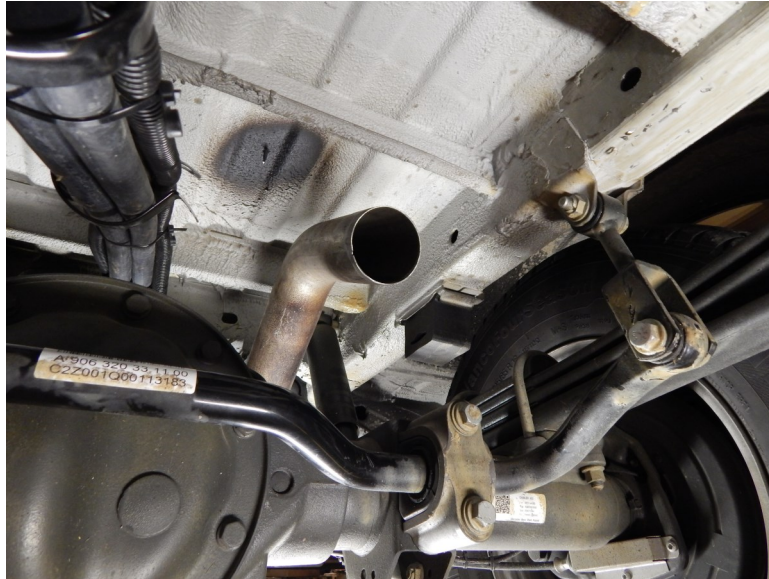
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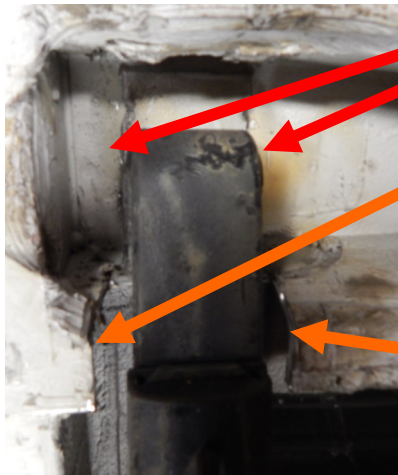
# **2012+ Mercedes Benz 3500 Dual Rear Wheel Sprinter Installation Instructions**



1. Place the vehicle on a smooth surface to perform the installation (if not using a lift).
2. Cut the exhaust off about 6" down from the bend above the axle. A new tailpipe is included with the kit.

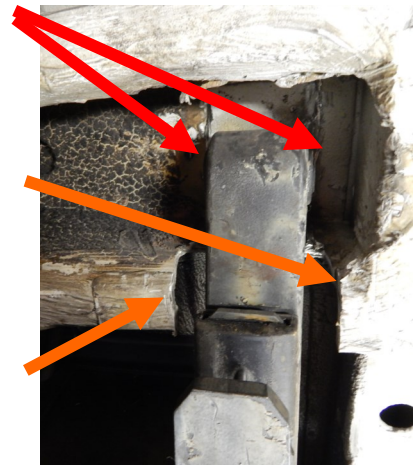


3. Remove the rear shackles off the leaf springs. The shackles will not be reused. Keep the bolts as they will be used in step 14.
4. Now cut the inner and outer shackle mounting plates off the body. It's a box like structure and using an air chisel works well. You will also need to cut for leaf spring clearance on the support bracket cut it so there is 3/4" clearance on each side of the leaf spring. Cut up within 1/2" of the bottom of the floor. This room is needed for the additional travel that the suspension will now have.

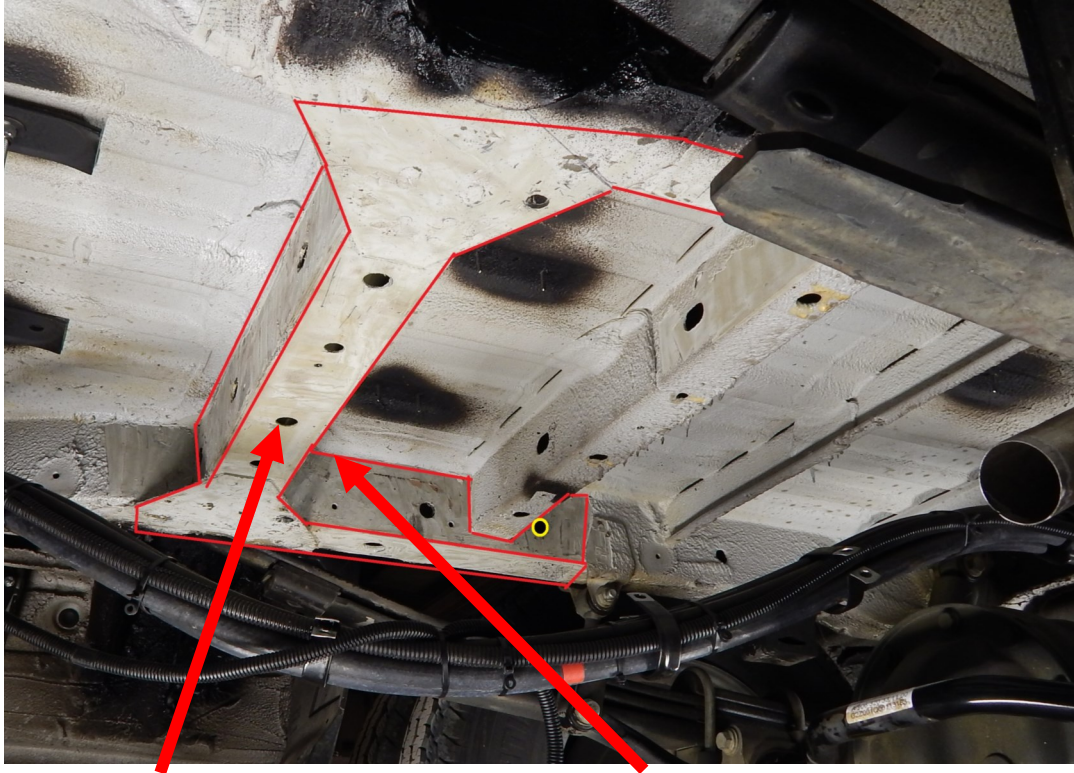


Cut the shackle mounting plates off.

Cut out the bracket 3/4" away from each side of the leaf spring. Next cut the remaining piece off 1/2" from the bottom of the floor



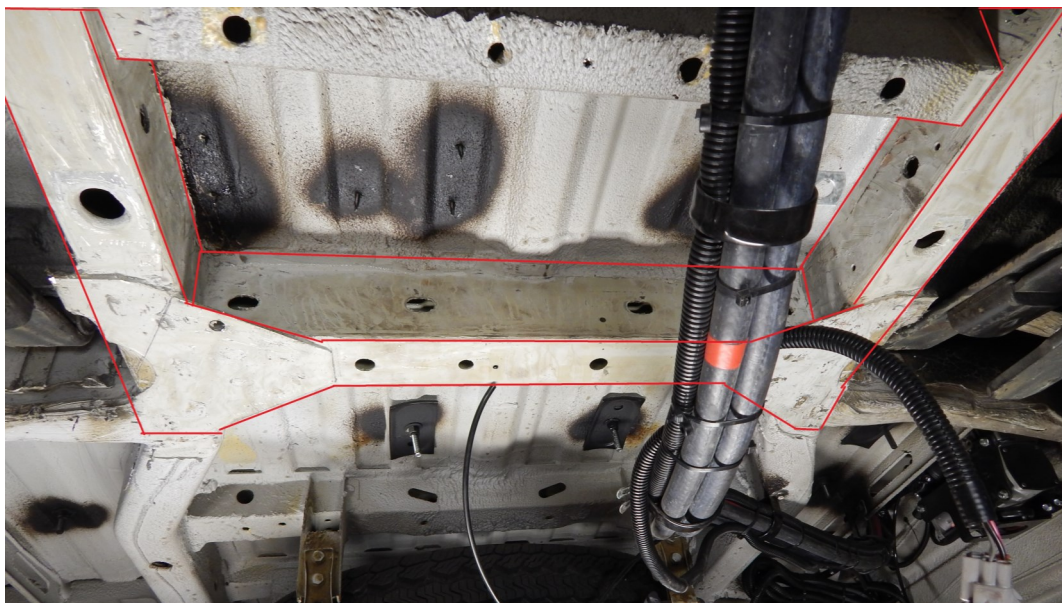




Clean the undercoating in the area outlined in red

The corners between the frame rail and cross member must be clean

5. Now locate part numbers 20801-20807. Notice where they mount to the unibody cross members. It is required to remove the factory undercoating where these parts attach to the chassis. This area is outlined in red in the pictures.

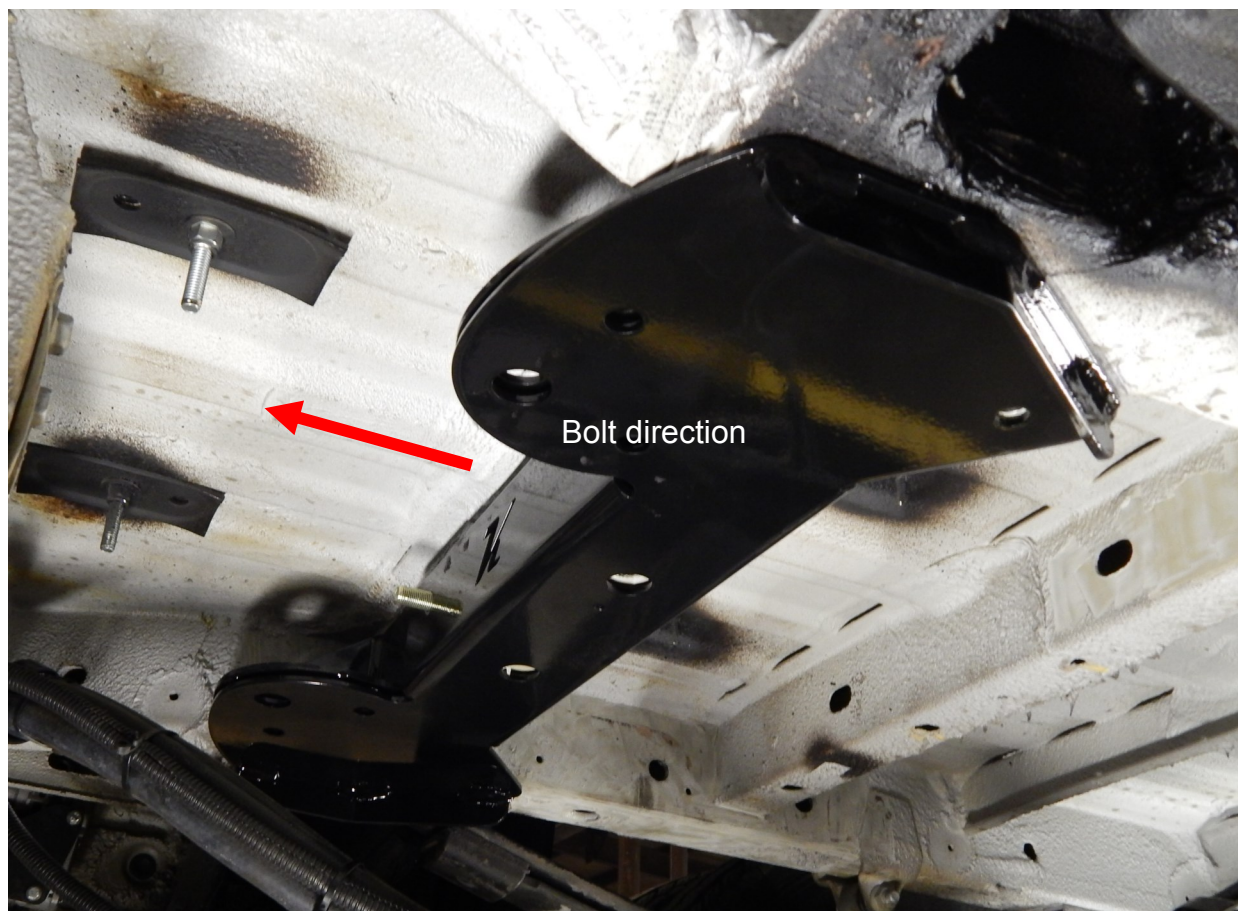


6. Locate the air bag upper top frame (part# 20806). Slide the upper frame into place with the bushings orientated towards the front of the vehicle. The bushings will slide through four existing holes in the cross member.

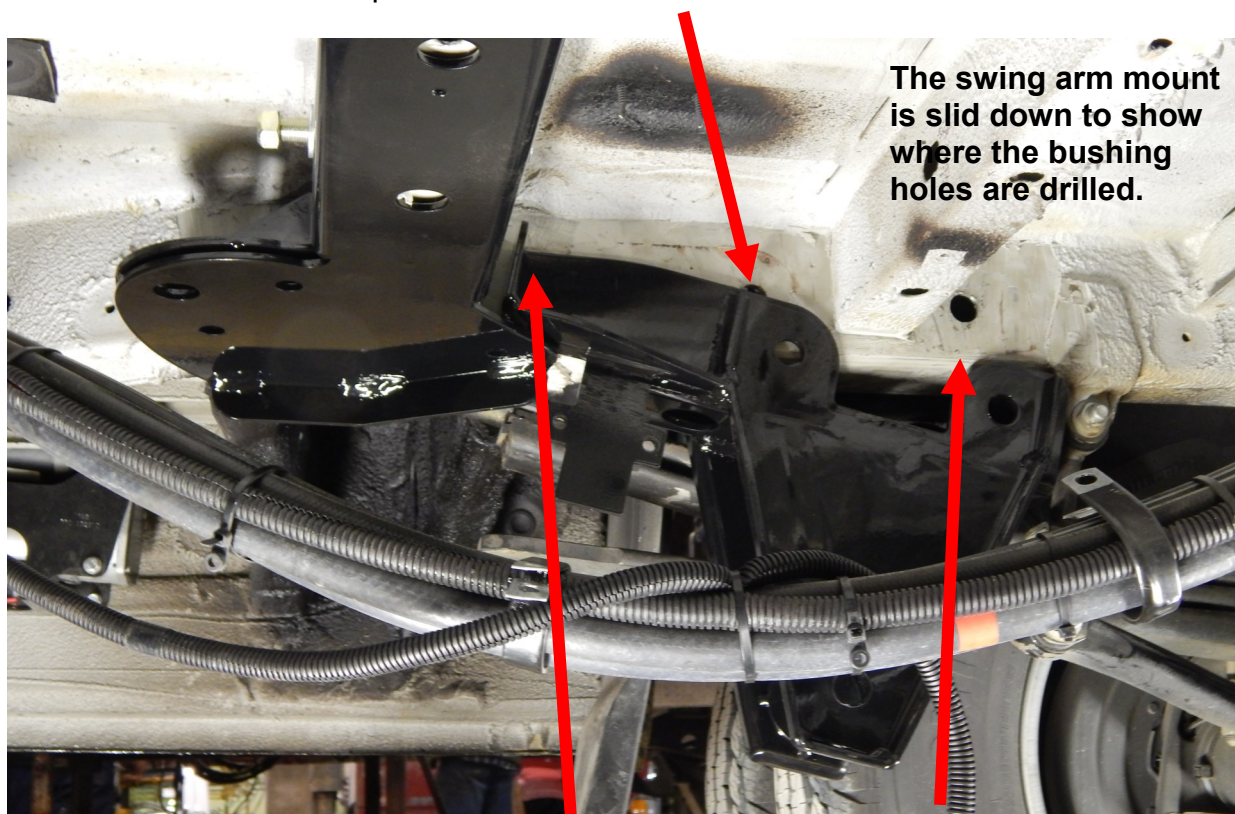




7. Locate the air bag lower top frame (part# 20805). Slide it over part # 20806 that you installed in step 6. Insert two 1/2x5" bolts in the inner holes. Orient the bolts from the front towards the back of the vehicle.



8. Locate the top frame swing arm mounts (part# 20803 DS). Slide the mount over the drivers side frame rail until it completely seats on the frame, making sure that the rear hole in the swing arm mount aligns with the factory hole in the frame. Locate part #20813 (rear anti-crush bushing) and slide it into the rear hole in the mount. Use a 1/2x5" bolt to hold it in place.



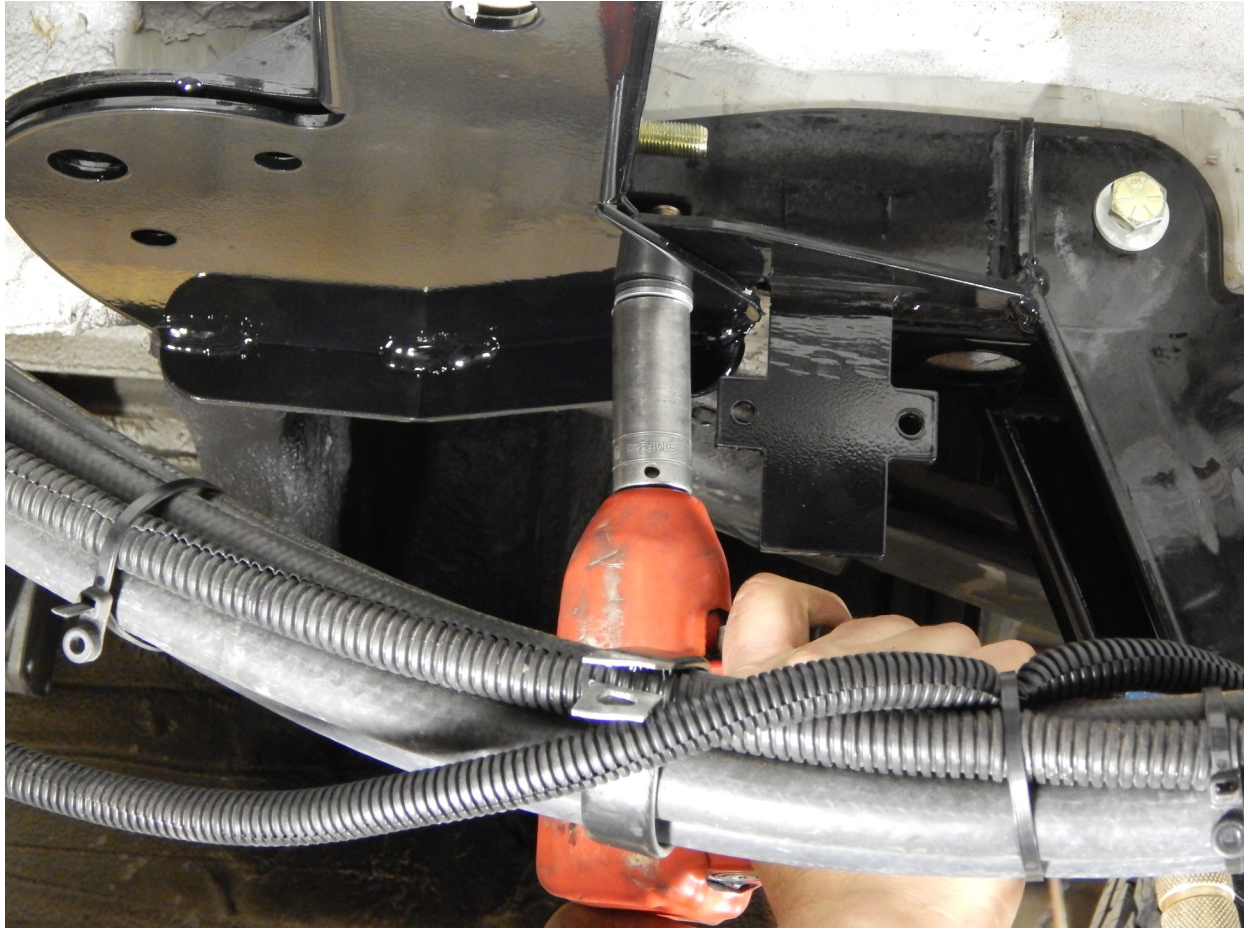
Now, locate another 1/2x5" bolt and slide it through the rear of the swing arm mount and upper bag mount/ factory cross member. Snug these bolts up so that the parts align with each other.

Use the swing arm mount as a drill guide to locate where to drill the bushing hole. The inside of the frame gets drilled out to 25/32 and the outside is 17/32 (the outside is smaller so the bolt goes through but not the bushing)

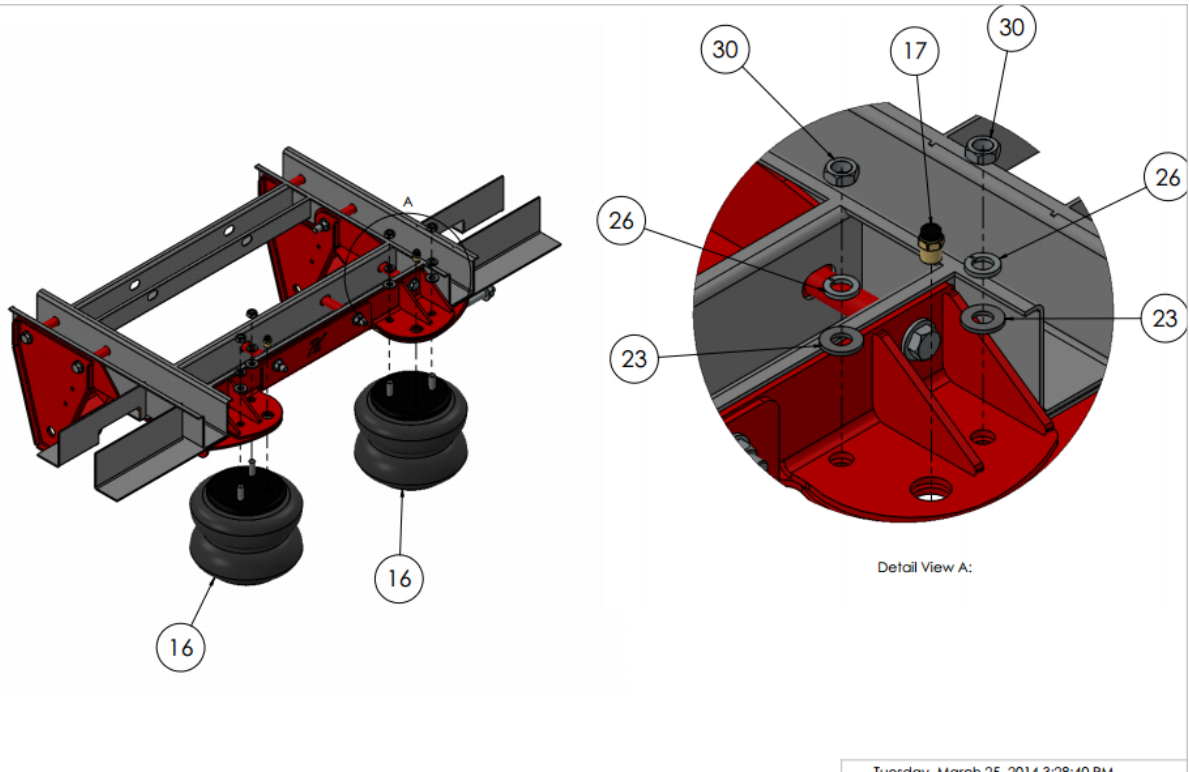
9. Locate part #20802 PS and repeat all the steps on the passenger side as you did on the drivers side. Once the holes are drilled go ahead and insert the two anti crush front bushings (part# 20812) using 1/2x5" bolts.



10. Now that the upper air bag plates are in place along with the swing arm mounts, locate two 1/2x1 1/2" bolts and fasten the two parts together. You will have to drill this hole 17/32". Use the framework as a drill guide. Next, insert the bolt from the bottom up. Go ahead and tighten these bolts to 85 ft/lbs.



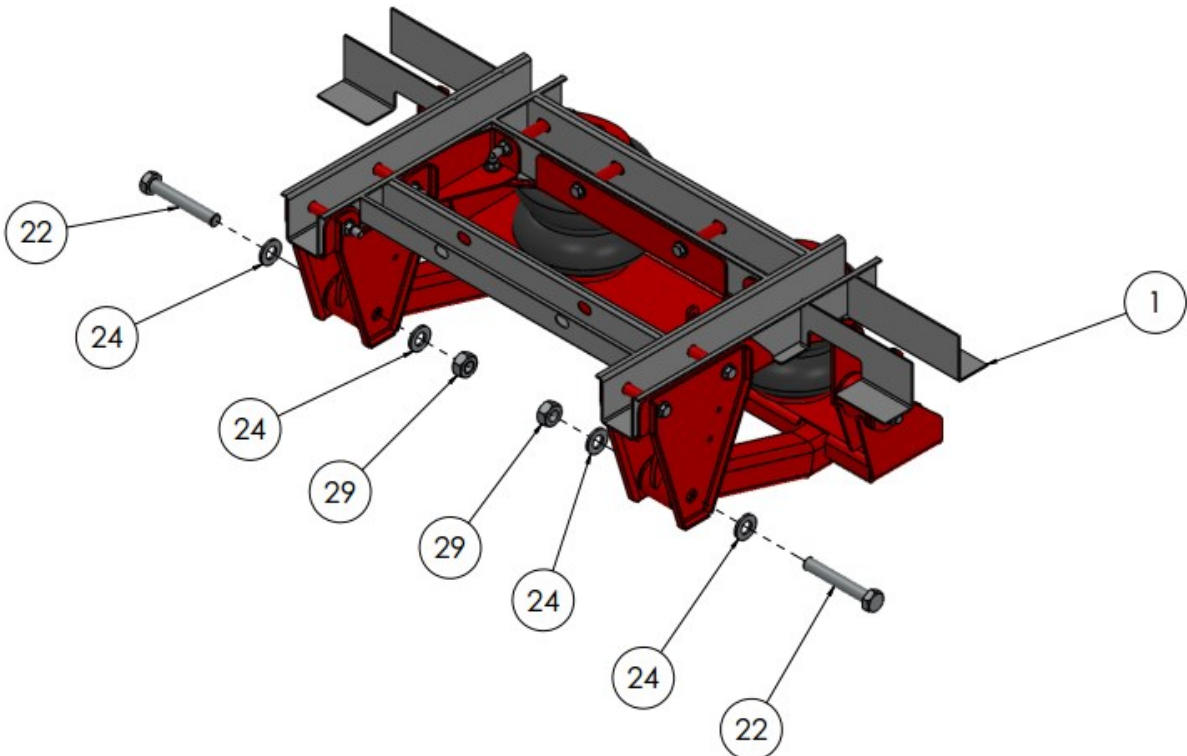
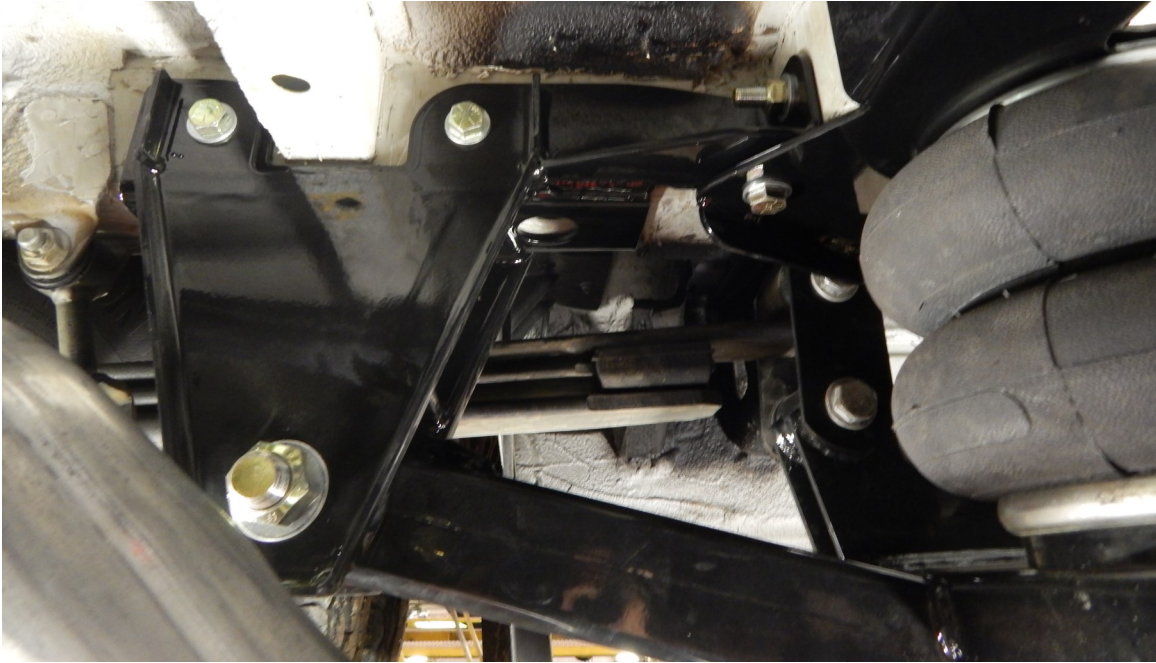
11. Now locate the Firestone air bags (part# 80012-6905). Locate the straight air fitting (part# 80016). Insert the fitting into the bag. Once it is finger tight use a 9/16" wrench and turn it one complete turn. Now place the bags into the upper air bag framework and fasten with the 1/2" lock washers and flat washers. Tighten these nuts to 35 ft/lbs.





12. Locate the swing arm (part# 20801). It connects into the top frame swing arm mounts with the 7/8x5 1/2" bolts. Insert the bolts from the outside in. Use a flat washer on each side. Just start the nut for now on the 7/8" bolt.

13. Raise the swing arm up and connect the bottom of the air bags to the swing arm with the 3/8x1 1/2" bolts. Use lock washers on these bolts and tighten them to 35 ft/lbs.



14. Locate the four shackle links (part# 20807), and the factory M16 shackle bolts, washers and nuts. The shackle links connect the lower swing arm to the leaf spring. Raise the swing arm up and/or lower the axle down in order to slide the bolts through (outside in). Make sure to put in the washer spacer on the bottom swing arm against the poly bushings. This will space the bottom the same as the top. Once the bolts are through and shackle links are connected, torque the bolts to 145 ft/lbs.



Spacer on the link goes on the bottom towards the poly bushing in the swing arm



15. Now that the air suspension is installed, go back and torque all the bolts. The 1/2" bolts torque to 85 ft/lbs and the 7/8" bolts torque to 300 ft/lbs.
16. Locate the air control system (part# Air Lift 25920). Use the instructions provided from Air Lift. The magnet sensor (ecu) mounts on the upper swing arm on the passenger's side. The actual magnet mounts on the long tab on the swing arm. When setting up the control system, adjust the magnet so the air bags measure 7.5-8" in between the lower swing arm and upper air bag mount. The compressor mounting is left up to the installer/builder. The less exposed to the elements the better.

Magnet in operating position

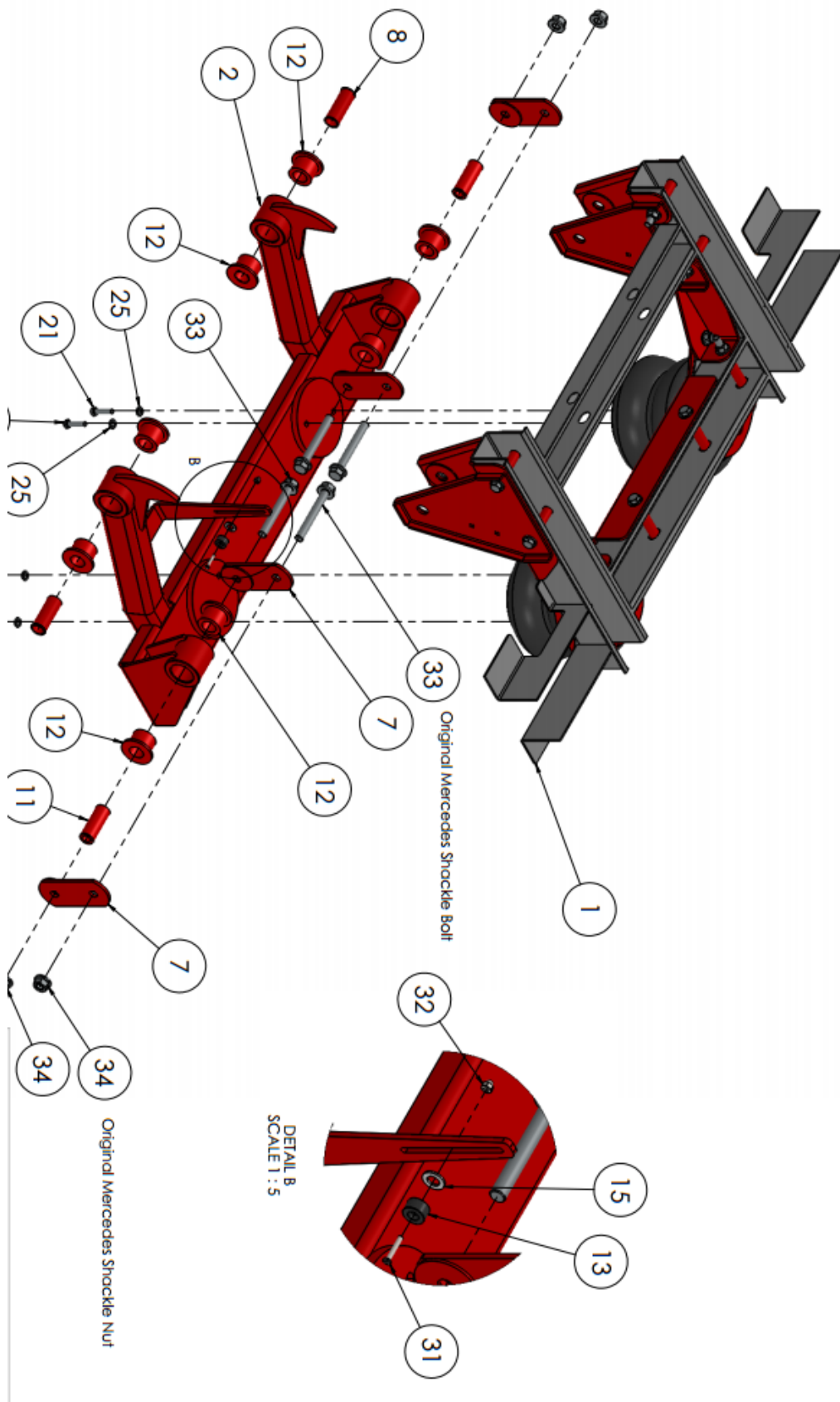




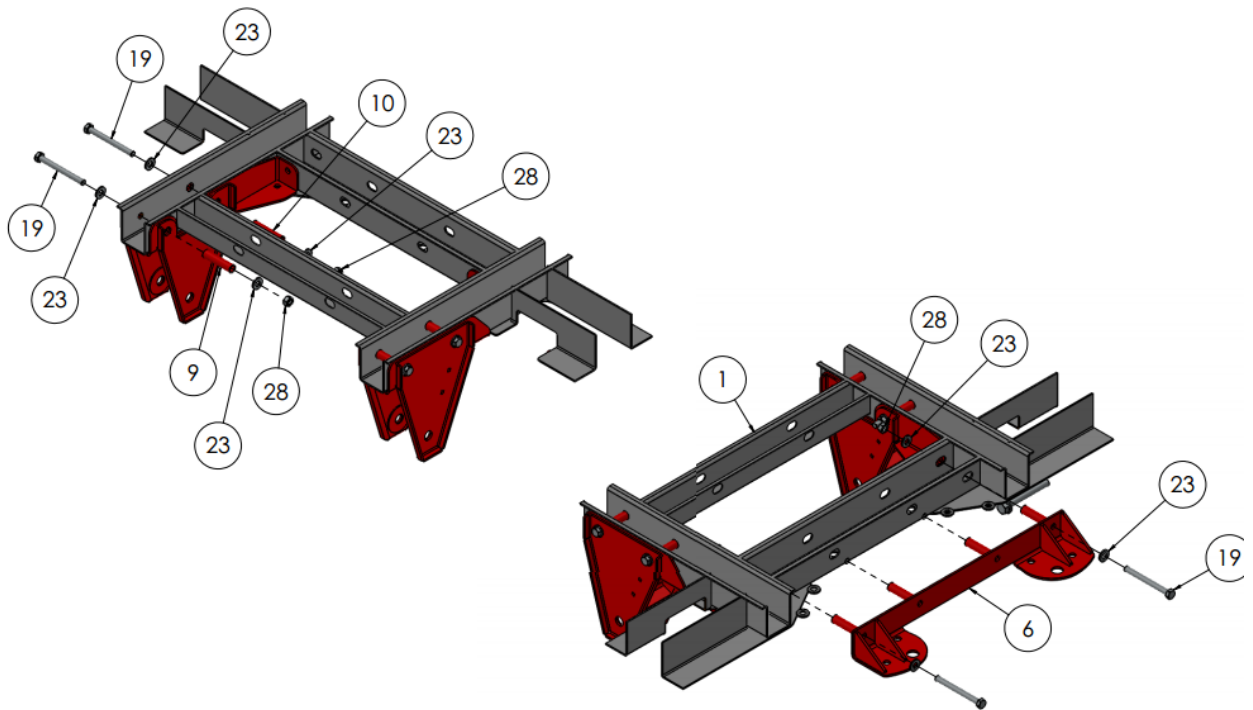
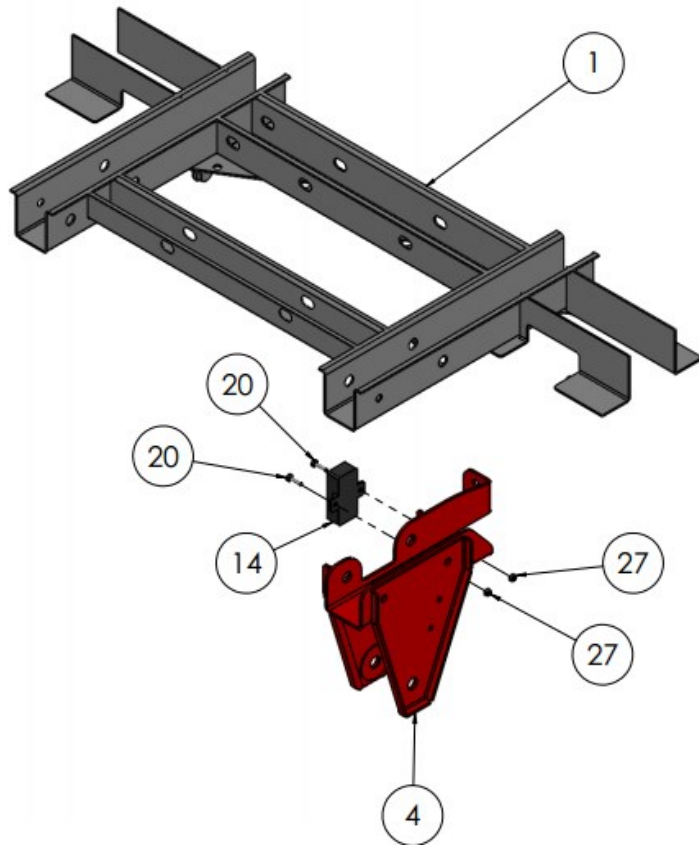


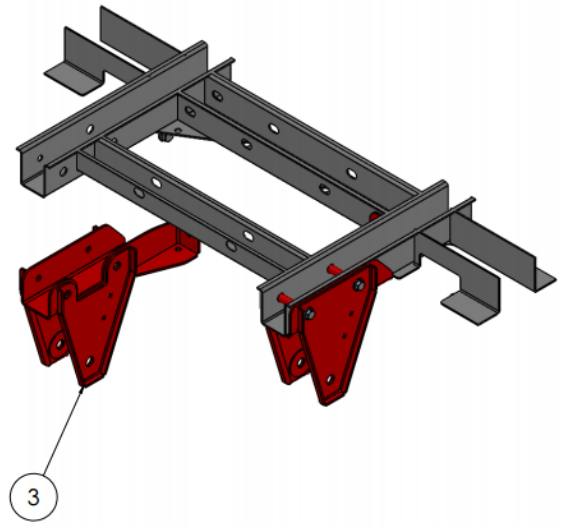
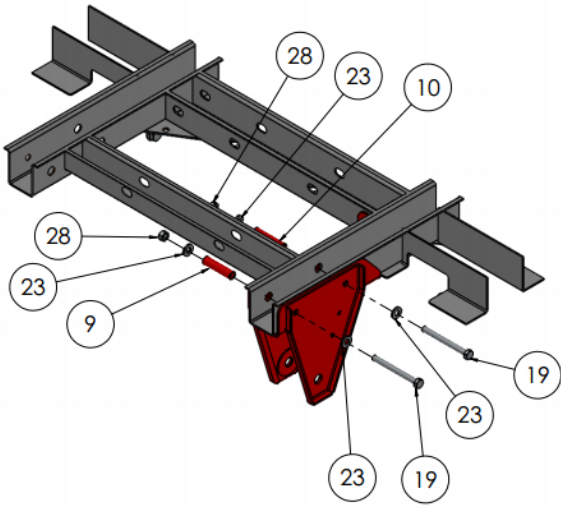
17. Once the controls are set up and everything is functioning, make sure the air bags are in the 7.5-8" range. Let the air out of the system to make sure that the area you cut out in step 4 has enough clearance. We don't want any metal to metal contact on anything.
18. Now locate the supplied tailpipe. Tack weld it in place and check for clearances. Dump the air and make sure nothing hits. Once it checks out ok, weld up the exhaust, reusing the factory hanger parts if needed.
19. Its recommended to go back and undercoat whatever areas of the frame are exposed from the removal of the factory undercoating. As long as the sensor and magnet don't get undercoating on it, will not affect the performance of the suspension if its gets undercoating sprayed on it.

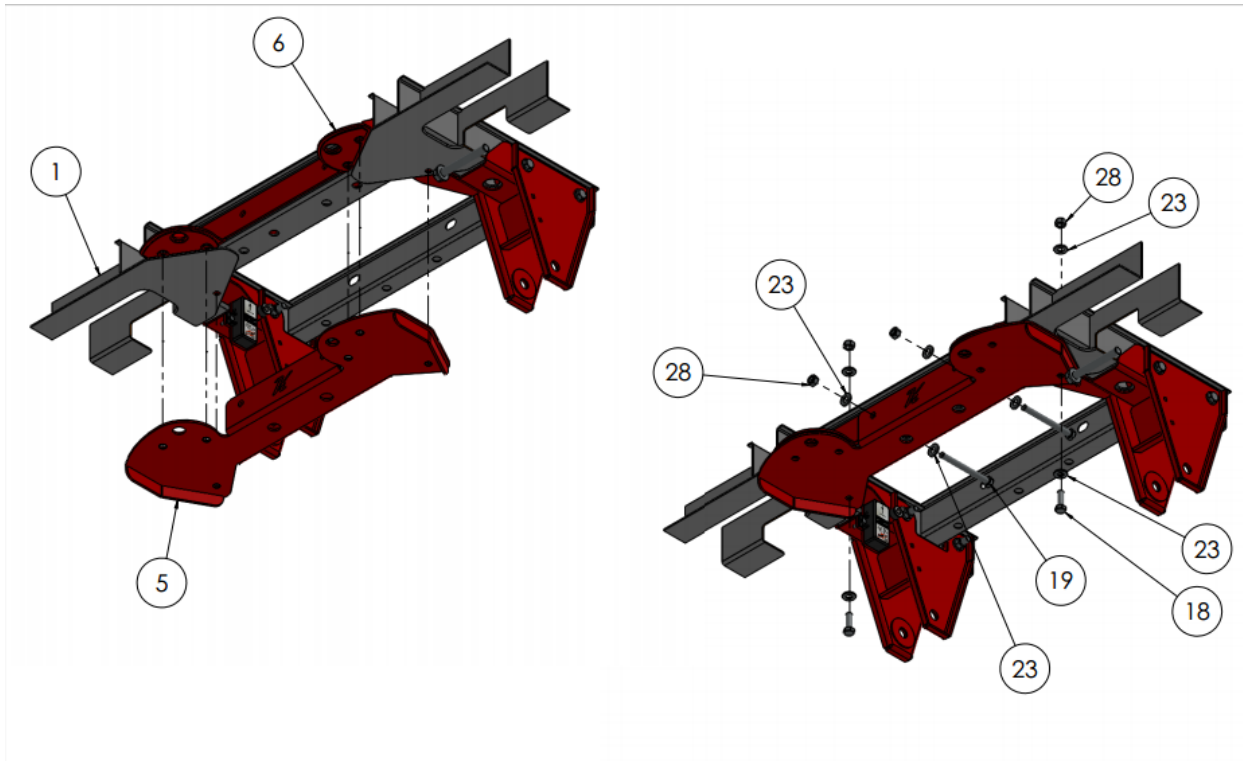
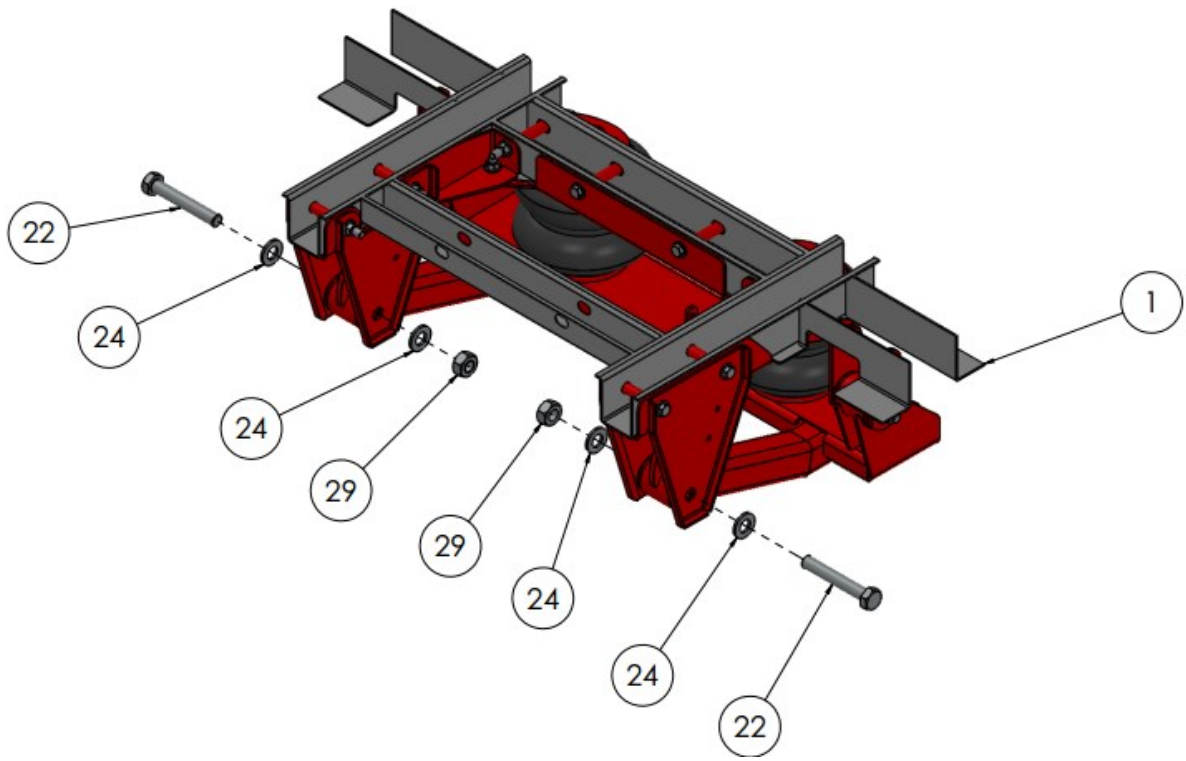
ITEM NO.	PART NUMBER	DESCRIPTION	Default/Qty.
1	2014 Sprinter Van 3500, Frame	2014 Mercedes Benz Sprinter Frame Mockup	1
<b>Assemblies</b>			
2	20801	Swing Arm	1
3	20802	Assembly - Top Frame Swing Arm Mount (PS)	1
4	20803	Assembly - Top Frame Swing Arm Mount (DS)	1
5	20805	Assembly - Top Frame, Lower	1
6	20806	Assembly - Top Frame, Upper	1
7	20807	Assembly - Shackle Link	4
<b>Parts</b>			
8	20093	(IA) Knuckle Bushing	2
9	20812	Bushing - L 3-1/8" ID 17/32" OD 3/4"	2
10	20813	Bushing - L 3-1/4" ID 17/32" OD 3/4"	2
11	20829	Bushing - L 3" ID 5/8" OD 1-1/8"	2
<b>Purchased Parts</b>			
12	20092	Knuckle Press-in bushing	8
13	80011-10966	Magnet - Supplied in 80011	1
14	80011-24060	ECU - Height Control	1
15	80011-Plastic Washer	Plastic Washer Supplied in 80011	1
16	80012-6905	Firestone 6905	2
17	80016	Straight Air Fitting 1/4" NPT to 1/4" Tube (SMC)	2
<b>Hardware</b>			
18	2007	BOLT - 1/2"-20 X 1 1/2" GR8	2
19	2037	BOLT - 1/2"-20 X 5" GR8	8
20	2110	BOLT - 1/4"-20 X 1" - GR5 - 7	4
21	2216	Bolt - 3/8"-16 X 1-1/2" - GR5	4
22	22631	BOLT - 7/8"-14 X 5 1/2" - GR8	2
23	3004	Washer - 1/2" - Flat - SAE	24
24	3030	Washer - 7/8" - Flat - SAE	4
25	3046	Washer - Locking - 3/8"	4
26	13050	Washer - Locking - 1/2"	4
27	13100	Nut - Locking - 1/4" - 20 - GR5	2
28	13104	Nut - Locking - 1/2"-20 - GR8	10
29	13130	Nut - Locking - 7/8"-14 - GR8	2
30	13144	NUT - 1/2"-13 - GR5	4
31	4048	Machine Screw - #10 - 24 X 1.25" - Allen- Countersunk	1
32	14050	Nut - Locking - #10-24	1
33	M16 x 1.25 - 120mm	M16 x 1.5 - 120mm Flange Bolt GR10.9	4
34	M16 x 1.25	M16 x 1.5 Flange Nut GR10.9	4



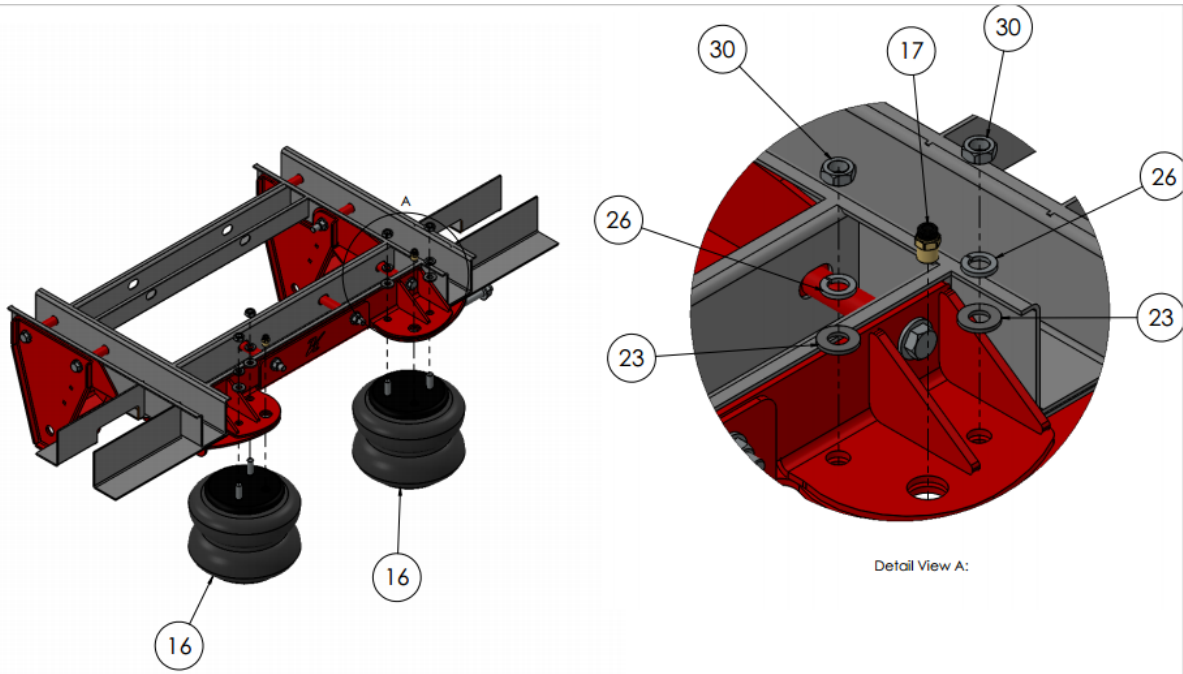












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