22338 BDS & Bucket Extension Retrofit Instructions Rev 01

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BDS & Bucket Extension Retrofit Instructions

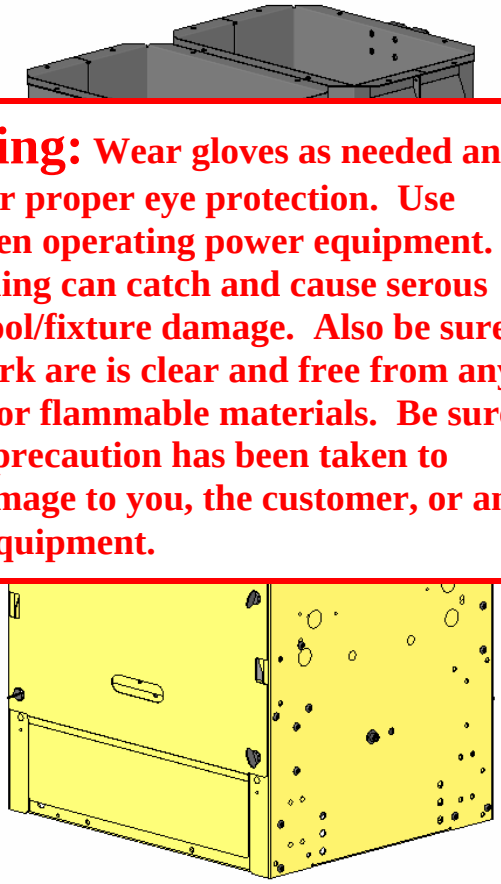
Tools Needed:

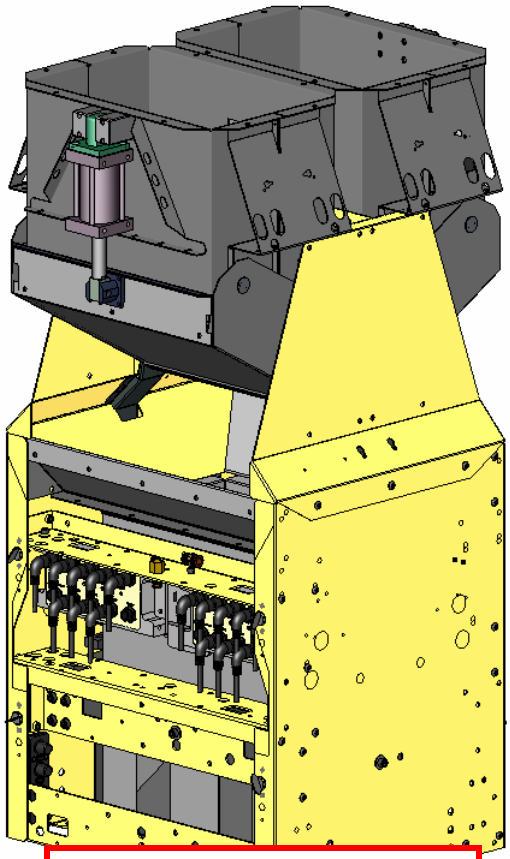
Part Number	Description	Vendor
28765A26	Hvy Dty Cobalt Screw Machine-Length Drill Bit 9/32" Size, 2-11/16" O'all Length, 1-1/2" L Flute	McMaster Carr
28765A69	Hvy Dty Cobalt Screw Machine-Length Drill Bit Wire Gauge Size 19, 2-1/8" L O'all, 1-1/16" L Flute	McMaster Carr
28765A33	Hvy Dty Cobalt Screw Machine-Length Drill Bit 3/8" Size, 3-1/8" O'all Length, 1-13/16" L Flute	McMaster Carr
4192A16	Carbide-Tipped Hole Saw 1" Diameter, 1-1/2" Cutting Depth	McMaster Carr
4066A78	Arbor for 9/16"- 1-3/16" Saws, 3/8" Hex	McMaster Carr
4066A86	1/4" Pilot Drill for Bimetal Hole Saw	McMaster Carr
22336	Side Panel Modification Template	Juniper Systems
22337	Bucket Modification Template	Juniper Systems
22340	Side Panel Deflector Fixture	Juniper Systems
n/a	Drill w/ 1/2in chuck	Any
n/a	Skil Saw w/ Steel cut-off blade (Circular Saw)	Any
n/a	4.5in Angle grinder with cut-off wheel	Any
n/a	3" Cut-off tool (electric or Pneumatic)	Any
n/a	Pop Rivet Tool	Any
n/a	Combination Wrench Set	Any
n/a	Hex key set (SAE)	Any
n/a	Touch-up paint Type: Delstar Acrylic Enamel Color: Cream Formula: (32.0 Oz) DMR400 488.4 488.4 DMR491 82.7 571.1 DMR486 63.0 634.1 DMR475 3.9 638.0 DMR495 19.0 657.0 DMR499 475.6 1132.6	S & B Automotive Color Inc 64 Federal Ave, Logan, UT - (435) 752-4331
n/a	Small Paint Brush	Any
n/a	Safety Glasses	Any
n/a	Leather Gloves	Any
n/a	Ear Plugs	Any
n/a	Power Cord	Any
n/a	Teflon Tape	Any
n/a	Loctite 242	Any
n/a	Round File	Any
n/a	Shop Towels	Any
n/a	Vise Grips	Any

22313 - HCGG Bucket Extensions - Retrofit Kit			
PN	ITEM #	Description	QTY.
13175	1	1/4-20x.375 BtnHd Soc SS	20
15620	2	HM2K Cross Bar	1
22311	3	Bucket Extensions - Straight Side	2
22312	4	Bucket Extensions - Front-Back	2
22314	5	Cable Guard for Bucket Extensions	2
22357	6	Vented Brass Ball Valve ¼" NPT Female both ends	1
22358	7	Brass Elbow 1/4" NPT Male x Male	1
9569	8	FIT 3/8OD x 1/4NPT	1
X6804	9	1/8 Pop Rivet	10
15299	10	BAG PL 4X3IN ZIPLOCK	2
11280	11	BAG PL 10X13 2 MILL	1
22438	12	HCGG Bucket Cylinder Stop Collar	2

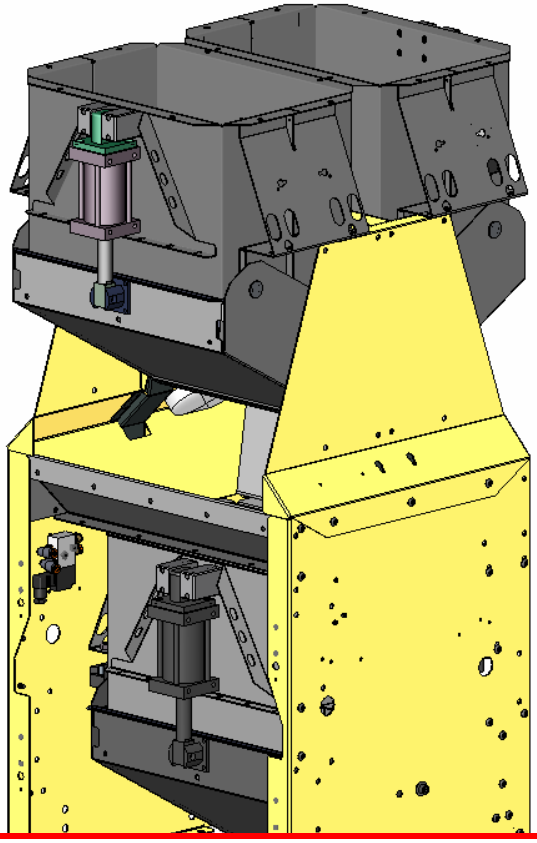
20260 - BDS System			
PN	ITEM #	Description	QTY.
20259	1	20259-00 BDS Mechanical Asm	1
20261	2	20261 Hyrbrid Module	1
22368	3	22360 BDS Calibration Weight	1
7395	1	7395 0.125 NPT to 0.25 tube fitting	2
7397	2	7397 Elbow 1_4 OD x 1_8 NPT	4
8379	3	8379 Actuator Valve	2
8548	4	8548 6-32 SS Nylock Nut	4
9592	5	9592 1/4” air line tubing	3ft
13164	6	13164 6-32 x 0.25 SS Button HD	5
13167	7	13167 0.25 Y-Union Fitting	3
13174	8	13174 0.25-20 x 0.5 SS Button HD	3
15332	9	15332 Power Cable	1
15335	10	15335 CAN Cable	1
20225	11	20225-00 Bucket Mount Back Plate	1
20307	14	20307-00 Hybrid Module Bucket Bracket	1
20351	15	20351 0.25-20 x 0.75 SS Button HD	4
20355	16	20355 PC5_32-N1U Strait 0.156 OD x 1_8 NPT	2
20360	17	20360-01 Bulkhead Actuator Cable	1
20527	18	20527 6-32 x 1 SS PH Truss Head	4
15299	21	BAG PL 4X3IN ZIPLOCK	5
19737	22	16x18 4mil bag	2
8431	23	Actuator Connector	2

a. **Warning: Wear gloves as needed and always wear proper eye protection. Use caution when operating power equipment. Loose clothing can catch and cause serous injury or tool/fixture damage. Also be sure that the work are is clear and free from any dangerous or flammable materials. Be sure that every precaution has been taken to prevent damage to you, the customer, or any customer equipment.**

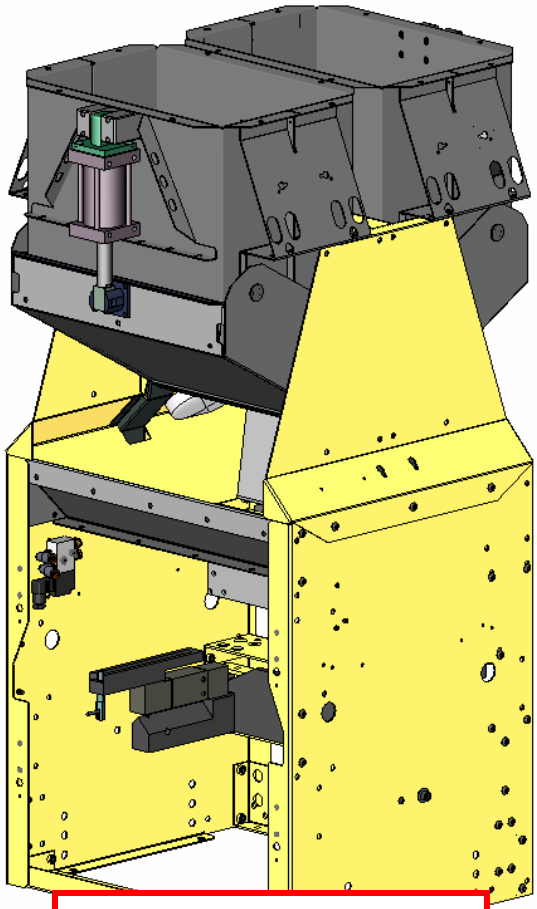




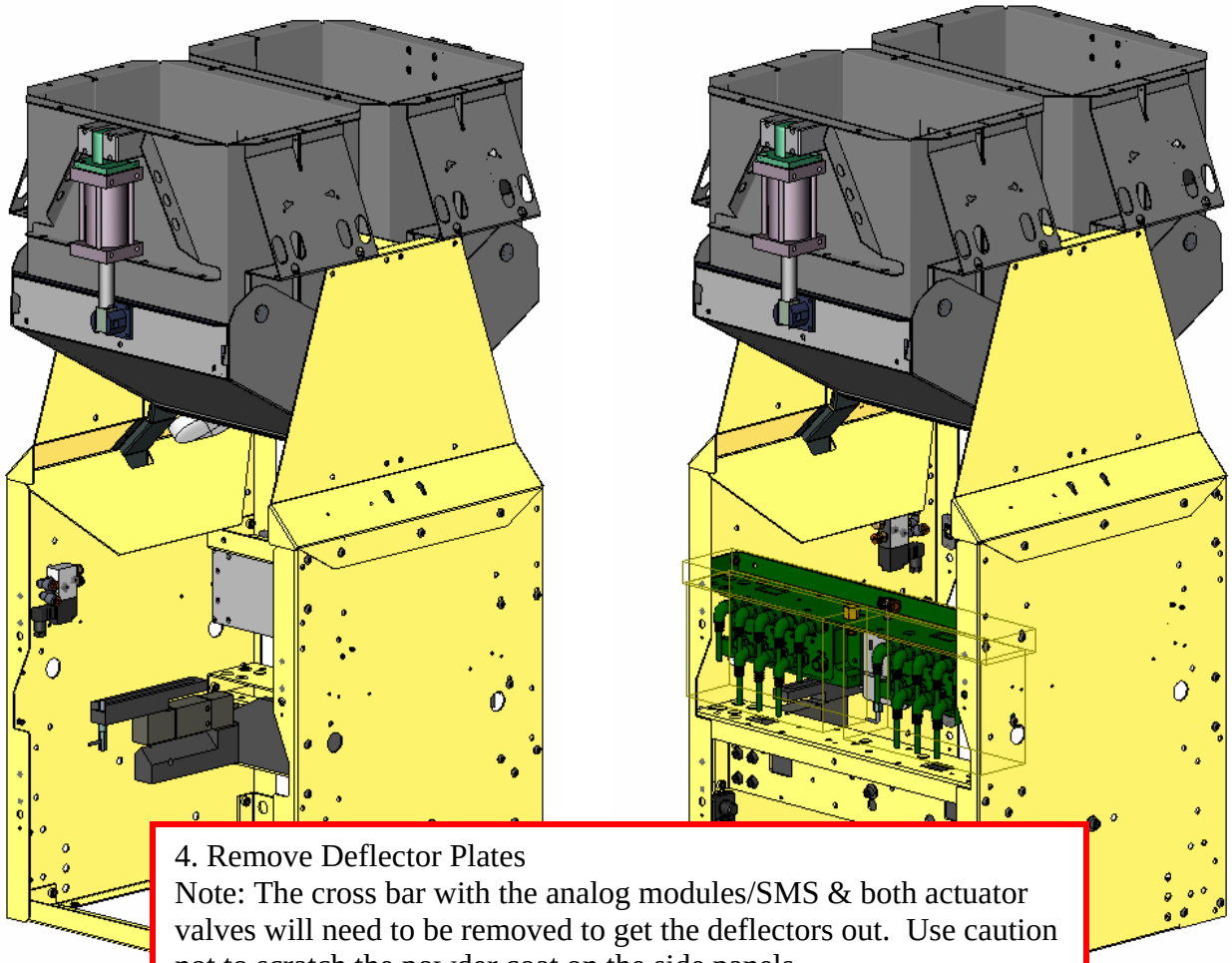
1. Remove front & rear doors



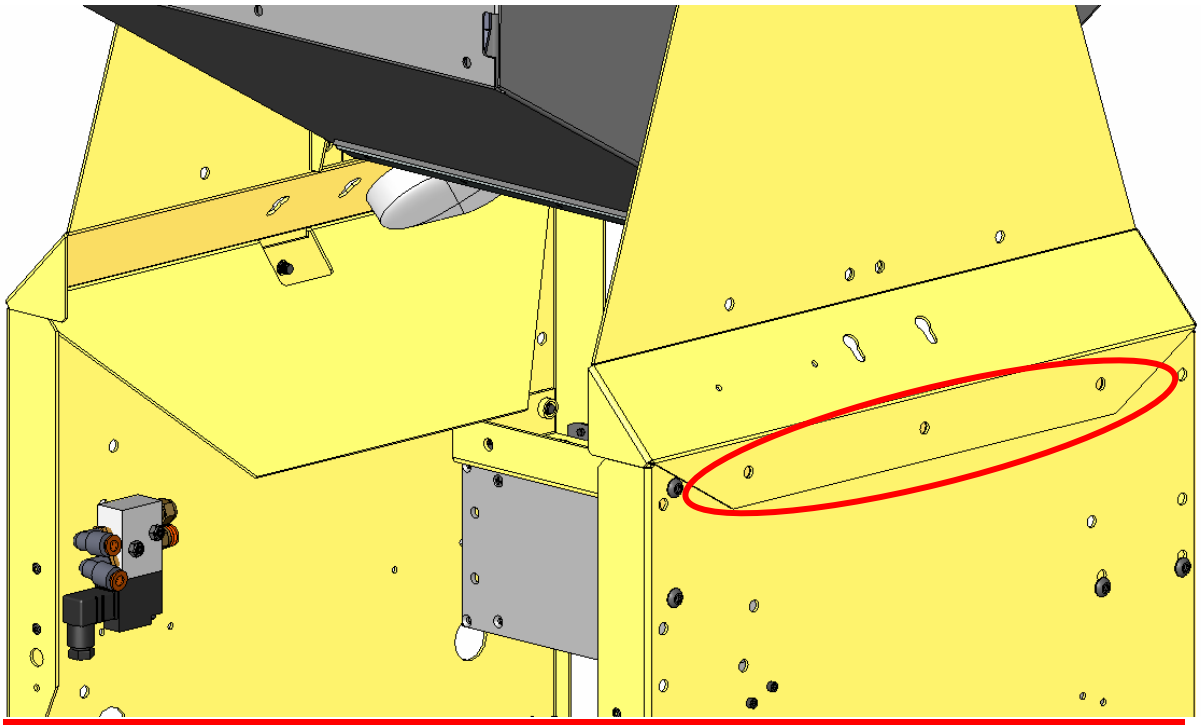
2. Remove Cross-bar. Disconnect all air lines and cables going to the weigh bucket.



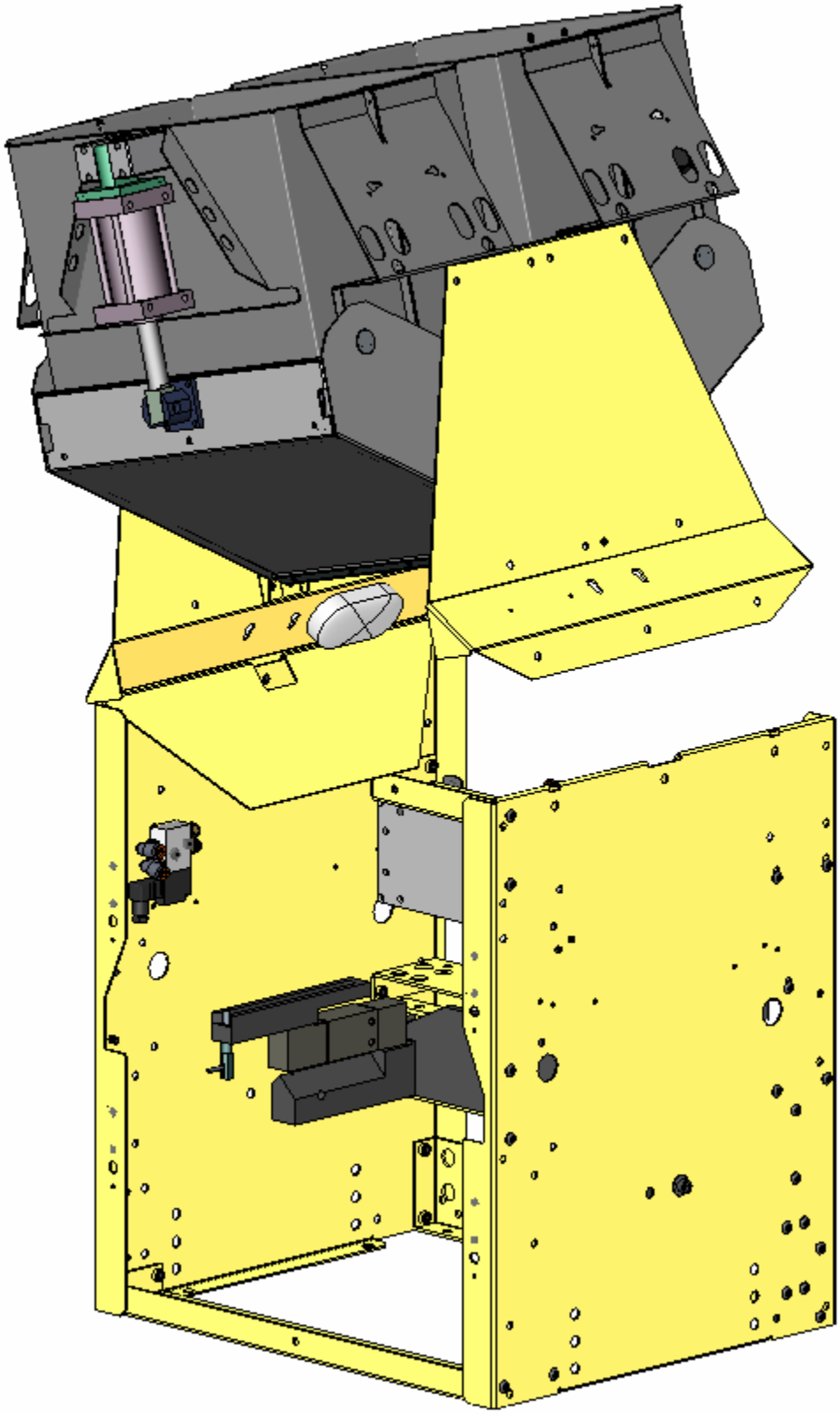
3. Lower Plunger Pins & Remove weigh bucket



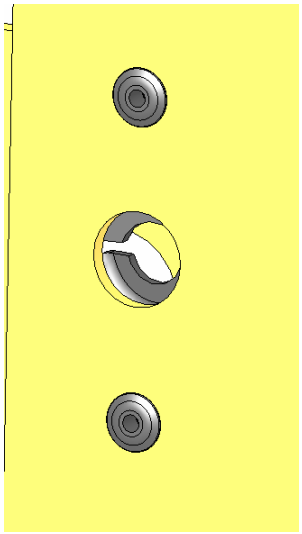
4. Remove Deflector Plates
Note: The cross bar with the analog modules/SMS & both actuator valves will need to be removed to get the deflectors out. Use caution not to scratch the powder coat on the side panels.



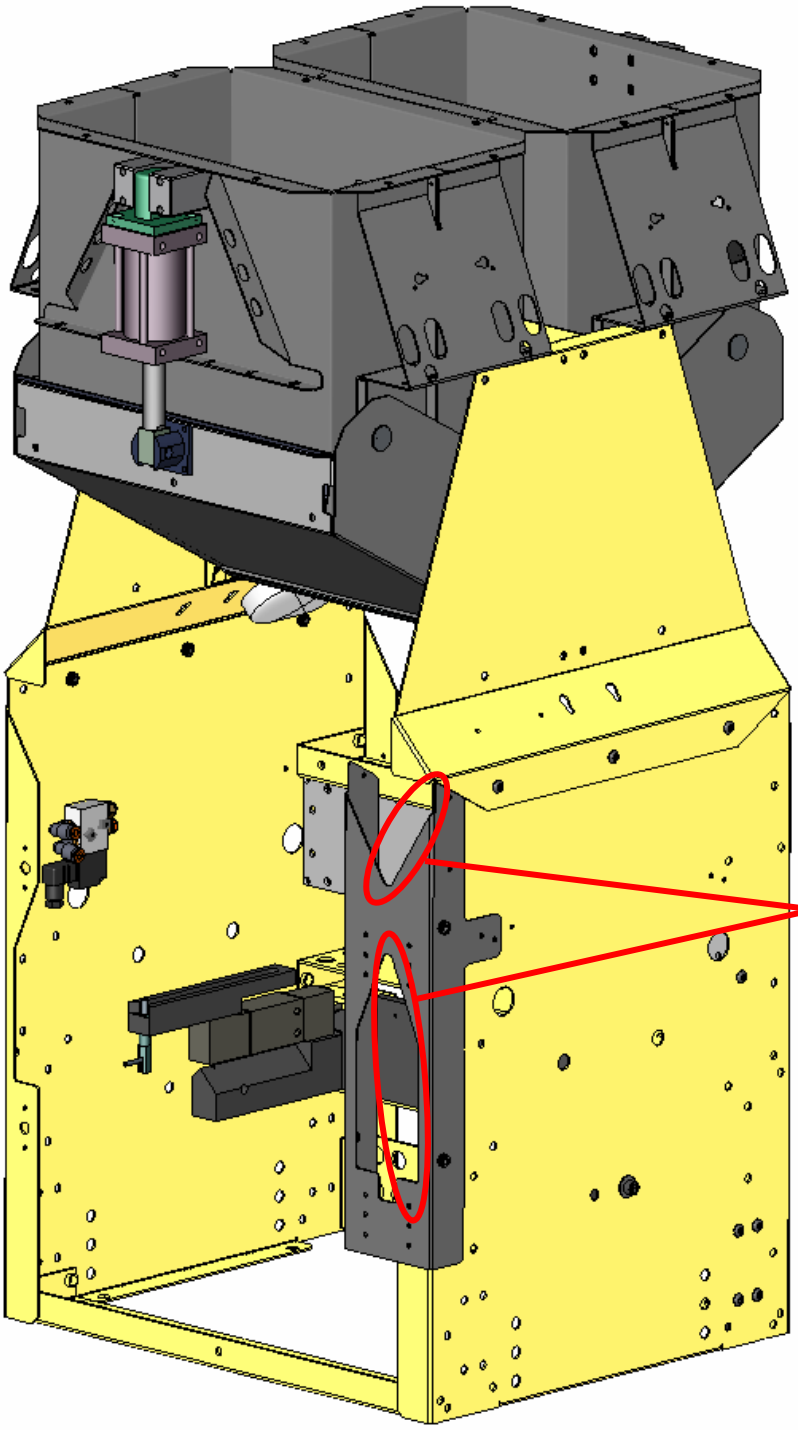
5. Remove the three twin mounting screws on one side and then loosen the three on the other side about 3 turns. (Be sure that the screw is still securely in the threads) Also remove the cable guards. Unhook all cables/hoses from the twin and move them out of the way of the cutting operations.



6. Tilt the twin as shown and place wooden block (3-4 inches) to support it temporarily.



7. On the front side only (the side that the bucket is removed from) drill off the front of the rivets that hold the latch plate for the door screw and remove all four of them. Keep them as they will need to be installed later.



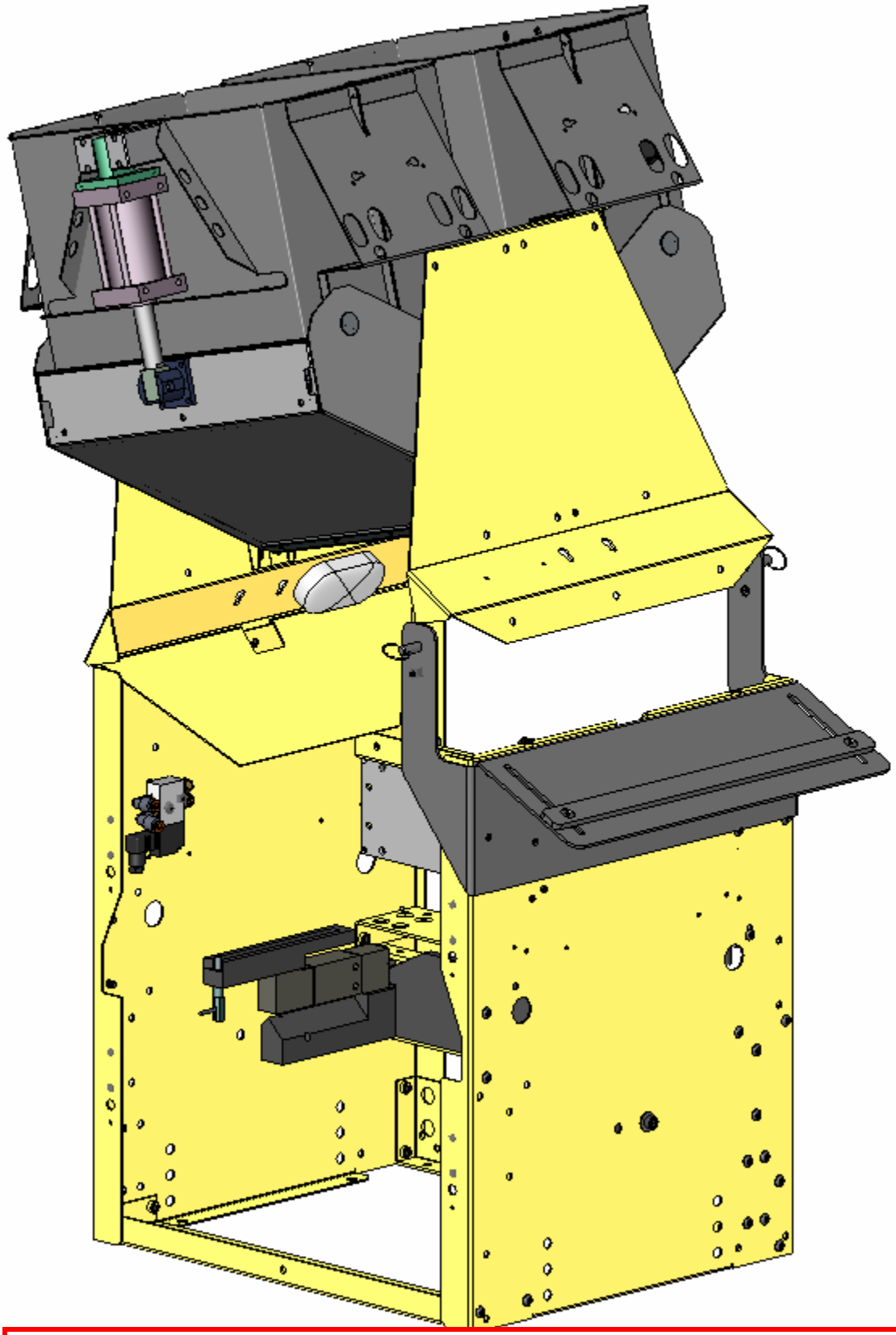
8. Note: Although this operation is probably easier to do with the twin lifted, it is also possible to do it with the twin down as shown in the picture.

a. Install the 22336 Side Panel Modification Template as shown using two ¼-20 bolts.

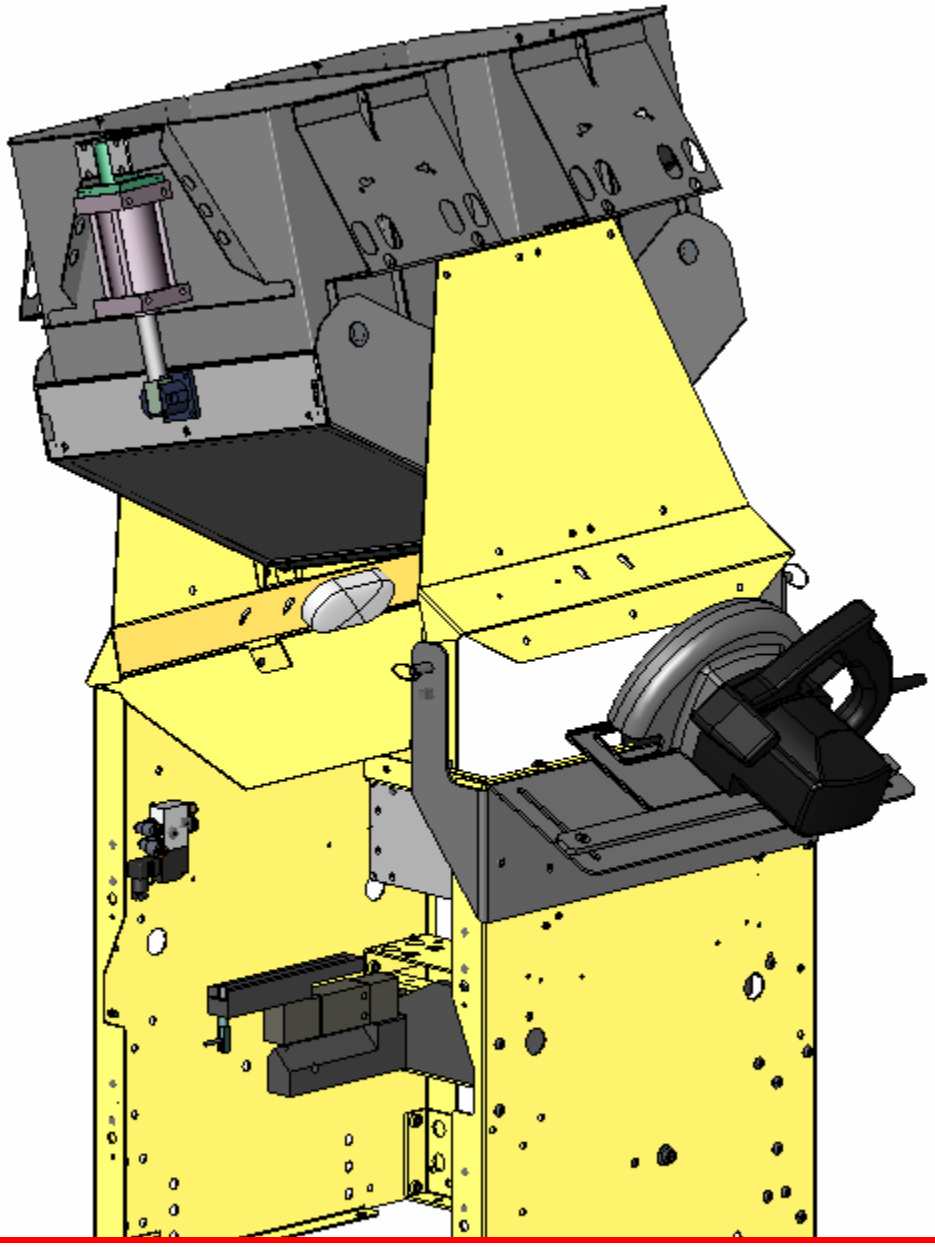
Mark the side panel flange along the fixture where it needs to be cut as shown

Using a number 19 drill bit (0.166in diameter) mark 10 center marks; holes to be drilled out later.

Remove the fixture.



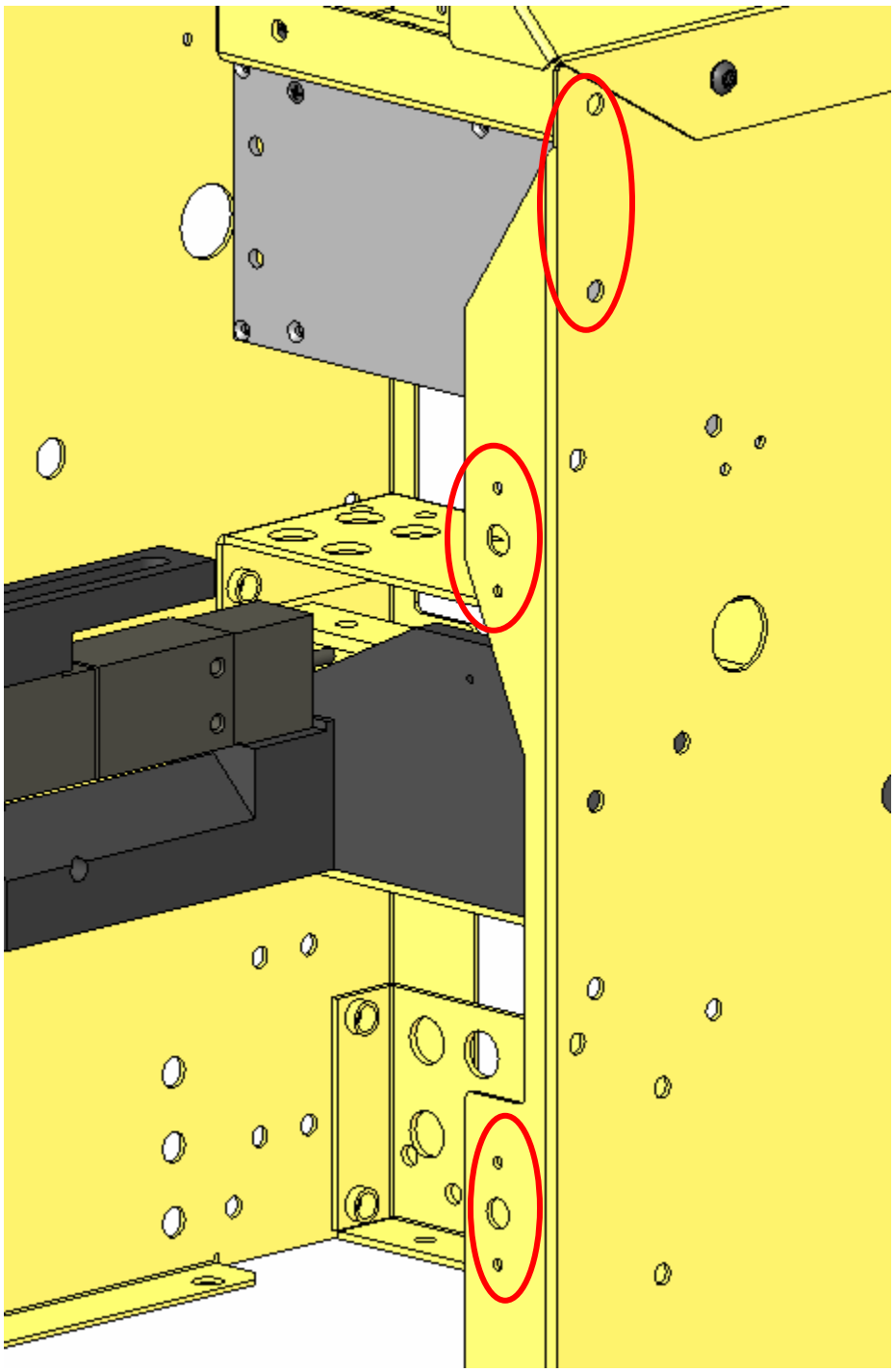
9. Install 22340 Side panel deflector fixture as shown using (2) holes and two ¼-20 bolts and nuts from the deflector plates that were removed previously. Once installed, place the quick pins from the fixture into the holes on the fixture as shown. Remove the wooden block and let the twin rest on the fixture.



10. Use the depth feature on the saw and set the depth to zero (blade not protruding) and then place the saw on the fixture with the fixture guiding it as shown. Check to make sure the fixture is adjusted properly. (The blade should be lined up with the center of the radius of the side panel deflector bend.) Once all is set, then loosen the depth feature on the saw and carefully plunge into the panel a little ways and then cut the deflector off. Be sure not to over cut at either end as this would damage the fixture and the customers side panel.

After the cut has been made, use a grinding wheel to remove the sharp edges and burrs from the cut. Use caution not to remove any more powder coat than necessary or damage the fixture.

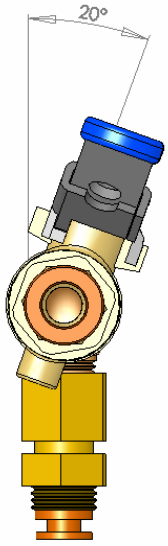
Remove the fixture and repeat the procedure (***with both fixtures***) on the other side. (Be sure the opposite side of the twin still has the bolts loosely installed.) The touchup paint will be added later. Be sure to reinstall the twin bolts with thread locker and tighten them down properly.



11. Drill sizes as shown (approx 0.166 for small, 3/8 for large and .266 for top two) from the marks made previously.

12. Clean burrs as necessary. Re-install the door hardware with the provided pop rivets. (4 plcs)

13. Remove old shut off (slide style) valve bulkhead union fitting (the piece that mounted to the system) and the male to male adaptor that connected the old valve to the bulkhead union if it is not in the old valve (it could have stayed with either piece when it was taken apart). Follow instruction below to assemble the new valve.



New Air Valve Assembly:

Evenly wrap some *Teflon thread tape* on both ends of the *Brass Elbow ¼ NPT Male x Male (22358)* and screw it into the *Vented Brass Ball Valve ¼ NPT Female (22357)*. Screw it into the end opposite the valve handle (when open). Screw the other end into the *Bulk Head Union Fitting (7584.)* Tighten securely.

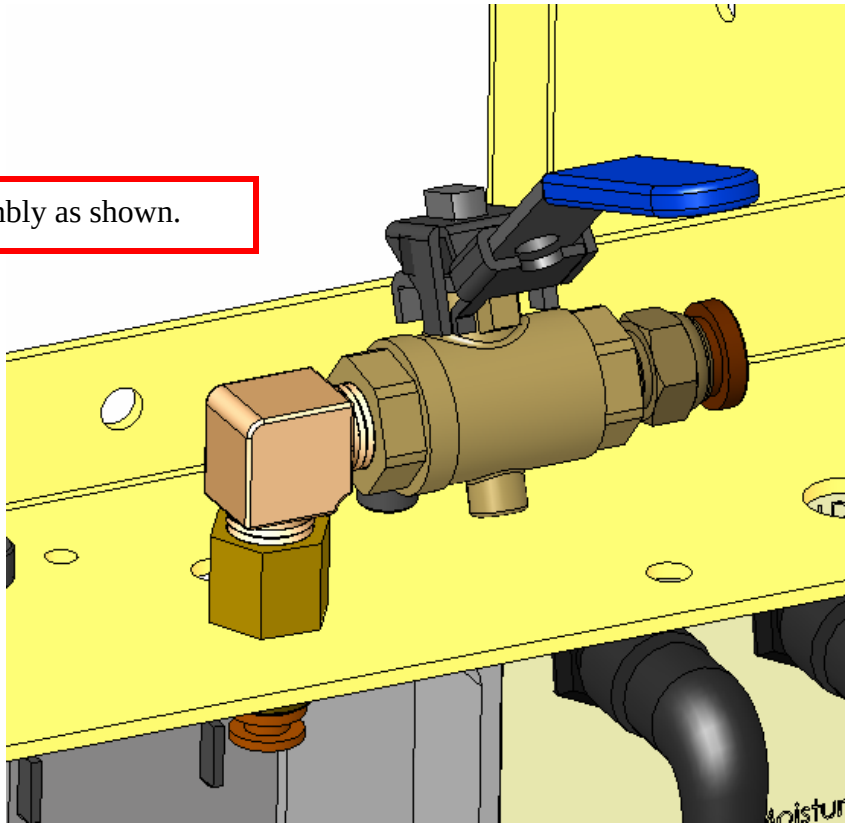
Insert the *1.4" NPT fitting (9569)* into the other port on the shut-off valve assembly (*22357*). Tighten the valve so the elbow is about 20deg off from the bulk head union fittings as shown (left).

Place the shut off valve assembly into the ½-inch hole in the center (or side) of the crossbar (if that is where the old valve was located) and tighten the brass lock nut securely.

The valve will appear to be mounted upside down. This is normal.
After tightening the lock nut, check the tightness of the shut-off valve assembly once more and tighten as necessary.

Align the shut-off valve in line with the crossbar as shown in figure 6.

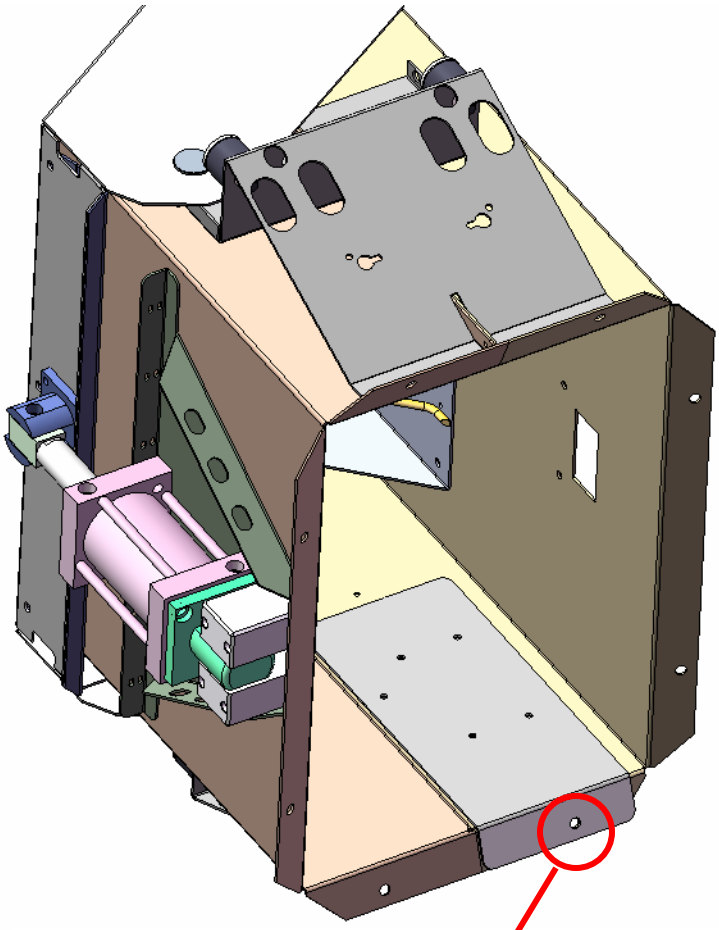
14. Install the new valve assembly as shown.

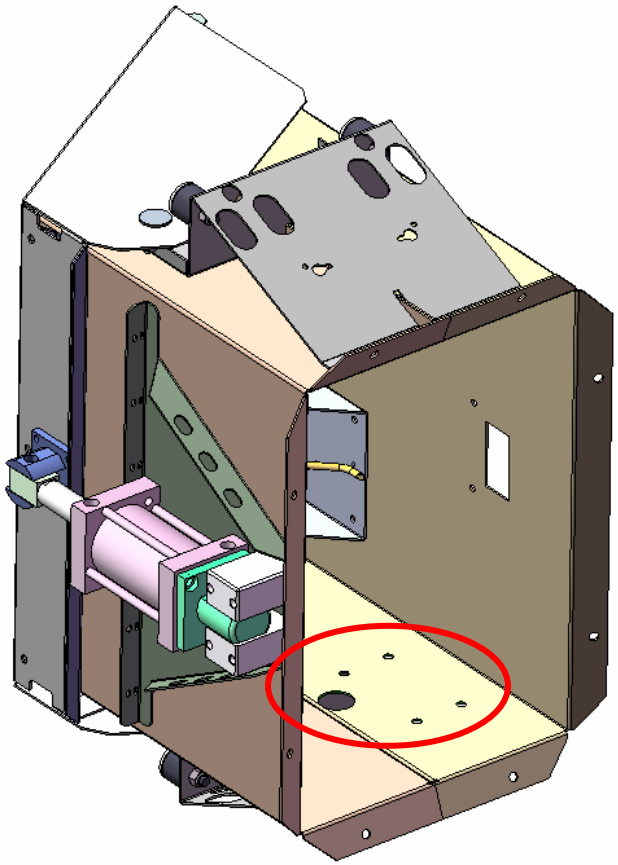


Note: Check the bucket flanges to be sure that they are already angled as shown. If they are not already bent they must be bent before the following fixture is used. They will also need to bent so that the extensions can be installed later. Use the bend in the template to make sure the bend is at the appropriate angle.

15. Place the Bucket Modification Template in the bucket as shown. Inset a ¼-20 bolt into the hole circled and a ¼-20 nut on the backside to lock the template down. Additional clamps (such as vise grips) may be used to secure the template down. (If the template is not flat against the bucket then the bucket flange may not be bent at the correct angle.)

Use the Bucket Modification Template and the #19 drill bit to make 5 center marks; one through each hole.

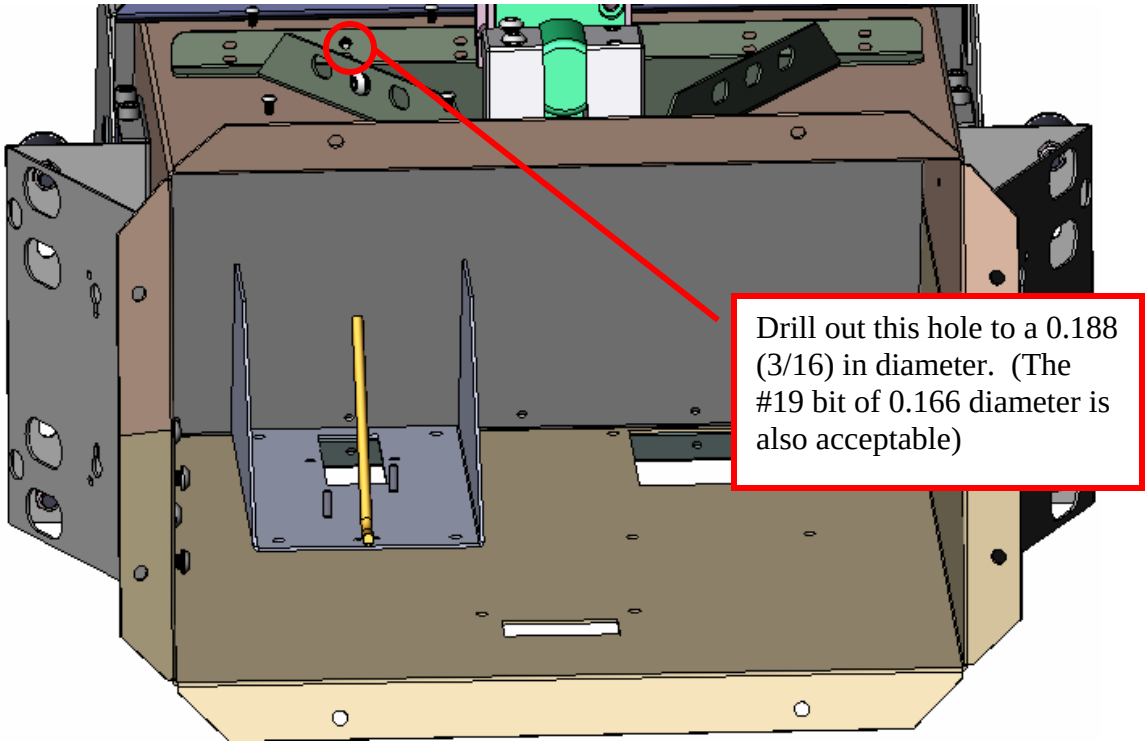




16. Use center marks made previously to drill out the four mounting holes with the 0.266" (17/64 to 5/16 is accaptable) drill bit. Then use the 1in hole-saw on the fifth mark as shown to make the hole for the BDS cables. Clean the edges of the 1" hole with a round file to make sure the edges are not sharp. Remove burrs from all holes.

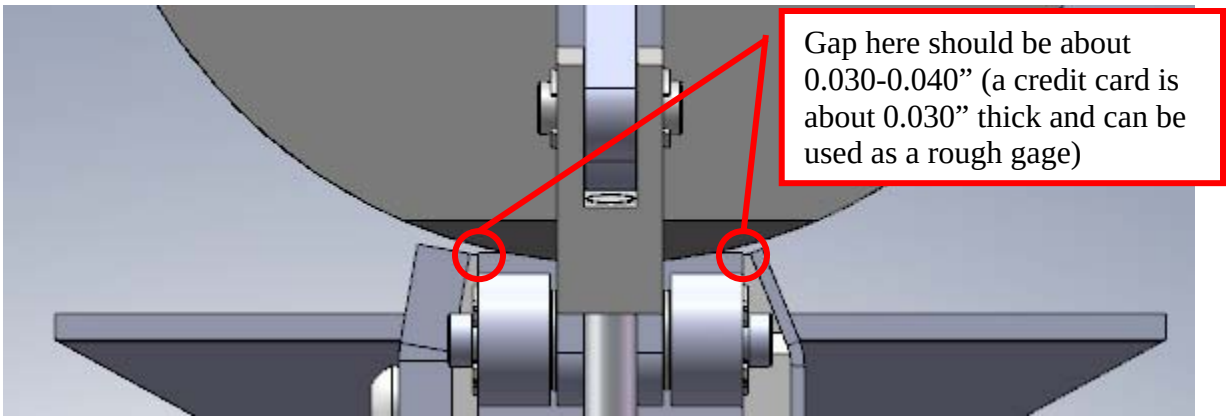
TIP: Using something to pry the drill against the upper side of the bucket may be an advantage that will speed up the drilling process.

17. Place the weigh bucket on a work bench or similar. Remove the EM sensor assembly and the cover plate from the left side of the bucket. Reinstall both but with the EM sensor on the opposite side (left) of the bucket and the cover plate on the right as shown. Drill out hole as shown.

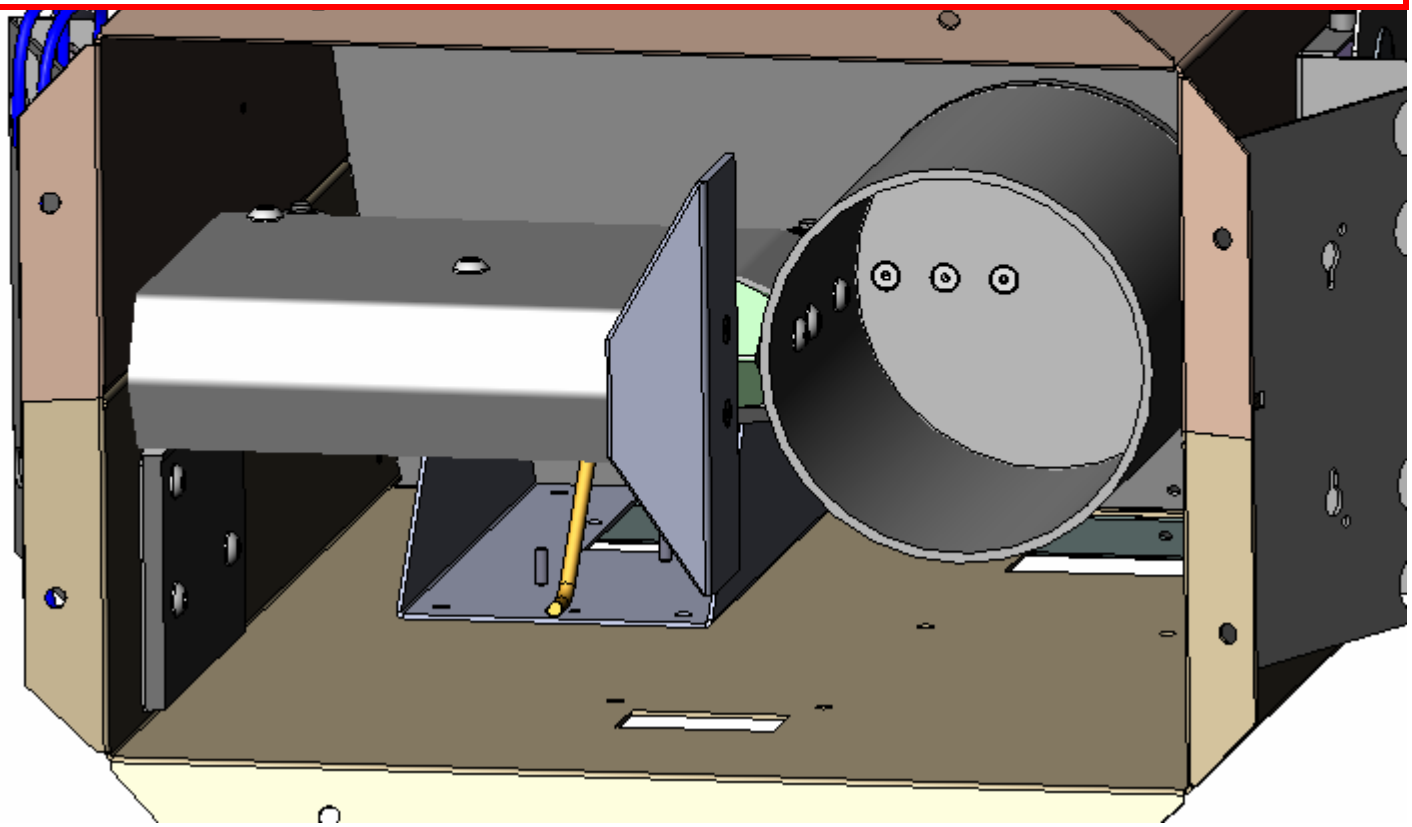


18. Inspect the BDS System – Fully inspect the 20259 Assembly to make sure that there is no damage and everything is in good order. Verify that the load cell spacing on the 20259 is set correctly. (See below) If the gap is not set correctly, use the set screws on the side of the bucket angle mount bracket to adjust the gap by first loosening both set screws and adding Loctite 242 to both. Next, bias the cup towards the set screw side. Tighten the front set screw (the one closest to the cup) until the gap seems about even on both sides. Finally, tighten the rear set screw to lock down the cup position. If the system does not have set screws, manually adjust the gap by pressing the weigh cup to the correct side until the gap is set correctly as shown below.

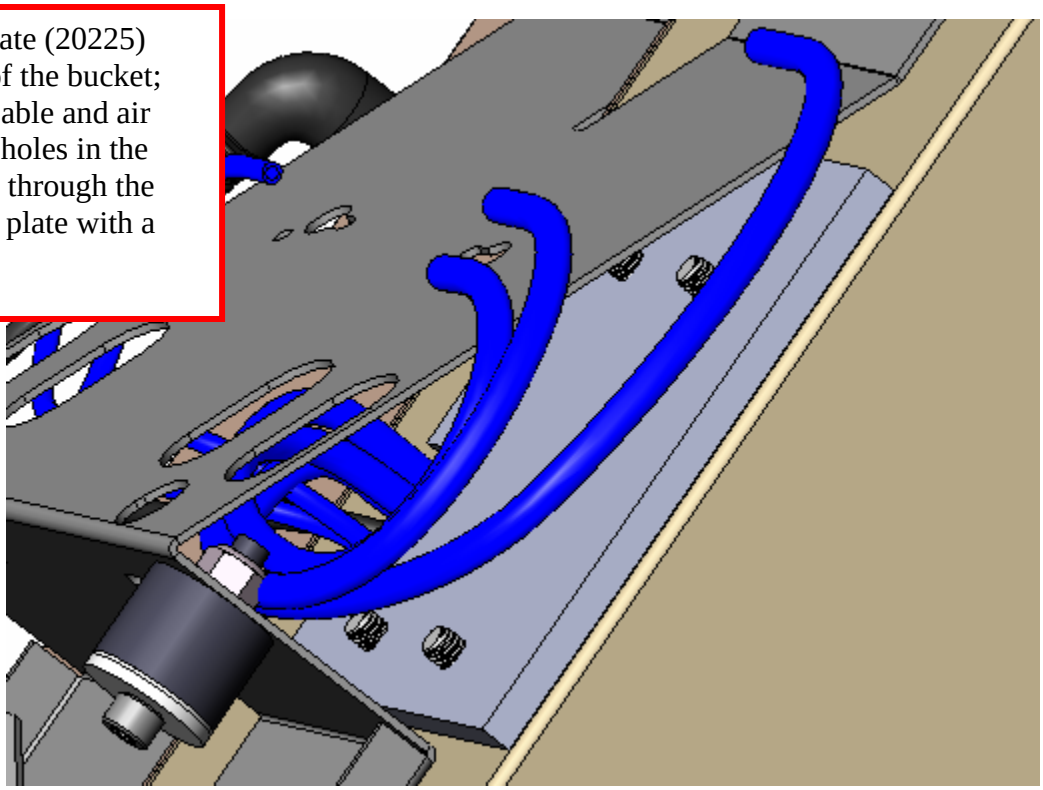
View from bottom of BDS

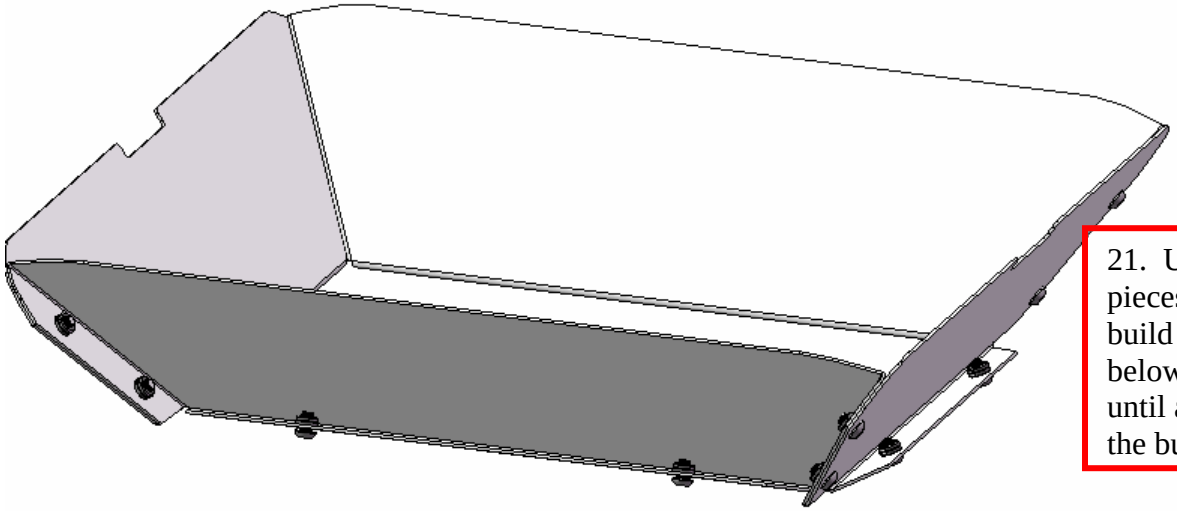


19. Install the BDS System – Insert the 20259 BDS Mechanical Assembly into the Weigh Bucket Assembly Cup first. Thread load cell cable and the four air lines of the BDS Mechanical Assembly from inside of the bucket to outside through 1-inch diameter hole. Use caution not to cut any of the cables or hoses on the sharp edges as you are pulling them through. Apply Loctite and insert the four 1/4-20 x .75 BTN SOCHD SS Screws (20351) through the mounting holes on the BDS Mechanical Assembly and through the holes on the bucket wall (screw heads are on inside of the bucket). Note: The 3 large air lines go towards the back of the bucket and the two small air lines along with the load cell cable go to the front.



20. Place the Bucket Mount Back Plate (20225) against the outside of the right wall of the bucket; align the notch in the plate with the cable and air lines as shown. Line up the threaded holes in the plate with the four screws protruding through the bucket wall. Tighten screws into the plate with a 5/32-inch Allen wrench.

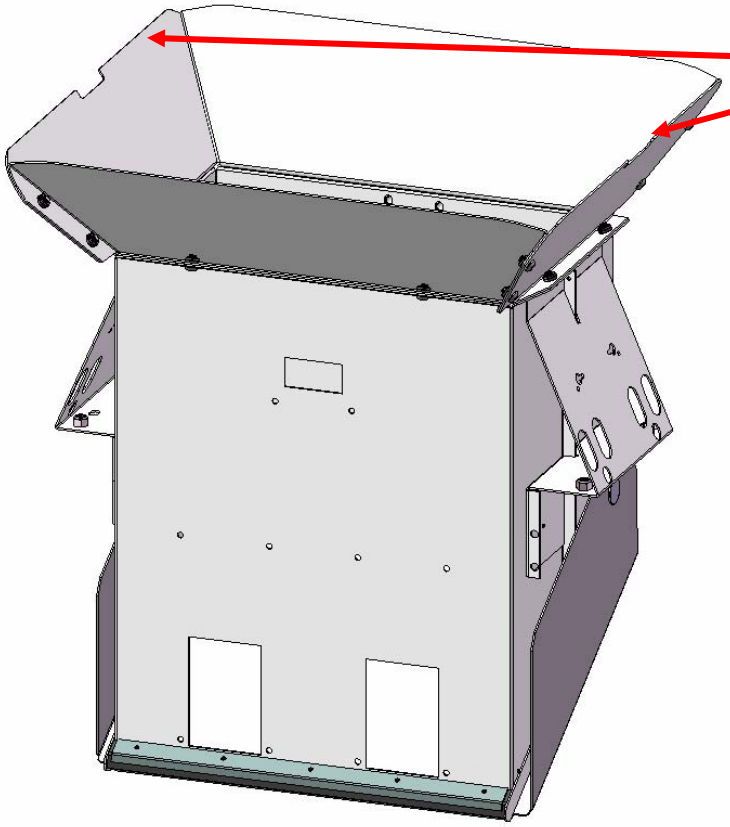




21. Use Loctite and the four pieces and fasteners provided; build the bucket top as shown below. Wait to tighten the bolts until after the top is installed on the bucket.

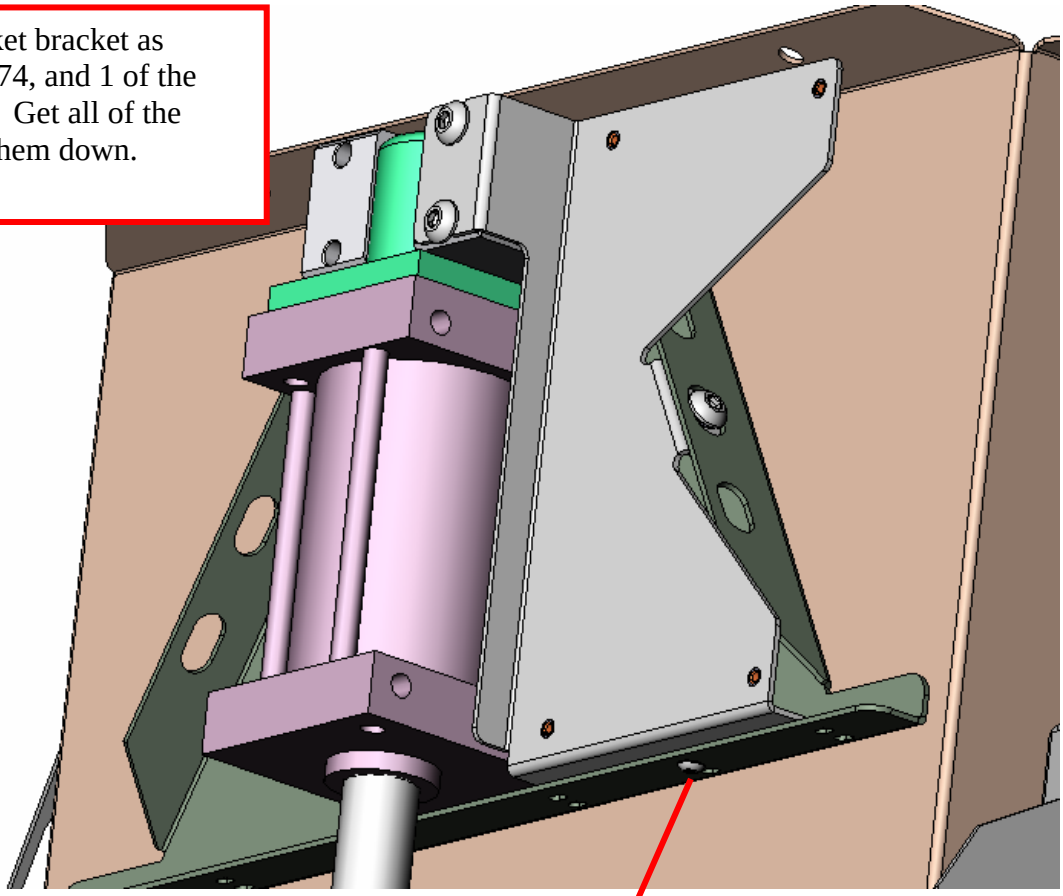
22. Using Loctite and the remaining fasteners, bolt the bucket top to the bucket as shown. Measure from corner to corner on opposite corners in two directions to verify that the extensions are square. If they are not, then loosen and adjust appropriately.

23. CAUTION**!** Care must be taken when inserting the new bucket into the HCGG as these edges may be sharp and can cut the cables and hoses from the top assembly. This must also be considered when removing the bucket later.

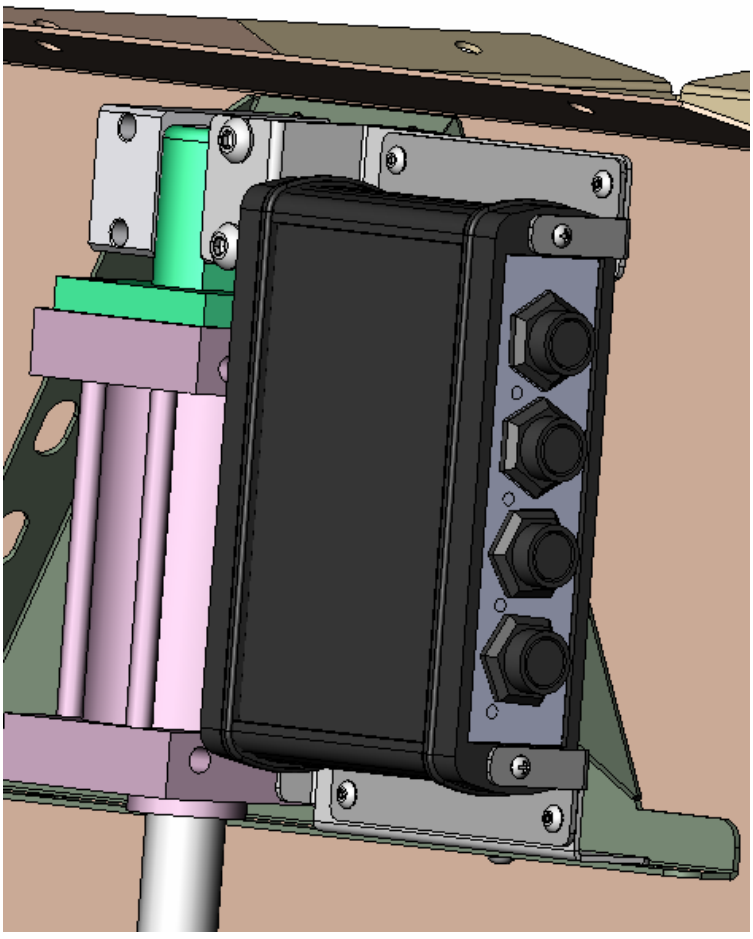


WARNING**!** If the Hybrid Module or bracket is installed before this, then it will need to be removed to install all of the bolts in the bucket extensions.

24. Install the 20307 hybrid bucket bracket as shown. Use Loctite, 3 of the 13174, and 1 of the 13164 screws to attach as shown. Get all of the screws started before tightening them down.

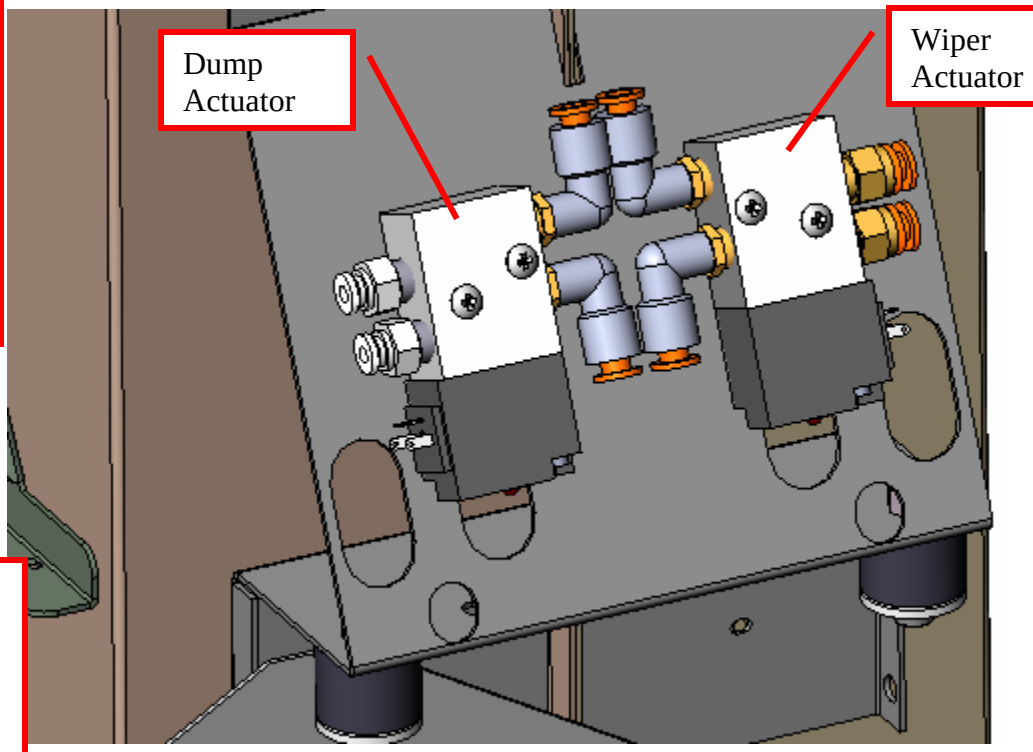


13164 Here



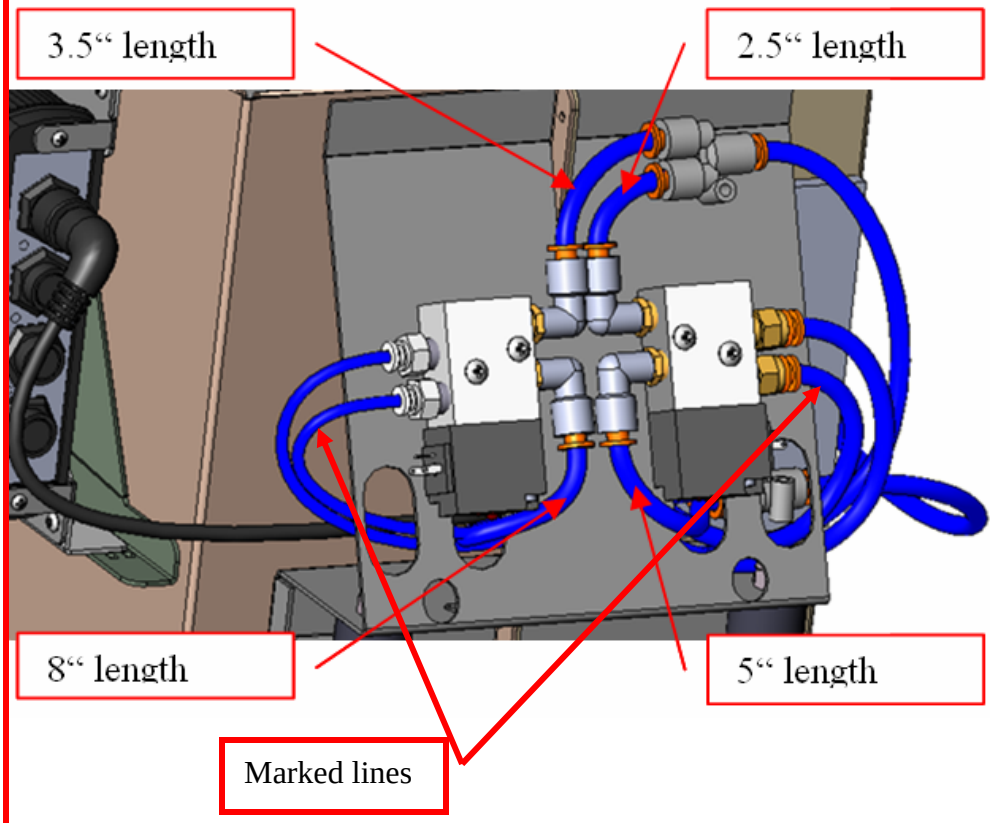
25. Install the 20261 hybrid module as shown. Use Loctite and 4 of the 13164 screws to attach as shown. Get all of the screws started before tightening them down.

26. Using the four 6-32 Phillips screws (20527) and the four 6-32 Nylock nuts (8548) place the solenoid valves from the kit into the bucket as shown. (The connections for the small air lines go to the front of the bucket). Adjust the air flow set screws on the ***dump actuator*** by turning each one all the way in then back ½ turn.

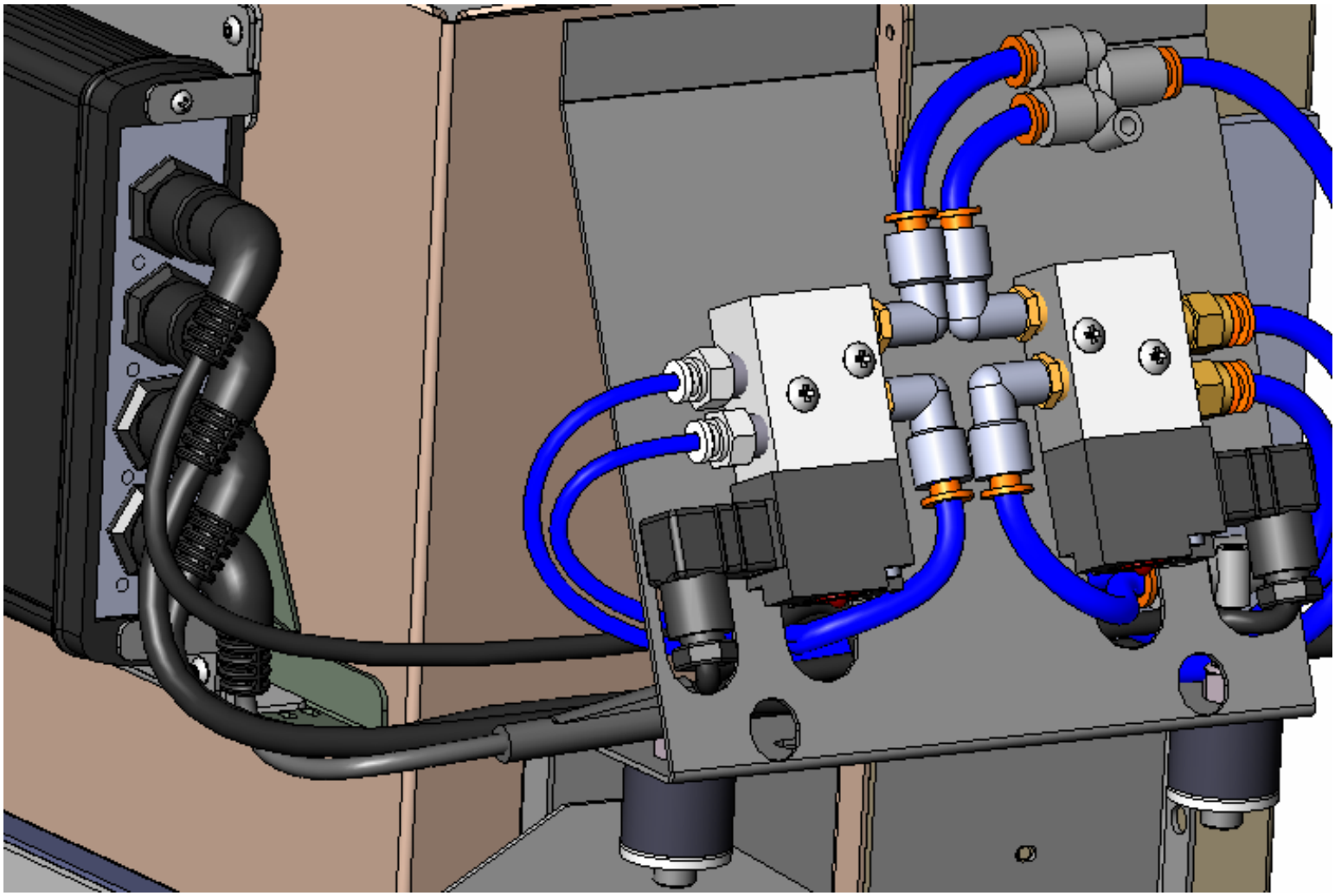


27.

- Cut the following lengths from the 9592 air line: one 2.5" length, one 3.5" length, one 5" length. one 8" length, and the remainder should be about 17" long,
- Insert *Y-Union Fitting (13167)* as shown onto the 2.5" & 3.5" two ¼-inch tubing pieces. Connect the longest hose from the BDS mechanical to the other end of the fitting as shown. (This is the exhaust hose and should have little or no resistance when you blow on it.)
- Insert the two 5/16" lines from the BDS system into the fittings in the actuator on the left (toward the Hybrid module side as shown). The marked line goes in the lower port.
- Insert the two 1/4" lines from the BDS system into the fittings in the actuator on the right as shown (opposite the Hybrid module side). The marked line goes in the lower port.
- Insert the 8" & 5" lengths into another *Y-Union Fitting (13167)*. The single fitting hooks to the 17" length. Feed the 8" & 5" lengths from the back side of the bucket and through the holes under the actuators as shown. Insert the 8" length into the left hand actuator and the 5" into the right hand actuator as shown.
- Connect the remaining *Y-Union Fitting (13167)* on the end of the 17" hose. This connects to the main feed line after the bucket is installed. The 17" hose may need to be trimmed to fit appropriately.



28. Attach the load cell cable from the BDS mechanical system to the top connector on the hybrid module. Attach *20360 Bulkhead Actuator Cable* to the actuators as shown; short end to the close actuator and long to the other. Then plug the molded end into the lowest port on the hybrid module. String the CAN cable through the bucket support and plug the angled end into the second from bottom connector on the hybrid module as shown. The power cable will be installed later.



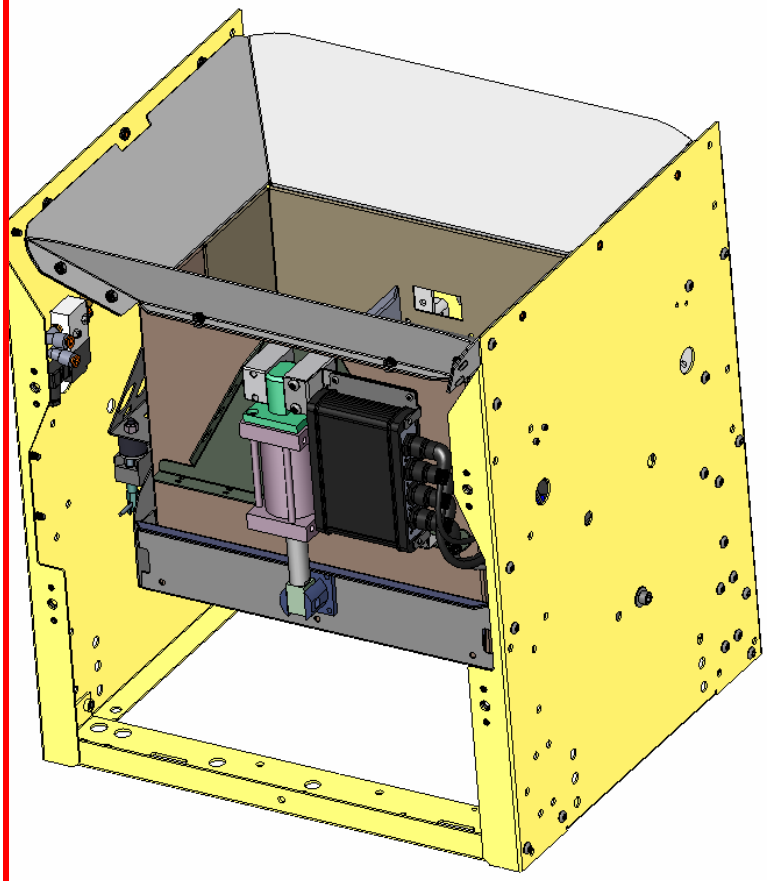
29. Trim the rubber grain deflector from the twin buckets so that they can't set on top of the grain being weighed. (The rubber should protrude from the bucket about ½" so that it is similar to the edge of the weigh bucket door seal sown below)

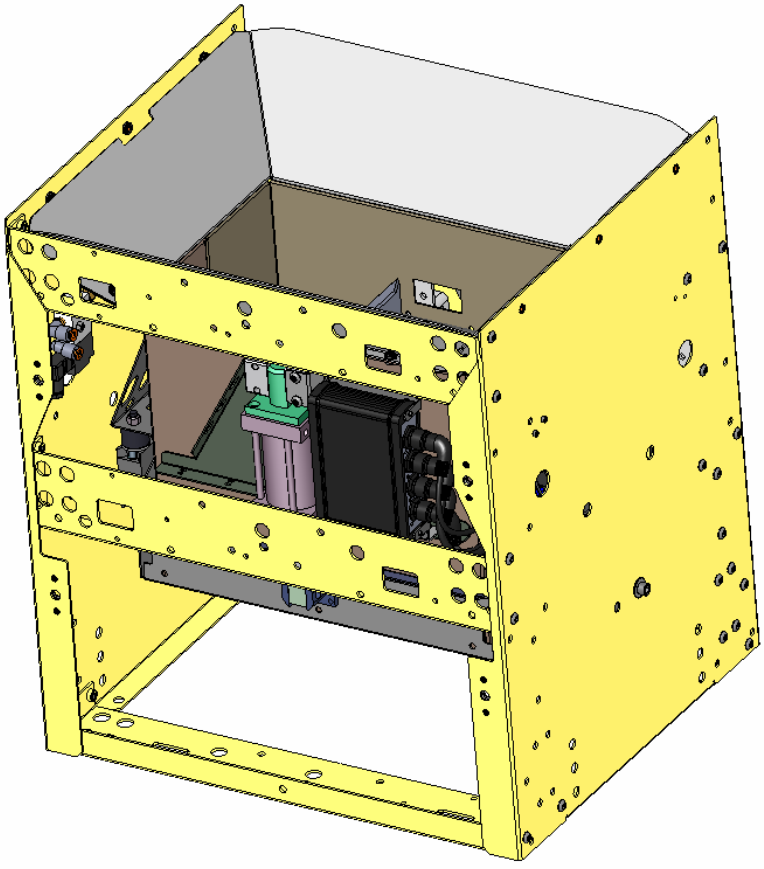
Clean up the grain gage from the grindings and any other messes that were made on the equipment.

Install new cable guards provided and make sure that all cables and hoses are held securely but not pinched. This should be done before the bucket is inserted or the bucket extension edges may cut the cables.

Also re-install the actuators into the new holes that were drilled. Both actuators should be installed with the manual button facing down and in intake port facing the rear of the system. Reconnect any hoses, cables, connectors as needed. Be sure that the twin cables are routed properly.

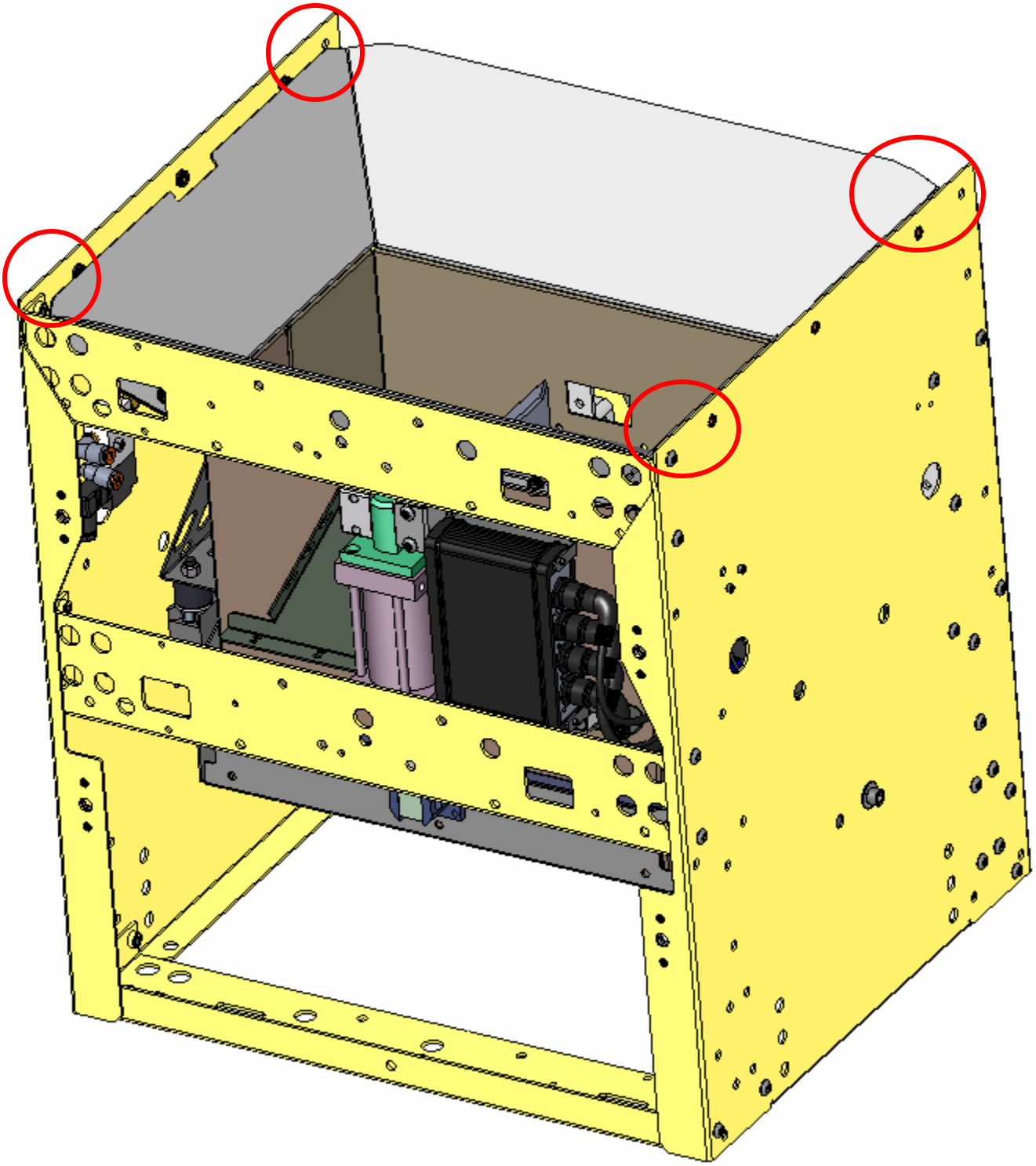
Insert Bucket into HCGG as shown.





30. Insert the last two cross beams as shown below. (One from the original assembly and one from the kit) Use the 13175 (1/4-20 x 3/8 SS Button Head Hex drive) provided in the retrofit kit so that the ends do not interfere with the bucket extensions.

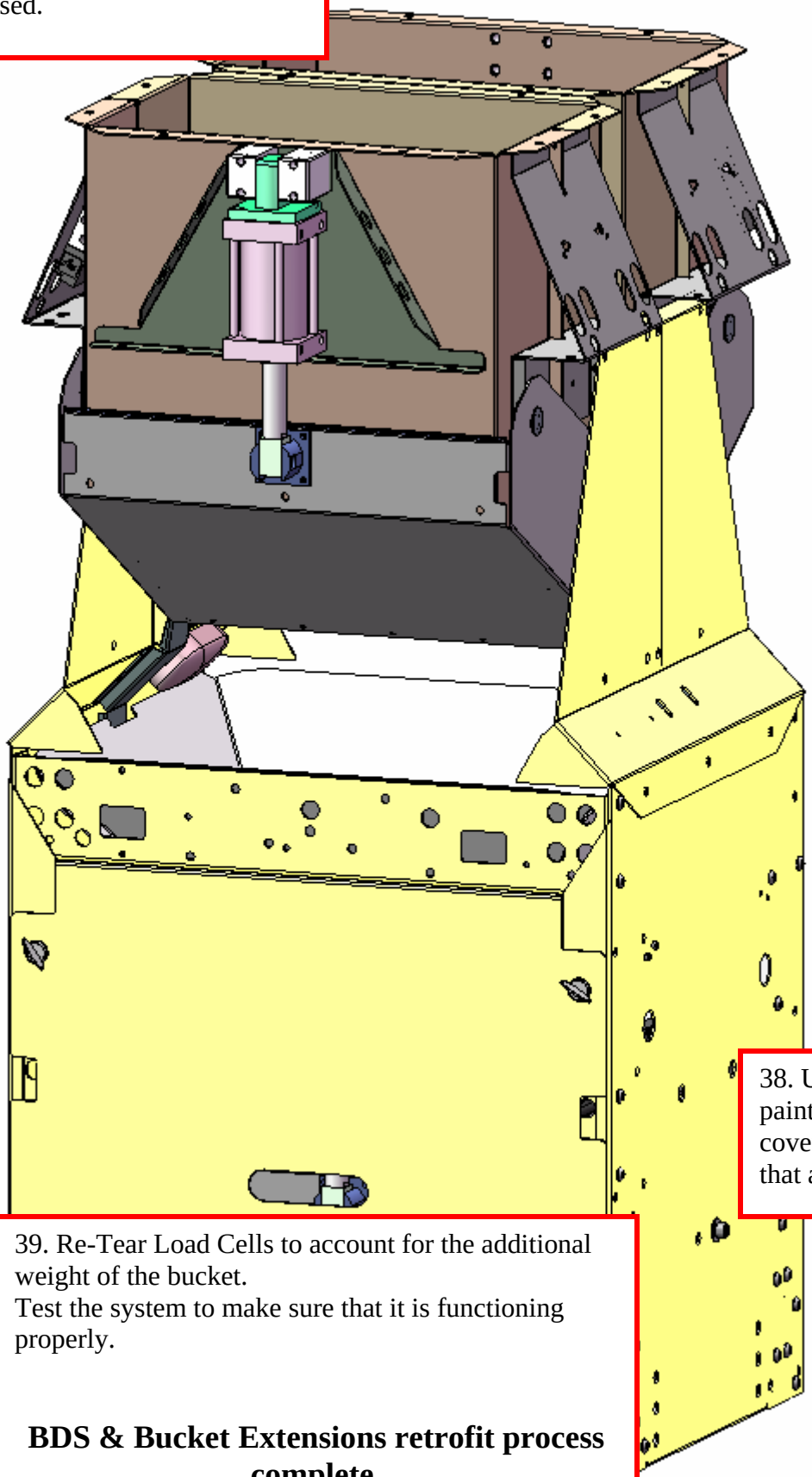
31. Check the areas indicated and also the entire perimeter of the bucket top to make sure that the bucket is free from interferences from the frame.



19. Install cylinder stop collars on twin hopper assembly

See Appendix A for instructions.

37. Replace the doors and check Top assembly. Check again for clearances on the new bucket. Re-connect the air to the new valve and check to see that it works properly, including the venting when the valve is closed.



38. Use touchup paint as needed to cover the cut edges that are visible.

39. Re-Tear Load Cells to account for the additional weight of the bucket.
Test the system to make sure that it is functioning properly.

BDS & Bucket Extensions retrofit process complete.

Bucket Extension Retrofit Instructions

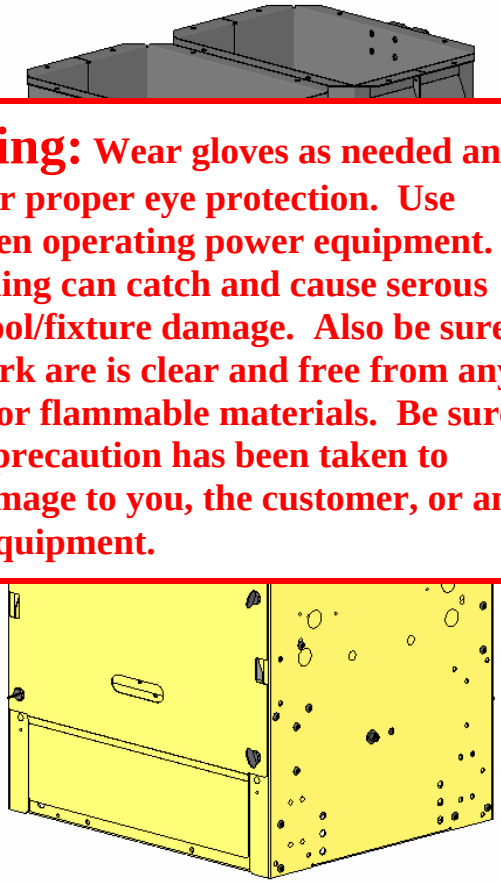
Tools Needed:

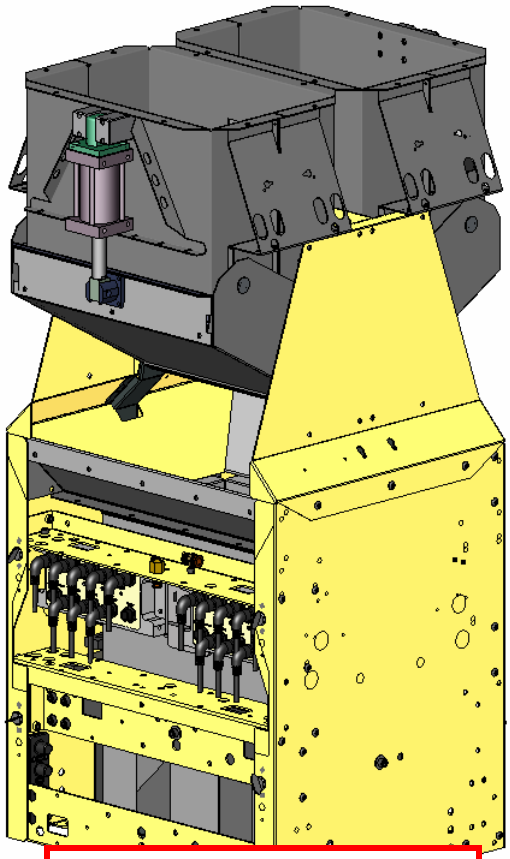
Part Number	Description	Vendor
28765A26	Hvy Dty Cobalt Screw Machine-Length Drill Bit 9/32" Size, 2-11/16" O'all Length, 1-1/2" L Flute	McMaster Carr
28765A69	Hvy Dty Cobalt Screw Machine-Length Drill Bit Wire Gauge Size 19, 2-1/8" L O'all, 1-1/16" L Flute	McMaster Carr
28765A33	Hvy Dty Cobalt Screw Machine-Length Drill Bit 3/8" Size, 3-1/8" O'all Length, 1-13/16" L Flute	McMaster Carr
22336	Side Panel Modification Template	Juniper Systems
22340	Side Panel Deflector Fixture	Juniper Systems
n/a	Drill w/ 3/8in chuck	Any
n/a	Skil Saw w/ Steel cut-off blade (Circular Saw)	Any
n/a	4.5in Angle grinder with cut-off wheel	Any
n/a	3" Cut-off tool (electric or Pneumatic)	Any
n/a	Combination Wrench Set	Any
n/a	Hex key set (SAE)	Any
n/a	Touch-up paint Type: Delstar Acrylic Enamel Color: Cream Formula: (32.0 Oz) DMR400 488.4 488.4 DMR491 82.7 571.1 DMR486 63.0 634.1 DMR475 3.9 638.0 DMR495 19.0 657.0 DMR499 475.6 1132.6	S & B Automotive Color Inc 64 Federal Ave, Logan, UT - (435) 752-4331
n/a	Small Paint Brush	Any
n/a	Safety Glasses	Any
n/a	Leather Gloves	Any
n/a	Ear Plugs	Any
n/a	Power Cord	Any
n/a	Teflon Tape	Any
n/a	Loctite 242	Any
n/a	Round File	Any
n/a	Shop Towels	Any
n/a	Vise Grips	Any

Materials that should be available for this process

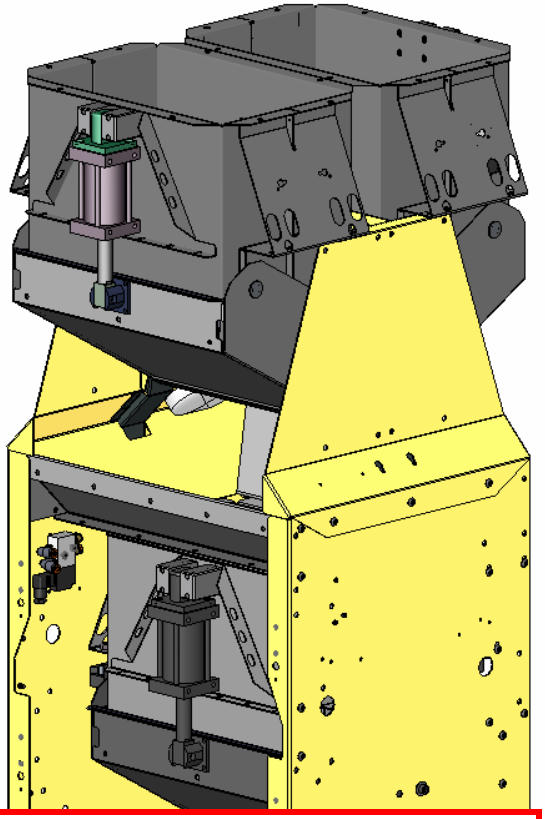
22313 - HCGG Bucket Extensions - Retrofit Kit			
PN	**ITEM #**	**Description**	**QTY.**
13175	1	1/4-20x.375 BtnHd Soc SS	20
15620	2	HM2K Cross Bar	1
22311	3	Bucket Extensions - Straight Side	2
22312	4	Bucket Extensions - Front-Back	2
22314	5	Cable Guard for Bucket Extensions	2
22357	6	Vented Brass Ball Valve ¼" NPT Female both ends	1
22358	7	Brass Elbow 1/4" NPT Male x Male	1
9569	8	FIT 3/8OD x 1/4NPT	1
X6804	9	1/8 Pop Rivet	10
15299	10	BAG PL 4X3IN ZIPLOCK	2
11280	11	BAG PL 10X13 2 MILL	1
22438	12	HCGG Bucket Cylinder Stop Collar	2

a. **Warning: Wear gloves as needed and always wear proper eye protection. Use caution when operating power equipment. Loose clothing can catch and cause serous injury or tool/fixture damage. Also be sure that the work are is clear and free from any dangerous or flammable materials. Be sure that every precaution has been taken to prevent damage to you, the customer, or any customer equipment.**

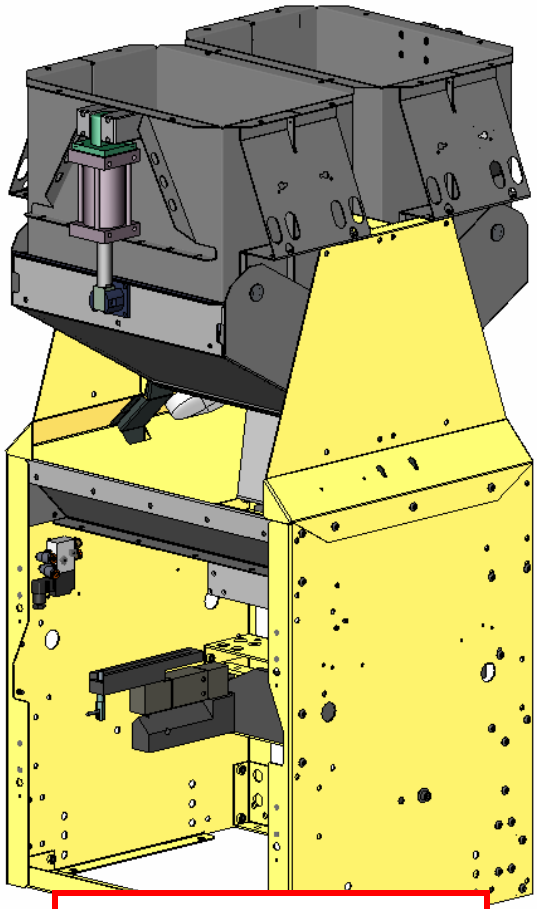




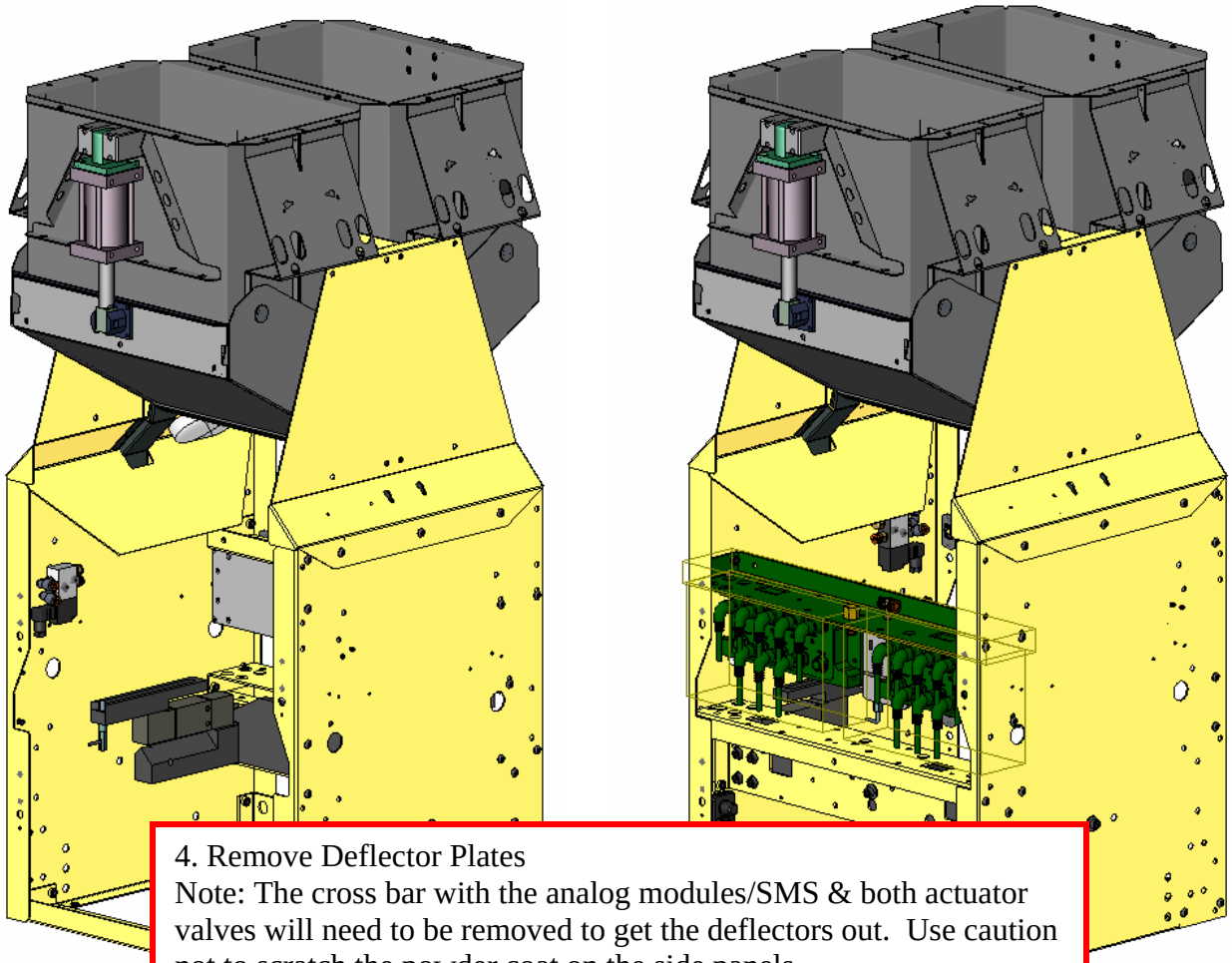
1. Remove front & rear doors



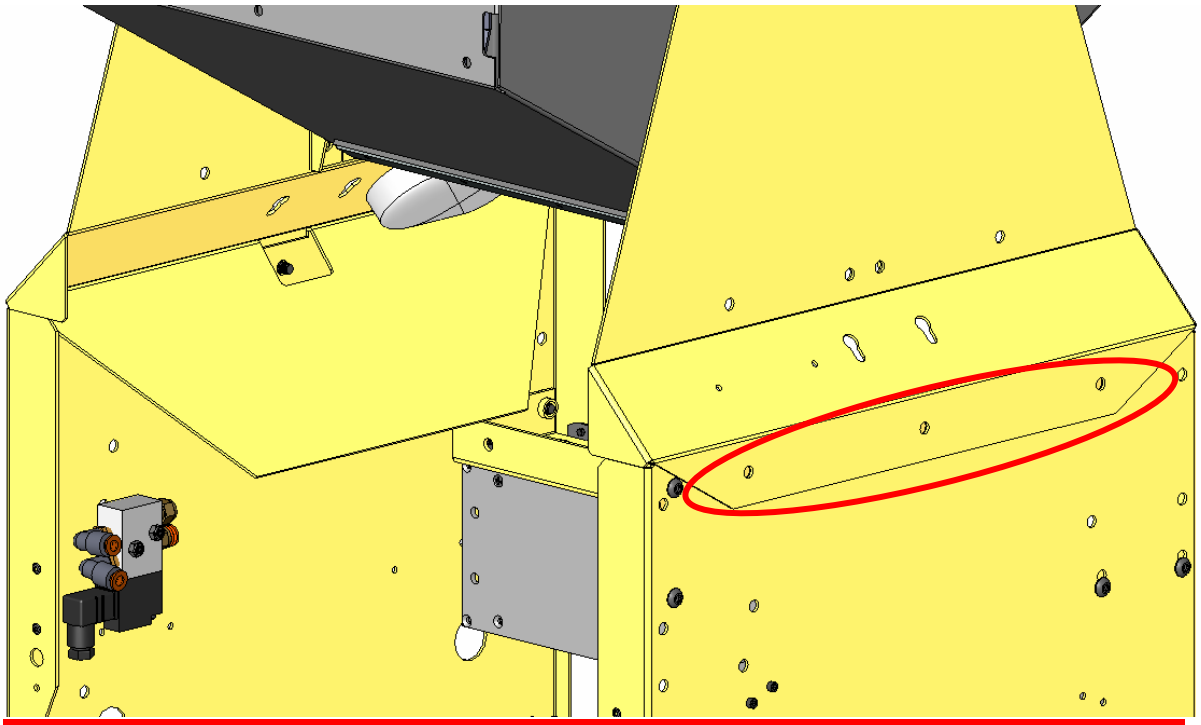
2. Remove Cross-bar. Disconnect all air lines and cables going to the weigh bucket.



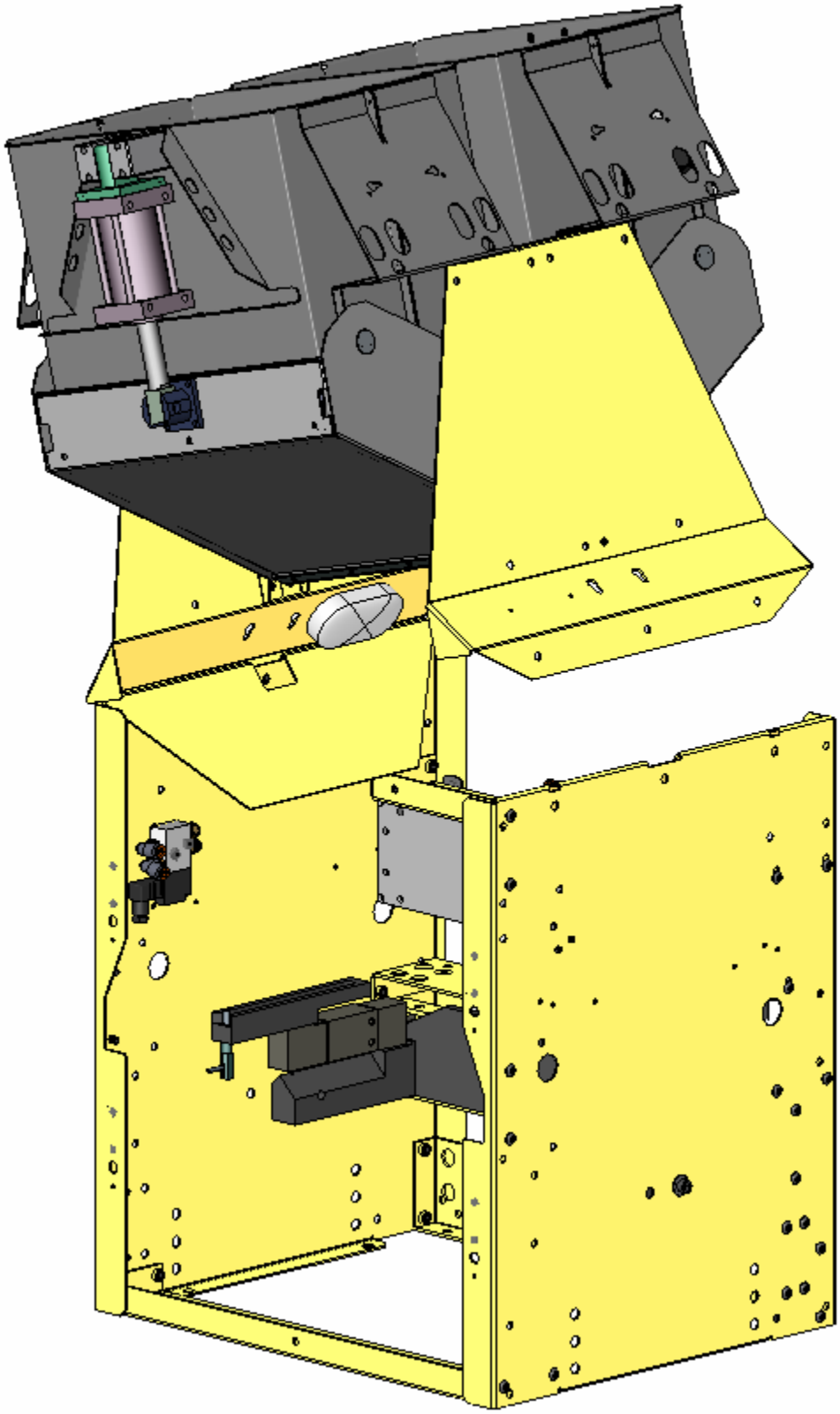
3. Lower Plunger Pins & Remove weigh bucket



4. Remove Deflector Plates
Note: The cross bar with the analog modules/SMS & both actuator valves will need to be removed to get the deflectors out. Use caution not to scratch the powder coat on the side panels.



5. Remove the three twin mounting screws on one side and then loosen the three on the other side about 3 turns. (Be sure that the screw is still securely in the threads) Also remove the cable guards. Unhook all cables/hoses from the twin and move them out of the way of the cutting operations.



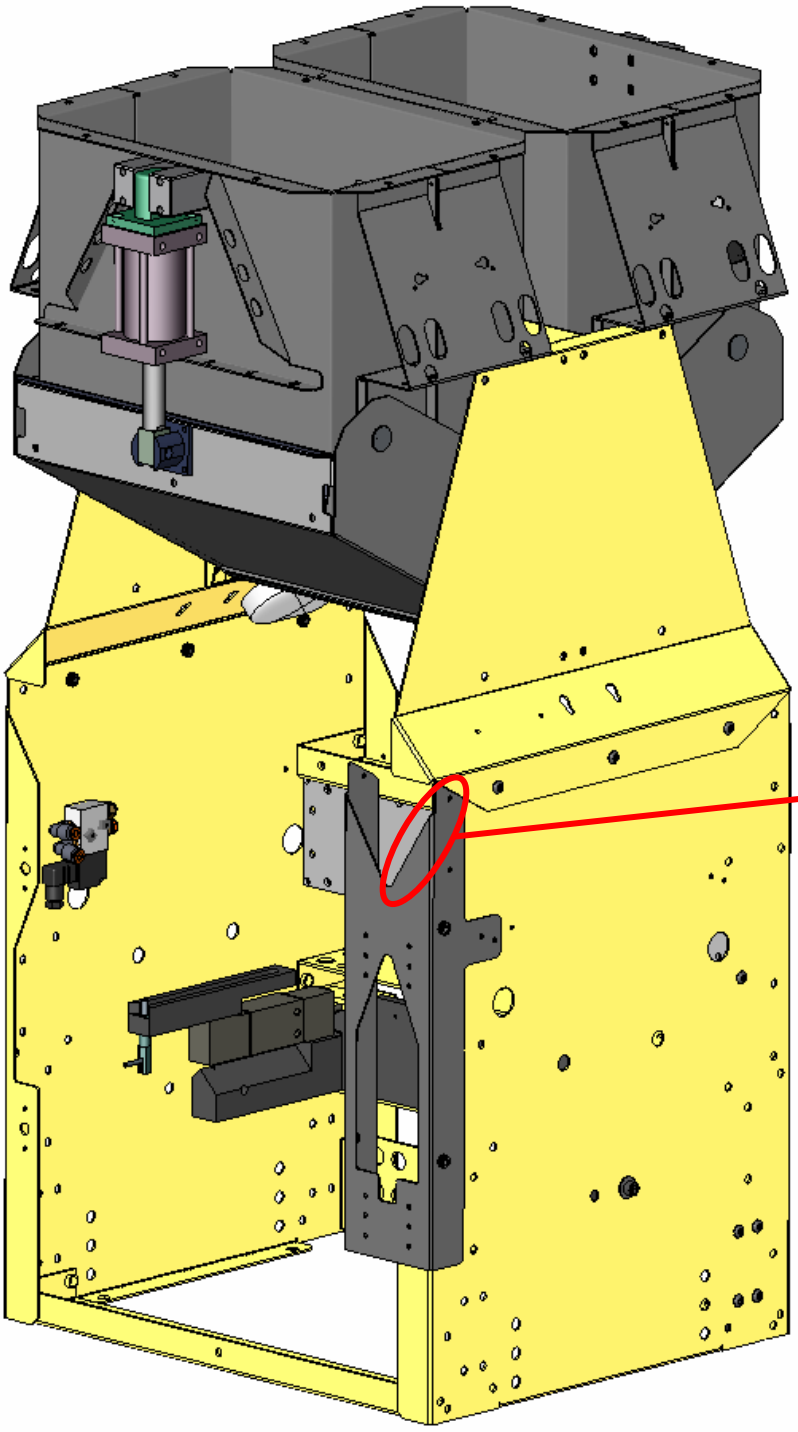
6. Tilt the twin as shown and place wooden block (3-4 inches) to support it temporarily.

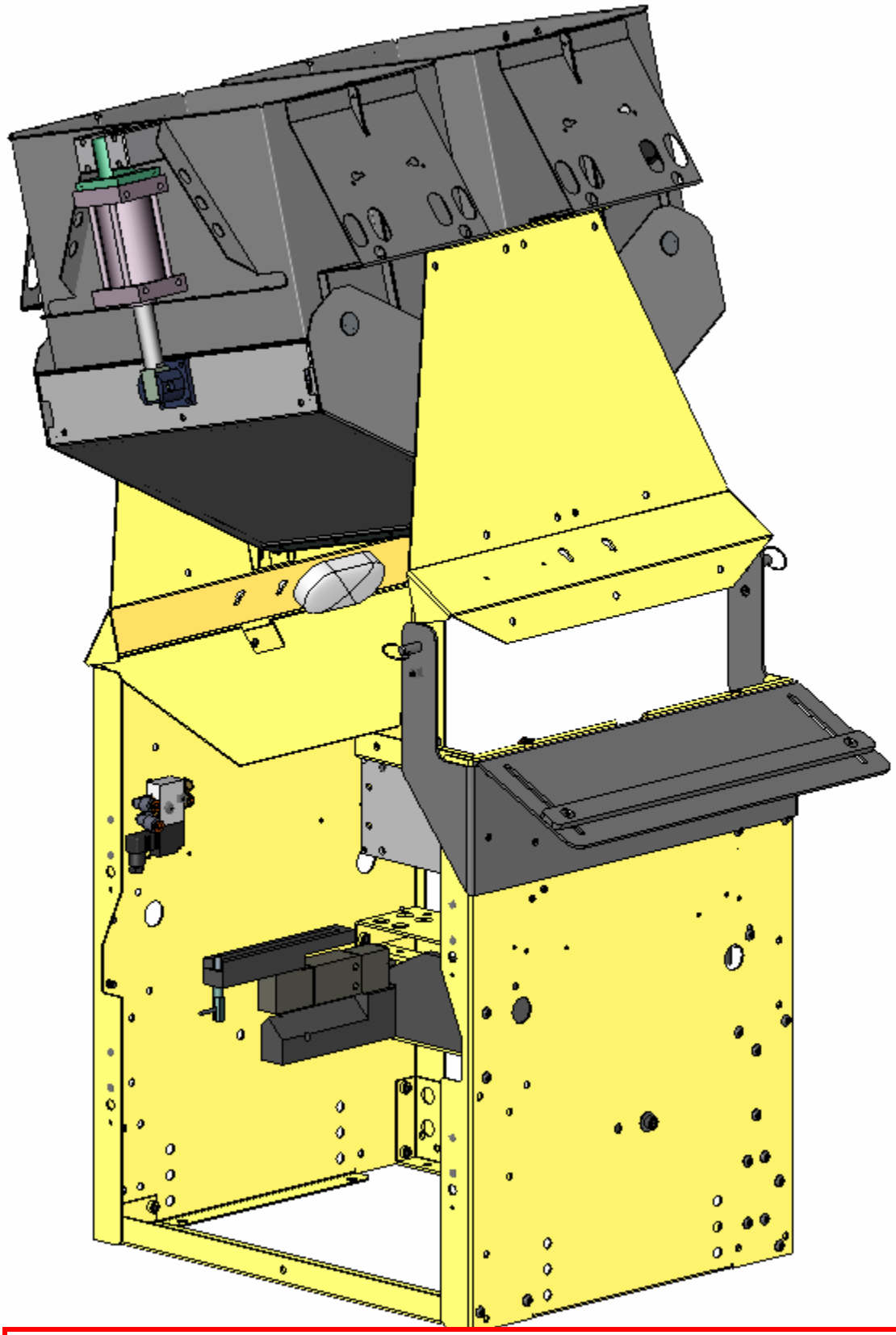
7. Note: Although this operation is probably easier to do with the twin lifted, it is also possible to do it with the twin down as shown in the picture.

Install the 22336 Side Panel Modification Template as shown using two ¼-20 bolts.

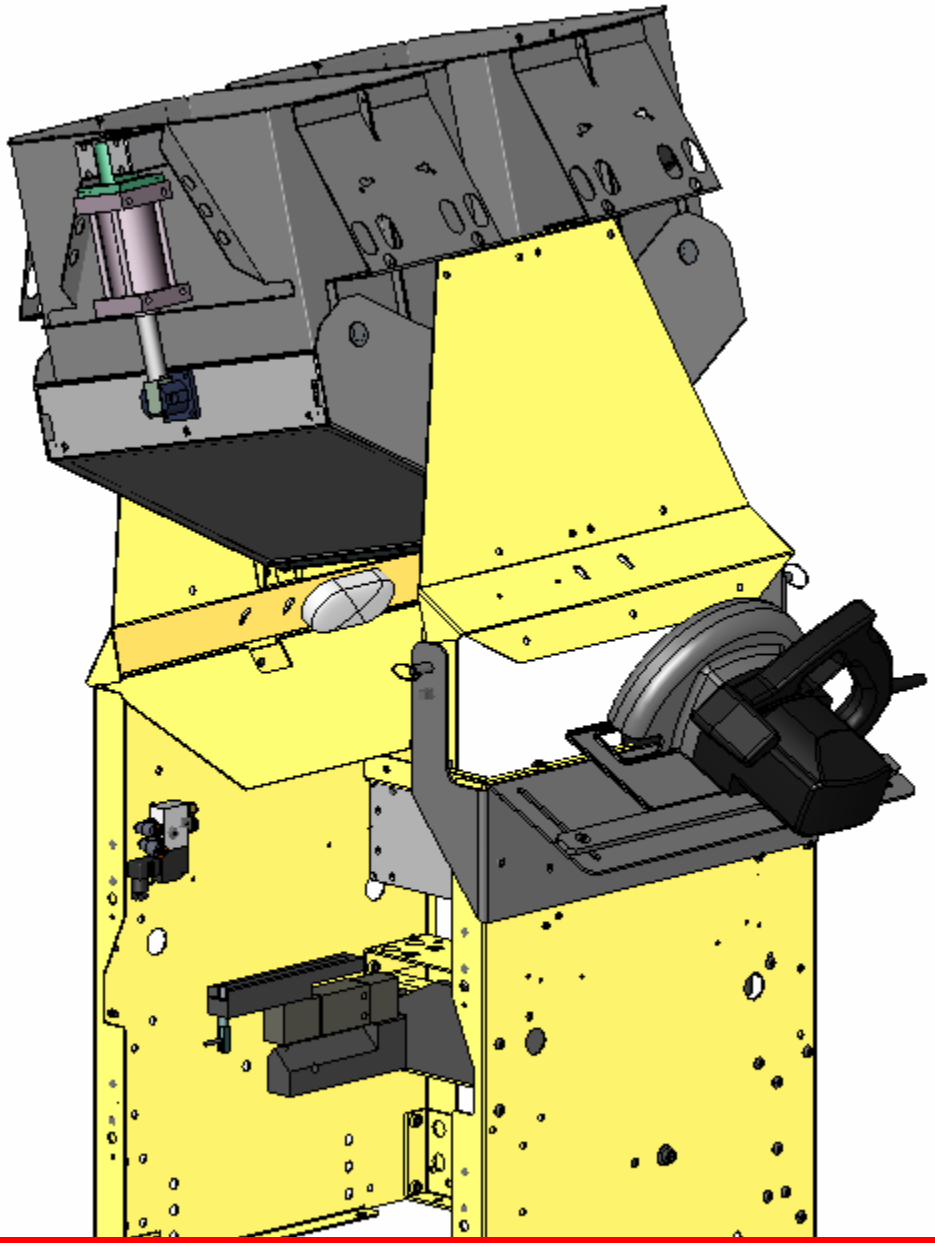
Mark the side panel flange along the fixture where it needs to be cut. (Only mark inside the red ellipse. For bucket extensions only, this is all that needs to be cut.)

Using a number 19 drill bit (0.166in diameter) mark the ***top two center marks only***; holes to be drilled out later. (Only the holes in the red ellipse)





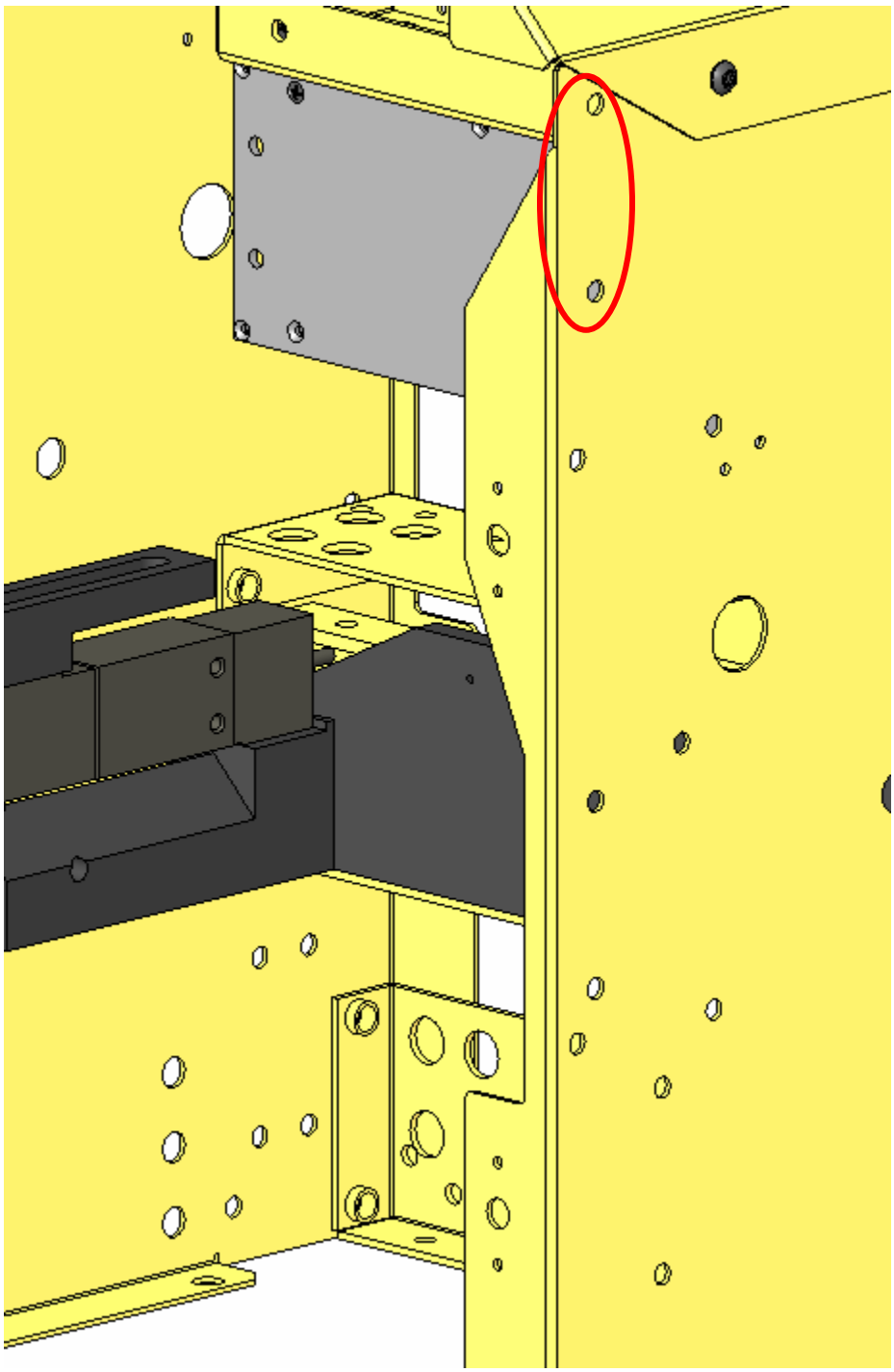
8. Install 22340 Side panel deflector fixture as shown using (2) holes and two ¼-20 bolts and nuts from the deflector plates that were removed previously. Once installed, place the quick pins from the fixture into the holes on the fixture as shown. Remove the wooden block and let the twin rest on the fixture.



9. Use the depth feature on the saw and set the depth to zero (blade not protruding) and then place the saw on the fixture with the fixture guiding it as shown. Check to make sure the fixture is adjusted properly. (The blade should be lined up with the center of the radius of the side panel deflector bend.) Once all is set, then loosen the depth feature on the saw and carefully plunge into the panel a little ways and then cut the deflector off. Be sure not to over cut at either end as this would damage the fixture and the customers side panel.

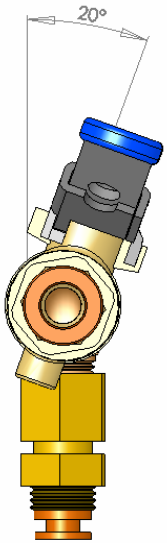
After the cut has been made, use a grinding wheel to remove the sharp edges and burrs from the cut. Use caution not to remove any more powder coat than necessary or damage the fixture.

Remove the fixture and repeat the procedure (***with both fixtures***) on the other side. (Be sure the opposite side of the twin still has the bolts loosely installed.) The touchup paint will be added later. Be sure to reinstall the twin bolts with thread locker and tighten them down properly.



10. Drill sizes as shown (approx 0.266 for top two) from the marks made previously. Only the two holes in the red ellipse need to be drilled out.

11. Remove old shut off (slide style) valve bulkhead union fitting (the piece that mounted to the system) and the male to male adaptor that connected the old valve to the bulkhead union if it is not in the old valve (it could have stayed with either piece when it was taken apart). Follow instruction below to assemble the new valve.



New Air Valve Assembly:

Evenly wrap some *Teflon thread tape* on both ends of the *Brass Elbow ¼ NPT Male x Male (22358)* and screw it into the *Vented Brass Ball Valve ¼ NPT Female (22357)*. Screw it into the end opposite the valve handle (when open). Screw the other end into the *Bulk Head Union Fitting (7584.)* Tighten securely.

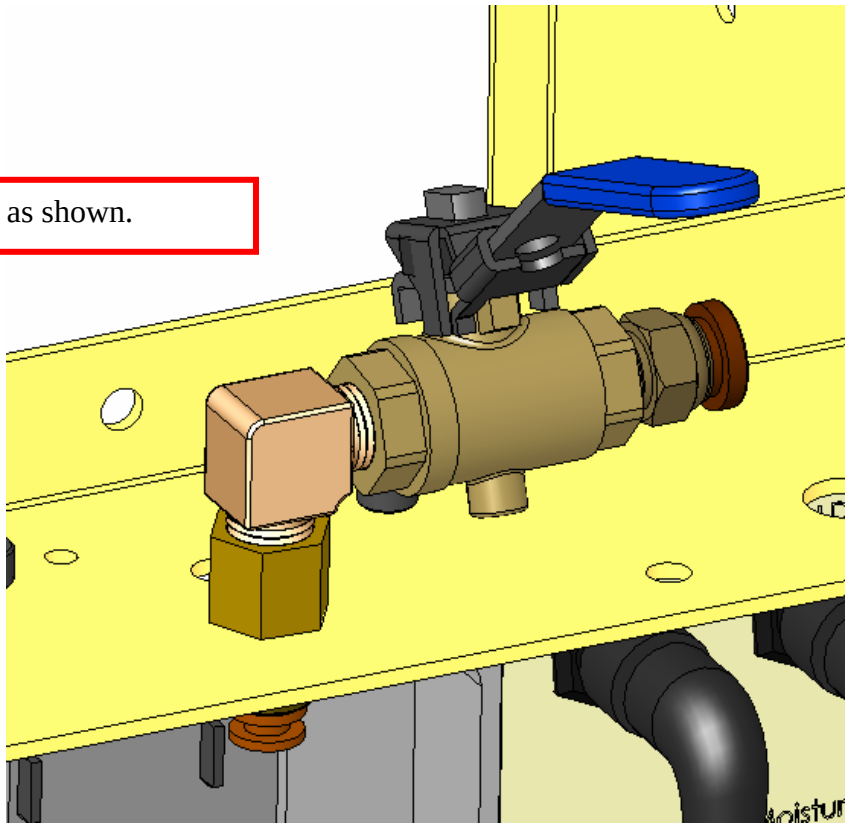
Insert the *1.4" NPT fitting (9569)* into the other port on the shut-off valve assembly (*22357*). Tighten the valve so the elbow is about 20deg off from the bulk head union fittings as shown (left).

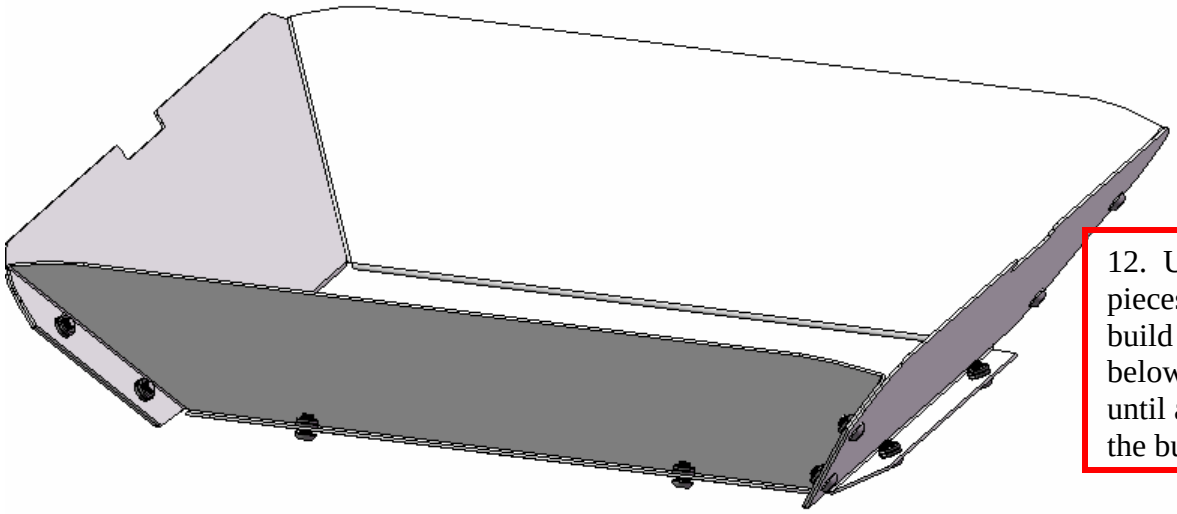
Place the shut off valve assembly into the ½-inch hole in the center (or side) of the crossbar (if that is where the old valve was located) and tighten the brass lock nut securely.

The valve will appear to be mounted upside down. This is normal.
After tightening the lock nut, check the tightness of the shut-off valve assembly once more and tighten as necessary.

Align the shut-off valve in line with the crossbar as shown in figure 6.

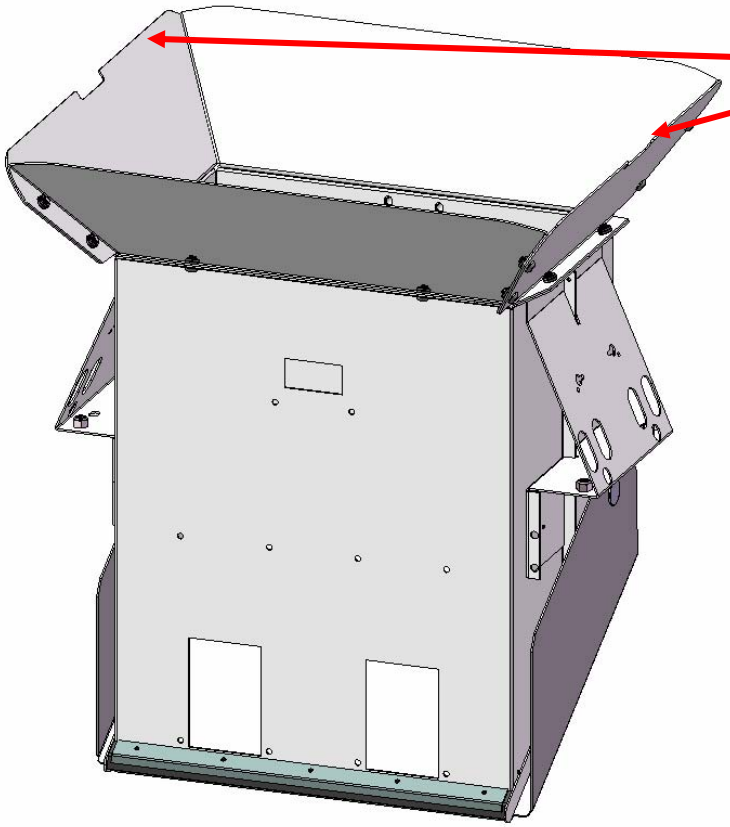
Install the new valve assembly as shown.





12. Use Loctite and the four pieces and fasteners provided; build the bucket top as shown below. Wait to tighten the bolt until after the top is installed on the bucket.

13. Using Loctite and the remaining fasteners, bolt the bucket top to the bucket as shown. Measure from corner to corner on opposite corners in two directions to verify that the extensions are square. If they are not, then loosen and adjust appropriately.



14. CAUTION**!** Care must be taken when inserting the new bucket into the HCGG as these edges may be sharp and can cut the cables and hoses from the top assembly. This must also be considered when removing the bucket later.

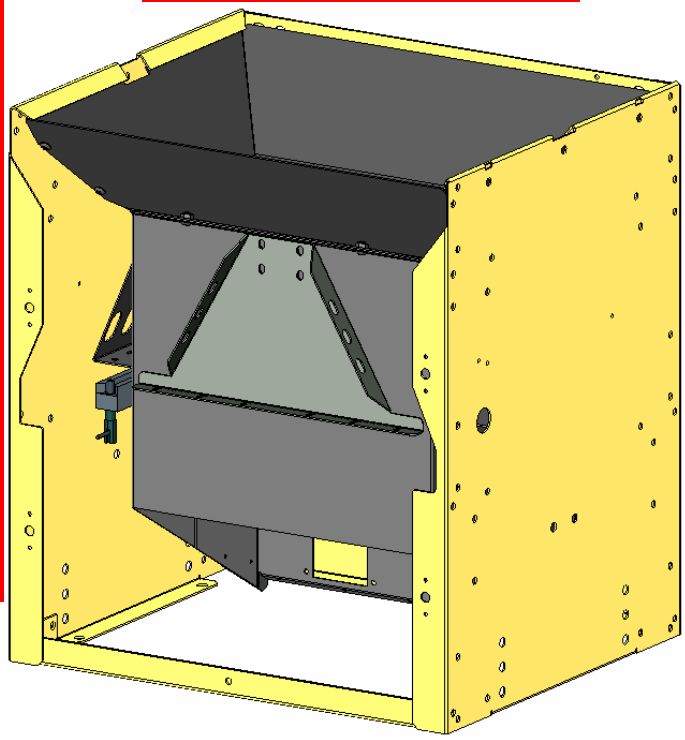
15. Trim the rubber grain deflector from the twin buckets so that they can't set on top of the grain being weighed. (The rubber should protrude from the bucket about ½" so that it is similar to the edge of the weigh bucket door seal as shown below)

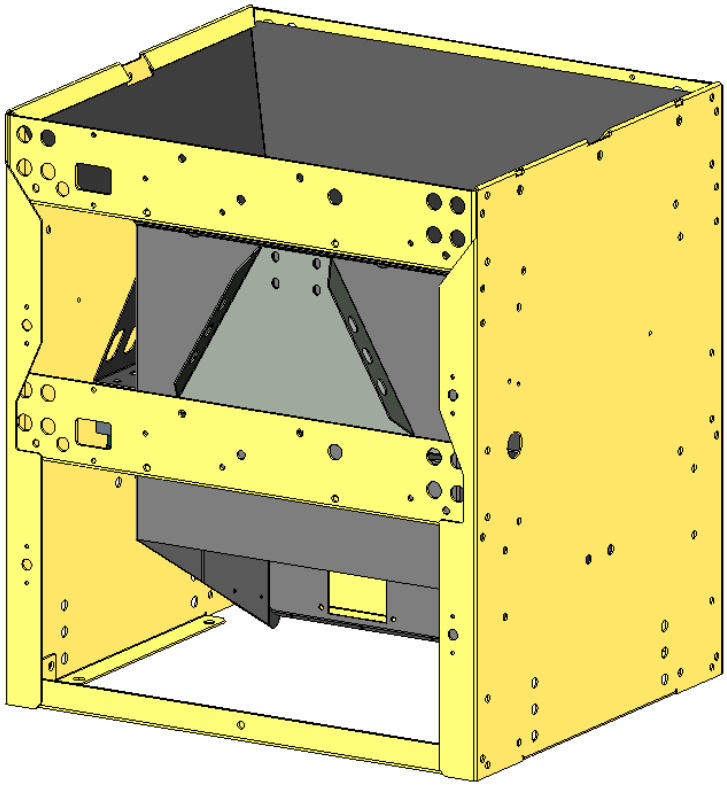
Clean up the grain gage from the grindings and any other messes that were made on the equipment.

Install new cable guards provided and make sure that all cables and hoses are held securely but not pinched. This should be done before the bucket is inserted or the bucket extension edges may cut the cables.

Also re-install the actuators. Reconnect any hoses, cables, connectors as needed. Be sure that the twin cables are routed properly.

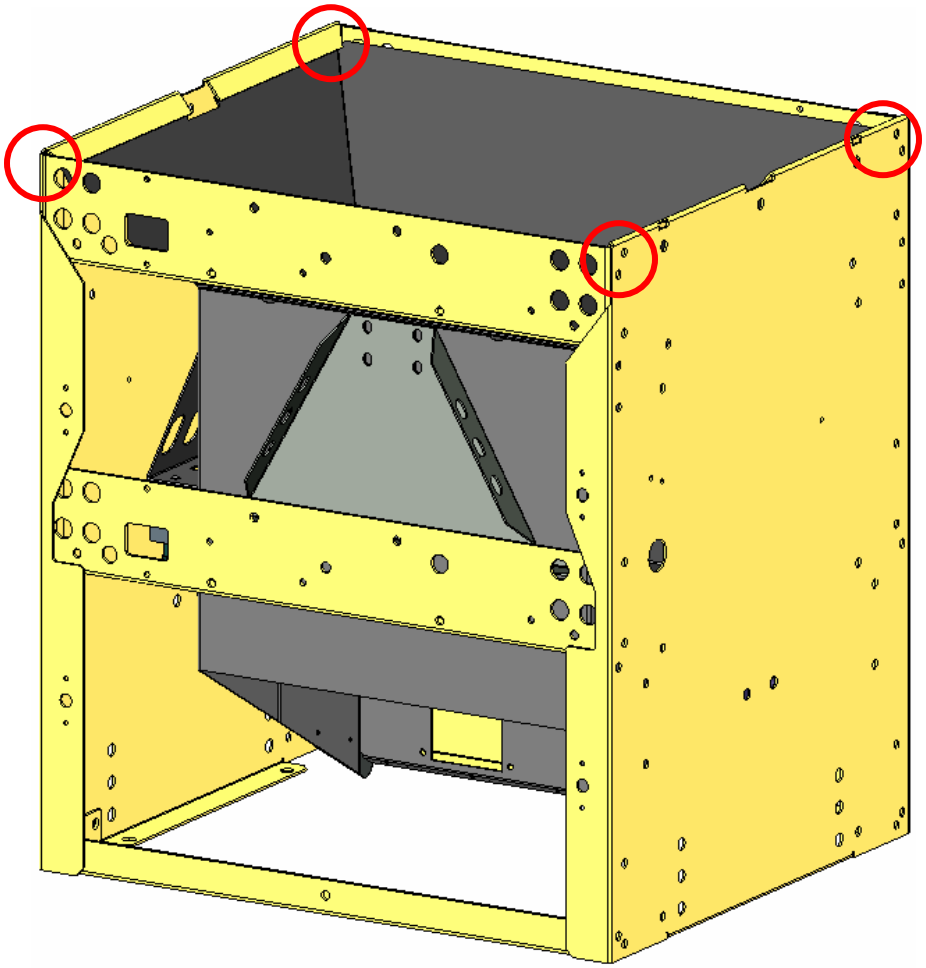
16. Insert Bucket into HCGG as shown.





17. Insert the last two cross beams as shown below. (One from the original assembly and one from the kit) Use the 13175 (1/4-20 x 3/8 SS Button Head Hex drive) provided in the retrofit kit so that the ends do not interfere with the bucket extensions.

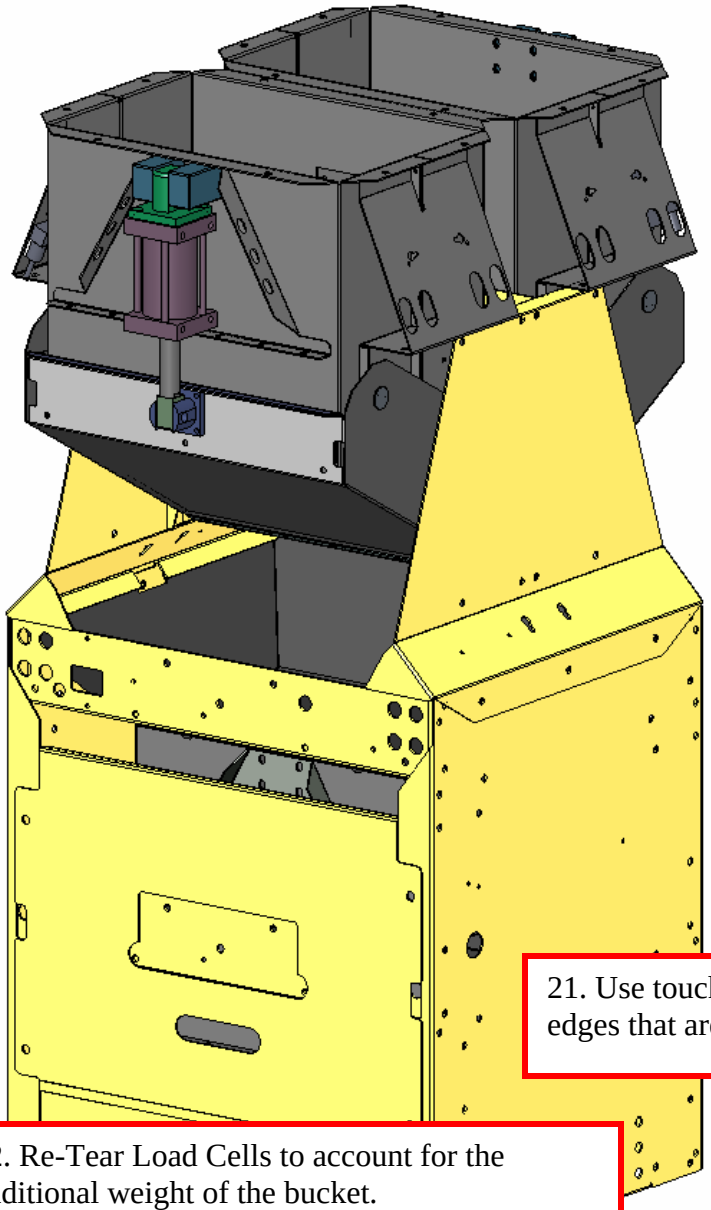
18. Check the areas indicated and also the entire perimeter of the bucket top to make sure that the bucket is free from interferences from the frame.



19. Install cylinder stop collars on twin hopper assembly

See Appendix A for instructions.

20. Replace the doors and check Top assembly. Check again for clearances on the new bucket. Re-connect the air to the new valve and check to see that it works properly, including the venting when the valve is closed.



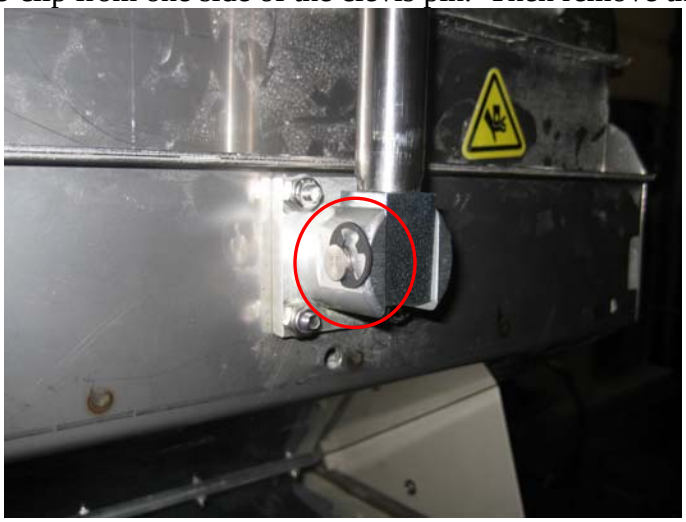
21. Use touchup paint as needed to cover the cut edges that are visible.

22. Re-Tear Load Cells to account for the additional weight of the bucket.
Test the system to make sure that it is functioning properly.

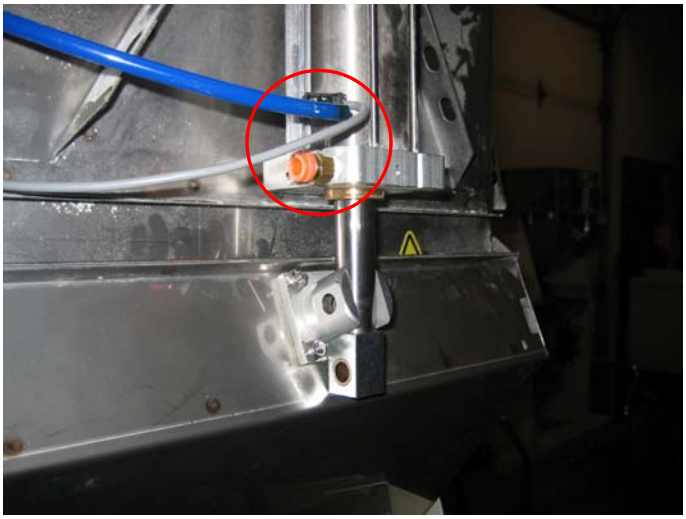
Bucket Extensions retrofit process complete.

Appendix A: Twin Hopper Cylinder Stops

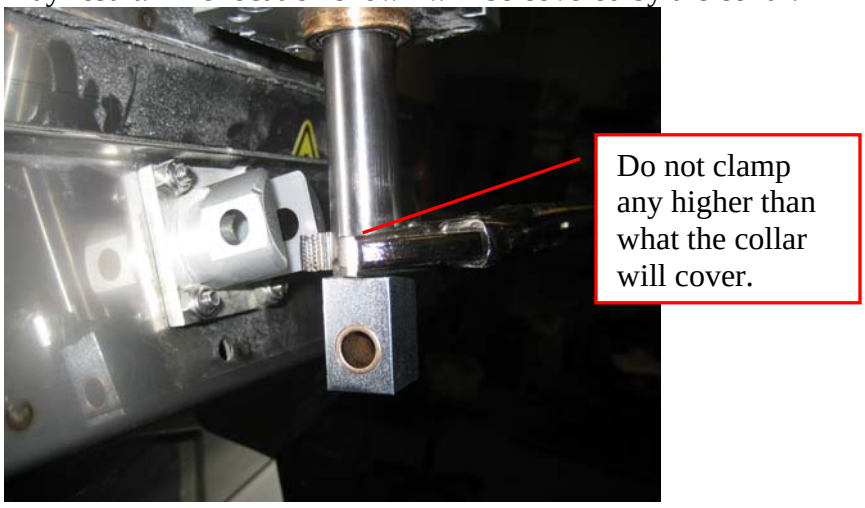
Locate the cylinder on one side of the twin hopper assembly.
Remove an e-clip from one side of the clevis pin. Then remove the clevis pin.



Unhook lower air hose as shown.



Clamp the cylinder with vise grips as shown. Be sure that the vise grips are as close to the end of the cylinder as possible or damage may result. The location shown will be covered by the collar.



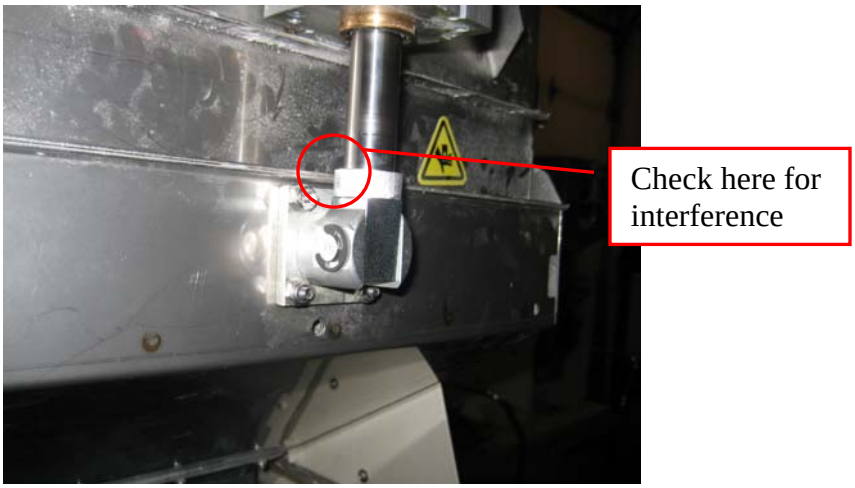
Use a crescent wrench to remove the pivot rod. Then remove the vise grips.

Place the 22438 Twin Bucket Cylinder Stop Collar over the cylinder as shown. It may have a tight fit but if aligned it should go on. The pivot rod can be used to screw it on all the way.

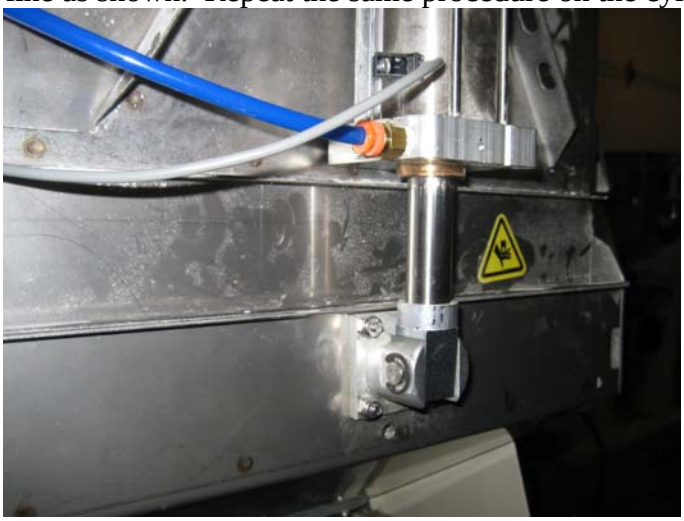
Start the pivot rod as shown and then add Loctite 242.

Place the vise grips over the collar as shown. They DO NOT NEED TO BE VERY TIGHT. Use the crescent wrench to finish tightening the pivot rod..

Remove the vise grips and re-insert the clevis pin and e-clip as shown. Check the door motion to be sure there are no interferences or problems, especially with the flange of the bucket. **If interference in found here, the collar must be ground down on that side to allow the bucket to close completely. Grind more than half way through the thickness of the collar wall.**



Re-attach the lower air line as shown. Repeat the same procedure on the cylinder on the other side.



End Appedix A