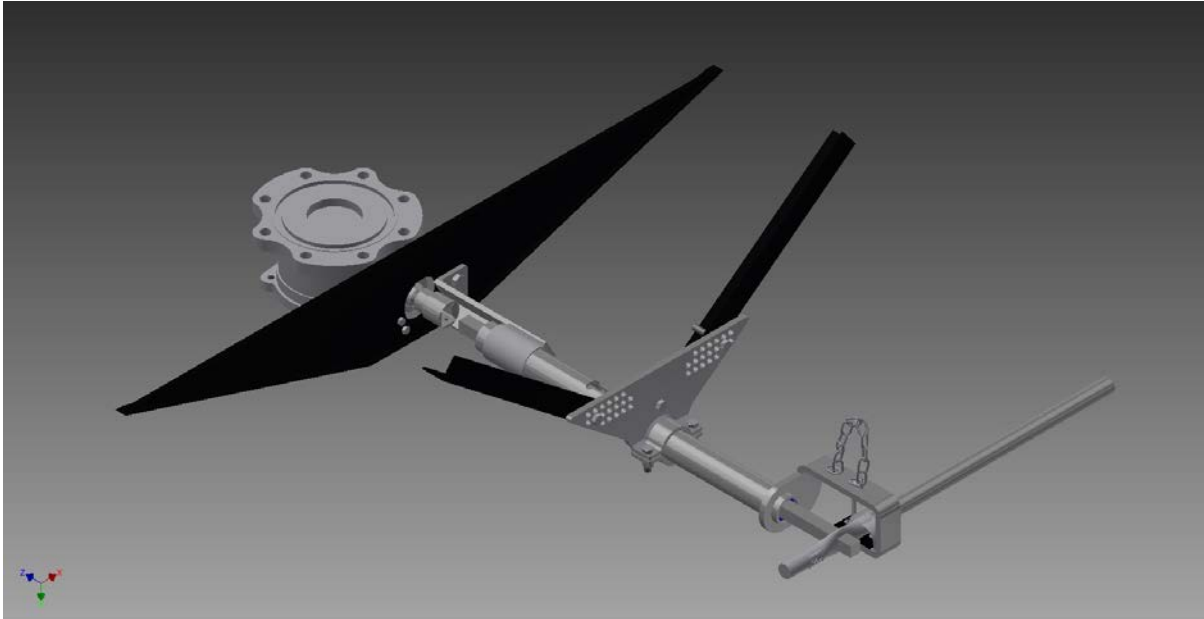




# INSTALLATION INSTRUCTIONS FOR BOVHKITCSJ08



PDP3.02.2 - Rev 5

1385 101<sup>st</sup> St., Suite A • Lemont, IL 60439  
(630) 783-2570 Fax (630) 783-2590  
22311 Hufsmith-Kohrville • Tomball, TX 77375  
(281) 351-0274 Fax (281) 351-1514

## TOOLS NEEDED

- Mag drill with a small footprint (ie. Jancy Slugger or DeWalt DWE1622K) or a 1/2" drill with a portable drill press attachment (ie. Rapidrill).
- Cutting fluid for drilling and fast-drying lubricant for spring pin.
- 7/16", 9/16", and 11/16" drill bits (1/4" bits for a pilot)
- Channel lock pliers with a 3-1/2" minimum jaw opening.
- Band saw and/or reciprocating saw
- 1/2", 9/16", 3/4", and 15/16" deep well sockets and wrenches.
- File, pry bar, dead blow hammer, center punch, and locking c-clamps.



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## HARDWARE

Zinc-plated carbon steel Grade 5 1/2"-13 bolts are supplied at 2-1/2" and 3" lengths for the mounting plate. If longer bolts are required, match these material specs.

Spacer washers are carbon steel, 9/16" ID and 1-1/4" OD. Thicknesses used for spacing are 1/8" (part # A41701), 1/4" (part # A41699), and 1/2" (part # A41847). Additional spacers can be acquired from Salco Products. It is recommended that additional spacers are purchased when kits are purchased so that installation crews have extras.



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# TOOL KIT

A tool kit is available with the necessary accessories for installing the handle:

- Pin set
- Drill fixture
- Skid hole plug
- 3/8", 1/2", and 5/8" standard carbon steel nuts



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CUT  
HERE

## REMOVE HANDLE

Remove the bolt and nut holding the handle to the valve stem. Cut off the bracket that locks the handle in place using a portable band saw or a reciprocating saw (cut just below the weld to avoid excessively dulling the blade). Slide the handle out and remove. Also remove the chain and locking pin from the old handle. Use a file to round any sharp edges.



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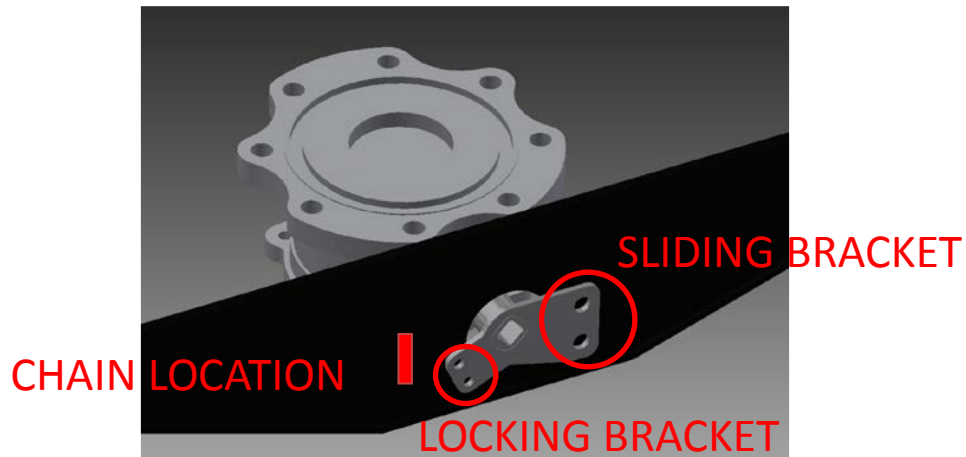
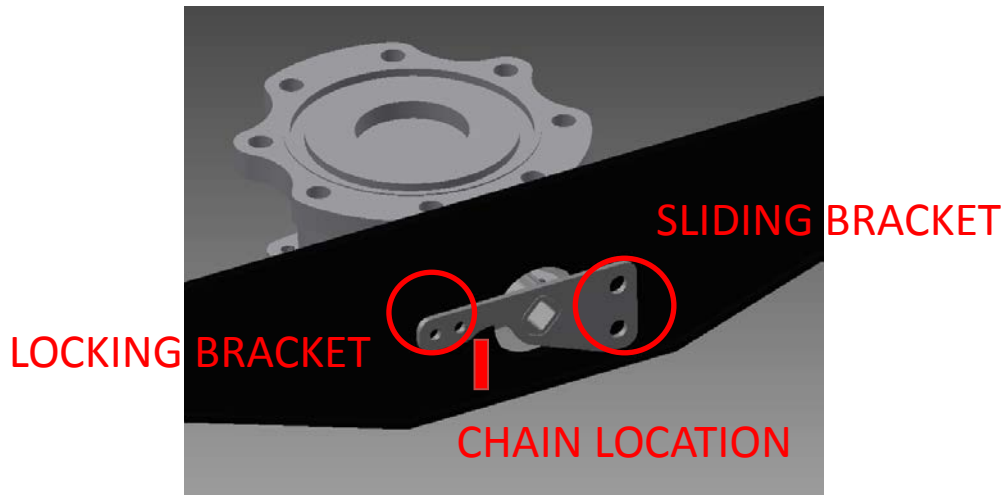
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## MARK HOLES FOR BRACKETS

Two drilling fixtures are supplied with the tool kit to avoid interfering with the outlet chain attached to the skid plate. Determine which set of mounting holes for the adapter locking bracket will work for the application. Slide the drilling fixture onto the valve stem, and press it flat against the face of the skid. Mark the two holes for the locking bracket and the two holes for the sliding bracket using a center punch. Drill two 7/16" holes in the skid for the locking bracket using a mag drill. Use the supplied steel plug in the skid hole to give the drill's magnet more material to attach to. Drill two 11/16" holes in the skid for the sliding bracket.



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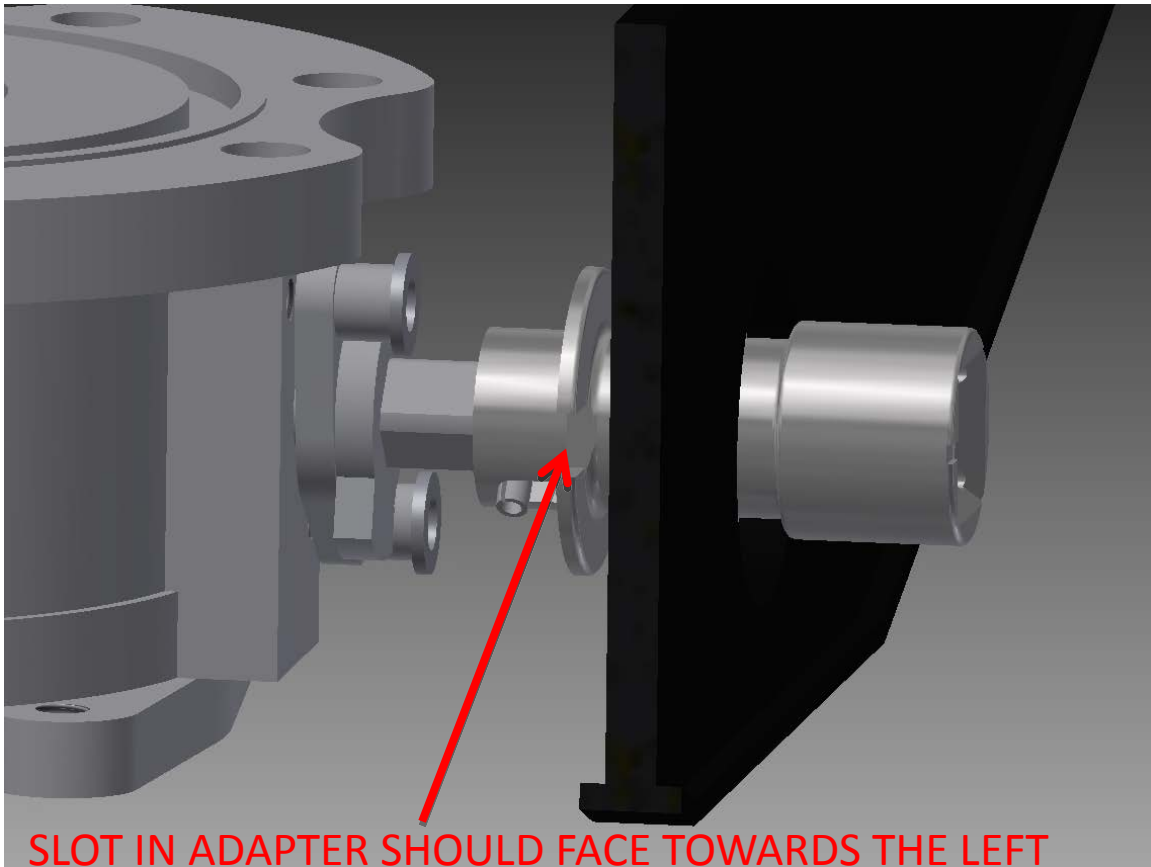
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## ATTACH THE ADAPTER

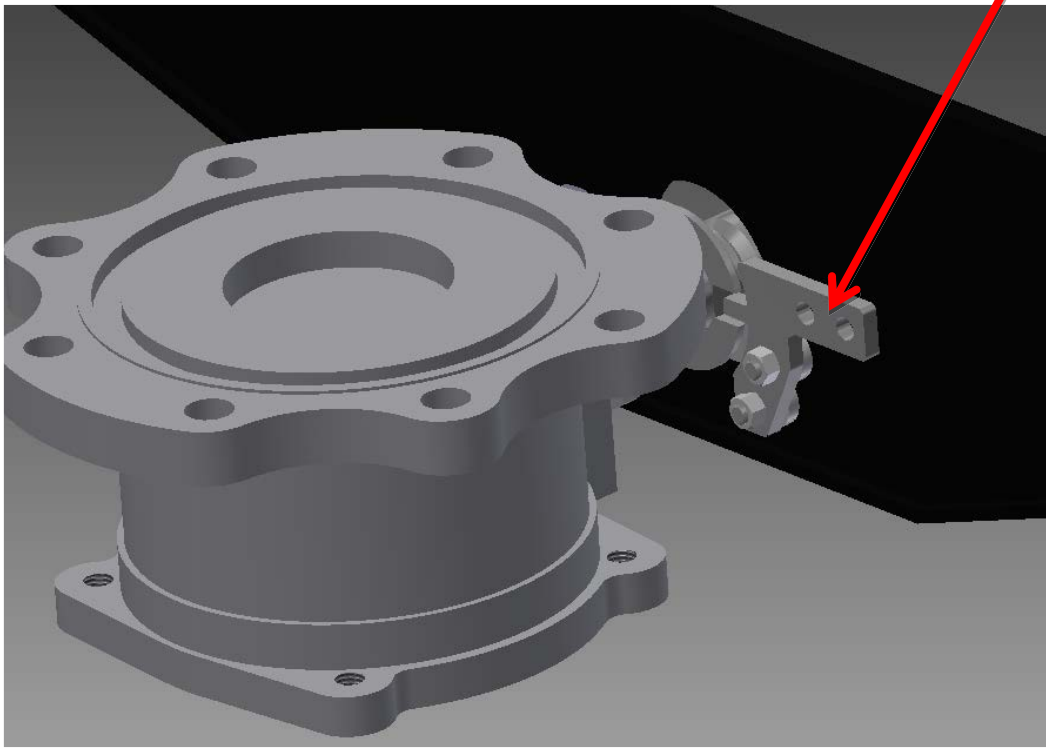
Install the adapter (B39388) onto the valve stem. Be sure to place the spring (A38818) inside the adapter before installation. Spray the spring pin (SP74343) with lubricant. Use the pin set (tool kit) to just hold the spring pin into the slot of the adapter and the hole in the stem. **Do not use the pin set to fully install the spring pin, or damage to the valve packing may occur.** Use a pair of channel lock pliers (minimum of 3-1/2" jaw opening required) to press the pin all the way through the adapter. Lubricate the pin to simplify this process.



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DEPENDING ON THE LOCATION OF THE OUTLET CAP CHAIN,  
YOU MAY BE BOLTING THROUGH THESE HOLES INSTEAD.



## ATTACH LOCKING BRACKET

Attach the locking bracket (A42501) to the inside of the skid using 3/8" bolts (HB13109) and nuts. Use standard nuts for now, and hand-tighten. **DO NOT USE THE LOCK NUTS AT THIS TIME!**



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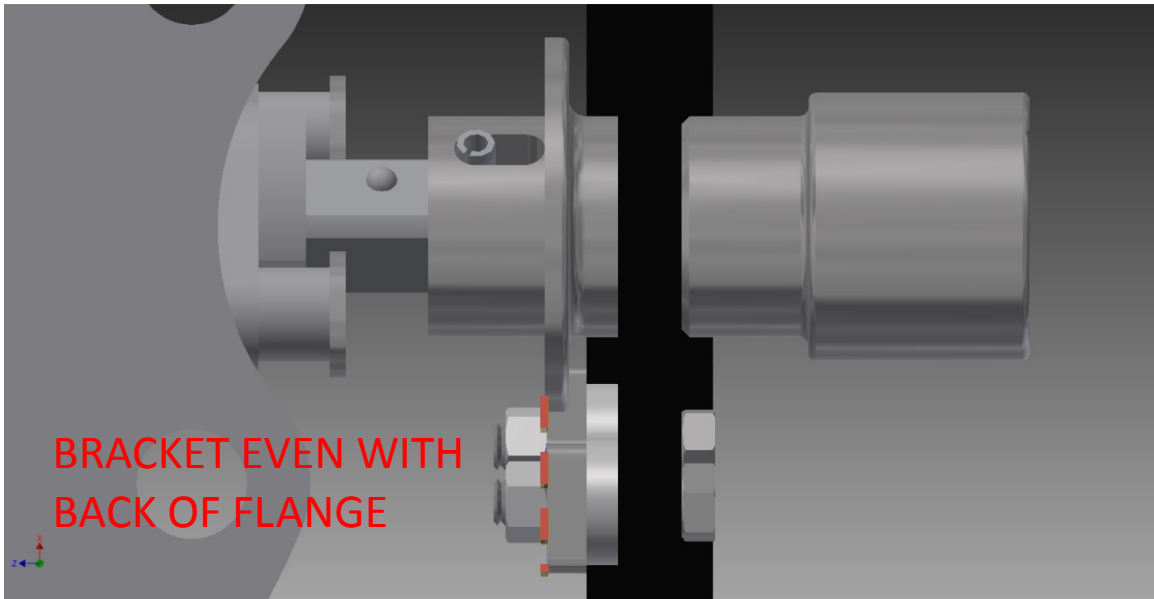
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## SPACE LOCKING BRACKET

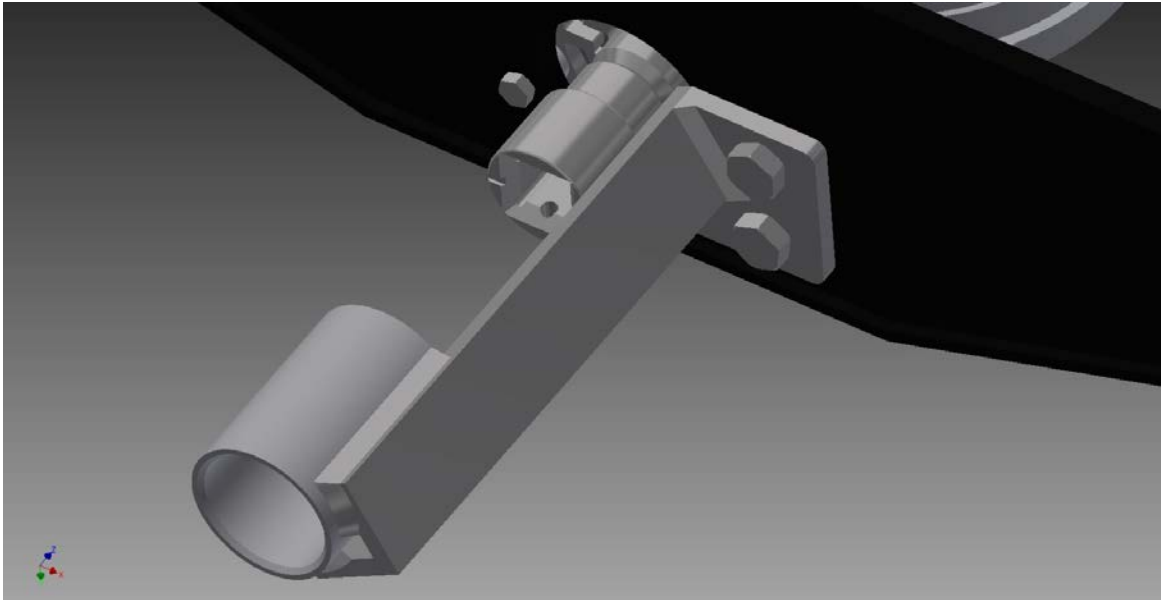
Stack the appropriate number of supplied 3/8” washers (KL103FW) between the locking bracket and the inside of the skid plate so that the bracket is even with the inside edge of the adapter flange. Once the proper spacing has been established, secure the bolts with lock nuts (LN77798).

Note: If the valve on the car is a Jamesbury 5RET, use the 3/8” spacers (A43069) and longer 3/8” bolts (HB13114) along with the washers and lock nuts from above to secure the bracket.



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## **ATTACH THE SLIDING BRACKET**

Bolt the sliding bracket (D42352) to the skid using 5/8" bolts (HB13310). Use standard 5/8" nuts for now. **DO NOT USE THE LOCK NUTS AT THIS TIME!**



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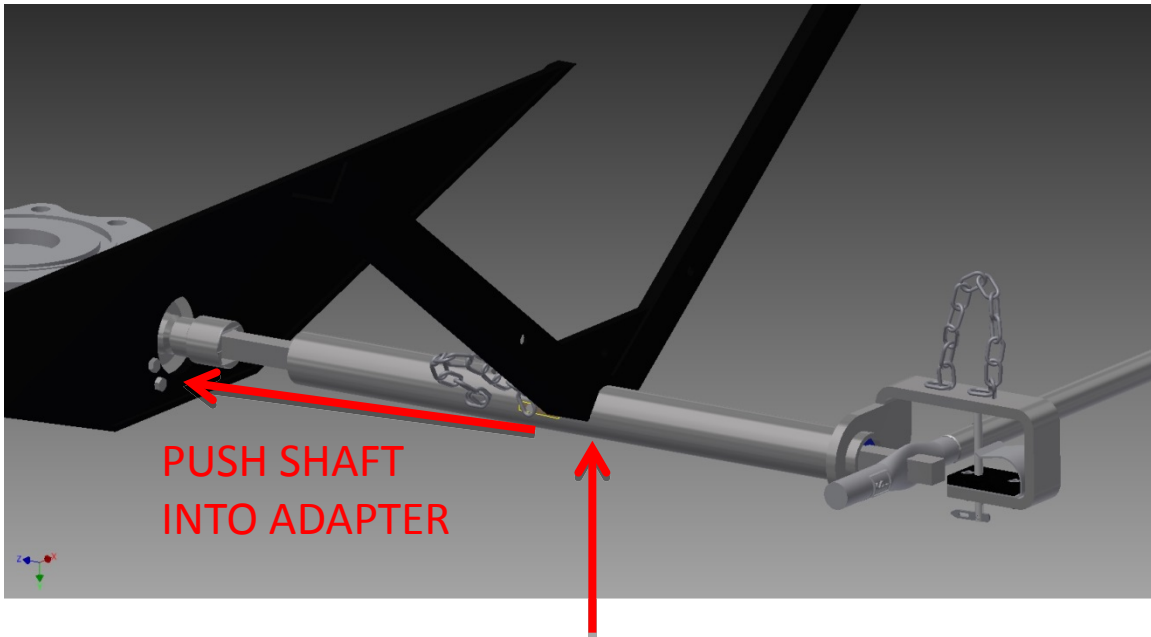
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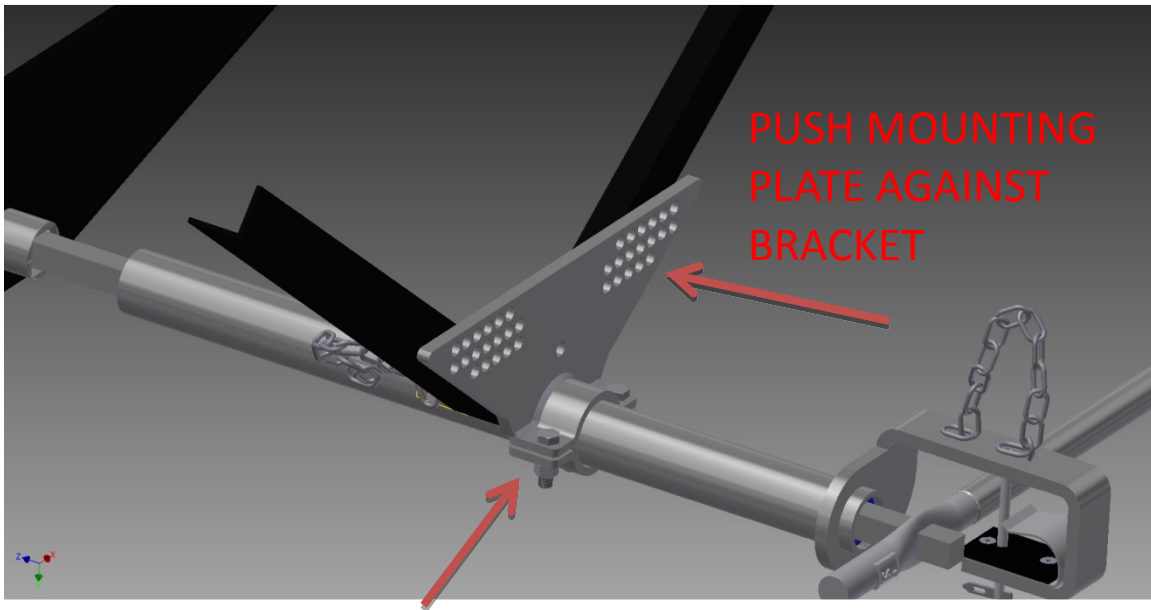
## **HOLD HANDLE ASSEMBLY IN PLACE**

Place the handle assembly (BOVHECS07) in place. Engage the shaft of the handle into the adapter to ensure that everything is in alignment. Press the mounting plate of the handle up against the angle iron bracket.



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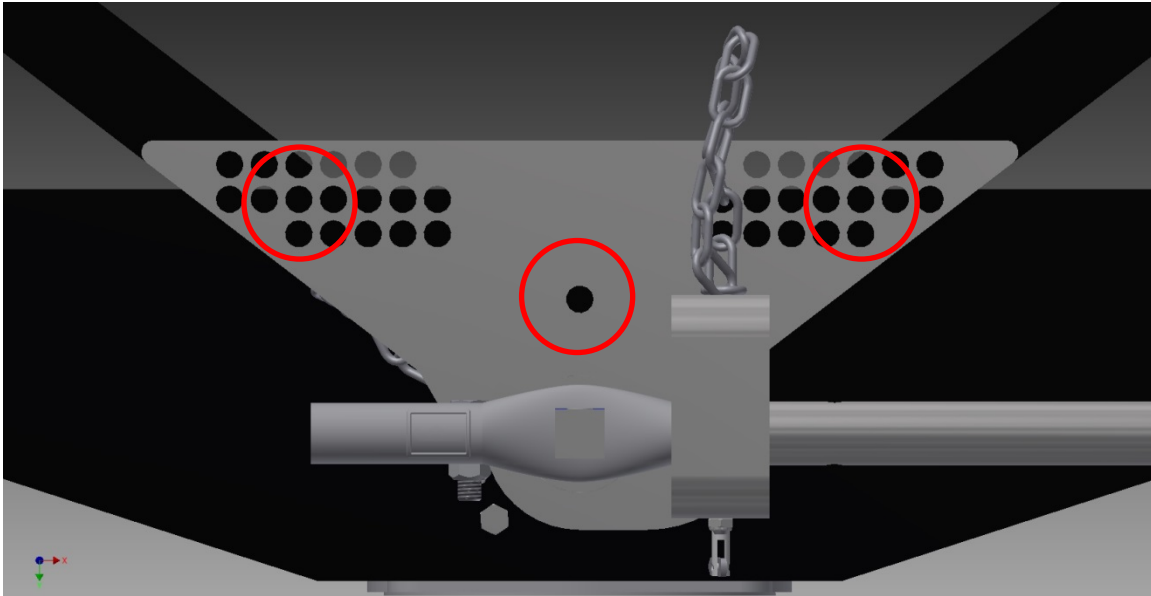
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**INSTALL THE COLLAR IN THE CLOSEST HOLE**

## **LOCATE ADJUSTABLE MOUNTING BRACKET**

While still holding the handle assembly in place, slide the adjustable mounting plate (C42343) down the tube. Place the pin of the collar (B42340) in the pipe hole that is closest to the angle iron brackets. Bolt the collar to the mounting plate temporarily with ½” bolts (HB13210) and standard nuts. Use C-clamps to hold the mounting bracket to the angle iron brackets.



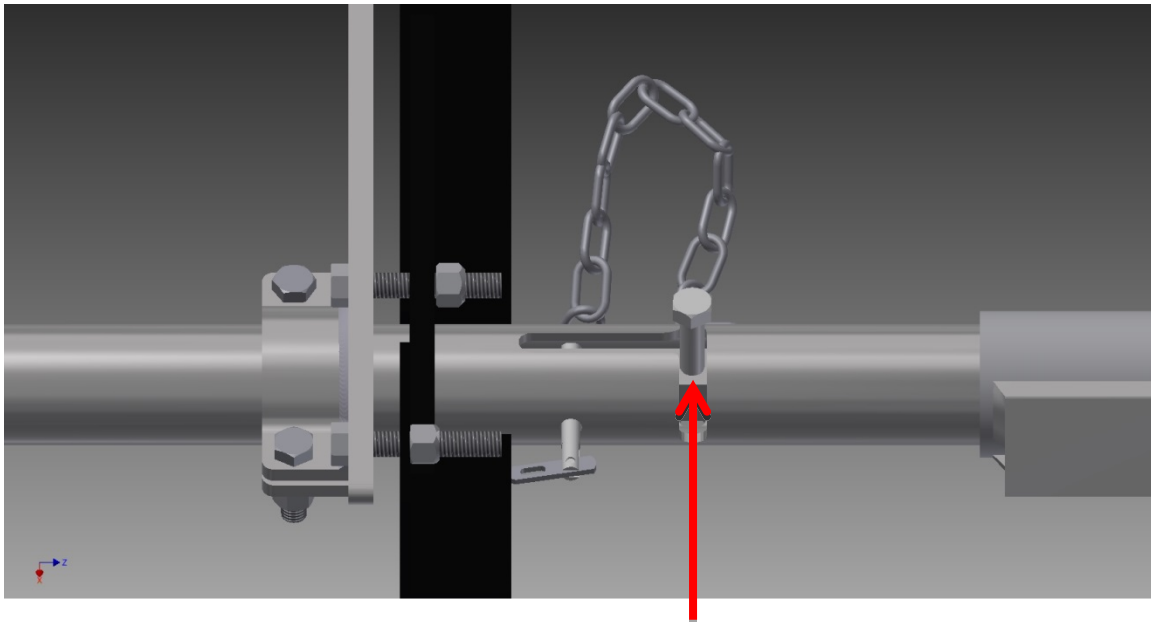
## MARK AND DRILL HOLES

Mark the location for three 1/2" bolts. Determine which of the array of holes in the upper corners matches up best with the center of the two pieces of angle. The center hole is also necessary. Remove the handle and drill three 9/16" holes.



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**ENGAGE SHAFT SO THIS BOLT IS AGAINST  
THIS FAR SIDE OF THE SLOT**

## **ALIGN HANDLE TO DETERMINE SPACERS**

Install the handle with three ½” bolts (TB1113824 – 3” L or TB1113823 – 2-1/2” L), and engage standard nuts just enough to keep them on. You want to be able to slide the handle back and forth easily. Push the shaft into the adapter until the shaft is fully engaged. The bolt (shown above) will be against the far end of the slot when this has been done.



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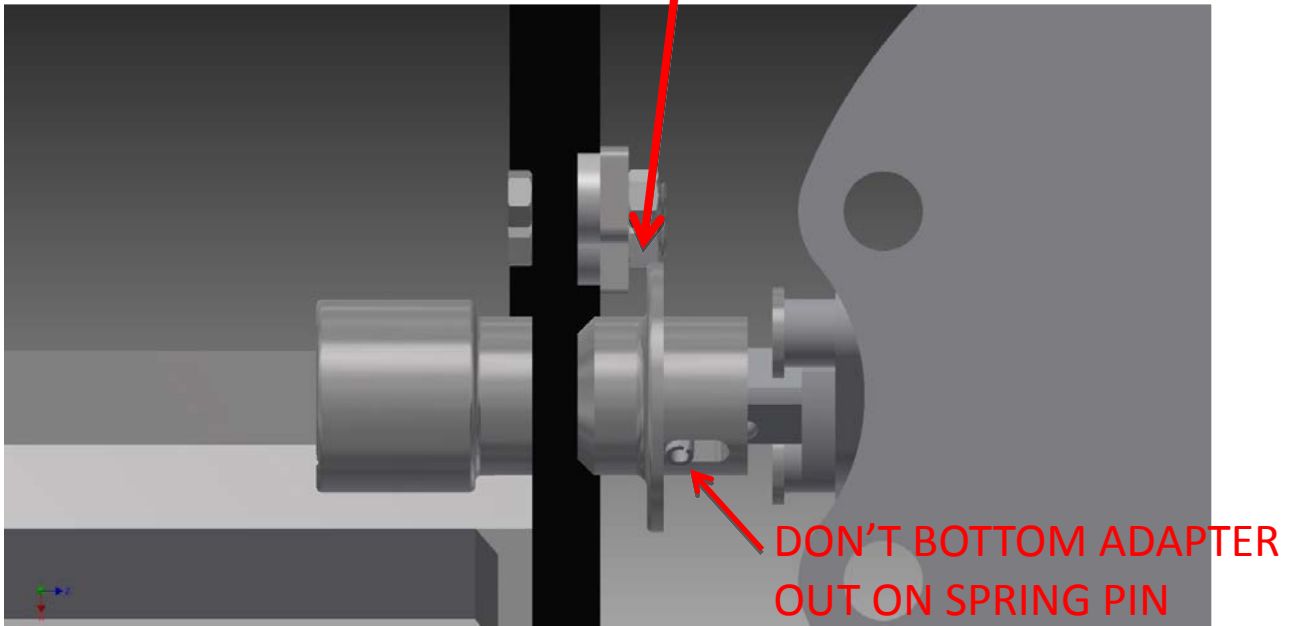
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ADAPTER FLANGE CLEARS  
LOCKING BRACKET



## ALIGN HANDLE TO DETERMINE SPACERS

Adjust how far in or out the handle assembly is so that when the shaft is fully pressed in (shown in last slide), the adapter is pressed in enough to clear the locking bracket. Make sure that the adapter is not 'bottomed out' with the spring pin at the end of the adapter slot. You will want a little bit of play here in case things move slightly or temperature affects the parts.



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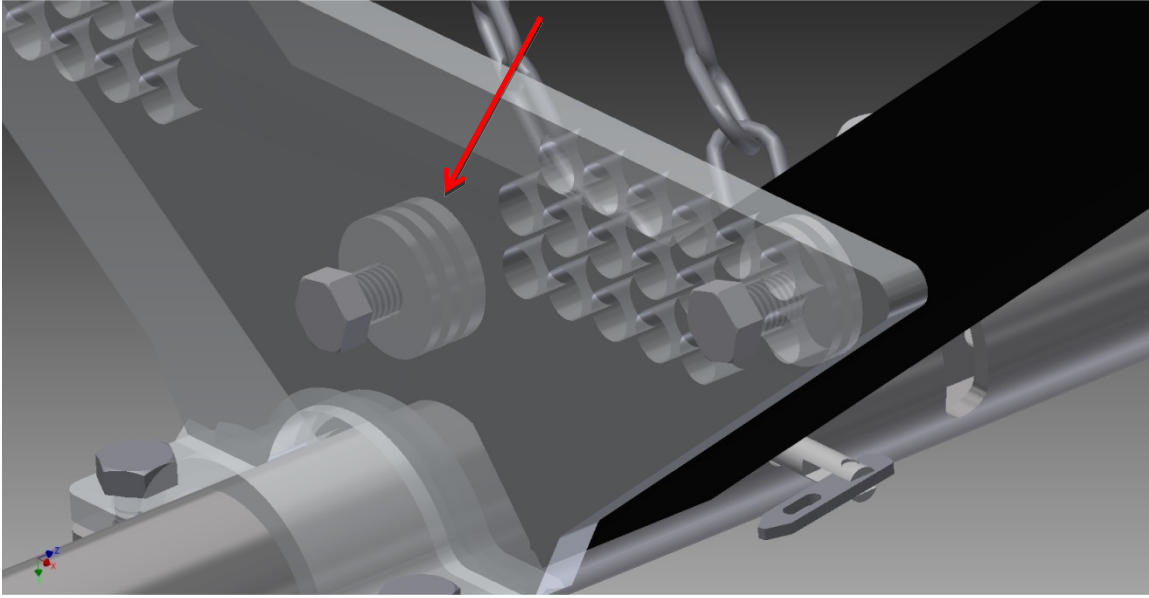
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**3/16" SPACER TO BRING THE CENTER  
HOLE OUT TO THE FACE OF THE ANGLES**



**PROPER SPACER STACKUP**

Determine which spacers you will need to use to make up your spacer distance. There are 1/2" (A41847), 1/4" (A41699), and 1/8" (A41701) thick spacers that can be stacked to make up the gap. Always use the thickest spacers you can to minimize the quantity of spacers on any one bolt. Place spacers behind each of the three fasteners. The 3/16" spacer (A41700) is intended go behind the center hole. This will bring the plate out even with the angle iron. You may need to add spacers unevenly in order to get the handle shaft to align perfectly with the adapter.

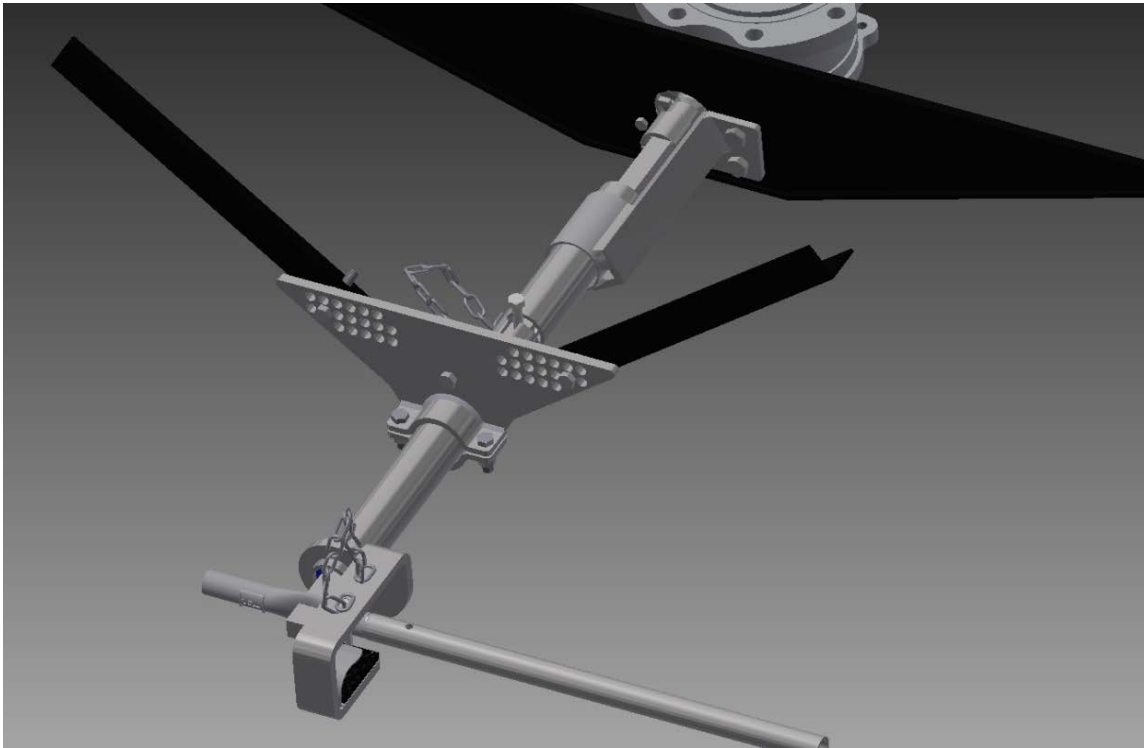


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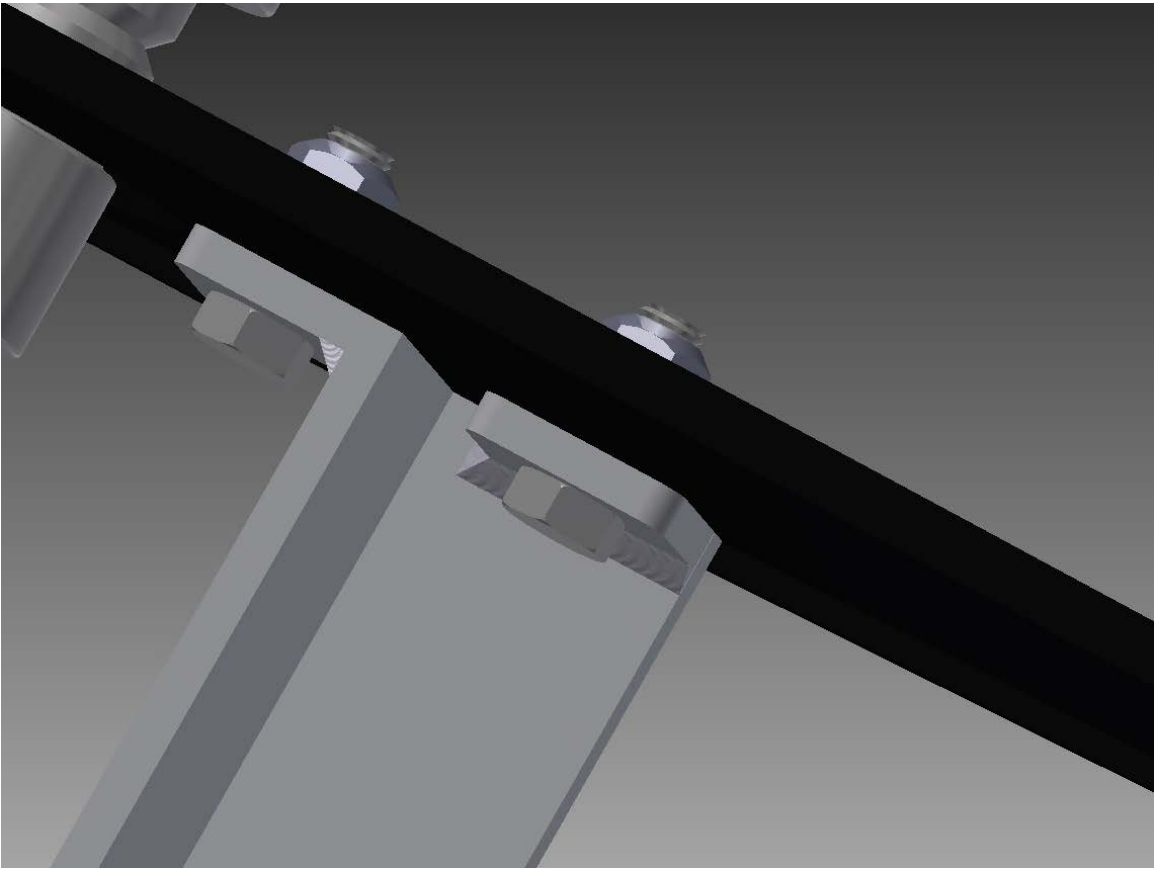
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## ATTACH HANDLE ASSEMBLY

Attach the handle assembly. Use standard nuts for now. **DO NOT USE THE LOCKING NUTS AT THIS TIME!** Tighten everything down and cycle the handle in and out several times to verify that it is engaging the adapter properly and everything has the proper clearance to open. If necessary, adjust the spacers as needed.



## **INSTALL LOCK NUTS**

Once you are happy with the fit and operation of everything, replace the five 1/2" and two 5/8" standards nuts with the thread deforming lock nuts (LN70800 for 1/2" and LN77802 for 5/8").



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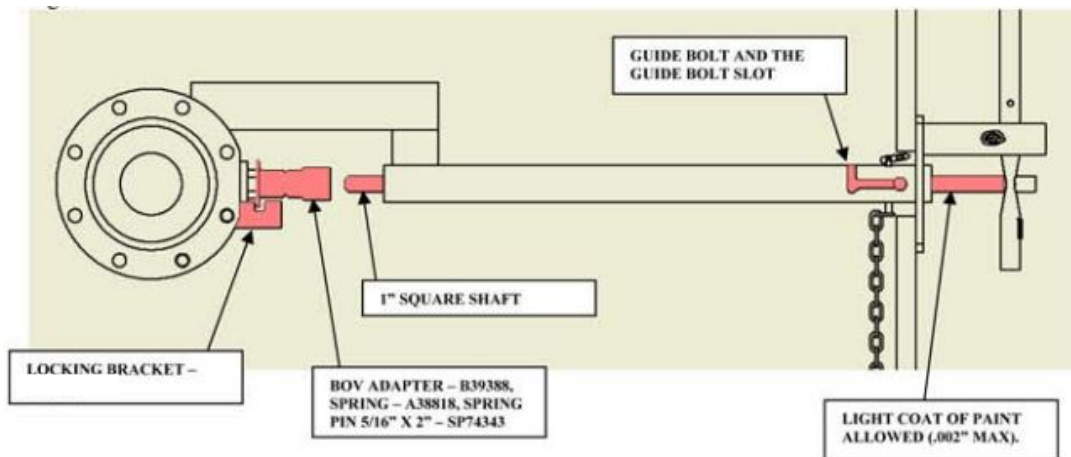
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# PAINING GUIDELINES

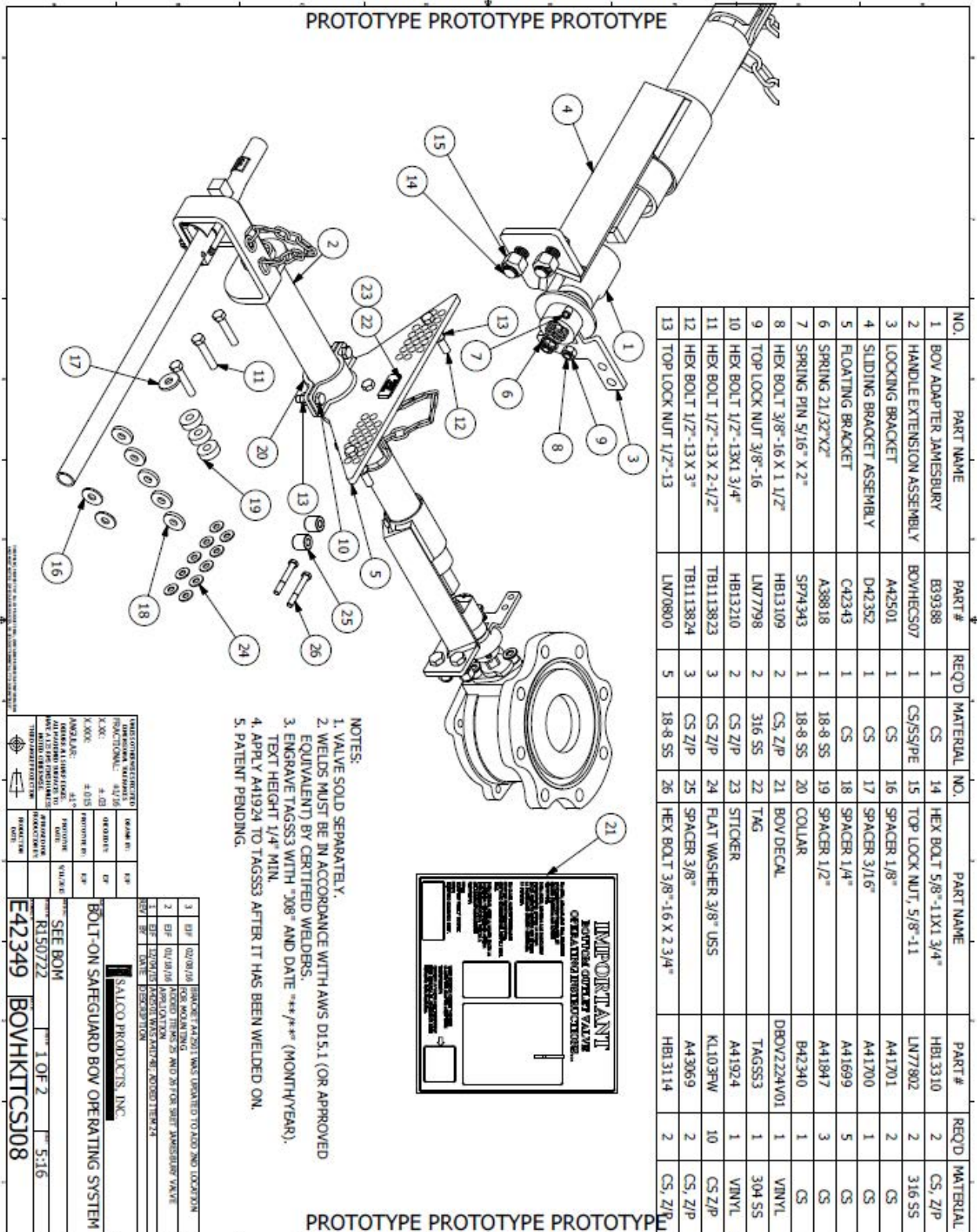


Follow the image above when painting the BOV handle assembly. It is recommended that all of the areas indicated in red are left free of coating to avoid negatively affecting the operation of the handle. Also, any areas on the car that were cut or drilled should be touched up.



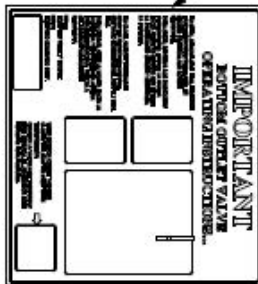
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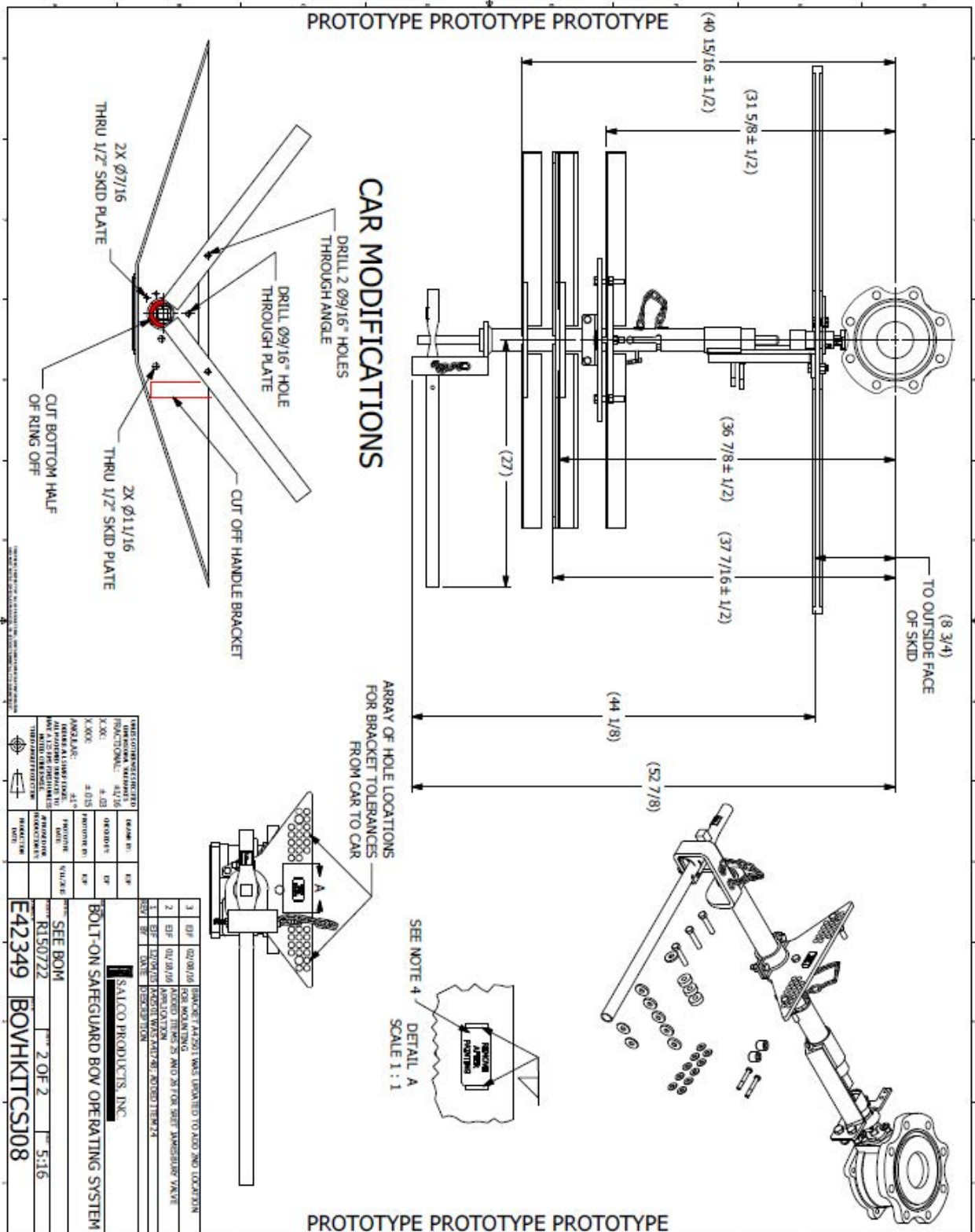


NO.	PART NAME	PART #	REQ'D	MATERIAL	NO.	PART NAME	PART #	REQ'D	MATERIAL
1	BOV ADAPTER JAMESBURY	E39388	1	CS	14	HEX BOLT 5/8"-11X1 3/4"	HB13310	2	CS, Z/P
2	HANDLE EXTENSION ASSEMBLY	BOVHECS07	1	CS/SS/PE	15	TOP LOCK NUT 5/8"-11	LN77802	2	316 SS
3	LOCKING BRACKET	A42501	1	CS	16	SPACER 1/8"	A41701	2	CS
4	SLIDING BRACKET ASSEMBLY	D42352	1	CS	17	SPACER 3/16"	A41700	1	CS
5	FLOATING BRACKET	C42343	1	CS	18	SPACER 1/4"	A41699	5	CS
6	SPRING 21/32"X2"	A38818	1	18-8 SS	19	SPACER 1/2"	A41947	3	CS
7	SPRING PIN 5/16" X 2"	SP74343	1	18-8 SS	20	COLLAR	BA2340	1	CS
8	HEX BOLT 3/8"-16 X 1 1/2"	HB13109	2	CS, Z/P	21	BOV DECAL	DBOV2224V01	1	VINYL
9	TOP LOCK NUT 3/8"-16	LN77798	2	316 SS	22	TAG	TAGSS3	1	304 SS
10	HEX BOLT 1/2"-13X1 3/4"	HB13210	2	CS Z/P	23	STICKER	A41924	1	VINYL
11	HEX BOLT 1/2"-13 X 2-1/2"	TB1113823	3	CS Z/P	24	FLAT WASHER 3/8" USS	KL103FW	10	CS Z/P
12	HEX BOLT 1/2"-13 X 3"	TB1113824	3	CS Z/P	25	SPACER 3/8"	A43069	2	CS, Z/P
13	TOP LOCK NUT 1/2"-13	LN70800	5	18-8 SS	26	HEX BOLT 3/8"-16 X 2 3/4"	HB13114	2	CS, Z/P

- NOTES:
1. VALVE SOLD SEPARATELY.
  2. WELDS MUST BE IN ACCORDANCE WITH AWS D5.1 (OR APPROVED EQUIVALENT) BY CERTIFIED WELDERS.
  3. ENGRAVE TAGS3 WITH "308" AND DATE \*\*\*/\*\*/\*\* (MONTH/YEAR). TEXT HEIGHT 1/4" MIN.
  4. APPLY A41924 TO TAGS33 AFTER IT HAS BEEN WELDED ON.
  5. PATENT PENDING.



REVISION	DATE	DESCRIPTION	BY	CHKD
1	02/09/16	ISSUED FOR BOM		
2	02/09/16	FOR WELDING		
3	02/09/16	FOR WELDING		
4	02/09/16	FOR WELDING		
5	02/09/16	FOR WELDING		
6	02/09/16	FOR WELDING		
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10	02/09/16	FOR WELDING		
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24	02/09/16	FOR WELDING		
25	02/09/16	FOR WELDING		
26	02/09/16	FOR WELDING		



REV	DATE	DESCRIPTION
1	02/09/16	BRACKET AN 2501 WAS DEDICATED TO ADD 2ND LOCATION FOR MOUNTING
2	04/18/16	ADDED THICK 25 AND 25 FOR SHIP PARALLEL PLATE
3	12/01/15	ADDED THICK 25 AND 25 FOR SHIP PARALLEL PLATE

DESIGNER	DATE	SCALE	PROJECT
YKX	02/09/16	2 OF 2	BOVHKITCSJ08

WARRANTY ENGINEER	DATE	SCALE	PROJECT
YKX	02/09/16	2 OF 2	BOVHKITCSJ08

SAFETY ENGINEER	DATE	SCALE	PROJECT
YKX	02/09/16	2 OF 2	BOVHKITCSJ08

PROJECT MANAGER	DATE	SCALE	PROJECT
YKX	02/09/16	2 OF 2	BOVHKITCSJ08

SAFETY ENGINEER	DATE	SCALE	PROJECT
YKX	02/09/16	2 OF 2	BOVHKITCSJ08

PROJECT MANAGER	DATE	SCALE	PROJECT
YKX	02/09/16	2 OF 2	BOVHKITCSJ08