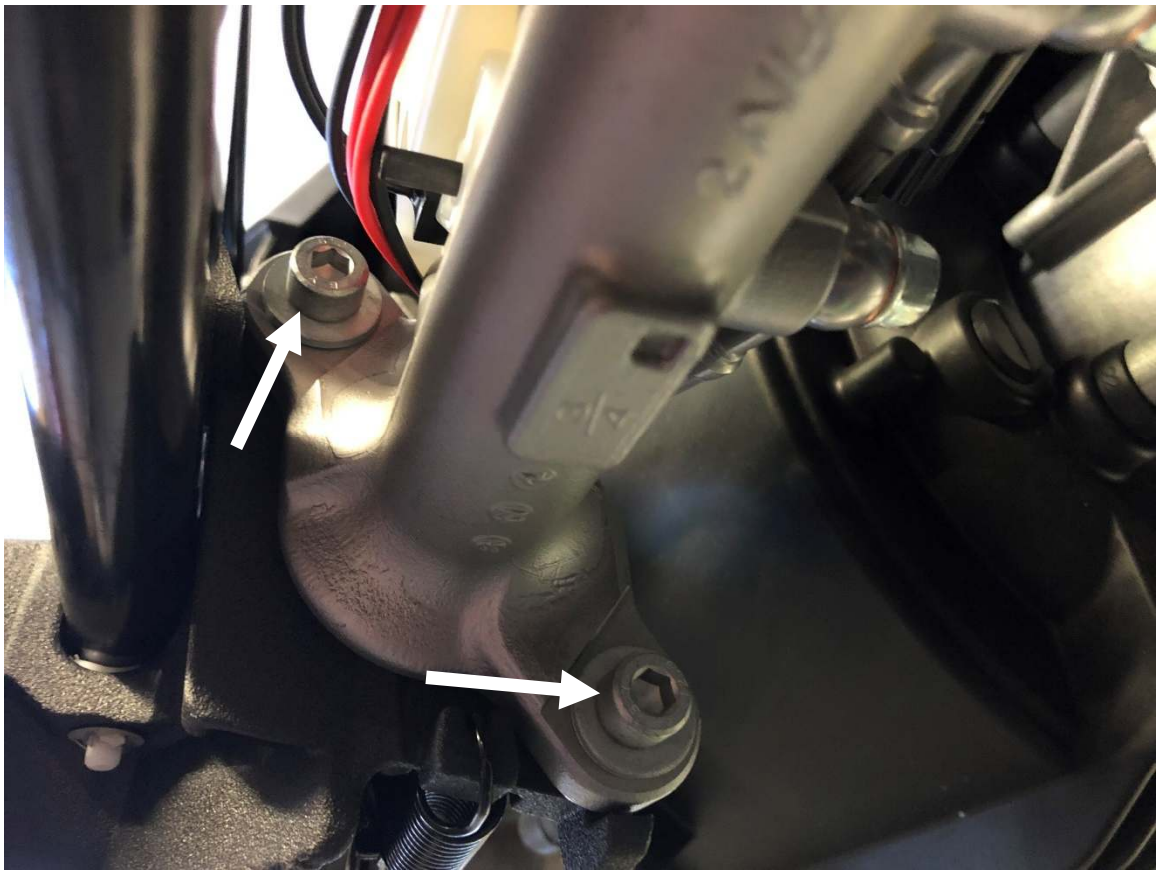
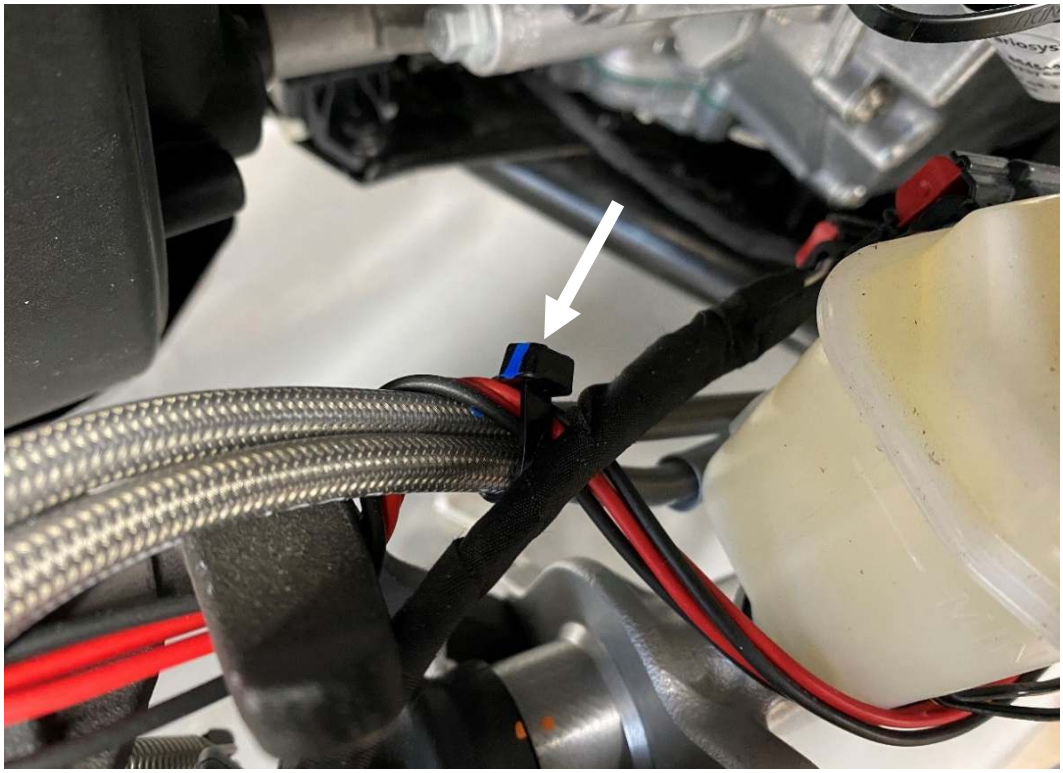
INSTALLATION INSTRUCTIONS FOR ISCI RYKER HANDBRAKE SPY-HB-RKR

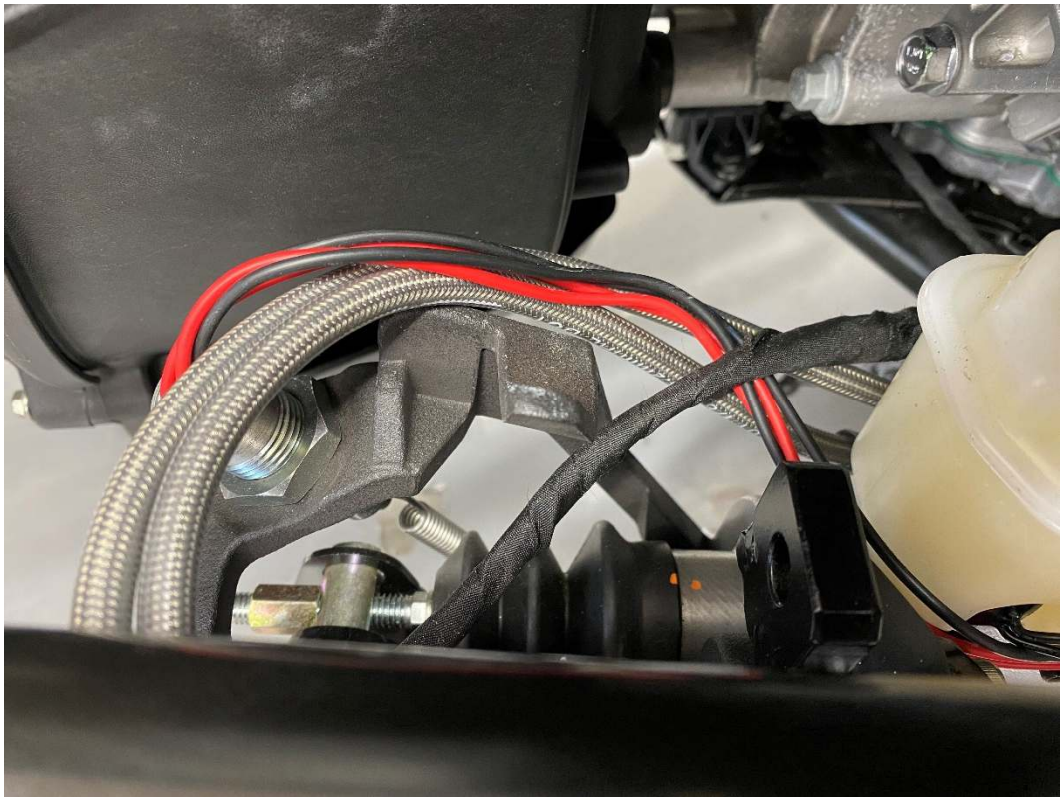
Great care has gone into providing complete and thorough installation instructions. Use the torque values listed on the Assembly Drawing when tightening all fasteners. Use the supplied Loctite on all fasteners that do not have any mechanical locking device. See terms and conditions located at the end of this document.

1) Ensure that all parts and the proper quantities of parts that are listed in the Parts List on the Assembly Drawing are in the package. Some of these items are pre-assembled.
2) Refer to Spyder Shop Manual and remove the RH Rocker Panel, Air Filter Cover Assy, Trunk Lid Assy, and the Hood.
3) Remove two Socket Head Screws that hold the Master Cylinder in place as shown in the picture below. Save the washers for Step 5.

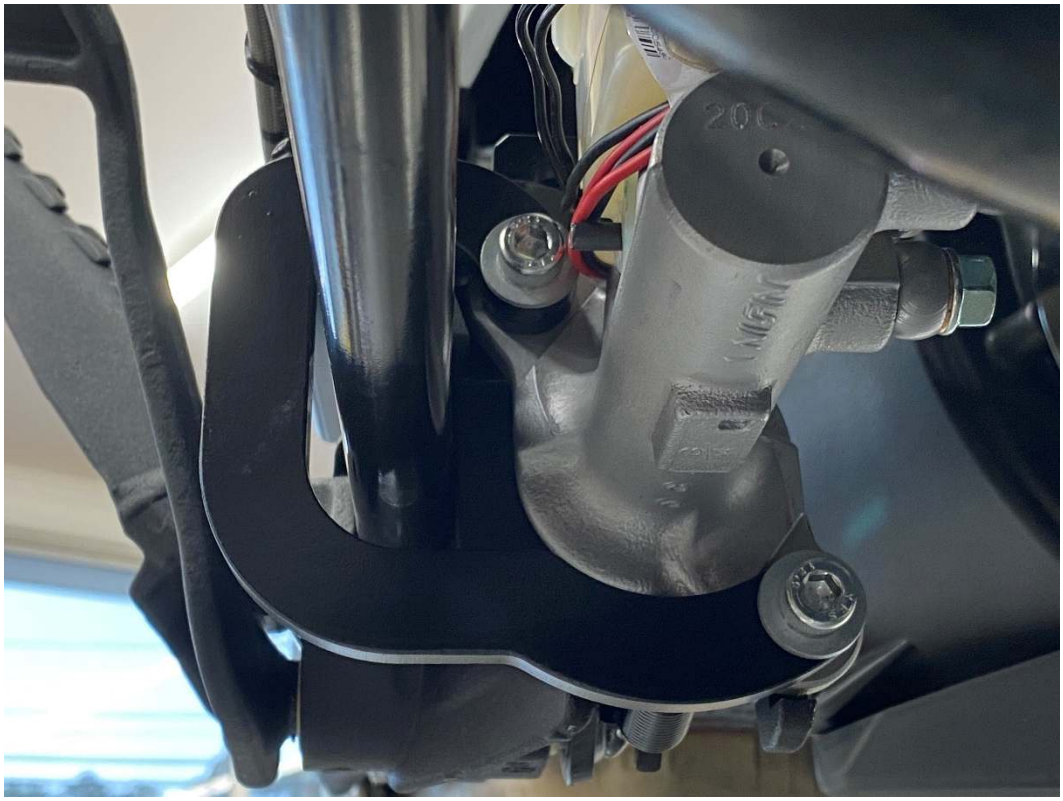


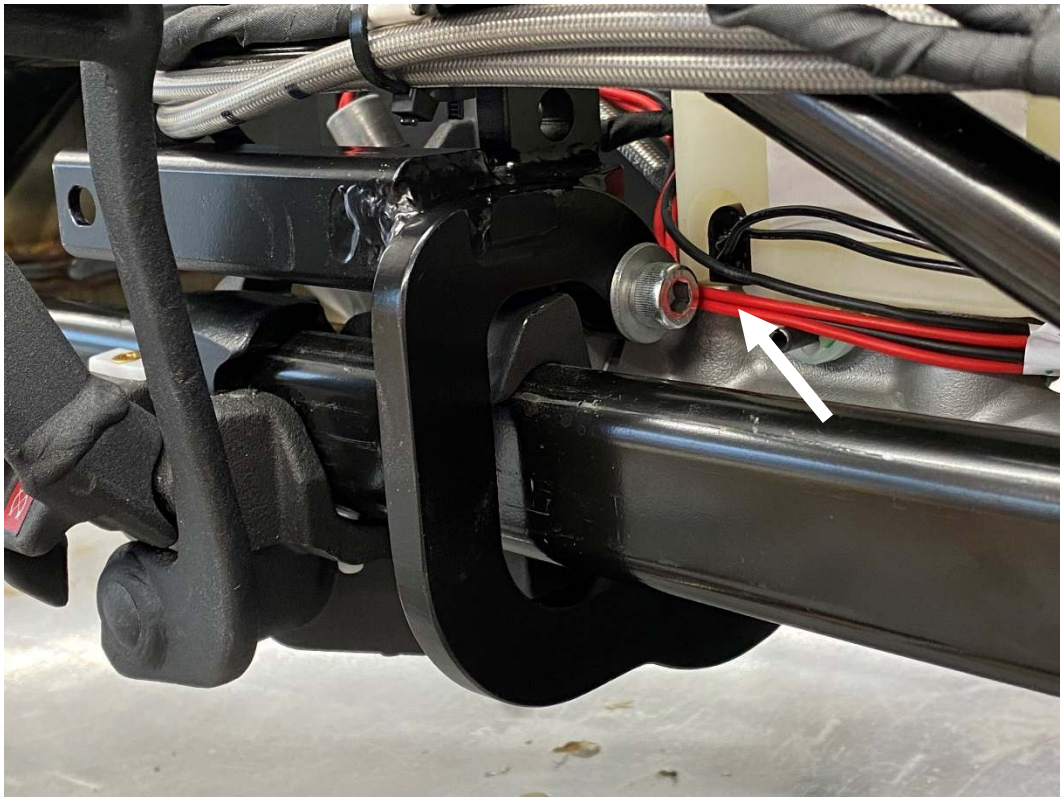
4) Cut the wire tie in the picture below from the bottom being extremely careful to not cut the wires or nick the brake lines. Reroute the wires as shown in the bottom picture. This is to give the wires some slack as they route around the Master Cylinder Reservoir.



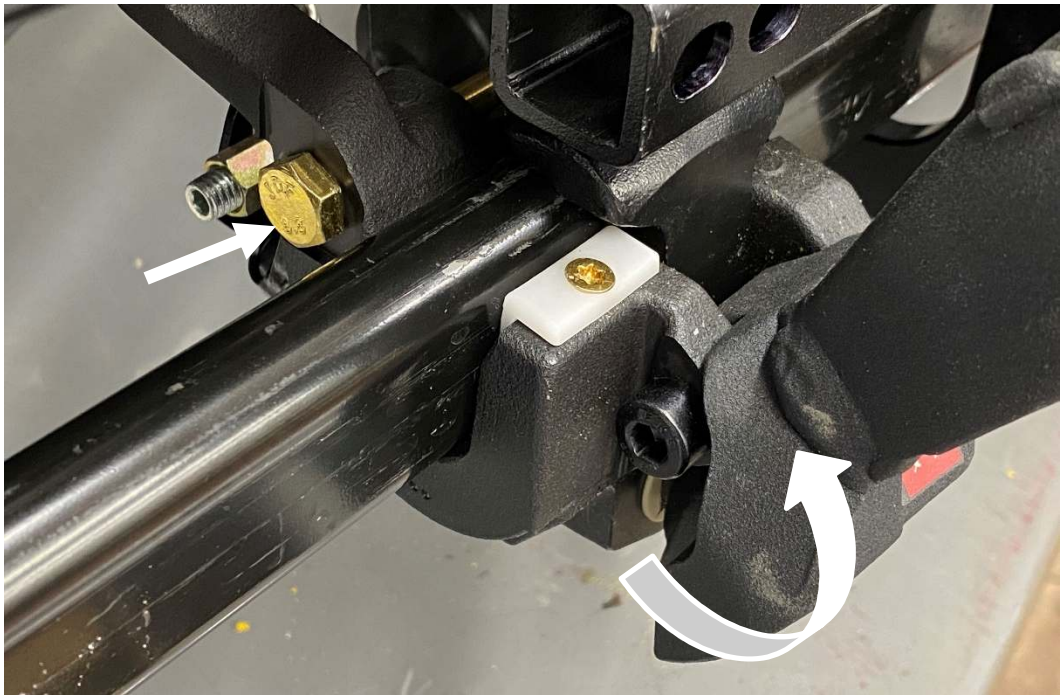


5) Bolt Slave Cylinder Bracket, Forward (Item #1) using the supplied M8 x 40mm SHCS (Item #18) and the OEM washers removed from Step 3. **Tighten finger tight, then back off ¼ turn**. Note how the wires are routed in the second picture below. Make sure the wires don't get pinched.

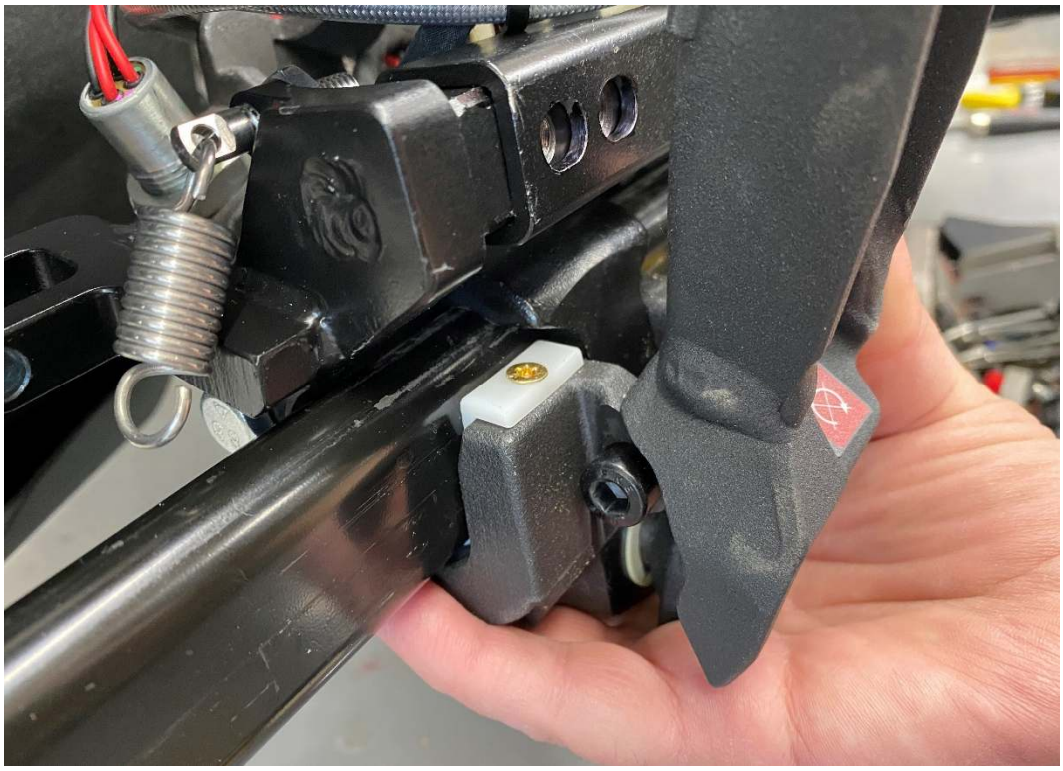




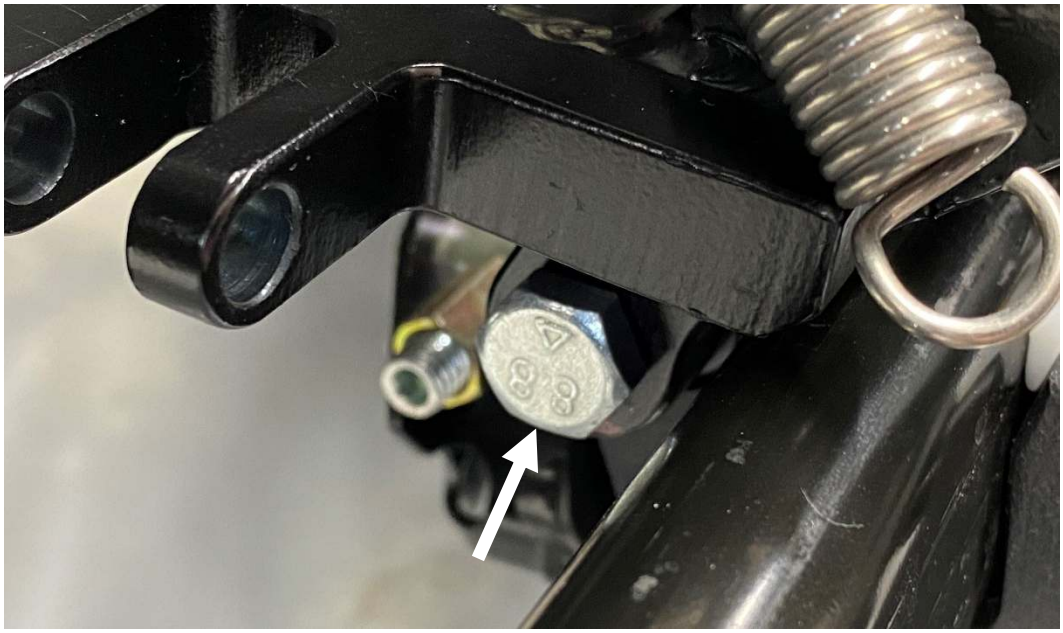
6) Make sure to rotate the Footpeg to the up position to take tension off of the Hex Head Bolt and remove the bolt. Lifting up the entire Brake – Master Cylinder / Pedal / Footpeg Assembly will allow the Hex Head Bolt to come out easier after it is out of the tapped hole (See picture in Step 7).



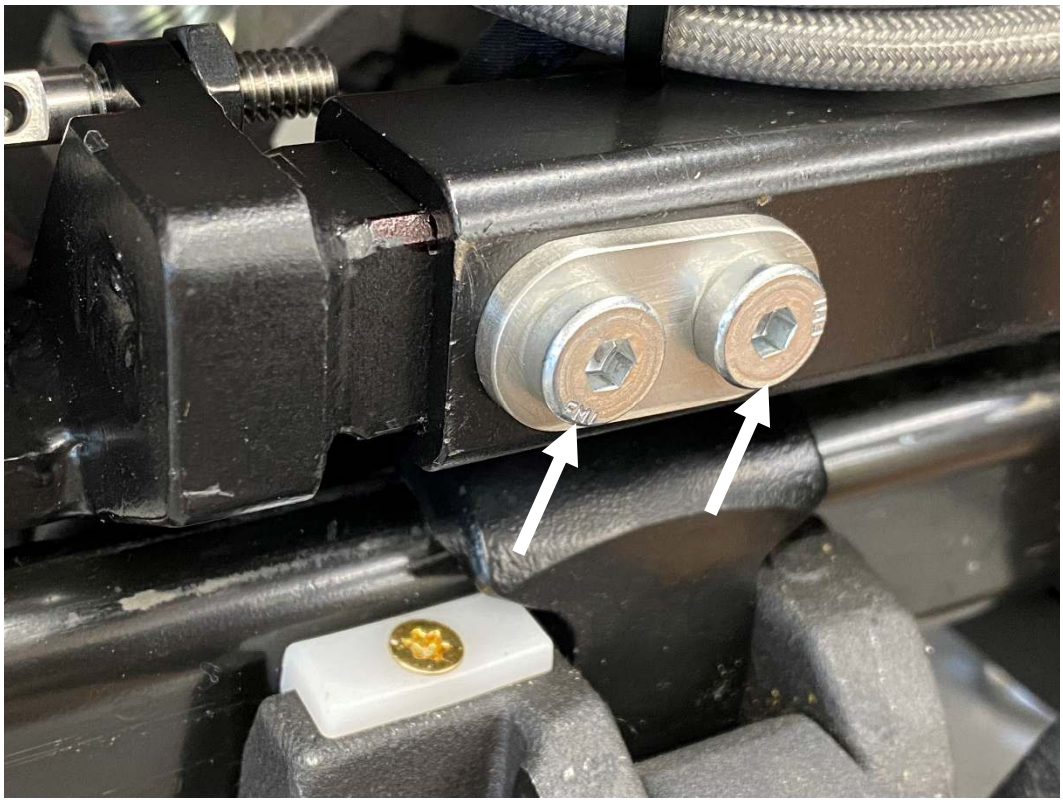
7) Install Slave Cylinder Bracket, Rear (Item #2) by sliding the square end of the bracket into the square tube of Slave Cylinder Bracket, Forward (Item #1) as shown below.



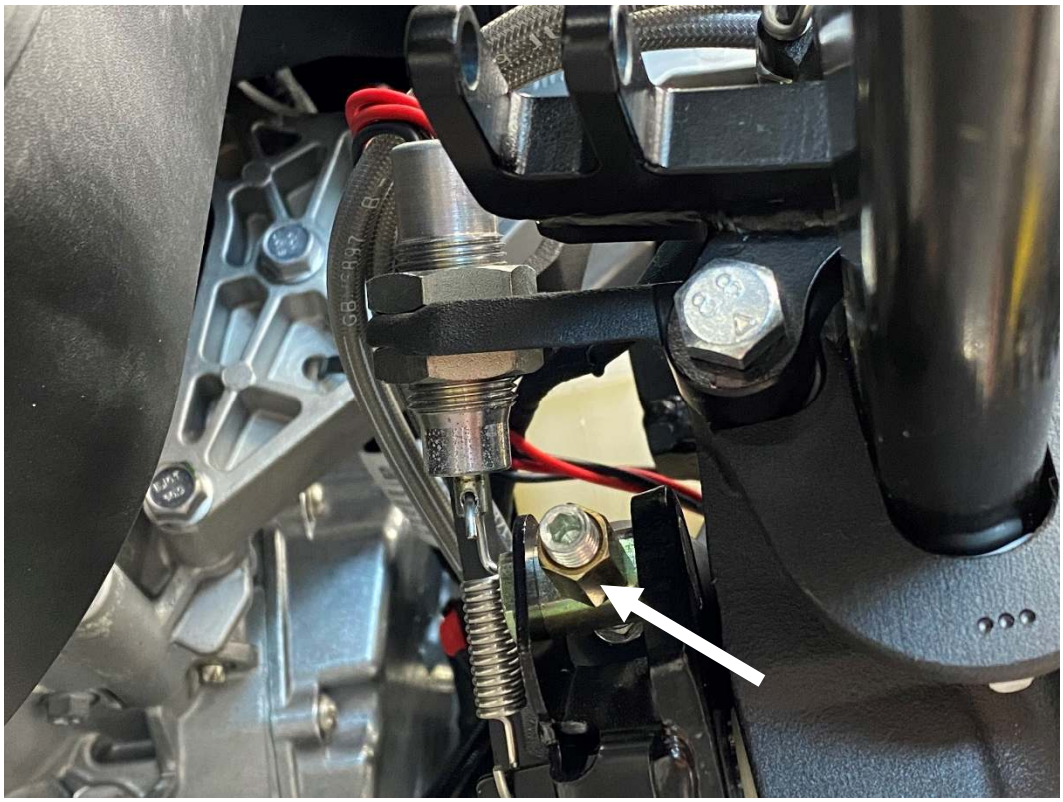
8) Install Supplied M8 x 80mm Hex Head Bolt (Item #12) as shown below. Lifting up the entire Brake – Master Cylinder / Pedal / Footpeg Assembly will allow the Hex Head Bolt to slide in easier to the tapped hole (See picture in Step 7). **Tighten finger tight, then back off ¼ turn**.



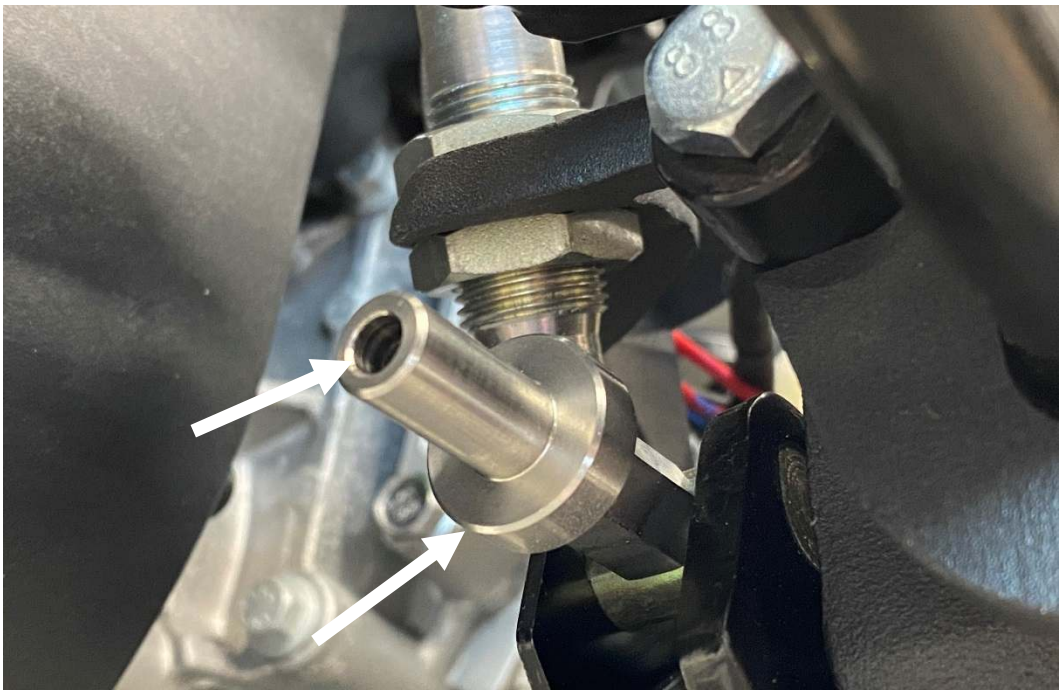
9) Install two 5/16”-18 LHCS (Item #19) through Washer Plate (Item #15) and the slotted holes in the square tube of Slave Cylinder Bracket, Forward (Item #1) into the tapped holes of Slave Cylinder Bracket, Rear (Item #2). **Do not tighten at this time, leave them loose.**



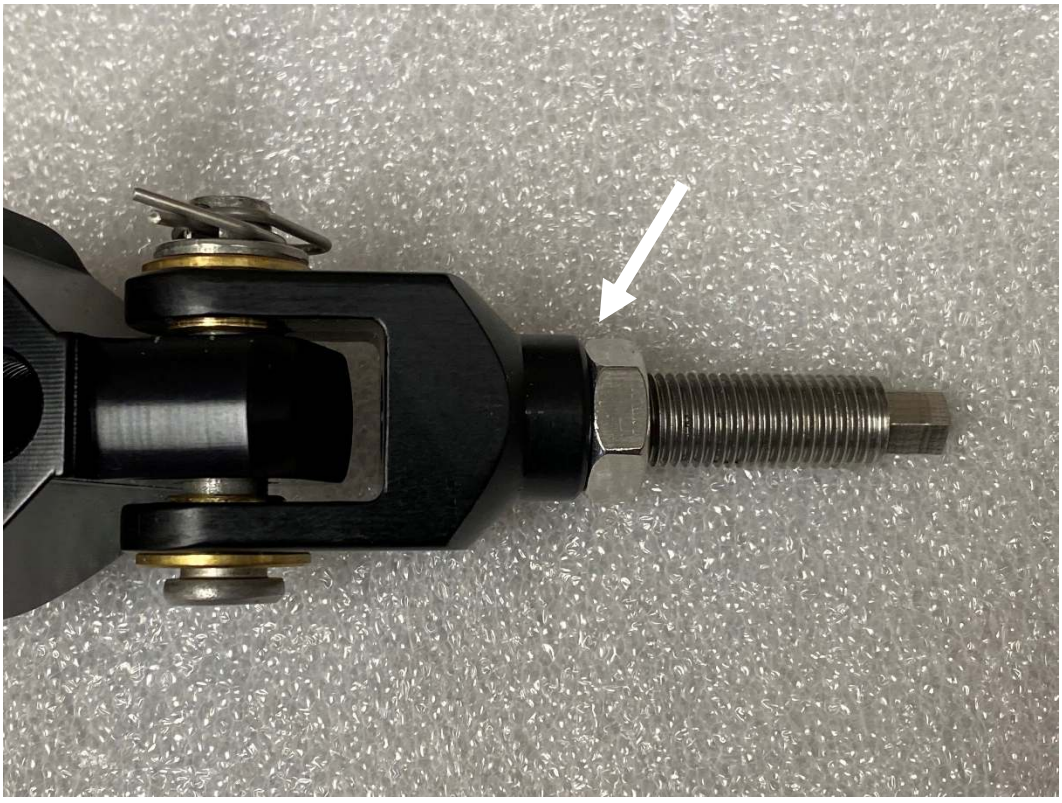
10) Now that you have all of these five bolts installed, in the following sequence:
    a) Tighten the two M8 x 40mm SHCS (Item #18) finger tight.
    b) Tighten the M8 x 80mm Hex Head Bolt (Item #12) finger tight.
    c) Torque the two M8 x 40mm SHCS (Item #18) to 21 (ft-lbs).
    d) Torque the M8 x 80mm Hex Head Bolt (Item #12) to 14 (ft-lbs).
    e) Tighten and torque the two 5/16”-18 LHCS (Item #19) to 13 (ft-lbs).
11) Remove M8 Jam Nut from the Master Cylinder Push Rod. Be sure to use an allen wrench to keep the push rod from rotating as you loosen the Jam Nut.



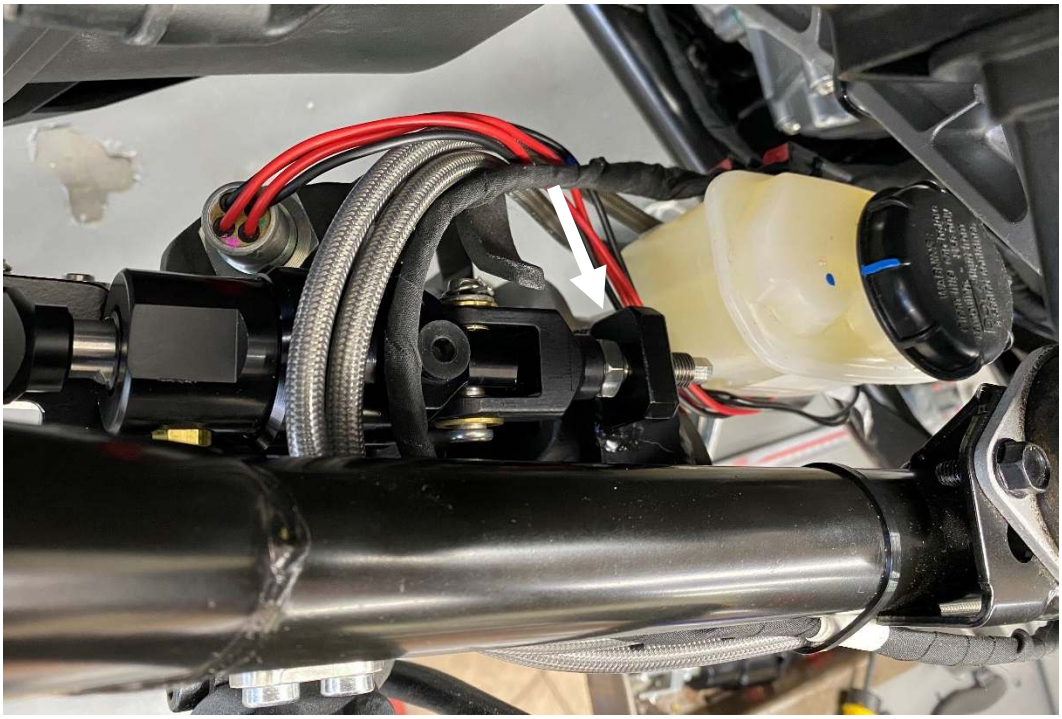
12) Replace the M8 Jam Nut that was just removed with Thrust Lock Nut (Item #9). Be sure to use an allen wrench through the hole in the end of the Thrust Lock Nut to keep the push rod from rotating as you tighten.



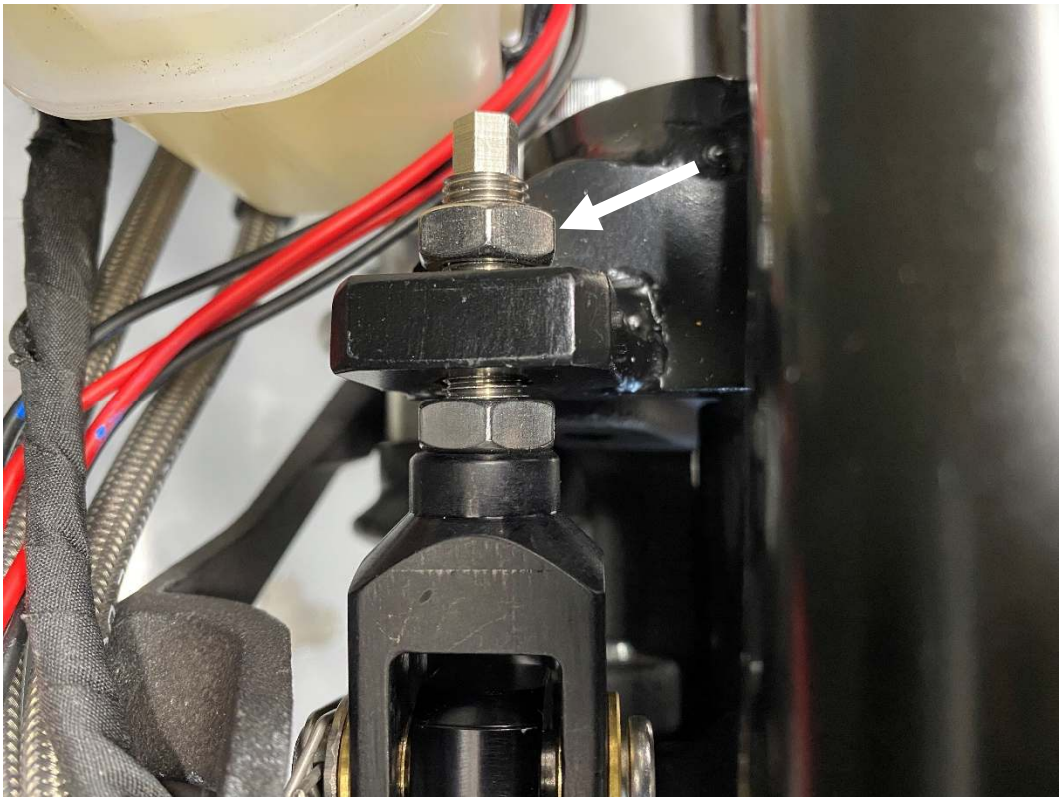
13) Make sure the 3/8-24 Jam Nut, Grade 8 (Item #25) is threaded loosely on Adjusting Screw (Item #8) all the way to the shoulder of the Slave Cylinder Clevis (Item #4). Do not tighten.



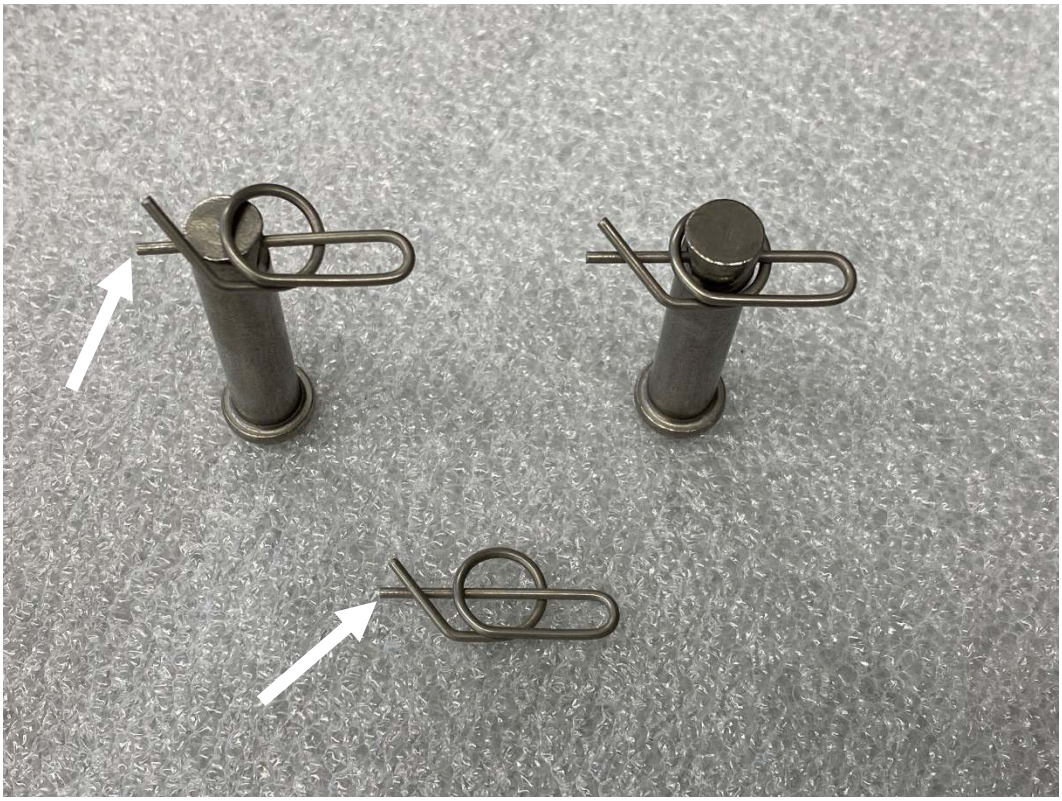
14) Assemble Slave Cylinder (Item #3) to the Slave Cylinder Bracket, Forward (Item #1) by sliding it under the OEM Brake Lines and the Wire Bundle and inserting Adjusting Screw (Item #8) through the hole in Slave Cylinder Bracket, Forward (Item #1).



15) Thread the second 3/8-24 Jam Nut, Grade 8 (Item #25) onto Adjusting Screw (Item #8) and leave loose for now.



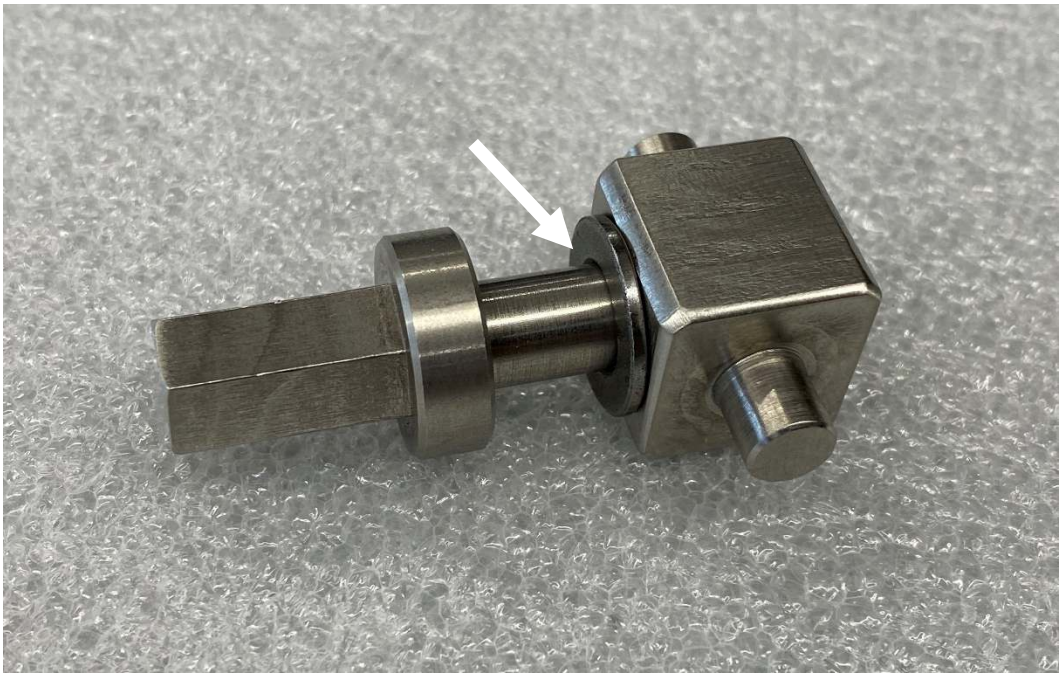
16) For securing the clevis pins in place we utilize Rue Ring Cotters (Item #35). They are easy to put in place and are very secure. The picture below shows how they are installed. Slide the straight pin of the Rue Ring into the hole of the clevis pin until the ring slips completely over the clevis pin. The Clevis Pin on the right shows the correct installation.



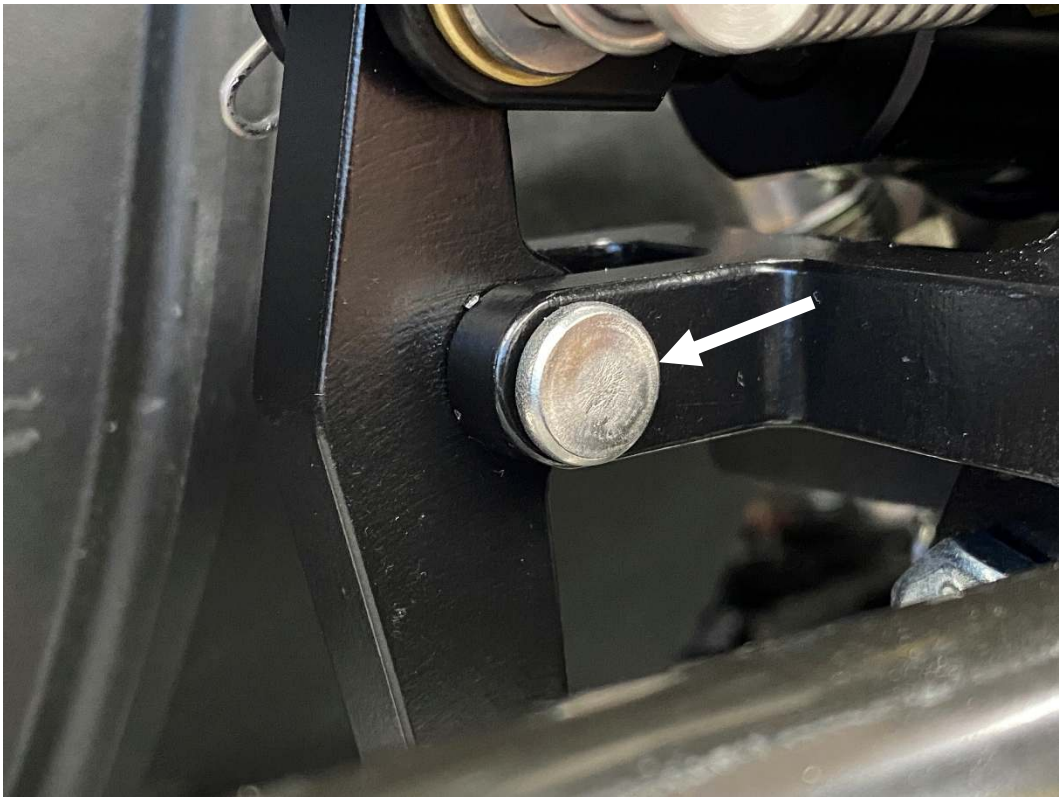
17) Take the Spring Retaining Clevis Pin (Item #12) and insert it through the open ringed end of the Extension Spring (Item #34) then slide one 5/16" Washer (Item #28) onto the pin as shown below.

18) Insert the Spring Retaining Clevis Pin (Item #12) through the R Slave Cylinder Clevis (Item #10) through the short end hole of the Pivot Arm (Item #11). Place a 5/16” Washer (Item #28) onto the Spring Retaining Clevis Pin (Item #12) and install Rue Ring Cotter (Item #35).

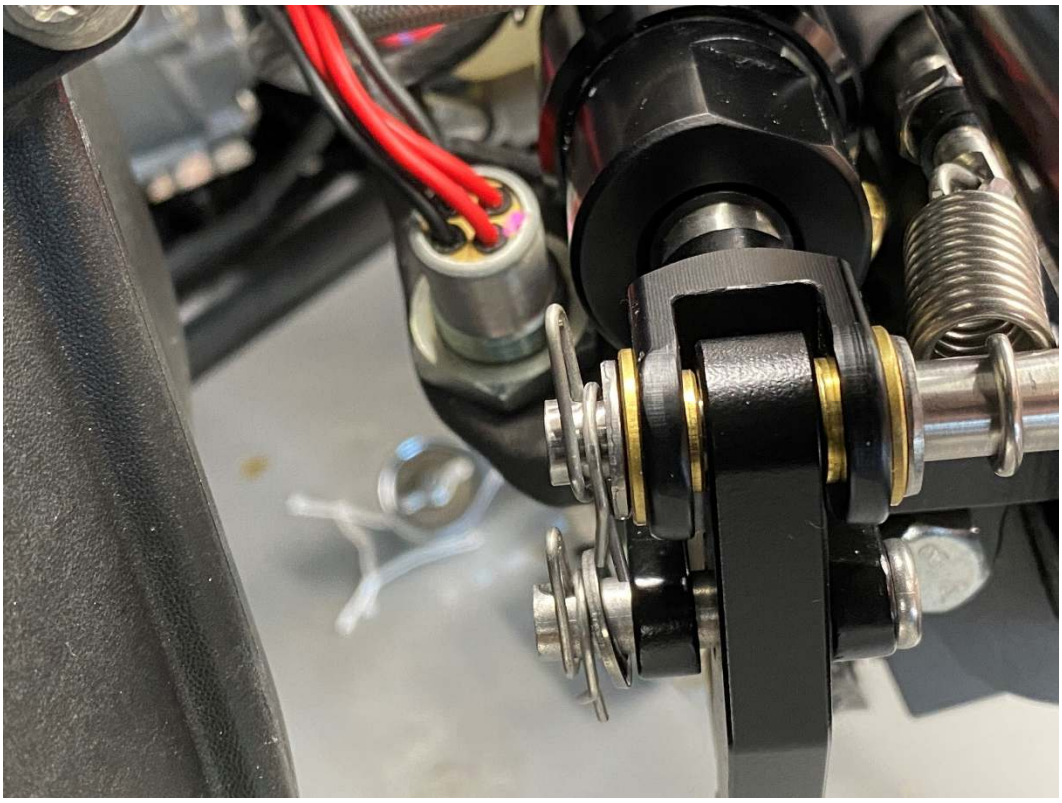
19) Slide the Thrust Block (Item #13) onto Thrust Lock Nut (Item #9), [Installed in Step 12]. Make sure that the flange of the installed bushing is facing the shoulder of Thrust Lock Nut (Item #9) as shown below. Installed picture is on the following page.



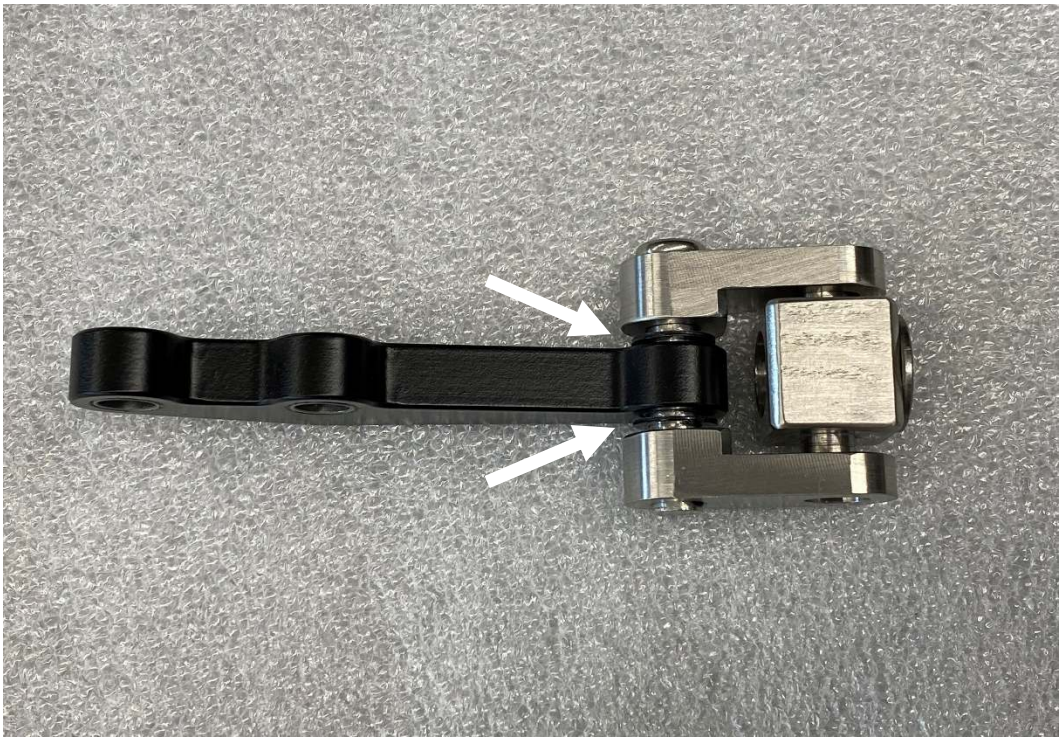
20) Insert 5/16” Clevis Pin (Item #23), [this one is the shorter of the two loose in the kit], through the hole in Slave Cylinder Bracket, Rear (Item #2) through the middle hole of Pivot Arm (Item #11) and out the other side. Place a 5/16” Washer (Item #28) onto the 5/16” Clevis Pin (Item #23) and install a Rue Ring Cotter (Item #35).



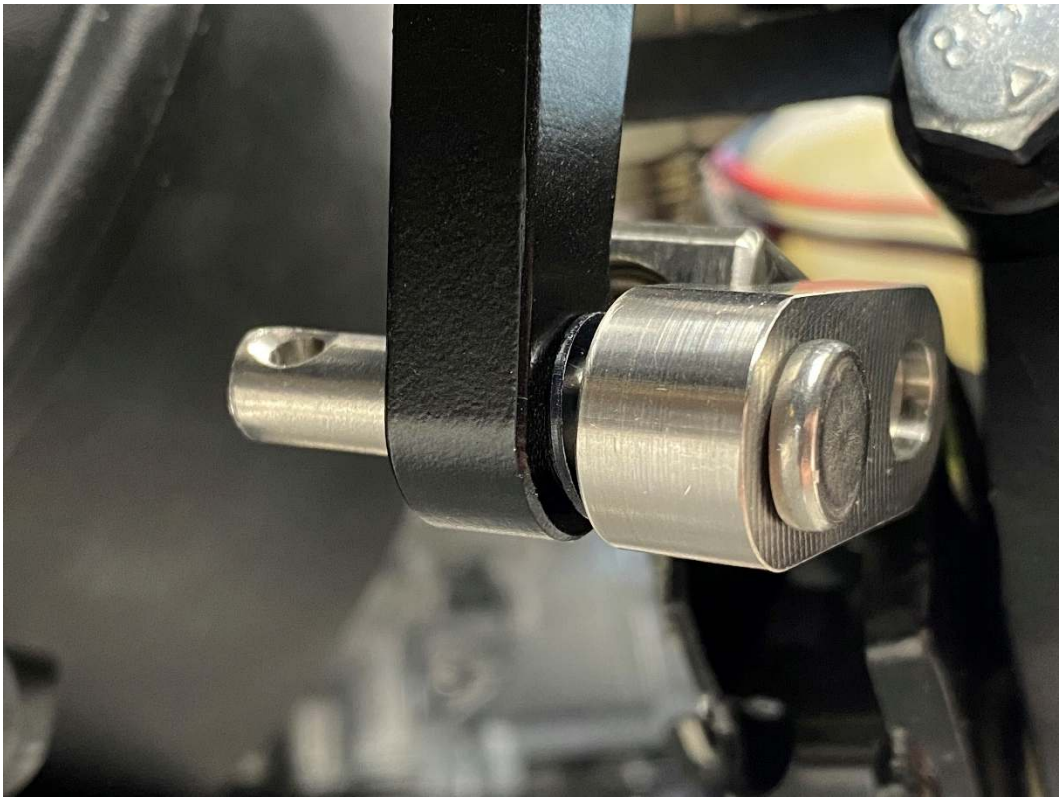
21) This is how the assembly should look from the rear at this point.

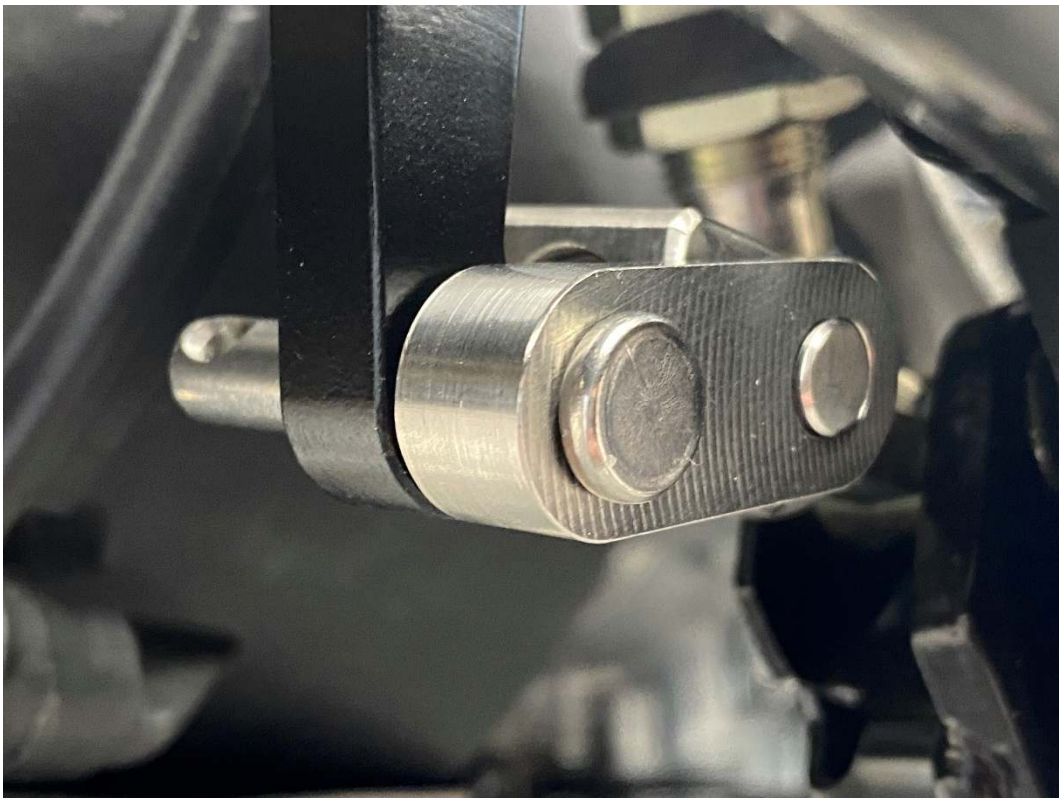


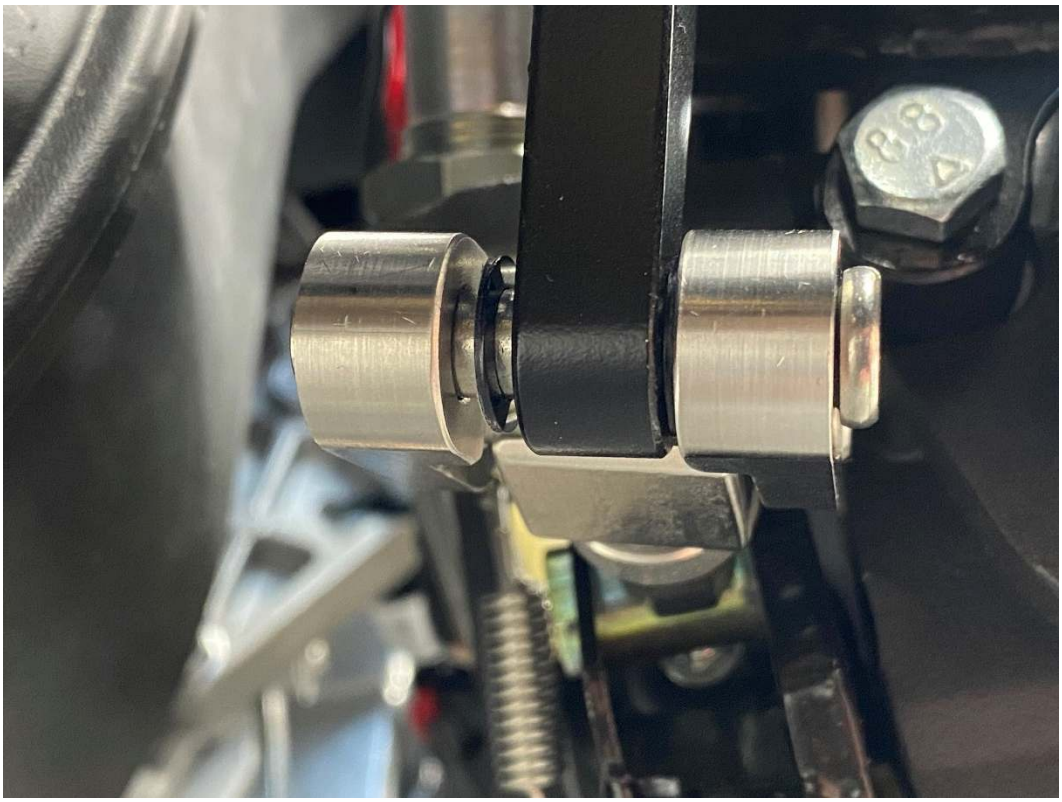
22) The following picture shows how the two Actuating Links (Item #14) are assmbled to the Pivot Arm (Item #11) and the Thrust Block (Item #13). Take note of the two 5/16” Nylon Washers (Item #26) and their location on either side of the Pivot Arm.

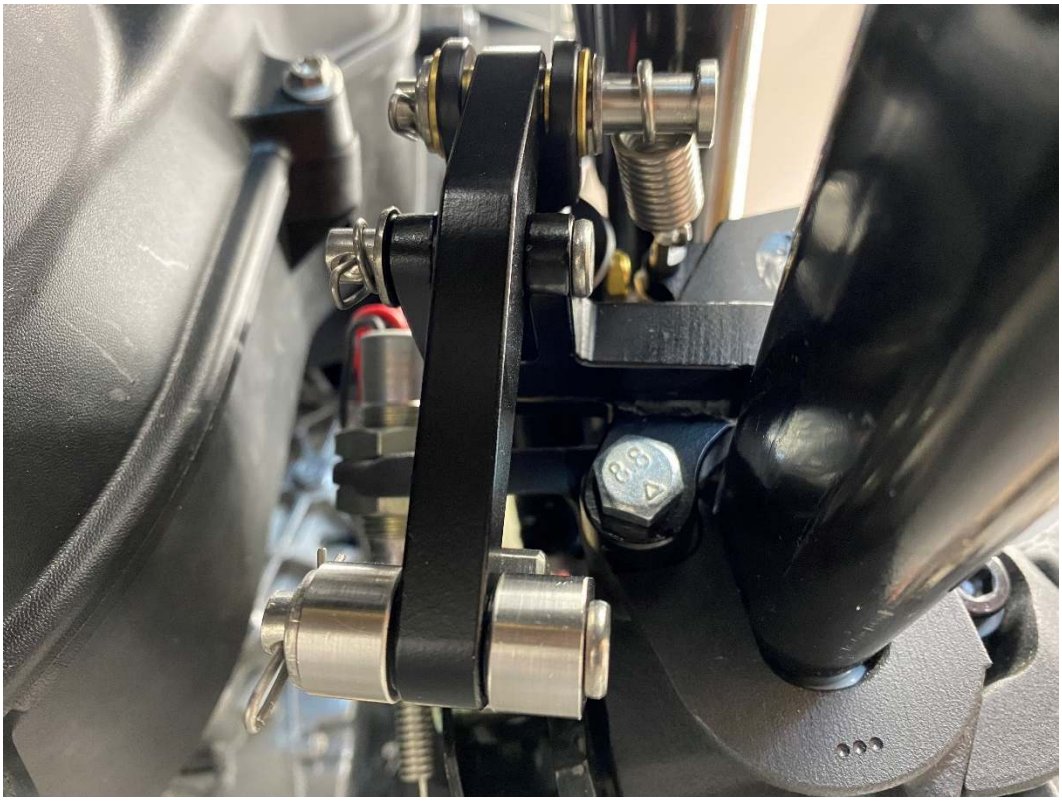


23) The followiing pictures shows the proggression of the assembly using the 5/16” Clevis Pin (Item #24), {the longer of the Clevis Pins], the two Actuating Links (Item #14) and the two 5/16” Nylon Washers (Item #26) to the Pivot Arm (Item #11) and the Thrust Block (Item #13). The the pins on the Thrust Block will fit into the slotted hole in the Actuating Links and they will stick out futher than those in the pictures.









24) Once the Actuating Links are in place on the Clevis Pin place a 5/16” Washer (Item #28) and install a Rue Ring Cotter (Item #35). Everything should look like the picture above.

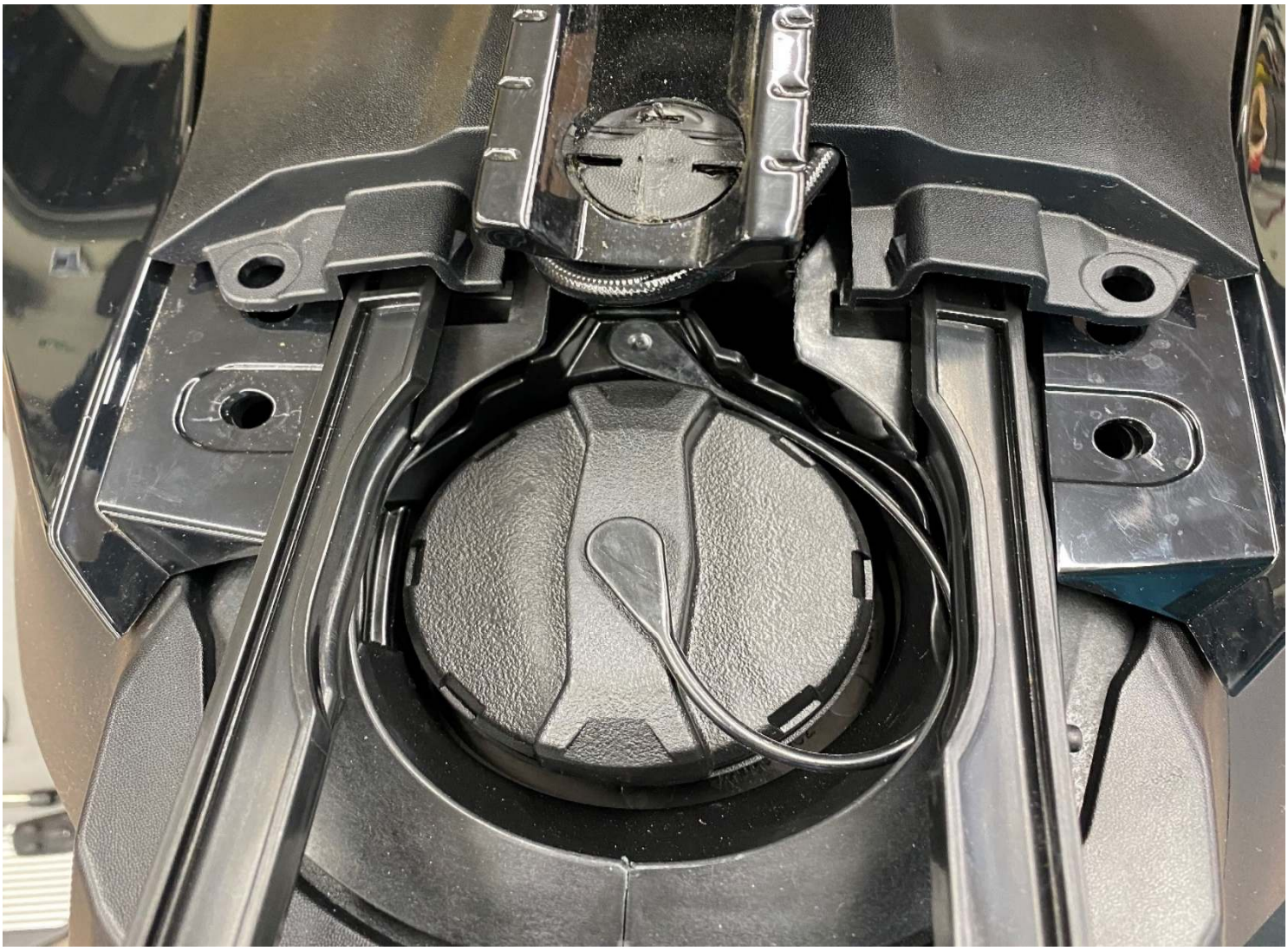
Now that the Handbrake Slave Cylinder Assembly has been installed in conjunction with the existing Pedal/Foot Peg Assembly, we will now proceed with the assembly of the Handbrake Master Cylinder and routing of Brake Line.

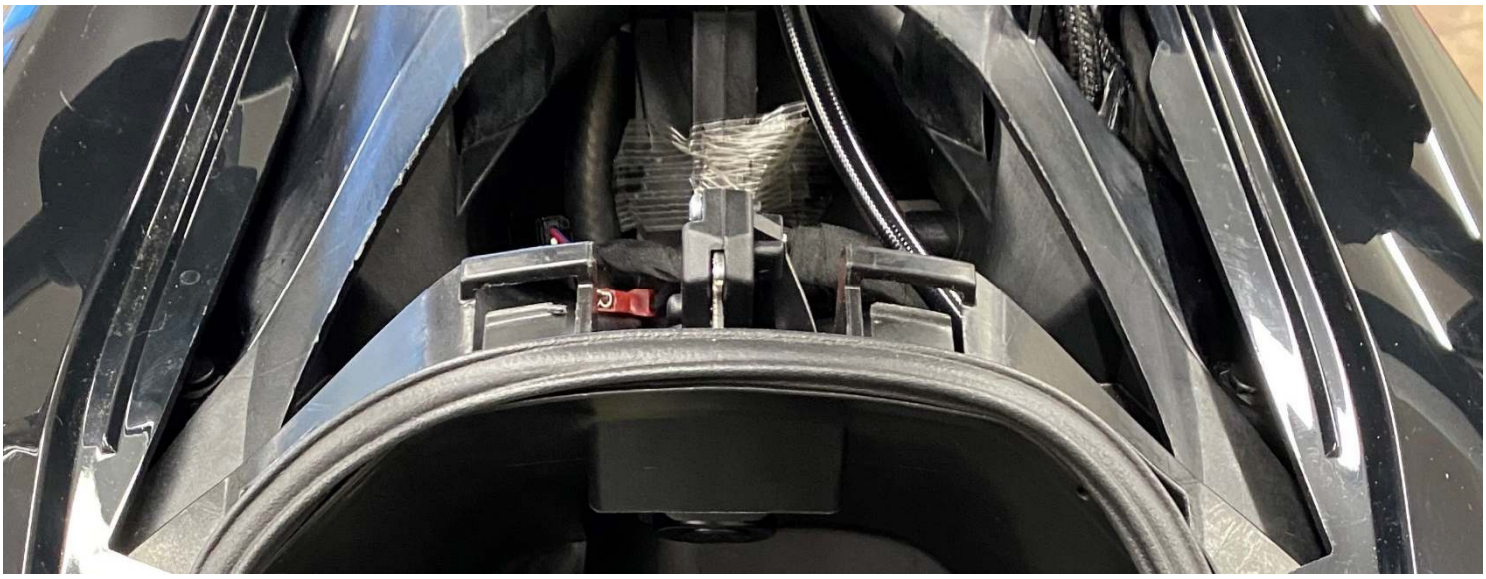
1) Remove Hand Grip Guard by removing the 4 screws attaching it to the Handle Bar.

2) Assemble the Master Cylinder Assembly to the Handle Bar. Orient the Brake Line as shown.

3) Remove Front Hood Assembly by following instructions as noted on Front Grille.

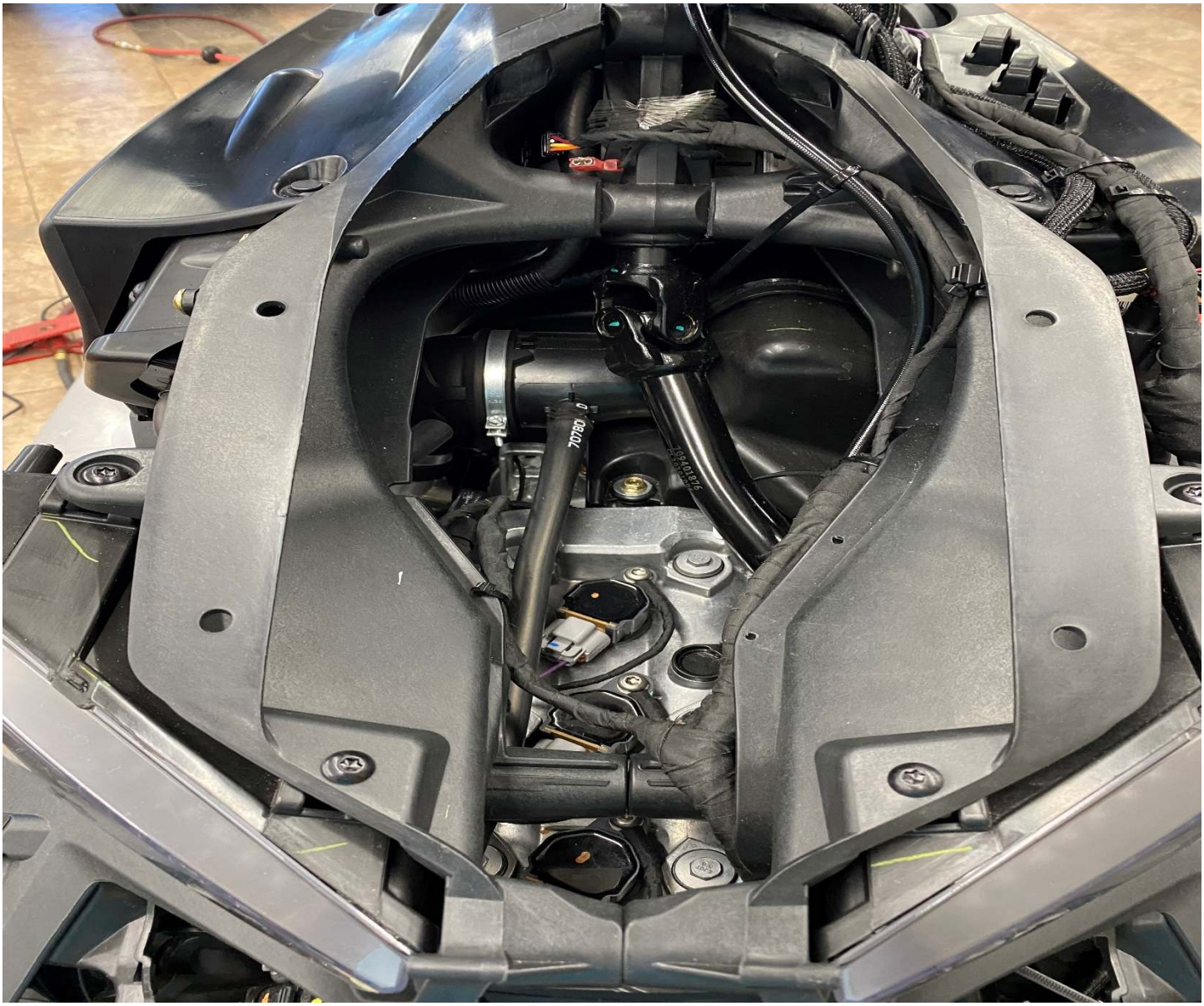
4) Pull back the Gas Cap Cover and remove four(4) Push Retainer Clips. After removal of the Retainer Clips, completely remove the Gas Cap Cover and the Forward Vent under the Speed/Tach Assembly.



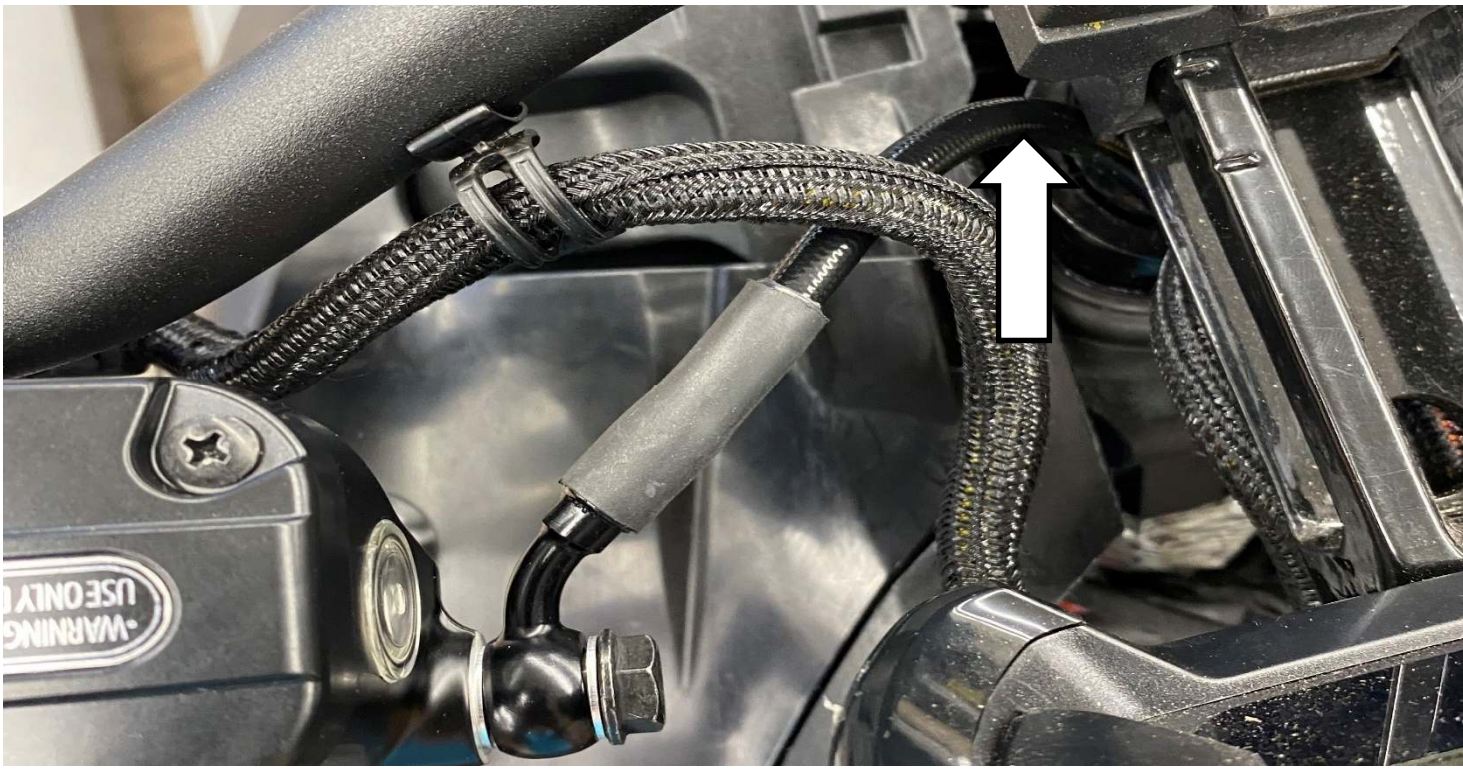


5) Remove the four(4) Push Retainer Clips securing the LH and RH Headlamp Panel Assemblies. Remove the Headlamp Panel Assemblies taking care not to damage the lower retainers during dis-assembly.

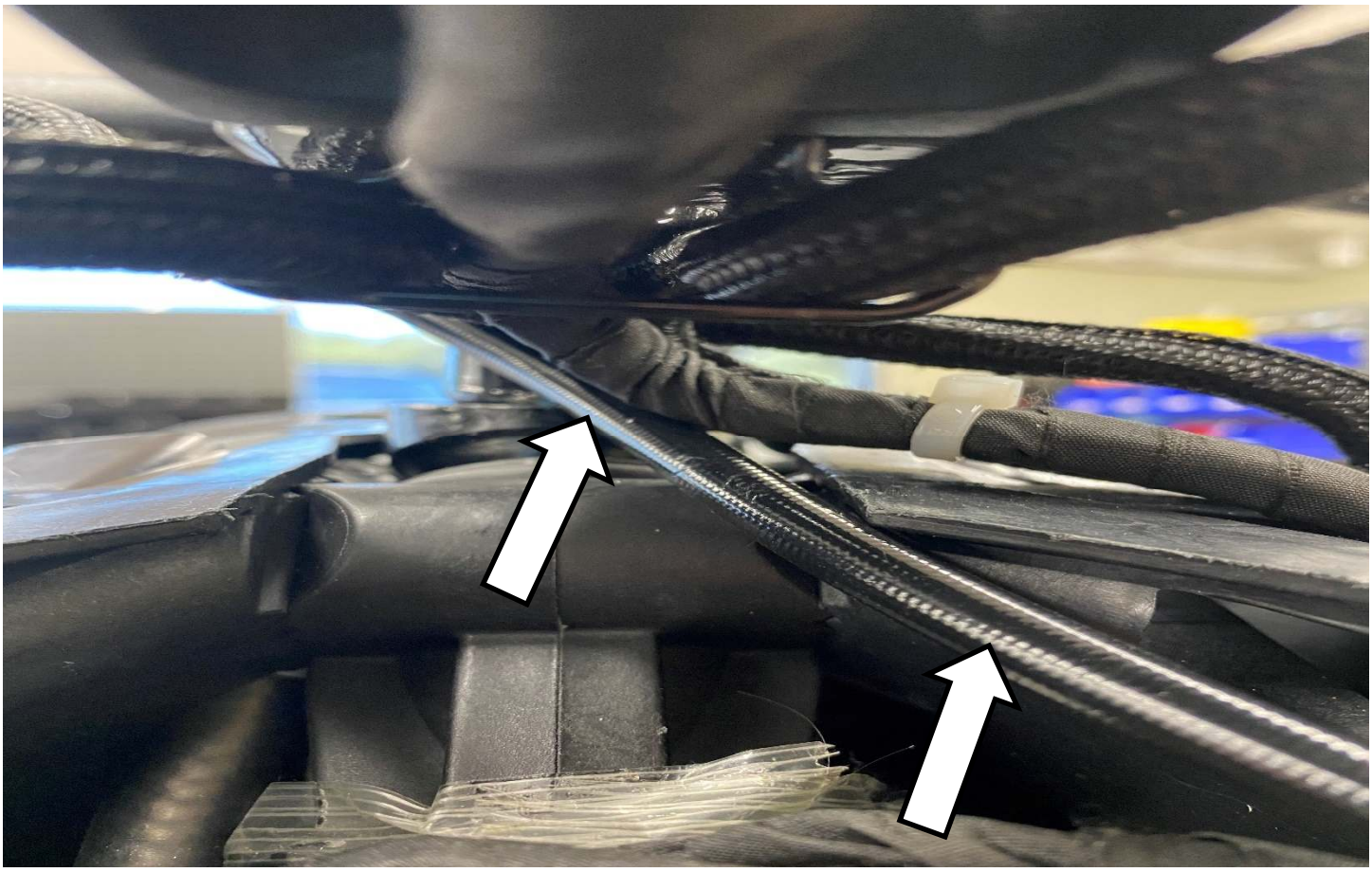
6) Remove the two(2) screws on each side of the lower end of the Cargo Box. Remove Cargo Box



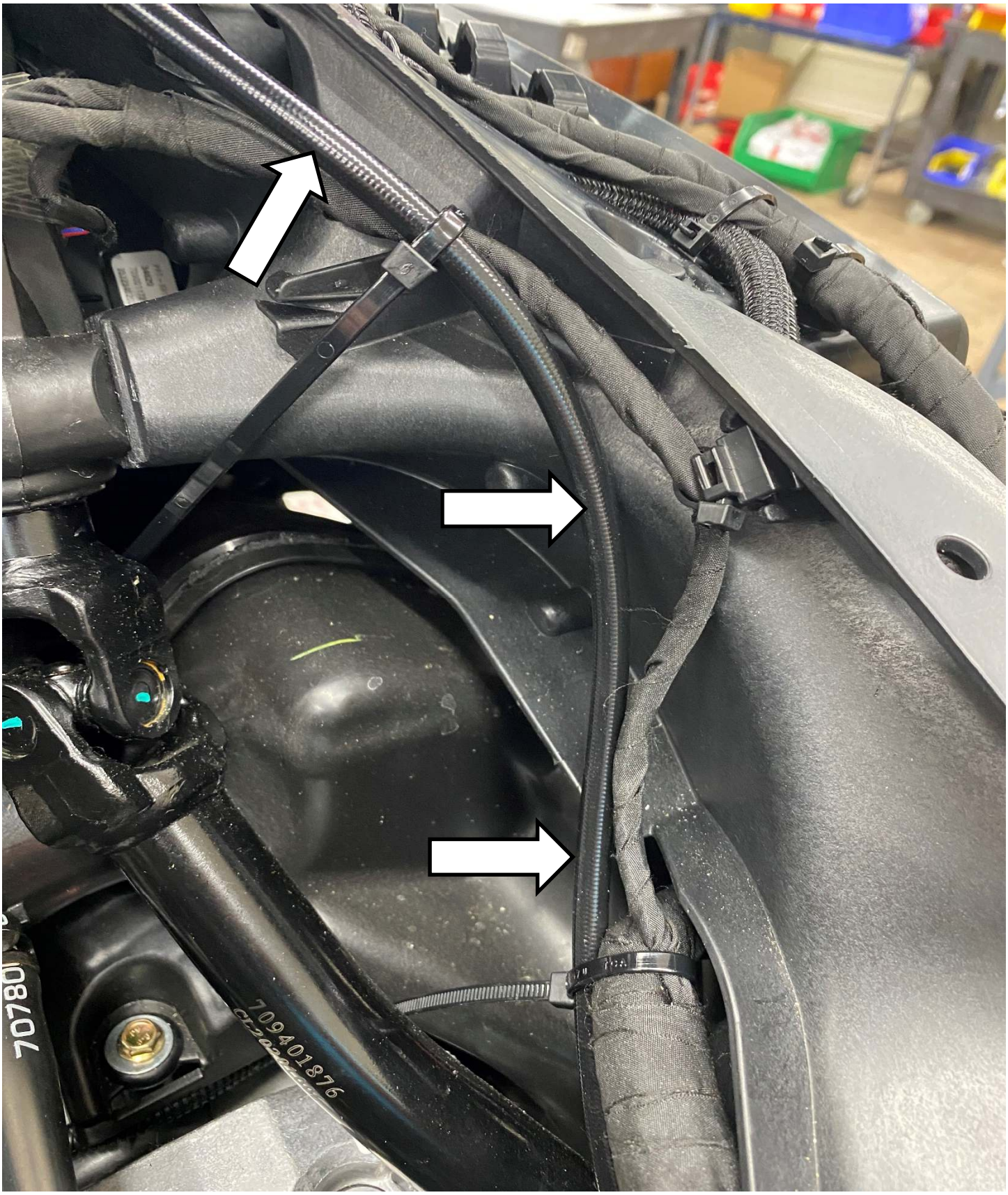
7) After removing the Body Panels as necessary, route the Brake Line as shown in the following photos:
   a. Route the Brake Line down in front of the Steering Column.



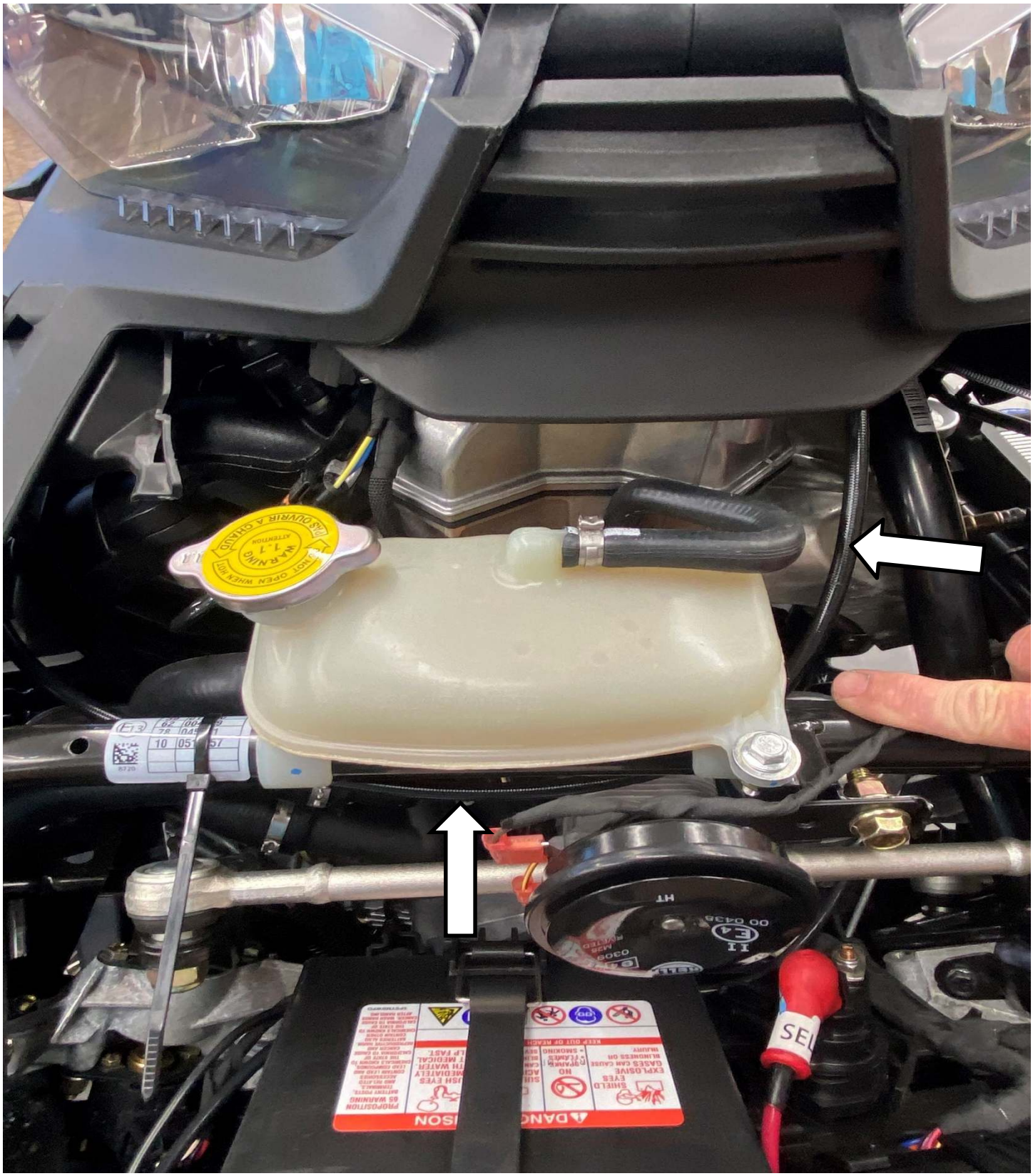
   b. Continue routing the Brake Line through the existing plastic cut-out.



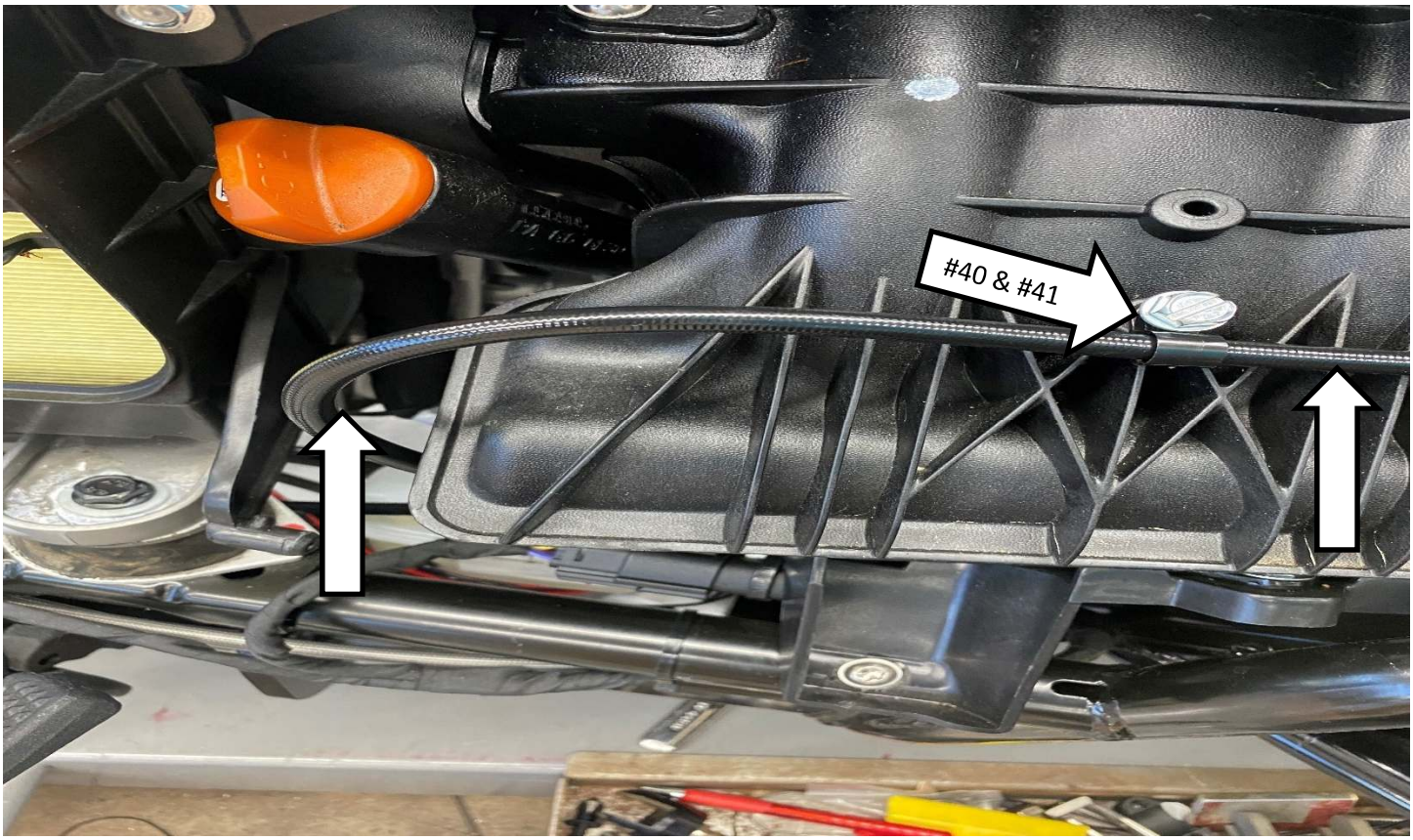
c. Continue routing the Brake Line through the Cargo Box opening along the same path as the USB Plug wiring and the main wiring harness. Secure as shown (do not completely tighten wire ties until brake line is completely routed).



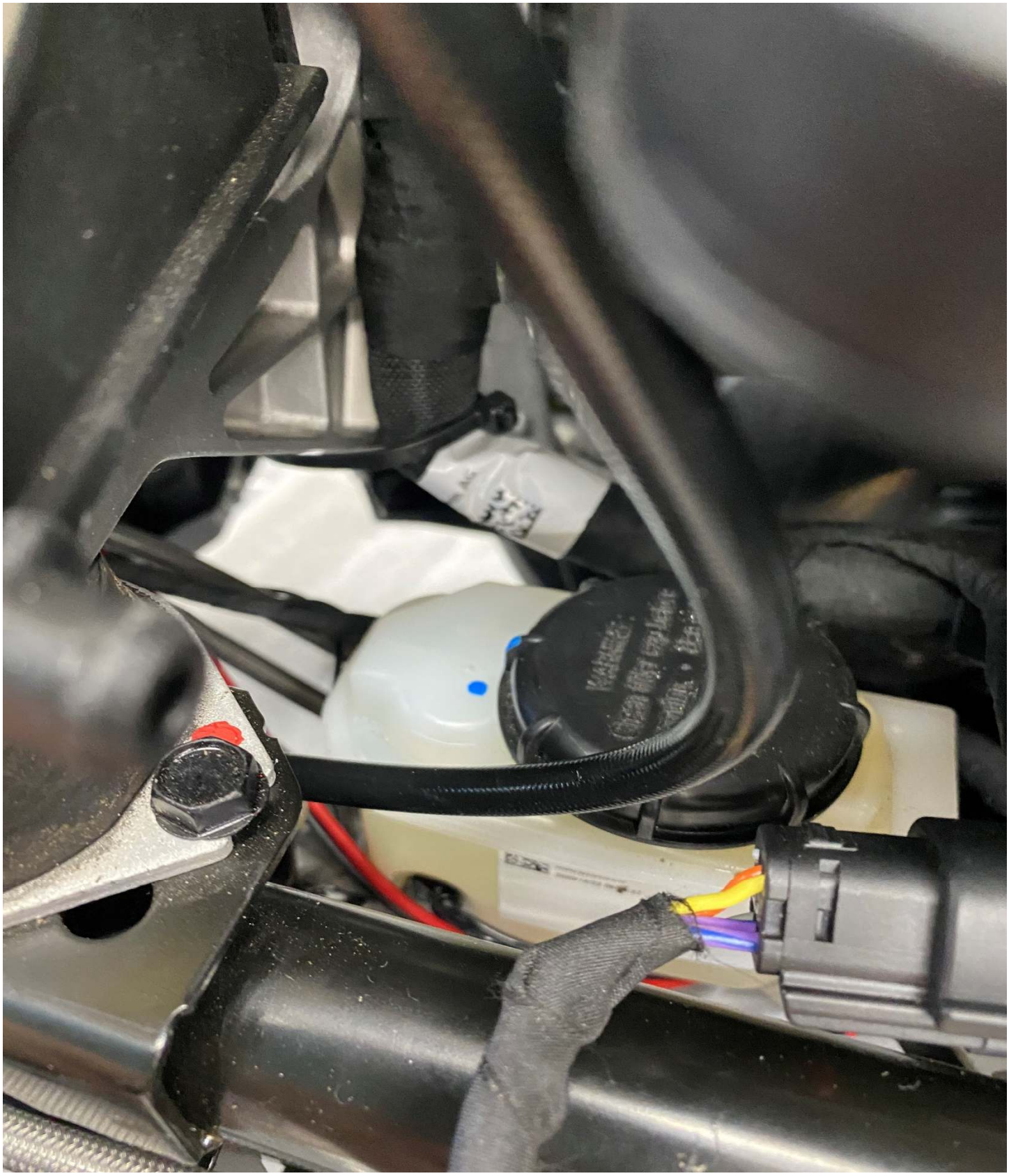
d. Continue routing the Brake Line behind the RH Headlamp Shroud and exit underneath on the RH side of the Coolant Reservior. Loop the Brake Line underneath the Coolant Reservior staying parallel with the Front Cross Member and exit on the LH side of the Reservior heading towards the Intake Assembly. Secure to the Front Cross Member with a wire tie as shown on the LH side of the Coolant Reservior (do not completely tighten).



e. Continue routing the Brake Line underneath the LH Headlamp Shroud Assembly and past the Intake Assembly going towards the Air Filter Box. Use the Screw (Item 40) and Plastic Loop Clamp (Item 41) provided to secure the Brake Line to the Intake Assembly as shown (do not tighten clamp).



f. Continue routing Brake Line between the Intake Assembly and the Air Filter Box as shown. Besure to route the Brake Line underneath the Motor Mount Bracket below the Air Filter Box. Do not secure this portion of the Brake Line as it will need to be free to move during adjustment of the Pedal/Foot Peg Assembly.



8) Attach brake line to the slave cylinder using one of the supplied black banjo bolts and two crush washers. The other black banjo bolt and two crush washers are used on the master cylinder. Fill master cylinder with DOT 4 brake fluid and bleed till there is no air coming out of the bleeder valve. Connecting a clear tube to the bleeder will help from making a mess and you can easily see when there is no more air coming from the slave cylinder. **See pages 28 and 29 of these instructions for more information about the bleeder valve.**

9) Loosen the two Jam Nuts at the rear of the slave cylinder so that the brake pedal is in its upmost position. Tighten the front jam nut against the mounting bracket until the brake pedal starts to move down and then back off that jam nut ½ turn. Check to make sure that the brake lights are not on. If they are on continue backing off the front jam nut ½ turn at a time until the brake lights are no longer on. At this time tighten the rear jam nut securely.

10) After checking the Brake Line routing for best fit after all adjustments are made, go back and tighten all clamps and wire ties to assure secureness of the Brake Line. Add any additional wire ties as needed. MAKE SURE THAT THE BRAKE LINE IS NOT KINKED IN ANY WAY AND THAT IT DOES NOT RUN OVER SHARP EDGES OR CORNERS.

11) Reinstall all body panels that were removed and the installation is complete.

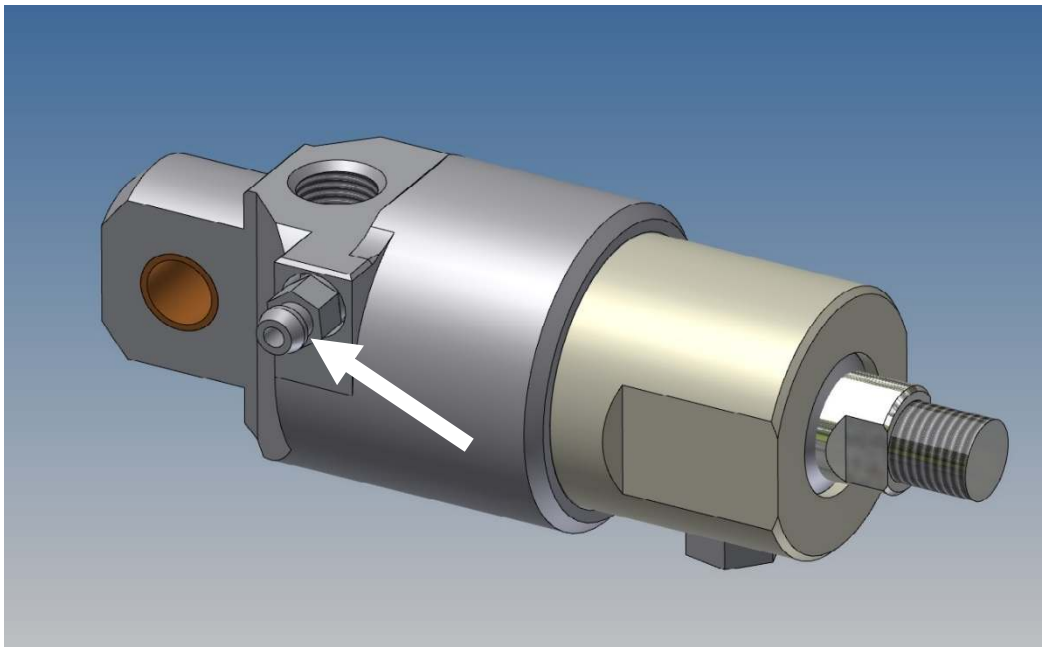
12) Perform a visual inspection of the slave cylinder every 3000-5000 miles by wiping the cylinder rod clean and checking that the vent is not caked up with road grime.

13) It is recommended that the brake system's fluid be changed and the system flushed to remove moisture and contamination build up every year or every 12,000 miles, which ever comes first. Also do this if the Spyder isnt ridden very often.

If for some reason you are having trouble with any part of this installation please do not hesitate to give us a call at 334-277-2224. Ask for Jeff Kranzusch.

ATTENTION!!

All of our slave cylinders now feature a Made in the USA Speed Bleeder® bleeder screw installed into the Cylinder End Cap for easier bleeding of the Handbrake System. The unique and patented Speed Bleeder® has a built in check valve to allow for easier and less messy bleeding of the system!!

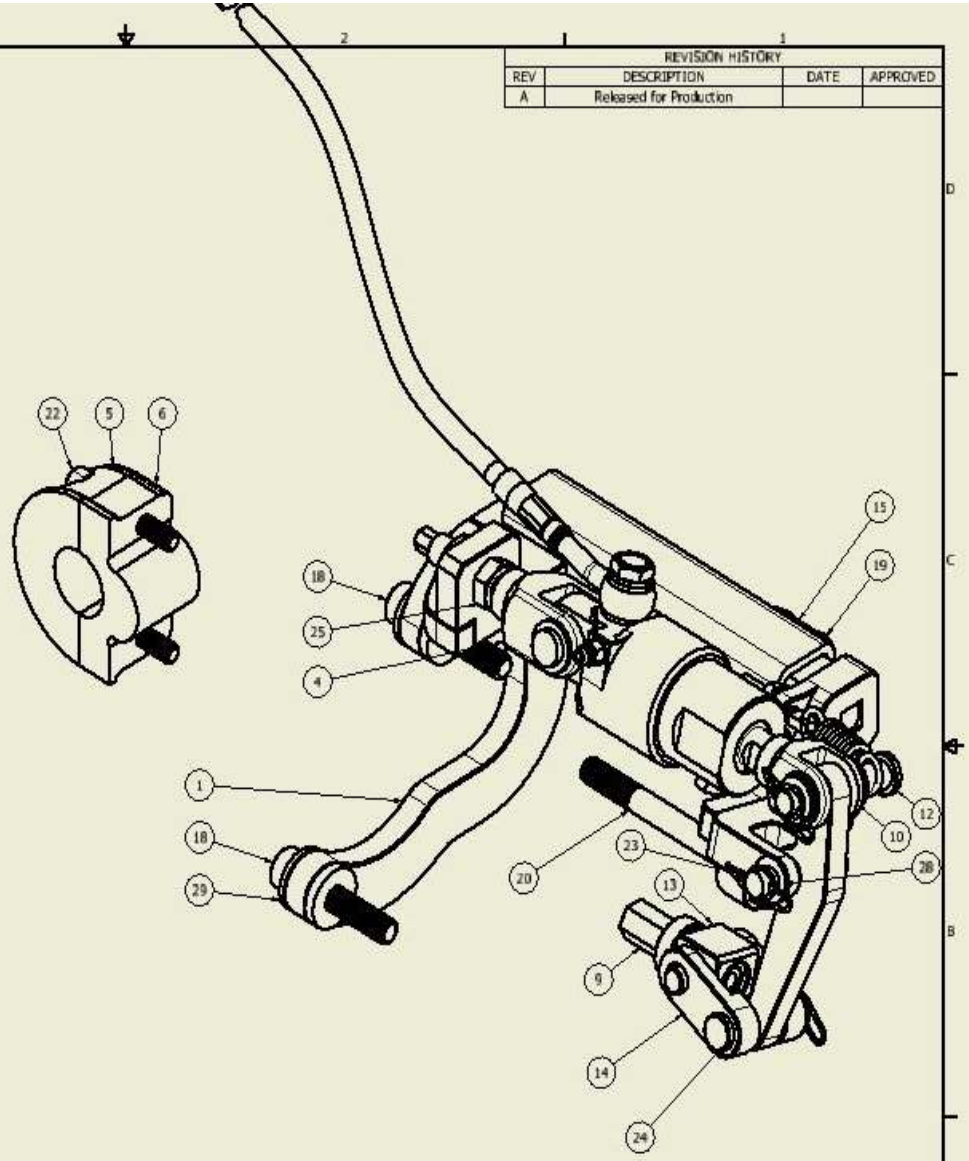


Once you are at the point of filling and then bleeding the system all you have to do is open the Speed Bleeder® ¼ to ½ of a turn and leave it open with the clear tubing supplied on the nipple of the Speed Bleeder® while pumping the Master Cylinder Lever. Opening and closing of the bleeder screw repeatedly is no longer necessary due to the built in check valve of the Speed Bleeder®. You will need to keep an eye on the brake reservoir so you don't empty it of brake fluid. Once all the air is removed and you have bubble free fluid coming out of the Slave Cylinder, tighten the Speed Bleeder® to close it. DO NOT OVER TIGHTEN!!! If it leaks after closing tighten it a little more BUT NO MORE THAN 1/8 TURN!! If you tighten any more than this you might break it off. Be sure to top off the master cylinder with fluid after the bleeding process is finished.

www.speedbleeder.com

PARTS LIST					
ITEM	QTY	REV	PART NUMBER	DESCRIPTION	DIMENSIONS
1	1	A	SPY2100	Slave Cylinder Bracket, Forward	
2	1	A	SPY2200	Slave Cylinder Bracket, Rear	
3	1	F	7-8 Slave	Slave Cylinder	
4	1	F	SPY406	Slave Cylinder Clevis	3/4" X 1" X 1-3/4"
5	1	A	SPY509	Master Cylinder Clamp	1-1/4" X 1-1/4" X 2-5/16"
6	1	A	SPY510	Master Cylinder Clamp Spacer	1-1/4" X 1-1/4" X 2-5/16"
7	4	B	SPY805	Bronze Flanged Bushing	5/8"OD X 5/16"
8	1	A	SPY1027	Adjusting Screw	3/8"-24 X 2"
9	1	A	SPY2108	Thrust Lock Nut	3/4" OD X 1-3/4" lg
10	1	A	SPY2110	R Slave Cylinder Clevis	1-1/8" OD X 1-5/16" lg
11	1	B	SPY2111_RevB	Pivot Arm	3/8" X 1" X 3-13/16"
12	1	A	SPY2112	Spring Retaining Clevis Pin	1/2" OD X 2" lg
13	1	B	SPY2113_RevB	Thrust Block	1" OD X 1-1/2" lg
14	2	B	SPY2114_RevB	Actuating Link	7/16" X 5/8" X 1-9/16"
15	1	A	SPY2115	Washin Plate	1/8" X 5/8" X 1-1/4"
16	3	-	2868T54	Bronze Bushing	3/8" OD X 5/16" ID X 3/8" lg
17	1	-	2938T370	Bronze Flange Bushing	1/2" OD X 3/8" ID X 3/4" lg
18	2	-	90128A278	M8 x 1.25 SHCS	40mm lg
19	2	-	90665A176	5/16-18 LHCS	3/4" lg
20	1	-	91280A558	M8 x 1.25 Hex Head, Class 8.8	80mm lg.
21	1	-	91847A029	Jam Nut	1/4-20
22	2	-	92196A546	1/4-20 SHCS	1-1/2" lg
23	2	-	92390A217	5/16" Clevis Pin	1-5/32" Usable Length
24	1	-	92390A218	5/16" Clevis Pin	1-1/4" Usable Length
25	2	-	93839A815	3/8-24 Jam Nut, Grade B	3/8"-24
26	2	-	95606A430	5/16" Nylon Washer	5/16" ID X 1/2" OD X 1/32" thk
27	1	-	95907A480	1/4-20 Spring Anchor	1/4-20
28	5	-	98017A690	5/16" Washer	5/16" ID X 9/16" OD X 1/16" thk
29	2	-	5061512A5	OEM Washer	1" X 1" X 1"
30	2	-	41750-06B	Banjo Bolt, M10 X 1	20mm lg
31	1	-	44551-08	Master Cylinder	Not Shown
32	1	-	FK003D25-2	Braided Brake Line	
33	4	-	FK003D010A	Crush Washer	10mm ID X 15mm OD X 1.5mm thk
34	1	-	LE 075E 02S	Extension Spring	.50" OD X 1-1/2" lg X .075 wire
35	4	-	RUE-10-S	Rue Ring Cotter	

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	Released for Production		



3)

2) CAD DATA IS AVAILABLE FOR THIS FILE

1) BREAK ALL SHARP CORNERS, DEBUR AS NECESSARY

NOTES:

SHEET 1 of 1

Scale: NTS | Drawing Unit: IN. [mm]

Tolerances Unless Noted Otherwise
Inches: .xxx ± .005 | .xx ± .01 | x ± .02
Fract. ± 1/32"
Metric: .xx ± .13 | .x ± .25 | x ± .5
Angle ± 0°-30'

Date: 3/15/2021	Material:	Dimensions:	
Drawn By: R.L.K.	Part #: SPY-HB-RKR	Finish:	
Surface Area: 706.14 in^2	Description: Ryker Handbrake	Company: ISCI	Model File #: I:\34917-1\Ryker\SPY-HB-RKR\SPY-HB-RKR.iam
Approx. Weight: 3.76 lbmass	Used In Assembly #:	Project: Spyder	File #: I:\34917-1\Ryker\SPY-HB-RKR\SPY-HB-RKR.idw

ISCI
INDUSTRIAL SPECIALTY CO, INC.
Precision Machining / Engineered Products / Anodizing
Revision A

ITEM	QTY	REV	PART NUMBER	DESCRIPTION	DIMENSIONS	PRE	IN PACKAGE?
1	1	A	SPY2100	Slave Cylinder Bracket, Forward		▲	
2	1	A	SPY2200	Slave Cylinder Bracket, Rear		▲	
3	1	F	7-8 Slave	Slave Cylinder		▲	
4	1	F	SPY406	Slave Cylinder Clevis	3/4" X 1" X 1-3/4"	▲	
5	1	A	SPY509	Master Cylinder Clamp	1-1/4" X 1-1/4" X 2-5/16"		
6	1	A	SPY510	Master Cylinder Clamp Spacer	1-1/4" X 1-1/4" X 2-5/16"		
7	4	B	SPY805	Bronze Flanged Bushing	5/8"OD X 5/16"	▲	
8	1	A	SPY1027	Adjusting Screw	3/8"-24 X 2"	▲	
9	1	A	SPY2108	Thrust Lock Nut	3/4" OD X 1-3/4" lg		
10	1	A	SPY2110	R Slave Cylinder Clevis	1-1/8" OD X 1-5/16" lg		
11	1	B	SPY2111_RevB	Pivot Arm	3/8" X 1" X 3-13/16"		
12	1	A	SPY2112	Spring Retaining Clevis Pin	1/2" OD X 2" lg		
13	1	B	SPY2113_RevB	Thrust Block	1" OD X 1-1/2" lg		
14	2	B	SPY2114_RevB	Actuating Link	7/16" X 5/8" X 1-9/16"		
15	1	A	SPY2115	Washer Plate	1/8" X 5/8" X 1-1/4"		
16	3	-	2868T54	Bronze Bushing	3/8" OD X 5/16" ID X 3/8" lg	▲	
17	1	-	2938T370	Bronze Flange Bushing	1/2" OD X 3/8" ID X 3/4" lg	▲	
18	2	-	90128A278	M8 x 1.25 SHCS	40mm lg		
19	2	-	90665A176	5/16-18 LHCS	3/4" lg		
20	1	-	91280A558	M8 x 1.25 Hex Head, Class 8.8	80mm lg.		
21	1	-	91847A029	Jam Nut	1/4-20	▲	
22	2	-	92196A546	1/4-20 SHCS	1-1/2" lg		
23	2	-	92390A217	5/16" Clevis Pin	1-5/32" Usable Length	▲	
24	1	-	92390A218	5/16" Clevis Pin	1-1/4" Usable Length		
25	2	-	93839A815	3/8-24 Jam Nut, Grade 8	3/8"-24		
26	2	-	95606A430	5/16" Nylon Washer	5/16" ID X 1/2" OD X 1/32" thk		
27	1	-	95907A480	1/4-20 Spring Anchor	1/4-20	▲	
28	5	-	98017A690	5/16" Washer	5/16" ID X 9/16" OD X 1/16" thk		
29	2	-	506151245	OEM Washer			
30	2	-	41750-06B	Banjo Bolt, M10 X 1	20mm lg		
31	1	-	44551-08B	Master Cylinder	Not Shown		
32	1	-	FK003DIS-2	Braided Brake Line			
33	4	-	FK003D010A	Crush Washer	10mm ID X 15mm OD X 1.5mm thk		
34	1	-	LE 075E 02S	Extension Spring	.50" OD X 1-1/2" lg X .075 wire		
35	4	-	RUE-10-S	Rue Ring Cotter			
36	10	-	80005K51	Cable Ties	8"		
37	1	-	0150425	Loctite 242			
38	1	-	5231K959	12" Clear Tubing	5/32" ID x 9/32" OD		
39	1	-	1670K3	Plug for Slave Cylinder		▲	
40	1	-	99461A440	Rnd Hd Phillips Screw for Plastic	#10 x 3/8"Lg.		
41	1	-	8876T2	Plastic Loop Clamp	5/16"ID Loop, Color: Black		

Items in Kit		
▲	PRE	Parts that are Pre-Assembled

Signature

Date

Order #