

PLUS 1 Quad Conversion

BASIC KIT,

Assembly Guide,

These instructions cover the procedures for assembling and installing the Plus 1 basic kit after the Slingshot's stock rear suspension has been removed. Prior to removing your stock components remember to measure the stock ride height , from the floor to a point on the rear Slingshot frame , to accommodate final adjusting the ride height of the Plus 1 installed Slingshot.

Some of these photos were taken from a partially disassembled kit. You will notice parts in the background that are already installed in the photos but haven't been installed yet in the instructions.

- Painting / Powder Coating** - The steel Tone Ring Q21B, the Upper Frame Support Q41H, the steel Speed Sensor mounting bracket from Q12C, the four steel Rod End mounting brackets from Q13F, the two heavy steel washers form Q13A , and the driveshaft Q41G, Should be painted prior to installation.
- The differential , though not painted in Automotive use, could be painted or clear coated prior to installation , Owner's preference .
 - The 2 Toe Rod Tubes do not require Painting but could be, for custom color choice, Owner's preference.
 - The Control Arms and Chassis require Painting or Powder Coating, the minimum protection required is a Black Texture spray. (Bed Liner for trucks, available in rattle can)
 - Before assembling the shocks, the springs could be painted or powder coated for custom color choice, Owner's preference.

- Special Tools needed,-** 36MM SOCKET TO TIGHTEN WHEEL BEARING NUTS
- 22MM HEX SOCKET TO REMOVE POLARIS SWINGARM
 - Green Loctite for 12 driveshaft bolts,

Step 1 - Install the Differential

Parts Needed:

- Plus 1 chassis
- Differential
- Q13E - Differential Mounting Hardware
- Q11E - Differential Vent Hardware
- Q21E - Wheel Speed Sensor Steel Mount from Q12 C

Procedure:

Any preferred painting of the differential or end components should be done prior to installing. The tone ring should be pre-painted as well .

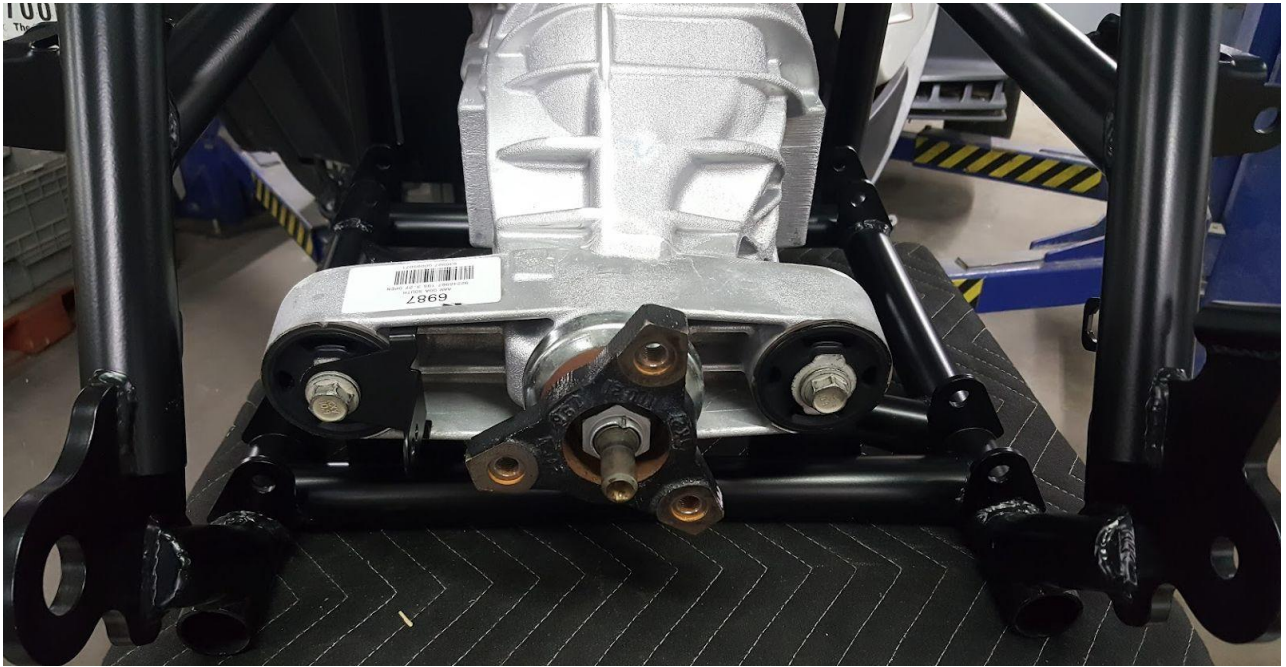
75 w 90 Gear lube may be partially drained for shipping and should be changed eventually with new, prior to operating the Plus 1 kit. The side plug is the fill hole, as well as the full level indicator. Capacity 1.75 Quarts

1. Slip one of the M12 x 90mm hex head bolts through one of the M12 flat washers and the Q12C steel wheel speed sensor mount. The two small tabs of the mount should point the same direction as the bolt.
2. Install this bolt into the passenger side bushing of the differential. The two tabs should fit into the webbing of the differential. A little twisting, bending, of the tabs may be required to fit into the webbing.



3. Install another M12 x 90mm hex head bolt with an M12 flat washer into the driver side bushing of the differential.
4. Lift and install the differential through the front of the Plus 1 Chassis. Align the front M12 bolts as you go. They should slip into the front mounts of the Plus 1 Chassis. To help keep from

scratching the chassis, you can lay a towel or a piece of cardboard inside the chassis. Prior to lifting

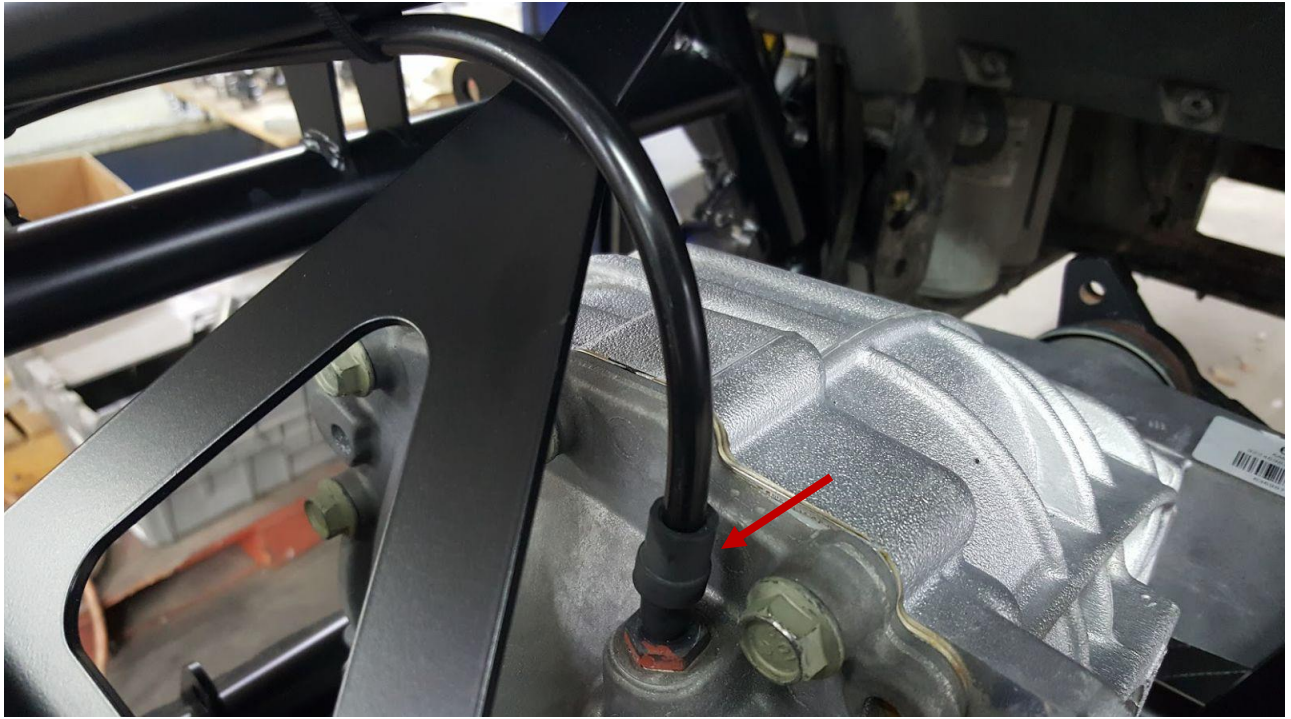


it in , its best to grind a small bevel , not even a ¼ " high on the bottoms off the two diff lobes on the sides of the rear arm as they need to be a tight fit which prevents the diff from dropping down easily.

5. Next align the rear differential bushing with the Plus 1 mounts and install the remaining M12 x 90mm bolt with a washer. You can install this from the left or right side.



6. Install the last washers and the nylok nuts. **Torque to 60 ft-lbs.**
7. Install the vent hose from the Q11E hardware bag onto the vent tube of the differential. Zip tie the vent hose to the chassis as shown.



Step 2 - Install the Brake Lines

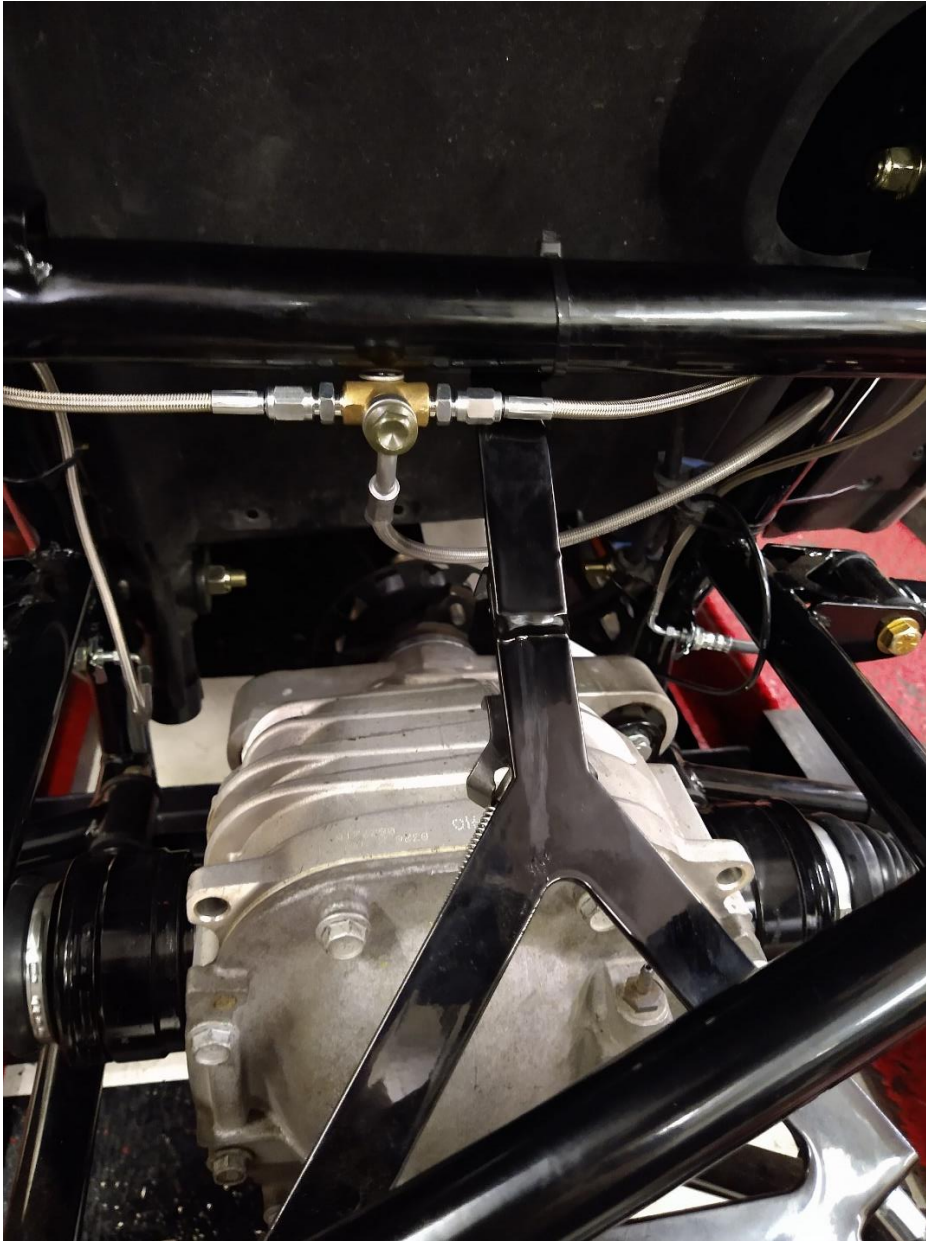
Parts Needed:

- Q11D - Brake Hose Hardware
- Q33B – Plus 1 rear brake hose, left
- Q33C – Plus 1 rear brake hose, right
- Q43C – Braided steel Brake Lines, t

Procedure:

1. From the Q11D bag, use the 1/4 x 1.25 inch button head screw and two 1/4 flat washers to install the brass brake tee into the rivnut near the top of the Plus 1 chassis.
2. The outer ports of the tee should be inline with the upper chassis cross tube and the center port of the tee should aim out the back of the Slingshot (see photos below).

3. Install the Q34C braided steel brake lines as shown in the photos. Using adapters From Q11 bag. into the Brass Tee
4. The center port of the tee will be left open at this time but will eventually receive the stock Slingshot brake hose.
5. The prebent bottom braided steel hose ends will bolt directly into Flex hoses at retainer clips , no adapters required.



Step 3 - Install the Upper Frame Support

Parts Needed:

- Q41J - Upper frame support bracket
- Slingshot upper shock bolt

Procedure:

1. Insert the upper frame support bracket into your Slingshot's upper shock mount. The tube end of the bracket should fit between the shock mount.
2. Use your Slingshot's original upper shock bolt to hold the shock mount. Tighten the bolt just until the bracket has a little bit of friction when you swing it back and forth.



3. Push the support bracket up and out of the way for now.

Step 4 A - Install the Plus 1 Chassis on the 2015-2016.5 Slingshot (for 2017+ see Step 4B)

Shown below is bushing kit Q13A for 2015 to 2016.5

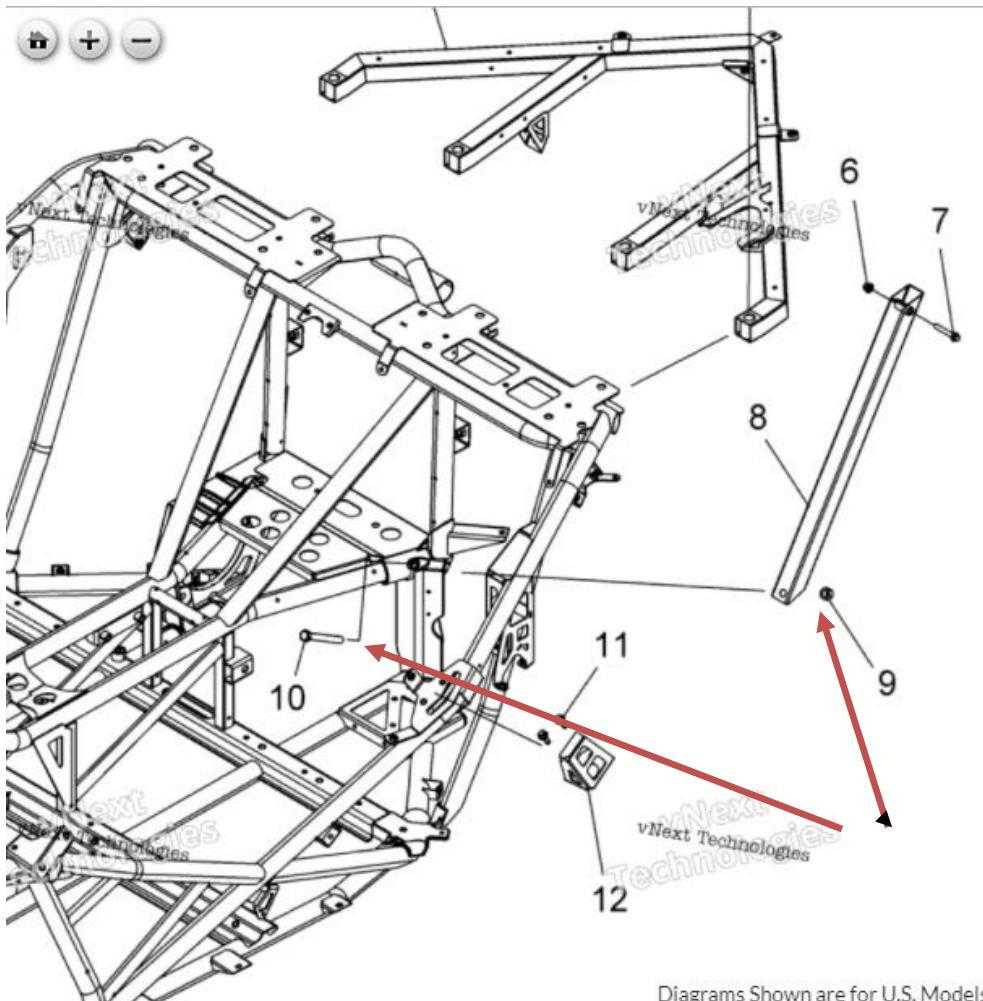
Parts Needed:

- Q13A - Chassis Mount Hardware for 2015 to 2016.5 Plus 1 Kits

Procedure: For Installing onto 2015 to 2016.5 Slingshots

Prior to installing chassis, drive the two black plastic caps into the tops of the vertical chassis tubes, a wooden block and a good heavy club hammer work best

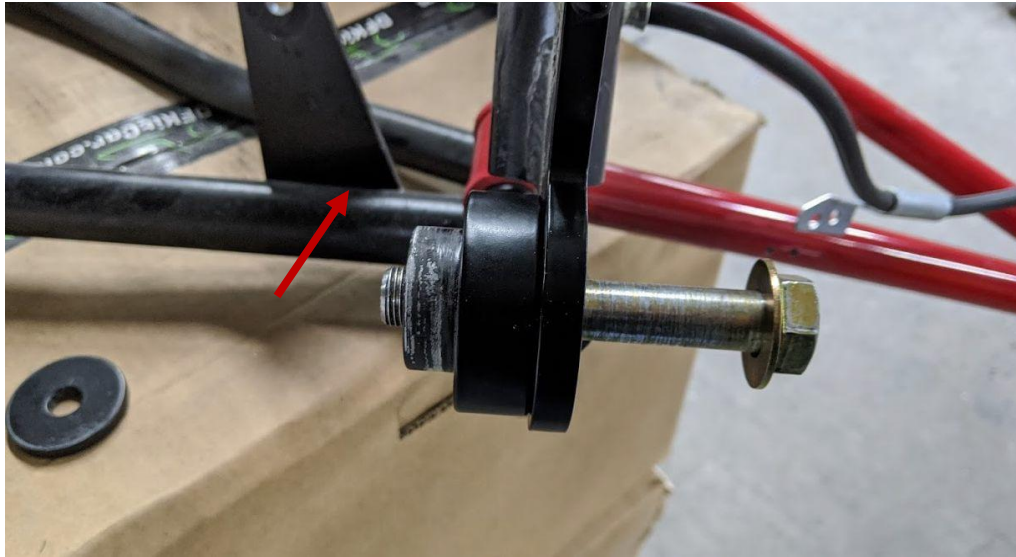
1. Prior to sliding the Plus 1 chassis into place, you will have to remove the 3/8 bolt, part #10 shown below, which bolts the aluminum subframe riser to the main slingshot frame, as you will be replacing that bolt later in Step 6 with a longer bolt.



Diagrams Shown are for U.S. Models

2. Slip the 5/8 x 4 inch hex head bolt with a 5/8 flat washer through the driver side of the Plus 1 chassis. The bolt head and washer should be toward the outside of the chassis.
- 3 Find the larger of the two aluminum alignment bushings in the Q13A bag. This is the driver side bushing.
4. Install the bushing Q42F onto the driver side bolt with the big flanged end against the Plus 1 chassis.



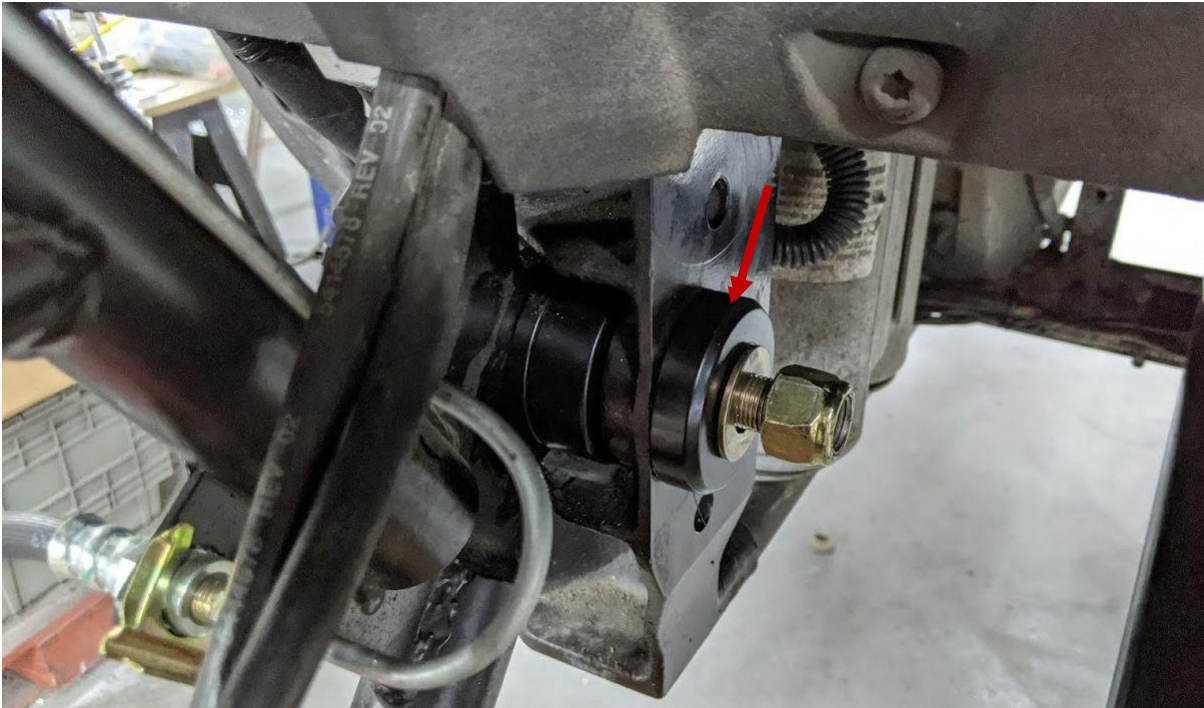


2. Place the Plus 1 chassis behind the Slingshot and guide it into place. This step will be easiest if you can vary the height of the Slingshot and/or Plus 1 chassis as you go.
Using a 12" tapered punch or similar, will help draw holes into alignment as you go.

3. Align the bolt and bushing with the Slingshot frame and slide it into place.



4. Use the larger of the two heavy steel washers from Q13A (shown black) and a 5/8 nylok nut and washer to hold the bolt in place. Do not tighten
It at this time. When you do, 100 lbs torque is adequate for this application.



5. Align the passenger side of the Plus 1 chassis, using a 12" tapered punch or similar, and install the smaller aluminum alignment bushing Q42G from inside the chassis with the 5/8 x 3 inch bolt and a 5/8 washer.



6. Outside the Slingshot frame, install the remaining heavy steel washer , Q13A (shown black) along with a 5/8 nylok nut and washer onto the 3 inch bolt. Do not tighten it at this time. When you do, 100 lbs torque is adequate for this application.



STEP 4-B. For 2017+ Models the bushing kit shown above, Q13A switches to package Q13B Shown below ,

The only difference is the driver's side bushing Q42 F becomes Q42H and has a smaller cap and longer, larger diameter, inserted end to accommodate the frame changes in all 2017 + Slingshots

PROCEDURE FOR INSTALLING PLUS 1 CHASSIS ONTO 2017 + SLINGSHOTS

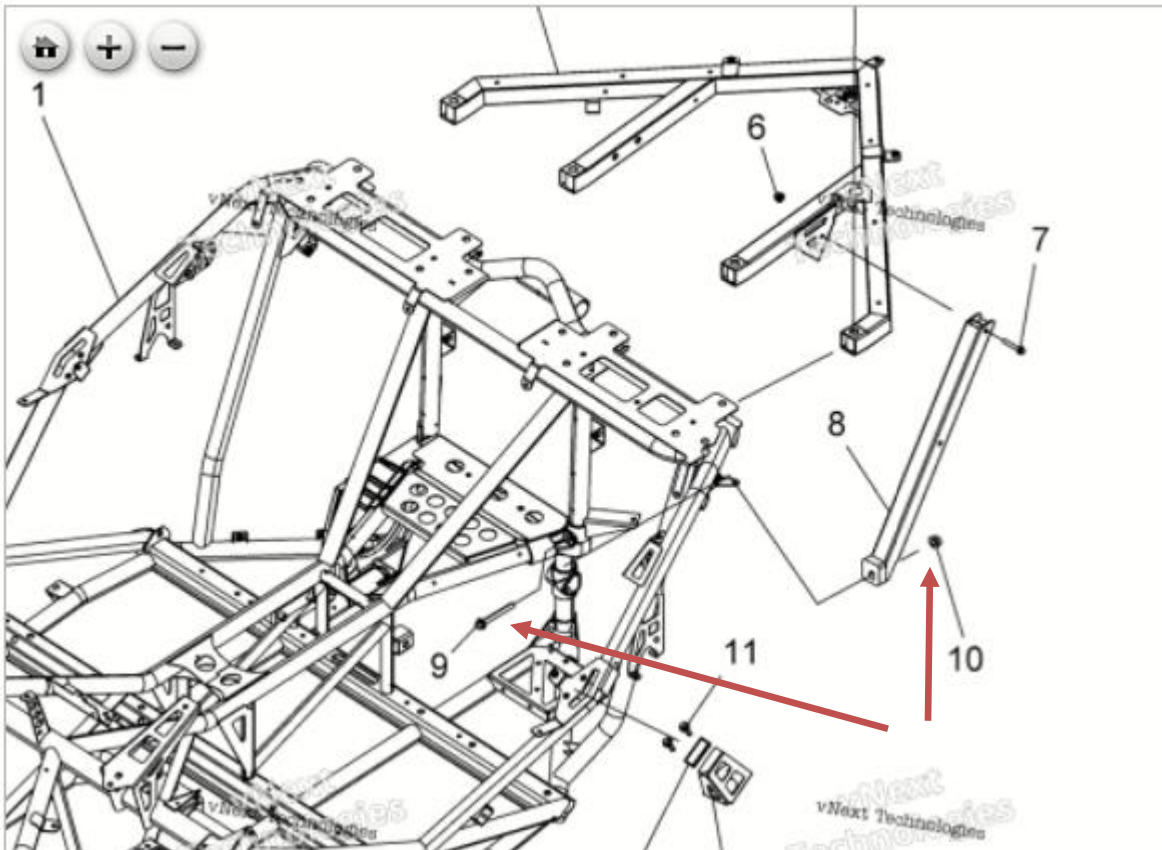
Parts Needed:

- Q13B - Chassis Mount Hardware for 2017+ Plus 1 Kits



Prior to installing chassis, drive the two black plastic caps into the tops of the vertical chassis tubes , a wooden block and a good heavy club hammer work best

1. Prior to sliding the Plus 1 chassis into place, you will have to remove the 3/8 bolt, part # 9 shown below, which bolts the aluminum subframe riser # 8 to the main slingshot frame, as you will be replacing that bolt later in Step 6 with a longer bolt. .



2. Place the Plus 1 chassis behind the Slingshot and guide it into place. This step will be easiest if you can vary the height of the Slingshot and/or Plus 1 chassis as you go.

The chassis sits to the left side, (battery side) of the drivers side frame and inside of the angle drive mounting frame .flange.

Using a 12" tapered punch or similar, will help draw holes into alignment as you go.

- 3.. Insert the largest aluminum bushing Q42H into the driver side of the plus 1 chassis , it will then extend into the swingarm bolt hole from the outside of the Slingshot frame pointing towards inside of the slingshot frame..

4 .Find the larger of the two heavy swingarm steel washers from Q13B for the driver's side and slip the 5/8 x 4.5" hex head bolt with a 5/8 flat washer through this larger steel washer,

5. Then insert that bolt through the mounting flange hole on the Plus 1 chassis and into the previously inserted large bushing Q42H inside the Slingshot frame swingarm bolt hole. As shown below



LARGE
ALUMINUM
BUSHING Q42H

Place a 5/8 flat washer and nylock bolt onto bolt after it exits largest aluminum bushing Q42H , do not tighten at this time. As shown below. When you do, 100 lbs torque is adequate for this application.

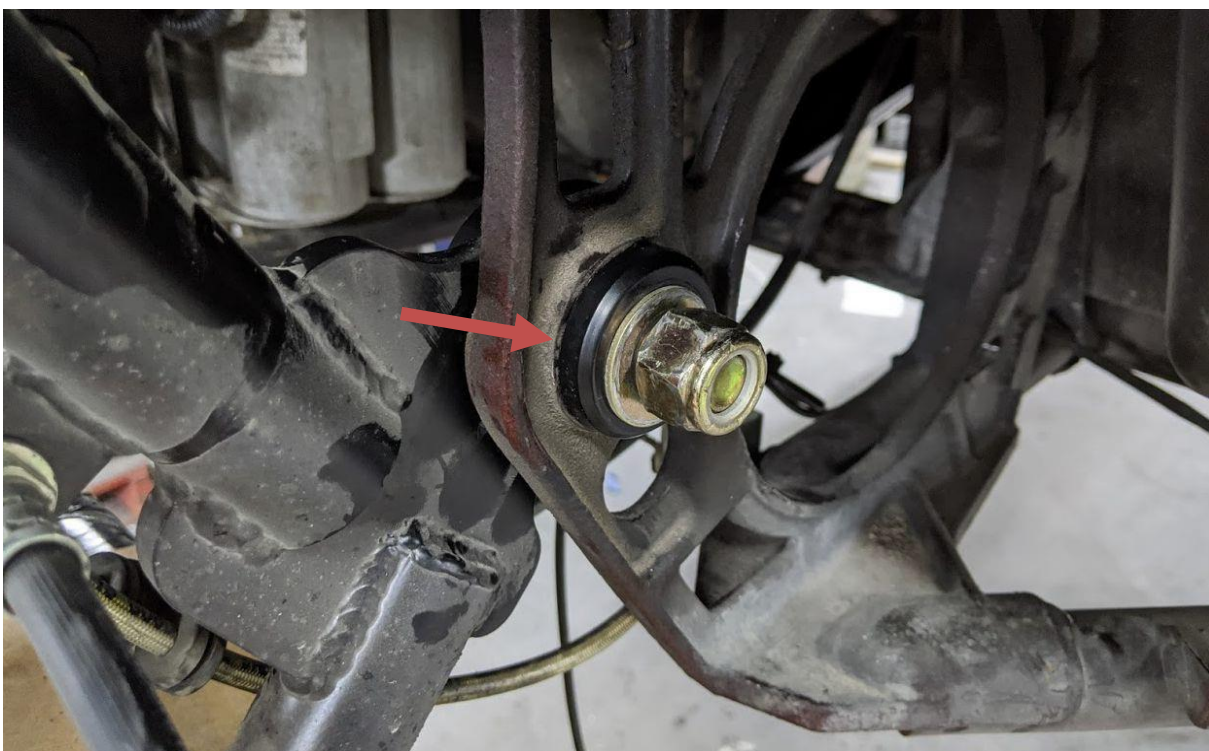


Large Steel washer from Q13B

7. For the passenger side Plus 1 chassis mounting flange to the angle drive mounting flange , find the 5/8 x 2.5" hex bolt and slip it through a 5/8 flat washer and then the second aluminum bushing Q42G from Q13B
8. Align the passenger side of the Plus 1 chassis, using a 12" tapered punch or similar, and install the smaller aluminum alignment bushing from inside the Plus 1 chassis with the 5/8 x 3 inch bolt and a 5/8 washer.



9. Outside the Slingshot Angel Drive frame, install the remaining heavy steel washer , Q13A (shown black) along with a 5/8 nylock nut onto the 3 inch bolt. Do not tighten it at this time. When you do, 100 lbs torque is adequate for this application.



Step 5 - Attach the Upper Frame Support

Parts Needed:

- Q11C - Upper Frame Support Hardware

Procedure:

1. Pivot the Plus 1 Chassis and draw it aligned with the upper frame support using the tapered punch



until the frame support aligns with the upper chassis mount tab.

2. Install the Q11C 1/2 x 1.25 inch bolt, washers and nut. Do not tighten it at this time.



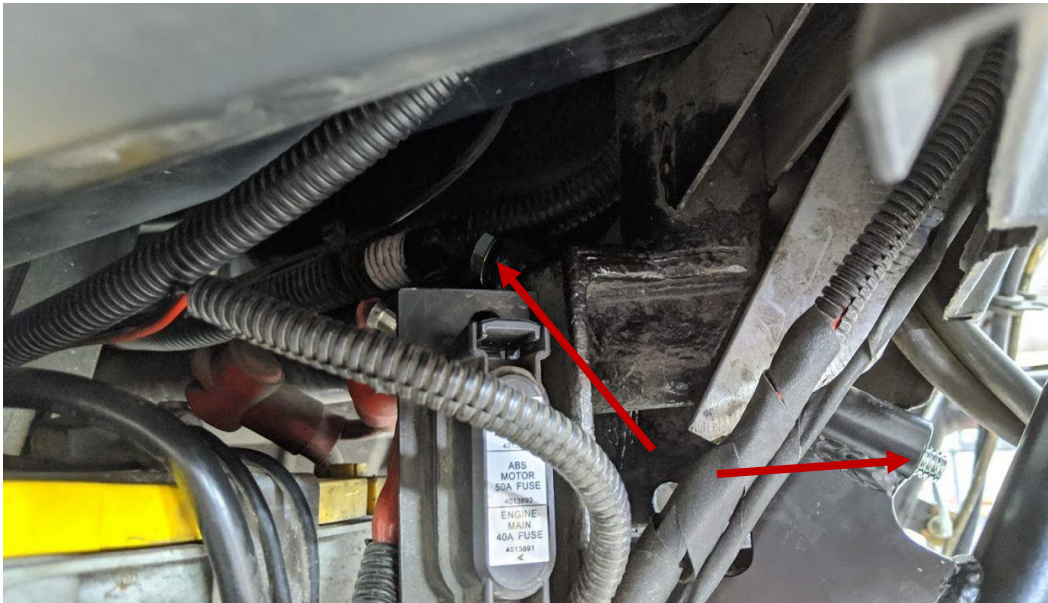
Step 6-A, Install the Final Frame Mount 3/8 Bolt on 2015-2016.5 Slingshots (2017+ SEE STEP 6-B)

Parts Needed:

- Q13A - Chassis Mount Hardware for Early Model Plus 1 Kits

Procedure:

Insert the 3/8 x 6.5 inch hex head bolt with a 3/8 washer into the driver side of the Slingshot frame. The bolt will go through the Slingshot frame where you removed the existing 3/8 bolt in Step 4 above., It will



pass through the Slingshot aluminum subframe and into the welded tube on the Plus 1 chassis



1. Place the 3/8 nylock nut and flat washer.as shown below.



2. Torque the 3/8 bolt and nut to 33 ft-lbs.Then go back and tighten the other three.
3. Torque the top bolt of the upper frame support (Slingshot upper shock bolt) to 50ft-lbs.
4. Torque the lower bolt of the upper frame support to 90 ft-lbs.
5. Torque the 5/8 lower frame bolts to 100 ft-lbs.

Step 6-B - Install the Final Frame Mount 3/8 Bolt 2017+

Parts Needed:

- Q13B - Chassis Mount Hardware for Late Model Plus 1 Kits

Procedure:

1. Insert the 3/8 x 5.5 inch hex head bolt with a 3/8 washer into the driver side of the Slingshot frame. The bolt will pass through the Slingshot aluminum sub frame where you removed the existing 3/8 bolt in Step 4 above., It will pass through and into the welded tube on the Plus 1 chassis.



3. To Place the 3/8 nylock nut and flat washer, you will have to notch the black plastic panel , as shown below





4. Torque the 3/8 bolt and nut to 33 ft-lbs. then go back and tighten the previous other three, chassis frame bolts.
5. Torque the top bolt of the upper frame support (Slingshot upper shock bolt) to 50 ft-lbs.
6. Torque the lower bolt of the upper frame support to 90 ft-lbs.
7. Torque the two 5/8 lower frame bolts to 180 ft-lbs.

Step 7 - Install the Upper Control Arms

Parts Needed:

- Plus 1 Upper Control Arms
- Q14A - Control Arm Bushing Hardware
- Q11A - Shock Mount Hardware
- O22B - DS401 Shock, Single Adjustable
- O22J - Spring 2.5 inch x 9 inch x 400 lbs/in

Procedure:

1. Assemble the QA1 shocks and springs following the instructions in the QA1 coilover boxes. Adjust the spring seat nuts until approximately 10 threads are shown below the black adjuster nut. Final ride height can be adjusted later..
2. Insert the red urethane bushings from the Q14A bag into the control arms.
3. Apply a small amount of grease on the inner diameter of the bushings and slide the steel tubes from the Q14A bag into the bushings.
4. Install the upper control arms into the Plus 1 chassis with the shock mount tabs aimed up. Use the 1/2 x 3.75 inch hex head bolts, washers and nuts to hold the control arm. If you have powder coated the chassis any powder inside these holes will likely have to be removed as these bolts require a tight fit .
5. **Torque the bolts to 90 ft-lbs.**
6. Use the hardware in the Q11A bag to bolt the top of the shocks to the Plus 1 chassis and the bottom of the shocks to the upper control arms.



Step 8 - Install the Lower Control Arms

Parts Needed:

- Plus 1 Lower Control Arms
- Q14A - Control Arm Bushing Hardware

Procedure:

1. Insert the red urethane bushings from the Q14A bag into the control arms.
2. Apply a small amount of grease on the inner diameter of the bushings and slide the steel tubes from the Q14A bag into the bushings.
3. Install the lower control arms into the Plus 1 chassis with the toe link tabs aimed behind the vehicle. Use the 1/2 x 3.75 inch hex head bolts, washers and nuts to hold the control arm.
4. **Torque the bolts to 90 ft-lbs.**
5. With the lower control arms attached only on their inboard end, the arms can move down far enough to contact the Plus 1 Chassis. To prevent damage, slide rags or cardboard between the control arms and chassis.

Step 9 - Assemble the Aluminum Uprights

Parts Needed:

- Q13F - Upright Hardware
- Q42B – LS Upright, Left,, Open Diff. **OR** Q42D SS upright, left LSD.
- Q42C – LS. Upright, Right. Open Diff **OR** Q42E SS upright right LSD.
- 2- P30LS - Wheel bearing hub, Open diff, 5x114.3 (x2) **OR** 2-P33SS Bearings LSD DIFF.

Procedure:

1. Place the aluminum uprights on a table . Notice that the face up surfaces of the uprights are flat. The sides with the protruded bearing hub spacers are face down against the table. Insert the wheel bearings from below, and bolt down using red Loctite, split washers and the three M12- 1.75 X55 bolts. You may wish to just snug bearing up at this time and tighten later when all control arms are in place .
2. Use the 1/2 x 4 inch bolts, washers and nylok nuts from Q13F to install the steel, 3 hole brackets for upper control arm to bolt into later ..These bolts are ½ longer to allow for fender installation at a later date if so desired.
3. The wheel bearings have two sets of lug bolt patterns, they are set in the 114.3 bolt holes to accommodate Slingshot stock rims , If you wish to use automotive rims with a 110 mm stud pattern you can knock the lug studs out of the P32L bearing hubs by tapping them with a hammer. Transfer them to the alternate pattern and pull them up with M12 x 1.5 lug nuts. Before bolting hub bearings into uprights , slide them into a rim to confirm they are correct stud pattern size. The Custom , Drilled and Slotted rotors provided by PLUS 1 fit both 110 and 114.3 lug patterns.
4. If you changed stud bolt holes, you don't have to get these fully seated at this time. When you torque your lug nuts at the end of the build, the studs will pull all the way into place.





Step 10 - Install the Uprights

Parts Needed:

- Q13C - Upper Control Arm Outer Hardware
- Q13D - Lower Control Arm Outer Hardware
- Assembled Uprights

Procedure:

1. Install the 5/8 x 3/4 rod ends with 3/4 jams nut into the upper control arms. These parts are in the Q13C bag.
2. Use the 5/8 X 2.5" bolts, washers and nuts in the Q13C bag to mount the uprights to the upper control arms. The caliper mount portion of the uprights should aim toward the front of the Slingshot and the bearing hubs should aim out away from the Slingshot. Use the 1" tapered aluminum spacers x 1/2" Long - 5/8 ID. with a 5/8 washer before and after spacers to correctly space between the steel brackets for the upper control arm rod end.
3. Snug the large 5/8 rod end bolts but don't torque them yet. You might have to remove these bolts later when setting the camber..
4. **Torque the 1/2 inch mount bolts to 90 ft-lbs.**

Do **not** attach the uprights to the lower control arms at this point. Let the lower control arms hang down to facilitate swinging out the uprights to put the axles in.

Step 11 - Install the Axles

Parts Needed:

- Axle (x2)

Procedure:

If you purchased the 3:27 Open Differential kit , the axles are two different lengths, The Part # GM8292 must be used on the passenger side, as it is 7/8" longer than the GM8291 which must be used on the driver's side.

If you purchased the LSD Differential 3:27 or 3:45 both axles are the same, they are Interchangeable part # GM8287

1. Remove the axle nuts from the axles.
2. Carefully insert the inboard end of the axles into the differential. Do not bump the seals with the axles. You can damage the seals or knock the seal spring out of place. Both cases will require the seals to be removed, to be replaced or to reinstall the spring.
3. You should feel the axles pop into place when they are fully seated into the differential. This might require a decent push.
4. Swing the aluminum upright and bearing hub outward (hanging from the upper control arm) and insert the outboard end of the axle into the bearing hub.
5. Install the axle nuts and snug them up as tight as you can by hand. Later when you have all the running gear installed , driveshaft etc, and slingshot lowered down onto ground and in gear you will need to torque the axle end nuts to 150 ft lbs torque. Failure to remember to torque axle end nuts to 150 ft lbs will result in a structural failure.

STEP 12 – Attach The Lower Control Arms to The Uprights

Parts Needed:

- Q13D - Lower Control Arm Outer Hardware

Procedure:

1. Install the 5/8 x 5/8 rod ends with 5/8 jam nuts into the lower control arms. These parts are in the Q13D bag. A good starting point for aligning later is to set the rod ends with 5 threads showing after jam nut is against rod end.

2. Use the 5/8 x 2 inch bolts and washers to attach the lower control arms to the uprights. Snug these bolts up but don't torque them yet. You might have to remove these bolts later when aligning the vehicle.



Step 13 - Install the Toe Rods

Parts Needed:

- Q12A - Toe Rod Hardware
- O44G – Plus 1 toe rod tube (x2)

Procedure:

1. Install the 5/8 x 5/8 rod ends with 5/8 jam nuts into the toe rods. Notice that one end of each rod has left hand threads. Two of the rod ends and two jam nuts will also be left hand threaded.
2. Thread the rod ends all the way into the rods until the jam nuts bottom out. A good starting point for alignment is to turn each rod end out until 5 threads are exposed after the jam nut is tightened..
3. Use the 5/8 x 2.25 inch bolts, washers and nuts to attach the toe rods to the control arms. **Torque these bolts to 100 ft-lbs.**
4. Use the 5/8 x 2 inch bolts and washers to attach the toe rods to the uprights. Snug these bolts up but don't torque them yet. You might have to remove these bolts later when aligning the vehicle.



Step 14 - Install the Calipers and Rotors

Parts Needed:

- Q13F Upright hardware
- Q33B Rear Brake Hose
- Q33C Rear Brake Hose
- Q11D Rear Brake hose Hardware

Procedure:

1. Install the pads into the calipers, NOTE* the two pads are not symmetrical , the one to go on the inside against the caliper piston has a spring clip on the bottom of the pad to keep it supported against the caliper piston correctly. The other one has no spring clip on pad and when placed in place , it needs to be lifted up over a bottom ledge that prevents it from sitting correctly, If just slid in against that ledge.
2. Place the rotors on hubs and slide the calipers with pads inserted over the rotors. Calipers should be oriented with E-Brake cable flanges and bleeder screws pointing up. Bolt calipers to uprights using M12 split washers over M12 flat washers with M12 x 1.74 x 40 bolts from Q13F
3. Install 033 rear brake hoses. Using clamps from Q11D on front lower control arm, and two caliper banjo bolts into calipers. When bolting brake line flanges to calipers, it is imperative their banjo bolt centerlines line up. Some aftermarket calipers have a rounded corner or too big a block stop cast into them (or aftermarket line head block is overly long) , not allowing brake line block to fit far enough in for bolt holes to line up. If that is the case on your caliper hose flanges, you have two solutions, 1- grind back the stop cast into the calipers but that is difficult and risky to scar up flange faces. 2- the easier method is just to shorten the flange block of the hose by grinding back the mating face against the caliper stop , you will see grooves in the face of the block marking the mating area for the copper seals, NOTE there is excess material outside of the grooves, you simply need to grind back the excess material , on an angle the end face of the line block by less than 1/16" You do not need to grind too far and get into the grooved face needed for the copper seal. Just a bit off allows the banjo bolt holes to center up perfectly and allow proper sealing flanges. .They will leak if you force the bolt into misaligned holes and you risk stripping the caliper bolt holes. PLEASE ENSURE BANJO BOLT HOLES LINE UP BEFORE FORCING BOLT IN.
4. Using the single 10mm Banjo Bolt with rubber seals, from Q11D Hook up OEM brake line from Slingshot into the brass brake tee from step #2. Some of the brass tees are not as deep as others, (limited availability) and the banjo will not go in far enough to compress rubber seals, if this is the case , do not apply excessive torque, simply add an additional copper washer above and below rubber seals against brass tee. (yes, 4 total washers)
5. Later when all the running gear is installed, bleed the brakes accordingly.



. Step 15 - Install the Parking Brake Cables

Parts Needed:

- Q12B Brake Cable Hardware
- 2 - E Brake Cables U95344 and 78-95344 or Dorman C95344

Procedure:

1. Insert the factory Parking brake Cable into top port of triangular E brake section of chassis.
If powder coating is too thick coating may have to be removed in holes to allow E Brake cables to insert.
2. Insert right and left E brake cables into bottom ports of triangular E brake Section of chassis
3. Using three way Parking Brake Cable Union from Q12B connect all three cables.
4. Insert cable end of E-Brake cables into calipers. Use 1 ¼ " clamps from Q12 B to support E Brake cables from rear upper control arms and slide protective sleeve tight against caliper to protect cable against suspension.
5. Adjust original E brake cable below E Brake handle to fully engage new E Brakes at less than full travel of E Brake handle.



Step 16 - Install the Speed Sensor

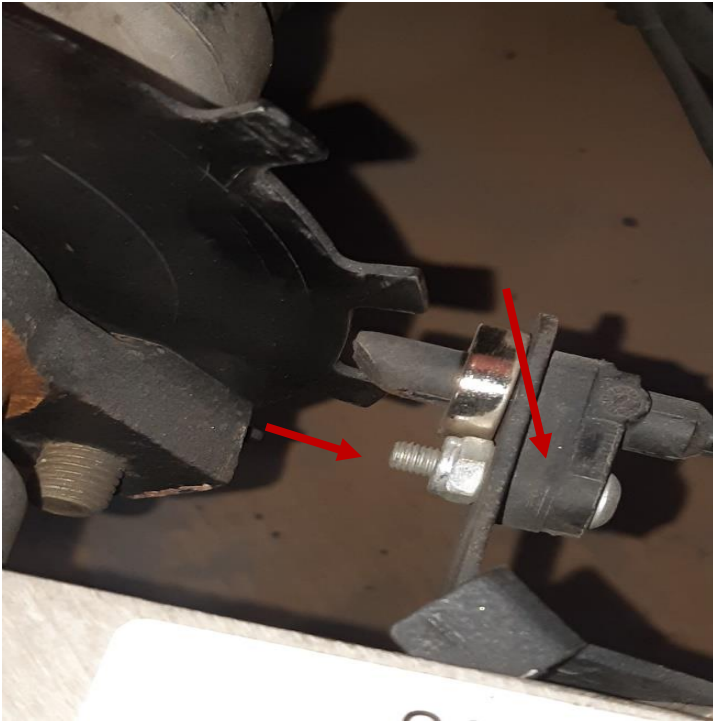
Parts Needed:

- Q12C Speed Sensor Hardware

Procedure:

1. IN Step 1 you installed the steel speed sensor bracket Q21E under the head of the front right differential mounting bolt, you will now install the factory stock OEM. Speed sensor from the Slingshot into that bracket.. To create the magnetic field that the Tone Ring will interrupt and send pulse signals from, you will find four thin wafer magnets stuck to the inside of the speed sensor bracket. Zip ties are used to identify the four wafer magnets and protect them via shipping , remove the zip ties and ensure the four wafers are lined up with the hole in the bracket. Note- the wafer magnets are fragile and will break if attempting to pry apart sideways . (There should be no reason to remove them but if you have to, slide down with a razor knife on one edge sliding that magnet off of others). You should simply be able to ensure the four wafers are slid in place aligned with the hole below then insert the speed sensor, into two holes in steel speed sensor bracket, from the outside of it, pointing in toward tone ring. Secure with 10-32 x 1 bolt and nylock nut from Q12C

You may need to bend or tweak the ears of the steel bracket to allow the sensor to clear the tone ring by at least 1/8 " and not to extend any further towards the center than the depth of the Tone Ring teeth , Set up shown below is good . V2 Plus 1 are shipped with a tone ring having a safety edge around the outer perimeter, maintain 1/8 " spacing between magnets and safety ring. The V2 magnets have been upgraded to four 2 lb wafer magnets verses the one 15 lb magnet shown. Ensure all three lobes of the driveshaft flange do not strike sensor as they rotate , they are rough ground with the odd lobe longer than the others.



. Step 17 - Install the Drive Shaft

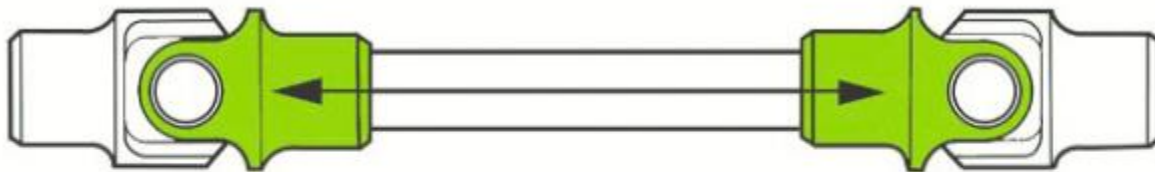
Parts Needed:

- Q41H Front Drive Shaft Adapter
- Q14C Front Drive Shaft Adapter hardware
- Q41I Rear Drive Shaft Adapter
- Q14B Rear Drive Shaft Adapter Hardware
- Q21B Tone Ring
- Q41G Drive Shaft

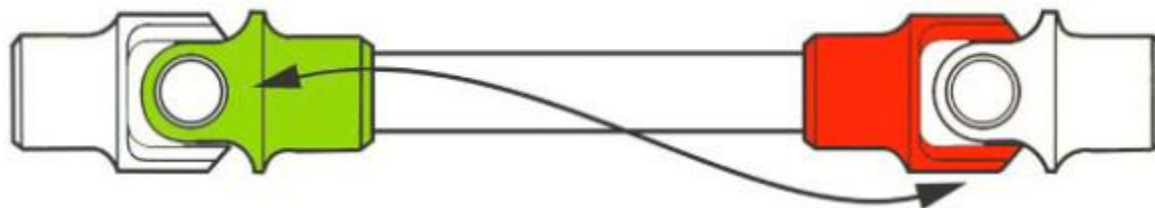
Procedure:

1. Place Red Loctite on the three M12 x 1.50 x 50 bolts and washers from Q14B and then place first, the Tone Ring against the differential flange, then the Rear Driveshaft Adapter Q41I then insert and torque the three M 12 bolts to 90 FT LBS
2. Install the Front Drive Shaft Adapter using Red Loctite on the six S.H. M8-1.25 X 30 bolts with split washers from Q14C. Snug the bolts in a criss-cross fashion the same way you would install a six stud tire. After ensuring tightened evenly, torque to 30 ft lbs .
3. Install the driveshaft , The short slip yoke end goes to the front transmission end .If you choose to unslip the slip joint and install the short end first , it is imperative you properly phase the opposing two end yokes when slipping the rear half back in . A properly phased driveshaft has both end yokes aligned, not rotated 90 degrees or any amount of twist , See illustration below .
Place Red Loctite on the S.H.7/16 – 14 UNC bolts, use the S.H.split washers when inserting into the driveshaft flanges bolting securely to the driveshaft adapters. And torque to 52 FT LBS.

CORRECT PHASING



INCORRECT PHASING



. Step 18 – Rear Wheel Alignment

Specs- Toe = 0 degrees

Camber, 0 degrees, street use

, Negative 1 degree, (track use, top leaning in)
Caster – factory set , none adjustable

The rear wheel alignment of your Plus 1 Quad conversion can be done at home if you have the skills. Premature uneven tire wear will appear on rear tires of those not properly aligned, and /or inflated.

Note- The threaded portion of adjustable rod end is 2 " in length. At no time can there be less than the diameter of the threaded shaft, buried in the rod end .(½ diameter rod requires minimum ½" thread penetration in rod end.)

SETTING CAMBER

If you install the rod ends with the recommended amount of exposed threads as mentioned in manual they will come out pretty close on camber, and toe is easily adjusted using adjustable link. The camber should be neutral , zero degrees for street cruising , and up to negative 1 degree for aggressive, track handling. meaning top leaning in . Alignment shops when they set camber want to move bottom in or out as most auto assemblies favor that , with the Plus 1 it is much easier to remove the horizontal 5/8 upper control arm bolt then turn the rod end in or out verses fighting to line up the bottom 5 /8 vertical bolts and trying to take them in and out to adjust lower rod end . one full turn on the upper rod end will give you about one degree camber .you can do this the same way we aligned automobiles for decades before digital alignment , string lines or straight edges, and levels , and are still used trackside on race night by hundreds of competitive racers when trackside repairs warrant it. A 4 ft level placed vertically up the side of tire can easily be used to set camber when you are installing the chassis at home shop , make sure there is no tire bulge at bottom , if there is, move level ahead or behind bulge .With the Slingshot sitting on floor, not on stands, the level should read level for street use, or the bubble should be touching the line on the outside edge for 1 degree of negative Camber.

The trick to easily removing that 5/8 horizontal upper bolt is to use a floor jack centered under the differential lifting against the bowed frame cross member there. You only want to lift enough to get weight off tire where it will sit flat on floor , you can remove 5/8 nut prior to jacking and find the sweet spot with the jack by being able to wiggle the 5.8 bolt loosely when you find that sweet spot . then remove the bolt and all the spacers , turn rod end in one thread for about one degree, place 5/8 bolt back in , no need to nut it yet, let weight off jack. Then use the level and decide if you have enough camber. Myself I set the camber to negative 1/2 degree approximately by just adjusting for the bubble to be slightly favoring the outside line when all weight is removed off floor jack . If satisfied ensure all spacers are properly set on 5/8 bolt and torque nut accordingly .

SETTING TOE

After camber is set, **The Toe** is easily adjusted , while front tires require toe in , rears should be neutral. First measure (confirm) the outside wheel base of your front tires when straight , they should be around 78 " depending on which rim offset you are currently running . Then measure rears with wheels straight, (use toe rods to straighten by eye and measure at vertical centerline of treads and see if you have tires parallel, if they are, you will have with same measurements across treads in front of the tires and across treads at back side of tires, then you can measure your rear outside wheel base) . You should find the rear wheelbase will typically be about 74", meaning 2" narrower track each side , depending which rim offset you are running .

Whichever measurement you end up with because of different rim offsets you will want to set the toe the same on both sides, meaning if you measure 78 on fronts and 74 on rears you will want rears 2 "

perfectly in line with the fronts but with a 2 inch narrower track each side. By loosening off the right handed , then left handed threaded jam nuts on adjustable toe rod link you will find it incredible easy and accurate to adjust toe on your rear tires , 1/2 a turn of the link will give you approx 1/2 " of track adjustment at your front tires. Keep in mind hundreds of thousands of vehicles were aligned without digital laser alignment racks prior to their exitance until just a few decades ago.

, Use a 12 ft straight edge or string line to determine where your rear tire is pointing (THE TOE) in regards to your front track. By simply placing a 12' 2x4 on edge across your rear wheel at the horizontal centerline and sliding it forward till it hits the front tire will show you where it is hitting . You will adjust toe link until the straight edge off your rear tire is hitting exactly 2 inches inside of the outside edge of your front tire, or whichever measurement you came up with after measuring your side to side parallel wheelbases. Set both rear tires the same way.

To double check your work , simply slide the 12 ft straight edges out the back end of your rear tires and with them fully extended , measure across them. If you have both rear tires set true at zero, or neutral toe, the distance across (rear wheel base) at the end of your straight edges will be the same 10 ft behind your sling as it is at the front tires.

