VAN STEEL
CORVETTE SUSPENSION SPECIALISTS

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C3 Rear Coilover Conversion

CO-C3-RS1, RS2, & with Bearings
CO-C3-RD1, RD2, & with Bearings
Eliminate the Transverse Leaf Spring

Videos on youtube.com/vansteelcorvettes

* * * For 63-64 Rear Drum to Disk Brake Conversions with Coilovers * * *

You **MUST** cut the rear bump stop tabs flush with the side of the frame rail and relocate the rubber bumper inboard. Failure to do so will result in part failures. On compression, the bump stop will hit the caliper and can cause the caliper mounting bracket to break.

We also have parking brake cables for 63 only specifically for this application.

Before starting, be sure that your side yokes are within spec

When putting a Corvette on jack stands or on a lift you should always pop the hood, release the t-top locks (if you have them) and pop the doors. This will help relieve stress on the fiberglass.

Rolling Chassis/Frame Off

Weld on the rear upper reinforcement brackets before painting/powdercoating your frame.

Torque Specs

See the last page for additional bolt torque specs

Parts Listing:

3/8" Studs w/Hardware (8)
5/8" x 5.5" Strut Bar Bolt (2)
Spanners *(unless included with front kit)*
Two Coilover Offset Trailing Arms
Two Shocks w/Hardware
- (2) Upper Reinforcement Brackets
- (4) 1/2 x 2.5" Bolts
- (8) Tappered Spacer Inserts

Required Tools:

- Vice Grips
- Large Flat Head Screwdriver
- Pry Bar
- Drill with 3/8" & ½" Drill Bit
- Heavy Hammer
- Center Punch
- Parking Brake Screw Driver (PT# PB-36)
- Needle Nose Pliers (11" PT# NN-01)
- Spindle Flange Nut – Socket 1 1/16"
- Torque Wrench
- Dial Indicator

OVER 40 YEARS
Building Corvette Bearings & Parts

Tear Down/Removal

1. Once your car is safely on jack stands or a lift, remove the rear tires.
2. **Remove and discard transverse leaf spring** and disconnect rear sway bar from T-arms.
2. Take a set of vise grips and crimp the rubber brake line on the side you are working on.
3. Remove the steel brake line that is on the back side of the caliper at the caliper and where the rubber and hard line meet along with the clips.
4. Remove the caliper.
5. If you plan on keeping your original rotors and don't have a dial indicator, this is the perfect time to mark your rotor and spindle. It's best to use a punch so you can see your marks after the parts are cleaned. This will help with rotor run-out later.

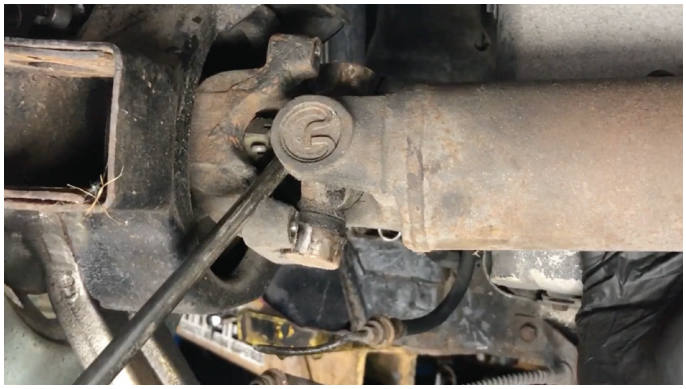
6) Next, you will move to the lower shock mount and remove both nuts.

7) You can take a long screwdriver and pry the lower part of the shock off of the mount.

8) You will have to drive the lower shock mount out. The heavier the hammer the better. Be careful not to mushroom the threads. We recommend a shock mount remover (Prt # SM-01). The old shock mounts will not be re-used in the kit, however, if you ever want to convert back to stock, you will be able to re-use these later on.

Use the castle nut or our SM-01 removal tool to kncok the shock mount out.

9) Disconnect the half shaft, both inboard and outboard. By removing the whole shaft from the car it will make the work a little easier.



Remove half shaft, 80-82's will require a little help from a prybar

10. Now you can loosen the front t-arm pivot bolt nut.
11. Try to remove the alignment shims. You should try to use a pry bar or large flat head screwdriver to work them out. Mark their location so you can reinstall them in the same order in which they were removed. If you can not get the shims out or if your pivot bolt is frozen, you will need to use a sawzall to cut through the shims and bolt in order to remove the t-arm from the car. It's a good idea to remove the rotor for the extra weight. When the arm is about to become free, be careful that it doesn't fall on you.

*** * *See bearing transfer instructions if you did not purchase coilovers with bearings installed.**

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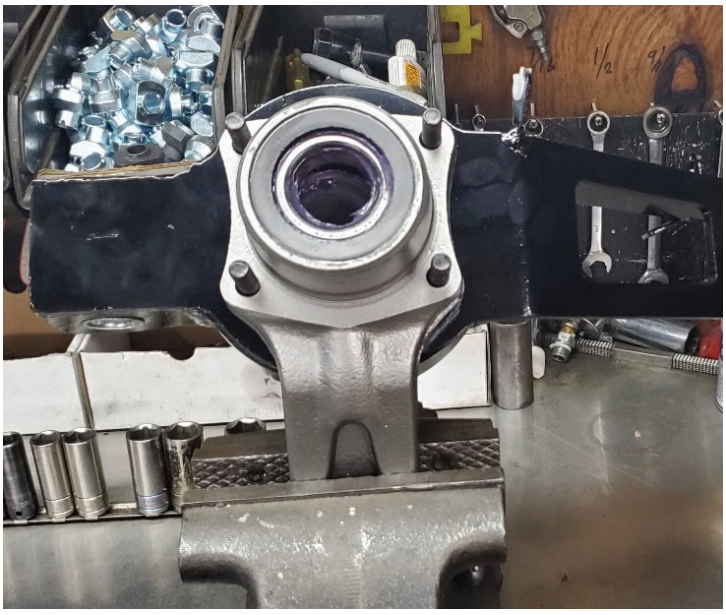
Coilover Installation

*** * *First, you'll need to drill out the upper shock mount to accept the 1/2" bolt supplied with the reinforcement brackets* * ***

These are typically bolted onto the top of the rear shocks for shipping.

We recommend you weld this bracket in place after everything is assembled and you are certain that everything clears. You can install it without welding it. If you choose to have it welded later on, please note that you ***SHOULD NOT WELD NEAR THE COILOVER SHOCK****. You should remove the shocks and disconnect the battery 1st (step 16 on Tarm installation).*

These cars are 25 plus years old and the shock brackets could have been mounted at +/- the mounting point.



How the t-arm studs slide onto a bare bearing support.

After the old t-arm is removed, you're now ready to install the new t-arm. You should also set the bearing support to one side of the vice vs. the center of the vice when you put the coilover arm on. The side you put it toward will depend on which coilover arm you are installing 1st (L or R).We provided you with new t-arm studs so use those. You will need to hammer those in before moving on. Once the new studs are in you can install the t-arm onto the bearing assembly.

1. Install the 4 T-Arm Studs the t-arms and slide the coilover arm into place.
2. Install the 5/8 x 5.5" long bolt and slide the spacer in between the coilover bracket and the bearing support. The spacers are "file to fit" since the bearing support castings can vary.

*** *NOTE:** *If you have adjustable strut rods, you can install the outboard side when you build the assembly and screw the sleeve on later. You can opt to remove the rotor to reinstall the t-arm assembly. It will take off a lot of weight. Just make sure the rotor run out is done and it's marked.*

3. Once the arm is on and spacer is fit, you can install the 4 lock washers and nuts and tighten the assembly up.
4. Reassemble your parking brake shoes and hardware.
5. Install the rotor. You should have marked the rotor and spindle like we mentioned before. Line the 2 marks up. It is important that you still do a rotor run out to ensure the run out is no too high. (You should install all 5 lug nuts when doing rotor run out with a dial indicator.)
6. Install the spindle flange, washer and nut. Torque the spindle nut to 100ft/lbs.
7. You can remove the 5/8" x 5.5" bolt so you can install the strut rod.

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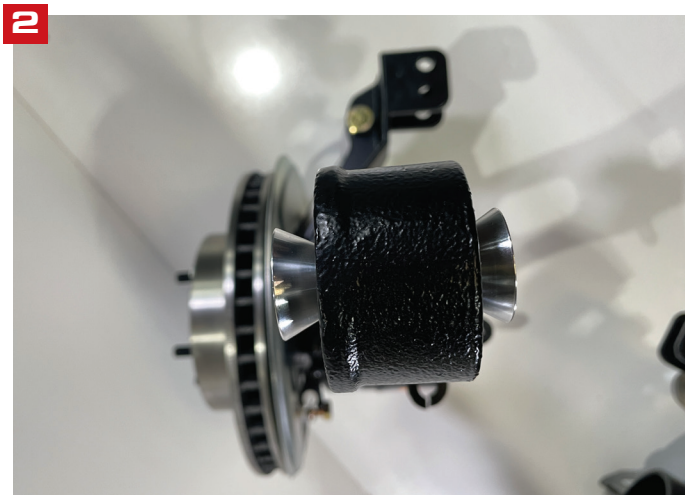
Installation of T-arm

1

2



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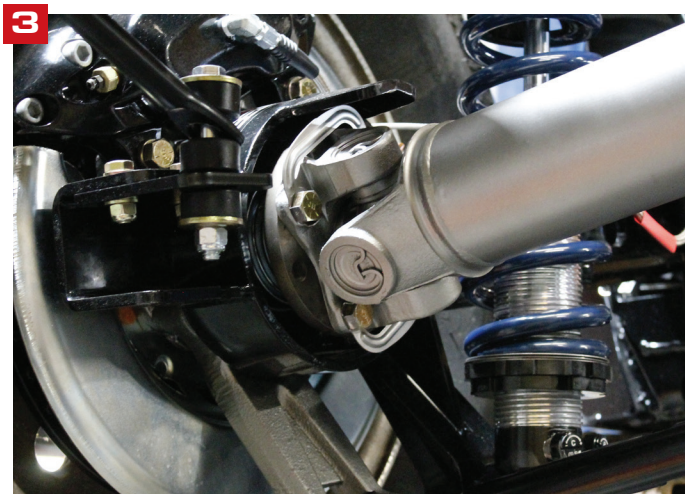

1) You should start by inserting your t-arm pivot bolt though the inner frame rail. Just get it in a ¼" or so. Using long needle nose pliers will help out. We recommend 11" needle nose pliers.
2) Insert bearing spacers (i for inner and O for outer). Place the t-arm into the frame pocket and push the t-arm bolt through. You will have to shimmy the arm around to make the bolt go all the way through.
3) Bolt your half shafts up. You'll use french locks for 65-79, or caps for 80-82 & Van Steel 31 spline axles
4) Install the strut rods. (Don't forget the inboard reducing washers.)
5) Re-install the 5/8" x 5.5" Bolt through the bracket, bearing support and strut rod. Placing the spacer in between the coilover bracket and bearing support. Spacer must be shaved down as there are variances per car. **DO NOT OVERTIGHTEN NUT**
6) Install the upper shock mount reinforcement bracket over the OE bracket. Tap it in place with a small hammer and drill out the original mount to accept the ½" bolt supplied. The bracket will look like the OE bracket, only thicker. The opened end of the bracket will open up to the front of the car on one side and the back on the other. Just like OE.

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Installation of T-arm

7

9

7) Install the coilover shock. Mount the top 1st. You should have the lower jam nuts on the coilover at its lowest point for ease of installation. Please note** that bushing on top of the coilover will be in a bind. This is because the assembly is in full droop. For installs with the body off, the bolt should be installed with the head of the bolt towards the outside of the car.
8) Once the top is installed, you should raise the jam nuts at this time to put some tension on the spring. Once there is some tension on the spring, you can install the shock on lower mount. Please Note**** The head of the bolt should face the front of the car. The nut will be toward the rear.
9) Install the Parking Brake Cable - You will need to put a tight "S" bend in the cable. We recommend you install the cable on the t-arm 1st. It's going to take some man handling to get it into the triangle bracket on the frame but it will go.
10) Install the rotor if it has not been done already.

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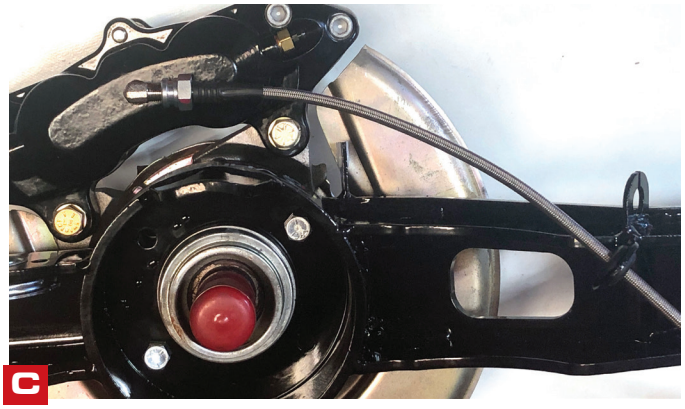
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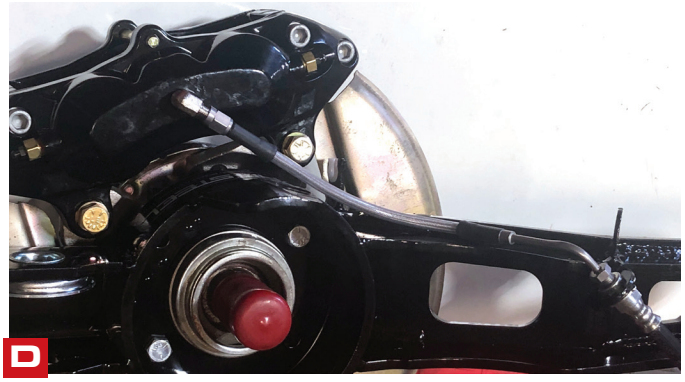
D

11) Install the caliper with the hard line (see page 6). This line will need to be tweaked to go around the coilover shock. You can also purchase part number RB-13-SLR-OE which is a long flex line that goes from the brake block to the center of the caliper and uses a short "J" line. This is for stock calipers. If you have Wilwood calipers, you can use part number RB-13-SLR-WW.
12) Connect the rubber flex line and the caliper hard line.
13) Install your wheels and place the car on the ground with the full weight of the car. If working on a rolling chassis, do not proceed until the car is at full weight and ready for test drive/alignment.
14) If you have a rear sway bar, install it at this time.
15) Now you can make your ride height adjustment using the spanner wrenches that were supplied. Move the car back and forth as well as jounce the car to make sure that nothing binds or rubs.
16) If all clears, jack the car back up, remove the coilover shock and weld the upper reinforcement bracket in place and re-install the coilover.
17) Once the car sits where you want it to, get it aligned.

Rear Caliper Setups

A) Factory Caliper with factory lines. You will have to slightly adjust the hardlines to fit correctly.
B) Factory caliper, with RB-13-OE lines. J-line to SS softline goes through t-arm bracket and into junction block. Also comes with clips to bolt to t-arm.
C) Wilwood caliper with RB-13-WWE. 90 degree fitting provided with calipers, SS softlines straight into junction block.
D) Wilwood caliper with wilwood provided 90 degree fitting & SS soft line. Connects to factory soft line.

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Torque Specs

- T-arm pivot bolt (hand tight only before alignment)
- U-joint (inner) u-bolts 15 ft/lbs
- U-joint (inner) cap 30 ft/lbs
- U-joint (outer) Flange bolts 70 ft/lbs
- Strut Rod (inner) Camber bolts 70 ft/lbs
- Strut Rod outer nylon nut 60 ft/lbs
  - *do not over tighten, can break bearing support*
- Shock Mount Bolts 40 ft/lbs
- Tarm Studs to bearing housing 30 ft/lbs
- Spindle Nut 100 ft/lbs
  - *minimum spec, tighten more to install cotter pin if necessary.*
- Caliper mounting bolts 70 ft/lbs

Shock Settings

You'll need to adjust to your shock valving, there are 18 settings/clicks. You should never run at zero clicks as it can damage the shock. We recommend these starting points below. You can adjust it to your ride quality after you get a feel for the car. If you have problems, please contact via phone, email, or message us on facebook.

C = Compression | R = Rebound

SHOCK STARTING POINTS

All specs below for 200TW Tires

Single Adjustable/Street
Front: 7 Clicks / Rear: 5 Clicks

Double Adjustable/Street
Front: C8/R5 / Rear: C5/R8

Double Adjustable/Advanced Street & Track
Front: C10/R5 / Rear: C4/R8
Contact us for Track Slicks/Drag setups

Alignment

All measurements based on a stock tire, overall height of 27"

*All toe amounts are total toe measurements. *You may experience accelerated tire wear with these alignment settings.*

Street Specs

FRONT

Rake	.500" Positive
Toe	.063° Total Toe In
Camber	0°
Caster OE Upper Arms	Max° Positive
Caster w/VS Tubular Uppers	6-8° Positive

REAR

Toe	.265° Total Toe In
Camber	.25° Negative

Advanced Street Specs

FRONT

Rake	.500" Positive
Toe	0° - Total
Camber	.25 - .5° Negative
Caster w/OE Upper Arms	Max° Possible
Caster w/VS Tubular Uppers	6-8° Positive

REAR

Toe	.265° Total Toe In
Camber	.25-.50° Negative

Track Specs

FRONT

Rake	.200" Positive
Toe	0 - .132° Total Toe Out
Camber	.75 – 2° Negative
Caster w OE Upper Arms	Max Possible
Caster w/VS Tubular Uppers	6.3-7.5° Positive

REAR

Toe	.265°-.657° Total Toe In
Camber	.5 – 1° Negative