



SPEED, INC.

**Detroit Speed, Inc.
Front Coilover Kit Race Double Adjustable
2010-15 Camaro
P/N: 030321**

The Detroit Speed, Inc. 2010-15 Camaro Race Front Coilover Kit provides bolt-on replacement strut assemblies that are fully adjustable. The adjustable spindle bracket allows ride height to be adjusted without affecting strut travel. The ride height can still be "fine tuned" with a coilover adjusting nut on the strut body as well. The top spindle mounting holes uses removable camber slugs to positively change camber without any worry of movement or slippage like a traditional slot. In addition, the DSE strut can achieve more negative camber than the OEM strut. The upper strut mount is replaced with a precision spherical bearing to eliminate compliance and improve response. In addition, the upper mounting plates offer quick, easy camber adjustment for track tuning.



Figure 1 - Top Camber Plate

Item	Description	Quantity
1	Front Strut Assembly (Double Adjustable)	2
2	Coilover Spring 250# x 2.5"ID x 8"L	2
3	Strut Tower Mounting Plate	2
4	Upper Strut Monoball Plate	2
5	Upper Spring Perch	2
6	Tapered Spacer	2
7	5/8" Long Straight Spacer	2
8	1/4" Long Straight Spacer	2
9	Camber Slug, 0	2
10	Camber Slug, 1/16"	2
11	Camber Slug, 1/8"	2
12	Camber Slug, 3/16"	2
13	Camber Slug, 1/4"	2
14	Coilover Nut Bearing	2
15	Coilover Nut Bearing Race	4
16	Upper Steering Bearing	2
17	Upper Steering Bearing Race	4
18	Star Adjuster	4
19	Endlink Adapter Sleeve	2
20	M16 x 70 Flange Bolt	4
21	M16 Flange Lock Nut	4
22	M6 Flange Lock Nut	2
23	M8 x 25 Socket Head Bolt	4
24	M8 Washer	8
25	M8 Nylock Nut	4
26	M10 x 25 Socket Head Bolt	4
27	5/8" Nylock Jam Nut	2
28	Drill Template LH	1
29	Drill Template RH	1

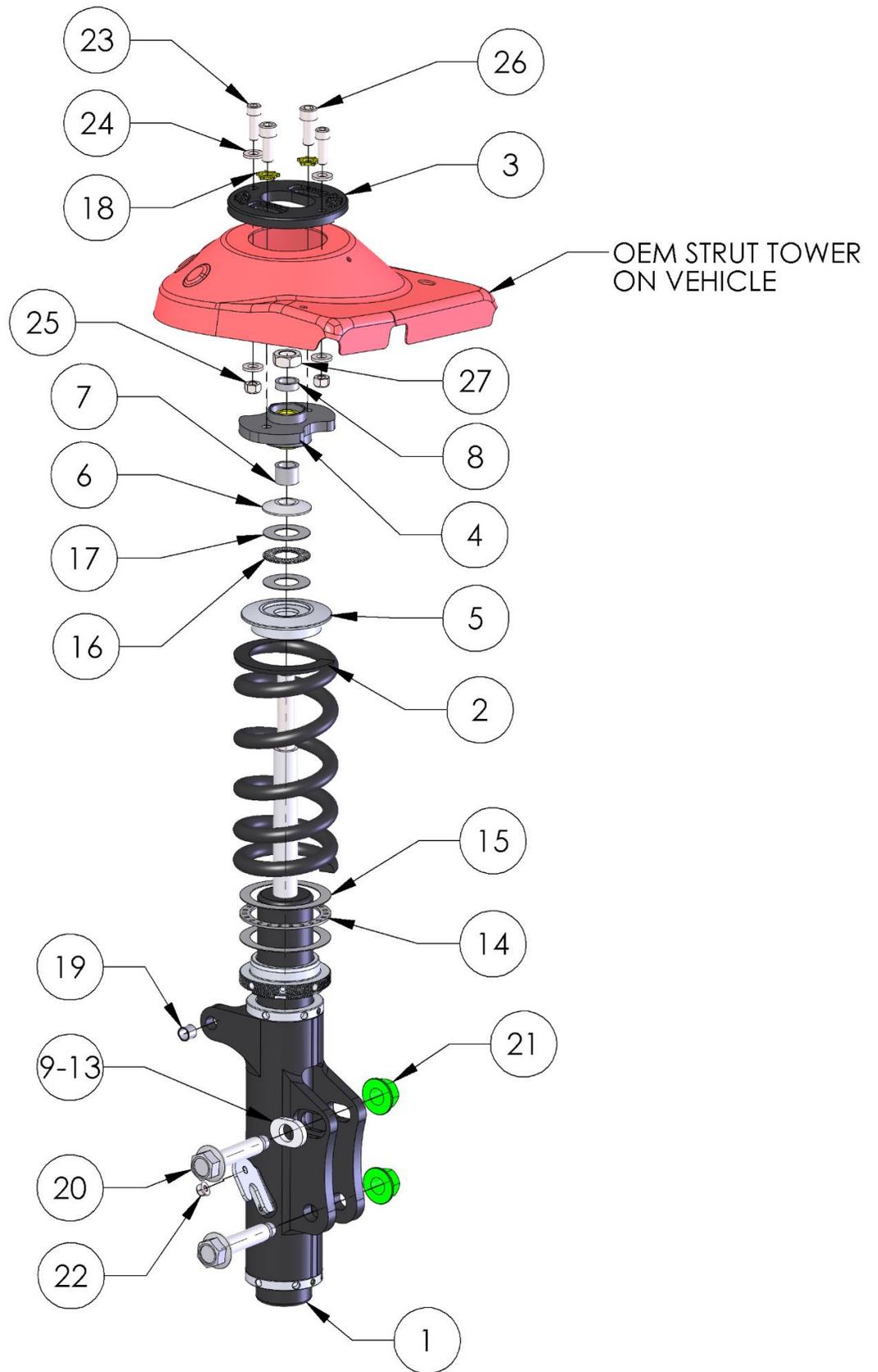


Figure 2 - General Assembly Exploded View, LH - Passenger Side

1. With the car safely up on jack stands remove the front wheels.
2. Disconnect the front brake line and ABS wire from each respective tab on the OEM strut. Save the M6 bolt from the brake line tab to be re-used later. Disconnect the front sway bar end link from the OEM strut.
3. Place a floor jack under the spindle or lower control arm to support the suspension while the strut is removed. Remove the two M16 nuts & bolts attaching the strut to the spindle. At this time the spindle should swing clear of the strut assembly. [Figure 3]

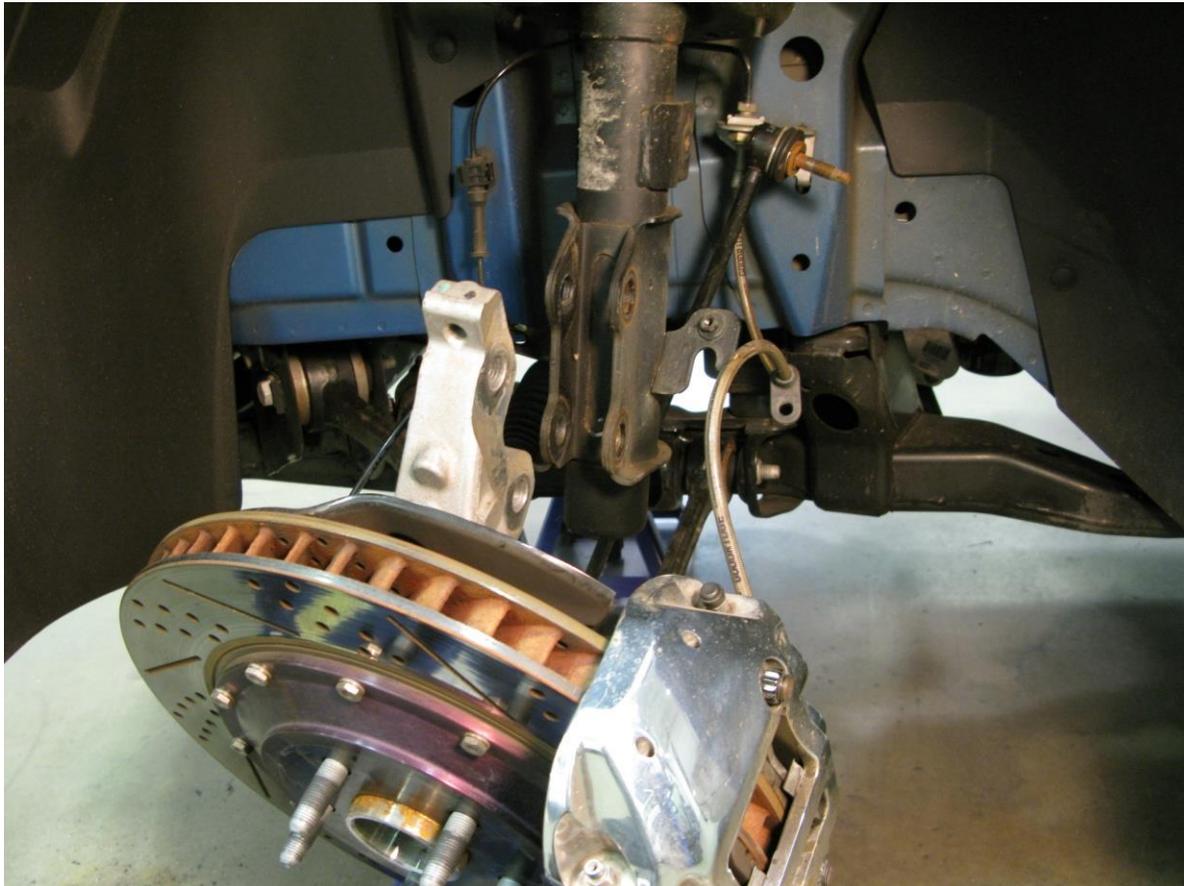


Figure 3

4. Remove the plastic nut cover on top of the strut tower. The nut holding the rebound plate to the strut should now be exposed. Remove this nut and the rebound plate with one hand while holding the strut assembly with your other hand so it doesn't fall. Remove the OEM strut assembly from the wheel house.
5. Use the provided templates to drill mounting holes for the strut tower mounting plates on each strut tower. Use these same templates to slightly enlarge the strut tower holes as well.
6. Bolt the strut tower mounting plate to the strut tower using the M8 socket head bolts, washers, and nylok nuts. Torque the M8 bolts to 27 ft/lbs.

NOTE: On 2011 and newer cars with strut brace holes be sure to position the recessed section of the plate over the hood strut bracket on the passenger strut tower.

7. Insert the upper strut monoball plate from the bottom side of the strut tower. Make sure the plate is oriented such that the snap ring for the monoball is on the bottom. Secure it with two M10 socket head bolts and two star adjusters. Set the stars to "0" in the center notch to start. Apply medium strength Loctite and torque the M10 bolts to 35 ft/lbs.
8. The DSE strut comes pre-assembled up to the point of loading the spring. Grease and place the coilover nut bearing assembly onto the coilover nut followed by the coilover spring and upper spring perch. At this point grease and place the upper steering bearing assembly into the spring perch followed by the steel tapered spacer and the 5/8" long steel straight spacer.
9. Insert the strut shaft through the monoball from the bottom side. Hold the strut assembly with one hand while placing a 1/4" long steel straight spacer and 5/8" jam Nylock nut on the top side of the strut shaft. Be careful to make sure the spring perch and upper steering bearing parts stay in position before snugging the 5/8" jam Nylock nut. **CAUTION: When tightening the 5/8"-18 Nylock Nut, failure to hold the shaft from turning too many times while under pressure can cause the inner shaft nut to loosen and fall off. This would result in sending the shocks back to be repaired at the customer's expense.** Turn the coilover nut up to take any free play out of the spring if necessary.
10. Insert a "0" camber slug into the recessed oval slot in the DSE strut. **WARNING:** When using the 3/16" or 1/4" camber slugs, you may be required to slightly clearance the radius on the spindle as it may interfere with the coilover shock mounting tabs. Attach the spindle to the new strut using the M16 flange head bolts and nuts provided. Torque the M16 nuts to 59 ft/lbs +180deg.
11. Go back and final torque the upper strut 5/8" jam Nylock nut to 50 ft/lbs while holding the shaft on the provided wrench flats. **CAUTION: When tightening the 5/8"-18 Nylock Nut, failure to hold the shaft from turning too many times while under pressure can cause the inner shaft nut to loosen and fall off. This would result in sending the shocks back to be repaired at the customer's expense.**
12. Attach the front sway bar end link to the DSE strut. There are two possible end link stud sizes your car could have, M10 or M12. If you have the more common smaller M10 size, insert the provided sleeve adapter into the end link mounting hole. If you have the HD M12 version you simply omit the adapter sleeve. Torque the M10 end link nut to 52 ft/lbs. Refer to factory specs for the M12 nut. (Figure 4)



Figure 4 – Sleeve Adapter

13. Attach the front brake line to the tab on the DSE strut. Install the M6 bolt saved from earlier from the outboard side and secure with the provided M6 flange nut. Clip the ABS wire grommet in to the provided tab on the DSE strut.
14. Repeat these steps for the other side of the vehicle.
15. Put the front wheels back on and torque the lug nuts to proper OEM specs.
16. Final set the ride height using the coilover nuts. Lock the coilover jam nut when finished.
 - a. With the vehicle assembled with all components installed, adjust the vehicle ride height. Before adjusting the ride height, DSE recommends cleaning the threads of the shock. Once the threads are clean, DSE recommends applying dry bicycle chain lube to the threads of the shock body before adjusting the spanner nut and compressing the coilover spring. Allow the chain lube to dry before adjusting the spanner nut. If you have the non-adjustable shocks, the spanner nut has a soft tip set screw that will need to be tightened before the vehicle is driven.
 - b. Detroit Speed does include a Spanner Tool (P/N: 031060) to adjust ride height as shown in Figure 5.



Figure 5 – DSE Spanner & Adjustment tools

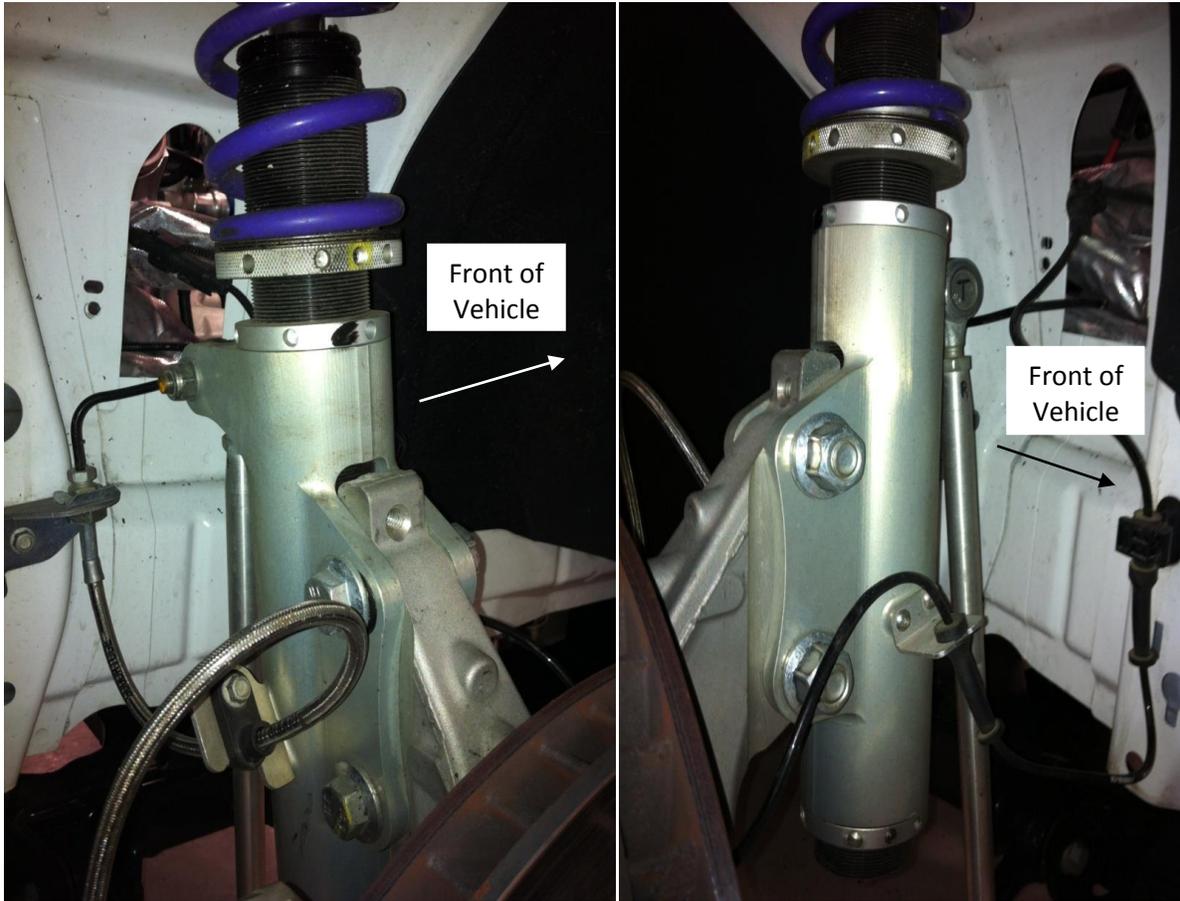


Figure 6 - Pictures above show installation on the passenger side



Figure 7 - Picture above shows mounting on the passenger side

Figure 8 below shows recommended alignment settings for performance street use.

Alignment Specifications	
Front	
Camber	-0.50° (-0.25° to -0.75°)
Caster	6.25° (Can be adjusted with DSE caster kit)
Toe	1/16" Toe-in (1/32" to 3/32")

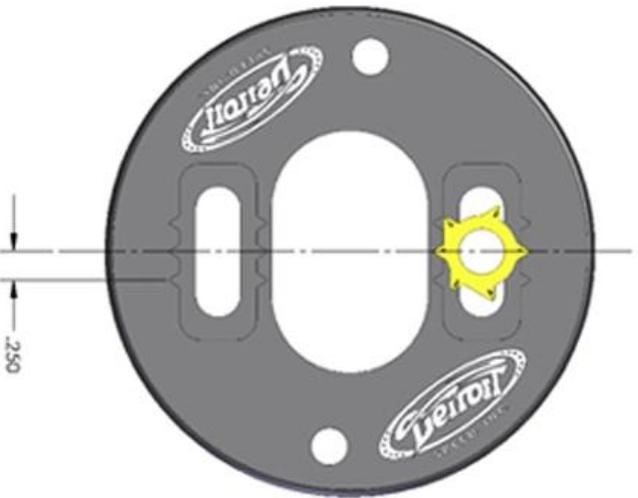
Figure 8 - Specifications are listed as nominal with a range in parentheses

Figure 9 below shows recommended alignment settings for track use on street tires.
(Increase camber more for non-DOT racing tires)

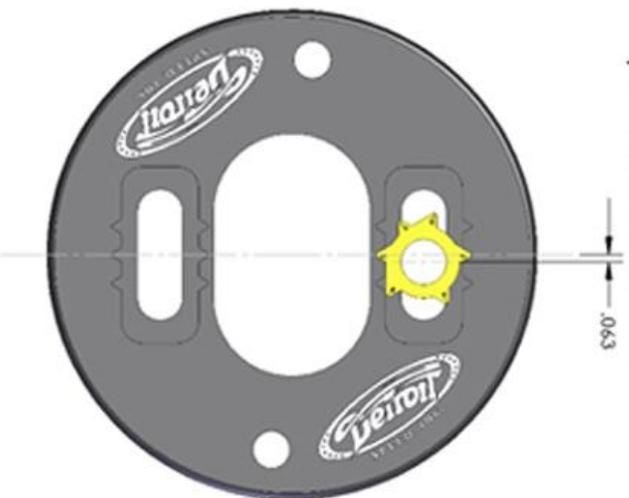
Alignment Specifications	
Front	
Camber	-1.5° (-1.0° to -2.0°)
Caster	6.25° (Can be adjusted with DSE caster kit)
Toe	1/16" Toe-Out (1/32" to 3/32")

Figure 9 - Specifications are listed as nominal with a range in parentheses

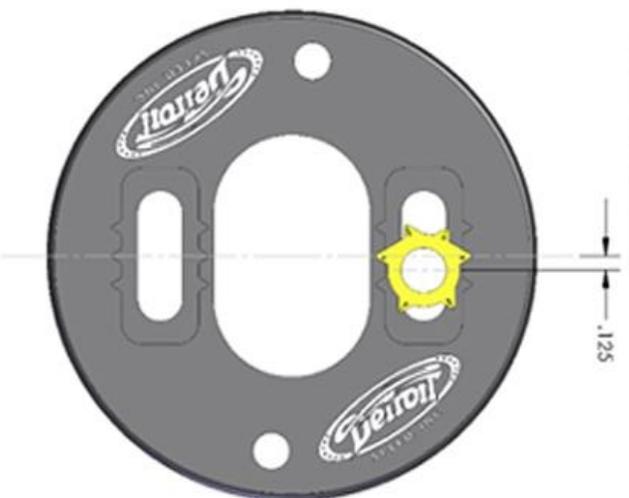
ADJUSTMENT STAR IS SET ON "0" IN THE CENTER NOTCH, MOVING THE STAR TO THE NEXT NOTCH MOVES THE STRUT 1/4" FROM CENTERLINE.



ADJUSTMENT STAR IS ROTATED TO A 1/16" MARK BUT REMAINS IN THE CENTER NOTCH, THIS MOVES THE STRUT 1/16" FROM CENTERLINE.

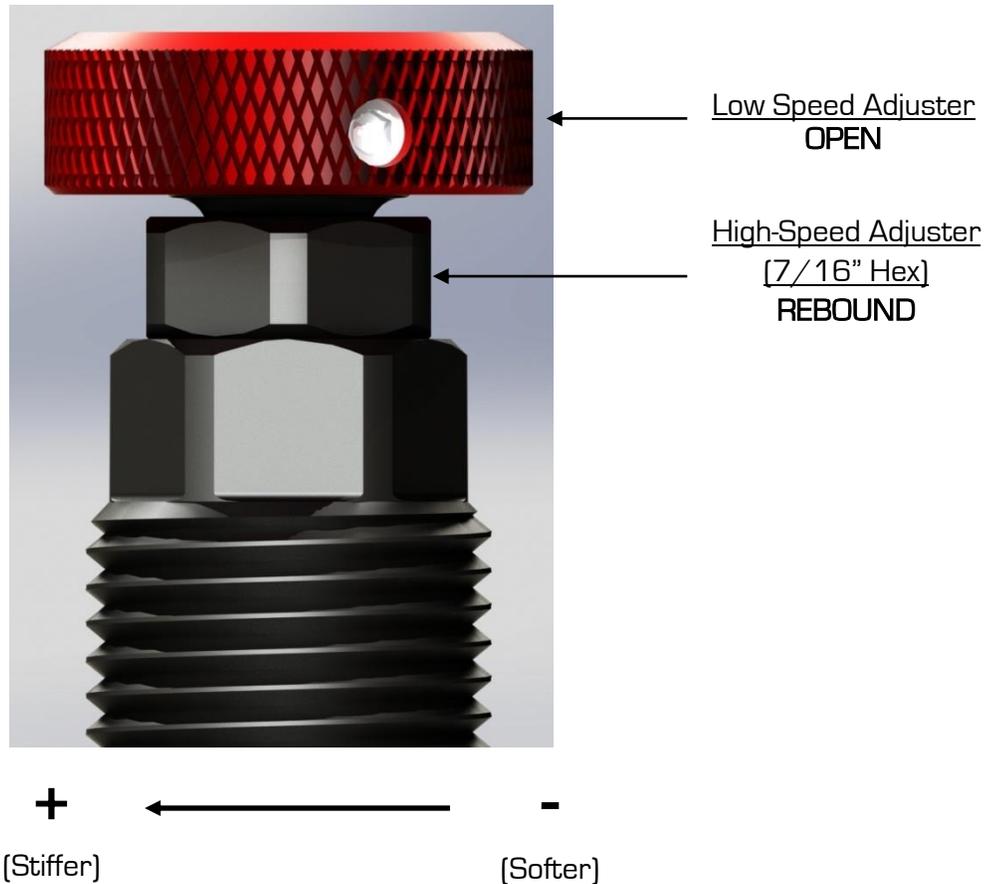


ADJUSTMENT STAR IS ROTATED TO A 1/8" MARK BUT REMAINS IN THE CENTER NOTCH, THIS MOVES THE STRUT 1/8" FROM CENTERLINE.



USE ANY COMBINATOIN OF STAR ROTATION AND NOTCH POSITION TO MOVE THE STRUT TOP "IN & OUT" FOR CAMBER ADJUSTMENT. EACH 1/16" OF STAR MOVEMENT CHANGES THE CAMBER ANGLE AT THE WHEEL BY APPROXIMATELY 0.15 DEGREES. IT IS RECOMMENDED TO INITIALLY SET THE CAMBER WITH THE SLUGS AT THE SPINDLE BOLTS AND THEN USE THE ADJUSTMENT STARS IN THE STRUT MOUNTING PLATES FOR "FINE-TUNING" AND QUICK TRACK ADJUSTMENTS.

DSE Double Adjustable Shocks



To change from the recommended "Detroit Tuned" valving, adjustments can be made independently to both the high and low speed settings. The rebound is controlled by the sweepers at the upper shock mount. The sweepers rotate clockwise (+) to increase the damping and counterclockwise (-) to decrease the damping.

The high-speed adjuster is a "sweep" style adjuster and the adjustment is measured by how many hex "flats" pass a given point. The high speed sweeper is directly below and is turned with a 7/16" wrench. The high-speed adjuster has 14 flats and is at its full soft position when the hex is bottomed out against the shaft end. The high-speed adjusters reference position is full soft and referred to as +0 (+0 = full soft, +14 = full stiff). Mark a line for reference to keep track of your adjustments.

The top knob is the low speed sweeper and can be turned by hand. It is a "clicker" style adjuster meaning that its adjustment is measured by detent grooves located inside the high-speed shaft and has 30 clicks. It uses a right-hand thread in its operation which means; as you increase low-speed, the adjuster will move down. The low speed adjuster's reference position is full stiff and referred to as -0 (-0 = full stiff, -30 = full soft). The adjuster is at full stiff when it cannot turn towards the stiff position anymore. **NOTE: Do not exceed 30 clicks on the low speed screw. When turning to full soft, as soon as you feel clicks stop, stop turning and return to the last clicking setting. This is the end of your adjustment.**

NOTE: The low-speed adjustment does not change when adjusting the high-speed, even though the adjuster turns when adjusting the high-speed shaft.

When adjusting the low speed rebound start at full (+) position, when adjusting the high speed rebound start at full (-) position. To return to the DSE recommended settings turn the sweeper clockwise(+) to full damping for the low speed setting, and counterclockwise (-) to full damping for the high speed setting. Once at full damping, turn counterclockwise (-) for the low speed setting, and clockwise (+) for the high speed setting to reach the recommended settings.

Low Speed Rebound (Sweeper)..... 15 sweeps (counterclockwise)(-)
High Speed Rebound (Sweeper)..... 4 sweeps (clockwise)(+)

DSE Recommended Settings

Once again, we appreciate your business.

If you have any questions before or during the installation of this product please contact Detroit Speed at tech@detroitsspeed.com or 704.662.3272

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