D190-0001

DINAN

ST-1 COIL-OVER SUSPENSION; F56 MINI

INSTALLATION

2014-24 F56 Mini Cooper 2-door (Base, S, & JCW)
2015-24 F55 Mini Cooper 4-door (Base, S)

Notes:

These instructions were written for a North American specification 2020 F56 Mini Cooper S, but other models are similar.

When disassembling the car, be sure to keep all fasteners so they can be reused. It is recommend that you get some kind of compartmented tray to organize the fasteners, such as a fishing tackle box or several large ice cube trays. Fasteners that are not reused for reinstallation are noted in the instructions. If a fastener is listed with an additional tightening sequence (such as an angle after a torque specification), it is a torque-to-yield fastener and is recommended to be replaced.

All directions used in this manual (right, left, front, etc.) are based on if you were sitting in the drivers seat of the car.

These instructions assume that you have basic mechanical skills and several varieties of basic hand tools in order to install the kit. If you have any questions about the install, feel free to contact your Dinan representative.

INSTALLATION NOTES:

DO NOT WORK ON VEHICLES SUPPORTED BY A JACK ONLY. USE SECURE JACK STANDS!

DO NOT USE A PNEUMATIC IMPACT GUN TO TIGHTEN THE SHOCK SHAFT TOP NUT! DOING SO MAY DAMAGE THE SHAFT AND THE SHOCK'S INTERNAL COMPONENTS. WARRANTY WILL BE VOIDED IF THIS PRECAUTION IS NOT FOLLOWED!

All suspension related components must be inspected and in good working condition. You should inspect all bushings, tie rods, hubs, bearings, strut mounts, sway bar end links, wheels, tires, etc. and replace if necessary.

Tightening of components & fasteners:

- All rubber-mounted strut/shock attachments must not be fully tightened until after the suspension system is loaded (wheels on the ground).
- Other mounting fasteners (brackets, strut mounts, etc.) must be securely tightened before load is placed on the suspension system.

Dinan’s recommended starting ride height is 3/4" lower than stock. Dinan has determined that this is a safe starting value under most instances. However, the vehicle's specific configuration (wheel/tire selection, vehicle loadout, body options such as aerodynamic kits, etc.), as well as the local road conditions & speeds, and driving style, all have a huge influence over what is considered safe for your individual situation. Take care to assess all of these factors when determining ride height, and adjust as needed.

Additional lowering beyond Dinan's recommended starting point is certainly possible, but extra care must be taken to assess tire & chassis clearance as warned previously. Furthermore, additional lowering will result in more frequent bumpstop engagement, which has the effect of increasing spring rate and will alter the handling balance of the vehicle. Extreme care must be taken during the initial test drive to assess the vehicle's handling, and adjust as needed.

Springs will settle after a test drive. Please be sure to recheck and adjust ride height after a test drive, but before performing an alignment.

An alignment is required after installation of this kit.

After installing the suspension system, a four-wheel alignment must be performed according to manufacturer´s specifications. Also check and reset load-dependent brake compensator, ABS system and headlight aim according to manufacturer's specifications, if applicable.

1) Remove the front struts and swaybar endlinks from the vehicle per factory recommended procedure.

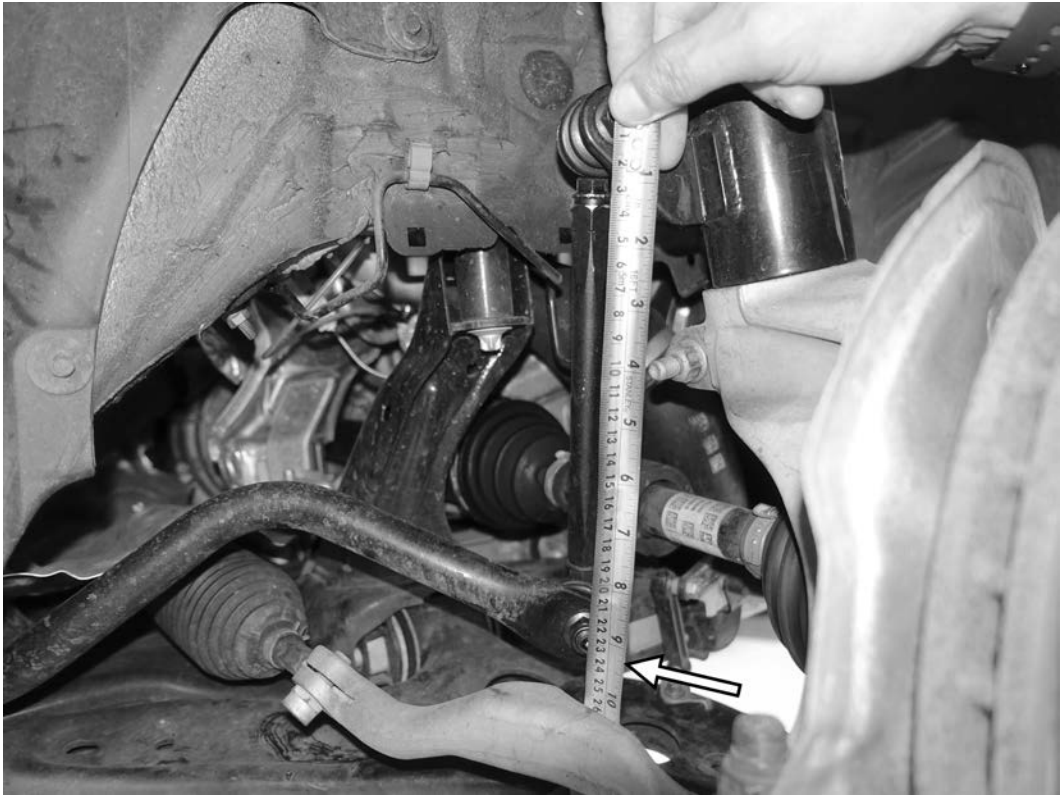
Prepare the new front coilovers for install. The middle setting shown in the picture on the camber plate should get the car close, if not in, the factory recommended settings for camber .

The Dinan coilovers are 32-way adjustable. Turning the coilover all the way clockwise is 0 (HARDEST) and all the way counterclockwise is 32 (SOFTEST). The coilovers should be set out of the box at 8, we recommend an initial setting of 22 for the front struts.

2) Adjust the preload on the spring. With the spring up against the bottom of the upper camber plate, hand thread the lower spring perch up to the bottom of the spring. Then, after measuring and with the supplied tools, tighten the lower spring collar an additional 10mm (0.38in), preloading the spring on the strut assembly. Thread the upper locking collar against the lower spring perch, and then lock the two in place against each other.

3) Adjust the position of the lower strut mount to where 73mm (2.88in) of thread is showing between the lower spring collar and the collar that holds the lower strut mount. This should set the front ride height about 19mm (0.75in) lower than stock. Using the supplied wrenches, lock the collar against the lower strut mount to prevent movement.

4) Reinstall the front coilover assembly in the car. The installation is the reverse of the removal, but all new factory bolts should be used. Tighten the the three upper strut mount screws to 30Nm (22 ft-lbs) and then tighten the screws an additional 90°. Install the pinch bolt from the back and install the nut, then tighten the nut to 44Nm (32 ft-lbs) and then tighten an additional 90°.

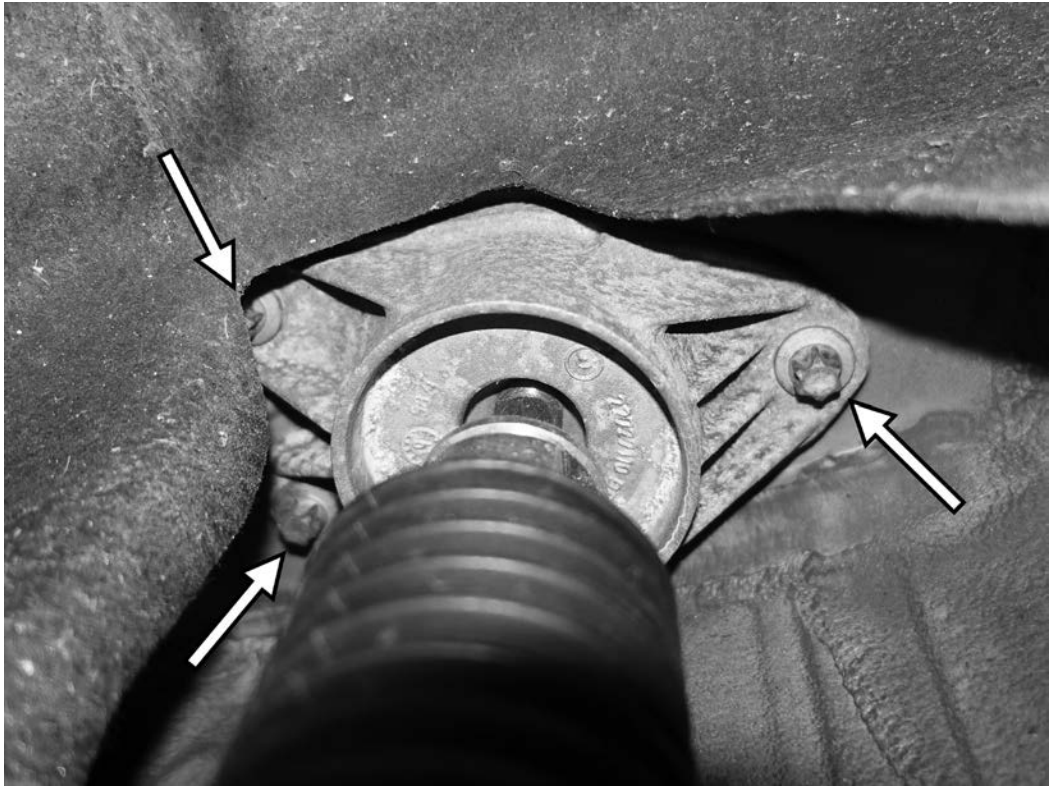


5) Adjust the length of the front swaybar endlink to approximately 235mm (9.25in) from the center to the center of the the end links. Rotate the ball joint ends to align the studs with the strut bracket and swaybar arm. Tighten the locknuts to secure the ends in this position, then install the endlinks.

6) Remove the rear springs from the vehicle per the factory recommended procedure. Separate the rear sway bar endlink from the lower side of the endlink. Be sure to remove the factory lower rubber spring pad as well. Install the Dinan rear spring assembly with the factory top rubber perch. Note that the upper Dinan spring perch is threaded to 6mm (0.25in) of the max highest position. This should result in a rear ride height that is about 19mm (0.75in) lower than stock. Leave the lower shock bolt off for now.

7) Remove the rear shock assembly from the vehicle per the factory recommended procedure. Separate the stock upper shock mount from the stock shock, and install it on the Dinan rear shock. Tighten the nut holding the upper shock mount to the the Dinan shock to 38Nm (28 ft-lbs).

8) Install the shock assembly back in the car, tighting the upper shock mounting bolts to 28Nm (21 ft-lbs). Reinstall the lower shock bolt to the trailing arm, but do not fully tighten it yet.

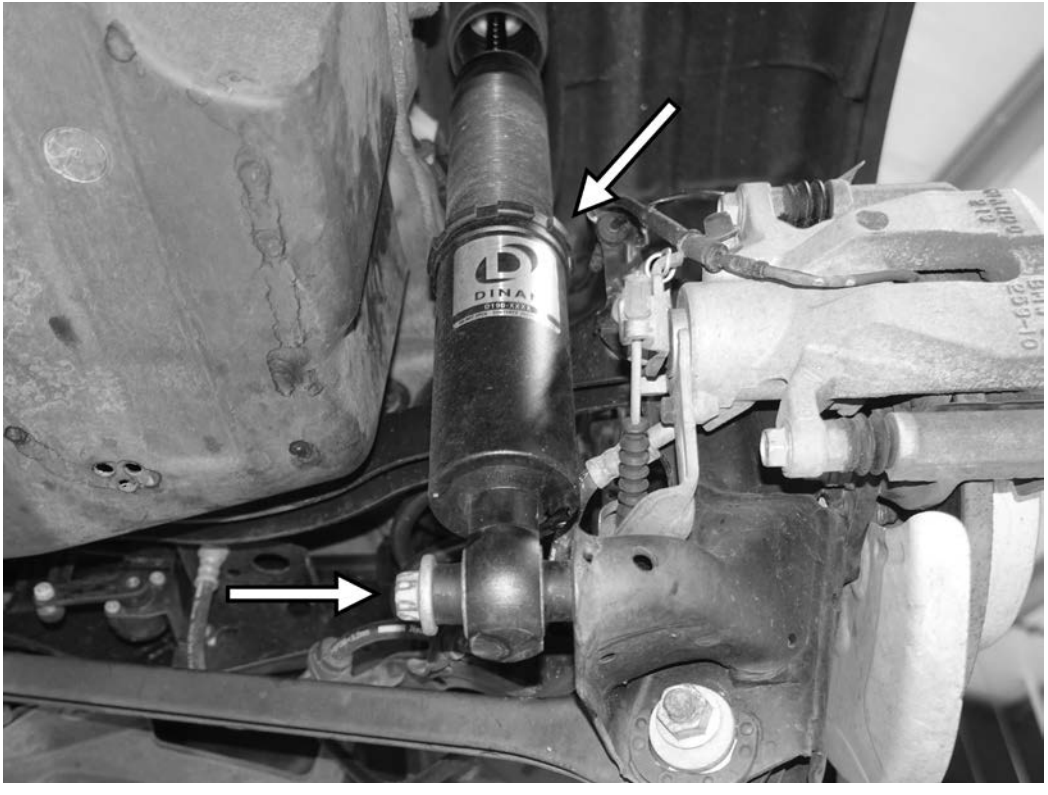


9) Reinstall the lower shock bolt to the trailing arm, but do not fully tighten it yet. Reinstall the wheel and tire assembly onto the rear upright.

10) Lower the car to the ground. Roll the car forward or backwards one to two tire revolutions so the tire tread is not binding, which will keep the car from sitting down correctly. Change the desired ride height on the car by threading the upper spring perch up or down on the threaded body of the upper spring mount if necessary.

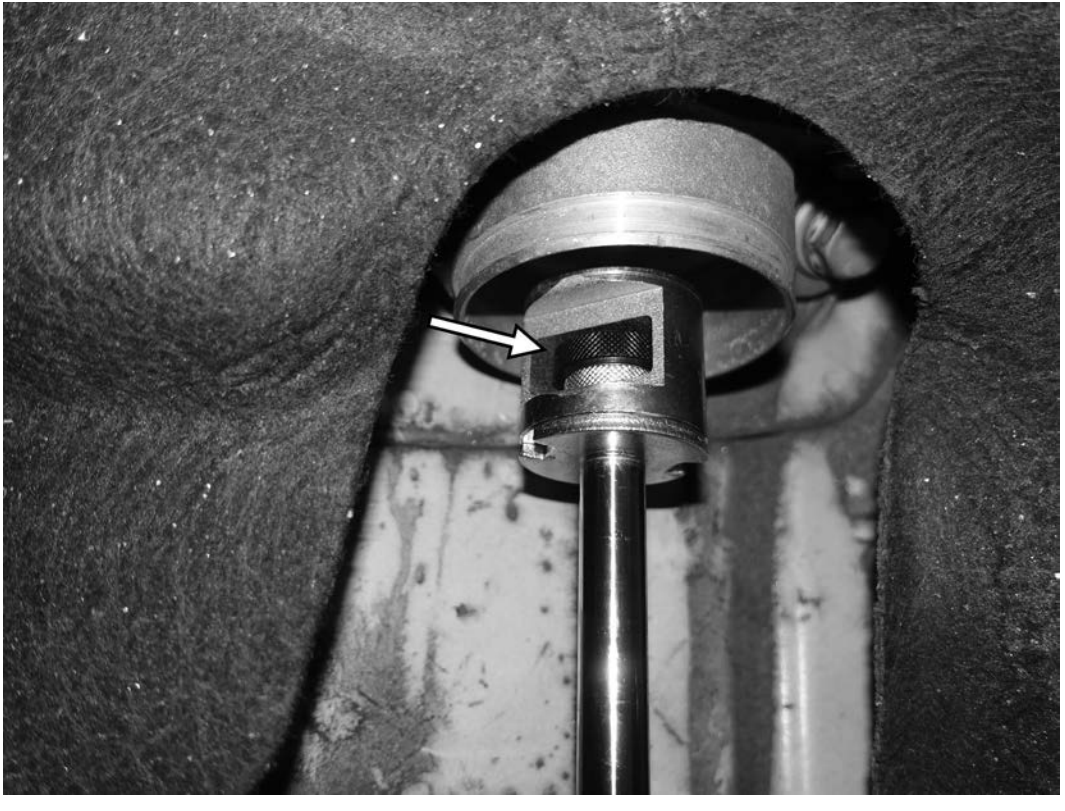
11) Now that ride height has been set, the length of the rear shocks needs to be adjusted. Raise the chassis of the car again to let the rear suspension fully droop and hang down. Remove bolth left and right-lower shock bolts from the lower control arms, allowing the suspension to droop until the spring is just slightly loose.

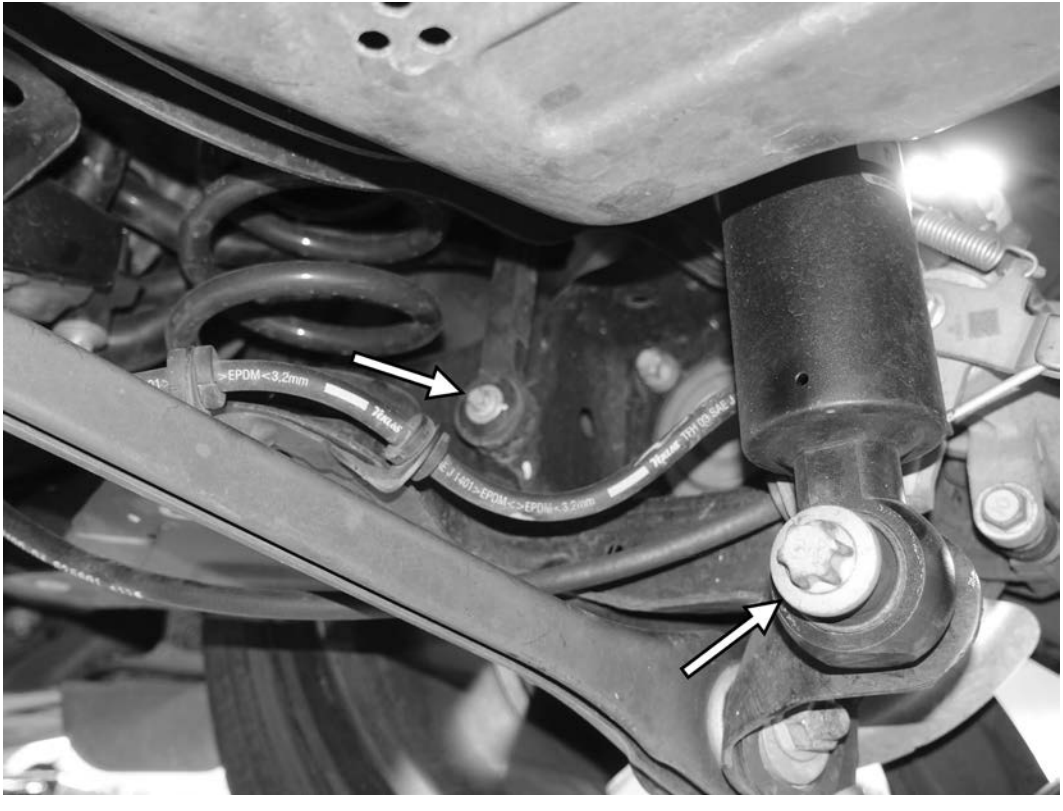
12) Using a jack on the left rear side of the car, raise the rear suspension from the lower control arm 50mm (2 inches) so the spring is under pre-load. You may measure from the bottom of the fender to center of the wheel to ensure you have preloaded the spring 50mm.



13) With the suspension still in this position, adjust the overall length of the shock. The wheel has been removed for photo purposes. Turn both the lower body of the shock and the lock collar up on the threaded body until the bottom shock bolt hole lines up with the hole for the shock in the lower control arm. The shock bolt should be able to easily be installed or uninstalled through the lower control arm and the shock hole. Install the lower shock bolt, but do not fully tighten yet. Repeat the last step and this step for the right rear side of the car.

14) Adjust the rear shocks by turning the knob on the top of the shock. Like the front, the knob has 32 ways of adjustment. Turning the knob all the way clockwise is 0 (HARDEST) and all the way counterclockwise is 32 (SOFTEST). We recommend an initial setting of 24 on the rear shocks.





15) All suspension bolts should be tightened while the car is sitting on the ground at the set ride height. Tighten the bolt to the stabilizer bar endlink to rear knuckle to 28Nm (21 ft-lbs). Tighten the lower shock bolt to the trailing arm to 155Nm (114 ft-lbs).

A four-wheel alignment must be performed after installation of this kit. Set the tires to the factory recommended values before performing the alignment. Also, the alignment should be performed with a full fuel tank and no weight inside the vehicle.

After installing the suspension system, a four-wheel alignment must be performed according to manufacturer´s specifications. Also check and reset load-dependent brake compensator, ABS system and headlight aim according to manufacturer's specifications, if applicable.

Front Suspension Specifications:

Camber = -0.5° with an acceptable range of -0.08° to -0.92°
Caster = 4° with an acceptable range of 3.5° to 4.5°
Total Toe = 0.20° with an acceptable range of 0.13° to 0.27°

Rear Suspension Specifications:

Camber = -1.9° with an acceptable range of -1.82° to -1.98°
Total Toe = 0.23° with an acceptable range of 0.16° to 0.30°

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