

Air Lift[™]
PERFORMANCE

Kit 78518
Nissan R35 GT-R
Front Application



INSTALLATION GUIDE

For maximum effectiveness and safety, please read these instructions completely before proceeding with installation.

Failure to read these instructions can result in an incorrect installation.

PERFORMANCE SUSPENSION PARTS




Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of this Nissan R35 GT-R Performance kit.

It is important to read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair. The information includes a hardware list, step-by-step installation information, maintenance tips, safety information and a troubleshooting guide.

NOTATION EXPLANATION

Hazard notations appear in various locations in this publication. Information which is highlighted by one of these notations must be observed to help minimize risk of personal injury or possible improper installation which may render the vehicle unsafe. Notes are used to help emphasize areas of procedural importance and provide helpful suggestions. The following definitions explain the use of these notations as they appear throughout this guide.

-  **DANGER** INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.
-  **WARNING** INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.
-  **CAUTION** INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE TO THE MACHINE OR MINOR PERSONAL INJURY.



NOTE *Indicates a procedure, practice or hint which is important to highlight.*

IMPORTANT SAFETY NOTICES

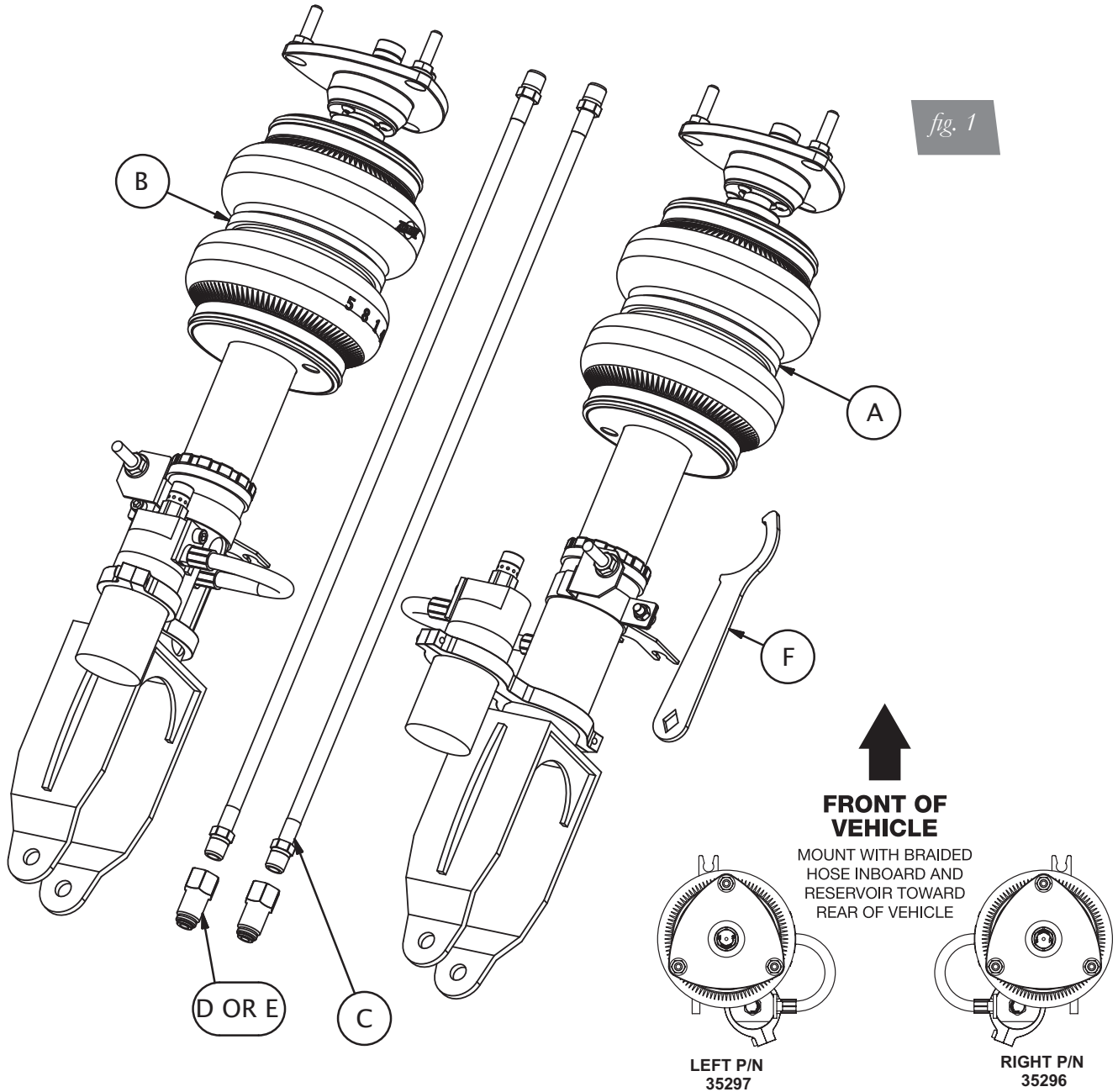
The installation of this kit does not alter the Gross Vehicle Weight Rating (GVWR) or payload of the vehicle. Check your vehicle's owner's manual and do not exceed the maximum load listed for your vehicle.

Gross Vehicle Weight Rating: The maximum allowable weight of the fully loaded vehicle (including passengers and cargo). This number — along with other weight limits, as well as tire, rim size and inflation pressure data — is shown on the vehicle's Safety Compliance Certification Label.

Payload: The combined, maximum allowable weight of cargo and passengers that the vehicle is designed to carry. Payload is GVWR minus the Base Curb Weight.

-  **WARNING** DO NOT INFLATE AIR SPRINGS WHILE OFF OF THE VEHICLE. DAMAGE TO ASSEMBLY MAY RESULT AND VOID WARRANTY.
-  **CAUTION** DO NOT WELD TO, OR MODIFY PERFORMANCE STRUTS/SHOCKS IN ANY WAY. DAMAGE TO UNIT MAY OCCUR AND WILL VOID WARRANTY.

Installation Diagram



HARDWARE LIST

Item	Part #	Description	Qty
A	35296	ASM, Shock, R-35 GT-R, RF	1
B	35297	ASM, Shock, R-35 GT-R, LF.....	1
C	20997	Leader Hose, 1/4" ID	2
D	21987	Union, 1/4"FNPT X 3/8" PTC, DOT	2
E	21810	Union, 1/4"FNPT X 1/4" PTC, DOT	2
F		Spanner Wrench.....	1

Installing the Air Suspension

PREPARING THE VEHICLE

1. Elevate and support the vehicle with a hoist or jack stands.
2. Remove the front tire and support the hub assembly (figs. 2 and 3).



fig. 2



fig. 3

REMOVING THE FRONT SUSPENSION

1. Remove the axle nut and loosen the axle in the hub (fig. 4).



fig. 4

2. Unclip the wheel sensor wire and brake line from the shock (figs. 5a-5e).



fig. 5a

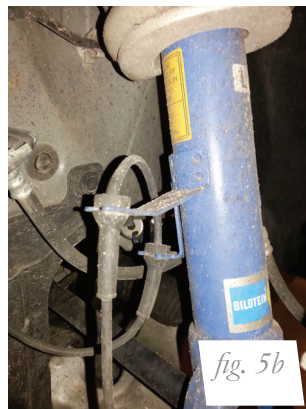
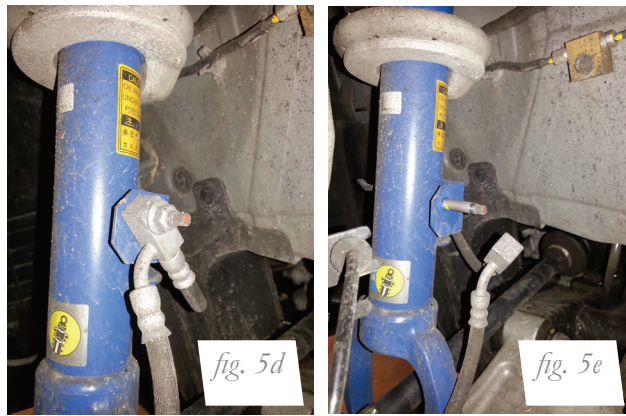


fig. 5b



fig. 5c



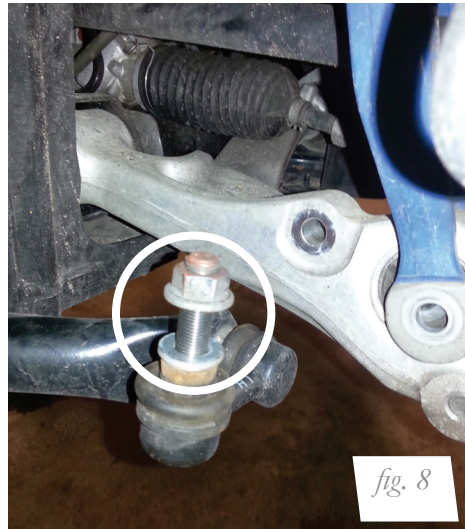
3. Loosen the forward pivot bolt for the lower control arm, but do not remove it (fig. 6).



4. Support the hub and unbolt the lower shock mount from the control arm (fig. 7).



5. Disconnect the stabilizer end link from the lower control arm (fig. 8).



6. Support the hub and unbolt the steering knuckle from the upper control arm ball joint (figs. 9 and 10).



7. Within the engine compartment, locate the connection for the Electronic Damping Control and disconnect it (figs. 11 and 12).

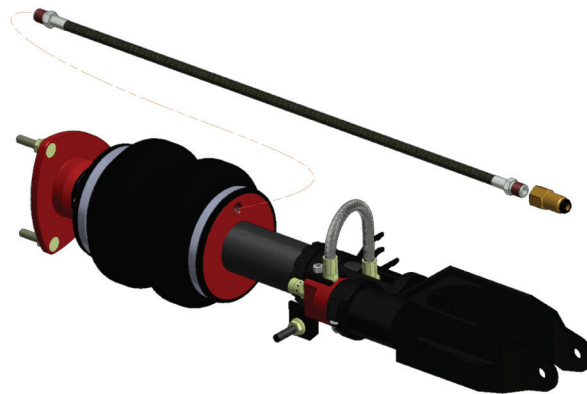


8. With the EDC disconnected and the wire lead-free, unthread the three upper mount nuts and remove the shock from the vehicle (figs. 13 and 14).



AIR SUSPENSION INSTALLATION

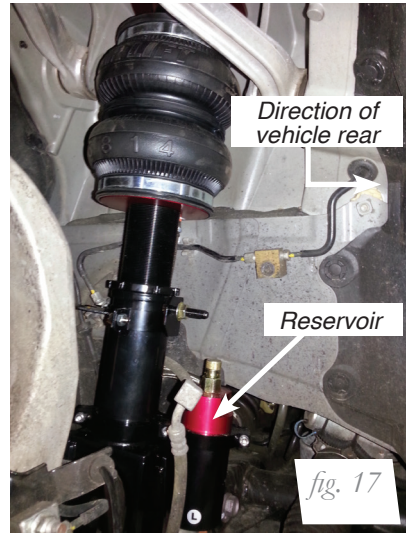
1. Begin by installing the leader line into the air spring (fig. 15). Apply thread sealant to the threads of the leader hose. Tighten the appropriate fitting to the airline $1 \frac{3}{4}$ turns beyond hand-tight. Tighten the leader line into the air spring $1 \frac{3}{4}$ turns beyond hand-tight.



2. Remove the paper gasket from the factory shock upper mount and place onto the new shock assembly (fig. 16).



3. Insert the shock assembly so that the braided hose faces toward the engine compartment, and the external reservoir faces the rear of the vehicle (fig. 17). Torque upper mount nuts (fig. 18) to 27 Nm (20 ft-lbs.)



4. Reattach the upper control arm to the steering knuckle (fig. 19) and torque pinch bolt (fig. 20) to factory specification.



5. Lift the lower control arm up and reinstall the lower shock mount bolt (fig. 21). Do not torque at this time.



6. Align the stabilizer end link and insert it into the lower control arm (fig. 22). Torque to 100 Nm (74 ft-lbs.) (fig. 23).



- Attach the brake line to shock (fig. 24) and torque nut (fig. 25) to 13 Nm (10 ft-lbs.)



- Re-seat and torque the axle nut (fig. 26) to factory specifications.



- Cycle the suspension and check for clearances around the air spring. The air spring is quite close to the upper control arm attaching bolts (fig. 27). Sourcing a round head bolt may be required if contact with the air spring occurs.



10. Fully compress the suspension using a jack. With the suspension compressed, review the best routing for the leader hose that is clear of all suspension components and axle. Routing should also allow for the suspension to extend without kinking or pulling the line tight or rubbing on other components. Following the brake line routing is often a good place to start. Check clearances to all other components.
11. With the suspension fully compressed, take a measurement from the fender to some reference point – typically the center of the axle. Record this measurement as Max Compression.
12. Cycle the suspension to Max Extension and record the measurement from the same reference points.
13. Add ME and MC then divide by 2. Set the suspension to this point. This position will give 50% stroke in either direction and is a starting point for ride height (fig. 28).

Formula for Calculating Ride Height

$$(ME+MC)\div 2=MID\ STROKE$$

fig. 28

14. With the suspension at this position, loosen, then re-torque the lower control arm bolts to manufacturer's specifications.

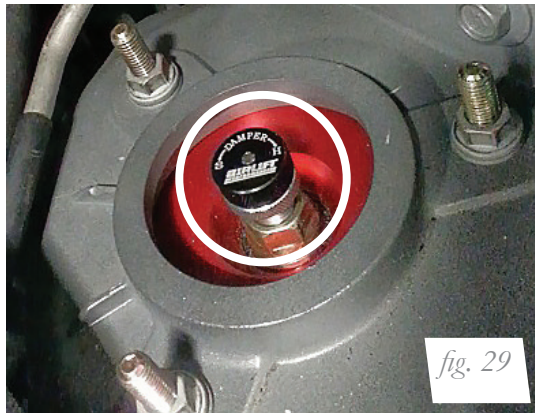
Torque Specifications		
Location	Nm	lb-ft
Lower shock mount bolt/nut	107	79
Lower control arm forward bolt	100	74
Swaybar endlink to lower control arm	100	74
Upper mount nut	27	20
Brake line attachment nut	13	10
Air Fitting (with sealant)	1.5-3.0 turns beyond hand tight	
Lower damper locking collar	.5 turns beyond hand tight	
Reservoir collar bolts	5	44 in-lbs.
Wheel studs	131	97

Table 1

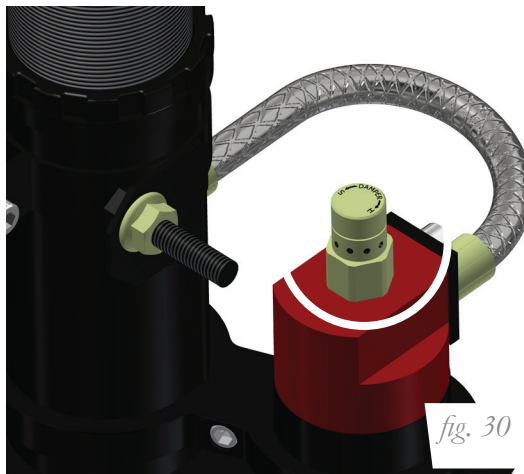
DAMPING ADJUSTMENT

There are two forms of damping adjustment with this Nissan R35 GT-R suspension kit.

Rebound adjustment is controlled by the adjuster on the shock rod, located within the engine compartment (fig. 29). Turn the damping knob clockwise to “harden” the suspension rebound. Turn the knob counterclockwise to “soften” the suspension rebound. The Air Lift setting is -17R (17 clicks away from full hard). This was developed on a 2009 GT-R and may need adjustment to meet vehicle differences or driving demands.



Compression damping is adjusted through the remote reservoir attached to the shock body (fig. 30). Turn the damping knob on the reservoir clockwise to “harden” the suspension compression setting. Turn the knob counterclockwise to “soften” the suspension compression setting. The Air Lift setting is -21C (21 clicks away from full hard). This was developed on a 2009 GT-R and may need adjustment to meet vehicle differences or driving demands.



ALIGNING THE VEHICLE

1. Using the control system, set the vehicle height to the new custom ride height.
2. If the custom ride height is lower than stock, we recommend loosening all pivot points (bolts, nuts) on any control arm, strut arm or radius rod that contains bushings. Once they have been loosened, re-torque to stock specifications.

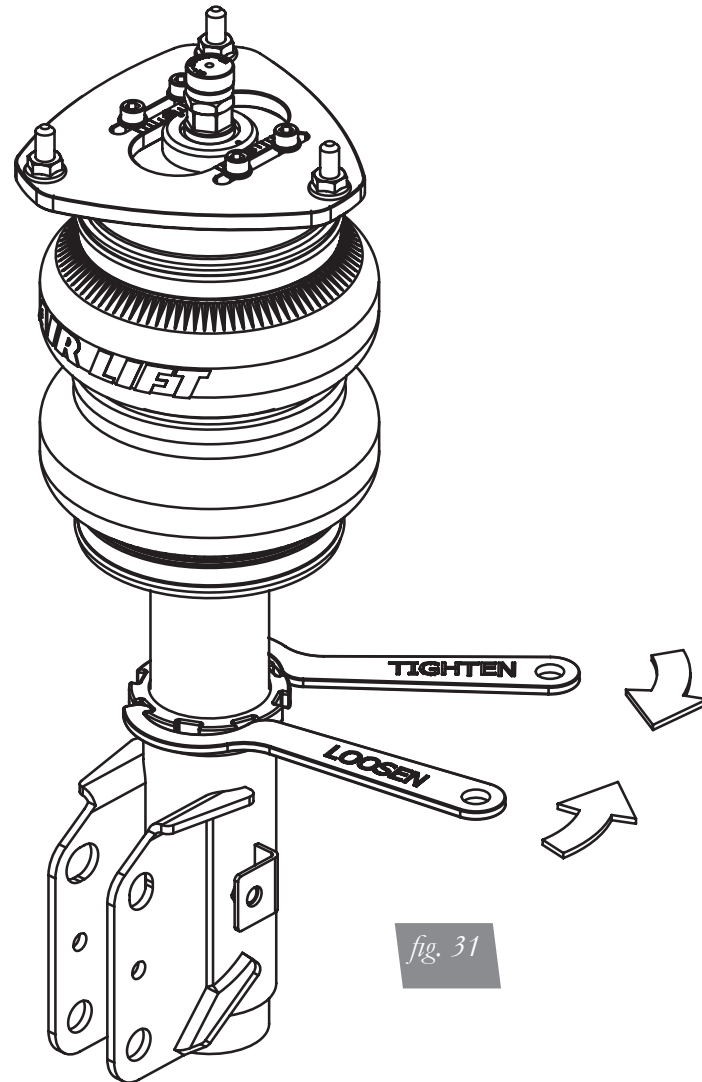
NOTE

It may be necessary to cycle the suspension to loosen the bushing up from its mount. This will help re-orient the bushing at its new position and increase life of the bushings based on the custom ride height.

ADJUSTING EXTENDED OR DROP HEIGHT USING LOWER MOUNT

Your struts have been pre-set at the factory to provide maximum drop height while maintaining adequate tire clearance to the air spring. If you wish to gain more extended height (lift), which is the same as reducing drop height, or want to lower the chassis further and there is still adjustment available at the lower mount, please use the following procedure:

1. Support the vehicle with jack stands or a hoist at approved lifting points.
2. Remove the wheel.
3. Using the supplied spanner wrench, loosen the lower locking collar (fig. 31).



4. Deflate the air spring to 0 PSI on the corner you are adjusting.
5. Disconnect lower mount from suspension.
6. Spin the lower mount to the desired location.

NOTE

Not all models will have further drop height available.

7. Re-install lower mount to suspension and torque fasteners.
8. Tighten the lower locking collar to the lower mount using significant force.

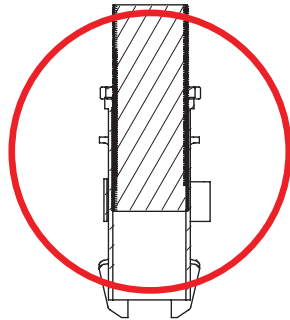
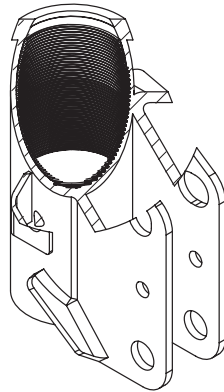
CAUTION

WHEN ADJUSTING HEIGHT UPWARDS, MAKE SURE THAT THE STRUT BODY ENGAGES ALL THE THREADS OF THE LOWER MOUNT (FIG. 32). WHEN ADJUSTING DOWNWARDS, MAKE SURE THERE IS ADEQUATE AIR SPRING CLEARANCE TO THE TIRE/WHEEL ASSEMBLY. CLEARANCE MUST BE CHECKED WITH SYSTEM FULLY DEFLATED AS WELL AS FULLY INFLATED TO ENSURE THAT NO RUBBING OCCURS. FAILURE TO MAINTAIN ADEQUATE CLEARANCE CAN RESULT IN AIR SPRING FAILURE AND WILL NOT BE COVERED UNDER WARRANTY.

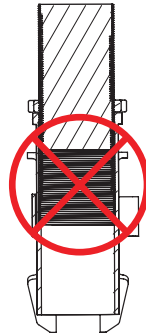
CAUTION

DO NOT ADJUST HEIGHT BY SPINNING THE AIR SPRING ON THE STRUT! DOING SO MAY CAUSE AN AIR LEAK AND COMPROMISE THE ASSEMBLY.

FOR STRUTS:



OK, no threads showing.



Not OK, threads are showing.

FOR SHOCKS:

