



## **Kit 78587**

Toyota Supra (A90)

***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.*





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# A. Introduction

Air Lift Performance thanks you for purchasing the most complete, fully engineered high-performance air suspension made for the Toyota Supra (A90). Read these installation instructions to correctly and safely set up the vehicle for a #lifeonair.

Air Lift assumes that the installer has the mechanical knowledge and ability to work on vehicle suspension systems and has basic tools necessary to complete a suspension replacement project. Special tools needed to complete the installation are noted on the *Installation Diagram* page.

Air Lift reserves the right to make changes and improvements to its products and publications at any time. For the latest version of this manual, contact Air Lift Performance at **(800) 248-0892** or visit **www.airliftperformance.com**.

An Air Lift Performance air management system is highly recommended for this product. Learn more at **air-lift.co/productlines**.

## 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.



INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.



INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.



INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE TO THE VEHICLE OR MINOR PERSONAL INJURY.

### NOTE

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

# B. Important Safety Notices



DO NOT INFLATE AIR SPRINGS WHILE OFF OF THE VEHICLE. DAMAGE TO ASSEMBLY MAY RESULT AND VOID WARRANTY.



DO NOT WELD TO OR MODIFY PERFORMANCE STRUTS/SHOCKS IN ANY WAY. DAMAGE TO UNIT MAY OCCUR AND WILL VOID WARRANTY.



AFTER INSTALLATION, ENSURE ALL ORIGINAL EQUIPMENT VEHICLE SAFETY FEATURES ARE PROPERLY CALIBRATED BY A QUALIFIED TECHNICIAN. CHANGING VEHICLE HEIGHT MAY AFFECT FUNCTIONING OF SAFETY SENSORS AND CAMERAS.

# C. Installation Diagram

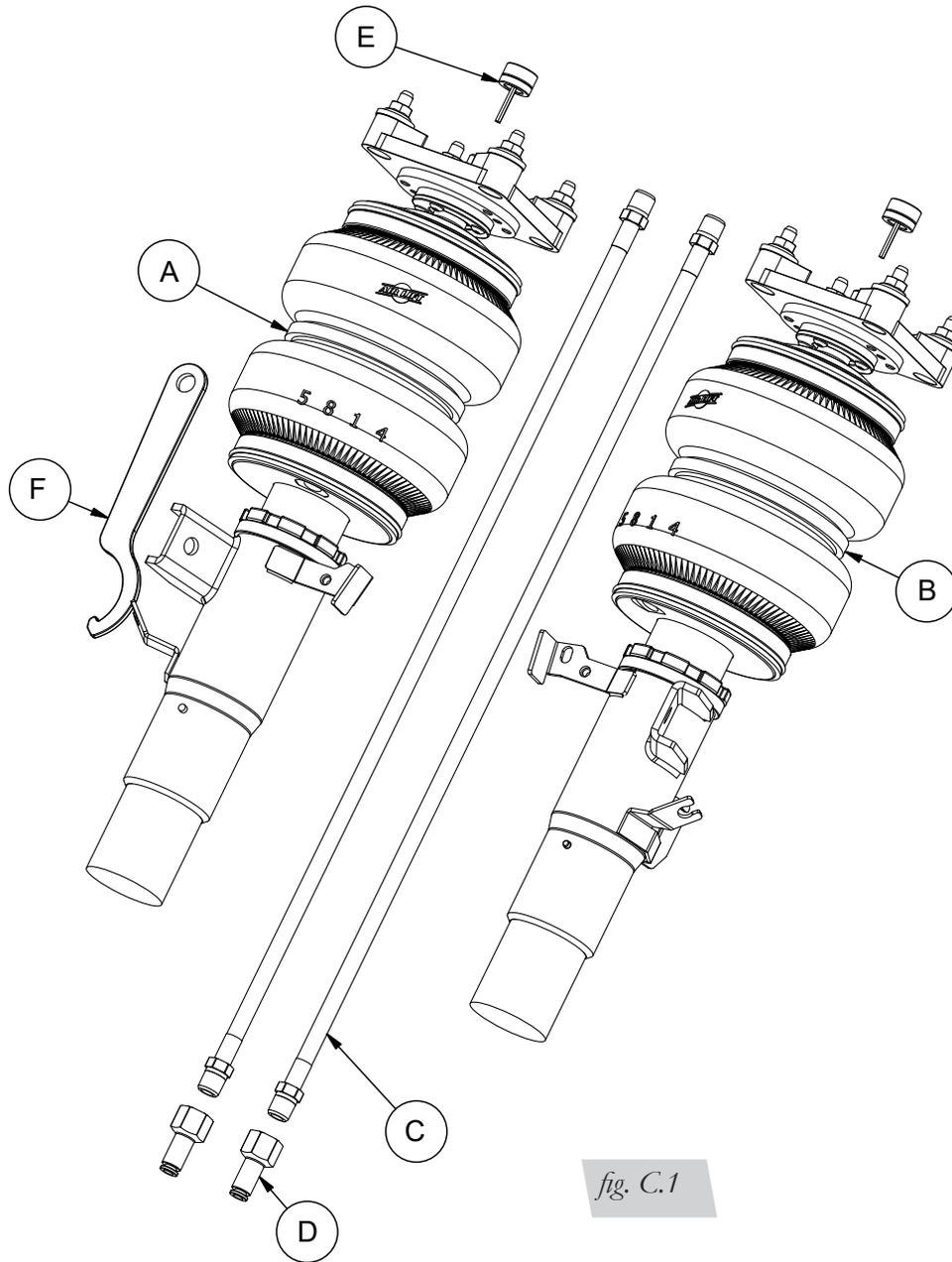


fig. C.1

## HARDWARE LIST

Item	Part #	Description .....	Qty
A	35473	Air spring, left front .....	1
B	35472	Air spring, right front.....	1
C	20997	Leader line, 1/4" .....	2
D	21810	1/4" FNPT x 1/4" PTC fitting .....	2
E	11283	Damping adjusters.....	1
F	11289	Spanner .....	1



Missing or damaged parts? Call Air Lift customer service at (800) 248-0892 for a replacement part.

## D. Installing the Air Suspension

### NOTE

See "Important Safety Notices" on page 2.

### PREPARING THE VEHICLE

1. Elevate and support the vehicle with a hoist or safety stands.
2. Remove the front wheel (Figs. D.1 & D.2).



*fig. D.1*



*fig. D.2*

### REMOVING THE FRONT DAMPER

1. Disconnect the sensor linkage from the lower control arm (Fig. D.3).

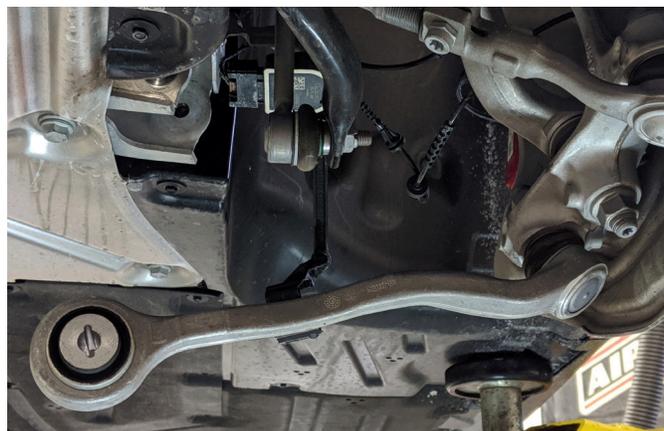


*fig. D.3*

2. Unbolt the lower control arm from the subframe (Figs. D.4 & D.5).

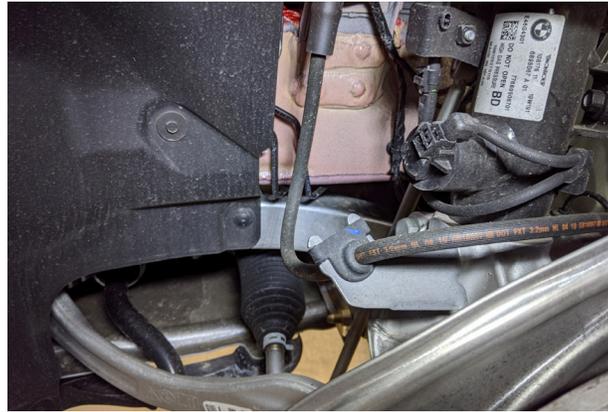


*fig. D.4*

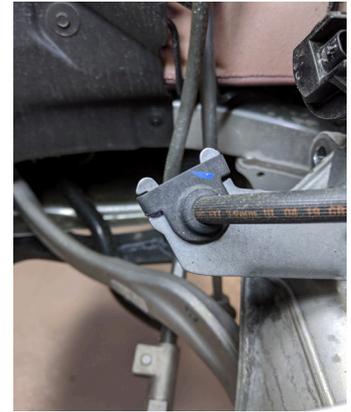


*fig. D.5*

3. Unclip the brake line bracket from the attaching bracket (Figs. D.6 & D.7).



*fig. D.6*



*fig. D.7*

4. Disconnect the electronic damping control wires from the damper (Figs. D.8-D.10).



*fig. D.8*

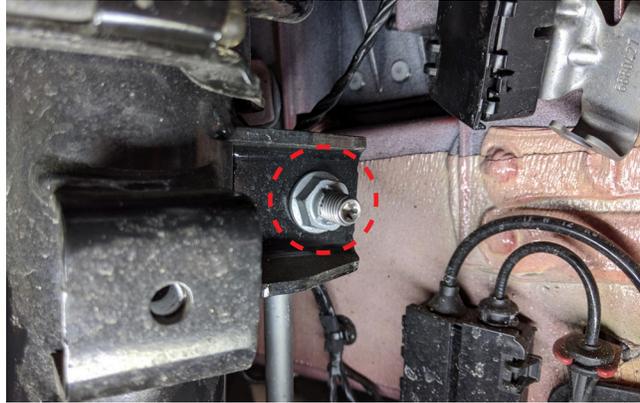


*fig. D.9*



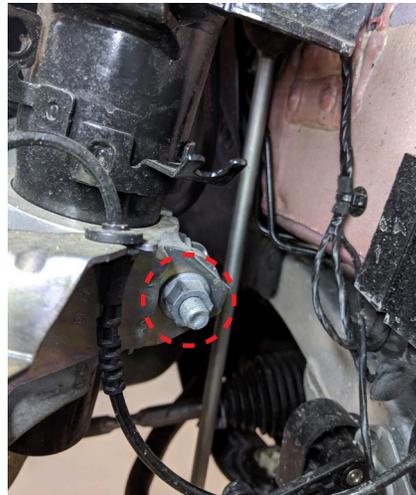
*fig. D.10*

5. Unbolt the stabilizer link from the damper assembly (Fig. D.11).



*fig. D.11*

6. Support the hub assembly and unbolt the lower pinch bolt from the wheel bearing housing (Fig. D.12). Lower the assembly until the damper is disconnected (Fig. D.13).



*fig. D.12*



*fig. D.13*

7. Within the engine compartment, unclip and lift the cowl cover (Figs. D.14-D.16).



*fig. D.14*



*fig. D.15*



*fig. D.16*

8. Remove the four upper mount bolts (Fig. D.17) and remove the damper assembly from the vehicle (Fig. D.18).



fig. D.17



fig. D.18

9. Remove the accelerometer from the damper (Fig. D.19).



fig. D.19

## INSTALLING THE AIR SUSPENSION

1. Begin applying thread sealant to the threads of the leader line. Tighten the fitting to the leader line (1 3/4 turns beyond hand-tight). Tighten the leader line into the air spring 1 3/4 turns beyond hand-tight (Fig. D.20).

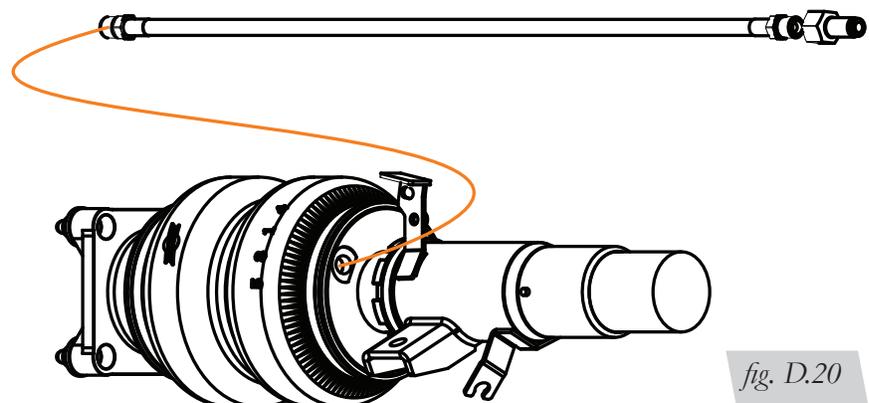


fig. D.20

2. Attach the upper mount to the chassis. Torque nuts to 28Nm (21lb.-ft.) (Fig. D.21).

**NOTE**

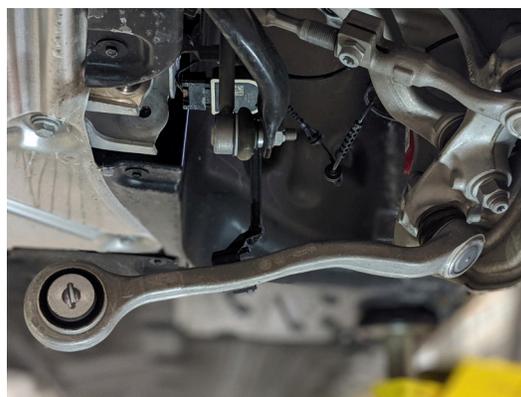
When adjusting camber, verify clearance around the air spring throughout all suspension travel.

*fig. D.21*

3. Lift the hub assembly onto the damper, align the sensor wire bracket and attach the lower pinch bolt (Figs. D.22 & D.23). Torque to 56Nm + 90 degrees (41 lb.-ft. + 90 degrees).

*fig. D.22**fig. D.23*

4. Align and reattach the lower control arm to the subframe (Fig. D.24). Do not torque at this time.

*fig. D.24*

5. Reattach the stabilizer end link to the damper (Fig. D.25). Torque the end link nut to 56Nm (41 lb.-ft.).



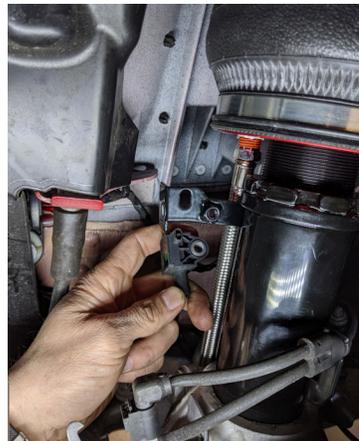
*fig. D.25*

6. Clip the sensor wires to the damper (Fig. D.26).



*fig. D.26*

7. Reattach the accelerometer to the damper (Figs. D.27 & D.28) and torque bolt to 9Nm (80 lb.-in.).



*fig. D.27*



*fig. D.28*

- Reinstall the brake line to the attaching bracket (Figs. D.29 & D.30).



*fig. D.29*



*fig. D.30*

- Reattach the sensor linkage to the lower control arm (Fig. D.31).



*fig. D.31*

- Torque lower control arm to the subframe at ride height with suspension loaded. Torque to 100Nm + 90 degrees (74 lb.-ft. + 90 degrees).

## FINISHED INSTALLATION PHOTO



*fig. D.32*

## ROUTING THE AIR LINES

 **WARNING**

AFTER INSTALLATION, ENSURE ALL ORIGINAL EQUIPMENT VEHICLE SAFETY FEATURES ARE PROPERLY CALIBRATED BY A QUALIFIED TECHNICIAN. CHANGING VEHICLE HEIGHT MAY AFFECT FUNCTIONING OF SAFETY SENSORS AND CAMERAS.

1. Fully compress the suspension using a jack. With the suspension compressed, review the best routing for the air line that is clear of all suspension and steering components.
2. Routing should allow for the suspension to extend and steer without kinking, 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.

# E. Before Operating

## SETTING THE RIDE HEIGHT

1. Refer to the User Guide supplied with this kit to set up the suspension.

Torque Specifications			
Location	Nm	lb.-ft.	lb.-in.
Upper mount to chassis	28	21	
Damper lower pinch bolt	TTY 56+90 degrees	TTY 41+90 degrees	
Stabilizer linkage to damper	56	41	
Accelerometer to damper	9	6.6	80
Control arm to subframe	TTY 100+90 degrees	TTY 74+90 degrees	
Wheel bolts	140	103	
Camber adjustment bolt	7	5.2	62
Damper locking collar	45 degrees beyond hand-tight		
Air line and fitting	1 3/4 turns beyond hand-tight with thread sealant		

Table 1

Suggested Driving Air Pressure	Maximum Air Pressure
<b>35-45 PSI (2.4-3.1BAR)</b>	<b>125 PSI (8.6BAR)</b>
FAILURE TO MAINTAIN ADEQUATE MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD) MAY RESULT IN EXCESSIVE BOTTOMING OUT AND <b>WILL VOID THE WARRANTY.</b>	

Table 2

## CHECK FOR BINDING



**CAUTION**

MAKE SURE THE FRONT WHEELS ARE STRAIGHT WHEN DEFLATING AND REINFLATING AIR SPRINGS.

1. Inflate and deflate the system (do not exceed 125 PSI [8.6BAR]) to check for clearance or binding issues. With the air springs deflated, check clearances on everything so as not to pinch brake lines, vent tubes, etc. Clear lines if necessary.
2. Inflate the air springs to 75-90 PSI (5.2-6.2BAR) and check all connections for leaks.

## INSTALLATION CHECKLIST

- Clearance** — Inflate the air springs to 75-90 PSI (5.2-6.2BAR) and make sure there is at least 1/2" (13mm) clearance from anything that might rub against the air spring. This should be checked with the air spring fully inflated and fully deflated.
- Leak** — Inflate the air springs to 75-90 PSI (5.2-6.2BAR) and check all connections for leaks. All leaks must be eliminated before the vehicle is road tested.
- Heat** — Be sure there is sufficient clearance from heat sources, at least 6" (152mm) from air springs and air lines. If a heat shield was included in the kit, install it. If there is no heat shield, but one is required, call Air Lift customer service at **(800) 248-0892**.
- Fastener** — Recheck all bolts for proper torque.
- Road** — Inflate the air springs to recommended driving pressures (Table 2). Drive the vehicle 10 miles (16km) and recheck for clearance, loose fasteners and air leaks.
- Operating instructions** — If professionally installed, the installer should review the operating instructions with the owner. Be sure to provide the owner with all paperwork that came with the kit.

### NOTE

*When adjusting camber, verify clearance around the air spring throughout all suspension travel.*

## DAMPING ADJUSTMENT

1. The dampers in this kit have 30 settings, or “clicks,” of adjustable compression and rebound damping characteristics. Damping is changed through the damper rod using the supplied adjuster (Figs. E.1 & E.2) or a 3mm hex key (not included).
2. Turn the adjuster clockwise (H) and the damping settings are hardened, reducing oscillations and body motion. Turn the adjuster counterclockwise (S) and the damping is softened.
3. Each damper in this kit is preset to “-15 clicks.” This means that the damper is adjusted 15 clicks away from full stiff, which starts at 0. Counting up from full stiff is the preferred method of keeping track of, or setting, damping. This setting was developed on a 2020 Toyota Supra GR.

For more information, refer to the User Guide.



fig. E.1



fig. E.2

## Limited Warranty and Return Policy

Air Lift Company provides a 1-year limited warranty to the original purchaser of Air Lift Performance damper kits from the date of original purchase, that the products will be free from defects in workmanship and materials when used on vehicles as specified by Air Lift Company and under normal operating conditions, subject to the requirements and exclusions set forth in the full Limited Warranty and Return Policy that is available online at [www.airliftperformance.com/warranty](http://www.airliftperformance.com/warranty).

For additional warranty information contact Air Lift Company customer service.

Air Lift Company reserves the right to make changes and improvements to its products and publications at any time. For the latest version of this manual, contact Air Lift Company at **(800) 248-0892** or visit [www.airliftperformance.com](http://www.airliftperformance.com).

# Notes

# Notes



## Need Help?

The Air Lift Company customer service department is open from 8 a.m. to 8 p.m. ET Monday through Friday. Call (800) 248-0892 or (517) 322-2144 for calls from outside the U.S. and Canada.



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