

**AIR LIFT**  
**PERFORMANCE**

## Kit 78687

Toyota Supra (A90)

***Rear 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) Rear. 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.

**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 VEHICLE OR MINOR PERSONAL INJURY.

**NOTE**

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

## B. Important Safety Notices

**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.

**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.

# C. Installation Diagram

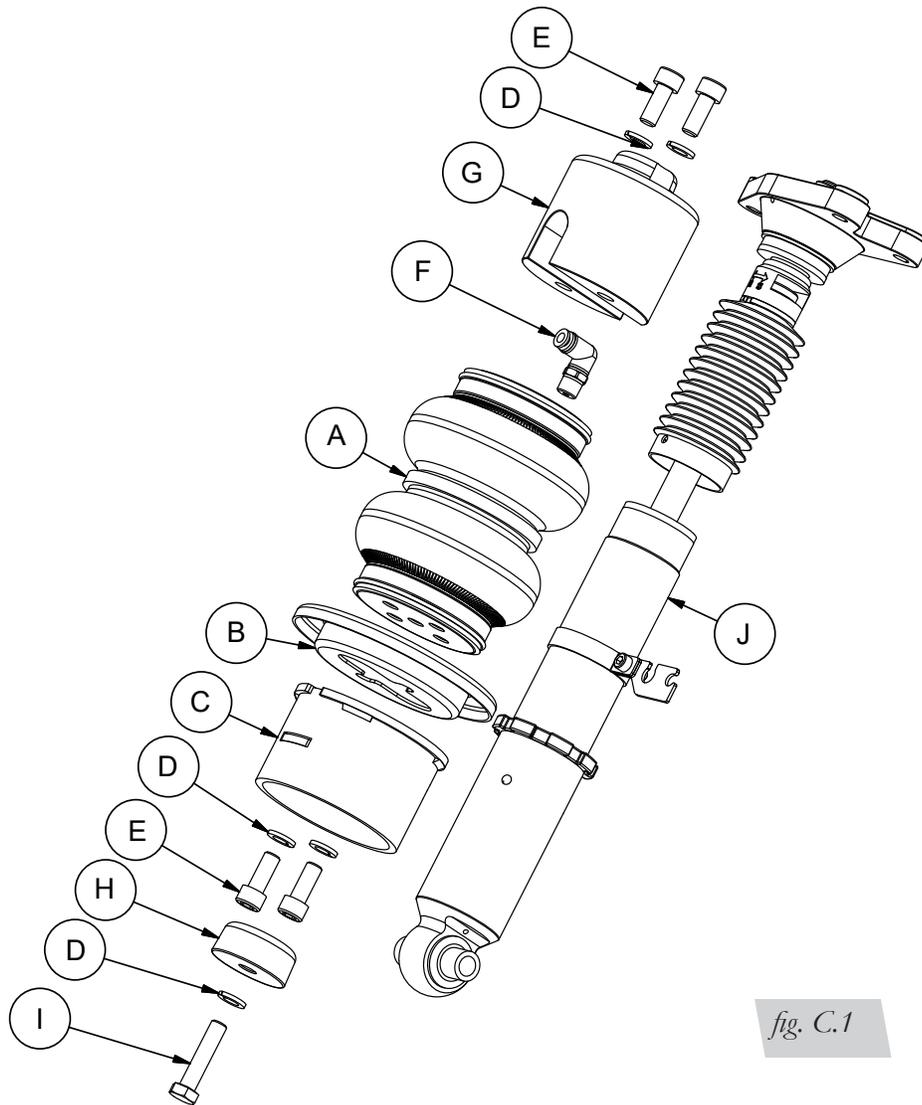


fig. C.1

## HARDWARE LIST

| Item | Part #  | Description .....                     | Qty |
|------|---------|---------------------------------------|-----|
| A    | 58558   | Air spring .....                      | 2   |
| B    | 11803 A | Roll plate.....                       | 2   |
| C    | 03052   | Lower rear bracket.....               | 2   |
| D    | 18628   | M10, Split lock washer .....          | 10  |
| E    | 17516   | M10-1.5x25 Socket-head cap screw .... | 8   |
| F    | 21779   | 1/4" MNPT x 1/4 PTC Elbow .....       | 2   |
| G    | 13303   | Upper spacer .....                    | 2   |
| H    | 13993 B | Centering spacer .....                | 2   |
| I    | 17330   | M10-1.5x30 Hex cap screw .....        | 2   |
| J    | 26627   | Rear shock.....                       | 2   |
| K*   | 11289   | Wrench.....                           | 1   |

\* Not shown in the Installation Diagram (Fig. C.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 jack stands.
2. Remove the rear wheel (Figs. D.1 & D.2).



*fig. D.1*



*fig. D.2*

### REMOVING THE REAR SPRING AND DAMPER

1. Unbolt the splash guard from the spring control arm (Figs. D.3 & D.4).



*fig. D.3*



*fig. D.4*

2. Disconnect the sensor linkage from the spring control arm (Figs. D.5 - D.8).



*fig. D.5*



*fig. D.6*



*fig. D.7*



*fig. D.8*

3. Disconnect the electronic damping control wires from the damper (Figs. D.9 - D.11).



*fig. D.9*

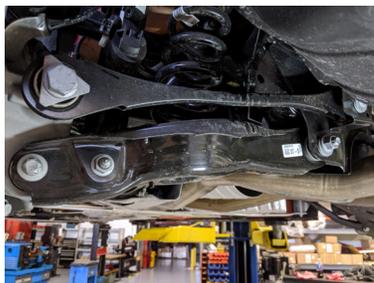


*fig. D.10*



*fig. D.11*

4. Support the spring control arm at the outer most point and loosen the eccentric cam bolt (Figs. D.12 & D.13).

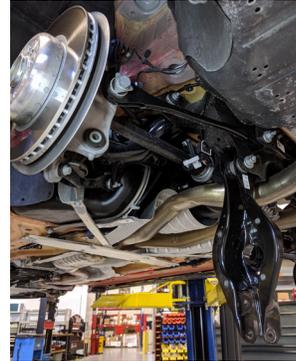


*fig. D.12*



*fig. D.13*

5. Unbolt and remove both the lower damper and spring control arm to hub assembly bolts. Lower the spring control arm. Remove the spring and spring isolators (Figs. D.14 & D.15).

*fig. D.14**fig. D.15*

6. Remove the three upper mount bolts from the damper assembly and remove from the vehicle (Figs. D.16 & D.17).

*fig. D.16**fig. D.17*

## INSTALLING THE AIR SUSPENSION

1. Attach the damper assembly to the chassis with replacement bolts (Fig. D.18). Torque to 28Nm (21 lb.-ft.).

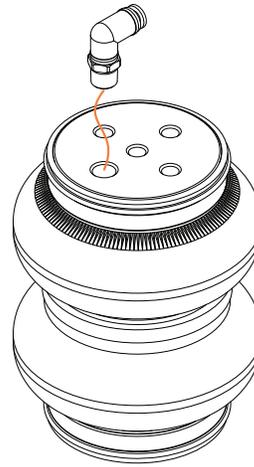
*fig. D.18*

2. Clip the sensor wires to the damper (Fig. D.19).



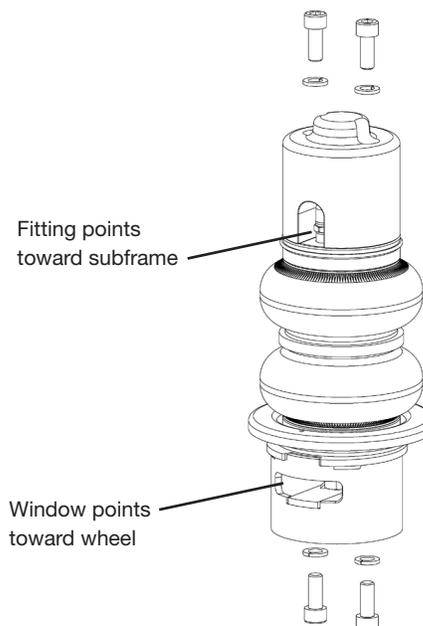
*fig. D.19*

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



*fig. D.20*

4. Fasten the air spring to the lower mount with the window cutout pointing toward the wheel. Ensure the fitting points toward the subframe (Fig. D.21). Torque bolts to 27Nm (20 lb.-ft.).



*fig. D.21*

5. Attach and fasten the upper mount to the air spring and torque bolts to 27Nm (20 lb.-ft.).
6. Insert the air spring assembly while attaching the spring control arm to the wheel bearing housing (Figs. D.22 & D.23). Torque bolt to 165Nm + 90 degrees (122 lb.-ft. + 90 degrees).

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

7. Assemble the damper to the spring control arm (Fig. D.24). Do not torque at this time. Torque at ride height with suspension loaded. Torque to 100Nm (74 lb.-ft.).

*fig. D.24*

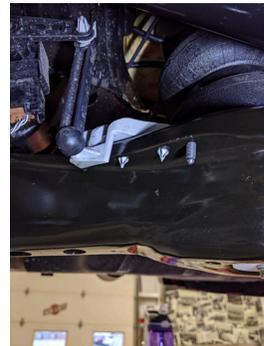
8. Insert the air line into the fitting and align the upper mount with the locating feature in the chassis (Figs. D.25 & D.26).

*fig. D.25**fig. D.26*

9. Attach the centering spacer to the spring control arm (Fig. D.27) and torque to 27Nm (20 lb.-ft.). Ensure the lower bracket window is pointed toward the wheel and centered in the control arm. Verify air spring clearance to all other components.

*fig. D.27*

10. Reattach the sensor linkage to the spring control arm (Figs. D.28 & D.29).

*fig. D.28**fig. D.29*

11. Reinstall the splash guard (Fig. D.30). Torque nuts to 6Nm (53 lb.-in.).

*fig. D.30*

## ROUTING THE AIR LINES

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 components and axle.
2. 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.

### **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.

**FINISHED INSTALLATION PHOTO**



*fig. D.31*

**E. Before Operating**

Read the User Guide that came with this kit to set up the suspension.

| Torque Specifications                              |   |                    |         |
|--|---|--------------------|---------|
| Location   | Nm  | Lb.-ft.            | lb.-in. |
| Upper mount to chassis                             | 28  | 21                 |         |
| Damper to spring control arm bolt                  | 100   | 74                 |         |
| Spring control arm to wheel bearing housing        | TTY 165+90 degrees                                | TTY 122+90 degrees |         |
| Spring control arm to subframe                     | 175   | 129                |         |
| Toe control link to subframe                       | 108   | 80                 |         |
| Toe control link to wheel bearing housing          | TTY 100+90 degrees                                | TTY 74+90 degrees  |         |
| Other control arms to subframe                     | TTY 100+90 degrees                                | TTY 74+90 degrees  |         |
| Forward upper control arm to wheel bearing housing | TTY 165+90 degrees                                | TTY 122+90 degrees |         |
| Splash cover                                       | 6   | 4.4                | 53      |
| Wheel bolts  | 140   | 103                |         |
| 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 |
|---|----------------------|
| 75-95 PSI (5.2-6.6BAR)  | 150 PSI (10.3BAR)    |
| THESE SPRINGS HAVE BEEN TESTED AND APPROVED FOR EXTREME APPLICATIONS UP TO 150 PSI (10.3BAR). 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

1. Inflate and deflate the system (do not exceed 150 PSI [10.3BAR]) 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.

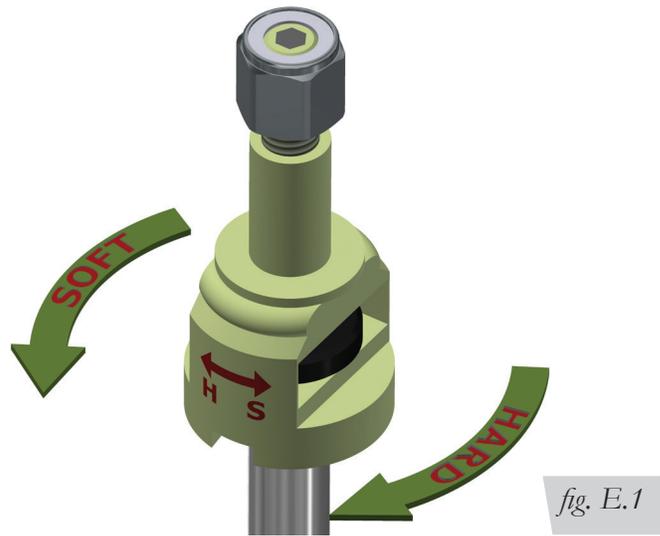
## INSTALLATION CHECKLIST

- 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.

## 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 (Fig. E.1) 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 “-18 clicks.” This means that the damper is adjusted 18 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.



## 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).



## 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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