

AIR LIFT
PERFORMANCE

Kit 78551

Lexus XE20 AWD

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

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of this Lexus XE20 AWD 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.

Air Lift Performance 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 our website at www.airliftperformance.com.

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 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.



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.

B. Installation Diagram

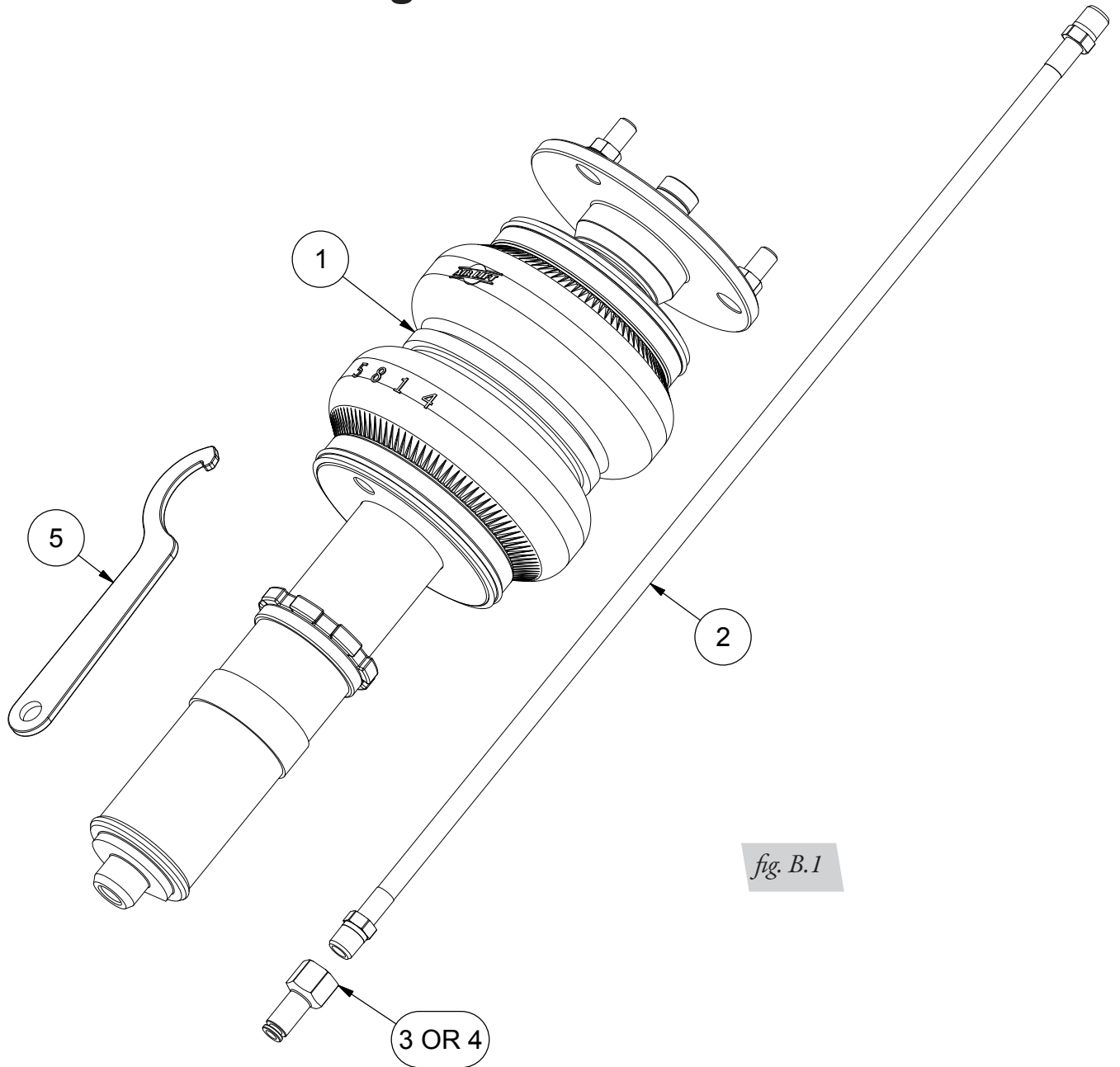


fig. B.1

HARDWARE LIST

Item	Part #	Description	Qty
1	35356	Lexus XE20 AWD Front Shock	2
2	20997	Leader Line, 1/4" ID	2
3	21987*	Fitting, 1/4" FNPT X 3/8" PTC, DOT	2
4	21810	Fitting, 1/4" FNPT X 1/4" PTC, DOT	2
5		Spanner Wrench	1

*1/4" MNPT x 3/8" PTC fittings are NOT included in this kit, but are available as a special order.



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

C. Installing the Air Suspension

PREPARING THE VEHICLE

1. Elevate and support the vehicle with a hoist or safety stands.
2. Remove the front wheel and support the hub assembly. (Fig. C.1)



fig. C.1

REMOVE THE FRONT SHOCK

1. Detach the headlight alignment linkage from the lower control arm. (Figs. C.2 & C.3)



fig. C.2



fig. C.3

2. Unbolt the wiring support bracket from the shock and steering knuckle. (Figs. C.4, C.5, C.6 & C.7)



fig. C.4



fig. C.5



fig. C.6



fig. C.7

3. Loosen the bolt that connects the lower mount to the shock. This bolt does not need to be removed at this time but loosening it now will make the disassembly easier when the shock is out of the vehicle. (Figs. C.8 & C.9)



fig. C.8



fig. C.9

- Remove the lower mount nut and keyed washer. (Figs. C.10 & C.11)



fig. C.10



fig. C.11

- Within the engine compartment, remove the upper shock mount cover and three nuts. (Fig. C.12)

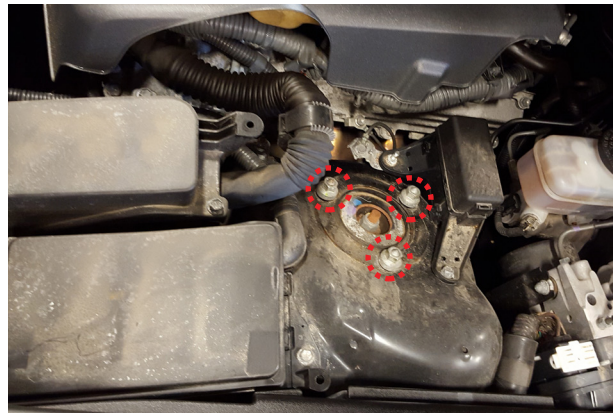


fig. C.12

- Remove the cotter pin from the tie rod end and remove the nut from the steering knuckle. Separate the tie rod end from the steering knuckle. (Figs. C.13, C.14 & C.15)



fig. C.13



fig. C.14



fig. C.15

CAUTION

SUPPORT THE HUB TO PREVENT OVER-EXTENSION OF COMPONENTS BEFORE PROCEEDING.

- Remove the cotter pin from the upper control ball joint. Remove the nut and separate the ball joint from the steering knuckle. (Figs. C.16, C.17 & C.18)



fig. C.16



fig. C.17



fig. C.18

- Remove the shock assembly from the vehicle. (Fig. C.19)



fig. C.19

- Reattach the spindle to the upper control arm ball joint. Torque to 87Nm (64 lb.-ft.). Install the cotter pin through the ball joint nut. (Figs. C.20 & C.21)



fig. C.20



fig. C.21

10. Remove the lower mount bolt and separate the shock from the mount. (Fig. C.22)



fig. C.22

INSTALLING THE KIT COMPONENTS

1. Begin by installing the leader line into the air spring. Apply thread sealant to the threads of the leader line. Tighten the appropriate fitting to the air line (one and three-quarter turns beyond hand-tight). Tighten the leader line into the air spring 1 3/4 turns beyond hand-tight. (Fig. C.23)

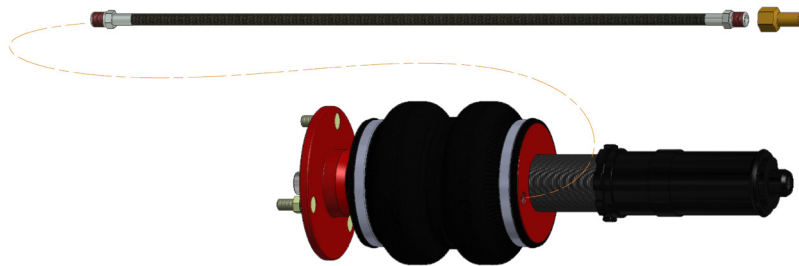


fig. C.23

2. Attach the shock to the lower mount. Torque bolt to 48Nm (35 lb.-ft.). (Figs. C.24, C.25 & C.26)



fig. C.24



fig. C.25



fig. C.26

3. Insert the shock assembly into the shock tower while aligning the three upper bracket studs with the associated holes. Torque the upper bracket nuts to 67Nm (49 lb.-ft.) (Figs. C.27 & C.28).

NOTE

The images are representative, actual kit may differ.



fig. C.27

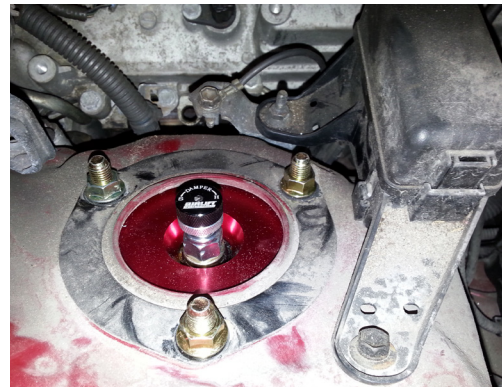


fig. C.28

4. Slide the lower mount stud through the lower control arm. Reinstall the lock washer and nut. Snug, but do not torque, the lower bushing bolt at this time. Bolt torque must be done when vehicle is at the desired ride height. (Figs. C.29 & C.30)



fig. C.29



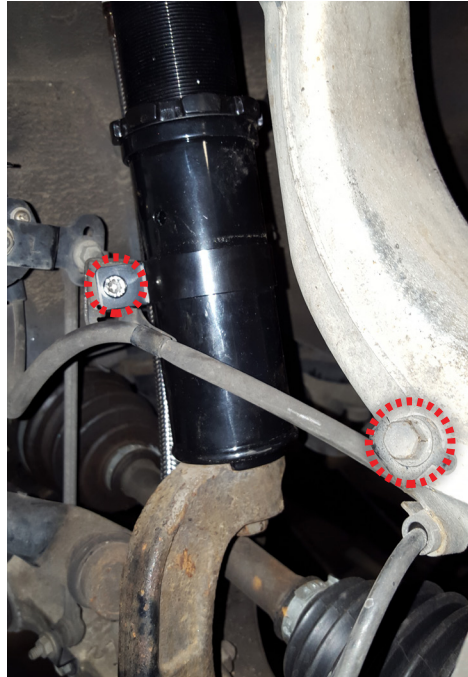
fig. C.30

5. Reattach tie rod end to the steering knuckle. Torque to 65Nm (48 lb.-ft.). Reinstall the cotter pin. (Fig. C.31)



fig. C.31

6. Reattach brake line bracket. Torque bolts to 6Nm (4.4 lb.-ft.). (Fig. C.32)

*fig. C.32*

7. Align and attach the height sensor to the lower control arm. Torque to 5.4Nm (47.8 lb.-in.). (Fig. C.33)

*fig. C.33*

ROUTING THE AIR LINES

1. Fully compress the suspension using a jack. With the suspension compressed, review the best routing for the leader 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.

D. 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 control arm to steering knuckle	87	64	—
Toe link to steering knuckle	65	48	—
Shock to lower mount bolt	48	35	—
Upper mount nuts	67	49	—
Lower mount stud to lower control arm	112	82	—
Brake line bracket bolt	6	4.4	—
Height sensor bolt	5.4	—	47.8
Wheel lug	103	76	—
Air fitting and leader line with sealant	1 3/4 turn beyond hand-tight		

Table 1

Suggested Driving Air Pressure	Maximum Air Pressure
60-75 PSI (4.1-5.2BAR)	125 PSI (8.6BAR)
FAILURE TO MAINTAIN ADEQUATE MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD) WILL RESULT IN BOTTOMING OUT, OVER-EXTENSION OR RUBBING AGAINST ANOTHER COMPONENT AND WILL VOID THE WARRANTY.	

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.

DAMPING ADJUSTMENT

The shocks in this kit have 30 settings, or “clicks”, of adjustable compression and rebound damping characteristics. Damping is changed through the shock rod using the supplied adjuster (figs. D.1 & D.2) or a 3mm allen wrench.

Turn the adjuster clockwise and the damping settings are hardened. Turn the adjuster counterclockwise and the damping is softened.

Each shock is preset to “-15 clicks”. This means that the shock is adjusted 15 clicks away from full stiff. Counting down from full stiff is the preferred method of keeping track of, or setting, damping. This setting was developed on a 2008 Lexus IS 350 AWD and may need to be adjusted to different vehicles and driving characteristics.



fig. D.1



fig. D.2

E. 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.

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.

NEED HELP?

Contact Air Lift Company customer service department by calling (800) 248-0892. For calls from outside the USA or Canada, dial (517) 322-2144.



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