Installation Manual



AIR SUSPENSION KIT

CHEVROLET EXPRESS 2500/3500◊* (OVER 7300 GVWR)
GMC SAVANNA 2500/3500◊* (OVER 7300 GVWR)

***Will not fit** Cutaway Chassis models*
◊Cargo & Passenger Vans only

CHEVROLET GM30 & GMC G3500 VAN*

***Will not fit** Cutaway Chassis models*

Use the most advanced air springs on the market to eliminate your vehicle's sag, sway and bottoming out. This heavy duty air suspension kit levels your truck's stance while providing added support for an overall smooth and safe ride.

** See application guide for proper fitment.*

Thank you and congratulations on the purchase of an Air Suspension kit.

Please read the entire manual prior to starting the installation to ensure you can complete it once started. If you are unsure whether you are qualified to install the Air Suspension kit, consult a qualified service professional before beginning the installation.

SAFETY WARNINGS!

You must read and abide by the instructions found in this manual, paying close attention to the helpful (⊕), cautionary (!) or dangerous (!) warning icons highlighting important safety recommendations and maintenance suggestions throughout this manual. **Failure to abide by all instructions in this manual will void the warranty.**

HELPFUL INSTALL TIP
Additional information that could potentially make the job a little easier.

PLEASE USE CAUTION
Unsafe practices could result in damage to you or your vehicle, or others.

DANGER WARNING
Hazards which could result in severe personal injury or death.

- **Serious personal injury or death may result from an air spring failure** or accident due to improper installation or air spring pressure operation or maintenance.
- **Inflating an unsecured air spring is dangerous.** If it bursts, it could be hurled into the air with explosive force resulting in serious personal injury or death. Never inflate an air spring unless it is secured to the vehicle.
- **Removing and replacing air springs can be dangerous.** This is only a job for a qualified service professional. Never perform air spring service procedures without proper training, tools, and equipment.
- An air suspension kit will not increase the GVWR (Gross Vehicle Weight Rating), as the GVWR is determined by the vehicle manufacturer. **Do not exceed the maximum capacity listed by the vehicle manufacturer.**

! For safe and proper operation of the vehicle, never operate the vehicle under the minimum or over the maximum listed PSI in the air spring(s), (see: *MIN/MAX PSI* chart on the final page of this manual). Staying within the pressure limits will ensure a reasonable duration of the air springs. **Failure in doing so may result in damage to your vehicle and will void the warranty.**

BEFORE STARTING THE INSTALLATION

- **Always read your vehicle owner's manual and follow all instructions and warnings therein prior to modifying your vehicle.**
- Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
- It is recommended to always jack the vehicle on the axle. If lifting the vehicle with a floor jack or hoist on the frame, never allow the air spring to limit the travel of the axle. Suspending the axle with the air spring limiting the axle travel **will damage the air spring and void the warranty**. *(This warning does not apply to In-Coil Springs)*
- The air spring must have clearance between itself and the surrounding components to prevent any contact when the air spring is inflated or compressed. Trimming off excess bolt length may also be required to ensure no contact with the spring or other suspension components can be made once installed. **Failure to do so will void the warranty.**
- Some vehicles are equipped with a rear wheel brake proportioning valve. Check with the manufacturer before installing the air spring kit, as it may affect braking performance.
- This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon air line will distort the line and cause the connection to leak. The air line must be cut off squarely with the hose cutter provided in this kit, or a sharp utility knife. **Failure to do so will void the warranty.**
- ⊕ It is recommended to use additional thread sealant or Teflon tape on fittings during the installation for a proper seal.
- Always ensure the bolts are not over-torqued; especially when a torque value is provided, failing to use the provided torque value(s) can lead to **premature failure and will void the warranty.**
- ⊕ It is recommended to use a good quality anti-seize on all fasteners to reduce the chance of corrosion and help facilitate removal, if required at a later date.

KIT CONTENTS

Please confirm the items below are provided in your kit before starting the installation. Reference the kit explosion diagram on the following page for part assembly.

HEAVY DUTY KITS		QTY	PART #
A	**Single Convoluted Spring**	2	**HP10083**

HEAVY DUTY JOUNCE BUMPER KITS		QTY	PART #
B	**Single Convoluted Spring** w/ Jounce Bumper	2	**HP10083-J**

KIT CONTENTS		QTY	PART #
C	Roll Plates	4	HP10054
D	90-Degree Swivel Fitting	2	HP1100
E	Bracket, Upper, Passenger	1	HP2118
F	Bracket, Upper, Driver	1	HP2119
G	Bracket, Lower	2	HP0022
H	Bracket, Support	2	HP0093
I	Axle Strap	4	HP0021
J	Bolt, 3/8" -16 x 2.5", Carriage	8	HP1005
K	Bolt, 3/8" -24 x 7/8", Hex Head	4	HP1002
L	Bolt, 3/8" -24 x 1", Hex Head	4	HP1183
M	Bolt, 3/8" -16 x 1.25", Self-Tapping	4	HP1078
N	Bolt, M8 -1.25 x 30 mm	1	C789
O	Bolt, 1/4" -14 x 1.25" Self-Drilling	4	C20658
P	Washer, 3/8" Flat	8	C653
Q	Washer, 3/8", Split Lock	8	C18007
R	Nut, 3/8-16, Nylon Lock, Flange	8	HP1975
S	Spacer, M8 0.642" Long	1	C3002
T	Adel Clamps, 3/8"	4	HP1435
U	Heat Shield	1	HP0012
V	Worm Gear Ring Clamp	2	HP1001
W	Air Line	1	HP1344

HP10083



HP10083J



KIT LAYOUT



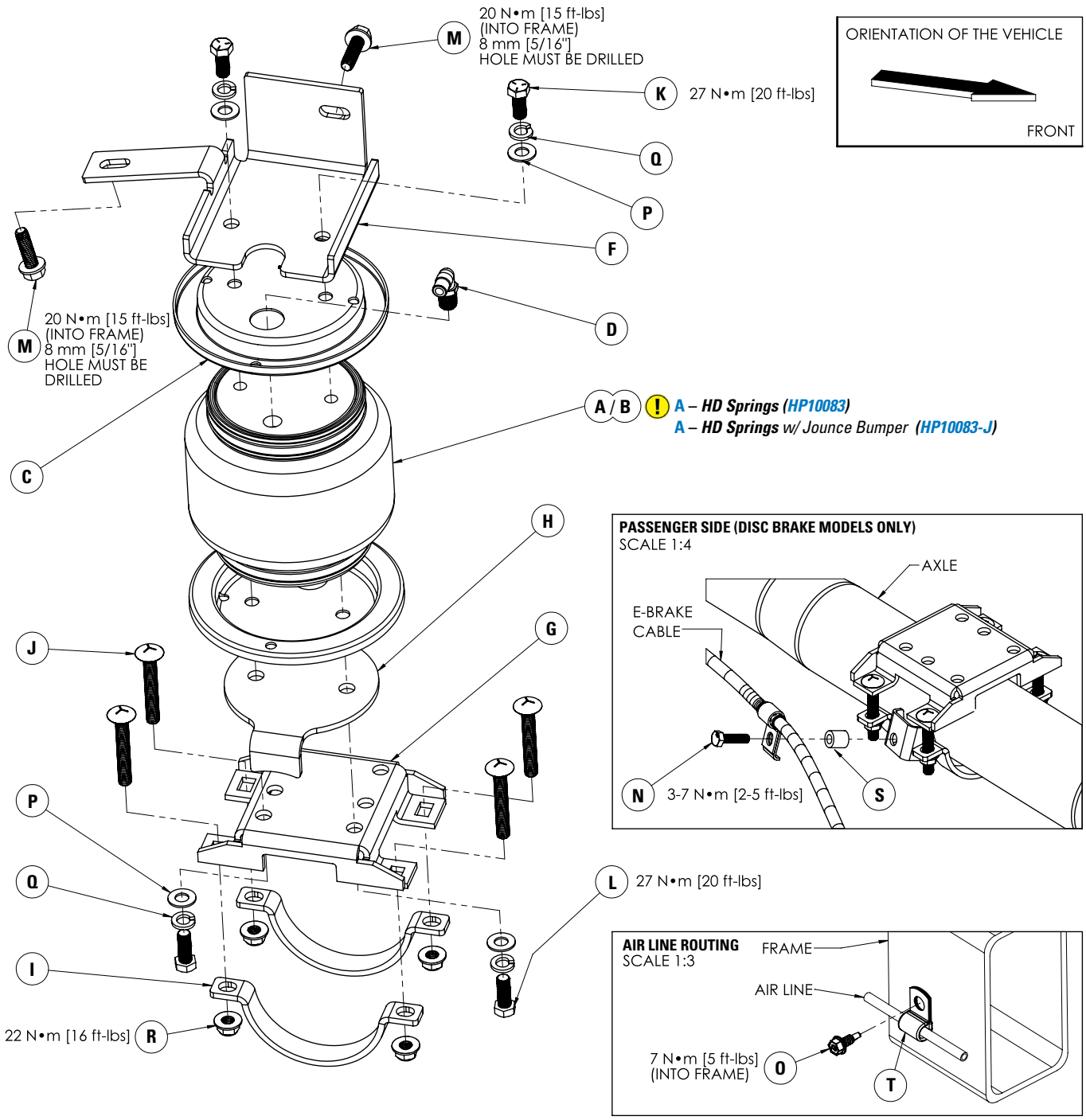
REQUIRED TOOLS

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 9/16" Crow Foot Wrench
- Ratchet
- Metric & Standard Sockets
- Hose Cutter (included) or Sharp Utility Knife
- Pipe Thread Sealant
- Spray Bottle with Dish Soap/Water
- Air Compressor/Compressed Air Source (to test/fill air springs)

WARNING: This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. ***For more information go to*** *www.P65Warnings.ca.gov*

KIT EXPLOSION DIAGRAM

DRIVER SIDE ASSEMBLY SHOWN (Passenger side assembly is mirrored)



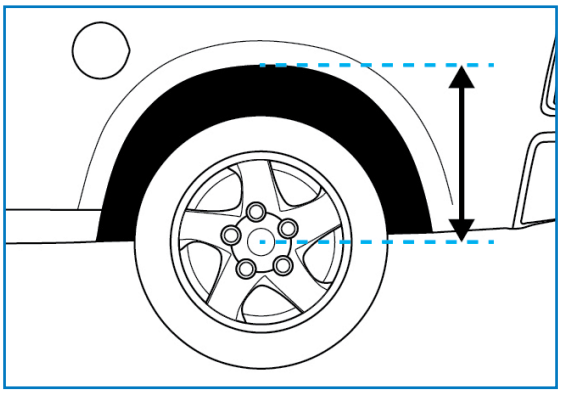
INSTALLATION INSTRUCTIONS

1 MEASURE STOCK RIDE HEIGHT & CLEARANCE

Park the vehicle on a level surface and remove any unnecessary weight from the vehicle to attain a "Normal Ride Height".

Using a measuring tape, measure the distance between the center of the wheel hub and the bottom of the fender well (see Figure 1 for reference) this will give you your stock Normal Ride Height.

Note the ride height for all four tires.



1

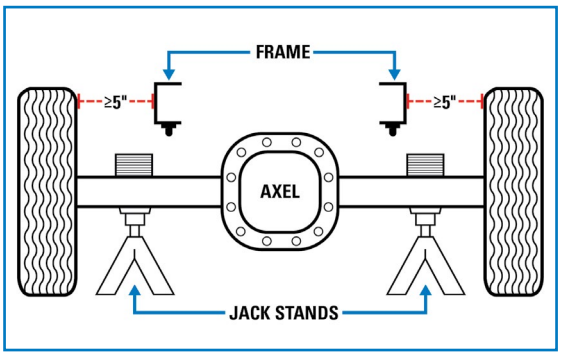
2 REMOVE REAR WHEELS

Place wheel chocks in front of and behind both front wheels.

Raise the rear of the truck high enough to remove both wheels and attain a comfortable working height.

Place two jack stands under rear axle (as shown in Figure 2).

Lower the vehicle until the axle is supported by the jack stands and remove rear wheels.



2

3 REMOVE JOUNCE BUMPER

Remove the rubber jounce bumper by either gently pulling it out of the slotted track or gently prying it out with a screwdriver.

4 PRE-ASSEMBLE THE UPPER BRACKET

Set a roll plate on top of the air spring, lining up all 3 holes in the roll plate with the 3 holes in the top of the air spring. (See Figure 4)

Install the 90º air fitting into the largest port on top of the air spring.

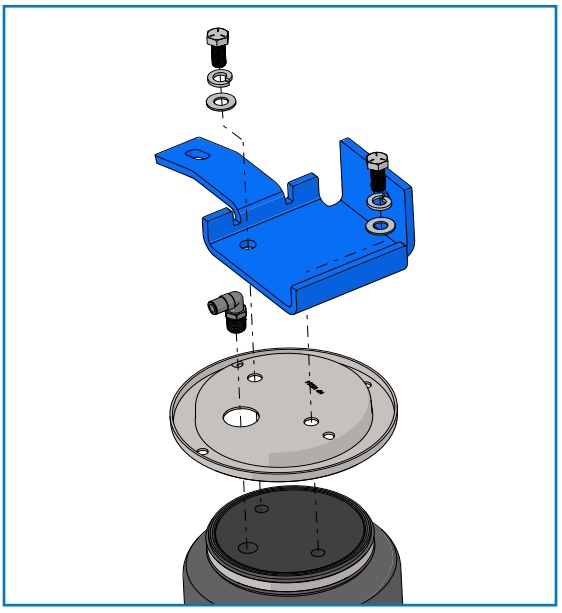
Some fittings have sealant pre-applied on the threads. If the threads have no visible coating, it is recommended to apply thread sealant or Teflon tape.

Tighten the air fitting figure tight plus an additional 1.5 turns.

Place the upper bracket on top of the roll plate, aligning the two mounting holes in the bracket with the mounting holes in the air spring.

Secure the upper bracket to the air spring assembly with two 3/8"-24 x 1" hex bolts, two 3/8" flat washers, and two 3/8" split lock washers.

Torque bolts to 27 N•m [20 ft-lbs]



5

5 PRE-ASSEMBLE THE LOWER BRACKET

On the bottom of the air spring place a roll plate and then the lower support bracket, aligning the two holes in the air spring, roll plate, and lower support bracket.

The leg of the lower support bracket must be oriented so the leg of the bracket extends down from the air spring base and is located on the same side of the air spring as the large air fitting hole located on the top of the air spring.

Before securing the lower bracket to the bottom of the air spring assembly, the carriage bolts need to be inserted into the two "front" square holes in the lower bracket (shown with a black arrow in Figure 5A), as you will not be able to insert them once the lower bracket is attached to the air spring assembly.

⊕ *The "front" holes are equally square in shape where the "back" holes are more rectangular*

Place the lower bracket and carriage bolt assembly against the bottom of the roll plate and air spring, aligning the holes with the holes marked "A" (shown with a white arrow in Figure 5A).

⚠ ***PLEASE NOTE: <u>Most vehicles</u> will require the use of "A" holes to secure the lower bracket to the air spring assembly.***

<u>However</u>; alternative holes are available in the lower bracket to avoid interference with the welded tab on the Passenger side axle on some model vehicles.

Before selecting the holes, place the air spring assembly against the axle on the Passenger side of the vehicle and position the upper bracket against the frame (as shown in Figure 5B).

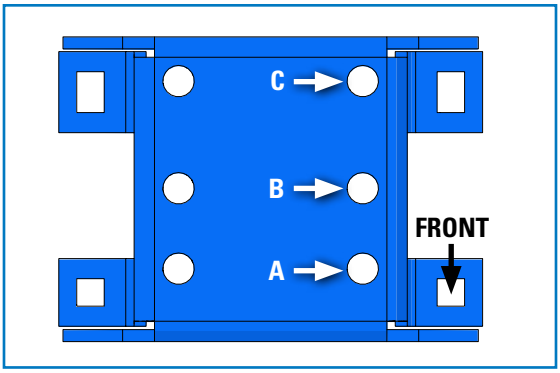
Confirm that the carriage bolts in the lower bracket do not interfere with the welded tab on the axle (See circled area in Figure 5B).

If the carriage bolts are too close to the welded axle, rotate the lower bracket 180-degrees and use hole pattern "C" to mount the air spring assembly.

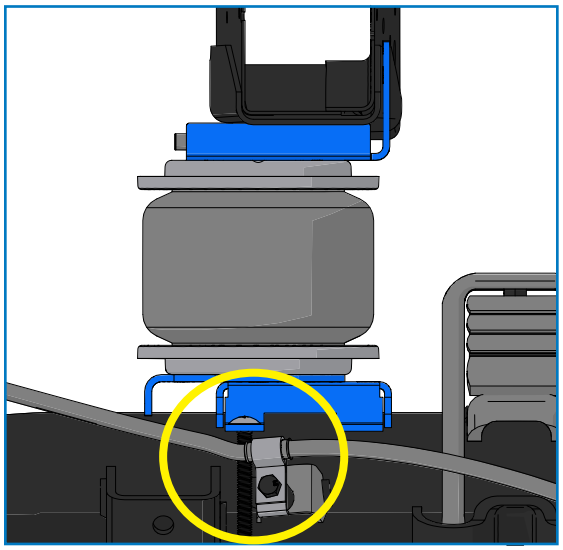
⊕ *The square carriage bolt holes (marked "front" in Figure 5A) should be oriented closest to the exterior of the vehicle if hole pattern "C" is used.*

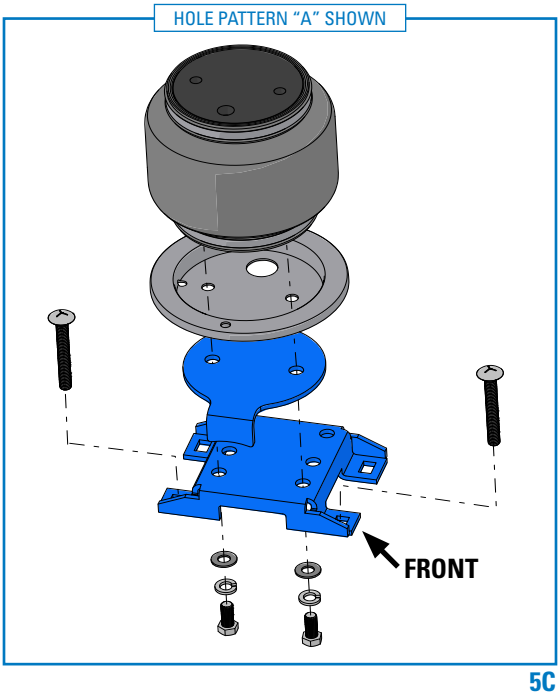
Remove the assembly from the vehicle and secure the lower bracket to the air spring with two 3/8"-24 x 1" hex bolts, two 3/8" flat washers, and two 3/8" split lock washers (as shown in Figure 5C).

Torque bolts to 27 N•m [20 ft-lbs]



5A


5B



5C

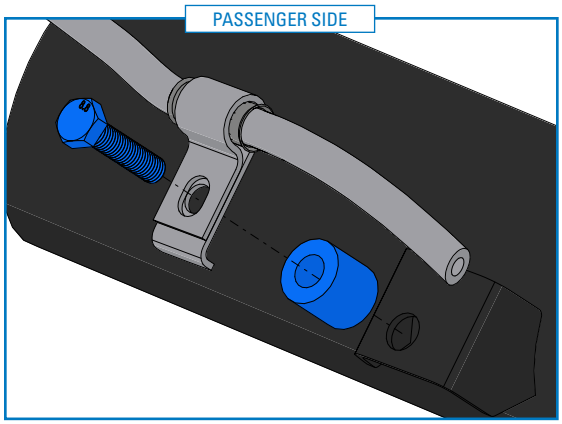
6 INSTALL SPACER

FOR VEHICLE'S <u>WITH DISC BRAKES</u> ONLY: remove the bolt securing the emergency brake cable to the bracket welded to the Passenger side of the rear vehicle axle.

⊕ *The OEM bolt can be discarded as it will not be reused*

Install the supplied spacer between the bracket welded to the rear axle and the emergency brake cable clip using the supplied M8 -1.25 x 35mm bolt.

Torque the bolt to 3-7 N•m [2-5 ft-lbs]



6

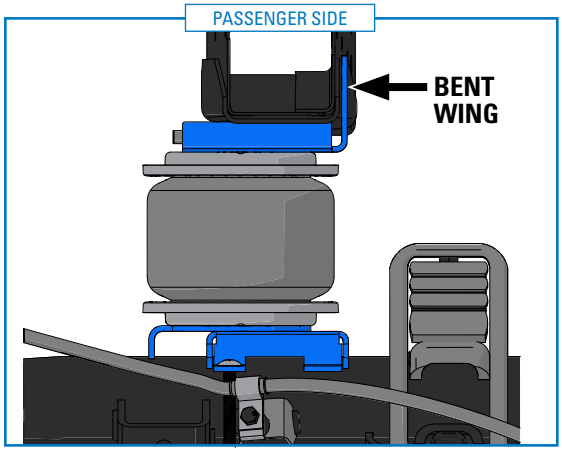
7 POSITION THE AIR SPRING ASSEMBLY

Maneuver the air spring assembly onto the axle.

The lower bracket and leg of the lower support bracket should rest on the axle between the leaf springs and the shock mount.

The bent wing of the upper bracket (shown with an arrow in Figure 7) should be flush against the outer frame.

<u>DRIVER SIDE ONLY:</u> Secure the breather tube away from the roll plates and air spring using the provided zip-ties.



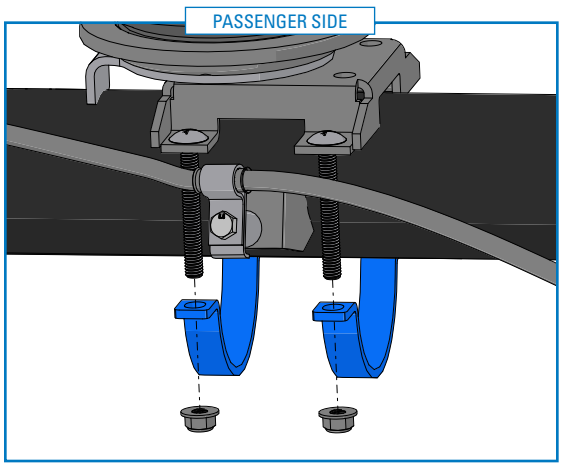
7

8 INSTALLATION OF AXLE STRAPS

Loosely install the axle straps against the axle using the 3/8-16 x 3" carriage bolts and the 3/8-16 nylon lock flange nuts (as shown in Figure 8).

⊕ ***FOR <u>NON-DISC BRAKE</u> MODELS:*** *The brake line should sit between the carriage bolts and the axle tube.*

⚠ ***Do not pinch the brake line under the axle strap or carriage bolt during installation.***



8

9 ALIGN AIR SPRING

Ensure the air spring assembly's bent wing of the upper bracket is still sitting flush against the outer frame (previously shown in Figure 7).

Once the assembly is properly aligned, slowly tighten the forward straps first. Then the back.

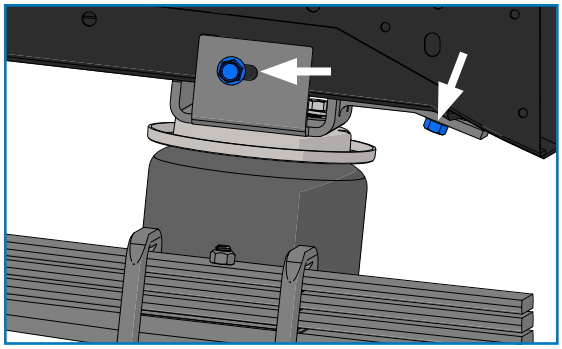
Torque hardware to 27 N•m [20 ft-lbs]

10 SECURE UPPER BRACKET

Using the slots in the upper bracket as guides, use a 5/16" drill bit to drill mounting holes into the frame (see white arrows in Figure 10).

Insert the 3/8"-16 self-tapping bolts into the drilled holes and secure the upper bracket to the frame.

Torque to 20 N•m [15 ft-lbs]



10

11 INSTALL AIR LINE

Provided in air spring kit are two fill valves. The most common place to install is in place of license plate fasteners. Alternatively, two 5/16" holes can be drilled in a convenient location.

***PLEASE NOTE: This kit contains push-to-connect fittings**; using scissors or wire cutters to cut the nylon air line will distort the line and cause the connection to leak. The air line must be cut off squarely with a hose cutter or a sharp utility knife.*

Cut air line assembly into two equal lengths with provided hose cutter.

Install one air line, route the nylon air line to an air spring fitting and cut the hose. Moisten the end of the air line prior to inserting it into the fitting and push it in until it stops.

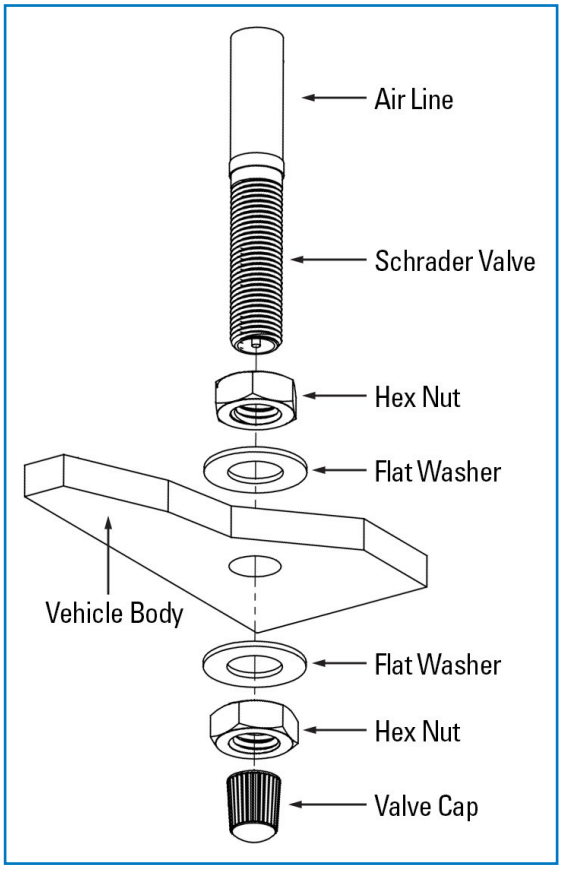
Repeat with the other fill valve.

PASSENGER SIDE ONLY: Slide the air line thermal sleeve over the air line where it is closest to the exhaust. This will assist in protecting the nylon air line from the heat of the exhaust tube.

Secure airlines using the tie-straps, away from moving items and heat sources.

In instances where the airline cannot be attached to the frame using tie-straps, additional self-tapping bolts and cable clamps have been supplied. Using 5/16" drill bits, drill holes in the location of your choosing to install cable clamps and self-tapping bolts to secure the airline to the frame.

Place a 5/16" nut on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole, install a flat washer, and 5/16" nut and cap (reference Figure 11 for assembly). There should be enough valve exposed after installation—approximately ½"—to easily apply a pressure gauge or an air chuck.



11

12 INSTALL HEAT SHIELD

Bend tabs on the heat shield so the required ½" of dead space exists between the heat shield and exhaust when attached.

Attached the heat shield to the exhaust pipe on passenger side using two ring clamps (shown in Figure 12). Each hose clamp holds a tab against exhaust pipe.



12

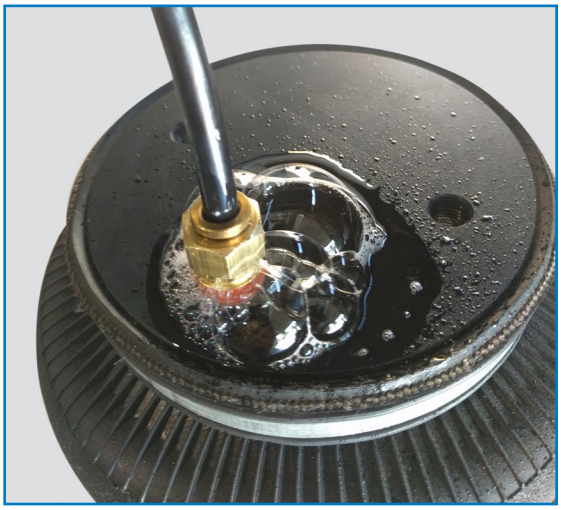
13 CHECK SYSTEM FOR LEAKS

Inflate both air springs to 90 psi, then use a mixture of dish soap and water on all air line connections to detect any air leaks. Large, expanding bubbles indicate a leak (as shown in Figure 12).

Repair as necessary and retest.

Inflate air springs to a predetermined value and on following day recheck pressure. If one or both of air springs have lost pressure, an air leak is present.

Leak must be repaired, and then retested until no leaks exist.



**Air Spring & NPT Air Fitting may differ between kits*

13

CONGRATULATIONS! You have completed the install

After Installation continues on the following page.

Thank you again, and congratulations on the installation of your Air Suspension kit.

AFTER COMPLETING THE INSTALLATION

- The air spring must have clearance between itself and the surrounding components to prevent any contact when the air spring is inflated or compressed. Trimming off excess bolt length may also be required to ensure no contact with the spring or other suspension components can be made once installed. **Failure to do so will void the warranty.**
- If the vehicle's tires were removed during the installation; re-install and torque all wheel fasteners (lug nuts) to the manufacturer's specifications. Re-torque all wheel fasteners after the first 500 miles of driving.
- **Review your vehicle owner's manual and adhere to all instructions and post-installation requirements related to vehicle modifications.**

OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum recommended pressure requirements:

MIN / MAX PSI: REQUIREMENTS FOR YOUR AIR SPRING(S)				
PART #	**SPRING STYLE**	**SPRING TYPE**	**MIN PSI**	**MAX PSI**
HP10687	**In-Coil**	**STANDARD DUTY**	**5 PSI**	**50 PSI**
HP10560		**STANDARD DUTY**	**5 PSI**	**70 PSI**
HP10001	**Sleeve Style**	**STANDARD DUTY**	**10 PSI**	**100 PSI**
HP10173		**STANDARD DUTY**		
HP10199		**STANDARD DUTY**		
HP10083	**Single Convoluted**	**HEAVY DUTY**	**5 PSI**	**100 PSI**
HP10083J		**HEAVY DUTY** with JOUNCE BUMPER	**0 PSI*** / **5 PSI**	**100 PSI**
HP10000	**Double Convoluted**	**HEAVY DUTY**	**5 PSI**	**100 PSI**
HP10000J		**HEAVY DUTY** with JOUNCE BUMPER	**0 PSI*** / **5 PSI**	**100 PSI**
HP10068	**Large Double Convoluted**	**HEAVY DUTY**	**5 PSI**	**100 PSI**
HP10438	**Double Convoluted**	**EXTREME DUTY**	**5 PSI**	**100 PSI**
HP10438J		**EXTREME DUTY** with JOUNCE BUMPER	**0 PSI*** / **5 PSI**	**100 PSI**

** Springs with a jounce bumper can be run at zero PSI when vehicle is unloaded only*

Never operate the vehicle under the minimum or over the maximum listed PSI in the air spring(s). Staying within the pressure limits will ensure maximum air spring life. **Failure in doing so may result in damage to your vehicle and void the warranty.**

- ***It is recommended to check the air pressure in your air springs daily, for the first 5 days, to ensure a leak has not developed.***

Air springs are designed to maintain the vehicle's stock ride height with a load. Do not use the air springs as a means to lift vehicle with no load. This will result in a harsh ride.

SERVICING YOUR VEHICLE WITH AIR SUSPENSION

It is recommended to always jack the vehicle on the axle. If lifting the vehicle with a floor jack or hoist on the frame, never allow the air spring to limit the travel of the axle. Suspending the axle with the air spring limiting the axle travel **will damage the air spring and void the warranty**. *(This warning does not apply to In-Coil Springs)*

WARRANTY

See accompanying limited warranty included with this kit for details.