NEWAY®
SAF-HOLLAND Group

Installation and Operation Manual

Auxiliary Axle Air Controls

- In Cab Mount
- Exterior Mount

XL-PS20020BM-en-US

SAFHolland

Introduction

This manual provides the necessary information for the installation, maintenance, inspection, and safe operation of the Neway® LSZ Series Auxiliary Axle Air Controls.

NOTE: To assist with installation, customer inspection drawing LSZ13_TAB_CI is required and is included in the literature kit.

Read this manual before using or servicing this product and keep it in a safe location for future reference. Updates to this manual, which are published as necessary, are available on the internet at www.safholland.us.

When replacement parts are required, SAF-HOLLAND® highly recommends the use of only SAF-HOLLAND® Original Parts. A list of technical support locations that supply SAF-HOLLAND® Original Parts and an Aftermarket Parts Catalog are available on the internet at www.safholland.us or contact Customer Service at 888-396-6501.

Warranty

Refer to the complete warranty for the country in which the product will be used. A copy of the written warranty is included with the product or available on the internet at www.safholland.com.

Notes, Cautions, and Warnings

Before starting any work on the unit, read and understand all the safety procedures presented in this manual. This manual contains the terms "NOTE", "IMPORTANT", "CAUTION", and "WARNING" followed by important product information. These terms are defined as follows:

NOTE: Includes additional information to enable accurate and easy performance of procedures.

IMPORTANT: Includes additional information that if not followed could lead to hindered product performance.

CAUTION — Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, could result in property damage.

⚠CAUTION — Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠WARNING — Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

1. Safety Instructions

General and Servicing Safety Instructions

- Read and observe all Warning and Caution hazard alert messages. The alerts provide information that can help prevent serious personal injury, damage to components, or both.

⚠WARNING Failure to follow the instructions and safety precautions in this manual could result in improper servicing or operation leading to component failure which, if not avoided, could result in death or serious injury.

- All installations should be performed by a properly trained technician using proper/special tools, and safe procedures.

NOTE: In the United States, workshop safety requirements are defined by federal and/or state Occupational Safety and Health Act (OSHA). Equivalent laws may exist in other countries. This manual is written based on the assumption that OSHA or other applicable employee safety regulations are followed by the location where work is performed.

- Properly support and secure the vehicle from unexpected movement when servicing the unit.

⚠WARNING Failure to properly support and secure the vehicle and axles prior to commencing work could create a crush hazard which, if not avoided, could result in death or serious injury.

- Service both roadside and curbside of an axle. Worn parts should be replaced in sets. Key components on each axle's braking system, such as friction material, rotors and drums will normally wear over time.
- Follow all manufacturer's instructions on spring pressure and air pressure controls.

⚠WARNING Failure to follow manufacturer's instructions regarding spring pressure or air pressure control could allow unexpected release of energy which, if not avoided, could result in death or serious injury.

- The wheel contact surfaces between the wheel and hub/drum MUST NOT be additionally painted.

IMPORTANT: The wheel contact surfaces MUST be clean, smooth and free from grease.

⚠WARNING Failure to keep wheel and hub contact surfaces clean and clear of foreign material could allow wheel/hub separations which, if not avoided, could result in death or serious injury.

- Only the wheel and tire sizes approved by SAF-HOLLAND® can be used.
- Tire clearance between tires and the suspension MUST be regularly monitored and maintained.

⚠WARNING Failure to maintain tire clearance between tires and the nearest point of contact on the suspension or vehicle could cause fire or loss of vehicle control which, if not avoided, could result in death or serious injury.

Operational and Road Safety Instructions

- Before operating vehicle, ensure that the maximum permissible axle load is NOT exceeded and that the load is distributed equally and uniformly and in accordance with state and federal bridge laws.
- Make sure that the brakes are NOT overheated from continuous operation.

⚠WARNING Failure to minimize the use of brakes during overheating conditions could result in deterioration of brake efficiency which, if not avoided, could result in death or serious injury.

- Observe the operating recommendation of the truck manufacturer for off-road operation of the installed axles.

IMPORTANT: The definition of OFF-ROAD means driving on non-asphalt/non-concrete routes, e.g. gravel roads, agricultural and forestry tracks, on construction sites and in gravel pits.

IMPORTANT: Off-road operation of axles beyond the approved application design could result in damage and impair suspension system performance.

- Follow the recommended routine maintenance and inspections described in this manual. These procedures are designed so that optimum performance and operational safety are achieved.
- The suspension springs should always be operated with a static operating pressure between 20 psi (1.38 bar) and 107 psi (7.38 bar).

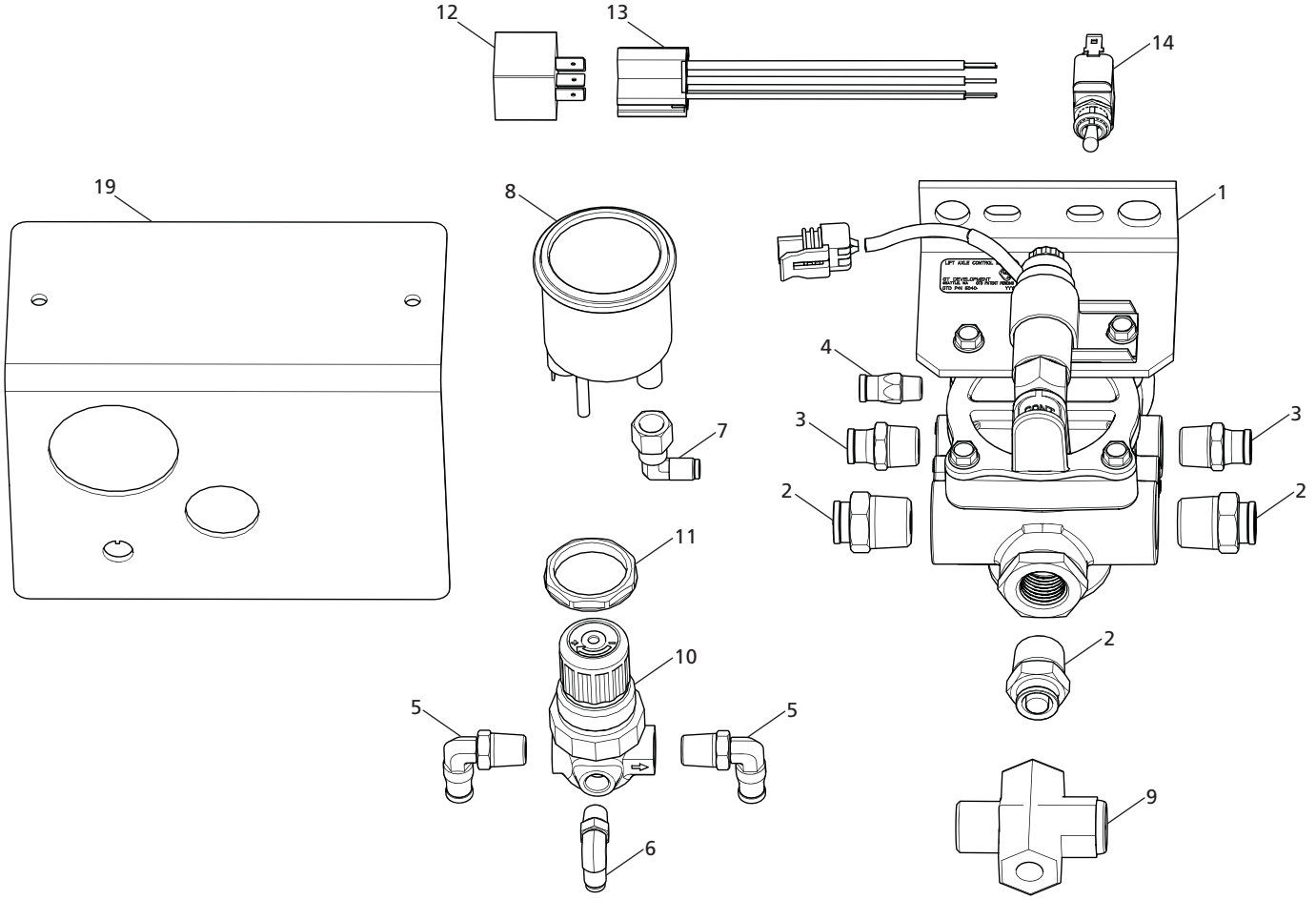
⚠WARNING Failure to operate the air springs with a proper static operating pressure could cause premature component failure and loss of vehicle control which, if not avoided, could result in death or serious injury.

- In the event of suspension air pressure loss, quickly reduce speed as safely as possible and remove the vehicle from traffic. If unable to remove vehicle from traffic, follow DOT safety requirements regarding emergency situations.
- Contact a qualified towing and/or service company to assist in repairing the vehicle or to move it to a qualified repair facility. DO NOT operate the vehicle in the absence of suspension air pressure; however in the event of an air system failure while in service, an internal rubber bumper built into the air spring will make it possible to temporarily operate the vehicle at reduced speed determined by road conditions.

⚠WARNING Operating the vehicle without proper air pressure can cause tire failure, fire, or loss of vehicle control which, if not avoided, could result in death or serious injury.

- The suspension MUST be lifted when the vehicle is moving in reverse.

CAUTION Failure to lift axle when in reverse could result in tire or axle damage.

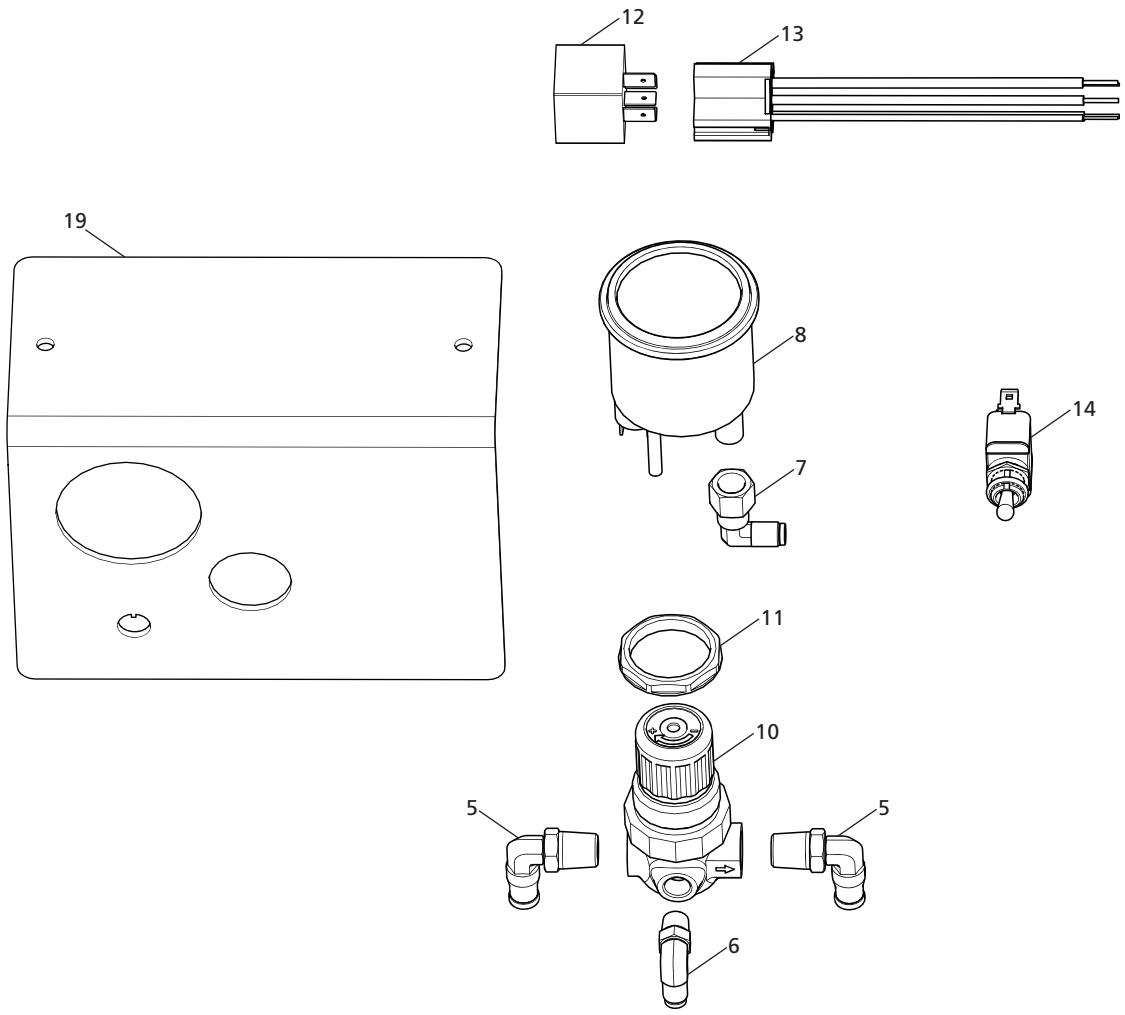


LSZ AIR KIT, IN-CAB MOUNT: 90560162			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lift Axle Control Module, Normally Closed	90060004	1
2	Fitting, 1/2" x 1/2" Push Connect with Cap	90060012	3
3	Fitting, 3/8" x 3/8" Push Connect with Cap	90060013	2
4	Fitting, 1/4" x 1/8" Push Connect with Cap	90060014	1
5	Fitting, 1/4" x 1/4" Push Connect with Cap	90060015	2
6	Fitting, 5/32" x 1/8" Push Connect with Cap	90060016	1
7	Fitting, 5/32" x 1/8" Push Connect with Cap	90060017	1
8	Gauge, Air Pressure-Lit	90060010	1

LSZ AIR KIT, IN-CAB MOUNT: 90560162			
ITEM	DESCRIPTION	PART NUMBER	QTY.
9	Pressure Protection Valve	90060005	1
10	Regulator Valve, Air Pressure	90060006	1
11	Nut, Regulator panel	90060007	1
12	Relay	90060008	1
13	Relay Socket	90060009	1
14	Toggle Switch	90060018	1
19	Panel, Control	90060019	1

NOTE: For installation Instructions, refer to Section 2, 4, 5, 6, and 7 on pages 8, 10, 11, and 12.

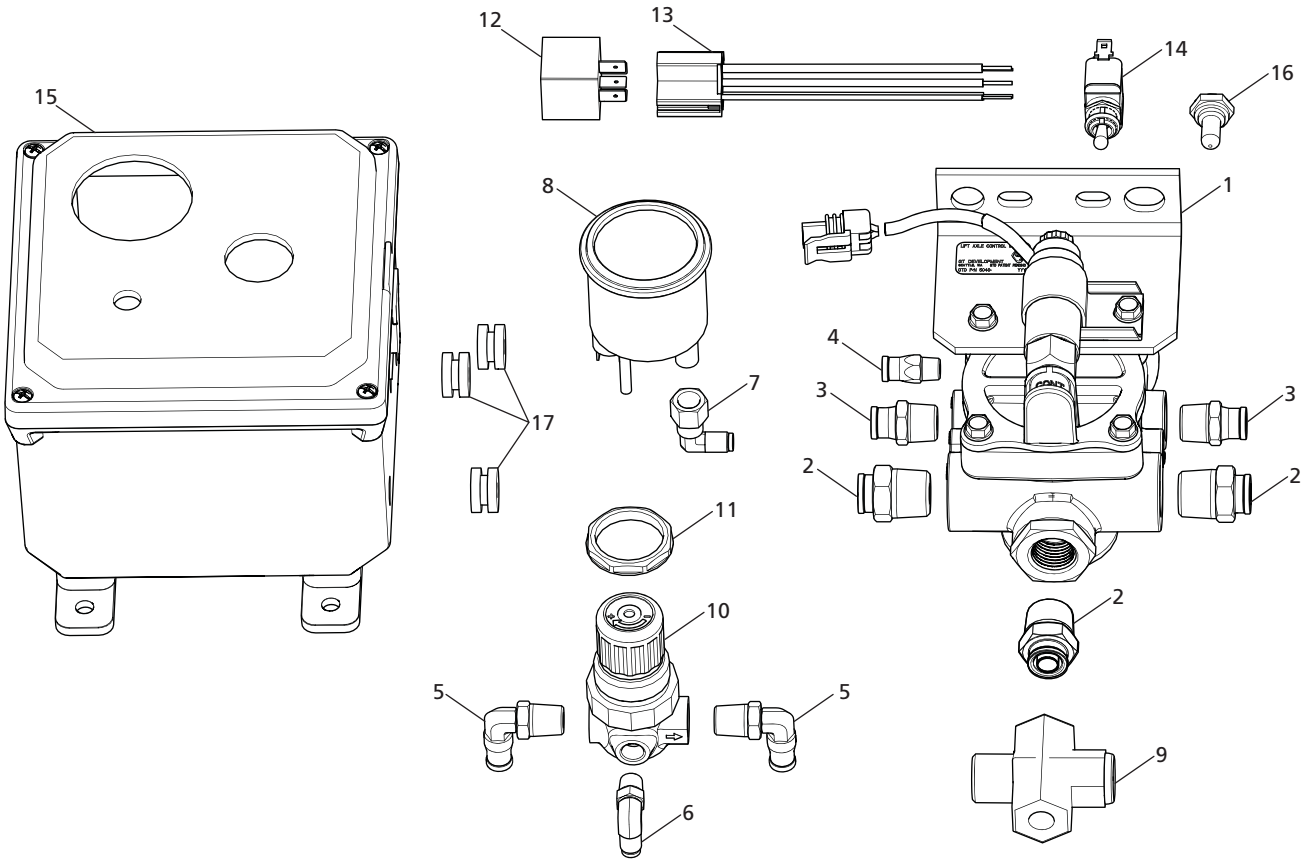
In-Cab Mount (Plumbed) Exploded View and Parts List



LSZ AIR KIT, IN-CAB MOUNT (PLUMBED): 90560171			
ITEM	DESCRIPTION	PART NUMBER	QTY.
5	Fitting, 1/4" x 1/4" Push Connect with Cap	90060015	2
6	Fitting, 5/32" x 1/8" Push Connect with Cap	90060016	1
7	Fitting, 5/32" x 1/8" Push Connect with Cap	90060017	1
8	Gauge, Air Pressure-Lit	90060010	1
10	Regulator Valve, Air Pressure	90060006	1

LSZ AIR KIT, IN-CAB MOUNT (PLUMBED): 90560171			
ITEM	DESCRIPTION	PART NUMBER	QTY.
11	Nut, Regulator Panel	90060007	1
12	Relay	90060008	1
13	Relay Socket	90060009	1
14	Toggle Switch	90060018	1
19	Panel, Control	90060019	1

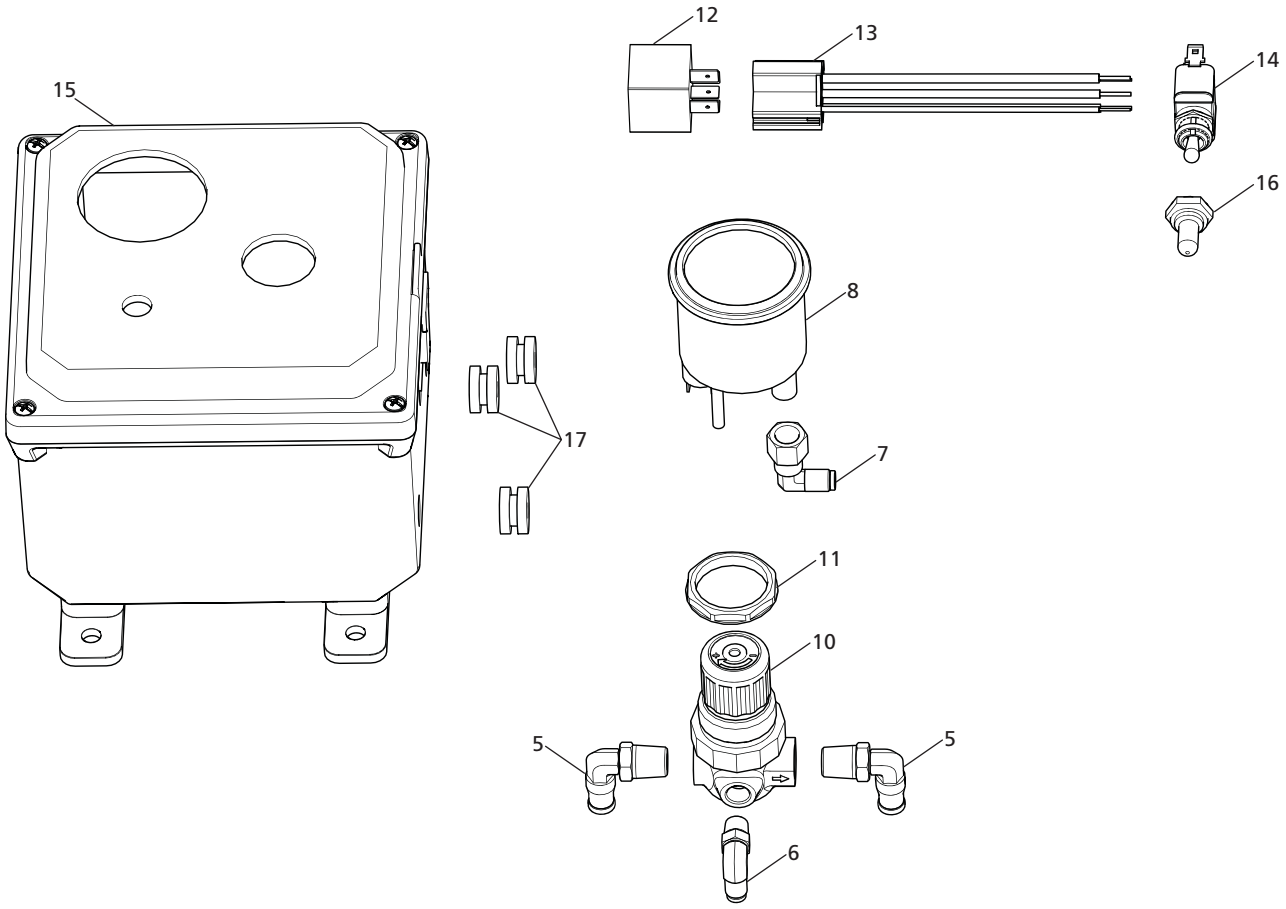
NOTE: For installation Instructions, refer to Section 2, 6, and 7 on pages 8, 11, and 12.



LSZ AIR KIT, EXTERIOR MOUNT: 90560163			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lift Axle Control Module, Normally Closed	90060004	1
2	Fitting, 1/2" x 1/2" Push Connect with Cap	90060012	3
3	Fitting, 3/8" x 3/8" Push Connect with Cap	90060013	2
4	Fitting, 1/4" x 1/8" Push Connect with Cap	90060014	1
5	Fitting, 1/4" x 1/4" Push Connect with Cap	90060015	2
6	Fitting, 5/32" x 1/8" Push Connect with Cap	90060016	1
7	Fitting, 5/32" x 1/8" Push Connect with Cap	90060017	1
8	Gauge, Air Pressure-Lit	90060010	1
9	Pressure Protection Valve	90060005	1

LSZ AIR KIT, EXTERIOR MOUNT: 90560163			
ITEM	DESCRIPTION	PART NUMBER	QTY.
10	Regulator Valve, Air Pressure	90060006	1
11	Nut, Regulator Panel	90060007	1
12	Relay	90060008	1
13	Relay Socket	90060009	1
14	Toggle Switch	90060018	1
15	Box, Poly	90045717	1
16	Toggle Boot	90045729	1
17	Grommet, 1/2"	90045730	3

NOTE: For installation Instructions, refer to Section 3, 4, 5, 6, and 7 on pages 9, 10, 11, and 12.



LSZ AIR KIT, EXTERIOR MOUNT (PLUMBED): 90560180			
ITEM	DESCRIPTION	PART NUMBER	QTY.
5	Fitting, 1/4" x 1/4" Push Connect with Cap	90060015	2
6	Fitting, 5/32" x 1/8" Push Connect with Cap	90060016	1
7	Fitting, 5/32" x 1/8" Push Connect with Cap	90060017	1
8	Gauge, Air Pressure-Lit	90060010	1
9	Regulator Valve, Air Pressure	90060006	1
10	Nut, Regulator Panel	90060007	1

LSZ AIR KIT, EXTERIOR MOUNT (PLUMBED): 90560180			
ITEM	DESCRIPTION	PART NUMBER	QTY.
12	Relay	90060008	1
13	Relay Socket	90060009	1
14	Toggle Switch	90060018	1
15	Box,Poly	90045717	1
16	Toggle Boot	90045729	1
17	Grommet, 1/2"	90045730	3

NOTE: For installation Instructions, refer to Section 3, 6, and 7 on pages 9, 11, and 12.

2. In-Cab Control Panel Sub-Assembly

1. Assemble the air pressure gauge sub-assembly per the following ***(Figure 1)***:
   a. Assemble the 5/32" x 1/8" elbow push connect fitting into the air pressure gauge's inlet port.
   b. Insert the supplied light bulb into the light bulb socket and insert the socket into the air pressure gauge.
2. Assemble the air pressure regulator sub-assembly per the following ***(Figure 2)***:
   a. Assemble the 1/4" x 1/4" elbow push connect fittings into the air pressure regulator.
   b. Assemble the 5/32" x 1/8" elbow push connect fitting into the air pressure regulator.
   c. Install the pipe plug into the air pressure port opposite of the 5/32" x 1/8" elbow push connect fitting.
3. Remove the protective covering ftom the face of the stainless steel control panel.
4. Assemble the gage to the control panel using the supplied gage bracket and nuts.
5. Assemble the air pressure regulator to the control panel using the regulator panel nut ***(Figure 3)***.
6. Assemble the toggle switch to the control panel ***(Figure 3).***

Figure 1

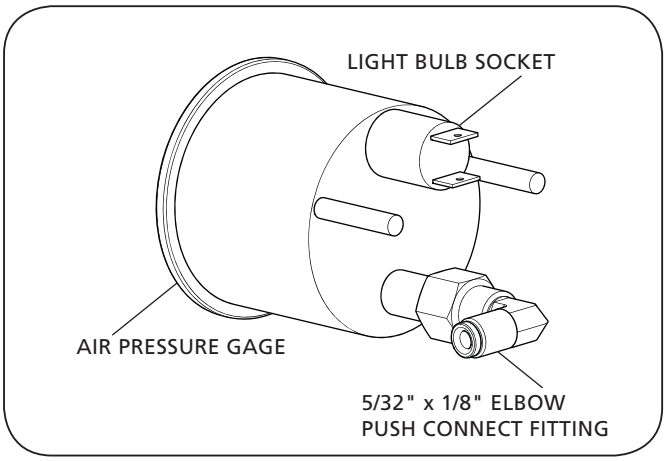


Figure 2

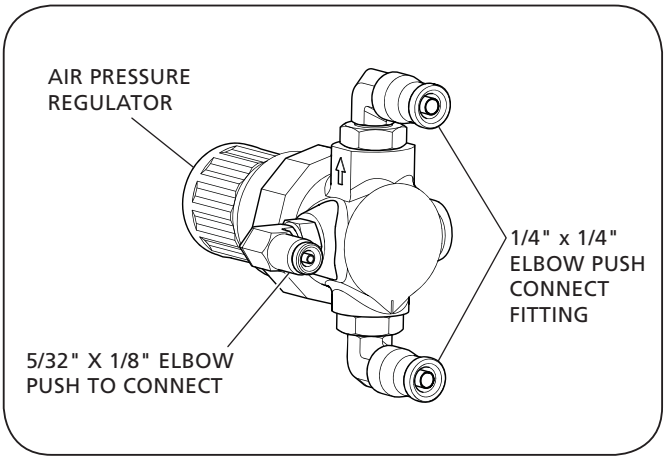
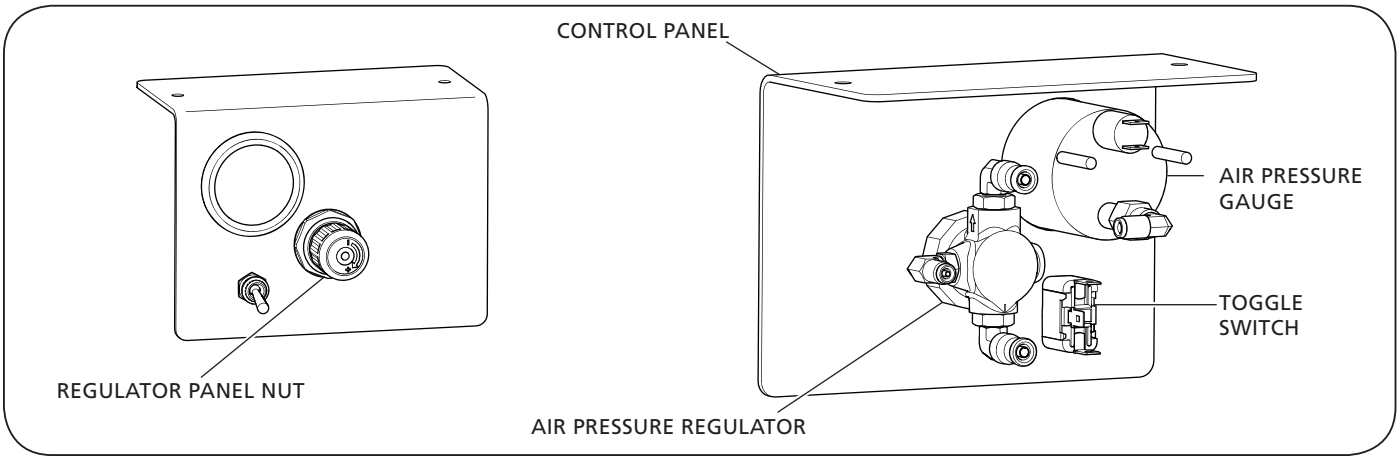


Figure 3



3. Exterior Mount Control Box Sub-Assembly

1. Assemble the air pressure gauge sub-assembly per the following ***(Figure 1)***:
   a. Assemble the 5/32" x 1/8" elbow push connect fitting into the air pressure gauge's inlet port.
   b. Insert the supplied light bulb into the light bulb socket and insert the socket into the air pressure gauge.
2. Assemble the air pressure regulator sub-assembly per the following ***(Figure 2)***:
   a. Assemble the 1/4" x 1/4" elbow push connect fittings into the air pressure regulator.
   b. Assemble the 5/32" x 1/8" elbow push connect fitting into the air pressure regulator.
   c. Install the pipe plug into the air pressure port opposite of the 5/32" x 1/8" elbow push connect fitting.
3. Assemble the grommets into the control box ***(Figure 4)***.
4. Assemble the toggle switch to the control box ***(Figure 5)***.
5. Assemble the toggle boot onto the toggle switch ***(Figure 5)***.
6. Assemble the gauge to the control box using the supplied gage bracket and nuts.
7. Assemble the air pressure regulator to the control box using the regulator panel nut ***(Figure 6)***.

Figure 4

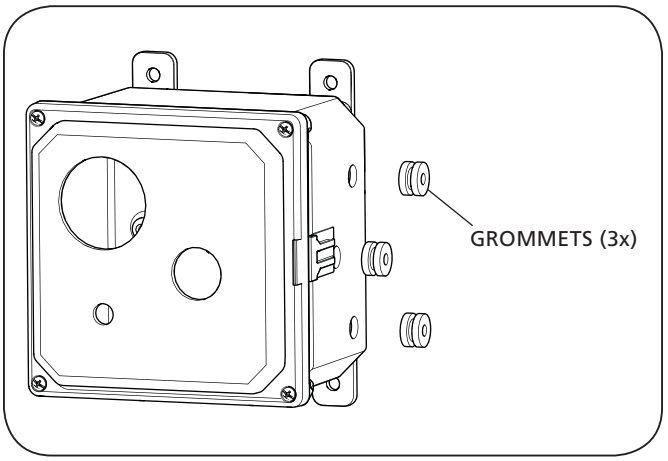


Figure 5

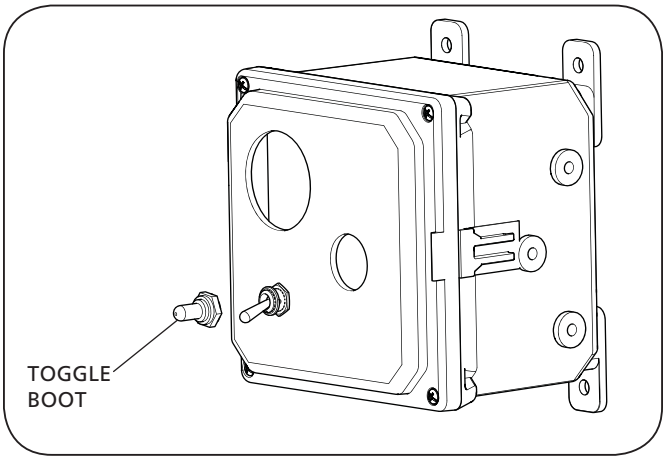
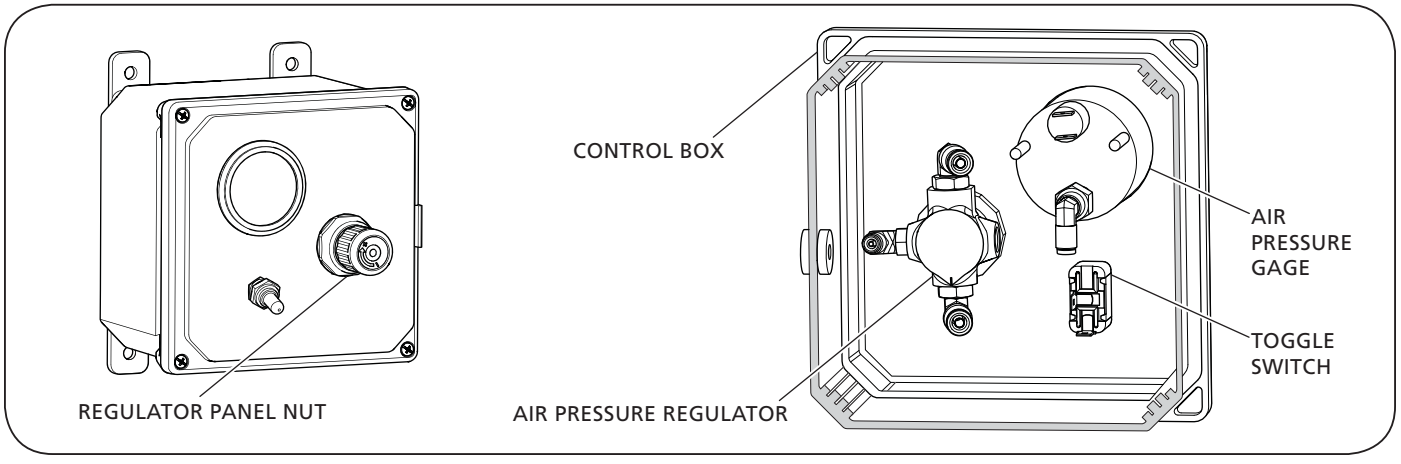


Figure 6



4. Lift Axle Control Module Sub-Assembly

1. Temporarily secure the lift axle control module (LACM) in preparation for installing the push connect fittings ***(Figure 7)***.
2. Assemble the push connect fittings into the LACM per the following ***(Figure 8)***:
   a. Assemble the 1/2" x 1/2" straight push connect fittings into the LACM's main supply port and both load delivery ports. Torque to 41 ft.-lbs. (56 N•m).
   b. Assemble the 3/8" x 3/8" straight push connect fittings into both of the LACM's lift delivery ports. Torque to 16 ft.-lbs. (22 N•m).
   c. Assemble the 1/4" x 1/8" straight push connect fitting into the LACM's pilot port. Torque to 6 ft.-lbs. (8 N•m).

⚠CAUTION Over-torqueing the push connect fittings could lead to a cracked or damaged lift axle control valve which, could result in being unable to lift the axle and/or supply load to the air springs. This could deem the vehicle out of service.

5. Lift Axle Control Module Mounting

1. Mount the LACM to an adequate flat surface using 1/2" (M12) or 5/16" (M8), GR 5 fasteners.

NOTE: Mounting the LACM near the auxiliary axle will increase the ease of installation, reduce the amount of air hose required to plumb the axle, and increase the speed to lift/lower the axle.

2. Mount the LACM ONLY with the exhaust vent facing downward ***(Figure 9)***.

⚠CAUTION Failure to mount the LACM with the exhaust vent facing downward will prevent contaminants from exiting the valve and may cause valve failure.

Figure 7

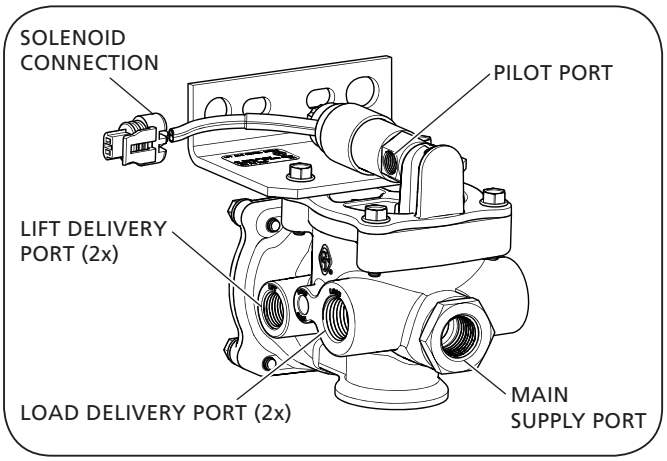


Figure 8

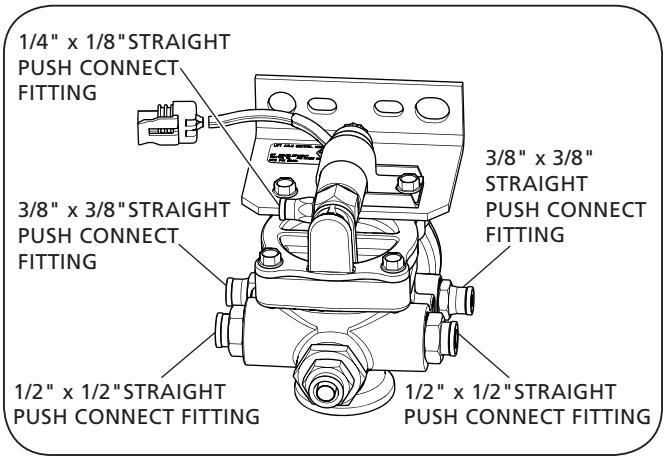
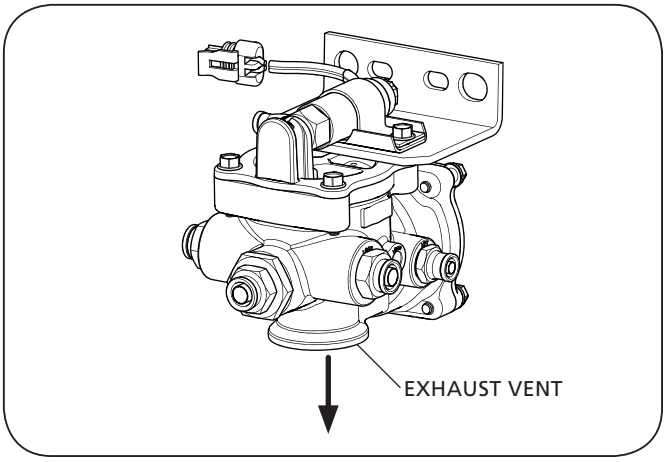


Figure 9



6. Plumbing

1. Apply thread sealant to the 1/2" NPTM threads of the pressure protection valve.
2. Install the inlet port of the pressure protection valve into the trucks's auxiliary air tank ***(Figure 10)***.
3. Plumb the control panel or the box sub assembly per the following ***(Figure 10 and 13)***:
   a. Connect the air pressure regulator inlet port to an outlet port on the pressure protection valve using a 1/4" air tube.
   b. Connect the air pressure regulator outlet (gauge) port to the air pressure gauge inlet port using a 5/32" air tube.
4. Plumb the LACM to the axle per the following ***(Figure 11 and 12)***:
   a. Connect the LACM main supply to the open outlet port on the pressure protection valve using a 1/2" air tube.
   b. Connect the LACM delivery ports to the auxiliary axle air springs using a 1/2" air tube.
   c. Connect the LACM lift delivery ports to the auxiliary axle SuperChambers™ using a 3/8" air tube.
   d. Connect the LACM pilot port to the outlet port of the air pressure regulator using a 1/4" air tube.

Figure 10

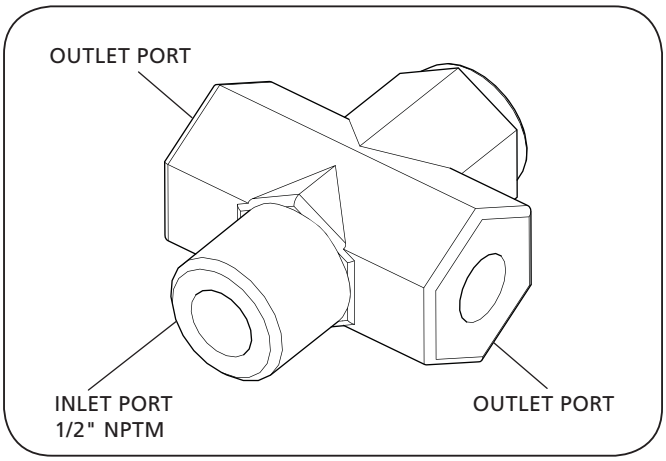


Figure 11

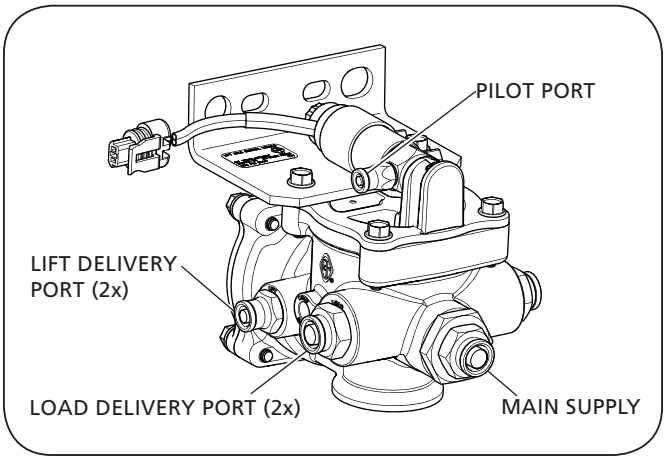
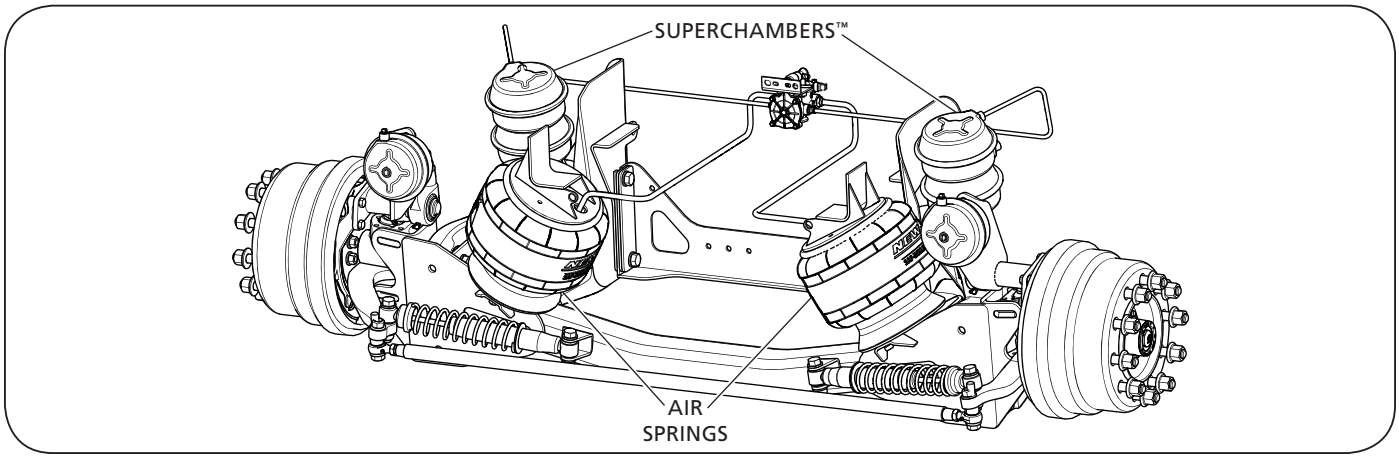


Figure 12



7. Electrical Connections

1. Remove the green wire from the relay socket.
2. Plug the relay into the relay socket.
3. Connect the relay socket lead wires per schematic and diagram as illustrated ***(Figure 14 and 15)***.

NOTE: The transmission reverse switch should provide power to the relay when the truck is in reverse.

Figure 13

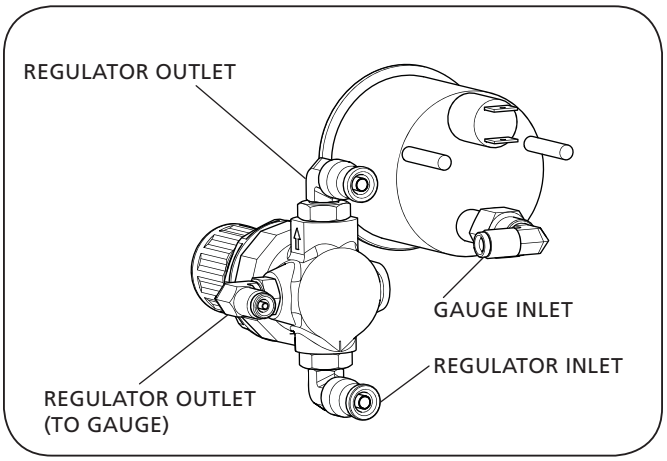


Figure 14

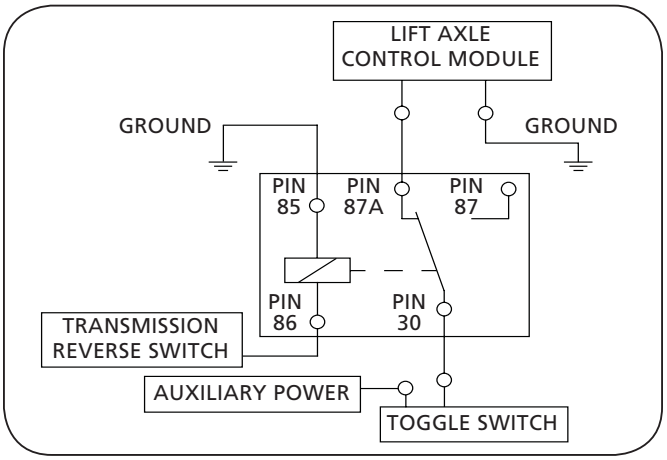
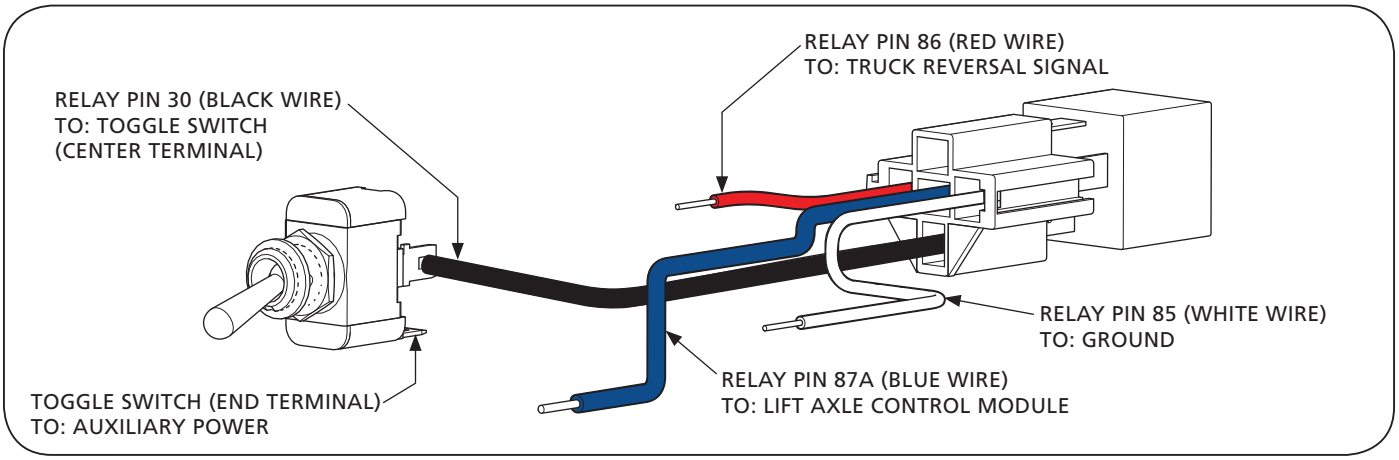


Figure 15



ORIGINAL PARTS™

From fifth wheel rebuild kits to suspension bushing repair kits, SAF-HOLLAND Original Parts are the same quality components used in the original component assembly.

SAF-HOLLAND Original Parts are tested and designed to provide maximum performance and durability. Will-fits, look-alikes or, worse yet, counterfeit parts will only limit the performance potential and could possibly void SAF-HOLLAND's warranty. Always be sure to spec SAF-HOLLAND Original Parts when servicing your SAF-HOLLAND product.

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