

LSZ13/20 Repair Manual

Crossmember and Frame Bracket



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Introduction

This manual provides the necessary information for the maintenance, inspection, and safe operation of the NEWAY® LSZ Series Auxiliary Air Suspension.

NOTE: To assist with installation, customer inspection drawing LSZ13_TAB_CI or LSZ20_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 could 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.

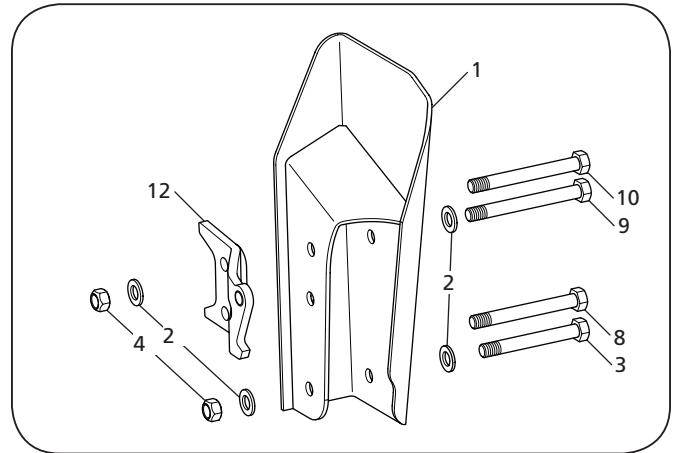
⚠ WARNING Operating the vehicle without proper air pressure can cause tire failure, fire, or loss of vehicle control which, if not avoided could result in death or serious injury.

- 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.

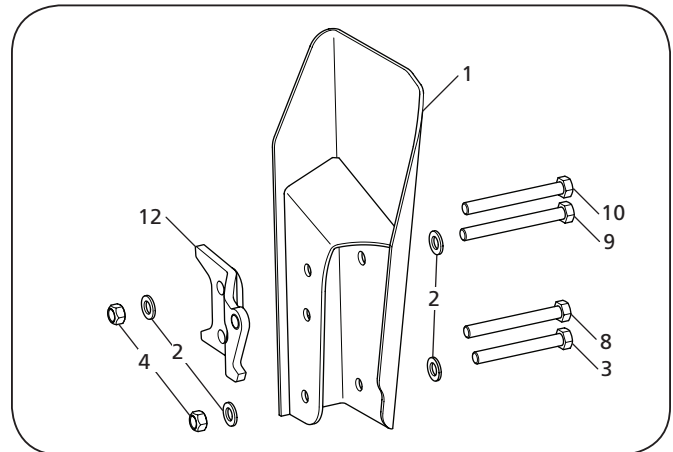
SRK 48100571: FRAME BRACKET KIT, LH 9"-11" RIDE HEIGHT			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Frame Bracket Assembly, LH, -9"-11" Ride Height	90522440	1
2	Washer, Flat Narrow 3/4"	93600156	4
3	Cap Screw, Hex 3/4"-10 x 6" GR8	93003659	1
4	Nut, Hex, Lock 3/4"-10 GR C	93400494	2
5	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Cap Screw, Hex 3/4"-10 x 7" GR8	93003683	1
9	Cap Screw, Hex 3/4"-10 x 6 1/2" GR8	96003671	1
10	Cap Screw, Hex 3/4"-10 x 6 3/4" GR8	93003677	1
11	Crossmember Service Bulletin (not Shown)	XL-PS200375B-en-US	1
12	Lower Lift Bracket Assembly, LH	90550448	1

SRK 48100571



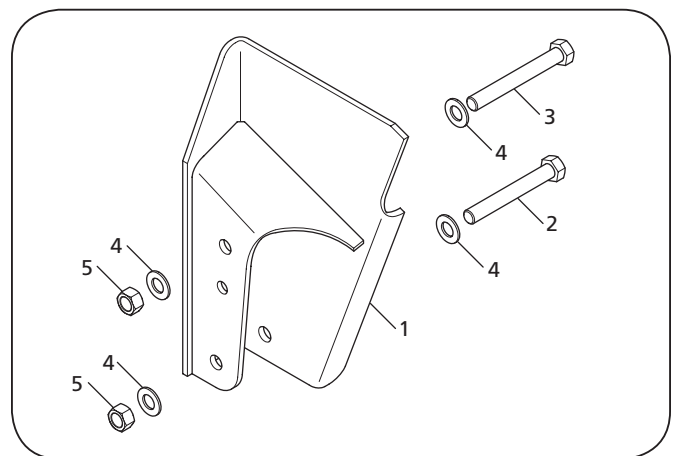
SRK 48100573: FRAME BRACKET KIT, LH 12"-14" RIDE HEIGHT			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Frame Bracket Assembly, LH, -12"-14" Ride Height	90522444	1
2	Washer, Flat Narrow 3/4"	93600156	4
3	Cap Screw, Hex 3/4"-10 x 6" GR8	93003659	1
4	Nut, Hex, Lock 3/4"-10 GR C	93400494	2
5	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Cap Screw, Hex 3/4"-10 x 7" GR8	93003683	1
9	Cap Screw, Hex 3/4"-10 x 6 1/2" GR8	96003671	1
10	Cap Screw, Hex 3/4"-10 x 6 3/4" GR8	93003677	1
11	Crossmember Service Bulletin (not Shown)	XL-PS200375B-en-US	1
12	Lower Lift Bracket Assembly, LH	90550448	1

SRK 48100573



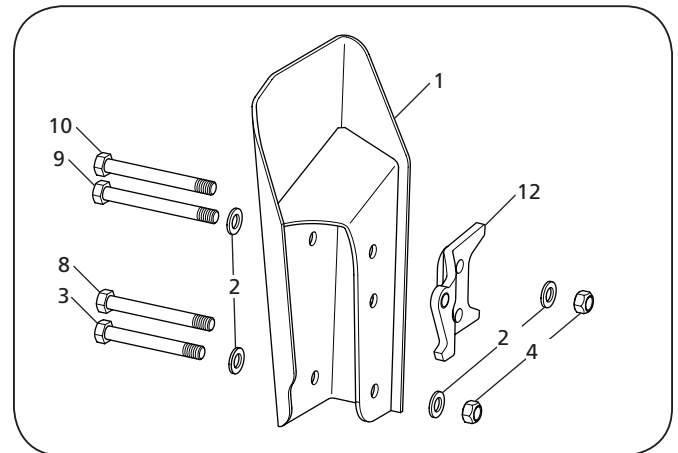
SRK 48100626: FRAME BRACKET KIT, LH 9"-11" HEIGHT LSZ20			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Frame Bracket Kit, LH, 9"-11" Ride Height-LSZ20	90522979	1
2	Cap Screw, Hex 7/8"-9 x 6 1/2" GR 8	93003881	1
3	Cap Screw, Hex 7/8"-9 x 7" GR 8	93003893	1
4	Washer, Flat 7/8"	93600160	4
5	Nut, Hex, Flat 7/8"-9 GR C	93400498	2
6	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1

SRK 48100626

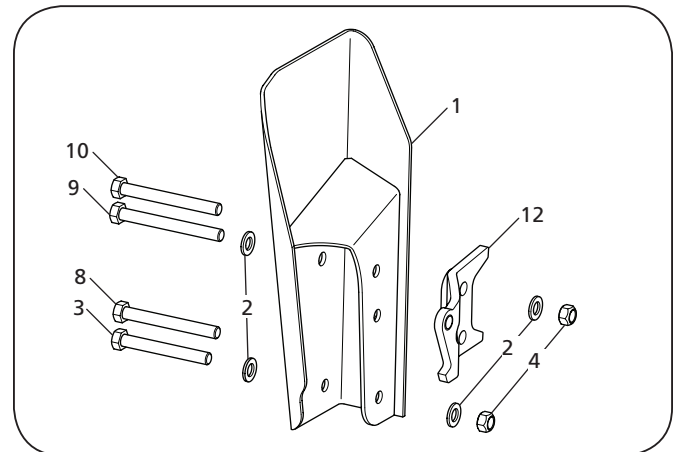


SRK 48100572: FRAME BRACKET KIT, RH 9"-11" RIDE HEIGHT

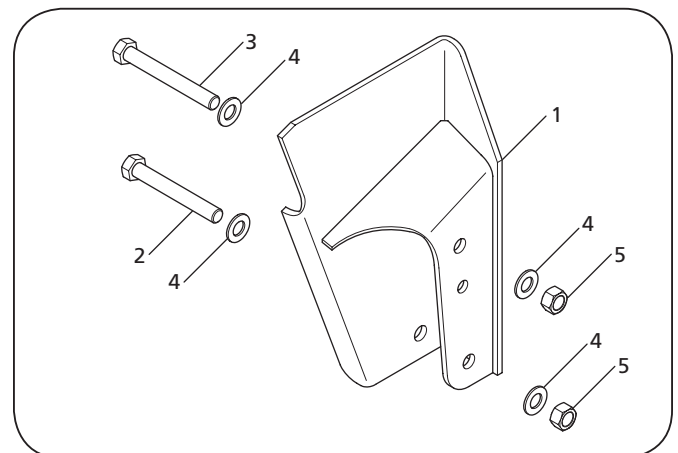
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Frame Bracket Assembly, RH, -9"-11" Ride Height	90522442	1
2	Washer, Flat Narrow 3/4"	93600156	4
3	Cap Screw, Hex 3/4"-10 x 6" GR8	93003659	1
4	Nut, Hex, Lock 3/4"-10 GR C	93400494	2
5	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Cap Screw, Hex 3/4"-10 x 7" GR8	93003683	1
9	Cap Screw, Hex 3/4"-10 x 6 1/2" GR8	96003671	1
10	Cap Screw, Hex 3/4"-10 x 6 3/4" GR8	93003677	1
11	Crossmember Service Bulletin (not Shown)	XL-PS200375B-en-US	1
12	Lower Lift Bracket Assembly, RH	90550449	1

SRK 48100572

SRK 48100574: FRAME BRACKET KIT, RH 12"-14" RIDE HEIGHT

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Frame Bracket Assembly, RH, -12"-14" Ride Height	90522445	1
2	Washer, Flat Narrow 3/4"	93600156	4
3	Cap Screw, Hex 3/4"-10 x 6" GR8	93003659	1
4	Nut, Hex, Lock 3/4"-10 GR C	93400494	2
5	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Cap Screw, Hex 3/4"-10 x 7" GR8	93003683	1
9	Cap Screw, Hex 3/4"-10 x 6 1/2" GR8	96003671	1
10	Cap Screw, Hex 3/4"-10 x 6 3/4" GR8	93003677	1
11	Crossmember Service Bulletin (not Shown)	XL-PS200375B-en-US	1
12	Lower Lift Bracket Assembly, RH	90550449	1

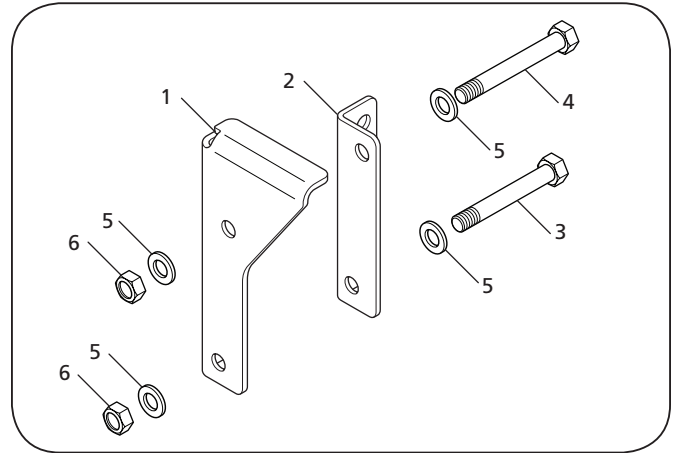
SRK 48100574

SRK 48100627: FRAME BRACKET KIT, RH 9"-11" HEIGHT LSZ20

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Frame Bracket Kit, LH, 9"-11" Ride Height-LSZ20	90522981	1
2	Cap Screw, Hex 7/8"-9 x 6 1/2" GR 8	93003881	1
3	Cap Screw, Hex 7/8"-9 x 7" GR 8	93003893	1
4	Washer, Flat 7/8"	93600160	4
5	Nut, Hex, Flat 7/8"-9 GR C	93400498	2
6	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1

SRK 48100627


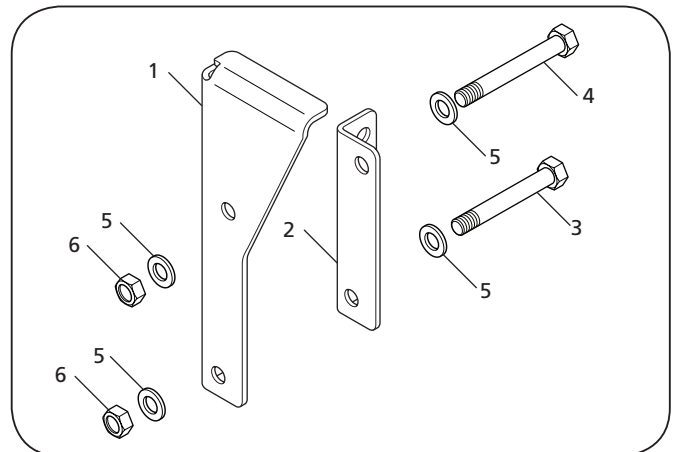
SRK 48100636: LSZ13 10" SPACER KIT, LH AFTER OCT 1, 2015			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Shelf Bracket, 10" - Left-Hand	90026916	1
2	Wrapper, Spacer - 13K - Left-Hand (Painted)	90026920	1
3	Cap Screw, Hex 3/4"-10 x 6" GR 8	93003659	1
4	Cap Screw, Hex 3/4"-10 x 7 GR 8	93003683	1
5	Washer, Flat, Narrow 3/4"	93600156	4
6	Nut, Hex, Lock 3/4"- 10 GR C	93400494	2
7	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Service Bulletin, Crossmember (Not Shown)	XL-PS20037SB-en-US	1

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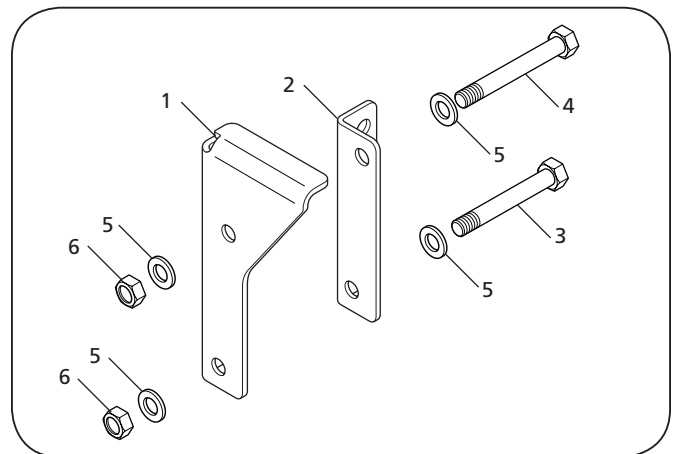
SRK 48100638: LSZ13 13" SPACER KIT, LH AFTER OCT 1, 2015			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Shelf Bracket, 13" - Left-Hand	90026916	1
2	Wrapper, Spacer - 13K - Left-Hand (Painted)	90026920	1
3	Cap Screw, Hex 3/4"-10 x 6" GR 8	93003659	1
4	Cap Screw, Hex 3/4"-10 x 7 GR 8	93003683	1
5	Washer, Flat, Narrow 3/4"	93600156	4
6	Nut, Hex, Lock 3/4"- 10 GR C	93400494	2
7	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Service Bulletin, Crossmember (Not Shown)	XL-PS20037SB-en-US	1

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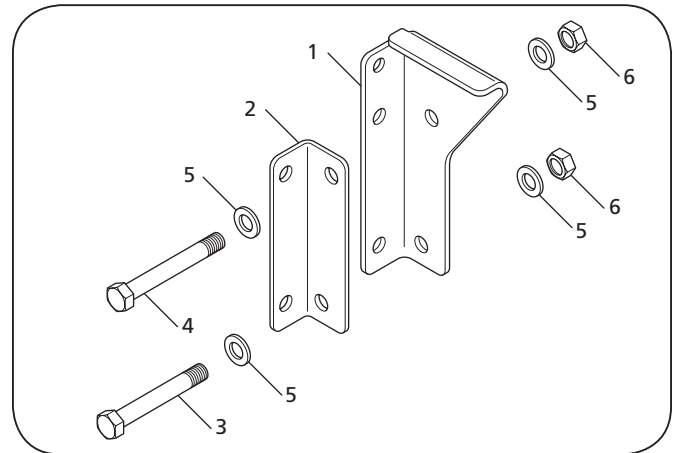
SRK 48100632: LSZ20 9"-11" SPACER KIT, LH			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Shelf Bracket, LH	90026897	1
2	Wrapper, Spacer, LH	90026893	1
3	Cap Screw, Hex 7/8"-9 x 6 1/2" GR 8	93003881	1
4	Cap Screw, Hex 7/8"-9 x 7" GR 8	93003893	1
5	Washer, Flat 7/8"	93600160	4
6	Nut, Hex, Lock 7/8"-9 GR C	93400498	2
7	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1

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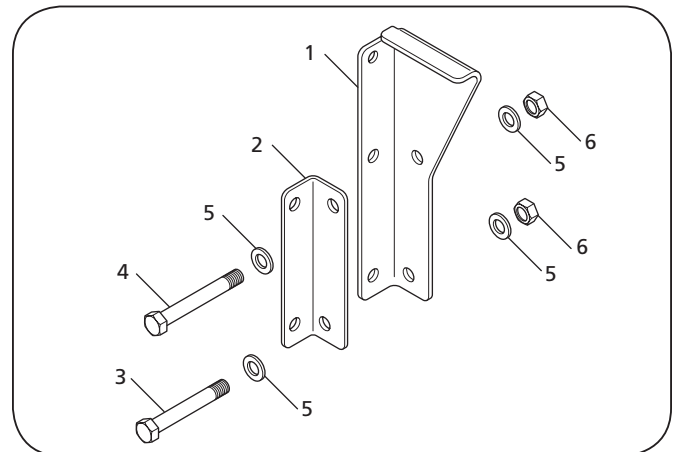


SRK 48100637: LSZ13 10" SPACER KIT, RH AFTER OCT 1, 2015

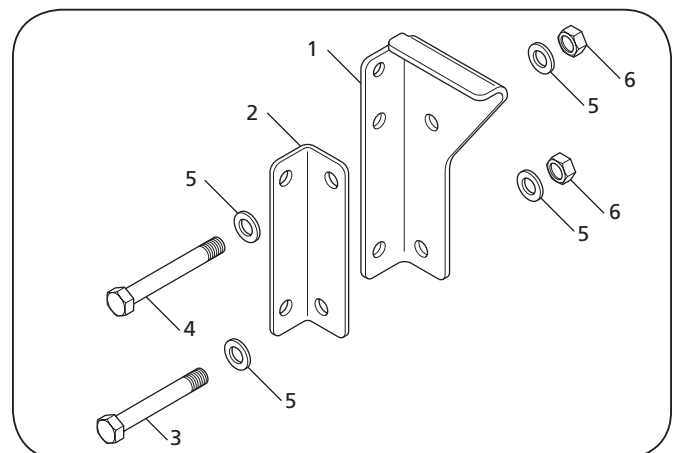
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Shelf Bracket, 10" - Left-Hand	90026917	1
2	Wrapper, Spacer - 13K - Left-Hand (Painted)	90026921	1
3	Cap Screw, Hex 3/4" -10 x 6" GR 8	93003659	1
4	Cap Screw, Hex 3/4" -10 x 7 GR 8	93003683	1
5	Washer, Flat, Narrow 3/4"	93600156	4
6	Nut, Hex, Lock 3/4" - 10 GR C	93400494	2
7	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Service Bulletin, Crossmember (Not Shown)	XL-PS20037SB-en-US	1

48100637

SRK 48100639: LSZ13 13" SPACER KIT, RH AFTER OCT 1, 2015

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Shelf Bracket, 13" - Right-Hand	90026916	1
2	Wrapper, Spacer - 13K - Right-Hand (Painted)	90026920	1
3	Cap Screw, Hex 3/4" -10 x 6" GR 8	93003659	1
4	Cap Screw, Hex 3/4" -10 x 7 GR 8	93003683	1
5	Washer, Flat, Narrow 3/4"	93600156	4
6	Nut, Hex, Lock 3/4" - 10 GR C	93400494	2
7	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Service Bulletin, Crossmember (Not Shown)	XL-PS20037SB-en-US	1

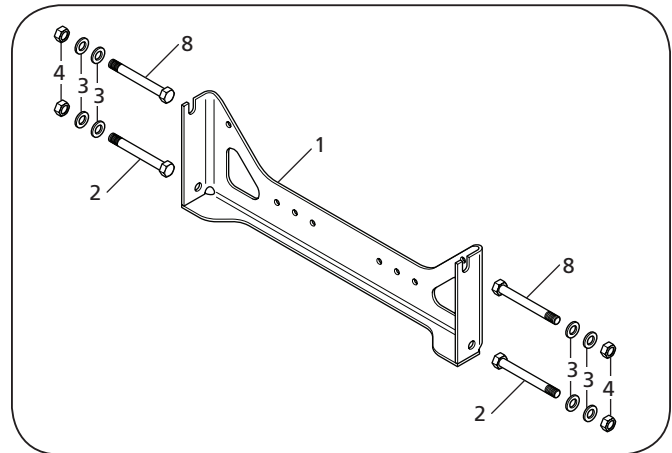
48100639

SRK 48100633: LSZ20 9"-11" SPACER KIT, RH

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Shelf Bracket, RH	90026897	1
2	Wrapper, Spacer, RH	90026893	1
3	Cap Screw, Hex 7/8" -9 x 6 1/2" GR 8	93003881	1
4	Cap Screw, Hex 7/8" -9 x 7" GR 8	93003893	1
5	Washer, Flat 7/8"	93600160	4
6	Nut, Hex, Lock 7/8" -9 GR C	93400498	2
7	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1

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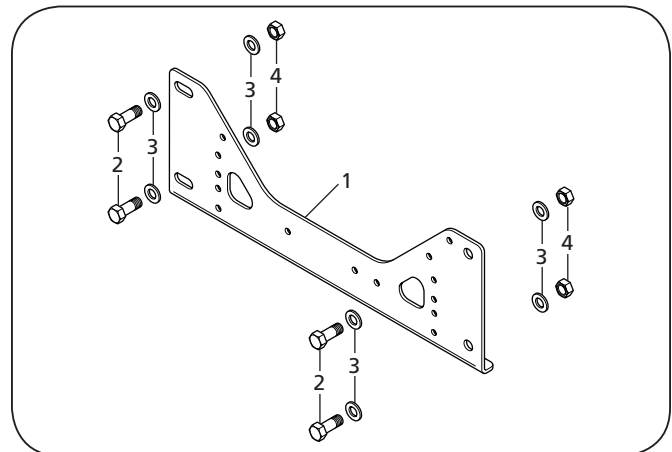
SRK 48100569: CROSSMEMBER KIT, BEFORE OCT 1, 2015			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Crossmember, Painted	90026642	1
2	Cap Screw, Hex 3/4"-10 x 6 1/2" GR 8	93003671	2
3	Washer, Flat, Narrow 3/4"	93600156	8
4	Nut, Hex, Lock 3/4"-10 GR C	93400494	4
5	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
8	Cap Screw, Hex 3/4"-10 x 6 3/4" GR 8	93003677	2
9	Service Bulletin, Crossmember (Not Shown)	XL-PS20037SB-en-US	1

48100569



SRK 48100625: CROSSMEMBER KIT, BEFORE OCT 1, 2015			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Crossmember - Painted	90026901	1
2	Cap Screw, Hex 3/4"-10 x 2" GR 8	93003563	4
3	Washer, Flat, Narrow 3/4"	93600156	8
4	Nut, Hex, Lock 3/4"-10 GR C	93400494	4
5	Repair Manual (Not Shown)	XL-PS20058RM-en-US	1
6	Service Bulletin, Crossmember (Not Shown)	XL-PS20037SB-en-US	1

48100625



2. Crossmember Replacement LSZ13 Fully Plumbed Manufactured Before October 1, 2015

LSZ13 Required Tools:

- 1-1/8" Wrench and Socket
- 5/8" Wrench
- 11/16" Socket or Wrench
- Torque wrench capable of 250 ft.-lbs.

1. With the vehicle unloaded and/or trailer disconnected on a level surface, set parking brakes and chock drive tires to prevent the vehicle from rolling forward or backward.

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

2. Place the suspension in the service position with no air in the suspension air springs.
3. Remove the air tank, bulkhead plate, tubing clamps, all pneumatic tubes and hoses attached to or near the crossmember
4. Record the position of the crossmember shelf brackets, spacers and tank mounts.
5. Remove and discard the two (2) lower 3/4" pivot bolt lock nuts and two (2) 3/4" flat washers from the frame bracket (**Figure 1**).
6. Loosen the two (2) upper 3/4" pivot bolt locknuts.
7. Support the crossmember in preparation of unbolting the pivot joints and separating it from frame brackets (**Figure 2**).
8. Use a punch to remove and discard the two (2) lower 3/4" pivot bolts and two (2) 3/4" flat washers
9. Rotate the bottom of the crossmember to allow it to be removed and discarded (**Figure 2**).
10. Remove and discard the two (2) 3/4" locknuts and flat washers from the upper pivot bolts.
11. Use a punch to remove and discard the two (2) upper 3/4" pivot bolts and two (2) 3/4" flat washers.
12. Install the new upper 3/4" pivot bolts and 3/4" flat washers.
13. Install the new crossmember onto the upper pivot bolts (**Figure 2**).
14. Rotate the lower portion of the crossmember to allow the installation of the two (2) lower 3/4" pivot bolts and two (2) 3/4" flat washers.

Figure 1

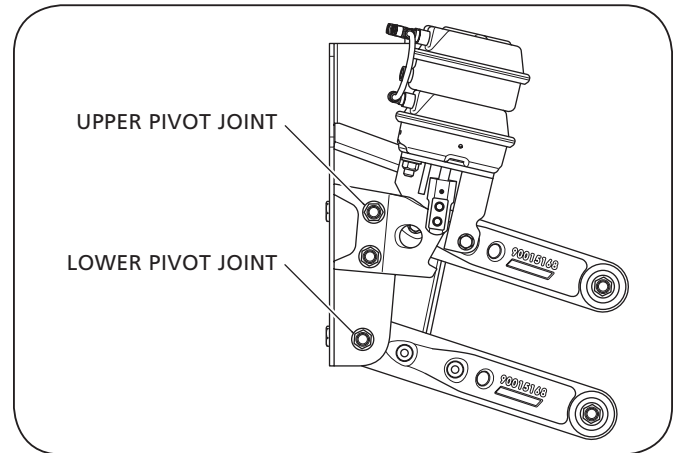
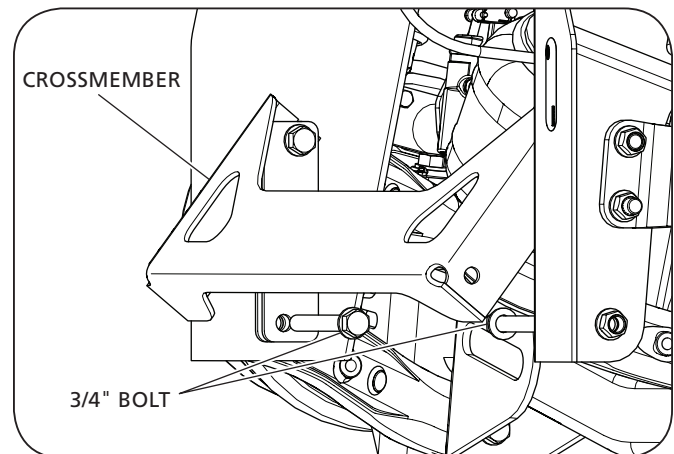


Figure 2



15. Install all four (4) new 3/4" lock nuts with four (4) new 3/4" flat washers onto the upper and lower 3/4" pivot bolts. Torque the four (4) 3/4" lock nuts according to specifications in **Table 1 (Figure 1)**.
16. Re-install the air tank, bulkhead plate, tubing clamps, all pneumatic tubes and hoses attached to or near the crossmember.
17. Remove the chocks from drive tires.

3. Crossmember Replacement LSZ13 Unplumbed Manufactured Before October 1, 2015

LSZ13 Required Tools:

- 1-1/8" Wrench
- 1-1/8" Socket
- Torque wrench capable of 250 ft.-lbs.

1. With the vehicle unloaded and/or trailer disconnected on a level surface, set parking brakes and chock drive tires to prevent the vehicle from rolling forward or backward.

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

2. Place the suspension in the service position with no air in the suspension air springs.

3. Remove and discard the two (2) lower 3/4" pivot bolt lock nuts and two (2) 3/4" flat washers from the frame bracket (**Figure 3**).

4. Loosen the two (2) upper 3/4" pivot bolt locknuts (**Figure 4**). Support the crossmember in preparation of unbolting the pivot joints and separating it from frame brackets.

5. Use a punch to remove and discard the two (2) lower 3/4" pivot bolts and two (2) 3/4" flat washers.

6. Rotate the bottom of the crossmember to allow it to be removed and discarded (**Figure 4**).

7. Remove and discard the two (2) 3/4" locknuts and flat washers from the upper pivot bolts.

8. Use a punch to remove and discard the two (2) upper 3/4" pivot bolts and two (2) 3/4" flat washers.

9. Install the new shelf bracket and wrapper plate onto the frame bracket with new pivot bolts and flat washers (**Figure 5**).

10. Install two (2) new lock nuts and two (2) new flat washers onto the pivot bolts.

11. Torque the two (2) locknuts to the torque specified in **Table 2**.

12. Repeat steps 7 through 9 on the opposite side.

13. Using four (4) 3/4" bolts, eight (8) 3/4" flat washers, and two (2) 3/4" locknuts, install the crossmember to front face of the shelf brackets (**Figure 6**).

14. Torque the two (2) 3/4" locknuts on the **ROADSIDE ONLY** to the torque specified in **Table 1**.

15. Assemble the crossmember to the front face of the **CURBSIDE** shelf bracket using two (2) 3/4" bolts, four (4) 3/4" flat washers, and two (2) 3/4" lock nuts. Hand tighten the locknuts (**Figure 6**).

Figure 3

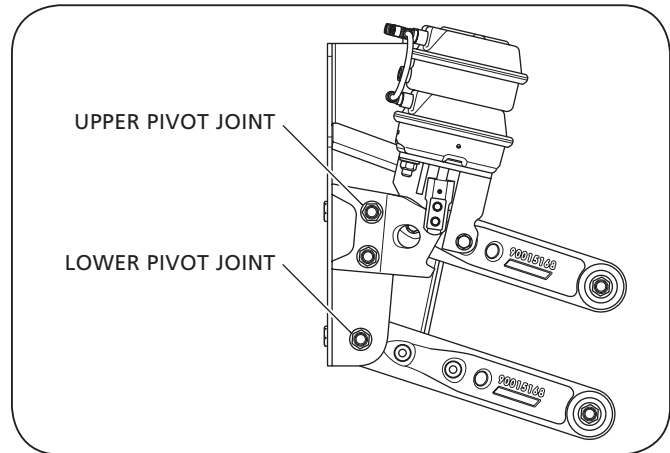


Figure 4

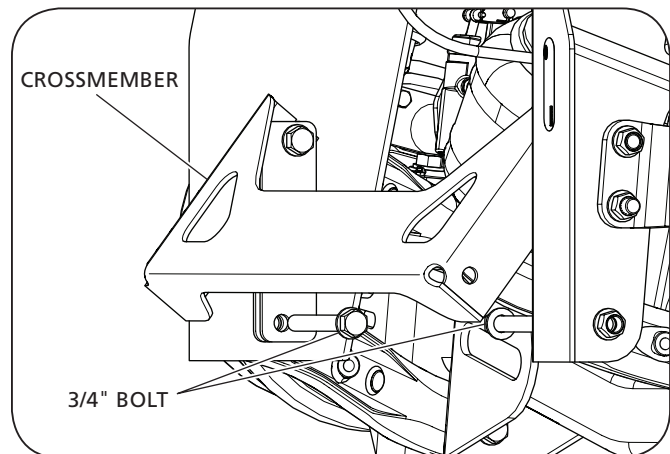
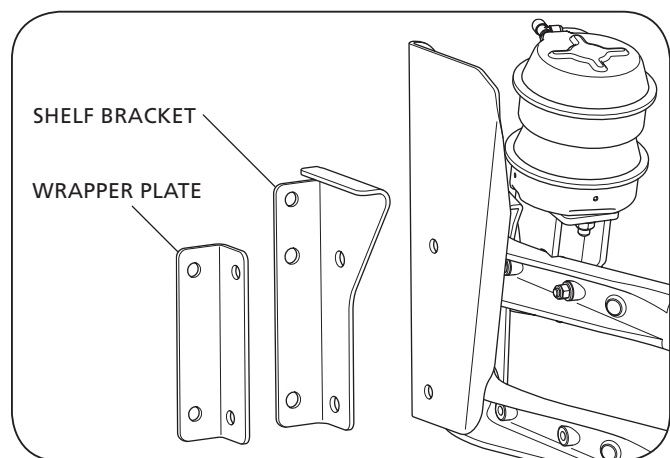


Figure 5



16. Measure the distance between the frame brackets at the **BOTTOM** of the frame brackets, and the **TOP** just below the bottom of the frame rail (**Figure 7**).
17. Adjust the crossmember to ensure the frame brackets are parallel to each other. The distance between frame brackets at the **TOP** should be equal to the distance between the frame brackets at the **BOTTOM** (**Figure 7**).
18. Torque the two (2) 3/4" curbside locknuts to the torque specified in **Table 1**.
19. Remove the chocks from drive tires.

4. Crossmember Replacement LSZ13/20 Manufactured after October 1, 2015

LSZ13 Required Tools:

- 1-1/8" Wrench
- 1-1/8" Socket
- 11/16" Wrench or socket
- 5/8" Wrench
- Torque wrench capable of 250 ft.-lbs.

LSZ20 Required Tools:

- 1-1/8" Wrench
- 1-1/8" Socket
- 1-5/16" Wrench
- 1-5/16" Socket
- 5/8" Wrench
- 11/16" Socket
- Torque wrench capable of 400 ft.-lbs.

1. With the vehicle unloaded and/or trailer disconnected on a level surface, set parking brakes and chock drive tires to prevent the vehicle from rolling forward or backward.



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

2. Place the suspension in the service position with no air in the suspension air springs.
3. For LSZ fully plumbed units, remove the air tank, bulkhead plate, tubing clamps, all pneumatic tubes and hoses attached to or near the crossmember.
4. Support the crossmember in preparation of unbolting the joints connecting the crossmember to the shelf brackets and separating the crossmember from suspensions (**Figure 6**).
5. Remove the four (4) 3/4" lock nuts, the four (4) 3/4" bolts and the eight (8) 3/4" flat washers. Retain if not replacing the crossmember (**Figure 6**).
6. Remove the crossmember, retain if not replacing (**Figure 8**).

Figure 6

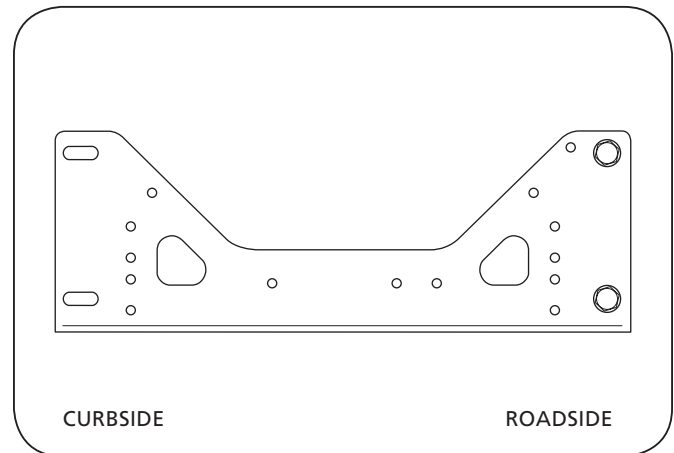


Figure 7

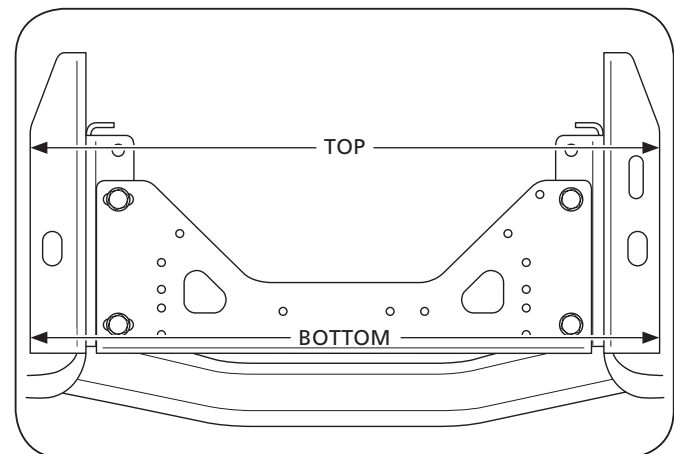
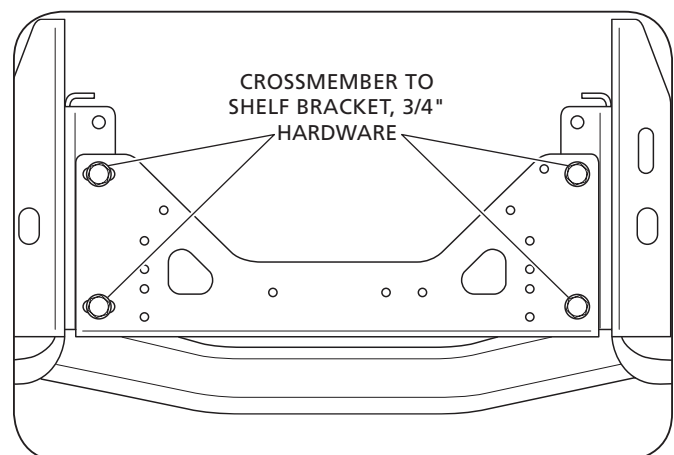


Figure 8



7. Remove and discard the four (4) lock nuts and four (4) flat washers from the frame bracket pivot joints. There are two (2) pivot joints per frame bracket (**Figure 9**).
8. Use a punch to drive the pivot bolts inboard and out of the pivot joint. Discard the four (4) pivot bolts and the four (4) flat washers.
9. Remove and discard shelf brackets and wrapper plates (**Figure 10**).
10. Install the new shelf bracket and wrapper plate onto the frame bracket with new pivot bolts and flat washers (**Figure 10**).
11. Install two (2) new lock nuts and two (2) new flat washers onto the pivot bolts.
12. Torque the two (2) locknuts to the torque specified in **Table 1**.
13. Repeat steps 7 through 9 on the opposite side.
14. Using four (4) 3/4" bolts, eight (8) 3/4" flat washers, and two (2) 3/4" locknuts, install the crossmember to front face of the shelf brackets (**Figure 11**).
15. Torque the two (2) 3/4" locknuts on the ROADSIDE ONLY to the torque specified in **Table 1**.
16. Measure the distance between the frame brackets at the BOTTOM of the frame brackets, and the TOP just below the bottom of the frame rail (**Figure 12**).
17. Adjust the crossmember to ensure the frame brackets are parallel to each other. The distance between frame brackets at the TOP should be equal to the distance between the frame brackets at the BOTTOM (**Figure 12**).
18. Torque the two (2) 3/4" curbside locknuts to the torque specified in **Table 1**.
19. For fully plumbed units, re-install the air tank, bulkhead plate, tubing clamps, all pneumatic tubes and hoses attached to or near the crossmember.
20. Remove the chocks from drive tires.

Figure 10

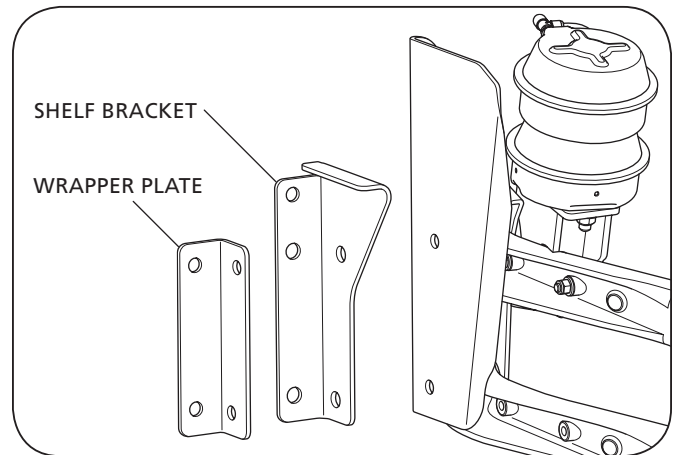


Figure 11

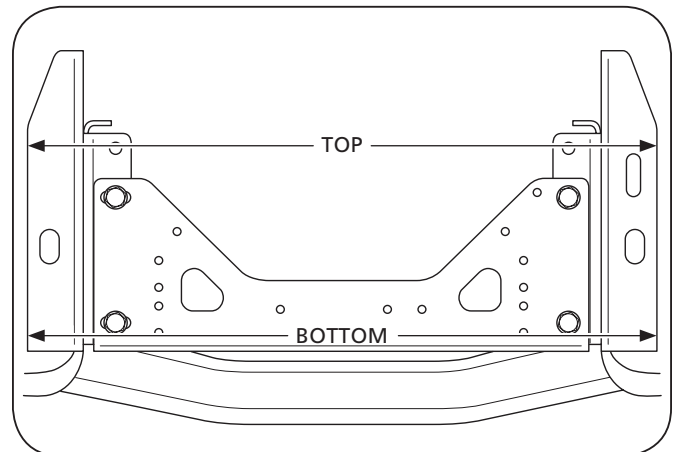


Figure 12

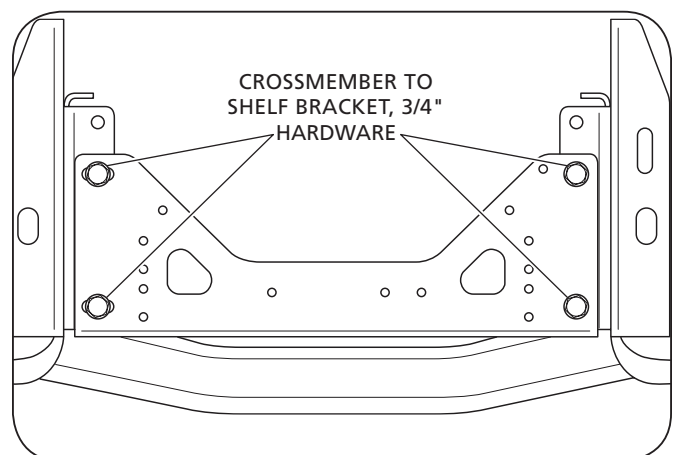
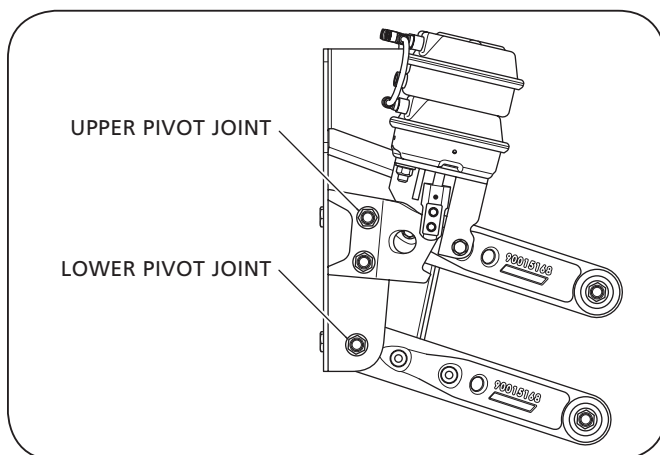


Figure 9



5. Frame Bracket Replacement

LSZ13 Required Tools:

- 1-1/8" Wrench and socket
- 3/8" Open end wrench
- 3/4" Wrench and socket
- 1/2" Socket
- Torque wrench capable of 250 ft.-lbs.

LSZ20 Required Tools:

- 1-1/8" Wrench and socket
- 3/8" Open end wrench
- 1-5/16" Wrench and socket
- 3/4" Wrench and socket
- 1/2" Socket
- Torque wrench capable of 400 ft.-lbs.

1. With the vehicle unloaded and/or trailer disconnected on a level surface, set parking brakes and chock drive tires to prevent the vehicle from rolling forward or backward.

⚠ WARNING

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

2. Place the suspension in the service position with no air in the suspension air springs.
3. Record the position of all four (4) crossmember spacers if equipped.
4. Disconnect the supply tubing to the SuperChamber™. Depress the release collar on the fitting with wrench at the same time pulling on the supply tubing (**Figure 13**).
5. Remove and retain the following:
 - Extend the chamber clevis to the allow the removal of the lower 3/4" lower lift bracket bolt and 3/4" flat washer.
 - The upper 5/16" bolt and lock washer from the clevis to allow removal of the clevis pin assembly.
 - Two (2) 1/2"-13 bolts and 1/2"-13 nuts along with four (4) 1/2" flat washers that mount the SuperChamber™ bracket to the upper control arm.
 - LSZ 13 Manufactured Before October 1, 2015, the spacer plates, shelf bracket and crossmember from the side the frame bracket to be changed (**Figure 14**).
 - LSZ13/20 Manufactured After October 1, 2015, the lower 3/4" bolt attaching the crossmember to the wrapper (**Figure 15**). This will allow the bottom pivot bolt to be removed.
 - The lower 3/4" lift bracket lock nut, two (2) 3/4" flat washers and the 3/4" bolt from the lower lift bracket.
 - The frame bracket to frame rail hardware. New hardware would be desirable.

Figure 13

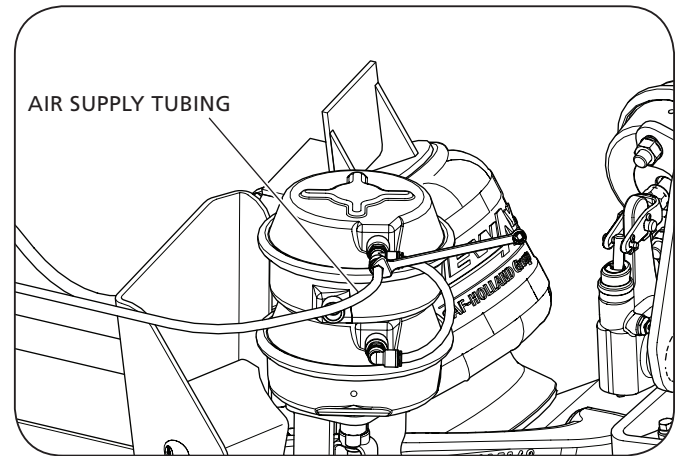
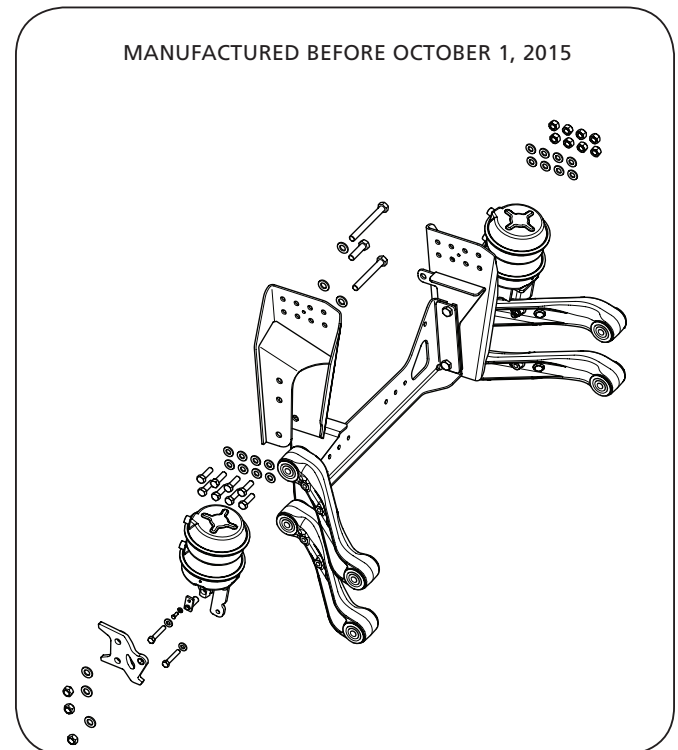


Figure 14



6. Remove and discard the following:
 - Both lock nuts and flat washers from the upper and lower pivot bolts.
 - The upper and lower pivot bolts, four (4) washers and two (2) locknuts.
 - The frame bracket being changed out.
7. Pull the frame bracket upward to remove from both control arms (**Figure 14 or 15**).
8. Drill the new frame bracket to match the removed frame bracket hole pattern.

IMPORTANT: Make sure that the original hole pattern and fastener size meets our stated requirements.

9. Install the following:
 - Frame bracket by lowering the bracket down over both control arms.

IMPORTANT: Make sure all four (4) lock-out washers are installed properly (**Figure 16**).

- Attach the frame bracket to the frame rails using preferably new hardware. Torque to industry standards.
 - LSZ 13 Manufactured Before October 1, 2015, install the spacers in the correct position noted earlier, shelf bracket and crossmember using new upper and lower pivot bolts with washers.
 - LSZ13/20 Manufactured After October 1, 2015, install wrapper shelf bracket and crossmember using new upper and lower pivot bolts with washers.
 - The lower 3/4" bolt, both washers and locknut attaching the crossmember to the wrapper.
 - Two (2) 1/2"-13 bolts and 1/2"-13 nuts along with four (4) 1/2" flat washers that mount the SuperChamber™ bracket to the upper control arm.
 - Lower lift bracket onto the upper pivot bolt .
 - The locknut and washer.
 - The lower lift bracket 3/4" bolt, washers and locknut.
 - The upper pivot nut and washer.
 - The SuperChamber air supply tubing.
 - Extend the SuperChamber clevis to allow installation of the clevis pin assembly.
 - Install the 5/16" bolt and lock washer to retain the clevis pin assembly to the clevis.
10. Torque all fasteners according to the specifications in **Table 1**.
 11. For fully plumbed units, reinstall the air tank, bulkhead plate, tubing clamps, all pneumatic tubes and hoses removed prior to replacing frame bracket.
 12. Remove the chocks from drive tires.

Figure 15

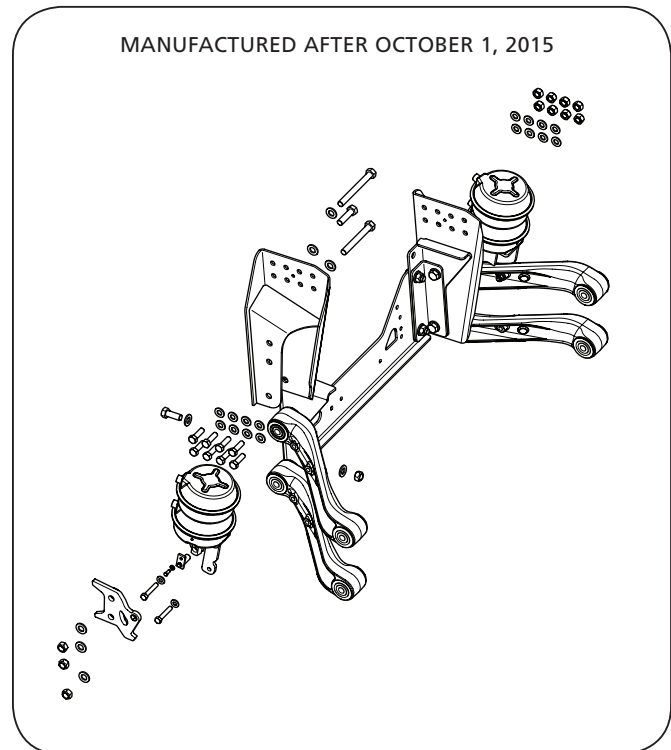
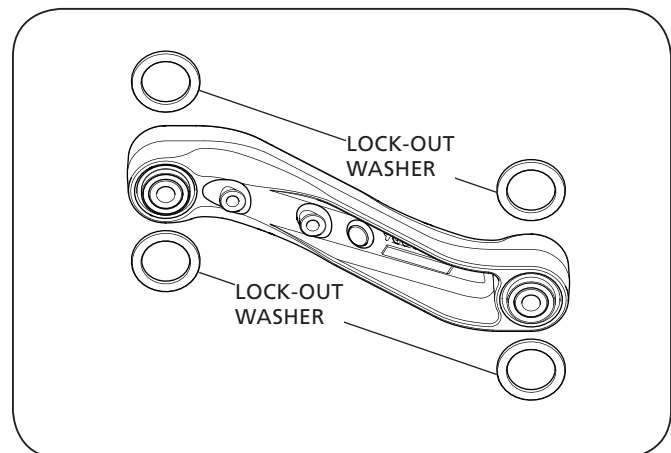


Figure 16



6. Torque Specifications

NOTE: Torque specifications listed in this section are with clean lubricated/coated threads, supplied by SAF-HOLLAND®.

IMPORTANT: The use of special lubricants with friction modifiers, such as Anti-Seize or Never-Seez®, without written approval from SAF-HOLLAND® Engineering, will void warranty and could lead to over torquing of fasteners or other component issues.

General Information

- The torque specifications listed throughout the manual are applied to the lock nut and NOT the bolt.

IMPORTANT: Most of the fasteners used in this suspension are Grade 8 bolts and Grade C lock nuts. These fasteners have the strength and hardness properties required for their particular function. They MUST be replaced with fasteners of the same grade, size and form as the original in order to prevent failure (**Figure 17**).

⚠ WARNING Failure to use the proper fasteners when servicing the suspension could cause component failure which, if NOT avoided, could result in death or serious injury.

⚠ WARNING Failure to properly torque all fasteners will result in component failure which, if NOT avoided, could result in death or serious injury.

- All fasteners MUST be re-torqued after the first 100 hours of service or 5,000 miles (8,000 km).
- Refer to vehicle OEM for torque specifications for vehicle frame fastener hardware.

7. Lubrication Specifications

Lubricate the suspension in accordance with the approved lubricants (**Table 2**).

IMPORTANT: Replacement of SAF-HOLLAND® supplied fasteners with non-SAF-HOLLAND® could result in unpredictable performance.

⚠ WARNING Failure to maintain the LSZ suspension with SAF-HOLLAND® original parts can result in unpredictable performance which, if NOT avoided, could result in death or serious injury.

Table 1

COMPONENT	TORQUE RANGE	SIZE
Hub Cap,	12-16 ft.-lbs. 16-22 N•m	5/16"-18
Clevis Pin Assembly	18-24 ft.-lbs. 24-33 N•m	5/16"-18
Retainer	25-35 ft.-lbs. 34-47 N•m	3/8"-16
Lower Air Spring	25-35 ft.-lbs. 34-47 N•m	1/2"-13
Chamber Bracket	47-63 ft.-lbs. 64-85 N•m	1/2"-13
Bolt-on Brake Assembly	150-180 ft.-lbs. 203-244 N•m	5/8"-11
SuperChamber™ and Service Brake Chamber	133-155 ft.-lbs. 180-210 N•m	5/8"-11
Lift Bracket, King Pin Bolt, Crossmember, and Tie Rod	200-250 ft.-lbs. 271-339 N•m	3/4"-10
LSZ13 Pivot Connections	200-250 ft.-lbs. 271-339 N•m	3/4"-10
Steering Damper	133-155 ft.-lbs. 180-210 N•m	3/4"-10
LSZ20 Pivot Connections	330-370 ft.-lbs. 447-502 N•m	7/8"-14

Figure 17

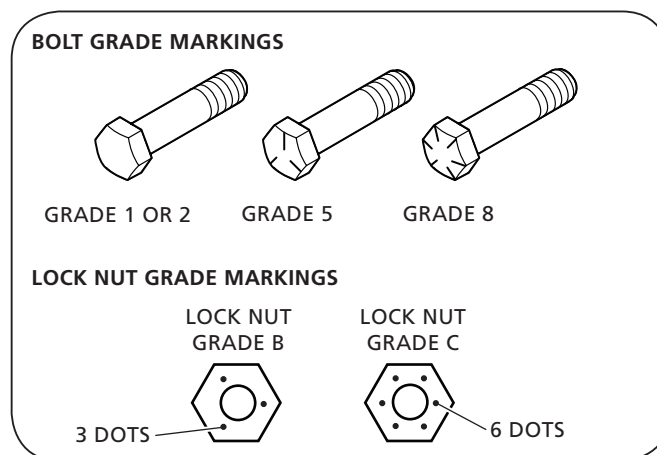


Table 2

GREASE	HUB OIL
SAF® Premium Synthetic Grease 50844001	Exxon Mobil Mobilube HD Plus 80W-90
CITGO SynDurance Premium Synthetic 460	Shell Spirax S 75W-90
Mystik JT-6 Hi Temp with Moly	Shell Spirax ASX 75W-90
Valvoline Palladium Grease	Exxon Mobil Mobilube 1 SHC 75W-90
Chevron Delo Heavy Duty Moly 5% EP	Exxon Mobil Delvac 75W-90



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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