

# **H** ASSEMBLY INSTRUCTIONS

## HAULMAAX® Progressive and Auxiliary Load Spring

**SUBJECT:** Kit Nos. 60961-745, 60961-747, 64179-004

**LIT NO:** 59310-056

**DATE:** December 2014

**REVISION:** B

### INTRODUCTION

**FIGURE 1**

#### Progressive Load Spring



**FIGURE 2**

#### Auxiliary Load Spring



In July 2014, Hendrickson Truck Commercial Vehicle Systems launched the progressive load spring for new production vehicles equipped with Hendrickson's HAULMAAX® rear suspension system. Due to the height of the progressive load spring, new HAULMAAX suspensions are now equipped with two (2) load spring shims per side, as opposed to the prior auxiliary load spring configuration equipped with three (3) load spring shims.

This publication is intended to assist maintenance personnel with the installation of Progressive Load Spring and Auxiliary Load Spring Service Kits for vehicles equipped with Hendrickson's HAULMAAX rear suspension.

The progressive load spring (Figure 1) appears slightly different than the previously equipped auxiliary load spring (Figure 2). However, the same component replacement procedure is to be used for both the progressive and auxiliary load spring with the exception of when converting to the new progressive load spring, the removal of one load spring shim per side is necessary.

Refer to Hendrickson publication 17730-244 for complete service and safety instructions for the HAULMAAX suspension.

### LOAD SPRING SERVICE KITS

Progressive Load Spring Kits	60961-745 One Side	*60961-747 Tandem Set
Progressive Load Spring	1	2
½"-13 UNC 2.25" Flange Bolt	3	6
½"-13 UNC Flange Nut	3	6
* Service Kit 60961-747 should be used to convert from auxiliary load springs to the progressive load springs. Conversion requires both sides be replaced.		
Auxiliary Load Spring Kit	64179-004	One Side
Auxiliary Load Spring		1
½"-13 UNC 2.25" Flange Bolt		3
½"-13 UNC Flange Nut		3

## PROGRESSIVE LOAD SPRING / AUXILIARY LOAD SPRING

### VISUAL INSPECTION

As referenced in Hendrickson publication 17730-244, a visual inspection of the progressive load spring / auxiliary load spring is required every three (3) months. If either type of load spring is damaged or is less than the minimum unloaded height of 3", replace as outlined in the Component Replacement Section of this publication.

- **Progressive load spring** — Unloaded normal height is 4¼", if the height of an unloaded progressive load spring decreases to 3.0" or less, replacement is required, see Figure 3.
- **Auxiliary load spring** — Unloaded normal height is 3¾", if the height of an unloaded auxiliary load spring decreases to 3.0" or less, replacement is required, see Figure 4

FIGURE 3

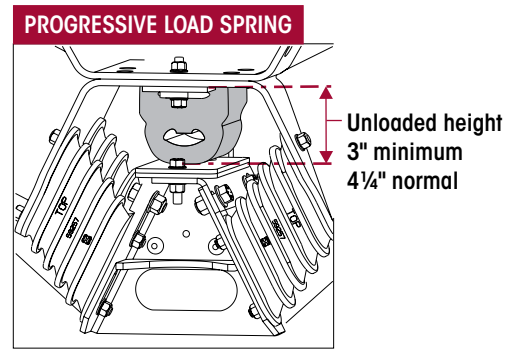
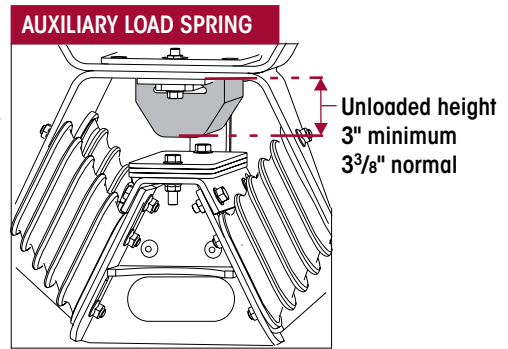


FIGURE 4



## COMPONENT REPLACEMENT (PROGRESSIVE LOAD SPRING OR AUXILIARY LOAD SPRING)

### NOTE

Use Kit No. 60961-747 when converting from the auxiliary load spring to the progressive load spring. The instructions are the same as below with the exception that it is necessary to remove one load spring shim from each side of the suspension. The conversion requires both sides of the tandem to be replaced with the progressive load spring.

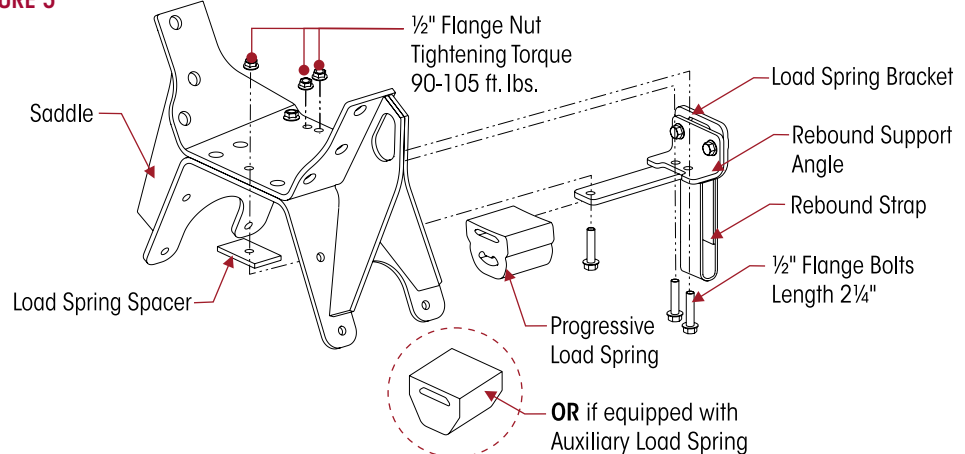
### DISASSEMBLY

#### SERVICE HINT

Tire removal is not necessary for the replacement of the load spring.

1. Chock the front wheels of the vehicle.
2. Remove the three  $\frac{1}{2}$ " flange head fasteners from the saddle, progressive / auxiliary load spring and load spring spacer.
3. Raise the frame slightly to create a gap between the load spring and shim.
4. Remove the progressive / auxiliary load spring from the load spring bracket, see Figure 5.

FIGURE 5



### ASSEMBLY

1. Install the new progressive / auxiliary load spring onto the load spring bracket.
2. Mount the new load spring group (progressive / auxiliary load spring, load spring bracket, rebound support angle and load spring spacer) to the saddle by installing the  $\frac{1}{2}$ " flange head bolts, see Figure 8-8. Tighten to 90-105 foot pounds torque.
3. Locate the locknuts on top of the saddle to prevent interference with equalizing beam assembly and tighten to 90-105 foot pounds torque.
4. Lower the frame.
5. Remove the wheel chocks.

## LOAD SPRING SHIM EVALUATION

Ride quality is subject to many influences in heavy-duty applications. They include, but are not limited to, body equipment, vehicle suspensions, cab suspension, terrain, chassis/frame specifications, tires/wheels and wheelbase.

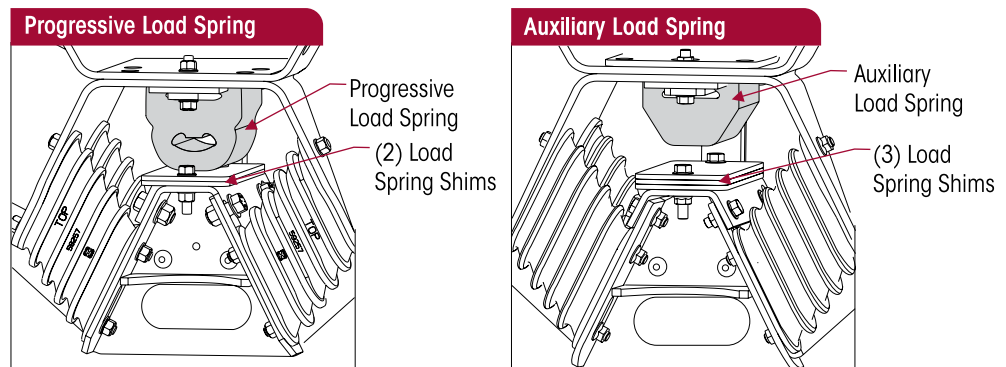
As shown in Figure 6, standard production vehicles specified with the HAULMAAX rear suspension are typically equipped with:

- **AFTER** July 2014 - progressive load spring equipped with two (2) load spring shims
- **PRIOR** to July 2014 - auxiliary load spring equipped with three (3) load spring shims

### NOTE

With the exception of weight bias vehicles (refer to Hendrickson publication 59310-047), both sides of the vehicle must be equipped with the equal amount of load springs. Failure to do so will induce an undesirable vehicle lean.

**FIGURE 6**



### ADJUSTMENT NOTES

1. Both sides of the HAULMAAX suspension **MUST** have an equal number of load spring shims, (shim part number 60791-000) in place.

### WARNING

THE HAULMAAX SUSPENSION MUST BE EQUIPPED WITH AT LEAST ONE LOAD SPRING SHIM ON EACH SIDE OF THE SUSPENSION. FAILURE TO DO SO CAN CAUSE PREMATURE COMPONENT WEAR, EQUALIZING BEAM MISALIGNMENT, LOSS OF VEHICLE CONTROL AND POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE.

2. The HAULMAAX suspension **MUST** be equipped with at least one (1) load spring shim per side.
3. Some vehicles in the field may be equipped with more or less shims than the standard production assembly.
4. For applications where increasing stability is desired, equally install additional shims per side. This may eliminate any gap between the load spring and the top load spring shim, which is acceptable.
  - Equipped with **progressive load spring** (maximum of four (4) load spring shims and a minimum of one).
  - Equipped with **auxiliary load spring** (maximum of five (5) load spring shims and a minimum of one).
5. After determining the proper amount of shims required, install or remove the shims as needed.

## LOAD SPRING SHIMS ADJUSTMENT

The unladen tandem weight with the body and equipment installed will influence the number of load spring shims necessary to achieve optimal ride quality and stability.

### DISASSEMBLY

1. Chock the front wheels of the vehicle.

- Remove the fasteners that attach the load spring shims to the load spring contact plate, see Figure 7.

## SERVICE HINT

If the load spring is in contact with the load spring shims, it will be necessary to raise the frame of the vehicle to service the load spring shims.

## ASSEMBLY

### WARNING

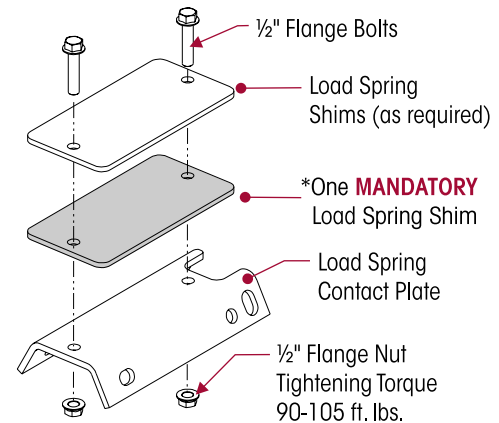
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## SERVICE hint

The bolt length varies with the amount of shims installed. Ensure there is at least three (3) threads exposed past the locknut.

- Install or remove load spring shims as needed:
  - Equipped with **progressive load spring** (maximum of four (4) load spring shims and a minimum of one).
  - Equipped with **auxiliary load spring** (maximum of five (5) load spring shims and a minimum of one).
- Install the fasteners that attach the load spring shims to the load spring contact plate and tighten to 90-105 foot pounds torque, see Figure 7.
- Lower the frame (If the vehicle was raised for disassembly).
- Remove wheel chocks.

**FIGURE 7**



**NOTE**  
\*One mandatory Load spring shim must be equipped on each side of the suspension.

Refer any questions on this publication, contact Hendrickson Tech Services:



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