



# PARTS LIST

## INTRAAX® AANT230 ZMD™ TRAILER SUSPENSION SYSTEM

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## INTRODUCTION

The purpose of this parts list is to document the available repair parts, accessories, special tools and lubricants available for the Hendrickson AANT230 ZMD™ INTRAAX® (Integrated Trailer Axle) suspension system.

ZMD technology eliminates shock absorbers from the maintenance equation by integrating the damping function traditionally performed by the shock within the air spring itself. ZMD air springs exchange pressurised air between the bellows and the piston. This patented air spring provides uniform and consistent damping over the life of the air spring.

The major components included in this parts list is as follows:

- AANT230 ZMD INTRAAX® axle assemblies (HALFTRAAX™)
- Air-springs, relevant mounting hardware and fasteners
- ZMD™ axle restraint, relevant mounting hardware and fasteners
- Frame hangers
- QUIK-ALIGN® hardware and fasteners

Parts published in this parts bulletin are the latest available parts. Unless otherwise noted, they are functionally equivalent to, or better than, the originally supplied components.

This parts list should be used in conjunction with:

- [97114-100](#) Trailer Wheel End Systems Parts List
- [97114-097](#) Trailer Brake Systems Parts List

**NOTE:** All quantities listed within this parts list are as applicable for a single axle.

## ABBREVIATIONS

Abbreviations used in this document include the following terms:

- AR – As Required
- ARL – Axle Rebound Limiter
- NSS – Not Serviced Separately
- PCD – Pitch Circle Diameter
- TFB™ – TRI-FUNCTIONAL™ Bush
- ZMD™ – Zero Maintenance Damping™



## AXLE AND SUSPENSION IDENTIFICATION

To assist with the identification of an INTRAAAX® axle or suspension system, reference should be made to the axle identification plate (*refer to Figure 1*) and suspension assembly number plate (*refer to Figure 2*).

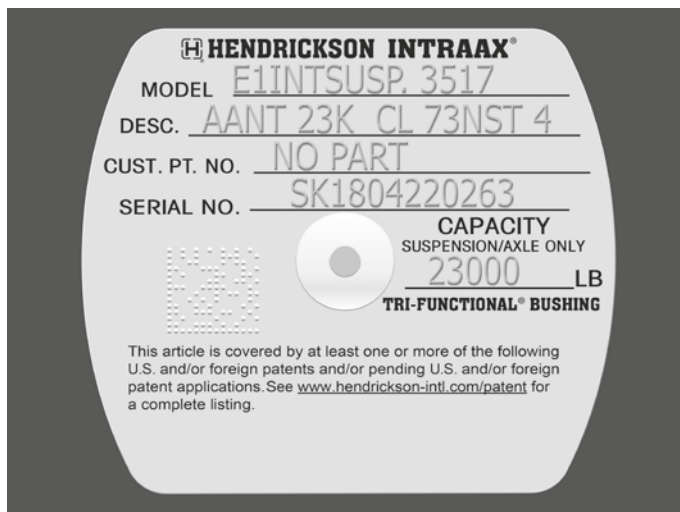


Figure 1



Figure 2

### AXLE ID PLATE

The axle ID plate is usually located on the inboard side of the left-hand trailing arm and provides the following:

- MODEL
- DESCRIPTION
- CUSTOMER PART NUMBER
- AXLE SERIAL NUMBER
- AXLE CAPACITY

The axle serial number (e.g. SK1804220263) provides the following details:

### MANUFACTURING PLANT IDENTIFIER

The first two digits of the axle serial number identify the manufacturing plant that originally manufactured the HALFTRAAX™ Assembly as follows:

- SK – Somerset Kentucky
- LI – Lebanon Indiana
- CO – Canton Ohio

### DATE OF MANUFACTURE

The third to eighth digits of the axle serial number identify the date the HALFTRAAX™ Assembly was manufactured in date format: Year - Month - Date. For example, the code 180422 shows that it was manufactured on 22 April 2018.

### MANUFACTURING SEQUENCE NUMBER

The final four digits (e.g. 0263) of the axle serial number provide the manufacturing sequence number.

### SUSPENSION ASSEMBLY NUMBER PLATE

The suspension assembly number plate is usually located on the inboard side of the right-hand trailing arm. It indicates that the suspension has been assembled in Australia and provides the following:

- RIDE HEIGHT
- ASSEMBLY PART NUMBER
- DATE OF ASSEMBLY

### ASSEMBLY PART NUMBER

The first six digits of the assembly part number identify the suspension system base model, while the remaining digits identify specific options such as wheel end and brake system configuration.

#### Base Model Identification

Manufacturer (Digit 1)	TRI-FUNCTIONAL™ Bush Width (Digit 2)	Load Capacity (Digit 3 & 4)	Model (Digit 5)	Specific Option Code (Digit 6)	Tyre Pressure Control (Digit 7)
H= Hendrickson	N = Narrow 3 Inch (76.2 mm)	23 = 23,000 lbs (10,430 kg)	T= Top Mount	See below.	C = None P = TIREMAAX™ PRO

#### Specific Option Code (Digit 6)

SOC	Axle Track	Brake Type	Spindle type	Axle Diameter
M	73 Inch	377 mm Disc	HN – Tapered	5.75 Inch (LDA)

### RIDE HEIGHT LABEL

The ride height label (*refer to Figure 3*) is usually affixed to the trailer frame by the trailer manufacturer. It provides an additional means of identification for an INTRAAX® axle, suspension system and system ride height.

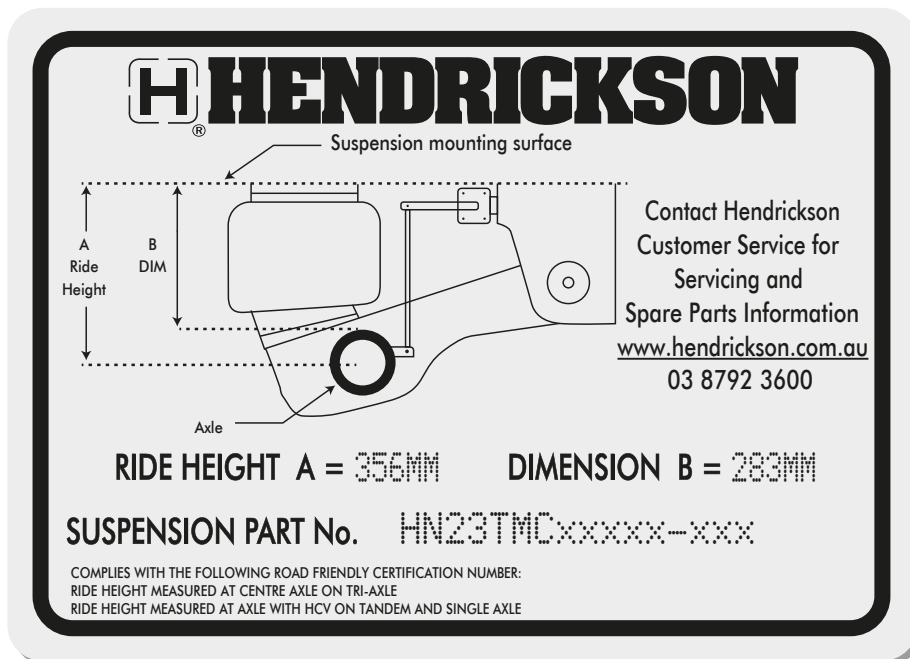


Figure 3

## AXLE ASSEMBLY

### HALFTRAAX™ ASSEMBLY COMPONENTS

All replacement AANT Disc Brake HALFTRAAX™ axle assemblies are supplied complete with the following components:

- TRI-FUNCTIONAL™ Bushes (TFB)
- ABS Sensor Locating Bush

Refer to **Figure 4** for detailed view of the AANT disc brake HALFTRAAX™ assembly as supplied.

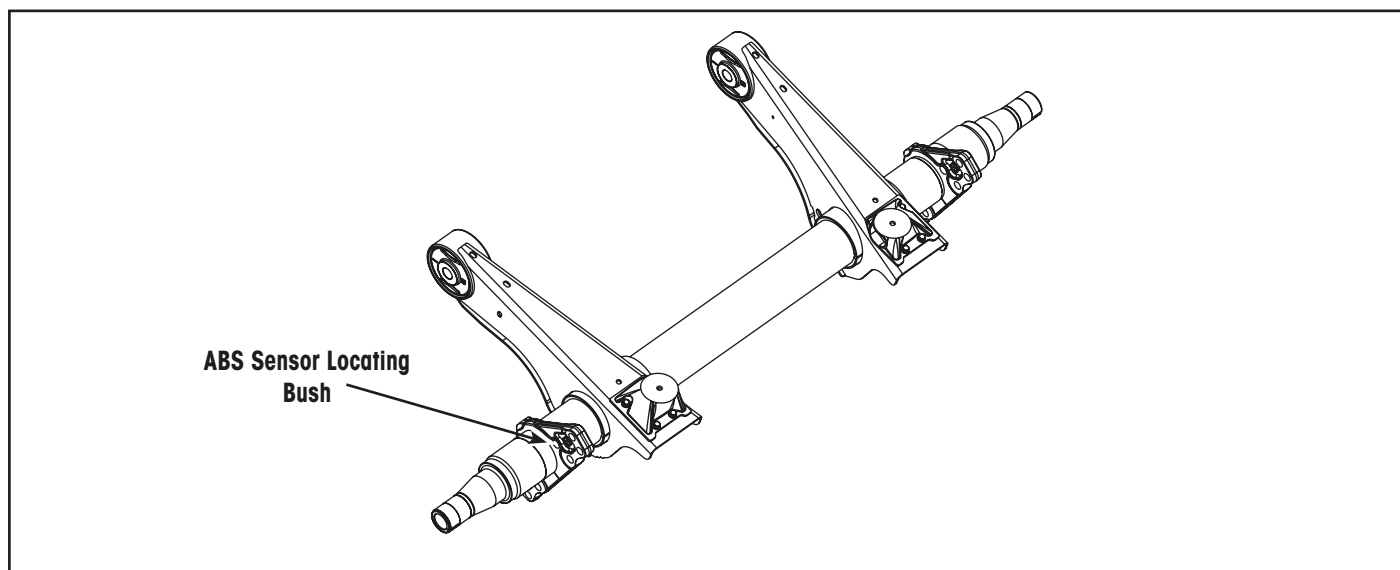


Figure 4

### HALFTRAAX™ SPINDLE IDENTIFICATION

For AANT INTRAAX® suspension systems, HALFTRAAX™ axle assemblies are only available with HN (Tapered) type spindles. **Refer to Figure 5.**

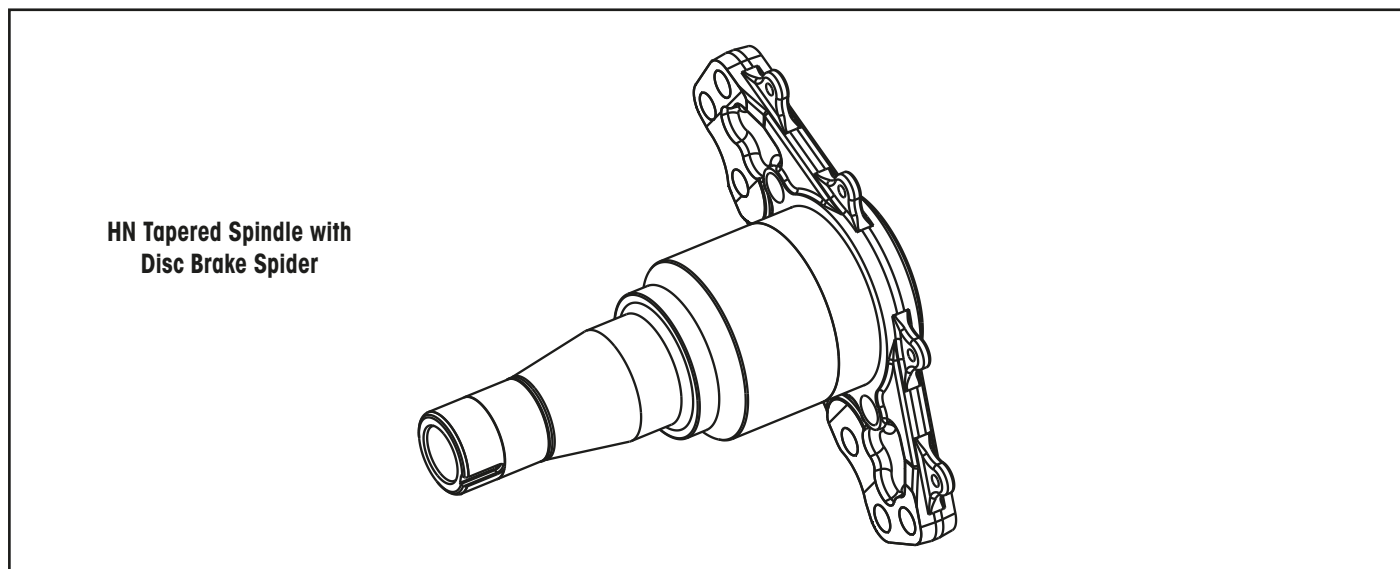
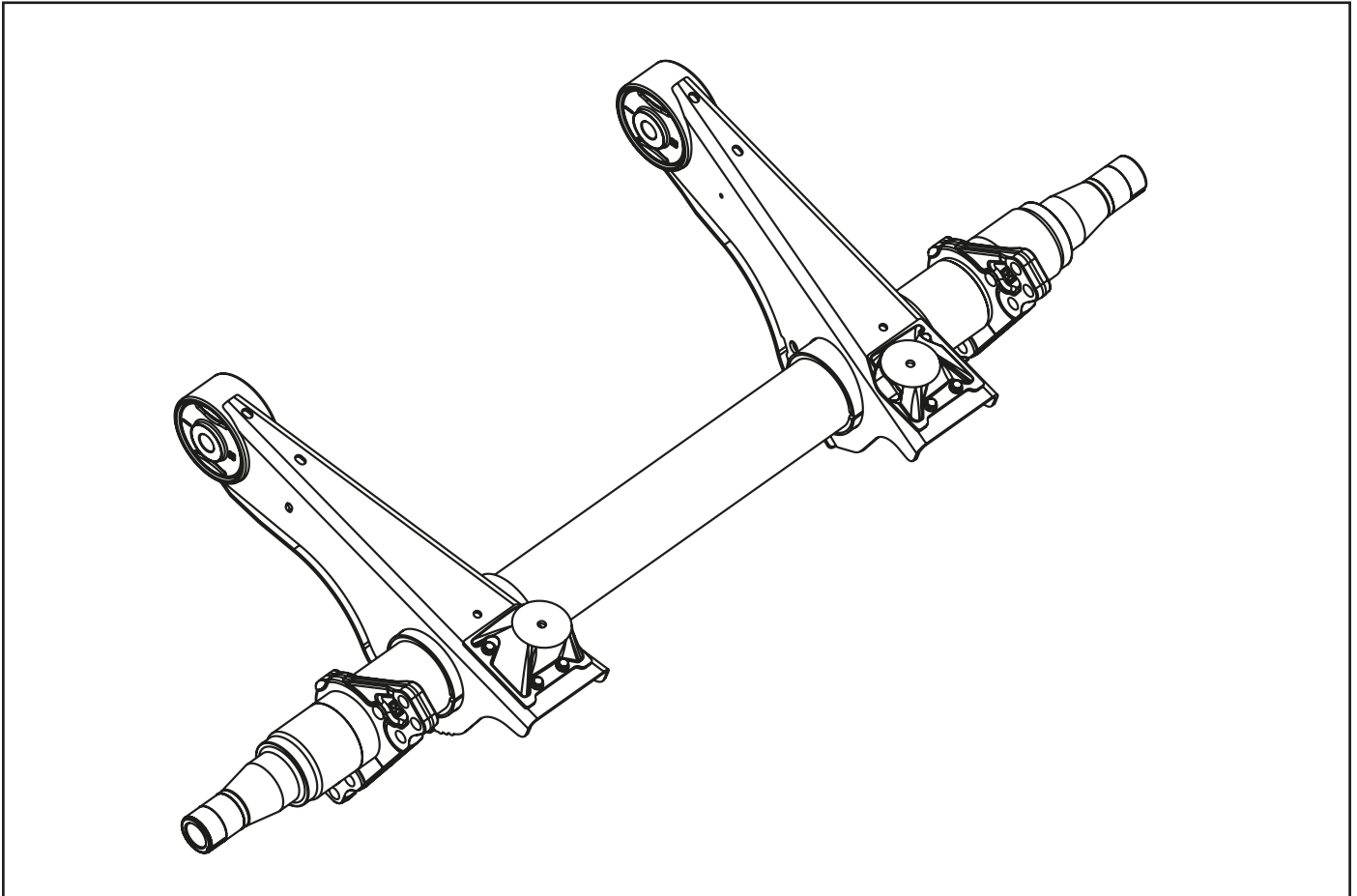


Figure 5



**AXLE ASSEMBLY**



Part Number	Description	Qty	Notes
E1INTSUSP.3517	HALFTRAAX™ Assembly, AANT – 73 Inch Track	1	Disc Brake. HN spindle.

**NOTE:** This axle is available in 14", 15", 16" and 17" ride heights. The ride height is determined by the ARL, air spring spacer, hanger bracket and configuration.



## FRAME HANGER & PIVOT

### FRAME HANGER & RIDE HEIGHT IDENTIFICATION

To determine the applicable frame hanger for a specific suspension, the hanger 'drop' will often need to be determined.

Frame drop is the measurement in millimetres from the underside of the trailer frame to the centre of the pivot bolt hole.

Refer to **Dimension A** in **Figure 6** and drop shown in **Frame Hanger & Pivot** table.

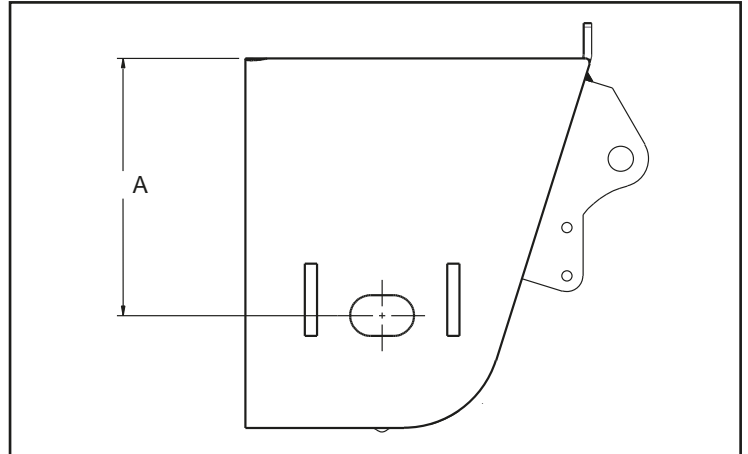
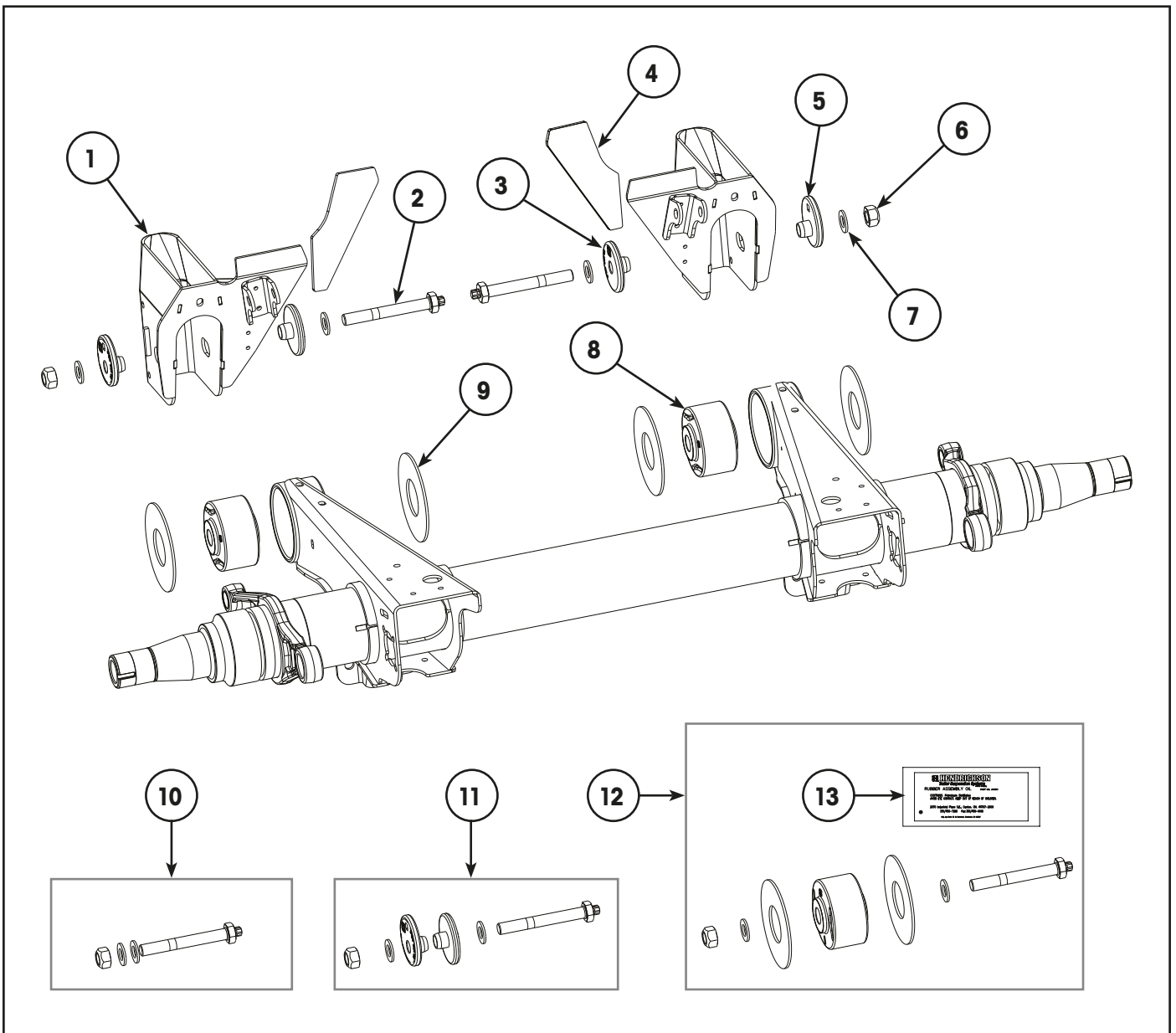


Figure 6







**FRAME HANGER & PIVOT**

Item	Part Number	Description	Qty	Notes
1	S-28400-1L	Hanger Frame Bracket Assembly LH Weld-On	1	14" & 15" Ride Height (Includes clevis) 203 mm Drop - Refer Figure 6.
	S-28400-1R	Hanger Frame Bracket Assembly RH Weld-On	1	
	S-28400-2L	Hanger Frame Bracket Assembly LH Weld-On	1	16" & 17" Ride Height (Includes clevis) 254 mm Drop - Refer Figure 6.
	S-28400-2R	Hanger Frame Bracket Assembly RH Weld-On	1	
2	NSS	Shear Bolt – QUIK-ALIGN®	2	Use Item 10, 11 or 12.
3	C-20924	Flanged Washer, Inner – QUIK-ALIGN®	2	Concentric. Use item 11 or 12.
4	S-27330	Gusset, Frame Bracket	2	
5	C-20925	Flanged washer, Outer – QUIK-ALIGN®	2	Eccentric. Use item 11 or 12.
6	NSS	Nut, Prevailing Torque – 7/8 UNC	2	Use Item 10, 11 or 12.
7	NSS	Washer, Hardened – 7/8	4	Use Item 10, 11 or 12.
8	NSS	Bush, TRI-FUNCTIONAL™	2	Refer Note Below. Use Item 12.
9	S-26807-4P	Kit, Wear Washer	1	Kit with 4 washers. (2 washers included in item 12.)
10	S-31621	QUIK-ALIGN® Pivot Bolt Kit	2	Includes Items 2, 6 & 7.
11	S-31628	QUIK-ALIGN® Pivot Bolt & Washer Kit	2	Includes Items 2, 3, 5, 6 & 7.
12	S-31622	Kit, TRI-FUNCTIONAL™ Bush	1	Includes Items 3, 4, 5, 6, 7, 8, 9 & 13.
13	A-14011	Lube Pack – TRI-FUNCTIONAL™ Bush	2	For bush installation. Part of item 12.

**Hanger Repair Kits:** Two hanger repair kits are available to assist with repair of cracked, worn or gouged hangers. Depending on the damage involved it may be possible to use one of these kits instead of replacing the entire hanger. For more details refer to Hendrickson [Technical Bulletin 97117-101](#).

- 98690-001 is for worn or gouged hangers. (Includes a bolt for wide bush axles, but can be adapted to suit.)
- 98544-024 is for hangers with minor cracking

**NOTE:** The TRI-FUNCTIONAL™ bush (TFB™) is larger than the inner diameter of axle beam tube. To avoid damaging the TFB, the correct installation tool **MUST** be used along with the appropriate lubricants. The tool part number is **S-24736**. Refer to the "Special Tools" on [page 15](#) section for more details.

## AIR SPRINGS

The ZERO MAINTENANCE DAMPING™ (ZMD™) system consists of a damped air spring and a chain ARL that are designed to replace the function of a standard shock absorbers to help lower maintenance, improve ride quality and enhance cargo protection.

The main components of a ZMD air spring are similar a standard air spring, with rubber bellows and a steel or plastic piston. However, the internal design components of this patented air spring are specifically designed to perform the suspension damping function traditionally performed by the shock absorber. The ZMD air spring exchanges pressurised air between the bellows and piston through a patented mechanism to provide continuous suspension damping.

**IMPORTANT:** These specialised air springs cannot be exchanged with standard air springs.

**NOTICE:** Ensure that mounting hardware, air springs, spacers and ARL chains are correct for the designed suspension ride height. Any mismatched parts may result in damage to the suspension and suspension components.

## AIR SPRING IDENTIFICATION

To determine the correct part number for the air spring as fitted to a particular suspension, a visual inspection of the existing air spring is recommended. The air spring part number is provided on a decal on the upper bead-plate (refer to *Item 1 in Figure 7*) and is also moulded into the air spring rubber bellows (refer to *Item 2 in Figure 7*).

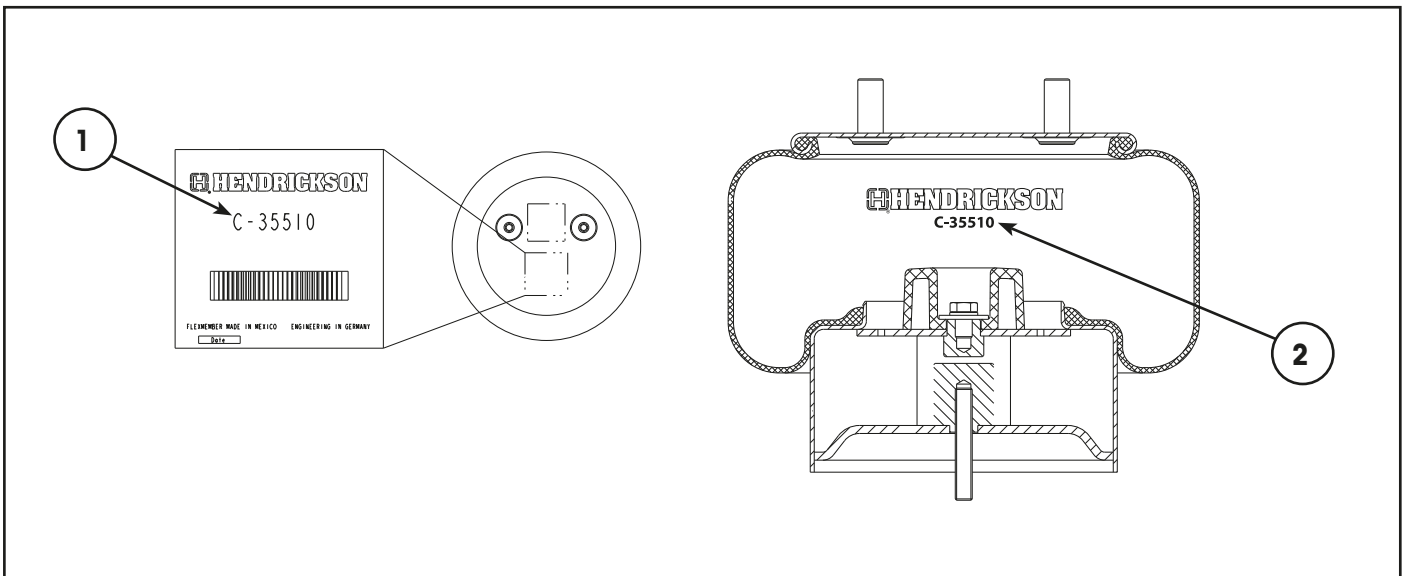
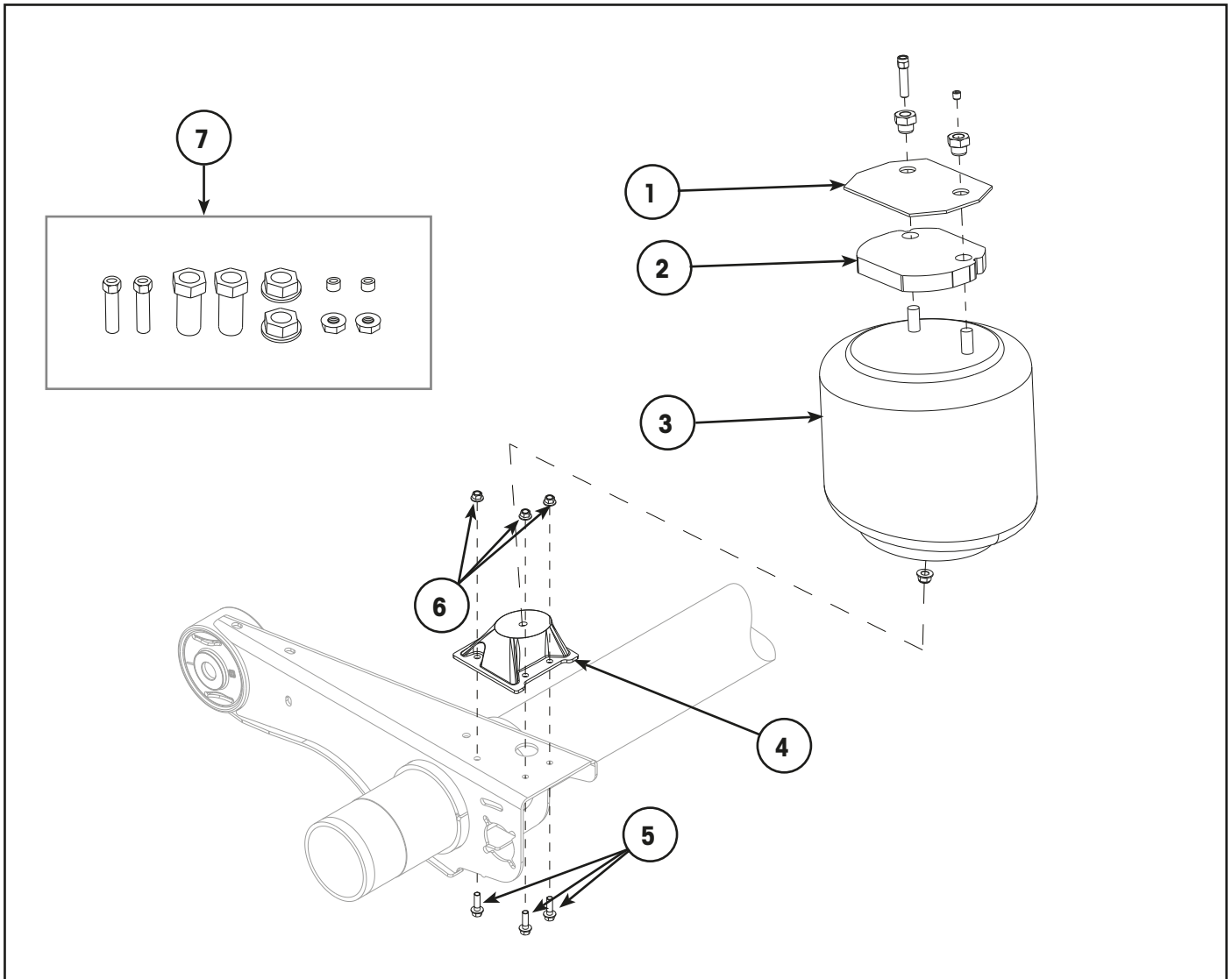


Figure 7



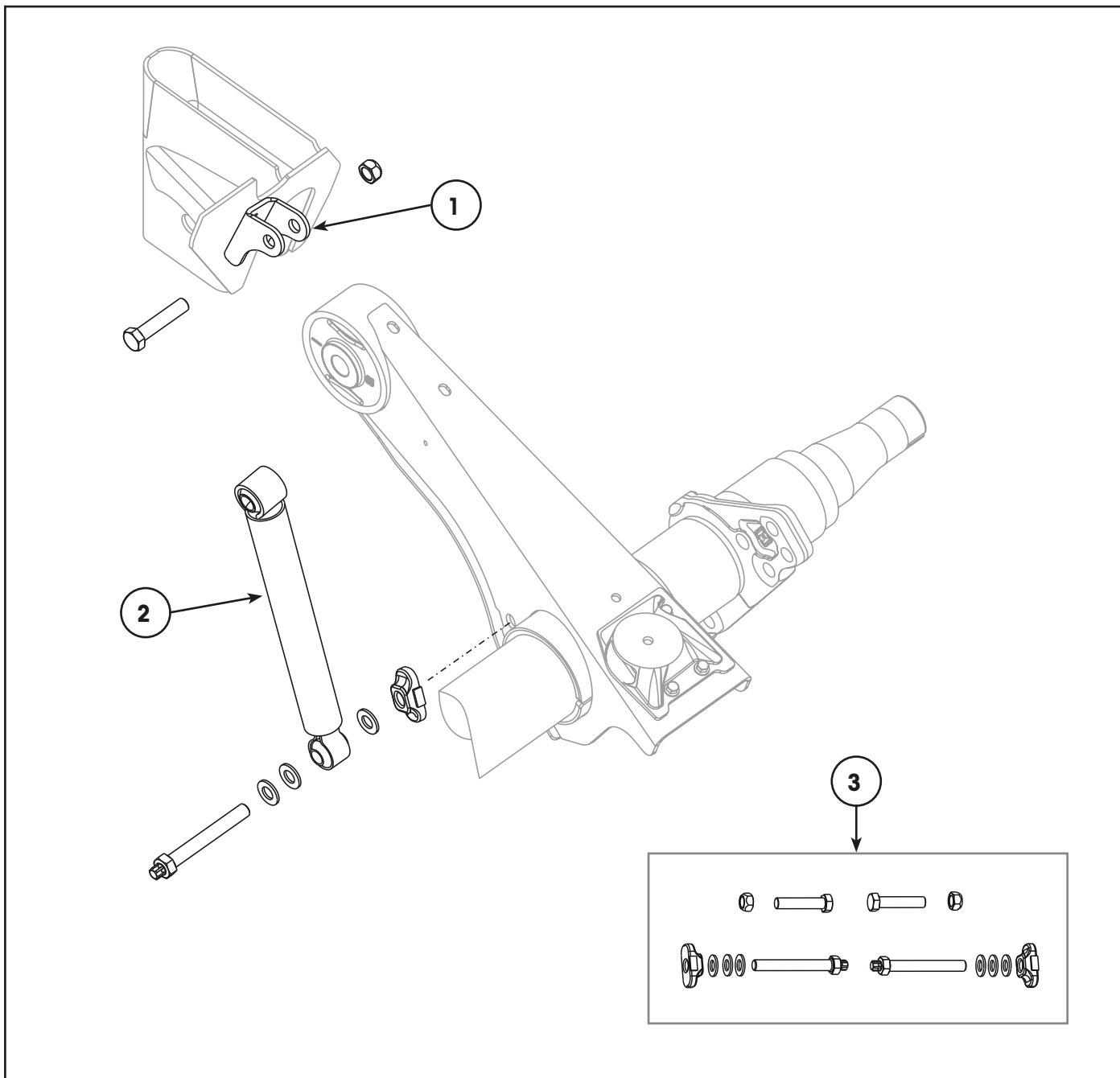
**AIR SPRINGS, FITTINGS & FASTENERS**



Item	Part Number	Description	Qty	Notes
1	B-20905	Mounting Plate, Air Spring	2	
2	S-22510-1	Spacer, Air Spring – 15" Ride Height	2	29 mm
	S-22510-2	Spacer, Air Spring – 16" Ride Height	2	48 mm
	S-22510-3	Spacer, Air Spring – 17" Ride Height	2	80 mm
3	C-35510	Air Spring 23K ZMD	2	
4	S-30148-1L	Air Spring Pedestal, Cast – Left Hand	1	48 mm
	S-30148-1R	Air Spring Pedestal, Cast – Right Hand	1	48 mm
5	SA-6900-5	Bolt, Flanged – 3/8" – 16 x 1.25"	6	
6	SA-7000-3	Nut, Flanged – 3/8" – 16	6	
7	98111-147	Kit Air Spring Mounting – 14" Ride Height	1	Includes required plugs, air fittings, top & bottom mounting nuts.
	S-22630	Kit Air Spring Mounting – 15" Ride Height	1	
	S-22631	Kit Air Spring Mounting – 16" Ride Height	1	
	S-22632	Kit Air Spring Mounting – 17" Ride Height	1	



## ZMD™ AXLE RESTRAINT



Item	Part Number	Description	Qty	Notes
1	S-20113	Clevis, ARL Mount	2	Included in hanger frame bracket. See <a href="#">"Frame Hanger &amp; Pivot"</a> on page 8.
2	C-33669	ARL Chain Assembly – 14" Ride Height	2	Includes sleeve, bush, connection chain.
	C-33669-3	ARL Chain Assembly – 15", 16" & 17" Ride Height	2	
3	98111-103	Bolt Kit, ARL Chain Mounting	1	Includes bolts, nuts, washers & cast spacers.



## HEIGHT CONTROL VALVE

### HCV MOUNTING

The height control valve is bolted onto the LH hanger bracket. (*Refer to Figure 8*)

The lower HCV linkage is attached to the axle tube with an axle clamp.

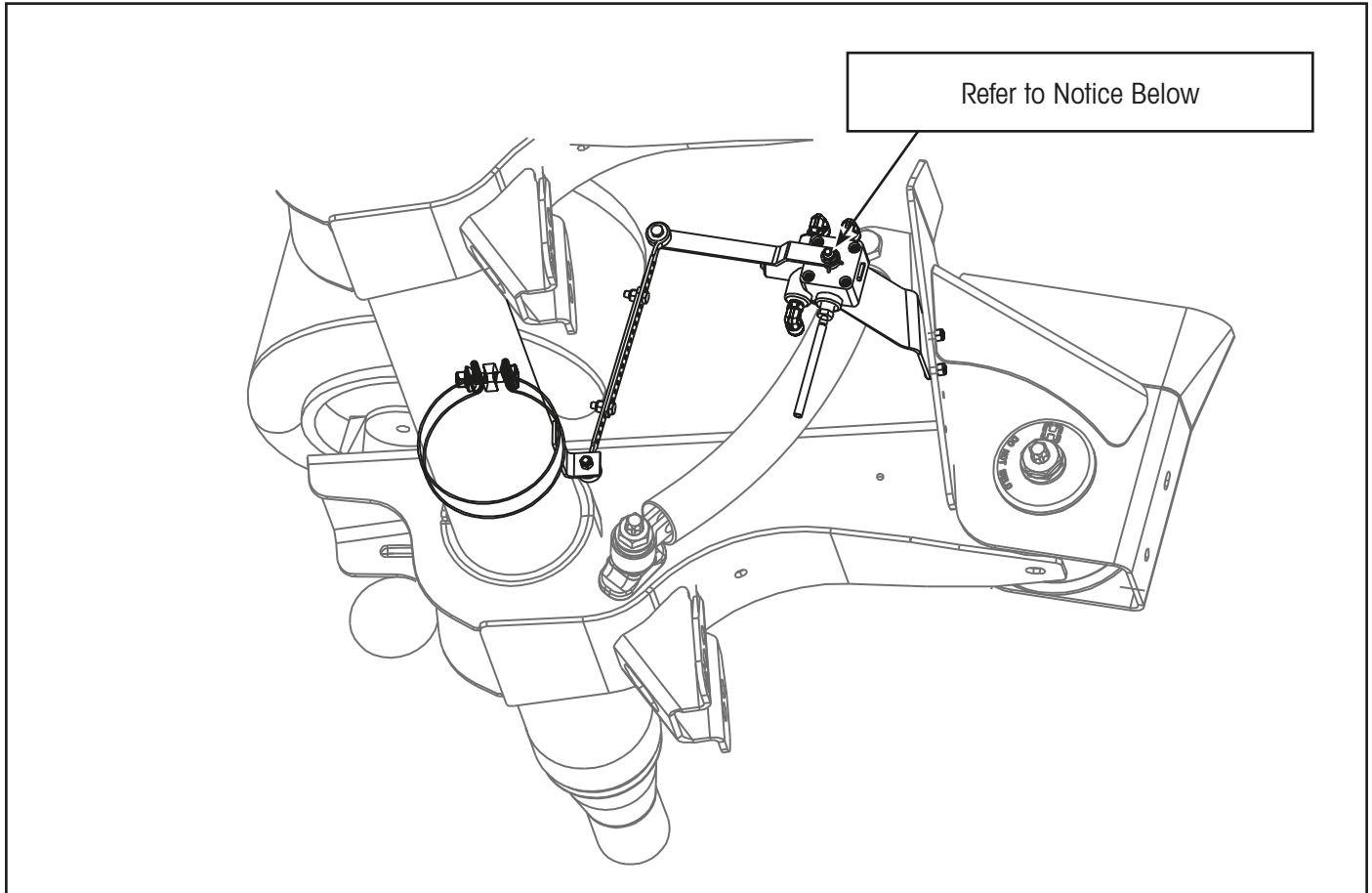
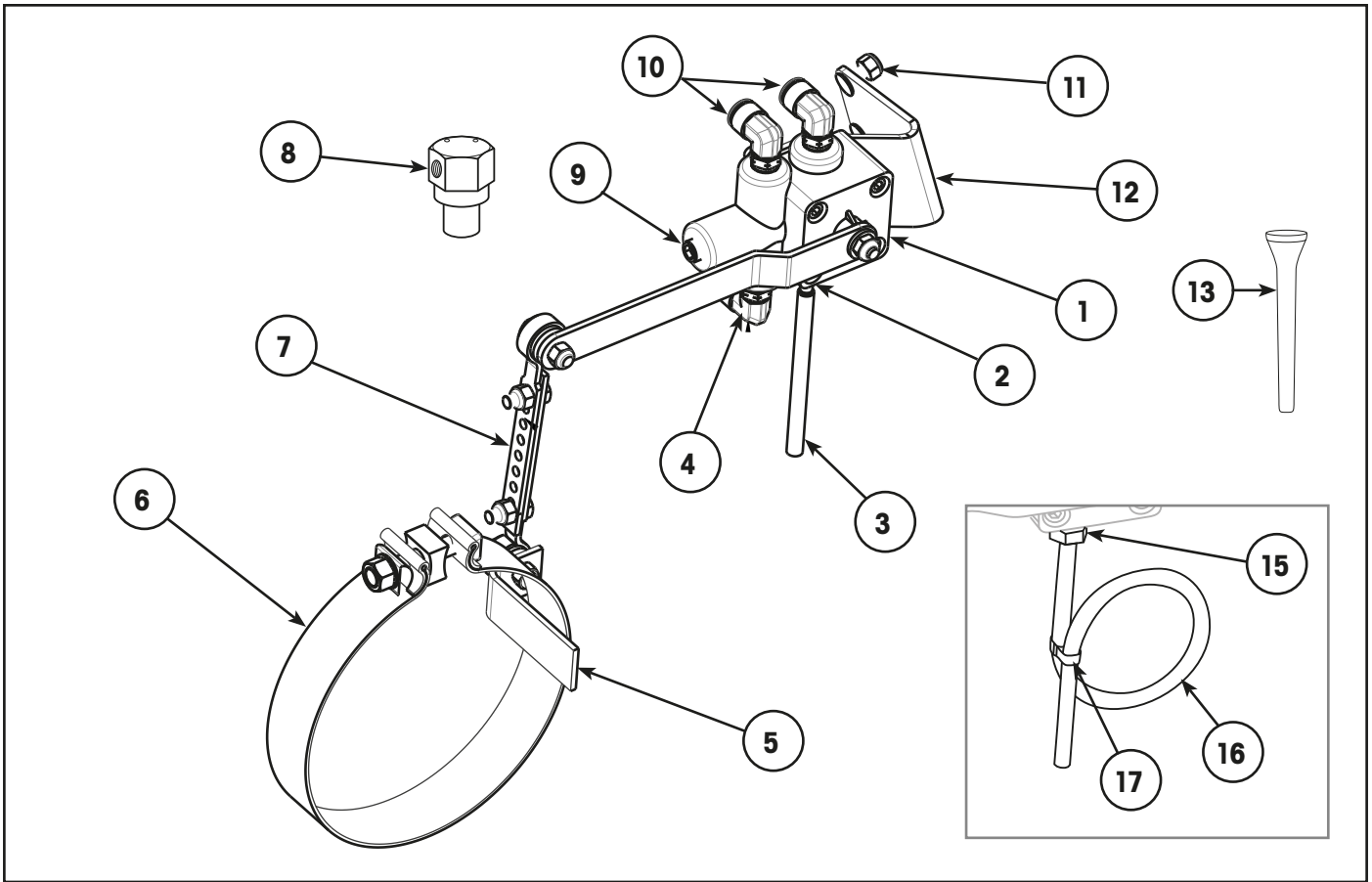


Figure 8

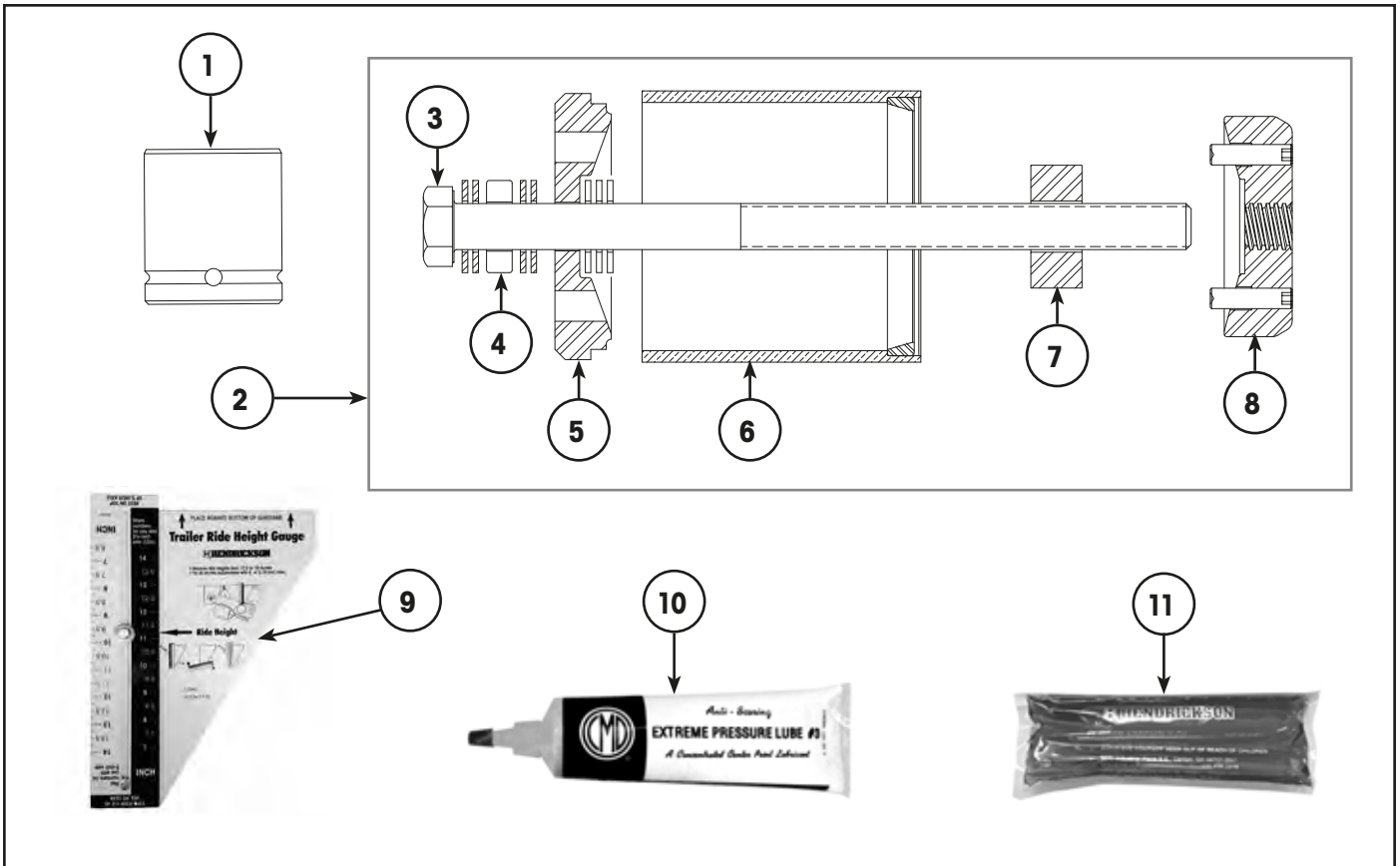
**NOTICE:** The HCV assembly (Part no. 60502-000) includes the lever arm. The nut that retains the lever arm to the HCV shaft is held tight with thread lock and **MUST NOT** be removed! Attempting to remove the nut will most likely result in fracture of the HCV shaft.



HEIGHT CONTROL VALVE



Item	Part Number	Description	Qty	Notes
1	60502-000	Height Control Valve 1/4" NPT	1	
2	NSS	Barbed Tube Fitting, 1/4" NPT, Plastic	1	Use item 14. For heavy duty applications use items 15, 16 & 17.
3	NSS	Tube 1/4" ID x 4" Long	1	
4	98934-031	Elbow 90° Swivel x 1/4" NPT	1	
5	S-23293	HCV Bracket Lower Fixing	1	
6	S-26593-2	5.75" Round Axle Clamp	1	
7	S-14187	Link Assembly – Bolted	1	Part of item 14.
8	A-1128	Pressure Protection Valve	1	
9	NSS	Pipe Plug 1/4" NPT	1	Use item 14.
10	NSS	Elbow 90° - 3/8" OD x 1/4" NPT	2	Use item 14.
11	NSS	Nut Lock Hex 1/4" – 20 Metal Grade C	4	Use item 14.
12	B-26306	Bracket HCV Spacer	1	Part of item 14.
13	NSS	HCV Centring Dowel	1	Use item 14.
14	AKH0262	Non-Delay HCV Mounting Kit	1	Includes items 2, 3, 7, 9, 10, 11, 12 & 13. (Kit Not Illustrated)
15	98934-035	Fitting 1/4 NPT, Metal	1	Optional vent tube & fitting suitable for heavy duty axle use.
16	SA-6400-2	Tube, Black Nylon – 1/4" x 12" Long	1	
17	S-11430-1	Tie, Nylon	1	

**SPECIAL TOOLS**


Item	Part Number	Description	Qty	Notes
1	S-24303	Socket, Pivot Bolt – E20	1	3/4 inch drive
	S-24536	Socket, Pivot Bolt – E20	1	1 inch drive standard duty
	S-25119	Socket, Pivot Bolt – E20	1	1 inch drive heavy duty
2	S-24736	Tool Kit - Narrow TRI-FUNCTIONAL™ Bush	1	Kit includes items 3 to 8 & 11. Refer Note.
3	S-24215	Bolt, Acme Thread – 14 Inch	1	Included in item 2.
4	98762-001	Bearing, Thrust – TFB Tool	1	Included in item 2.
5	S-26986	Plate, Front – TFB Tool	1	Included in item 2.
6	S-24216	Tube, Transition – TFB Tool	1	Included in item 2.
7	S-21314	Spacer, Removal – TFB Tool	1	Included in item 2.
8	S-26985	Plate, Rear Drive – TFB Tool	1	Included in item 2.
9	S-23442	Gauge, Ride Height – 13.5 to 19 Inch	1	
10	S-21337	Grease, Extreme Pressure	1	Refer Note. Essential for use with tool on installation. Included in item 2.
11	A-14011	Lube Pack - TRI-FUNCTIONAL™ Bush	1	To lubricate bushes on installation.

**NOTE:** The TRI-FUNCTIONAL™ tool kits are supplied with one tube of extreme pressure grease. It is essential to use this grease on the tool's Acme thread to avoid thread form damage. Do not use this grease on the bushes.

