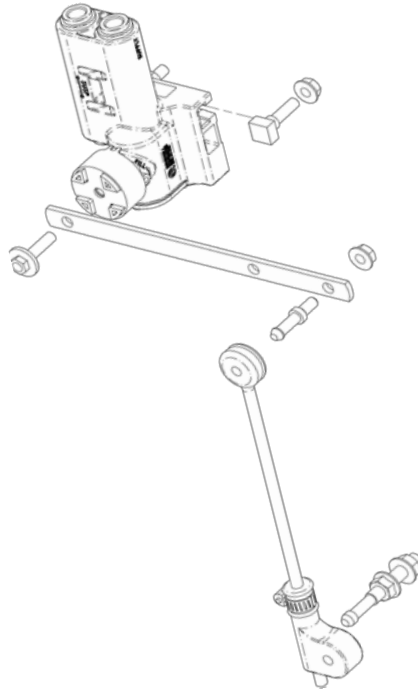


EXTREME AIR™ HEIGHT CONTROL KIT TRAILER INSTALLATION GUIDE



RAR 260 UNDERSLUNG – 15K; 25K; 30K	
RAR 260 OVERSLUNG – 25K; 30K	2
RAR 266 Overslung (LDA) – 23K; 25K	
RAR 266 Low Mount (LDA) – 25K	3
RAR 240 UNDERSLUNG – 15K; 25K; 30K or RAR 243 UNDERSLUNG – 25K	
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RIDEWELL
SUSPENSIONS

RAR 260 UNDERSLUNG – 15K; 25K; 30K
RAR 260 OVERSLUNG – 25K; 30K

1 HEIGHT CONTROL VALVE (HCV)

4 VERTICAL LINK

7 LOWER PIN ASSEMBLY

2 LEVER

5 "P" CONNECTOR

8 LOWER MOUNTING BRACKET

3 UPPER PIN ASSEMBLY

6 CLAMP FOR "P" CONNECTOR

9 UPPER MOUNTING BRACKET

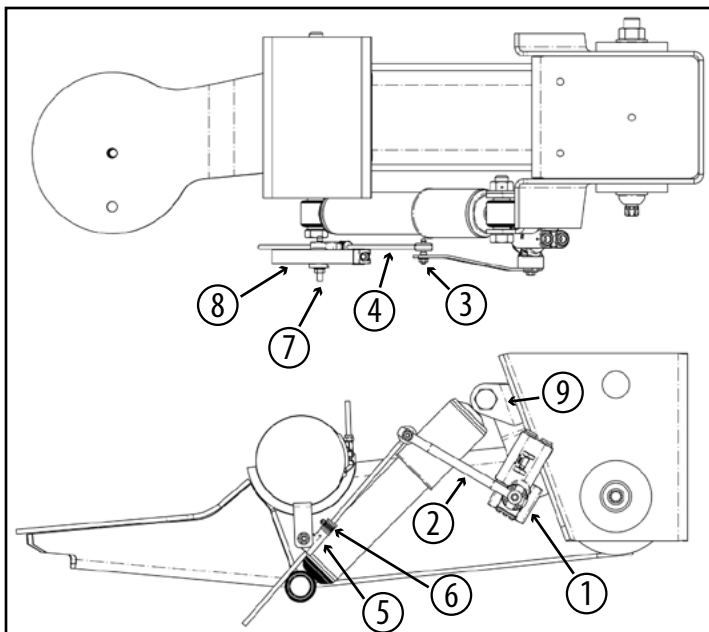


Figure 1.
RAR 260 Underslung – 15K Capacity

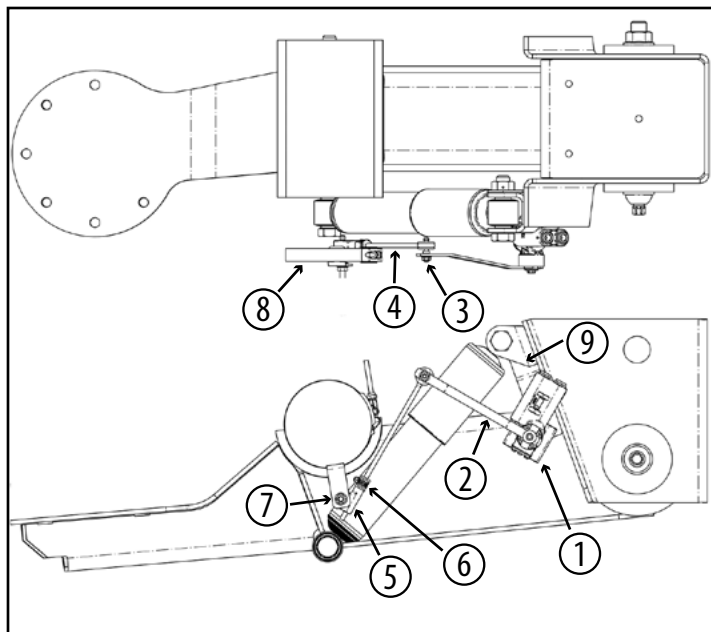


Figure 2.
RAR 260 Underslung – 25K or 30K Capacity

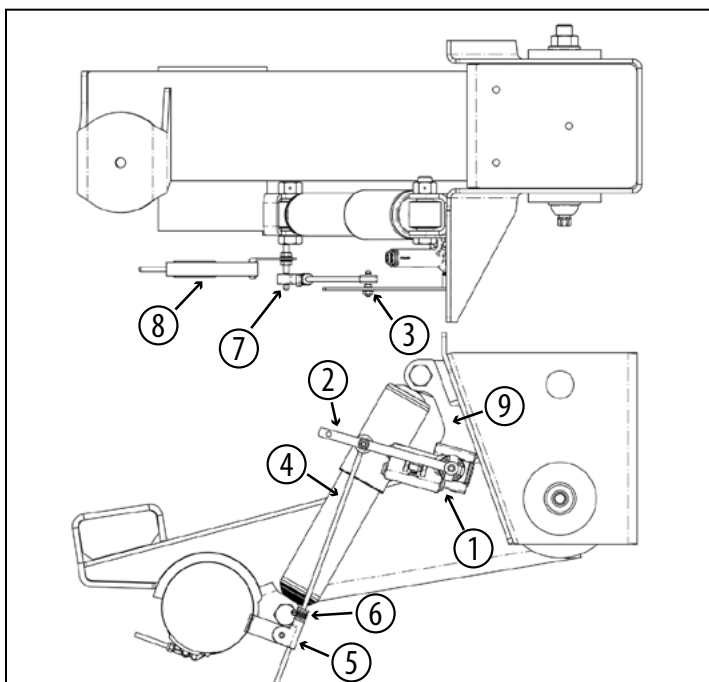


Figure 3.
RAR 260 Overslung – 25K Capacity

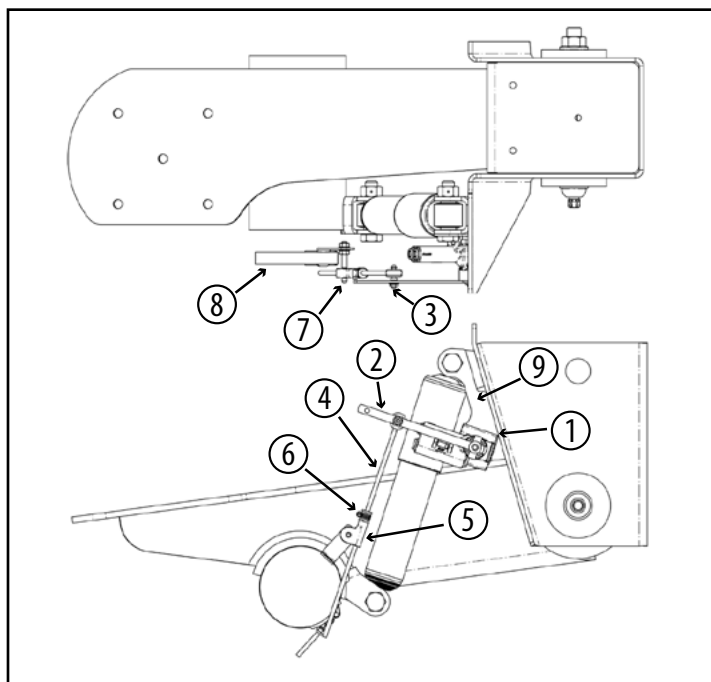


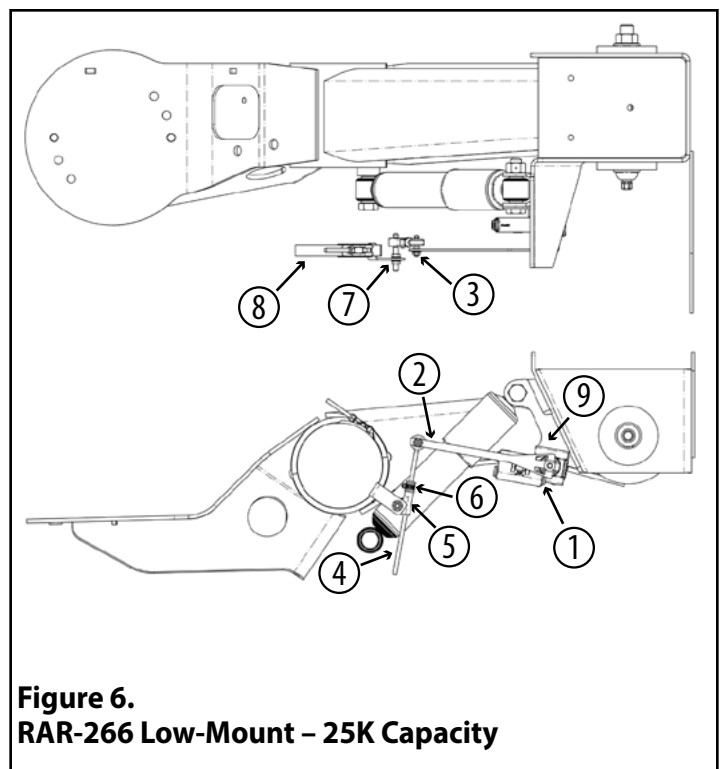
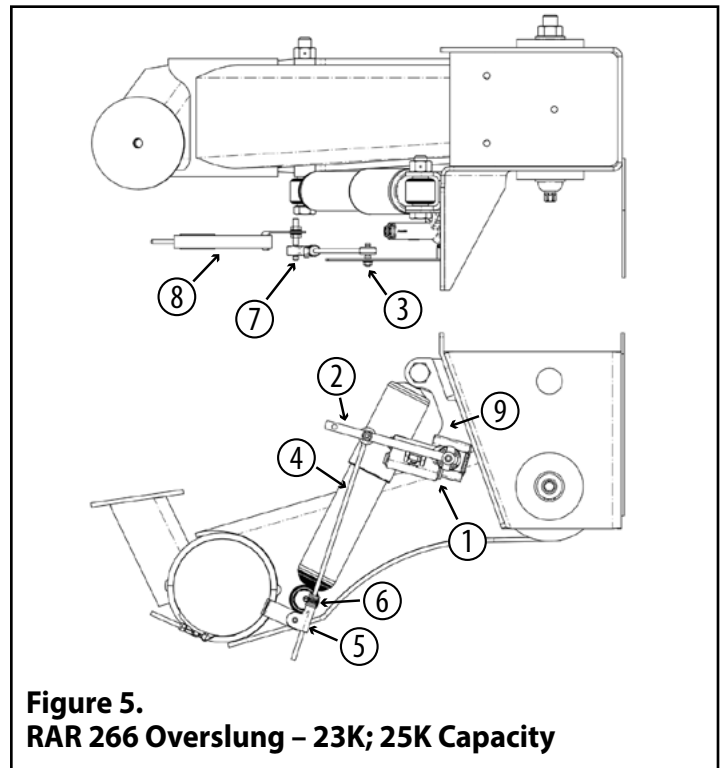
Figure 4.
RAR 260 Overslung – 30K Capacity

RAR 266 OVERSLUNG (LDA) – 23K; 25K
RAR 266 LOW MOUNT (LDA) – 25K

- 1 HEIGHT CONTROL VALVE (HCV)**
- 2 LEVER**
- 3 UPPER PIN ASSEMBLY**

- 4 VERTICAL LINK**
- 5 "P" CONNECTOR**
- 6 CLAMP FOR "P" CONNECTOR**

- 7 LOWER PIN ASSEMBLY**
- 8 LOWER MOUNTING BRACKET**
- 9 UPPER MOUNTING BRACKET**



**RAR 240 UNDERSLUNG – 15K; 25K; 30K or RAR 243 UNDERSLUNG – 25K
 RAR 240 OVERSLUNG – 25K; 30K**

1 HEIGHT CONTROL VALVE (HCV)

4 VERTICAL LINK

7 LOWER PIN ASSEMBLY

2 LEVER

5 "P" CONNECTOR

8 LOWER MOUNTING BRACKET

3 UPPER PIN ASSEMBLY

6 CLAMP FOR "P" CONNECTOR

9 UPPER MOUNTING BRACKET

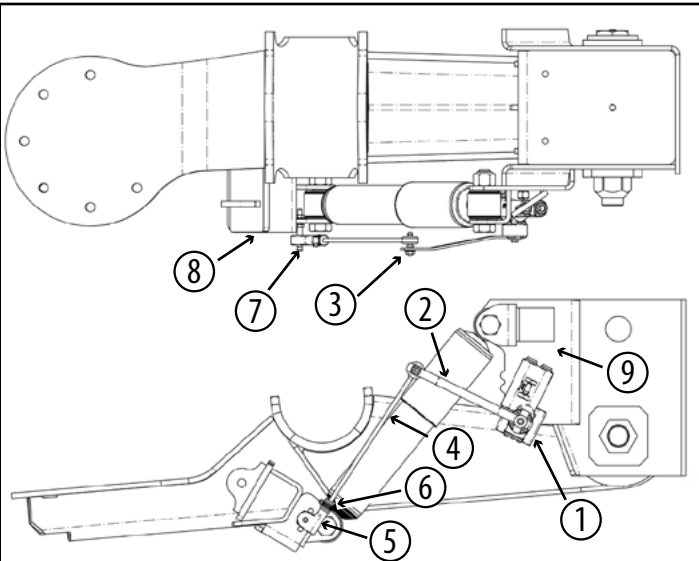


Figure 7.
RAR-240 Underslung - 15K; 25K; 30K
RAR-243 Underslung - 25K

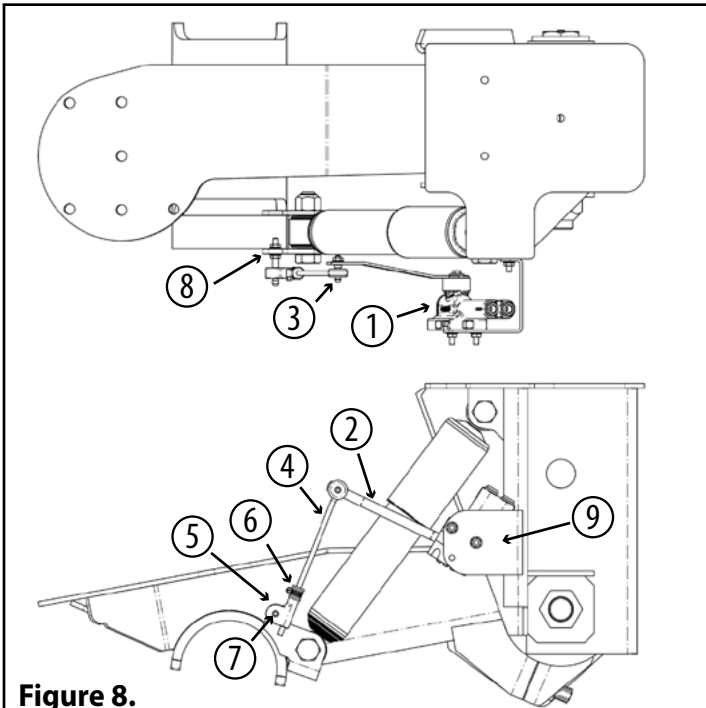


Figure 8.
RAR-240 Overslung - 25K

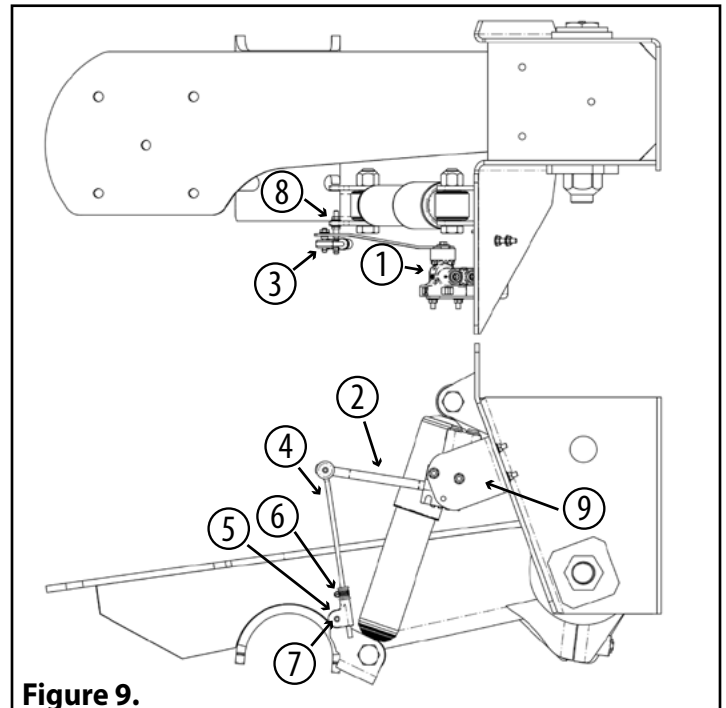


Figure 9.
RAR-240 Overslung - 30K

RAR 244 UNDERSLUNG – 8K (FEATHERIDE)

RAR 244 UNDERSLUNG – 16K

1 HEIGHT CONTROL VALVE (HCV)

4 VERTICAL LINK

7 LOWER PIN ASSEMBLY

2 LEVER

5 "P" CONNECTOR

8 LOWER MOUNTING BRACKET

3 UPPER PIN ASSEMBLY

6 CLAMP FOR "P" CONNECTOR

9 UPPER MOUNTING BRACKET

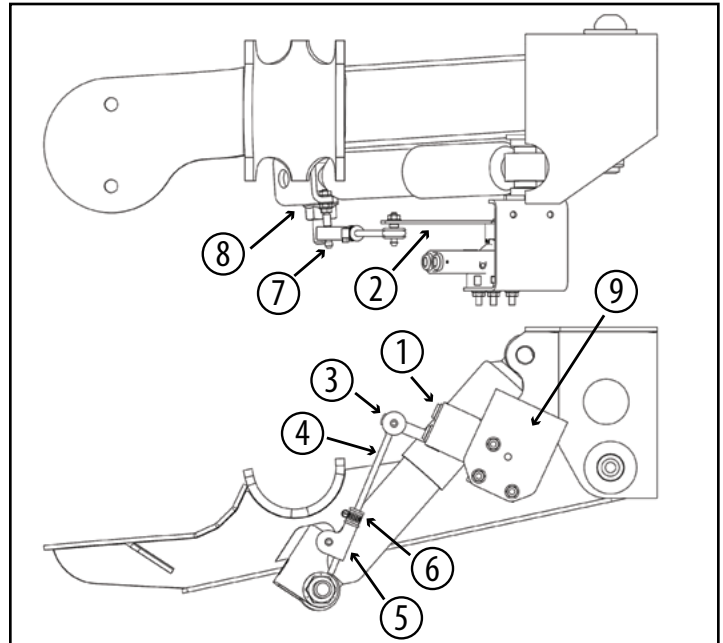


Figure 10.
RAR-244 Underslung - 8K Capacity (FEATHERIDE)

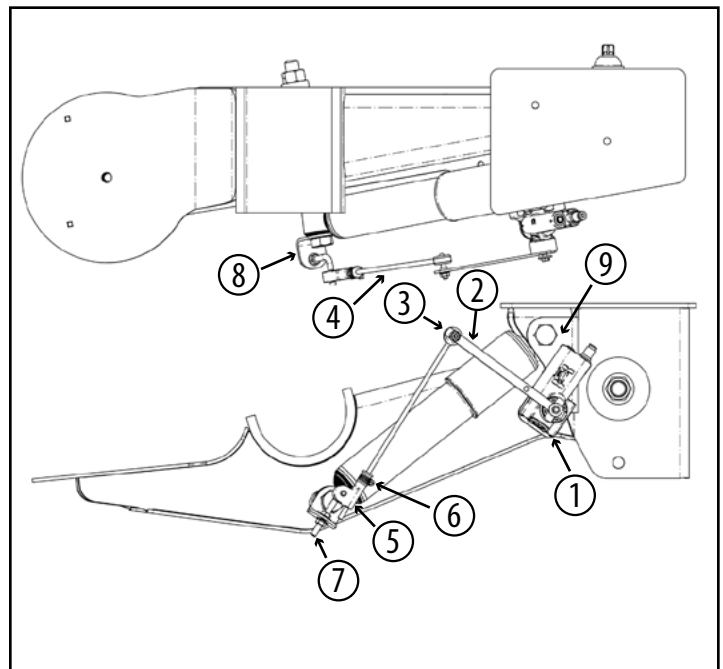


Figure 11.
RAR-244 Underslung - 16K Capacity

RAR 200 OVERSLUNG – 23K; 25K; 30K

1 HEIGHT CONTROL VALVE (HCV)

4 VERTICAL LINK

7 LOWER PIN ASSEMBLY

2 LEVER

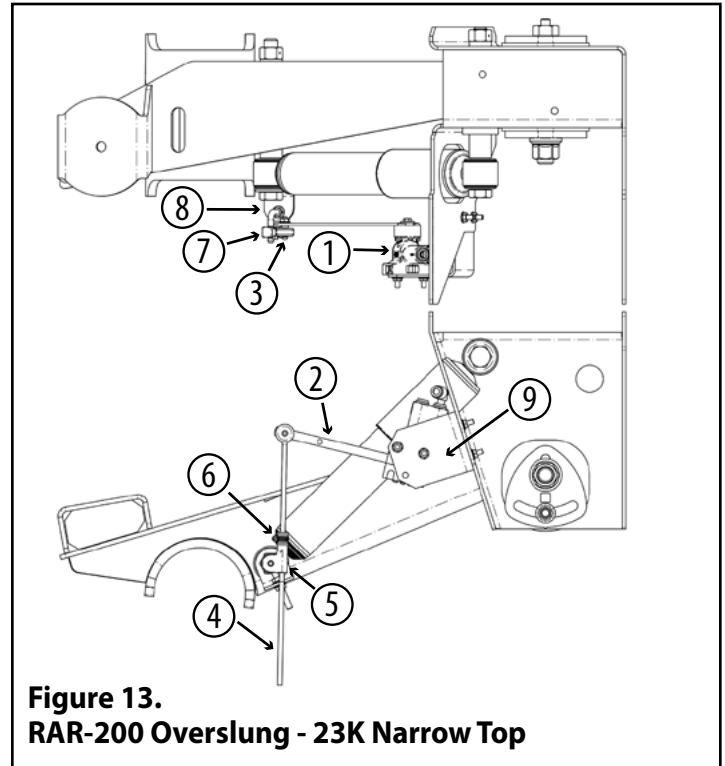
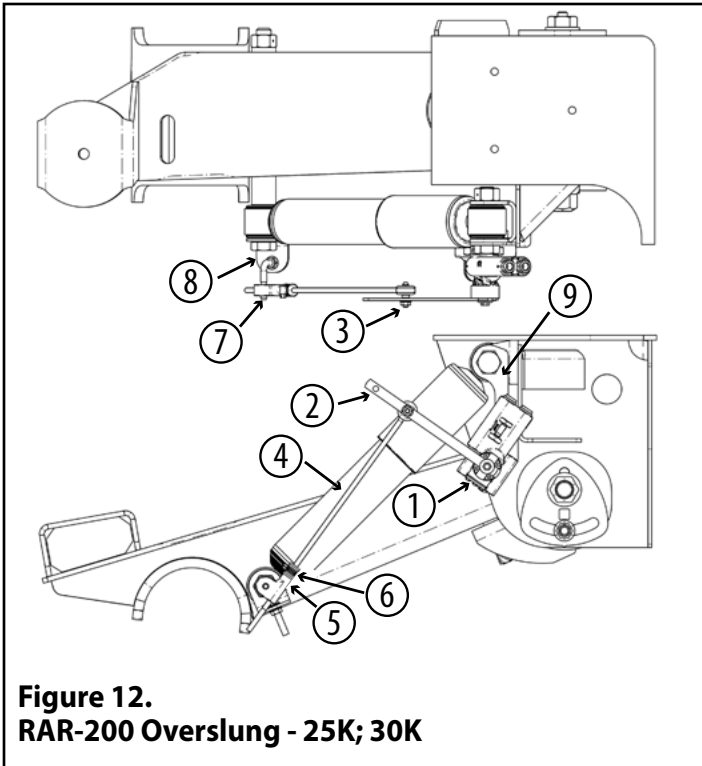
5 "P" CONNECTOR

8 LOWER MOUNTING BRACKET

3 UPPER PIN ASSEMBLY

6 CLAMP FOR "P" CONNECTOR

9 UPPER MOUNTING BRACKET



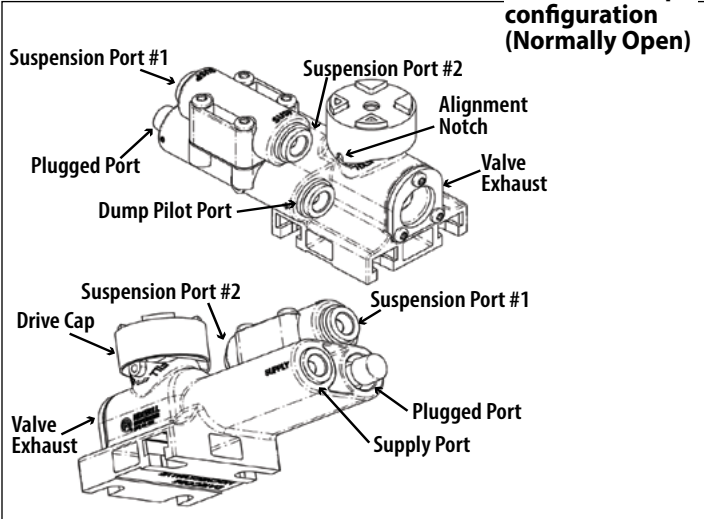
EXTREME AIR™ HCV – HEIGHT CONTROL KIT (HCK) INSTALLATION PROCEDURE

All the height control valve ports use push-to-connect (PTC) fittings to 3/8" tubing.

The exhaust port should be installed at or below a horizontal position.

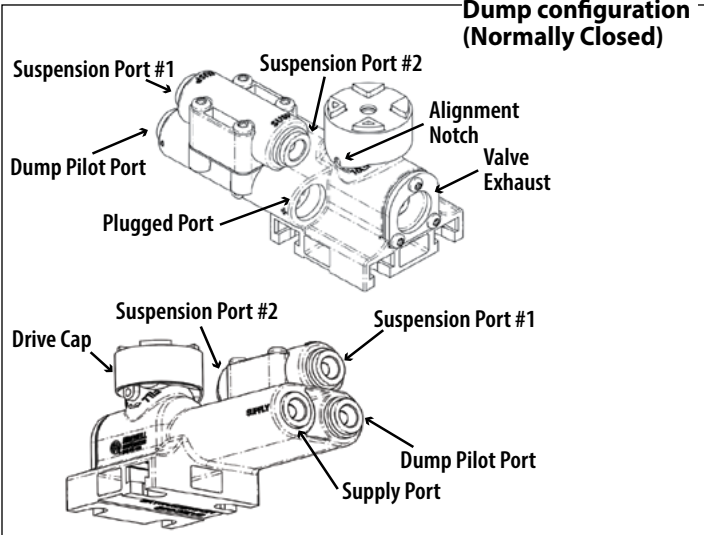
Pressure-Dump HCV: The dump pilot port cannot be plugged if the dump feature is not used. Plumb the dump pilot port with at least 6" of air line tubing open to the atmosphere at one end.

Pressure-Dump configuration (Normally Open)



Zero Pressure-Dump HCV: The dump pilot port must be plumbed. The Zero-Pressure Dump height control valve requires a minimum pressure of 75 psi at the pilot port for normal operation.

Zero-Pressure Dump configuration (Normally Closed)



A pressure protection valve (PPV) on the air tank is required when the tank is shared with an air brake system.

The installer is responsible for the air system installation complying with all federal/state requirements such as "FMVSS 121 for Air Brake Systems."

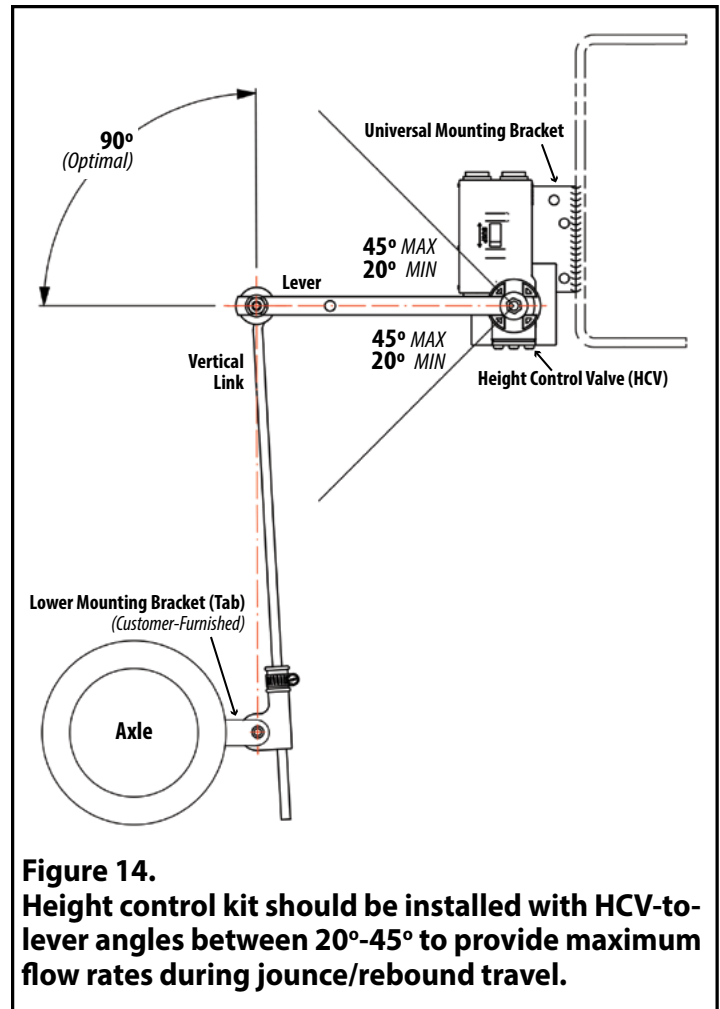


Figure 14. Height control kit should be installed with HCV-to-lever angles between 20°-45° to provide maximum flow rates during jounce/rebound travel.

Service Notes

Exhaust all pressure from the air system and wear proper eye protection and personal protective equipment at all times. Park the vehicle on a level, debris-free surface. Chock the vehicle wheels to prevent movement.

CAUTION Failure to provide proper support, chock vehicle's wheels or exhaust the air system could allow vehicle movement that could result in serious injury.

1. Raise the suspension/axle system to the desired ride height and support.
2. Set drive cap alignment notch to the center (neutral) position. Lever moves up to fill ("FILL"); down to exhaust ("EXH"). Attach lever. Torque to 50-55 in-lbs.
3. Mount HCV lever assembly to vehicle mounting bracket with two T-bolts. Torque to 60-80 in-lbs.
4. Attach "P"-Connector to lower mounting bracket with lower pin. Torque to 90-120 in-lbs (Fig 14).

Continued on next page

HCK INSTALLATION PROCEDURE

5. Set lever to neutral (center) position. Slide vertical link into "P"-Connector. Slide rod until grommet reaches the same height as the lever. Attach vertical link to lever with the upper pin. Torque to 60-80 in-lbs. Tighten P-Connector band clamp to hold the rod in place. Cut and remove excess rod, leaving about one-inch of rod beneath the P-Connector (Fig 14).
6. Install air lines to HCV supply port and to the suspension and dump ports. Pressurize system and check for leaks.
7. Remove the suspension/axle system supports. Lower suspension/axle to ground.

Operational Check

Move suspension through entire range of travel. Check lever travel range through full jounce and rebound movement. No binding, toggling or interference should be present.

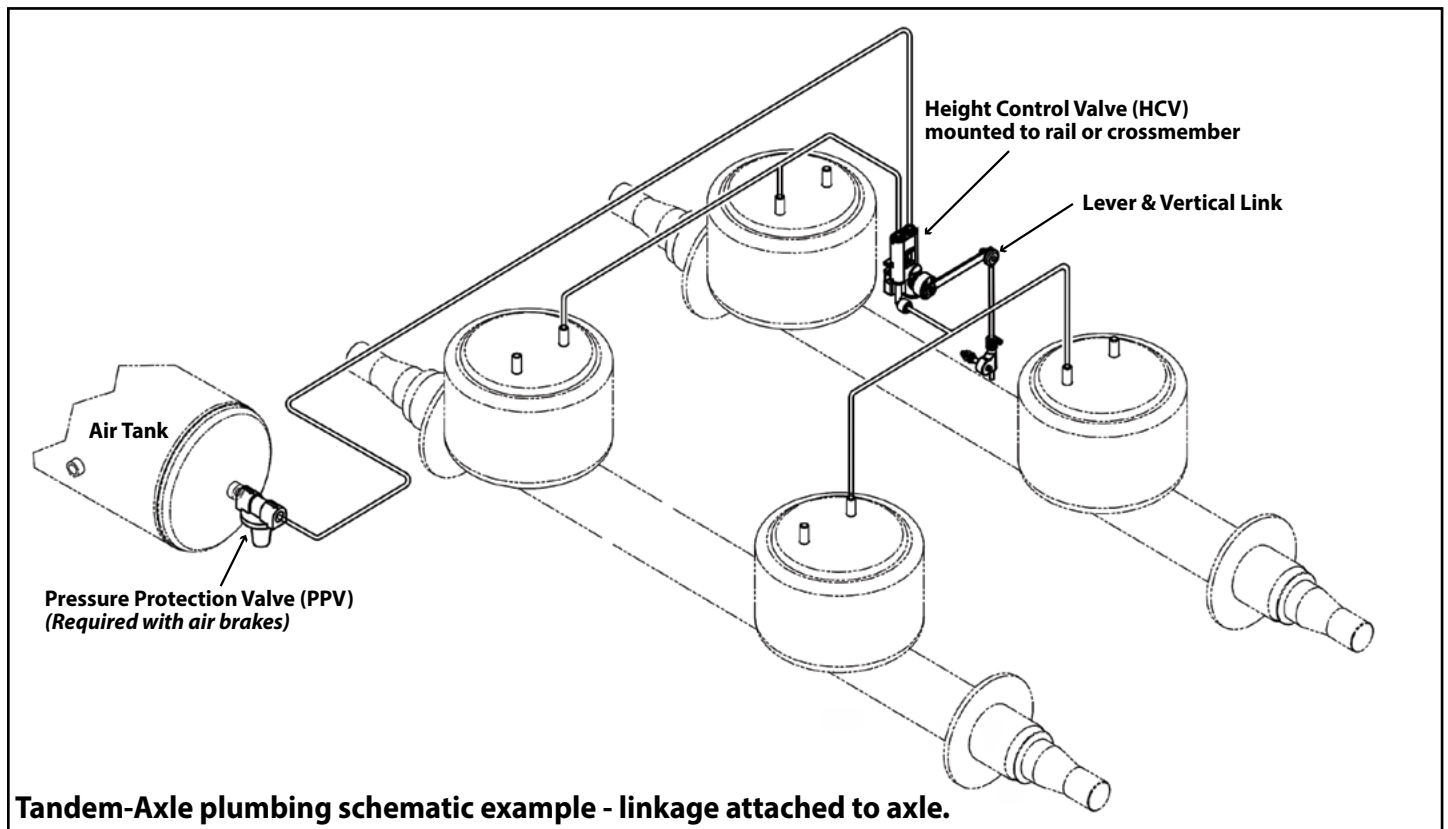
1. Raise the suspension by manually rotating the lever arm 20-30 degrees towards the "FILL" position. Hold the lever in place until air springs inflate. Rotate lever down to exhaust the air springs.

If air springs do not inflate:

- Verify that air supply pressure is sufficient to open the pressure protection valve (usually greater than 70 psi).
- Check to make sure that no suspension dump/exhaust feature(s) are not activated.
- Check to make sure lever is oriented properly. NOTE: The drive bearing cap may need to be rotated 180 degrees and the lever re-positioned.

2. If air springs are inflating properly, manually rotate the lever 20-to-30 degrees down towards the Exhaust (EXH) position. Hold lever in place and check that air is escaping from the exhaust port.

CAUTION Be sure that turning wheels does not interfere with the HCV/other components if HCK is installed on a steer axle.



EXTREME AIR™ LO-FLO HEIGHT CONTROL VALVE – HCK INSTALLATION PROCEDURE

Pre-Installation Notes

- The Extreme Air™ Lo-Flo Height Control Valve supply port is a 3/8" push-to-connect (PTC) fitting. The delivery ports use 1/4" PTC fittings.
- Install the height control valve exhaust port (rubber boot end of HCV) at or below a horizontal position.
- A pressure protection valve (PPV) installed on the air tank is required when the tank is shared with an air brake system.
- The installer is responsible for the air system installation complying with the federal/state requirements such as "FMVSS 121 for Air Brake Systems."

Service Notes

Exhaust all pressure from the air system and wear proper eye protection and personal protective equipment at all times. Park the vehicle on a level, debris-free surface. Chock the vehicle wheels to prevent movement.

CAUTION Failure to provide proper support, chock vehicle's wheels or exhaust the air system could allow vehicle movement that could result in serious injury.

1. Raise the suspension/axle system to the desired ride height and support.
2. Set drive cap alignment notch to center (neutral) position. Lever moves up to fill ("FILL"); moves down to exhaust ("EXH"). Attach lever. Torque to 50-55 in-lbs.
3. Mount HCV lever assembly to vehicle mounting bracket with two T-bolts. Torque to 60-80 in-lbs.
4. Attach "P"-Connector to lower mounting bracket with the lower pin. Torque to 90-120 in-lbs (Fig 2).
5. Set lever to neutral (center) position. Slide vertical link into "P"-Connector. Slide rod until grommet reaches the same height as the lever. Attach vertical link to lever with the upper pin. Torque to 60-80 in-lbs. Tighten P-Connector band clamp to hold the rod in place. Cut and remove excess rod, leaving about one-inch of rod beneath the P-Connector (Fig 15).
6. Install air lines to HCV supply port and to the suspension and dump ports. Pressurize system and check for leaks.
7. Remove the suspension/axle system supports. Lower suspension/axle to ground.

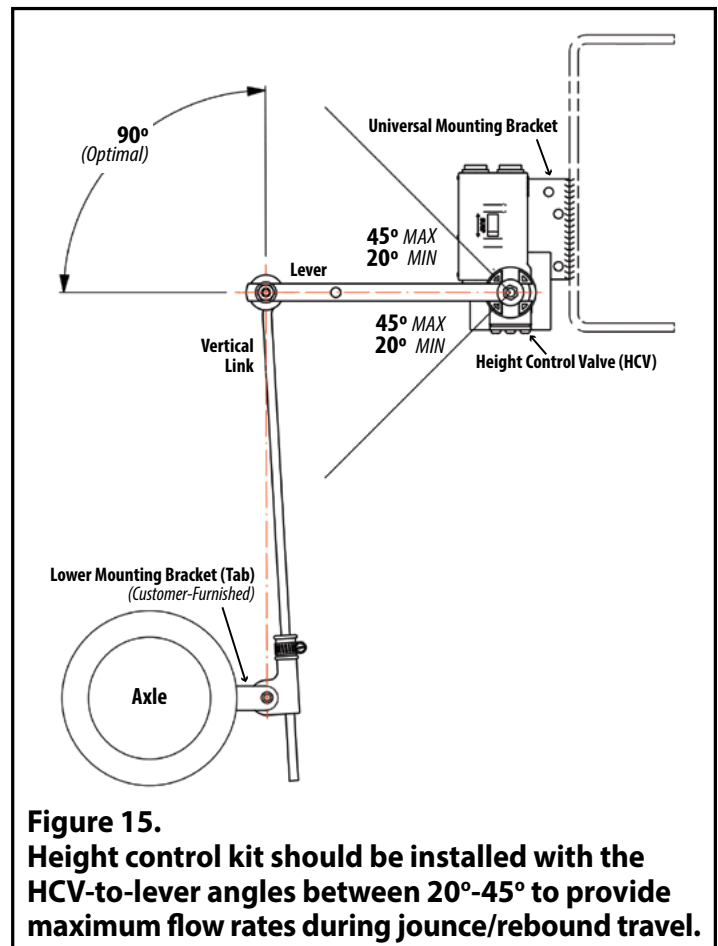


Figure 15. Height control kit should be installed with the HCV-to-lever angles between 20°-45° to provide maximum flow rates during jounce/rebound travel.

Operational Check

Move suspension through entire range of travel. Check lever travel range through full jounce and rebound movement. No binding, toggling or interference should be present.

1. Raise the suspension by manually rotating lever arm 20-30 degrees towards the "FILL" position. Hold lever in place until air springs inflate. Rotate lever down to exhaust the air springs. If air springs do not inflate:
 - Verify air supply pressure is sufficient to open pressure protection valve (usually > 70 psi).
 - Check to make sure that suspension dump/exhaust feature(s) is not activated.
 - Check to make sure lever is oriented properly.
NOTE: The drive bearing cap may need to be rotated 180 degrees and the lever re-positioned.
2. If air springs are inflating properly, manually rotate the lever 20-to-30 degrees down towards the Exhaust (EXH) position. Hold lever in place and check that air is escaping from the exhaust port.

CAUTION Be sure that turning wheels does not interfere with the HCV/other components if HCK is installed on a steer axle.

TROUBLESHOOTING – HEIGHT CONTROL VALVE INSTALLATION

A “bad HCV” is a common misdiagnosis of the air system not working. Most problems are traced to other parts of the system such as pinched/damaged lines, other valves or loose component fittings. Repair air system problems found before resuming troubleshooting.

Problem	Possible Cause	Corrective Action
Ride Height too high or too low.	<ul style="list-style-type: none"> – HCV out of adjustment or not installed correctly. 	<ul style="list-style-type: none"> – Refer to engineering drawing for ride height specifications. Check HCV adjustment.
HCV is not receiving air or is not delivering air to the air springs.	<ul style="list-style-type: none"> – Blocked air supply line. – Air tank is not filling/reaching set pressure. – Pressure Protection Valve (PPV) not working correctly. – Pilot port is not plumbed or is plumbed incorrectly. 	<ul style="list-style-type: none"> – Verify air lines are pressurized by removing the air supply line at HCV. Check for pinched lines. – Verify tank pressure with manual/in-line pressure gauge. – Check PPV operation - Valve opens when system reaches the desired pressure setpoint (<i>usually greater than 70 psi</i>). – Check HCV configuration – Non-Dump; Pressure-Dump (Normally Open); Zero-Pressure Dump (Normally Closed). Reinstall, if necessary.
Air springs fill but do not exhaust.	<ul style="list-style-type: none"> – Obstructed air line. – HCV installed backwards. – Supply line installed in the suspension port 	<ul style="list-style-type: none"> – Disconnect linkage and rotate actuating lever to the “down” position (exhaust). If springs remain inflated, check for pinched/blocked lines. – Check installation. Reinstall, if necessary. – Move air supply line to HCV supply port.
Air system leaks down in a short period of time.	<ul style="list-style-type: none"> – HCV installed backwards. – Leak in air system beyond the accepted standards. 	<ul style="list-style-type: none"> – Disconnect linkage and rotate actuating lever to the “Up” position (fill). If air springs do not inflate, reinstall HCV. – Pressurize system and spray soapy water solution onto the HCV and fittings. Check for bubbles (leaks): <ul style="list-style-type: none"> No leak found – Do not remove valve, check the rest of the system for leaks. Check that tubing cuts are straight and tubing is pushed onto fittings. Re-cut and reassemble if necessary.

Preventive Maintenance

- Drain all moisture from the air tank(s) at regular intervals, daily if possible.
- Periodically check for pinched/damaged lines or loose fittings that could cause an air leak in the system. Repair any problems found.
- Routinely inspect the entire air system to make sure that the HCV is maintaining the desired ride height. Adjust the linkage and re-torque fasteners as necessary.

**Ridewell suggests American Truck Association
Technology & Maintenance Council (TMC)
publications for more information**

RP 617 Air-System Contaminants
Elimination Procedure

RP 619 Air System Inspection Procedure

RP 634 Ride Height Adjustment Procedures
for Air Ride Suspensions

RP 643 Air-Ride Maintenance Guidelines

HCK COMPONENT REFERENCE – PRIMARY TRAILER

HCK Components Reference Chart – Engineering Drawing #6300AAA00

Engineering Drawing 6300AAA00 lists height component kit options available for use with Ridewell Air-Ride (RAR) Primary Trailer Suspensions. The “X” symbol signifies additional options (listed on the drawing).

63	0	0	A	A	A	A	0	0
Series Part No.	(HCV) Height Control Valve	(PPV) Pressure Protection Valve	Lever	Vertical Link		(Lower) Pin Assembly	Mounting Bracket	Air Fittings
Suspension Model				HCK Reference		Comments		
All Ridewell Air-Ride Trailer Models				63XXBFAB13		Universal Height Control Kit Option (Typically mounted to axle)		
RAR-260 15K; 25K; 30K Underslung (All models)				63XXCFAJ6X		2605208 uses 63XXBDAB0X		
RAR-260 25K; 30K Overslung (All models)				63XXBFAJ3X				
RAR-260 25K Yoke Mount (All models)				63XXBFAB13		Universal Height Control Kit		
RAR-266 25K Overslung – 5” Axle (All models)				63XXBFAJ3X		266311402 uses 63XXBFAG3X		
RAR-266 25K Overslung – 5 3/4” LDA (All models)				63XXBFAK3X				
RAR-266 25K U/S (Low-Mount) (All models)				63XXECAK3X				
(All models except N/A) RAR-240 15K, 25K,; 30K Underslung RAR-243 25K Underslung				63XXCGAE0X		See N/A model listing below		
(All models except N/A) RAR-240 25K; 30K Overslung				63XXCGAE2X		See N/A model listing below		
RAR-240 25K LKS Overslung (All models) RAR-240 25K; 30K Yoke Mount (All models)				63XXBFAB13		Universal Height Control Kit		
RAR-244 8K Underslung				6330DMAE20		NOTE: Uses Lo-Flo HCV		
RAR-200 25K; 30K (All models)				63XXBFAG3X		2000112 use 63XXBFAG0X		
RAR-200 23K Narrow-Top (All models)				63XXBFAG2X				
RAR 240 Models - Integrated HCK Not Available Use 63XXBFAB13 (Universal Height Control Kit)								
25K Underslung	30K Underslung	25K Overslung						
2400014	2400814	2400068						
2400048	2400816	2400714						
2400054	2400818	30K Overslung						
2400064	2400901	2400060						
2400614	2400902	2400160						
2400200 - 2400213	2400903	2400260						
2401206	2400904							
2401213	2400905							
	2401814							

Terms and coverage in this warranty apply only to the United States and Canada.

The Ridewell Corporation warrants the Automatic Height and Leveling Air Control Valve manufactured by it to be free from defects in material and workmanship for a period of 1 year from the date code molded into the body.

Warranty coverage is limited to the repair/replacement of valve parts. Coverage applies only to valves that have been properly installed, maintained and operated. No warranty applies to air lines, fittings, mounting hardware, actuating arm, linkage, or axle attachments.

Ridewell reserves the right to require any valve to be returned for inspection before claim is obtained. All returns must have transportation charges prepaid by the customer and accompanied with a complete written explanation of claimed defects and the circumstances of operational failure.

This non-transferable warranty is in lieu of all other expressed or implied warranties or representations, including any implied warranties of merchantability or fitness or any obligations on the part of Ridewell.

Ridewell will not be liable for any business interruptions, loss of profits, personal injury, any costs of travel delays or for any other special, indirect, incidental or consequential losses, costs or damages caused by Ridewell.

Contact the Ridewell Warranty Dept. at 417.833.4565 - Ext. 135, for complete warranty information.