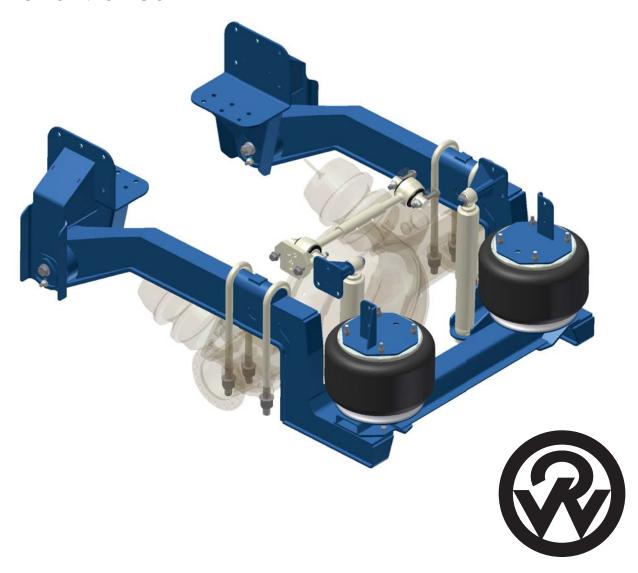
RIDEWELL SUSPENSIONS

The Engineered Suspension Company

RAD-241

Owner's Manual



www.ridewellcorp.com

P.O. Box 4586 • Springfield, MO 65808 • 417.833.4565 • 417.833.4560 (fax)



Suspension Identification:

Ridewell Suspensions are identified by a metal tag attached to the left-hand hanger that indicates part number, revision level, & serial number. Consult your vehicle manufacturer for your correct mounting height.

Parts:

For optimum suspension performance, order only Ridewell parts. Replacement parts for RAD-241 are shown on page 8 of this manual.

Sales, Service & Warranty:

If you need assistance regarding this product, please contact us and we will be glad to help you.

Mailing Address

Ridewell Corporation P.O. Box 4586 Springfield, MO 65808

Shipping Address

Ridewell Corporation 3715 East Farm Rd. 94 Springfield, MO 65803

Phones, Fax, E-mail

800.641.4122, 417.833.4565 417.833.4560 (fax) info@ridewellcorp.com

Contents

Alignment	4
Bushings	
Fasteners	
Ride Height	
Shock Absorbers	
Transverse Torque Rod	7
U-Bolts	
Parts Illustrations	8-10
Service Intervals.	11
Warranty	11



Alignment

There are two types of alignment mechanisms used on the RAD-241 suspension - eccentric bolt and Speed-SetTM. The eccentric bolt uses a 1 ¼" nut, while the Speed-SetTM mechanism uses a %" fastener.

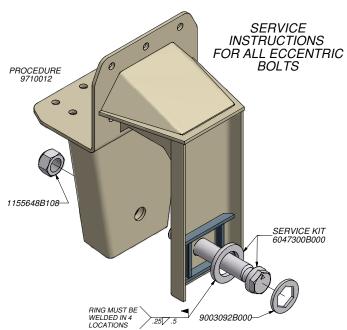
Eccentric Bolt: Axles may be re-aligned by rotating the eccentric pivot bolt. An arrow at the 12 o'clock position indicates the neutral position. Rotation of this bolt to 9 or 3 o'clock will move the axle a total of ¼" per side.

- 1. Remove the nut on the eccentric bolt and discard.
- 2. Remove the anti-turn washer covering the nut of the eccentric bolt assembly. Use a grinder to remove the tack welds.
- 3. To align the axle, turn the arrow the direction of required movement.
- 4. Re-install anti-turn washers and tack weld in two locations.
- 5. Install a new 1 ¼" locknut and torque to 750 ft-lbs.

Service Notes:

Service kit 6047300B000 replaces eccentric bolt assembly 5007300B000.

Weld receiver ring 9090005 into "picture frame" of hanger. Install eccentric bolt 1137694B000 as normal with aarow mark at 12 o'clock.



Speed-SetTM: The alignment is accomplished by rotating the alignment plates. The neutral position is indicated by the arrow in the 6 o'clock position. Rotating the alignment plates forward or rearward moves the axle a total of ½" per side.

- 1. Loosen the pivot nut and the alignment plate nuts.
- 2. With a ½ drive ratchet, rotate the pivot plates in the desired direction. The pivot plates on either side of a hanger must be rotated equal amounts or loss of pivot bolt torque may occur.
- 3. Torque the %" pivot nut to 520 ft-lbs.
- 4. Torque the adjuster plate nuts to 60 ft-lbs.

Bushings

Inspection: Bushings should remain centered in the eye and hanger and should not exhibit excessive movement. Excessive tire wear on the rear axle may warrant bushing replacement.

Replacement:

Clamp-in bushing:

- 1. Raise and secure the vehicle frame and exhaust the air from the air springs.
- 2. Remove the tires.
- 3. Remove the anti-turn washer (if installed) from 1 ¼" nut. Remove nut.
- 4. Remove anti-turn washer from eccentric bolt. Use a grinder to remove tack welds. Turn the eccentric bolt arrow to the 12 o'clock position and remove the eccentric bolt.
- 5. Use a grinder to remove vertical welds that join the clamping plate to the frame hanger in two places. Tap out the eccentric bolt/clamping plate assembly and all the beam to drop from the frame hanger.
- 6. Remove the %" fasteners from the bushing clamp and remove the bushing.
- 7. Install a new bushing and insert new clamp fasteners. Torque the clamp fasteners to 100 ft-lbs. Ensure that the bushing has remained centered in the eye during the assembly process.
- 8. Reassemble the beams to the hangers with new eccentric bolts in the 12 o'clock position.
- 9. Follow the alignment procedure in this manual as needed. Re-install the anti-turn washers and tack weld them into place. Torque the locknut on the eccentric bolt to 750 ft-lbs.
- 10. Weld the clamp plate into place in the previous locations.

Press-in bushing:

- 1. Raise and secure the vehicle frame and exhaust the air from the air springs.
- 2. Remove the tires.
- 3. Remove the pivot bolt and rotate the beams down and out of the hangers. Removal of the alignment plate fasteners is not nescessary.
- 4. With a hydraulic press, press out the bushings and press in new ones. If a portable press is not available, the beams will have to be removed from the axle.
- 5. Reassemble the hanger and beam with new pivot bolts. Re-alignment should not be necessary unless the alignment plate fasteners have been removed. Torque the pivot bolt



Fasteners

Inspection: See Chart A for proper fastener torque values.

Fastener Size	Location	Torque (ft-lbs.)	
½" 13NC	Air Spring Bottom	50	
½" 13NC	Air Spring Top	25	
½" 13NC	Cross-Channel	60	
½" 13NC*	Alignment Plate	60	
%" 9NC*	Bushing Pivot Bolt	520	
1 ¼" 7NC*	Bushing Pivot Bolt	750	
1" 14NC	U-Bolt	500	
%" 11NC*	Bushing Clamp	100	
%" 11NC*	Transverse T-Rod	210	
1" 8NC	Shock Absorber Nut	1.75" bushing width	
%" 14NF*	U-Bolt	425	

Ride Height

<u>Inspection:</u> The RAD-241 suspension is designed to accommodate a specific vehicle ride height. Ride Height is measured from the bottom of frame to the center of the axle and is controlled by the height control valve(s). Operating outside the designed ride height of the suspension may cause problems such as poor ride quality and driveline noise and wear. To determine the correct ride height of your suspension, contact the vehicle manufacturer or Ridewell Suspensions.

<u>Service</u>: The ride height should be measured when the vehicle is on level ground. The ride height of the suspension can be adjusted by the height control valve. Refer to your height control valve installation instructions for further information.

Shock Absorbers

The RAD-241 suspension is designed with premium adjustable Koni shock absorbers and can be adjusted to improve ride and handling or to compensate for wear.

Rebound Adjustment Procedures:

- 1. Remove the shock absorber from the vehicle and hold it vertically with the lower eye or pin attached in a vise. Use clamp plates to prevent damage.
- 2. Fully collapse the shock absorber, at the same time turning the dust cap or piston rod slowly to the left (counterclockwise), until it is felt that the cams of the adjustment nut engage in the recesses of the foot valve assembly.
- 3. Some shock absorbers include a bumprubber concealed under the dust cover and it must be removed prior to adjusting.
- 4. The damper may have already been adjusted. Therefore, check whether the shock absorber is in the adjustment position by keeping it collapsed and gently turning it further to the left counting at the same time half turns until a stop is felt. Stop turning then and do not use force.
- 5. Keeping the shock absorber collapsed, make 1 half turn (180 degrees) to the right (clockwise). In case of prior adjustment, add the number of half turns previously found. The total range is approximately 5 half turns.
- 6. Pull the shock absorber out vertically without turning for at least 1 centimeter to disengage the adjusting mechanism. The dust cap or piston rod may now be turned freely. Adjusting direction:

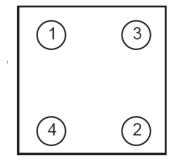
Clockwise = Firmer Counterclockwise = Softer

Transverse Torque Rod

Inspection: The transverse torque rod is essential to the proper lateral location of the axle. The length of the rod must be such that the beams and u-bolts of the suspension are equal distances from the chassis frame rails. Shims are provided at the chassis end of the rod for adjustability. A transverse torque rod with the improper length may cause the u-bolts to wear on the chassis and will cause the bushings to wear prematurely.

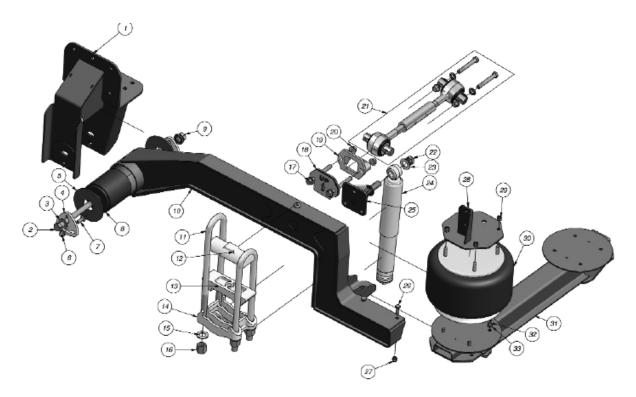
U-Bolts

U-bolts must be retightened after the first 6,000 miles and every 36,000 miles thereafter. If U-bolts must be removed for any reason while servicing the vehicle, they must be retightened in a criss-cross pattern as shown. Do not overtighten.





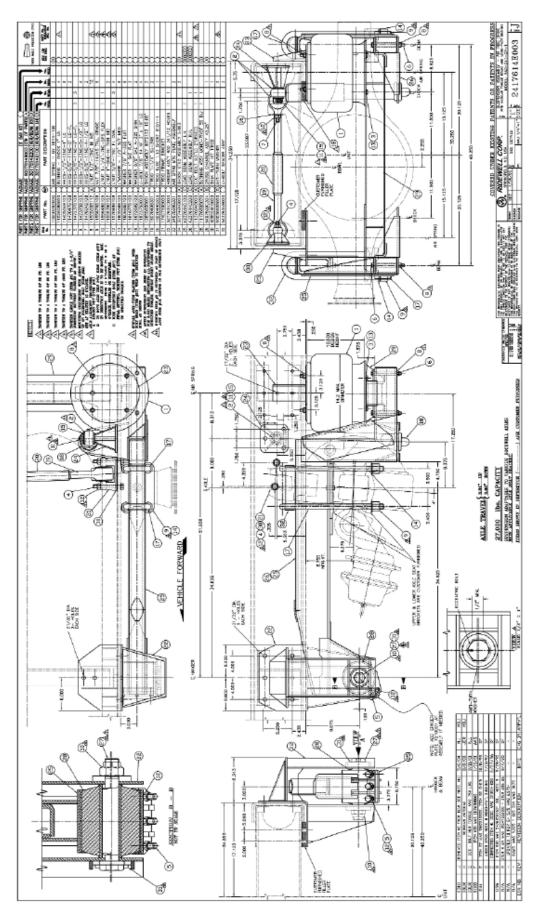
Parts Illustrations

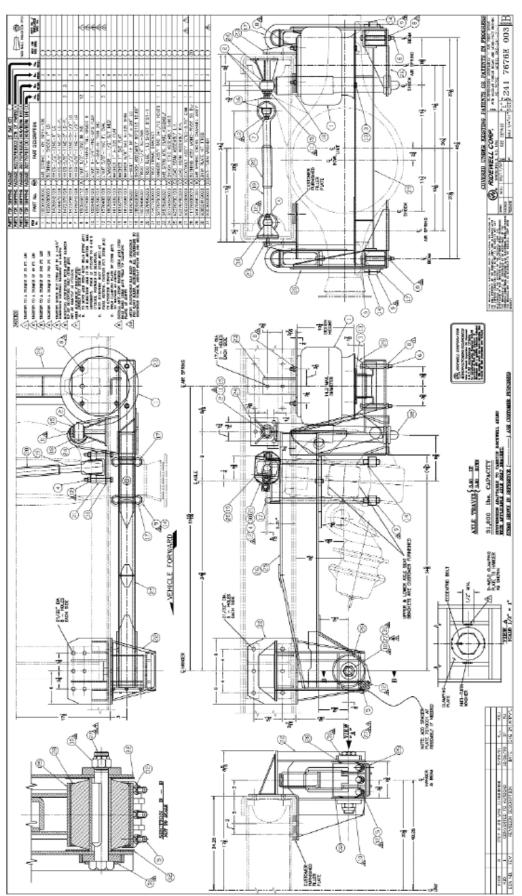


RAD-241 PARTS LIST

	I	NAD-241 FAR15	SUSPENSION NUMBER AND QTY				
ITEM	PART NO	DESCRIPTION	2410010				
	3270002	HANGER ASSEMBLY-LH/RH	2			2	
1	3270003	HANGER ASSEMBLY-LH/RH		2	2		
2	1140054	HHCS 7/8" 14NF 10"L GR8 P&O	2	2 2		2	
3	1160868B100	WASHER 7/8" A-325 FLAT	2	2	2	2	
4	5340018	ADJUSTER PLATE ASSEMBLY	4	4	4	4	
5	1167680B000	WASHER-UHMW 6.25X2.125X.188	4	4	4	4	
6	1150012	L'NUT 1/2" 13NC FLANGED GR G	4	4	4	4	
7	1130012	BOLT, CARRIAGE 1/2 13NC 1.50LG	4	4	4	4	
8	1110060	BUSH 60 DURO .906 ID	2	2	2	2	
9	1150028	L'NUT 7/8" 14NF GR8 SECURELOK	2	2	2	2	
	5970310	BUSH/BEAM LH ASM	1			1	
4.0	5970311	BUSH/BEAM RH ASM	1			1	
10	5970314	BUSH/BEAM LH ASM		1	1		
	5970315	BUSH/BEAM RH ASM		1	1		
11	1187676B302	UB 1" 14UNS 3"x19"L	4	4	4	4	
12	1740004	U-BOLT TOP PLATE	2	2	2	2	
13	a	UPPER AXLE SEAT BRACKET	2	2	2	2	
14	а	LOWER AXLE SEAT BRACKET	2	2	2	2	
15	1161480B100	WASHER 1" A-325 FLAT	8	8	8	8	
16	1154790B108	NUT 1" 14UNS TALL GRADE 8	8	8	8	8	
17	1140030	HHCS 5/8" 11NC 5-1/2"L FLN GR8	2	2	2	2	
18	6095241B000	SHIM PLATE KIT-T'ROD	1	1	1	1	
19	1740760B000	TRQ ROD FRAME BRKT 22186-000	1	1	1	1	
20	1157048B108	L'NUT 5/8" 11NC OVAL FLANGED	4	4	4	4	
21	a	TRANSVERSE TORQUE ROD	1	1	1	1	
22		L'NUT 1" 8NC THIN NYL INSERT	2	2	2	2	
23		WASHER 1" SAE FLAT	2	2	2	2	
24	1265583B001	SHOCK ASY 90F2152 10.08" KONI	2	2	2	2	
25		SHOCK STUD ASSY 5.063	2	2	2	2	
26		HHCS 1/2" 13NC 1-1/2LG	4	4	4	4	
27		L'NUT 1/2" 13NC TOP LOCK	4	4	4	4	
28	3457599B301	A.S.MTG PLT ASY	2	2	2	2	
29	1150555B112	L'NUT 1/2" 13NC NYL INSERT	8	В	8	8	
30		A/SPG 1R14-108 /1T19F-5 #9200	2	2	2	2	
l	5490012	A.S. CROSS CHNL ASM	1				
31	5490018	A.S. CROSS CHNL ASM		1			
1 "	5490019	A.S. CROSS CHNL ASM			1		
	5490020	A.S. CROSS CHNL ASM				1	
32		L'WASHER 1/2" S/T MED	8	8	8	8	
33	1140554B105	HHCS 1/2" 13NC 1"L	8	8	8	8	

Notes: a - Contact Ridewell Suspensions or the vehicle manufacturer for more information.





Service Intervals

	Every 1,000 miles	First 6,000 miles of operation	Every 12,000 miles	Every 36,000 miles	Every 100,000 miles
Bushings	I				
Air Springs	I				
Structure	I				
Ride Height	I				
U-Bolts		T		Т	
Fastener Torque		T		Т	

I = Inspect, L = Lubricate, T = Tighten, R = Replace

Warranty

Ridewell Suspensions warrants the suspension systems manufactured by it to be free from defects in material and workmanship, under proper use, installation, application, and maintenance for period of 3 years with no mileage limit after delivery to the original purchaser. The responsibility of Ridewell Suspensions under this warranty is limited to making good at the company factory by repair or replacement of any part or parts which it manufactures.

Written permission for any claim return must be first obtained from Authorized Ridewell personnel. 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. On all component parts not manufactured by Ridewell, their warranty is to the extent that the manufacturer of such parts warrant them to Ridewell Suspensions. This is the only authorized warranty and is in lieu of all other expressed or implied warranties or representations, including any implied warranties of merchantability or fitness, or of any obligations on the part of Ridewell Suspensions. In no event will Ridewell be liable for business interruptions, loss of profits, personal injury, cost of delay, or for other special, indirect, incidental or consequential losses, costs or damages.

Subject to all of the above conditions, if repair or replacement of any defective part is made by Ridewell Suspensions, Ridewell will return the repaired or replaced part to the original purchaser with transportation charges prepaid.

- 1 12 months 100% Parts & Labor
- 13 24 months 100% Parts & 50% Labor
- 25 36 months 50% Parts Only