RIDEWELL SUSPENSIONS The Engineered Suspension Company

RD-202S

Heavy-Duty Tandem Drive Truck Suspension 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 pedestal that indicates part number, revision level, and serial number.

Parts:

For optimum suspension performance, order only Ridewell parts. Replacement parts for Model RD-202S are shown on pages 9-13 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



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Basic Operation

When properly maintained and operated within design limits, Ridewell's **Dynalastic Model RD-202S** will provide many years of trouble-free service.

The RD-202S provides the heavy-duty truck industry with a versatile tandem suspension. It has proven durability in **refuse, military, firefighting, logging and construction** applications for four continents.

How the Suspension Works

Being a single-point design suspension, all the load is first transmitted from the frame to the center bushing. There, the load is equally distributed along the compensator. Elastomer (rubber) springs housed at the ends of the compensator deflect according to load applied and transmit this load to the independent torque arms and engage as the suspension reaches a given load deflection. The overload springs act as an assist for the main load-carrying elastomer springs. The interaction of the components provide the vehicle with an exceptionally fine ride, both in a loaded and unloaded condition.

As the vehicle encounters a bump, the independent torque arms for the elastomer spring go into compression. This compression is absorbed in the compensator and equalizes the bump's dynamic force between front and rear elastomer springs before reaching the chassis of the vehicle.



Operational Inspection

- 1. Inspect all fasteners at the pedestal clamp and pedestal to frame connections. Refer to torque chart for proper torque requirements.
- 2. Inspect elastomer springs.
- 3. Inspect shocks and shock attach points.
- 4. Inspect torque beam end bushings and axle attachments.





Preventative Maintenance

Daily

Check for loose or broken parts on or around suspension. If loose or broken parts are detected, immediate corrective action must be taken.

6,000 Miles

After suspension has been in operation for approximately 6,000 miles (10,000 KM), all fasteners must be re-tightened to specified torque.

Every 30 Days

Check clearances around all moving suspension parts, tires, and shock absorbers. Any signs of interference should be corrected immediately.

Every 90 Days & with Annual Inspection

Inspect items required in daily & 30-day inspections.

Inspect all welded connections.

Inspect all pivot and clamping connections such as the suspension pivots, elastomer springs, and shock mounts.

50,000 Miles

All fasteners must be re-tightened to specified torque. Repeat every 50,000 miles.

BOLT SIZE	LUBRI	CATED THREADS
1 ½"	1,	100 FT. LB. (1,490 N•m
1 ¼"	1,0	000 FT. LB. (1,350 N•m
1 ¹ /8"		500 FT. LB. (680 N•m
1"	GRADE 5	360 FT. LB. (490 N•m
1"	GRADE 8	460 FT. LB. (625 N•m
7/8"		350 FT. LB. (475 N•m
3⁄4"	GRADE 5	160 FT. LB. (220 N•m
3⁄4"	GRADE 8	190 FT. LB. (260 N•m
5/8"		100 FT. LB. (135 N•m
*3/4"		50 FT. LB. (70 N•m
*1/2"		25 FT. LB. (35 N•m
*AIR S	PRING CONN	ECTION ONLY
After suspension h 6,000 miles (10,00 to specified torque	as been in ope 0 km), all faste . Repeat every	eration for approximately eners must be re-tightened 50,000 miles (80,000 km

Figure 2



Basic Troubleshooting

- 1. Vehicle pulls to left or right check the following:
 - a. Tire pressure
 - b. All suspension bushings
- 2. Vehicle has excessive sway check the following:
 - a. Sway bar
 - b. Torque beam bushings
 - c. Center bushing
- 3. Vehicle has axle walk or hop check the following:
 - a. Torque beam bushings
 - b. Center bushings
- 4. Mounting height has changed check the following:
 - a. Elastomer springs
 - b. Compensator
 - c. All suspension bushings



Bushing & Elastomer Replacement Procedure

It is recommended that torque beam pivot bushings and elastomer springs be replaced in pairs for maximum suspension performance.

- 1. Remove vehicle weight from suspension by raising and blocking vehicle chassis and axles. Remove tires and wheels.
- 2. Remove axle/axle bracket assembly from torque beams.
- 3. Remove shock absorbers.
- 4. Remove elastomer spring fasteners from compensator.
- 5. Remove locking plate from torque beam/compensator pivot bolt and remove 1½" bolt.
- 6. Remove torque beam/elastomer spring assembly from compensator.
- 7. Inspect torque beam pivot bushing, end beam bushing, elastomer spring, and overload spring for damage or excessive wear.
- 8. Replace defective parts using only genuine Ridewell replacement parts.
- 9. After servicing the assembly, re-assemble the supension by reversing this procedure.
- 10. It is imperative that all fasteners be tightened to specified torque and bolt locking plates be re-installed on bolt heads.
- 11. If you require additional assistance, please contact Ridewell Corporation.



Shock Absorber Adjustment

If your suspension is equipped with Koni adjustable shock absorbers and requires adjustment, proceed as follows:

NOTE: READ THIS ENTIRE PROCEDURE BEFORE STARTING.

- 1. Remove the shock absorber from the vehicle and holt it vertically with the lower eye in a vice.
- 2. Press top of shock down while turning **gently** counter-clockwise until you feel the cams of the adjusting nut engage in the recesses of the front valve assembly. When engagement is made, turn top of shock 2 **half** turns clockwise and stop. Adjustment is complete.
- 3. Pull top of shock up about $\frac{1}{2}$ and remove from vice.
- 4. Re-install on vehicle.

IMPORTANT NOTE:

Shock absorbers must be adjusted in pairs. There is a minimum of 5 half turns clockwise adjustment on your shock absorber. Do not use excessive force when making adjustments. If you are having difficulty, please contact Ridewell.



Parts Illustrations

ITEMS PER CUSTOMER REQUIREMENTS. CONTACT RIDEWELL CUSTOMER SERVICE FOR PART NUMBERS AND SPECIFICATIONS

2 4 OPTIONS AVAILABLE, CONTACT RIDEWELL CUSTOMER SERVICE FOR PART NUMBERS AND SPECIFICATIONS

/3- ITEM 29 MUST BE ORDERED WITH GABRIEL SHOCKS

	Parts List							
	ITEM	PART NO.	DESCRIPTION					
A/3	1	1252607B000	SHOCK ASSY - GABRIEL					
Λ		1265478B000	SHOCK ASSY - KONI. BUSHINGS INCLUDED					
	2	1155939B102	L'NUT 1" 8NC THIN W/ NYL, GR 2, Z PLA					
^	3	1161677B100	WASHER 1" SAE FLAT ZINC					
/↑	4		STRADDLE MOUNT PEDESTAL SMPA 202S					
	5	1154718B105	L'NUT 7/8" 14NF TOP LOCK, GR 5 (B), Z PLA					
	6	1164718B100	WASHER 7/8" TYPE B NAR .1 THICK Z PLA					
	7	1287594B000	7/8 X 6 CLAMP BLOCK STUD					
	8	1747564B001	CAST COMP CAP MCH'D 3.5ID 7"					
1/2	9	1037261C00_	OVERLOAD SPRING J19368_ (1-4)					
$A \land$	10	1037326D00_	ELASTOMER SPG J19576 (1-4)					
	11	1130670B105	HHCS 1-1/2"-6NC x 7" LG GR 5 ZINC PLATED					
	12	1140665B105	HHCS 5/8" 18NF 1"LG. GR 5, ZINC PLATE					
	13	1142735B105	HHCS 5/8" 18NF 1-1/4"LG GR 5, ZINC PLATE					
	14	1147414B108	HHCS 5/8" 11NC 7"LG GR 8, ZINC PLATE					
	15	1157048B108	L'NUT 5/8" 11NC OVAL FLANGED					
	16	1160519B302	WASHER- BEARING SLEEVE					

	ITEM	PART NO.	DESCRIPTION
	17	1160598B100	L'WASHER 5/8" S/T MED ZINC PLATE
	18	1160673B000	L'WASHER 1-1/2" INT TOOTHLOCK
Λ	19	1304398B000	RETAINER KIT M.D. 3" x 6"
		1307564B001	RETAINER KIT 2.5" X 5.75"
		1304963B000	RETAINER KIT 2.5" X 6"
		1307561B000	RETAINER KIT 3" X 7"
	20	1117558B000	BUSHING CENTER 4.75" X 7" BONDED
Λ	21		COMPENSATOR ASS'Y 40" / 42"
Λ	22		TORQUE BEAM ASS'Y - LH
$\overline{\Lambda}$	23		TORQUE BEAM ASS'Y - RH
$\overline{\mathcal{A}}$	24	1114398B000	S'BLK BUSH 6"X6"X3"
		1117564B001	S'BLK BUSH 5.75" X 2.5"
		1114964B000	S'BLK BUSH 6" X 2.5"
		1117561B000	S'BLK BUSH 7" X 6" X 3"
	25	1120016	BUSHING 3.13ODX1.5IDX4.42LG UR
	26	9004565B000	LOCKING PLATE
	27	9117340B318	TUBE 1.250D .28W 5.22"LG
	28	9127564B000	C'TUBE 2.44"OD. x 44.88"LG356W.
	29	1102608B000	SHOCK BUSHING (GABRIAL SHOCKS ONLY)











				RIDEWELL CORP.	MATERIAL	DTRC	CKR EN	G MODELS	SCALE: 1/4" = 1"	1r
					SEE DETAILS	D3/ M	4 D	L.	PART NUMBER	r
				TITLE SFRINGFIELD, MISSOOKI U.S.H.	-	17. ľ	. ²	Į Į Į	20277310351	٦Ľ ۵
30	6007734B126	1267395B000	1225169	SUSPENSION ASS'Y-"DYNALASTIC" STRADDLE MOUNT WITH				- 16	DRAWING NUMBER	집법
	SHOCK INSTALL PKG.	SHOCK ASS'Y	CUSTOMER CODE/	4.5" LOAD SPRINGS AND ADJUSTABLE BAR PIN BUSHINGS		10CT. DO	6 2	<u>ё</u> Щ	BRAWING NORBER	금감별
0	PART NO.	PART NO.	PART NO.	W/SHOCKS FOR TRUCK APPLIC. 52" BEAM SPACING	WT.	'01 '	'Ō1 'Ō1		SEE P/N	R.





SUSPENSION ASS'Y

KEY TO TARGET SYMBOLS

1/2 "F"

DIMENSI

"D"

COMP/T'BEA (SHIPPING ASS PART No.

"F"

PEDESTAL ASS'Y (ITEM No. 13) PART No.

SUSPENSION ASS'Y

1142 A

ECN NO. LET

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10	ତା	600/626B126	12034/08000	J LLL #M 34-2/4	CUCRENCION MODEL NO 16 DD 2020 EA 40 DS USE GARRIEL SHOCK ARSORREDS	2
10	\odot	6007626B125 🔿	1252607B000 () CCC #A94-273	SUBPENSION MODEL NO. 13 RD-2023-54-48-83 OUL GADINIEL DI DOR ADDOINDEND	
	O	0	() FLN	COVERED UNDER EXISTING PATENTS OR PATENTS IN PROCESS	
10	O	6007626B126 🔿	1265478B000 () N' STAR #	RIDEVELL CORP MATERIAL DTR CKR ENG MODELS SCALE: 1/4" = 1"	\widehat{F}
10	\bigcirc	6007626B126 🔘	1265478B000 () PETE #03-08423	SPELNGFIELD MISSOLELUIS A SEE DETAILS	5
10	\bigcirc	0	() FORD#	BM S 2027653D31	δœ
10	\odot	6007626B126 ()	1265478B000 () RIDEWELL STANDARD	Mill SUSPENSION ASS T- DIVINIASTIC STRAUDLE	ωË
M		SHOCK INSTALL PKG	SHOCK ASS Y	CUSTOMER CODE/	5.25" COMPENSATOR FOR TRUCK APPLICATIONS ARTICULATION PER FEB	20
2 (T)	/10	PART No.	PART No. 12)	PART No.	USING 54" BEAM SPACING AT 9.25" MTG. HGT. $SK-1711C$ 93 G $AS-7653D#2$	ᄮ















