SPARTAN CHASSIS, INC.

CAMPAIGN SERVICE BULLETIN

SUBJECT: Front Suspension- IFS84

APPLIES TO: Spartan Chassis Motor Home Models Equipped with an IFS84 Ridewell Front Suspension, with a VDM (Vehicle Date of Manufacture) of January 27, 2004 through September 20, 2005.

CONDITION: Upward forces generated by the air spring may cause the lower end of the upper spring tower to pull away from the main cradle's mounting plate. This creates the potential for upper spring tower mounting fastener failure and the possible subsequent failure of the upper spring tower's ability to maintain control over the upper spring position.

CORRECTION: Inspect condition of the upper spring towers; replace if necessary. Weld upper spring towers to the main cradle.

PART / SERVICE INFORMATION:

Labor Time: 4.5 Hrs. / per side to replace upper spring tower
2.5 Hrs. / to weld both spring towers to cradle (includes inspection)

PLEASE READ THE ENTIRE BULLETIN BEFORE PROCEEDING WITH ANY WORK.

QTY.	Part Number	Description
1	S-1749-001	Kit- LH Upper Spring Tower IFS84
1	S-1749-002	Kit- RH Upper Spring Tower IFS84
As required	81801 or equivalent	Pipe Sealant w/teflon

Kit #S-1749-001 Contains:

QTY.	Part Number	Description
1	3450100	Upper Spring Tower- LH
8	08130200FH8Y	Bolt- 1/2-13 X 2.00 FLG GR8 YYEL
8	0813FLN8Y	Nut- 1/2-13 FLG LK GR8
1	CSB06-250-002	Document Instructions

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Kit #S-1749-002 Contains:

QTY.	Part Number	Description
1	3450101	Upper Spring Tower- RH
8	08130200FH8Y	Bolt- 1/2-13 X 2.00 FLG GR8 YYEL
8	0813FLN8Y	Nut- 1/2-13 FLG LK GR8
1	CSB06-250-002	Document Instructions

STEP-BY-STEP INSTRUCTIONS:

1. Observe all industry safety standards and secure vehicle for welding of the upper spring towers to the main cradle.

2. Jack up the vehicle's front end until both tires are off the ground. Place jack stands under the frame rails of the chassis behind the front suspension. Lower vehicle onto jack stands keeping both tires off the ground.

THE FOLLOWING PROCEDURES ARE RECOMMENDED BY RIDEWELL CORPORATION IN COOPERATION WITH SPARTAN CHASSIS:

These instructions are broken down into three sections. The first section deals with inspection and how to determine the correct procedure to fix the problem. The second section covers repair of an undamaged (or moderately affected) upper spring tower while the third section instructs as to how to replace a damaged upper spring tower.

UPPER SPRING TOWER INSPECTION PROCEDURE (SUBSET "A")

1A. Remove front tires from vehicle.
2A. Visually inspect the lower ends at the front and rear of the upper spring tower for condition of the upper spring tower's contact with the main cradle's mounting plate.
3A. Refer to FIG. 3-1. If the upper spring tower is pulling away from the main cradle's mounting plate determine how much gap there is between the two components (either visually or with a tape measure).
4A. Refer to FIG. 3-1. If no gap can be seen or if the gap is less than 1/8" there is no need to replace the upper spring tower. **See *UPPER SPRING TOWER REPAIR PROCEDURE (SUBSET "B")* for details.**

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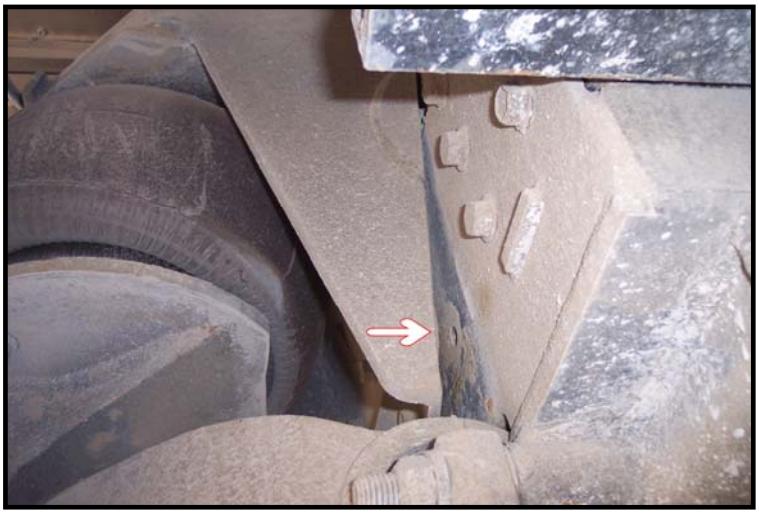

FIG. 3-1

5A. If a gap is seen and it is determined to be 1/8" or greater then the upper spring tower must be replaced. **See *UPPER SPRING TOWER REPLACEMENT PROCEDURE (SUBSET "C")* for details.**

NOTE: It may be possible that one side of the vehicle would require repair while the opposite side would require replacement. In that event follow instructions in both SUBSET "B" and SUBSET "C".

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UPPER SPRING TOWER REPAIR PROCEDURE (SUBSET "B")

WARNING: ***DISCONNECT BOTH POSITIVE AND NEGATIVE BATTERY CABLES, GROUND CABLE TO ALTERNATOR, POWER CABLES AND CONNECTORS TO MULTIPLEX CONTROLLERS AND NODES, AND CONNECTORS FROM ALL ECUs (Electronic Control Modules) PRIOR TO PERFORMING ANY WELDING OPERATIONS.***

'GROUND' THE WELDING APPARATUS AS CLOSE TO THE AREA TO BE WELDED AS POSSIBLE. NEVER USE THE ENGINE OR TRANSMISSION AS A GROUND POINT.

FAILURE TO DO SO MAY CAUSE DAMAGE TO ELECTRICAL COMPONENTS AND THE VEHICLE'S ELECTRICAL SYSTEM.

WARNING: **COMPLETELY EXHAUST VEHICLE'S AIR SYSTEM BEFORE PROCEEDING WITH STEP 1B. FAILURE TO DO SO MAY RESULT IN BODILY INJURY OR DEATH.**

1B. Disconnect all upper air lines to the air spring.

2B. Remove all fasteners attaching the air spring. Remove the spring and set aside for later re-use.

3B. **NOTE:** ***This step is to gain room to apply welds and may be skipped if mechanic/welder determines it is not necessary.*** Remove the upper shock mounting fasteners. Loosen the lower shock fasteners. Swing the shock away from its upper end mounting point.

4B. **Refer to FIG. 5-1. Weld the upper spring tower to the main cradle mounting plate as shown in the attached diagram. All welding should be done using a 7018 low hydrogen electrode or equal. Apply a minimum of 300 amps, reverse polarity. All surfaces in the area of the weld should be cleaned of dirt, grease, paint, etc. (using a wire brush, side wheel grinder, or similar method) before welding. Approximately 2 feet of weld will be required per upper spring tower.**

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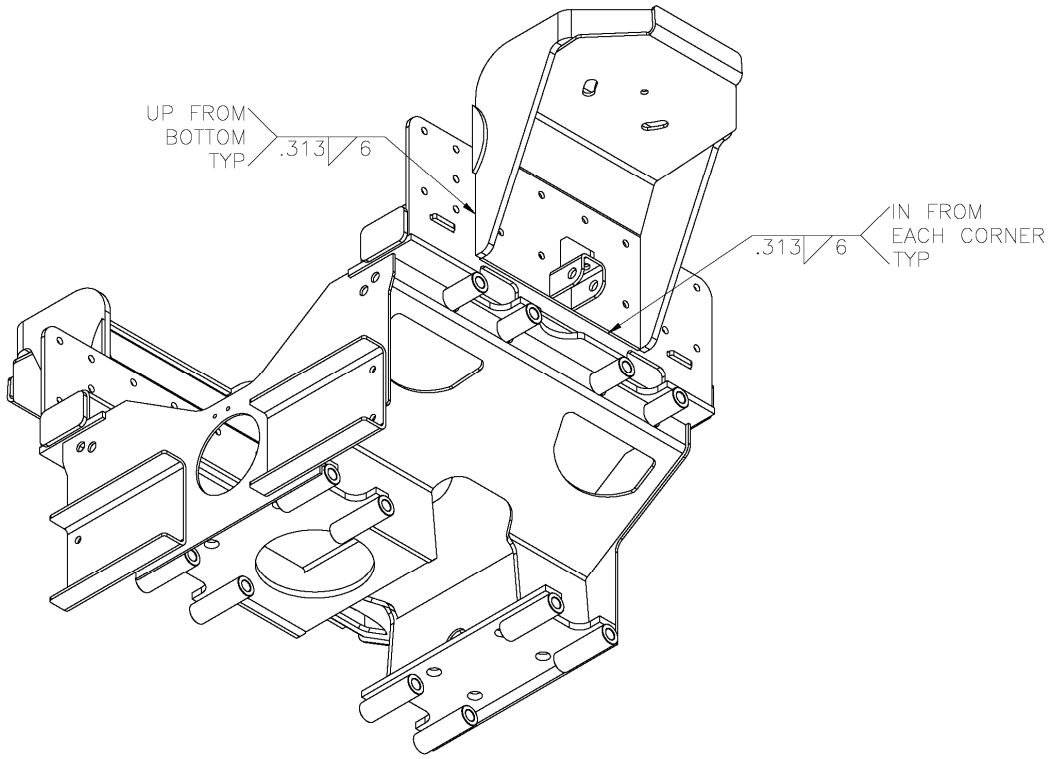

FIG.5-1

5B. Swing the shock back into proper position (if required). Re-install all upper shock fasteners. Tighten upper and lower shock nuts to 160 ft/lbs of torque.

6B. Replace the air spring in it's original position.

7B. Re-install the air spring lower fasteners. Tighten all lower fasteners to 25 ft/lbs of torque.

8B. Re-install the air spring upper fasteners. Tighten all upper fasteners to 50 ft/lbs of torque. Re-connect the upper air lines to the air spring. (**Note: Apply 81801 Pipe Sealant w/Teflon or equivalent to fitting threads only.)**

9B. Re-connect all electrical components disconnected prior to welding.

10B. Start vehicle's engine (**NOTE:** make certain vehicle is not "in gear" and that park brakes remain set) and allow air system pressure to build to a maximum PSI. Turn off vehicle's engine.

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11B. Check all air line connections for possible leaks. Use of soap and water solution is suggested for this procedure. Re-tighten and/or re-seal the threads if bubbles are observed.

12B. **ONLY AFTER BOTH SIDES ARE COMPLETE:** Replace front tires on the vehicle. Tighten all wheel nuts to **450-500** ft/lbs of torque.

13B. **ONLY AFTER BOTH SIDES ARE COMPLETE:** Jack the vehicle to a point where jack stands can be removed. Remove jack stands. Return vehicle to ground. Remove jacks from under vehicle.

UPPER SPRING TOWER REPLACEMENT PROCEDURE (SUBSET "C")

WARNING: ***DISCONNECT BOTH POSITIVE AND NEGATIVE BATTERY CABLES, GROUND CABLE TO ALTERNATOR, POWER CABLES AND CONNECTORS TO MULTIPLEX CONTROLLERS AND NODES, AND ALL CONNECTORS FROM ALL ECUs (Electronic Control Modules) PRIOR TO PERFORMING ANY WELDING OPERATIONS.***

'GROUND' THE WELDING APPARATUS AS CLOSE TO THE AREA TO BE WELDED AS POSSIBLE. NEVER USE THE ENGINE OR TRANSMISSION AS A GROUND POINT.

FAILURE TO DO SO MAY CAUSE DAMAGE TO ELECTRICAL COMPONENTS AND THE VEHICLE'S ELECTRICAL SYSTEM.

WARNING: **COMPLETELY EXHAUST VEHICLE'S AIR SYSTEM BEFORE PROCEEDING WITH STEP 1B. FAILURE TO DO SO MAY RESULT IN BODILY INJURY OR DEATH.**

NOTE: Two upper spring tower assemblies are supplied; Ridewell P/N 3450100 upper spring tower is for use on the vehicle's left (or street) side and Ridewell P/N 3450101 upper spring tower is for use on the vehicles right (or curb) side. These assemblies are NOT interchangeable and must be installed on the side for which they were intended.

1C. Disconnect all upper air lines to the air spring.

2C. Remove all fasteners attaching the air spring. Remove the spring and set aside for later re-use.

3C. Remove the upper and lower shock mounting fasteners. Remove the shock and set aside for later re-use.

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4C. Remove the upper spring tower fasteners and the damaged upper spring tower. Discard damaged upper spring tower. Properly dispose of fasteners.

5C. Replace upper spring tower using the correct new upper spring tower assembly and new fasteners. Tighten all fasteners to 85 +/- 5 ft/lbs of torque.

6C. **Refer to FIG. 5-1. Weld the upper spring tower to the main cradle mounting plate as shown in the attached diagram. All welding should be done using a 7018 low hydrogen electrode or equal. Apply a minimum of 300 amps, reverse polarity. All surfaces in the area of the weld should be cleaned of dirt, grease, paint, etc. (using a wire brush, side wheel grinder, or similar method) before welding. Approximately 2 feet of weld will be required per upper spring tower.**

7C. Replace the shock in it's original position. Re-install all upper and lower shock fasteners. Tighten upper and lower shock nuts to 160 ft/lbs of torque.

8C. Replace the air spring in it's original position.

9C. Re-install the air spring lower fasteners. Tighten all lower fasteners to 25 ft/lbs of torque.

10C. Re-install the air spring upper fasteners. Tighten all upper fasteners to 50 ft/lbs of torque. Re-connect the upper air lines to the air spring. (**Note: Apply 81801 Pipe Sealant w/Teflon or equivalent to fitting threads only.)**

11C. Re-connect all electrical components disconnected prior to welding.

12C. Start vehicle's engine (**NOTE:** make certain vehicle is not "in gear" and that park brakes remain set) and allow air system pressure to build to a maximum PSI. Turn off vehicle's engine.

13C. Check all air line connections for possible leaks. Use of soap and water solution is suggested for this procedure. Re-tighten and/or re-seal the threads if bubbles are observed.

14C. **ONLY AFTER BOTH SIDES ARE COMPLETE:** Replace front tires on the vehicle. Tighten all wheel nuts to **450-500** ft/lbs of torque.

15C. **ONLY AFTER BOTH SIDES ARE COMPLETE:** Jack the vehicle to a point where jack stands can be removed. Remove jack stands. Return vehicle to ground. Remove jacks from under vehicle.