72185 County Road 3
Nappanee, IN 46550

Newmar Corporation
Warranty Department

800.858.4924
Fax 219.773.2007

Technical Service Bulletin

Date Issued	Model Year(s) Affected	Model(s) Affected	TSB #
05/03/01	2001	DIESEL PUSHERS	217

Brand

All ☐ American Star ☐ Kountry Star ☐ Dutch Star ■
NewAire ☐ Mountain Aire ■ Kountry Aire ■ London Aire ■

Type

All ☐ T T ☐ F W ☐
C A ☐ D P ■ D B ☐

- ☐ Air Conditioning & Heating
- ☐ Appliances & Accessories
- ☐ Cabinets & Furniture
- ■ Chassis Components
- ☐ Construction Components
- ☐ Electrical Components
- ☐ Exterior Components
- ☐ Interior Components
- ☐ Plumbing & Bath Components
- ☐ Windows, Awnings, Vents, & Doors

Description of Problem

Technical information bulletins from Spartan Motors.

Recommended Solution

Please contact Spartan Motors with the coach VIN number to receive further instructions on how to respond to the following bulletins.

If you have any questions regarding this T.S.B., please contact a Warranty Service Representative at Newmar Corporation.

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SPARTAN MOTORS
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Newmar Corporation
TSB 217
Page 1/9

TIB 01-1201
SPEC (01004)
Page 1 of 9
April, 2001

Technical Information Bulletin

SUBJECT:

WABCO Air Compressor Failure; Cummins Campaign Bulletin #0111.

Cummins Inc. has determined that there is a potential for an air compressor failure which may result in a loss of power steering assist in certain RV's powered by Cummins ISC engines equipped with a Wabco Air Compressor on Spartan Chassis'.

This procedure to be completed concurrently with Cummins Campaign Bulletin #0111 ONLY.

APPLIES TO:

Spartan Chassis' Equipped with a Cummins ISC Engine and a WABCO Air Compressor

CONDITION:

Operator May Experience Loss of Power Steering Assist and/or Vehicle May Incur Damage to Hydraulic Steering System Components

CAUSE:

WABCO Air Compressor Failure

SERVICE PROCEDURE:

Labor Time: Set-up/Inspection 2.5 Hours
Add: Hydraulic System Rework 3.5 Hours

Inspect/evaluate the condition of the hydraulic pump on every vehicle that is included in Cummins Campaign Bulletin #0111. Depending upon conditions, the hydraulic pump, manifold cartridge valves, and hydraulic oil filters may require replacement. Flush and refill the hydraulic system. **At minimum a new hydraulic pump gasket and Citgo AW-32 hydraulic oil are required for inspection.**

PLEASE READ THE ENTIRE BULLETIN BEFORE PROCEEDING WITH ANY WORK.

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SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 2/9

PARTS LIST:

QTY	Part Number	Description
1	01004	Kit – Hydraulic System/Cummins Campaign #0111
*5 to 6 gallons		Hydraulic Oil- Citgo AW-32 or equivalent
**1	154916	Gasket- Hydraulic Pump **(Required)**

*** As needed**

****A new gasket must be installed even if just the inspection process is performed.**

Kit # 01004 Contains:

1	1046-KK1	Pump – Hydraulic
1	154916	Gasket – Hydraulic Pump
1	1163-FF1	Valve - Relief
1	0831-FF1	Valve – Flow Control
3	87610A	Filter – Hydraulic Reservoir
1	TIB 01-1201	Bulletin Instructions

TO ORDER PARTS: *Spartan Service Parts Department: 1-800-722-3025*
Fax : 1-888-879-5671

You must have the Sales Order (SO) number of the vehicle and the engine serial number when ordering parts. Be prepared to supply these to the Spartan Service Parts Representative. The SO number is the last six digits of the Vehicle Identification Number (VIN), which is displayed on a VIN plate inside the windshield on the drivers side dash area. The engine serial number is located on the engine dataplate. Refer to the Cummins Operation and Maintenance Manual for exact location.

STEP BY STEP INSTRUCTIONS:

A. PREP

1. Park vehicle on flat working surface and engage park brake.
2. Be sure the engine is turned off and wheels are secured/chocked.

B. HYDRAULIC SYSTEM INSPECTION:

3. Disconnect hydraulic pump from compressor by removing the (2) mounting bolts. This should be done without disconnecting the hoses. Retain mounting hardware.

   Note: Pump must be supported. Do not allow the pump to "hang" from the hoses.

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SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 3/9

TIB 01-1201
SPEC (01004)
Page 3 of 9
April, 2001

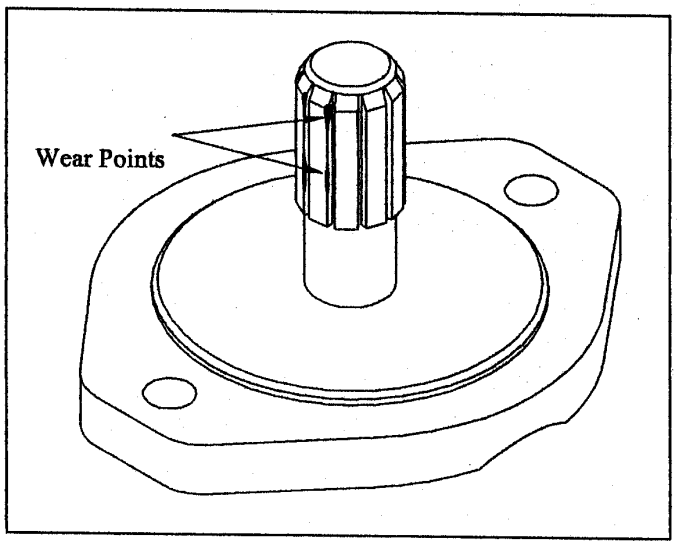
4. Pump Inspection- check for all conditions:

   4.1 Check for pump set-up by rotating the shaft. The shaft should rotate smoothly. If shaft cannot be rotated, hydraulic components must be replaced.

   4.2 Check for bushing/bearing wear by holding the pump firmly and attempting to move the shaft "side-to-side". Any "play", or movement of the shaft with respect to the pump, indicates excessive bushing or bearing wear in which case the pump requires replacement.

   4.3 Refer to FIG. 3-1. Inspect for shaft wear. Splines should appear symmetrical, with no metal worn from the splined area. Look closely for any erosion of material from this area of the spline. Any wear to the shaft splines will lead to an improper fit, causing premature pump failure. If inspection indicates even minor damage to the splines, the pump must be replaced.

   Note: One side of each spline will appear more "shiny" than the rest of the shaft. This is normal.



The pump shaft in this illustration exhibits early signs of wear as a result of improper lubrication and/or shaft alignment. In this instance, the wear is on only one side of each spline. Further use of a pump showing this type of wear anywhere on the splines can result in premature failure of the pump, the compressor, or both.

FIG. 3-1

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Fax 219.773.2007

SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 4/9

4.4 Inspect for presence of metal debris/shavings in the engine oil. For thorough inspection, perform both methods:

a) Using a clean paper towel, wipe a sample of engine oil from the pump shaft or air compressor cavity. Inspect for any reflective material.

b) Using a flashlight, check the condition of the engine oil in the air compressor cavity by inspecting for reflective material. If reflective material is observed, engine oil/filter must be changed (refer to Cummins bulletin).

4.5 If, after all inspections have been performed, the pump does not require replacement, reassemble pump to engine using a new gasket and proceed to step #4.6. **For pump replacement, proceed to Section C.**

4.6 Perform hydraulic system pressure check. Install an SAE pressure gauge to the priority block gauge port as shown (refer to FIG. 4-1). The gauge port is an o'ring standard thread port and will not connect directly to a gauge fitted with a male threaded NPT (National Pipe Thread) end.

4.7 Check system pressure when engine has achieved normal coolant operating range. Refer to the Cummins Operation and Maintenance Manual for specific range.

To check pressure, increase engine speed to a minimum of **2000 RPM** while another technician observes the gauge reading. During engine warm-up, pressure reading may reach as high as 3100 psi..

The gauge should read **2950 psi +/- 50 psi. If gauge reading is below this specified range, pump must be replaced; go to section C after shutting off engine and allowing system to cool.**

4.8 Shut engine off.

4.9 Remove pressure gauge from manifold block and reinstall plug.

4.10 Check and top off hydraulic fluid in reservoir with Citgo AW-32 hydraulic oil or equivalent. If pump replacement is not required, procedure is complete.

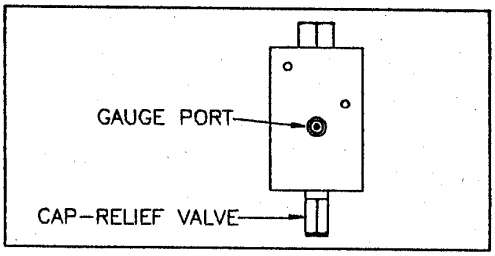

FIG. 4-1

72185 County Road 3
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Fax 219.773.2007

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C. HYDRAULIC SYSTEM REWORK/PUMP REPLACEMENT

Prepare for the safe containment and disposal of any hydraulic oil. Keep all hydraulic components free from dirt and contaminants. ALL hydraulic system components must be cleaned with brake parts cleaner prior to re-assembly of system.

5. Disconnect (**DO NOT CUT**) the large "push-on" suction hose at the pump. Approximately 4 to 5 gallons of oil will drain from the reservoir through this hose.

   Note: A complete visual examination of the hose must be carefully performed to ensure it is reusable. Determination is made by conducting a visual inspection for cuts in the cover from prior clamping, exposed fabric reinforcement, and chafed/weathered material. A functional review must also be performed at full working condition following hose reinstallation.

6. Disconnect (**DO NOT CUT**) the smaller hose from the pump. Set pump aside for reuse of fittings.

   Note: Refer to the hose examination note in step #5; the same applies.

7. Remove both cartridge valves from the manifold.

   Note: It may be necessary to remove the manifold mounting bolts, but do not remove any plumbing connections from the manifold (see FIG. 6-1).

8. Disconnect the hoses from each of the hydraulic coolers and drain all oil from the coolers and hoses.

9. Remove both hoses from the steering gear and allow all oil to drain.

10. Remove the filters from the hydraulic reservoir. Rinse the inside of the reservoir with brake parts cleaner, and install the new replacement filters (Refer to FIG. 7-1).

11. Position the new pump mounting gasket and install the new pump to the compressor using the original bolts: tighten the bolts to specified torque (Refer to FIG. 8-1).

12. Reinstall hoses to the hydraulic pump.

    Note: Check for hydraulic oil to begin flowing at the suction connection on the pump. When oil leaks from this point, tighten hose clamp.

13. Install the new priority cartridge valve into the manifold (larger valve on top). If manifold was loosened to remove valves, tighten as necessary. (Refer to FIG. 9-1)

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Nappanee, IN 46550

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Warranty Department

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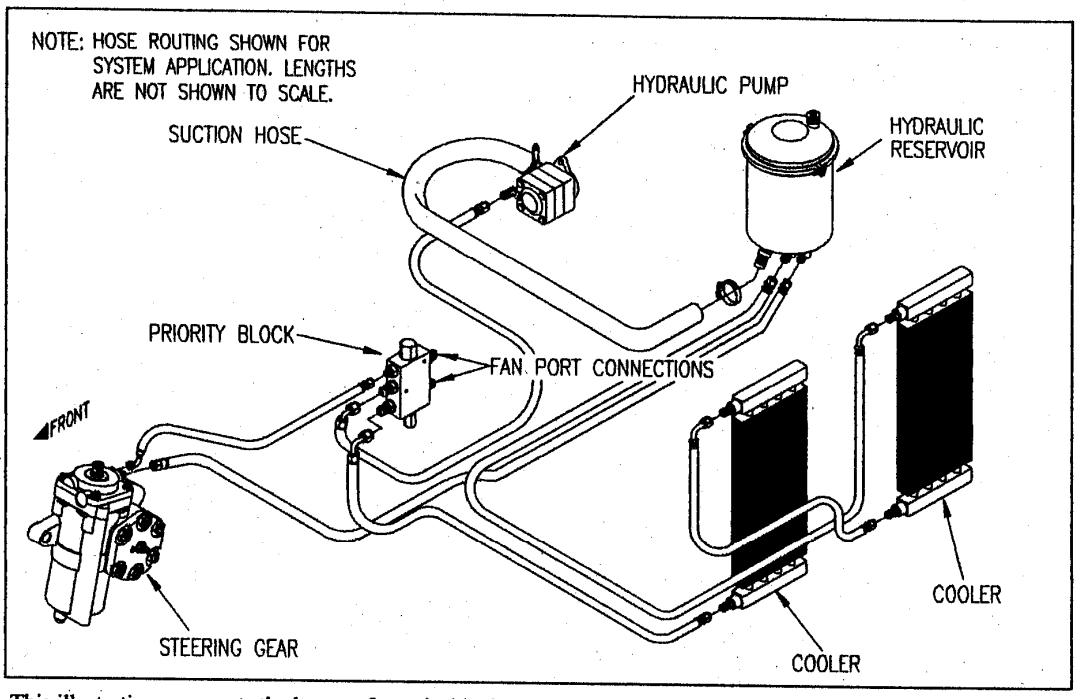
Fax 219.773.2007

SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 6/9



This illustration represents the layout of a typical hydraulic system. Component locations (i.e. manifold block, reservoir, etc.) may vary.

FIG. 6-1

14. Fill the reservoir with Citgo AW-32 hydraulic oil (or equivalent). Total amount required is between 5 and 6 gallons.
15. Watch for oil to begin flowing from the relief valve cavity in the manifold. Inspect the stream of oil flowing from this location; when the oil stream is free from air bubbles, install the relief valve cartridge. (Refer to FIG. 9-1)
16. Reattach hoses at the hydraulic coolers.

    Note: Take special care to prevent damage to the coolers.
17. Secure all hoses with tie straps in a manner as to not subject them to any chafing conditions and in compliance with the routing as stated above.

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Fax 219.773.2007

SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 7/9

TIB 01-1201
SPEC (01004)
Page 7 of 9
April, 2001

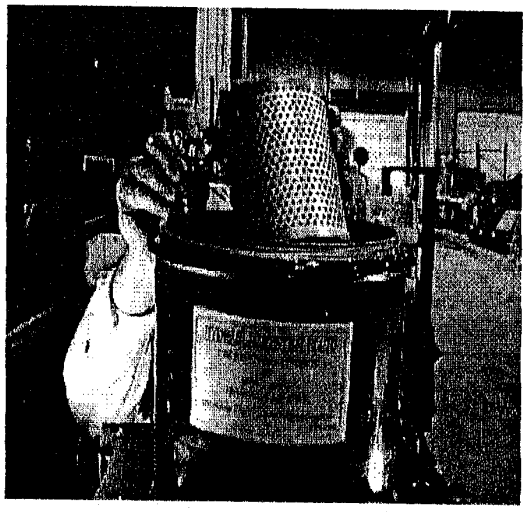

FIG. 7-1

18. Fill hydraulic reservoir with Citgo AW-32 hydraulic oil or equivalent.

    NOTE: Fluid level must not be allowed to drop significantly or run out of the reservoir.

19. Watch for oil to begin flowing from the hoses at the steering gear. Reattach hoses when flowing fluid is free from air bubbles.

    19.1 Start and run the engine for approximately 10 seconds and turn off.

    19.2 Check and refill reservoir. Repeat check and refill process at least 3 times until the reservoir fluid level reads consistently full.

    19.3 Start and run engine at idle for at least 2 minutes and turn off; **DO NOT activate (turn steering wheel) the steering system.** Check the fluid level in the reservoir; refill as necessary. Check for any leaks, especially at or near clamps.

    19.4 Restart the engine, and with engine idling, turn the steering wheel from full left to full right several times until the steering wheel turns smoothly in both directions. Air in the steering system causes steering to lose power assist. Add hydraulic oil as necessary for a full reservoi-

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Fax 219.773.2007

SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 8/9

TIB 01-1201
SPEC (01004)
Page 8 of 9
April, 2001

19.5 **For manual bleed steering gears only**: Refer to FIG. 9-2. Stop steering and loosen the manual bleed screw approximately one turn. Allow air and aerated fluid to 'bleed' out until only clear fluid is seen. Close bleed screw and refill reservoir as necessary.

19.6 Perform pressure check as described in steps 4.6 through 4.10.

20. Test drive vehicle.

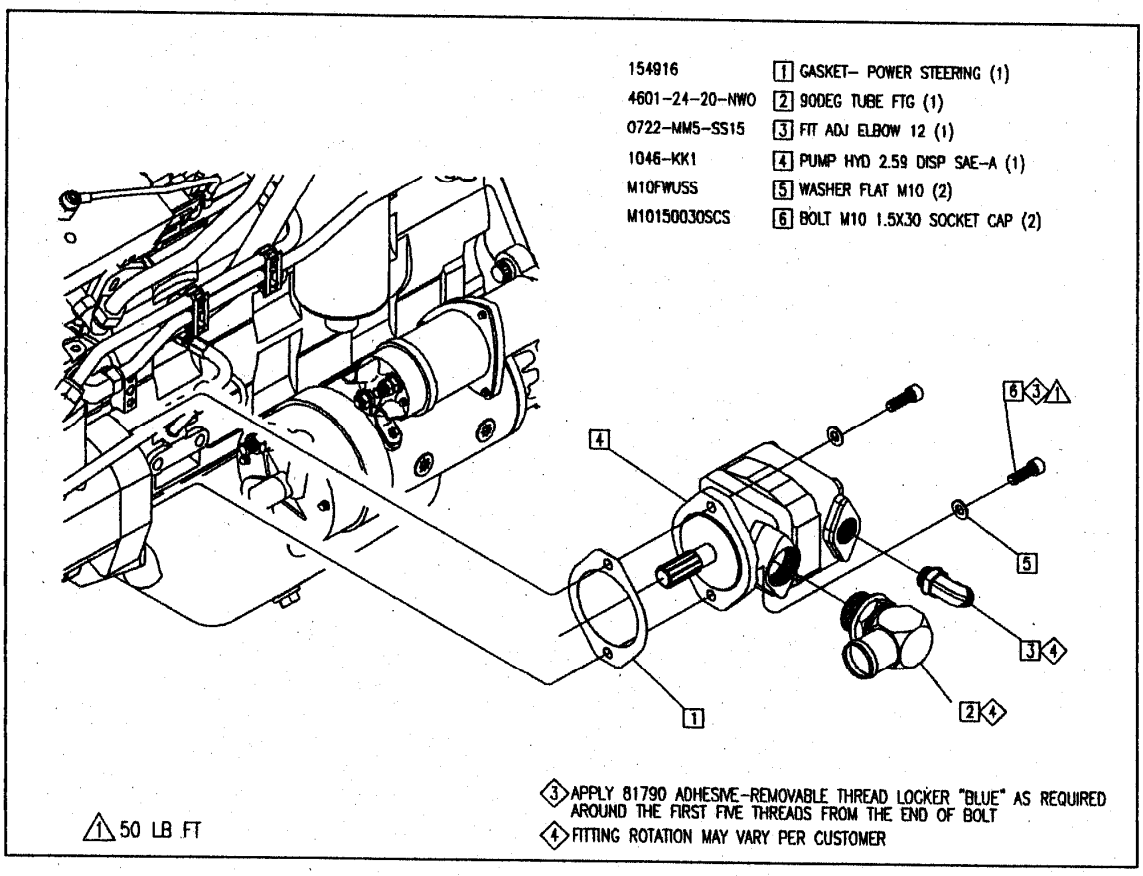

FIG. 8-1

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SPARTAN MOTORS CHASSIS, INC.

Newmar Corporation
TSB 217
Page 9/9

TIB 01-1201
SPEC (01004)
Page 9 of 9
April, 2001

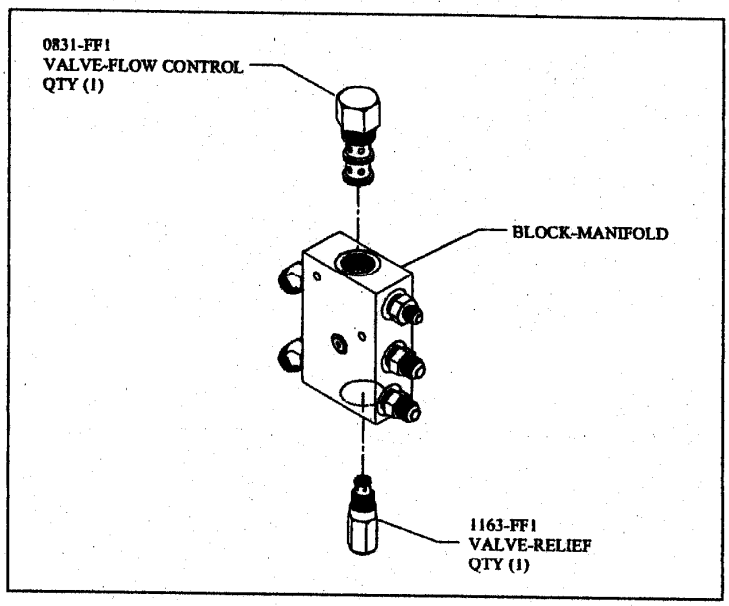

FIG. 9-1

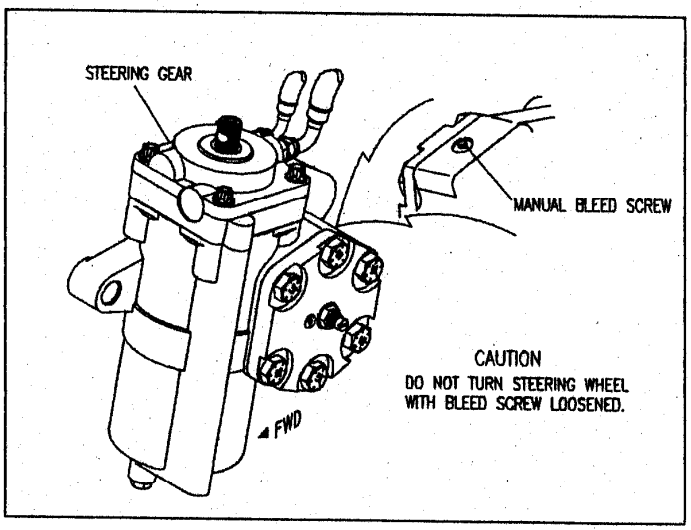

FIG. 9-2

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