Added and Removed Firestone Part Numbers from Catalog

Items Removed From the Previous Catalog

Bellows No.	Assembly No.	Notes		Bellows No.	Assembly No.
1T15L-2	W01-358-8907			1T15V-3	W01-358-9576
1T15M-4	W01-358-9691			1T15VLT-10.5	W01-358-9580
1T15M-6	W01-358-9084			26C	W01-358-7503
1T15M-9	W01-358-9130	USE 9394		22C	W01-358-6850
1T15M-9	W01-358-9241	USE 9394		233-2	W01-358-7784
1T15TQ-1	W01-358-5774			203C	W01-358-7510
1T15TQ-5	W01-358-5800				

Added and Removed Firestone Part Numbers from Catalog

Items Added to the Current Catalog

Bellows No.	Assembly No.		Bellows No.	Assembly No.
1T14CB-1	W01-358-8872		1T15M-11	W01-M58-9668
1T14C-5	W01-358-5336		1T15T-1	W01-358-9651
1T14C-6	W01-358-5439		1T15TQ-1	W01-358-5789
1T15AA-3	W01-358-9553		1T15TQ-1	W01-358-5792
1T15CCR-6	W01-358-8184		1T15VP-4	W01-358-9579
1T15LA-(-0)	W01-358-9547		1T15VMW-8	W01-358-6258
1T15LA-0	W01-358-9541		1T15ZR-6	W01-358-9780
1T15LA-0	W01-358-9675		1T15ZR-6	W01-358-9781
1T15L-1.5	W01-358-8886		1T15ZR-6	W01-358-9782
1T15L-2	W01-358-9562		1T15AEZR-3	W01-358-8632
1T15LP-2	W01-358-9554		1T17B-5	W01-358-8723
1T15L-4	W01-358-8942		1T17B-5	W01-358-8782
1T15M-0	W01-358-8971		1T17C-3	W01-358-8733
1T15M-0	W01-358-8972		1T17C-3	W01-358-8737
1T15M-0	W01-358-9505		1T17C-3	W01-358-8738
1T15M-2	W01-358-7667		1T17CA-3	W01-358-8614
1T15M-2	W01-358-8207		1T17CD-3	W01-358-8617
1T15M-2	W01-M58-8650		1T17CA-6	W01-358-8623
1T15M-2	W01-358-8878		1T17C-8	W01-M58-8712
1T15M-2	W01-358-8935		1T17CL-9.5	W01-358-9580
1T15M-2	W01-358-9556		1T17CL-9.5	W01-358-9581
1T15MT-3	W01-358-9774		1T19F-3	W01-358-8761
1T15M-4	W01-358-8813		1T19F-3	W01-3588787
1T15M-4	W01-358-8816		1T19LF-7	W01-358-8774
1T15M-4	W01-358-8817		1T19F-7	W01-358-9811
1T15M-4	W01-358-9507		1T19L-11	W01-358-8796
1T15M-6	W01-358-8824		1T19LE-12	W01-358-8793
1T15M-6	W01-358-9474		1T19ZK-5.7	W01-358-8050
1T15M-6	W01-M58-6260		255-1	W01-358-6831
1T15MPW-7	W01-358-6262		264	W01-358-3420
1T15M-7.5	W01-358-8888		26C	W01-358-7705
1T15M-7.5	W01-358-9971		20F	W01-358-6856
1T15M-7.5	W01-358-9972		20F	W01-358-6884
1T15MT-8	W01-358-9654		20F	W01-358-7686
1T15M-9	W01-358-8842		20F	W01-358-7892
1T15M-9	W01-358-8864		20F-2	W01-358-5900
1T15M-11	W01-358-9538		21D	W01-358-8171

Air Spring Warranty Evaluation Criteria

Firestone air springs are designed to provide years and thousands of miles of trouble free service. The durability of Firestone air springs is such that they will often outlast other maintenance items on your suspension, such as bushings, shocks, leveling valves or regulators.

Airide® springs by Firestone are warranted to be free of material defects and/or workmanship for various periods of time, depending upon the application. Free replacements may be provided by the original manufacturer, manufacturer's representative or dealer, or by any Firestone air spring distributor. All labor and incidental costs associated with replacing the defective air spring are the responsibility of the purchaser, or end user.

Firestone Industrial Products Company offers a complete line of Airide springs, with replacement springs available for virtually every vehicular air suspension system.

Since each individual air spring is closely examined and pressure tested at the factory, the vast majority of premature failures and consequent warranty returns are found not to be defective, but fail because of abuse caused by other problems associated with the suspension.

Before you install a new air spring, you should carefully examine the old one to determine what caused it to fail. If it was due to a defect in the suspension system, then the new air spring will also fail unless you correct the problem.

The information on the next two pages was developed to illustrate the types of failures that may occur, and to assist you in determining the cause and corrective action required.

When applied and maintained properly, *Airide*® springs can provide thousands of miles of trouble-free service. Most failures are caused by a lack of suspension maintenance or improper application. This is a guide to common air spring failures that are *not* covered by warranty.

MISALIGNMENT

Appearance or Condition

- Off-center bumper contact
- Same as abrasion or bottoming out

Possible Causes

- Worn bushing
- Improper suspension installation

LOOSE GIRDLE HOOP

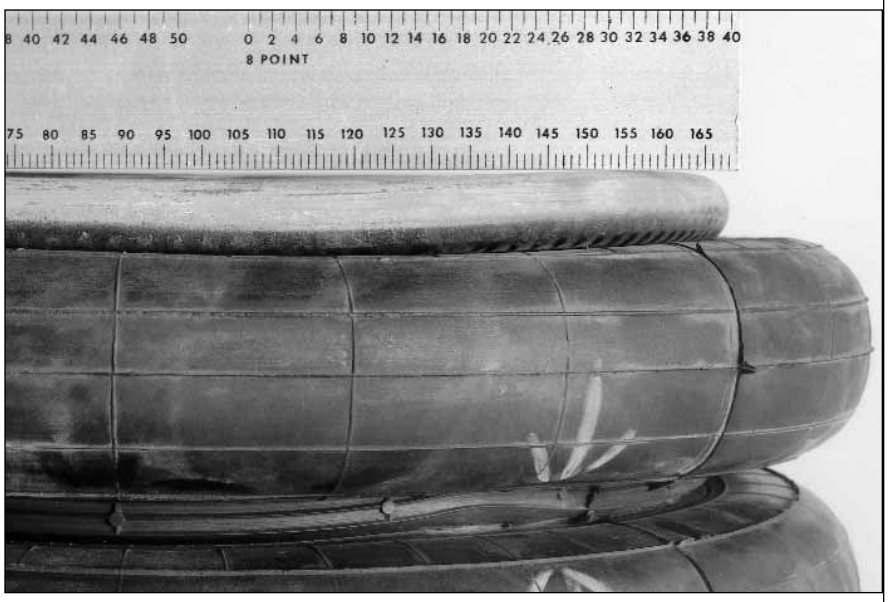
Appearance or Condition

- Rubber bellows distorted and girdle hoop torn loose

Possible Causes

- Running at extended positions with low air pressure

BOTTOMING OUT



Appearance or Condition

- Bead plate concave
- Internal bumper loose
- Hole in girdle hoop area (convoluted)
- Hole in bead plate junction area
- Leaking around blind nuts

Possible Causes

- Broken or defective shock absorber
- Defective leveling valve
- Overloaded vehicle
- Pressure regulator set too low
- Wrong air spring (too tall)

WARRANTY EVALUATION CRITERIA

ABRASION

Appearance or Condition

- Hole rubbed into side of bellows
- Hole in bellows area that rolls over piston (reversible sleeve style)

Possible Causes

- Structural interference, such as:
  - -broken shock
  - -loose air line
  - -misalignment
  - -worn bushings
- No air pressure (reversible sleeve style)
- Foreign material (sand, rocks, etc.)
- Wrong air spring

CIRCUMFERENTIAL CUTS

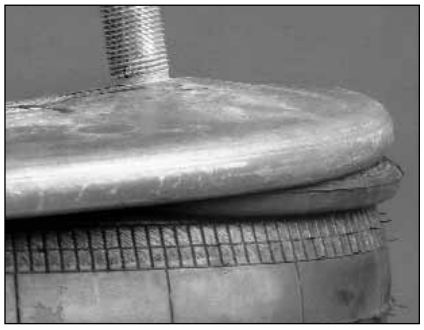
Appearance or Condition

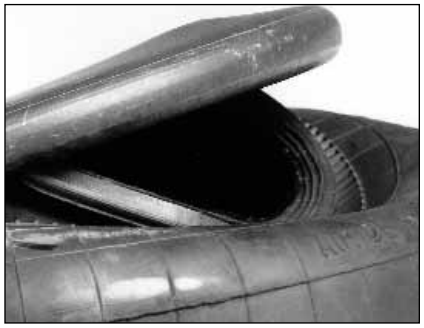
- Bellows cut in circle at bead plate junction
- Bellows cut in circle at piston junction (reversible sleeve style)

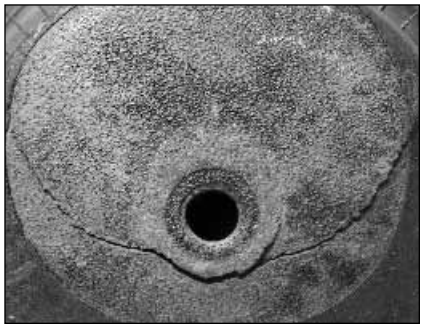
Possible Causes

- High pressure, fully extended for long periods of time
- Impact in compressed position

OVER EXTENSION







Appearance or Condition

- Bead plate convex, especially around blind nuts or studs
- Rubber bellows separated from bead plate
- Leaking at blind nuts or studs
- Leaking at end closure (reversible sleeve)
- Loose girdle hoop on convoluted style

Possible Causes

- Broken or wrong shock absorber
- Defective leveling valve
- Ride position too high
- Defective upper stop (lift)
- Wrong air spring (too short)

PREVENTIVE MAINTENANCE CHECKLIST

Listed below are items that can be checked when the vehicle is in for periodic maintenance.

Never attempt to service the air suspension on a truck or trailer with the air springs inflated.

1 Inspect the O.D. of the airspring. Check for signs of irregular wear or heat cracking.

2 Inspect air lines to make sure contact doesn't exist between the air line and the O.D. of the air spring. Air lines can rub a hole in an air spring very quickly.

3 Check to see that there is sufficient clearance around the complete circumference of the air spring while at its maximum diameter.

4 Inspect the O.D. of the piston for buildup of foreign materials. (On a reversible sleeve style air spring, the piston is the bottom component of the air spring).

5 Correct ride height should be maintained. All vehicles with air springs have a specified ride height established by the O.E.M. manufacturer. This height, which is found in your service manual, should be maintained within 1/4". This dimension can be checked with the vehicle loaded or empty.

6 Leveling valves (or height control valves) play a large part in ensuring that the total air spring system works as required. Clean, inspect and replace, if necessary.

7 Make sure you have the proper shock absorbers and check for leaking hydraulic oil and worn or broken end connectors. If a broken shock is found, replace it immediately. The shock absorber will normally limit the rebound of an air spring and keep it from overextending.

8 Check the tightness of all mounting hardware (nuts and bolts). If loose, re-torque to the manufacturer's specifications. Do not over-tighten.

CLEANING

9 **APPROVED**

Approved cleaning media are soap and water, methyl alcohol, ethyl alcohol and isopropyl alcohol.

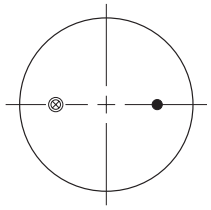
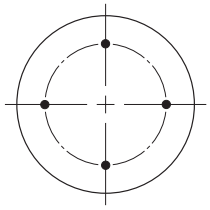
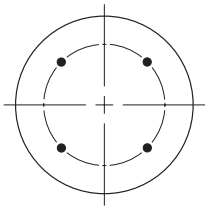
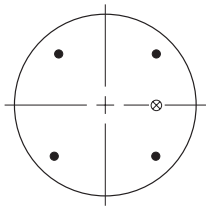
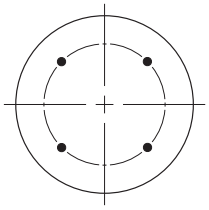
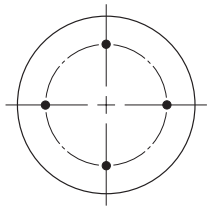
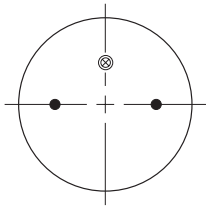
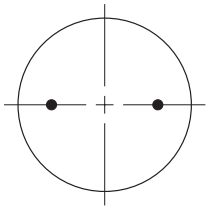
NON-APPROVED

Non-approved cleaning media include all organic solvents, open flames, abrasives and direct pressurized steam cleaning.

The total inspection process described on this page can be done in just a matter of minutes. If you find one of the above conditions exists, please take corrective action to ensure that it is fixed properly. It will save you both time and money.

Alignment Definitions

Alignment is based on the orientation of the lower bead plate or piston compared to the upper bead plate. Alignments other than those shown are noted in the bottom view.

BEAD PLATE TOP VIEW	BEAD PLATE OR PISTON BOTTOM VIEW	
	PARALLEL ALIGNMENT	45 DEGREE ALIGNMENT
I. 		
II. 		
III. 		90° ALIGN.