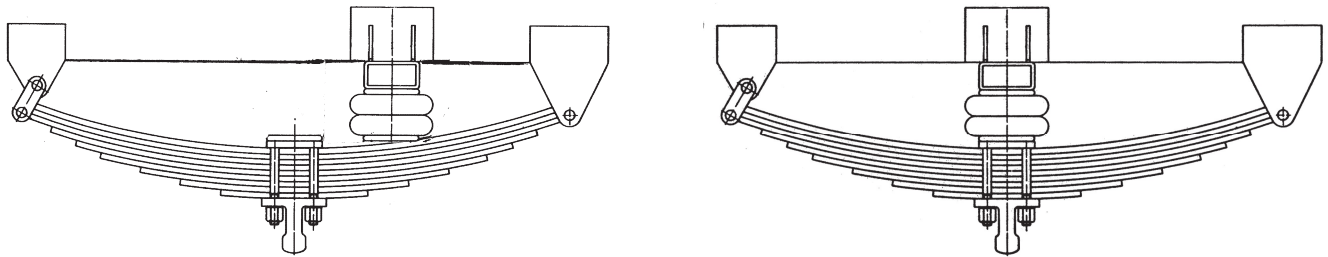


In 1998/89 Load-Share® customers began to complain of excessive weight transfer, when the pusher or tag axle was lifted. This weight transfer would provoke extreme sagging of the truck and/or trailer suspension springs, resulting in premature spring failure and in the case of steering axle suspensions, steering problems.

Load-Share® installed air bellows between the axle beam and the vehicle frame rails or leaf springs.



Picture No. 1 shows an air bellow system installed between the suspension springs and the truck frame rail. Picture No. 2 shows an air bellow installed between the suspension axle and the vehicle frame.

PURPOSE OF DUAL BAG INSTALLATION

Two air bellows are installed on either side of the vehicle centreline to keep the vehicle from sagging to a specific side. This is accomplished by supplying the air bellows with a controlled air pressure. These pressurized bellows are now capable of transferring a portion of the vehicle weight directly to the axle(s) centre. The use of such an air bellow system will keep the truck/trailer frame from sagging in instances where the weight is shifted, such as under braking or load transfer when lifting auxiliary axles.

In the case of excessive weight on one side of the vehicle, for instance snow plow trucks equipped with wing blades, a second air pressure control system can be used to supply a specific air pressure to the proper side of the vehicle.

THE BENEFITS OF AN AIR HELPER SPRING SYSTEM

Various systems have been tested under the most rugged conditions and in all cases a 100% improvement in vehicle performance was observed. Listed below are several benefits noticed when using the air bag setup.

- 1) Eliminate leaf spring sag
- 2) Frame was kept level under braking
- 3) Frame was kept level when weight was shifted
- 4) Frame was kept level when auxiliary suspensions were raised
- 5) Improved steering characteristics of the vehicle
- 6) Extended the life of steering, spring and pivot bushing components
- 7) Vehicle handling was improved
- 8) Weight distribution was improved



THE SYSTEM

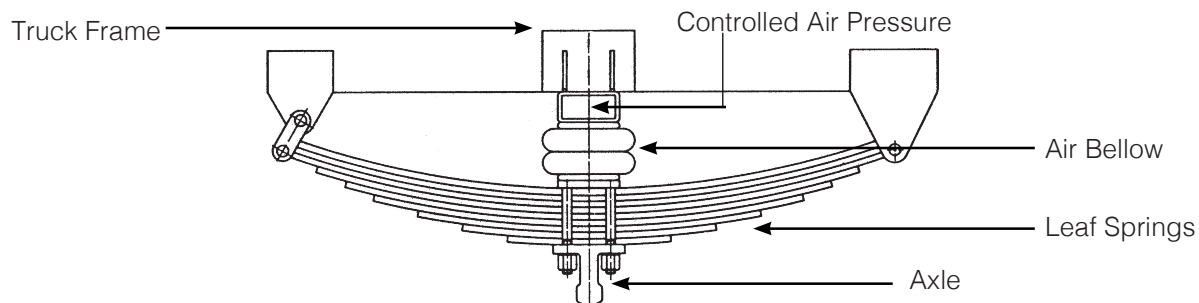
The Load-Share® system comes complete with air bellows, mounting hardware, brackets, pressure control system and installation instructions. The air bellows and brackets are designed to fit in the open space between the axle centreline, spring package and the bottom of the vehicle frame, as illustrated in Pictures 1 and 2.

SYSTEM OPERATION

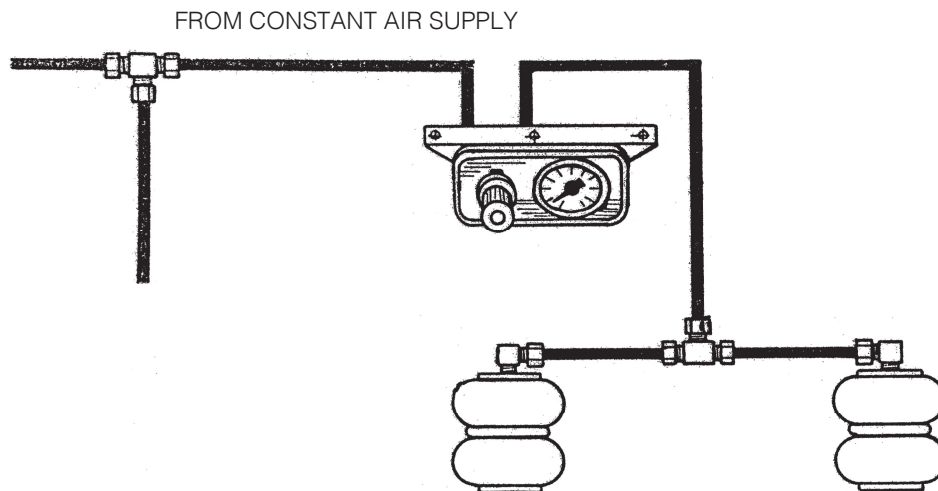
There are several possibilities when considering the air bag system operation or control. Three of these systems have been tested and are supplied as standard equipment.

SYSTEM ONE

Regulated air pressure is supplied to the air bellows. This controlled or regulated air pressure will fill each bellow extending it in length. Therefore, as the air spring is located between the axle and the vehicle frame, the truck/trailer suspension will be leveled to the proper height. If the vehicle was loaded with payload, the air bellows would transfer part of the weight directly to the axle and through the tires to the pavement. Therefore, this will help to reduce the load transferred through the leaf springs and shackles, reducing the amount of wear on these particular components.



The air pressure is controlled by means of a pressure regulator which can be adjusted manually by the operator or truck driver. Pressurized air is supplied to one side of the regulator and the controlled air is released into the system. This can be accomplished by use of a knob or lever on the regulator unit. The required air pressure can be read on a pressure gauge located in the system. The required air pressure is supplied by the vehicle's standard air compressor system as outlined on the attached schematic. This control unit is usually installed in the vehicle dashboard.



Congratulations on your purchase of a new Load-Share® air helper spring kit. This kit is designed so that your Load-Share® helper springs can be adjusted from inside the cab. Please take a few minutes to read through the instructions, identify the components, and learn how to properly install your cab control kit and helper springs.

INSTALLATION INSTRUCTIONS

STEP 1: Prepare the vehicle.

With the vehicle on a solid surface, jack up the vehicle front axle, let the axle down on jack stands and remove the wheels.

To eliminate step 1, turn the wheels instead. This will provide enough space to accomplish drilling procedure with the use of a hand drill.

Safety caution: Turn engine off while drilling.

STEP 2: removing of axle spring pad stop cushion.

Remove one axle spring pad stop cushion and replace with bottom casting item #4, retorque "U" bolts. Remove spring pad stop cushion on opposite side and replace with bottom casting item #4, retorque "U" bolts.

Note: Bellows have built-in bumpers.

Replace "U" bolts if needed.

STEP 3: Installing top angle bracket.

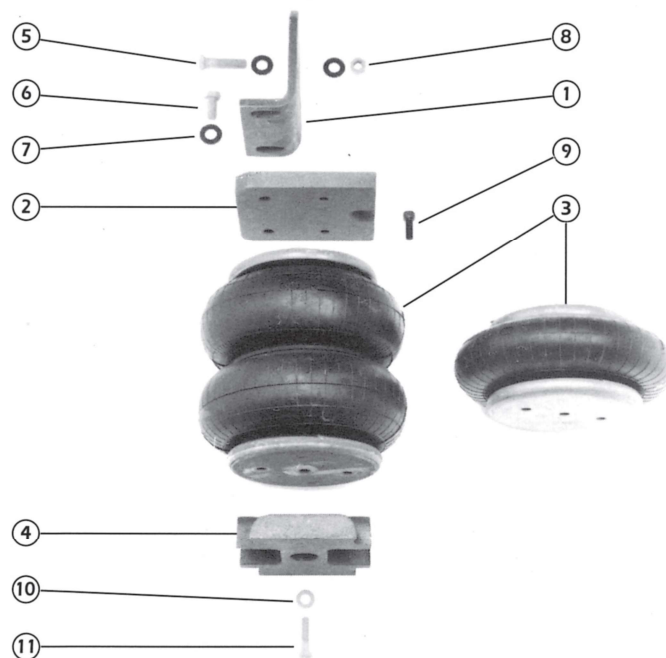
It is important that the center of top angle bracket, item #1 is aligned with center of the bottom casting item #4. Using a square, draw a pencil line on the truck frame centered with bottom casting. Take top angle bracket and align center mounting hole with pencil line on truck frame, clamp bracket to truck frame making sure that the bottom of the angle bracket is flush with bottom of truck frame. Using the bracket as a template, mark the hole locations on the frame. Remove the bracket from the frame and drill (3) 9/16" holes where marked.

Note: In some cases the brake line bulkhead fitting has to be removed, and re-installed after top angle bracket is mounted. If top mounting hole is aligned with bulkhead fitting re-drill this hole to 13/16" dia. Care should be taken to move fuel lines, electrical wire etc. inside the truck frame from the path of the drill. Use the bolts, washers and nuts supplied in the hardware kit to mount the brackets.

PARTS LIST

Helper spring mounting brackets	see page 2
Air bellow	2
Mounting hardware	see page 2
Tubing and fitting kit	see page 3
Air control panel assembly	see page 4
Air control mounting bracket	see page 4
Nylon ties	7
Installation screws	7

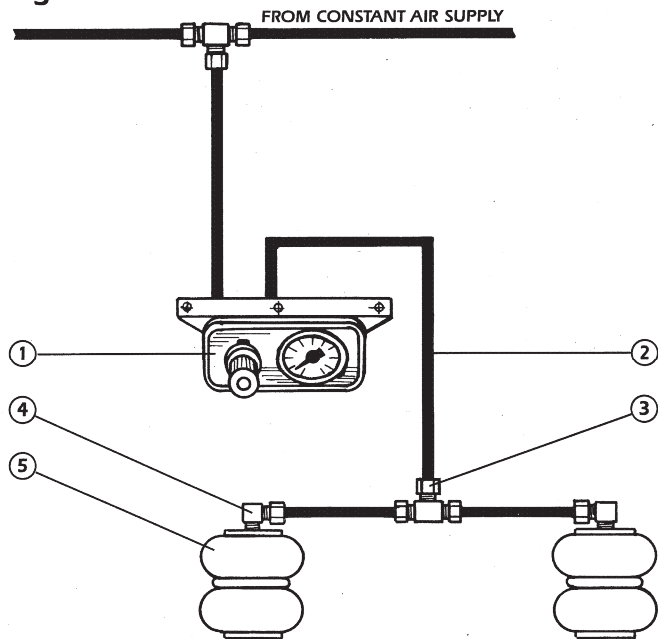
Fig. 1



ITEM	PART NO.	QTY.	DESCRIPTION
1	20167	2	Angle Bracket
2	20166	2	Top Plate
3	HS 10086	2	Double Convolute Air Spring
3	HS 10110	2	Single Convolute Air Spring
4	20168	2	Bottom Mounting
5	HS 10088	6	Hex Head Cap Screw 1/2" unc x 2" long
6	HS 10087	4	Hex Head Cap Screw 1/2" unc x 1" long
7	HS 10091	16	Washer 1/2" dia structural
8	HS 10090	6	Locknut 1/2" unc
9	HS 10089	4	Allen Head Screw 3/8" unc x 1" long
10	HS 10092	4	Washer 3/8" dia structural
11	HS 10095	4	Hex Head Cap Screw 3/8" unc x 1" long

AIR HELPER SPRINGS AND SINGLE CAB CONTROL KIT.

Fig. 2



ITEM	DESCRIPTION	QTY	PART NO.
1	Control Panel Assembly	1	20109
	Panel	1	20110
	Bracket	1	20111
	Regulator	1	HS 10037
	Pressure Gauge	1	HS 10035
	Female Connector 1/8" x 1/8"	1	HS 10008
	90° Male Elbow 1/8" x 1/8"	1	HS 10009
	90° Male Elbow 1/4" x 1/4"	2	HS 10031
	Tubing 1/8" dia	12"	HS 10003
	Self Tapping Screw	7	HS 10096
2	Tubing 1/4" dia	40'	HS 10097
3	Union Tee	2	HS 10098
4	90° Male Elbow 1/4" x 1/4"	2	HS 10031
5	Air Spring	2	HS 10086
N/S	Nylon Tie 8" long	7	HS 10163

When ordering Air Springs, specify single or double convoluted air spring. See fig. 1 for part number

NOTE:

With a load on your truck, and the air springs inflated, you must have at least one inch clearance all around the air bellows. FOR BEST RIDE use only enough air pressure in the air springs to level the vehicle when viewed from the side. Inflate the air springs to maintain this height under any condition of load. Too much

STEP 4: Bellow installation.

Install 90° fitting in bellow, see fig. #2. Install mounting plate item #2 to the bellow with slot in the mounting plate over the 90° fitting. Mounting plate item #2 has rows of mounting holes allowing plates to be adjusted or turned with fitting pointing to inside or outside of truck frame. Install the bellow to the bottom mounting casting and the mounting plate to the top angle bracket. Note: Make sure that the bellows are clear of any truck parts and are installed straight. Tighten all bolts and nuts.

Warning: Do not inflate assembly when it is unrestricted. Assembly must be restricted by suspension or other adequate structure. Do not inflate beyond 100 PSI. Improper use or over-inflation may cause assembly to burst, causing property damage and/or severe personal injury.

STEP 5: Installation of control panel and air lines.

See fig. 2 for air schematic. Select a location inside the vehicle cab for mounting control panel item #1. Install a union tee item #3 in air supply line to windshield wiper motor, driver's air seat, or other constant air supply. Connect 1/4" dia. tubing item #2, from union tee to inlet side of pressure regulator of control panel. You may have to drill through the firewall, if so make sure the hole is free of sharp edges. Run 1/4" dia. tubing item #2 from outlet port on regulator, through the firewall if needed, to the air springs. Install union tee item #3 as shown in fig. 2 to connect air springs.

STEP 6: Check the air system.

Once the control panel and tubing is installed, inflate the air system and check the fittings for air leaks with a solution of soap and water. If a leak is detected correct the fitting installation. This now completes the installation. The wheels and tires should be re-installed.

air pressure in the air springs will result in a stiffer ride. Too little air pressure will allow the vehicle to bottom out and not provide the improvement in handling that is possible. To prevent possible damage, maintain a minimum of 2 PSI in the LOADSHARE® bellows at all times.