Apr. 30, 2001

Associate Administrator for Enforcement (NEF-01)
National Highway Traffic Safety Administration
400 Seventh Street, SW
Washington, DC 20590

Haldex is providing this information in accordance with NHTSA reporting regulations, 49 CFR Part 573.5.
Haldex Brake Systems has determined that a defect exists in air brake relay valves manufactured between Sept. 19, 2000 and Feb. 10, 2001. This defect could result in the loss of service brakes during heavy brake applications at cold temperatures.

PRODUCT IDENTIFICATION
This defect exists in Haldex relay valves. These valves can be used in either park brake systems or in service brake systems and are identified with a manufacturing date code of 380K (38th week of 2000) to 061K (6th week of 2001). It is sold to OEM manufacturers and to various Haldex distributors.

PROBLEM DESCRIPTION:
PARK BRAKE SYSTEM:
A problem was reported to Haldex concerning leakage from the Park Brake relay after the units had been parked outside in cold weather. This problem was reported on straight trucks and tractors. It was discovered that the relay valves were leaking out of the exhaust port. When the vehicle is parked (the control pressure is released), the modulation tube inside the relay valve sticks in the "open" position. The supply port of the relay is then connected directly to exhaust port allowing reservoir pressure to be depleted. This can also result in the inability to recharge the air system.
The modulation tube sticks due to a rough surface finish in the mating surface of the exhaust body. Testing identified that this problem is associated with cold temperatures. Cycle testing established that three of three test subjects reached a "break-in" point after 700 and before 3000 cycles. All three of these units passed the leakage test at –15 degrees F after the break-in. Parts that do not fail initially are likely to improve with time due to the wear-in.

When the relay valve is used in a park brake system, the inlet valve can stick open when the air in the park brakes is exhausted (vehicle is parked). When the valve sticks open, it prevents the compressor from replenishing the system pressure and does not allow the park brakes to be released. The valve will comply with the 3.0 second spring brake apply time requirement even with the leakage of the reservoir pressure. At engine idle, the system pressure will build to approximately 9 psi. The leak can be eliminated, and the system can be fully charged, if the yellow "System Park" knob is manually held in (this forces the piston in the relay valve down and seals off the leak). These conditions were tested on a truck with a sticking relay valve.

SERVICE BRAKE SYSTEM:

When the relay valve is used in a service brake system, the valve could stick open when a heavy brake application is made (greater than 50-psi application pressure). Sticking of the valve in this situation would allow the service reservoir pressure to be exhausted and could result in the loss of the primary service brakes. During this sticking and loss of air, the operator would have warning of decreasing air pressure (low-pressure alarm). In the event of an unrelated primary system failure, the SPRING BRAKE relay valve is required to apply the spring brakes. In the failed condition the relay will exhaust air from the spring brakes and bring the vehicle to a controlled stop by using reservoir air to modulate the valve. It will however, also exhaust air from the service reservoirs. If the unrelated primary failure has occurred in the system after the foot valve then the service reservoirs will be re-supplied by the vehicles air compressor. If the valve sticks open, there would be insufficient reservoir pressure to run the timing test to 90 psi.

CHRONOLOGY OF EVENTS

The problem was first reported on Feb. 3, 2001 but no valves were available to return and no clear definition of the failure conditions was available. Valves returned as "failures" did not exhibit the non-complaint condition. A group of valves was returned from fleets for testing. Evaluation of these valves identified that the valve could stick at low temperatures and that the sticking was caused by a rough surface finish on the exhaust body of the valve. Additional valves were recovered and tested to determine the conditions under which the sticking could occur. Additional tests were conducted on trucks in the field and at Meritor Wabco to further define the sticking conditions.

It was determined that the rough finish was limited to a specific batch of material from the supplier. These parts were used between Sept. 19, 2000 and Feb. 10, 2001. Parts used after Feb. 10, 2001 were from a revised tool and had a different color to the corrosion treatment.

ORIGINAL EQUIPMENT CUSTOMERS

We have identified the following OEM customers (and Tier one suppliers).

Meritor Wabco	(24,004 pcs.)	Beall Trailer	(85 pcs.)
Dorsey Trailer	(5 pcs.)	Fruehauf of Mexico	(471 pcs.)
GM of Canada	(170 pcs.)	Heil Corp.	(6 pcs.)
Landoll Corp.	(140 pcs.)	Stewart & Stevenson	(3171 pcs.)
Systems & Electronics	(1198pcs.)	Utility Trailer Mf'g.	(405 pcs.) ✓
Wabash Trailer	(16 pcs.)	PAI Industries	(350 pcs.)

CONCLUSION:

There were 28,750 relay valves built with these suspect parts between Sept. 19, 2000 and Feb. 10, 2001.

Haldex has reviewed the "sticking valve at low temperature" problem and while we are concerned with this problem, we do not feel that the inability to release a parking application is a major problem. While the rate of failure has been low (less than 0.1%) our evaluation shows that more than 50 % of the suspect parts checked are far enough out of spec that they may cause problems at low temperatures. Our tests also show that the rough finish will wear-in and the valve will not stick after approximately 3000 applications.

RECOMMENDED ACTION:

Haldex recommends that service relay valves be repaired as a "Safety Defect" and that park brake relay valves be repaired on a "Field Service" basis using a Haldex repair kit to prevent the sticking problem. Haldex will supply repair kits to its customers upon receipt of a "Request for Repair Parts".

Defective exhaust bodies are dark green in color and have a date code on the valve of 380K (38th week of 2000 (19, Sept. 2000) to 061K (6th week of 2001(10 Feb, 2001)). This date code is found on a metal tag attached to one of the 4 cover screws at the top of the valve. Valves with date codes before the 38th week of 2000 or after the 6th week of 2001 are not included in the suspect material. New (replacement) parts are identified with a yellow color at the cast exhaust body.

Haldex has defined that the repair will take 0.75 hours per valve. This time is based on the repair of more than 100 vehicles to date. This repair time includes time to drain the air system, get to the relay valve(s), repair the valve, build up air and test the units for leakage.

Copies of the letters to OEMs/major customers and letters to end customers are attached. These letters will be sent to customers starting within 5 days of the letter approval from NHTSA.

Donald Myers
Dir. Quality Assurance
Haldex Brake Systems
Phone 816-801-2641
Fax 816-891-9432
e-mail don.myers@haldex.com

OEM Notification Letter

May 2001

To:

Dear Haldex Customer,

Haldex Brake Systems has defined that a defect exists in its two and four port relay valves manufactured between Sept. 19, 2000 and Feb. 10, 2001. These valves are used to control either the service brake system or park brake systems on tractors, trucks and trailers.

DEFECT: This defect results in the valve sticking open when a high-pressure application is released. This condition possibly occurs only at low temperatures. When the valve sticks open, it can result in a total loss of air from either the service or the park brake system.
When this occurs in a park brake system, the vehicle is usually parked and the stuck valve will prevent the compressor from building system pressure. When this occurs in a service brake system, it could result in a loss of the primary service brakes during a service application. A low-pressure warning will accompany this loss.

PARTS INVOLVED: This defect affects all N30096, N30100, N30111 and N30106 series valves manufactured and sold by Haldex Brake Systems between Sept. 19, 2000 and Feb. 10, 2001. They are identified with a date code on a metal tag attached to one of the four cover bolts. The suspect date codes are 380K, 390K, 400K, 410K, 420K, 430K, 440K, 450K, 460K, 470K, 480K, 490K, 500K, 510K, 520K, 011K, 021K, 031K, 041K, 051K and 061K.

REPAIR: All suspect valves should be repaired using a Haldex Brake Kit # SK13569. These kits will be available from Haldex starting May.1, 2001 and may be obtained by completing the attached request form.

TIME REQUIRED FOR THE REPAIR: Haldex has determined that it will require 0.75 hours per valve to complete the repair. Some vehicles may have two valves that require the repair; one in the service system and one in the park brake system. It is recommended that BOTH valves be repaired.

WHAT YOU SHOULD DO: Haldex recommends that you repair all suspect parts received from Haldex Brake Systems or Haldex Services Corp. between Sept 25, 2000 and Feb. 15, 2001. Haldex has provided a listing of the part number (s) and quantities of the units we show as having been shipped to you during the suspect time period to assist you in determining where these units may have been used. Review this list and identify to Haldex how many repair kits are needed. This can be done with the attached "**Repair Kit Request**" form or by contacting Haldex Customer Service. We also recommend that you review your current inventory for suspect date codes. If any of these suspect valves are still in your stock, they can be returned to Haldex for reimbursement at your current purchase price. Please contact your Haldex Customer Service representative for a RGA number to return these valves.
Since Haldex does not have Field Service facilities or technicians. You will need to do the repair (or have it done).

WHAT HALDEX WILL DO: Haldex will credit you for the labor associated with this repair. A "**Labor Request**" form must be completed to receive this labor allowance. Haldex is requesting that the old parts be destroyed at the point of replacement (do not return the parts to Haldex Brake Systems).

If you are a vehicle manufacturer or a distributor and you want Haldex to send notification to your customers, please supply Haldex with a listing of the names and addresses of the people / companies who purchased these valves between Sept. 19, 2000 and Feb. 28, 2001. Haldex Brake systems will send the notice to them. This information should be sent to Donald Myers at the address listed at the bottom of this letter

Haldex would appreciate a response indicating the action that you are taking on his issue. If you have any questions concerning the details of this recall or the remedy, you may contact Haldex Brake Systems at 816-801-2641.

The contact for replacement parts is 316-365-6911. Ask for "Customer Service" between the hours of 7 a.m. and 5 p.m. Central Time Monday through Friday.

Haldex apologizes for any inconvenience in this matter. We have taken this action in the interest of your safety and continued satisfaction with our product.

Sincerely,

Donald Myers
Group Director, Quality Assurance
Haldex Brake Systems
10930 N Pomona Ave.
Kansas City, MO 64153
Phone 816-801-2641
Fax 816-891-9432

End User Letter

May 2001

Dear Haldex Customer,

This notice is being sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Haldex Brake Systems has defined that a defect exists in its two and four port relay valves manufactured between Sept. 19, 2000 and Feb. 10, 2001. These valves are used to control either the service brake system or park brake systems on tractors, trucks and trailers.

DEFECT: This defect results in the valve sticking open when a high-pressure application is released. This condition possibly occurs only at low temperatures. When the valve sticks open, it can result in a total loss of air from either the service or the park brake system.
When this occurs in a park brake system, the vehicle is usually parked and the stuck valve will prevent the compressor from building system pressure. When this occurs in a service brake system, it could result in a loss of the primary service brakes during a service application. A low-pressure warning will accompany this loss.

PARTS INVOLVED: This defect affects all N30096, N30100, N30111, and N30106, series valves in addition to service part numbers KN28060, KN28061, KN28065, KN28071, KN28080, KN28085, KN28131, KN28132, KN28140 and KN28300 manufactured and sold by Haldex Brake Systems between Sept. 19, 2000 and Feb. 10, 2001. They are identified with a date code on a metal tag attached to one of the four cover bolts. The suspect date codes are 380K, 390K, 400K, 410K, 420K, 430K, 440K, 450K, 460K, 470K, 480K, 490K, 500K, 510K, 520K, 011K, 021K, 031K, 041K, 051K and 061K.

REPAIR: All suspect valves should be repaired using a Haldex Brake Kit #SK13569. These kits will be available from Haldex starting May.1, 2001 and may be obtained by completing the attached request form.

TIME REQUIRED FOR THE REPAIR: Haldex has determined that it will require 0.75 hours per valve to complete the repair. Some vehicles may have two valves that require the repair; one in the service system and one in the park brake system. It is recommended that BOTH valves be repaired.

WHAT YOU SHOULD DO: Haldex recommends that you repair all suspect parts received from Haldex Brake Systems or Haldex Services Corp. between Sept 25, 2000 and Feb. 15, 2001. Haldex has provided a listing of the part number (s) and quantities of the units we show as having been shipped to you during the suspect time period to assist you in determining where these units may have been used.

Review this list and identify to Haldex how many repair kits are needed. This can be done with the attached **"Repair Kit Request"** form or by contacting Haldex Customer Service. We also recommend that you review your current inventory for suspect date codes. If any of these suspect valves are still in your stock, they can be returned to Haldex and will be replaced with new valves. Please contact your Haldex Customer Service representative for a RGA number to return these valves. Since Haldex does not have Field Service facilities or technicians. You will need to do the repair (or have it done).

WHAT HALDEX WILL DO: Haldex will pay the freight for the replacement material and reimburse you for the labor rate of $65 per valve. A **"Labor Request"** form must be completed to receive this labor allowance. Haldex is requesting that the old parts be destroyed at the point of replacement (do not return the parts to Haldex Brake Systems).

If you have any questions concerning the details of this recall or the remedy, you may contact Haldex Brake Systems as shown at the bottom of this letter. **The contact for replacement parts is 316-365-6911. Ask for "Customer Service" between the hours of 7 a.m. and 5 p.m. Central time Monday through Friday or you may fax the order to 316-365-5275, attn.: S Johns.**

You my also wish to contact the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street SW, Washington, DC 20590 or call 1-800-424-9393 (Washington, DC residents may call 202-366-0123).

Haldex apologizes for any inconvenience in this matter. We have taken this action in the interest of your safety and continued satisfaction with our product.

Sincerely,

Donald Myers
Group Director, Quality Assurance
Haldex Brake Systems
10930 N Pomona Ave.
Kansas City, MO 64153
Phone 816-801-2641
Fax 816-891-9432