Kansas
RTAP Fact Sheet
A Service of The University of Kansas Transportation Center for Rural Transit Providers

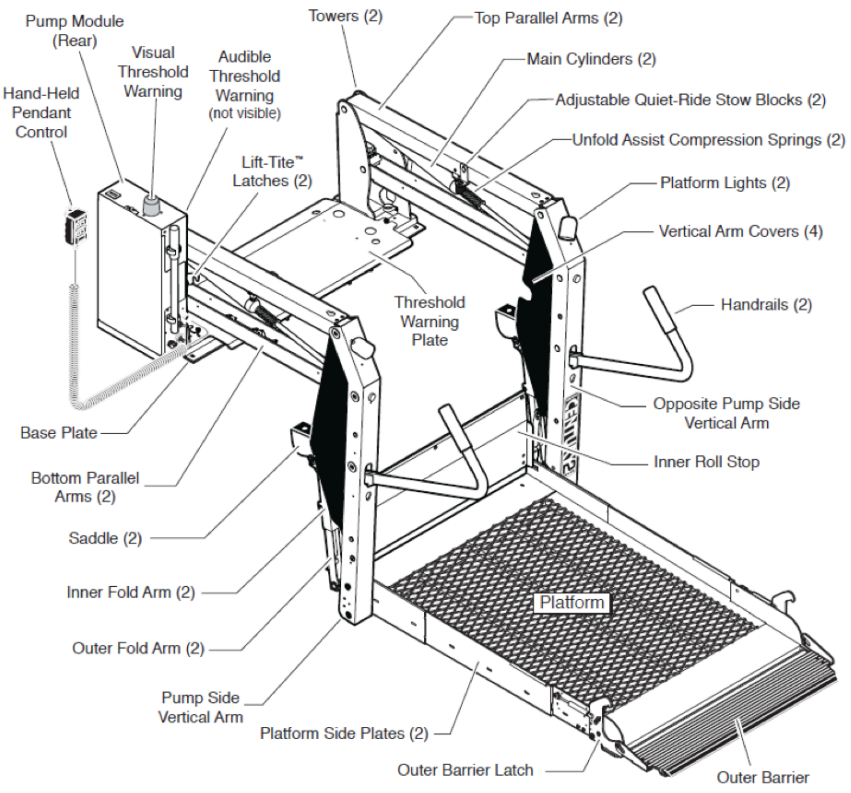
Troubleshooting Your Braun Lift

What operators should know about the Braun lift.

By Anne Lowder

Kansas RTAP hosted BraunAbility workshops at four Kansas transit agencies this past February. The training, provided by Jeff Tellez, after-sales field trainer with BraunAbility, was designed to help operation supervisors and maintenance personnel maintain, operate, and troubleshoot Braun lifts. During the three hours of instruction Tellez covered basic electrical connections, operating procedures, adjustments and lubrication points, and common troubleshooting tools to test and diagnose a Braun lift. Seventy-six participants registered for the workshop from 36 Kansas transit agencies. Each participant received a BraunAbility troubleshooting book along with a certificate of completion.

The training was targeted to lift mechanics, but some great tips were identified of use to operators who conduct pre-trip and post–trip inspections. This article highlights five areas covered by Tellez to help operators better understand the operations of a Braun Lift.



Inspecting and troubleshooting your Braun lift

1) Platform. *Platform won't unfold.* The Braun lift operation is hydraulic. Hydraulic fluid expanding, contracting or seeping may result in platform drift (failure to hold the platform in the folded or raised position). Platform drift (sometimes called weekend drift) may occur between extended periods when a lift is not in use, such as over the weekend. In the event that the platform does not unfold when you push the unfold switch on the hand pendant, the hydraulics have likely "bled off." The fix is to press the fold switch. This will pressurize the hydraulic system. The lift will then unfold.

Platform weight sensor does not work. The platform of the Braun Lift has a weight sensitivity of 50 lb of pressure. While cycling the lift, check this weight sensitivity while pressing the fold switch on the hand pendant. Simply put your hand the platform and press down while pressing the fold switch. If the lift continues to fold, take the vehicle out of

service until this is fixed. Working the lift while not being sensitive to weight could lead result in catapulting someone on the lift to the inside your vehicle.

2) Threshold. *Issues with the threshold buzzer alarm.* The threshold warning buzzer warns of danger. The buzzer sounds if weight is on the threshold plate when the lift is 1 inch down from floor level. At this time the inner barrier has engaged and is in vertical position, and there is open space between the vehicle and the platform that someone could step off of and become injured. If the buzzer is continuously engaged there is an adjustment in Tower 3 that your mechanic can tighten or loosen that will fix the situation.

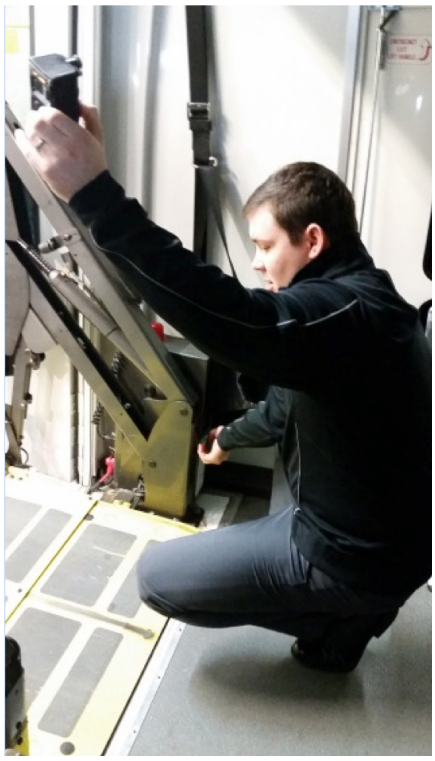
Threshold platform rattles. Operators often complain that the threshold platform rattles. The first technique to try is pressing the fold switch on the hand pendant to pressurize the hydraulics. If this does not work there are two adjusting screws on the threshold plate that can be manually adjusted by your mechanic to solve the rattling. Tellez pointed out that usually the rattle is due to loss of hydraulic pressure.

3) Lift will not raise or lower. *Inner roll stop barrier won't lock.* The inner roll stop barrier, which must be in a locked position for the lift to operate, has two functions. First, it acts as a bridge plate between the vehicle and the platform for wheelchairs as they move in and out of the vehicle at floor level. Second, the inner barrier locks into a vertical position when the unfold switch is pressed on the hand pendant and prevents wheelchairs from rolling off the rear (inner side) of the lift while boarding and unboarding.

The inner roll stop barrier is activated by a micro switch when the barrier is in locked position. If the lift senses weight on the platform and the barrier is not in locked position, power is lost to the hand pendant and the lift stops working. If the inner roll stop barrier is not locking into position, the vehicle should be taken out of service until it is fixed.

Another scenario might be that the wheelchair blocks the inner roll stop barrier from locking into position. Tellez said it is an ADA and NHSTIS safety requirement that the inner roll stop barrier locks into place, so in this case, the lift will not be able to accommodate that chair.

Outer barrier won't lock. The outer barrier must also be in locked position for the lift to operate. The lift will attempt to rise but will stop at 3 inches up if the outer barrier is not locked into position. If



Images by KUTC / A. Lowder

Jeff Tellez of BraunAbility provides tips to Section 5311 maintenance staff to keep their wheelchair lifts in top operating condition.

Lift Terminology

Pump Module: The lift-mounted pump module consists of the hydraulic pump, the manual hand pump, the electronic control board and electrical components that power the lift electric/hydraulic systems

Hand-Held Pendant Control : The hand-held attendant's pendant control is connected to the pump module. The handheld pendant is equipped with two rocker switches, (UNFOLD, FOLD, DOWN, and UP). The momentary switches activate the automatic lift functions.

Lift Frame: The lift frame consists of the base plate, threshold warning plate, towers, parallel arms, vertical arms, platform pivot arms and handrails. Two main hydraulic cylinders are housed in the parallel arms. The electrical/hydraulic powered lift frame components mechanically unfold, lower, raise and fold the lift platform assembly.

Platform Assembly: The platform assembly consists of the steel tubing frame with grating surface upon which the wheelchair is positioned, the outer barrier, outer barrier latch, the inner roll stop barrier, and the hydraulic cylinder assembly that powers the outer barrier.

Outer Barrier: The cylinder powered automatic outer barrier provides a ramp for wheelchair loading and unloading at ground level.

Inner Roll Stop Barrier: NL Series lift models are equipped with an automatic inboard roll stop that also serves as the bridge plate. The roll stop bridges the gap between the lift platform and the vehicle floor. The inner roll stop automatically rotates from the horizontal position to the vertical position as the lift lowers and raises.

the outer barrier is not in locked position, or if it is being blocked from locking in, or if weight on the outer barrier is keeping it from folding into the vertical position, the hand pendant will lose power and the lift not work. It is important that the operator press the down switch to fully unfold the outer barrier at ground level. The outer barrier will not unfold if part of the platform has stopped at an obstruction such as a curb and the foot latch of the out barrier is not engaged. Lift operations should be discontinued if the outer barrier is not working properly.

4) The lift chatters. The number one reason the lift chatters (makes lots of noise) while driving is that the hydraulics need to be pressurized. Once again, to fix possible lack of pressure in the hydraulics, hit the fold switch. The lift will tighten up, thus quieting the noise from the lift. The second reason for the lift chattering is missing rubber bumpers. At any point that the lift could touch metal–to-metal, a rubber bumper has been engineered into that area. These bumpers wedge the lift snugly into its folded position and reduce chatter while the vehicle is moving. If the bumpers are not aligned correctly or are missing, the lift will chatter.

5) The hand held pendant does not work properly. The hand held pendant is the key to trouble-shooting the Braun lift. If the micro switches are in working order, the pendant will be illuminated. If the pendant is not illuminated, the lift needs troubleshooting to find what is not properly connected.

The hand held pendant itself also receives the brunt of abuse from operators, Tellez said. The pendant gets dropped or banged against the vehicle and the cord gets pinched during lift operations.

A malfunctioning pendant may get switched out and replaced from a "used parts" bin. However, the pendant needs to be replaced with the part number that was engineered for that lift or it will not work properly with the lift.

When a pendant is not operating properly, first check that the inner and outer lift barriers are locked into position. This engages the micro switches which will illuminate the hand pendant. If the hand pendant can't be illuminated it could be that the pendant is the wrong replacement part or that the barriers are unable to engage the micro switches. Either way the vehicle should be taken out of service until the items are fixed.

Maintenance is important

Regular preventive maintenance will reduce potential lift operation downtime and increase the service life of the lift, as well as possibly detect potential hazards. Exposure to harsh weather elements, environmental conditions, or heavy use may require more frequent maintenance and lubrication. Preventive maintenance visual inspections are important, but Tellez said they do not take the place of the procedures specified in the Maintenance and Lubrication Schedule for your lift. Proper maintenance will keep lift problems to a minimum.

Reprinted from the April 2015 issue of the *Kansas TransReporter*, a publication of the Kansas Rural Transit Assistance Program (RTAP) at the Kansas University Transportation Center.

Sources

- BraunAbility Maintaining and Troubleshooting Your Braun Lifts workshop with handouts and notes. Salina, Garden City, Girard and Lawrence, KS. February 16-19, 2015
- BraunAbility Customer Support. At the bottom of the page click on the Lift to download the service manual. Accessed February 27, 2015. http://www.braunability.com/commercial/customer-support.html
- BraunAbility training resource at KS RTAP website: http://www2.ku.edu/~kutc/pdffiles/BraunAbilityPPT.pdf