



SHIFT-N-STEP

OPERATORS MANUAL





Table of Contents

1. Basic System Description and Operation – Page 3
2. Safety – Page 4
3. Routine Maintenance – Page 6
4. Normal Operation – Pages 7 & 8
5. Electronic Operator Override – Pages 9 & 10
6. Manual Operator Override – Pages 11 thru 15



BASIC SYSTEM DESCRIPTION AND OPERATION

System Description The Shift-N-Step is a dual access entry system which allows a wheelchair lift to be “shifted” sideways (re-positioned relative to the vehicle door opening) to allow access by either ambulatory or non-ambulatory passengers through the same door opening. Shifting the lift fully back toward the rear wheels can provide up to a 30 inch wide walkway to the right side of the lift for ambulatory passengers. Shifting the lift fully forward toward the front of the vehicle allows a full size (34” Platform) ADA compliant, dual parallel arm commercial quality wheelchair lift to be deployed through the same door opening. This eliminates the need for two doorways and extensive, expensive vehicle modifications. The Shift-N-Step has been designed as much as possible to be a “bolt in” system and, depending on the vehicle, the Shift-N-Step can be installed with very few (if any) structural modifications. Other optional components are available that, when combined with the Shift-N-Step system, provide a complete package for the ultimate in safe, convenient, economical and easy transportation solutions for ambulatory as well as non-ambulatory passengers. These optional features include integrated grab bars, bus style steps, automatic door openers and more and, although the Shift-N-Step system can “stand alone”, it was designed to integrate perfectly with the AbiliTrax flooring and seating systems.

System Operation The Shift-N-Step consists of two basic components; A stationary mounting base platform that is attached securely to the vehicle structure and a sliding platform “carriage” which is allowed to move “sideways” (relative to the door opening) within the stationary platform. The Shift-N-Step is designed to be low profile to minimize height issues while providing a strong and sturdy platform which is FMVSS compliant. All materials, components and finishes are designed to provide maximum strength, durability, dependability and safety, while also minimizing maintenance requirements. A standard, dual parallel arm platform wheelchair lift base is attached to the “carriage” platform. This carriage platform glides on a high strength, low friction rail system. The carriage platform is also electro-mechanically driven by rack and pinion gearing powered by an electric motor and gear box.



SHIFT-N-STEP

SAFETY FIRST

Safety First....is the key to avoiding dangerous conditions and situations to personnel and equipment. Always use “situational awareness” and be alert to your own position and the position of other persons or other obstructions. Look before you press a button or turn a key. Do not operate this device unless you have thoroughly read and understand these instructions and have received adequate training by qualified personnel.

Keep hands, feet, hair, clothing, jewelry, etc. away from moving parts.

Keep area around equipment clean, well-lit and unobstructed.

Make sure all equipment is well maintained and kept in peak operating condition. Report and have repaired any unusual sounds, motion, loose, damaged or missing parts.

Operate only as intended and described in these instructions. Do not bypass or render inoperable any safety device or system. Do not modify, alter or deviate from original design without prior written authorization.

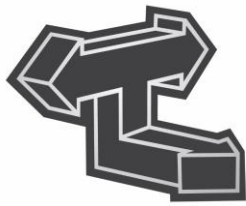
Keep all guards, safety devices and warning labels in place and in good repair.

WARNING – Never leave the Manual Override tool in position with the gear teeth engaged when using the push buttons. Sudden and violent movement of the tool will occur.

The Shift-N-Step is provided with sensors that limit both the left and right travel of the carriage. To insure full travel, continue pressing the “normal operation” left or right push buttons until the carriage stops on its own.

In the event of an emergency, the stairway must not be obstructed. Only move the Shift-N-Step to the full right (deploy) position when it is necessary to load or unload a wheelchair passenger. Always return the Shift-N-Step to the full left (stowed) position after use. There is an arrow label on the right end of the lift base and a label stating “Full Left Shift” on the right side of the Shift-N-Step base. When these two arrows align, it indicates that the lift is fully stowed. This is a visual guide only and it is not critical that the arrows be perfectly aligned. However, if there is a large discrepancy (more than ¼” of misalignment) and the “Left Shift” pushbutton has been held until the unit stops on its own, it may indicate an electrical or mechanical issue requiring attention. Do not move the vehicle with the lift obstructing the stairway.





SHIFT-N-STEP

Before deploying the lift through the door opening, make sure that the door is fully opened and the Shift-N-Step has moved the lift to the full right (deployable) position. Failure to do so may result in a collision between the lift and the door or door opening causing damage to the vehicle and/or lift. There is an arrow label on the left end of the lift base and a label stating “Arrows Must Align to Deploy Lift” nearer the left end of the Shift-N-Step base. When these two arrows align, it indicates that the lift is shifted fully right and is safe to deploy. This is a visual guide only and it is not critical that the arrows be perfectly aligned but if there is a discrepancy of $\frac{1}{4}$ ” or more in the arrow alignment (and the “Right Shift” pushbutton has been held until the unit stops on its own), it may indicate an electrical or mechanical issue requiring attention and care should be taken that the lift will safely pass thru the door opening.



If the Shift-N-Step does not move adequately to deploy the lift or if it makes “hard contact” at either end of its travel, the sensor(s) may require adjustment, repair or replacement.

The Shift-N-Step may also be equipped with (optional) photoelectric sensors. These sensors project an invisible beam across both the inboard and outboard sides of the ambulatory passenger pass through area. If one of these beams is “broken” by a person’s leg, hand, or some other obstruction, the movement of the carriage will immediately stop regardless of button actuation. The carriage will move again only when the obstruction is removed from the path of the beam and a button is being pressed. (**CAUTION** - Operator override key switch disregards these sensors).



ROUTINE MAINTENANCE

Most maintenance and repair will be the responsibility of the Technicians, mechanics, etc. and is covered in the “Maintenance Manual” (separate publication). Maintenance must be performed every 1,500 “shifts” (as indicated by the shift counter located on the unit, near the LED illumination light on the “B” Pillar Stabilizer Plate).

As an operator, be observant of any obstructions or other foreign matter (large stones, wrappers or other debris) that may accumulate around moving parts or create a tripping / slipping hazard and remove them. Also be observant of any unusual movement, sounds, loose parts, etc. which may indicate a problem and bring them to the immediate attention of the proper personnel. Lubrication of the Slides / Skis is not required.

An occasional small amount of grease or oil on the Rack and Pinion gear teeth is the only lubrication necessary. Do not over lubricate and wipe off any excess.

If it ever becomes necessary to use either the electronic OR manual bypass to move the “carriage”, it indicates a problem with the Shift N Step unit that requires immediate service and / or repair. It should never be considered “normal” to operate the Shift-N-Step unit by use of the key operated override or the manual back-up handle.



NORMAL OPERATION

Normal Operation. The Shift-N-Step is powered by the vehicles electrical system. It activates when the lift door is open. Pressing the “Normal Operation” push buttons will move the carriage left (Left Button)



or right (Right button). As long as the button is held in, the carriage will continue to move until it is detected by a sensor (at each end of the carriage travel) at which point movement will stop.



(NOTE- Operator override key switch disregards these sensors). If the button is released at any time during movement, the carriage will immediately stop. In the event of an emergency situation in which the carriage must be stopped or reversed, immediately release the button to stop movement or press the opposite button to reverse movement.



SHIFT-N-STEP

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SHIFT-N-STEP

ELECTRONIC OPERATOR OVERRIDE

Electronic Operator Override mode – If normal operation cannot be established by use of the push buttons, it may indicate a problem with a sensor, certain circuit board problems, or some other electrical or mechanical failure. If this should occur, it may be possible to temporarily move the carriage in an emergency or other “as needed” situation by use of the operator override key switch. This switch bypasses most electronic devices and all safety switches and provides a direct power supply to the drive motor. This mode is intended only as a temporary bypass and the Shift-N-Step should never be operated using this override on a routine basis. Should it become necessary to use this feature, it would indicate a problem exists somewhere in the normal operating system. This problem must be investigated and resolved as quickly as possible.

To activate this mode, insert the key into the switch



Rotate the switch clockwise to move the carriage right



or counter-clockwise to move the carriage left.



SHIFT-N-STEP



Movement of the carriage will stop when key is released. If the key is held beyond full mechanical movement capabilities, the carriage can “hard stop” against the ends of its travel. If the key is held in this position, an electronic overload protection device will cut power to the system to prevent overheating and damage to electrical circuits and devices. If this overload should occur, release the key switch and allow several seconds for the overload to cool down and reset. A mechanical malfunction which would prevent carriage movement may also cause this overload to occur. Remove the key when not in use to prevent unauthorized use. Never leave the key in the switch. In some applications, the vehicle door may contact the key when closing, thus damaging the key. **WARNING** – Never leave the Manual Override tool in position with the gear teeth engaged when using the override key switch. Sudden and violent movement of the tool will occur. As a precaution, remove the key from the switch before using the manual override tool.



SHIFT-N-STEP

MANUAL OPERATOR OVERRIDE



1. Manual Override Tool

Manual Override Mode – Should a complete electrical failure or certain mechanical failures occur and neither the “Normal” nor “Operator Override” modes function, it may be necessary to perform a Manual Override operation. Refer to the procedure as outlined on the Manual Override labels attached to the base unit or as follows;

WARNING – Never leave the Manual Override tool in position with the gear teeth engaged when using the push buttons or Key Switch. Sudden and violent movement of the tool will occur.

1. The Drive Motor and gearbox unit are attached to the underside of a sliding mounting plate. The output shaft of the gearbox is attached to a drive pinion gear. The pinion gear in turn rotates against a rack gear which is attached to a slide on the carrier. The pinion gear must be disengaged from the rack gear to allow the carriage to be moved manually. To disengage the pinion gear from the rack gear, loosen the two locking handles which anchor the motor slide plate. The handles may be lifted slightly to disengage the handle from its threaded shaft and rotate them to a more accessible position. Once the handles have been rotated as desired, allow them to drop back down so that they re-engage. Loosen both handles so that the motor mounting plate is free to slide in and out.





SHIFT-N-STEP



If the Locking Handles are too tight to loosen by hand, the Manual Override Tool is provided with a rectangular cutout which can be placed around the locking handle to aid in loosening. DO NOT use the Manual Override Tool or any other tool when re-tightening the handles as damage may result. Gently hand tighten only.





SHIFT-N-STEP

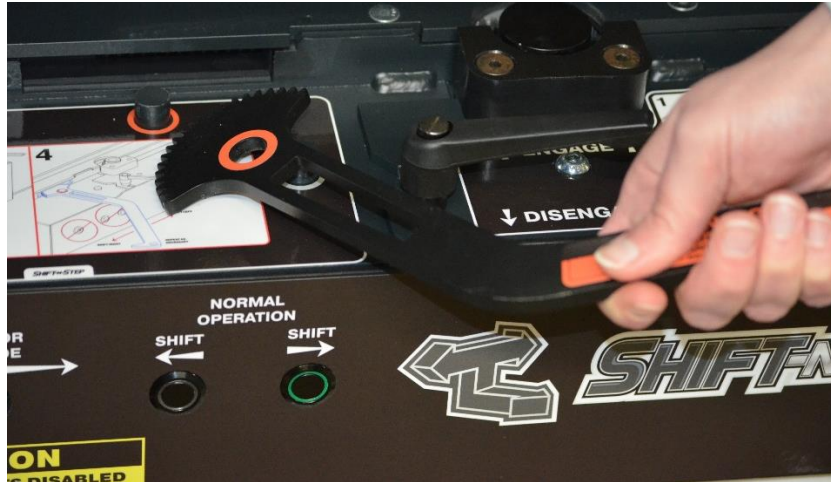
2. Once the Locking Handles have been loosened to allow the mounting plate to slide, place the hole in the handle nearest the “bird’s beak” over the pin nearest the notch in the edge of the motor plate (Gray ring around hole to matching gray ring around pivot pin). Engage the “bird’s beak” into the notch in the edge of the motor slide plate. Rotate the lever clockwise, sliding the plate backward to disengage the pinion from rack or counter-clockwise to re-engage the pinion.





SHIFT-N-STEP

3. After sliding the motor mounting plate backward and disengaging the pinion gear, remove the tool from the pin, reverse the tool and insert the end of the tool (with the gear teeth cut into it) into the slot in the side of the base nearest the pin with the orange ring, while simultaneously placing the hole in the tool with the orange ring over the pin with the matching orange ring. (The Tool may be flipped over to provide the best angle for movement.)



4. With the gear teeth of the tool engaged into the gear teeth of the rack gear, rotate the outward end of the tool counter-clockwise to shift left or clockwise to shift right. Disengage and re-engage the tool and repeat as necessary to shift to desired position. If the lift cannot be moved, check to make sure that the pinion gear is completely disengaged from the rack gear. If movement is still not possible, a mechanical failure has occurred and professional service will be required.





SHIFT-N-STEP

To re-enable motorized movement of the carriage, the pinion gear must be re-engaged into the rack gear. Using the “bird’s beak” end of the tool, reverse the disengagement process by “prying” the motor mounting plate back to the engaged position. The pinion gear teeth must mesh into the rack gear teeth. It may be necessary to slightly rotate the pinion by use of the push buttons or key selector switch (but in either case, **DO NOT have the Manual Bypass Tool engaged when doing so.**) until the pinion teeth can mesh properly with the gear rack teeth. Insufficient engagement may result in gear slippage (which will damage gear teeth) while excessive pressure may result in binding and excessive wear. Do NOT pry the Motor Plate back into engagement using excessive force. Once the pinion gear has been properly re-engaged, tighten the slide locking handles. It should not be necessary (and it is not recommended) that the Manual Override Tool be used when re-tightening the handles as damage may result. When the handles have been sufficiently tightened, lift them slightly to disengage them from their shaft and rotate them to point inward, toward the lift. Do NOT leave the slide locking handles pointed outward as interference with the lift and/or door may occur.

