



# **KNIGHT** **GLOBAL** **PNEUMATIC SCISSOR** **LIFT TABLE FAMILY**

Operation, Installation, and Maintenance Manual



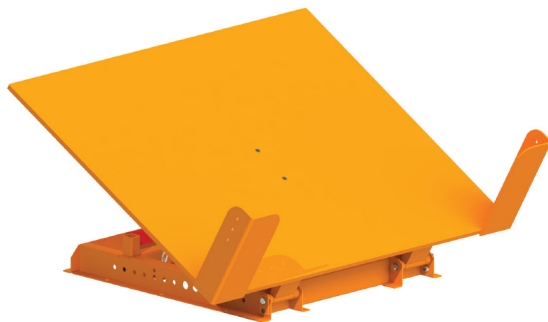
**Lift Table**



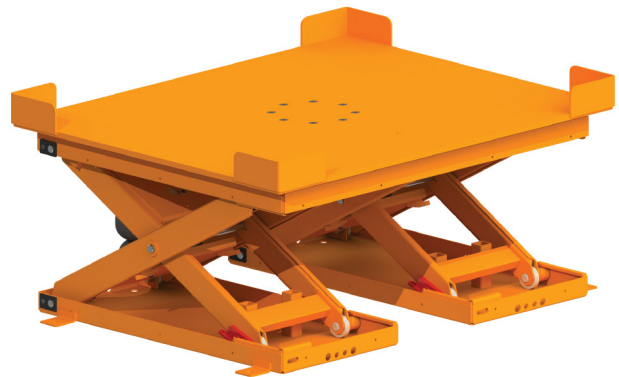
**Lift and Rotate Table**



**Lift and Tilt Table**



**Tilt Table**



**Low Profile Lift and Rotate Table**

*ORIGINAL INSTRUCTIONS*

THIS MANUAL CONTAINS IMPORTANT INFORMATION REGARDING, SAFETY, INSTALLATION, MAINTENANCE, AND OPERATION OF KNIGHT GLOBAL SCISSOR LIFT / TILT / ROTATE TABLE AND SHOULD BE AVAILABLE TO ALL PERSONNEL RESPONSIBLE FOR USING AND INSTALLING TABLE.

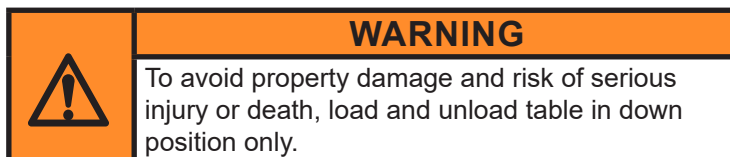
**REV: KTBL20181203**

## SAFETY

Although the procedures covered in this manual have proven safe in use, Knight Global assumes no responsibility for personal injury or damage to the equipment resulting from their application. It is not possible to cover all safety conditions in this manual. Therefore, always be alert and work safely. Only qualified machine operators and maintenance personnel should perform the procedures covered in this manual.

DO NOT INSTALL TABLE UNTIL PLANT SAFETY HAS DETERMINED THAT THE INSTALLATION, INSPECTION, TESTING, MAINTENANCE, AND OPERATION IS IN COMPLIANCE WITH ALL APPLICABLE ANSI/ASME STANDARDS, OSHA REGULATIONS, FEDERAL, STATE, AND LOCAL CODES. IF CLARIFICATION OF ANY INFORMATION IN THIS MANUAL OR ADDITIONAL INFORMATION IS REQUIRED, CONTACT KNIGHT GLOBAL. DO NOT INSTALL, OPERATE, INSPECT, TEST OR MAINTAIN THE TABLE UNLESS ALL INFORMATION IS UNDERSTOOD.

- Do not operate table without proper training and authorization.
- Read, understand and follow all notes, cautions, warnings and instructions contained in this manual and the hazard warnings on the table.
- Keep area around table free of oil, objects and debris that could cause personnel to slip or stumble while operating table.
- All personnel operating this device should wear safety glasses and steel toed shoes.
- Perform daily inspections at every shift change.
- Do not lubricate air supply. Lubricating air supply can damage parts and will void the warranty.
- Do not locate the controls in front of a tilt table. Locate controls inline with tilt angle on table.
- Do not lift more than the table capacity is rated for.
- Never go under the table unless unit is properly locked out and all maintenance safety devices are engaged.
- If load is mobile, secure load in a fixed position before lifting.
- Do not operate table with a load unless secured to the floor.
- All loads should be centered on the table top before lifting.
- Prior to operating the table, ensure that all personnel on or near the table are aware of its imminent operation and that no person will be in harms way during the use of the unit.
- The table shall not be modified or altered without written permission from the manufacturer.
- Ensure that objects are clear of the area beneath the table and immediately surrounding perimeter of the table while its in use.



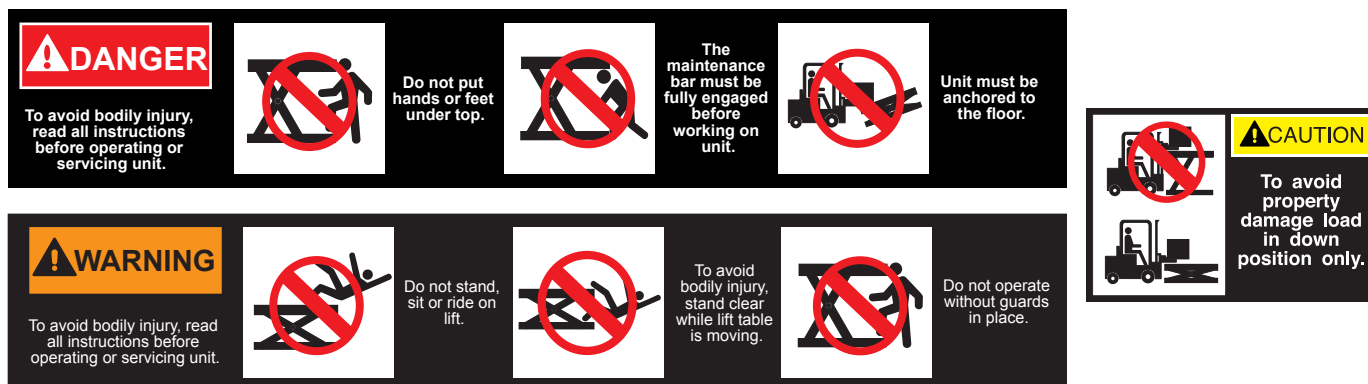
### Tables Disclaimer:

**NOTE:** Optional Safety Equipment including but not limited to; perimeter fence guarding, bellows skirting, safety mats, audible signals, light signals, toe guards, special control guarding, etc. are not included unless otherwise stated in product description above.

Please check with your state, local or plant safety for requirements. Knight Global will be happy to quote any and all safety equipment needed to meet your requirements.

### Safety Labels:

Safety labels have been placed at various points on the equipment to alert everyone of potential dangers. Inspect equipment for proper position of safety labels and make sure all personnel are aware of the labels and obey their warnings.



## INSTALLATION



### WARNING

Installation can only be performed by trained personnel. Untrained persons are in great danger of serious injury or death.



### NOTE

Before installing, check all codes and ordinances which may apply. Read all instructions carefully. Read and understand all warnings.

1. Connect air lines, match the label on the air line to the label on the fitting on table base. (i.e. 1 to 1 and 2 to 2).
2. Set the table at desired location, the table should be installed in a level position. Locate controls a minimum of 3' [1m] away from the table.



### NOTE

Do not locate the controls in front of a tilt table. Locate controls inline with tilt angle on table

3. Remove table from skid and/or remove shipping blocks and banding.



### NOTE

Main air supply must be clean, dry and not lubricated. Operating pressure is between 60 and 100 psi. A filtration of 40 microns or better is required. Filter, regulator and dryer to be supplied by others.

4. Connect main air supply to air "IN" connection on the controls.
5. Before securing the table to the floor turn on the main air supply. Check air lines and connections for leaks.
6. Before securing the table perform the following without dunnage (See Operation):
  - Raise the table using the controls.
  - Inspect the table and maintenance devices.
  - Lower the table. The table should move smoothly and quietly.
  - Inspect the table, hoses and controls for damage or pinch points.
7. Raise table and secure maintenance bar (See Maintenance Bar).
8. Secure the table to the floor (See Stud Anchor recommendations). Anchoring points are located at the base of the table. All anchoring points are to be used.



### WARNING

Securing the table to the floor can only be performed by trained personnel. Untrained persons are in great danger of serious injury or death.

## Stud Anchor Recommendations

Before operating the Knight Global table, it is imperative that the equipment is securely anchored in place. The recommended anchoring method is the use of expandable carbon steel stud anchors installed in a structurally sound concrete floor at each equipment attachment point. The anchoring studs shall be rated to the following specifications:

- Rated to government G.S.A. spec: FF-S-325 Group VIII-Type1
- 5/8-11 stud thread (2" minimum thread length)
- 4" [ 10.1 cm ] minimum embedment in concrete.
- 6" [ 15.2 cm ] minimum overall length
- Pullout rating 7,700 lbs [ 3493 kg ]
- Shear rating 11,200 lbs [ 5080 kg ]

### Examples of studs which meet these specifications:

- Powers brand power stud CAT # 7432.
- RED HEAD brand PT # JS-58H

## OPERATION

Before operating, read the entire manual and understand all instructions and warnings. If it is necessary to stop the unit before it reaches the closed position, the control must be manually returned to the "NEUTRAL" position.



### WARNING

To avoid property damage and risk of serious injury or death, load and unload table in down position only.

If the table does not operate, makes unusual noises or seems unsafe, cease operation immediately and notify maintenance personnel.

### Raise:

1. Ensure the load is centered on table.
2. Move the control valve to the "Lift Up" position to raise the table.
3. Return control valve to neutral position when at desired height.

### Lower:

1. Move the control valve to the "Lift Down" position to lower table.
2. Return control valve to neutral position when at desired height.

**Rotate:** On rotating tables, ensure the brake is on when loading, lifting or lowering the table.

1. Release the brake.
2. Manually turn table to desired position.
3. Turn the brake on.

### Tilt:

1. Move the control valve to the "Tilt Up" position to increase the angle of the table..
2. Return control valve to neutral position when at desired tilt.
3. Move the control valve to the "Tilt Down" position to lower the tilt.
4. Return control valve to neutral position when at desired height.

Please Note: The above is a general guide line for safe table operation. If at any time a lift truck forks entered the scissors or internal area of the table, a complete inspection should be performed. If you have any questions of concerns about the table's safe operation contact Knight Global 248-377-4950.

## MAINTENANCE

### WARNING



Remove load from equipment. Never attempt to service any table with weight on platform. Remove all debris from around and inside table.

Never attempt to raise table with forks from lift truck.

Maintenance and repair can only be performed by trained personnel. Untrained persons are in great risk of serious injury or death.

1. Raise table using control valve.
2. Lower maintenance bar so that bar rests on bottom of the lift table pan.



Lift Maintenance Bar



Tilt Maintenance Bar

3. Lower table using control valve until bar comes into contact with table pan wall and lockout if applicable.

### CAUTION



Whenever possible, leave system pressurized. (during installation and removal etc).

4. When maintenance is complete, raise table using control valve and return maintenance bar to its support rest.

#### Incapacitated Table

1. Disconnect air supply and remove control valve. This will allow air to enter system and avoid creating a vacuum.
2. Remove scissors pivot pins from pan and remove top assembly. With top pan removed and scissor base exposed perform services as needed.

### WARNING



Remove load from equipment. Never attempt to service any table with weight on platform. Remove all debris from around and inside table. Never attempt to raise table with forks from lift truck.

### CAUTION



Improper maintenance procedures can kill!!! Read and follow all instructions in this manual. For maintenance or service that is not covered in this manual, call Knight Global service department for recommendations and instructions. Phone: (248) 377-4950 ext. 162.

## Inspection

Timely and effective maintenance will ensure that your Knight system performs at peak efficiency. Under most typical operating conditions, the system will require only minimal maintenance. However, there are a few critical areas in which regular maintenance attention is critical. These areas include:

### Daily Inspection

- Visually inspect all air lines for ruptures or signs of wear.
- Check all controls for ease of operation
- Check for missing or loose screws
- Check all hose connections to ensure they are intact & there are no leaks.
- Check for any damage that may hamper any free movement.
- Check all floor mounting bolts for damage.

### Semi-Annual Inspection

- A complete inspection should be performed. Extremely damaged or torn bellows skirting should be replaced at this time. Following the "General Maintenance" procedure above, lift the bellows skirting and visually inspect all moving parts (pivot points, wheels, axles, etc.) for lift truck damage or wear.
- Check internal / external hoses and fittings for leaks or damage. Retighten fittings if necessary
- Check the air bag for unusual signs of damage or wear. Refer to page 4 for visual reference guide.
- Check for missing or loose screws.
- Check all floor mounting bolts for damage.

## AIR BAG LIFE EXPECTANCY

Air bags should be visually inspected bi-yearly for the first 5 years after installation. Air bags should be inspected for visually exposed cords, abrasion, gouges, dry-rot/cracking, separation of the air bag at the mounting plate, etc. (ref. provided photos)

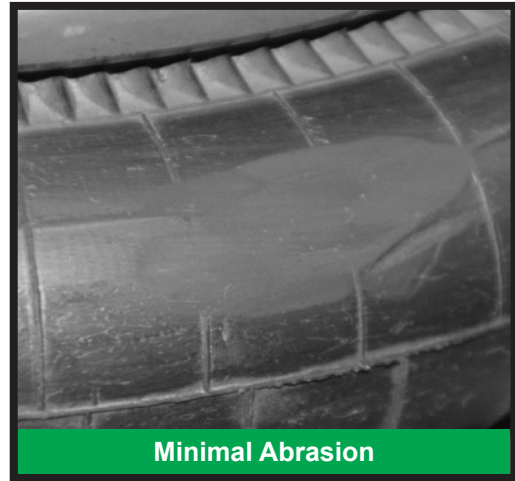
Preventive maintenance procedures identifies that after 5 years or 62k\* cycles to replace the air bags. If maintenance determines there is no significant wear or damage to the bags and it's decided to continue to use the lift table, it is recommended to increase the inspection frequency to a quarterly basis.

If the lift table is idle for an extended period of time (a few months), cycled less than 6k times per year or not stored in a cool dry environment and out of direct sunlight, a thorough inspection of the air bag is necessary. The air bag may need to be replaced.

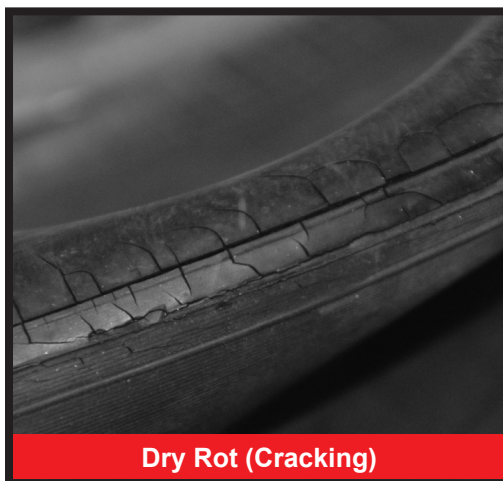
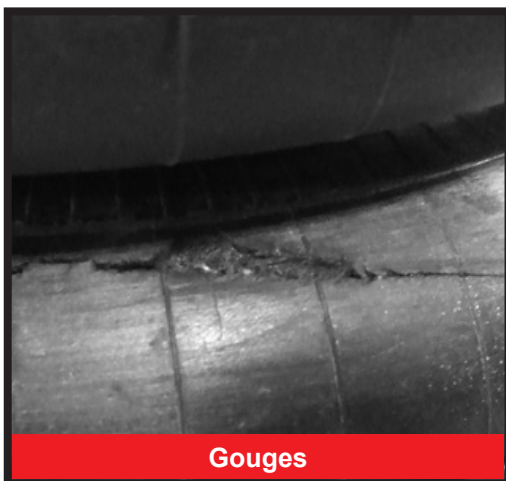
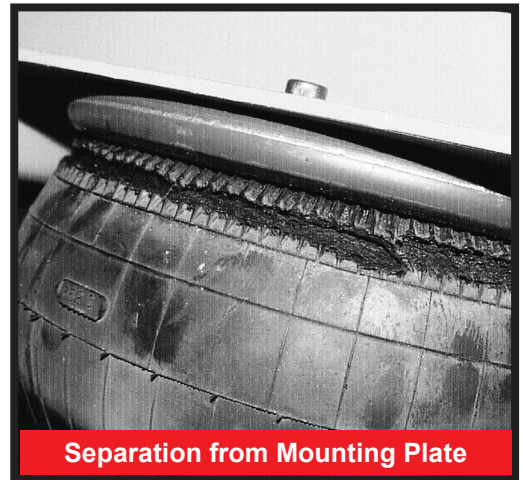
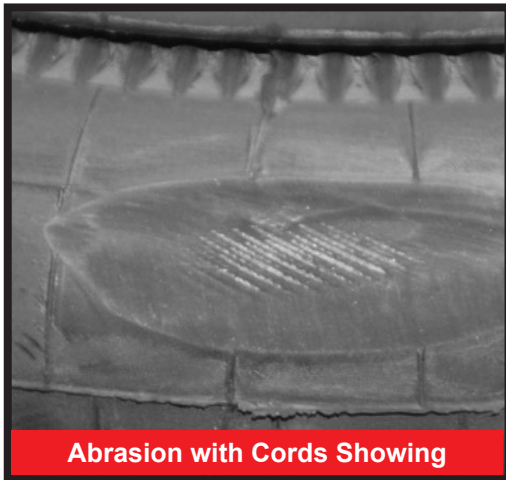
\*(20 cycles per shift x 2 shifts x 6 days per wk.  
x 52 wks. per yr. x 5 yrs.)




ACCEPTABLE



REPLACE



## DECOMMISSIONING TABLE

	<b>WARNING</b>
	<p>Remove load from equipment. Never attempt to remove any table with weight on platform. Remove all debris from around and inside table.</p> <p>Removing the table from the floor can only be performed by trained personnel. Untrained persons are in great danger of serious injury or death.</p>

Knight Global Lift Tables contain various materials which, at end of service life, should be disposed of or recycled, in accordance with local regulations.

1. Ensure there is not a load on the table.
2. Lower table to full down position using control valve.
3. Turn off the main air supply.
4. Disconnect main air supply to air "IN" connection on the controls.
5. Remove anchor bolts that are located at the base of the table.
6. Use fork truck to remove table.

## WARRANTY

Knight warrants that its products and parts shall meet all applicable specifications, performance requirements, and be free from defects in material and workmanship for one year, (Servo Systems for (2) two years, Pneumatic Lift Tables for (5) five years), from the date of invoice, unless otherwise noted.

Knight warrants the Servo Hoist, Arms, and Tractors to be free from defects in material or workmanship for a period of two years or 6000 hours use from the date of shipment.

On design and build jobs, the customer is the owner of the equipment once they authorize shipment. The purchased equipment cannot be returned for reimbursement or credit.

### Exclusions

This warranty shall not cover the failure or defective operation caused by inadequate training provided by customer regarding the operation and/ or maintenance of the tool, misuse, negligence, misadjustment, or any alteration not approved by Knight Global. Knight's obligation is limited to the replacement or repair of Knight's products at a location designated by Knight Global. Buyer is responsible for all associated internal removal and reinstallation costs as well as freight charges to and from Knight Global. Knight's maximum liability shall not in any case exceed the contract price for the products claimed to be defective.

Any field modification made to Knight Products or Systems without the written authorization by Knight Global shall void Knight's warranty obligation.

Any purchased components not manufactured by Knight Global and their specific individual warranties are not covered. Paint defects, scratches and marring from shipping are also excluded on all Knight Global products and products not manufactured by Knight Global.

Knight Distributors/ Agents are not authorized to circumvent or change any of these terms and/ or conditions of this warranty unless prior approval is received in writing by Knight Global Management. Verbal statements made by Knight Distributors/ Agents do not constitute warranties.

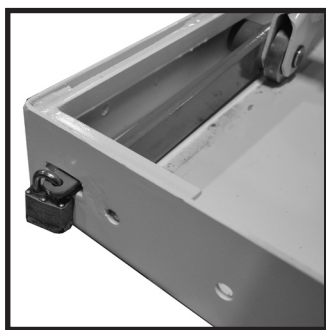
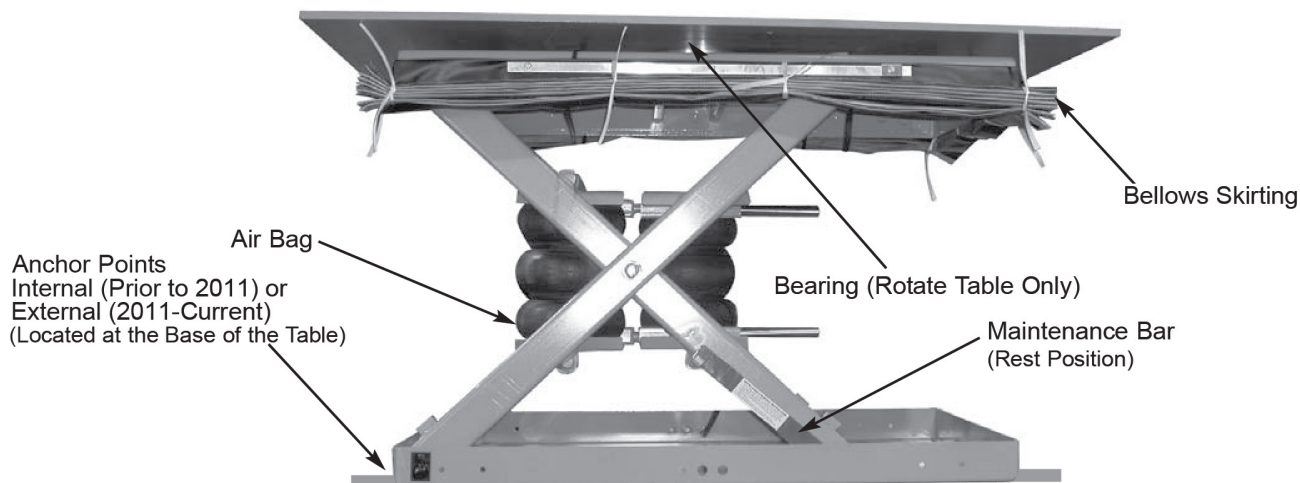
### Disclaimer

**OTHER THAN AS SET FORTH HEREIN, NO OTHER EXPRESSED WARRANTIES, AND NO IMPLIED WARRANTIES, ORAL AND WRITTEN, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE BY KNIGHT GLOBAL WITH RESPECT TO ITS PRODUCTS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.**

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## LIFT TABLE AND OPTIONAL EQUIPMENT



**Lift Maintenance Bar  
(Engaged Position with Lock)**



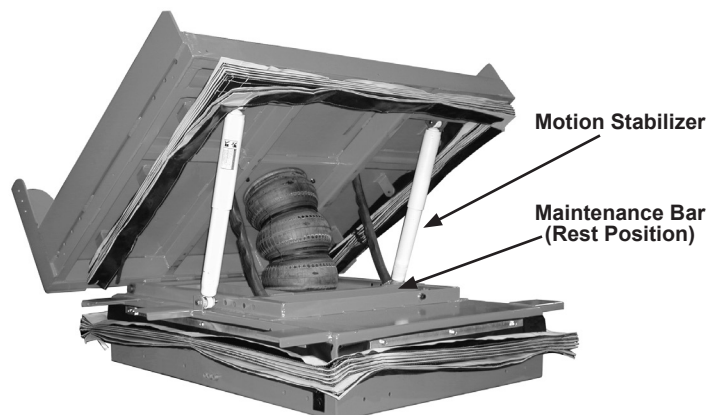
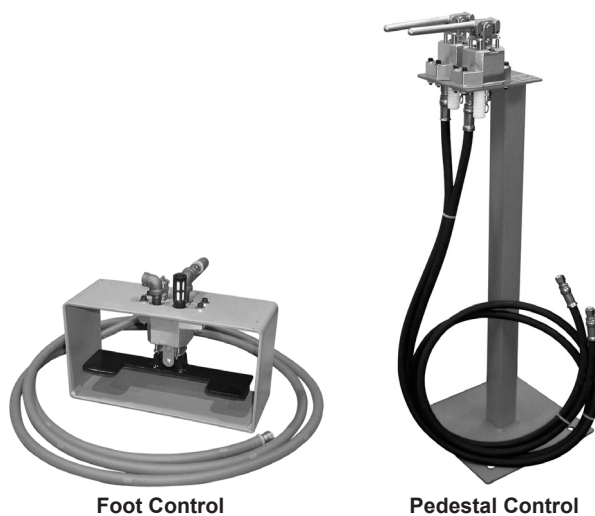
**Tilt Maintenance Bar  
(Rest Position)**



**Tilt Maintenance Bar  
(Engaged Position)**

### GENERAL SPARE PARTS LIST

Part Number	Part Description
TBA1102A	Knight Valve Hand Control
TBA1104A	Knight Valve Foot Control
T-358-8044	Knight Air Bag
BSS100T	Bellows Skirting For Tilt Table
BSS100L	Bellows Skirting For Lift Table
BSS100LT	Bellows Skirting For Lift and Tilt Table
MSD-100	Motion Stabilizer
TVA-100P	Pedestal Control Assembly-Tilt
TVA-200F	Foot Control Assembly-Tilt
T-WA3850	Knight Wheel Axle Assemblies
T-WA3850WW	Knight Wide Wheel Axle Assemblies
LTVA-100P	Pedestal Control Assembly-Lift And Tilt
LTVA-200F	Foot Control Assembly-Lift And Tilt
T-2001	Air Brake Control Foot
T-2003	Air Brake Control Hand
T-20-0414R	Roteck Bearing Assembly
T-C721X	Fabco Cylinder For Air Brake
T-721BP-2	Pad For Brake Assembly
LRVA-100P	Pedestal Control Assembly-Lift And Rotate
LRVA-200F	Foot Control Assembly-Lift And Rotate
LVA-100P	Pedestal Control Assembly-Lift
LVA-200F	Foot Control Assembly-Lift
T-CA2850	Caster Bearing And Shaft Assembly
TBA-20LTTHKIT	Hose Management Kit for Lift, Tilt, Lift and Tilt
TBA-30LRHKIT	Hose Management Kit for Lift and Rotate, Low Profile





# KNIGHT GLOBAL

KNIGHT GLOBAL

2705 Commerce Parkway

Auburn Hills, MI 48326

Phone 248-377-4950 | Fax 248-377-2135

For additional copies\literature e-mail: [sales@knightglobal.com](mailto:sales@knightglobal.com)

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