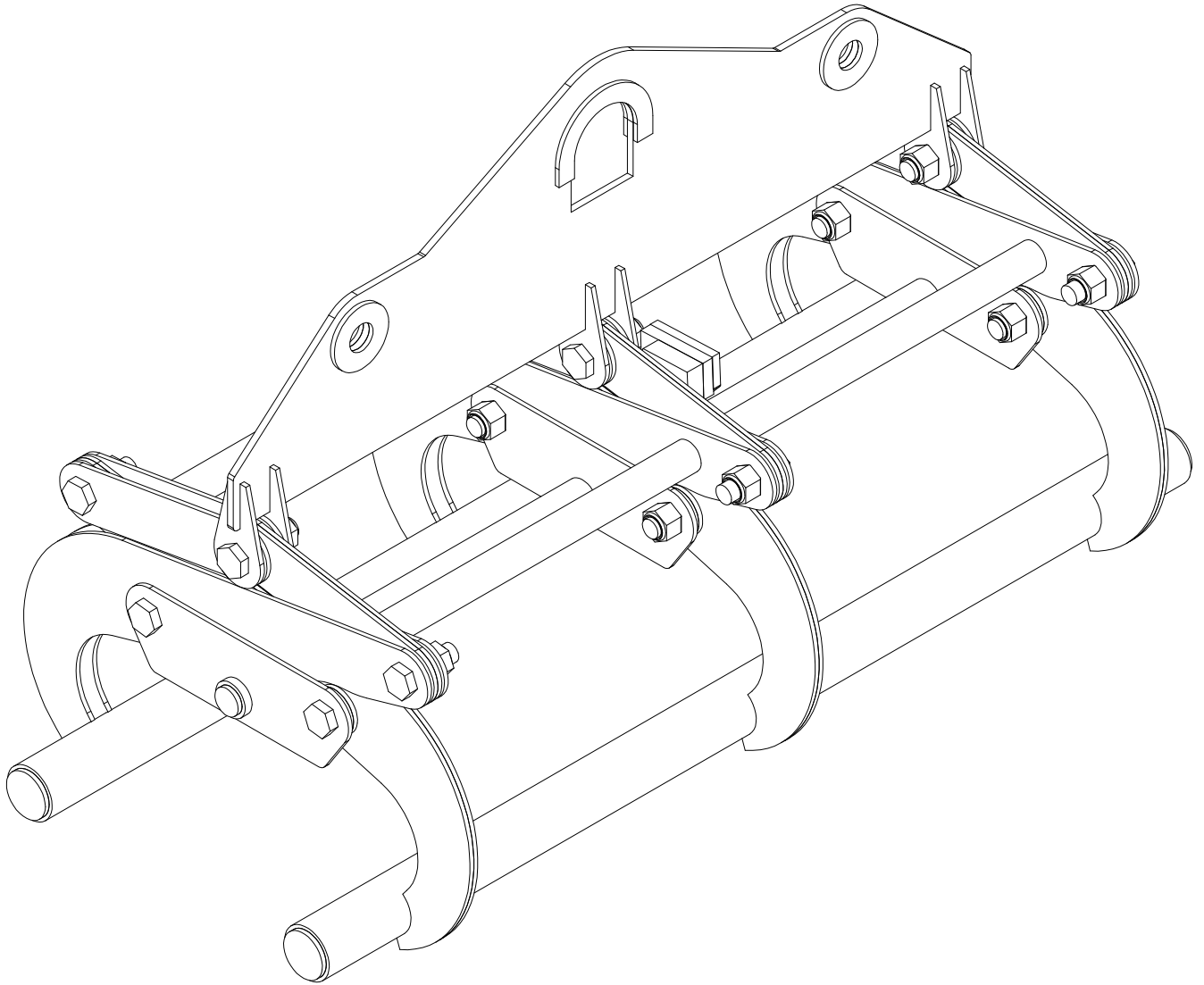


**Attachment Solutions**



# **KL6KTWALL56**

**Concrete median barrier handling device**

**Operators Manual**

**Conforms to ASME B 30.20, BTH-1**

**Design Category B, Service Class 3**





## Section I. General Information

May we take this opportunity to thank you for purchasing the KENCO T-WALL LIFT<sup>®</sup> highway median barrier wall handling system. The T-WALL LIFT<sup>®</sup> System provides the ultimate in below the hook concrete highway barrier handling versatility. The T-WALL LIFT<sup>®</sup> is quality engineered to provide years of trouble free, low maintenance performance. **Please read and fully understand this manual and any additional attached documentation before attempting to setup, operate or maintain the T-WALL LIFT<sup>®</sup> system.**

This manual should be made available to all persons who may use or maintain the T-WALL LIFT<sup>®</sup> system. For additional information, please feel free to contact the service department at Kenco at 1-800-653-6069

## Section II. Safety

### A. General

1. Safety practices described in this manual are intended as guidelines for safe operation under most conditions and are supplementary to any and all rules and/or laws governing any aspect of the KENCO T-WALL LIFT<sup>®</sup> operation that are in force in your area.
2. Before operating the KENCO T-WALL LIFT<sup>®</sup>, you should have a clear understanding of said laws and regulations to ensure compliance.
3. Throughout this manual there are parts tagged with one or more of the following safety warnings. Particular care must be exercised with regard to these statements.



#### **DANGER**

This warning is used where there is a high probability of death or serious injury if the instructions are not followed correctly.



#### **WARNING**

This warning is used where there is a possibility of injury to yourself or others if the instructions are not followed correctly.



#### **CAUTION**

This warning is used where there is a possibility of damage to the machine if the instructions are not followed correctly.

### B. Personal Safety

1. Wear appropriate protective clothing and related safety equipment including protective glasses, hardhat, gloves, protective shoes, hearing protection, and any other equipment/devices dictated by job conditions.



170 State Route 271  
Ligonier, PA 15658  
1-800-653-6069

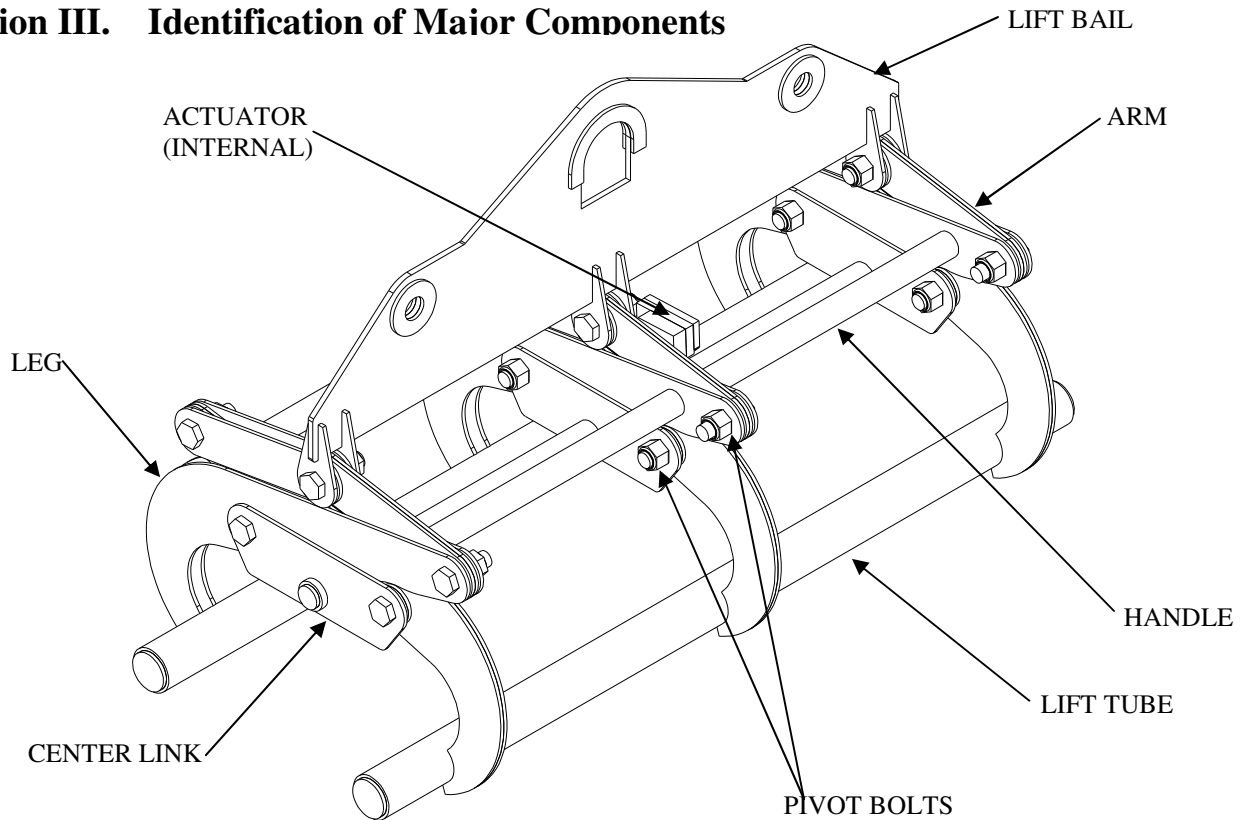
2. Do not wear loose clothing, jewelry, or hairstyles that could become entangled in the KENCO T-WALL LIFT® or rigging hardware.
3. Keep hands, feet, and any other appendages clear of T-WALL LIFT® while in operation.

### C. Operation Safety

1. **DO NOT ATTEMPT TO OPERATE OR PERFORM MAINTENANCE ON THE T-WALL LIFT® UNTIL READING AND FULLY UNDERSTANDING THIS MANUAL**
2. **MAINTAIN SAFE DISTANCE FROM LOAD - NEVER ALLOW T-WALL LIFT® OR LOAD TO PASS OVER ANY PART OF A PERSON.**
3. **DO NOT USE A KENCO T-WALL LIFT® THAT HAS BEEN ALTERED ACCIDENTALLY OR INTENTIONALLY, IN ANY WAY WITHOUT INSPECTION BY QUALIFIED PERSONNEL.**
4. **DO NOT USE A KENCO T-WALL LIFT® FOR ANY TASK OTHER THAN THE INTENDED PURPOSE OF THE DESIGN.**



### Section III. Identification of Major Components



### Section IV. Setup

- A. Check T-WALL LIFT<sup>®</sup> for any signs of damage incurred during shipping.
- B. Record model and serial #of assembly and components.
- C. Check that all bolts are tightened appropriately
  - 1. Actuator bolts: app. 40+ ft. lbs.
  - 2. Pivot bolts: Bolt/nut should be able to rotate freely and not compress members.
- D. DO NOT OVER TIGHTEN PIVOT POINT HINGE POINT BOLTS . PIVOT POINT BOLTS MUST HAVE (LIMITED) ROTATIONAL FREEDOM AT THIS POINT.**
- E. Check that all identification and warning labels are present.
- F. Attach T-WALL LIFT<sup>®</sup> to hoist.
  - 1. Do not rig the T-WALL LIFT directly to lifting equipment. Always utilize a chain, wire rope or nylon sling to isolate the T-WALL LIFT from the machine/sheave block



170 State Route 271  
Ligonier, PA 15658  
1-800-653-6069

2. Use as few rigging components (shackles, slings, chain, etc.) as possible.
3. **ALL RIGGING COMPONENTS MUST HAVE A WORKING LOAD LIMIT THAT IS EQUAL TO OR GREATER THAN THE COMBINED WEIGHT OF INTENDED LOAD PLUS THE WEIGHT OF THE T-WALL LIFT<sup>®</sup>.**
4. **UNDER NO CIRCUMSTANCES SHOULD ANY COMPONENT USED AS RIGGING TO T-WALL LIFT<sup>®</sup> BE OF A RATED CAPACITY LESS THAN THE WORKING LOAD LIMIT OF THE T-WALL LIFT<sup>®</sup>**
5. **DO NOT RIG UNPROTECTED NYLON SLINGS OR WIRE ROPE DIRECTLY THROUGH LIFT BAIL.**
6. **IF USING EQUIPMENT OTHER THAN A CRANE: USE RIGGING OF SUFFICIENT LENGTH TO PREVENT CONTACT BETWEEN T-WALL LIFT<sup>®</sup> AND EQUIPMENT.**



## Section V. Operation



*Before attempting to use the T-WALL LIFT<sup>®</sup> device **ALWAYS** perform a test lift on the intended object(s) to confirm proper operation. **DO NOT** use a T-WALL LIFT<sup>®</sup> to handle objects beyond the rated capacity or range.*



*Manipulation of the T-WALL LIFT<sup>®</sup> by ground personnel for the purpose of alignment with load shall only be done with T-WALL LIFT suspended above the wall. **KEEP ALL HANDS AWAY FROM T-WALL LIFT DURING OPERATION.***



*Lift tubes and surfaces of the load that come into contact with the lift tubes **MUST BE CLEAN** and free of any foreign material or coating that could compromise the grip.*

### A. Operation

1. Ensure that the T-WALL LIFT<sup>®</sup>'s capacity and range are appropriate to the median barrier wall to be handled.
2. Ensure lift tubes and wall pads are clean and free of debris or contamination.
3. Position T-WALL LIFT<sup>®</sup> at or near center of object to be lifted.
4. Lower T-WALL LIFT<sup>®</sup> onto object, taking care to minimize impact.
5. Ensure that all persons are clear of T-WALL LIFT<sup>®</sup> and wall.
6. Release tension on lift cable.
7. Raise T-WALL LIFT<sup>®</sup> and load in a smooth motion, avoid shock loading.
8. Deposit at desired location.
9. Release tension on lift cable. (Note: avoid undue slamming of the T-WALL LIFT<sup>®</sup> into open position to prolong actuator life.)
10. Remove T-WALL LIFT<sup>®</sup> (T-WALL LIFT<sup>®</sup> is latched in open position automatically)

*Tip: The majority of wear on the T-WALL LIFT<sup>®</sup>, pads, and associated components results from shock loading, impacting, and poor alignment of the T-WALL LIFT<sup>®</sup> with the load. Minimizing these incidents will greatly extend the life of the T-WALL LIFT<sup>®</sup> and consumables.*

- B. AVOID JARRING, SWINGING, AND OTHERWISE UNNECESSARY MANIPULATION OF THE LOAD.**
- C. AVOID HANDLING OF LOADS OFF CENTER.**
- D. DO NOT USE THE T-WALL LIFT<sup>®</sup> TO PICK MULTIPLES OF ITEMS IN A SINGLE PICK.**
- E. OBSERVE ALL SAFETY PRACTICES ASSOCIATED WITH OPERATION OF HOIST MACHINERY.**
- F. DO NOT USE T-WALL LIFT<sup>®</sup> TO DRAG LOADS.**
- G. DO NOT ALLOW LOAD (BARRIER SECTION) TO CONTACT ANY SURFACE/OBJECT WHILE BEING HANDLED.**
- H. IF LIFTER HAS BEEN EXTENDED WITH NO WALL IN PLACE, EXTREME CARE MUST BE TAKEN WHEN RESTORING LIFTER TO LATCHED OPEN POSITION.**



*The T-WALL LIFT<sup>®</sup> barrier handling device produces grip proportional to and dependent on the weight of the barrier wall. It is for this reason that while in operation the T-WALL LIFT and wall NEVER be allowed to contact other items.*





## Section VI. Maintenance

### A. Daily:

1. Visually inspect T-WALL LIFT® for signs of stress and wear.
2. Check that bolts and nuts are snug.
3. Ensure free movement of all components.
4. Ensure that all warning labels are present and readable.
5. Check that actuator mounting screws are snug and seated.
6. Lubricate all moving mechanisms with penetrating oil.
7. **LUBRICATE ACTUATOR WITH LIGHT PENETRATING OIL ONLY (WD40™)**

### B. Annually\*

1. Remove pivot bolts and washers, coat with grease.
2. Inspect holes, pins, bolts etc. for wear. See sect VII for criteria.
3. Remove actuator, clean and lubricate with light penetrating oil – check for signs of wear, replace if necessary.

\* *Frequency depends on usage, environmental conditions, etc.*

## Section VII. Inspection Criteria

**THE T-WALL LIFT® UNIT AND ALL OF ITS ASSOCIATED COMPONENTS SHALL BE REMOVED FROM SERVICE AND TAGGED APPROPRIATELY UNTIL RECERTIFICATION BY A QUALIFIED INDIVIDUAL IN ANY OF THE FOLLOWING CONDITIONS:**

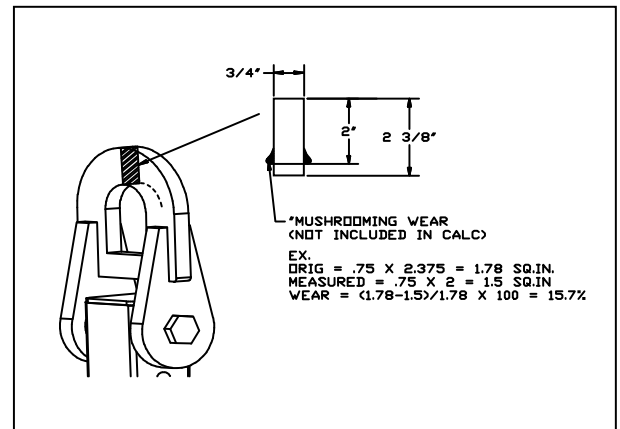
### A. General

1. Cracking in any component or member.
2. Cracking in any weld.
3. Visible distortion in any member.
4. Visible distortion in any Bolt/Pin/Shaft.

### B. Specific

#### 1. Lift Bail

- a. The lift bail shall be replaced if a 20% loss in cross-sectional area from the original member(s) can be demonstrated. Note: cross section of welds, “mushroomed” wear faces, and burrs are not accounted for as cross-sectional area. (See ill.)



#### 2. Holes

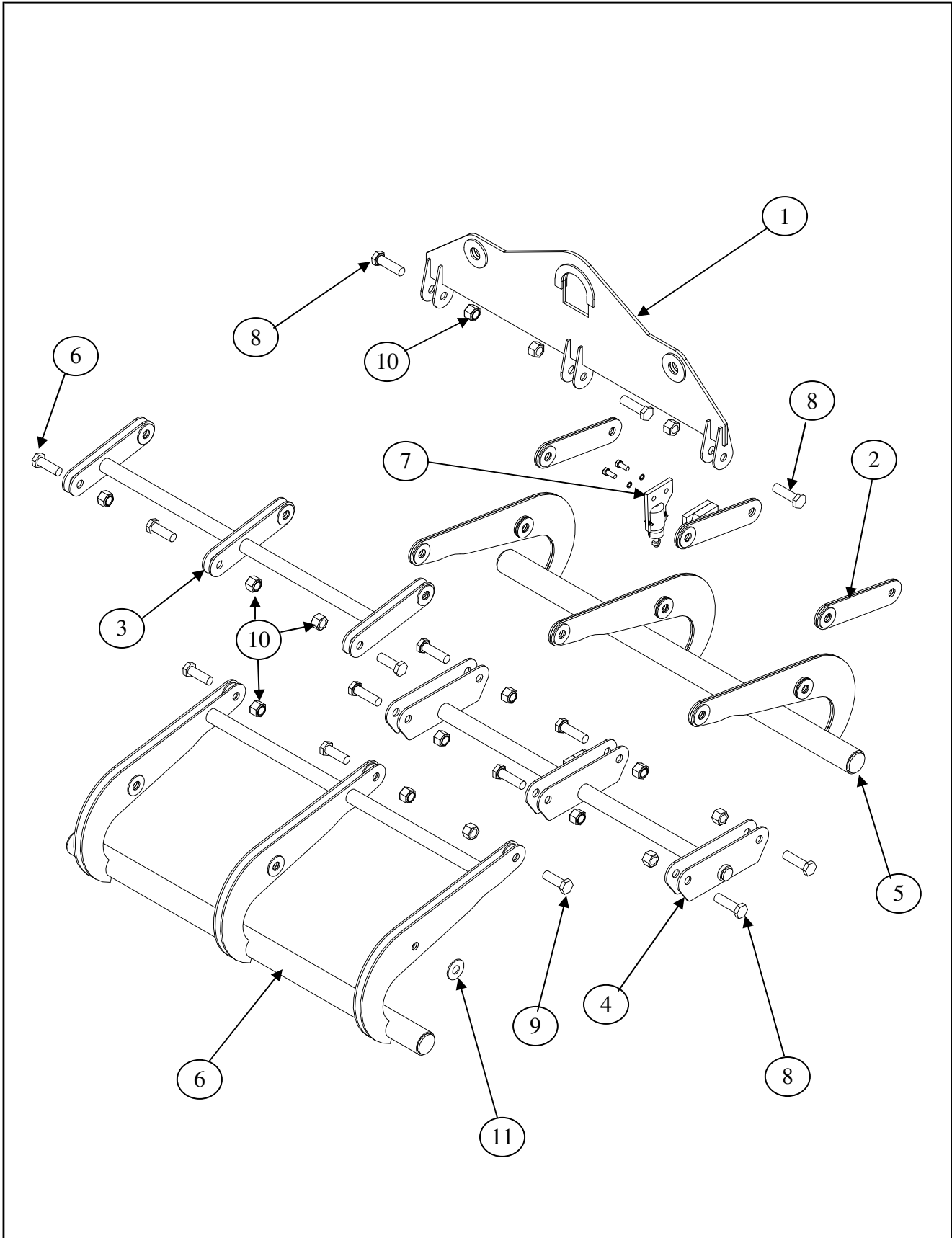
- a. Any members through which bolted or pinned connections pass shall be replaced if a 10% loss in cross-sectional area from the original member(s) can be demonstrated. Note: cross section of welds, “mushroomed” wear faces, and burrs are not accounted for as cross-sectional area.

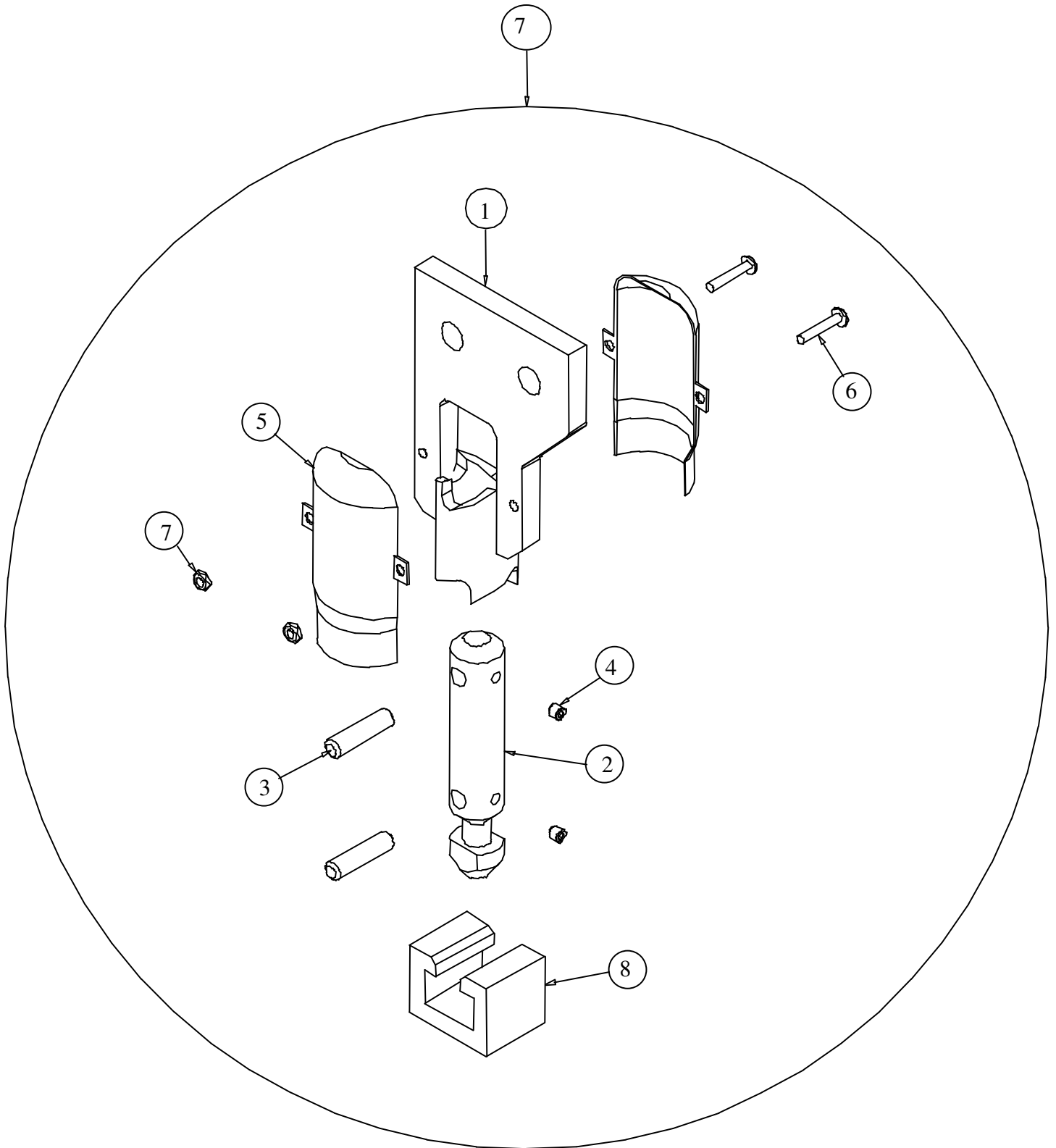
#### 3. Pins/Bolts

- a. Any visible deformation of a pin, shaft or bolt shall require replacement of that part.

#### 4. Pads – Replace if:

- a. For units utilizing urethane gripping pads, if surface of any given mounting bolt is not at least 3/32” below the surface of the pad,.
- b. Any de-lamination of the pad from the backing plate.
- c. Any scarring, chunking, or missing pad material constituting a total combined loss of surface area greater than 3 sq. in. per pad.
- d. Any single scar, chunk, or missing pad face that is greater than 1 sq. in per pad.







20

**DANGER**  
**DO NOT STAND UNDER OR NEAR**  
**WHILE MACHINE IS OPERATING**

21

**KENCO CORPORATION**  
**877-4ATTACH**


MODEL


USAGE

CAPACITY  WT

SERIAL NO

24

 **WARNING**




Read and understand operator's manual before using this equipment.

Failure to follow operating and maintenance procedures could result in death or serious injury.

22

**THIS LIFTER IS DESIGNED TO ASME BTH-1**  
**DESIGN CATEGORY  SERVICE CLASS**

23

 **WARNING**

**DO NOT** exceed the rated load capacity of the lifter.

**DO NOT** attempt to operate a malfunctioning or damaged unit.

**DO NOT** allow unit or load to pass over any part of a person.

**DO NOT** leave a suspended load unattended.

**DO NOT** remove or obscure any labels or markings.

**DO NOT** operate or service without first having read and understood the operating manual.

**DO NOT** lift loads higher than necessary.

**DO NOT** alter or modify this equipment.

**DO NOT** use lifter for other than designated purposes.

**DO NOT** lift unbalanced loads.

**DO NOT** allow load to contact other objects while suspended.

**INSPECT LIFTER PRIOR TO EACH USE.**

25 (ex.)



**Model: KL6KTWALL5**  
**Unit Weight: 650 LBS**  
**Capacity: 6,000 LBS**  
**Usage: 1-2 SECT. T-WALL**

170 State Route 271, Ligonier, PA 15658  
www.kenco.com 1-877-4-ATTACH



NO	QTY	NAME
1	1	LIFT BALE ASSEMBLY
2	1	ARM ASSEMBLY - ACTUATOR SIDE
3	1	ARM ASSEMBLY - NON ACT. SIDE
4	1	CENTER LINK ASSEMBLY
5	1	LEG ASSEMBLY (ADJACENT LEGS)
6	1	LEG ASSEMBLY (SEPERATED LEGS)
7	2	ACTUATOR ASSEMBLY
7-1	1	MEDIUM ACTUATOR BODY
7-2	1	MEDIUM ACTUATOR SHAFT
7-3	2	MEDIUM ACTUATOR PIN
7-4	2	1/4-20 X 1/4" SET SCREW
7-5	2	MEDIUM ACTUATOR COVER
7-6	2	#10-24 X 7/8" SOCKET HEAD SCREW
7-7	2	#10-24 NYLOCK NUT
7-8	1	MEDIUM RECEIVER BLOCK
8	9	1 X 3.5 GRADE 8 BOLT
9	6	1 X 3 GRADE 8 BOLT
10	15	1 NYLOCK NUT
11	36	1 FLAT WASHER
20	4	DANGER STICKER
21	1	IDTAG
22	1	BTH TAG
23	1	LG. WARNING STICKER
24	1	SM. WARNING STICKER
25	1	ID STICKER





## **Section IX.      Warranty**

### **A. Policy**

1. KENCO Corporation (KENCO) warrants the KENCO T-WALL LIFT® lifting device (not including pads or consumable items) sold by KENCO to be free from proven defects in material and workmanship for a period of six (6) months from the delivery date to the original customer.
2. Warranty is limited to replacement of parts and/or assemblies, which upon inspection by KENCO are deemed to be defective in material, workmanship, or both.
3. Warranty shall not extend to products that have been altered or repaired in any way without the express written consent of KENCO.
4. Warranty shall not extend to any product that has been misused, abused, or improperly applied or any defect resulting thereof.
5. Defects and corrosion that are the result of improper storage and/or maintenance are not warrantable.
6. Wear items such as Pads, Pins or Lifting bails etc. are not considered for warranty claims.

### **B. Disclaimer**

1. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER REPRESENTATIONS AND WARRANTIES EXPRESSED OR IMPLIED, AND KENCO EXPLICITLY DISCLAIMS AND EXCLUDES ANY IMPLIED WARRANTY OF MERCHANTABILITY FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL THE END USER BE ENTITLED TO ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES OF ANY KIND ARISING OUT OF BREACH OF CONTRACT, WARRANTY (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORIES OF LAW, WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY KENCO, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO.