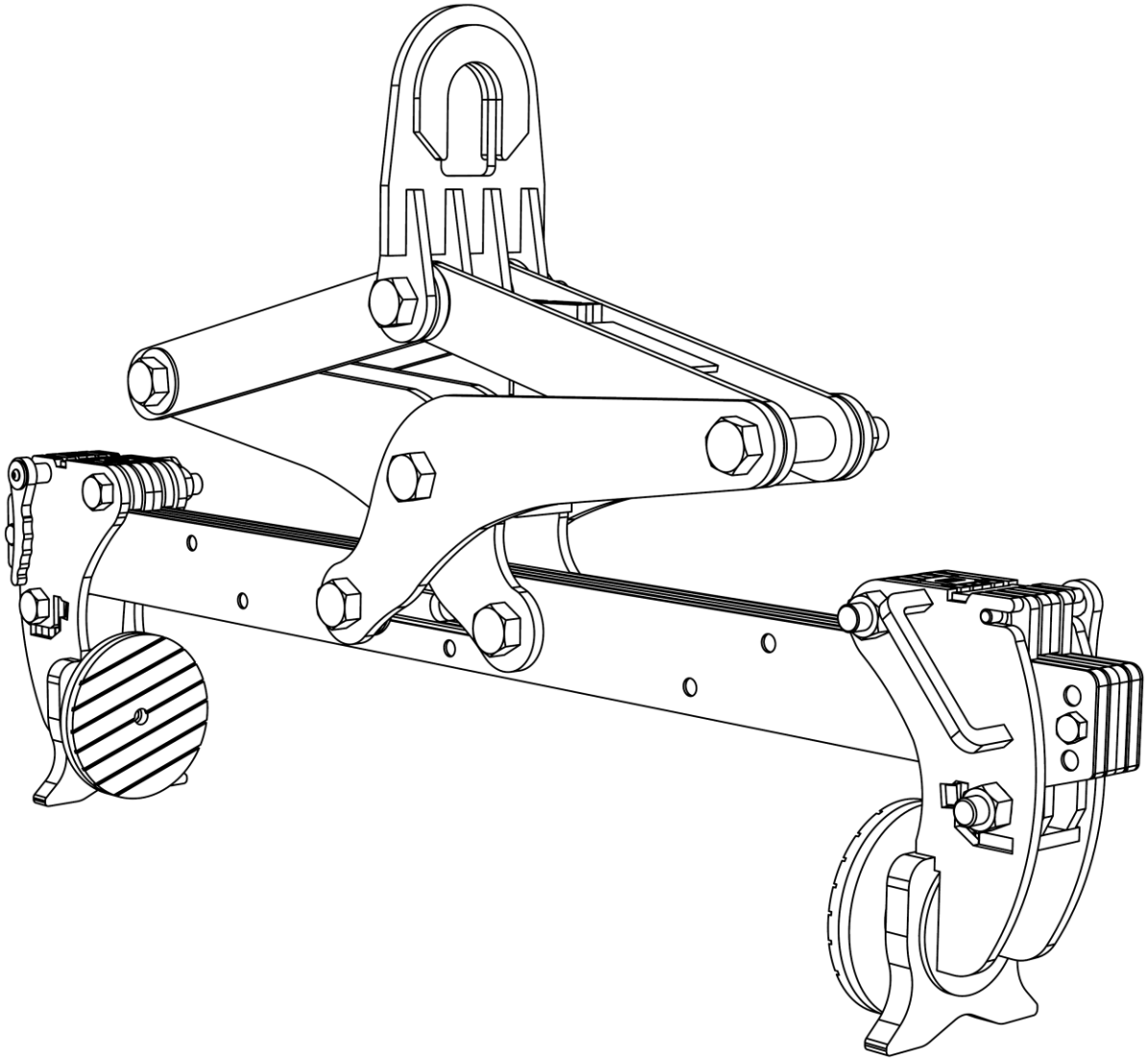
KENCO

Attachment Solutions



Multi-Lift® System

Operator's Manual

Conforms to ASME B 30.20, BTH-1
Design Category B, Service Class 3

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

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RECORD INFORMATION HERE

FOR REFERENCE

MODEL		ATTACHMENT SERIAL NUMBER	
BODY SERIAL NUMBER		ATTACHMENT	
ATTACHMENT		ATTACHMENT SERIAL NUMBER	
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Section I. General Information

May we take this opportunity to thank you for purchasing the KENCO Multilift® system. The Multilift® System provides the ultimate in below the hook handling versatility and 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 Multilift® system**.

This manual should be made available to all persons who may use or maintain the Multilift® 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 Multilift® operation that are in force in your area.

2. Before operating the KENCO Multilift®, 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.

2. Do not wear loose clothing, jewelry, or hairstyles that could become entangled in the KENCO Multilift® or rigging hardware.

3. Keep hands, feet, and any other appendages clear of the Multilift® while in operation

C. Operation Safety.

1. **DO NOT ATTEMPT TO OPERATE OR PERFORM MAINTENANCE ON THE MULTILIFT® UNTIL READING AND FULLY UNDERSTANDING THIS MANUAL**

2. **MAINTAIN SAFE DISTANCE FROM LOAD - NEVER ALLOW MULTILIFT® OR LOAD TO PASS OVER ANY PART OF A PERSON.**

3. **DO NOT USE A KENCO MULTILIFT® THAT HAS BEEN ALTERED ACCIDENTALLY OR INTENTIONALLY, IN ANY WAY WITHOUT INSPECTION BY QUALIFIED PERSONNEL.**

4. **DO NOT USE A KENCO MULTILIFT® FOR ANY TASK OTHER THAN THE INTENDED PURPOSE OF THE DESIGN.**

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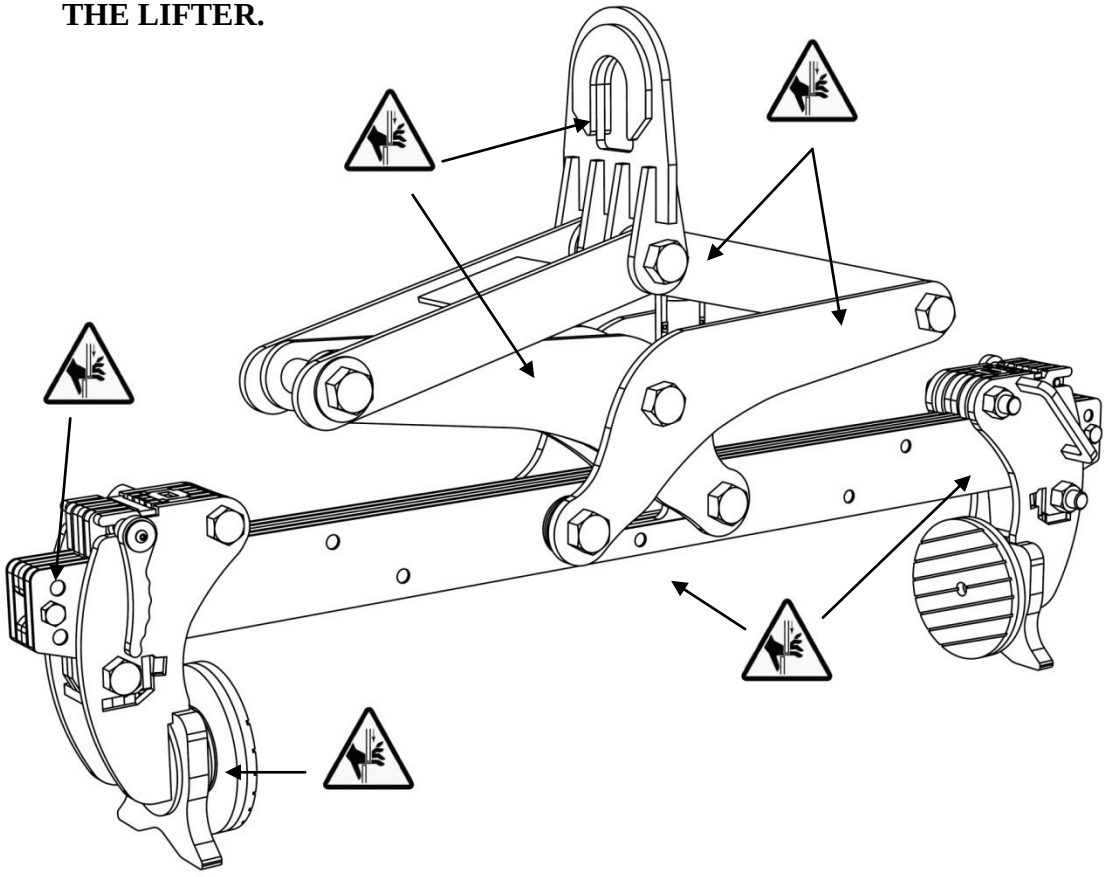
D. Pinch Points.

1. **Due to the mechanical nature of the Multilift®, extreme care must be taken to avoid placing hands, limbs, hair, or clothing on or near the lifter while in operation.**

2. **Extreme care must be taken while adjusting the legs of the lifter. Keep fingers, clothing, etc. clear of the gap(s) formed between the leg and core structures.**

3. **AT NO TIME SHALL ANYTHING OTHER THAN THE HANDLES OF THE LIFTER BE USED TO CONTROL THE ALIGNMENT, LOADED OR UNLOADED, OF THE LIFTER.**

4. **USE ONLY THE HANDLES PROVIDED TO ADJUST THE LEGS OF THE LIFTER.**



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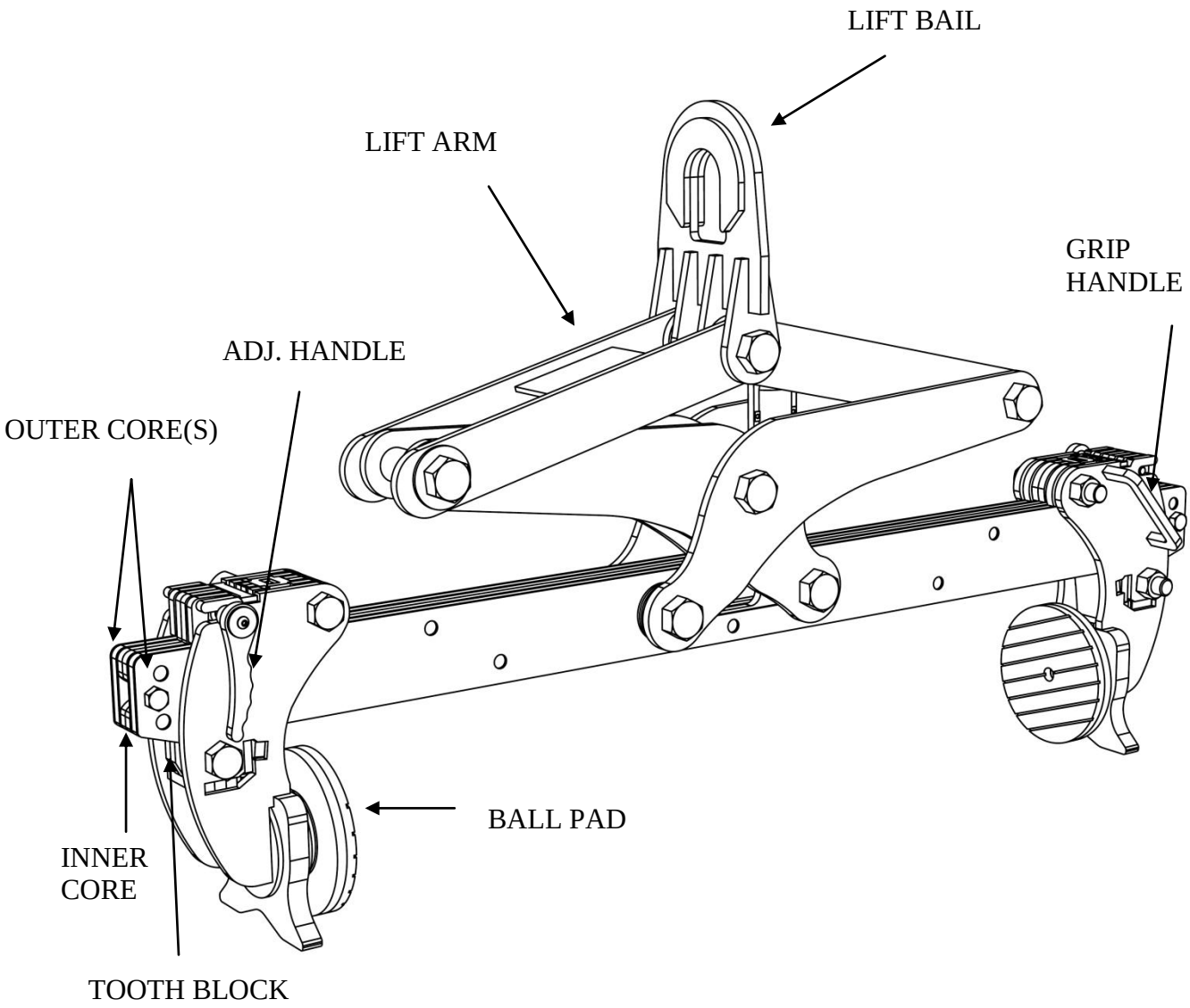
Section II. Identification of Major Components



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Section IV. Setup.

A. Check the lifter for any signs of damage incurred during shipping.

B. Record model and serial #of assembly and components.

C. Check all bolts for snugness.

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

Section V. Grip Adjustment

***CAUTION*:** *The procedures that follow are intended as guidelines. They are to be carried out by qualified mechanics possessing knowledge of general procedures and practices involved with the maintenance of heavy machinery.*

***IMPORTANT**: Wear appropriate protective clothing and personal safety equipment including safety glasses, hard hat, gloves, protective shoes, hearing protection, and any special equipment called for by the job conditions.*

***WARNING**: Failure to observe standard safety practices could result in personal injury. Service personnel and operators must be fully conversant with the maintenance and operating procedures.*

A. Place Multilift® **on object to be lifted to determine grip.**
   1. Pads should have a minimum of ½'' and maximum of 3'' clearance with object.

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B. Place Multilift® on an object narrower than grip and with sufficient height to provide clearance for leg assemblies for adjustment. DO NOT ATTEMPT TO ADJUST LEG ASSEMBLIES WHILE Multilift® IS HANGING.

1. **Care must be taken to ensure that the lifter remains stable and balanced during adjustment.**

C. Leg assemblies are attached to the core using ADJ. HANDLE in the following manner:

1. **Outer Leg Assembly** is latched to **OUTER CORES**.
2. **Inner Leg Assembly** is latched to **INNER CORE.**

D. Leg assemblies are referenced to their respective core member by the spacing of the **TOOTH BLOCKS** inside the leg assembly. The leg referenced to the **INNER CORE** has (1) **TOOTH BLOCK** indexed to contact **INNER CORE,** the leg referenced to the **OUTER CORES** has two **(2) TOOTH BLOCKS** indexed to **OUTER CORES**.

E. Adjust legs for a level pick.

F. Ensure that the lifter's components (leg assemblies, lift core, and lift assembly) do not bind and have travel remaining after adjustment.

G. Multiple Leg Configurations:

1. Legs can be reversed for inside-out gripping.
2. Legs can be used in multiples for open ended boxes. *
3. Lift assembly can be positioned to either side of the leg assemblies to handle "L'' shaped objects.*
4. Custom leg and pad configurations available (extended legs, hardened points, ball joint, etc).*
5. Custom core lengths available.*

**Required additional hardware not included with standard unit.*

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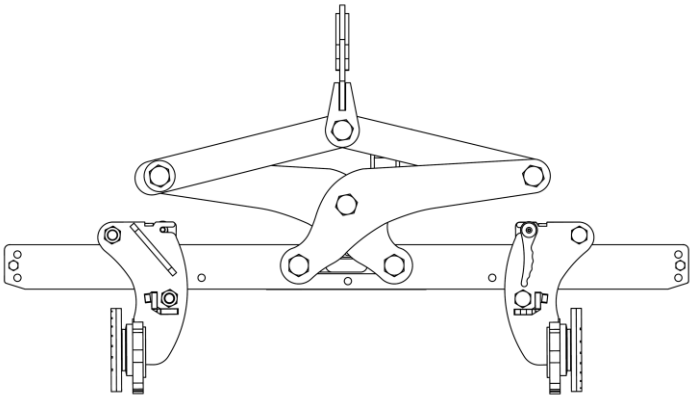
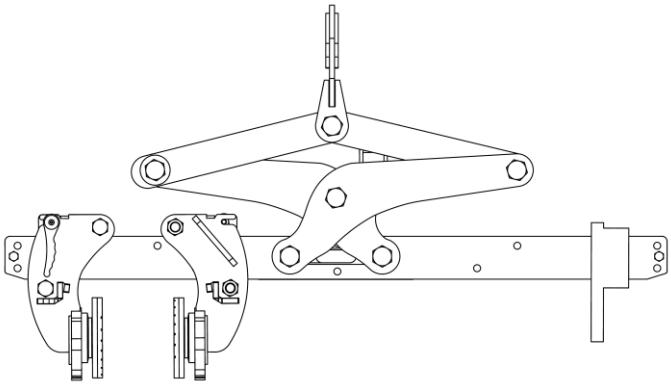
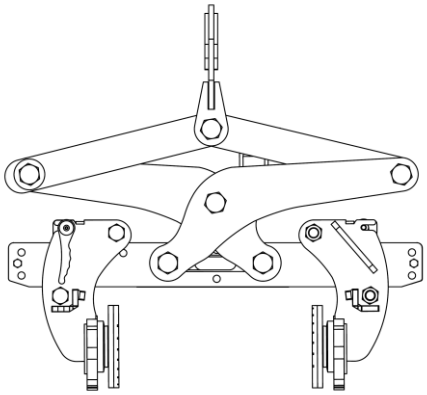


Inside-out Gripping



"L" Shaped Object
(shown with additional counterweight)



Shortened Cores

Section VI. Operation.

DANGER

*Before attempting to use the Multilift® device **ALWAYS** perform a test lift on the intended object(s) to confirm proper operation. **DO NOT** use a Multilift® to handle objects beyond the rated capacity or range.*

DANGER

*Manipulation of the Multilift® by ground personnel for the purpose of alignment with load shall only be done with Multilift® suspended above the wall. **KEEP ALL HANDS AWAY FROM MULTILIFT® DURING OPERATION.***

DANGER

Surfaces of the load that come into contact with the gripping surfaces must be free of any foreign material or coating that could compromise the grip.

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A. Operation:

1. Ensure that the Multilift®'s capacity and range are appropriate to the object being handled.
2. Ensure pads are clean and free of debris or contamination.
3. Position Multilift® at or near center of object to be lifted while keeping the pads parallel to the gripping surfaces.
4. Lower Multilift® onto object, taking care to minimize impact.
5. Ensure pads do not grip surfaces more than eleven degrees in any direction from vertical.
6. Ensure that all persons are clear of Multilift® and object.
7. Release tension on lift cable.
8. Raise Multilift® and load in a smooth motion; do not "jerk".
9. Deposit at desired location.
10. Release tension on lift cable. (Note: avoid undue slamming of the Multilift® into open position to prolong actuator life.)
11. Remove Multilift® (Multilift® is latched in open position automatically).
12. Refer to Kenco.com for videos and tutorials on usage of the Multilift®.

Tip: The majority of wear on the Multilift® will result from shock loading, impacting, and poor alignment of the Multilift® with the load. Minimizing these incidents will greatly extend the life of the Multilift® and consumables.

B. <u>AVOID JARRING, WEINGING, AND OTHERWISE UNNECESSARY MANIPULATION OF THE LOAD.</u>

C. <u>DO NOT ALLOW PADS TO GRIP SURFACES ANGLED MORE THAN ELEVEN DEGREES IN ANY DIRECTION FROM VERTICAL. DAMAGE TO THE LIFTER MAY RESULT.</u>

D. <u>AVOID HANDLING OF LOADS OFF CENTER.</u>

E. <u>DO NOT USE THE MULTILIFT® TO PICK MULTIPLES OF ITEMS IN A SINGLE PICK.</u>

F. <u>OBSERVE ALL SAFETY PRACTICES ASSOCIATED WITH OPERATION OF HOIST MACHINERY.</u>

G. <u>DO NOT USE MULTILIFT® TO DRAG LOADS.</u>

H. <u>DO NOT ALLOW LOAD TO CONTACT ANY SURFACE/OBJECT WHILE BEING HANDLED.</u>

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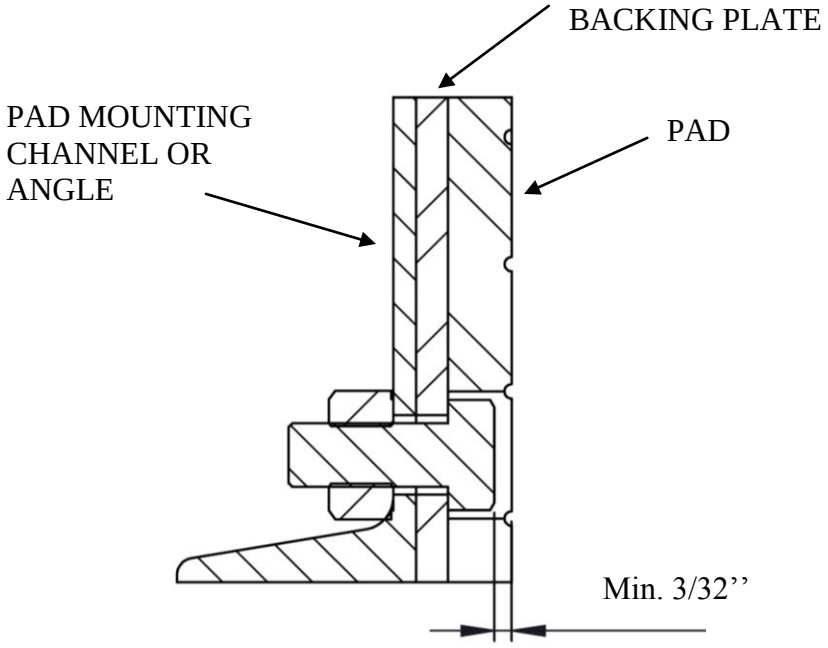
DANGER

The Multilift® *wall handling device produces grip* ***proportional to and dependent on*** *the weight of the load. It is for this reason that while in operation the* Multilift® *and wall* ***NEVER*** *be allowed to contact other items.*

Section VII. Maintenance

A. Daily:

1. Visually inspect Multilift® 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™)**
8. For Pads:
   a. Check that all pad mounting bolts and nuts are tight.
   b. Verify freedom of rotation for pad angle.
   c. Ensure that pad material is sound, and not de-laminated from backing plates.
   d. Ensure that pad mounting bolts heads are min.3/32'' below the surface of the pad. (see ill.)
   e. Ensure pads are clean and free of any foreign material or substance.



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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 VIII. Inspection Criteria

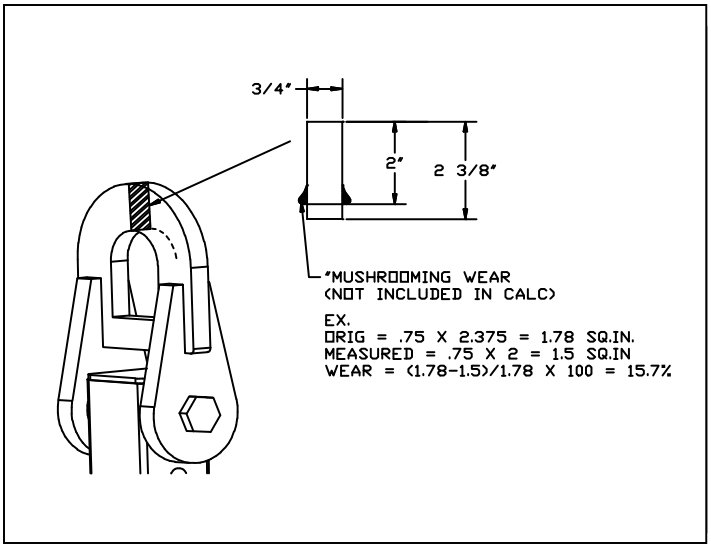
THE MULTILIFT® UNIT AND ALL OF ITS ASSOCIATED COMPONENTS SHALL BE REMOVED FROM SERVICE AND TAGGED APPROPRIATELY UNTIL RECERTIFICATION BY A QUALIFIED INDIVIDUAL IN ANY OF THE FOLLOWING CONDITIONS:

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.**

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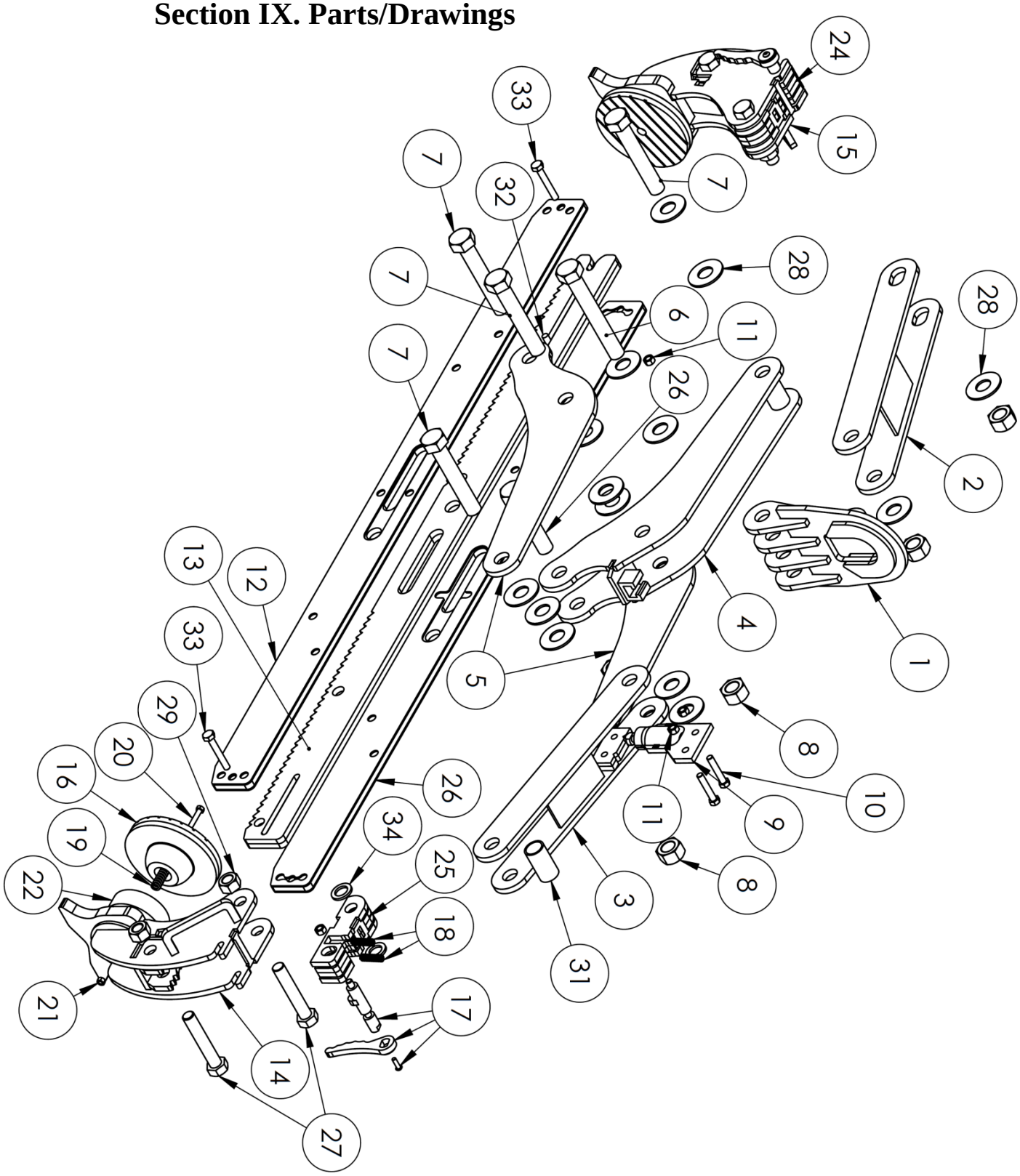
Section IX. Parts/Drawings



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PN	Qty.	Description
1	1	Lift Bail
2	1	Outer Arm Assembly
3	1	Inner Arm Assembly
4	1	Inner Leg Assembly
5	1	Outer Leg Assembly
6	1	1.25'' x 9'' GR8 Bolt
7	4	1.25'' x 7.5'' GR8 Bolt
8	6	1.25'' NYLOCK Nut
9	1	Med. Actuator Assy.
10	2	½'' x 2'' GR 8 Bolt
11	4	½'' NYLOCK Nut
12	2	Outer Core Member
13	1	Inner Core Member
14	1	Outer Core Leg Assy.
15	1	Inner Core Leg Assy.
16	2	Ball Pad
17	2	Adj. Handle Assy.
18	4	Shoe Spring
19	2	Pad Spring
20	2	0.3125'' x 3.125'' GR 8 BOLT
21	8	0.3125'' NYLOCK Nut
22	2	Ball Cup
23	1	Labels and Decals*
24	1	Center Core Shoe Assy.
25	1	Outer Core Shoe Assy.
26	1	1.125''x6'' GR8 Bolt
27	4	1''x5.5'' GR8 Bolt
28	20	1.25'' Flat Washer
29	2	1'' NYLOCK Nut
30	2	1.125'' NYLOCK Nut
31	2	Pipe Spacer
32	1	½'' x 2.25'' Inner Support Pin
33	2	0.5''x 3.5'' GR8 Bolt
34	4	0.1875'' Shoe Spacer

**Due to the modular nature of the ML series lifters the decals are listed on the next page and should be located in high visibility areas on the lifter.*

NOTE: MODEL AND SERIAL NUMBER OF LIFTER MUST ACCOMPANY PART ORDERS.

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KENCO CORPORATION
877-4ATTACH

MODEL

USAGE

CAPACITY WT

SERIAL NO

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

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.

KENCO Attachment Solutions

Model: KL 12000
Unit Weight: 900 lbs.
Capacity: 12000 lbs.
Usage: 16' - 20' Barrier Wall

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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.

DANGER
DO NOT STAND UNDER OR NEAR WHILE MACHINE IS OPERATING

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Section X. Warranty

A. Policy

1. KENCO Corporation (KENCO) warrants the KENCO Pipe 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 LIEW 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.