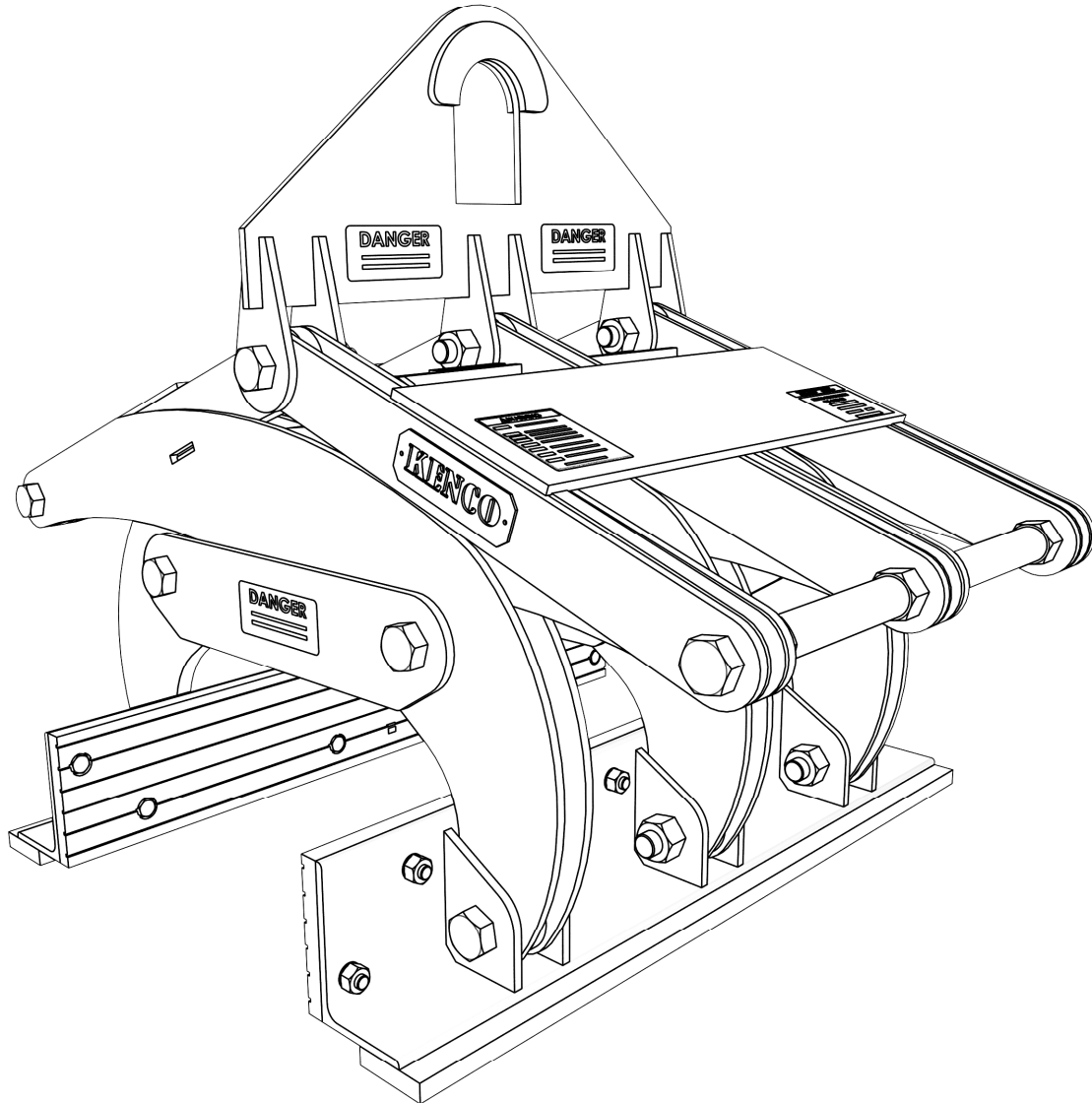


Attachment Solutions



The Kenlift®

Concrete median barrier handling device

Operators Manual

Conforms to ASME B 30.20, BTH-1

Design Category B, Service Class 3

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RECORD INFORMATION HERE

FOR REFERENCE

MODEL	
BODY SERIAL NUMBER	
Notes:	



Section I. General Information

May we take this opportunity to thank you for purchasing the KENCO Kenlift® highway median barrier wall handling system. The Kenlift® System provides the ultimate in below the hook concrete highway barrier handling versatility. The Kenlift® 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 Kenlift® system.**

This manual should be made available to all persons who may use or maintain the Kenlift® 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 Kenlift® operation that are in force in your area.
2. Before operating the KENCO Kenlift®, 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.



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



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



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.



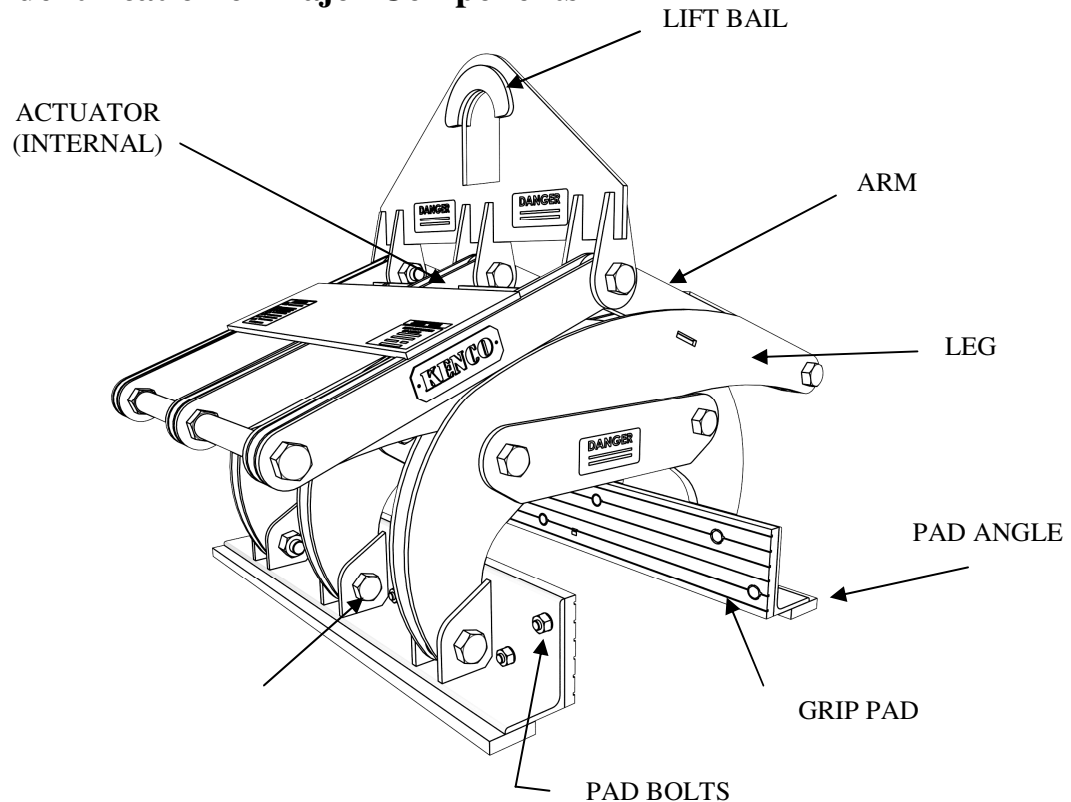
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2. Do not wear loose clothing, jewelry, or hairstyles that could become entangled in the KENCO Kenlift® or rigging hardware.
3. Keep hands, feet, and any other appendages clear of Kenlift® while in operation.

C. Operation Safety

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

Section III. Identification of Major Components



Section IV. Setup

- A. Check Kenlift® for any signs of damage incurred during shipping.
- B. Record model and serial #of assembly and components.
- C. Check that all pad bolts are tight.
- D. **DO NOT OVER TIGHTEN PAD ANGLE BOLTS. PAD ANGLE MUST HAVE (LIMITED) ROTATIONAL FREEDOM AT THIS POINT.**
- E. Check that all identification and warning labels are present.
- F. Attach Kenlift® 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®.**



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3. **UNDER NO CIRCUMSTANCES SHOULD ANY COMPONENT USED AS RIGGING TO Kenlift® 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 Kenlift® AND EQUIPMENT.**



Section V. Operation



DANGER

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



DANGER

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



DANGER

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

A. Automatic operation

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

Tip: The majority of wear on the Kenlift[®], pads, and associated components results from shock loading, impacting, and poor alignment of the Kenlift[®] with the load. Minimizing these incidents will greatly extend the life of the Kenlift[®] 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 Kenlift[®] TO PICK MULTIPLES OF ITEMS IN A SINGLE PICK.
- E. Observe all safety practices associated with operation of hoist machinery.
- F. DO NOT USE Kenlift[®] TO DRAG LOADS.
- G. DO NOT ALLOW LOAD (BARRIER SECTION) TO CONTACT ANY SURFACE/OBJECT WHILE BEING HANDLED.

**DANGER**

*The Kenlift[®] 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 Kenlift and wall **NEVER** be allowed to contact other items.*



Section VI. Maintenance

A. Daily:

1. Visually inspect Kenlift® 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 bolt heads are min. 3/32" below the surface of the pad.
 - e. Ensure pads are clean and free of any foreign material or substance.

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 KENLIFT® 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:

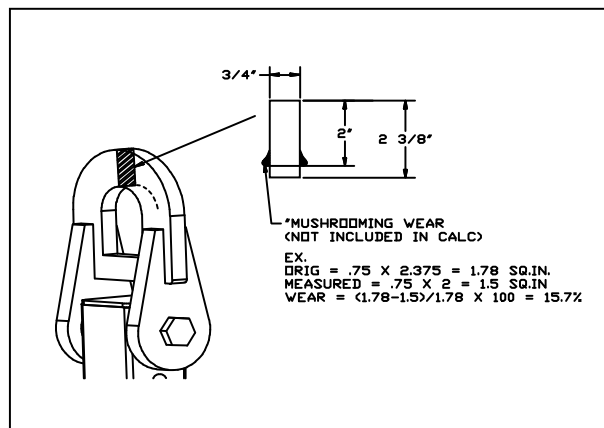
A. General

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.

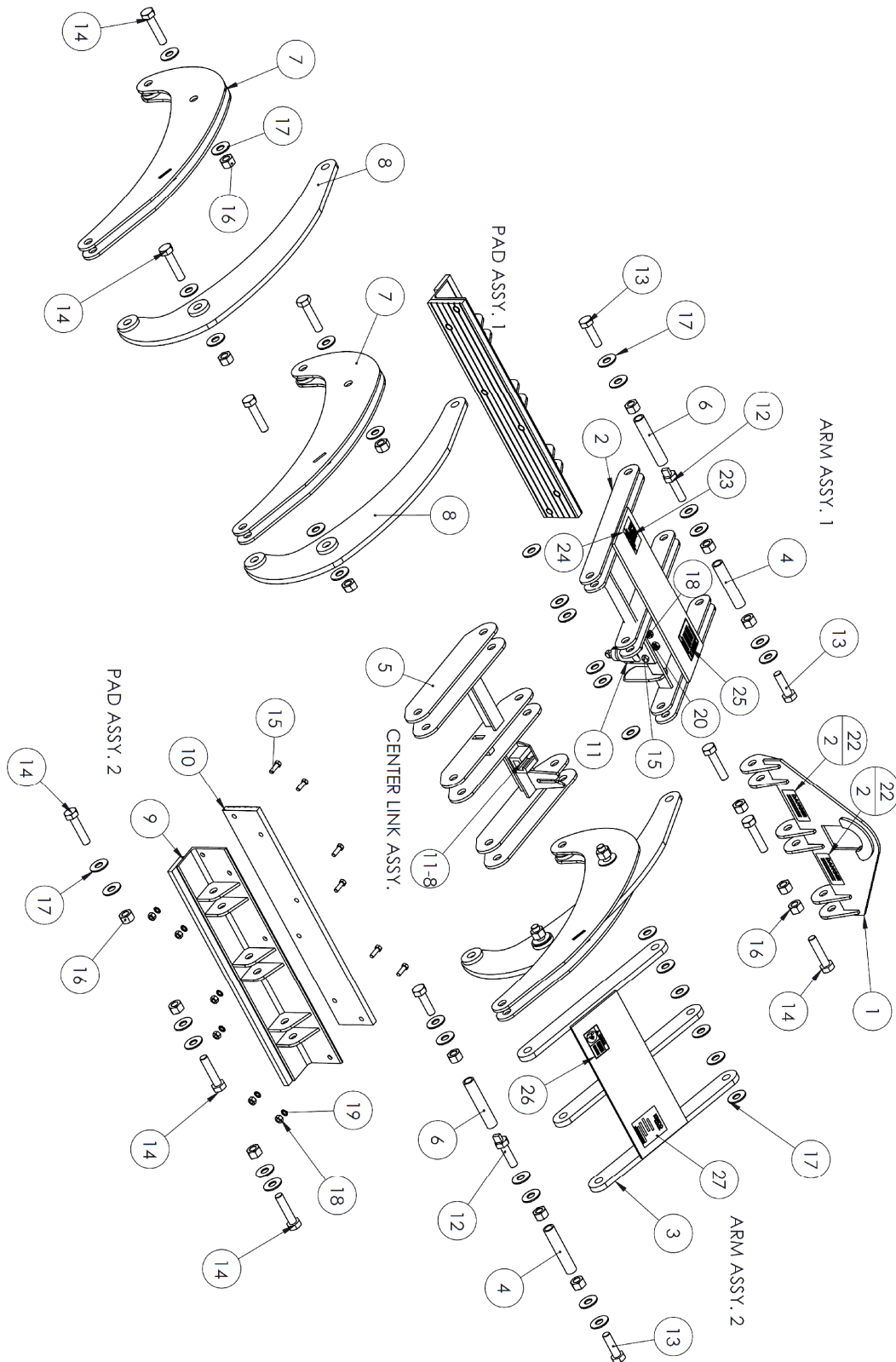
3. Pins/Bolts

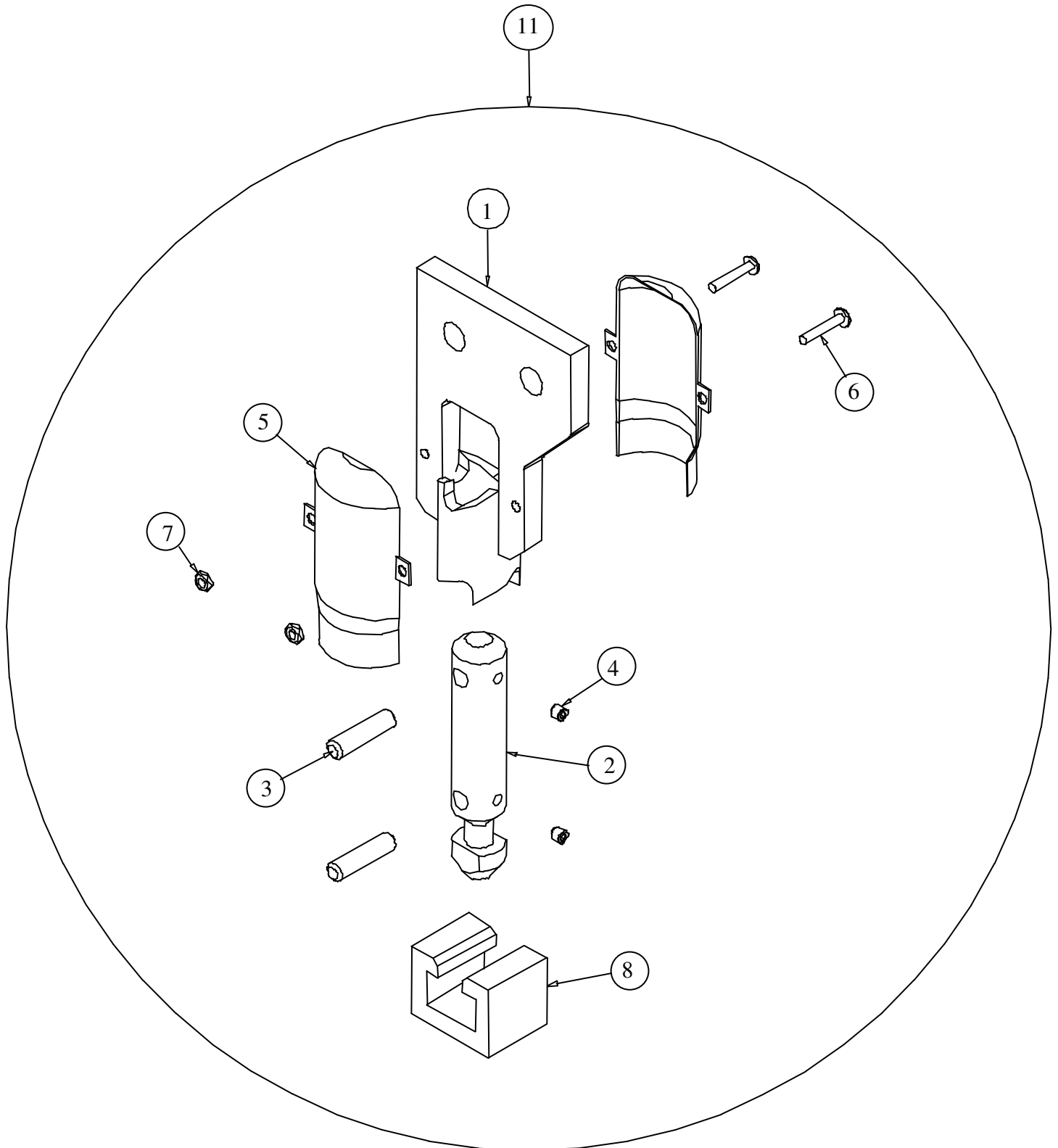
- a. Any visible deformation of a pin, shaft or bolt shall require replacement of that part.

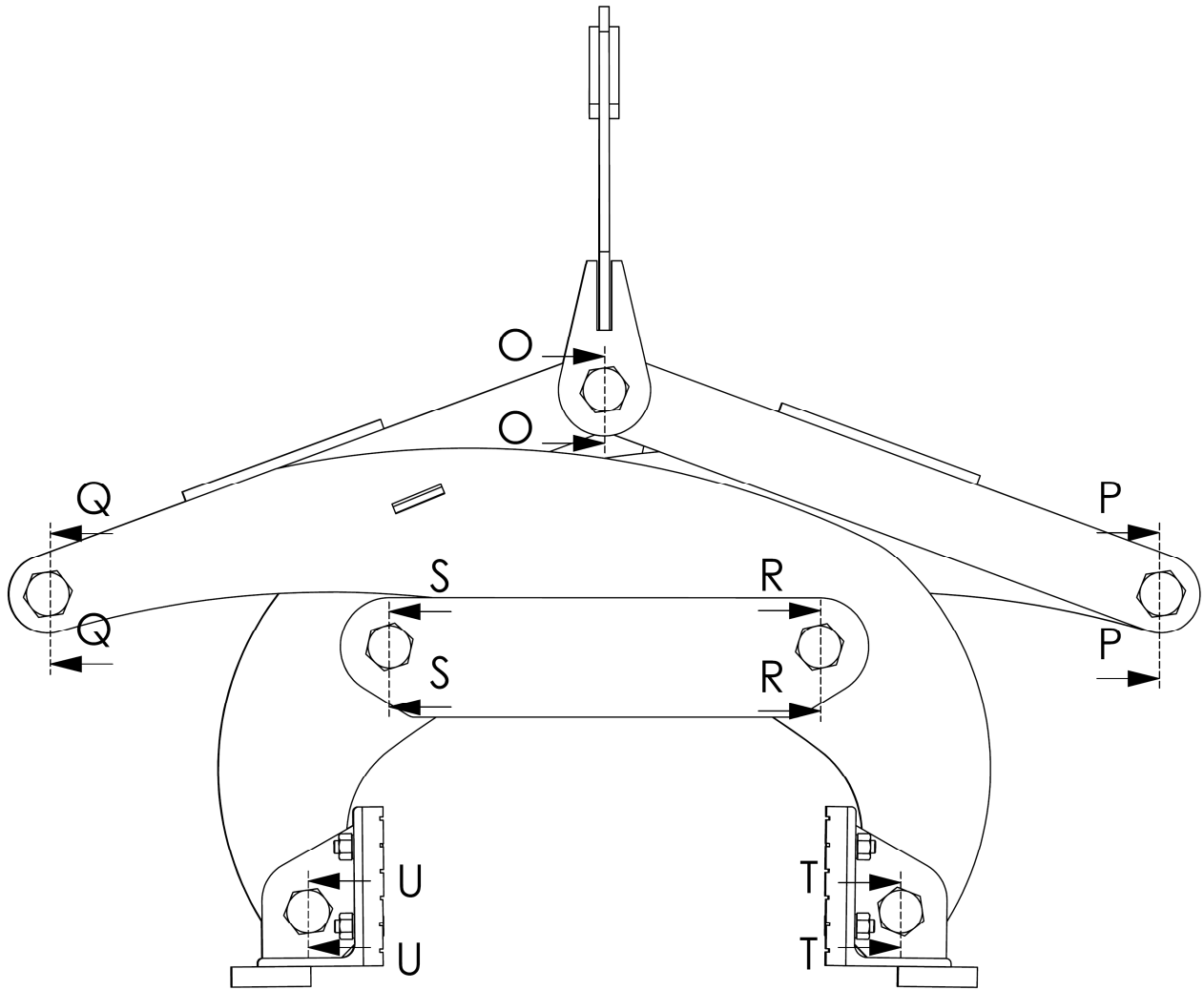
4. Pads – Replace if:

- 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.

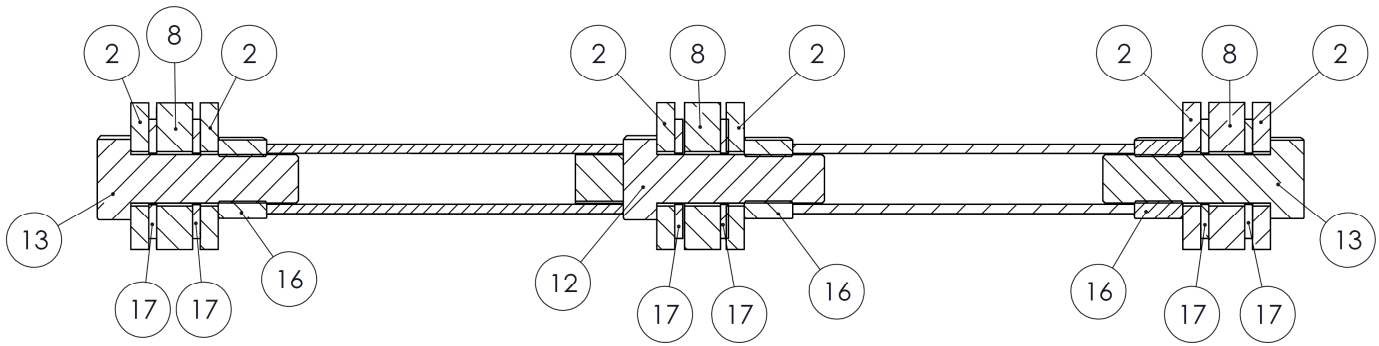
Section VIII. Parts/Drawings





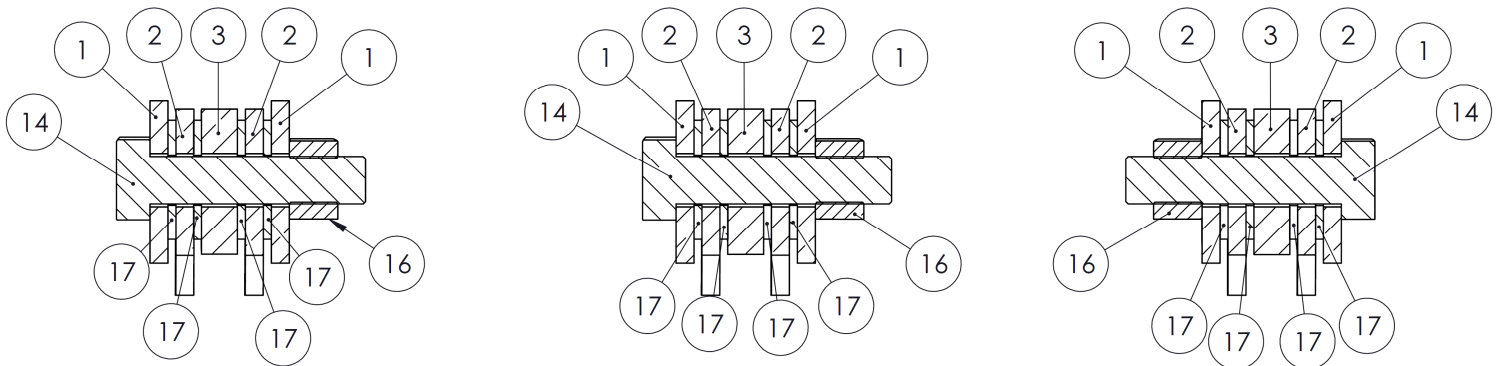


CROSS SECTIONAL DESIGNATIONS

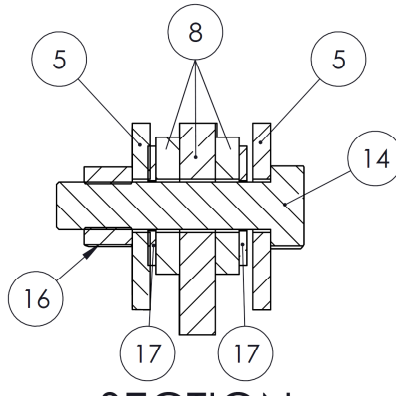
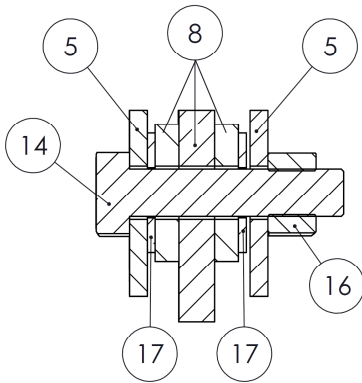


SECTION P-P

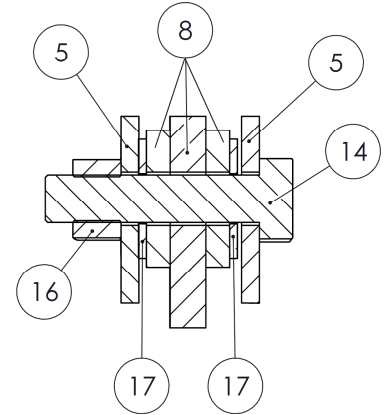
ARM ASSY. 1 CROSS SECTIONAL VIEW



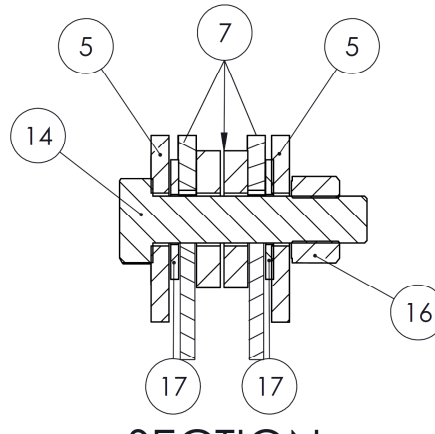
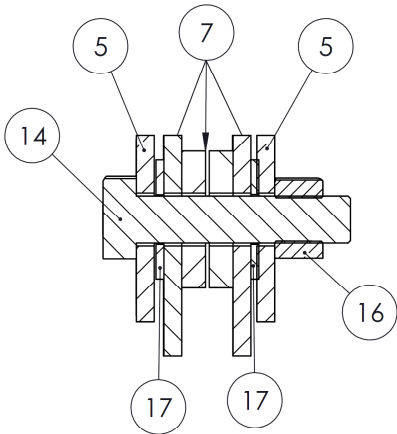
SECTION O-O



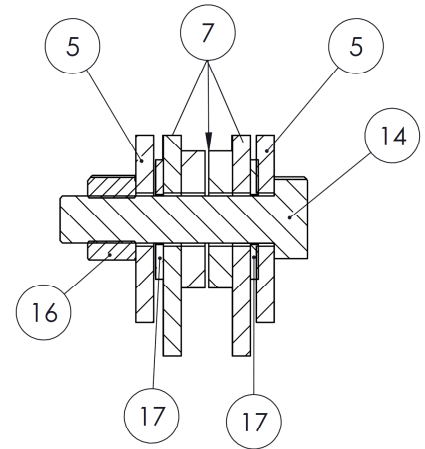
SECTION S-S

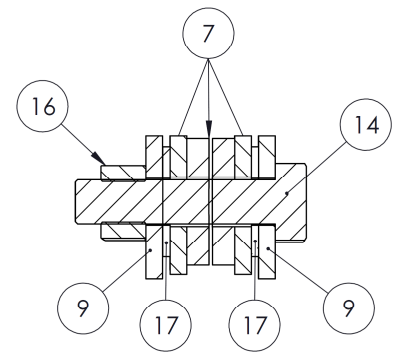
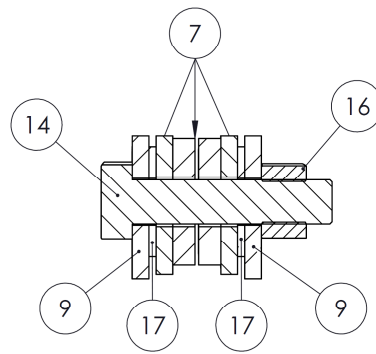
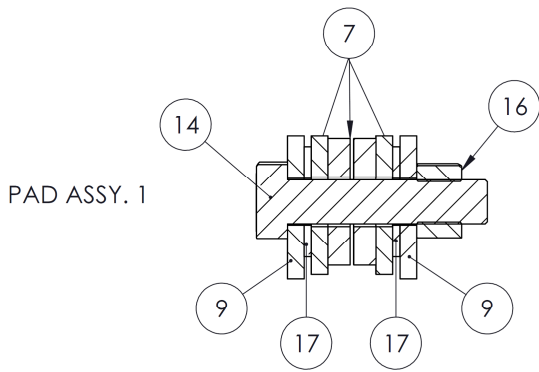


CENTER LINK CROSS SECTIONAL VIEW

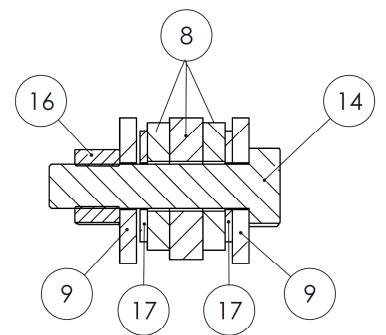
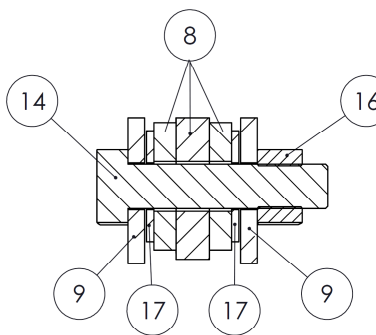
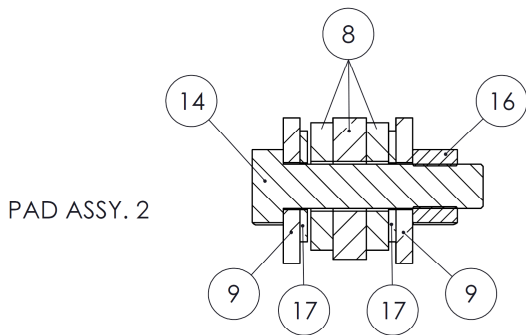


SECTION R-R





SECTION T-T



SECTION U-U



22

DANGER
DO NOT STAND UNDER OR NEAR
WHILE MACHINE IS OPERATING

23

KENCO CORPORATION
877-4ATTACH

MODEL

USAGE

CAPACITY WT

SERIAL NO

24

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

25

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.

26

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.

27 (ex.)



Model: KL 12000

Unit Weight: 900 lbs.

Capacity: 12000 lbs.

Usage: 16' - 20' Barrier Wall

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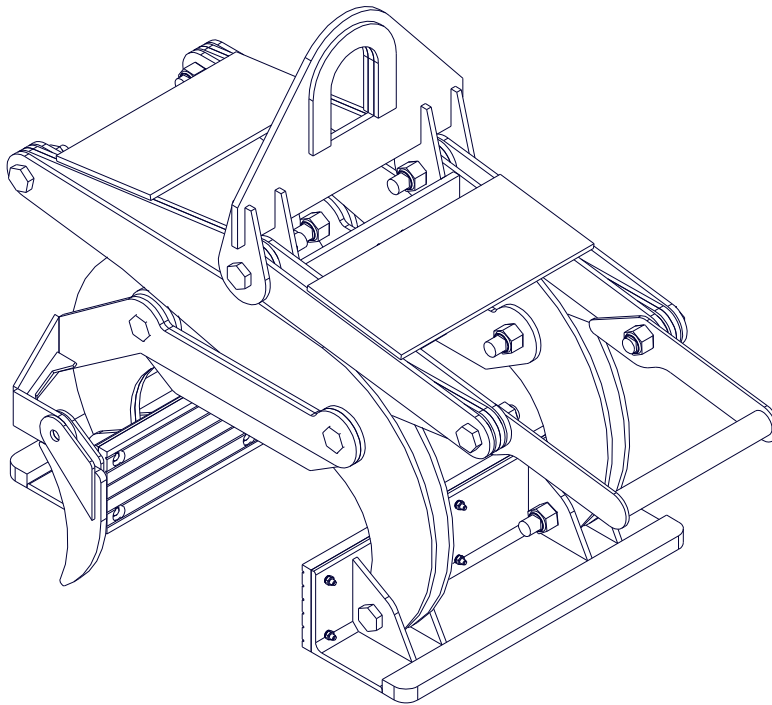
NO	QTY	NAME
1	1	LIFT BALE ASSEMBLY
2	1	ARM ASSEMBLY - ACTUATOR SIDE
3	1	ARM ASSEMBLY - NON ACT. SIDE
4	2	SM HANDLE
5	1	CENTER LINK ASSEMBLY
6	2	LG HANDLE
7	6	RH LEG ASSEMBLY
8	6	LH LEG ASSEMBLY
9	2	PAD ANGLE ASSEMBLY
10	2	6 X 36 PAD
11	1	ACTUATOR
11-1	1	LARGE ACTUATOR BODY
11-2	1	LARGE ACTUATOR SHAFT
11-3	2	LARGE ACTUATOR PIN
11-4	2	1/4-20 X 1/4" SET SCREW
11-5	2	LARGE ACTUATOR COVER
11-6	2	#10-24 X 7/8" SOCKET HEAD SCREW
11-7	2	#10-24 NYLOCK NUT
11-8	1	LARGE RECEIVER BLOCK
12	2	1.00 X 4 BOLT W/ TAB
13	6	1.00 X 4 BOLT
14	15	1.00 X 5 BOLT
15	14	.5 X 1.5 BOLT
16	21	1.00 NUT
17	48	1.00 FLAT WASHER
18	14	.5 NUT
19	12	.5 STAR INTERNAL
20	2	.5 LOCK WASHER
21	2	SMALL BADGE
22	4	DANGER STICKER
23	1	IDTAG
24	1	BTH TAG
25	1	LG. WARNING STICKER
26	1	SM. WARNING STICKER
27	1	ID STICKER



Section IX. Available Options

A. Alignment legs

1. Kenco provides an optional bolt-on attachment that facilitates hands off operation when used on the automatic model.
2. The Kenlift[®] with alignment leg attachment is simply guided by the hoist operator into the wall. The alignment legs then contact the wall surface and align the Kenlift[®] properly with the wall.



B. Leveling link.

1. Allows for level handling of single faced asymmetrical median wall sections.

C. Automatic conversion kit.

1. Converts semi-automatic units to fully automatic operation.

D. Semi automatic conversion kit.

1. Converts from automatic operation to semi-automatic operation.

Contact Kenco for pricing on these items.



Section X. Warranty

E. Policy

1. KENCO Corporation (KENCO) warrants the KENCO Kenlift® 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.

F. 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.