

Superlift[®] System

Operators Manual



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RECORD INFORMATION HERE FOR REFERENCE

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

May we take this opportunity to thank you for purchasing the KENCO Superlift[®] system. The Superlift[®] 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 enclosed documentation before attempting to setup operate or maintain the Superlift[®] system.

This manual should be made available to all persons who may use or maintain the Superlift[®] 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 Superlift[®] operation that are in force in your area.
2. Before operating the KENCO Superlift[®], 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 or jewelry that could become entangled in the KENCO Superlift[®] or rigging hardware.

C. Operation Safety.

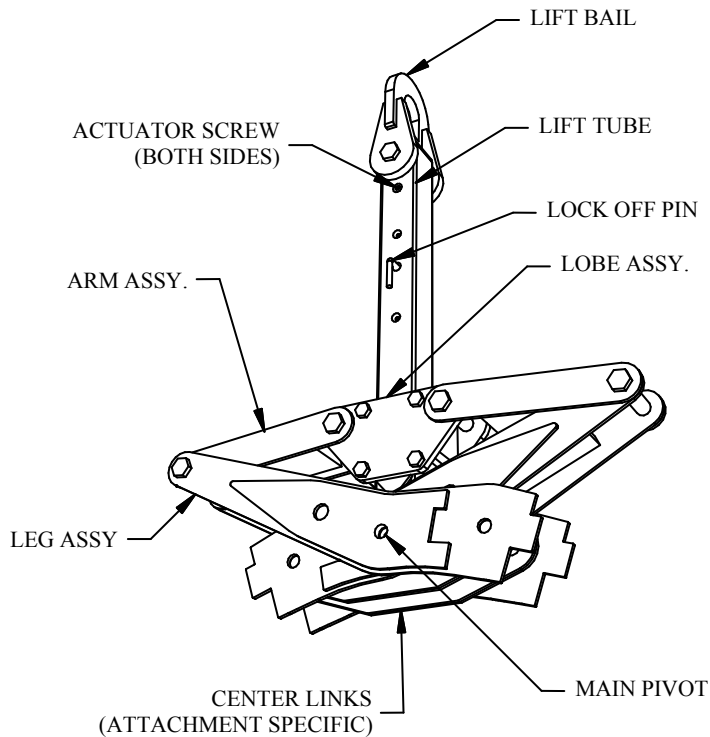
1. **DO NOT ATTEMPT TO OPERATE OR PERFORM MAINTENANCE ON THE SUPERLIFT[®] UNTIL READING AND FULLY UNDERSTANDING THIS MANUAL**
2. **MAINTAIN SAFE DISTANCE FROM LOAD - NEVER ALLOW LIFTER OR LOAD TO PASS OVER ANY PART OF A PERSON.**
3. **DO NOT USE A KENCO SUPERLIFT[®] THAT HAS BEEN ALTERED ACCIDENTALLY OR INTENTIONALLY, IN ANY WAY WITHOUT INSPECTION BY QUALIFIED PERSONNEL.**



CAUTION

IF EQUIPED WITH “PIPE TINES” OR “DEBRIS TINES”, STORE SUPERLIFT ON IT’S SIDE WHEN NOT IN USE.

Section III. Identification of Major Components



Section IV. Setup.

- A. Check 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. Install desired attachment as documented in section V.
- E. **DO NOT OVER TIGHTEN LINKAGE BOLTS.**
- F. Attach lifter to hoist.
 1. Where possible, hook directly through lift bail.
 2. If necessary, use shackles/slings of equal to or greater capacity than intended application.
 3. **UNDER NO CIRCUMSTANCES SHOULD ANY COMPONENT USED AS RIGGING TO LIFTER BE OF A RATED CAPACITY LESS THAN THAT OF THE LIFTER.**

Section V. Operation.

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

A. Automatic operation:

1. Position lifter at or near center of object(s) to be lifted.
2. Lower lifter onto object, taking care to minimize impact.
3. Release tension on lift cable.
4. Raise lifter and load in a smooth motion, do not “jerk”.
5. Deposit at desired location.
6. Release tension on lift cable. (Note: avoid undue slamming of the lifter into open position to prolong actuator life.)
7. Remove lifter (Superlift® is latched in open position automatically)

Tip: The majority of wear on the lifter, pads, and associated components results from shock loading, impacting, and poor alignment of the lifter with the load. Minimizing these incidents will greatly extend the life of the lifter.

B. **Avoid Jarring, swinging, and otherwise unnecessary manipulation of the load.**

C. **Avoid picking loads off center.**

D. **DO NOT USE THE SUPERLIFT TO PICK MULTIPLES OF ITEMS IN A SINGLE PICK OTHER THAN WHEN USED IN THE DEBRIS GRAPPLE CONFIGURATION.**

E. **Observe all safety practices associated with operation of hoist machinery.**

Section VI. Changing attachments

! 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. Non Center-Link Attachments:

Step 1.

With lifter upright, on ground, latched in open position, and supported by a hoist, install lock off pin.

! DANGER *Note: earlier models do not have lock off pin, in this case, lifter must be bound by straps or chains to prevent actuator from disengaging during change-over. (Dia. 1-2)*

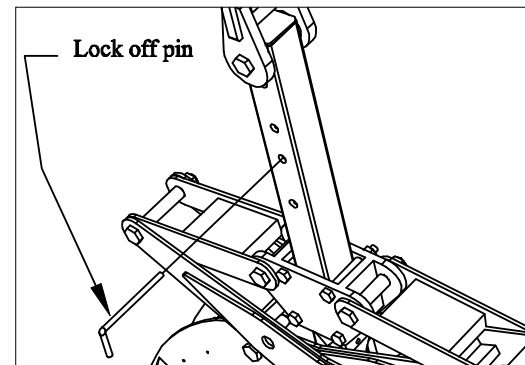


Diagram 1.

Step 2.

Remove previous attachment and exchange for desired attachment one side at a time.

Step 3.

Ensure that proper spacer tubes are inserted between leg members and tighten bolts and nuts to minimize gap between key plates.

Step 4.

Remove Lock off pin. Cycle Lifter to ensure proper function of lifter before attempting to engage loads.

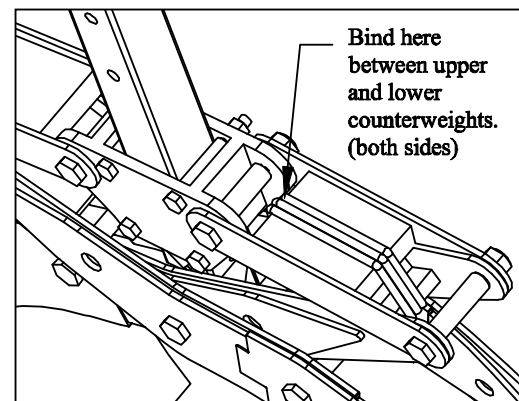


Diagram 2

B. Attachments With Center-Link(s):

Step 5.

With lifter upright, on ground, latched in open position, and supported by a hoist, install lock off pin.

! DANGER *Note: earlier models do not have lock off pin, in this case, lifter must be bound by straps or chains to prevent actuator from disengaging during change-over. (Dia. 1-2)*

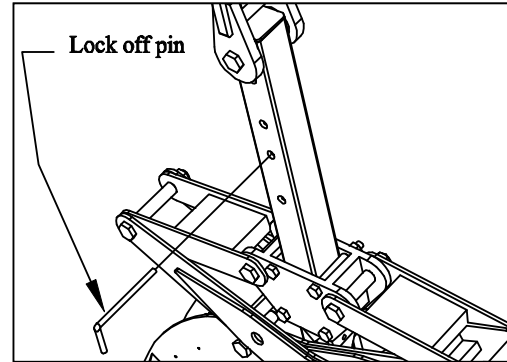


Diagram 1

Step 6.

Remove previous attachments.

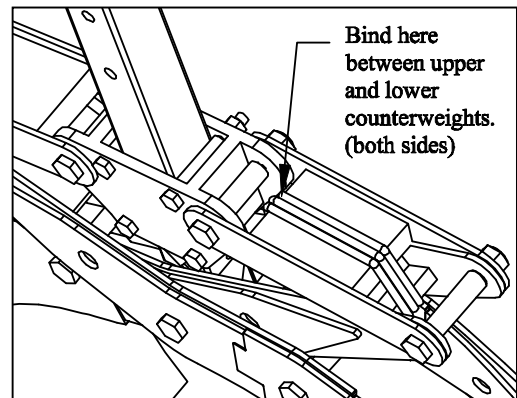


Diagram 2

Step 7.

Remove nut only from main pivot bolt. **Do Not** remove main pivot bolt at this time.

Step 8.

Lay lifter on side with bolt head up and support at arms use sufficient blocking to keep lifter level and clear of ground. (Dia. 3)

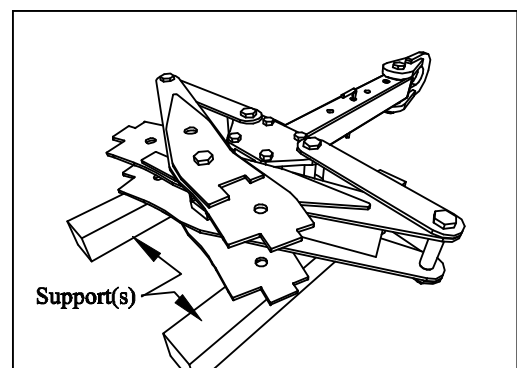


Diagram 3

Step 9.

Remove main pivot bolt. (Dia. 4)

Step 10.

Slide tube out to expose main pivot blocks, install center links and spacer tubes. (Dia. 4) *Note: Typical application is supplied with four (4) center-links, two are installed per side. These links are frequently stitch-welded together in pairs for convenience. Corners of pivot blocks may be ground to facilitate fit of center links.*

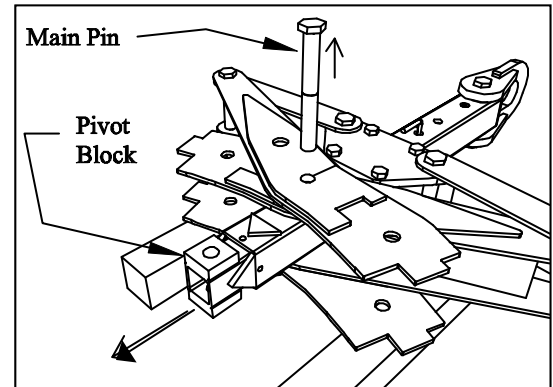


Diagram 4

Step 11.

Slide assembly back up into arms until main pivot holes are aligned. (Dia. 5)

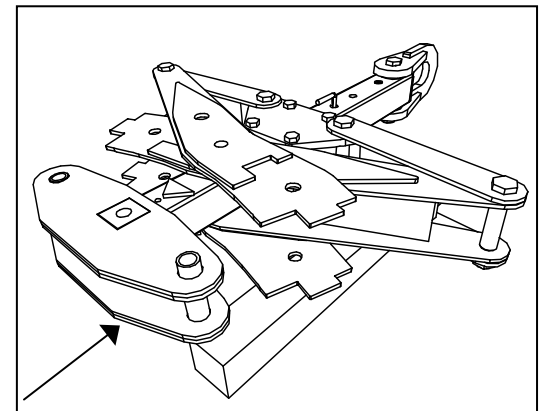


Diagram 5

Step 12.

Replace main pivot bolt and nut temporarily.

Step 13.

Slide required attachments into position and install bolts.

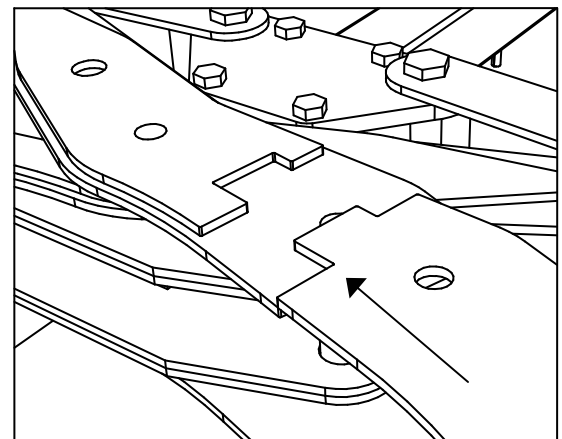


Diagram 6

Step 14.

Stand lifter upright and rig to lifting machine. Install and tighten nuts on attachment bolts only. Nuts should be tightened so that gaps between attachment and legs are minimized.

Step 15.

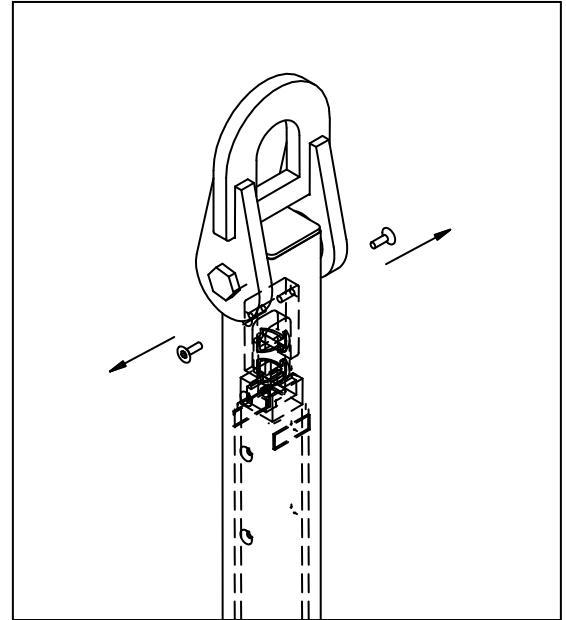
Remove main pivot pin and Lock off pin/binding.

Cycle Lifter to ensure proper function of lifter before attempting to engage loads.

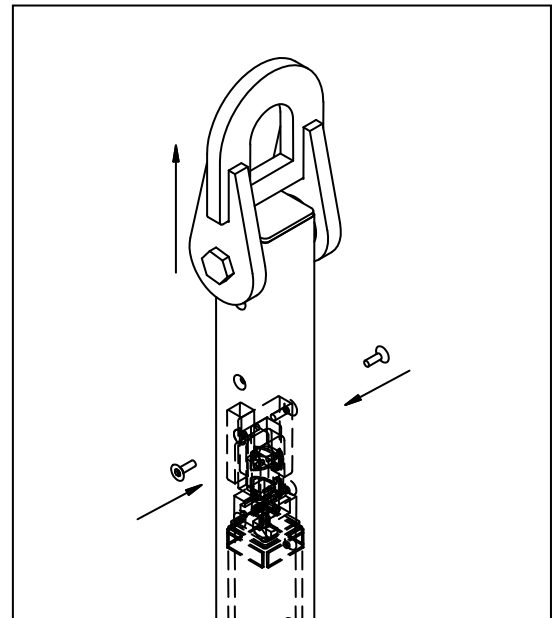
Section VII. Actuator adjustment

If working in areas where it is necessary to have a narrower initial grip opening, (Ex. When lifting pipe out of a trench box) the actuator may be adjusted to narrow the grip as follows:

1. With Superlift[®] rigged to lifting machinery, place on level surface.
2. Maintain slight tension on rigging
3. Remove hex-head actuator screws. (Dia. 7-1)
4. Raise lift bale until actuator mounting holes align with holes in tube that best suits your tine width requirement. (Dia. 7-2)
5. Replace and tighten actuator screws.



Dia. 7-1



Dia. 7-2

Section VIII. Maintenance

B. Daily:

1. Visually inspect lifter for signs of stress and wear.
2. Make sure that all labels and warnings are present.
3. Check that bolts and nuts are snug.
4. Check that key-way area of attachment and lift body are properly seated.
5. Ensure free movement of all components.
6. Ensure that all warning labels are present and readable.
7. Check that actuator mounting screws are snug and seated.
8. Lubricate all moving mechanisms with penetrating oil.
9. **LUBRICATE ACTUATOR WITH LIGHT PENETRATING OIL ONLY (WD40™)**
10. If using Barrier gripping or urethane padded attachments:
 - 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. 1/8" below the surface of the pad.

C. Annually*

1. Remove bolts and coat with grease.
2. Coat washers and associated faces of members with grease.
3. Inspect holes, pins, bolts etc for wear. See sect VIII for criteria.
4. Remove actuator, clean and lubricate with light penetrating oil – check for signs of wear, replace if necessary.
5. Fully extend telescoping lift tubes and lubricate with a light coat of grease.

* Frequency depends on usage, environmental conditions, etc.

Section IX. Inspection Criteria

THE SUPERLIFT® 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:

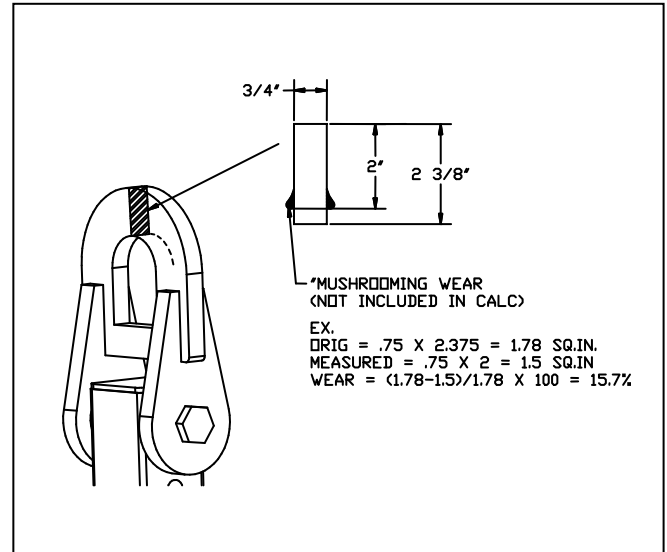
A. General

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 Bale

- a. The lift bale 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.

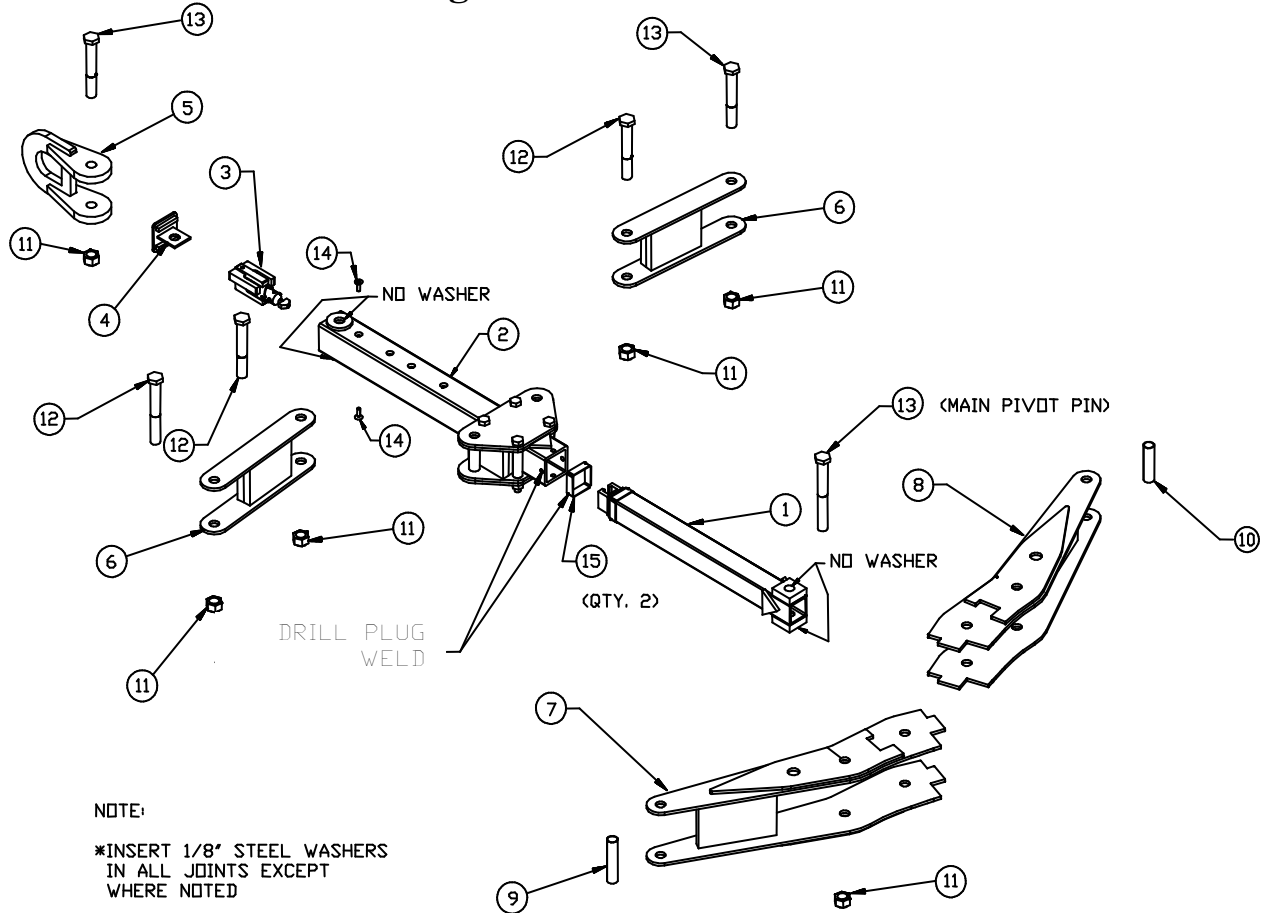
3. Pins/Bolts.

- 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.

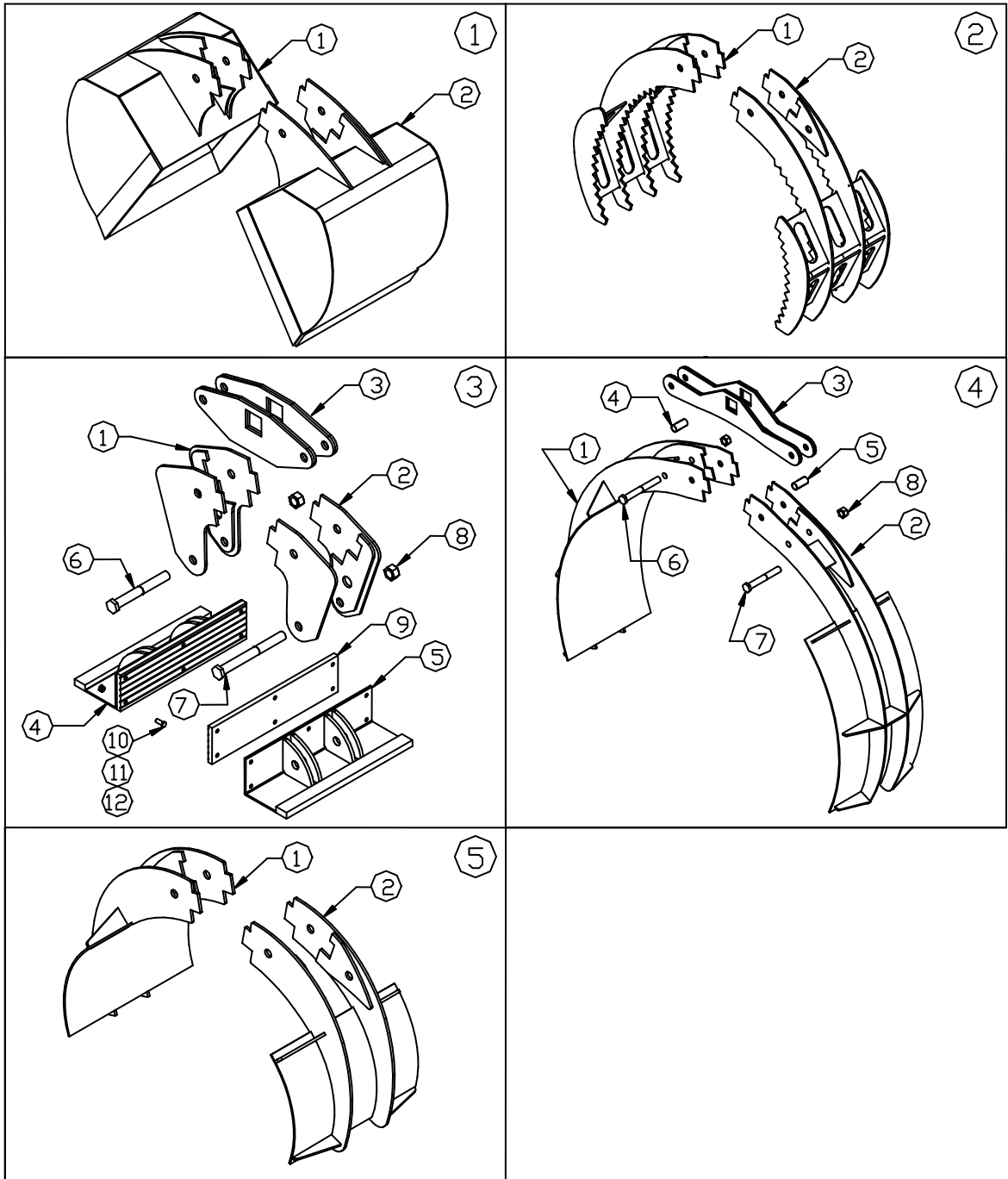
Section X. Parts/Drawings



NOTE:

*INSERT 1/8" STEEL WASHERS
IN ALL JOINTS EXCEPT
WHERE NOTED

Model (SL6K, SL12K, SL20K)	Part	Qty.	Description
XXXX	1-0	1	BODY
XXXX	1-1	1	INSIDE TUBE ASSY
XXXX	1-2	1	OUTSIDE TUBE ASSY
XXXX	1-3	1	ACT.
XXXX	1-4	1	CAP ASSY.
XXXX	1-5	1	LIFT EYE ASSY
XXXX	1-6	2	ARM ASSY
XXXX	1-7	1	LEG ASSY 1
XXXX	1-8	1	LEG ASSY 2
XXXX	1-9	1	ARM SPACER TUBE 1
XXXX	1-10	1	ARM SPACER TUBE 2
XXXX	1-11	5	1 1/4" NYLON LOCK NUT
XXXX	1-12	2	1 1/4"X9" HEX HEAD BOLT
XXXX	1-13	2	1 1/4"X11" HEX HEAD BOLT
XXXX	1-14	2	1/2" CAP SCREW
XXXX	1-15	4	STOP SHIMS
XXXX	1-16	10	1/8" STEEL WASHERS* NOT SHOWN IN DRAWING





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

Model (SL6K, SL12K, SL20K)	Part	qty	description
	1-0	1	BUCKET KIT
	1-1	1	NARROW LUG BUCKET
	1-2	1	WIDE LUG BUCKET
	2-0	1	DEBRIS TINE KIT
	2-1	1	NARROW LUG TINE
	2-2	1	WIDE LUG TINE
	3-0	1	BARRIER/BLOCK KIT
	3-1	2	LH LEG
	3-2	2	RH LEG
	3-3	2	CENTERLINK PAIR
	3-4	1	WIDE PAD ANGLE
	3-5	5	NARROW PAD ANGLE
	3-6	1	WIDE SIDE BOLT
	3-7	1	NARROW SIDE BOLT
	3-8	2	NUT
	3-9	2	PAD
	3-10	12	PAD BOLT
	3-11	12	PAD WASHER
	3-12	12	PAD NUT
	4-0	1	LG. TINE KIT
	4-1	1	WIDE TINE
	4-2	1	NARROW TINE
	4-3	2	CENTERLINK PAIR
	4-4	1	WIDE SPACER
	4-5	1	NARROW SPACER
	4-6	1	WIDE SIDE BOLT
	4-7	1	NARROW SIDE BOLT
	4-8	2	NUT
	5-0	1	SMALL OR MED TINE KIT
	5-1	1	WIDE SIDE TINE
	5-2	1	NARROW SIDE TINE

Section XI. Warranty

A. Policy

1. KENCO Corporation (KENCO) warrants the KENCO Superlift® 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 bales 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.