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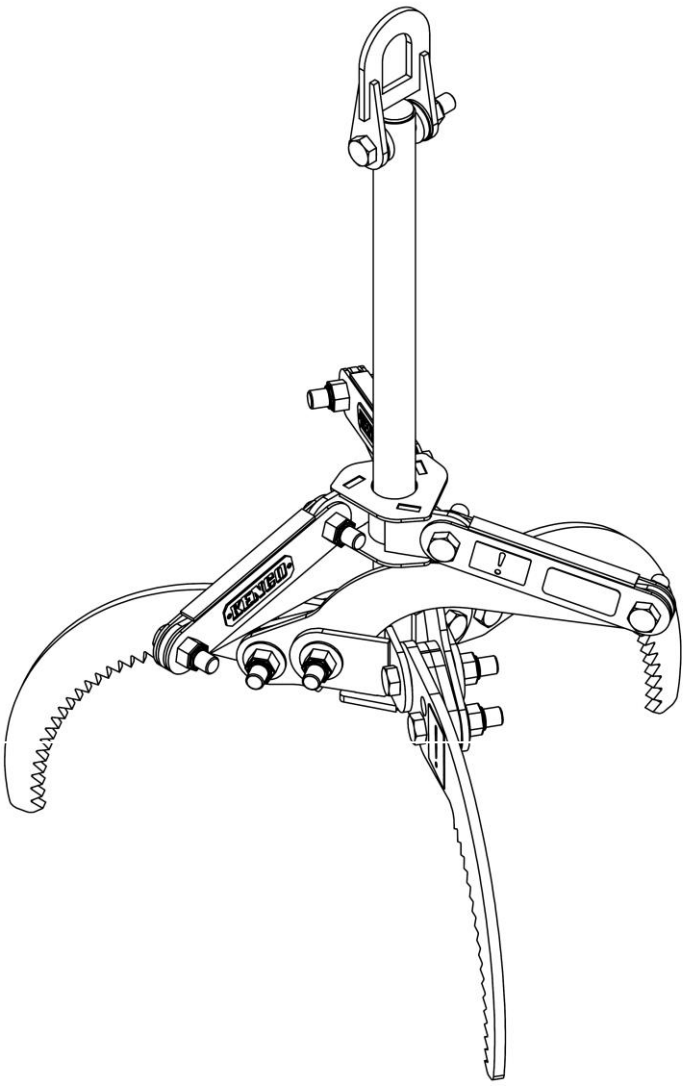
Attachment Solutions



MG6K15T40V4
Mechanical Grapple
Operators Manual

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RECORD INFORMATION HERE

FOR REFERENCE

MODEL	
BODY SERIAL NUMBER	
Notes:	

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Section I. General Information.

1. May we take this opportunity to thank you for purchasing the KENCO *Mechanical Grapple*. The *Mechanical Grapple* provides the ultimate in below the hook handling versatility. The *Mechanical Grapple* 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 Mechanical Grapple.**

2. This manual should be made available to all persons who may use or maintain the *Mechanical Grapple*. 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 *Mechanical Grapple* operation that are in force in your area.

2. Before operating the KENCO *Mechanical Grapple*, 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.

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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 *Mechanical Grapple* or rigging hardware.

3. Keep hands, feet, and any other appendages clear of *Mechanical Grapple* while in operation.

C. Operation Safety.

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

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

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

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

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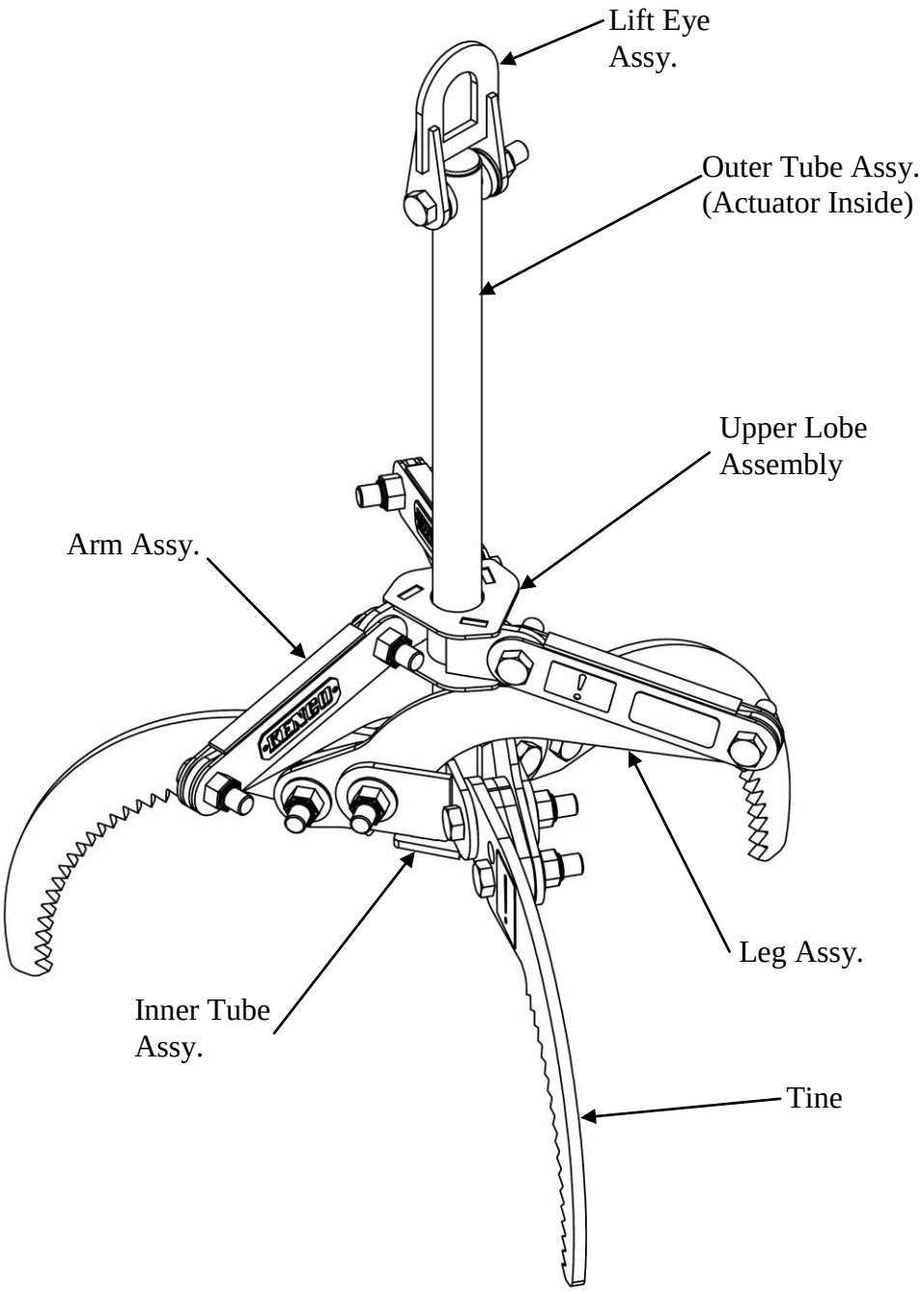
Section III. Identification of Major Components



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Section IV. Setup.

A. Preliminary inspection

1. Check *Mechanical Grapple* for any signs of damage incurred during shipping.
2. Check for missing items/fasteners.
3. Check all bolts for snugness.
4. Record model, and serial # of assembly and components.

B. **DO NOT OVER TIGHTEN LINKAGE BOLTS.**

C. Attach *Mechanical Grapple* 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 MECHANICAL GRAPPLE.**

3. **UNDER NO CIRCUMSTANCES SHOULD ANY COMPONENT USED AS RIGGING TO THE MECHANICAL GRAPPLE BE OF A RATED CAPACITY LESS THAN THAT OF THE MECHANICAL GRAPPLE.**

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 THE MECHANICAL GRAPPLE AND EQUIPMENT.**

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Section V. Operation.

DANGER

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

DANGER

*Manipulation of the Mechanical Grapple by ground personnel for the purpose of alignment with load shall only be done with the Mechanical Grapple suspended above the object. **KEEP ALL HANDS AWAY FROM THE MECHANICAL GRAPPLE DURING OPERATION.***

A. **Operation:**

1. Ensure that the *Mechanical Grapple*'s capacity and range are appropriate to the object to be handled.
2. Adjust tine position by removing adjustment bolt and rotating the tine until holes in leg, spacer and tine line up. Reinstall the adjustment bolt.
   Position #1 is for objects approximately 15"-24" in diameter.
   Position #2 is for objects approximately 24"-40" in diameter.
   (See detail A on page 8 for clarity.)
3. Position *Mechanical Grapple* at or near center of object to be lifted.
4. Lower *Mechanical Grapple* onto object, taking care to minimize impact.
5. Ensure that all persons are clear of the *Mechanical Grapple* and the load.
6. Release tension on lift cable.
7. Raise the *Mechanical Grapple* 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 *Mechanical Grapple* into open position to prolong actuator life.)
10. Remove *Mechanical Grapple* (*Mechanical Grapple* is latched in open position automatically)

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

C. Avoid handling of loads off center.

D. DO NOT USE THE MECHANICAL GRAPPLE TO PICK MULTIPLES OF ITEMS IN A SINGLE PICK.

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

F. DO NOT USE MECHANICAL GRAPPLE TO DRAG LOADS.

G. DO NOT ALLOW LOAD TO CONTACT ANY SURFACE/OBJECT WHILE BEING HANDLED.

DANGER

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

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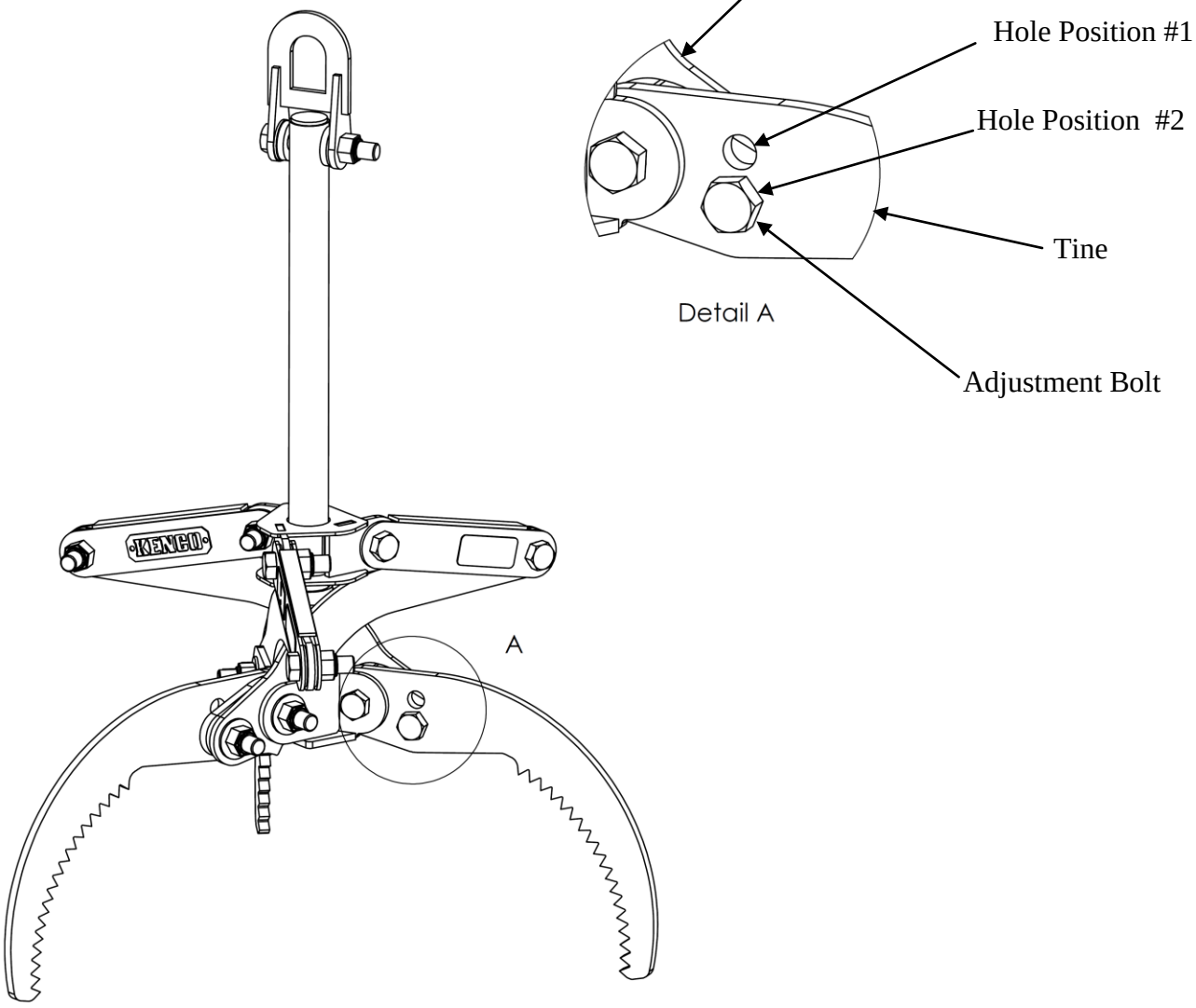
TINE ADJUSTMENT DETAIL



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Section VI. Maintenance

A. Daily:

1. Visually inspect lifter 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. Lubricate all moving mechanisms with penetrating oil.
6. **LUBRICATE ACTUATOR WITH LIGHT PENETRATING OIL ONLY (WD40™)**

B. Annually*

1. Remove pivot bolts and coat with grease. Coat washers and associated faces of members with grease.

2. Inspect holes, pins, bolts etc for wear. See sect VIII 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.*

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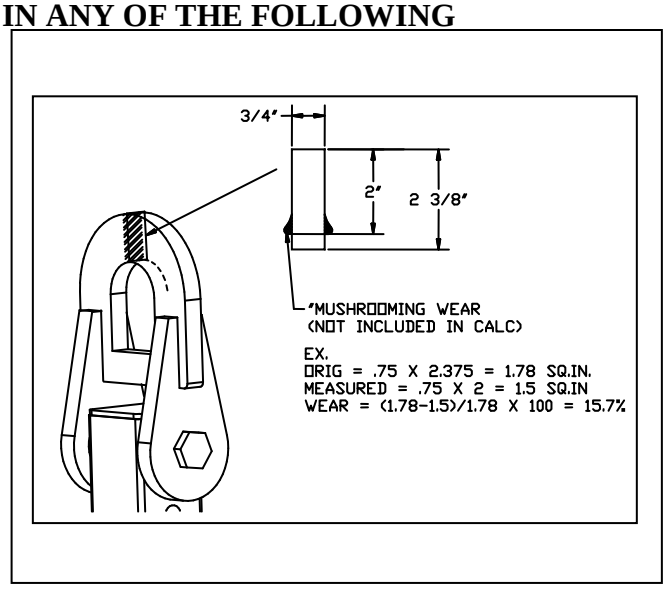
Section VII. Inspection Criteria

THE MECHANICAL GRAPPLE 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 edge of the hole to any edge of the profile 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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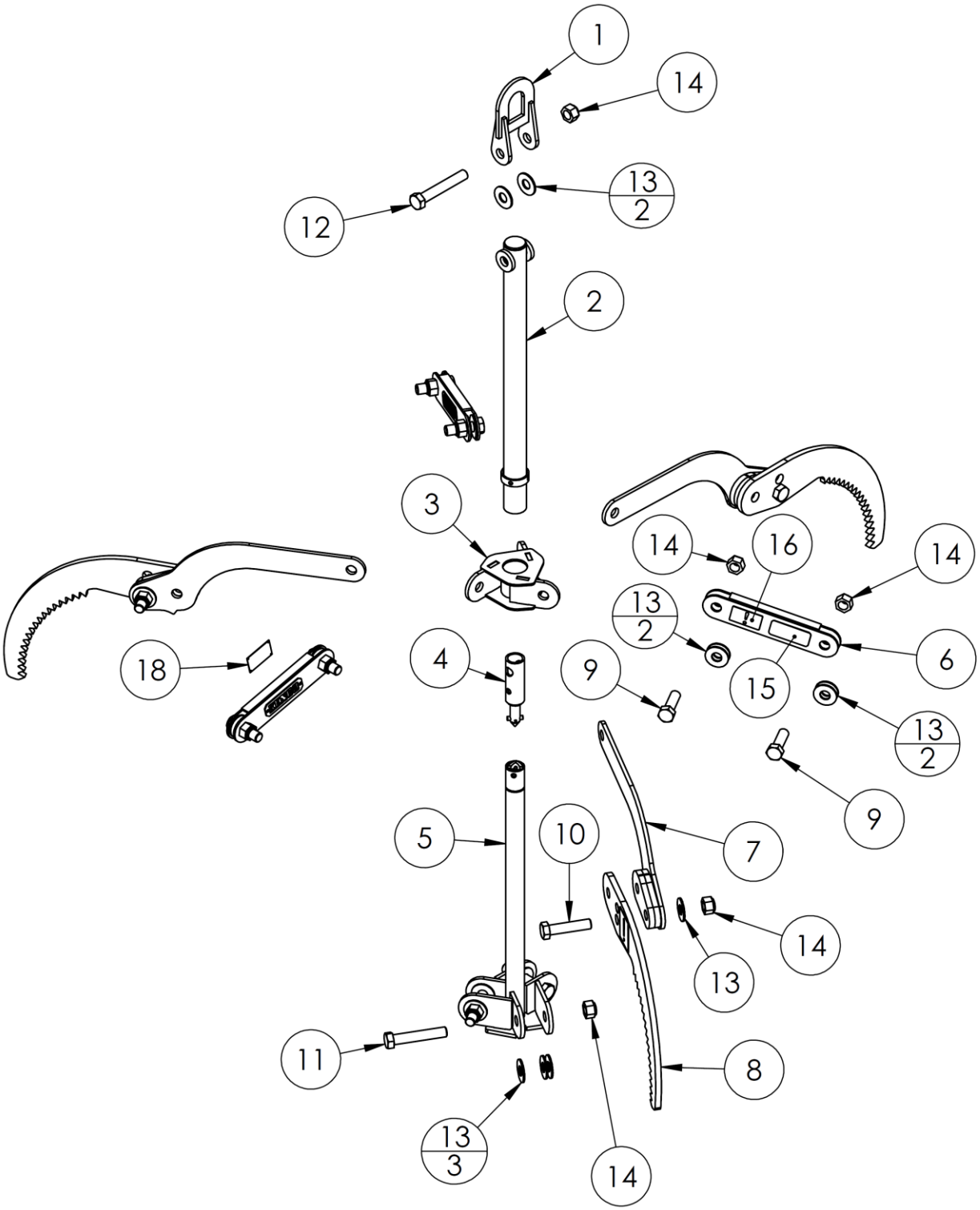
Section VIII. Parts/Drawings



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ITEM NO.	QTY.	PART NAME
1	1	MG6K15T40V4 Lift Eye Assy.
2	1	MG6K15T40V4 Outer Tube Assy.
3	1	MG6K15T40V4 Upper Lobe Assy.
4	1	MG6K Actuator Assy.
5	1	MG6K15T40V4 Lower Tube Assy.
6	3	MG6K15T40V4 Arm Assy.
7	3	MG6K15T40V4 Leg Assy.
8	3	MG6K15T40V4 Tine
9	6	1-1/4" x 4" NC Gr. 8 Hex Head Capscrew
10	3	1-1/4" x 5-1/2" NC Gr. 8 Hex Head Capscrew
11	3	1-1/4" x 7" NC Gr. 8Hex Head Capscrew
12	1	1-1/4" x 8" NC Gr. 8Hex Head Capscrew
13	26	1-1/4" Flat Washer
14	13	1-1/4" Nylock Nut
15	3	Danger Sticker
16	1	Small Warning Sticker
17	1	Large Warning Sticker
18	1	Kenco ID Tag

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DANGER

DO NOT STAND UNDER OR NEAR WHILE MACHINE IS OPERATING

16

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.

17

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.

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KENCO CORPORATION
877-4ATTACH

MODEL
USAGE
CAPACITY WT.
SERIAL NO.

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Section IX. Warranty

A. Policy

1. KENCO Corporation (KENCO) warrants the KENCO *Mechanical Grapple* (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.