THE HYDRAULIC SINGLE JOINT ELEVATOR

BOTTLENECK & CASING

OPERATING PROCEDURE MANUAL

Table of Contents

"HSJE" SERIES ELEVATOR

SAFETY INSTRUCTIONS

The most important safety device for this tool is **YOU**. Your good judgment is the best protection against injury.

⚠WARNING

To reduce the risk of injury, everyone using, installing, performing maintenance, changing accessories on, or working near this tool must read and understand these instuctions before performing any such task.

Operating Hazards

⚠**WARNING**: Do not overload the elevator. Overloading the recommended rating could cause series injury or death.

⚠**WARNING**: Ensure the Latch Lock and Safety latch pin are in their proper closed position. Failure to secure the latch lock and safety latch pin when picking up or laying down pipe could cause serious injury or death.

⚠**WARNING**: Always ensure that the elevator and bore code are correct for the tubular it is to be used on. Failure to use the proper elevator and bore code could result in injury or death.

⚠**WARNING**: Always ensure that the tool joint or collar O.D. of the pipe is correct. Failure to maintain adequate contact area could result in injury or death.

⚠**WARNING**: To prevent injury or elevator malfunction, inspect the elevator bore, latch, hinge pin, safety latch pin and latch lock regularly for wear. Failure to inspect these parts could cause injury or death.

⚠**WARNING**: Do not use undersized pipe. Using undersized pipe could cause an inadequate load bearing area and uneven stress distribution. Both of which may result in injury or death.

⚠**WARNING**: Do not use the elevator if the latch, latch lock, or safety latch pin is malfunctioning. Latch, latch lock, or safety latch pin failure, may result in injury or death.

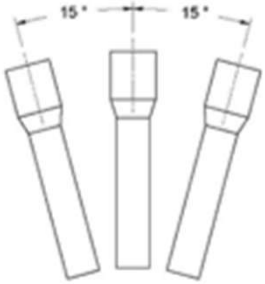
⚠**WARNING**: All warning labels attached to the equipment must be observed. The warning labels must be present on the tool. Do not remove the labels. If they are missing, replacing is mandatory.

⚠WARNING: The company operating the tool is responsible for issuing work instructions for safe and proper use of the equipment.

⚠WARNING: The operating company is responsible for verifying that any personnel operating, servicing, inspecting, or otherwise involved with the use of the tool must be properly trained correctly.

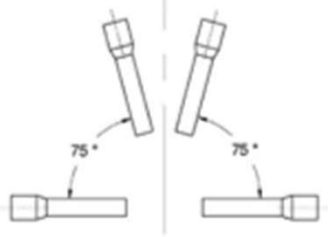
⚠**WARNING**: Do not use oversized pipe. Using oversized pipe could make it difficult or impossible to properly latch the elevator.

Vertical / Non-vertical Lifting



Vertical lifting is considered vertical ± 15°

Non-vertical lifting is considered =< 75° as max. from horizon.



DO NOT DISCARD – GIVE TO USER **Keystone** ENERGY TOOLS

"HSJE" SERIES ELEVATOR

SAFETY INSTRUCTIONS

The most important safety device for this tool is **YOU**. Your good judgment is the best protection against injury.

Workplace Hazards

⚠WARNING: keep hands fingers clear of the elevator when functioning the tools and installing the elevator around the pipe.

⚠WARNING: Always use the proper tools and wear eye, head, hand, and foot protection when servicing this elevator.

⚠WARNING: Maintain a balanced body position and secure footing.

⚠WARNING: For professional use only.

Maintenance Hazards

⚠**WARNING**: Use only Keystone Energy Tool components on equipment. Failure to do so may affect the correct functioning of the tool and may cause injury or death.

⚠**WARNING**: KET equipment is made of cast alloy heat treated steel and should never be welded on in the field. Improper welding can cause cracks or brittleness in the castings which could result in drastic weakening or failure of the equipment. Any welding or machining must be performed by an authorized KET or API certified repair center.

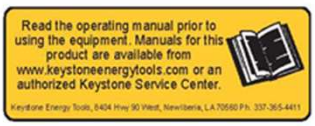
⚠**WARNING**: Improper welding and/or re-machining of cast alloy heat treated steel can cause personal injury, property damage, or death.

Read Operation manual before use.

Pay attention: do not place your hands between moving parts.

DO NOT lift from this area.

Be careful when lifting from these areas.



DO NOT DISCARD – GIVE TO USER Keystone ENERGY TOOLS

1.0 Introduction

This manual contains operation and maintenance instructions for the Keystone Energy Tools (KET) "HSJE" series single joint elevator and provides instruction for its proper field use, disassembly and repair; including a complete parts breakdown.

(KET) "HSJE" elevators are designed to replace manual SJ elevators and rope slings for hoisting collar type and bottleneck pipe into position when adding to a string. The HSJE utilizes interchangeable insert bushings specific to pipe size. Each different pipe size will require its on specific insert bushings. HSJE elevators allow the crew to handle pipe properly, thus avoiding pipe thread damage and reduces the chances of accidents/injuries.

The HSJE series pick up elevator has a simple, reliable latch that closes simultaneously when the elevator is closed. To ensure the Latch does not open, the system incorporates a safety latch pin that pins into the elevator after the latch is fully latched around the door lug. The size range of the SJ series elevator is as illustrated in the table provided.
(See Figure 1)

⚠WARNING: If the hydraulic sequence valves are not set properly, and the latch safety pin goes to the set position prior to the latch fully closing, the safety pin will prevent the latch from fully engaging the latch lug on the door resulting in a false latch. **See Figure 3 & 4** for illustrations showing examples of an improper latch and a properly latched "HSJE".

Model	Tons	Range
SJ-40	7.5/10/12	4 1/2" – 7 5/8"
SJ-50	7.5/10/12	7 5/8" – 9 5/8"
SJ-60	7.5/10/12	10 3/4" – 13 3/8"
SJ-65	7.5/10/12	13 5/8"- 20"

Figure 1

NOTE: WARNING labels have been installed at critical areas on the tool. Familiarize yourself with their message and locations before proceeding to operate equipment.
See Safety Instructions Page 3 & 4

⚠WARNING: During use, the elevator should never be run into the tool joints or couplings inducing any type of shock load into the equipment. Shock loads are an impact-type force applied over a short instant of time. In shock loading, the energy of the applied force is ultimately absorbed, or transferred, to the elevator designed to resist the force. The application of shock loads to an elevator can cause shock/fatigue stress loading potentially resulting in premature stress/fatigue failure.

Hydraulic Specifications	
Minimum Flow Rate	3 GPM
Minimum Working Pressure	2000 psi
Maximum Working Pressure	2500 psi

Figure 2

2.0 Operation

The HSJE is easily installed by the user. Perform the actions prescribed below after the elevator is hoisted to the rig floor and properly positioned.

- ▶ Remove the bolt from the shackle on the swivel suspension assembly or lifting link system.
- ▶ Attach the shackle over the lifting eye on the elevator then replace the bolt to the shackle.
- ▶ Repeat the process for the opposite lifting eye. To remove the elevator, simply reverse the process.

▶ Connect the hydraulic supply and return lines utilizing the quick disconnects.

▶Secure the hose bundle in a safe location above the elevator, out of harms way from the pipe and can move with the tool.

The operation of the HSJE elevator is powered by hydraulic power supply from the rig.

Open: When functioning the controls to the open position, the door opening sequence will begin when the safety latch pin cylinder lifts the safety latch pin and the open and close hydraulic cylinder retracts, engaging the pull and cam arm pulling outward on the Latch Lock, opening the elevator.

Close: When functioning the controls to the closed position, the door close sequence will begin when the open and close hydraulic cylinder extends, engaging the pull and cam arm pushing the door and latch lock, closed. Once latch is closed and open/close cylinder is fully extended, the safety latch pin will set into the latch.

⚠WARNING: Never engage HSJE into the open position when holding pipe, only release if the CRT, Main Elevator, or Spider have the weight of the tubular. This could result in accidental dropping of the tubular resulting in possible bodily injury or death.

2.0 Operation

Figures 3 Illustrates the improper latching of the “HSJE” latch and safety latch pin. This improper latch is due to the safety latch pin closing prior to the latch. It is critical to ensure that the sequence valves are set correctly, and the elevator is properly latching prior to use and inspect during use to prevent any accidental dropping of tubular that may result in personal injury and/or death. (see section 4 to adjust sequence valves)

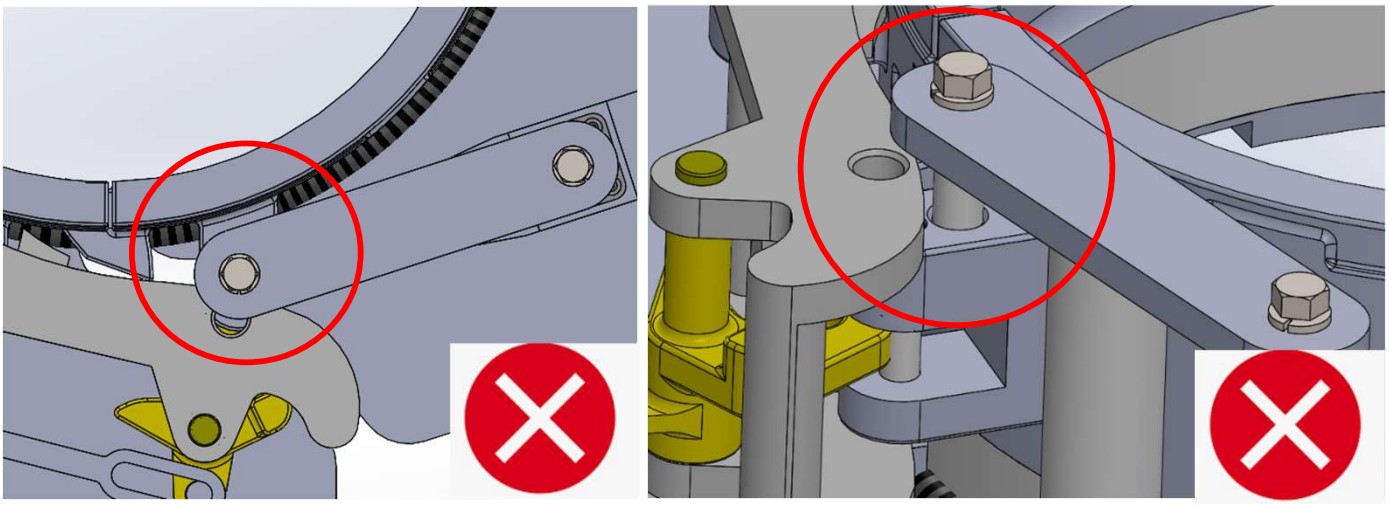


Figure 3

Figures 4 Illustrates the proper latching method of the “HSJE” where the latch has closed properly, and the safety latch pin is properly positioned in the retaining hole of the latch and door lug.

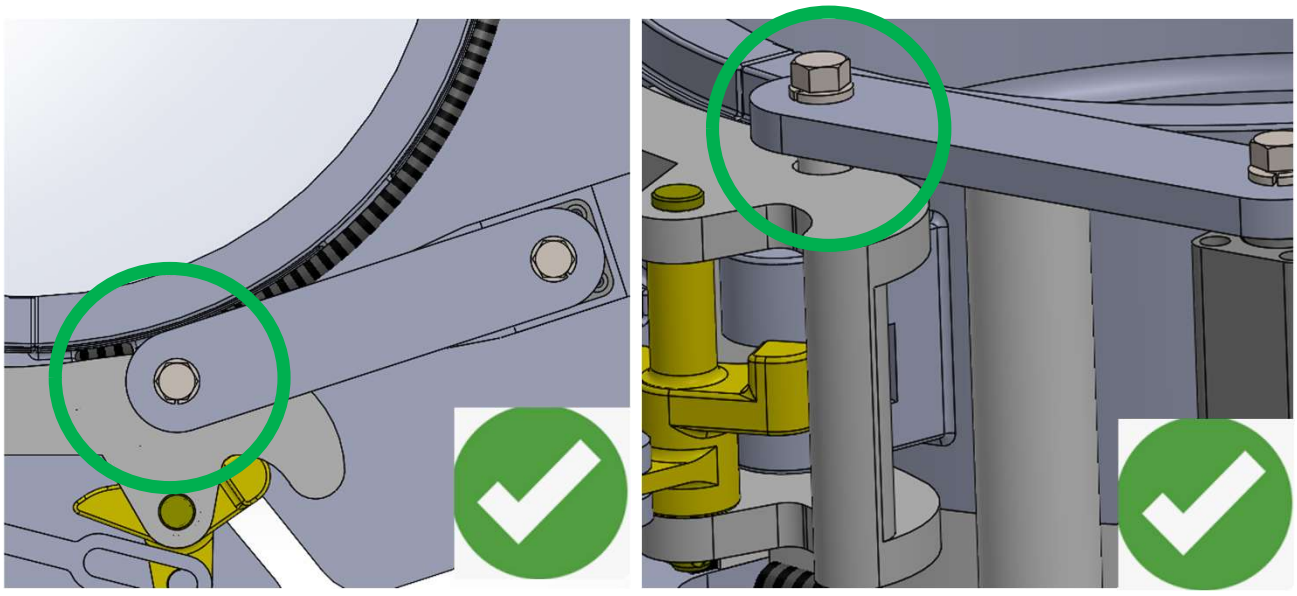


Figure 4

3.0 Disassembly & Assembly

Bushing Assembly/Disassembly

The “HSJE” utilize interchangeable insert bushings specific to pipe size. Each half of the bushing is held in the single joint by the adjoining retainer bolts, and lock washers.

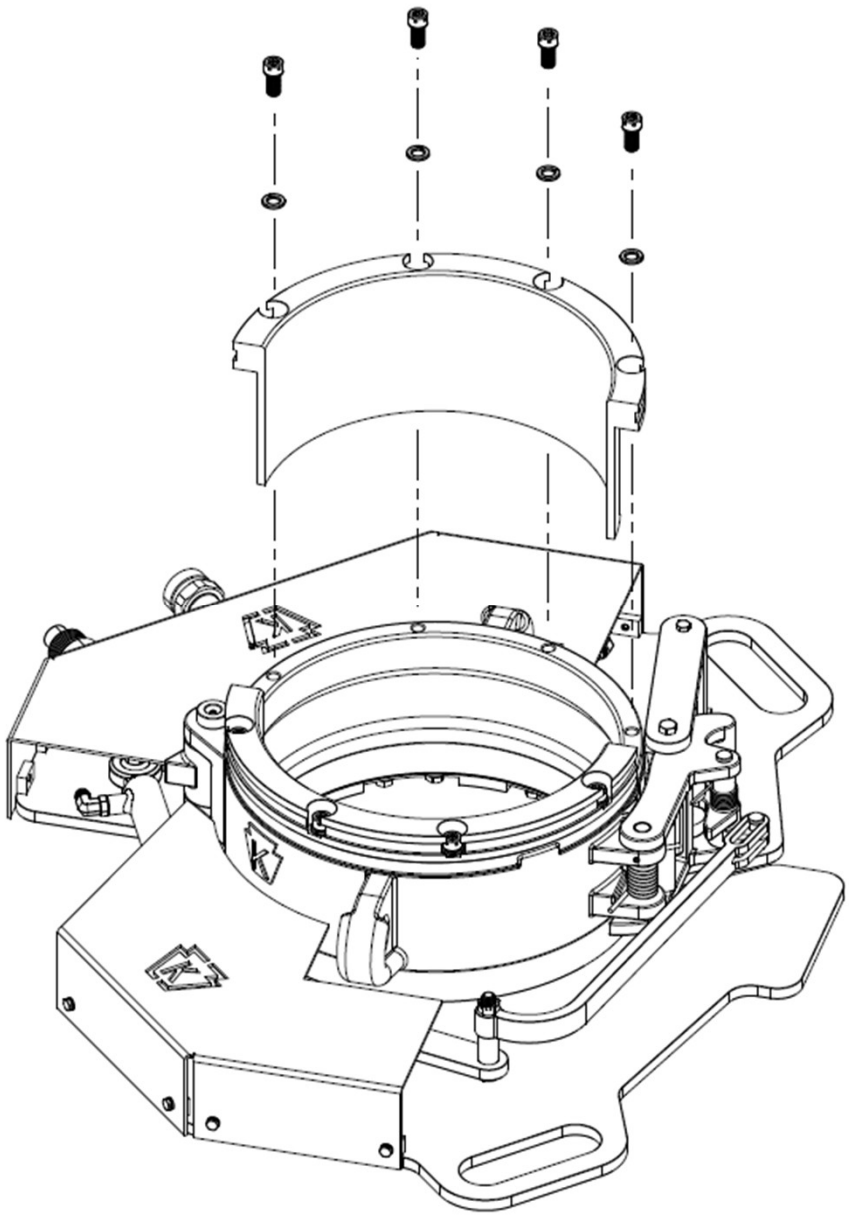


Figure 5

4.0 Hydraulic Information

HSJE Hydraulic System Information

When operating this equipment, you must use high quality hydraulic fluid not containing rust, oxidation inhibitors, and foam suppressants that meet the requirements of the below chart. When operating KET-HSJE equipment without using the proper required fluid will greatly increase the chances of premature component wear, premature seal failure causing damages to the equipment.

Hydraulic Fluid Requirements		
Characteristics	**Metric**	**US**
Operating Viscosity Range	12 to 75 mm2/s	65 to 347 SUS
Minimum viscosity	4 mm2/s	39 SUS
Maximum viscosity	460 mm2/s	2128 SUS
Hydraulic Fluid Operating Temp range	30 to 60 C	86 to 140 F
Minimum Fluid Temperature	-30 C	-22 F
Maximum Fluid Temperature	90 C	194 F
Fluid Cleanliness ISO	23/19/16	

Figure 6

When selecting the proper hydraulic fluid also consider climate operating conditions and equipment load.

4.0 Hydraulic Information

The HSJE is equipped with a pair of sequence valves to control the order of operations. These valves are set from the factory and should not need adjusting. If the valves need adjusting, it should be done by a person qualified in hydraulics.

The sequence is defined below:

Open: Utilize control panel to shift HSJE to the open position. When shifting the HSJE to open, the safety pin will first rise out of the latch. Once it is fully extended, the pressure will peak above the setting pressure for the open sequence valve, sending pressure to the retract side of the open/close cylinder, opening the HSJE.

Close: Utilize control panel to shift HSJE to the close position. When shifting the HSJE to close, the open/close cylinder will first extend closing the elevator, the latch, and locking the latch. Once it is fully extended and elevator is closed, the pressure will peak above the setting pressure for the close sequence valve, sending pressure to the retract side of the safety pin cylinder, pinning the latch of the HSJE in the closed position.

Adjusting the sequence valve:

- A 5/32” allen wrench and 9/16” open end or crescent wrench will be needed.
- Locate the adjustment screw on the sequence valve.
- Loosen locknut.
- Turn screw:
    - Clockwise to increase the pressure setpoint.
    - Counterclockwise to decrease.
- Set the cracking pressure ~10% above the stall pressure of Cylinder A.
    - This ensures Cylinder A is fully extended before Cylinder B starts retracting.
- Tighten locknut.

4.0 Hydraulic Information

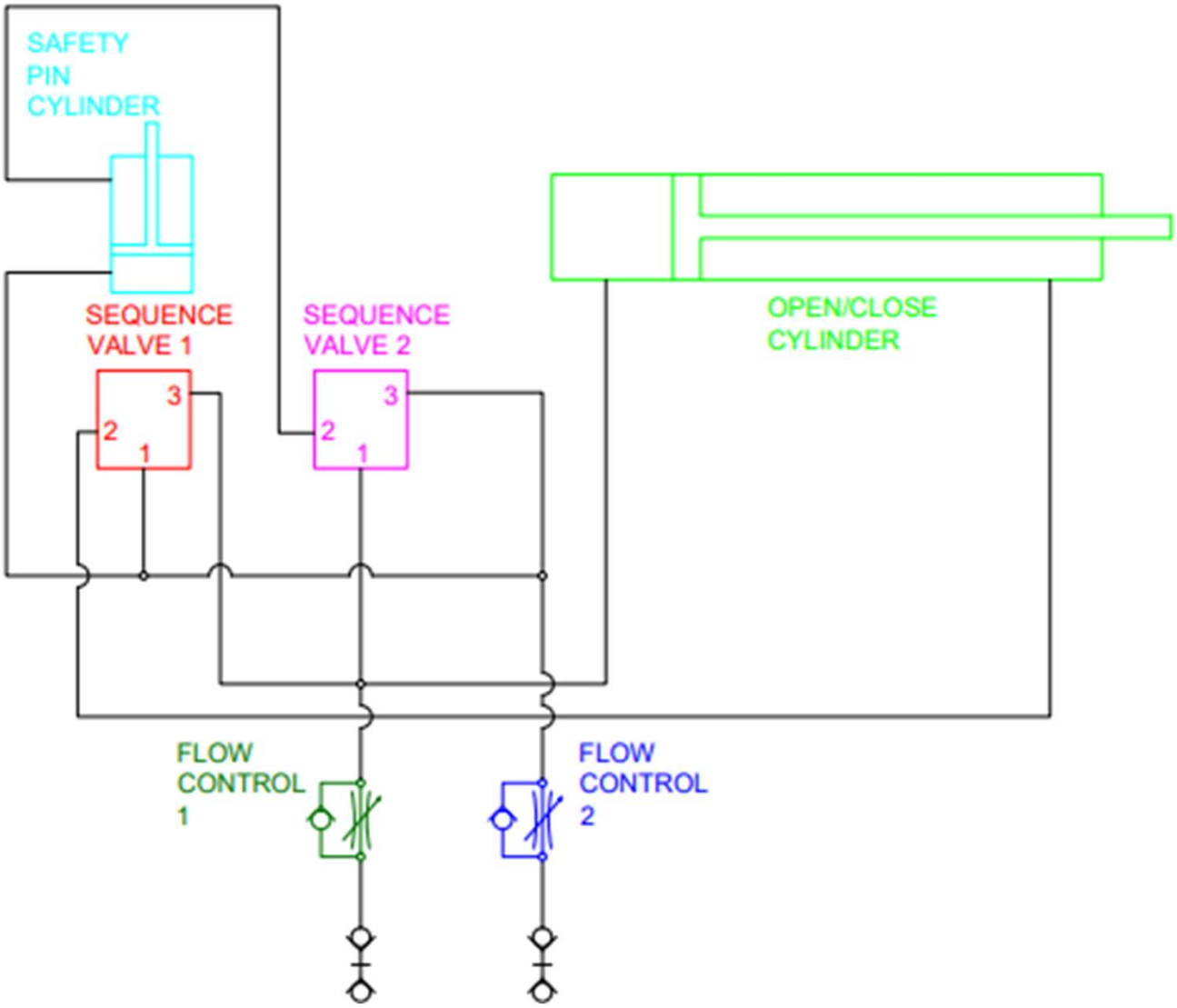


Figure 7

5.0 Maintenance & Inspection

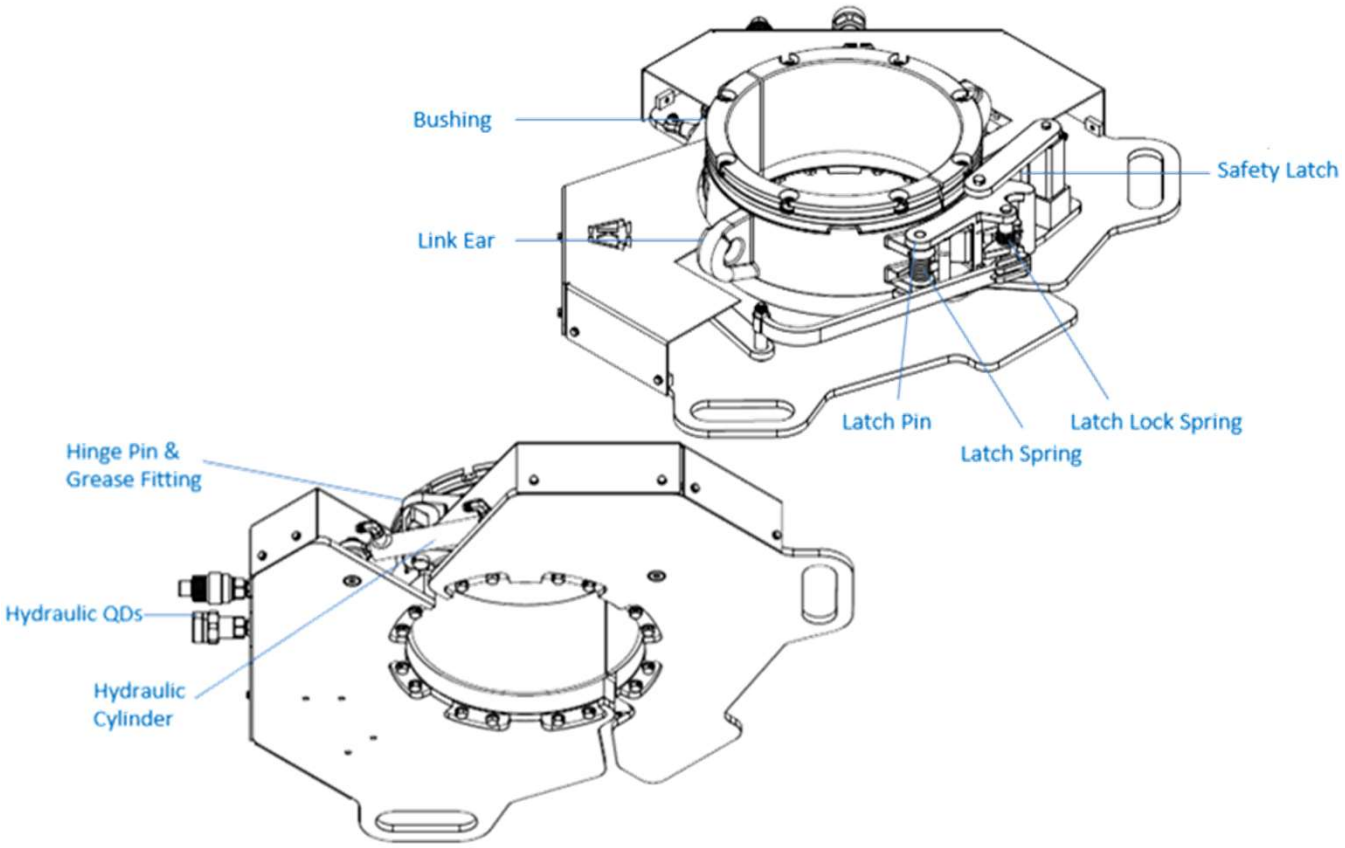


Figure 8

To ensure optimum performance, perform the below-listed weekly checks.

- Check for worn Hinge Pin, Latch Pin, Cam Arm, Pull Arm, Latch Lock, Safety Latch Pin, Safety Pin Lifting Plate, and their mating parts. These, if worn, may hinder proper opening and closing of the door and latch.
- Check the Safety Latch assembly for worn or damaged parts. (e.g. Safety Latch Pin)
- Check for proper Latch Spring and Latch Lock Spring performance.
- Check for proper operation of Latch Stop mechanism. Latch should not stop against the door when engaged.
- Check for proper operation of the Latch Lock Mechanism.
- Check Hydraulic Cylinders, Valves, and fittings for leaks. Ensure Quick Disconnects are free of debris.
- Check springs for damage, deformation and lack of tension.

Lubricate the elevator regularly during usage and storage to prevent corrosion. Use an extreme pressure, multi-purpose, lithium base grease of No. 1 or No. 2 consistency or a lubricant that meets MIL-SPEC-A907E.

5.0 Maintenance & Inspection

The owner/user of the equipment should develop schedules of inspection based upon experience, manufactures recommendations, and one or more of the following factors:

- Environment
- Load Cycles
- Regulatory requirements
- Operating time
- Testing
- Repairs
- Remanufacture

"Proof Load Test" shall be performed only once following manufacture or remanufacture. This is by applying a load equal to 1.5 times the rated load for a period no less than 5 min. A proof load test shall be followed by surface NDT no earlier than 24 hrs. after proof of testing.

"Performance Load Test" is recommended after 365 days of accumulative use. This test is to verify the function of the equipment to perform under the conditions or in conjunction with other equipment. The Performance Test may consist of loads up to, but not exceeding, the rated load of the equipment.

Lubricate the elevator regularly during usage and storage to prevent corrosion. Use an extreme pressure, multi-purpose, lithium base grease of No. 1 or No. 2 consistency or a lubricant that meets MIL-SPEC-A907E.

****When greasing of pins make sure the pump grease until it comes out of both ends.****

Maintain elevator as prescribed on page 13 periodic Actions/Examinations. (See Figure 7)

Reference API 8B Recommended Practice

Category III: Every 6 months the equipment should include NDT of critical areas and may involve some disassembly to access specific components and to identify wear that exceeds the allowable wear tolerances.

Category IV: Every 12 months the equipment **shall** be disassembled to permit the necessary full NDT inspection of all primary load carrying components per ASTM E-709 (see figure 8). Including inspection for excessive wear, cracks, flaws , and deformations.

If any repair work is required, the equipment shall be sent into a Keystone Energy Tool facility for evaluation.

5.0 Maintenance & Inspection

Tool Maintenance		
ACTION	**FREQUENCY**	**FIG.**
Grease Hinge Pin	Daily	6
Lubricate Latch Pin		6
Lubricate Latch Lock Pin		6
Grease Underside of Lifting Eye		6
Grease Bore and Seating Surface		6
Grease surface between cam arm and pull arm		6
Grease surface between pull arm and latch lock		6
Lubricate Safety Latch Pin		6
Lubricate guide rod for Latch Lifting Plate		6
Grease Safety Latch Pin mating hole		6
MPI Category III	Every 6 Months	8
MPI Category IV	Every 12 Months	8
Performance Load Test	Every 365 Days “See page 13”	-

Figure 9

6.0 Repair & Critical Areas

The HSJE series requires minimum attention. To Remove and Replace the Hinge Pin, Hinge Pin Retainer Pin , Latch Pin, and Latch Lock assembly described below.

- To remove the Hinge Pin, first remove the Hinge Pin Retainer Pin. Drive out the Hinge pin from the bottom of the elevator. Replace the Hinge Pin and Hinge Pin Retainer Pin.
- To remove the Latch Pin, first remove the Latch Pin Retainer Pin. Drive out the Latch Pin from the bottom of the elevator. Replace the Latch Pin, Latch Pin Spring, and Latch Retainer Pin.
- To remove Latch Lock Assembly, remove the pull arm pin by removing the cotter pin from pull arm pin, then remove pull arm pin from latch lock. Next remove the cotter pin from the latch lock pin, and remove the latch lock pin. Remove the latch lock and spring. Replace the latch lock , latch lock spring, latch lock pin, and pull arm pin.

We have identified those areas considered critical to tool performance and functionality. These should be examined for repair or replacement.

Bodies, doors and latches are specifically matched by trained Keystone Energy Tools professionals. For this reason, a body, door or latch from one elevator should never be exchanged with a body, door, or latch from another elevator.

Illustrated below are the critical and non-critical areas associated with the subject tool. Critical areas are identified by the shaded areas. All non-shaded areas are considered non-critical.

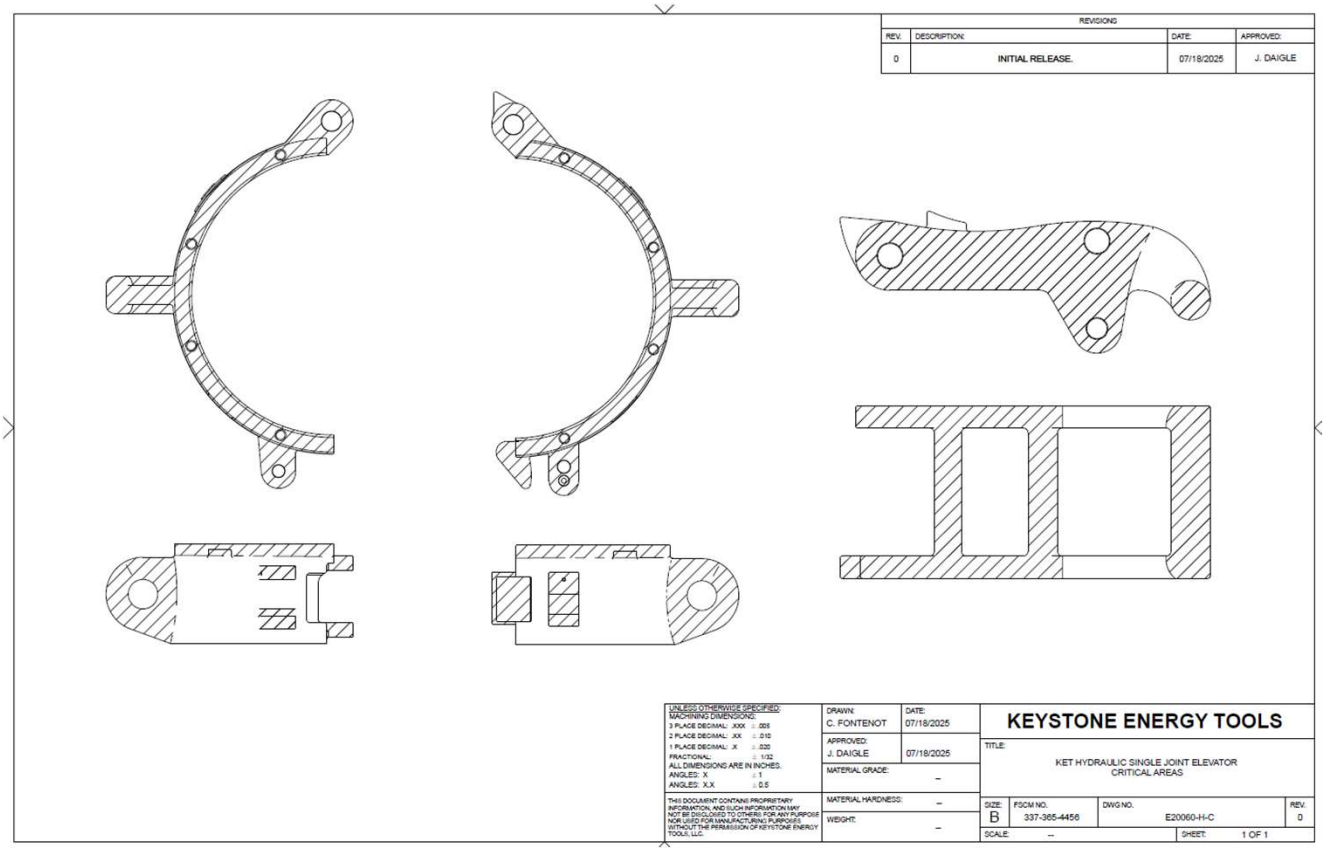
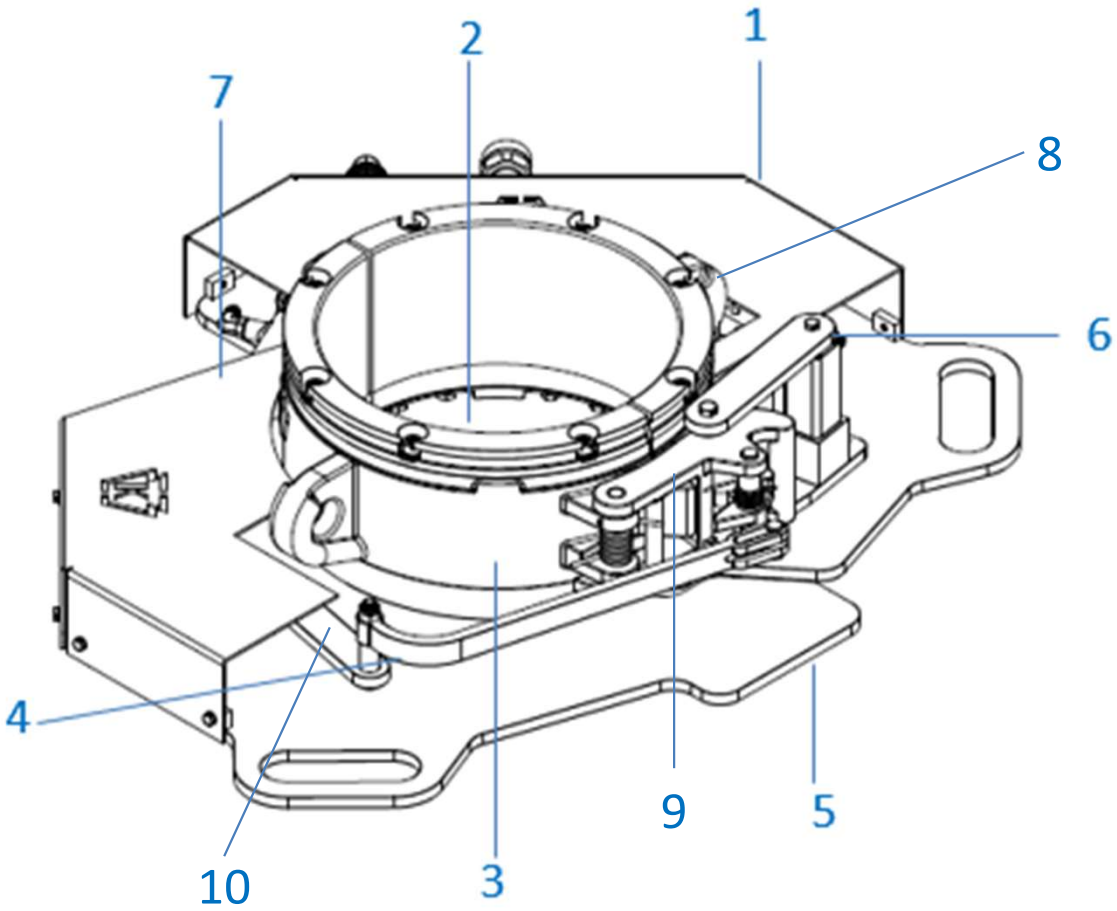


Figure 10

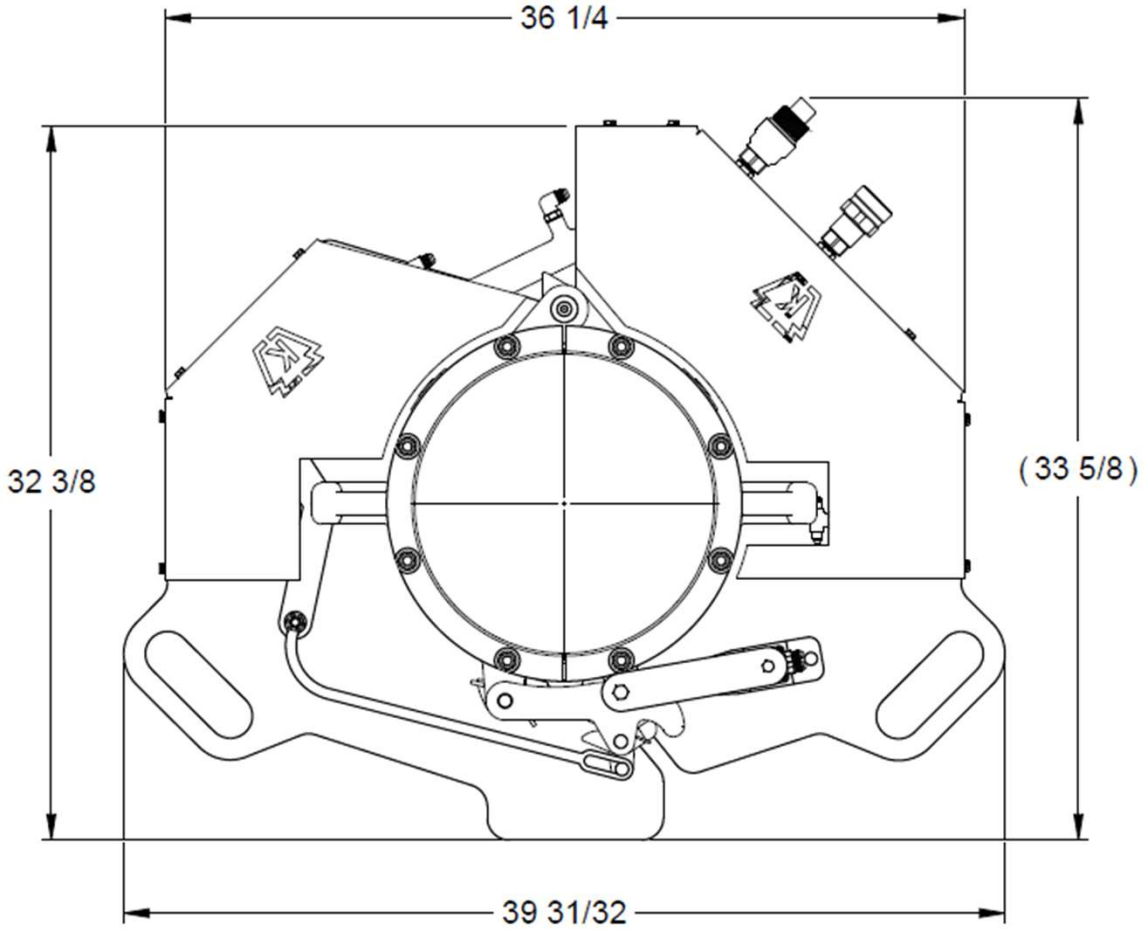
7.0 Technical Drawings

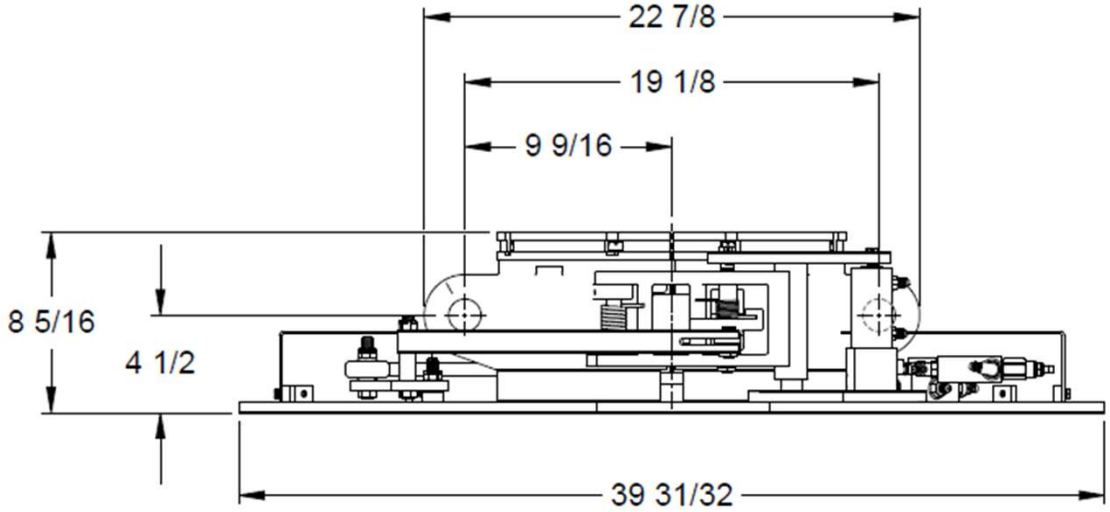
List of Critical Components

1. Guards
2. IB-Bushing
3. Body
4. Pull Arm
5. Base Plate
6. Safety Latch Pin Assembly
7. Hydraulic Cylinder
8. Door
9. Latch
10. Cam Arm



7.0 Technical Drawings





8.0 Ordering Information

"HSJE" Assemblies

Part Number	Description	Size Range	Rating	Weight (lbs.)
E20040-HYD-IB	KET HYDRAULIC SJ BUSHING STYLE	4 1/2" – 7 5/8"	7.5, 10, 12	
E20050-HYD-IB	KET HYDRAULIC SJ BUSHING STYLE	7 5/8" – 9 5/8"	7.5, 10, 12	
E20060-HYD-IB	KET HYDRAULIC SJ BUSHING STYLE	10 3/4" – 13 3/8"	7.5, 10, 12	250
E20065-HYD-IB	KET HYDRAULIC SJ BUSHING STYLE	13 5/8" – 20"	7.5, 10, 12	

HSJE – E20040 Bushing Assemblies

Part Number	Bore Code	Description	Weight (lbs.)
E20043-129	129	4 1/2" HYDRAULIC SINGLE JOINT BUSHING	
E20043-132	132	5 1/2" HYDRAULIC SINGLE JOINT BUSHING	
E20043-134	134	6" HYDRAULIC SINGLE JOINT BUSHING	
E20043-137	137	7 5/8" HYDRAULIC SINGLE JOINT BUSHING	

HSJE – E20050 Bushing Assemblies

Part Number	Bore Code	Description	Weight (lbs.)
E20053-137	137	7 5/8" HYDRAULIC SINGLE JOINT BUSHING	
E20053-139	139	8 5/8" HYDRAULIC SINGLE JOINT BUSHING	
E20053-141	141	9 5/8" HYDRAULIC SINGLE JOINT BUSHING	

HSJE – E20060 Bushing Assemblies

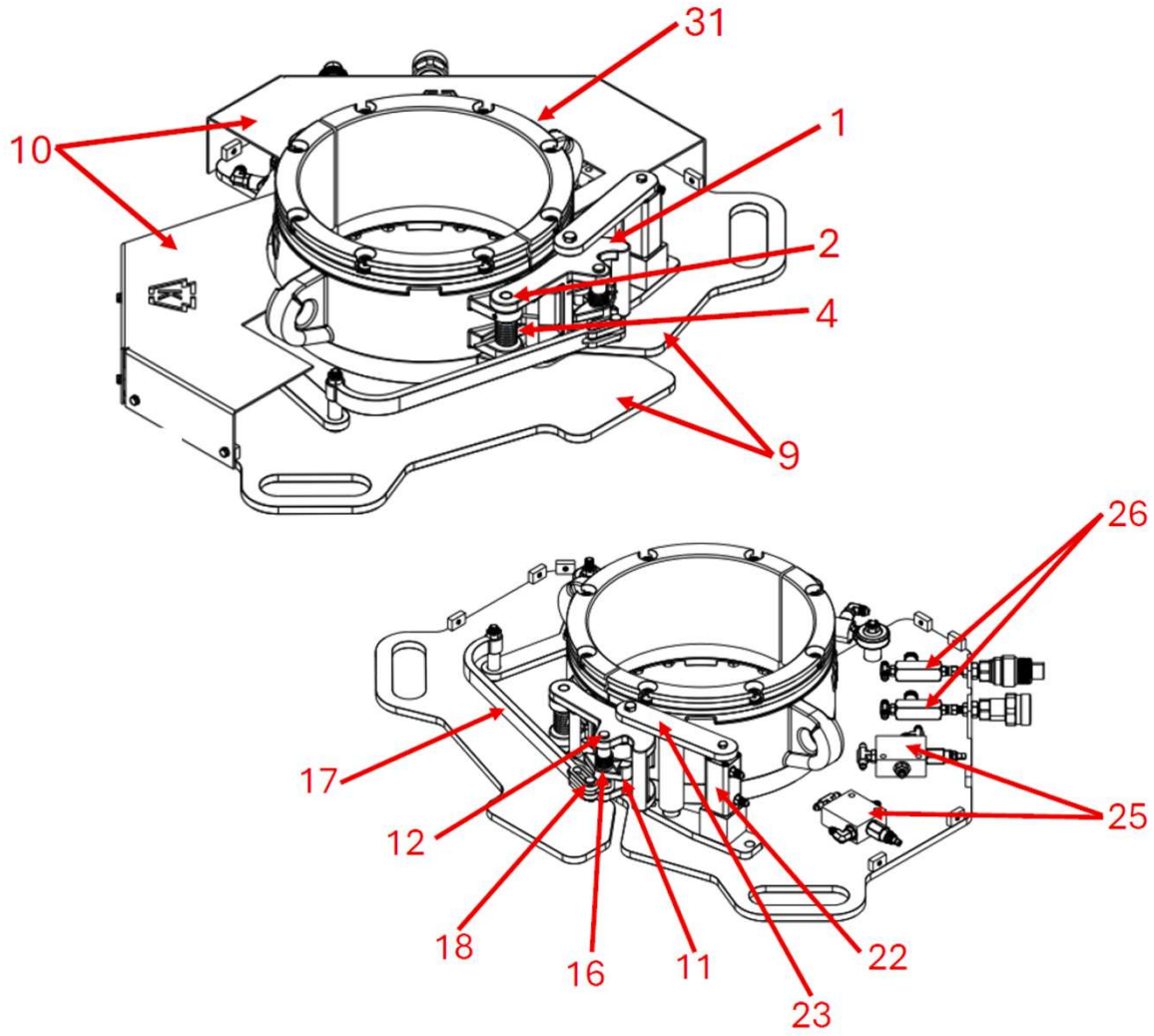
Part Number	Bore Code	Description	Weight (lbs.)
E20063-142	142	10 3/4" HYDRAULIC SINGLE JOINT BUSHING	145.00
E20063-143	143	11 3/4" HYDRAULIC SINGLE JOINT BUSHING	135.00
E20063-144	144	13 3/8" HYDRAULIC SINGLE JOINT BUSHING	129.00

HSJE – E20065 Bushing Assemblies

Part Number	Bore Code	Description	Weight (lbs.)
E20068-145	145	16" HYDRAULIC SINGLE JOINT BUSHING	
E20068-146	146	18 5/8" HYDRAULIC SINGLE JOINT BUSHING	
E20068-147	147	20" HYDRAULIC SINGLE JOINT BUSHING	

NOTE – additional & pipe specific size bore codes are available upon request. Consult further with a Keystone sales representative on the requirements for your operations.

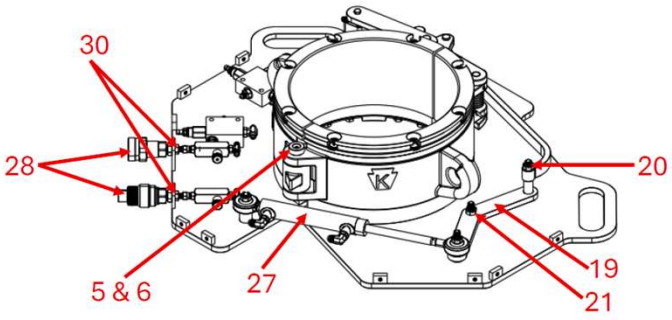
9.0 Replacement Parts

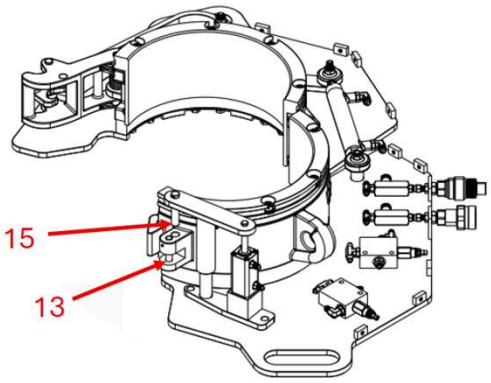


ITEM	QTY	PART No.	DESCRIPTION
1	1	E20026	LATCH
2	1	E39-050	LATCH PIN
3	1	E34568	SJ SWIVEL SUSPENSION ASSEMBLY *(NOT SHOWN)*
4	1	E7829-1	LATCH SPRING
5	1	E39-052	HINGE PIN **COMES WITH GREASE ZERT**
6	1	E316-TI	TAP IN GREASE FITTING
7	1	E316RP	LATCH PIN RETAINER (SAME AS HINGE) *(NOT SHOWN)*
8	1	E316RP	HINGE PIN REATAINER (SAME AS LATCH) *(NOT SHOWN)*
9	1	E60-102	BASE PLATE W/ MOUNTING BOLTS
10	1	E60-103	GUARDS W/ BOLTS

⚠**WARNING**: Use only Keystone Energy Tool components on equipment. Failure to do so may affect the correct functioning of the tool and may cause injury or death.

9.0 Replacement Parts





ITEM	QTY	PART No.	DESCRIPTION
11	1	E40-149	LATCH LOCK
12	1	E40-169	LATCH LOCK MAIN PIN W/ COTTER
13	1	E40-150	LATCH LOCK LATCHING PIN
14	1	E40-184	LATCH LOCK LATCHING PIN RETAINER *(NOT SHOWN)*
15	1	E40-183	LATCH SAFETY PIN
16	1	E40-156	LATCH LOCK SPRING
17	1	E60-100	PULL ARM (SPECIFIC TO SIZE)
18	1	E40-172	PULL ARM PIN W/ COTTER
19	1	E60-101	CAM ARM (SPECIFIC TO SIZE)
20	1	E40-185	CAM ARM & PULL ARM BOLTING ASSEMBLY
21	1	E40-186	CAM ARM MOUNTING BOLT ASSEMBLY
22	1	E40-187	SAFETY PIN LIFT CYLINDER W/ MOUNTING BOLTS & FITTINGS
23	1	E40-188	SAFETY PIN LIFTING PLATE ASSEMBLY
24	1	E40-189	SAFETY PIN LIFTING PLATE BUSHING *(NOT SHOWN)*
25	1	E40-190	HYDRAULIC SEQUENCE VALVE ASSEMBLY
26	1	E40-191	HYDRAULIC FLOW CONTROL ASSEMBLY
27	1	E40-192	OPEN/CLOSE CYLINDER W/ MOUNTING HARDWARE & FITTINGS
28	1	E40-193	HYDAULIC QUICK DISCONNECTS
29	1	E40-194	HOSE KITS W/ FITTINGS *(NOT SHOWN)*
30	1	E40-195	BULK HEAD FITTINGS
31	1	SEE CHART	HSJE BUSHING

⚠**WARNING**: Use only Keystone Energy Tool components on equipment. Failure to do so may affect the correct functioning of the tool and may cause injury or death.

10.0 Wear Data for Single Joint Elevators

SIZE	4 1/2" - 20"
RATED CAPACITY	7.5 –12 TONS

STANDARD PINS

HINGE PIN PART #	E39-052
TOTAL CLEARANCE (H)	0.025
HINGE PIN MIN. DIA. NEW	.992
BORE DIA. MAX. NEW	1.010
BORE DIA. MAX. WORN	1.015

LATCH PIN PART #	E39-050
TOTAL CLEARANCE (L)	0.025
LATCH PIN MIN. DIA.	0.620
BORE DIA. MAX. NEW	0.637
BORE DIA. MAX. WORN	0.645

1/16" OVERSIZE PINS

HINGE PIN PART #	E39-052-R
TOTAL CLEARANCE (H)	0.025
HINGE PIN MIN. DIA.	1.059
BORE DIA. MAX. NEW	1.064
BORE DIA. MAX. WORN	1.078

LATCH PIN PART #	N/A
TOTAL CLEARANCE (L)	N/A
LATCH PIN MIN. DIA. NEW	N/A
BORE DIA. MAX. NEW	N/A
BORE DIA. MAX. WORN	N/A

1/8" OVERSIZE PINS

HINGE PIN PART #	N/A
TOTAL CLEARANCE (H)	N/A
HINGE PIN MIN. DIA.	N/A
BORE DIA. MAX. NEW	N/A
BORE DIA. MAX. WORN	N/A

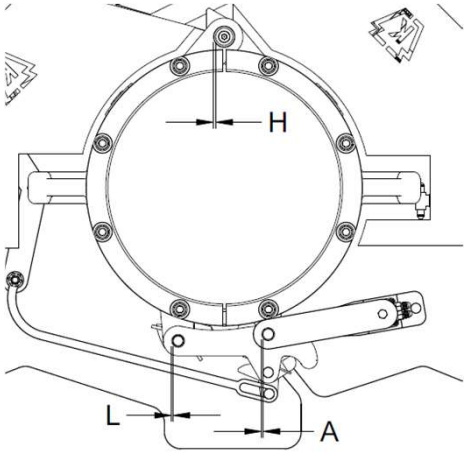
LATCH PIN PART #	N/A
TOTAL CLEARANCE (L)	N/A
LATCH PIN MIN. DIA. NEW	N/A
BORE DIA. MAX. NEW	N/A
BORE DIA. MAX. WORN	N/A

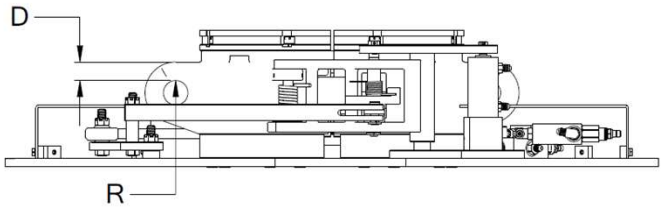
SAFETY LATCH LOCK PIN

DIMENSION (A)MAX	0.530

LIFTING EARS

RADIUS – R	0.625
DIMENSION (D) MIN	0.750





11.0 Reception, Storage, Transport & Decommissioning

Reception

Check the tool immediately after reception and re-preserve the tool as required (try to have this completed withing 1 month).

Any exposed or non painted metal surfaces should be coated with a rust preventative to prevent any corrosion build up.

Storage

The tool should be stored or palletized in a clean and dry place to avoid all environmental elements. It is recommended to store in an indoor environment of 60 – 90 Deg F with max humidity of 80%. If the tool is to be stored outdoor, then a cargo container would be appropriate to ensure the tool is not exposed to weather conditions.

Preserve the tool by greasing all areas defined in the maintenance requirements per the manual.

During storage, the tool shall still be inspected annually per inspection requirements in the user's manual.

Transport

When lifting the tool do so only by using its lifting ears only. The best way of transporting the tool is in its original palletized state. Ensure the tool is banded down accordingly to prevent the possibility of potential dropped objects and broken shipments.

Decommissioning

The tool may contain grease, steel, rubbers, plastic, stainless steel, mild steel and several assembled components with undefined consistency or mixtures. The tool can be contaminated with drilling fluids, hydraulic fluids and preservatives. After the tool is decommissioned, it is recommended to disassemble the tool in a place where waste fluids can be contained and properly disposed of.

⚠**WARNING:** any fluids, mud, or grease are potentially unsafe when in contact with the skin. Always wear gloves and safety goggles when disassembling the tool.

1. Clean the tool with a steam cleaner.
2. It is recommended to disassemble the tool in a place where drainage for waste fluids is possible.

CERTIFICATE OF WARRANTY AND GUARANTEE OF QUALITY

KET warrants all materials and products manufactured to be free from defects in material and workmanship, under normal use and service, when installed, used, and serviced in the manner provided and intended by the seller for a period of twelve (12) months after delivery. Seller's obligation under this warranty is expressly limited to repair or replacement, at its option, of any materials or products, returned to the seller's plant in Broussard, Louisiana and which are determined by the seller to be defective. All freight charges for return and reshipment shall be paid by the customer. A new warranty period shall not be established for repaired or replaced material or products; such items shall remain under warranty only for the remainder of the warranty period on the original materials or products. This is the sole warranty of the seller and no other warranty is either expressed or implied, in fact or by law, including any warranty at to the merchantability or fitness for a particular use or purpose.

In case of goods or parts not wholly of seller's manufacture, seller shall make available to the customer whatever warranty or guarantee is extended to seller for such goods or parts by the supplier or manufacturer thereof.

Seller will not assume responsibility or liability for any repairs, rebuilding, welding or heat treating done to its material or products outside of seller's plant, such work shall void all warranties. All parts used in the manufacture and /or final assembly of seller's materials or products are necessary for both safety and operational performance. Omission of any part or failure to replace any worn part may result in the malfunction and a consequent safety hazard for which seller disclaims any responsibility or liability for injuries or damage as a result thereof.

Buyer's sole and only remedy in regard to any defective materials or products shall be the repair or replacement thereof as herein provided, and seller shall not be liable for any consequential, special, incidental or punitive damages resulting from or caused by any defective materials, products or supplies.

For more information, please contact us at:

Keystone Energy Tools
3711 Melancon Rd.
Broussard, LA 70518

www.k-e-t.com

Office: 1-337-365-4411
Fax: 1-337-365-4456

Revision History			
Rev.	Date	Changes	Approved By
0		Original Release	Cody Haas