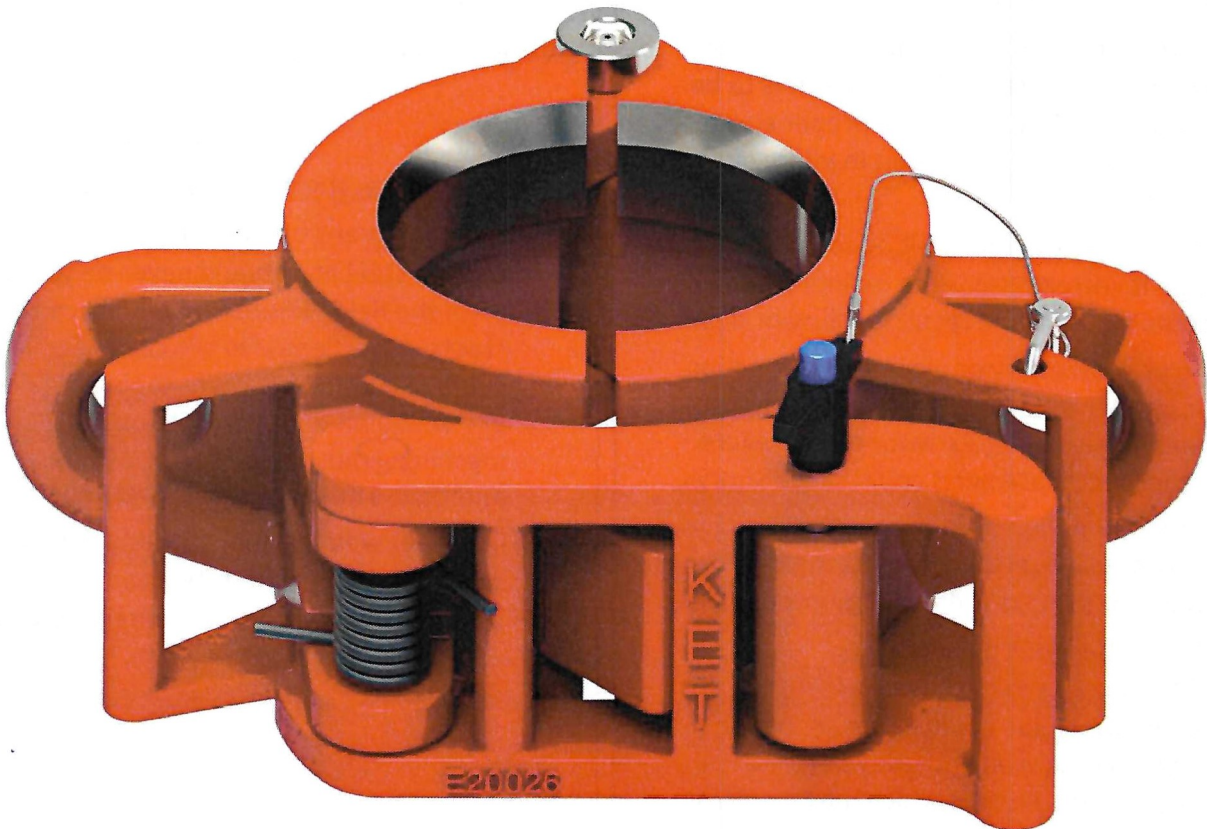




**SINGLE JOINT ELEVATOR**  
**OPERATING PROCEDURE MANUAL**



# SINGLE JOINT ELEVATOR

## SAFETY INSTRUCTIONS

### ▲ 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 instructions before performing any such task.

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

### Operating Hazards

- ▲ Do not overload the elevator. Overloading the recommended rating could cause serious injury or death.
- ▲ Secure the Latch Lock Pin in its proper position. Failure to secure the Pin when picking up or laying down pipe could cause serious injury or death.
- ▲ Always insure 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.
- ▲ Insure 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.
- ▲ To prevent injury or elevator malfunction, inspect the elevator bore, latch, latch pin and hinge pin regularly for wear. Failure to inspect these parts could cause injury or death.
- ▲ Do not use oversized pipe. Using oversized pipe could make it difficult or impossible to properly latch the elevator
- ▲ 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.
- ▲ Do not use the elevator if the latch or latch lock pin is malfunctioning. Latch or latch lock pin failure, may result in injury or death.

### Workplace Hazards

- ▲ Keep hands / fingers clear of elevator bore when installing the elevator on the pipe.
- ▲ Always use the proper tools and wear eye, head and hand protection when servicing this elevator.
- ▲ Maintain a balanced body position and secure footing.
- ▲ For professional use only.

### Maintenance Hazards

- ▲ Use only Keystone Energy Tools parts.
- ▲ 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 casting 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
- ▲ Improper welding and/or re-machining of cast alloy heat treated steel can cause personal injury, property damage or death.

# Table of Contents

2	<b>SAFETY INSTRUCTIONS</b> – Single Joint Elevator
4	<b>1.0 Introduction</b>
4	Figure 1 – Model Specifications
4	Figure 2 – Warning Label
4	<b>2.0 Operation</b>
5	<b>3.0 Maintenance</b>
5	Figure 3 – Tool Maintenance Chart
5	Figure 4 – Locations of Tool Maintenance Items
6	<b>4.0 Repair</b>
6	Figure 5 – Critical Areas
7	Replacement Parts – Single Joint Elevator
8	Wear Data – Single Joint Elevator
9	Certificate of Warranty and Guarantee of Quality

# 1.0 Introduction

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

(KET) "SJ" elevators are designed to replace rope slings for hoisting collar type and bottleneck pipe into position when adding to a string. SJ elevators allow the crew to handle pipe properly, thus avoiding pipe thread damage and reduces the chances of accidents/injuries.

The SJ 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 Latch Lock Pin must be used. The size range of the SJ series elevator is as illustrated in the table provided. (See Figure 1)

Model	Short Ton	Metric Ton	Range
SJ	7.5	6.8	2 3/8" – 20"

**NOTE:** Use on pipe weighing 7.5- Short Tons (6.8 metric tons) or less.

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 Figure 2

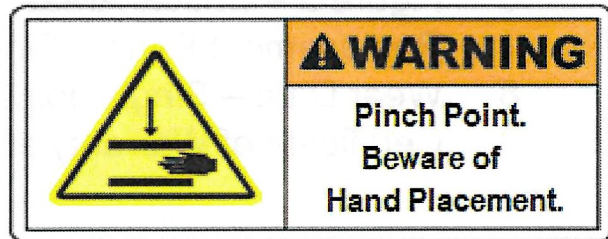


Figure 2

# 2.0 Operation

As with any manual operated elevator, the SJ 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.
- ▶ 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.

The operation of the SJ elevator is straightforward. The door is opened by removing the Safety Latch Pin and pulling outward on the Latch. When the elevator is properly closed around the pipe, install the Latch Lock Pin Retainer.

(See Figure 4)

# 3.0 Maintenance

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

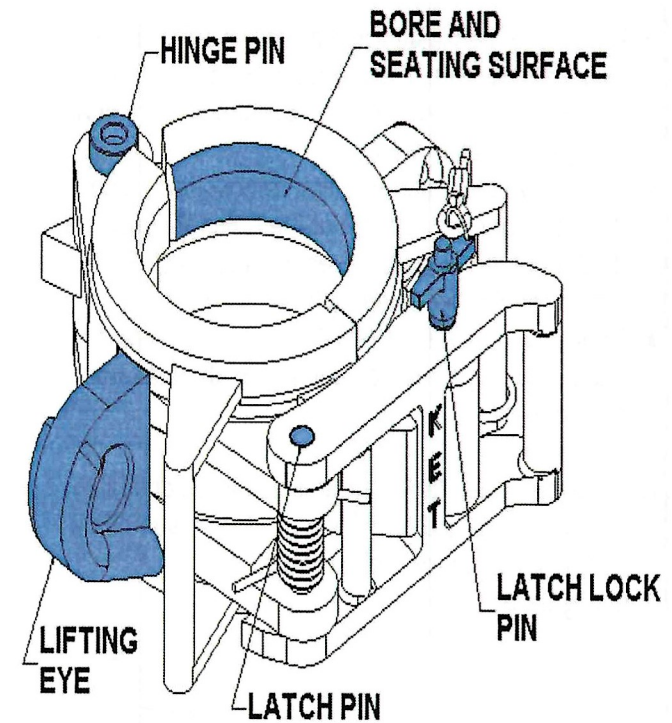
- ▶ Check for worn Hinge Pin and Latch Pin and their mating parts. These, if worn, may hinder proper opening and closing of the door and latch.
- ▶ Check the Latch Lock Pin assembly for worn or damaged parts. (e.g. Safety Latch Pin)
- ▶ Check for proper Latch Spring performance.
- ▶ Check for proper operation of Latch Stop mechanism. Latch should not stop against the door when engaged.
- ▶ 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.

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

Maintain elevator as prescribed in the below periodic Actions/Examinations. (See Figure 3)

Tool Maintenance		
ACTION	FREQUENCY	FIG.
Grease Hinge Pin	Daily	4
Lubricate Latch Pin		4
Lubricate Latch Lock Pin		4
Grease Underside of Lifting Eye		4
Grease Bore and Seating Surface		4
Magnetic Particle Examination	Every 6 Months	-
		-



Locations of parts identified in Figure 3 have been illustrated below for reference. (See Figure 4)

Figure 4

Figure 3

## 4.0 Repair

The SJ series elevator requires minimum attention. To Remove and Replace the Hinge Pin, Hinge Pin Retainer Pin, Latch Pin, and Latch Lock Pin 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 Pin Assembly, remove the cable end ring from the split ring on the elevator door handle.

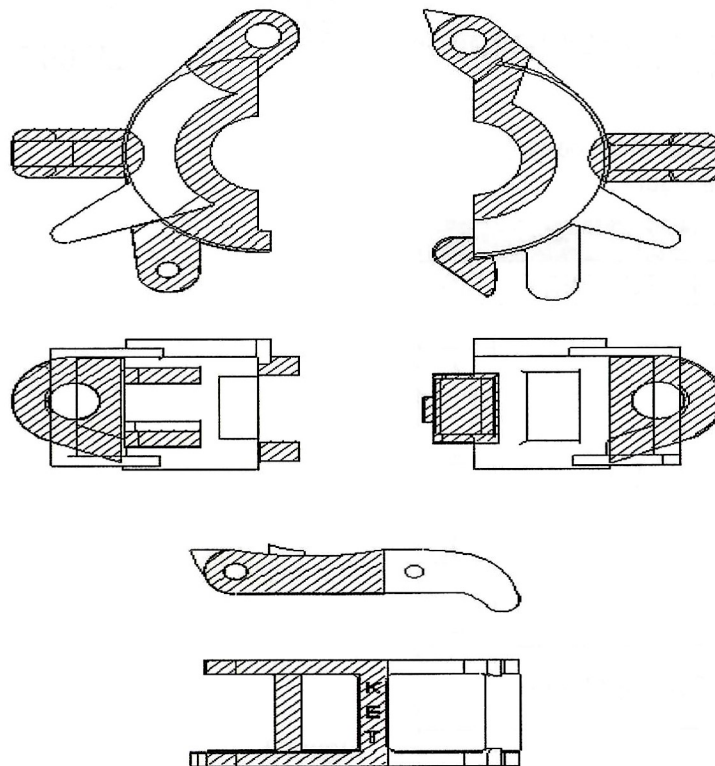
We have identified those areas considered critical to tool performance and functionality. These should be examined for repair or replacement.

(See Figure 5)

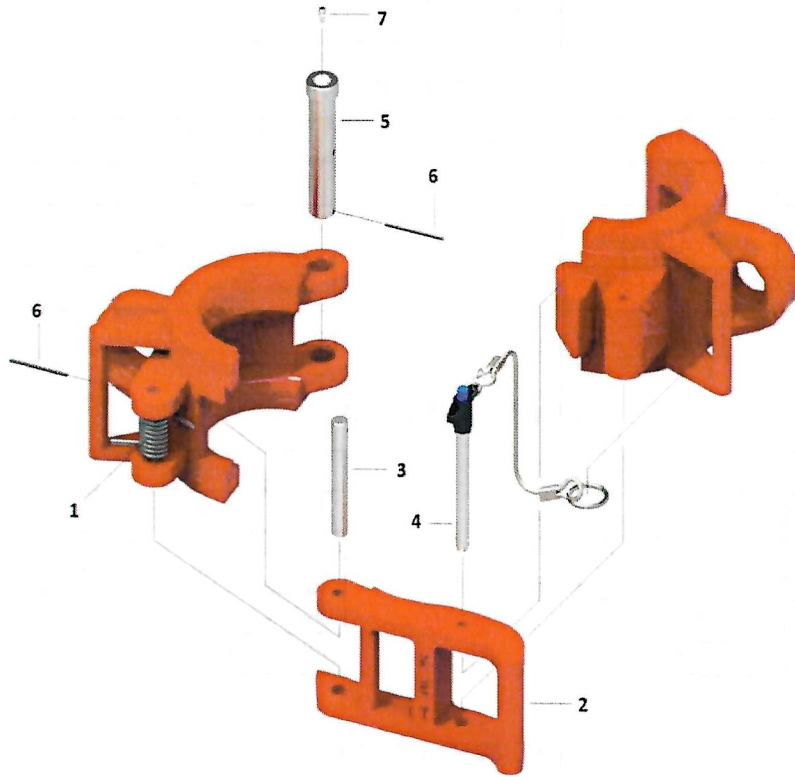
**NOTE 1:** Bodies, doors and latches are specifically matched by trained Keystone Energy Tools professionals. For this reason, a body, door, or latch from one elevator should never be exchanged with a body, door, or latch from another elevator.

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 to be non-critical.

Figure 5



# Replacement Parts



ITEM	QTY	PART No.	DESCRIPTION
1	1	E39-034	LATCH SPRING
1	1	E7829-1	LATCH SPRING (E20035 FRAME ONLY)
2	1	E20026-C	LATCH
2	1	E39-190	LATCH (E20035 FRAME ONLY)
3	1	E39-050	LATCH PIN
3	1	E39-051-1	LATCH PIN (E20035 FRAME ONLY)
4	1	E39-051-8	LATCH LOCK PIN ASSY.
5	1	E39-052	HINGE PIN
6	2	P316RP	1 1/4" X 3/16" ROLL PIN
7	1	N/A	GREASE ZERT

# WEAR DATA FOR KEYSTONE SINGLE JOINT SERIES ELEVATORS

SIZE	2 3/8" - 20"
RATED CAPACITY	7.5 TONS

## STANDARD PINS

HINGE PIN PART #	E39-052
TOTAL CLEARANCE (H)	0.025
HINGE PIN MIN. DIA. NEW	.996
BORE DIA. MAX. NEW	1.001
BORE DIA. MAX. WORN	1.015

LATCH PIN PART #	E39-050
TOTAL CLEARANCE (L)	0.025
LATCH PIN MIN. DIA.	0.622
BORE DIA. MAX. NEW	0.627
BORE DIA. MAX. WORN	0.640

## 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

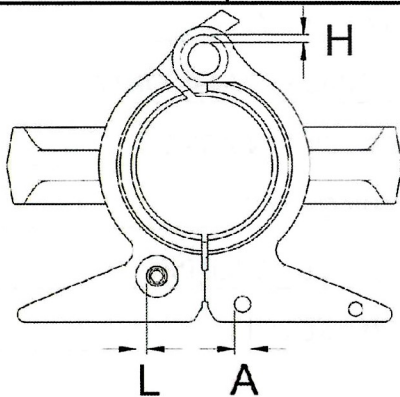
## 1/8" OVERSIZE PINS

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

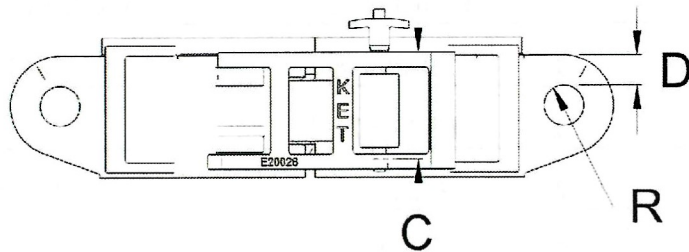
## SAFETY LATCH LOCK PIN

DIMENSION (A) MAX	0.530
DIMENSION (C) MIN	3.938"



## LIFTING EARS

RADIUS - R	0.625
DIMENSION (D) MIN	0.750



## 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 New Iberia, 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**

8404 Hwy. 90 West  
New Iberia, LA 70560

[www.k-e-t.com](http://www.k-e-t.com)

**Office:** 1-337-365-4411

**Fax:** 1-337-365-4456