



SJ
Single Joint Elevator
Operation Manual

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Rev	Date	Reason
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Description of Change

Rev	Change
B	

TABLE OF CONTENTS

GENERAL	4
CONVENTIONS	5
SAFETY	5
SPECIFICATIONS	5
PREVENTIVE MAINTENANCE	6
ELEVATOR WEAR LIMITS	7
CRITICAL AREA MAP	8
TROUBLESHOOTING	9
STORAGE AND TRANSPORTATION	9
PARTS LIST	10
APPENDIX	11

GENERAL

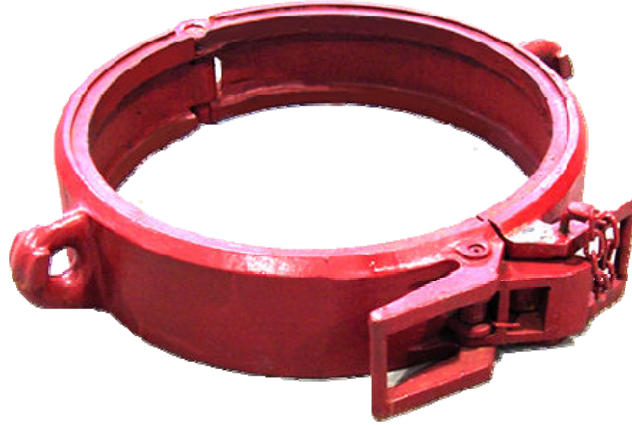


Figure 1 – SJ

Texas International Oilfield Tools (TIOT) offers single joint (SJ) elevators to handle a large range of tubular. See Specifications table on page 5 for ranges. SJ elevators are used to add tubular to a string, hoisting a single casing, tubing, or collared type pipe.

The elevator has a simple, reliable latch which locks simultaneously when elevator is closed. The latch lock pin, when set, prevents the latch from opening. The latch lock pin is fixed onto the elevator to prevent loss. Handles facilitate easy and ergonomic operator use. The SJ elevator hangs from a swivel suspension assembly using the elevator's lifting eyes.



The SJ elevator can **ONLY** hoist up to 5 short tons (4.54 metric tons)

CONVENTIONS




IMPORTANT SYMBOL IDENTIFICATION	
	WARNING to Operators / Users
	CAUTION to Operators / Users
	NOTIFICATION to Operators / Users

Table 1

SAFETY

Texas International's equipment is used and installed in controlled rig environments involving hazardous operations and situations.

All personnel performing installation, operations, repair or maintenance on this elevator must have knowledge of rig procedure. All crew in the vicinity of operations should be trained on rig safety and tool operation.

SPECIFICATIONS

Size Range (in)	Part Number PN - BC	Weight (lb)*
2 3/8 - 4 3/4	T39039-XXX	21
		30
5 - 6 5/8	T39040-XXX	31
		40
7 - 7 3/4	T70501-XXX	49
8 5/8 - 10 3/4	T70502-XXX	60
11 3/4 - 13 5/8	T70503-XXX	105

Size Range (in)	Part Number PN - BC	Weight (lb)*
16 - 20	T70504-XXX	117
		134
		161
21 1/2 - 26	T70505-XXX	244
		317
28 - 30	T70506-XXX	308

BC= Bore code shown as XXX above

*Nominal weight shown - depends on bore and frame

Table 2

Specifications continued



Drill pipe single joints are machined to nominal pipe size plus 3/32" with an 18° bevel

PREVENTIVE MAINTENANCE



This is a suggested PM schedule. The tool owner has the responsibility to adjust the program according to actual tool usage

Daily (PM1) – While in use

- Apply extreme pressure grease to hinge pin and latch pin to lubricate and prevent corrosion
- Pull out latch lock pin. Lock and unlock a total of 10 cycles to assure locking mechanism performs. Verify latch lock pin is fixed to the body



If latch lock pin is no longer fixed to the body, remove elevator from operation for repair

- Make sure hinge pin does not wobble up and down - replace if needed
- Inspect elevator for damage and cracks
- Grease bore and top surface
- Check latch spring - replace if damaged, deformed or not holding tension

Semi-Annual (PM2)

- Remove coating and debris from critical areas
- Perform MPI on critical areas as indicated on API specification 8C
- Repair cast as needed - recommend that repairs be done by TIOT
- Verify bore dimension is within API specification
- Carry on daily PM

Annual (PM3)

- Repeat semiannual PM
- Performance load test
- MPI critical areas 24 hours after load test
- Repair cast as needed - recommend repairs be done by TIOT



Proof of load test and MPI are required after remanufacture or a major weld repair in a critical area

ELEVATOR WEAR LIMITS

The wear of the elevator bore affects its ability to support the required load. Elevators for which the bore measurements exceed the 'Maximum Allowable Wear' shown in Table 3 shall either be remanufactured or scrapped.

Tubular			Tubular		
Tubular Size (in)	Bore Code	Maximum Allowable Wear (in)	Tubular Size (in)	Bore Code	Maximum Allowable Wear (in)
2 3/8	158	2.512	10	831	10.255
2 7/8	160	3.013	10 1/8	846	10.382
3 1/2	162	3.639	10 3/4	142	11.018
4	164	4.139	11 3/4	143	12.036
4 1/2	129	4.659	13 3/8	144	13.664
4 3/4	130	4.913	13 5/8	596	13.918
5	131	5.168	14	690	14.300
5 1/2	132	5.676	16	145	16.335
5 3/4	133	5.931	18	723	18.370
6	134	6.185	18 5/8	146	19.006
6 5/8	135	6.821	20	147	20.405
7	136	7.203	21 1/2	148	21.925
7 5/8	137	7.838	22	688	22.431
8 5/8	139	8.856	24	630	24.456
9	140	9.238	26	650	26.481
9 5/8	141	9.873	28	693	28.506
9 7/8	649	10.128	30	644	30.531

Table 3

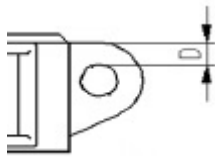


Figure 2

Bore Size	<20	>20
Min. Size D (in)	0.728	0.846

Table 4

Elevator Wear Limits continued

Model	SJ			
Size	2 3/8 - 5 3/4	6 - 20	21 1/2 - 24 1/2	26 - 36
Hinge Pin (in)				
Min Dia.	0.780	0.976	1.252	1.370
Hinge Pin Hole (in)				
Max Dia.	0.796	0.993	1.268	1.386
Max Worn	0.802	0.999	1.275	1.393
Total Clearance (in)				
Hinge Pin	0.025			
Latch Pin				
Latch Pin (in)				
Min Dia.	0.578			
Latch Pin Hole (in)				
Max Dia.	0.598			
Max Worn	0.602			

Table 5

CRITICAL AREA MAP

Darken areas are defined as critical.

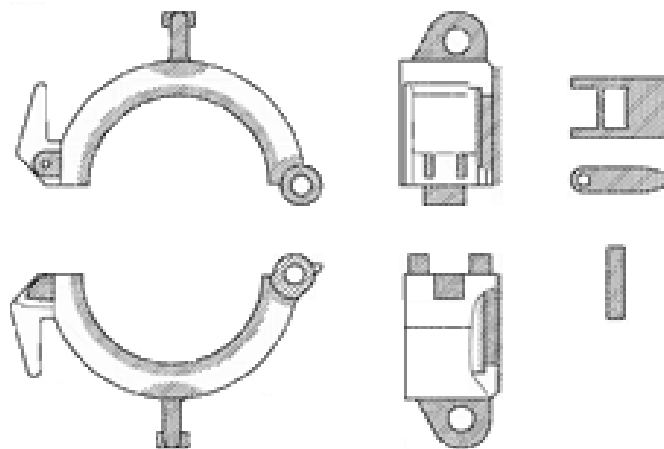


Figure 3

TROUBLESHOOTING

Failure Mode	Possible Cause	Possible Solution
Deformed pin holes	Overload	Scrap the tool Pull elevator from operation and carry on PM 3
	Wear	Verify pin clearance
Bent Pins	Overload	Perform PM 3
Elevator does not open	Corrosion	Pry open, clean and lubricate.
	Overload	Carry on PM 3 Scrap the tool
Elevator does not close	Oversized tubular	Select properly sized elevator

Table 6

STORAGE AND TRANSPORTATION

- Unpainted surfaces should be coated with rust preventing agent
- Prevent excessive exposure to water and moisture
- Clean the tool after use – steam clean as needed; remove mud, debris and any other substances
- Transport the unit on a suitable container or pallet

PARTS LIST

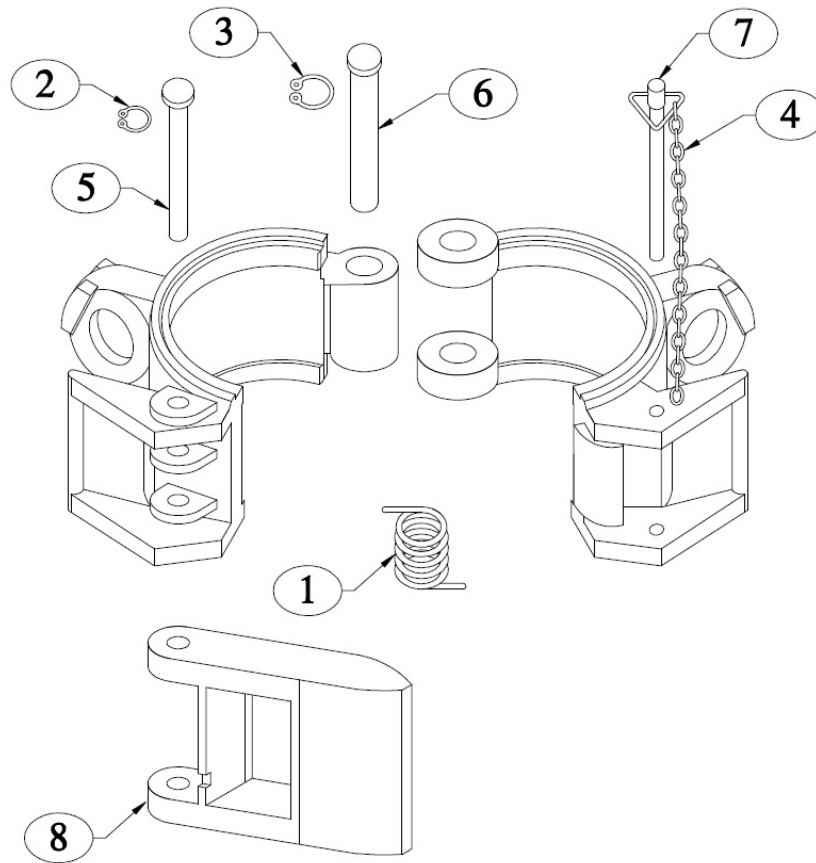


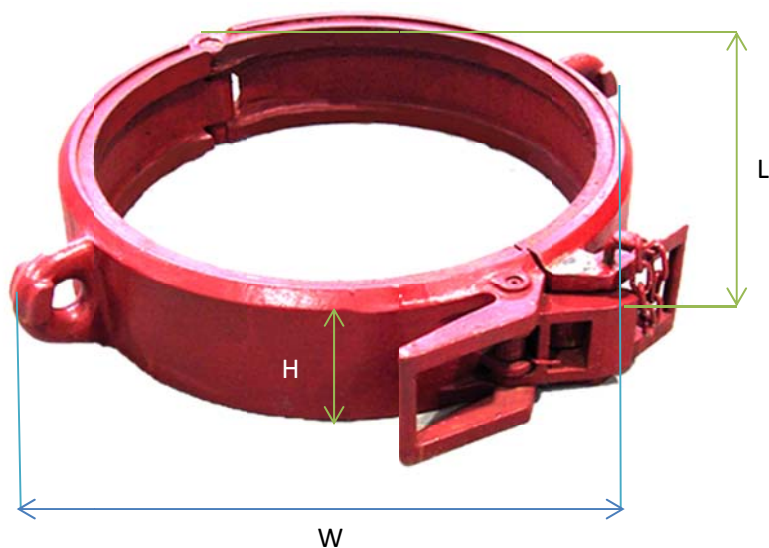
Figure 4

Spare Parts List										
#	Frame PN	Qty	T39039	T39040	T70501	T70502	T70503	T70504	T70505	T70506
	Range (in)		2 3/8 - 4 3/4	5 - 6 5/8	7 - 7 3/4	8 5/8 - 10 3/4	11 3/4 - 13 5/8	16 - 20	21 1/2 - 26	28 - 30
Component		Qty	Part Number							
1	Latch spring	2	T7829-1							
2	Latch Pin Retainer (clip)	2	080099							
3A*	Hinge Pin Retainer (clip)	2	080095	080095/ 080096	080096				080097/ 080098	080098
3B	Hinge Pin Retainer (roll pin)	2	T39055							
4	Chain	8"	080032							
5	Latch pin	2	33035							
6	Hinge Pin	2	33032	33032/ 200050	200050				200050/ 200051	200051
7	Latch Lock Pin	2	080852				T34439			
8	Latch	2	T200026							

* Retainer ring is shown, but elevator may have a set screw (3B) instead.

Table 7

SINGLE JOINT



Frame P/N	Bore	Type**	Size (in)	L (in)*	W (in)*	H (in)*	weight (lb)*
T39039	117	Drill Pipe	2 7/8	9 1/4	7 3/4	4 1/4	21
	164	Tubing	4	11 1/4	9 3/4	4 1/4	30
T39040	123	Drill Pipe	5	12 3/8	10 3/4	4 1/4	31
	135	Drill Collar	6 5/8	13 7/8	12 1/4	4 3/4	40
T70501	136	Casing	7	15 1/4	13 1/4	4 3/4	49
T70502	141	Casing	9 5/8	17 1/2	15 3/8	4 5/8	60
	142	Casing	10 3/4	18 3/8	16 1/4	4 7/8	60
T70503	596	Casing	13 5/8	22 3/4	19 1/2	5 1/8	105
T70504	145	Casing	16	25 3/8	21 1/2	5 1/8	117
	146	Casing	18 5/8	27 3/4	24 3/8	5 1/8	134
	147	Casing	20	29 1/4	26 1/4	5 1/8	161
T70505	149	Casing	24	34 1/2	32 3/4	5 1/4	244
	650	Casing	26	38 1/8	36 3/4	5 1/4	317
T70506	644	Casing	30	40 1/2	38 1/2	5 3/8	308

* dimensions/weights shown are nominal

** samples - other bore and types available

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