



# A Series Elevator Operation Manual

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**Revision History**

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**Description of Change**

<b>Rev</b>	<b>Change</b>
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# TABLE OF CONTENTS

GENERAL .....	4
CONVENTIONS .....	5
SAFETY .....	5
SPECIFICATIONS .....	5
PREVENTIVE MAINTENANCE .....	6
ELEVATOR WEAR DATA.....	7
CRITICAL AREA MAP .....	10
TROUBLESHOOTING .....	11
STORAGE AND TRANSPORTATION .....	11
SPARE PARTS LIST.....	11

# GENERAL



Figure 1

Texas International Oilfield Tools (TIOT) offers “A” series center latch collar type elevators for handling drill pipe and casing. See Specifications table on page 5 for load capacity and size ranges. “A” series elevators should only be used with square shoulder tubular. The elevator is designed with two (2) halves of similar weights for good balance and easier opening and closing. Elevators are equipped with a latch and latch lock combination. To open, pull the latch lock handle out and swing the elevator apart. An extra handle at the rear of the elevator allows for easier, safer operation. The latch and latch lock secures automatically when the elevator is closed around the pipe.



Use the ears for lifting elevator – NOT the handles

# CONVENTIONS




IMPORTANT SYMBOL IDENTIFICATION	
	<b>WARNING</b> to Operators / Users
	<b>CAUTION</b> to Operators / Users
	<b>NOTIFICATION</b> 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

Type	Size Range	Frame PN + BC	Capacity
TA	2-3/8" – 3-1/4"	T32385-XXX	65 Tons
TA	3-1/2" – 4-1/2"	T32386-XXX	65 Tons
TA	2-3/8" – 2-7/8"	T32383-XXX	100 Tons
TA	3-1/2" - 5"	T32384-XXX	100 Tons
TA	5" - 8-1/2"	T32754-XXX	150 Tons
TA	9" – 11-1/4"	T39342-XXX	150 Tons

BC= Bore code shown as XXX above

Table 2

# PREVENTIVE MAINTENANCE



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



When there is suspicion that the elevator has been **overloaded**, it should be pulled from operation for an Annual type PM

Normal wear in course of use will eventually reduce the elevator's capability. Inspect the bore, latch, latch pin and hinge pin regularly for wear. Cracks or the appearance of damage can indicate the need for repair, even impending failure, and requires prompt attention. The elevator must be either pulled from operation immediately or repaired.

## Daily (PM1) – While in use

- Apply EP 4 grease to grease port and ears, as needed
- Inspect the contact surface of the ears. If surfaces are flattened or metal is rolled, the elevator should be pulled from operation for Annual (PM3)
- Check for wear on hinge pin by checking the vertical play between latch, body, and door
- Open and close the elevator 5 times slowly and 5 times quickly to ensure elevator works properly
- Visually check for damage and cracks – if found, pull from operation for repair
- Look for worn, damaged, loose or missing parts – replace or tighten
- Inspect latch pin tack weld (see Figure 2) on TA-65 and TA-100. If broken, remove from operation and repair.

## Semi-Annual (PM2)

- Try to open the latch by prying the latch between body and latch with a steel bar or screw driver – the latch lock prevents the latch from being opened (Figure 3). If the elevator opens during pry test, pull from operation for repair
- Remove coating and debris from critical areas
- Disassemble and perform Magnetic Particle Inspection (MPI) on critical areas as indicated on API Specification 8C
- Carry on daily PM

### Annual (PM3)

- Repeat daily and semi-annual PMs
- Performance load test
- MPI critical areas twenty four (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

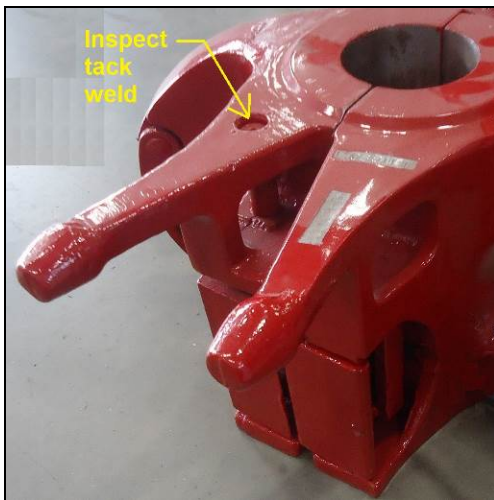


Figure 2: Tack weld



Figure 3: Pry test instruction

## ELEVATOR WEAR DATA

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 tables 3 through 5 shall either be remanufactured or scrapped.



Ensure tubular is not out of tolerance

Elevator Wear Data continued

Plain Drill Collars with Lift Plug		
Collar OD	Bore Code	Maximum Allowable Wear (in)
3"	205	3.188
3-1/8"	206	3.313
3-1/4"	207	3.438
3-1/2"	209	3.688
3-3/4"	211	3.938
4"	213	4.188
4-1/8"	519	4.313
4-1/4"	548	4.438
4-1/2"	215	4.688
4-3/4"	354	4.969
5"	552	5.219
5-1/4"	219	5.469
5-1/2"	411	5.719
5-3/4"	222	6.031
6"	349	6.281
6-1/4"	348	6.531
6-3/8"	331	6.656
6-3/4"	338	7.063
7"	372	7.313
7-1/4"	335	7.563
7-1/2"	137	7.813
7-3/4"	550	8.063
8"	334	8.313
8-1/4"	347	8.563
8-1/2"	580	8.844
8-3/4"	226	9.094
9"	356	9.344
9-1/4"	227	9.594
9-1/2"	346	9.844
10	228	10.406
10-1/2"	229	10.906
11"	230	11.406

Table 3

Tubing/Casing		
Casing Size (in)	Bore Code	Maximum Allowable Wear (in)
2 3/8	158	2.512
2 3/8 U	159	2.762
2 7/8	160	3.013
2 7/8 U	161	3.263
3 ½	162	3.639
3 ½ U	163	3.920
4	164	4.150
4 U	165	4.431
4 ½	129	4.659
4 ½ U	167	4.924
4 3/4	130	4.913
5	131	5.168
5 1/2	132	5.676
5 3/4	133	5.931
6	134	6.185
6 5/8	135	6.821
7	136	7.203
7 5/8	137	7.838
8 5/8	139	8.856
9	140	9.238
9 5/8	141	9.873
9 7/8	649	10.128
10	831	10.255
10 1/8	846	10.382
10 3/4	142	11.018

Table 4



Drill Collars with Zip Lift Recess			
Collar OD	Bore Code	Maximum Allowable Wear (in)	
		Top	Bottom
4-1/8"	177	3.844	4.281
4-3/4"	435	4.406	4.906
5-1/4"	179	4.906	5.406
5-1/2"	180	5.156	5.656
5-3/4"	181	5.313	5.938
6"	362	5.563	5.688
6-1/4"	337	5.813	6.438
6-1/2"	373	6.063	6.688
6-3/4"	387	6.250	6.938
7"	361	6.500	7.188
7-1/4"	357	6.750	7.438
7-1/2"	188	7.000	7.688
7-3/4"	339	7.250	7.938
8"	336	7.500	8.188
8-1/4"	422	7.750	8.438
8-1/2"	426	8.000	8.688
9"	427	8.438	9.188
9-1/2"	370	8.938	9.688
9-3/4"	367	9.188	9.938
10"	195	9.438	10.188
10-3/4"	527	10.188	10.938
11"	419	10.438	11.188
11-1/4"	196	10.688	11.438

Table 5

Ear Radius ( R ) <i>based on tons</i>	Minimum <i>in inches</i>
65	1
100	1
150	1 1/2

Table 6

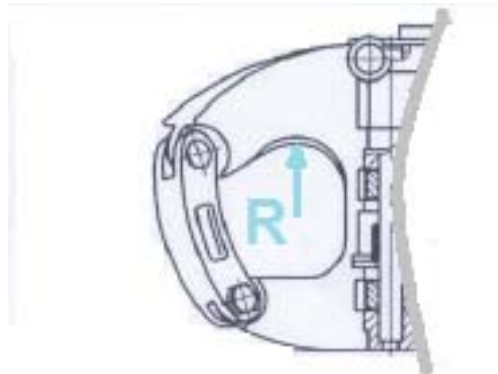


Figure 4

Model	TA	TA	TA	TA
Frame	T32385/ T32386	T32383	T32384	T32754/ T39342
<b>Total Clearance</b>				
Hinge Pin	0.030	0.030	0.035	0.035
Latch Pin	0.030	0.030	0.030	0.035

Table 7

## CRITICAL AREA MAP

Darken areas are defined as critical

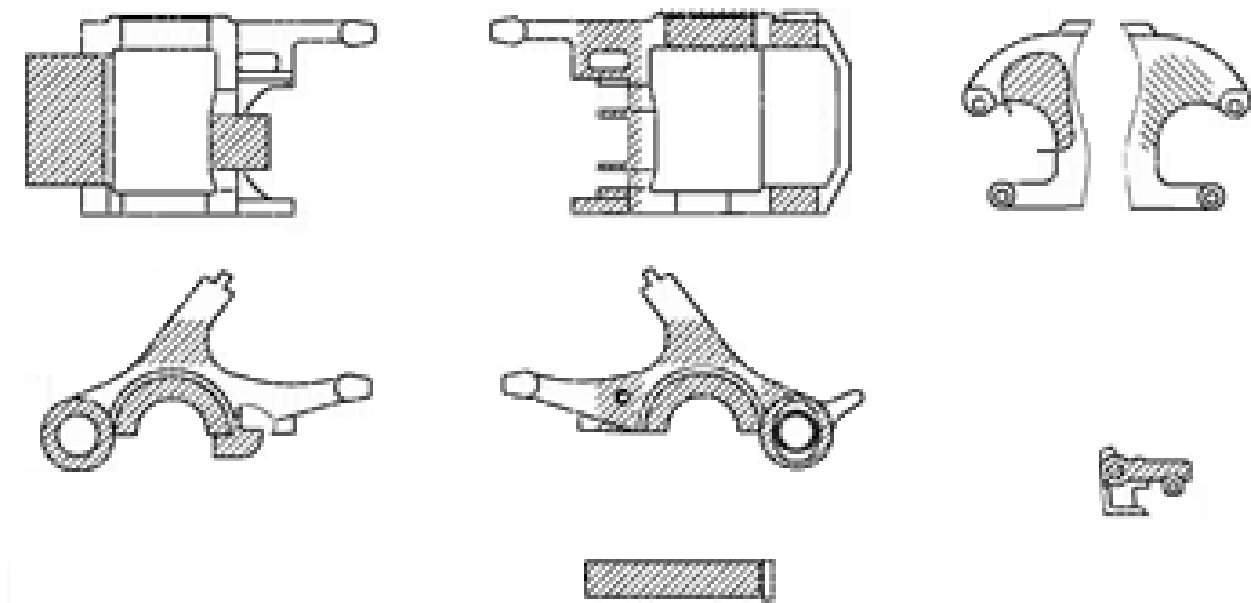


Figure 5

# 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 (see Table 5)
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
Elevator does not hang level	Link length difference	Use same length slings/links

Table 8

## 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

## SPARE PARTS LIST

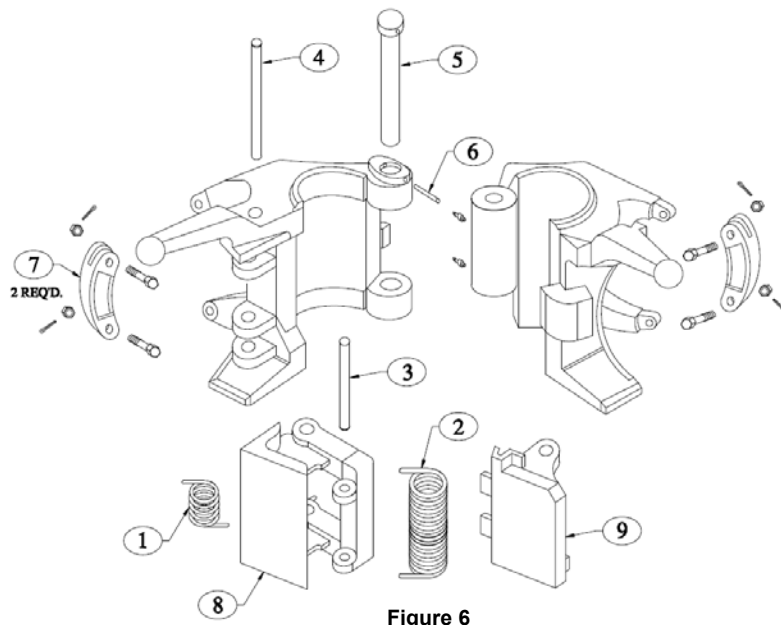


Figure 6

Spare Parts List continued

Spare Parts List							
Model	→	TA	TA	TA	TA	TA	TA
Tons	→	65	65	100	100	150	150
Frame	→	T32385	T32386	T32383	T32384	T32754	T39342
#	Component	Req	P/N				
1	LATCH SPRING	1	32470			32760	
2	LATCH LOCK SPRING	2	32469			32758	
3	LATCH LOCK PIN	1	36208			36207	
4	LATCH PIN	2	32424-4	50713	32424-1	32762	
5	HINGE PIN	1	32916	32915	32919	32924	
6	HINGE PIN RETAINER	2	32892	32892	32920	32925	
7	LINK BLOCK	2	T32430			T9519	
8	LATCH	1	T32380			T32752	
9	LATCH LOCK	1	T32381-1			T32757-2	
10**	LATCH PIN RETAINER	1	N/A				080024-3

\*\* Not shown

Table 9

Every Company has to have a Toolbox  
at Texas International Oilfield Tools.

*We provide the tools to fuel the  
world!*



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