



**ABACO MACHINES**

**OPERATION MANUAL**

**ABACO ARCTURUS LIFTER**

**(ARL100)**



**ABACO MACHINES (USA)**

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**APPLICABLE MODELS  
of this ABACO ARCTURUS LIFTER:**

**ARL100**

**ABACO MACHINES (USA)**

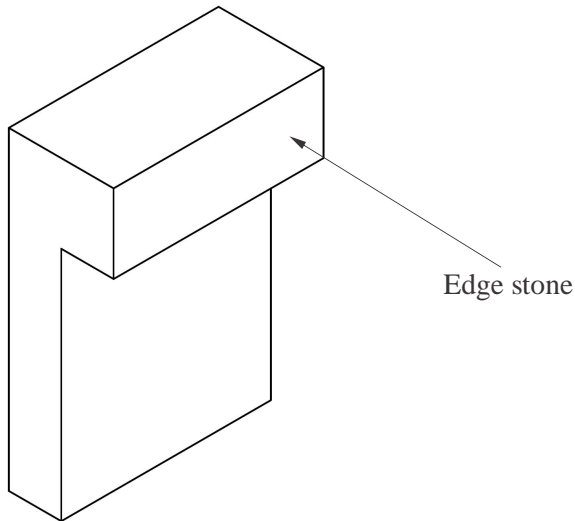
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**Note: Please read this operation manual carefully before using the device.**

## **I.OVERVIEW:**

- Arcturus Lifter is designed to lift and move stone slabs by using a hoist (or a forklift).
- Automatic locking latch is equipped with this device for easy and safe operation.
- The clamp plate is covered by vulcanized rubber.
- The lifter comes with a swivel hook attached to install onto a hoist or other lifting devices
- The lifter can clamp onto the edge stone slab also.



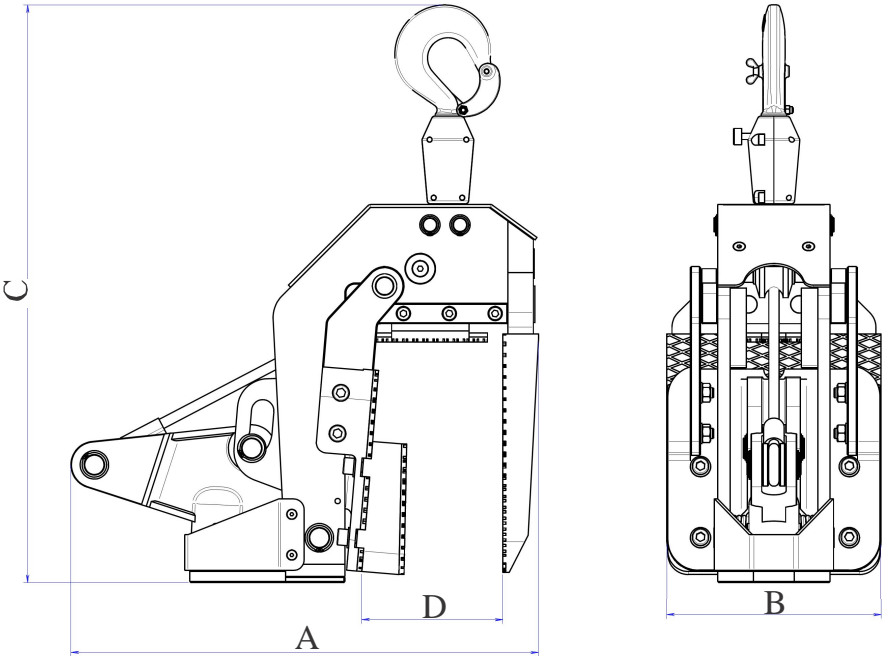
## **II.TECHNICAL SPECIFICATIONS:**

- The outer shell is made of mild steel.
- Clamp plates and lever arms are made of aluminum castings.

# 1) Dimensions:

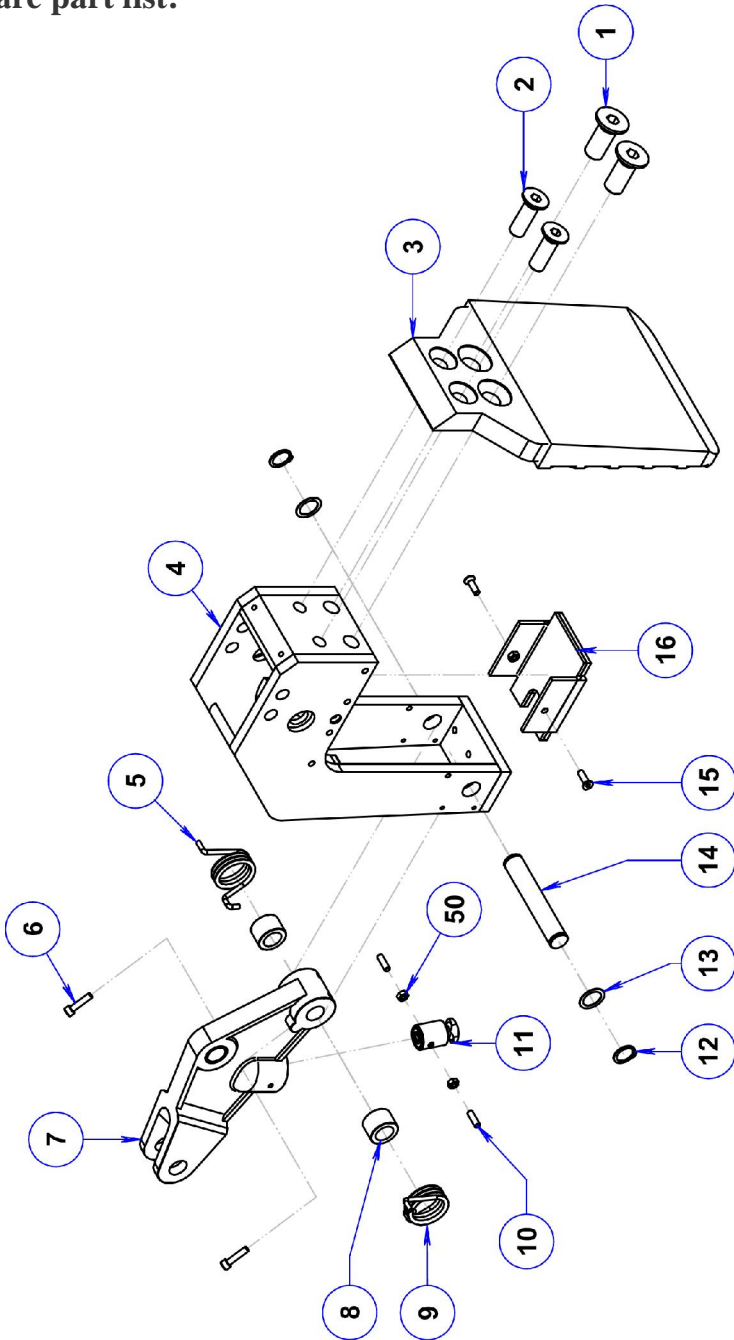
Length (A) inches (mm)	Width (B) inches (mm)	Height (C) inches (mm)
18 1/8 (460)	8 1/4 (210)	22 5/16 (567)

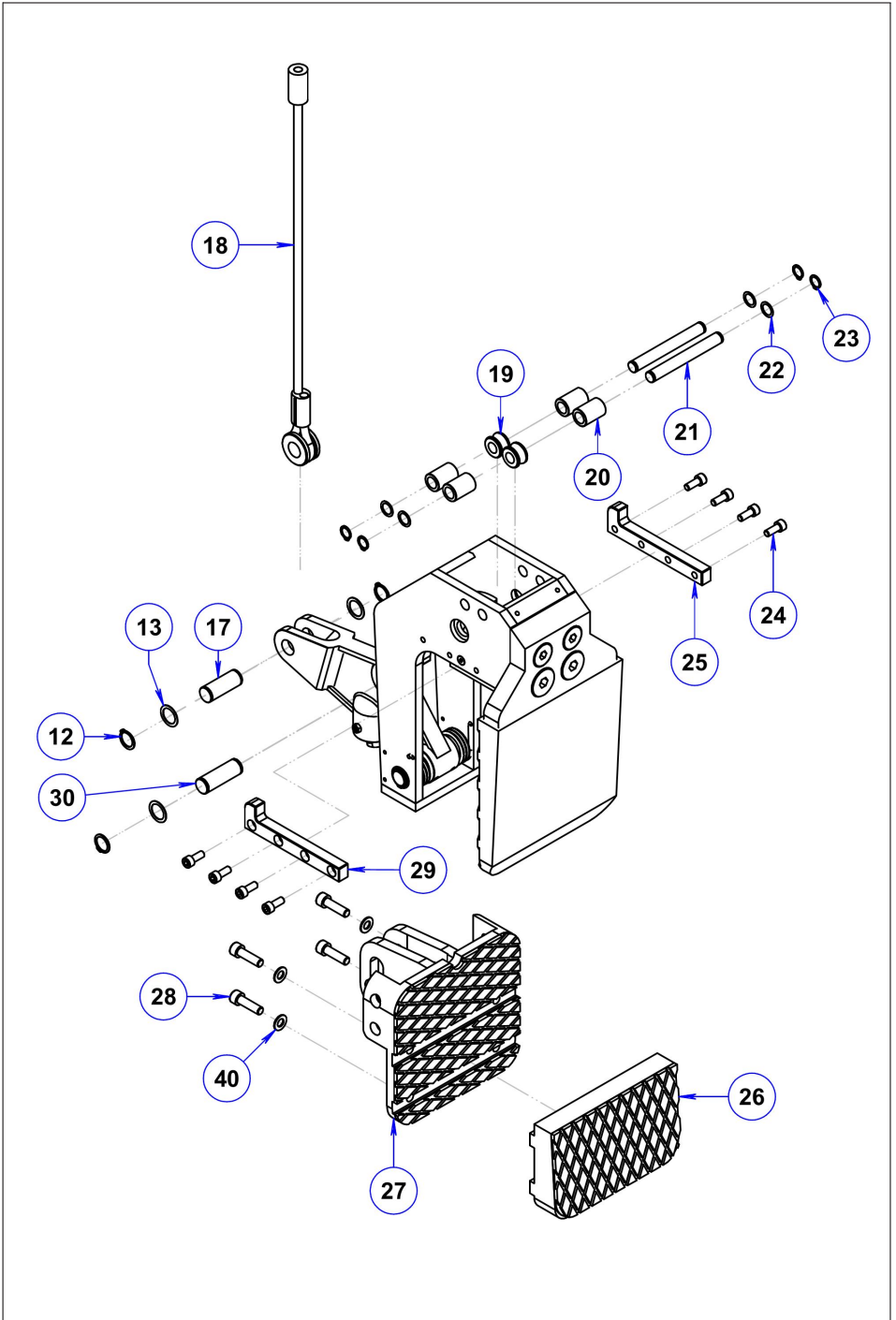
Grip range (D) inches (mm)	W.L.L * lbs (kg)	Net weight lbs (kg)
13/16 ~ 3 15/16 (20 ~ 100)	3300 (1500)	78.1 (35.5)



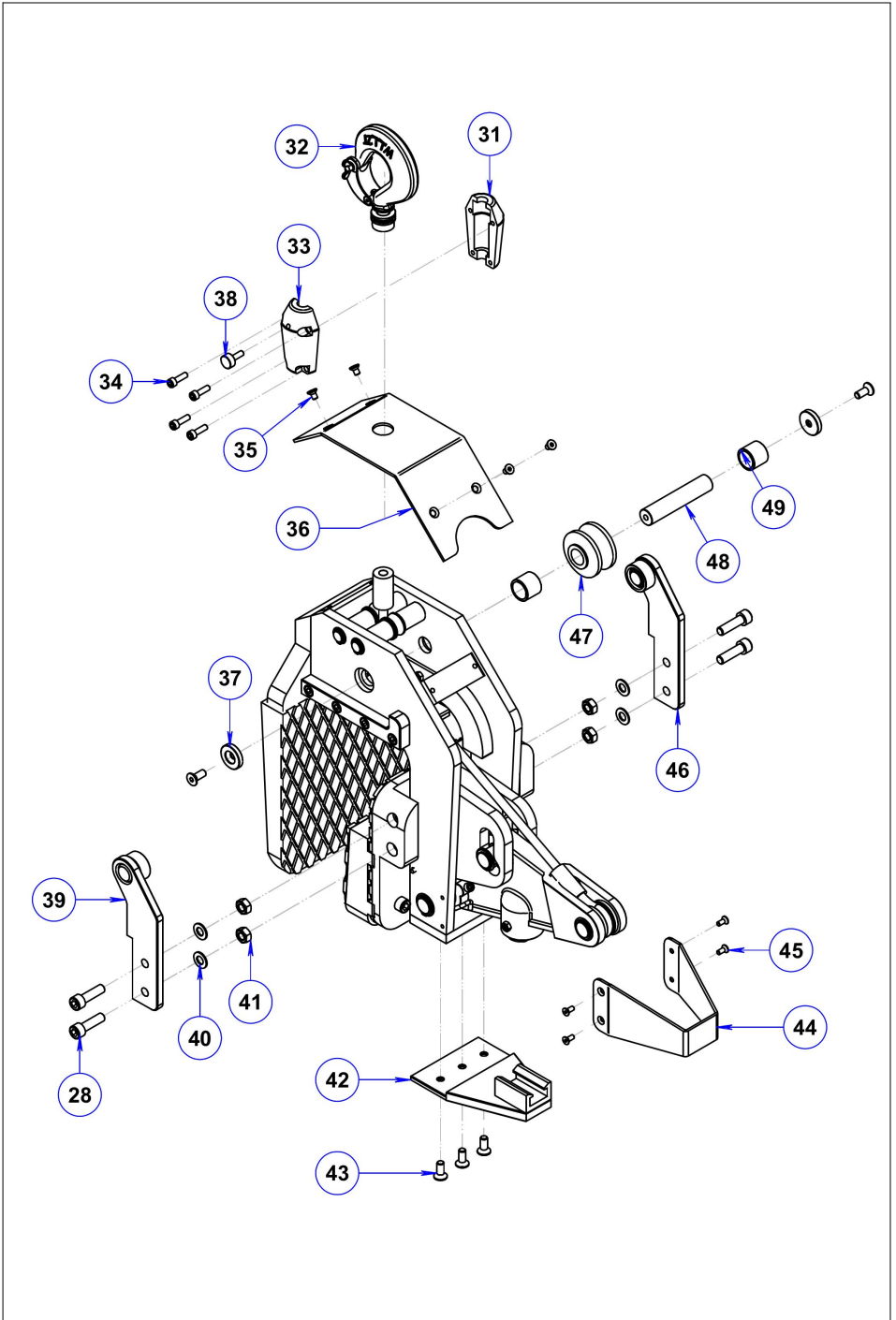
\* W.L.L : Work Load Limit.

## 2) Spare part list:









## SPARE PART LIST

<b>Pos.</b>	<b>Description</b>	<b>Qty.</b>	<b>Code</b>
01	Allen bolt countersunk M20x50	02	ARL100-01
02	Allen bolt countersunk M16x50	02	ARL100-02
03	Fixed plate	01	ARL100-03
04	Body	01	ARL100-04
05	Spring, left	01	ARL100-05
06	Allen bolt M6x25	02	ARL100-06
07	Lever	01	ARL100-07
08	Bushing, spring	02	ARL100-08
09	Spring, right	01	ARL100-09
10	Allen set screw M6x20	02	ARL100-10
11	Lock, automatic latch	01	ARL100-11
12	Circlip Ø20	06	ARL100-12
13	Washer Ø20xØ28x0.5	06	ARL100-13
14	Shaft Ø20x118	01	ARL100-14
15	Allen bolt countersunk M6x25	02	ARL100-15
16	Stopper	01	ARL100-16
17	Shaft Ø20x53	01	ARL100-17
18	Cable	01	ARL100-18
19	Roller Ø14xØ27x17	02	ARL100-19
20	Bushing B	04	ARL100-20
21	Shaft Ø14x118	02	ARL100-21
22	Washer Ø14xØ24x1	04	ARL100-22
23	Circlip Ø14	04	ARL100-23
24	Allen bolt countersunk M8x20	08	ARL100-24
25	Rail, right	01	ARL100-25

<b>Pos.</b>	<b>Description</b>	<b>Qty.</b>	<b>Code</b>
26	Plate, extra clamp	01	ARL100-26
27	Plate, middle	01	ARL100-27
28	Allen bolt M10x35	08	ARL100-28
29	Rail, left	01	ARL100-29
30	Shaft Ø20x60	01	ARL100-30
31	Connector B	01	ARL100-31
32	Hook	01	ARL100-32
33	Connector A	01	ARL100-33
34	Allen bolt M6x20	04	ARL100-34
35	Allen bolt countersunk M6x10	04	ARL100-35
36	Body cap	01	ARL100-36
37	Washer	02	ARL100-37
38	Knob, lock	01	ARL100-38
39	Bar, right	01	ARL100-39
40	Washer Ø10xØ20x1.5	08	ARL100-40
41	Nut M10	04	ARL100-41
42	Base of lock latch	01	ARL100-42
43	Allen bolt countersunk M8x20	05	ARL100-43
44	Cover, lock latch	01	ARL100-44
45	Allen bolt countersunk M5x12	04	ARL100-45
46	Bar, left	01	ARL100-46
47	Roller Ø20xØ57x40	01	ARL100-47
48	Shaft Ø20x98	01	ARL100-48
49	Bushing Ø20xØ25x22.5	02	ARL100-49
50	Nut M6	02	ARL100-50

### III. INSTRUCTIONS FOR USE:

#### 1. Safety Instructions :

**WARNING: Before using your lifter, please confirm the surfaces of the slab to be lifted are flat, smooth, and free from dust, oil, or any debris which will cause slipping.**

##### a) *For Arcturus Lifter:*

- **Caution:** Follow all applicable rules and regulations in your area including all safety standards and practices for hoisting operations.
- **Caution:** It is strongly recommended that only highly trained and experienced employees are allowed to operate this device. Safety rules and regulations must be strictly followed and observed.
- **WARNING:** Inspect your clamp every day before start using it carefully and thoroughly. Do not use the clamp if it is worn out or damaged.
- **WARNING:** Use the appropriate model of the lifter for the job as determined by the weight of the slab to be lifted. Do not exceed the W.L.L. (Working Load Limit) for the lifter (Refer to page 2). Slab thickness must also be within the grip range specified by the Manufacturer.
- **WARNING:** All personnel must be kept at a safe distance and stand clear of the lifter and slabs while they are being lifted or moved.
- **WARNING:** The grip depends on friction. Check to make sure the rubber pads are free from dirt, grease and other substances that may reduce their effectiveness.
- **WARNING:** Do not lift wet slabs. The grip depends on friction. Lifting wet slabs may cause the rubber pads to lose their grip.
- **WARNING:** No more than one piece of the slab should be lifted at any time.
- **WARNING:** Position the clamp at the center of the slab to be lifted, so that the load is balanced.
- **WARNING:** Make sure the slab is inserted to the full depth of the clamp (see Figure on page 17)
- **Caution:** Lift up the slab slowly. Check the tension and the proper balance of the load.

**WARNING:** Do not rest the clamp and its load onto other slabs or materials while lowering the slab on the racks. Doing so may cause the clamp to release its load prematurely.

***b) General Safety Instructions:***

- **Caution:** In order to protect people from any accident, it is important to follow all safety rules and regulations.
- **Caution:** Read the operation manual carefully before using the hoisting equipment.
- **Caution:** Make sure that the operation manual is readily available and next to the place where the hoisting equipment is used.
- **Caution:** Only allow well-trained and well-qualified persons to operate the lifter.
- **Caution:** Wear safety equipment such as: helmet, gloves, and safety boots.
- **WARNING:** Never leave a lifted load unattended.
- **Caution:** Inspect the lifter to ensure that it has no physical damage and is function properly. Operate the lifter only in the safe working conditions.
- **WARNING:** Keep all personnel clear while the load is being raised, moved, or lowered. No one is allowed to stand, pass or work underneath the load.
- **WARNING:** Check the hoist and its accessories periodically to make sure there is no damage or loosening of fasteners. Inspect them again before using the lifter.
- **WARNING:** The device must be stored in a place where they are protected against any weather conditions and away from abrasive substances.
- **Caution:** Inspections and maintenance should only be performed by well-qualified persons.

## **2. Cautions:**

### **a. Before operation:**

- Make sure that all bolts are securely tightened.
- Use appropriate PPE (Personal Protective Equipment) to protect against injury.
- Make sure that the automatic locking latch is in good operable condition. (Refer to III.2.d on page 10).
- Make sure that the rubber pads are free from dirt, grease and other substances.

### **b. During operation:**

- Make sure the weight of the slab being lifted is within the specified W.L.L. limit.
- Stand clear of the lifter and its load during the operation. No one is allowed to stand, pass or work underneath the load.
- Follow the steps and instructions in the operation manual.
- For your own safety follow all the applicable laws and regulations in your area.

### **c. After operation:**

- Clean the device thoroughly after each use.
- Store the lifter in a well-ventilated place, avoid places with high heat or humidity.

### **d. About Automatic locking latch:**

- Automatic locking system consists of a cam lock which rotates each time the device is lifted to either clamp-on or release the load. It is important not to allow dust to go inside, inspect and lubricate it (with machine oil) periodically to ensure it is function properly.

### 3. Device usage:

#### Preliminary Safety Checks

Have a trained and well-qualified person perform the safety checks on the lifter before each use.

#### **WARNING:**

- \* Make sure that the Arcturus Lifter is correctly installed and in safe working conditions.
- \* Make sure that the locating pin on the forklift boom is correctly positioned and secured with the safety clip.
- \* This Arcturus Lifter (ARL100) is designed to lift a slab between  $1\frac{3}{16}$  inches (20 mm) and  $3\frac{15}{16}$  inches (100 mm) in width. Do not attempt to lift a slab with width less than  $1\frac{3}{16}$  inches (20 mm).
- \* Only lift one slab at a time.
- \* See page 17 for information and specification on the detachable clamp plate.

#### *Step 1: Installing lifter.*

- Hook Arcturus Lifter on the forklift boom (figure 1).

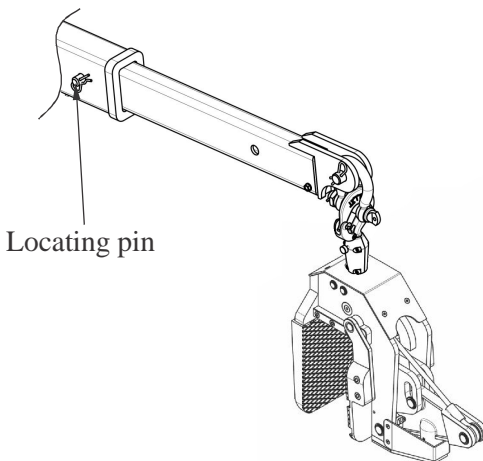


Figure 1

## Step 2: Moving stone slab

**Warning:** Position the lifter at the center of the slab so that the load is balanced. Make sure that the slab is fully inserted into the opening of the clamp.

- Clamp the top part of the slab at the center from the pack of slabs using a pinch bar and/or a wedge (figure 2a), allowing enough room for back plate of the clamp to pass between the pack of slabs.
- Lower the forklift boom to allow the slab fully inserted into the opening of the clamp. The automatic locking latch should engaged and the clamp will clamp on the slab securely (figure 2b).
- Lift the slab slowly to ensure the load is balanced. Moving the slab away from a stand, lower the slab and keep a minimum distance of about  $3 \frac{15}{16}$  inches (100 mm) from the floor.
- Move the slab to the desired location (figure 2c).

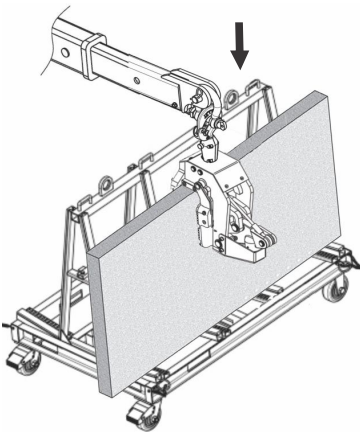
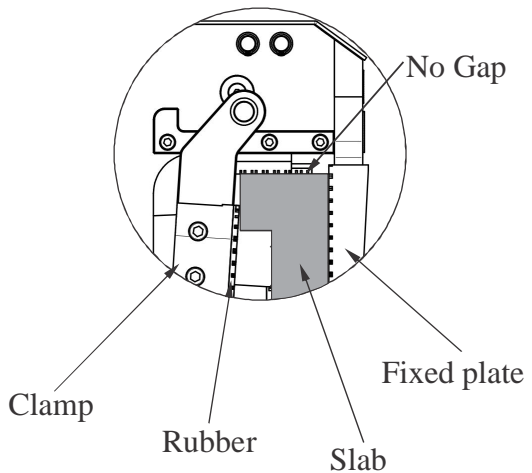


Figure 2a





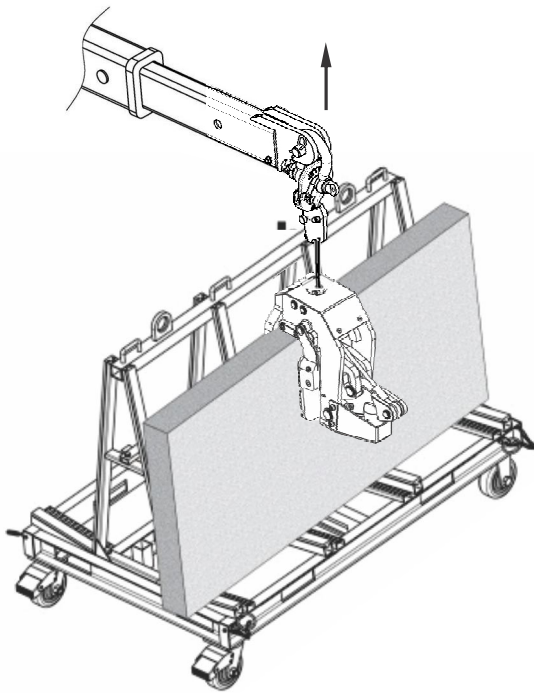


Figure 2b

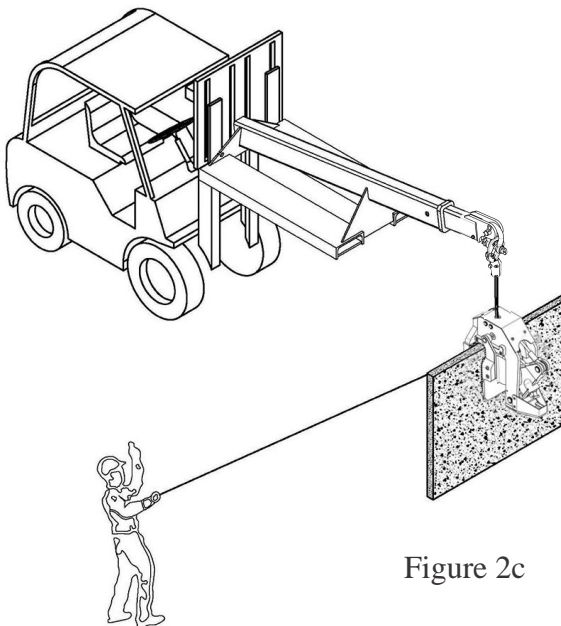
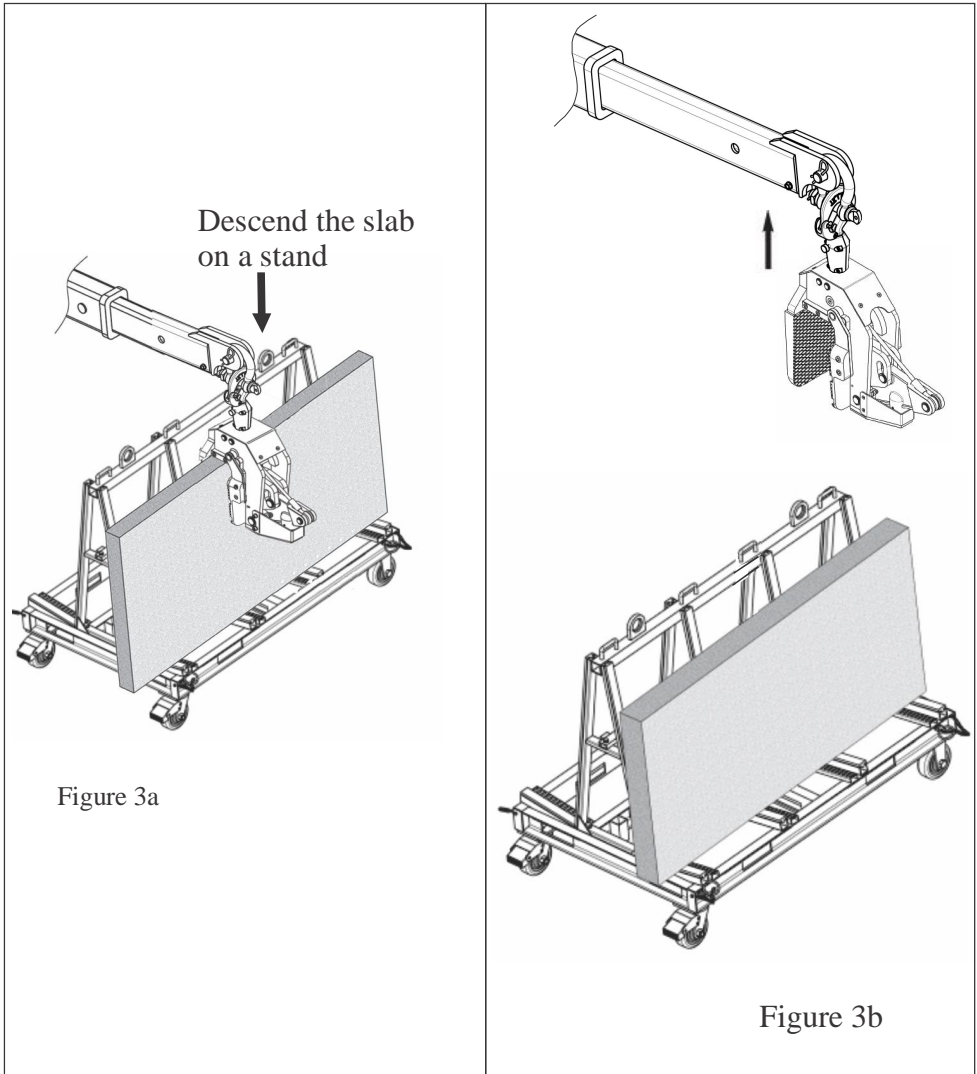


Figure 2c

### Step 3: Taking the lifter from the slab

- Release the slab from the lifter
- Lower the lifter slowly (figure 3a). Once the auto lock disengaged and released the slab, move the lifter away from the slab (figure 3b).



## **Cautions:**

- Before lowering the slab, make sure there are no obstacles to interfere with the lowering the slab to the stand or rack.
- If the lifter did not release the slab, lift the lifter up and down again to disengage the automatic locking latch.

### **WARNING**

- Select proper size of lifter for the job.
- Do not exceed the W.L.L (Work Load Limit) shown on page 2 of this manual.
- Slab thickness must be within the G.R. (Grip Range – page 2).
- Inspect and replace the Shackle as needed due to wear and tear.

## IV. APPENDIX:

### **Clamping the edged slab:**

- Attach the extra clamp plate (26) onto the middle clamp (27) using allen bolts M10x35 (28) and washers Ø10xØ20x1.5 (40) (Figure 4a).
- Follow the same procedure 1 to 3 as described earlier (see Figure 4b)

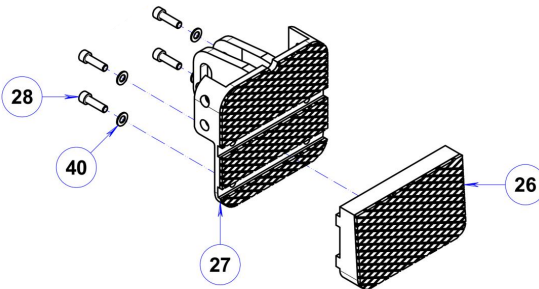


Figure 4a

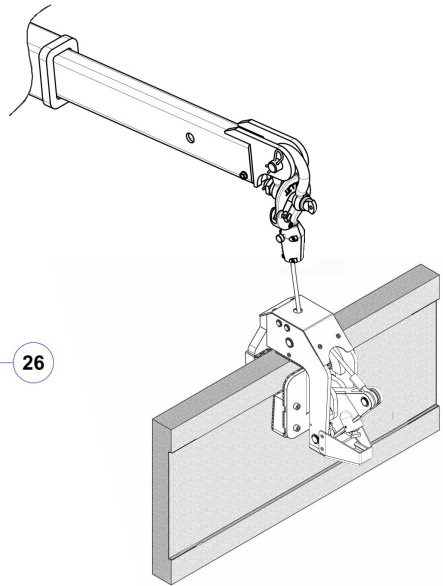


Figure 4b

**Note:**

When using an extra clamp plate, ensure the dimensions of the slab edge are within the following (Figure 4c):

$A < 30 \text{ mm}$

$B < 50 \text{ mm}$

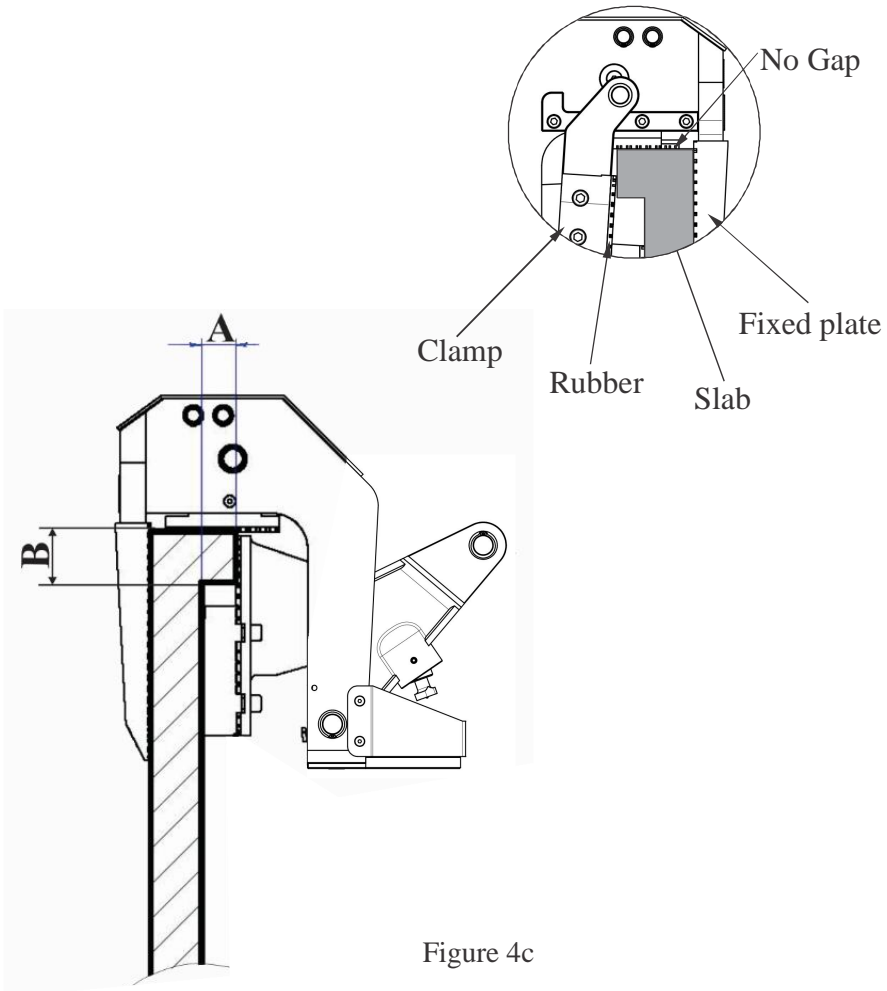


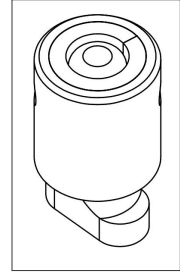
Figure 4c

## V. TECHNICAL PROBLEMS & SOLUTIONS:

Automatic locking latch is not working.

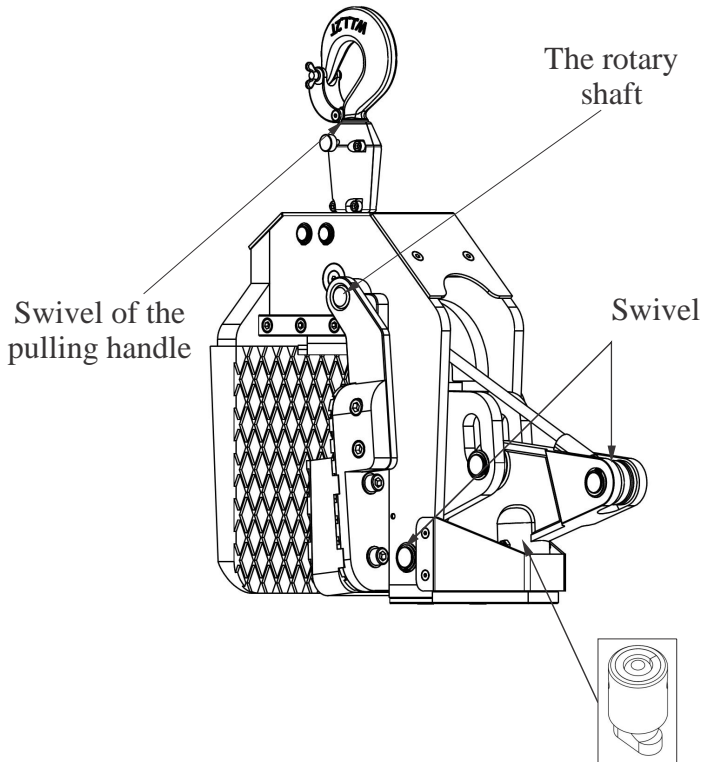
- **Cause:** Dirt clogged up the locking latch.

- **Solution:** Clean the automatic locking latch, lubricate or replace with a new automatic locking latch.



Automatic locking latch

- Lubricate with machine oil into the roller hanging on the automatic clamps, the rotary shaft, the swivels of cable and pulling handle.



Automatic locking latch

## **VI. INSPECTION & MAINTENANCE:**

- Schedule periodic maintenance of the lifter, especially the rubber of clamp plates.
- Always keep necessary spare parts on hand for maintenance or repair.
- Check and tighten the nuts and bolts on regular basis.
- Always keep the lifter clean and away from grease or other substances as they may reduce the effectiveness of the rubber pads and cause them lose their grip.
- Store in a dry and cool place.

## **VII. WARRANTY:**

At the time of delivery, it is necessary to inspect it to make sure that Arcturus Lifter has not been damaged during shipment. Any claims must be submitted within 8 days from the date of delivery. We provide a one (1) year warranty on the Arcturus Lifter from the date of purchase.

During warranty period, we will provide the replacement parts at no charge (shipping and handling fees may apply).

### **Warranty coverage is void if:**

- The operator failed to comply with the instructions in the manual.
- The specifications are not followed.
- Damage is due to inadequate maintenance and inspections.
- Damage is due to improper storage and/or usage.
- Repairs were performed by the user without our permission.
- Non-original spare parts were used

# WARRANTY CERTIFICATE

Please read the following terms and conditions carefully.

## PERIOD

The warranty starts from the date of purchase and is valid for a period of twelve (12) months.

## WARRANTY

This warranty is limited only to providing replacement parts as determined by the Company as defective (excluding worn-outs and consumable parts)

The Company is not responsible for any negligence, abuse, or improper use of the product.

In case the device failed to operate properly within the warranty period, our Customer Support Department will inform you of the appropriate method in dealing with your claim and advise you of your nearest approved service center.

## EXCLUSIONS

The warranty does not apply to damages or failures caused by:  
Incorrect use, misuse, error in transporting, mishandling  
improper or lack of regular maintenance.

Use of non-genuine parts/accessories, or of incorrect specs.



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**ABACO MACHINES**

**OPERATION MANUAL**

**ABACO ARCTURUS LIFTER**

**(ARL50)**



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**APPLICABLE MODELS  
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**ARL50**

**ABACO MACHINES (USA)**

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**Note: Please read this operation manual carefully before using the device.**

## **I.OVERVIEW:**

- Abaco Arcturus Lifter is designed to lift and to move stone slabs by using a hoist (or a forklift).
- Automatic locking latch is equipped with this device for easy and safe operation.
- The clamp plate is covered by vulcanized rubber.
- The lifter comes with a swivel hook attached to install onto a hoist or other lifting devices.

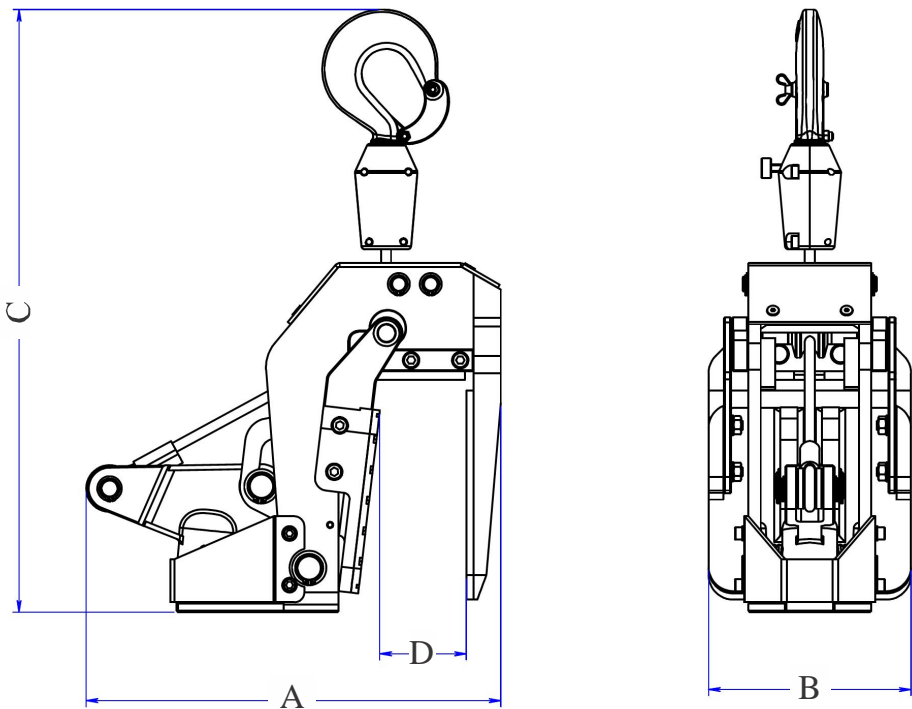
## **II.TECHNICAL SPECIFICATIONS:**

- The outer shell is made of mild steel.
- Clamp plate and lever arms are made of aluminum castings.

# 1) Dimensions:

Length (A) inches (mm)	Width (B) inches (mm)	Height (C) inches (mm)
12 <sup>3</sup> / <sub>8</sub> (314)	6 <sup>1</sup> / <sub>2</sub> (165)	18 <sup>7</sup> / <sub>8</sub> (480)

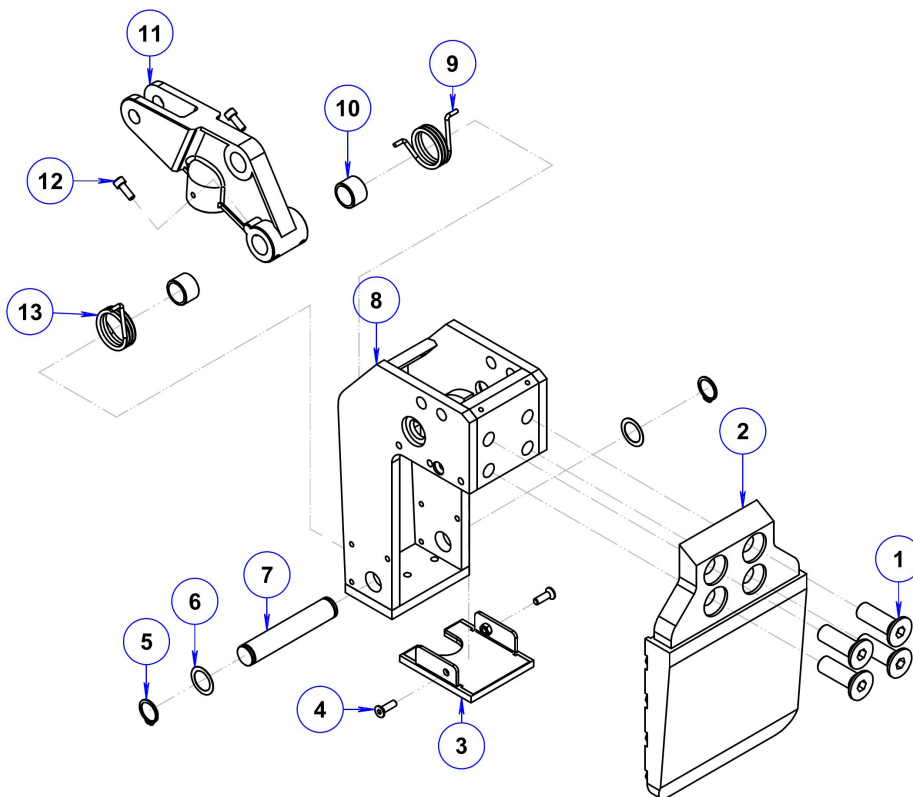
Grip range (D) inches (mm)	Net weight lbs (kg)	W.L.L * lbs (kg)
<sup>3</sup> / <sub>8</sub> ~ 1 <sup>15</sup> / <sub>16</sub> (10 ~ 50)	57.2 (26)	2200 (1000)

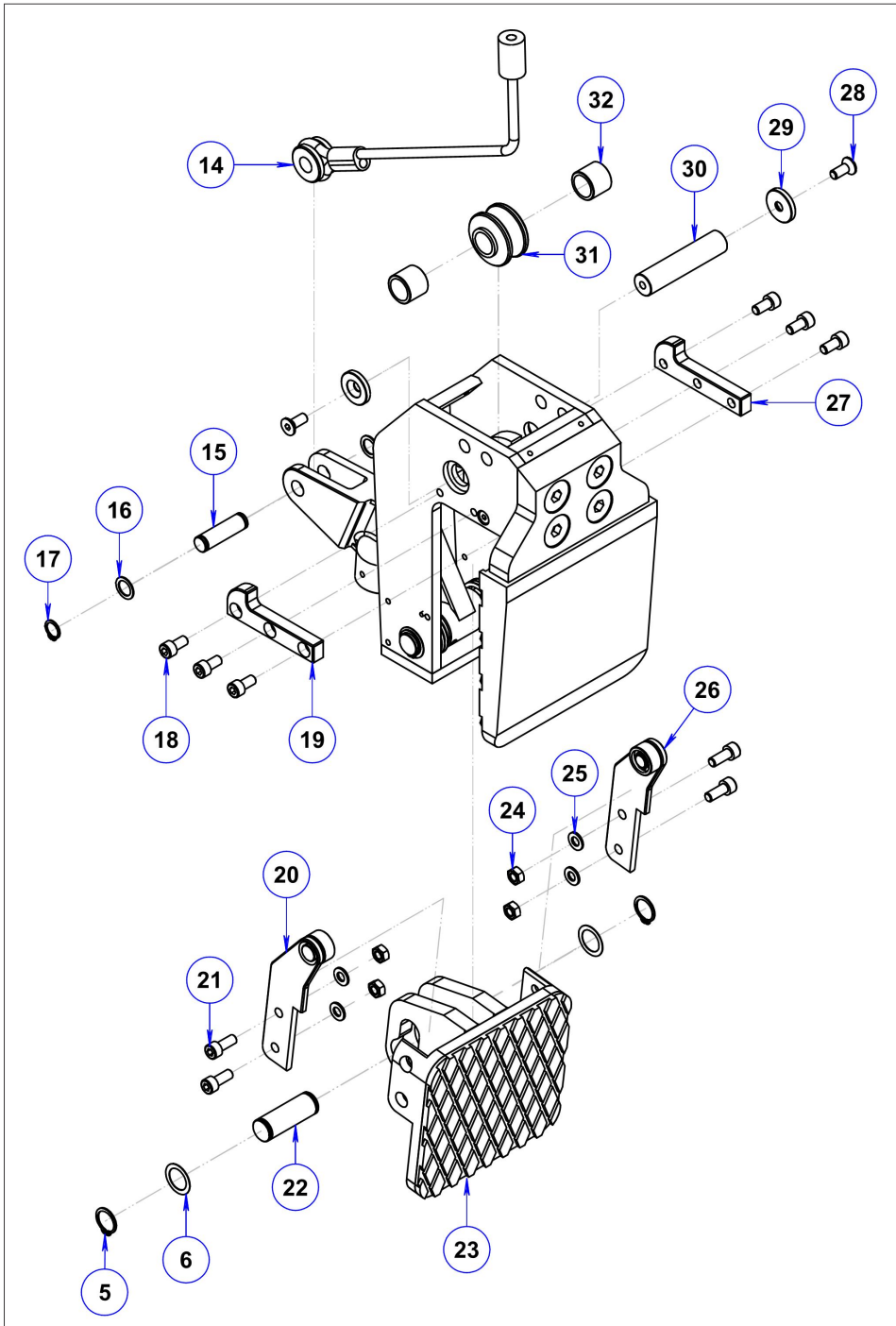


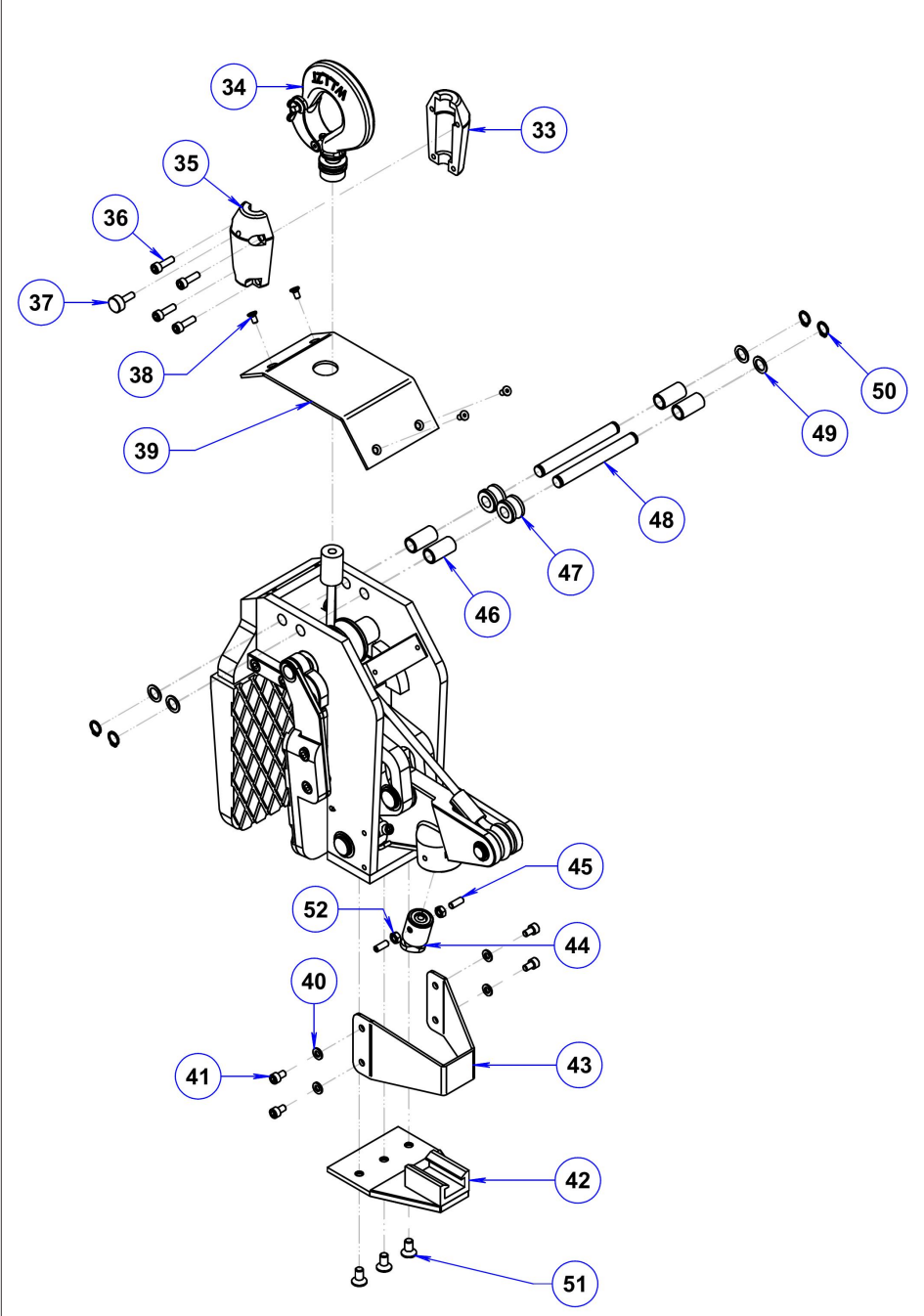
\* W.L.L : Work Load Limit



## 2) Spare part list:







## SPARE PART LIST

Pos.	Description	Qty.	Code
01	Allen bolt countersunk M16x50	4	ARL50-01
02	Fixed plate	1	ARL50-02
03	Stopper	1	ARL50-03
04	Allen bolt countersunk M6x20	2	ARL50-04
05	Circlip Ø20	4	ARL50-05
06	Washer, brass Ø20xØ28x1	4	ARL50-06
07	Shaft	1	ARL50-07
08	Body	1	ARL50-08
09	Spring, left	1	ARL50-09
10	Bushing, spring	2	ARL50-10
11	Lever	1	ARL50-11
12	Allen bolt M6x25	2	ARL50-12
13	Spring, right	1	ARL50-13
14	Cable	1	ARL50-14
15	Shaft	1	ARL50-15
16	Washer Ø14xØ20x1	2	ARL50-16
17	Circlip Ø14	2	ARL50-17
18	Allen bolt M8x16	6	ARL50-18
19	Rail, left	1	ARL50-19
20	Bar, left	1	ARL50-20
21	Allen bolt M8x20	4	ARL50-21
22	Shaft	1	ARL50-22
23	Plate, middle	1	ARL50-23
24	Nut M8	4	ARL50-24
25	Washer Ø8xØ16x1.5	4	ARL50-25

<b>Pos.</b>	<b>Description</b>	<b>Qty.</b>	<b>Code</b>
26	Bar, right	1	ARL50-26
27	Rail, right	1	ARL50-27
28	Allen bolt countersunk M8x20	2	ARL50-28
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30	Shaft B	1	ARL50-30
31	Roller B	1	ARL50-31
32	Bushing B	2	ARL50-32
33	Connectors B	1	ARL50-33
34	Hook	1	ARL50-34
35	Connectors A	1	ARL50-35
36	Allen bolt M6x20	4	ARL50-36
37	Knob, lock	1	ARL50-37
38	Allen bolt countersunk M5x10	4	ARL50-38
39	Body cap	1	ARL50-39
40	Washer Ø6xØ12x1	4	ARL50-40
41	Allen bolt M6x10	4	ARL50-41
42	Base of lock latch	1	ARL50-42
43	Cover, lock latch	1	ARL50-43
44	Lock latch, automatic	1	ARL50-44
45	Allen set screw M6x12	2	ARL50-45
46	Bushing A	4	ARL50-46
47	Roller A	2	ARL50-47
48	Shaft A	2	ARL50-48
49	Washer, brass Ø12xØ18x1	4	ARL50-49
50	Circlip Ø12	4	ARL50-50
51	Allen bolt countersunk M8x16	3	ARL50-51
52	Nut M6	2	ARL50-52

### III. INSTRUCTIONS FOR USE:

#### 1. Safety Instructions :

**WARNING: Before using your lifter, please confirm the surfaces of the slab to be lifted are flat, smooth, and free from dust, oil, or any debris which will cause slipping.**

**a) For Abaco Arcturus Lifter:**

- **Caution:** Follow all applicable rules and regulations in your area including all safety standards and practices for hoisting operations.

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- **WARNING:** Inspect your clamp every day before start using it carefully and thoroughly. Do not use the clamp if it is worn out or damaged.

- **WARNING:** Use the appropriate model of the lifter for the job as determined by the weight of the slab to be lifted. Do not exceed the W.L.L. (Working Load Limit) for the lifter (Refer to page 2). Slab thickness must also be within the grip range specified by the Manufacturer.

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- **WARNING:** Make sure the slab is inserted to the full depth of the clamp (see Figure on page 12)

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- **WARNING:** Keep all personnel clear while the load is being raised, moved, or lowered. No one is allowed to stand, pass or work underneath the load.
- **WARNING:** Check the hoist and its accessories periodically to make sure there is no damage or loosening of fasteners. Inspect them again before using the lifter.
- **WARNING:** The device must be stored in a place where they are protected against any weather conditions and away from abrasive substances.
- **Caution:** Inspections and maintenance should only be performed by well-qualified persons.

## **2. Cautions:**

### **a. Before operation:**

- Make sure that all bolts are securely tightened.
- Use appropriate PPE (Personal Protective Equipment) to protect against injury.
- Make sure that the automatic locking latch is in good operable condition. (Refer to III.2.d on page 10).
- Make sure that the rubber pads are free from dirt, grease and other substances.

### **b. During operation:**

- Make sure the weight of the slab being lifted is within the specified W.L.L.
- Stand clear of the lifter and its load during the operation. No one is allowed to stand, pass or work underneath the load.
- Follow the steps and instructions in the operation manual.
- For your own safety follow all the applicable laws and regulations in your area.

### **c. After operation:**

- Clean the device thoroughly after each use.
- Store the lifter in a well-ventilated place, avoid places with high heat or humidity.

### **d. About Automatic locking latch:**

- Automatic locking system consists of a cam lock which rotates each time the device is lifted to either clamp-on or release the load. It is important not to allow dust to go inside, inspect and lubricate it (with machine oil) periodically to ensure it is function properly.



### 3. Device usage:

#### Preliminary Safety Checks

Have a trained and well-qualified person perform the safety checks on the lifter before each use.

#### **WARNING:**

- \* Make sure that the Abaco Arcturus Lifter is correctly installed and in safe working conditions.
- \* Make sure that the locating pin on the forklift boom is correctly positioned and secured with the safety clip.
- \* This Abaco Arcturus Lifter (ARL50) is designed to lift a slab between  $\frac{3}{8}$  inches (10 mm) and  $1 \frac{15}{16}$  inches (50 mm) in width. Do not attempt to lift a slab with width less than  $\frac{3}{8}$  inches (10 mm).
- \* Only lift one slab at a time.

#### **Step 1: Installing lifter.**

- Hook Abaco Arcturus Lifter to the forklift boom (figure 1).

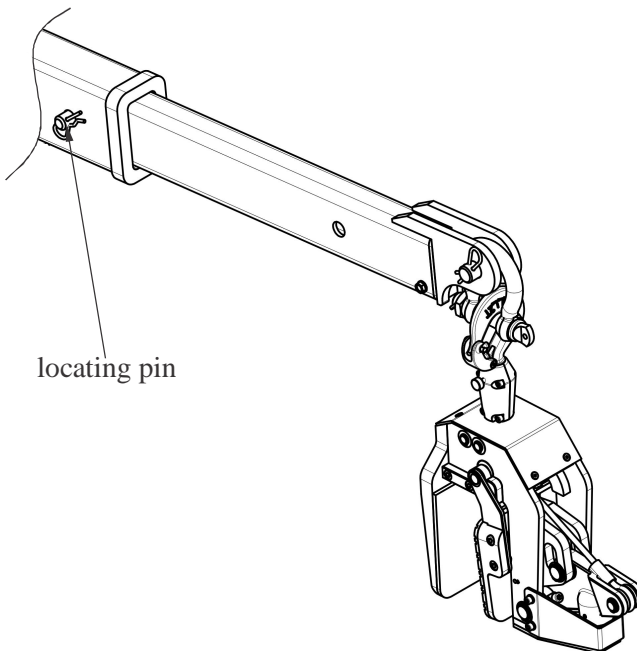


Figure 1

## Step 2: Moving stone slab

**Warning:** Position the lifter at the center of the slab so that the load is balanced. Make sure that the slab is fully inserted into the opening of the clamp.

- Clamp the top part of the slab at the center from the pack of slabs using a pinch bar and/or a wedge (figure 2a), allowing enough room for back plate of the clamp to pass between the pack of slabs.
- Lower the forklift boom to allow the slab fully inserted into the opening of the clamp. The automatic locking latch should engaged and the clamp will clamp on the slab securely (figure 2b).
- Lift the slab slowly to ensure the load is balanced. Moving the slab away from a stand, lower the slab and keep a minimum distance of about  $3 \frac{15}{16}$  inches (100 mm) from the floor.
- Move the slab to the desired location (figure 2c).

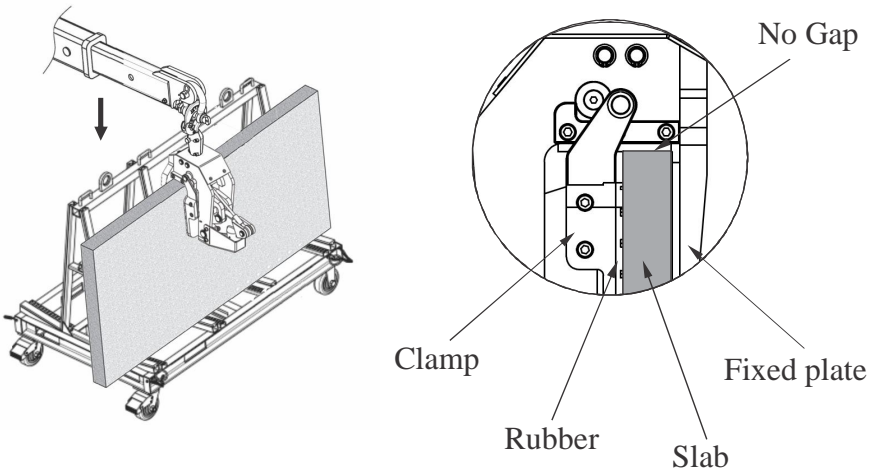


Figure 2a

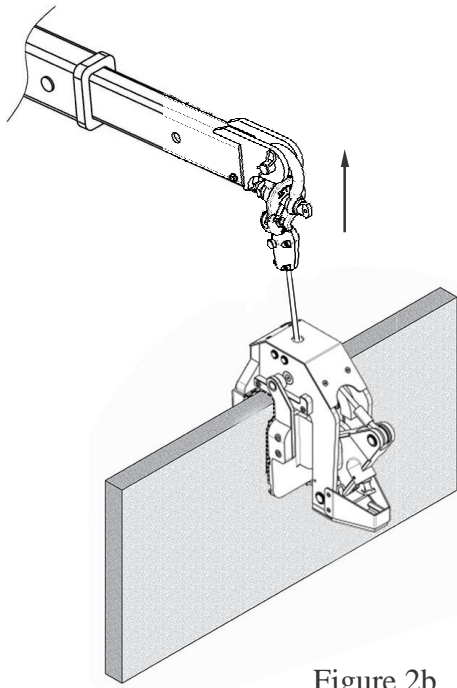


Figure 2b

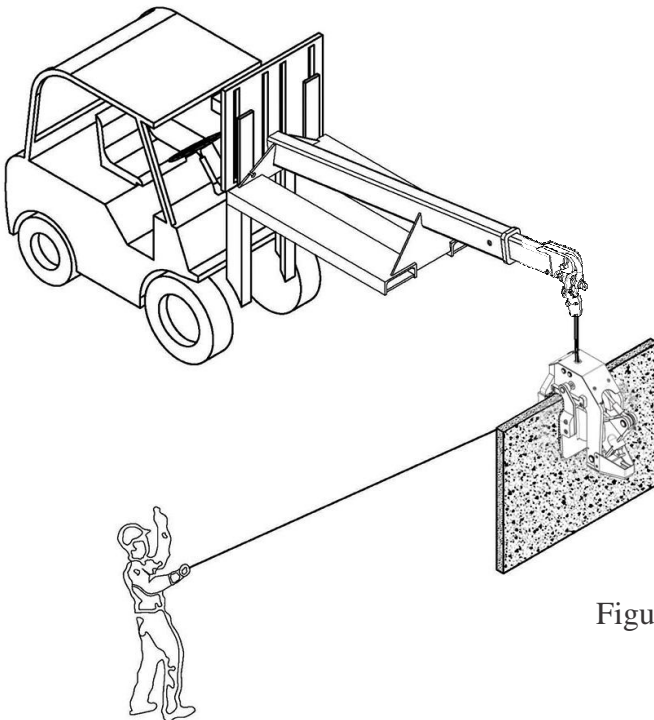
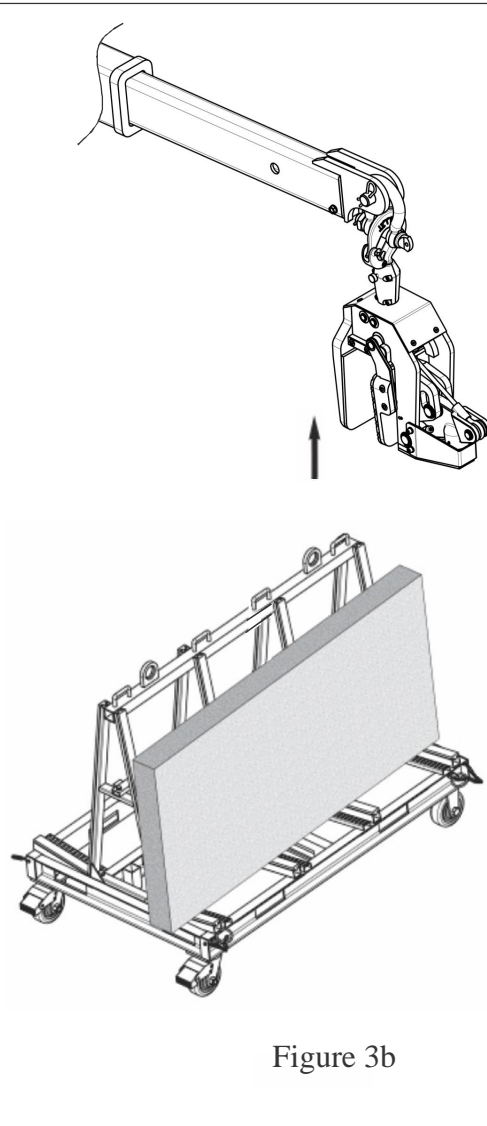
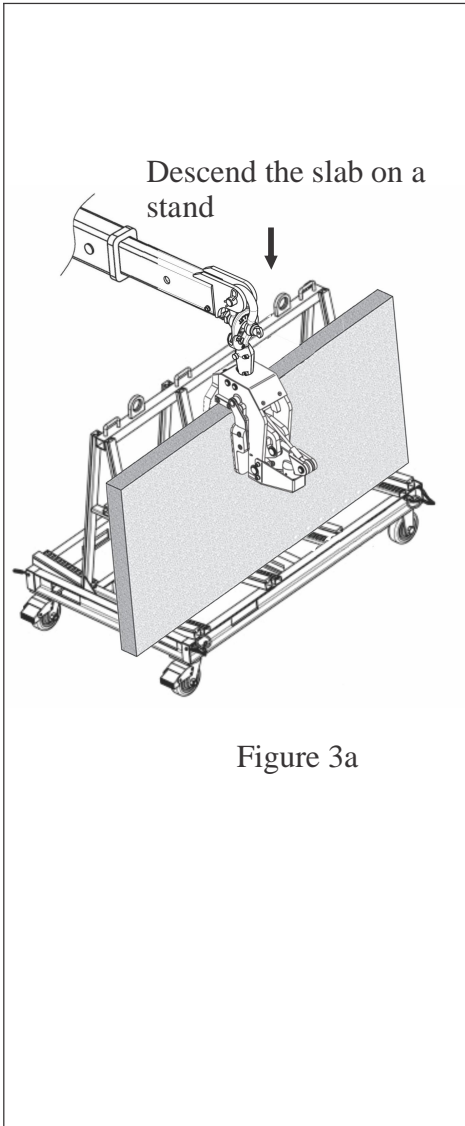


Figure 2c

### Step 3: Taking the lifter from the slab

- Release the slab from the lifter
- Lower the lifter slowly (figure 3a). Once the auto lock disengaged and released the slab, move the lifter away from the slab (figure 3b).



## **Cautions:**

- Before lowering the slab, make sure there are no obstacles to interfere with the lowering the slab to the stand or rack.
- If the lifter did not release the slab, lift the lifter up and down again to disengage the automatic locking latch.

### **WARNING**

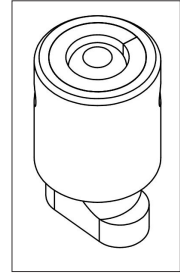
- Select proper size of lifter for the job.
- Do not exceed the W.L.L (Work Load Limit) shown on page 2 of this manual.
- Slab thickness must be within the G.R. (Grip Range – page 2).
- Inspect and replace the Shackle as needed due to wear and tear.

## IV. TECHNICAL PROBLEMS & SOLUTIONS:

Automatic locking latch is not working.

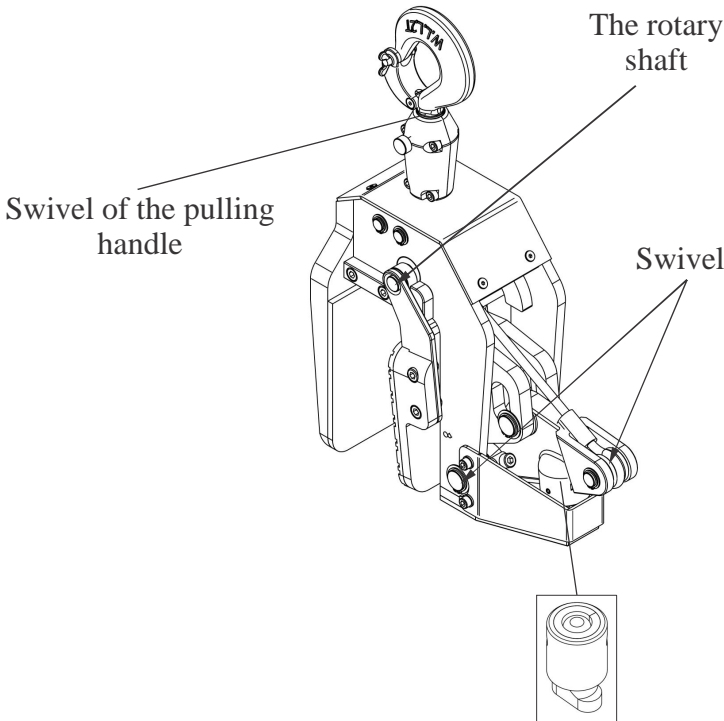
- **Cause:** Dirt clogged up the locking latch.

- **Solution:** Clean the automatic locking latch, lubricate or replace with a new automatic lock latch.



Automatic locking latch

- Lubricate with machine oil into the roller hanging on the automatic clamps, the rotary shaft, the swivels of cable and pulling handle.



Automatic locking latch

## **V. INSPECTION & MAINTENANCE:**

- Schedule periodic maintenance of the lifter, especially the rubber of clamp plates.
- Always keep necessary spare parts on hand for maintenance or repair.
- Check and tighten the nuts and bolts on regular basis.
- Always keep the lifter clean and away from grease or other substances as they may reduce the effectiveness of the rubber pads and cause them lose their grip.
- Store in a dry and cool place.

## **VI. WARRANTY:**

At the time of delivery, it is necessary to inspect Abaco Arcturus Lifter to make sure that it has not been damaged during shipment. Any claims must be submitted within 8 days from the date of delivery. We provide a one (1) year warranty on the Abaco Arcturus Lifter from the date of purchase.

During warranty period, we will provide the replacement parts at no charge (shipping and handling fees may apply).

### **Warranty coverage is void if:**

- The operator failed to comply with the instructions in the manual.
- The specifications are not followed.
- Damage is due to inadequate maintenance and inspections.
- Damage is due to improper storage and/or usage.
- Repairs were performed by the user without our permission.
- Non-original spare parts were used

# WARRANTY CERTIFICATE

Please read the following terms and conditions carefully.

## PERIOD

The warranty starts from the date of purchase and is valid for a period of twelve (12) months.

## WARRANTY

This warranty is limited only to providing replacement parts as determined by the Company as defective (excluding worn-outs and consumable parts)

The Company is not responsible for any negligence, abuse, or improper use of the product.

In case the device failed to operate properly within the warranty period, our Customer Support Department will inform you of the appropriate method in dealing with your claim and advise you of your nearest approved service center.

## EXCLUSIONS

The warranty does not apply to damages or failures caused by:

Incorrect use, misuse, error in transporting, mishandling improper or lack of regular maintenance.

Use of non-genuine parts/accessories, or of incorrect specs.



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