

User manual



Hydraulic Block Cutter

Type: AL 43SH 21

ALMI Machinefabriek B.V., Vriezenveen
Doc.no.: 100287-HB-04 AL43SH 21 ENG
Revision and revision date: 2-03-11-2014

Table of contents

1.	Foreword	4
1.1.	Name of machine	4
1.2.	Warning	4
1.3.	Target group for each chapter	4
1.4.	Symbols	4
1.5.	Re-ordering the user manual	4
1.6.	Deficiencies in this user manual	4
2.	Introduction	5
2.1.	The user	5
2.2.	The manufacturer	5
2.3.	Machine identification	5
2.4.	Function of the machine	6
2.5.	Machine options	6
2.6.	Liability	6
2.7.	Service	6
2.8.	Warranty conditions	6
3.	Safety regulations	6
3.1.	Safety provisions	6
3.1.1.	General	6
3.1.2.	Emergency stop	7
3.1.3.	Key switch	7
3.1.4.	Safety shields	7
3.2.	Warning symbols on the machine	7
3.3.	General safety regulations	8
3.4.	The operator	8
3.5.	The maintainer	8
3.6.	Setup of the machine	8
3.7.	The noise emission of the machine	9
3.8.	Maintenance of the machine	9
3.9.	Summary of the safety regulations	9
4.	Description	9
4.1.	General	9
4.2.	Construction of the machine	9
4.3.	Electrical supply	10
4.4.	Safety provisions and warning symbols	10
4.5.	Controls and adjustments	10
4.6.	Operation	10
4.7.	Technical data	11
5.	Scope of delivery, transport, storage, placement and initial setup	11
5.1.	Scope of delivery	11
5.2.	Transport and storage	11
5.3.	Placement of the machine	11
5.4.	Initial setup	11
6.	Operation	11
6.1.	Placement and movement	12
6.2.	Operation in general	12
6.3.	Start up	12
6.4.	Shut down	12
7.	Maintenance	13
7.1.	Precautionary measures	13
7.2.	Checkpoints	13
7.3.	Replacement of components	13
8.	Trouble	14
8.1.	General information for trouble	14
8.2.	Trouble indications and signals	14
9.	Disposal	14

Table 1.3-1: Overview of the target groups for each chapter	4
---	---

ALMI Machinefabriek B.V., Vriezenveen
Doc.no.: 100287-HB-04 AL43SH 21 ENG
Revision and revision date: 2-03-11-2014

Table 7.2-1: Checkpoints and lubrication schedule.....	13
Figure 2.3-1: Sample type plate with CE-mark.....	5
Figure 2.3-2: Location of the type plate and serial number	6
Figure 3.2-1: Warning symbols on the machine.....	8
Figure 4.2-1: Construction of the machine	10
Figure 6.3-1: Pictogram "placing the stone in the middle of the blade".....	12
Appendix:.....	EU Declaration of Conformity for machines
Appendix:.....	Exploded view drawing with drawing number 1.0438.000 1A

1. Foreword

This foreword contains general information about and for this user manual.

1.1. Name of machine

The name of the machine is "Hydraulic block cutter".

1.2. Warning

Read this user manual carefully before use and before maintenance of the machine is carried out. Only then is optimal safety ensured. The machine may only be operated and maintained by personnel who have received special training.

There are moving parts on the machine!

For this reason, the machine must always be switched off and the electrical supply must be disconnected before maintenance and/or repairs are carried out.

Always be careful of the moving, sharp and/or protruding parts; they can cause injury!

While cutting, always remain at a safe distance.

1.3. Target group for each chapter

This user manual is intended to provide information to the persons/departments listed below.

- the owner
- the operator
- the maintainer

Next to the heading of each chapter is indicated for which of the groups described above the chapter is intended. Table 1.3-1 provides an overview of the target groups for each chapter.

Chapter	Title	Owner	Operator	Maintainer
-	Table of contents	•	•	•
1	Foreword	•	•	•
2	Introduction	•	•	•
3	Safety regulations	•	•	•
4	General description of the machine	•	•	•
5	Transport, storage and setup of the machine			•
6	Operation of the machine		•	•
7	Maintenance of the machine			•
8	Trouble		•	•
9	Disposal of the machine	•		•

Table 1.3-1: Overview of the target groups for each chapter

1.4. Symbols

The safety and caution symbols shown below are used in this document.



The information indicated by this symbol warns you of potential problems. Furthermore, the symbol warns you that you can seriously injure yourself or that you can seriously damage the machine.

1.5. Re-ordering the user manual

Extra copies of the user manual can be ordered from ALMI Machinefabriek BV of Vriezenveen. When ordering, indicate the document number and the number of copies. The document number is indicated in the footer area.

1.6. Deficiencies in this user manual

This user manual was prepared with the greatest possible care. Should you, nonetheless, find inaccuracies or deficiencies in the text, notify ALMI Machinefabriek BV of the problem.

2. Introduction

This chapter provides basic information about the machine and the accompanying user manual. This chapter is intended for the owner, the operator and the maintainer of the machine.

2.1. The user



Read this user manual carefully before use and before maintenance of the machine is carried out. Only then is optimal safety ensured.

The machine may only be operated by qualified personnel. The operator must read the chapters indicated in 1.3 carefully.
Maintenance of the machine may only be carried out by specially trained personnel from the maintenance department. The maintainer must read the chapters indicated in 1.3 carefully.

2.2. The manufacturer

The manufacturer of the machine is:

ALMI Machinefabriek BV
Wierdenseweg 82-86
7671 JK Vriezenveen
The Netherlands
T+31(0)546 561 353
F+31(0)546 564 465

2.3. Machine identification

The machine is provided with the CE-mark. This is shown on the type plate. See Figure 2.3-1.

The CE-mark indicates that this machine satisfies the fundamental health and safety requirements of the European Union. Also refer to the warning in section 1.2.

In addition to the CE-mark, the data indicated below is also shown on the type plate. See also Figure 2.3-1.

- Name and address of the manufacturer
- Type indication
- Year of manufacture
- Serial number (only reference)
- Required supply voltage
- Weight

ALMI Machinefabriek B.V.		Pump specifications		
Type:	AL43SH21	Voltage:	12V	
Year of manufacture:	2010			
Serial no.: listed on the crosshead		Weight	125 kg	

Figure 2.3-1: Sample type plate with CE-mark

For the location of the attached CE-mark and type plate, see Figure 2.3-2.



Figure 2.3-2: Location of the type plate and serial number

2.4. Function of the machine

The function of the machine is the cutting of stone.
It is forbidden to use the machine for purposes other than the cutting of stone products.

2.5. Machine options

There is no optional equipment that can be added to the existing version of the machine.

2.6. Liability

When injury or harm to persons or damage to the machine or products is the result of not following these operating and maintenance instructions, ALMI Machinefabriek BV cannot be held liable.

2.7. Service

For service contact your dealer or your own maintenance department.

2.8. Warranty conditions

- art. 1 If within 6 months of delivery ALMI Machinefabriek BV is notified of deficiencies in the delivered machine that are caused by defects in materials or workmanship and is provided with the serial number and the original receipt, ALMI will repair these defects.
- art. 2 All warranty obligations expire if:
- repairs or modifications are made to the machine by others, without instruction from ALMI, in an incompetent manner;
 - non-original parts are used;
 - the damage or defects are the result of connecting the machine in a manner other than intended, incompetent use, or failure to follow the regulations and instructions for use;
 - the deficiencies are the result of normal wear of the machine.
- art. 3 ALMI reserves the right to have work on the machine carried out by third parties during and after the warranty period.

3. Safety regulations

This chapter provides information concerning the general safety regulations. This chapter is intended for the owner, the operator and the maintainer of the machine. Read this chapter carefully before use of the machine and before carrying out repairs on the machine.

3.1. Safety provisions

3.1.1. General

For the exact location of the various provisions, see Figure 4.2-1.
It is absolutely forbidden to remove or disable the safety provisions.

3.1.2. Emergency stop

The machine is not equipped with an emergency stop provision.
An emergency stop does not contribute to a safer work situation.

3.1.3. Key switch

The machine is equipped with a key switch that is used to set the hydraulic unit in stand-by mode.

The machine may only be operated by personnel who have received sufficient instruction. Therefore, remove the key from the key switch before you leave the work area.

3.1.4. Safety shields

The machine has no external moving parts except the upper blade.

To protect it from external contaminants, such as rain, dirt and falling debris, the hydraulic unit and the battery with electric cabling are enclosed in a separate housing.

Only personnel that have received sufficient instruction may open safety shields to perform maintenance and/or repairs. Also refer to section 1.3 "Target group for each chapter".

3.2. Warning symbols on the machine

The following warning symbols can be found on the machine. For the location of the warning symbols on the machine see Figure 3.2-1

It is absolutely forbidden to remove the warning symbols or make them unreadable by any means.

Worn warning symbols must be replaced in a timely manner.



Sticker 1: Be careful to avoid injury to the hand!



Sticker 2: Use eye and hearing protection



Sticker 3: Read the user manual first



Sticker 4: Only transport the machine in the upright position



Figure 3.2-1: Warning symbols on the machine

3.3. General safety regulations

Although the machine satisfies the fundamental health and safety requirements of the European Union, dangerous situations can always occur. Always remain alert for possible dangerous situations. Be careful of projecting portions of the machine.

At a minimum, the following safety regulations must be followed:

- Never engage power to the machine if any person is in contact with the machine in a dangerous manner.
- Never start the machine if any person is in contact with the machine in a dangerous manner.
- During maintenance of the machine, use the key switch to switch off the machine and remove the key from the lock.
- Remove the key from the key switch before you leave the work area.
- Follow the warnings and indications on the machine. For the explanation of the symbols, see section 3.2.



Always think of the safety of yourself and others!

3.4. The operator

The machine may only be operated by personnel who are qualified to do so. Personnel that have this qualification are referred to in the rest of this user manual as the operator. As operator of the machine, you must be aware of the information that is relevant for you. Also refer to section 1.3 "Target group for each chapter". The operator is not permitted to perform operations that are not indicated to be intended for the operator. Comply with the safety regulations in this user manual. Do not deviate from the safety regulations. This can result in danger.

3.5. The maintainer

Only personnel from the maintenance department who have received special training may carry out maintenance of the machine. Personnel that have this qualification are referred to in the rest of this user manual as the maintainer. As maintainer of the machine, you must be aware of the information that is relevant for you. Also refer to section 1.3 "Target group for each chapter". Comply with the safety regulations in this user manual. Do not deviate from the safety regulations. This can result in danger.

3.6. Setup of the machine

Make sure that the machine is horizontal and stable during use. Prevent tilting. Lock the swivel castor.

3.7. The noise emission of the machine

The noise emission during cutting is highly dependent on the material of the stone that is to be cut.

The use of good hearing protection is required.

3.8. Maintenance of the machine

The machine must be in a sufficient state of repair that no dangerous situations can occur. The troubleshooting chart is provided in chapter 7. Use only original parts.

3.9. Summary of the safety regulations

- The machine may only be operated by qualified personnel.
- As operator of the machine, you must be aware of the information that is relevant for you in these operation and maintenance regulations. Refer to section 1.3 "Target group for each chapter".
- The operator is not permitted to perform operations that are not indicated to be intended for the operator.
- As maintainer of the machine, you must be aware of the information that is relevant for you in these operation and maintenance regulations. Refer to section 1.3 "Target group for each chapter".
- Always remain alert for possible dangerous situations. Be careful of projecting portions of the machine. Be careful with loose clothing and hair.
- Never engage power to the machine if any person is in contact with the machine in a dangerous manner.
- Never start the machine if any person is in contact with the machine in a dangerous manner.
- During maintenance of the machine, use the key switch to switch off the machine and remove the key from the lock.
- Remove the key from the key switch before you leave the work area.
- Follow the warnings and indications on the machine. For the explanation of the symbols, see section 3.2.
- It is absolutely forbidden to remove the warning symbols or make them unreadable by any means. Worn warning symbols must be replaced in a timely manner.
- The machine must be in a sufficient state of repair that no dangerous situations can occur. The troubleshooting chart is provided in chapter 7.
- Only sufficiently trained personnel may open protective shields to perform service. Also refer to section 1.3 "Target group for each chapter".

4. Description

This chapter provides general information about the machine. This chapter is intended for the owner, the operator and the maintainer of the machine.

4.1. General

This user manual includes an appendix with an exploded view drawing with drawing number **1.0438.000 1A**.

This drawing includes a parts list containing the name of each part.

4.2. Construction of the machine

The machine consists primarily of the components shown in **Figure 4.2-1**.

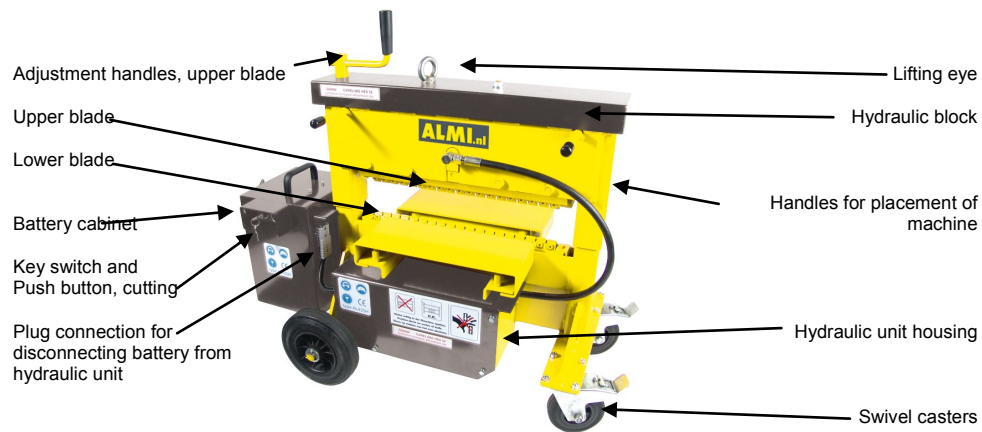


Figure 4.2-1: Construction of the machine

4.3. Electrical supply

The machine operates on a 12-volt maintenance-free battery. The battery and battery charger are included in the battery cabinet as shown in Figure 4.2-1.

4.4. Safety provisions and warning symbols

The safety provisions and warning symbols are handled in sections 3.1 and 3.1.

4.5. Controls and adjustments

The machine has the following controls and adjustments as shown in Figure 4.2-1:

- Handles for adjustment of the upper blade.
- Key switch
- Push button for cutting
- Handles for placement of machine

4.6. Operation

By turning the two handles on the top of the machine, the distance between the upper and lower blades can be adjusted. The upper blade must be adjusted so it is parallel to the lower blade and there is 3 to 7 mm of free space above the stone.

The hydraulic unit can be put in stand-by mode by turning the key switch to the "1" position.

The upper blade moves downward when the appropriate push button is pushed, see Figure 4.2-1.

When the push button is released again, the upper blade returns to its original position.

The machine works on a 12-volt maintenance-free battery. The battery and battery charger with supply cable and plug are located in the battery cabinet. The supply voltage for the charger is 230V/60 Hz. The battery cabinet can be opened with the star-knob.

If desired, the plug connection between the battery and the hydraulic unit can be disconnected and the entire battery cabinet can be removed to simplify charging.

4.7. Technical data

Type:	AL 43SH 21
Serial number	The serial number is punched in the crosshead. See Figure 2.3-2.
Maximum cutting pressure	21000 kg
Weight	125 kg
Measurements	lxwxh=900x450x700 mm
Range of cutting width	w=180-430 mm
Range of cutting height	h=10-200 mm
Stroke of upper blade	25 mm
Blade system	Fixed mounted cutting teeth of hardened metal. Each has 3 cutting edges.
Pump	M319-03-12V-6660-N/O
Oil	Hydraulic oil with kinematic viscosity of 32-46 mm ² /s
Battery	D&M battery 12-volt (maintenance-free)
Battery charger	F15EBS 12A Electronic

5. Scope of delivery, transport, storage, placement and initial setup

This chapter provides information about the scope of delivery, transport, storage, placement and initial setup of the machine. This chapter is intended for the maintainer of the machine.

5.1. Scope of delivery

The following components should be included with every new machine:

- The Hydraulic Block Cutter AL 43SH 21 (1x)
- The battery with battery charger F15EBS 12A Electronic (built into battery cabinet)
- Key (2x)

5.2. Transport and storage

No special transport equipment is required.

The machine is equipped with four handles, two fixed casters and two swivel casters. This makes it easy to move the machine.

For vertical lifting, the machine is equipped with a lifting eye.

Make sure that the machine is horizontal and stable during storage. Prevent tilting. If the cutter is tilted, oil may leak from the vent hole.

5.3. Placement of the machine

Make sure that the machine is horizontal and stable during use. Prevent tilting. Lock the swivel casters.

5.4. Initial setup

Charge the battery. The battery charger with supply cable and plug are located in the battery cabinet. Required supply voltage is 230V/60 Hz. The battery cabinet can be opened with the star-knob.

Check the oil level in the oil reservoir of the hydraulic unit. The oil level must be between 2 and 3 cm under the top of the reservoir. Top off if necessary.

Set the key switch to the "1" position.

The machine is now ready for use.

6. Operation

This chapter provides information about the operation of the machine. This chapter is intended for the operator and the maintainer of the machine.

6.1. Placement and movement

No special transport equipment is required. The machine is equipped with four handles, two fixed casters and two swivel casters. This makes it easy to move the machine.

For vertical lifting, the machine is equipped with a lifting eye.

Make sure that the machine is horizontal and stable during use. Prevent tilting. Lock the swivel casters. If the cutter is tilted, oil may leak from the vent hole.

6.2. Operation in general

The following is a description of regular operation.

Comply with the safety regulations in chapter 3.

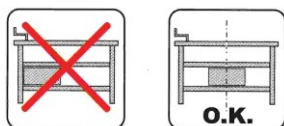
Operation is carried out using the controls and adjustments described in section 4.5.

For additional information also see section 4.6, the "Operation" of the machine.

Clean stone debris from the machine regularly.

6.3. Start up

- Charge the battery, if necessary. The battery charger with supply cable and plug are located in the battery cabinet. Required supply voltage is 230V/60 Hz. The battery cabinet can be opened with the star-knob.
- Set the key switch to the "1" position. The block cutter is now in "stand-by".
- Place the stone that is to be cut on the lower blade.
The cutting range is: Height 10-200 mm; width 180-430 mm
Use the handles to adjust the upper blade to the correct height above the stone. The space between the upper blade and the stone must be 3 to 7 mm. The upper blade must be parallel to the lower blade.
- Slide the stone into position, approximately in the middle of the blade. See also the pictogram shown on the machine.



Steine mittig in der Maschine spalten.

Position block on center of knife.

Steen op midden van het mes plaatsen.

Figure 6.3-1: Pictogram "placing the stone in the middle of the blade"

- Push the push button to move the upper blade downward.
BE CAREFUL! Keep body parts out of the area between the stone and the blade!
When the push button is released, the upper blade returns to its original position.
- Release the push button when the stone has been cut into two pieces. The upper blade returns to its original position.

6.4. Shut down

To switch off the machine, set the key switch to the "0" position.

7. Maintenance

This chapter provides information about the maintenance of the machine. This chapter is intended for the maintainer of the machine.

7.1. Precautionary measures



Maintenance of the machine may only be performed if the machine is voltage free. Comply with the safety regulations in chapter 3.

7.2. Checkpoints

The machine must regularly be checked according to the points in Table 7.2-1.

Item number	Description	Time interval
1	clean stone debris from the machine	Daily
2	check machine for oil leakage	Daily
3	charge the battery if the voltage is too low A battery that has not been used for 3 months must be recharged. The battery charger with supply cable and plug are located in the battery cabinet. Required supply voltage is 230V/60 Hz. If desired, the plug connection between the battery and the hydraulic unit can be disconnected and the entire battery cabinet can be removed to simplify charging. For the location of the plug, see Figure 4.2-1	Daily
4	check oil level in the oil reservoir of the hydraulic unit The oil level must be between 2 and 3 cm under the top of the reservoir. If necessary, top off with hydraulic oil that has a kinematic viscosity of 32-46 mm ² /s.	Monthly
5	replace oil Use hydraulic oil with kinematic viscosity of 32-46 mm ² /s The oil level must be between 2 and 3 cm under the top of the reservoir.	Annually
6	Check the upper and lower cutting teeth for wear. If necessary, rotate or replace cutting teeth. A blade has three cutting edges and can therefore be used 3 times. See also the provided exploded view drawing. Steps: - Loosen attachment screw - Rotate 120° or replace - Tighten attachment screw	Monthly
7	check machine for wear and damage	Monthly

Table 7.2-1: Checkpoints and lubrication schedule

7.3. Replacement of components

If the machine requires repair, we recommend that you contact your dealer. If you carry out repairs yourself, you must only use original parts.

When ordering parts, the following information must be provided:

- The machine type number
The machine type number is indicated on the type plate.
- The machine serial number
The machine serial number is punched in the crosshead. See Figure 2.3-2.
- The part number with description
The part number with description is indicated on the exploded view drawing provided with this user manual, drawing number **1.0438.000 1A**.

8. Trouble

This chapter provides information about trouble and trouble indications. This chapter is intended for the operator and the maintainer of the machine.

8.1. General information for trouble

When trouble occurs, switch off the machine and contact your dealer or your own maintenance department.

Comply with the instructions in chapter 3 and the maintenance instructions in chapter 3.

8.2. Trouble indications and signals

The machine controls do not include trouble indications or other signals.

9. Disposal

This chapter provides information about the disposal of the machine. This chapter is intended for the owner and the maintainer of the machine.

The machine must be disposed of in accordance with the legal requirements of the country in which it is used.

The owner is responsible for disposal of the machine.

EU Declaration of Conformity for machines

(Directive 2006/42/EG art. 6 sec. 2 and Appendix II A)

Manufacturer: **ALMI Machinefabriek BV**
Address: **Wierdenseweg 82-86**
Postcode and city: **7671 JK Vriezenveen**

Hereby declares that:

The Hydraulic Block Cutters

With

Type numbers AL 43SH 14 and AL 43SH 21

- in conformance with the machinery directive 2006/42/EG,
- satisfy the requirements of the following other EU directives;
2004/108/EG – EMC directive, as modified in directive 89/336/EEC.

and that

- the following (portions of) European Standards have been applied:

NEN-EN-ISO 12100-1:2003 - Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology,

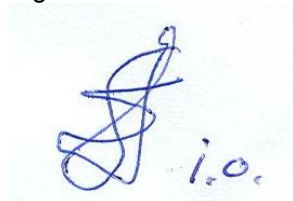
NEN-EN-ISO 12100-2:2003 - Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications,

NEN-EN 982:1996+A1:2008 - Safety of machinery - Safety requirements for hydraulic and pneumatic systems and their components – Hydraulics,

NEN-EN-IEC 60204-1:2006 Safety of machinery - Electrical equipment of machines - Part 1: General requirements.

Completed in Vriezenveen, 3 november 2014.

Signature:



J. J. Landhuis
General Director