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Operating Manual

Tyre regroover Rubber Cut RC 414, 314



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1 About this operating manual

1.1 Scope

This manual applies to the tyre regroovers RC 414 and 314.

1.2 Purpose of the manual

This manual contains information about the design, operation, use and maintenance of the tyre regroover as well as troubleshooting procedures.

The safety instructions serve to avoid personal injury and damage to property.

This manual is an integral part of the tyre regroover and only valid in its entirety. If the tyre regroover is resold, the manual is part of the scope of delivery.

All persons who work on the tyre regroover (such as operators and maintenance personnel) must have read the manual and are obligated to adhere to it at all times.

Ludwig Hartmann Elektrotechnik reserves the right to make changes to the design or execution of the tyre regroover for technical reasons. No obligation to subsequently modify tyre regroovers previously delivered to customers will be incurred in such cases.

1.3 Explanation of symbols and notices

The symbols listed below are used in this manual and have the following meanings:

1.3.1 Safety notices

| Symbol | Signal word | Description |
|---|----------------|--|
|  | DANGER | Imminent danger which can cause grievous bodily harm or death. |
|  | WARNING | Potentially dangerous situation which can cause grievous bodily harm or substantial damage to the product. |



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| | | |
|---|----------------|--|
|  | CAUTION | Potentially dangerous situation which can cause minor injury or damage to the machine, the plant or the product. |
|---|----------------|--|

Presentation of safety notices (example):

DANGER



Risk of serious or fatal injury due to electrical shock!

- ▶ Verify that disconnected parts are free of voltage
- ▶ Disconnect power supply before tests and maintenance work
- ▶ Ensure that the device cannot be re-started

1.3.2 Highlighting



This symbol indicates user tips and useful information.

- Bulleted list
- ▶ Action
 - Consequence of an action

1.4 Warranty

1.4.1 Conditions

A warranty for the tyre regroover is provided under the following conditions:

- The unit is operated in accordance with the instructions given in this manual.
- The operating conditions are adhered to (see "Operating conditions" on page 11).

1.4.2 Exclusion of liability

Ludwig Hartmann Elektrotechnik does not accept liability for damage and operational failures resulting from non-compliance with the manual, and will void any warranty.

Under one or more of the following conditions Ludwig Hartmann Elektrotechnik can be excluded from all liability:

- Improper use of the tyre regroover.
- Use of the tyre regroover with defective safety devices.
- Operation by unauthorised personnel.
- Maintenance by unauthorized personnel.



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- Improper or incomplete functional testing and maintenance, or failure to carry out functional testing and maintenance.
- Use of spare parts not approved by Ludwig Hartmann Elektrotechnik.
- Changes to the unit or its settings not approved by Ludwig Hartmann Elektrotechnik.
- Use in media not corresponding to the specification.
- Improper disposal and recycling of the tyre regroover, its components and its packaging material in the material recycling system.
- Resale of the unit without the manual.

1.5 Copyright

This manual is subject to German copyright law; no part of it may be reproduced, distributed to third parties or otherwise used for publication purposes without the written permission of Ludwig Hartmann Elektrotechnik.

2 Safety

Our tyre regroovers are developed and manufactured according to the state of the art and approved safety-relevant rules. Nevertheless dangers to life and limb for the user or third parties and damage of the tyre regroover or other property may occur.

Where danger situations could arise, the corresponding safety instructions are specified in the manual. The safety instructions in this manual must be adhered to by all persons who work on or with the tyre regroover.

2.1 Intended use

The tyre regroover is designed to prepare or cut grooves in rubber materials.

Any other use is deemed to be non-intended use and is therefore prohibited.

Only blades approved or supplied by Ludwig Hartmann Elektrotechnik may be used (REMA TIP TOP). If other cutting tools are used, the operator shall be liable for any damage or injuries which result.

Intended use also includes compliance with all instructions in this manual.

2.2 Possible inappropriate use

If the tyre regroover is used other than for its intended purpose, dangers to life and limb as well as property damage may arise.



Any use beyond the intended use or any other use of the device may lead to serious consequences.



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2.3 Safety regulations

The tyre regroover is only permitted to be used and operated:

- according to its intended use
- in a technically and operationally safe condition
- as described in this manual
- in accordance with safety standard DIN EN 60335-1 regarding constructional and operational safeguards

In particular, attention must be given to the following points:

- ▶ The device must be connected to a Schuko-type mains outlet (earthed safety socket) according to CEE 7/7. The nominal data must correspond to the nameplate.
- ▶ No changes, additions or modifications may be made to the tyre regroover if these compromise safety or affect the intended use of the device.
- ▶ The tyre regroover must be stopped immediately should a fault occur that might compromise safety. The fault must be rectified immediately.
- ▶ Only original spare parts, wear parts and accessories may be used.
- ▶ To carry out maintenance and repairs the device must be unplugged.
- ▶ When preparing tyres, the pressure should be lowered to normal pressure.
- ▶ Regularly check all components and functions. In the event of damage or malfunctions, contact an authorised service technician or our after-sales service department (see "6.1 After-sales service" on page 15)

In addition, the general and local regulations and rules on accident prevention and environment protection must be observed.

2.4 Organizational measures

The user of the tyre regroover is required to implement the following measures or arrange for them to be implemented:

- ▶ The manual must be constantly available for the personnel at the place of work.
- ▶ Legal and other obligatory regulations for accident prevention and environmental protection must be observed and enforced.
- ▶ Such obligations may also relate, for example, to handling hazardous substances or the supply of protective clothing.
- ▶ All safety instructions provided at or on the tyre regroover must be complete and legible.
- ▶ The safety-consciousness of the personnel, attention to potential hazards and compliance with the manual must be regularly checked.
- ▶ The specified deadlines for regular inspections must be maintained.
- ▶ Adequate workshop equipment and appropriate tools for maintenance work must be available.



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2.5 Personnel

Only appropriately trained and instructed personnel are allowed to work on the tyre regroover.

Clear rules relating to the responsibilities of personnel for operation, tool preparation, maintenance and repair must be specified.

Trainees or persons undergoing training are only allowed to work on the tyre regroover under the supervision of an experienced and qualified person.

The assigned personnel must have read and clearly understood the manual – in particular the chapter "safety" – before beginning any work.

2.5.1 Qualification of personnel

Work on the electrical components of the tyre regroover may only be performed by a skilled electrician (for Europe: technical personnel in accordance with DIN EN 50110 or IEC 364) or a person trained in electrical engineering. The skilled electrician must know the relevant safety regulations in order to recognise and avoid possible dangers.

Work on the control system may only be performed by trained control engineers of the machine manufacturer.

3 Product description

The tyre regroover is designed for cutting grooves in rubber material. The blades are inserted into the holding slots of the blade holders in the cutting head and adjusted for the required cut depth. The cutting temperature is regulated by means of the rotary switch. A minimum or maximum level can be selected for each heat setting by means of the rocker switch. The blade heats up when it is pushed in the direction of the cut by exerting pressure on the cutting head.

3.1 Technical data

| | | |
|--------------------------------|--------------------|-------------------------|
| Rubber Cut RC 414 / 314 | | |
| Power supply: | Transformer | |
| | Temporary duty | 5 min |
| | Nominal voltage: | See nameplate +/- 5% |
| | Nominal frequency: | 50/60 Hz |



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| | | |
|-------------------|-------|---------------|
| Protection class | IP 44 | |
| Performance data: | | See nameplate |

3.2 Nameplate

| | |
|---|--------------------------|
|  | Type: RC 414 |
| | No. 00001 |
| | 230 V +/- 5% 50/60 Hz |
| | 300 W 1.37 A |
| | Temp. duty 5 min |
| RTT part no. 564 1220 | |
| Made by Ludwig Hartmann 84428 Buchbach | |

The data shown here is given as an example and will vary depending upon the rated voltage and model of the tyre regroover.

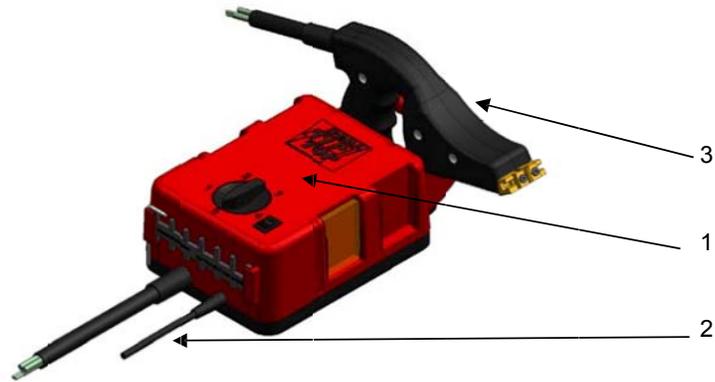
3.3 Operating conditions

| | |
|------------------------------|---------------|
| Frequency tolerance | +/- 2% |
| Temperature range | max +40 °C |
| Protection class | II |
| Cutting of solids | not permitted |
| Operation in hazardous areas | not permitted |

The tyre regroover may only be operated in accordance with the specified data. The cutting temperature must be adapted to suit the specific working conditions.

3.4 Components

The main components of the tyre regroover are shown below.



| | | | |
|---|-----------------------------------|---|----------------------|
| 1 | Control unit | 2 | Power cord with plug |
| 3 | Handle complete with cutting head | | |

3.4.1 Protective devices

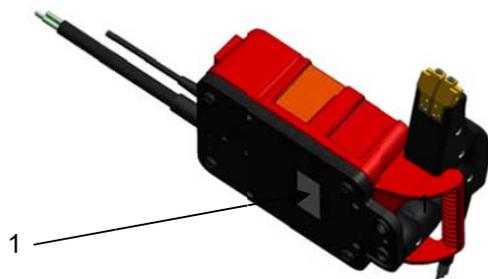
The tyre regroover is equipped with the following protective device:

- Thermal overload protection for transformer

3.5 Signs affixed to the tyre regroover

All signs affixed to the tyre regroover must be complete and clearly legible:

- Nameplate



| | | | |
|---|-----------|--|--|
| 1 | Nameplate | | |
|---|-----------|--|--|



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4 Transport and storage

The packaging of the tyre regroover is designed to protect the device from stresses and external influences during transportation. Always transport the device in the original packaging to avoid damage. Avoid impacts and collisions and exposure to extreme temperatures during transport and storage. Store the tyre regroover in a dry and weatherproof environment.

4.1 Safety

- ▶ Only trained personnel may operate the device.
- ▶ Avoid impacts and collisions (handle with care).

4.2 Temporary storage

If the tyre regroover is stored temporarily, the following criteria must be ensured:

- Closed and dry storeroom
- Temperature range max. +40 °C

4.3 Returning the device to service

Before returning the device to service, please observe the instructions and guidelines set out in the section "Putting into operation".

4.4 Disposal of packaging material

The packaging consists of cardboard.

This material is recyclable. Please dispose of correctly. Relevant national regulations may apply.

5 Connection and operation

5.1 Safety

The tyre regroover may only be operated in a technically and operationally safe condition as described in the manual.

WARNING



Hot surfaces can cause burns!

- ▶ Temperatures of up to 90°C can be present at the cutting tool. Do not touch.

Be sure to refer to the information in the chapter on "Safety".



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5.2 Preparations

The following conditions must be ensured:

- The device is in a technically and operationally safe condition
- Type and model correspond to the connection data
- The qualification of the operating personnel meets the requirements specified in this manual (see "2.5 Personnel" on page 6)

5.2.1 Check of safety devices

Check that all safety devices are intact and functional before operating the tyre regroover.

5.2.2 Putting into operation

- ▶ Carry out a visual inspection to ensure that no damage or defects have occurred during transport, storage or due to incorrect assembly.
- ▶ A Schuko-type mains outlet (earthed safety socket) must be available.
- ▶ Impacts and collisions should be avoided.
- ▶ Safety devices such as circuit breaker must be in place.
- ▶ Only trained personnel may operate the device.
- ▶ Observe the switch setting.

6 Maintenance

The tyre regroover is designed to be maintenance-free throughout its service life.

However, to ensure reliable operation and a long life of the tyre regroover and its components, it is necessary to perform regular function checks and cleaning.

6.1 After-sales service

Please contact our service department for technical service and to order spare parts (REMA TIP TOP):

Manufacturer:
Ludwig Hartmann Elektrotechnik
Kaspar-Graf-Str. 3
84428 Buchbach
GERMANY

Exklusive sales and sales consultancy:
REMA TIP TOP AG
Gruber Straße 65
85586 Poing/Germany

Phone (+49) 08086 8150
Fax (+49) 08086 8256
www.lh-elektrotechnik.de

Phone (+49) 08121 707-0
www.rema-tiptop.com



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6.2 Safety

Only qualified and authorised personnel may perform maintenance and repairs.
Please ensure that only suitable and approved tools are used for this purpose.

DANGER



Contact with live electrical parts and wiring can cause severe injury from electrical shock!

- ▶ Verify that disconnected parts are free of voltage
- ▶ Disconnect power supply before tests and maintenance work
- ▶ Ensure that the unit cannot be re-started

WARNING



Hot surfaces can cause burns!

- ▶ Temperatures of up to 90°C can be present at the cutting tool. Do not touch.
- ▶ Allow the device to cool down before carrying out tests and maintenance work

CAUTION



Non-approved spare parts and equipment can cause machine damage

- ▶ Use only spare parts and equipment approved by Ludwig Hartmann Elektrotechnik
-



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6.3 Function checks and cleaning

The functionality of the tyre regroover and its components should be checked regularly, paying particular attention to the electrical equipment.

- ▶ Please ensure any loose connections and damaged cables are immediately repaired or replaced.
- ▶ Protect all electric cables against excessive heat and sharp edges.

The tyre regroover must be stopped immediately should a fault occur that might compromise safety. The fault must be rectified immediately. Please contact our service department in this regard.

The following table is provided to assist you in carrying out function checks.

CAUTION



Use of high pressure water jet will damage the device!

- ▶ Clean the tyre regroover with a brush or cloth only.

| Interval | Part | Function check | Action |
|------------|--------------------------------|---|---|
| Periodical | Electrical equipment | Check cable for loose connection | Tighten or reconnect |
| | | Check cable for damage | Replace damaged cable |
| | Clamping jaws and blade holder | Check clamping jaws and blade holder for wear | Replace worn parts. Use only original spare parts. |
| | | Check cutting head for dirt and deposits | Clean cutting head with a cloth or brush. |
| | Control unit | Check control unit for dirt and deposits | Clean control unit with a cloth or brush. Do not use products which attack plastic. |



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7 Troubleshooting

Should a fault occur during operation of the tyre regroover, check first whether the instructions and information contained in this manual have been observed.

The tyre regroover must be stopped immediately should a fault occur that might compromise safety. The fault must be rectified immediately.

Repairs to the device may only be performed by an authorized specialist.

The following table will help you to identify the cause and to correct the error.

WARNING



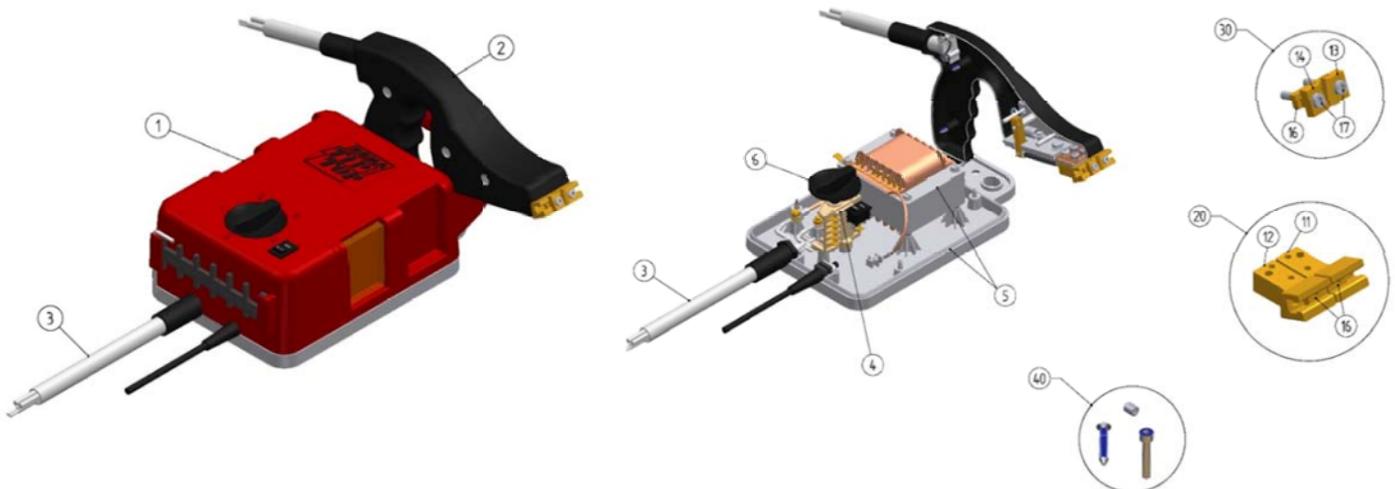
Hot surfaces can cause burns!

- ▶ Temperatures of up to 90°C can be present at the cutting tool. Do not touch.
 - ▶ Allow the device to cool down before carrying out tests and maintenance work
-

| Trouble / fault | Possible reason | Remedy |
|--------------------------------------|--|---|
| Device is not working | No power supply to device, or device not connected | Check power supply and restore if necessary |
| | Defective fuse | Check fuse and replace it if necessary |
| Noises | Loose cord, causing spark discharge | Attach cable correctly |
| Thermal overload protection responds | Defective transformer | Replace transformer |
| | Short circuit in a cable | Contact after-sales service |

8 Spare parts list

| Ref.No. | Pos. | Drawing | Qty | Description |
|---------|------|---------|-----|--|
| 564 | 1 | | 1 | Housing RC 414, red, with carrying handle |
| 0510 | 1 | | 1 | Housing RC 314, red, with carrying handle |
| | 6 | | 1 | Switch button |
| 564 | 5 | | 1 | Transformer RC 414/314, 230-240V, incl. base plate |
| 0520 | 5 | | 1 | Transformer RC 414/314, 115V, incl. base plate |
| 564 | 4 | | 1 | Rotary switch |
| 0128 | | | | |
| 564 | 3 | | 1 | Cable for cutting head, RC 414, complete |
| 0460 | 3 | | 1 | Cable for cutting head, RC 314, complete |
| | | | | Handle assembly, comprising: |
| 564 | 2 | | 1 | Right half of handle |
| 0530 | | | 1 | Left half of handle |
| | 20 | | | Cutting head assembly, comprising: |
| | 12 | | 1 | Cutting head right |
| 5640860 | 11 | | 1 | Cutting head left |
| | 16 | | 2 | Slot nut |
| | 30 | | | Set of clamping jaws, comprising: |
| | 14 | | 1 | Clamping jaw, right |
| 5640820 | 13 | | 1 | Clamping jaw, left |
| | 16 | | 2 | Slot nut |
| | 17 | | 2 | Hex. socket screw M4 x 15 |
| | | | | Set of screws, comprising: |
| 5640870 | 40 | | 8 | Plastic parts |
| | | | 2 | Cylinder head screw M4x10, switch |
| | | | 2 | Threaded pin M5 x 6 |





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9 Warranty

Warranty period: 24 months after purchase date. Proof of purchase (such as invoice or delivery note) must be provided. The warranty period will not be prolonged should service be rendered under the terms of the warranty.

Scope of warranty: During the warranty period Hartmann will, at its option, either exchange or refund the value of any parts which are defective by reason of faulty material, design or workmanship.

Further claims, for whatever legal reason, are excluded.

This warranty will be void if the product supplied is altered or improperly used by third parties.

In addition, the "General Conditions for the Supply of Products and Services of the Electrical and Electronic Industry" shall apply.



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10 Annex

Declaration of Conformity

as defined by the EC EMC directive 2004/108/EC, the EC low voltage directive 2006/95/EC

The manufacturer

Ludwig Hartmann Elektrotechnik

Kaspar-Graf-Str. 3

84428 Buchbach

declares that following products

Rubber Cut RC 314 und RC 414

are developed, designed and manufactured in accordance with the EC directive 2006/95/EC, 2004/108/EC to the extent they may be applicable.

The above listed products are delivered according to the following standards to the extent they may be applicable:

| | |
|-------------------------------|---|
| DIN EN 60204 – 1 (2011) | safety of machinery, electrical equipment of machines, part I: general requirements |
| DIN EN 60529 (1991 + A1:2000) | Degrees of protection provided by enclosures |
| EN 61000-6-2 (2005) | Electromagnetic compatibility (EMC) – part 6-2: generic standards - immunity for industrial environments |
| EN 61000-6-3 (2007+A1: 2011) | Electromagnetic compatibility (EMC) – part 6-3: generic standards – emission standards for residential, commercial and light industrial environment |
| EN 61000-6-4 (2007) | Electromagnetic compatibility (EMC) – part 6-4: generic standards – emission standard for industrial Environments |

Remark: The compliance with EMC directive 2004/108/EC only applies to these products, if they are operated self-contained and connected in compliance with the operation instructions. If these products are integrated in a system or operated in combination with other products the system manufacturer is responsible for the compliance with EMC directive for the complete system.

A complete technical documentation is available.

Buchbach, 30.10.2014

Ludwig Hartmann
Elektrotechnik

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