

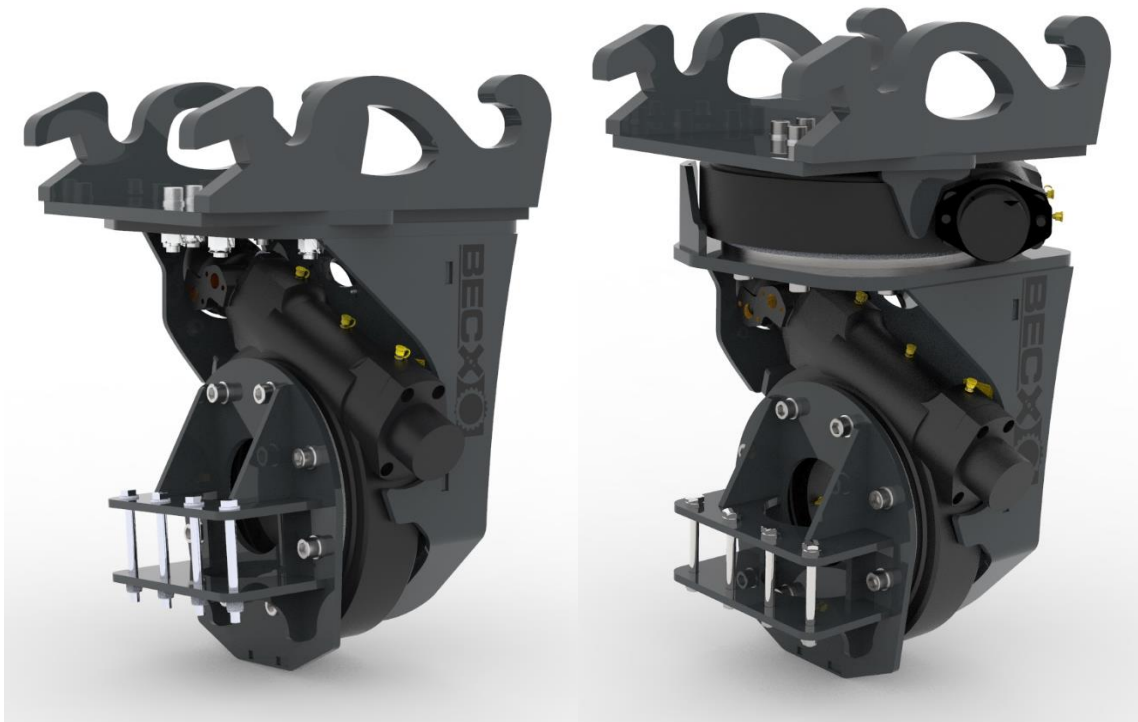
Single rotator unit

ERHS45

Double rotator unit

DRHS55

User Manual



Manufacturer: Becx Machines B.V.
De Sonman 35
5066 GJ Moergestel
The Netherlands
Tel: +31 (0) 13 2070760
info@becxmachines.com
<http://www.becxmachines.com>

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This manual is a translation of the original Dutch version.

Preface

The Becx Machines Rotator Units are specially developed to convey tools in as flexible and stable manner as possible from the mini-crane/digger to the object to be worked on. As standard, this rotator unit has a universal CW10 quick-release connection.

This manual is intended for users and maintenance personnel and has been compiled with care. However, if it is not possible to find a clear answer to your question, please contact your supplier's technical service department.



- Read this manual carefully before you start to use the implement. Always follow the safety instructions set out in chapter 2.
- Always read the operating instructions for the tool carrier used carefully before putting it into operation. Always observe the safety requirements listed in the operating instructions.
- One copy of this manual must be kept with the implement and must be available to the user. All important servicing sessions and any comments must be recorded and retained by the servicing company.
- The user is responsible for selecting a suitable tool carrier for the machine and for ensuring that the implement is properly attached and connected.

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Declaration of Conformity (Ila) (copy)

We:

Becx Machines B.V.
De Sonman 35
5066 GJ Moergestel
The Netherlands

declare entirely under our own responsibility that the product:

Description:	Single Rotator Unit	Double Rotator Unit
Type:	ERHS45	DRHS55
From serialnumber:	045-017-02	055-078-02

to which this declaration relates, is in conformity with the provisions of Directives:

Machine directive 2006/42/EG

And in accordance with the following standards:

NEN-EN-12100	Safety of machinery. Basic concepts, general principles for design.
NEN-EN ISO 4413	Hydraulic fluid power - General rules and safety requirements for systems and their components.
NEN-EN-ISO 14121-1	Safety of machines – Risk evaluation.

Director; Erwin Hommen



Moergestel, The Netherlands

Date : 12 January 2023

Overview of symbols

All actions and situations risking the safety of the operator and/or technician and where actions must be carried out carefully will refer to the following symbols in this user manual:

	Important!
	Explanation.

1. Technical specifications

Type machine	ERHS45	DRHS55	Units
Rotation angle	1x 180	2x 180	°
Requirements for filtering hydraulic oil	10		Micron
Hydraulic oil quality	HV-46 or equivalent		-
Lubrication grease	NLGI 2		-
Dimensions and weights			
Width	486	523	mm
Length	495	615	mm
Height	709	831	mm
Dead weight	163	214	kg
Connector details			
Type	Standard CW10	Standard CW10	-
Max. vertical load rotator unit	1850	1850	N
	*other connectors on application.		
Implement attachment details			
Standard implement connector	80x80	80x80	mm
Torque setting connector bolts	120	120	Nm
Available installation width	276 - 593	276 - 593	mm
Maximum implement weight	450	450	kg
Hydraulic connections			
Required number of hydraulic functions	1	2	
Hydraulic motor connections	½" BSP		
Maximum system pressure	200	200	bar
Required oil flow	35*	35*	l/min
	*Rotational speed over 90° approx. 3 sec.		

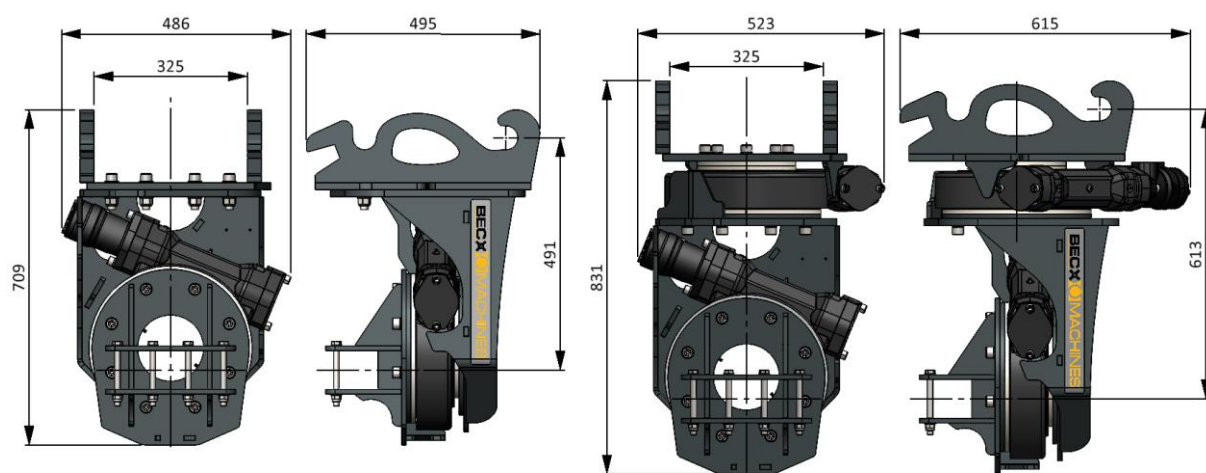


Figure 1: Dimensions ERHS45 & DRHS55.

2. Safety

2.1. General

	• No modifications may be made to the implement. • It is the user's responsibility to ensure that the correct tool carrier and support arm are used. The following points are particularly important here: • The maximum pressure and oil flow (speed) must not be exceeded. Exceeding this may result in damage to the equipment and injury to bystanders. • The tool carrier must have sufficient strength and stability to safely absorb the forces and moments caused by the hedge trimmer under all conditions.
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2.2. During operation

	• The system may only be used for the intended work. • Consult the manual of the tool carrier for the noise levels generated. As this will be considerably higher than that of the weed brush itself, the noise level of the tool carrier is decisive in determining whether hearing protection is required. • If persons or animals are present or approach in the working area (approx. 5m around the machine), stop immediately and switch off the implement. • If excessively heavy traffic from passers-by restricts the progress of the work too much, consideration can be given to cordoning off the work area.
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	• Inspection and maintenance work should be carried out in a timely manner. • During inspection, maintenance or cleaning, the machine must be switched off. • Local working and safety regulations must always be followed. • To prevent damage to the installation, switching on and off should always be done at low speed. Depending on the implement carrier used, this is at idle engine speed or at minimum oil flow.
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2.3. Operating personnel

	• Operating personnel must be over 18. • Persons must only carry out jobs for which they are trained. This applies to both maintenance work and normal operations. • If the operating personnel identify errors or risks or disagree with the safety measures, this should be reported to the owner or chief operating officer.
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2.4. Warning symbols

	Read manual before operation!
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3. Component description

Element	Description
Tool carrier	The tool carrier is not part of the delivery. It is the user's responsibility to ensure that a suitable tool carrier is chosen for the rotator unit. Where tool carrier is used, it can also be read as mini- or midi excavator or digger.
Rotator unit	- The rotator unit provides for a stable connection between tool carrier and implement, in which the implement can be rotated over a single axis (ERHS) or double axis (DRHS). - Everything the user of this machine needs to know is described in this user manual.
Implement	The implement is not part of the delivery. It is the user's responsibility to ensure that a suitable implement is chosen for the rotator unit/tool carrier.

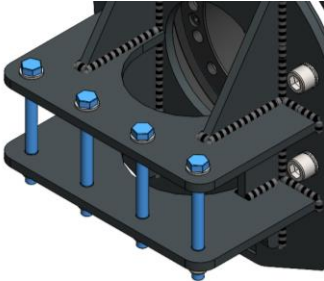
3.1. Main components

	Element	Description
	Quick coupler	- As standard, the ERHS/DRHS is equipped with a CW10 quick coupler. - For the ERHS one double acting hydraulic function is required. For the DRHS two. - These will need to be installed to the rotator unit by an qualified professional.
	Slewing ring*	- Upper and lower ring can be rotated steplessly relative to each other. (ERHS45 is fitted with a single slewing ring, the DRHS55 with two.)
	Centre frame	The machine tag is attached to this element.
	Implement connector	The Becx standard 80x80mm clamp connects the implement to the rotator unit.

4. Operation

4.1. Installation of the rotator unit

	Point of attention	Action	Result
1	Select the suitable tool carrier. 	<u>Mechanical requirements</u> - Ensure that the tool carrier is sufficiently strong and stable for the weed brush. See the technical data for weight, maximum vertical load and tipping moment occurring in the mounting point. <u>Hydraulic requirements</u> - Ensure that the maximum pressure and oil flow are not exceeded. - Ensure that the implement carrier is provided with the right number of hydraulic functions. - Ensure that the correct (quick) couplings are fitted for oil pressure, return and leakage lines.	Not respecting the specified limits may damage the installation and injure bystanders.
2	Mechanical connection of the rotator unit to the tool carrier.	- The method of coupling depends on the type of coupling part. - In all cases, ensure that the locking device is properly attached.	
3	Connect the hydraulic hoses.	- Connect the hydraulic hoses of the rotary function(s). See the implement carriers' O&M manual for the correct connection positions. - The rotator is supplied <u>without</u> hoses. See Chapter 1 for connections to the hydro motor(s).	
4	Maximum system pressure and oil flow.	Set the implement carrier's power unit so that the maximum pressure and speed cannot be exceeded.	

5	Mechanical connection of the implement to the rotator unit.	• Position the tool mounting sleeve in the centre of the rotator clamping plates. • Fit 4x Hex bolt with Flange nut.  • Tighten bolts in two stages to 120 Nm.	
6	Connect the hydraulic hoses of the implement to the implement carrier.	• Make sure the P and T connections are properly connected. • Connect the case drain hose as well. • Make sure hoses do not get stuck or pinched off anywhere during rotation.	

4.2. Operation

	• Always follow the safety instructions in chapter 2. • Refer to the implement carrier manual for correct operation of the steering functions. • Refer to the implement carrier manual for proper safety and operating instructions.
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5. Maintenance

	• When replacing or repairing parts, only components supplied or approved by the manufacturer should be used. • If work is carried out on the installation, always disconnect the power supply from the implement. This can be done by disconnecting the hydraulic hoses. • Only persons with proven knowledge of mechanical and hydraulic installations through training and/or experience may carry out maintenance work. • The implement may be hosed down with a high-pressure cleaner. However, never spray directly on hydraulic components. • Always grease the machine immediately after cleaning.
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5.1. Daily maintenance

	What to do	Action
1	Lubricate	• Grease the grease nipples, which are located on the slewing ring housings (figure 2). • Grease the machine preferably at the end of each work day, before the machine is put in storage. • See Chapter 1 for the prescribed grease quality.

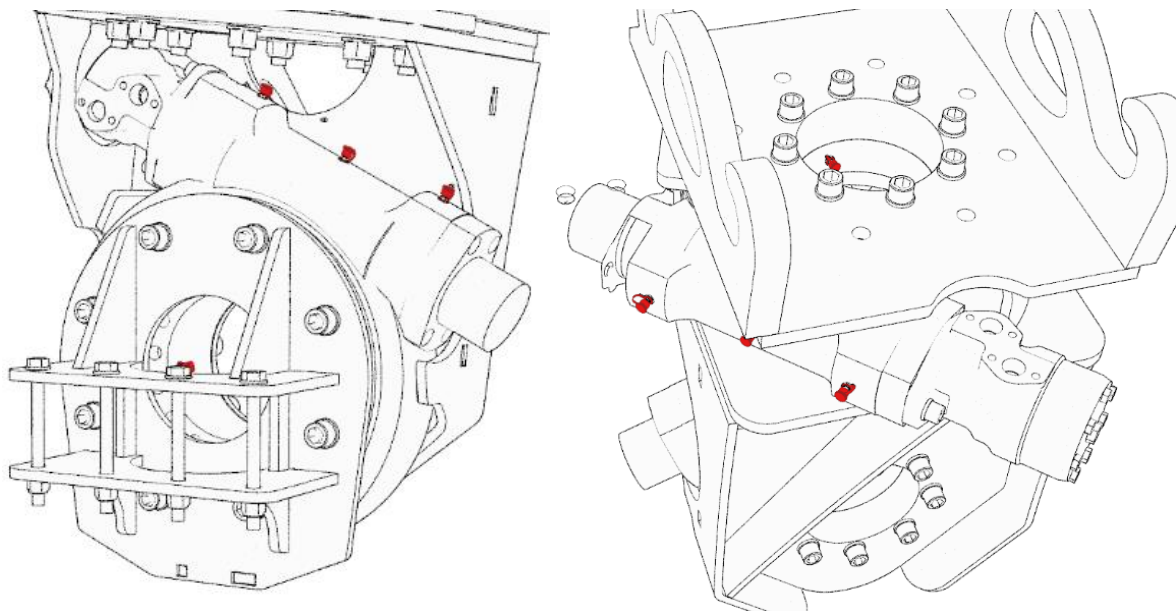


Figure 2: Location of grease nipples.

5.2. Weekly maintenance

	What to do	Action
1	Nuts and bolts	• Re-tighten all fasteners. • See 5.4 for tightening torques.
2	Visual inspection	• Check all structural parts and hydraulic components for damage, cracks and leaks.
3	Clean	• Clean the machine at the end of the working week, before the machine goes into storage. Always lubricate after cleaning. • The installation may be hosed down with a high-pressure cleaner. However, never spray directly on hydraulic components and certainly not on the seals of the slewing ring(s).

5.3. Yearly maintenance

	What to do	Action
1	Inspection	• Check structural parts for damage, cracking and play. • Check hydraulic parts for leaks and damage to hoses.
2	Refresh grease	• Remove old grease from the slewing ring, the worm drive and bearings, by cleaning them out and/or by pressing it out using fresh grease. • Fill the turntable bearing, worm transmission, and bearings with approx. 400 gram of new grease.

5.4. Torque settings

Torque values in the table are given in Nm.

These can be used when tightening and checking screw connections.

In most cases, the strength classes are indicated on the bolt head.

If in doubt, contact your supplier...

		Grade		
		8,8	10,9	12,9
Thread	M8	25	35	42
	M10	50	70	85
	M12	87	123	147
	M14	138	194	235
	M16	211	299	358
	M18	289	412	490
	M20	412	579	696

6. Failure analysis

	Failure	Solution
1	Rotator unit does not rotate or does not rotate properly	• Check that the hydraulic hoses and/or lines are connected correctly. • Check hydraulic pressure and flow.
2	Rotator unit does not rotate, but oil supply is okay.	• Check if the key on the drive shaft of the hydraulic motor is intact.

If you cannot resolve the malfunction using the recommendations in the above table, consult with your dealer or maintenance department.

7. Storage

The storage location is preferably dry, stable and flat. Placing the machine on a pallet is advised due to its manageability.

8. End of Life

When replacing components or at the end of the lifecycle, ensure that all materials are disposed of, destroyed or reused in a legal, responsible and environmentally friendly manner.

9. Logbook

Good insight into the technical condition of a machine is of great importance to use a machine efficiently and sustainably. We therefore advise every user of a Becx machine to keep a written record of inspections, maintenance and repairs.

A tool for this can be the following table. Tip: Write Machine and serial number in the boxes reserved for future reference.

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