

Weedbrush-Edgcutter

OBKS90-45

User Manual



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

© Copyright 2019

Nothing in this publication may be reproduced and/or made public in any form by print, photocopy, microfilm, recording tape, electronically or by any other means without prior written permission from Becx Machines B.V.

Becx Machines B.V. reserves the right to modify parts of the system, including the contents of this manual, at any moment, without prior or direct notification to the buyer.

Although Becx Machines B.V. has taken the greatest care to make sure that individual parts have been described correctly and in full where necessary, it accepts no liability for damage as a result of inaccuracies or incompleteness of this manual.

Preface

The Becx weed brush - edge cutter (in short: weed brush) has been specially developed for quick and efficient removing of grass growing over the edge of the roadway
The combination of coulter blade and brush makes for a clean sweep in one run.



- **Carefully read this manual before using the weed brush. Always follow the safety instructions set out in chapter 3.**
- **One copy of this manual must be kept with the weed brush 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 weed brush and for ensuring that the weed brush is properly attached and connected.**

Table of Contents

PREFACE	3
TABLE OF CONTENTS	4
FIGURES:.....	4
CERTIFICATE OF CONFORMITY (IIA) (COPY)	5
1 TECHNICAL SPECIFICATIONS.....	7
2 SAFETY	8
2.1 GENERAL.....	8
2.2 IN USE	8
2.3 OPERATING PERSONNEL.....	9
3 COMPONENT DESCRIPTION	10
3.1 MECHANICAL COMPONENTS TOOL CARRIER ATTACHMENTS.....	11
3.2 MECHANICAL COMPONENTS COULTER BLADE	12
3.3 MECHANICAL COMPONENTS BRUSH	13
3.4 HYDRAULIC COMPONENTS	14
4 OPERATIONS	16
4.1 ASSEMBLY AND ADJUSTMENT OF THE WEEDBRUSH	16
4.2 CARRY OUT BRUSH- AND CUTTING WORK	17
5 MAINTENANCE	19
6 FAILURE ANALYSES	21
7 REMOVAL.....	22
8 LOGBOOK.....	23

Figures:

FIGURE 1: OVERVIEWPHOTO.....	10
FIGURE 2: OVERVIEWPHOTO MECHANICAL COMPONENTS TOOL CARRIER ASSEMBLY	11
FIGURE 3: OVERVIEWPHOTO MECHANICAL COMPONENTS COULTER BLADE	12
FIGURE 4: OVERVIEWPHOTO MECHANICAL COMPONENTS BRUSH.....	13
FIGURE 5: OVERVIEWPHOTO HYDRAULIC COMPONENTS.....	14

Certificate of conformity (IIa) (copy)

We:

BeCX Machines B.V.
De Sonman 35
5066 GJ Moergestel

declare entirely under our sole responsibility, that this product:

Description : BeCX weed brush - edge cutter.
Type : BECX OBKS90-45
serial number :

to which this declaration applies, complies with the provisions of the Directives:

Machinery Directive 2006/42/EC

Complies with the following standards:

NEN-EN-12100-1 Safety of machinery. Basic definitions, general design principles.
Part 1: Basic terminology, methodology
NEN-EN-12100-2 Safety of machinery. General design principles. Part 2:
Technical principles and descriptions
NEN-EN 982 Safety of machines – Safety requirements for hydraulic and
pneumatic systems and their components: Hydraulics
NEN-EN 14121-1 Safety of machines – Risk assessment – Part 1: Principles

Director; Erwin Hommen





Netherlands, Moergestel,

Date:

List of symbols

This manual uses the following symbols for all actions and situations where the safety of the operator or technician is at stake and where it is necessary to act with caution:

	Warning!
---	----------

	Explanation.
--	--------------

1 Technical specifications

Description	Value	Unit
General		
Noise pressure	See manual tool carrier	dB(A)
Vibration level in normal use	Na	
Dimensions and weights		
Coulter blade		
Width min.	1100	mm
Width max	1750	mm
Length	1850	mm
Height	850	m
Own weight	+/- 270	kg
Attachment information		
Front		
Depends on carrier	-	-
Force on attachment point	3.000	N
Hanging moment	+/- 1600	Nm
Connection data		
Maximum operating pressure	250	bar
Maximum speed brush	450	-/min
Normal speed	+/-225	-/min
Maximum Oil flow	60	L/min
Needed oil flow for good result	30	L/min
Line attachments brush motor		
Pressure line attachment: with rapid flat seal attachment	3/4"	
Return line connection: with rapid flat seal attachment	3/4"	
Drain line connection: with rapid flat seal attachment	3/8"	
Maximum pressure on drain line	Non-pressurized	bar
Line attachments swivel main-arm		
Attachments in/out-lines (2*)	3/8"	
Line attachments tilting brush-head		
Attachments in/out-lines (2*)	3/8"	
Line attachments control valve (rotate brush-head, height coulter blade, swivel cutting-knife)		
Line attachment in/out-lines (2*)	3/8"	
Hydraulic oil filtering requirements	10	microns
Oil for the drive	HV-46 or equivalent	

2 Safety

2.1 General




- No modifications must be made to the weed brush.
- The user is responsible for making sure that the correct tool carrier and adapter are used (see chapter 3). The following are important points in this regard:
- The maximum pressure and number of revolutions (oil flow) must not be exceeded. Excess pressure and excess revving can damage the machine and cause injury.
- The tool carrier must be strong and stable enough to absorb the forces and moments exerted by the weed brush safely and under all circumstances.

2.2 In use





- Consult the tool carrier manual for the noise rating. Because this is considerably louder than the weed brush itself, the noise load of the tool carrier determines the rating.
- The machinery must only be used for the activities for which it is designed.
- Persons or animals who are present in or who approach the danger zone must be stopped immediately and the weed brush must be switched off .
- If passers-by disrupt the brushing and cutting work too much, the operator can consider temporarily cordoning off the site.
- If the weed brush starts to make a different sound and/or starts to vibrate, work must stop immediately and the weed brush has to be switched off. Work can only continue after the source of the noise has been identified and resolved.
- Always complete inspection and maintenance jobs.
- The machinery must not be used for any other purposes during inspection and maintenance.
- The hydraulic feed to the weed brush must be disconnected during inspection, maintenance or cleaning to prevent accidental operation.
- Always comply with local work regulations and safety rules.
- If the machinery is used in the dark, use sufficient lighting (approx. 50 lux at the work site).
- To prevent damage to the machine, switching on and off the machine should be done at low speeds. Depending on the tool carrier this is done at idle speed or minimal oil-flow.

2.3 Operating personnel

	<ul style="list-style-type: none">• Operating personnel must be over 18.• Only persons who have received permission from the owner are allowed to operate the system.• Persons must only carry out jobs for which they are trained. This applies to both maintenance work and normal operations.• Personnel who operate equipment must be familiar with all possible situations that could arise.• The owner or person in charge must be told if personnel operating machinery identify faults or hazards or do not agree with safety measures.
---	---

2.4 Safety-symbols on the machine

1. 	Read the manual before use!
2. 	Safety zone

3 Component description

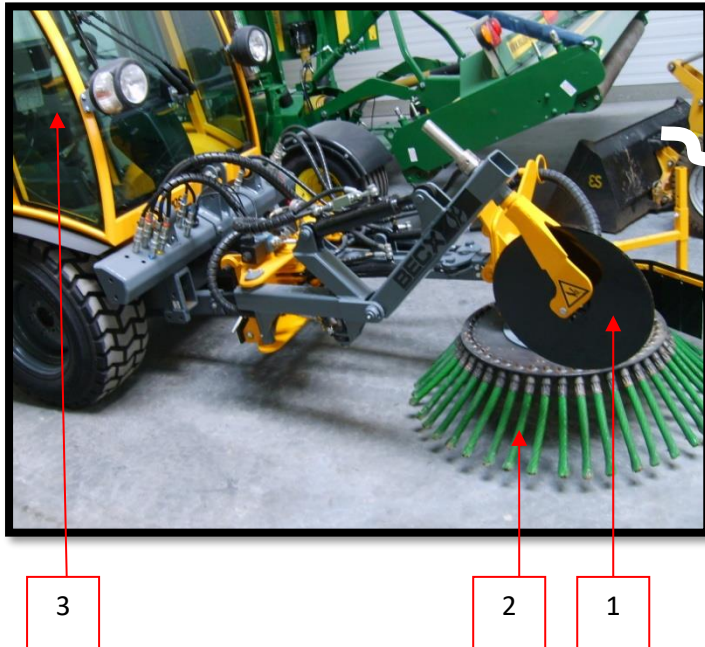


Figure 1: Overview

Figure 1	Part	Explanation
1	Coultter blade	<ul style="list-style-type: none">The coultter blade cuts through the grass directly next to the pavement so it cuts the grass which grows over the pavement.
2	Brush	<ul style="list-style-type: none">The brush brushes the weed and cut loose grass entirely from the pavement.
3	Tool carrier	<ul style="list-style-type: none">The tool carrier is not supplied. The user is responsible for using a tool carrier that is suitable for the weed brush.

3.1 Mechanical components tool carrier attachments

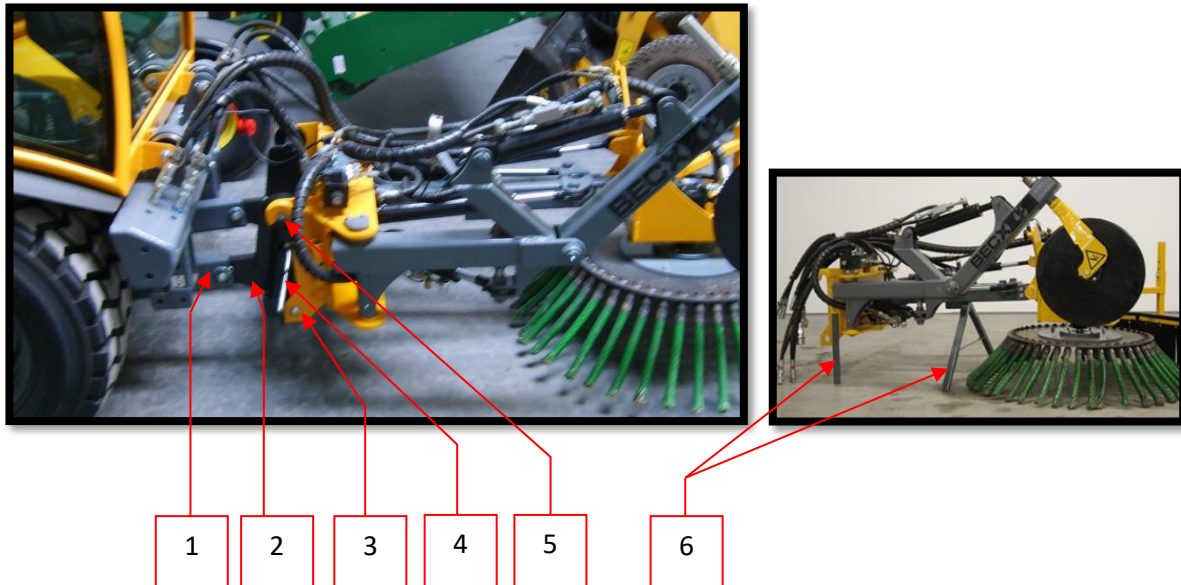


Figure 2: General overview of the mechanical components

Figure 2	Part	Explanation
1 t/m 5	Tool carrier attachment	<ul style="list-style-type: none"> The unit is attached by an adapter (figure 2:2) attached to the tool-attachment-point (figure 2:1) of the tool carrier. The attachment off the weed brush to the adapter consists of 2 mounting-pins (figure 2:5) and 2 locking pins (figure 2:3) When the unit is in the right position it can be locked with the lever (figure 2:4). The implementation of the adapter and its attachment to the tool carrier is dependent on the type of tool carrier. The up and down movement is realized by the fixture to be tool carrier. This is not part of the weed brush, it's controlled by the tool carrier.
6	Support legs	<ul style="list-style-type: none"> Two support legs are attached to the weed brush (figure 2.6) The support legs have to be completely raised or removed. If the unit is dismantled from the tool the support legs can be installed to put the unit down and stable on the ground.

3.2 Mechanical components coultter blade

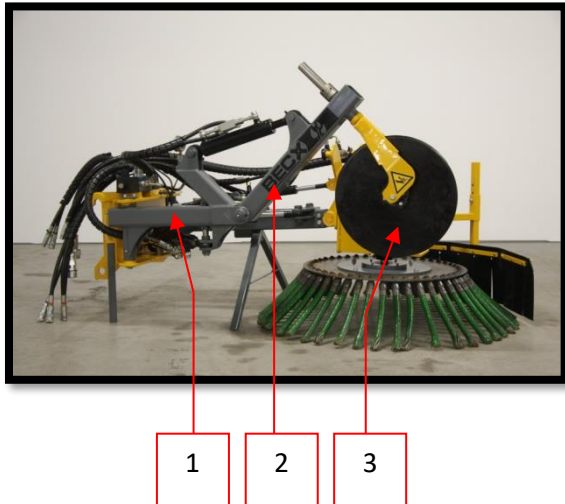


Figure 3: Overview mechanical components

Figure 3	Part	Explanation
1 + 3	Left/right	<ul style="list-style-type: none">From the tool-carrier the blade-position can be adjusted in the width direction. The tube (figure 3.1) on which the blade (figure 3:3) is mounted is then hydraulically moved to left or right.
2	Height	<ul style="list-style-type: none">The tube (figure 3.2) on which the blade is mounted can be adjusted up or down from within the tool carrier.While cutting the edges the blade must be in a downward position. While driving to next location it must be pulled up.

3.3 Mechanical components brush

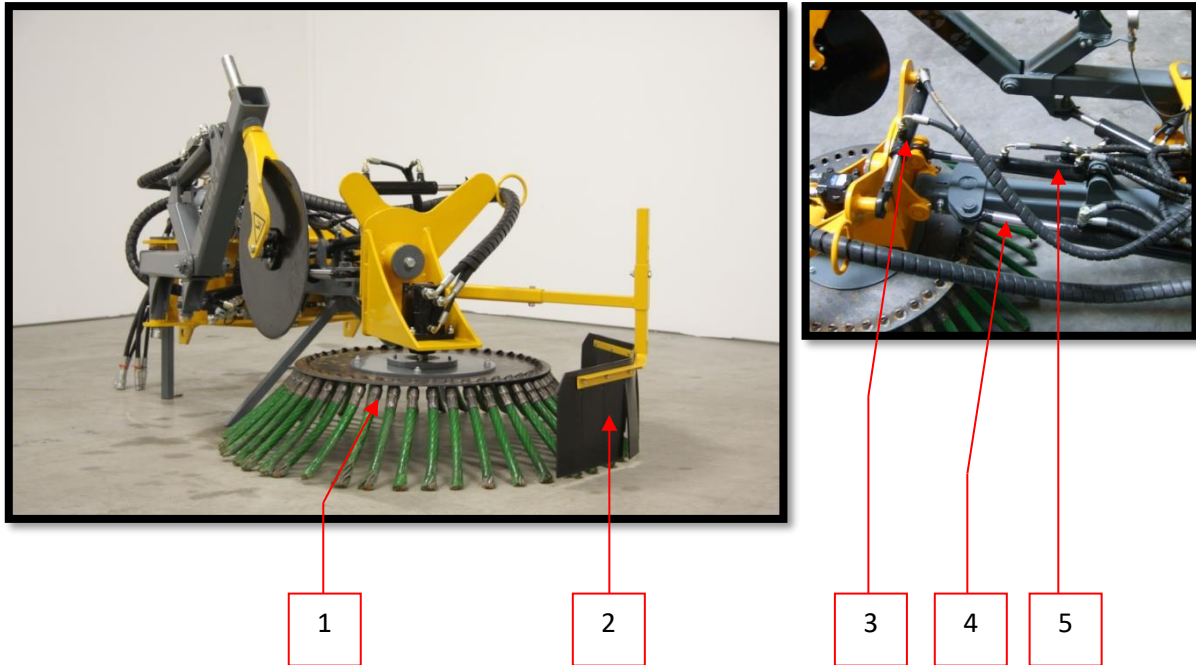


Figure 4: Overview mechanical components brush

Figure 4	Part	Description
4	Width adjustment	<ul style="list-style-type: none"> The width-position of the brush from the blade can be hydraulically adjusted (figure 4:4)
2	Mud guard	<ul style="list-style-type: none"> The protective mudguard (figure 4.2) makes sure the debris from the brush don't get thrown in the wrong direction. The right position can be achieved by different adjustment-points.
5	Tilt-adjustment	<ul style="list-style-type: none"> The brush-head can be hydraulically tilted to make sure the brush brushes in the right position (figure 4:5)
3	Angle adjustment brush	<ul style="list-style-type: none"> The angle in which the brush brushes the pavement can be hydraulically adjusted (figure 4:3)
1	Brush-mounting	<ul style="list-style-type: none"> When the brush is worn out it can be easily replaced by unbolting the mounting bolts from the holder-plate (figure 4:1)

3.4 Hydraulic components

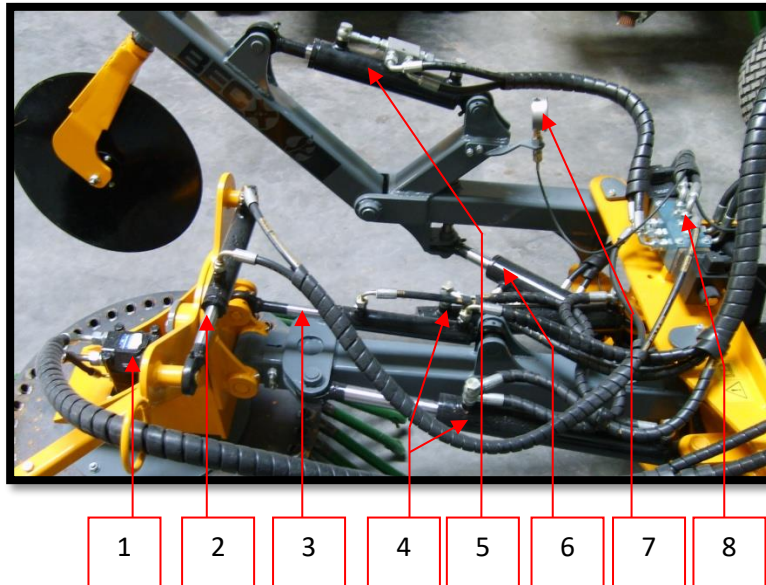



Figure 5: Overview hydraulic components

Figure 5	Part	Explanation
1	Hydraulic motor brush	<ul style="list-style-type: none"> The hydraulic has 3 attachments; in – out and a leak line. (figure 5:1)
4	Cylinders swivel main brush-arm	<ul style="list-style-type: none"> The cylinders for the swivel-adjustment of the main-brush-arm are equipped with 2 lines which are routed in a way these cylinders get the right in or out flow of oil. (figure 5:4)
3	Cylinder tilting brush-head	<ul style="list-style-type: none"> The cylinder for tilting the brush-head is a double-acting cylinder, equipped with 2 lines (figure 5:3). Depending on the movement direction, the oil flows on one of the lines.
8	Control valve	<ul style="list-style-type: none"> The control valve sends the oil-flow to the desired function. The control valve is attached via 2 rapid flat seal attachments to the tool carrier (figure 5:8). Functions: turning brush-head, height-adjustment blade, swivel function blade.
2	Control valve – turning brush-head	<ul style="list-style-type: none"> When control valve is in right position it sends the oil flow to the cylinder for turning the brush-head . Depending on the movement direction, the oil flows on one of the lines. (figure 5:2)
5	Control valve – height-adjusting blade	<ul style="list-style-type: none"> When control valve is in right position it sends the oil flow to the cylinder for the height-adjusting of the blade.


Figure 5	Part	Explanation
		<ul style="list-style-type: none">• Depending on the movement direction, the oil flows on one of the lines. (figure 5:5)
6+7	Control valve – swivel adjustment blade	<ul style="list-style-type: none">• When control valve is in right position it sends the oil flow to the cylinder for swivel adjustment of the blade• Depending on the movement direction, the oil flows on one of the lines. (figure 5:6)• The attached pressure gauge gives an indication of the pressure on the blade from the pavement at falsely set settings or skewed trail of the tool carrier (figure 5.7)



4 Operations


4.1 Assembly and adjustment of the weed brush

Nr.	What to do	Action	Result
1	Select the correct tool carrier and lifting arm 	<ul style="list-style-type: none"> • make sure that the tool carrier and lifting arm are sufficiently strong and stable for the weed brush (see chapter 1 for the load when lifting and the exerted moment of the lifting). • Make sure that the maximum pressure and number of revolutions (oil flow) are not exceeded. • Make sure that the correct rapid attachment connections are installed for the feed line, return line and drain line. • Make sure that the correct clasp is used. 	Ignoring the stated values can result in damage to equipment and injury to persons.
2	Connect the hoses	<ul style="list-style-type: none"> • Connect the rapid attachment connections for the feed line, return line and drain line . 	
3	Adjust the hydraulic system	<ul style="list-style-type: none"> • Adjust the setting of the hydraulic aggregate so that the maximum pressure and number of revolutions cannot be exceeded. • This will depend on the type of tool carrier that is used. Please refer to the manual of the tool carrier. 	
4	Adjust the positions for the blade and brush	<ul style="list-style-type: none"> • With help of the different hydraulic functions the blade and brush can be adjusted to achieve the correct result with the weed brush. 	


4.2 Carry out brush- and cutting work

	<ul style="list-style-type: none"> At driveways or other obstacles in the cutting-lane the blade needs to be lifted in time, to prevent damage to the pavement and machine
---	---

No.	What to do	Action	Result
1	Check the machinery 	<ul style="list-style-type: none"> Check the following points: <ul style="list-style-type: none"> Check the blade on cracks or damages Check the speed of the brush-motor (50% of the capacity (30 liter)) is usually enough for a good result Check whether the brush-motor runs without excessive shaking and without abnormal sounds. Check the control of the width and height-adjustment of the blade. If a defect is identified in one of the above points, this must first be remedied before it is allowed to put the weed brush back into operation. 	
2	Drive to the site where the work will take place.	<ul style="list-style-type: none"> Always switch off the weed brush if you are not doing any brushing. 	
3	Switch on brush-motor	<ul style="list-style-type: none"> Please refer to the detailed instructions in the manual for the tool carrier. It is important always to switch on and off at a low revolution speed to prevent damage to the machinery. The revolution speed can be increased after switching on the brush-engine. 	Switching on and off at a high speed of revolutions will result in system overload.
4	Setup the blade in desired position 	<ul style="list-style-type: none"> The knife can be adjusted in width-position and in height, make sure it is in desired position. For detailed instruction, see manual of tool carrier. Watch for people or animals in near working area. 	
5	Cut and brush the edges	<ul style="list-style-type: none"> Drive the tool carrier along the edge of the pavement. 	

No.	What to do	Action	Result
6	Stop in following situations!! 	<ul style="list-style-type: none">• The operator must stop immediately in the following situations and switch off the weed brush:<ul style="list-style-type: none">• Persons or animals being or coming directly into the working area.• The weed brush begins making abnormal sounds or excessive shaking	Serious injury could result if the machinery is not stopped in time.
7	Switch off the weed brush	<ul style="list-style-type: none">• switch off the weed brush once the area to be cleaned had been brushed and cut. Please refer to the detailed instructions in the manual for the tool carrier.• It is important always to switch on and off at a low revolution speed to prevent damage to the machinery.	Switching on and off at a high speed of revolutions will result in system overload.

5 Maintenance

	<ul style="list-style-type: none"> • Only components supplied or approved by the manufacturer must be used for replacement or repair of parts. • Always disconnect the weed brush from the feed line when work is carried out on the machinery. This is done by disconnecting the rapid attachment. • Only persons who can show that they have adequate knowledge of mechanical and hydraulic machinery through their training and experience are allowed to carry out maintenance work. • The installation can be cleansed with a high pressure cleanser, never point directly at hydraulic components.
---	--

Weekly maintenance

No.	What to do	Action	Result
1	Grease the pivot points	<ul style="list-style-type: none"> • Squeeze grease into the grease nipples. These are located at all pivot points 	
2	Tightening bolts	<ul style="list-style-type: none"> • Check and tighten all bolts 	
3	Visual check	<ul style="list-style-type: none"> • Visually check the construction, the hydraulic aggregate and the cutter blades for damage and cracks. • Check cylinder-rods for damages and dirt. 	
4	Retighten adjusting bolts	<ul style="list-style-type: none"> • Within 4 working hours, tighten the set screws of the clamping sleeve mounting on the motor shaft and then check it regularly! (48NM) See image on page 20. 	

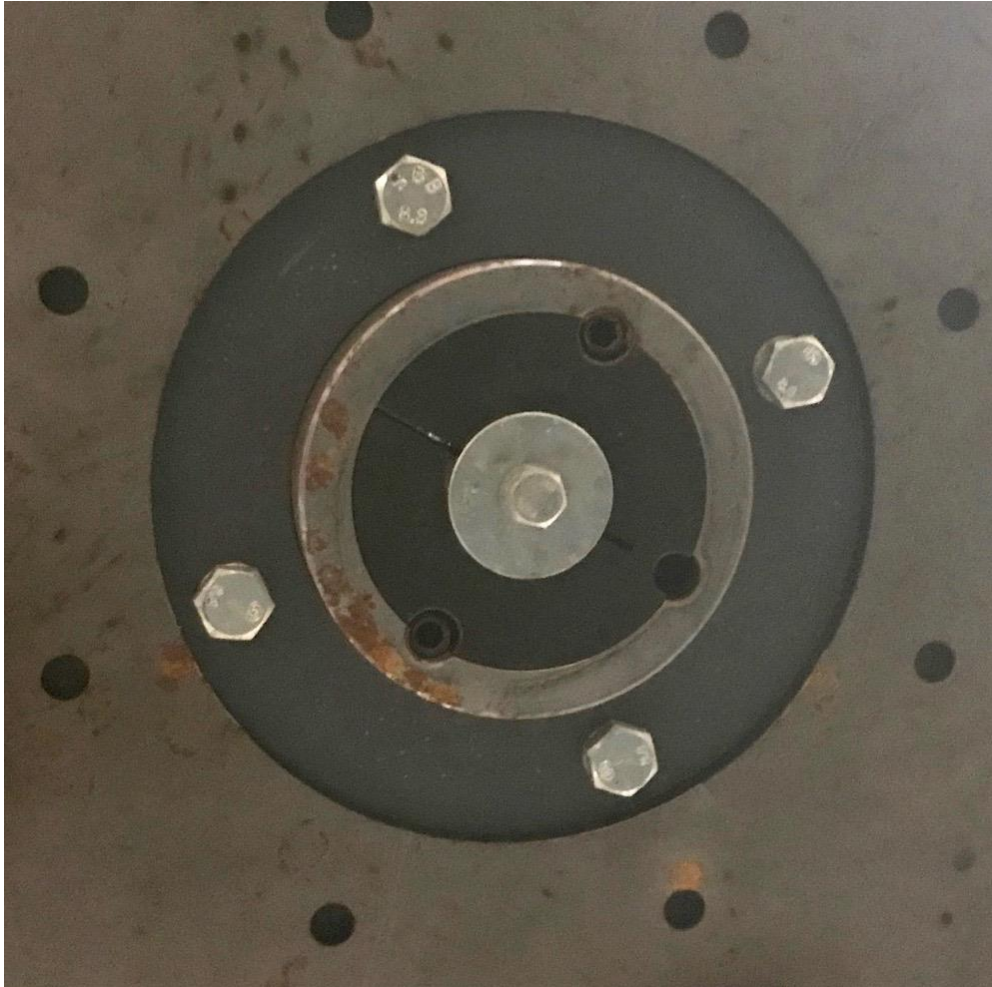


Image of clamping sleeve bottom of brush head.

Annual maintenance

No.	What to do	Action	Result
1	Inspecting the drive	<ul style="list-style-type: none">• Check following parts for damage, cracks and looseness:<ul style="list-style-type: none">• Tubes + bushings of the width and height directional adjusting installation• Bearings and seals	

6 Failure analyses

	Breakdown	Remedy
1	After switching on, the brush motor does not run	<ul style="list-style-type: none">• Check that the hydraulic hoses are correctly connected.
2	Machine is running, but no brushing-power.	<ul style="list-style-type: none">• Check turning direction of the motor. If the direction is wrong, switch the in and out lines with help of the quick-couplers.

If the fault cannot be solved by following the above recommendations, consult your dealer or maintenance department.

7 Removal

When replacing parts or at the end of the part's lifecycle, please ensure that all materials are disposed of, destroyed or recycled in a legal and environmentally friendly way.

Date	Passed by:	Description

