DR. SCHULZE GMBH

Original Instructions manual

Floor Milling Cutter DBF 200 & DBF 200-B

Serial number: _____

INDEX

1. INTRODUCTION & DESCRIPTION

Thank you very much for your confidence in our product! You have chosen to invest in a product which will give you many years of efficient and profitable production.

This manual is intended to provide operation and service information necessary for the safe and efficient use of the Floor milling cutter DBF 200 and DBF 200-B. Operating or servicing the unit other than in accordance with the instructions given may subject the machine to conditions beyond its capability, which may result in machine failure or personal injury.

IMPORTANT: ***Read the entire operating manual carefully before attempting to use the milling cutter DBF 200 and DBF 200-B. Special attention should be paid to the section entitled 'Safety Precautions'.***

Milling cutter DBF 200 and DBF 200-B is intended to milling of concrete, stone, paving, bitumen, natural stone, and the elimination of adhesives, lacquers and deposits and for **roughage** too smooth areas. Is ideal as auxiliary machine when other methods of preparation surfaces - blasting, grinding.

Construction of milling cutter DBF 200 and DBF 200-B has been designed such as robust and firm, but simultaneously lightweight so that it can be easily transported for the working places. This machine is intended to milling by roller with 4 rows of scabbing segments. Weight machine allows the easy relocation assisted by two persons.

During cutting is necessary to use the following protective equipments:

- Hearing protection (headset and earplugs)
- Respirator
- Protective glass or shield

2.1 Main parts of the machine

(1) Machine frame with handle
(2) Rolling front and rear wheels
(3) Setting mechanism for height adjustment
(4) Electric motor with pulley and cover of pulley
(5) Bearing box with bearings and shaft
(6) Milling drum with milling segments with removable forehead and sucking throat
(7) Wiring with switch and plug connection (electro version)
(8) Honda motor with the accessories

2. TECHNICAL DATA

Type	DBF 200	DBF 200-B
Motor / Engine	Single-Phase 230 V	Honda GSX 160
Motor / Engine Power	2.2 kW	4.0 kW
Engine speed	2,800 min^{-1}	see Honda manual
Uncertainty of measurement	101 dB	see Honda manual
Frequency	50 Hz	-
Covering	54 IP	-
Breaker	16 A	-
Cross-section of Cable	3 x 1,5 mm^2	-
Cable length	up to 50 m	-
Control method	-	manually
Weight	90.0 kg	
Distance from wall	40 mm	
Working depth	200 mm	
Milling drum	76 pcs. Segments, each with 5 pints	
Depth of cut	0 - 5 mm	
Dimensions of machine	1,165 x 1,280 x 330 mm	

3. ELECTRICAL INSTALLATION

Electrical installation of milling cutter is designed and performed for external environment with water and dust occurrence. Milling cutter is equipped with thermal protection against overheating of engine. The milling cutter is also equipped with power cable and connecting terminal.

In case the Honda motor is used for this machine the manual for engine Honda is an integral part of this manual.

4. WORKING PLACES

The working place of operator is in the rear part of machine by the control handle. All operating items are in reach of the operator.

5. OPERATION INSTRUCTIONS

Before starting work, carefully read the operation instructions. This instruction manual with it’s spare part lists has always to be available for the worker on-site. It is to the responsibility of the machine’s owner to make sure that each worker has read the instruction manual and well understood. For all work with the machine, the instructions of the operator's manual must always be observed. This belongs to the owner’s responsibility, too. Non-observance of the instructions can cause personal injury and damage to the equipment.

The floor milling cutter is designed to be used either wet or dry. If the floor is being ground dry, ensure a suitable industrial vacuum is connected and that operator is wearing suitable breathing respiratory equipment. Contact your local work place health authority to ensure that their requirements regarding respiratory equipment are being met.

5.1 Assembly and installation

For handling for short distance are only two people needed. To transport for longer distances, it is recommended to use mechanization or means of transport. Producer recommended in depending on the area in a vehicle and secured against overturning or displacement of the machine during braking or changing direction to ensure the cutter using fasteners to avoid damage. Operator should avoid crushing the people on the edges of the machine, or crossing limbs by wheels.

After stopping of machine must be properly set up in the plane, fixed on stationary pad and properly secured so as to avoid when working with the machine to its inadvertent movement.

For safe operation with the machine must be around the machine safe space at least a distance of 1 m from the machine.

During work with the machine small fragments can fall off from the milling material, so it is recommended to place the machine in the direction where there is no contact with people and you can´t damage the surrounding objects.

After the placement on the working place you need to connect the machine to a power source by using the cable with cable end.

It is recommended the power cable to cover in place of the movement of person and handling of material, to avoid people tripping or falling objects on the power cord and damage. Do not operate the machine with a damaged power cord or extension.

For safe operation it is necessary to provide adequate lighting so that the operator could see properly to all parts of the machine and the surrounding area.

The manufacturer recommends before work to start the machine and check all its features.
For proper operation of the motor must be protected from overheating, after running it is recommended to let it run so that it could be cool down during work. It is not allowed more than 10 starts per hour.

The operator is required to keep the engine clean, especially the cooling fins.

Clogged cooling fins reduce the cooling efficiency and increase wear out of the electric motor. The engine could be shutdown due to overheating.

Warning - ground wire (yellow-green) must be before operating the machine connected properly.
In the case that after running the motor rotates in the wrong direction (for three-phase motors), the machine must be disconnected from the network and perform the substitution phases as follows: using a screwdriver in the plug on the machine that is inserted in the slot and push the lock is released, then turn on 180 ° phase reversal occurs, the electric motor starts to rotate in reverse.

5.2 Work progress

- before running is necessary to check network connection, the state of the power cords and connection, cable cover (against damage), attachment and state of milling drum and the state and mounting covers and mounting of suction hose to the machine
- after setting the cutting height by adjusting mechanism in the range of 0-5 mm check if the settings are correct, you must choose the correct speed shift for straight and smooth scaling
- after starting by main switch come to start the electric motor and spin of milling drum – must to be in the lifting position!
- before starting the machine must be run the suction equipment
- after spin segments it is necessary to start the machine continuously and maintain a constant speed, at a higher speed become irregular scaling of substrate

- during operation must take care to avoid distorting suction hose or run over to the power supply cable
- while rotating it is necessary the cutter lift by the handle, and after the rotation in the desired direction it is necessary to run slowly in order to continuously mesh of milling segments
- cutter works correctly only when driving forwards, driving backwards may give rise to inequalities re-crossing the same place causes uneven scaling surface and the formation of a hollow

Operation and maintenance, including engine maintenance Honda (if the cutter contain) follows the instructions for the engine.

6. REQUIREMENTS AND PROHIBITIONS

6.1 Prohibitions

- Operate a device that its design does not correspond with the conditions mentioned in this manual
- interfere to the electrical or mechanical parts of the machine when the machine is in operation
- connect the machine to the electrical system, which does not have ground
- operate the device without connecting the suction device and connecting hoses
- mill other than the manufacturer specified materials
- operate the machine in the rain in the open space
- operate the machine with a damaged electric cable
- strain electrical connections by pulling
- lead electric cable over sharp edges
- overload device, mainly adding of load for increase effect to prevent damage milling segments and bearings
- operate the machine with damaged milling segments or with fall out hard metal insert
- increase the capacity of the machine without agreement with the producer
- use the machine for the transport of persons
- operate the equipment without proper and regular maintenance
- maintenance and cleaning of the equipment during operation
- open during work control equipment and service openings
- operate the machine other than by authorized person
- to operate the device without performing regular inspections of emergency function switches
- start machine or part after an emergency switch off if the cause was not intended or accidental emergency stop without performing checks to safety equipment parts which were in operation at the stop, the inspection of environment and if the damaged were not remove
- adjust mechanical or electrical equipment other than authorized person, especially when setting up the security features
- repair and remove protective covers without stopping the device without protection against the responsible person against start
- start the device without re-placement of protective covers and without authority designated responsible person
- lubrication of device during running, except situations when the lubrication place are in design, which allow lubrication without danger
- lubricate individual parts of device during work when the covers are removed
- make changes in design, location or operating rules without the knowledge of the producer

6.2 Requirements

- Before the intervention to the installation of the machine (in the range instruction manual) stop the engine and disconnect the device from the electric network
- make regular control, adjustment and maintenance
- keep working places and passages clean and unobstructed
- checking, adjusting, maintaining and cleaning the moving parts as recommended by the manufacturer / supplier of device
- know about switches to stop the device, including emergency, switches must be easy available, all areas must allow access to them, must be kept clean and free of obstacles
- regularly check function switches
- make lubrication equipment in accordance with operating instructions / manual
- be properly trained with regard to the operation and maintenance instructions manual
- at increase vibrations during operation must be stop the device immediately and determine the cause
- during work with device wear required clothing without loose parts and prescribed protective equipment
- maintain control of the vents and removable section of the covers functional and secured for safe using
- check the functionality of the security features of the device (alarm, limit switches)
- check status milling segments
- after the end of the work carried out maintenance according part 5 this manual
- keep the prescribed functional marking devices, mainly marking, conforming to the requirements of European directives in the field of traffic safety
- carry out regular maintenance of the machine only operate the equipment properly maintained

7. MAINTENANCE & CARE

The DBF 200 and DBF 200-B Floor Milling Cutter must remain in a condition which is safe for operation at all times, and therefore certain maintenance is needed. Please read the instructions below carefully before any service work is commenced. For safe and uninterrupted operation of the machine, we strongly recommend that the complete machine is brought back to your dealer for service at least once a year. At this service the machine is checked for proper function and all components critical for safe and reliable operation are checked and replaced if necessary.

7.1 General instructions

- ***Warning!*** *No service or maintenance may be performed on the machine unless it is disconnected electrically from the mains.*
- Daily cleaning: The motor in use should always be kept clean. No water drops, cotton etc should be allowed to get into the interior of the motors.
- Check on load current: While the motor is in operation, constant care should be taken to keep the load current below the rated value.
- Operational sounds: During operation of the motor there must be no rubbing sounds, shrieks or other random noises. Stop the motor immediately and restart after inspection and corrections have been made.

7.2 After finished work

- after completion of the work is necessary to have the machine run for about 3 minutes in order to cool down the motor and milling tool
- disconnect the machine from the power network, disconnect the sucking hose, check its status
- check status of milling segments and if are damaged must be replaced
- check the individual parts of machine from the dust and dirt

7.3 Maintenance and implementation terms

Check-List	Interval
Check of cutter condition	daily, continuously
Change of milling drum	wear out, damage segment
Remove of dust, clearing	daily, continuously
Check of electro installation	daily, continuously
Check of rotating parts	daily, continuously
Check wholeness of machine	daily, continuously
Check tightening of connection	daily, continuously
Check of sucking hose	daily, continuously

For proper operation of the machine it is necessary to perform regular maintenance, preferably after the end of the work day.

7.4 Changing of milling segments

After disconnecting from the electrical installation is necessary to unscrew the screws on the front of the head, remove the head, from the hex shaft remove the milling drum and instead of it insert a new one. After replacing put on the front head and tighten the screws. Without a properly mounted front head is forbidden to operate the machine!

7.5 Repairs

Possible repairs of milling cutter DBF 200 and DBF 200-B are recommended to send directly to the producer or person/company who is recommended by producer.

Repair is recommended if the machine works abnormally (irregular noise, uneven speed, vibration, etc.). When finding irregular running machine down, unplug from the electrical installation and let the machine to check by technician from Dr. Schulze GmbH.

Damaged cables must be replaced immediately - there is a danger of electric shock!

7.6 Lubrication

Lubrication points are fitted with lubricators.

8. TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	ACTION
Low engine power	Low voltage	Check the source of power
		Check the supply cable
		Check the terminal of electric motor
Low power of machine	Blocked of suction hose	Check the hose and clean it
Reducing the effectiveness of milling	Worn out segments	Exchange segments
	Incorrect height adjustment	Resize the height of milling
Increase d vibration on machine	Damaged segments	Change the segments
	Damaged bearing	Change the bearing
	Damaged shaft	Change the shaft
	Damaged supply cable	Check the cable, repair or change it
Startup-Switch does not hold in the position “ON”	Burned spool of switch	Change spool
	Worn involved the relay of spool	Repair involvement

9. GENERAL SAFETY INFORMATION

1. Read and follow these information before using the machine. Keep the information safe.
2. Keep your working place orderly. Danger of accident is due to disorder.
3. Protect yourself from electrical shock. Take care of the according instructions. Avoid touching earthed parts, e.g. pipes, radiators, stoves, refrigerators
4. Keep children away. Don't let other persons touch the tools or cables, keep them away from your working place.
5. Keep your tools safe. Unused tools should be kept in dry, closed place, unreachable for children.
6. Don't overburden your tools. You work better and safer in the indicated performing level.
7. Use the right tools. Don't use too weak tools for heavy work. Don't use tools for purposes and work abroad from its designated use.
8. Wear appropriate working clothes. Don't wear wide clothing or pieces of jewelry. They can be taken by moving parts. While working outside we recommend rubber gloves and non-slipping shoes. Wear a hairnet for long hair.
9. Use safety goggles. Use a breathing protection mask in case of dust

   producing work.
10. Use the cable only for its designated use. Don't carry the tool by the cable and don't use it to pull the plug out of the socket. Protect the cable from heat, oil and sharp edges.
11. Check connection cable and plug if damaged before each use. If damaged, let a specialist renew. Always put connection cable away from the working area of the machine.
12. Secure the workpiece. Use holding fixture or vise to hold the workpiece. In this manner it is hold more safe than with your hand and makes possible the use of the machine with both hands.
13. Don't overstretch your working area. Avoid abnormal posture. Care for a safe standing and keep the balance every time.
14. Care carefully for your material. Keep your tools sharp and clean to work efficiently and safely. Follow the maintenance regulations and the information about changing the tools. Check regularly the plug and the cable, and let renew by a specialist when damaged. Regularly check the extension cable and replace damaged cables. Keep handle bars dry and free from oil and grease.
15. Pull the mains plug: When the machine is not used, before maintenance and when changing tools.
16. Don't leave the tool key in the lock. Verify if the keys and the adjusting tools are removed before switching on.
17. Avoid unintended start. Don't carry tools connected to the power supply system with the finger at the switch. Take care that the switch is on position "OFF" when connecting the machine to the power supply system.
18. Electric equipment outside and for wet use: Portable equipment which can be used outside, should be connected to residual current switch (FI or DI or similar) for additional protection. Very important is this when working with free-hand-tools. Work with transformer and 115 Volts with water supply; please declare when ordering it.
19. Only use licensed and correspondingly marked extension cables outside.
20. Always be attentive! Observe your work! Act reasonable! Don't use tools when you are unconcentrated.
21. **Attention:** Securing means - like e.g. overload protection, undervoltage release, security couplings or similar - are aids, but they cannot guarantee absolute protection. As a responsible manufacturer we coordinate such means to each other, that they protect as optimal as possible. But without prudence and attention of the user the means can be detrimental when using carelessly. Let especially check the slipping clutch for correct adjustment and function when checking quarterly. This should happen in the company or in an authorized workshop and be documented.
22. Daily control if the machine is damaged, called sight check: Before further using the tool, check the securing means or slightly damaged parts whether working is possible or not. Verify if the function of movable parts is o.k., if they do not clamp, or if parts are damaged. All parts must be right installed and fulfill all conditions, to guarantee a precise use of the machine. Damaged protection devices and parts must be repaired or replaced by a special workshop. Don't use machine when you cannot switch on or off the switch. Especially check the electric security: Damaged cable? Plug? Switch? Are the security regulations fulfilled?
23. Let only a specialist repair your machine. Before using it for the first time and after each repair let an electric specialist check the security of the electric tools, according to VGB 4,§5.This check is further to be repeated and to be documented in regular intervals of at least once a year.
24. Please pay attention to eventually special regulations. E.g. in case of wet use and/or in wet surroundings used electric tools see regulations of the professional organization "stone and earth".
25. Electrical security and fire protection: As already 20 years ago, the VDE 0100 recommend today the additional security protection and fire protection by the good valued FI- and DI/PRCD-circuit breaker for each of our electric tools.

10. STORAGE

During storage is necessary to place the machine in a dry indoor environment, before storage it must be properly treated in accordance with part 5 of this manual and must be preserved against corrosion.

11. RECYCLING

According to the European regulation 2002/96/EG we have to take back old machines for departing them by substance and for recycling (see sign on name plate). Please make sure that the old tool does not get into the unsorted municipal solid waste, but that they are given back to us, resp. abroad to our distributors.

12. DECLARATION OF CONFORMITY

	Dr. Schulze GmbH Bollenberg 10 D-57234 Wilnsdorf Tel. +49 (0) 27 37 59 53 0 Fax +49 (0) 27 37 59 53 3	Floor Milling Cutter DBF 200 & DBF 200-B 25 April 2013	CE

CE	Declaration of conformity

We, company Dr. Schulze GmbH declare, that the Floor Milling Cutter DBF 200 and DBF 200-B has been produced under our responsibility and correspond to the regulations of the following European Community guidelines:

- Guideline of machine 2006/42/EG
- EMV Guideline 2004/108/EG

The declaration of conformity is no longer valid, as soon as the installation and the use of the Floor Milling Cutter DBF 200 and DBF 200-B does not correspond to the machine guidelines and specifications.

Germany, Wilnsdorf, April 25, 2013

Dr. Schulze GmbH

Bollenberg 10

D-57234 Wilnsdorf

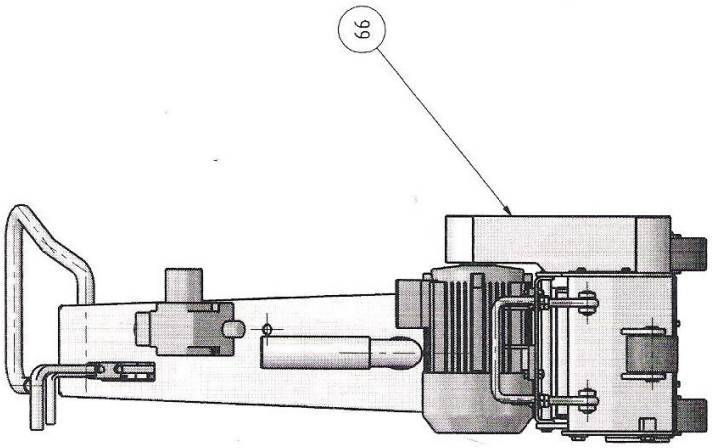
Management: Dr.-Ing. Alexey Levin

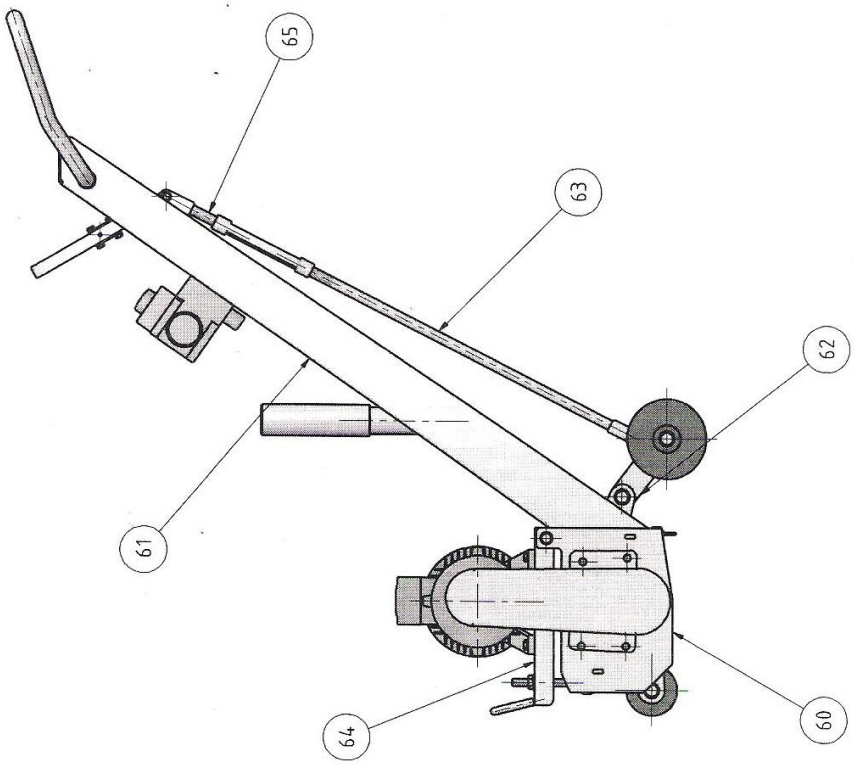
Dr.-Ing. Reiner Schulze

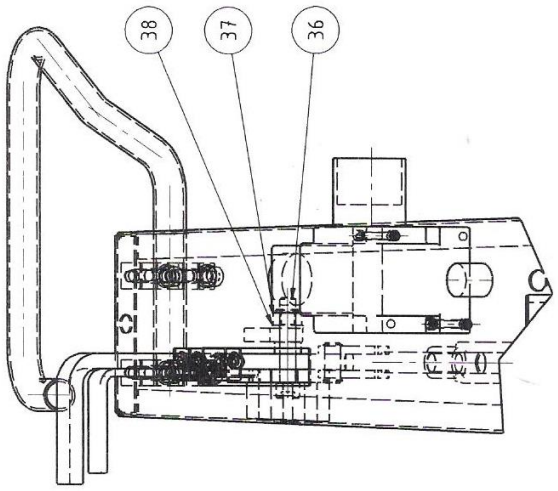
Technical consulting: Andreas Berg

Tel.: +49 2737 229511, Fax: +49 2737 229515

13. EXPLODED VIEW



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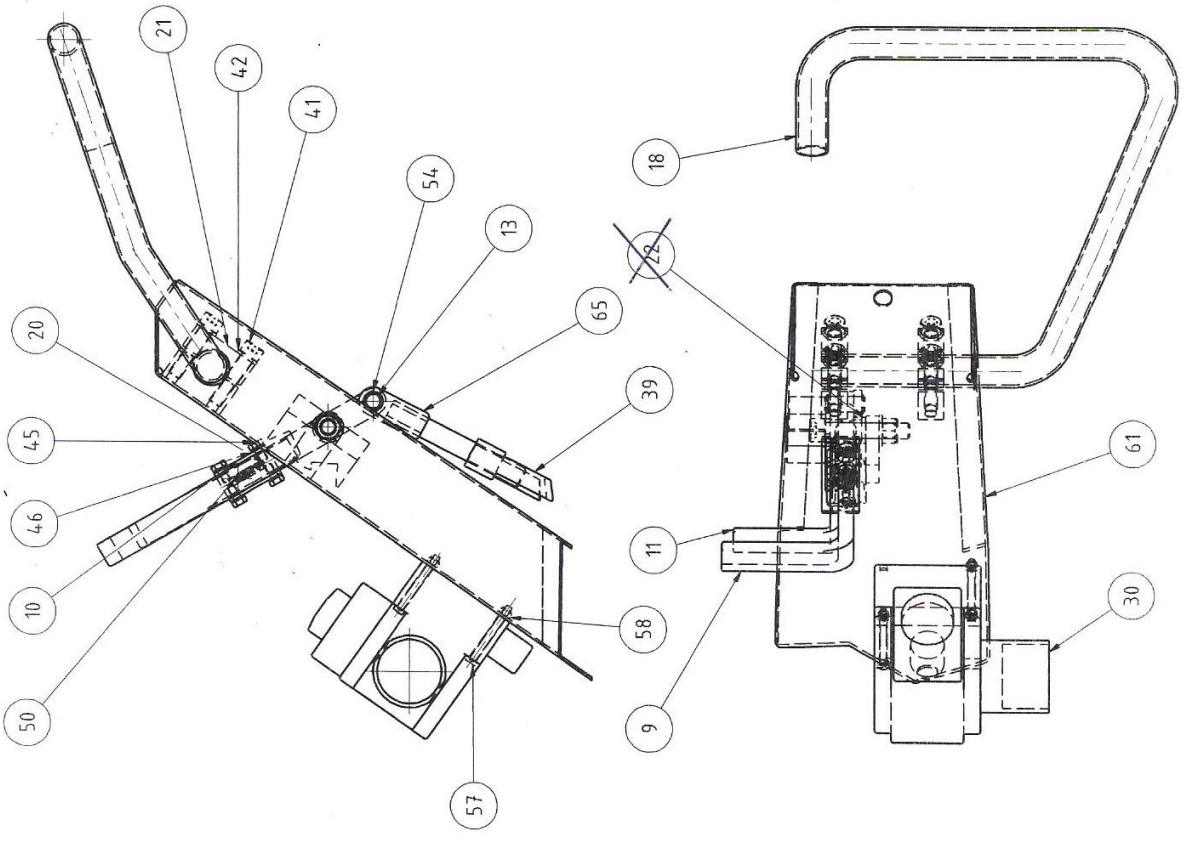
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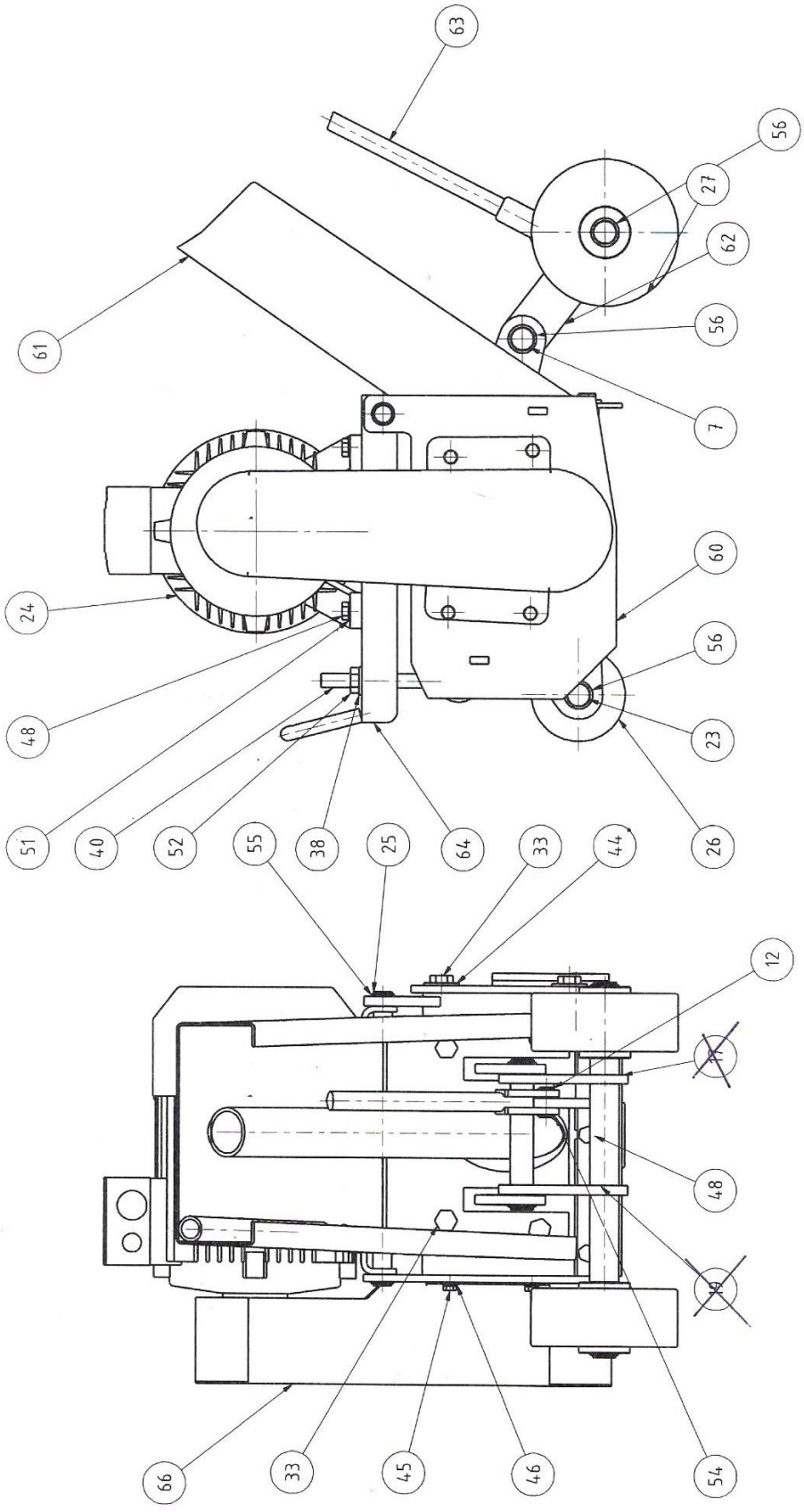
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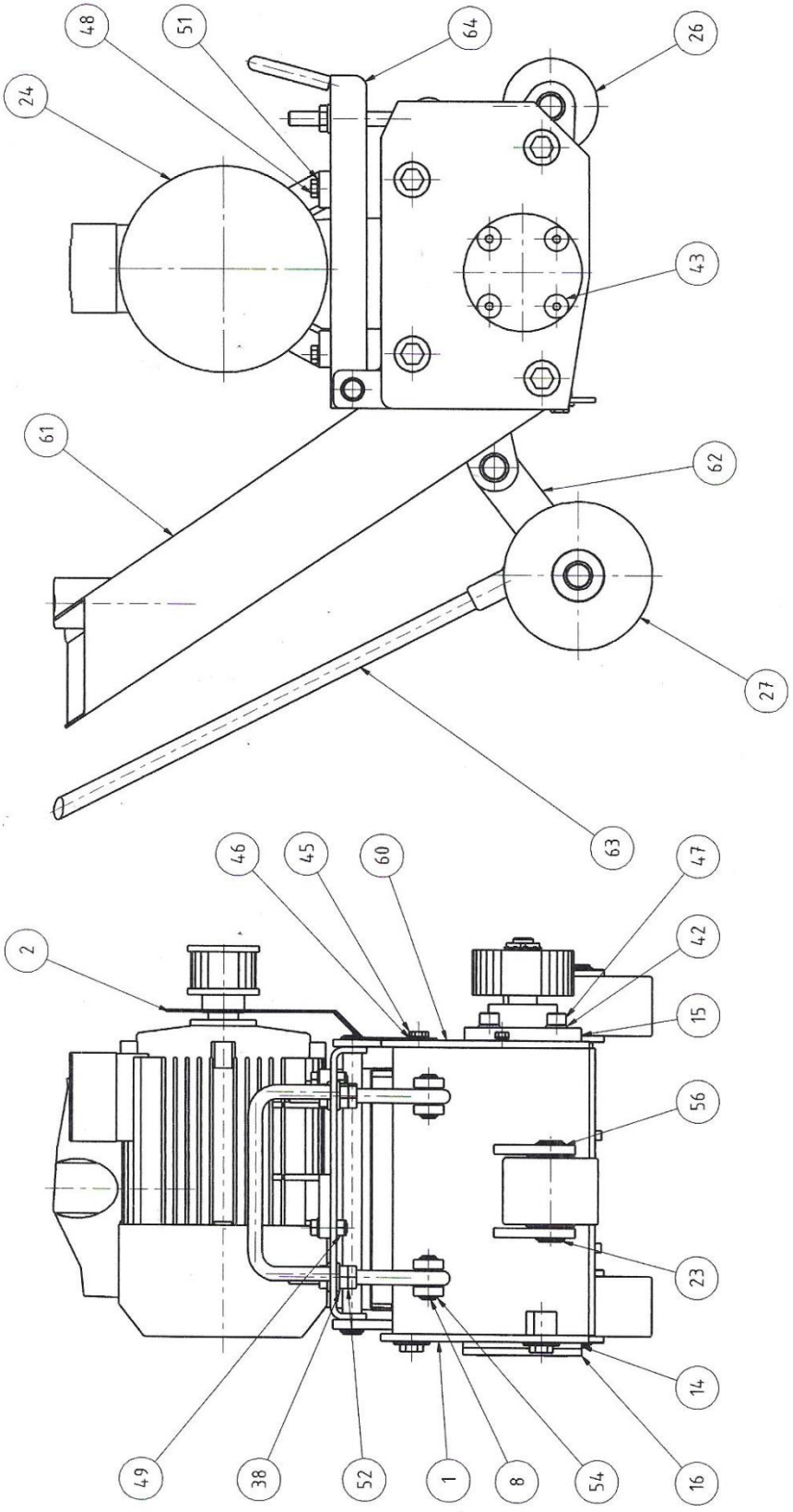
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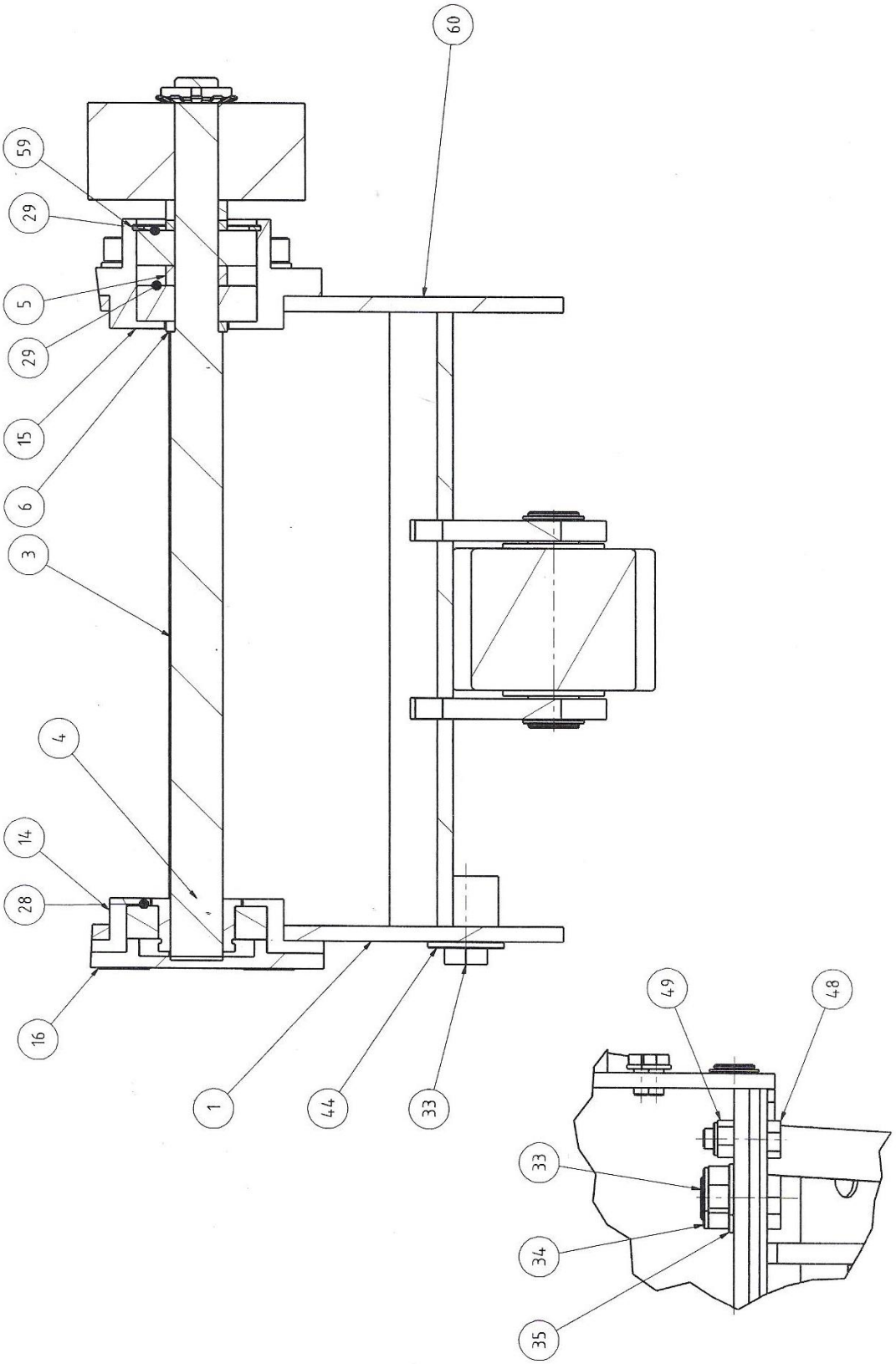
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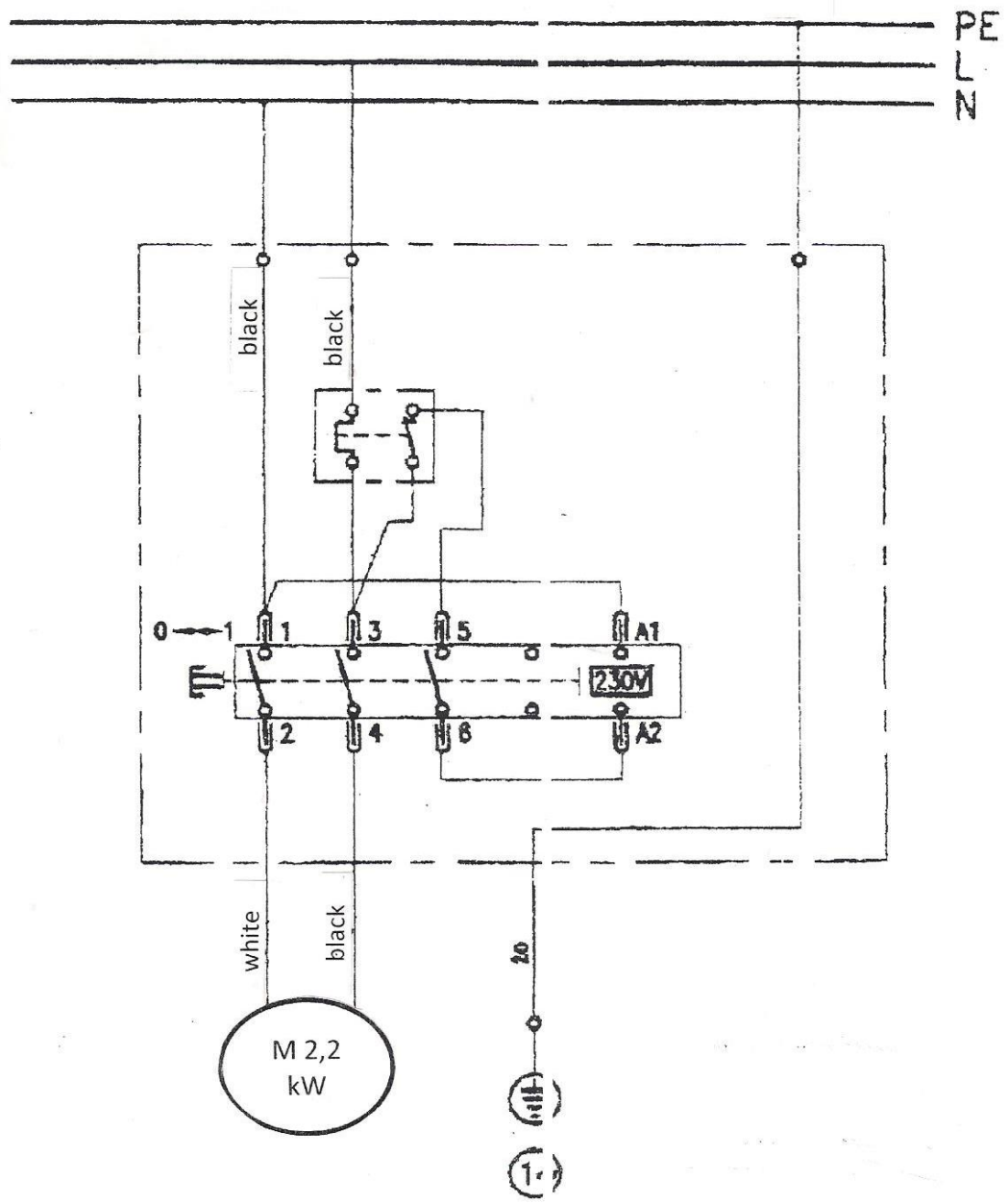
14. CIRCUIT DIAGRAM DBF 200



15. SPARE PARTS LIST

Position	Description
001	lid cabinet
002	shield of cover belt
003	hexagonal shaft
004	hexagonal case
005	delimiting ring
006	protective ring
007	shaft
008	pivot
009	lever of lifting
010	cover ratchet
011	ratchet lever
012	pivot rod
013	pivot rod lifting
014	right bearing cabinet
015	left bearing cabinet
016	cover of right bearing cabinet
018	handle
020	flexible peg
021	fastening segment handle
023	pivot of front wheel
024	engine
025	axis motor plate
026	front sliding wheel
027	rare sliding wheel
028	bearing of right cabinet
029	bearing of left cabinet
030	switch
033	screw
034	nut
035	pad

Position	Description
036	lifting screw
037	ring
038	pad
039	regulating nut
040	tensioning screw
041	nut
042	pad
043	screw
044	pad
045	nut
046	pad
047	screw
048	screw
049	nut
050	spring
051	pad
052	nut
054	hedging ring
055	hedging ring
056	hedging ring
057	screw
058	nut
059	hedging ring
060	cabinet
061	shoulder
062	undercarriage
063	rod of lifting
064	engine plate
065	set screw lifting
066	cover belt