



Operating manual

Version 1.1.2

Circular metal saw

○ **OPTI**saw®
CS 275

○ **OPTI**saw®
CS 315



Img.0-1: Circular metal saw CS315



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Preface

Dear customer,

Thank you very much for purchasing a product made by OPTIMUM.

OPTIMUM metal working machines offer a maximum of quality, technically optimum solutions and convince by an outstanding price performance ratio. Continuous enhancements and product innovations guarantee state-of-the-art products and safety at any time.

Before commissioning the machine please thoroughly read these operating instructions and get familiar with the machine. Please also make sure that all persons operating the machine have read and understood the operating instructions beforehand.

Keep these operating instructions in a safe place nearby the machine.

Information

The operating instructions include indications for safety-relevant and proper installation, operation and maintenance of the machine. The continuous observance of all notes included in this manual guarantee the safety of persons and of the machine.

The manual determines the intended use of the machine and includes all necessary information for its economic operation as well as its long service life.

In the paragraph "Maintenance" all maintenance works and functional tests are described which the operator must perform in regular intervals.

The illustration and information included in the present manual can possibly deviate from the current state of construction of your machine. Being the manufacturer we are continuously seeking for improvements and renewal of the products. Therefore, changes might be performed without prior notice. The illustrations of the machine may be different from the illustrations in these instructions with regard to a few details. However, this does not have any influence on the operability of the machine.

Therefore, no claims may be derived from the indications and descriptions. Changes and errors are reserved!

Your suggestion with regard to these operating instructions are an important contribution to optimising our work which we offer to our customers. For any questions or suggestions for improvement, please do not hesitate to contact our service department.

If you have any further questions after reading these operating instructions and you are not able to solve your problem with a help of these operating instructions, please contact your specialised dealer or directly the company OPTIMUM.

Optimum Maschinen Germany GmbH

Dr.- Robert - Pflieger - Str. 26

D-96103 Hallstadt

Mail: info@optimum-maschinen.de

Internet: www.optimum-maschinen.com



1 Safety

Representation Conventions

-
- | | |
|---|--------------------------|
|  | gives additional advices |
| <hr/> | |
|  | calls on you to act |
| <hr/> | |
|  | enumerations |
-

This part of the operating instructions

- explains the meaning and use of the warning notices included in these operating instructions,
- defines the intended use of the circular metal saw,
- points out the dangers that might arise for you or others if these instructions are not observed,
- informs you about how to avoid dangers.

In addition to these operation instructions, please observe

- the applicable laws and regulations,
- legal regulations for accident prevention,
- the prohibition, warning and mandatory signs as well as the warning notes on the circular metal saw.

European standards must be kept during installation, operation, maintenance and repair of the circular metal saw.

If European standards are not applied at the national legislation of the country of destination, the specific applicable regulations of each country are to be observed.

If necessary, the required measures must be taken to comply with the specific regulations of each country before the circular metal saw is used for the first time.

Always keep this documentation close to the circular metal saw.

INFORMATION

If you are unable to solve a problem using these operating instructions, please contact us for advice:

Optimum Maschinen Germany GmbH
Dr. Robert-Pfleger-Str. 26

D-96103 Hallstadt

email: info@optimum-maschinen.de





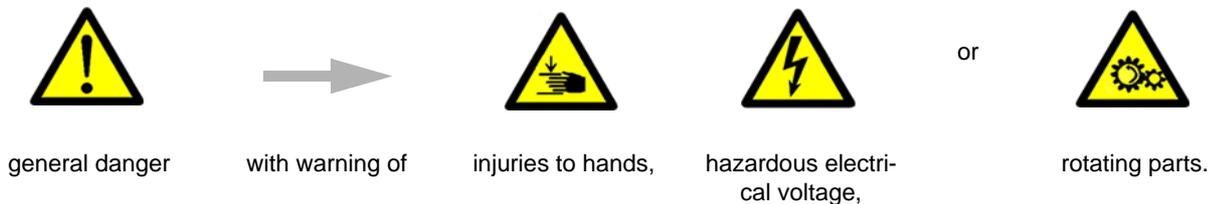
1.1 Safety instructions (warning notes)

1.1.1 Classification of hazards

We classify the safety instructions into different levels. The table below gives an overview of the classification of symbols (pictograms) and signal words for the specific danger and its (possible) consequences.

Pictogram	Signal word	Definition/Consequences
	DANGER!	Imminent danger that will cause severe injury or death to the staff.
	WARNING!	A danger that might cause severe injury to the staff or can lead to death.
	CAUTION!	Danger of unsafe procedure that might cause injury to the staff or property damages.
	ATTENTION!	Situation that could cause damage to the machine and products and other types of damage. No risk of injury to the staff.
	INFORMATION	Application tips and other important or useful information and notes. No dangerous or harmful consequences for the staff or objects.

In case of specific dangers, we replace the pictogram by





1.1.2 Other pictograms



Warning of automatic start up!



Forbidden to switch on!



Disconnect the mains plug!



Use protective glasses!



Use ear protection!



Use safety gloves!



Use safety boots!



Use protective suit!



Protect the environment!



Contact address

1.2 Intended use

WARNING!

In the event of improper use, the circular metal saw

- will endanger personnel,
- the machine and other material property of the operating company will be endangered,
- the correct function of the machine may be affected.



The circular metal saw is designed and manufactured to be used in environments where there is no potential danger of explosion.

The circular metal saw is designed and manufactured to saw cold metal, cast material and plastics or other material that are not health hazardous and do not generate dust.

The circular metal saw must not be used on wood.

The pieces to be cut must be of a shape that will allow them to be securely attached in the workholder vice and ensure that the piece does not come loose when it is being sawed.

The circular metal saw must only be installed and operated in a dry and ventilated place.

If the circular metal saw is used in any way other than described above, modified without authorization of Optimum Maschinen Germany GmbH, then the circular metal saw is being used improperly.

We do not take any liability for damages caused by intended use.

We expressly point out that the guarantee or CE conformity will expire due to any constructive technical or procedural changes which had not been performed by the company Optimum Maschinen Germany GmbH.

It is also part of intended use that

- observe the limits of the circular metal saw,
- the operating manual is constantly observed,
- observe the inspection and maintenance instructions.

📖 "Technical data" on page 16

The decisive factor for achieving efficient cutting and the necessary angular tolerance is the correct choice of parameters such as the saw blade, feed, cutting pressure, cutting speed and cooling agent.



WARNING!

Extremely severe injuries.

It is forbidden to make any modifications or alternations to the operation values of the circular metal saw ! They could endanger the staff and cause damage to the circular metal saw.



1.3 Possible dangers caused by the circular metal saw

The circular metal saw is state-of-the-art, nevertheless, there is a residual risk as the circular metal saw operates with,

- electrical voltage and currents,
- a running circular metal saw blade.

We have used construction resources and safety techniques to minimize the health risk for the staff resulting from these hazards.

If the circular metal saw is used and maintained by the staff who are not duly qualified, there may be a risk resulting from incorrect or unsuitable maintenance of the circular metal saw.

INFORMATION

All staff involved in assembly, commissioning, operation and maintenance, must

- be duly qualified,
- strictly follow these operating instructions.

In the event of intended use

- there is a risk for the employee,
- the circular metal saw and further property might be endangered,
- the correct function of the circular metal saw may be affected.

Always disconnect the circular metal saw if cleaning or maintenance work is being carried out.

WARNING!

The circular metal saw may only be used with the safety devices activated.

Disconnect the circular metal saw immediately whenever you detect a failure in the safety devices or when they are not mounted!

All additional devices installed by the operator have to be equipped with the prescribed safety devices.

This is your responsibility being the operating company!

 "Safety devices" on page 11



1.4 Qualification of the staff

1.4.1 Target group

This manual is addressed to

- the operating companies,
- the operators,
- the staff for maintenance works.

Therefore, the warning notes refer to both operation and maintenance of the circular metal saw.

Determine clearly and explicitly who will be responsible for the different activities on the machine (operation, maintenance and repair).

Unclear responsibilities constitute a safety risk!

Disconnect the main plug of the circular metal saw and secure the circular metal saw against restarting.

The qualifications of the staff for the different tasks are mentioned below:





Operator

The operator is instructed by the operating company about the assigned tasks and possible risks in case of improper behaviour. Any tasks which need to be performed beyond the operation in the standard mode must only be performed by the operator if it is indicated in these instructions and if the operating company expressly commissioned the operator.

Electrical specialist

Due to his professional training, knowledge and experience as well as his knowledge of respective standards and regulations the electrical specialist is able to perform works on the electrical system and to recognise and avoid any possible dangers himself.

The electrical specialist is specially trained for the working environment in which he is working and knows the relevant standards and regulations.

Specialist staff

Due to his professional training, knowledge and experience as well as his knowledge of relevant regulations the specialist staff is able to perform the assigned tasks and to recognise and avoid any possible dangers himself.

Instructed persons

Instructed persons were instructed by the operating company about the assigned tasks and any possible risks in case of improper behaviour.

1.4.2 Authorized staff

CAUTION!

Inappropriate operation and maintenance of the circular metal saw constitutes a danger for the staff, objects and the environment.

Only authorized staff may operate the circular metal saw !

Persons authorized to operate and maintain should be trained technical staff and instructed by the ones who are working for the operating company and for the manufacturer.



The operating company must

- train the staff,
- instruct the staff in regular intervals (at least once a year) on
 - all safety standards that apply to the machine,
 - the operation,
 - accredited technical guidelines,
- check staff's state of knowledge,
- document the trainings/instructions,
- require staff to confirm participation in training/instructions by means of a signature,
- check whether the staff is working safety- and risk-conscious and observe the operating instructions.

Obligations of the operating company

The operator must

- have obtained a training regarding the handling of the circular metal saw,
- know the function and mode of action,
- before taking the machine in operation
 - have read and understood the operating manual,
 - be familiar with all safety devices and instructions.

Obligations of the operator

For work on the following parts there are additional requirements:

- Electric components or operating materials: Must only be performed by a qualified electrician or person working under the instructions and supervision of a qualified electrician.

Further requirements to the qualification



Before starting work on electrical parts or operating agents, following measures need to be performed in the following order.

- disconnect all poles.
- secure against switching-on
- check dead circuit

1.5 Operator positions

The operator position is in front of the circular metal saw.

INFORMATION

The mains plug of the circular metal saw must be freely accessible.



Img. 1-1: Operator positions

1.6 Safety measures during operation

CAUTION!

Risk by inhaling health hazardous dusts and fogs.

Depending on the materials which need to be treated and the agents which are used, dusts and fogs may be generated which endanger your health.

Make sure that the generated health hazardous dusts and fogs are safely sucked-off at the place of origin and that they are dissipated or filtered. To do so, use a suitable extraction unit.



CAUTION!

Risk of fire and explosion by using inflammable materials or cooling-lubricating agents.

Before processing inflammable materials (e.g. aluminium, magnesium) or using inflammable auxiliary materials (e.g. spirit) it is necessary to take additional preventive measures in order to safely avoid health risks.





1.7 Safety devices

Use the circular metal saw only with properly functioning safety devices.

Stop the circular metal saw immediately if there is a failure on the safety device or if it is not functioning for any reason.

It is your responsibility!

If a safety device has been activated or has failed, the circular metal saw must only be used if you

- have removed the cause of the failure,
- have verified that there is no danger resulting for the staff or objects.

WARNING!

If you bypass, remove or override a safety device in any other way, you are endangering yourself and other persons working on the circular metal saw. The possible consequences are

- injuries may occur due to workpiece or parts of workpieces flying off,
- contact with rotating and revolting parts,
- fatal electrocution.



WARNING!

The separating protective equipment which is made available and delivered together with the machine is designed to reduce the risk of workpieces or fractions of them which being expelled, but not to remove them completely. Always work carefully and observe the limit values of your chipping process.



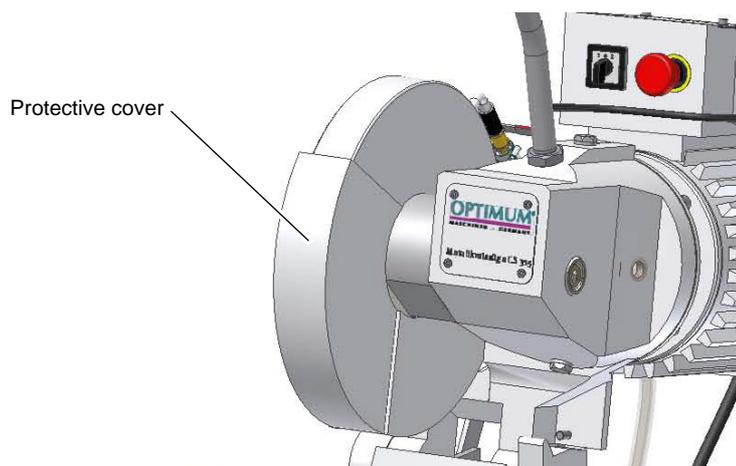
1.7.1 Protective cover on the saw blade

The saw blade of the circular metal saw is equipped with a protective cover. The protective cover covers the circulatory saw blade.

WARNING!

Danger of injury! The teeth of the saw blade are sharp. Take great care when opening the protective cover to change the saw blade.

Wear protective gloves.



Img.1-2: Protective cover

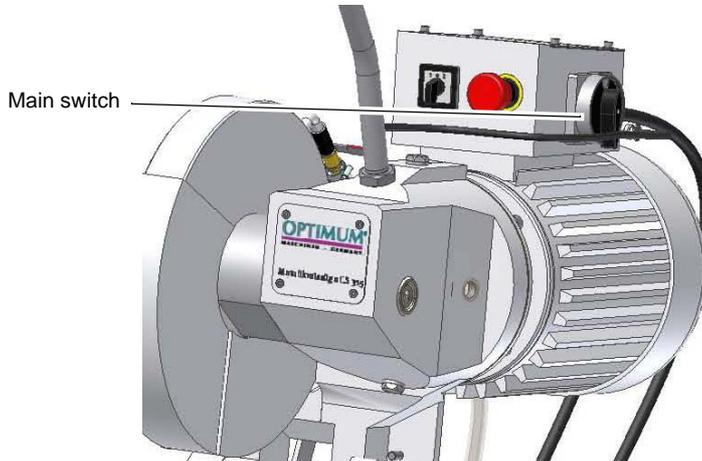


1.7.2 Lockable main switch

In the position " 0 " the lockable main switch can be secured against accidental or non-authorized switching-on by means of a padlock.

When the main switch is switched-off, the current supply is interrupted.

Except for the areas marked by the pictogram in the margin.



Img.1-3: Main switch

WARNING!

Dangerous voltage even if the main switch is switched-off. In the areas marked by pictogram in the margin, there might be voltage, even if the main switch is switched-off.

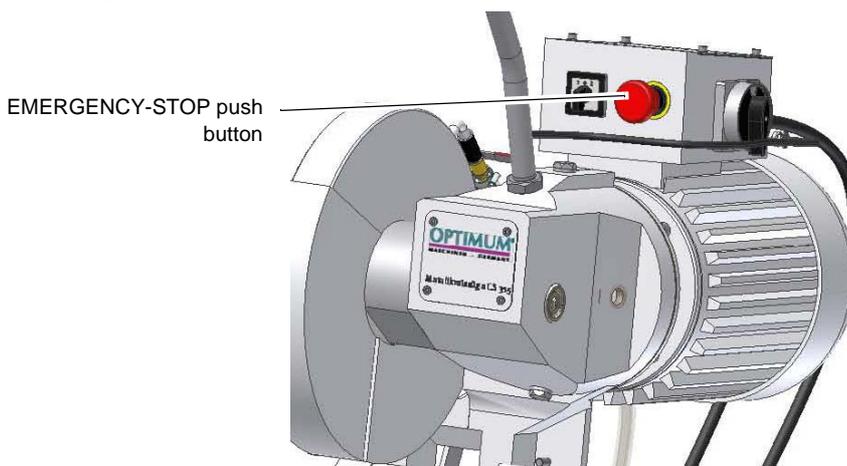


1.7.3 EMERGENCY-STOP push button

The EMERGENCY-STOP button switches the circular metal saw off.

INFORMATION

After actuation turn the EMERGENCYSTOP button clockwise in order turn the circular metal saw on again.



Img.1-4: EMERGENCY-STOP push button



1.7.4 Prohibition, warning and mandatory labels

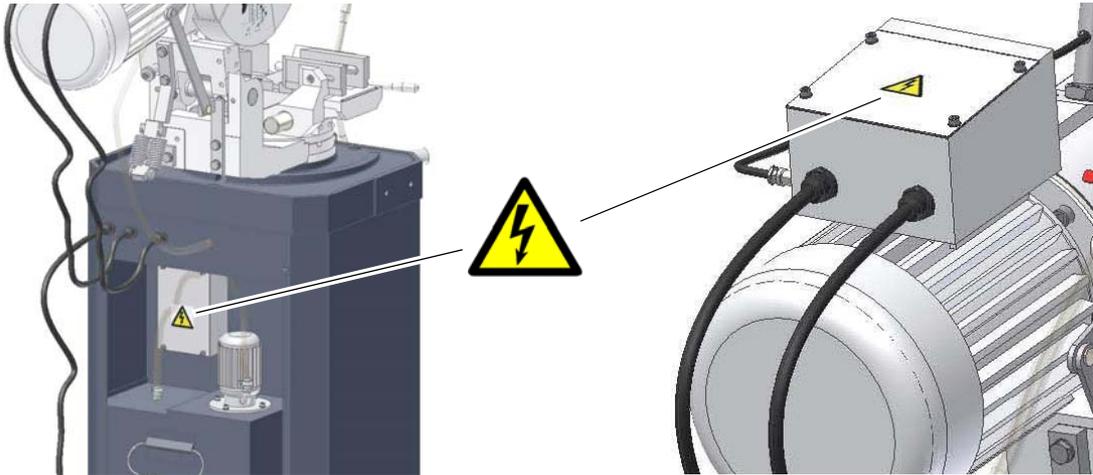
INFORMATION

All warning signs must be legible.

Check them regularly.



Position of labels on the circular metal saw:



Img. 1-5: Circular metal saw CS 275/ CS 315

Check the circular metal saw at least once per shift. Inform the person responsible immediately of any damage, defect or change in the operating function.

Check all safety devices

- at the beginning of each shift (with the machine stopped),
- once a week (with the machine in operation),
- after every maintenance and repair work.

Check that prohibition, warning and information signs and the labels on the circular metal saw

- are legible (clean them, if necessary),
- are complete.



1.8 Personnel protective equipment

For some works you need personnel protective equipment as protective equipment. These are

- safety helmet,
- protective glasses or face guard,
- protective gloves,
- safety shoes with steel caps,
- ear protection.

Before starting work, make sure that the prescribed protective equipment is available at the workplace.

CAUTION!

Dirty or contaminated personnel protective equipment can cause diseases. Clean it each time after use and once a week.



Personal protective equipment for special works

Protect your face and eyes: wear a safety helmet with facial protection when performing works where your face and eyes are exposed to hazards.



Use protective gloves when handling pieces with sharp edges.



Use safety shoes when you assemble, disassemble or transport heavy components.



1.9 Safety during operation

We specially point out the specific dangers when working with and on the circular metal saw.

CAUTION!

Before switching on the circular metal saw make sure that there are

- **no dangers generated for persons,**
- **no objects are damaged.**



Avoid any risky working practices:

- Make sure that nobody is endangered by your work.
- The instructions mentioned in these operating instructions have to be strictly observed during assembly, operation, maintenance and repair.
- Do not work on the circular metal saw, if your concentration is reduced, for example, because you are taking medication.
- Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other competent supervisory authority, responsible for your company.
- Stay at the circular metal saw until all movements have come to a complete standstill.
- Use the prescribed personnel protective equipment. Make sure to wear a well-fitting work suit and, if necessary, a hairnet.
- Inform the supervisor about all endangerments or errors.

1.10 Safety during maintenance

Inform the operators on time of any maintenance and repair work.

Report all safety relevant changes and performance details of the circular metal saw. Document all changes, have the operating instructions updated accordingly and train machine operators.

Report and document any changes

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1.10.1 Disconnecting and securing the circular metal saw

Disconnect the main plug of the circular metal saw and secure the circular metal saw against restarting.

Place a warning sign on the machine.



1.10.2 Using lifting equipment

WARNING!

The use of unstable lifting and load suspension gear that might break under load can cause severe injuries or even death.

Check that the lifting and load suspension gear is

- sufficient load capacity
- and that it is in perfect condition.

Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other competent supervisory authority, responsible for your company.

Fasten the loads properly.

Never walk under suspended loads!



1.10.3 Mechanical maintenance work

Remove or install protection safety devices before starting any maintenance work and re-install them once the work has been completed. This includes:

- Covers,
- Safety indications and warning signs,
- Earth (ground) connections.

If you remove protective or safety devices, re-fit them immediately after the completing the work.

Check if they are working properly!

1.11 Accident report

Inform your superiors and Optimum Maschinen Germany GmbH immediately in the event of accidents, possible sources of danger and any actions which almost led to an accident (near misses).

There are many possible causes for "near misses".

The sooner they are notified, the faster the causes can be eliminated.

INFORMATION

We point out the specific dangers when performing works with and on the circular metal saw when describing such works.



1.12 Electrical system

Have the machine and/or the electrical equipment checked regularly, at least every six months. Immediately eliminate all defects such as loose connections, defective wires, etc.

A second person must be present during work on live components to disconnect the power in the event of an emergency.

Disconnect the circular metal saw immediately if there is a malfunction in the power supply !

☞ "Maintenance" on page 35, ☞ "Schaltplan - Wiring diagram" on page 44



2 Technical data

The following information are the dimensions and indications of weight and the manufacturer's approved machine data.

2.1 Electrical connection	CS 275	CS 315
Connection	400 V ~ 50 Hz (~60Hz) 2 KW / 1.4 KW	400 V ~ 50 Hz (~60Hz) 1.5 KW / 0.75 KW
Cooling pump	400 V ~ 50 Hz 40 W	400 V ~ 50 Hz 40 W

2.2 Cutting area	CS 275	CS 315
90° round, max.	60 mm	85 mm
90° rectangular, max.	100 x 60 mm	130 x 70 mm
90° square, max.	60 x 60	70 x 70
45° round, max.	60 mm	85 mm
45° rectangular, max.	70 x 60 mm	90 x 70 mm
45° square, max.	60 x 60	70 x 70
Cutting angle	-45°/+45°	

2.3 General	CS 275	CS 315
Cutting angle adjustment	over turnable bearing block	
Feed	manually	
Material tension	manual in the quick-action vice	

2.4 Dimensions	CS 275	CS 315
Saw blade diameter [mm]	275	315
 "Dimensions of sawing flange" on page 40		
Range vice	110 mm	145 mm

2.5 Speed of saw blade	CS 275		CS 315	
Two-step drive engine [m/min]	41 (~50Hz)	82 (~50Hz)	19 (~50Hz)	38 (~50Hz)

2.6 Environmental conditions	CS 275	CS 315
Temperature	5-35 °C	
Humidity	5 - 80 %	

2.7 Operating material	CS 275	CS 315
Worm gear	Mobilgear 629, viscosity 40°C 150 mm ² /s , at 100°C 16 mm ² /s ISO VG 150	
Spindle of the machine vice	Commercial heavy grease	

CS275_CS315_GB_2.fm



2.7 Operating material	CS 275	CS 315
Slide bearing	Commercial heavy grease	
Bare steel parts	e.g. machines oil (Mobil Oil, Fina, ...) motor oil, motor oil is acid-, stain- and resin-free.	

2.8 Emissions

The generation of noise emitted by the circular metal saw is less than 80 dB(A).

If the circular metal saw is installed in an area where various machines are in operation, the noise exposure (immission) on the operator of the circular metal saw at the working place may exceed 85 dB(A).

INFORMATION

This numerical value was measured on a new machine under proper operating conditions. Depending on the age respectively on the wear of the machine it is possible that the noise behaviour of the machine changes.



Furthermore, the factor of the noise emission is also depending on manufacturing influencing factors, e.g. speed, material and clamping conditions.

INFORMATION

The mentioned numerical value is the emission level and not necessarily a safe working level.

Though there is a dependency between the degree of the noise emission and the degree of the noise disturbance it is not possible to use it reliably to determine if further precaution measures are required or not.



The following factors influence the actual degree of the noise exposure of the operator:

- Characteristics of the working area, e.g. size or damping behaviour,
- Other noise sources, e.g. the number of machines,
- Other processes taking place in the proximity and the period of time during which the operator is exposed to the noise.

Furthermore, it is possible that the admissible exposure level might be different from country to country due to national regulations.

This information about the noise emission shall allow the operator of the machine to more easily evaluate the endangering and risks.

CAUTION!

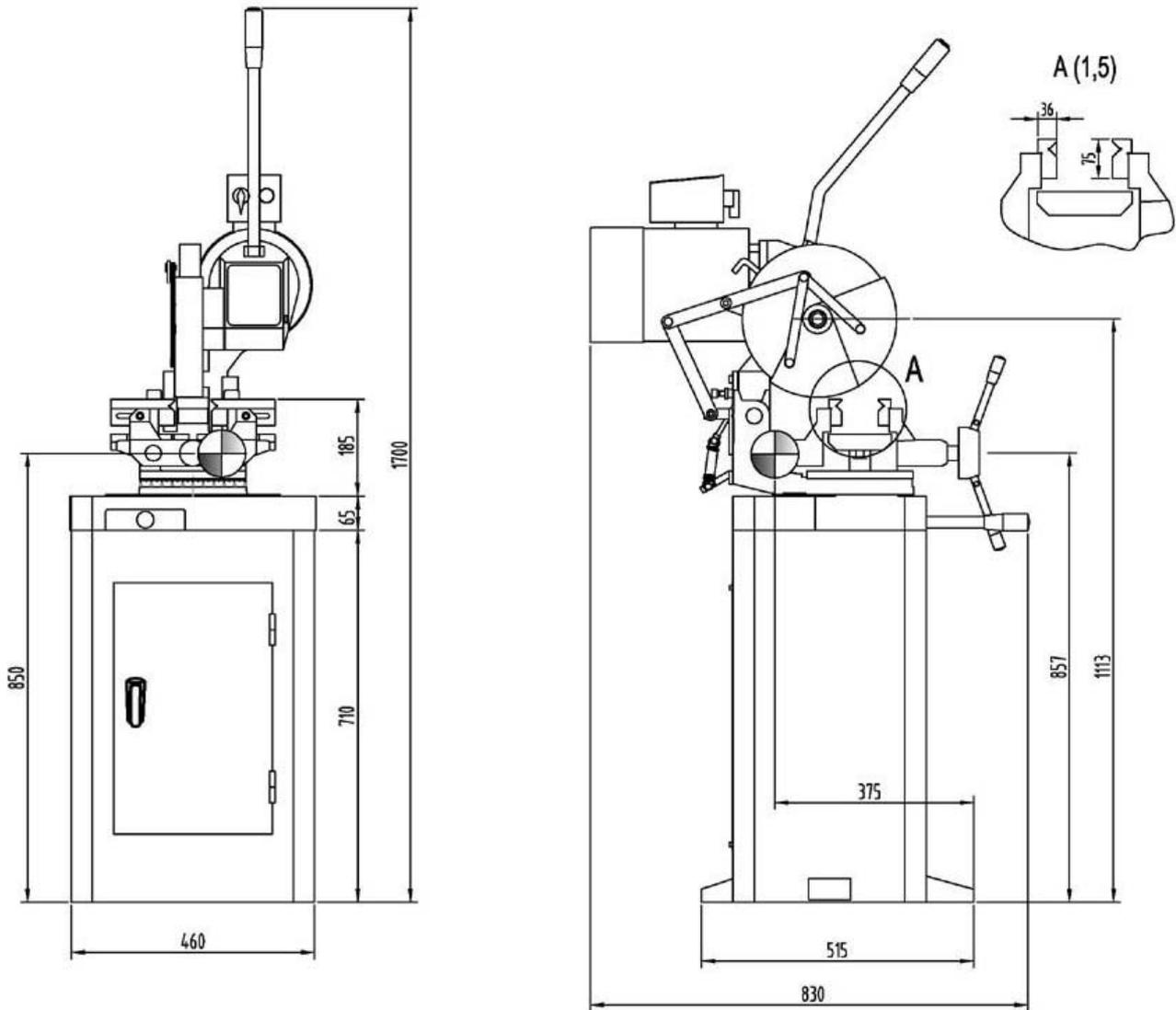
Depending on the overall noise exposure and the basic limit values the machine operators must wear an appropriate hearing protection.



We generally recommend to use a noise protection and a hearing protection.



2.9 Dimensions CS 275

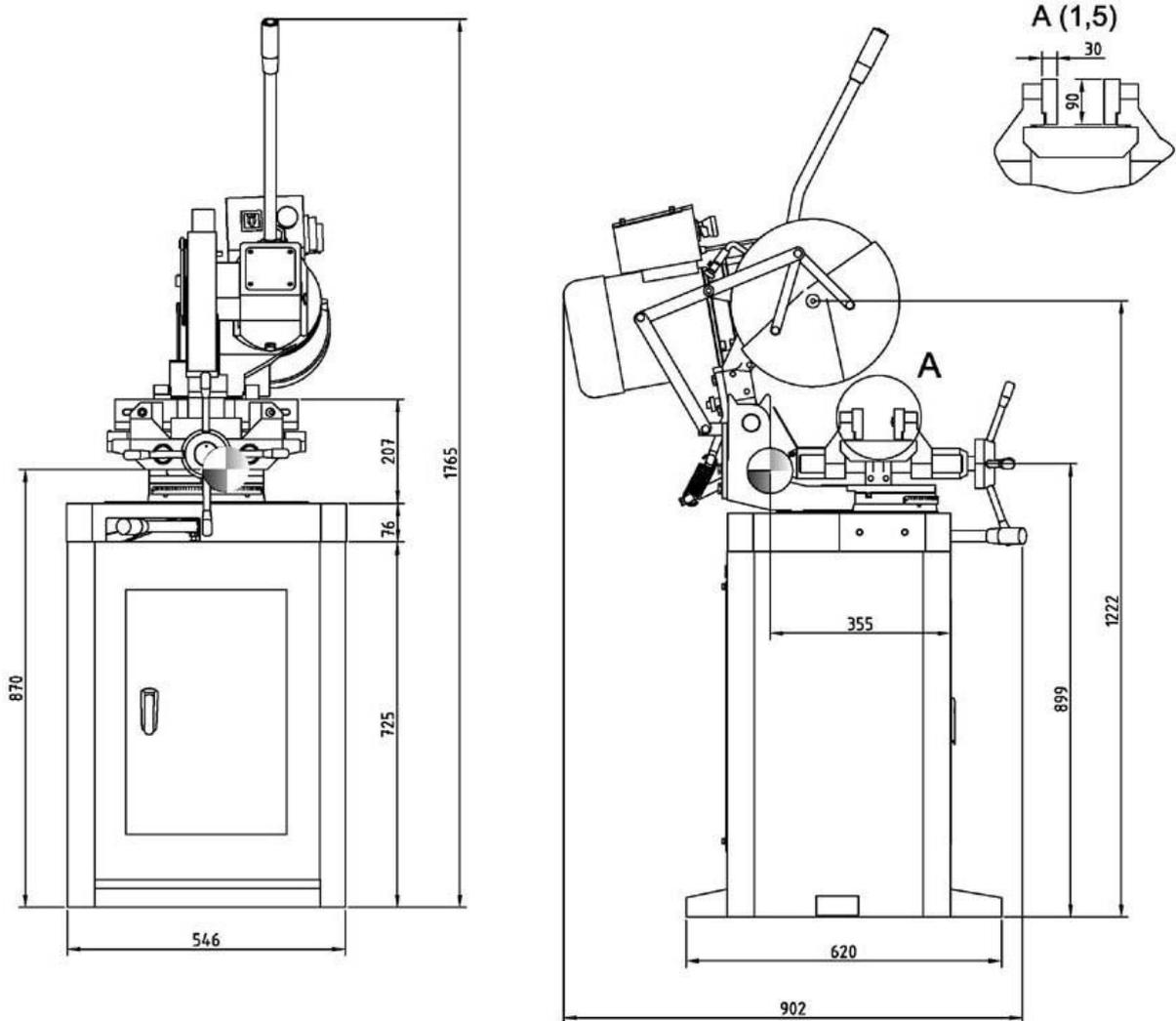


Schwerpunkt/ Centre of gravity
Gewicht / Weight 205 kg

Img.2-1: Dimensions CS 275



2.10 Dimensions CS 315



 **Schwerpunkt/ Centre of gravity**
Gewicht / Weight 270 kg

Img.2-2: Dimensions CS 315



3 Assembly

INFORMATION

The circular metal saw is delivered pre-assembled.



3.1 Scope of delivery

When the circular metal saw is delivered, please check immediately that it has not been damaged during transport. Also check that no fastening screws have come loose. Compare the scope of delivery with the attached packing list.

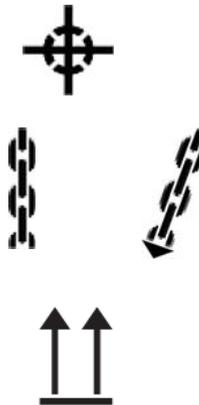
INFORMATION

In the default delivery volume, no saw blade is included. If required, you can order saw blades of three different toothings. ➔ "Ersatzteilliste - Spare parts list - CS275" on page 45



3.2 Transport

- Centres of gravity
- Attachment positions (Marking the positions for the attachment position gear)
- Prescribed transportation position (Marking of the top surface)
- Means of transport to be used
- Weights



WARNING!

Severe or fatal injuries may occur if parts of the machine tumble or fall down from the forklift truck or from the transport vehicle. Follow the instructions and information on the transport case:



- Centres of gravity
- Load suspension point
- Weights
- Means of transport to be used
- Prescribed transportation position

WARNING!

The use of unstable lifting and load suspension gear that might break under load can cause severe injuries or even death.

Check that the lifting and load suspension gear has sufficient load capacity and that it is in perfect condition. Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other competent supervisory authority, responsible for your company.



Fasten the loads properly. Never walk under suspended loads!



3.3 Storage

ATTENTION!

In case of wrong and improper storage electrical and mechanical machine components might get damaged and destroyed.

Store packed and unpacked parts only under the intended environmental conditions.

Follow the instructions and information on the transport case:



- Fragile goods
(Goods require careful handling)
- Protect against moisture and humid environment
☞ "Environmental conditions" on page 16.
- Prescribed position of the packing case
(Marking of the top surface - arrows pointing to the top)
- Maximum stacking height

Example: not stackable - do not stack a second packing case on top of the first packaging case



Consult Optimum Maschinen Germany GmbH if the drilling-milling machine and accessories are stored for more than three months or are stored under different environmental conditions than those given here.



3.4 Installation and assembly

3.4.1 Requirements to the installation site

Organize the working area around the circular metal saw according to the local safety regulations. 📏 "Dimensions" on page 16

The working area for operating, maintenance and repair must not be hindered.

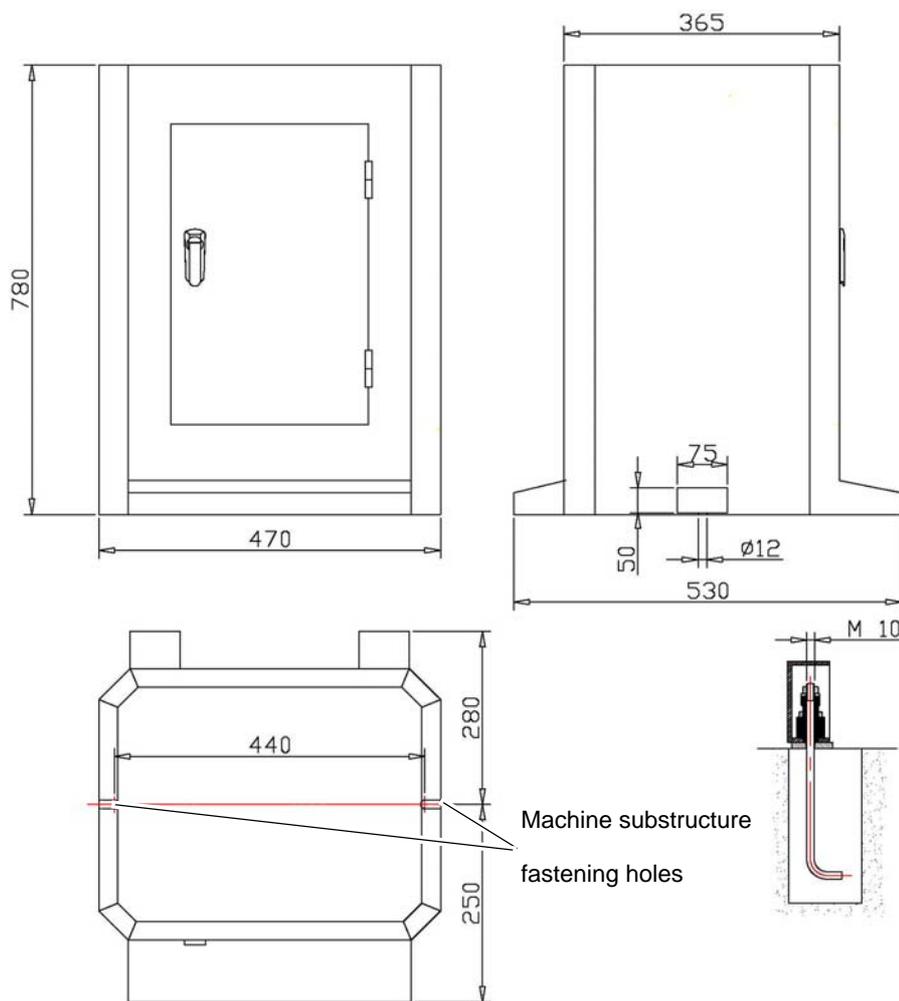
INFORMATION

The mains plug of the circular metal saw must be freely accessible.



3.4.2 Fasten the substructure of the circular metal saw CS275 on the floor

➔ Fasten the substructure on the floor with shear connector screws M10.

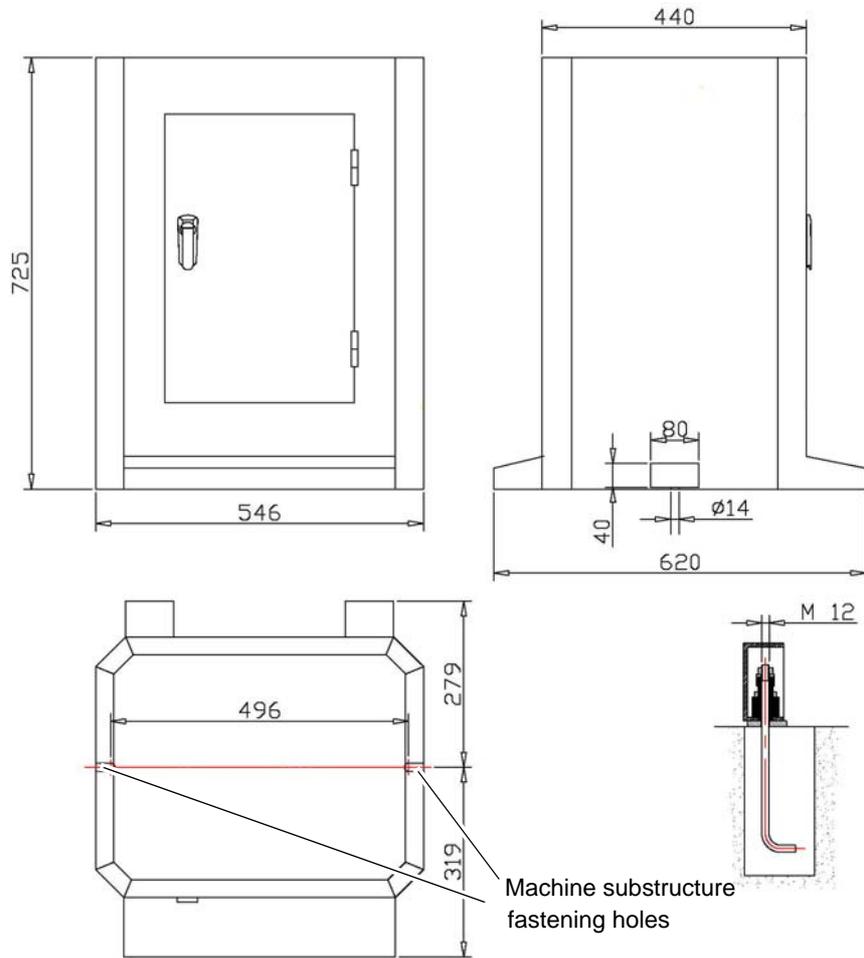


Img.3-1: Machine substructure CS275



3.4.3 Fasten the substructure of the circular metal saw CS315 on the floor

→ Fasten the substructure on the floor with shear connector screws M12.



Machine substructure fastening holes

img.0-2. machine substructure CS315



3.4.4 Mount the saw on the machine substructure

CAUTION!

Danger of crushing and tilting.

Danger of cutting, perform the works described hereunder with care.

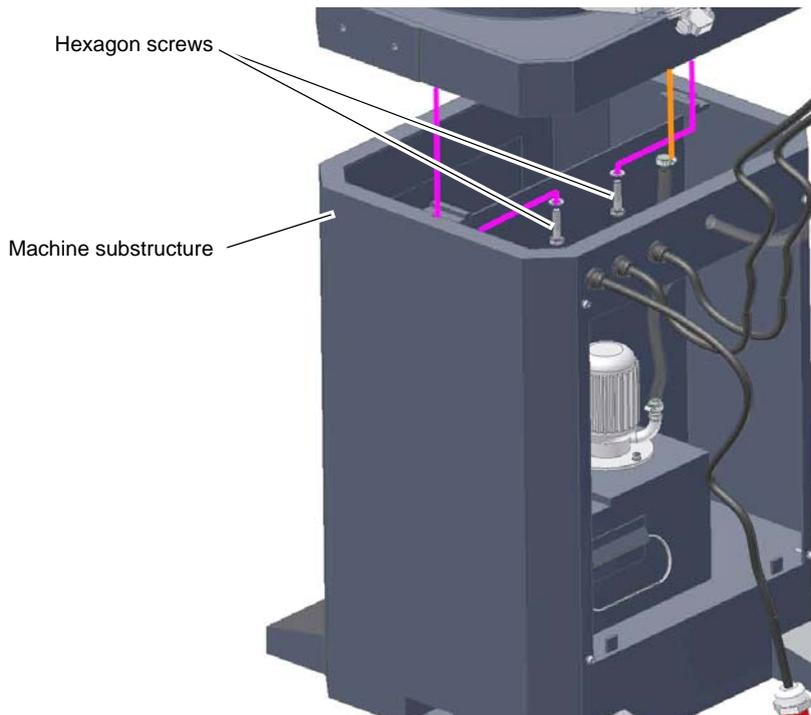


CAUTION!

The circular metal saw needs to be mounted on the machine substructure by at least two persons.



- Put the circular metal saw on the machine substructure.
- Fasten the circular metal saw with the hexagon socket screws on the machine substructure.

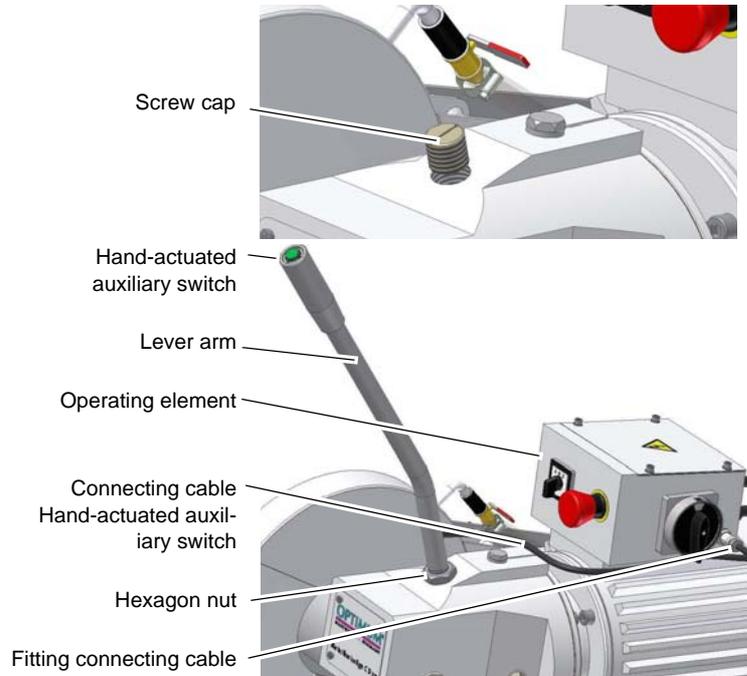


Img.3-3: Mount the saw on the machine substructure



3.4.5 Mount the lever arm

- Remove the screw cap on the saw head.
- Mount the lever arm on the saw head.
- Set up the lever arm.
- Counter the lever arm attached to the hexagonal nut.
- Connect the cable connection with the operating element.



Img.3-4: Mount lever arm

3.4.6 Mount the saw blade

- Mount your saw blade "Mounting and replacing the saw blade" on page 38

3.5 First commissioning

ATTENTION!

Before commissioning the machine check all screws, fixtures resp. safety devices and tighten up the screws if necessary!



WARNING!

When first commissioning the circular metal saw by inexperienced staff you endanger people and the machine.



We do not take any liability for damages caused by incorrectly performed commissioning.

3.5.1 Checks

- Perform the following checks.

CAUTION!

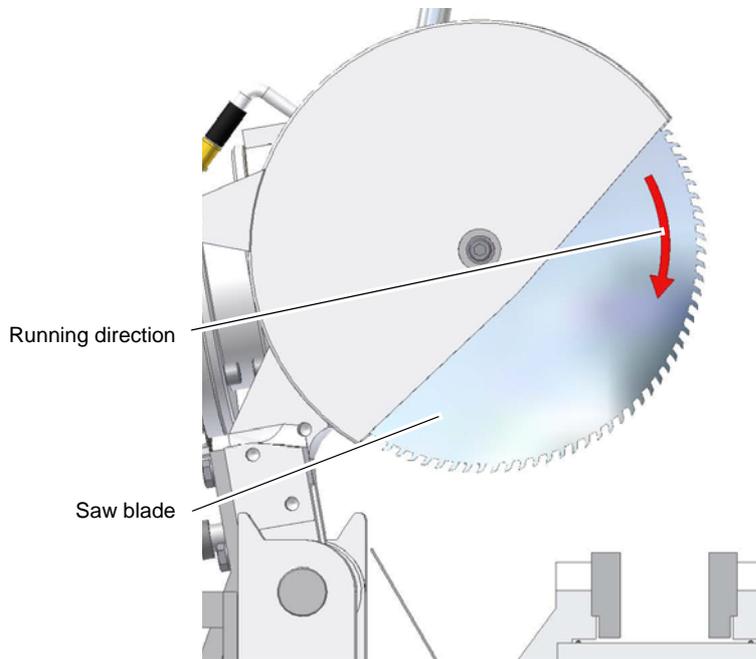
Danger of cutting, perform the works described hereunder with care. Use the prescribed protective equipment.





3.5.2 Direction of the saw teeth

- Check the direction of the saw teeth. The saw teeth need to be oriented in the direction of the illustrated arrow.



Img.3-5: Running direction of saw blade

3.5.3 Check the oil level in the worm gear

- Check the oil level in the worm gear of the circular metal saw.
 - ☞ "Check oil level, change gear oil." on page 36
- Fill in gear oil, if required.

3.5.4 Refill coolant

ATTENTION!

Failure of the pump in case of dry running.

When the circular metal saw is switched on, the coolant pump is switched on.

The pump is lubricated by the cooling agent.

Do not start up the pump without cooling lubricant.

☞ "Filling in / Rinsing / Replacing" on page 38



3.5.5 Electrical connection

Connect the mains plug of the circular metal saw with your power supply. Control the fusing (fuse) of the power supply according to the technical indications for the power input of the circular metal saw.

INFORMATION

For the connection, a 400V-16 A connection cable needs to be connected.





3.5.6 Electrical connection

Connect the electrical supply cable.

Check the fusing (fuse) of your electrical supply according to the technical instructions regarding the total connected power of the circular metal saw.

ATTENTION!

Imperatively make sure that all 3 phases (L1, L2, L3) are correctly connected.

Most motor defects result of wrong connections. For instance if a motor phase is not correctly clamped or connected to the neutral conductor (N).

Effects may be as follows:

- The motor is getting hot very rapidly.
- Increased motor noises.
- The motor has no power.

The guarantee will become null and void if the machine is wrongly connected.



3.5.7 Check the running direction of the saw blade

ATTENTION!

Observe the rotating field!

The saw blade is running clockwise.

Check the turning direction of the circular metal saw. The circular metal saw has to turn in direction as described. Img.3-5: "Running direction of saw blade" on page 26

If the turning direction is wrong, please exchange two of the three phases on your cable connection or on your power supply.

Make sure that a different power supply, the direction of rotation could be wrong again.

☞ "Qualification of the staff" on page 8





4 Operation

4.1 Safety

Use the circular metal saw only under the following conditions:

- The circular metal saw is in proper working order.
- The circular metal saw is used as prescribed.
- The operating manual is followed.
- All safety devices are installed and activated.

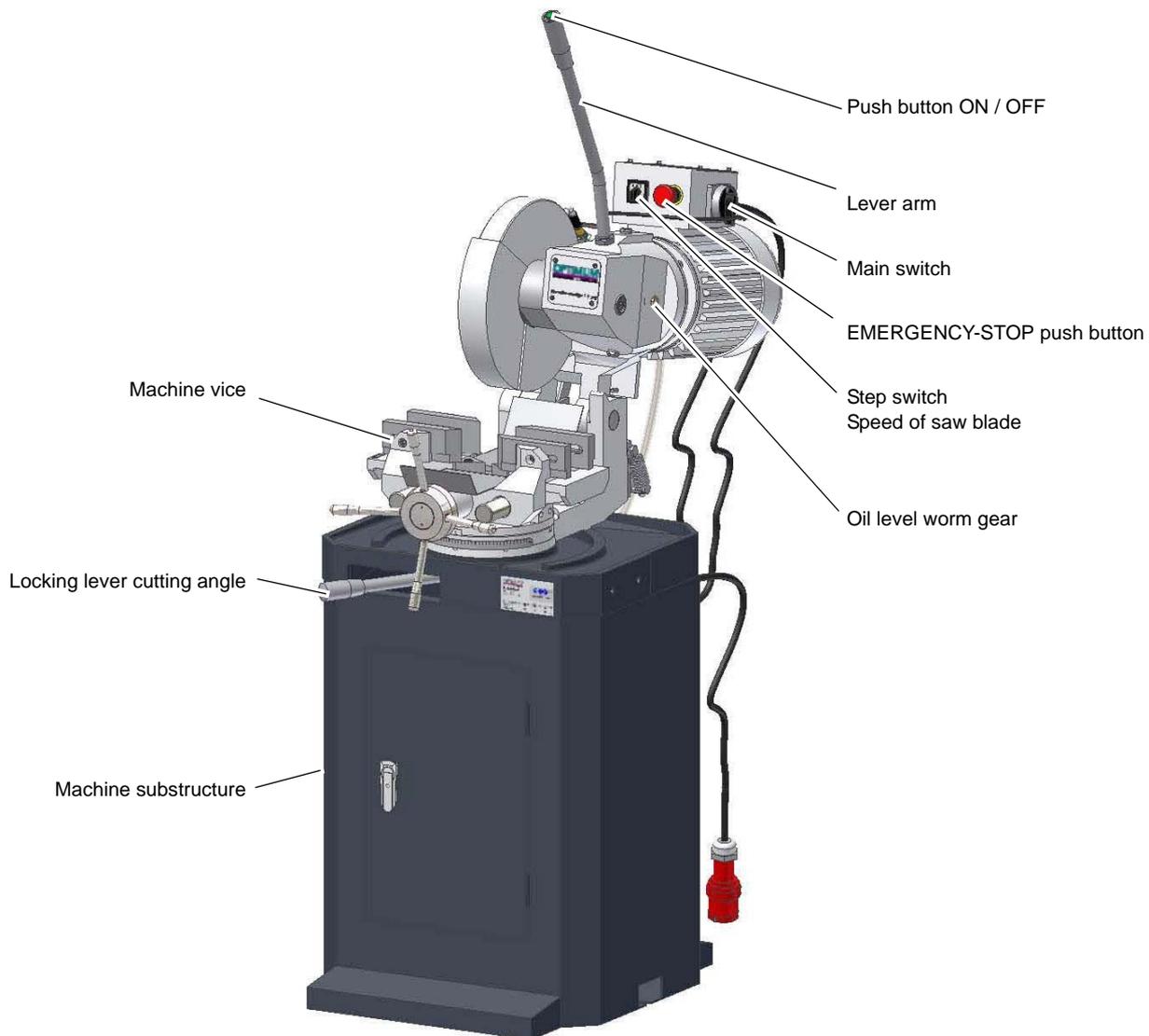
All failures should be eliminated immediately. Stop the immediately in the event of any abnormality in operation and make sure it cannot be started-up accidentally or without authorisation.

Notify the person responsible immediately of any modification.

☞ "Safety during operation" on page 14



4.2 Control and indicating elements CS 275/ CS 315



Img.4-1: Circular metal saw CS 315

CS275_CS315_GB_4.fm



4.3 Inserting the workpiece

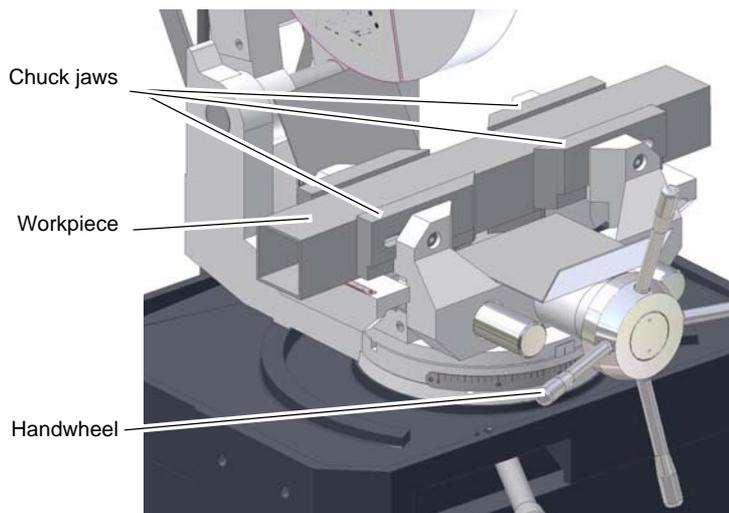
The machine vice serves as clamping device of the workpiece.

The machine vice consists of

- the working table,
- the clamping jaws,
- the hand wheel.

The clamping jaws at the front and back are moved simultaneously, this way the machine vice will clamp the clamp parts centrally.

➔ Insert the workpiece which needs to be sawed into the machine vice.

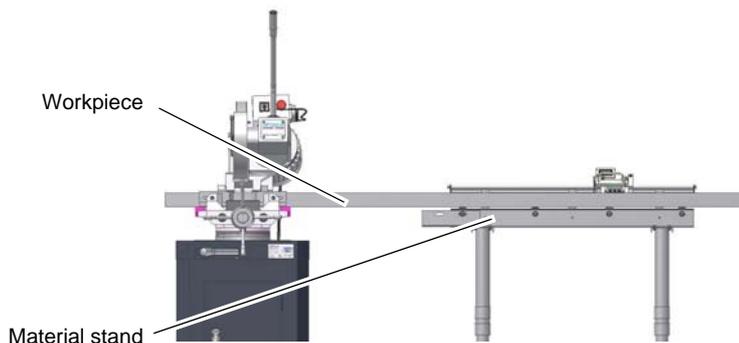


Img.4-2: Machine vice

ATTENTION!

Danger of overturning of the circular metal saw if the machine substructure had not been fixed to the floor.

Support long workpieces before pushing the piece to be cut into the machine vice.



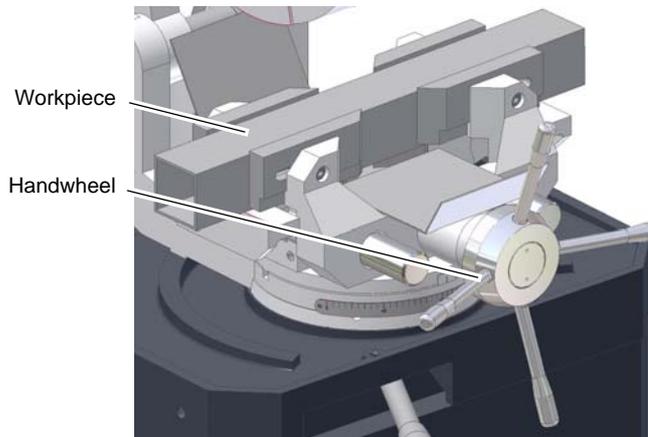
Img.4-3: Machine vice

➔ Turn the hand wheel to the right until the workpiece is firmly clamped.



ATTENTION!

Make sure if the workpiece is really firmly clamped.



Img.4-4: Handwheel

4.4 Saw blade speed CS 275/ CS 315

4.4.1 Speed change

A speed change of the saw blade is performed by switching over with the step switch on the control panel.

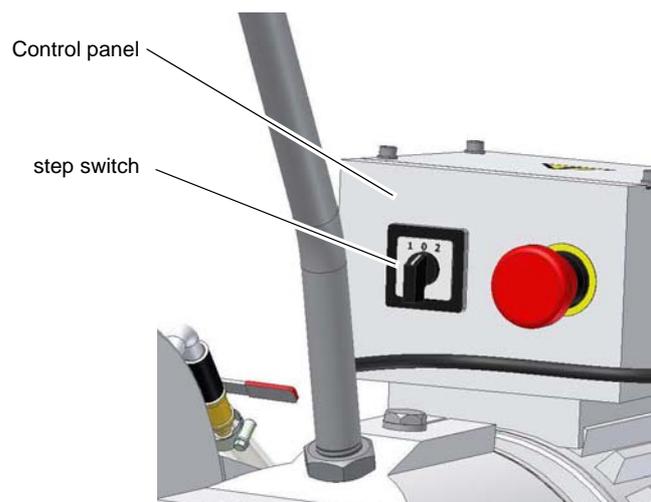
There are two speed levels available which allow a wide range of materials allowed for sawing.

CS 275

- Level 1 = 41 (~50Hz) m/min
- Level 2 = 82 (~50Hz) m/min

CS 315

- Level 1 = 19 (~50Hz) m/min
- Level 2 = 38 (~50Hz) m/min



Img.4-5: Step switch saw blade speed



4.4.2 Select the tothing and the shape of the tooth

When sawing with the circular metal saw, make sure to select the correct saw blade or the correct tothing of the saw blade.

With the help of the listed table (Img.4-6: „Table for tothing“ on page 31) you can determine the tothing for the material which you want to saw by yourself.

ATTENTION!

If the tothing is too small and the cutting length is too large, the chipping material can not be taken up by the gap between the tooth.



In case of large tothing, the saw tooth starts pecking; this might cause the teeth to break.

Spacing	Massive material					
	D	10	20	30	40	50
Profile material	d					
	d	1	2	3	4	5
	3	○				
	4		○			
	5	●		○		
	6				○	
	8		●			○
	10			●		
	12				●	
	15					●

<p>D=20 t=8</p>	<p>d=2 t=4</p>
-----------------	----------------

Img.4-6: Table for tothing

Example:

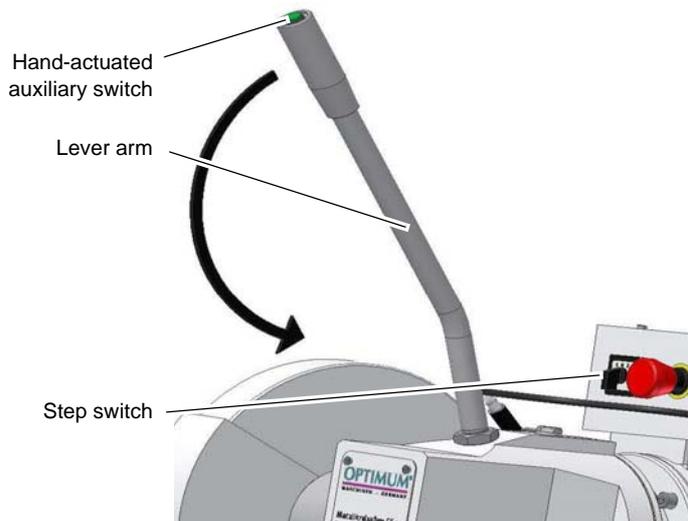
Profile material wall thickness 3 mm = tothing 10

Massive material diameter 40 mm = tothing 12



4.5 Switch on the machine

- Connect the mains plug with the power supply.
- Switch on the main switch.
- Select speed level "1" or "2".
- Actuate the hand-actuated switch at the handle of the lever arm.
- Pull the lever arm downward towards the workpiece.

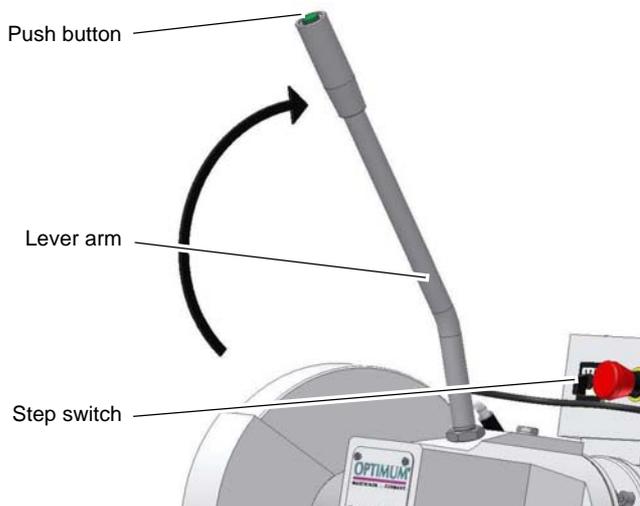


Img.4-7: Hand-actuated auxiliary switch and step switch



4.6 Switching off the machine

- Push the lever arm upward.
- Release the hand-actuated auxiliary switch at the handle of the lever arm.
- Switch the step switch to the position "0".
- Switch off the main switch.



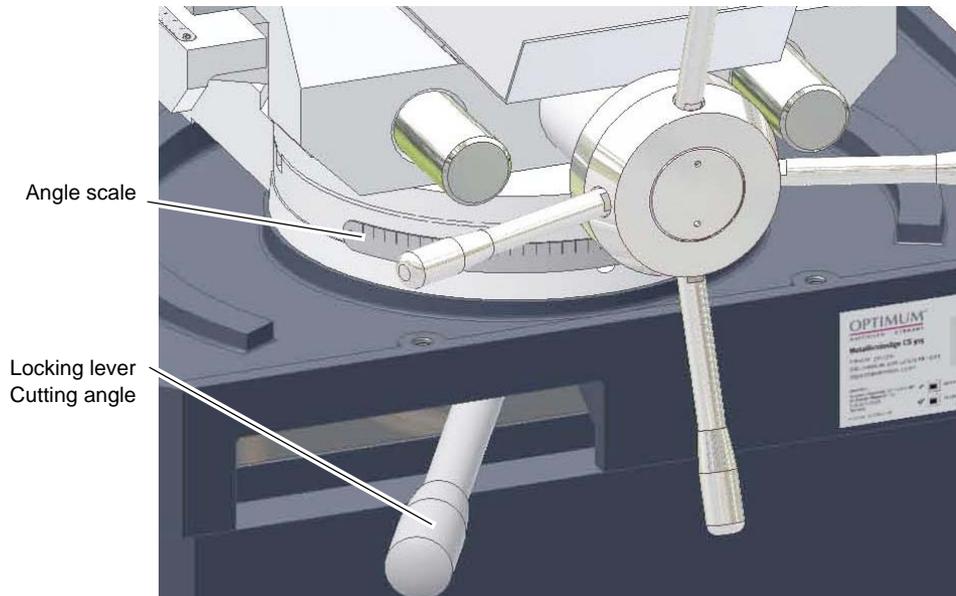
Img.4-8: Hand-actuated auxiliary switch and step switch





4.7 Sawing of angles

The circular metal saw can be turned from -45° to 45° in order to allow angular saw cuts.

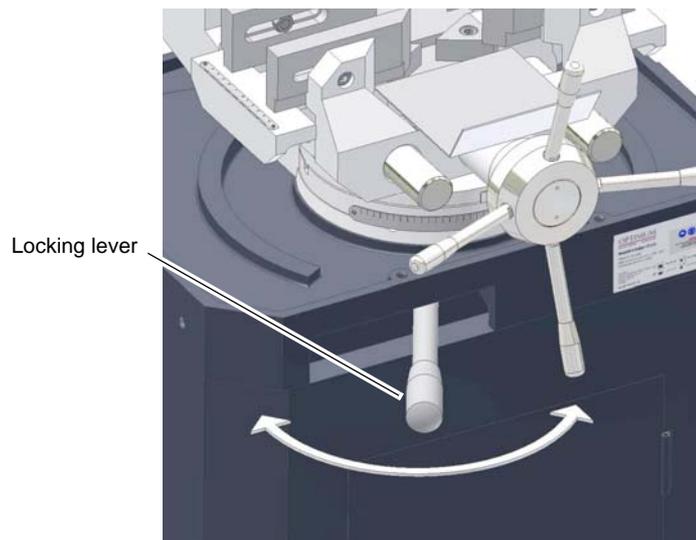


Img.4-9: Setting of angle cut

ATTENTION!

Make sure that the saw is clean and free of chips in the slewing area before adjusting it.

- Loosen the locking lever.
- Turn the saw to the required cutting position with the help of the angle scale.
- Retighten the clamping screw.
- Move the locking lever to the right in order to release the bearing block.
- Adjust the saw to the required position with the help of the angle scale.
- Move the locking lever to the left in order to reclamp the bearing block.



Img.4-10: Releasing clamping lever



4.8 Cooling

ATTENTION!

Failure of the pump in case of dry running.

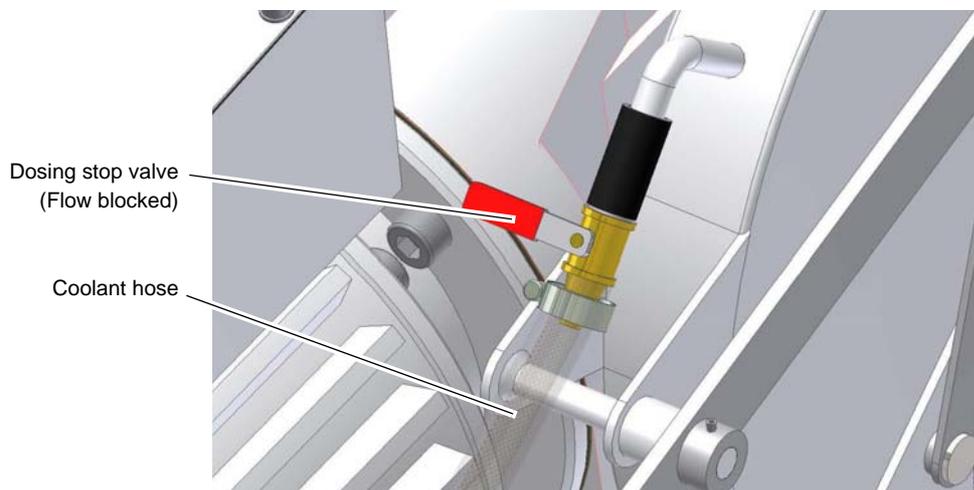
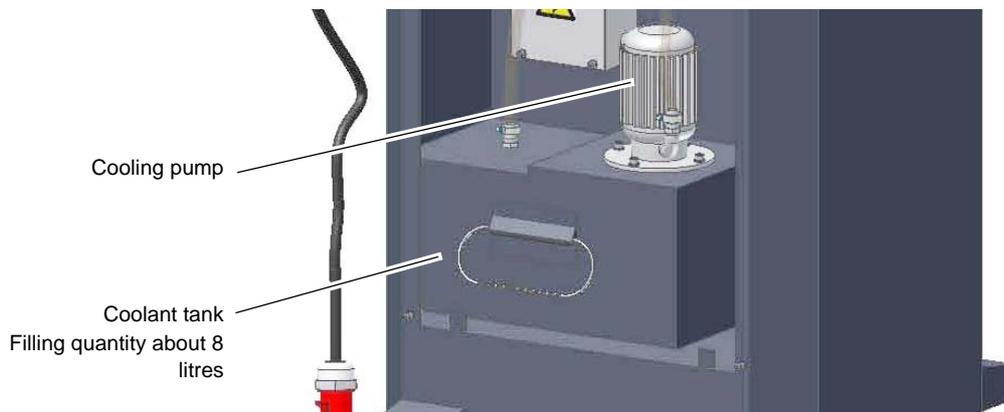
When the circular metal saw is switched on, the coolant pump is switched on.

The pump is lubricated by the cooling agent. Do not start up the pump without cooling lubricant.

➔ Turn the dosing stop valve in direction of the coolant hose until the coolant penetrates.

By the turning move high temperatures are generated at the lip of the tool by the occurring friction heat.

By cooling with an appropriate coolant/lubricant agent you will achieve better working results and longer tool life of the saw blade.



Img.4-11: Coolant equipment

INFORMATION

Use a water soluble environmentally compliant emulsion as cooling agent procured from the specialized trade.

Make sure that the cooling agent is properly retrieved.

Respect the environment when disposing of any lubricants and coolants.

Follow the manufacturer's disposal instructions.



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5 Maintenance

In this chapter you will find important information about

- Inspection
- Maintenance
- Repairs

ATTENTION!

Properly performed regular maintenance is an essential prerequisite for

- **operational safety,**
- **failure-free operation,**
- **long durability of the circular metal saw and**
- **the quality of the products which you manufacture.**



Installations and equipment from other manufacturers must also be in good order and condition.

ENVIRONMENTAL PROTECTION

During work on the worm gear and on the coolant tank make sure that the

- **collector tanks are used with sufficient capacity for the amount of liquid to be collected.**
- **any spilt liquids and oils are not spilt on the ground.**



Clean up any spilt liquid or oils immediately using proper oil-absorption methods and dispose of them in accordance with current legal requirements on the environment.

Collect leakages

Do not re-introduce liquids split outside the system during repair or as a result of leakage from the reserve tank: collect them in a collecting container to be disposed of.

Disposal

Never dump oil or other pollutant substances in water inlets, rivers or channels.

Used oils must be delivered to a collection center. Consult your supervisor if you do not know where the collection centre is.

5.1 Safety

WARNING!

The consequences of incorrect maintenance and repair work may include:

- **Very serious injury to personnel working on the circular metal saw,**
- **Damage to the machine.**

Only qualified personnel should carry out maintenance and repair work on the circular metal saw.



5.1.1 Preparation

WARNING!

Only carry out work on the machine, if it has been disconnected of the power supply.

Attach a warning label.



5.1.2 Restarting

Before restarting run a safety check.



WARNING!

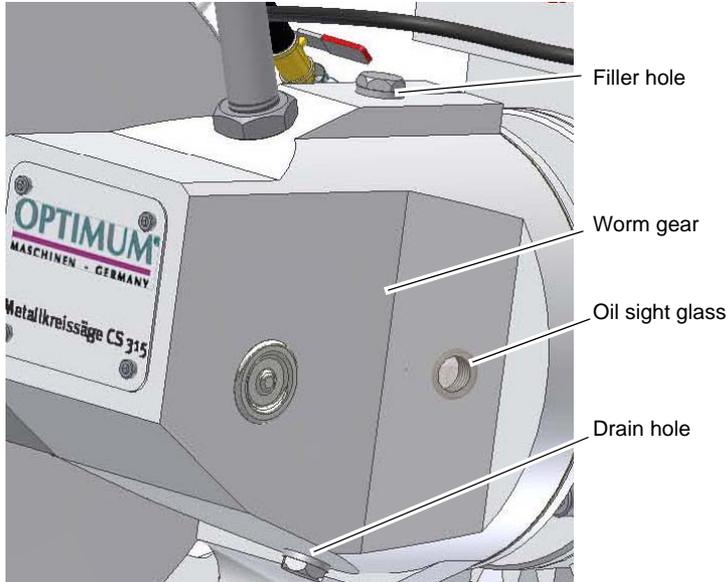
Before starting the machine you must be sure that

- no dangers generated for persons,
- the circular metal saw is undamaged.



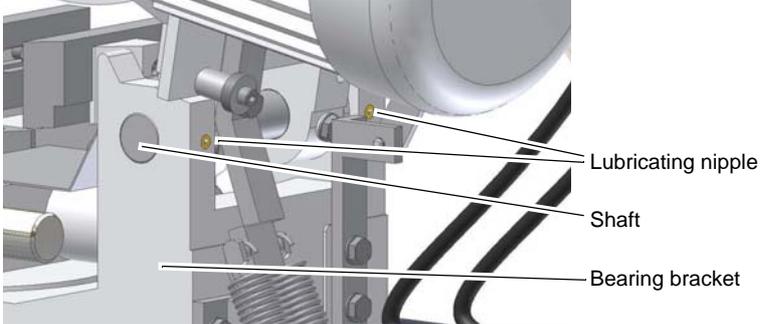
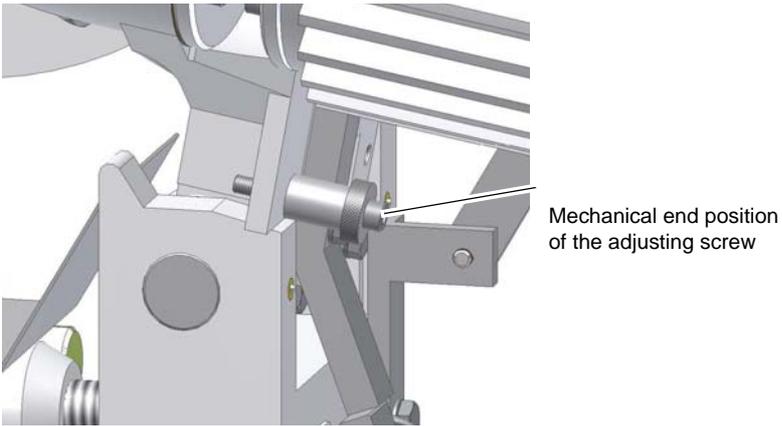
5.2 Inspection and maintenance

The type and level of wear depends to a large extent on the individual usage and operating conditions. For this reason, all the intervals are only valid for the authorised conditions.

Interval	Where?	What?	How?
every six months	Worm gear	Check oil level, change gear oil.	<p>→ Replace the lubricating oil in the worm gear. → Regularly check the oil level on the sight glass. → The oil level must at least attain the centre resp. top marking of the oil sight glass.</p>  <p>Img.5-1: Oil level worm gear</p> <p>INFORMATION The filling quantity amounts to about 0.5 litres Type of the gear oil, see "Operating material" on page 16</p>
every six months	Electrical system	Testing	<p>Check the electrical devices / components of the circular metal saw. see "Qualification of the staff" on page 8</p>
as required	Clean machine	Fine cleaning the machine	<p>→ Clean the machine with an appropriate cloth and provide rust protection with a conserving type of oil. see "Operating material" on page 16</p>

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Interval	Where?	What?	How?
as required	Vice	Cleaning the vice	<p>→ Regularly remove the chips which are accumulating below the clamping jaws.</p> <p>→ To do so, use a thin, flat brush.</p> <p>ATTENTION!  Never clean the vice with compressed air.</p>
as required	Arbor bearing block	Lubricating	<p>→ Lubricate the shaft of the bearing block</p>  <p>Img.5-2: Bearing bracket</p>
as required	Machine vice	Spindle	<p>→ Lubricate the spindle of the machine vice at the provided lubricating nipples.</p> <p>Type of the lubricating oil,  "Operating material" on page 16</p>
as required	Bearing bracket saw head	Adjusting the end position	<p>The end position of the saw blade shall be positioned below the support face of the machine vice..</p> <p>→ Adjust the end position of the saw head with the screw. Refasten the counternut after readjusting it.</p>  <p>Img.5-3: End position saw head</p>



Interval	Where?	What?	How?
every six months	Coolant equipment	Filling in / Rinsing / Replacing	<p>The coolant pump is maintenance-free.</p> <ul style="list-style-type: none"> ○ Replace the cooling agent regularly, depending on usage. ○ Rinse the coolant pump if you use coolants that leave residues. ○ In order to exchange the coolant liquid, pump it into an appropriate collecting vessel and refill the coolant liquid. <p>INFORMATION</p> <p>The filling quantity amounts to about 8 litres. Thus the tank is filled about 2/3 of its filling capacity.</p>
According to wear	Saw blade	Replacing the saw blade	<p>☞ "Mounting and replacing the saw blade" on page 38</p>

INFORMATION

The spindle bearing is lifetime-lubricated. It is not necessary to lubricate it again.



5.3 Mounting and replacing the saw blade

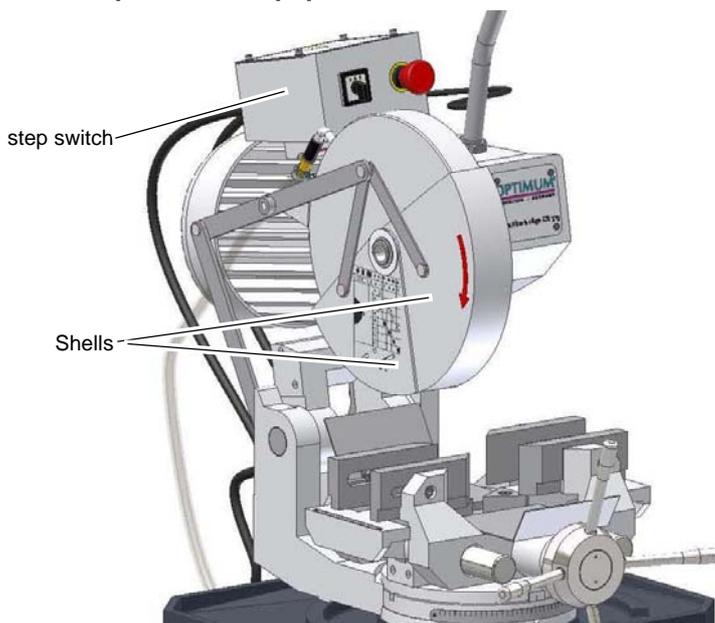
Disconnect the circular metal saw from the electrical supply.

☞ "Disconnecting and securing the circular metal saw" on page 15



CAUTION!

Danger of cutting, please proceed carefully when performing the below described works. Use the prescribed protective equipment.



Img.5-4: Mounting and replacing the saw blade

CS275_CS315_GB_5.fm



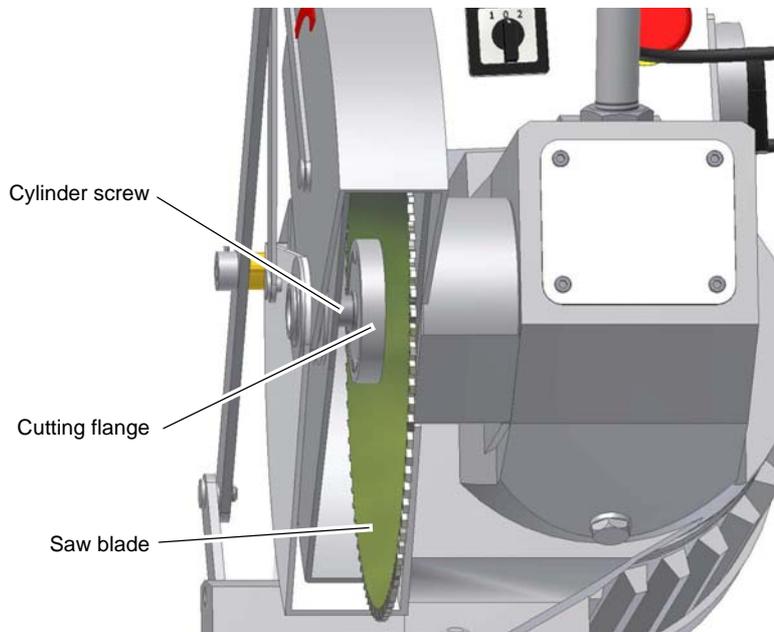
- Switch the step switch to the position 0.
- Disconnect the machine from the mains.
- Adjust the saw to the maximum top.
- Remove a screw on the linkage of the shells to prevent the automatic closing of the shells.
- Loosen the socket screw M8 from the sawing spindle and remove the cutting flange.
- Remove the sawing blade.
- Thoroughly clean the sawing spindle and the flange.
- Reassemble the parts in reverse sequence.



ATTENTION!

Danger of cutting, perform the works described hereunder with care.

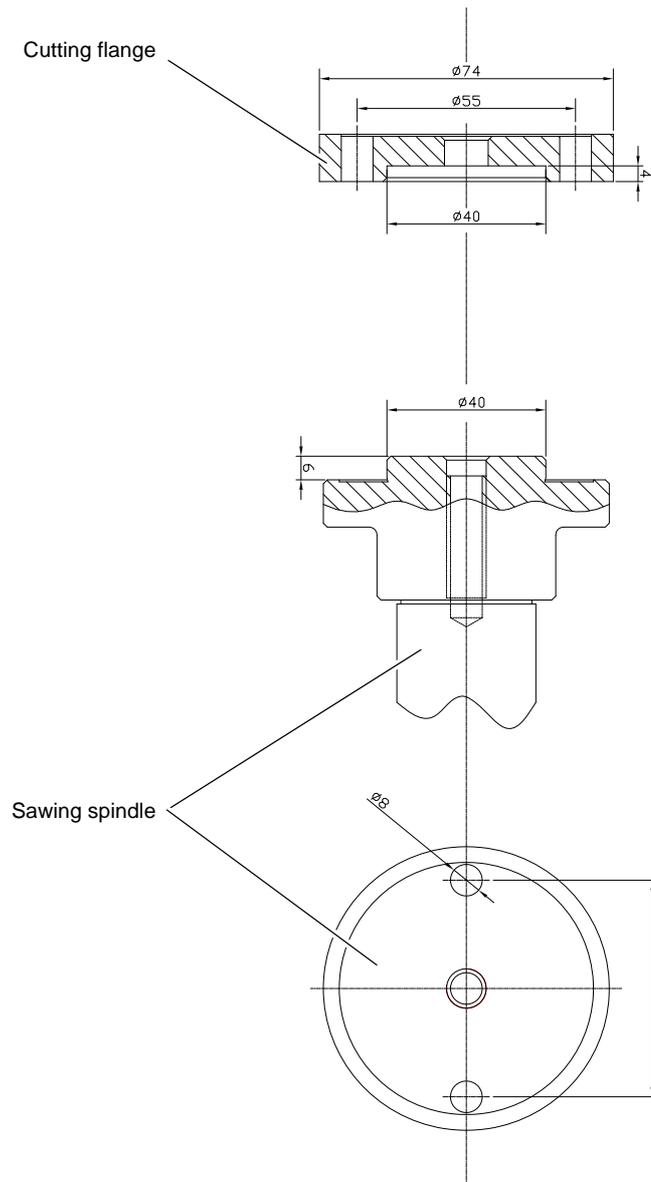
- Mind the turning direction of the saw blade.
- Check that the saw is correctly set.
- Close the protective hood again.
- When mounting the saw blade, make sure that the saw blade is correctly positioned on the flange of the spindle.



Img.5-5: Mounting and replacing the saw blade



5.3.1 Dimensions of sawing flange



Img.5-6: Cutting flange

5.4 Repair

5.4.1 Customer service technician

For any repair work request the assistance of an authorised customer service technician. Contact your specialist dealer if you do not have customer service's information or contact Stürmer Maschinen GmbH in Germany who can provide you with a specialist dealer's contact information. Optionally, the company Stürmer Maschinen GmbH

Dr.-Robert-Pfleger-Str. 26

D- 96103 Hallstadt

can provide a customer service technician, however, the request for a customer service technician can only be made via your specialist dealer.

If the repairs are carried out by qualified technical personnel, they must follow the indications given in these operating instructions.



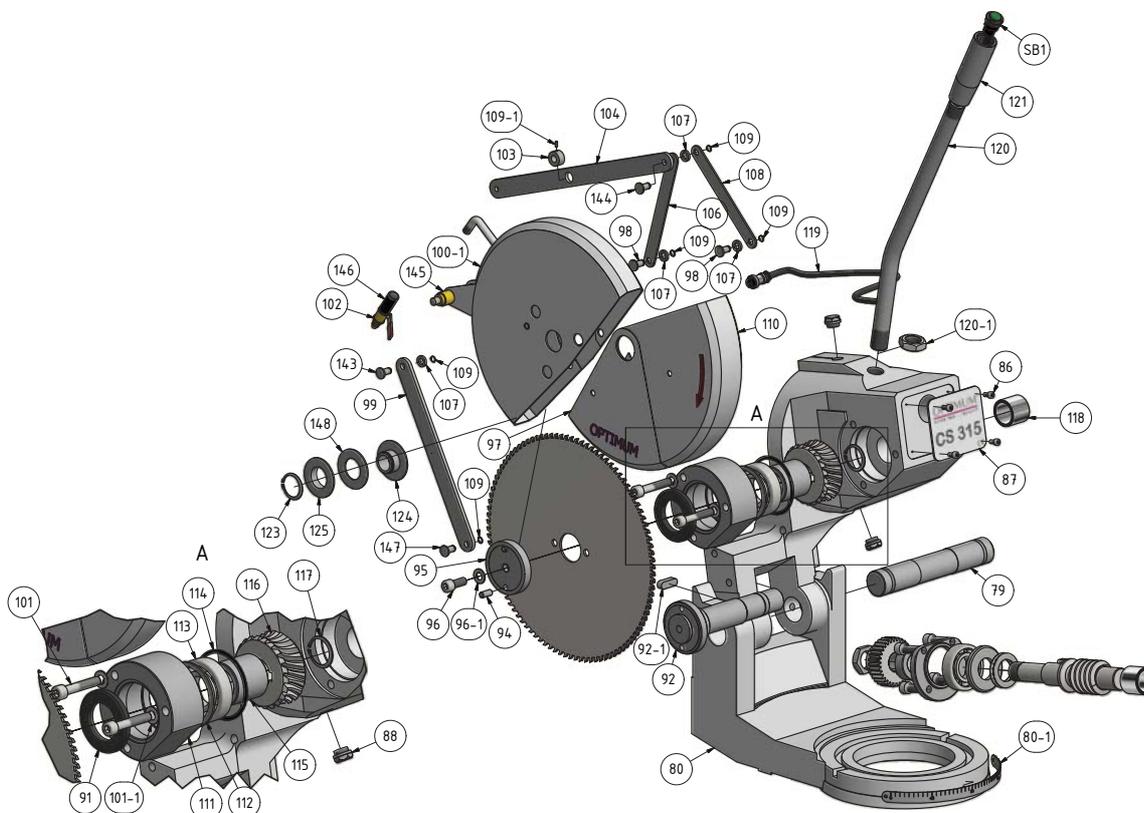
Optimum Maschinen Germany GmbH accepts no liability nor does it guarantee against damage and operating malfunctions resulting from failure to observe these operating instructions.

For repairs, only use

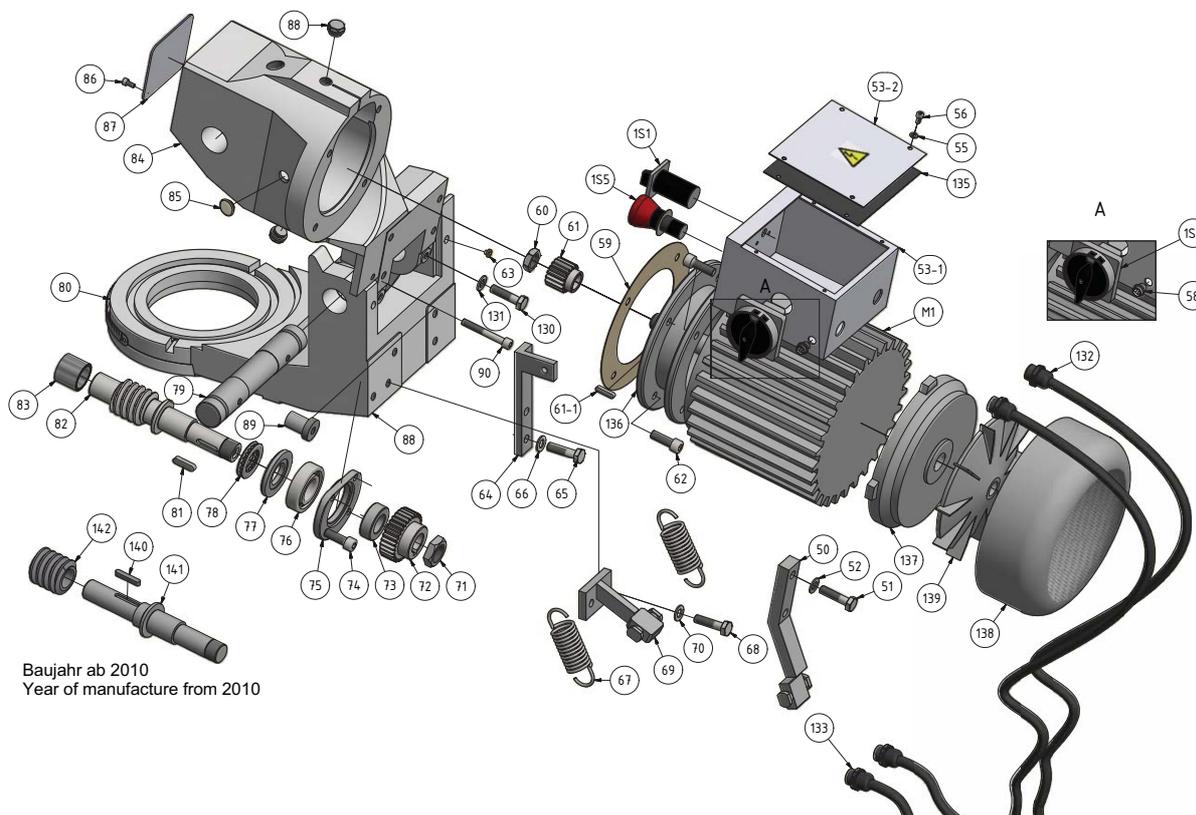
- faultless and suitable tools,
- original parts or parts from series expressly authorised by Optimum Maschinen Germany GmbH.

6 Ersatzteile - Spare parts - CS275, CS315

6.1 Einzelteile - Spare parts

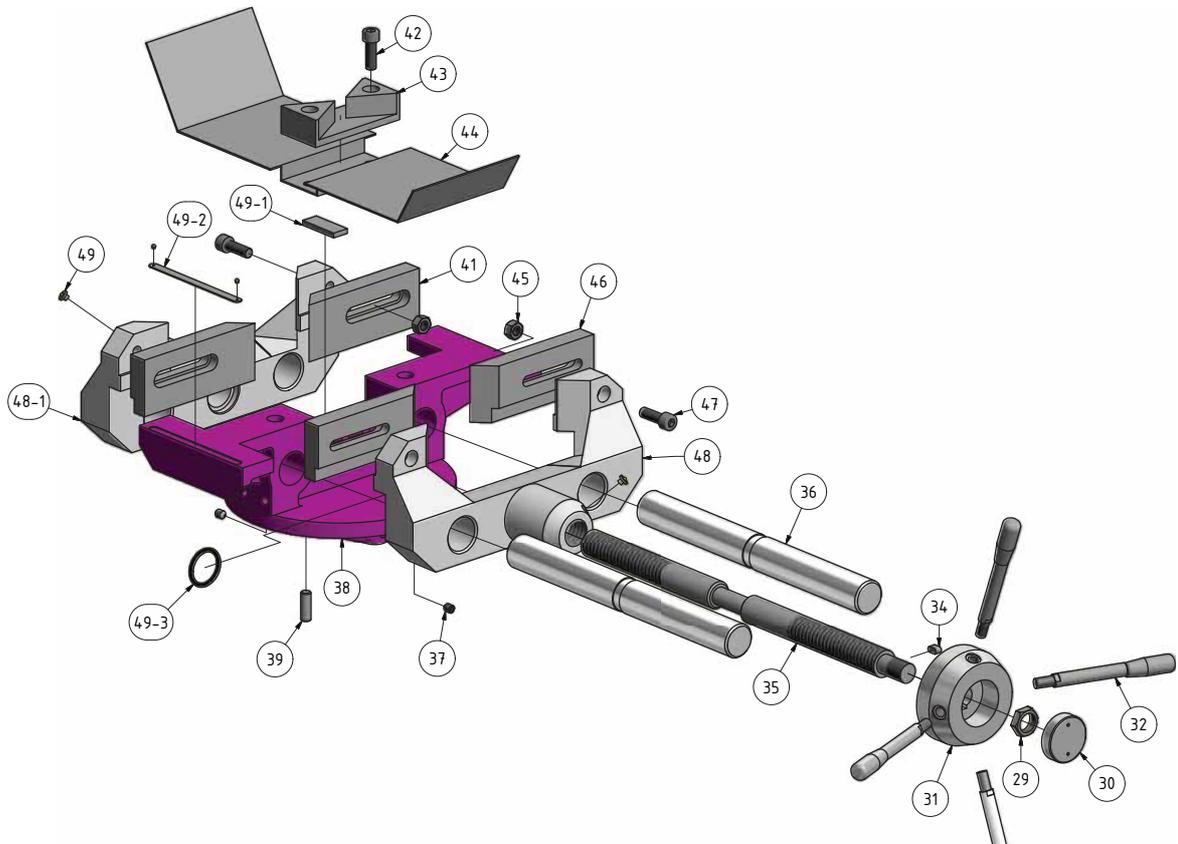


6-1: Vorderansicht - Front view - CS275/ CS315

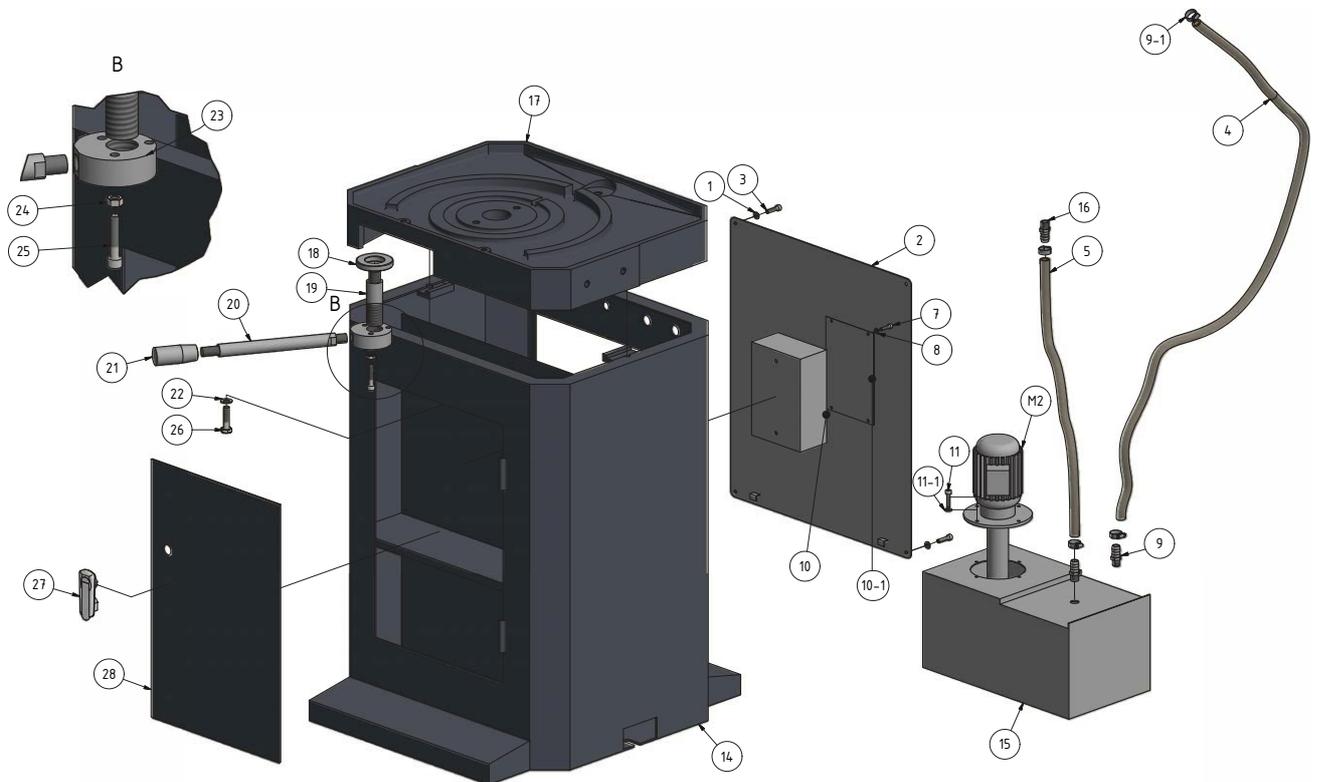


Baujahr ab 2010
Year of manufacture from 2010

6-2: Hinteransicht - Opinion behind - CS275/ CS315



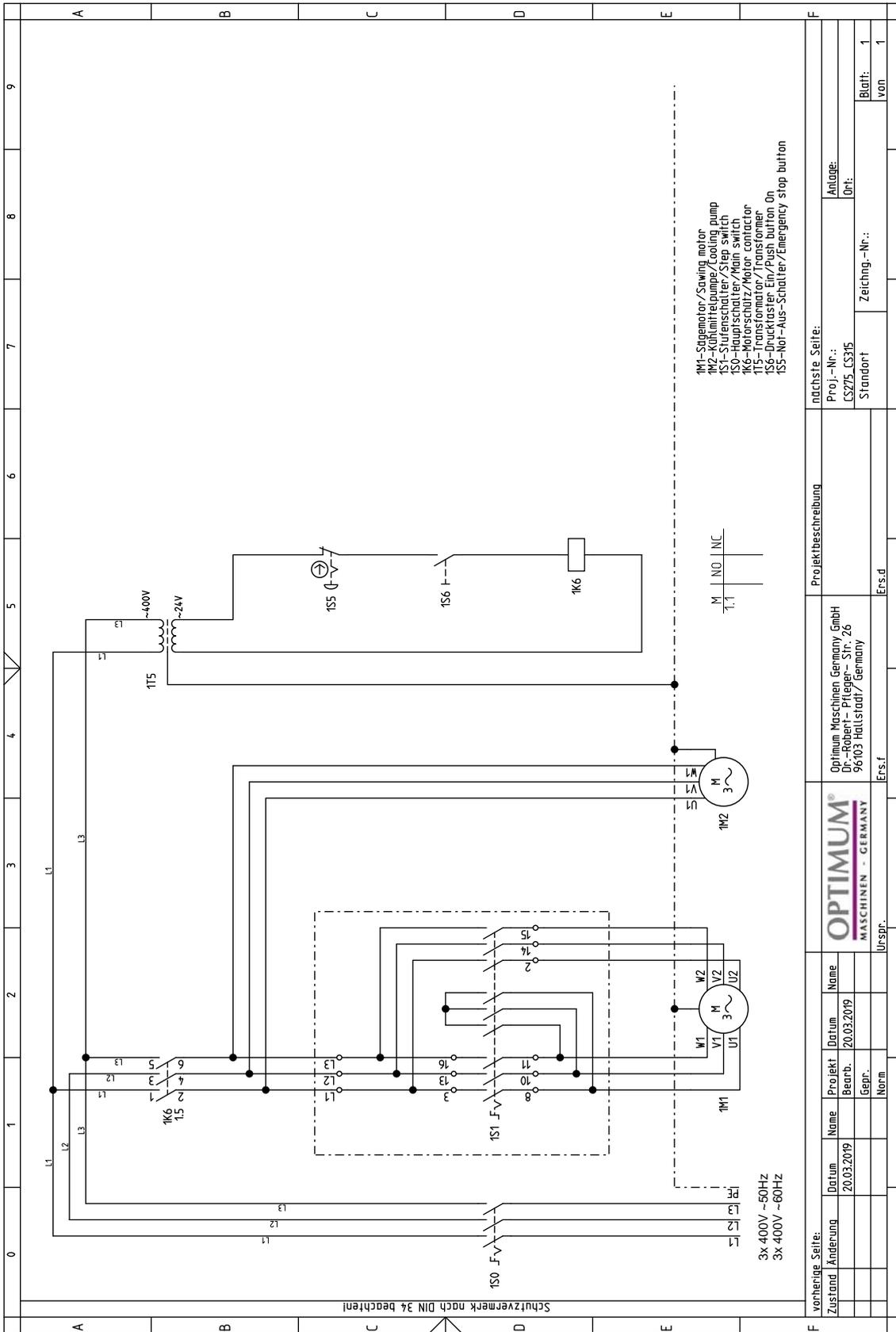
6-3: Schnellspannschraubstock - Machine vice - CS275/ CS315



6-4: Maschinenunterbau - Machine substructure - CS275/ CS315

CS275_CS315_parts.fm

6.2 Schaltplan - Wiring diagram



6-5: Wiring diagram

CS275_CS315_parts.fm



6.3 Ersatzteilliste - Spare parts list - CS275

CS275					
Pos. Pcs	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
1	Innensechskantschraube	Socket-head cap screw	8	M5x10	
2	Deckel	Cover	1		
3	Unterlegscheibe	Washer	1	Ø5	
4	Kühlmittelschlauch	Cooling agent hose	1	Ø11,8	033023004
5	Kühlmittelschlauch	Cooling agent hose	1	Ø30,5	033023005
7	Zylinderschraube	Socket-head cap screw	4	M5x10	
8	Unterlegscheibe	Washer	4	Ø5	
9	Reduzierstück/ Schlauchklemme	Reducer / Hose clip	1		0330227509
9-1	Schlauchselle	Hose clamp	4		
10	Schaltkasten	Electrical box	1		
10-1	Abdeckblech	Cover plate	1		
11	Zylinderschraube	Socket-head cap screw	4	M6x20	
11-1	Unterlegscheibe	Washer	4	Ø6	
12	Zylinderschraube	Socket-head cap screw	4	M5x20	
12-1	Unterlegscheibe	Washer	4	Ø6	
13	PG-Verschraubung	PG-screw connection	5		
14	Maschinenunterbau	Machine stand	1		
15	Kühlmittelbehälter	Coolant tank	1		0330227515
16	Reduzierstück	Reducer	1		
17	Grundplatte	Baseplate	1		
18	Ring	Ring	1		0330227518
19	Gewindestück	Threaded part	1		0330227519
20	Hebel	Lever	1		0330230020
21	Griff	Handle	1		0330227521
22	Unterlegscheibe	Washer	2	Ø10	
23	Spannmutter	Tightening nut	1		0330227523
24	Mutter	Nut	2	M8	
25	Zylinderschraube	Socket-head cap screw	2	M8x45	
26	Sechskantschraube	Hexagon head screw	2	M10x40	
27	Öffner/ Schließer (komplett)	Opener/ Closer (complete)	1		03400923883
28	Tür	Door	1		
29	Mutter	Nut	1	M20	
30	Abdeckung	Cover	1		0330227530
31	Nabe	Hub	1		0330227531
32	Hebel	Lever	4		0330227532
34	Passfeder	Key	1	6x12	042P4412
35	Spindel	Spindle	1		0330227535
36	Führungswelle	Guide shaft	2		0330227536
37	Gewindestift	Threaded pin	2	M8x10	

CS275_CS315_parts.fm



38	Unterteil	Lower part	1		0330227538
39	Zylinderstift	Cylindrical pin	2	2	0330227539
41	Spannbacken	Chuck jaws	2		0330227541
42	Zylinderschraube	Socket-head cap screw	2	M10x30	
43	Stützblock	Supporting block	1		0330227543
44	Schutzblech	Shield	1		0330227544
45	Mutter	Nut	4	M10	
46	Spannbacken	Chuck jaws	2		0330227546
47	Zylinderschraube	Socket-head cap screw	4	M10x30	
48	Klemmbacke	Clamping jaw	1		0330227548
48-1	Klemmbacke	Clamping jaw	1		03302275481
CPL	Spannbackenset	Clamping jaw set	1		0330227548CPL
49	Schmiernippel	Grease nipple	2	10	0330227549
49-1	Platte	Plate	1		
49-2	Skala	Scale	1		03302275492
49-3	Wellendichtring	Seal	2		04128407
50	Winkelstück	Angle pull-spring	1		
51	Sechskantschraube	Hexagon head screw	2	M10x25	
52	Unterlegscheibe	Washer	2	Ø10	
53-1	Schaltkasten-Gehäuse	Electric box housing	1		03302275531
53-2	Schaltkasten-Deckel	Electric box cover	1		03302275532
CPL	Schaltkasten komplett	Electric box complete	1		03302275531CPL
53-3	Innensechskantschrauben	Socket-head cap screw	4	M5x10	
53-4	Zylinderschraube	Socket-head cap screw	4		
53-5	Unterlegscheibe	Washer	4	Ø5	
54	PG-Verschraubung	PG-screw connection	2	Ø16	0330227554
55	Unterlegscheibe	Washer	4	Ø5	
56	Zylinderschraube	Socket-head cap screw	4	M5x10	
59	Dichtung	Seal	1		0330227559
60	Mutter	Nut	1	20	
61	Zahnrad	Gear wheel	1	Z=17; m=2	0330227561
61-1	Passfeder	Key	1	6x20	042P6620
62	Zylinderschraube	Socket-head cap screw	4	M10x20	
63	Schmiernippel	Grease nipple	2	10	0340113
64	Montagewinkel	Assembly angle	1		0330227564
65	Sechskantschraube	Hexagon head screw	2	M10x25	
66	Unterlegscheibe	Washer	2	Ø10	
67	Feder	Spring	2		0330230067
68	Sechskantschraube	Hexagon head screw	2	M10x25	
69	Winkelstück	Angle pull-spring	1		0330227569
70	Unterlegscheibe	Washer	2	Ø10	
71	Mutter	Nut	1	M25x1,5	
72	Zahnrad	Gear wheel	1	Z=31; m=2	0330227572
73	Abstandsring	Space ring	1		0330227573
74	Zylinderschraube	Socket-head cap screw	4	M8x25	
75	Sicherungsscheibe	Lock washer	1		0330227575



76	Lager	Bearing	1	3207A-RS	0403207R
77	Ring	Ring	1		0330227577
78	Axiallager	Axial-thrust bearing	1	81206	04081206
79	Welle	Shaft	1		0330227579
80	Lagerbock	Bearing block	1		0330227580
80-1	Skala	Scale	1		03302275801
81	Paßfeder	Key	1	8x30	
82	Schneckenwelle	Worm shaft	1		
83	Nadellager	Needle bearing	1	BK3026	040BK3026
84	Sägekopfgehäuse	Sawing head housing	1		0330227584
85	Sichtglas	Sight glass	1		
86	Zylinderschraube	Socket-head cap screw	4	M4x8	
87	Typenschild	Label	1		
88	Stopfen	Plug	1	NPT 3/8	0330227588
89	Rändelmutter	Knurled nut	1		0330230089
90	Zylinderschraube	Socket-head cap screw	1	M10x75	
91	Dichtung	Seal	1	B4565	041456510
92	Sägespindel	Sawing spindle	1		0330227592
92	Sägespindel Baujahr ab 2009	Sawing spindle year of manufacture from 2009	1		
92-1	Paßfeder	Key	2	10x28	
94	Zylinderstift	Cylindrical pin	2		0330227594
95	Sägeflansch	Sawing flange	1		
96	Zylinderschraube	Socket-head cap screw	1	M10x25-LH	0330227596
96-1	Unterlegscheibe	Washer	1	Ø10	
97	Gelenkhaube	Joint hood	1		0330227597
98	Bolzen	Bolt	2	11mm	0330227598
99	Kupplungsstange	Coupling rod	1	235mm	0330227599
100	Zentrierhülse	Centering bushing	1		
100-1	Schutzhaube	Protection hood	1		033022751001
101	Zylinderschraube	Socket-head cap screw	3	M10x65	
101-1	Unterlegscheibe	Washer	3	Ø10	
102	Absperrhahn	Shut-off valve	1		03302275102
103	Ring	Ring	1		03302275103
104	Kupplungsstange	Coupling rod	1	285mm	03302275104
106	Kupplungsstange	Coupling rod	1	185mm	03302275106
107	Kunststoffring	Plastic ring	1		03302275107
108	Kupplungsstange	Coupling rod	1	165mma	03302275108
109	Sicherungsring	Snap ring	5	8	042SR8W
109-1	Gewindestift	Setscrew	1		
110	Schutzhaube	Protection hood	1		03302275110
111	Lagergehäuse	Bearing cover	1		03302275111
112	Sicherungsring	Snap ring	1	72	042SR72W
113	Lager	Bearing	1	3207A-RS	0403207R
114	O-Ring	O ring	1	71x2,65	03302275114
115	Buchse	Socket	1		03302275115
116	Schneckenrad	Worm gear	1		03302275116

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116	Schneckenrad Baujahr ab 2009	Worm gear year of manufacture from 2009	1		
117	Sicherungsring	Snap ring	1	32x1,5	042SR32I
118	Nadellager	Needle bearing	1	BK3026	040BK3026
120	Hebelarm	Lever arm	1		03302275120
120-1	Mutter	Nut	1	M22-7H	033022751201
CPL	Hebelarm komplett	Lever arm complete	1		03302275120CPL
121	Griff	Handle	1		03302275121
123	Sicherungsring	Snap ring	1	30	042SR30W
124	Buchse	Socket	1		03302275124
125	Scheibe	Washer	1		
130	Sechskantschraube	Hexagon head screw	2	M10x40	
131	Scheibe	Washer	1	10	
132	Elektrokabel	Electric cable	1		
133	Elektrokabel	Electric cable	1		
135	Gummidichtung	Gasket	1		03302275135
136	Motorflansch	Motor flange	1		03302275136
137	Motordeckel	Motor cover	1		03302275137
138	Lüfterdeckel	Fan cover	1		03302275138
139	Lüfter	Fan	1		03302275139

Baujahr ab 2010 - Year of manufacture from 2010

140	Passfeder	Fitting key	1		
141	Welle	Shaft	1		
142	Schneckenrad	Worm gear	1		03302275142
143	Bolzen	Bolt	1	17mm	03302275143
144	Bolzen	Bolt	1	22mm	03302275144
145	Hülse	Sleeve	1	Messing/Brass	03302275145
146	Hülse	Sleeve	1	Messing/Brass	03302275146
147	Bolzen	Bolt	1	20mm	03302275147
148	Kunststoffring	Plastic ring	1		03302275148

Ersatzteilliste elektrische Bauteile - Spare parts list electrical components CS275

Pos.	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
SB1	Schalter	Switch	1		03302300SB
1M1	Sägemotor	Sawing motor	1	YDJ100L-4/8	0330227553
1M2	Kühlmittelpumpe	Cooling pump	1	AB12	03302275M2
1S1	Stufenschalter alter typ	Step switch, old type	1	H25-20/4/380V	03302300QS
1S1	Stufenschalter neuer typ	Step switch, new type	1	LW26-20	033023001S1
1S0	Hauptschalter	Power switch	1		03302275QS2
1K6	Motorschütz	Motor contactor	1	LC1K0910	03302300KM
1T5	Transformator	Transformer	1	400V/24V	03302300TC
1S6	Drucktaster Ein	Push button ON	1	LAS1-A	0460052
1S5	Not-Halt-Schalter	Emergency stop switch	1		0460049



6.4 Ersatzteilliste - Spare parts list - CS315

CS315					
Pos	Bezeichnung	Designation	Menge Qty.	Grösse Size	Artikelnummer Item no.
1	Innensechskantschraube	Socket-head cap screw	8	M5x10	
2	Deckel	Cover	1	KS315-00-34	
3	Unterlegscheibe	Washer	4	Ø5	
4	Kühlmittelschlauch	Cooling agent hose	1	Ø10	033023004
5	Kühlmittelschlauch	Cooling agent hose	1	Ø12	033023005
7	Zylinderschraube	Socket-head cap screw	4	M5x10	
8	Unterlegscheibe	Washer	4	Ø5	
9	Reduzierstück/ Schlauchklemme	Reducer / Hose clip	1	KS315-00-60	0330227509
9-1	Schlauchschelle	Hose clamp	4		
10	Schaltkasten	Electrical box	1	KS315-00-52	
10-1	Abdeckblech	Cover plate	1	KS315-00-53	
11	Zylinderschraube	Socket-head cap screw	4	M6x20	
11-1	Unterlegscheibe	Washer	4	Ø6	
12	Zylinderschraube	Socket-head cap screw	4	M5x20	
12-1	Unterlegscheibe	Washer	4	Ø6	
13	PG-Verschraubung	PG screw connection	5	Ø16	
14	Maschinenunterbau	Machine stand	1	KS315-00-29	
15	Kühlmittelbehälter	Coolant tank	1	KS315-00-47	0330230015
16	Reduzierstück	Reducer	1	KS315-00-60	0330230016
17	Grundplatte	Baseplate	1	KS315-00-01	0330230017
18	Ring	Ring	1	KS315-00-24	0330230018
19	Gewindestück	Threaded part	1	KS315-00-48	0330230019
20	Hebel	Lever	1	KS315-00-41	0330230020
21	Griff	Handle	1	KS315-00-51	0330230021
22	Unterlegscheibe	Washer	2	Ø10	
23	Spannmutter	Tightening nut	1	KS315-00-25	0330230023
24	Mutter	Nut	2	M8	
25	Zylinderschraube	Socket-head cap screw	2	M8x45	
26	Sechskantschraube	Hexagon head screw	2	M10x40	
27	Öffner/ Schließer (komplett)	Opener/ Closer (complete)	1		03400923883
28	Tür	Door	1		
29	Mutter	Nut	1	M20	
30	Abdeckung	Cover	1	KS315-00-45	0330227530
31	Nabe	Hub	1	KS315-00-08	0330227531
32	Hebel	Lever	4	KS315-00-09	0330230032
34	Passfeder	Key	1	6x12	042P6612
35	Spindel	Spindle	1	KS315-00-05	0330230035
36	Führungswelle	Guide shaft	1	KS315-00-04	0330230036
37	Gewindestift	Threaded pin	1	M8x10	
38	Unterteil	Lower part	1	KS315-00-03	0330230038
39	Zylinderstift	Cylindrical pin	2	KS315-00-31	0330230039
41	Spannbacken	Chuck jaws	2	KS315-00-06	0330230041
42	Zylinderschraube	Socket-head cap screw	2	M10x30	
43	Stützblock	Supporting block	1	KS315-00-07	0330230043
44	Schutzblech	Shield	1	KS315-00-33	0330230044
45	Mutter	Nut	1	M10	
46	Spannbacken	Chuck jaws	2	KS315-00-11	0330230046
47	Zylinderschraube	Socket-head cap screw	4	M10x30	
48	Klemmbacke	Clamping jaw	1	KS315-00-10	0330230048CPL
48-1	Klemmbacke	Clamping jaw	1	KS315-00-30	
49	Schmiernippel	Grease nipple	2	10	0340113
49-1	Platte	Plate	1	KS315-00-46	
49-2	Skala	Scale	1	KS315-00-56	03302300492
49-3	Wellendichtring	Seal	2	28x40x7	04128407
50	Winkelstück	Angle pull-spring	1	KS315-00-26	0330230050
51	Sechskantschraube	Hexagon head screw	2	M10x25	
52	Unterlegscheibe	Washer	2	Ø10	
53-1	Schaltkasten - Gehäuse	Electric box - housing	1	KS315-00-61	
53-2	Schaltkasten - Deckel	Electric box - cover	1	KS315-00-62	

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53-3	Zylinderschraube	Socket-head cap screw	4	M5x10	
53-4	Zylinderschraube	Socket-head cap screw	4		
53-5	Unterlegscheibe	Washer	4	Ø5	
54	PG-Verschraubung	PG screw connection	2	Ø16	
55	Unterlegscheibe	Washer	4	Ø5	
56	Zylinderschraube	Socket-head cap screw	4	M5x10	
59	Dichtung	Seal	1		0330230059
60	Mutter	Nut	1	20	
61	Zahnrad	Gear wheel	1	KS315-00-18	0330230061
61-1	Passfeder	Key	1	6x20	042P6620
62	Zylinderschraube	Socket-head cap screw	4	M10x20	
63	Schmiernippel	Lubrication fitting	2	10	0340113
64	Montagewinkel	Assembly angle	1	KS315-00-37	0330230064
65	Sechskantschraube	Hexagon head screw	2	M10x25	
66	Unterlegscheibe	Washer	4	Ø10	
67	Feder	Spring	2	KS315-00-44	0330230067
68	Sechskantschraube	Hexagon head screw	2	M10x25	
69	Winkelstück	Angle pull-spring	1	KS315-00-27	0330230069
70	Unterlegscheibe	Washer	2	Ø10	
71	Mutter	Nut	1	M25x1,5	
72	Zahnrad	Gear wheel	1	KS315-00-17	0330227572
73	Abstandsring	Space ring	1	KS315-00-32	0330230073
74	Zylinderschraube	Socket-head cap screw	4	M8x25	
75	Sicherungsscheibe	Lock washer	1	KS315-00-23	0330230075
76	Lager	Bearing	1	3207A-RS	0403207R
77	Ring	Ring	1	KS315-00-22	0330230077
78	Axiallager	Axial-thrust bearing	1	81206	04081206
79	Welle	Shaft	1	KS315-00-13	0330230079
80	Lagerbock	Bearing block	1	KS315-00-12	0330230080
80-1	Skala	Scale		KS315-00-43	03302300801
81	Paßfeder	Key	1	8x30	
82	Schneckenwelle	Worm shaft	1	KS315-00-14	0330230082
83	Nadellager	Needle bearing	1	BK3026	040BK3026
84	Sägekopfgewand	Sawing head housing	1	KS315-00-16	0330230084
85	Sichtglas	Sight glass	1	A10	049GN541
86	Zylinderschraube	Socket-head cap screw	4	M4x8	
87	Typenschild	Label	1		
88	Stopfen	Plug	2	NPT3/8	
89	Rändelmutter	Knurled nut	1	KS315-00-36	0330230089
90	Zylinderschraube	Socket-head cap screw	1	M10x28	
91	Dichtung	Seal	1	B4565	041456510
92	Sägespindel	Sawing spindle	1	KS315-00-12	0330230092
92	Sägespindel Baujahr ab 2009	Sawing spindle year of manufacture from 2009	1		
92-1	Paßfeder	Key	1	10x28	
94	Zylinderstift	Cylindrical pin	2	KS315-00-35	
95	Sägeflansch	Sawing flange	1	KS315-00-12	
96	Zylinderschraube	Socket-head cap screw	1	M10x25	
96-1	Unterlegscheibe	Washer	1	Ø10	
97	Gelenkhaube	Joint hood	1	KS315-00-28-2	0330230097
98	Bolzen	Bolt	4	KS315-00-28-1	0330227598
99	Kupplungsstange	Coupling rod	1	KS315-00-38	0330230099
100	Zentrierhülse	Centering bushing	1	KS315-00-28-1	
100-1	Schutzhaube	Protection hood	1	KS315-00-28-1	033023001001
101	Zylinderschraube	Socket-head cap screw	3	M10x65	
101-1	Unterlegscheibe	Washer	3	Ø10	
102	Absperrhahn	Shut-off valve	1		03302300102
103	Ring	Ring	1	KS315-00-28-1	
104	Kupplungsstange	Coupling rod	1	KS315-00-28-5	03302300104
106	Kupplungsstange	Coupling rod	1	KS315-00-28-4	03302300106
107	Kunststoffring	Spacer	1	KS315-00-28-1	
108	Kupplungsstange	Coupling rod	1	KS315-00-28-3	03302300108
109	Sicherungsring	Snap ring	1	8	042SR8W
109-1	Gewindestift	Setscrew	1		
110	Schutzhaube	Protection hood	1	KS315-00-28-1	03302300110
111	Lagergehäuse	Bearing cover	1	KS315-00-19	03302300111
112	Sicherungsring	Snap ring	1	72	042SR72W
113	Lager	Bearing	1	3207A-RS	0403207R
114	O-Ring	O ring	1	71x2,65	03302275114



115	Buchse	Socket	1	KS315-00-21	03302300115
116	Schneckenrad	Worm gear	1	KS315-00-15	03302300116
116	Schneckenrad Baujahr ab 2009	Worm gear year of manufacture from 2009	1		
117	Sicherungsring	Snap ring	1	32x1,5	042SR32I
118	Nadellager	Needle bearing	1	BK3026	040BK3026
120	Hebelarm	Lever arm	1	KS315-00-42	03302300120
120-1	Mutter	Nut	1	M22-7H	
121	Griff	Handle	1	KS315-00-57	03302300121
123	Sicherungsring	Snap ring	1	30	042SR30W
124	Buchse	Socket	1	KS315-00-28-1	03302300124
125	Scheibe	Washer	1	KS315-00-28-9	03302300125
130	Sechskantschraube	Hexagon head screw	2	M10x40	
131	Scheibe	Washer	1	10	
132	Elektrokabel	Electric cable	1		
133	Elektrokabel	Electric cable	1		
135	Gummidichtung	Gasket	1		
136	Motorflansch	Motor flange	1		03302300136
137	Motordeckel	Motor cover	1		03302300137
138	Lüfterdeckel	Fan cover	1		03302300138
139	Lüfter	Fan	1		03302300139

Ersatzteilliste elektrische Bauteile - Spare parts list electrical components CS315

Pos.	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
1M1	Sägemotor	Sawing motor	1	YDJ100L-4/8	0330230053
1M2	Kühlmittelpumpe	Cooling pump	1	AB12	03302275M2
1S1	Stufenschalter	Step switch	1	H25-20/4/380V	03302300QS
1S1	Stufenschalter neuer typ	Step switch, new type	1	LW26-20	033023001S1
1S0	Hauptschalter	Power switch	1		03302275QS2
1K6	Motorschütz	Motor contactor	1	LC1K0910	03302300KM
1T5	Transformator	Transformer	1	400V/24V	03302300TC
1S6	Drucktaster Ein	Push button ON	1	LAS1-A	03302300SB
1S5	Not-Halt-Schalter	Emergency stop switch	1		0460049



7 Malfunctions

7.1 Malfunctions on the circular metal saw

Malfunction	Cause/ possible effects	Solution
Saw motor overloading	<ul style="list-style-type: none"> • Suction of motor cooling air hindered • Motor not correctly fixed • Power unit for saw blade drive not properly fixed 	<ul style="list-style-type: none"> • Check and clean • Requires technical service! Have the machine repaired in the workshop
Motor does not start	<ul style="list-style-type: none"> • Motor connected incorrectly • Relay or motor defective • Step switch is switched to position 0/ OFF • Thermal protection of the engine is defective 	<ul style="list-style-type: none"> • Request help of electrical specialists
Short life of saw blade (Teeth blunt)	<ul style="list-style-type: none"> • Quality of saw blade not suitable for this material • An incorrect tooth spacing causes breakage of teeth (the broken tooth in the workpiece blunts the other teeth) • Missing cooling • Cutting speed too high 	<ul style="list-style-type: none"> • Saw blade with higher quality • Select correct tooth pitch • Use coolant equipment • Reduce cutting speed
Breakage of tooth	<ul style="list-style-type: none"> • The chip space of the saw blade crowded, false tooth pitch 	<ul style="list-style-type: none"> • Use saw blade with other tooth spacing
Twisted cut (saw blade deviating)	<ul style="list-style-type: none"> • Saw blade blunt • Cutting pressure too high • Saw blade defective (irregular set) 	<ul style="list-style-type: none"> • Replace • Reduce • Replace
Saw excessively jerks or breaks	<ul style="list-style-type: none"> • Cutting speed too high • Teeth too blunt or too small gaps between the teeth • Saw jerks as chips remain in the gaps of the saw blade • The saw is installed reverse to the turning direction 	<ul style="list-style-type: none"> • Have saw grinded and the gaps between the teeth polished • Turn round the saw and check the teeth
Cut not rectangular but parallel	<ul style="list-style-type: none"> • Material does not rest on both vice jaws • Vice jaws not adjusted to 90° 	<ul style="list-style-type: none"> • Insert material properly • Correctly adjust the circular metal saw
Cooling does not work	<ul style="list-style-type: none"> • The valve on the sawing hood is closed • The pump is not connected • Pump defective • Cooling agent tank empty • Suction tube of the coolant pump is blocked • Wrong turning direction of the pump 	

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8 Annex

8.1 Copyright

This document is copyright. All derived rights are also reserved, especially those of translation, re-printing, use of figures, broadcast, reproduction by photo-mechanical or similar means and recording in data processing systems, neither partial nor total.

Subject to technical changes without notice.

8.2 Terminology/Glossary

Term	Explanation
Workpiece	<ul style="list-style-type: none"> Material to be cut
Material stop	<ul style="list-style-type: none"> Position for multiple cuts Sawing stop
Protective cover saw blade	<ul style="list-style-type: none"> Covering on saw blade
Clamping jaw	<ul style="list-style-type: none"> Strip terminal on the machine vice
Quick-action vice	<ul style="list-style-type: none"> Clamping device for the workpiece
Drive motor	<ul style="list-style-type: none"> Drive motor of saw
PG threaded joint	<ul style="list-style-type: none"> Strain relief electrical connection

8.3 Change information manual

Chapter	Short note	new version no.
EC declaration	changed standard	1.0.7
2	CS315 by 1.5 KW / 1.1 KW to 1.5 KW / 0.75 KW	1.0.8
EC declaration	New low voltage directive	1.0.9
EC declaration	new Type-C standard	1.1.0
parts	Update spare parts listing	1.1.1
parts	Update wiring diagram + parts	1.1.2



8.4 Liability claims for defects / warranty

Beside the legal liability claims for defects of the customer towards the seller the manufacturer of the product, OPTIMUM GmbH, Robert-Pfleger-Straße 26, D-96103 Hallstadt, does not grant any further warranties unless they are listed below or had been promised in the frame of a single contractual agreement.

- The processing of the liability claims or of the warranty is performed as chosen by OPTIMUM GmbH either directly or through one of its dealers.
Any defective products or components of such products will either be repaired or replaced by components which are free from defects. The property of replaced products or components passes on to OPTIMUM GmbH.
- The automatically generated original proof of purchase which shows the date of purchase, the type of machine and the serial number, if applicable, is the precondition in order to assert liability or warranty claims. If the original proof of purchase is not presented, we are not able to perform any services.
- Defects resulting from the following circumstances are excluded from liability and warranty claims:
 - Using the product beyond the technical options and proper use, in particular due to overstraining of the machine.
 - Any defects arising by one's own fault due to faulty operations or if the operating manual is disregarded
 - Inattentive or incorrect handling and use of improper equipment
 - Non-authorized modifications and repairs
 - Insufficient installation and safeguarding of the machine
 - Disregarding the installation requirements and conditions of use
 - Atmospheric discharges, overvoltage and lightning strokes as well as chemical influences
- The following items are as well not subject to the liability or warranty claims:
 - Wearing parts and components which are subject to a standard wear as intended such as e.g. V-belts, ball bearings, illuminants, filters, sealings, etc.
 - Non reproducible software errors
- Any services which OPTIMUM GmbH or one of its servants performs in order to fulfil in the frame of an additional guarantee are neither an acceptance of the defects nor an acceptance of its obligation to compensate. Such services do neither delay nor interrupt the warranty period.
- Place of jurisdiction among traders is Bamberg.
- If one of the above mentioned agreements is totally or partially inefficient and/or null, it is considered as agreed what is closest to the will of the warrantor and which remains in the framework of the limits of liability and warranty which are predefined by this contract.

8.5 Advice for disposal / Options of re-use

Please dispose of your machine in an environmentally friendly way, not by disposing of the waste not in the environment, but by acting in a professional way.

Please do not throw away the packaging and the used machine later on, but dispose of your material according to the guidelines established by your municipality or by the responsible waste management company.



8.6 Decommissioning

CAUTION!

Immediately decommission used machines in order to avoid later misuse and endangering of the environment or of persons.



- Disconnect the machine from the mains.
- Cut the connecting cable into two.
- Remove all operating materials from the used device which are harmful to the environment.
- If required, remove the batteries and accumulators.
- If required, disassemble the machine into easy-to-handle and usable components and parts.
- Supply the machine components and operating materials to the provided disposal routes.

8.6.1 Disposal of the packaging of the new machine

All used packaging materials and packaging aids of the machine are recyclable and generally need to be transported to the material recycling.

The packaging wood can be supplied to the disposal or reuse.

It is possible to crush any packaging material made of cardboard and supply it to the waste paper collection.

The films are made of polyethylene (PE) and the upholstery parts are made of polystyrene (PS). It is possible to reuse these materials after reconditioning, if you supply them to the collection station or to the responsible waste management company.

Supply the packaging material only correctly sorted, so that it is possible to directly supply it to the reuse.

8.6.2 Disposal of the used machine

INFORMATION

Please take care in your interest and in the interest of the environment that all component parts of the machine are only disposed of in the intended and admitted way.

Please note that electrical devices include a number of reusable materials as well as components which are harmful to the environment. Please help that these components are disposed of separately and professionally. In case of doubt, please contact your municipal waste management company. If necessary contact a specialised waste disposal centre to get help for the disposal.



8.6.3 Disposal of electrical and electronic components

Please make sure that the electrical components are disposed of professionally and according to the legal regulations.

The machine is composed of electrical and electronic components and must not be disposed of as household waste. According to the European directive 2002/96/EC regarding electrical and electronic used devices and the implementation of national legislation used power tools and electrical machines need to be collected separately and supplied to an environmentally friendly recycling centre.

Being the machine operator, you should gather information regarding the authorised collection or disposal system which applies for your company.

Please make sure that batteries and/or accumulators are disposed of in a professional way and according to the legal regulations. Please throw empty accumulators only into the collection boxes of retail markets or municipal waste disposal companies.



8.6.4 Disposal of lubricants and cooling lubricants

ATTENTION!

Please imperatively make sure that the used coolants and lubricants are disposed of in an environmentally friendly way. Observe the disposal advices of your municipal waste management companies.



INFORMATION

Do not mix up used coolant emulsions and oils, since only used oils which had not been mixed up are recyclable.

The disposal advices for the used lubricants are made available by the manufacturer for lubricants. If necessary, ask for the product-specific data sheets.



8.7 Disposal via municipal collecting points

Disposal of used electrical and electronic components

Disposal of used electric and electronic devices (Applicable in the countries of the European Union and other European countries with a separate collecting system for such devices).

The sign on the product or on its packing indicates that the product must not be handled as common household waste, but that it needs to be delivered to a central collection point for recycling. Your contribution to the correct disposal of this product will protect the environment and the health of your fellow men. The environment and the health are endangered by incorrect disposal. Recycling of material will help to reduce the consumption of raw materials. Your District Office, the municipal waste collection station or the shop where you have bought the product will inform you about the recycling of this product.



8.8 Product follow-up

We have a follow-up service for our products which extends even after shipment.

We would be grateful if you could send us the following information:

- Modified settings
- Any experiences with the circular metal saw which might be important for other users
- Recurring failures

Optimum Maschinen Germany GmbH

Dr.-Robert-Pfleger-Str. 26

D-96103 Hallstadt

Fax +49 (0) 951 - 555 - 888

email: info@optimum-maschinen.de



EC - Declaration of Conformity



in accordance with the Machinery Directive 2006/42/EC Annex II 1.A

The manufacturer / distributor Optimum Maschinen Germany GmbH
Dr.-Robert-Pfleger-Str. 26
D - 96103 Hallstadt, Germany

hereby declares that the following product

Product designation: Metal circular saw

Type designation: CS275

CS315

fulfills all the relevant provisions of the directive specified above and the additionally applied directives (in the following) - including the changes which applied at the time of the declaration.

Description:

Hand controlled metal circular saw

The following other EU Directives have been applied:

EMC Directive 2014/30/EU

The following harmonized standards were applied:

EN ISO 16093:2017-10 - Machine tools - Safety - Sawing machines for cold metal

EN 60204-1:2014 - Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN 13849-1:2015 - Safety of machinery - Safety related parts of controls - Part 1: General design principles

EN 13849-2:2012 - Safety of machinery - Safety related parts of controls - Part 2: Validation

EN ISO 12100:2013 - Safety of machinery - General principles for design - Risk assessment and risk reduction

Name and address of the person authorized to compile the technical file:

Kilian Stürmer, phone: +49 (0) 951 96555 - 800

Kilian Stürmer (CEO, General Manager)

Hallstadt, 2018-07-09



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