CIRCULAR SAW

Model CS-315
CS-350

Operation Manual

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Introduction

General

By means of this operator's manual you can get acquainted with your circular sawing machine from the range CS-350 and/or CS-315.

We advise you to read the enclosed operator's manual carefully, so that you will soon be familiar with the operation and maintenance of the machine. This will minimize the times of 'downtime'.

We also ask you to pay special attention to the safety aspect that will be dealt with in chapter 1.2. Should any unexpected malfunctions occur, which can not be remedied by means of the instructions given in this operator's manual, please apply to your nearest sales outlet.

Safety regulations

- Read this manual carefully, in order to get thoroughly acquainted with the operation of your machine.
- Secure the machine to the floor.
- The floor on which is the machine is secured, must be flat and riged.
- Prevent unwanted starting of the machine. See to it that the speed selector switch is in the off postions while the machine is being connected.
- Provide a sufficient grounding of the machine.
- Avoid dangerous working conditions. Do not use the machine in a damp or wet environment.
- Never work without a safety guard.
- Wear safety goggles. Do not work with trailing pieces of clothing which could be caught by moving parts. Preferably wear ear mufflers.
- In case of danger resulting from defects, immediately contact the person in charge of the machine.
- Support long workpieces. Your machine can easily be extended with roller conveyors.
- Do not saw workpieces larger than those for which the machine was designed.
- Before sawing clamp the workpiece tightly.
- Do not saw with excessive pressure on the saw blade. This can cause breakage of the saw blade.
- Replace worn or damaged parts in time and do not work with blunt saw blades.

  Comply with the lubricating instructions and keep the machine clean.

- Use original spare parts and accessories only.
- Disconnect the mains while carrying out repairs or replacing parts.
- Make sure the saw blade is not resting on the material when the machine is switched on.
- HAVE YOUR MACHINE INSTALLED BY AN AUTHORIZED INSTALLER!!

1.3 Guarantee

Defects to goods delivered of which can be proved that they have occurred within 6 months of delivery as a result of an incorrectness in the design or of faulty finish or use of bad materials will be repaired by us free of charge.

Claims about externally noticeable faults are to be put in at the time of testing or inspection in our factory, resp. at the latest, or in case no test or inspection takes place in our factory, within two weeks after reception of the goods. If this period is exceeded all claims relating to the faults concerned will expire.

Claims about faults which are not externally noticeable are to put in as soon as possible, however, not later than two weeks after expiry of the period of guarantee. If this period is exceeded all claims relating to the faults concerned will expire.

The purchaser's appeal for guarantee does not relinquish his contractual obligations towards us. As long as the purchaser does not fulfil his contractual obligations towards us we deny our obligation to render guarantee.

NOTE:This manual is only for your reference. Owing to the continuous improvement,changes may be made at any time with no obligation on the part of machine.And please note the local voltage for operating this electric machine.

2 Technical data

2.1 *Main groups*

The 315 and 350 range comprises models as follows:

CS-315 LT > Low speed > sawing speed pos. 1: 18,5 m/min in pos. 2: 37

CS-315 HT > High speed > sawing speed pos. 1: 37 m/min in pos. 2: 74

CS-350 **LT > Low speed > sawing speed pos.** 1:18.5 **m/min in pos.**

CS-350 **HT > High speed > sawing speed pos.** 1:37 **m/min in pos.**

2.2 *Survey and sketch of dimensions (see fig. 2.01)*

Dimensions and weight of the machine

These are similar before LT and HT execution.

CS-315

Height: 1750 mm
breadth: 555 mm
Depth: 970 mm
Weight: 187 kg

CS-350

Height: 1800 mm
Breadth: 555 mm
Depth: 970 mm
Weight: 197 kg

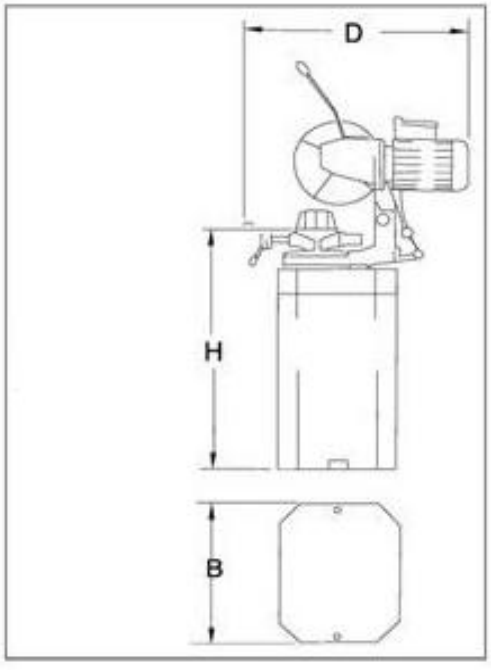


Fig 2.01

3 Description of machine

The 315 & 350 program consists of 4 models which have the same basic construction and each of which meets the same high quality requirements.
The constructive differences apply to the application and the specific wishes of the user.

All versions are standardly equipped with a machine base with incorporated cutting oil tank and pump.

All versions are fitted with a tolerance-free long-life worm and worm wheel. The worm gear runs in an oil bath case and is virtually maintenance-free.

All versions are fitted with a double, self-centring material vice.

The machine can mitre, slot and cut recessed corners in both directions. For this last form of operation it is of special importance that the saw unit as a whole can turn around its axis.

The machine can saw various profiles in various dimensions and cross-sections. A survey of these can be found in chapter 5.3 "Sawing capacity".

The patented protective guard opens and closes automatically. The saw blade can easily be exchanged. The machine as standard is equipped with an adapter for the saw blade (see technical data). If ordered a different adapter can be supplied.

4 Installation

4.1 Installation and mounting

Unpack the machine.

- Determine where the sawing machine will be placed. In doing so take into account the feed and discharge of materials, optional built-on accessories, maintenance and repairs.
- Remove the plastic plug from the saw head (fig. 4.01 B). If so required a lifting hook M20 DIN 580 can be screwed into the hole.
- Place the saw unit - if necessary by means of hoisting equipment - on the machine base (cover at the rear) and attach each other.
- Secure the machine to the floor. The necessary holes have already been made in the machine base.
- Install the handle in the saw head and lock it (fig 4.01A).
- Install the 3 short handles in the boss of the machine vice.
- Install the stretcher in the clamp.
- Slide the plastic tube coming from the cooling pump onto the tap which is positioned on top of the protective guard of the saw unit (fig 4.02A).
- Check on the level gauge of the saw head whether it contains sufficient oil. If necessary fill up (fig. 4.01, see arrow).
- Install the cover at the rear of the machine base.
- Install the saw blade (see chapter 5.4).

4.2 Non-recurrent adjustment

This adjustment is concerning the LOWEST POSITION of the saw head. Follow the instruction on the saw flange (fig. 4.03, see arrow). This instruction is also important when changing the saw blade.

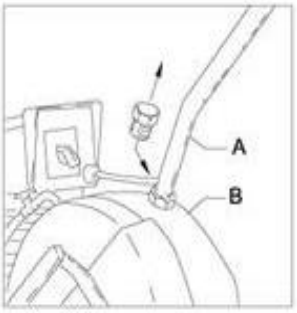


Fig 4.01

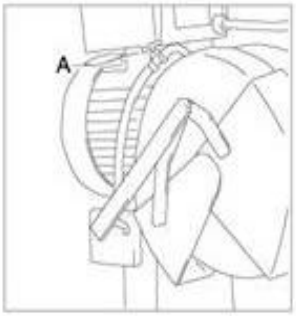


Fig 4.02

Fig 4.03

4.3 Coolant

The sawing machine can, depending on the version, be equipped with a circulation system or with atomized lubrication.

Circulation system

Fill the tank with coolant. Use sawing coolant and absolutely NO cutting oil.

recommends oils, available from your dealer. The coolant must be diluted in wear in a ratio between 1:10 and 1:20, depending on the kind of material. Add the oil slowly to the water while stirring it continually. The filler cap is positioned at the rear of the machine base.

The capacity of the tank is 30 litres.

The coolant circulates and for the larger part flows back into the tank. After some time the coolant will be used up completely and the tank will have to be filled again. A filter is also incorporated in the coolant circuit.

4.4 Electricity

Have the electrical connections made by a qualified installer. Connect the machine in accordance with the electrical diagram applying to your machine.

Saw motor

Two-speed pole changing motors are suitable for one mains voltage only. Therefore check whether the voltage indicated on the motor plate complies with the local mains voltage.

- Check whether the direction of rotation of the saw spindle corresponds to the arrow on the safety guard.
- If the motor rotates in the wrong direction two phases wires must be switched.

5 Operation

5.1 Selection of the sawblade

After years of research we recommend you to use only Timewinner saw blades. These HSS saw blades are of top quality and are made of the base material DMO 5. These saw blades have undergone a special heat treatment which guarantees high wear resistance. Owing to the microsporous structure the cutting oil is transferred quicker into the saw cut. This means longer life before resharpening and less chance of cold welding. The quality of the saw blade is of great importance.
The selection of the correct pitch depends on the material to be sawn.
The selection of the correct pitch and rake angle is of great importance for the life of the sawblade.

Selection of pitch and tooth form
If the pitch is too small and the length of the cut too large, the cut material cannot be taken into the tooth cavity. The chip will get stuck in the tooth cavity, so that it is inactive in case of a second cut of the same tooth. This can cause the saw blade to jam and break.
A pitch which is too large will cause the sawing tooth to hack as a result of which teeth can break free. For the sawing of profiles it must be taken as a rule that at least two teeth of the saw blade are in cut.
Fig. 5.01 will help you determine the pitch for the material to be sawn.

Hint
If a short, hard jerk is felt during sawing and the saw starts jolting, do not continue. In such cases it is almost certain that at one or more places a fine chip has fused away at the flank of the saw tooth. This causes the saw to be slightly thicker at certain places. Remove the saw blade and remove the fused material with a fine-grained, high-grade saw file.
Selection of the tooth form.

Besides a well selected pitch the following factors, too, are of great importance to facilitate the correct machining of the material (fig. 5.02):

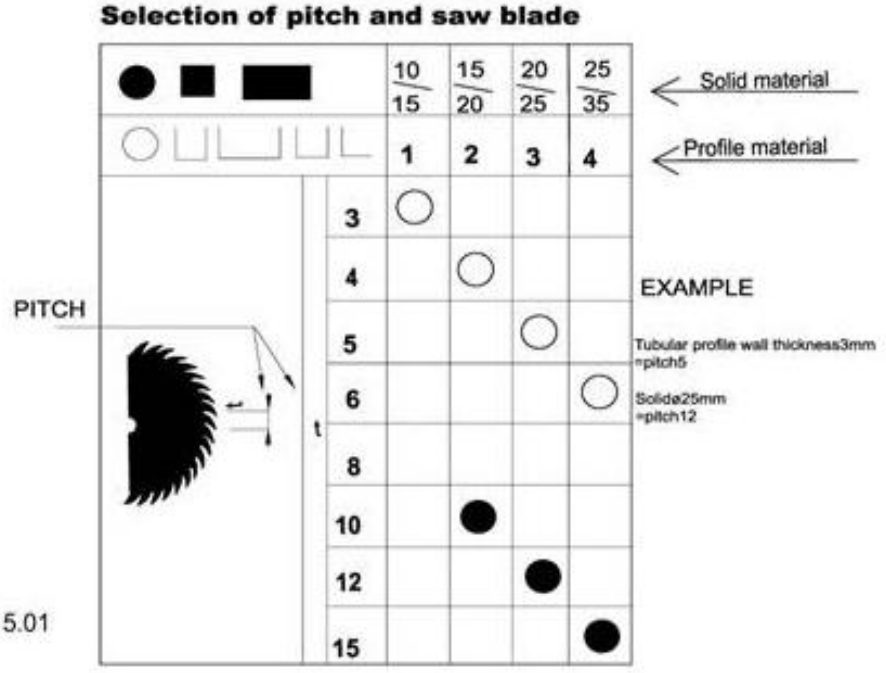
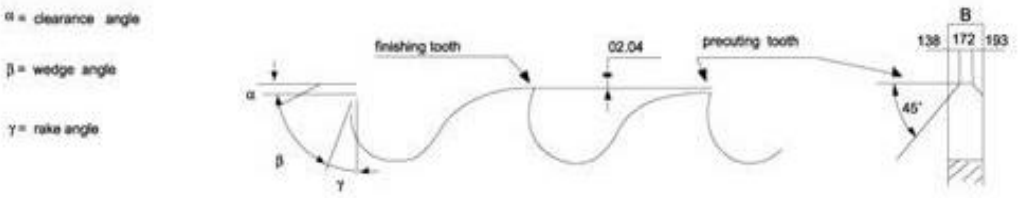


Fig. 5.01



Clearance angle β and rake angle γ of the tooth have been selected correctly in view of the material to be sawn.
the principle is as follows.

Material	Clearance angle	Rake angle
steel	8	22°
stainless steel	6	15°
Non-ferrous	12	25°

Form of tooth cavity large enough compared to the pitch.
A quick removal of the cut material and a correct depth and rounding of the tooth cavity are of the utmost importance. The tooth cavity must be large enough for the removed chips to be bend as long as the tooth is cutting. When the cutting tooth leaves the saw cut, the chip drops out of the tooth cavity.

The alternate saw (alternately bevelled edge) is often used for small pitches, especially up to 4mm.
The precutting and finishing teeth are used for larger, solid material, usually from pitch 4 mm onwards. These teeth ensure that the chips are not all of the same length. If a chip were to be cut out the normal way, it would get hot, expand and become wider than the width of the cut. This would cause it to get stuck, as a result of which the chip could not be removed from the cut. The finishing tooth must be positioned 0.2 to 0.4 mm higher than the precutting tooth.
The larger the pitch, the higher the precutting tooth must be placed as compared to the finishing tooth.
Consequently, only special machines are suitable for regrinding these teeth. When the blade has lost its cutting power, do not strain it. As a result the teeth may break off, which doubles the regrinding costs.

5.3 Sawing Capacity

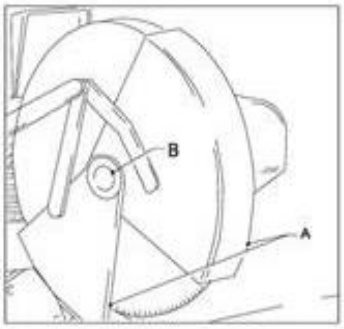
For the maximum capacity in mm see the schedule for the profile figure/cross-cut in relationship with the mitre angle. Whit 90° we mean straight sawing. Use the table from the machine type you have, CS-315 or CS-350

CS 315	○	□	⊓	⌞	▭	●	■
90°	100	100 × 100	100 × 100	100 × 100	140 × 90	55	50 × 50
60°	100	90 × 90	90 × 90	90 × 90	100 × 90	45	40 × 40
45°	100	90 × 90	90 × 90	90 × 90	100 × 90	45	40 × 40

CS 350	○	□	⊓	⌞	▭	●	■
90°	120	110 × 110	110 × 110	110 × 110	140 × 100	55	50 × 50
60°	115	100 × 100	100 × 100	100 × 100	120 × 100	45	40 × 40
45°	105	100 × 100	100 × 100	100 × 100	100 × 100	45	40 × 40

5.4 Installing and replacing the saw blade

Fig. 5.03



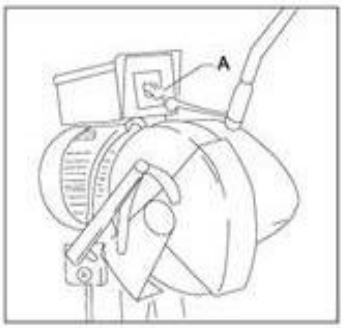
- Set the main switch in the off position.
- Put the saw head in the upper position.
- Open the guards (fig. 5.03A).
- Release the socket head screw M8 of the saw spindle (fig. 5.03B) and remove the saw flange.
- Remove the saw blade.
- Carefully clean the saw spindle and the saw flange.
- Installing is done in reverse order. Pay attention to the direction of rotation of the sawblade. Make sure the saw blade is placed flush against the flange of the saw spindle. Check the setting of the sawing depth (see chapter 4.2). Do not forget to close the safety guard.

5.5 Saw feed

Manual saw feed

The saw feed is determined by hand. The saw is lowered onto the material by means of the handle. Press the saw blade firmly onto the material, without using unnecessary force. When the saw pressure is too high this can cause the saw to break; when the saw pressure is too low, the saw will rapidly go blunt.

Fig. 5.04



5.4 Sawing speed

The sawspeed will be selected by the switch (fig. 5.04A)

The following cutting speeds are possible:

CS-315 LT > speed in position 1: 18,5 m/min in pos. 2: 37
CS-315 HT > speed in position 1: 37 m/min in pos. 2: 74
CS-350 LT > speed in position 1: 18,5 m/min in pos. 2: 37
CS-350 HT > speed in position 1: 37 m/min in pos. 2: 74

Every material has it's own cutting speed. Below advice for some materials:

18,5 & 20,5 m/min > For steel alloy e.g. stainless steel
37 & 41 m/min > For normal steel
41 & 82 m/min > For non-ferrous materials

5.7 *Clamping the material*

It is of the utmost importance that the material is safely clamped in the double material vice, so that it cannot tilt over or even move during sawing. In order to work efficiently, the material must always be clamped in such a way that the contact surface of the saw and the material is as small as possible. For instance, saw fiat material on its thinnest side; this will considerable shorten sawing times.
When very short pieces have to be sawn, and consequently only half of the material vice will be used, in order to prevent it from pulling out of alignment, a piece of material of equal thickness must be clamped in the other half of the vice. In this way the material is clamped tightly and evenly.
Application of special vice jaws is recommendable for repetitive work

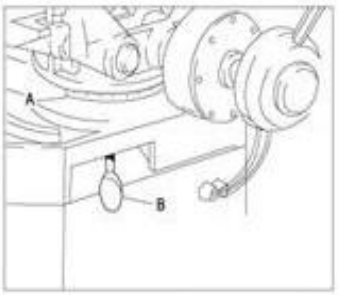


Fig. 5.06

The sawing depth can be limited by means of an adjustable ring, see chapter 4.2

Mitre-sawing
Pull the clamping rod (fig. 5.06B) to the right and turn the sawing unit in the required mitre position. The position can be read out on the scale division (fig 5.06A). Then fasten the clamping rod again. Do not use unnecessary force, a slight pull will suffice. Before clamping the material, check whether the saw is running completely clear between the jaws of the material vice. Place the steel vice jaws as closely as possible to the saw.

5.8 *Cooling*

Cooling is of great importance to the life of the saw blade. After thorough investigation it has been established that the emulsifiable coolant oils absolutely prevents - among other things - the forming of so-called built-ups (the fusing of cut material to the tooth point flanks).
This will prevent a jolting saw, which results in damage and breakage.
Oils forms a lubricating film on the saw tooth points, so that, in case of increased saw feed, the high pressure between chip and tooth (chip surface of the saw tooth) will not lead to overheating of the saw. Here it is important that a correctly directed stream at the cutting edges of the saw ensures an ample supply of coolant for the removal of chips and the elimination of frictional heat.

5.9 *Start/stop*

- Make sure the material has been fed.
- Check the sight-glass to see whether there is sufficient oil in the saw head. If necessary top up with BP GRXP 680 (ISO) through the vent hole in the handle.
- Check the depth setting of the saw blade.
- Check whether the vice jaws are suited for this material.
- Adjust the material vice to the material.
- Switch on the machine with the main switch.
- Select the required speed.
- Open the coolant cock on the safety guard (not in case of atomized lubrication).
- Start machine with the switch on the pulling rod.

6 Maintenance

6.1 *General*

Clean the machine after it has been used and provide rust protection by applying a protective oil. Regularly remove the chips which gather underneath the vice jaws. In doing so use a thin, flat brush and **NEVER** an air jet.
The gears, the worm and the worm gear are subject to wear. The moment the replacement of these parts is due, depends on the usage. You can order a complete set, including instructions for disassembly and assembly from your dealer. This kit is available from stock.
Regularly clean the coolant tank. This will considerable lengthen the life of the pump.
Check the condition of the oil filter in the cooling circuit. If the filter is severely polluted, it needs to be cleaned or replaced.
Check the oil level in the saw head every week.
Check the oil level of the saw feed tank and refill if necessary (see chapter 6.3).
Check the oil bowl and the water separator every day. Refill the oil bowl with BP HLP 15 or a type of the same quality.
Remove the water from the water separator of the air unit. With the PK-versions the glass can be screwed off.

6.2 *Lubrication*

The gear box with the gear parts must be rinsed clean at least once per six months, depending on the use of the machine. Loosen the plug at the bottom of the saw head and drain the oil. Rinse the unit with petroleum and drain it thoroughly. Fill the unit with BP GRXP 680 (ISO); the 315- and 350 -series with 1.1 litre. Check the oil level on the sight-glass. If the saw head gets too hot while used continuously, the oil level in the saw head may be too high.

Once every three months the grease nipples of the pivots of the saw head must be greased with a universal grease.
The 315 and 350 -version has one grease nipple (fig. 6.03).
The threaded spindle, the guide rods of the material vice and the guides of the machine bed must be oiled regularly. Use BP SHF15 for this purpose.

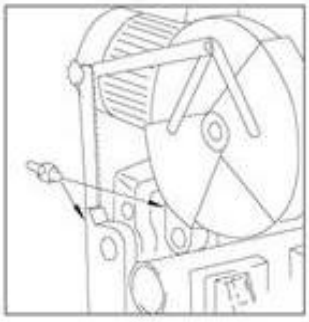


Fig. 6.03

6.3 *Grinding the sawblades*

It is only possible to work efficiently with a circular sawing machine when the saw blade is reground in time. When the saw has lost its cutting ability, do not try to continue sawing by pulling the handle harder, for this can cause teeth to break and the cost of regrinding doubled.

Regrinding should only be done on special machines, constructed for this kind of work.
Besides that it is advisable to check the saw optically in your own factory after they have been reground. In these optical checks special attention must be paid to the rake angle and the clearance angle.

Trouble shooting

Trouble	*Possible cause*	*Remedy*
Excessive bouncing or breaking of the saw.	1. Speed an/or saw feed too high.	
	2. Teeth blunt, tooth cavities too small.	
	3. Wrong coolant	Use oils
	4. Saw jolts because chips remain in the saw cavity (cold-welding on the saw).	Have the saw ground and the tooth cavity polished, so that the chips can easily slide through the tooth cavity.
	5. Saw installed incorrectly with respect to the direction of rotation.	Turn the saw and check the teeth.
	6. Worm and worm wheel worn out.	Replace.
Motor does not trun	1. Motor incorrectly connected.	
	2. Relays or motor defective.	
	3. Selector switch is in the OFF position.	
	4. Thermal protection of motor defective.	
	5. Fuses blown	
	6. Emergency stop button depressed	
Cooling system does not work	1. Cock on saw guard in closed position.	
	2. Pump incorrectly connected.	
	3. Pump defective	
	4. Cooling tank empty	
	5. Suction pipe of cooling pump obstructed.	

Lubrication/cooling agents	Packing	Article number
Cooling oil	2 litres	34.0020
	5 litres	34.0040
	25 litres	34.0060
Gear box oil BP' GRXP 680	2 litres	34.0100
Hydraulic oil BP BARTRAN 15	2,5 litres	34.0170
	5 litres	34.0280

Survey of available saw blades

Saw blades HSS DMO5, steam passivated

Material	Dim. (mm)	Pitch	Article number
Steel	250x2x32	3/240 teeth	32.0305
	250x2x32	4/200 teeth	32.0310
	250x2x32	5/160 teeth	32.0315
	250x2x32	6/128 teeth	32.0320
	250x2x32	8/100 teeth	32.0330
	250x2x32	10/72 teeth	32.0340
	250x2x32	12/60 teeth	32.0342
Stainless steel	250x2x32	3/240 teeth	32.0400
	250x2x32	4/200 teeth	32.0405
	250x2x32	5/160 teeth	32.0410
	250x2x32	6/128 teeth	32.0412
	250x2x32	8/100 teeth	32.0415
	250x2x32	10/72 teeth	32.0425
	250x2x32	12/60 teeth	32.0427
Steel	315x2,5x40	3/320 teeth	32.0775
	315x2,5x40	4/250 teeth	32.0780
	315x2,5x40	5/200 teeth	32.0785
	315x2,5x40	6/160 teeth	32.0790
	315x2,5x40	8/120 teeth	32.0800
	315x2,5x40	10/100 teeth	32.0810
	315x2,5x40	12/80 teeth	32.0820
	315x2,5x40	15/60 teeth	32.0830
Stainless steel	315x2,5x40	3/320 teeth	32.0855
	315x2,5x40	4/250 teeth	32.0860
	315x2,5x40	5/200 teeth	32.0865
	315x2,5x40	6/160 teeth	32.0870
	315x2,5x40	8/120 teeth	32.0880
	315x2,5x40	10/100 teeth	32.0885
	315x2,5x40	12/80 teeth	32.0890
	315x2,5x40	15/60 teeth	32.0895

Available on request:
- Special saw blades for aluminium, brass and cupper
- Saw blades with a diameter of 350 mm

Ordering spare parts

Direct your orders to your dealer only.
In order to process your orders in the quickest way possible, we ask you to state the necessary information on your order.

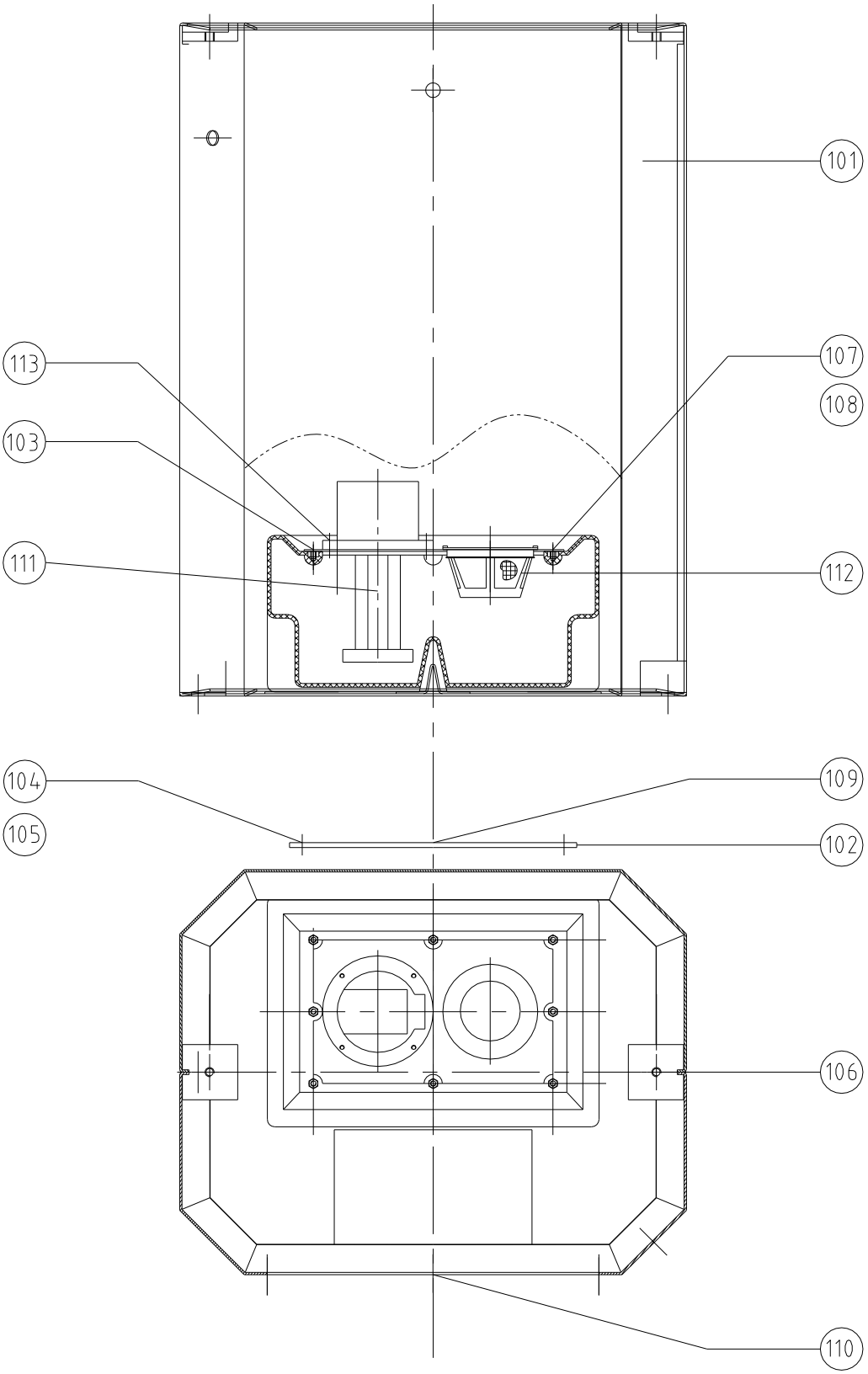
On the next pages you will find the spare parts lists and drawings for finding the article numbers you like to order.

Your order must contain the following information:

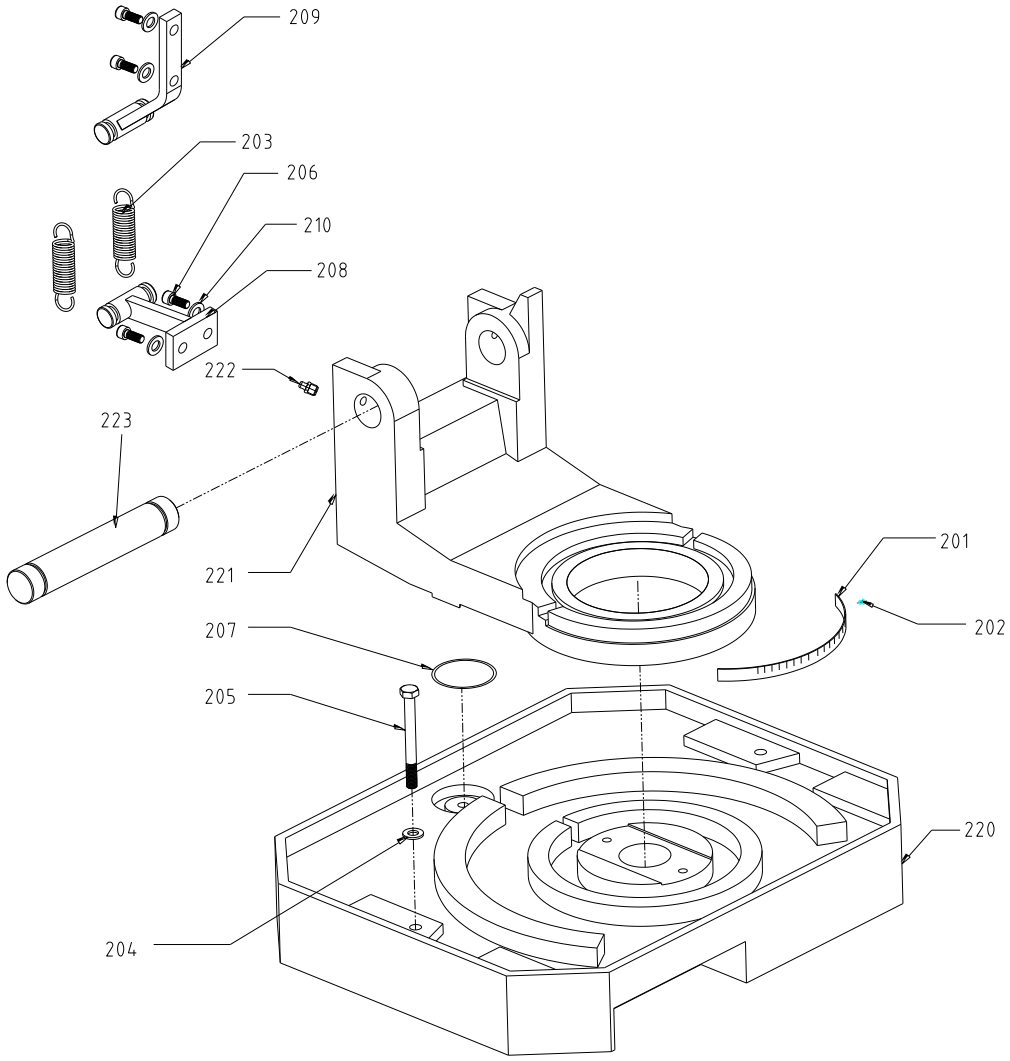
Type of machine .....
Mains voltage .....
Year of construction .....
Description spare part .....
Quantity required .....
Article number .....

Besides spare parts you can also order coolant and saw blades.

Part list



Group 100 **PEDESTAL**			Quantity per machine	
Pos.nr.	Description	Part nr	315	300
101	Pedestal	60.4350	1	1
102	cover	50.9806	1	1
103	support pump	50.9805	1	1
104	screw M6 × 12	44.1332	4	4
105	Spring washer 6	44.2452	6	6
106	Screw M10 × 100	44.1187	2	2
107	Screw M8 × 16	44.1362	2	2
108	Spring washer 8	44.2454	2	2
109	Sticker electro	48.3700	1	1
110	Sticker general	48.0021	1	1
111	Pump set 230/400V 50 HZ	65.2267	1	1
113	Screw M6 × 25	44.1335	2	2
112	strainer		1	1
	*)Pump set contents:			
111A	Pump	91.0500	1	1
111B	Hose 2m	22.7052	1	1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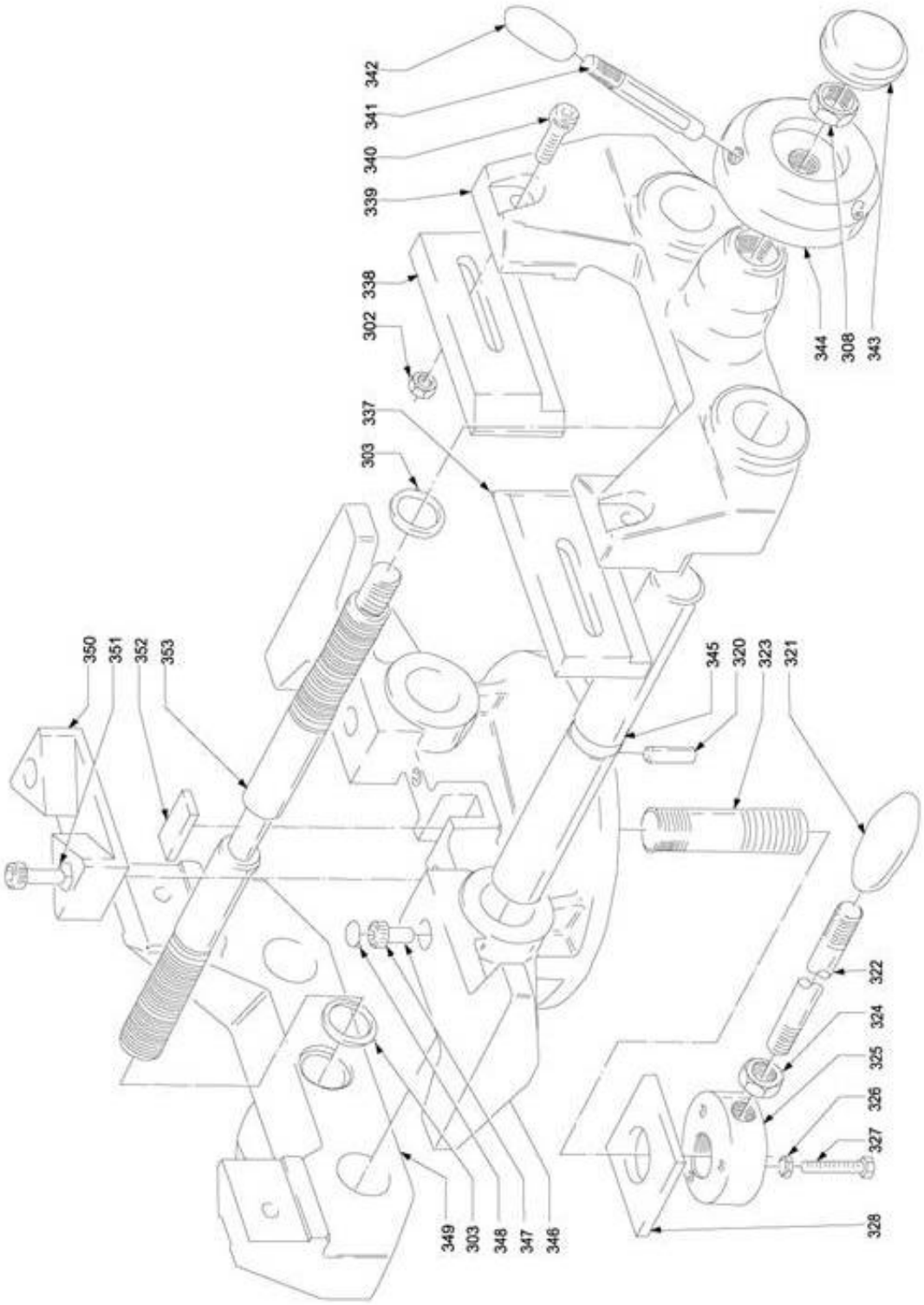
Group 200 **BASE PLATE**			Quantity per machine	
Pos.nr.	Description	Part nr.	315	300
201	Anglescale	50.1199	1	1
202				
203				
204	Ring	44.2344	2	2
205	Bold	44.1187	2	2
206	Bolt M10x25		4	4
207	Strainer		1	1
208	Plate		1	1
209	Pole		1	1
210	Washer		4	4
220	Base plate		1	1
221	Swivel block		1	1
222	Greasing nipple		2	2
223	Shaft		1	1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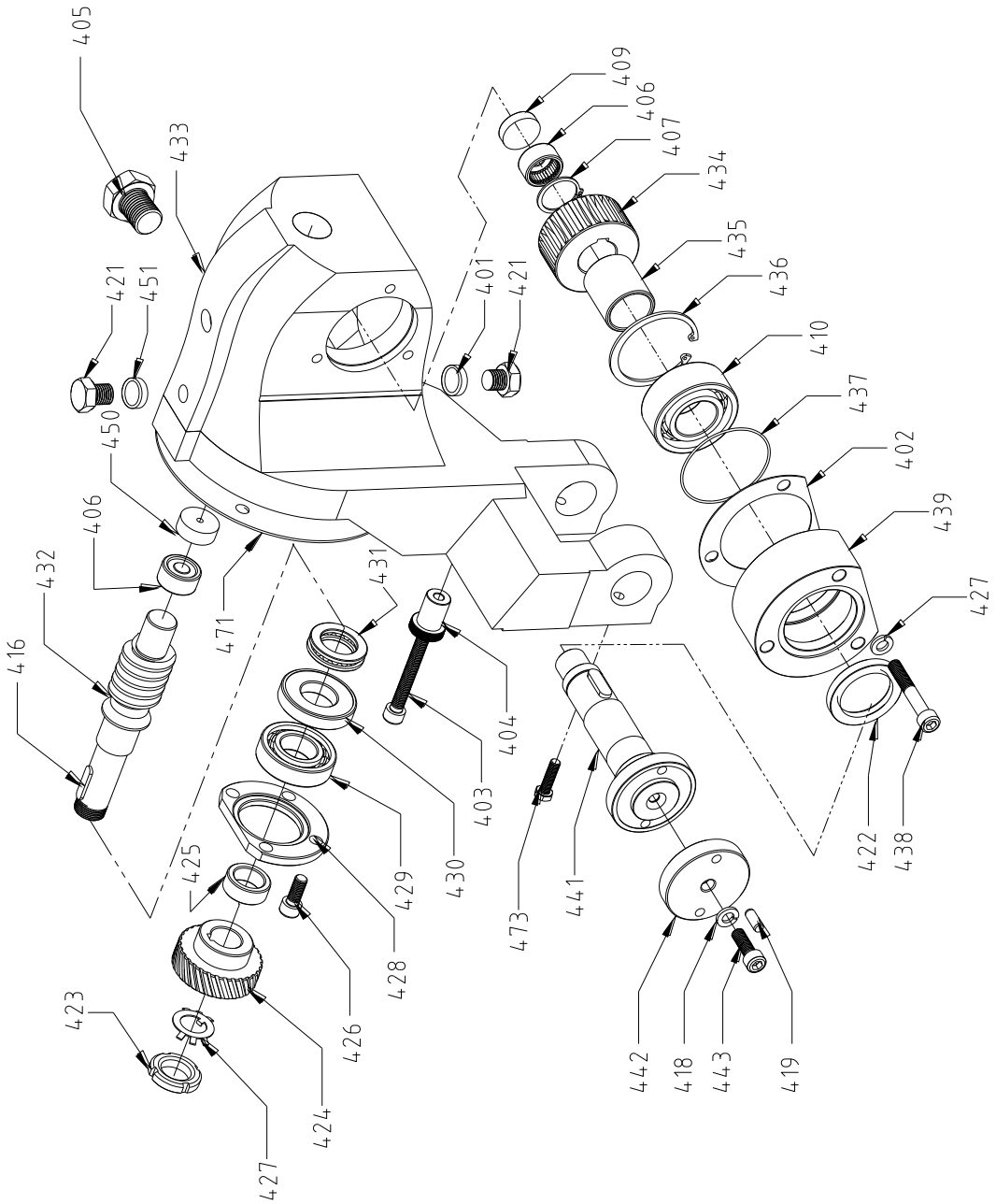
Group300 **MATERIAL VICE**			Quantity per machine			
Pos,nr.	Description	Art.nr.	315LT	300LT	315HT	300HT
302	Nut	44.2008	4	4	4	4
303	Ring	21.0050	2	2	2	2
308	Nut	44.2014	1	1	1	1
320	Dowel pin	44.2856	2	2	2	2
321	Knob	48.2562	1	1	1	1
322	Mitre handle complete incl.pos.321 and 324	65.0969	1	1	1	1
323	Stud	50.1085	1	1	1	1
324	Nut	44.2011	1	1	1	1
325	Tensioning nut	50.1082	1	3	1	3
326	Nut	44.2007	3	3	3	3
327	Bolt	44.1157	3	1	3	1
328	Pressure plate	50.0013	1	2	1	2
337	Vice plate left	50.0893	2	2	2	2
338	Vice plate right	50.0894	2	1	2	1
339	Vice jaw at the front	50.1088	1	4	1	4
340	Socket screw	44.0161	4	3	4	3
341	Handle rod+knob including pos,342	65.0970	3	3	3	3
342	Knob	48.2560	3	1	3	1
343	Plastic cover knob	48.2050	1	1	1	1
344	Boss	50.1084	1	2	1	2
345	Guiding shaft	50.0891	2	1	2	1
346	Vice base	50.0886	1	2	1	2
347	Socket screw	44.0155	2	2	2	2
348	Plastic cover knob	48.2403	2	2	2	2
349	Vice jaw at the back	50.1089	1	1	1	1
350	Support block	50.0892	1	1	1	1
351	Socket screw	44.0159	2	2	2	2
352	Spacer	50.1421	1	1	1	1
353	Threaded shaft	50.0888	1	1	1	1
	COMPOSED SPARES.					
>	Repair set material vice,composed with					
	the position numbers 303,339,349.350					
	and 353.	95.0004	1	1	1	1
>	Complete material vice,composed with all	95.0076	1	1	1	1
	position numbers.					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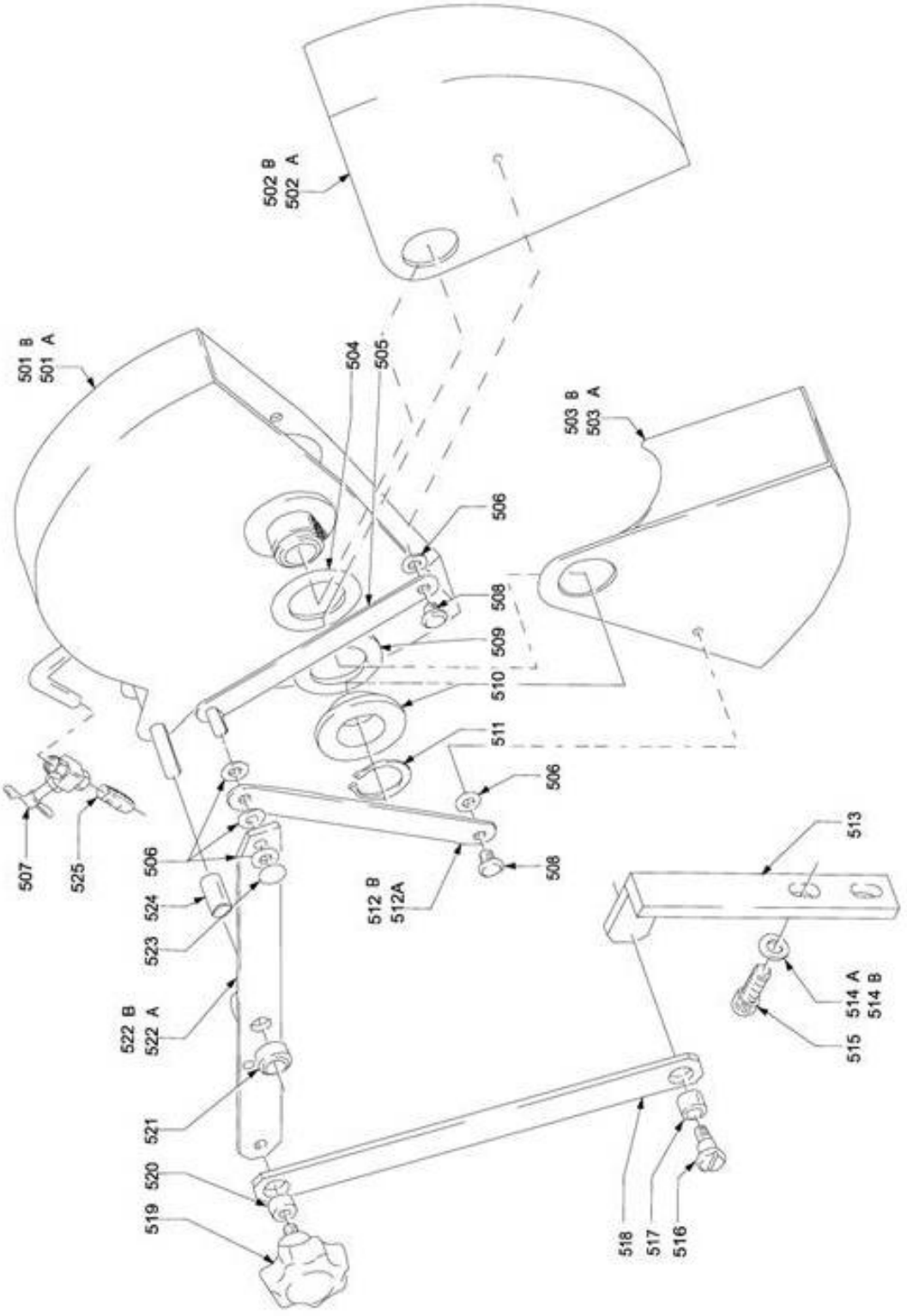
Group 400 **SAW HEAD**			Quantity per machine			
Pos,nr.	Description	Part nr.	315LT	300LT	315HT	300HT
405	Level gauge + ring	48.1515	1	1	1	1
406	Needle bearing	20.1115	2	2	2	2
407	Circlip	44.2585	1	1	1	1
410	Bearing	20.0360	1	1	1	1
416	Sunken key	44.3536	1	1	1	1
418	Ring	44.2257	1	1	1	1
419	Dowel pin	44.2842	2	2	2	2
421	Drain plug	48.6207	1	1	1	1
422	Oil catcher	21.1350	1	1	1	1
423	Nut	44.2099	1	1	1	1
424	Gear	50.0920	1	1	1	1
425	Spacer ring	50.0919	1	1	1	1
426	Socket screw	44.0515	4	4	4	4
427	Spring washer	44.2479	7	7	7	7
428	Locking ring	50.0922	1	1	1	1
429	Bearing	20.0530	1	1	1	1
430	Ring	50.0918	1	1	1	1
431	Bearing	20.2775	1	1	1	1
432	Worm shaft	50.0917	1	1	1	1
433	Gear housing 315	50.0915	1	-	1	-
	Gear housing 350	50.3439	-	1	-	1
434	Worm wheel	50.0925	1	1	1	1
435	Bush	50.0926	1	1	1	1
436	Circlip	44.2700	1	1	1	1
437	O-ring	21.1110	1	1	1	1
438	Socket screw	44.0523	3	3	3	3
439	Bearing block 315	50.0927	1	-	1	1
	Bearing block 350	50.3440	-	1	-	1
440	Sunken key	44.3548	1	1	1	1
441	Saw shaft 315	50.0924	1	-	1	1
	Saw shaft 350	50.3441	-	1	-	1
442	Saw flange 315	50.1167	1	-	1	1
	Saw flange 350	50.3442	-	1	-	1
443	Socket screw	44.0159	1	1	1	1
471	Packing	21.9901	1	1	1	1
473	Bolt				2	2
	ALSO AVAILABLE					
>	Transmission oil sawhead	34.0100	1,11	1.11	1.11	1.11
	COMPOSED SPARES:					
>	Composed saw spindle	95.0151	1	1	1	1
>	Composed worm shaft	95.0152	1	1	1	1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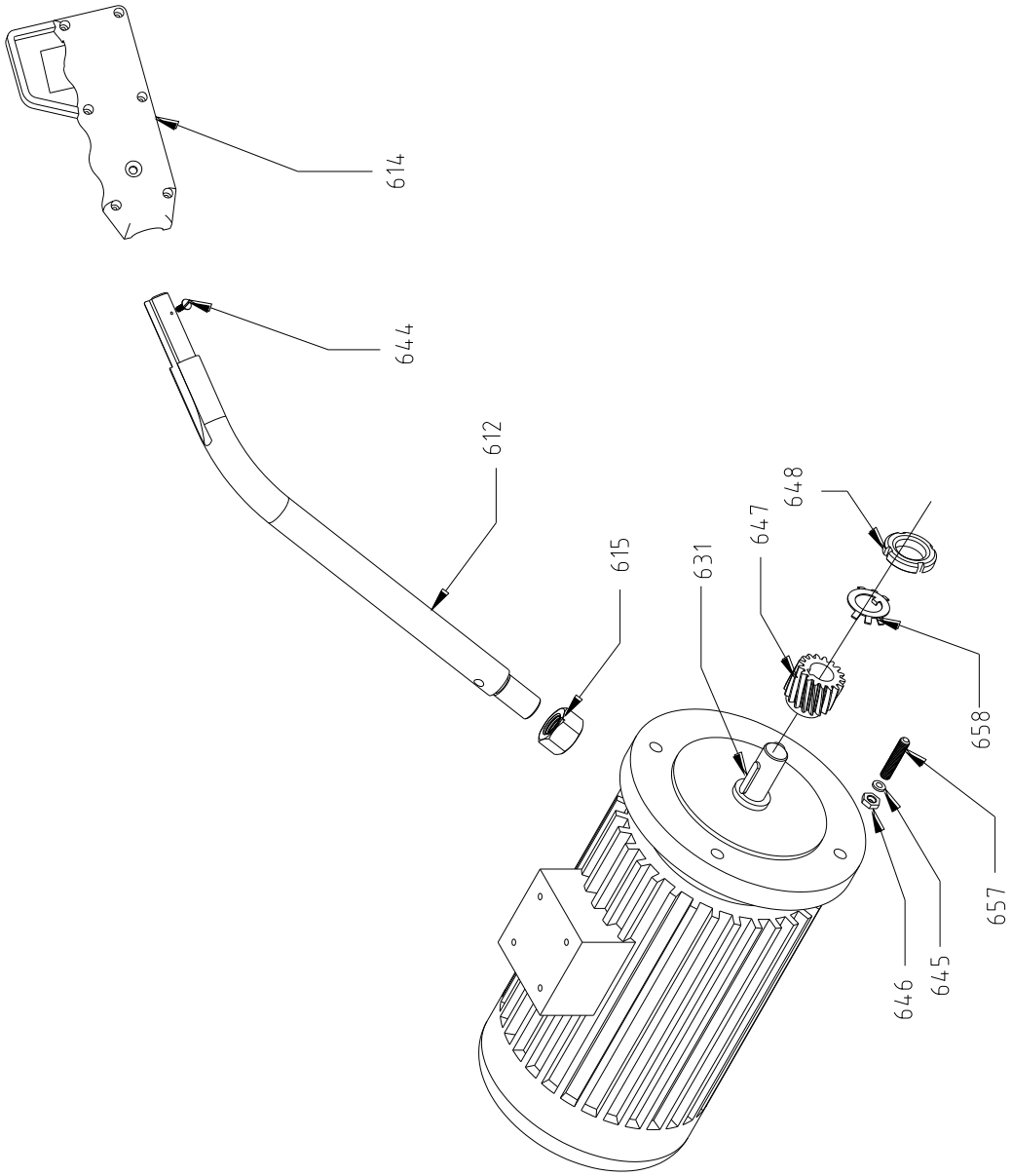
Group 500 **SAFETY GUARD**			Quantity per machine			
Pos,nr.	Description	Part nr.	315LT	300LT	315HT	300HT
501	Safety guard 315	60.0298	1	-	1	-
	Safety guard 300	60.1322	-	1	-	1
502	Hinged guard 315*	95.0521	1	-	1	-
	Hinged guard 300*	95.0523	-	1	-	1
503	Hinged guard315*	95.0522	1	-	1	-
	Hinged guard 300*	95.0524	-	1	-	1
504	Ring	50.0846	1	1	1	1
505	Coupling rod 315	60.0302	1	-	1	-
	Coupling rod 300	60.1326	-	1	-	1
506	Ring	44.2292	5	5	5	5
507	Tap(cock)	48.5501	1	1	1	1
508	Pin	50.0850	2	2	2	2
509	Ring	50.0847	1	1	1	1
510	Bush	50.0845	1	1	1	1
511	Circlip	44.2584	1	1	1	1
512	Coupling rod 315	50.1140	1	-	1	-
	Coupling rod 300	50.3437	-	1	-	1
513	Bracket	60.0303	1	1	1	1
514	Ring	44.2253	2	2	2	2
515	Socket head screw	44.1385	2	2	2	2
516	Shoulder screw	50.1596	1	1	1	1
517	Bearing bush	20.3055	1	1	1	1
518	Lever	50.1141	1	1	1	1
519	Star knob	48.2786	1	1	1	1
520	Bush	50.1142	1	1	1	1
521	Adjusting ring	44.2512	1	1	1	1
522	Lever 315	60.0301	1	-	1	-
	Lever 300	60.1325	-	1	-	1
523	Adjusting ring	44.2547	1	1	1	1
524	Bearing bush	20.3010	1	1	1	1
525	Connecting pipe	50.0034	1	1	1	1
	*including 506+508+505					
	**including 506+508+512					
	COMPOSED SPARES:					
>	Complete safety guard, CS-315					
	composed with all position numbers.	95.0073	1		1	
>	Complete safety guard, CS-300					
	composed with all position numbers.	95.0074		1		1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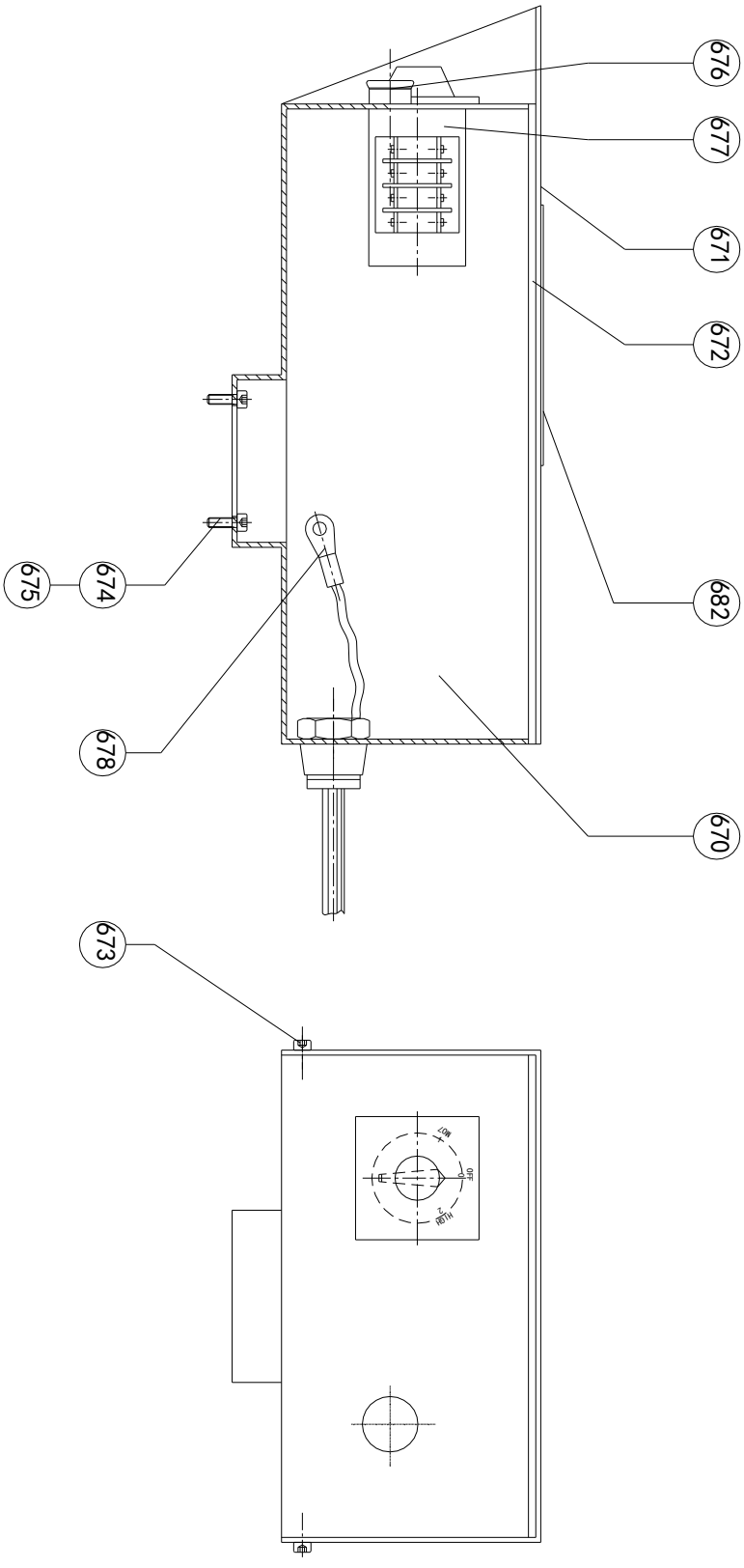
Group 600 **DRIVE** MOTOR			Quantity per machine	
Pos.nr.	Description	Art.nr.	315-300LT	315-300HT
612	Tie bar complete*	65.0332	1	1
614	Switch handle	46.1710	1	1
615	Nut	44.2013	1	1
631	Sunken key	44.3524	2	2
645	Washer		4	4
644	Bolt	44.1582	2	2
646	Nut	44.2454	4	4
647	Pinion	50.0923	1	1
648	Lock nut	44.2098	1	1
		47.1500	1	-
657	Lock bolt		1	1
658	Ring		1	1
	*Including pos. 611,613,614&615			
	**Be carefull:Maybe you have an another			
	voltage machine. Please, make contact			
	With your local dealer.			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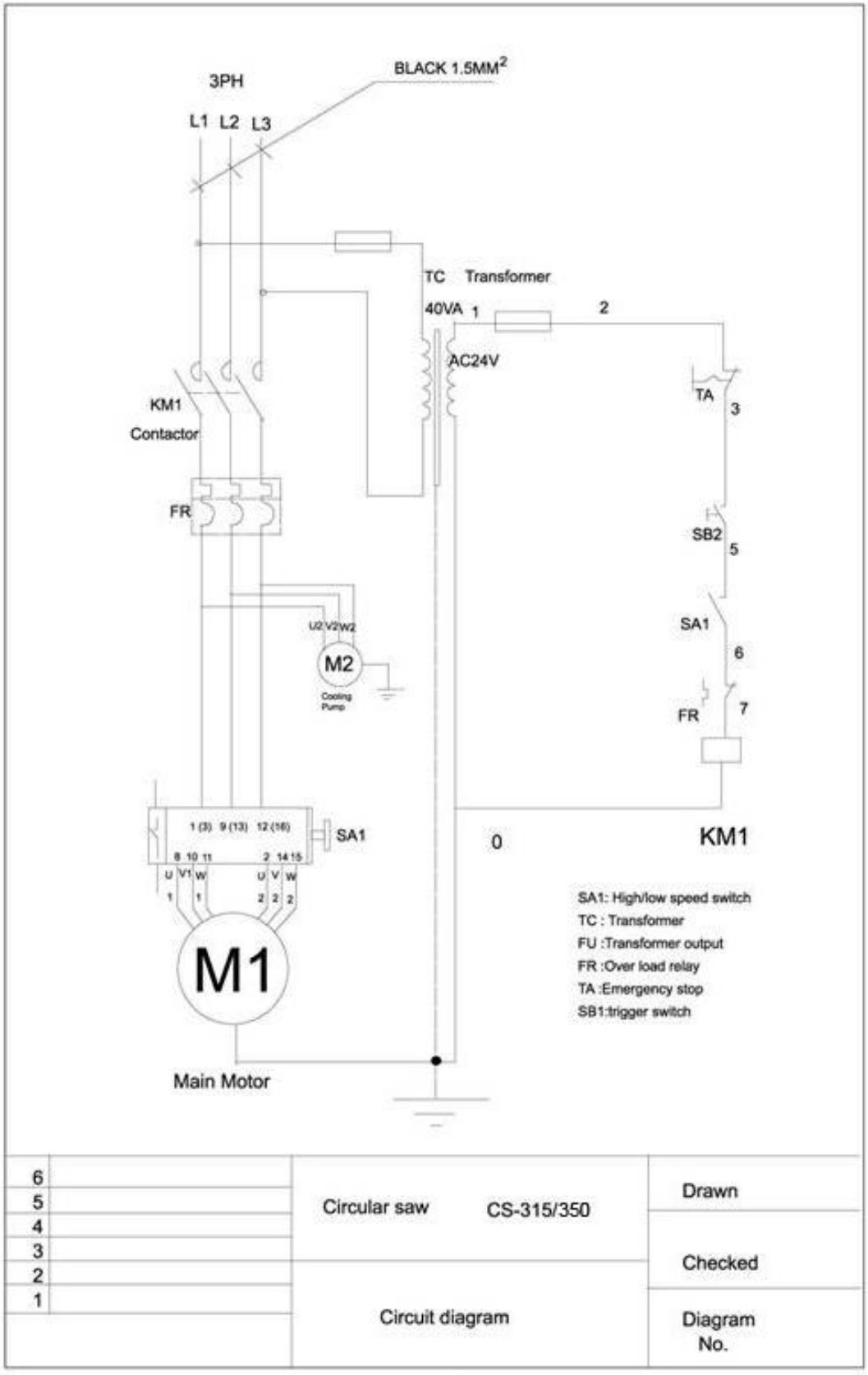
Group 600 **CPO DRIVE** ELECTRO BOX			Quantity per machine	
Pos.nr.	Description	Art.nr.	315	300
670	Switch box	60.0579	1	1
671	Cover	50.0955	1	1
672	Sealing tape	21.9950	1	1
673	Screw M4 × 10	44.1000	4	4
674	Screw M5 × 12	44.1583	4	4
675	Spring washer	44.2451	4	4
677	Motor switch contactor(Dahlander switch)	46.0902	1	1
678	Earth bolt	46.6350	1	1
682	Sticker	48.3700	1	1



6		Circular saw CS-315/350	Drawn
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4			Checked
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2		Circuit diagram	Diagram No.
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