

COLD SAW

Model: CS-12/CS-14

Opertation Manual

1. Introduction

1.1 General

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

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. Safety regulations

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.

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 rigid.
 - ✧ Prevent unwanted starting of the machine. See to it that the speed selector switch is in the off positions 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 eye protection device. Do not work with trailing pieces of clothing which could be caught by moving parts. Preferably wear ear muffers and mask during operation.
 - ✧ In case of danger resulting from defects, immediately contact the person in charge of the machine.
 - ✧ When handle heavy workpiece, it is advised to use proper hoist device.
 - ✧ When the workpiece is long, additional support device (e.g. table) must be used to support the workpiece to prevent hazards arise from the falling of the workpiece.
 - ✧ 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. For operator's safety, special spanner for change saw blade is provided.
 - ✧ The speed adjustment must be done only when the machine stops completely.
 - ✧ 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 tills 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.

2 Technical data

2.1 Main group

CS-350 and CS-315 range comprises model as follow :

NOTE: This manual is only for your reference. Owing to the continuous tmprovementi.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.

CS-315 and CS-350 LOW SPEED SAWING SPEED POS.1:18.5M/MIN IN POS.2: 37M/MIN.

CS-315 and CS-350 HIGH SPEED SAWING SPEED POS.1:37M/MIN IN POS.2: 74M/MIN.

2.2 Survey and sketch of dimensions

(see fig. 2,01)

Dimensions and weight of the machine

CS-12

Height(H): 175mm

Width(B): 555 mm

Depth: 970 mm

Weight: 185kg

CS-14

Height(H): 1800mm

Width(B): 555 mm

Depth: 970 mm

Weight: 190kg

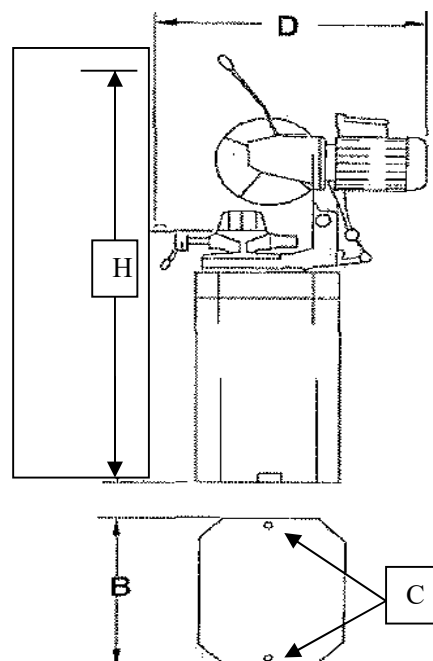


Fig.2

2.3 Requirement of operating site

This machine is designed for operating on the site:

- **Voltage** The steady-state AC power supply is 0.9~1.1 times of the rated value.
- **Frequency** 0.99~1.01 times of rated frequency (continuous working)
0.98~1.02 times of rated frequency(short period working)
- **Harmonics** The sum of 2nd-5th distorted harmonic must not exceed 10% of RMS of voltage, maximum 2% of RMS of line voltage is allowed to add to the sum of 6th-30th harmonic.
- **Unbalanced voltage** of 3-phase power supply
Negative sequence component are not allowed to exceed 2% of the positive sequence component.
- **Short-circuited protection and incoming line**
The machine shall have short-circuited protective device at the power supply end by the end-user, the rated current shall be 5A, and the diameter of the incoming line of the power supply must not be less than 1.5mm² (single phase) and 1.5mm² (PE).
- **Overvoltage protection**
Overvoltage protection device shall be provided in the power supply line by the end user.
- The height above sea level of the machine installation doesn't exceed 1000m;
- The ambient temperature range of air is 5°C~40°C.
- The relative humidity doesn't exceed 50% at a maximum temperature of +40 °C .
Higher relative humidity may be permitted at lower temperature (e.g.90% at 20°C)
- Lighting of the work zone should be at least 500lux(provide by end user).
- The installation site of the machine shall be away from undesirable vibration, shock or bump.

3 Description of machine

3.1 Description

Circular Saw consists of 6 models which have the same 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 based 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.

3.2 Intended use

According to the choice of saw blade referred in No.5 chapter, it can cut many kind and shape steel. For example CARTON STEEL, ALLOY STEEL, COPPER , ALUMINIUM and so on. But it can not cut flammability and explode material, like natrium and magnesium .

3.3 TRANSPORTATION OF MACHINE

- 1.The store and transport of machine's temperature must be from -25°C to 55°C.
2. The bolt (A in fig3.03) of basic must be fitted before transport and store.
3. When you transfer the bolt of the swinging ring ,you should loose B-bolt of oil-mouse
4. You should swing the machine with nylon rope.Then put the machine to the bottom pallet, fitted with bolt.
5. Covered the packing case. And put the basic to another case.
6. As this machine's weight is 110kg , it is recommended that the machine should be Transported with help of lifting device.

In fig 3.04

Warning:

- Tighten all locks before operating.
- ALWAYS keep proper footing & balance while moving this machine, and only use heavy-duty fibre belt to lift up the machine.

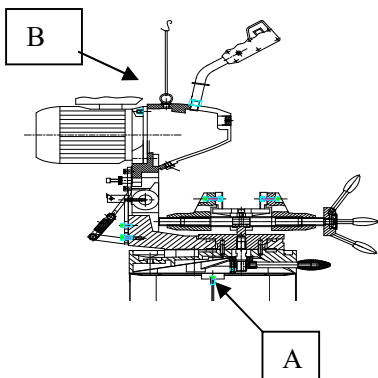


FIG3.03

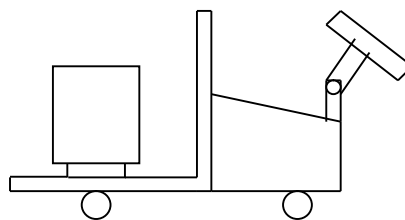


FIG3.04

4 Installation

Avoid installing the machine in damp, dirty or poorly lit environments.

Make sure that the machine has all necessary protection.

Electric installations should be performed by the authorized electrician.

Be sure that the machine is set up securely or anchored in place.

Attention: There is risk of overturn when machining heavy workpiece. We recommend to fix the machine to floor before operating as following:

Place the machine on a stable foundation. The bolt are fixed to the floor at the position indicated in the figure below.(in fig.2.01c)

4.1 Installation 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.
- Race 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 on the floor. The necessary holes have already been made in the machine base.
- Install the handle in the saw head and lock it (fig 4.01 A).
- 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.

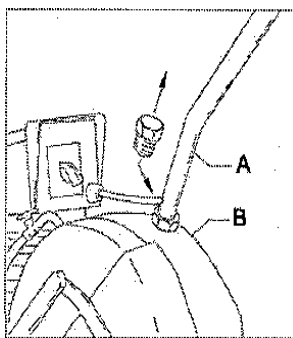


Fig 4.01

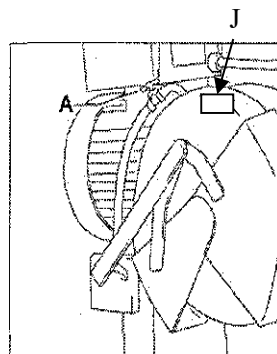


Fig 4.02

When you put on new blade reset adjusting screw.

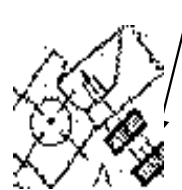


Fig 4.03

4.3 Coolant

The use of proper cutting fluid is essential to obtain maximum efficiency from a band saw blade. The main cause of tooth failure is excessive heat build-up. This is the reason that cutting fluid is necessary for long blade life and high cutting rates. Cutting area and blade wheels should be kept clean at all time. The rate of coolant flow is controlled by the stop valve lever (J) in Fig.4.02 which directs the coolant onto the blade. The lever (J) is shown in the off position. 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 water 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 10 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.

For general metal material (e.g. steel, copper), it is recommended to use BP-70 coolant.

Warning: Some material has fire hazards, e.g. Magnesium. Care must be taken when cutting such material. Special coolant must be used for these material. Please get detailed information from professional coolant supplier for special coolant.

-When adding coolant, attention should be taken that the coolant level should not access the line marked on the coolant container.

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.

Electrical installations should be always performed by authorized electricians.

- 1) Make sure that the correct voltage is supplied to the machine.
- 2) Set up the electrical connections according to the attached circuitry. Connect the electricity on the main line's automatic circuit breaker.
- 3) Make sure that the circular saw has the correct rotation direction.

Warning: Note the earth screw!

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 pitch corresponds to the arrow on the safety guard.
- If the motor rotates in the wrong direction two phases wires must be switched.

Overvoltage protection device shall be provided in the power supply line by the end user.

5 Operation

When operating at the first time, please check the back extension spring whether it is fastness, whether it is fastness between handle switch and handle. You must move the head of machine and protection of cutter up and down. Make sure they can convenient to open and close. Then you can operate it as follow :

5.1 Selection of the sawblade

After years of research we recommend you to use only Time winner 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 micro porous structure the cutting oil is transferred quicker into the saw cut. This means longer life before resharping 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.

5.2 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)

	10	15	20	25	← Solid material ← Profile material	
	15	20	25	35		
	1	2	3	4	EXAMPLE Tubular profile wall thickness 3mm =pitch 5 Solide 25mm =pitch 12	
	3	○				
	4		○			
	5			○		
	6					○
	8					
	10		●			
	12			●		
	15					●

Fig.5.0

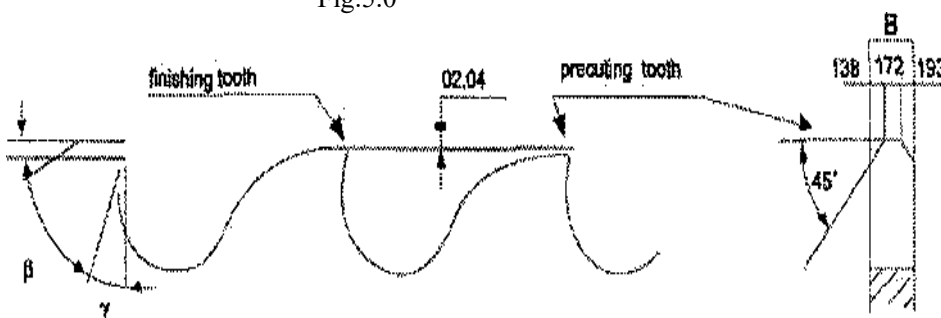


Fig.5.01

Clearance angle (5 and rake angle 7 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 bent 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. When 90° we mean straight sawing. Use the table from the machine type you have.

CS-315							
90°	100	110x110	110x110	110x110	140x100	55	50x50
60°	100	100x100	100x100	100x100	120x100	45	40x40
45°	100	100x100	100x100	100x100	100x100	45	40x40
CS-350							
90°	120	110x110	110x110	110x110	140x100	55	50x50
60°	115	100x100	100x100	100x100	120x100	45	40x40
45°	105	100x100	100x100	100x100	100x100	45	40x40

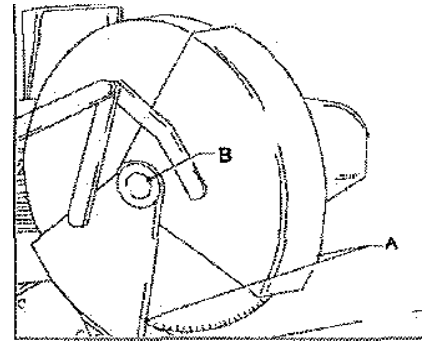


Fig.5.03

5.4 Installing and replacing the saw blade

- 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.

5.6 Sawing speed

The saw speed will be selected by the switch (fig, 5.04A)

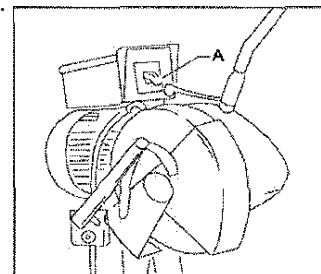


Fig 5.04

The following cutting speeds are possible:

CS-315 and CS-350 LOW SPEED SAWING SPEED POS.1:18.5M/MIN IN POS.2: 37M/MIN.

CS-315 and CS-350 HIGH SPEED SAWING SPEED POS.1:37M/MIN IN POS.2: 74M/MIN.

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

18, & 36r/min > For steel alloy e.g. stainless steel

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 flat material on its thinnest side; this will considerably 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

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.

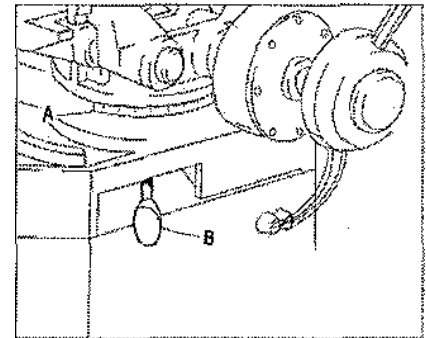


Fig. 5.06

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 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 350 and SCO-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.

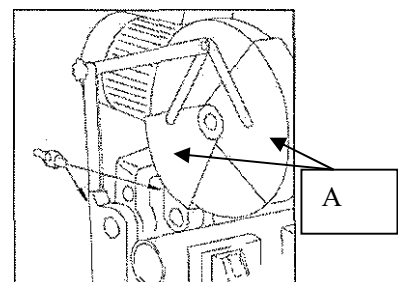


Fig.6.03

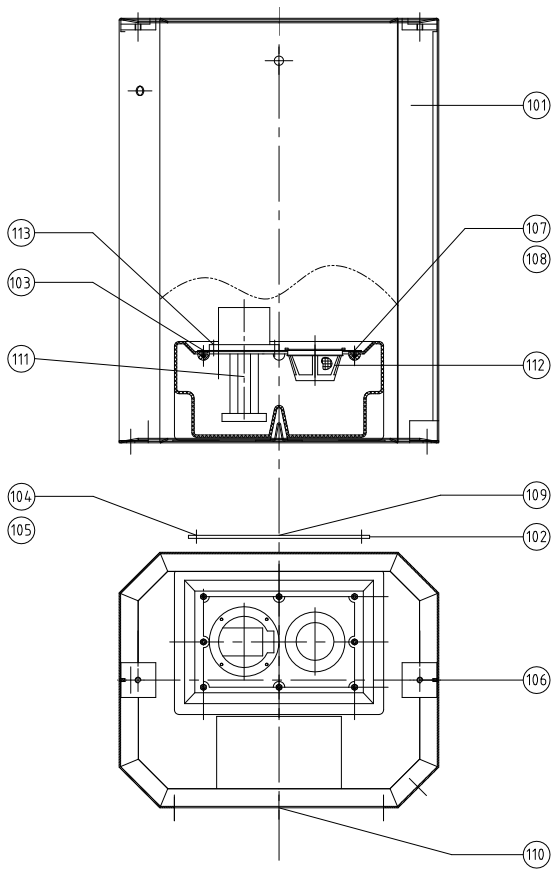
6.3 Grinding the sawblades

It is only possible to work efficiently with 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 putting 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.

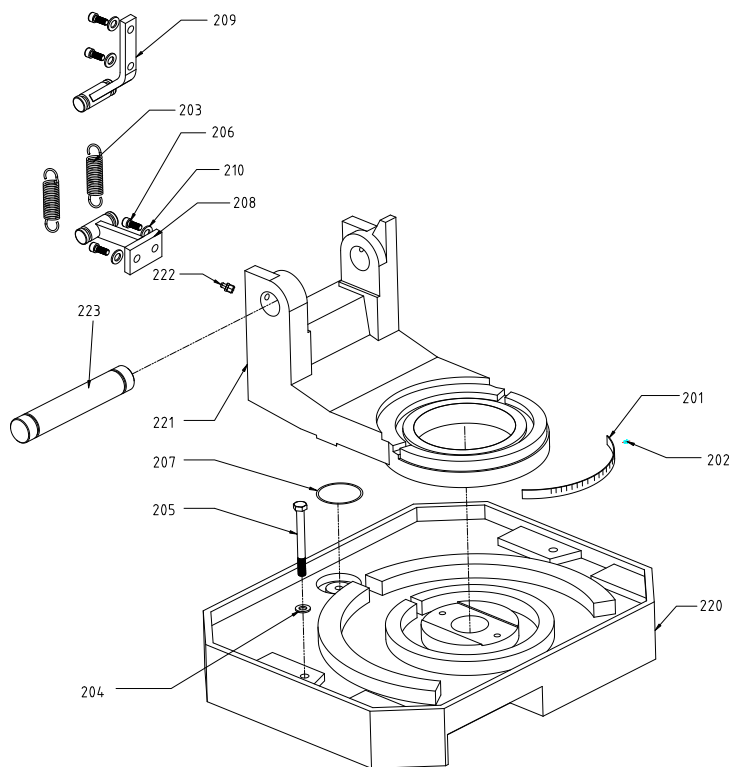
7 Trouble shooting

Trouble	Possible cause	Remedy
Excessive bouncing or breaking of the saw.	<ol style="list-style-type: none">1. Speed an/or saw feed too high.2. Teeth blunt, tooth cavities too small,3. Wrong coolant4. Saw jolts because chips remain in the saw cavity (cold-welding on the saw).5. Saw installed incorrectly with respect to the direction of rotation.6. Worm and worm wheel	Use oils Have the saw ground and the tooth cavity polished, so that the chips can easily slide through the tooth cavity. Turn the saw and check the teeth. Replace.
Motor does not turn	<ol style="list-style-type: none">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 blown6. Emergency stop butt	
Cooling system does not work	<ol style="list-style-type: none">1. Cock on saw guard in closed position.2. Pump incorrectly connected.3. Pump defective4. Cooling tank empty5. Suction pipe of cooling pump obstructed.	

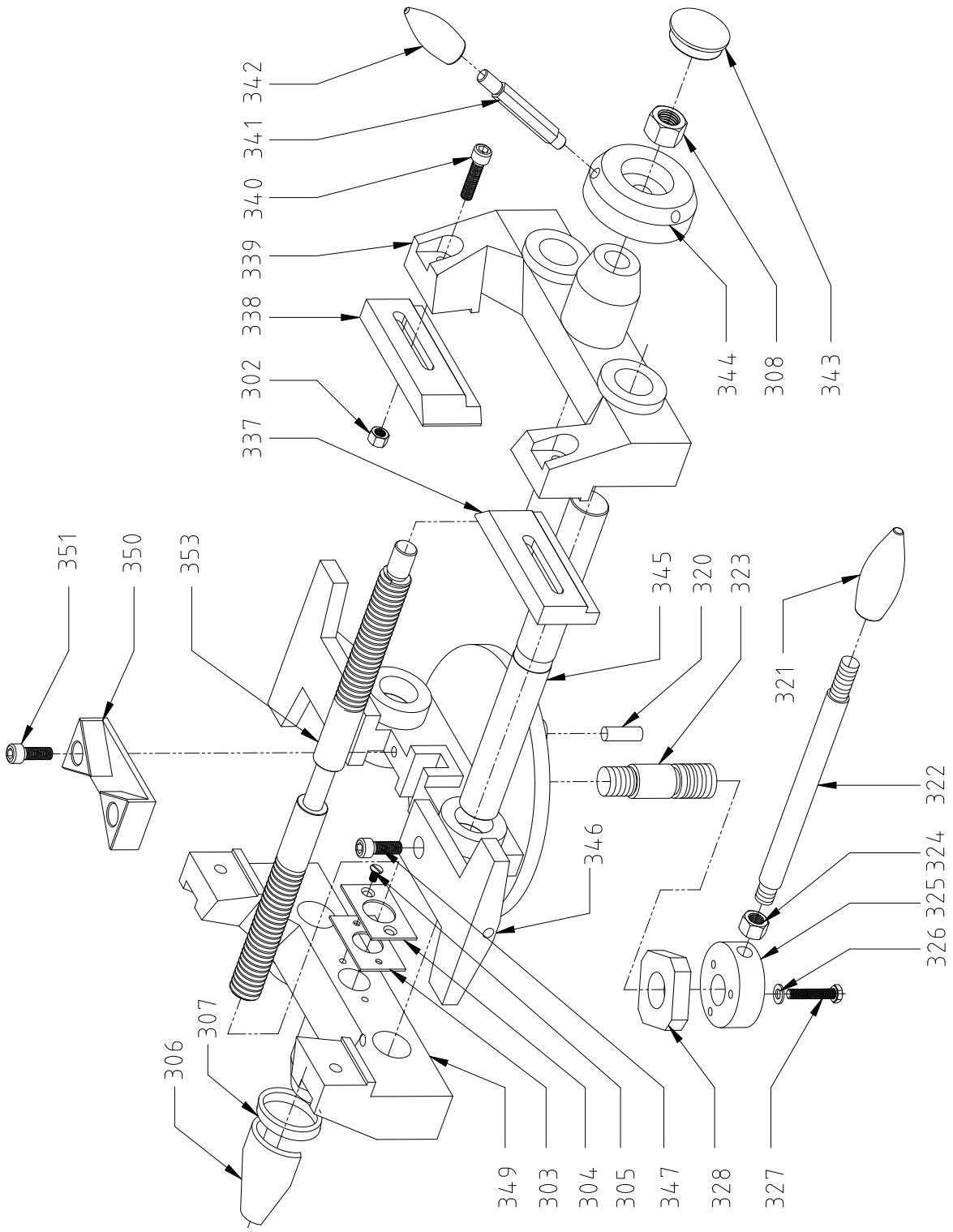
PARTS LISTS



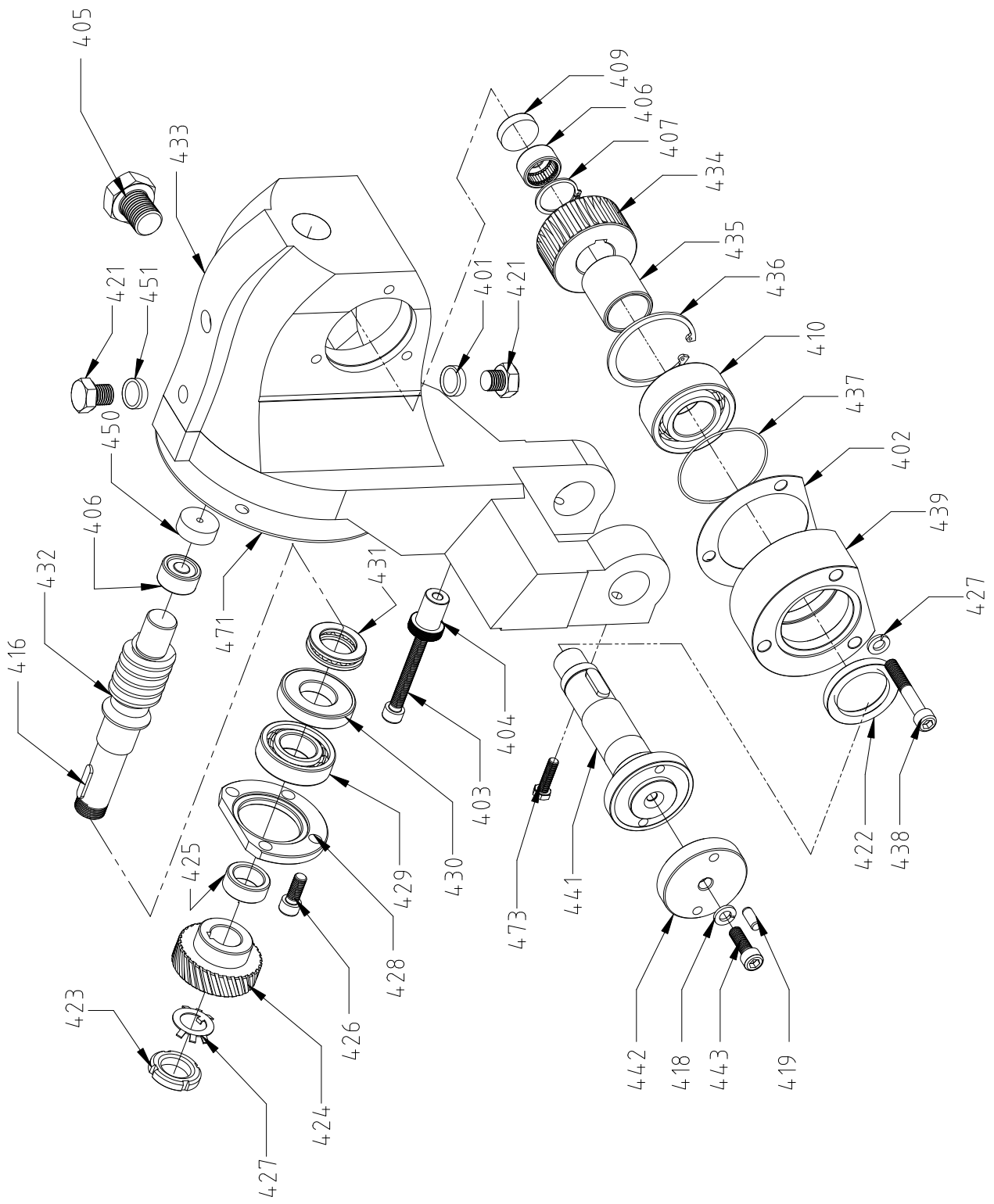
Part No.	Description	Qty.	Part No.	Description	Qty.
101	Pedestal	1	109	Sticker electro	1
102	cover	1	110	Sticker general	1
103	support pump	1	111	Pump set 230/40QV50HZ	1
104	screw 6 x 12	4	112	Filter	1
105	Spring washer 6	6	113	Screw M6x12	
106	Screw M10 x 100	2			
107	Screw M6 x 12	2			
108	Spring washer 8	2			



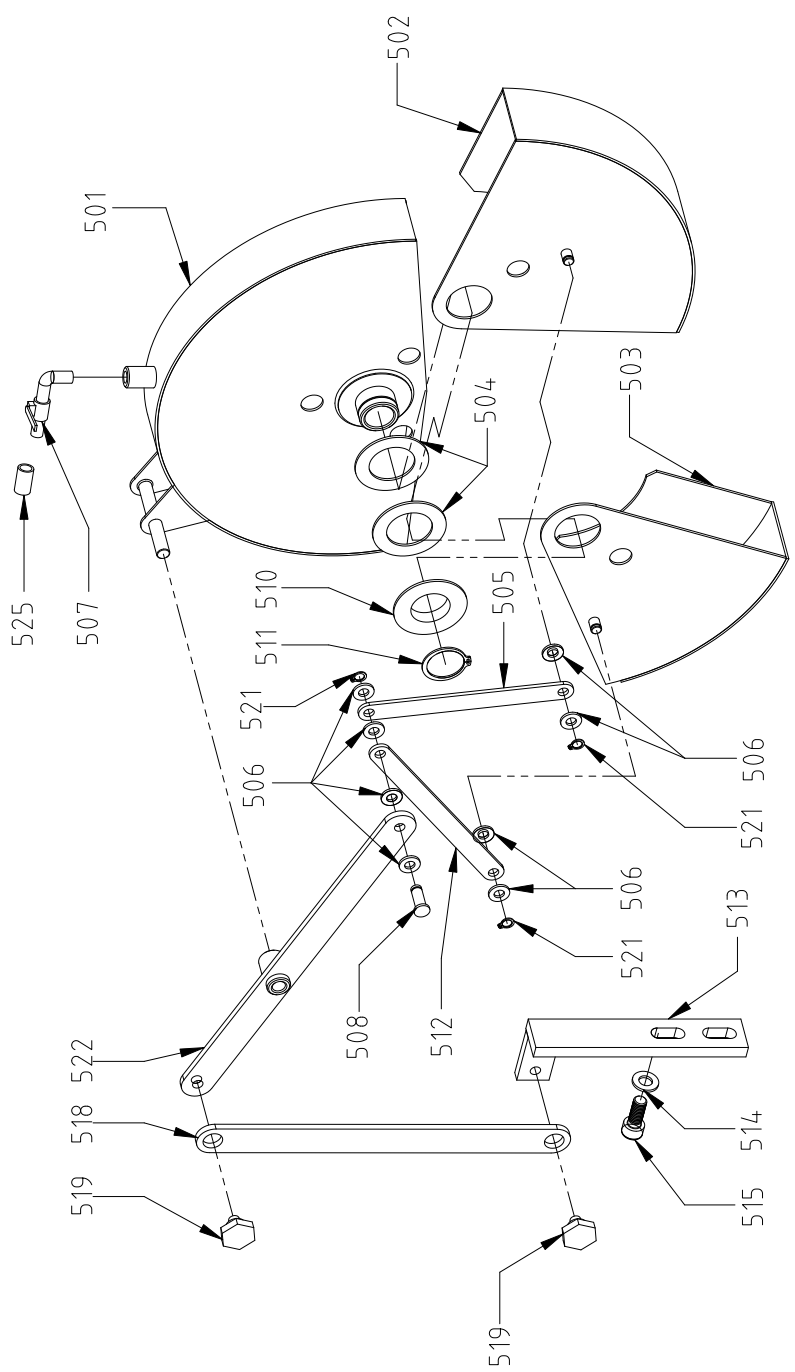
Part No.	Description	Qty.
201	Angel Scale	1
202	Type Shield	2
203	Spring	2
204	Rivet 10	2
205	Screw M10x100	2
206	Nut M10X25	4
207	Filter	1
208	Spring fixed plate	1
209	Spring fixed plate	1
210	Washer	4
220	Base plate	1
221	Swivel block	1
222	Greasing nipple	2
223	Shaft	1



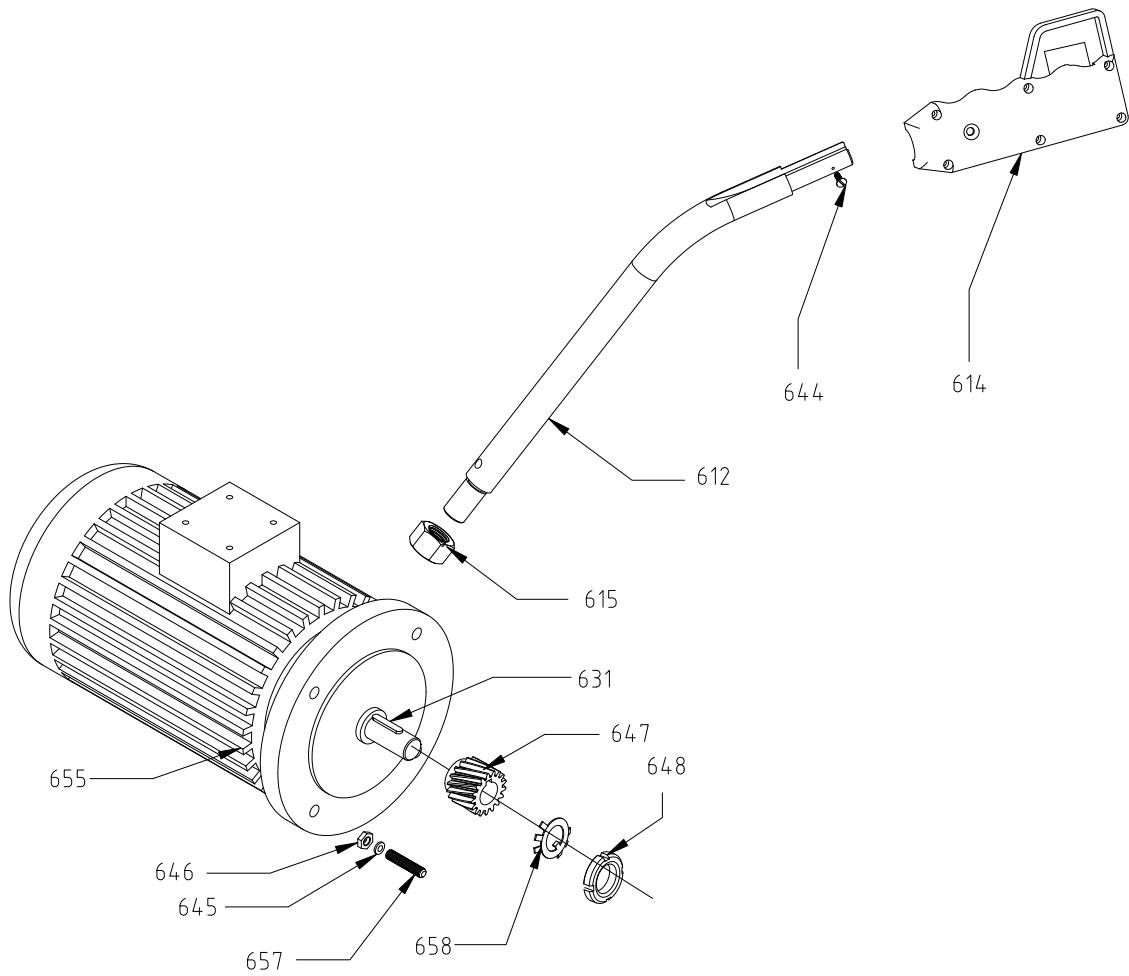
Part No.	Description	Qty.	Part No.	Description	Qty.
302	Nut M10	4	337	Vice plate left	2
303	Ring	2	338	Vice plate right	2
304	Mat board	2	339	Vice jaw at the front	1
305	Bolt	4	340	Socket screw	4
306	Rubber cover	1	341	Handle rod+knob	3
307	Pipe hoop	1	342	Knob	3
308	Nut	1	343	Plastic cover knob	1
320	Pin	2	344	Boss	1
321	Knob	1	345	Guiding shaft	2
322	Mitre handle complete	1	346	Vice base	1
323	Stud	1	347	Socket screw	2
324	Nut	1	349	Vice jaw at the back	1
325	Tensioning nut	1	350	Support block	
326	Nut	3	351	Socket Screw	2
327	Bolt	3	353	Threaded shaft	1
328	Pressure plate	1			



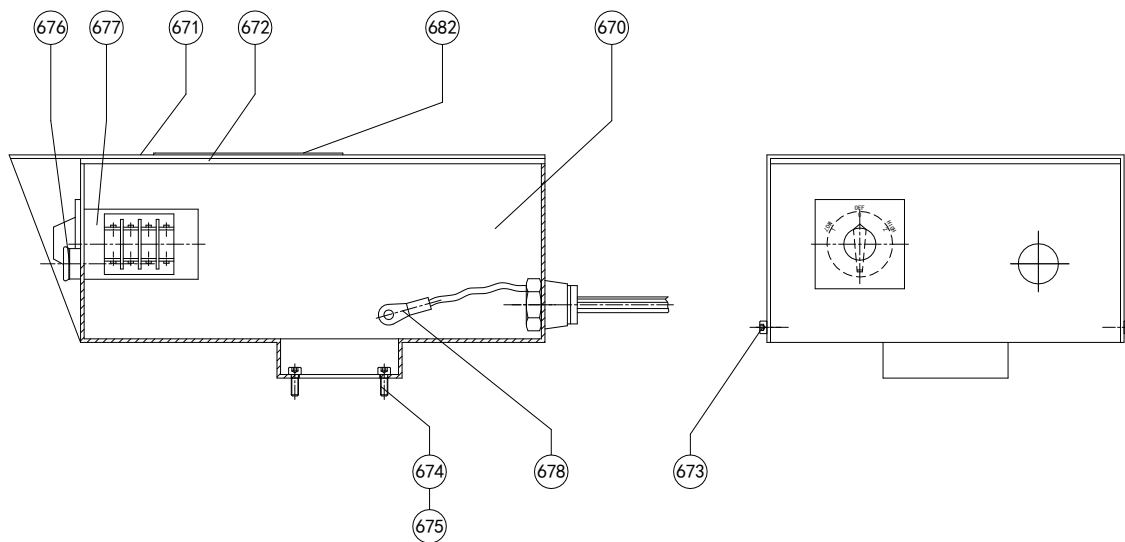
Part No	Description	Qty.	Part No.	Description	Qty.
401	Ring	1	428	Locking ring	1
402	Push down seat	1	429	Bearing	1
403	Bolt	1	430	Ring	1
404	Nut	1	431	Bearing	1
405	Oil mark	2	432	Worm shaft	1
406	Needle bearing	1	433	Gear housing 350	1
407	Circlip	1	434	Worm wheel	1
409	Stopper stifled	1	435	Bush	1
410	Bearing	1	436	Circlip	1
416	Sunken key	1	437	O-ring	1
418	Ring	1	438	Socket screw	3
419	Dowel pin	2	439	Bearing block	1
421	Drain catcher	1	440	Sunken key	1
422	Oil catcher	1	441	Saw shaft	1
423	Nut	1	443	Socket screw	1
424	Gear	1	450	Stopper stifled	1
425	Spacer ring	1	451	Ring	1
426	Socket screw	4	471	Packing	1
427	Stop ring	1	473	Screw	2



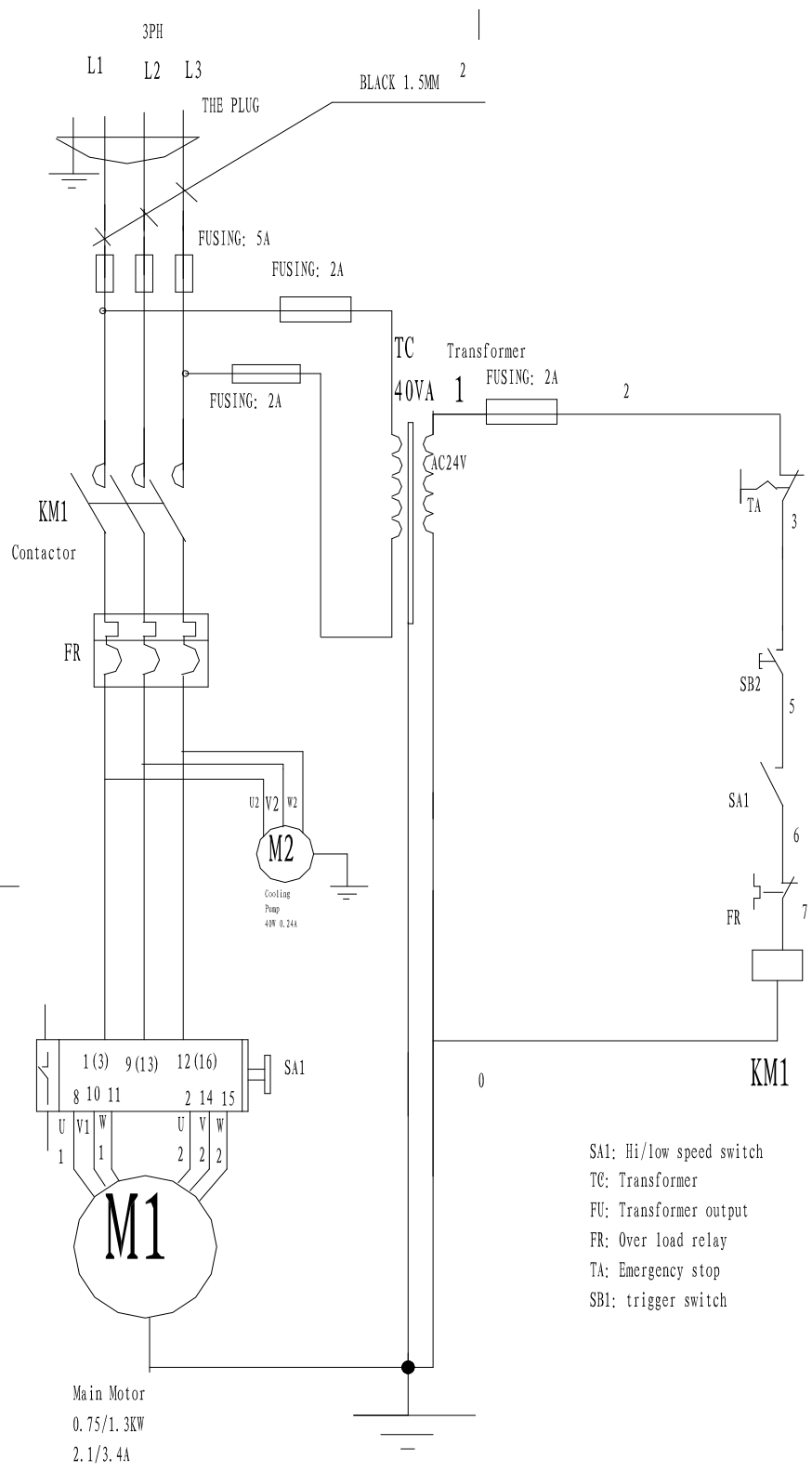
Part No	Description	Qty.	Part No.	Description	Qty.
501	Safety guard	1	512	Coupling rod	1
502	Hinged guard	1	513	Bracket	1
503	Hinged guard	1	514	Ring	2
504	Ring	1	515	Socket head screw	1
505	Coupling rod	1	518	Lever	1
506	Ring	8	519	Star knob	2
507	Tap (cock)	1	521	Adjusting rod	3
508	Spindle	1	522	Coupling rod	1
510	Bush	1	525	Connecting pipe	1
511	Circlip	1			



Part No	Description	Qty.	Part No.	Description	Qty.
612	Tie bar complete	1	646	Nut	4
614	Switch handle	1	647	Pinion	1
615	Nut	1	648	Lock nut	1
631	Sunken key	1	655	Motor	1
644	Screw	2	657	Bolt	1
645	Ring	4	658	Stop ring	1



Part No	Description	Qty
670	Switch box	1
671	Cover	1
672	Sealing tape	
673	Screw M4x10	4
674	Screw M5x12	4
675	Spring washer	4
677	Motor switch contactor (Dahlander switch)	1
678	Earth bolt	1
682	Sticker	1



6	Circular saw type 225 250 275 300 315 350	Drawn
5		Checked
4		
3	Circuit diagram	Diagram No.
2		
1		

Note: This manual is only for your reference. Owing to the continuous improvement of the machine, changes may be made at any time without obligation on notice.