

HARE & FORBES

MACHINERYHOUSE

Established 1930

Distributors of New & Used Workshop Equipment

METAL CUTTING BAND SAW

MODEL: EB-320DS

METAL CUTTING BAND SAW MACHINE

CY300

Instruction Manual

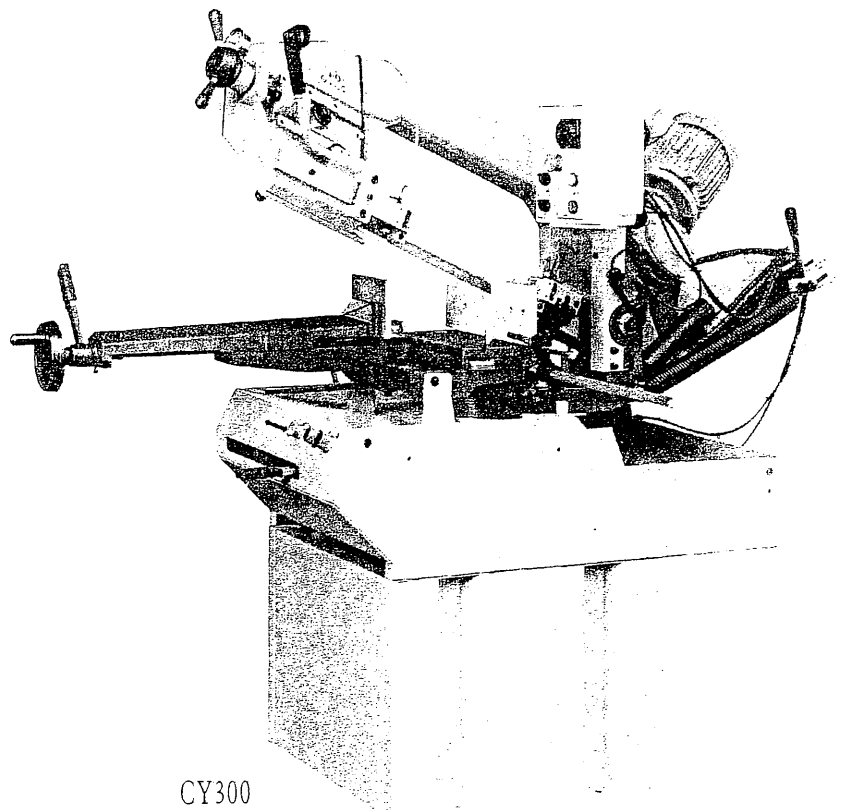
Standard Equipment

Bimetal saw blade

Cooling pump

Magnetic switch & CE

Stand



CY300

1 REFERENCE TO ACCIDENT - PREVENTION REGULATIONS

This machine has been built to comply with the national and community accident-prevention regulations in force. Improper use and/or tampering with the safety devices will relieve the manufacturer of all responsibility.

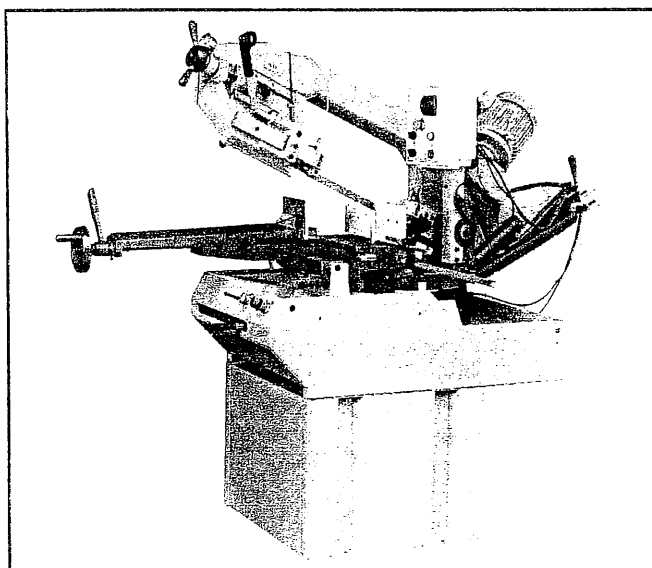
1.1 - Advice for the operator



- Check that the voltage indicated on the plate, normally fixed to the machine motor, is the same as the line voltage.
- Check the efficiency of your electric supply and earthing system; connect the power cable of the machine to the socket and the earth lead (yellow-green in colour) to the earthing system.
- When the saw frame is in suspend mode (up) the toothed blade must not move.
- Only the blade section used for cutting must be kept unprotected. Remove guarding by operating on the adjustable head.
- It is forbidden to work on the machine without its shields (these are all blue or grey in colour).
- Always disconnect the machine from the power socket before blade change or carrying out any maintenance job, even in the case of abnormal machine operation.
- It is forbidden to disconnect the "man present" device, known more correctly in the EEC as the "safety switch with hold-down action".
- Always wear suitable eye protection.
- Never put your hands or arms into the cutting area while the machine is operating.
- Do not shift the machine while it is cutting.
- Do not wear loose clothing with sleeves that are too long, gloves that are too big, bracelets, chains or any other object that could get caught in the machine during operation; tie back long hair.
- Keep the area free of equipment, tools or any other object.
- Perform only one operation at a time and never have several objects in your hands at the same time. Keep your hands as clean as possible.
- All internal and/or internal operations, maintenance or repairs, must be performed in a well-lit area or where there is sufficient light from extra sources so as to avoid the risk of even slight accidents.

1.2 - Location of shields against accidental contact with the tool

- Blue, grey metal guards, fastened with screws onto the stationary blade-guide and relevant holding arm.
- Blue or grey metal guard fastened with screws onto the mobile blade-guide, ensures covering of blade section not used in cutting operation.
- Grey metal guards fastened with knobs onto the saw frame, to protect from flywheels.



1-3 - Electrical equipment according to Euro-pean Standard "CENELEC EN 60 204-1" which assimilates, with some integrating modifications, the publication "IEC 204-1"

- The electrical equipment ensures protection against electric shock as a result of direct or indirect contact. The active parts of this equipment are housed in a box to which access is limited by screws that can only be removed with a special tool; the parts are fed with alternating current at low voltage (24 V). The equipment is protected against splashes of water and dust.
- Protection of the system against short circuits is ensured by means of rapid fuses and earthing; in the event of motor overload, protection is provided by a thermal probe.
- In the event of a power cut, the specific start-up button must be reset.
- The machine has been tested in conformity with point 20 of EN 60204.

1.4 - Emergencies according to European Standard "CENELEC EN 60 204-1"

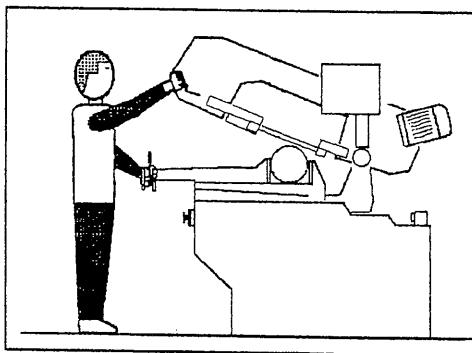
- In the event of incorrect operation or of danger conditions, the machine may be stopped immediately by pressing the red mushroom button.
- The casual or voluntary removal of the protection shield of the flywheels causes the stepping-in of a microswitch that automatically stops all machine functions.
- In case blade breaks, the tightening pressure switch stops all machine functions.

NOTE: Resetting of machine operation after each emergency stop is achieved by reactivating the specific restart button.

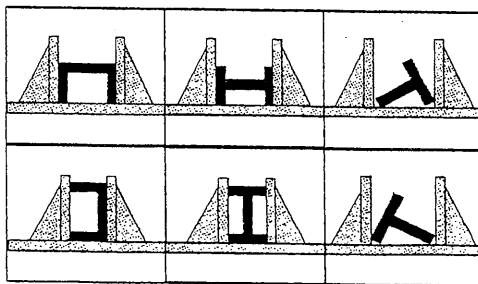
2 RECOMMENDATIONS AND ADVICE FOR USE

2.1 - Recommendations and advice for using the machine

- The machine has been designed to cut metal building materials, with different shapes and profiles, used in workshops, turner's shops and general mechanical structural work.
- Only one operator is needed to use the machine, that must stand as shown in the picture.






- Before starting each cutting operation, ensure that the part is firmly gripped in the vice and that the end is suitably supported. These figures show examples of suitable clamping of different section bars, bearing in mind the cutting capacities of the machine in order to achieve a good efficiency and blade durability.



- Do not use blades of a different size form those stated in the machine specifications.
- If the blade gets stuck in the cut, release the running button immediately, switch off the machine, open the vice slowly, remove the part and check that the blade or its teeth are not broken. If they are broken, change the tool.
- Check saw frame return spring to ensure proper balancing.
- Before carrying out any repairs on the machine, consult the dealer or apply to THOMAS.

3 TECHNICAL CHARACTERISTICS

3.1 - Table of cutting capacity and technical details

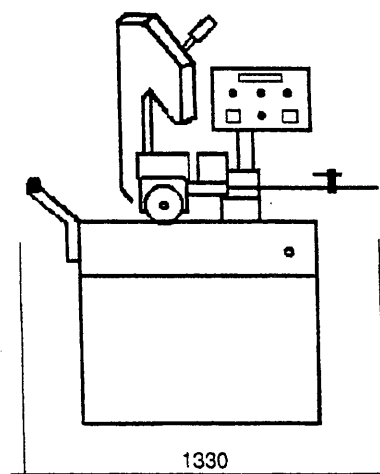
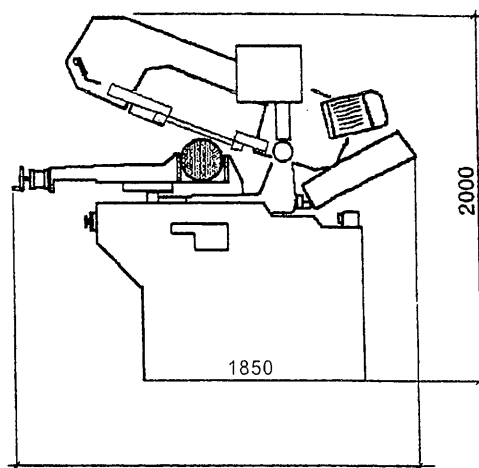
| |  |  |  |
|--------|---|---|---|
| 90° | 255 | 210 | 310 x 210 |
| 45° DX | 220 | 210 | 220 x 200 |
| 45° SX | 230 | 210 | 230 x 210 |
| 60° DX | 135 | 135 | 135 x 135 |

TECHNICAL DATA

| | | |
|----------------------|------|-----------------|
| BLADE MOTOR | Kw | 1.5 |
| COOLANT LIQUID MOTOR | Kw | 0,11 |
| BLADE DIMENSIONS | mm | 2750 × 27 × 0,9 |
| FLYWHEEL ϕ | mm | 330 |
| CUTTING SPEED | m/1' | 35-70 |
| VICE OPENING | mm | 310 |
| WORKING TABLE HEIGHT | mm | 950 |
| MACHINE WEIGHT | kg | 335 |

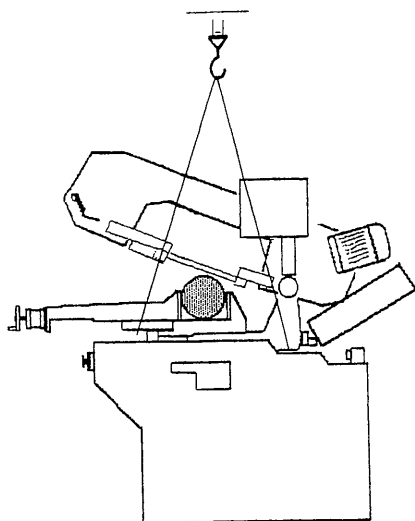
4 MACHINE DIMENSIONS 4 TRANSPORT INSTALLATION DISMANTLING

4.1 - Machine dimensions



4.2 - Transport and handling of the machine

If the machine has to be shifted in its own packing, use a forklift truck or sling it with straps as illustrated.



4.3 - Minimum requirements for the premises housing the machine

- Mains voltage and frequency complying with the machine motor characteristics.
- Environment temperature from -10°C to +50°C.
- Relative humidity not over 90%

4.4 - Instructions for electrical connection

- The machine is not provided with an electric plug, so the customer must fit a suitable one for his own working conditions:

1 - WIRING DIAGRAM FOR 4-WIRE SYSTEM FOR THREE-PHASE MACHINE-SOCKET FOR A 16A PLUG



4.5 - Instructions for assembly of the loose parts and accessories

Fit the components supplied as indicated in the photo:

- Mount bar-stop rod
- Mount and align the roll supporting arm as per the countervice table.

4.6 - Disactivating the machine

- If the sawing machine is to be out of use for a long period, it is advisable to proceed as follows:

- 1) detach the plug from the electric supply panel
- 2) loosen blade
- 3) release the arch return spring
- 4) empty the coolant tank
- 5) carefully clean and grease the machine
- 6) if necessary, cover the machine.

4.7 - Dismantling

(because of deterioration and/or obsolescence)

General rules

If the machine is to be permanently demolished and/or scrapped, divide the material to be disposed of according to type and composition, as follows:

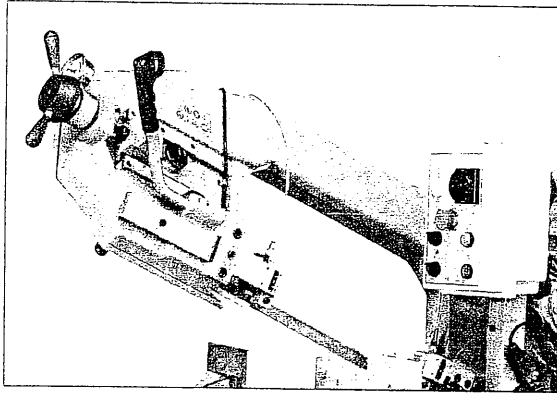
- 1) Cast iron or ferrous materials, composed of metal alone, are **secondary raw materials**, so they may be taken to an iron foundry for re-smelting after having removed the contents (classified in point3);
- 2) electrical components, including the cable and electronic material (magnetic cards, etc.), fall within the category of material classified as being assimilable to urban waste according to the laws of the European community, so they may be set aside for collection by the public waste disposal service;
- 3) old mineral and synthetic and/or mixed oils, emulsified oils and greases are special refuse, so they must be collected, transported and subsequently disposed of by the old oil disposal service.

NOTE: since standards and legislation concerning refuse in general is in a state of continuous evolution and therefore subject to changes and variations, the user must keep informed of the regulations in force at the time of disposing of the machine tool, as these may differ from those described above, which are to be considered as a general guide line.

5 MACHINE FUNCTIONAL PARTS

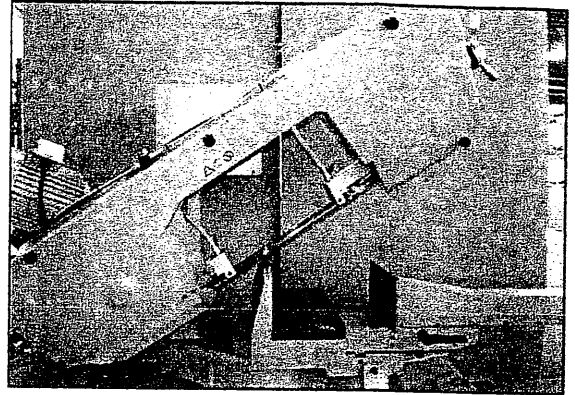
5.1 - Operating head or saw frame

- Machine part consisting of the members that transfer the motion (gearmotor, flywheels), and tension/guide (blade-guides, blade tension slide) and lowering control (optional) of tool.



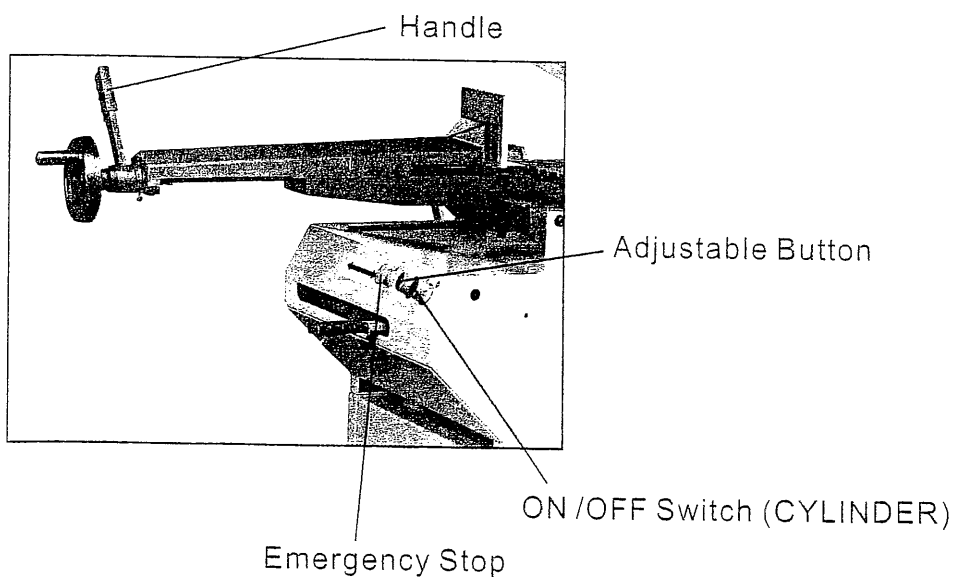
5.3 - Bed

- Support structure for the OPERATING HEAD OR SAW FRAME (rotating arm for gradual cutting, with respective blocking system), the ELECTRIC BOX, the VICE, the BAR STOP, the material support ROLLER and the housing for the cutting coolant TANK and pump.



5.2- Vice

- System for clamping the material during the cutting operation, operated with approach handwheel and locking lever or by a pneumatic device (optional).



6 DESCRIPTION OF THE OPERATING CYCLE

Before operating, all the main organs of the machine must be set in optimum conditions (see the chapter on "Regulating the machine").

6.1 - Starting up and cutting cycle

CUTTING CYCLE

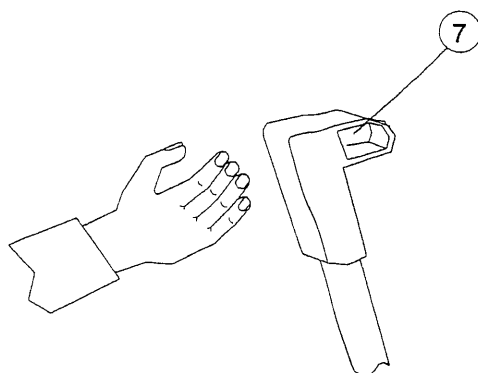
- Manual vice locking;
 - Manual sawframe downfeed;
 - Manual sawframe lift;
 - Manuale vice opening.
- Make sure the machine is not in emergency stop; if so, release the red mushroom push-button.
 - Rotate the band tightening flywheel (2) counterclockwise and the rapid tightening lever towards the left against the mechanical stop
 - Select the cutting speed on switch

position 1 = 36 m/min

position 2 = 72 m/min

ATTENTION: Make sure that the vice has been positioned to the far right or left of the countervice to avoid accidental impact with the sawblade. Also make sure that the relevant lever has been locked (also see Chapter 7 paragraph 7.4).

- Place the piece to be cut inside the vice by moving jaw to about 3-4mm and lock with lever(8).
- Stricke the strat/reset push-button
- If saw is supplied with a saw frame lowering control device, adjust it so as to suit the feaures and the shape of the material to be cut.
- Reach for handgrip (7) of the SAW FRAME control lever, strike the push-button and check that the blade is turing in the direction indicated (if not, invert the tow phase leads);
- Make sure that the cooling liquid flows regularly.



The band saw is now ready to start work, bearing in mind that the CUTTING SPEED and the TYPE of BLADE - combined with a suitable descent of the head - are of decisive importance for cutting quality and for machine performance (for further details on this topic, see below in the chapter on "Material classification and blade selection").

- When starting to cut with a new blade, in order to safeguard its life and efficiency, the first two or three cuts must be made while exerting a slight pressure on the part, so that the time taken to cut is about double the normal time (see below in the chapter on "Material classification and blade selection" in the section on Blade running-in).
- Press the red emergency button when there are conditions of danger or malfunctions in general, so as to stop machine operation immediately.

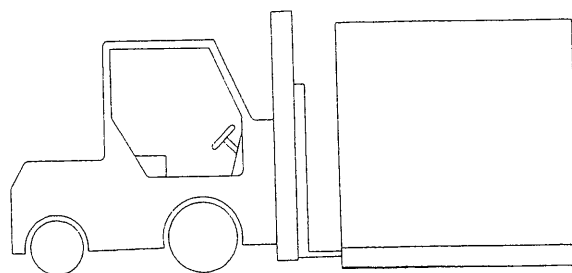
6.2. Foundation requirement

The foundation of the machine should be concrete with 150mm in depth. No special vibration absorption rubber is needed.

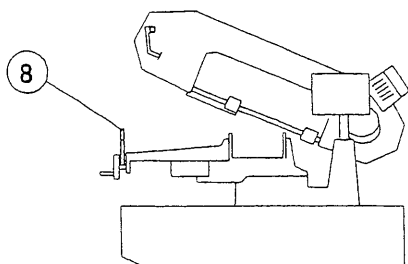
6.3. Unpacking

(Pile 2 sets only)

Removing first the top cover of the wooden case, carefully taking out fittings, stripping the side plates, then hoist the machine to its position.



Keep your hands off the cutting area



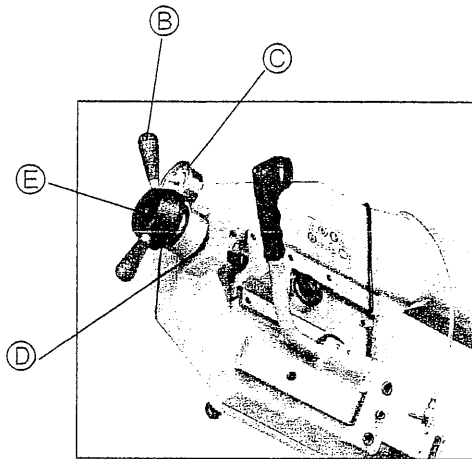
7 REGULATING THE MACHINE

7.1 - Blade tension assembly

The ideal tightening of the blade is achieved by rotating the blade tightening handwheel (B) towards the left against the mechanical stop pin. Ideal tightening of the blade read on the relative pressure bar (C)

Note: In case the saw is not used for a period of time, release blade pressure to the green area.

Always use blade having the dimensions specified in this manual.



7.2 - Restoring oil level on blade tightening cylinder

The blade pressure can be read on the pressure gauge (C), mounted on the relative blade tightening cylinder allowing constant display of the blade tension.

Ideal tightening of the blade

Should any problems in the monitoring of the tension occur, this may be caused by the reduced capacity inside the blade tightening cylinder due to an oil leak.

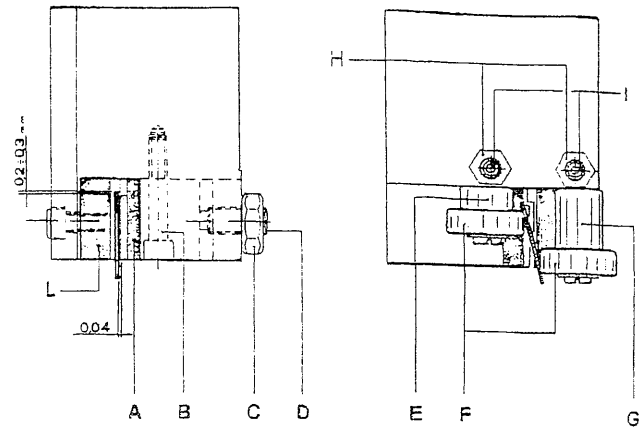
Simply push the blade tightening cylinder stem (E) back into place and then restoring oil level through plug(D).

Use SHELL HYDRAULIC OIL 32 type oil or similar.

When this operation has been completed close the plug(D) and tighten the blade.

7.3-Blade guide blocks

The blade is guided by means of adjustable pads set in place during inspection as per the thickness of the blade with minimum play as shown in the figure.



In case the blade needs to be replaced, make sure to always install 0.9 mm thick blades for which the blade guide pads have been adjusted. In the case of toothed blades with different thicknesses adjustment should be carried out as follows:

- Loosen nut(C), screw(B) and loosen dowel(D) widening the passage between the pads.
- Loosen the nuts(H) and the dowels(I) and rotate the pins (E-G) to widen the passage between the bearings(F).
- Mount the new blade, place the pad(A) on the blade and, loosening the dowel, allow a play of 0.04 mm for the sliding of the toothed blade; lock the relative nut and screw(B):
- Rotate the pins (E-G) until the bearings rest against the blade as indicated in the figure and then secure the dowels (I) and nut(H).
- Make sure that between the blade and the upper teeth of the pad(L) this is at least 0.2 - 0.3mm of play; if necessary, loosen the screws that fasten the blocks and adjust accordingly.

BEFORE PERFORMING THE-FOLLOWING OPERATIONS, THE ELECTRIC POWER SUPPLY AND THE POWER CABLE MUST BE COMPLETELY DISCONNECTED.

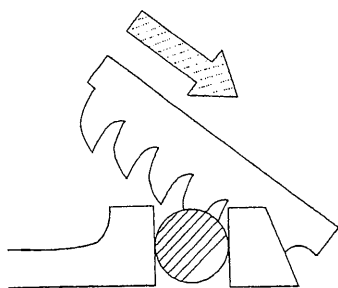
7.8 - Changing the blade

In case the blade is replaced:

- Lift the saw frame in upmost position.
- Loosen the blade with the handwheel, remove the mobile blade-guide cover, open the flywheel guard and remove the old blade from the flywheels and the blade guide blocks.
- Install the new blade by threading it into the bloc bearings and then inside the flywheel races. Make sure that teeth are in the cutting direction.
- Tighten blade and make sure that it perfectly fits inside the race of the flywheels.
- Mount the mobile blade-guide cover and close the flywheel guard with the relative clips and check that the safety microswitches are actuated otherwise the machine will not start when you restore electrical connections.

WARNING: always assemble blades having dimensions specified in this manual and for which the blade guide heads have be set: otherwise, see chapter on "Description of the operating cycle" in the section Starting-up.

CUTTING DIRECTION



7.9-Replacing saw frame return spring

- When performing this operation it is necessary to keep saw frame up using the lifting device.
- Replace the spring by loosening the upper coupling rod and releasing it from the lower tie-rod.

ROUTINE 8 AND SPECIAL MAINTENANCE

THE MAINTENANCE JOBS ARE LISTED BELOW, DIVIDED INTO DAILY, WEEKLY, MONTHLY AND SIX-MONTHLY INTERVALS. IF THE FOLLOWING OPERATIONS ARE NEGLECTED, THE RESULT WILL BE PREMATURE WEAR OF THE MACHINE AND POOR PERFORMANCE.

8.1 - Daily maintenance

- General cleaning of the machine to remove accumulated shavings.
- Clean the lubricating coolant drain hole to avoid excess fluid.
- Top up the level of lubricating coolant.
- Check blade for wear.
- Rise of saw frame to top position and partial slackening of the blade to avoid useless yield stress.
- Check functionality of the shields and emergency stops.

8.2 - Weekly maintenance

- More accurate general cleaning of the machine to remove shavings, especially from the lubricant fluid tank.
- Removal of pump from its housing, cleaning of the suction filler and suction zonz.
- Clean the filter of the pump suction head and the suction area.
- Cleaning with compressed air the blade guide heads (guide bearings and drain hole of the lubricating cooling).
- Cleaning flywheel housings and blade sliding surfaces on flywheels.
- Check condition of the blade cleaning brushes.

8.3 - Monthly maintenance

- Check the tightening of the motor flywheel screws.
- Check that the blade guide bearings on the heads are perfect running condition.
- Check the tightening of the screws of the gearmotor, pump and accident protection guarding.

8.4 - Six-monthly maintenance

REDUCTION UNIT

- The worm drive gear box mounted on the machine is maintenance-free guaranteed by its manufacture.
- Continuity test of the equipotential protection circuit.

8.5 - Oils for lubricating coolant

Considering the vast range of products on the market, the user can choose the one most suited to his own requirements, using as reference the type SHELL LUTEM OIL ECO. THE MINIMUM PERCENTAGE OF OIL DILUTED IN WATER IS 8-10 %.

8.6 - Oil disposal

The disposal of these products is controlled by strict regulations. Please see the chapter on "**Machine dimensions** - Transport - Installation" in the section on *Dismantling*.

8.7 - Special maintenance

Special maintenance operations must be carried out by skilled personnel. However, we advise contacting their dealer and/or importer. Also the reset of protective and safety equipment and devices, of the reducer, the motor, the motor pump and electric components is to be considered extraordinary maintenance.

9 MATERIAL CLASSIFICATION AND CHOICE OF TOOL

Since the aim is to obtain excellent cutting quality, the various parameters such as hardness of the material, shape and thickness, transverse cutting section of the part to be cut, selection of the type of cutting blade, cutting speed and control of saw frame lowering. These specifications must therefore be harmoniously combined in a single operating condition according to practical considerations and common sense, so as to achieve an optimum condition machine when there are many variations in the job to be performed. The various problems that crop up from time to time will be solved more easily if the operator has a good knowledge of these specifications.

WE THEREFORE RECOMMEND YOU TO ALWAYS USE GENUINE SPARE BLADES THAT GUARANTEE SUPERIOR QUALITY AND PERFORMANCE.

9.1- Definition of materials

The table at the foot of this page lists the characteristics of the materials to be cut, so as to choose the right tool to use.

9.2 - Selecting blade

First of all the pitch of the teeth must be chosen, in the other

words, the number of teeth per inch (25.4mm) suitable for the material to be cut, according to these criteria:




- parts with a thin and/or variable section such as profiles, pipes and plate, need close toothing, so that the number of teeth used simultaneously in cutting is from 3 to 6;
- parts with large transverse sections and solid sections need widely spaced toothing to allow for the greater volume of the shavings and better tooth penetration;
- parts made of soft material or plastic (light alloys, mild bronze, teflon, wood, etc.) also require widely spaced toothing;
- pieces cut in bundles require combo tooth design.

9.3 - Teeth pitch

As already stated, this depends on the following factors:

- hardness of the material
- dimensions of the section
- thickness of the wall.

| BLADE TEETH SELECTION TABLE | | |
|-----------------------------|---------------------------|----------------------|
| THICKNESS MM | Z CONTINUOUS TOOTH DESIGN | Z COMBO TOOTH DESIGN |
| TILL 1.5 | 14 | 10/14 |
| FROM 1 TO 2 | 8 | 8/12 |
| FROM 2 TO 3 | 6 | 6/10 |
| FROM 3 TO 5 | 6 | 5/8 |
| FROM 4 TO 6 | 6 | 4/6 |
| MORE THAN 6 | 4 | 4/6 |

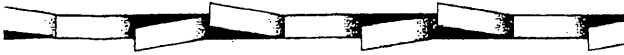




S = THICKNESS

| TYPES OF STEEL | | | | | | CHARACTERISTICS | | |
|--|---|-----------------|------------|----------|--------------|-----------------------|-----------------------|-----------|
| USE | UNI | DIN | F AF NOR | GB SB | USA AISI-SAE | Hardness ROCKWELL HRB | Hardness ROCKWELL HRB | R=N/mm2 |
| Construction steels | Fe360 | St37 | E24 | --- | --- | 116 | 67 | 360+480 |
| | Fe430 | St44 | E28 | 43 | --- | 148 | 80 | 430+560 |
| | Fe510 | St52 | E36 | 50 | --- | 180 | 88 | 510+660 |
| Carbon Steels | C20 | CK20 | XC20 | 060 A 20 | 1020 | 198 | 93 | 540+690 |
| | C40 | CK40 | XC42H1 | 060 A 40 | 1040 | 198 | 93 | 700+840 |
| | C50 | CK50 | --- | --- | 1050 | 202 | 94 | 760+900 |
| | C60 | CK60 | XC55 | 060 A 62 | 1060 | 202 | 94 | 830+980 |
| Spring steels | 50CrV4 | 50CrV4 | 50CV4 | 735 A 50 | 6150 | 207 | 95 | 1140+1330 |
| | 60SiCr8 | 60SiCr7 | --- | --- | 9262 | 224 | 98 | 1220+1400 |
| Alloyed steels for hardening and tempering and for nitriding | 35CrMo4 | 34CrMoO4 | 35CD4 | 708 A 37 | 4135 | 220 | 98 | 780+930 |
| | 39NiCrMo4 | 36CrNiMoO4 | 39NCD4 | --- | 9840 | 228 | 99 | 880+1080 |
| | 41CrAlMo7 | 41CrAlMo7 | 40CADG12 | 905 M 39 | --- | 232 | 100 | 930+1130 |
| Alloyed casehardening steels | 18NiCrMo7 | --- | 20NCD7 | En 325 | 4320 | 232 | 100 | 760+1030 |
| | 20NiCrMo2 | 21NiCrMo2 | 20NCD2 | 805 H 20 | 4315 | 224 | 98 | 690+980 |
| Alloyed for bearings | 100Cr6 | 100Cr6 | 100C6 | 534 A 99 | 52100 | 207 | 95 | 690+980 |
| Tool steel | 52NiCrMoKU | 56NiCrMoV7C100K | --- | --- | --- | 244 | 102 | 800+1030 |
| | C100KU | C100W1 | --- | BS1 | S-1 | 212 | 96 | 710+980 |
| | X210Cr13KU | X210Cr12 | Z200C12 | BD2-BD3 | D6-D3 | 252 | 103 | 820+1060 |
| | 58SiMo8KU | --- | Y60SC7 | --- | S5 | 244 | 102 | 800+1030 |
| Stainless steels | X12Cr13 | 4001 | --- | --- | 410 | 202 | 94 | 670+885 |
| | X5CrNi1810 | 4301 | Z5CN18.09 | 304 C 12 | 304 | 202 | 94 | 590+685 |
| | X8CrNi1910 | --- | --- | --- | --- | 202 | 94 | 540+685 |
| | X8CrNiMo1713 | 4401 | Z6CDN17.12 | 316 S 16 | 316 | 202 | 94 | 490+685 |
| Copper alloys Special brass Bronze | Aluminium copper alloy G-CuAl11Fe4Ni4 UNI 5275 | | | | | 220 | 98 | 620+685 |
| | Special manganese/silicon brass G-CuZn36Si1Pb1 UNI 5038 | | | | | 140 | 77 | 375+440 |
| | Manganese bronze SAE43 - SAE430 | | | | | 120 | 69 | 320+410 |
| | Phosphor bronze G-CuSn12 UNI 7013/2a | | | | | 100 | 56.5 | 265+314 |
| Cast iron | Gray pig iron | | | | | 212 | 96 | 245 |
| | Spheroidal graphite cast iron | | | | | 232 | 100 | 600 |
| | Malleable cast iron | | | | | 222 | 98 | 420 |

Set

Saw teeth bent out of the plane of the saw body, resulting in a wide cut in the workpiece.



REGULAR OR RAKER SET: Cutting teeth right and left, alternated by a straight tooth.



Of general use for materials with dimensions superior to 5 mm. Used for the cutting of steel, castings and hard nonferrous materials.

WAVY SET: Set in smooth waves.



This set is associated with very fine teeth and it is mainly used for the cutting of pipes and thin section bars (from 1 to 3 mm).

ALTERNATE SET (IN GROUPS): Groups of cutting teeth right and left, alternated by a straight tooth.



This set is associated with very fine teeth and it is used for extremely thin materials (less than 1 mm).

ALTERNATE SET (INDIVIDUAL TEETH): Cutting teeth right and left.



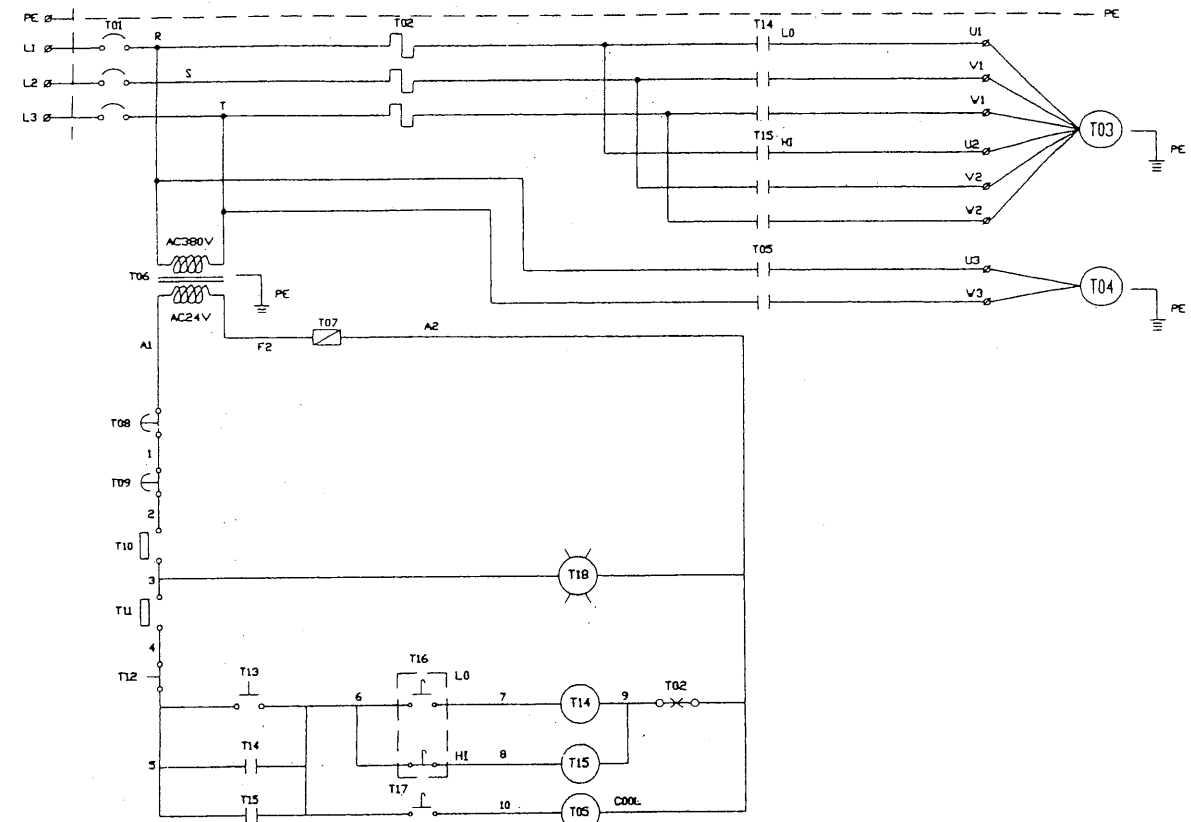
This set is used for the cutting of nonferrous soft materials, plastics and wood.

9.7.1 - RECOMMENDED CUTTING PARAMETERS

| STEEL | CUTTING SPEED | LUBRICATION |
|-------------------------|---------------|------------------|
| CONSTRUCTION | 60/80 | EMULSIFIABLE OIL |
| CEMENTATION | 40/50 | EMULSIFIABLE OIL |
| CARBON STEEL | 40/60 | EMULSIFIABLE OIL |
| HARDENING AND TEMPERING | 40/50 | EMULSIFIABLE OIL |
| BEARINGS | 40/60 | EMULSIFIABLE OIL |
| SPRINGS | 40/60 | EMULSIFIABLE OIL |
| FOR TOOLS | 30/40 | EMULSIFIABLE OIL |
| FOR VALES | 35/50 | EMULSIFIABLE OIL |
| STAINLESS STEEL | 30/40 | EMULSIFIABLE OIL |
| SPHEROIDAL GRAPHITE | 20/40 | EMULSIFIABLE OIL |
| CAST IRON | 40/60 | EMULSIFIABLE OIL |
| ALUMINIUM | 80/600 | KEROSENE |
| BRONZE | 70/120 | EMULSIFIABLE OIL |
| HARD BRONZE | 30/60 | EMULSIFIABLE OIL |
| BRASS | 70/350 | EMULSIFIABLE OIL |
| COPPER | 50/720 | EMULSIFIABLE OIL |

ELECTRICAL CIRCUIT DIAGRAM EB-320DS AC380V / 3PH

Rexom fuse 16A
Power Supply
3 PH / 50HZ / 380VAC
LIMIT OF EQUIPMENT



Electrical parts list

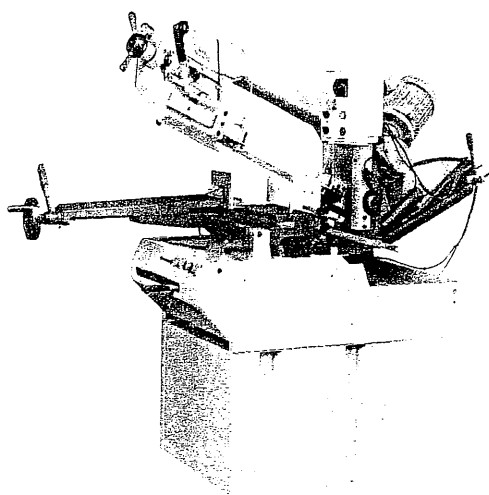
| Part No | Name | Dscription | Producer | Mark |
|---------|------------|----------------|---------------|------|
| T01 | POWER | CAM SWITCH | SAIZER | CE |
| T02 | OL | OL | SHIHLIN | CE |
| T03 | M1 | SAW MOTOR | GOROGE | CE |
| T04 | M2 | PUMP MOTOR | GOROGE | CE |
| T05 | MS3 | RELAY 12A | RY | CE |
| T06 | TR | TRANSFORMER | GOROGE | CE |
| T07 | F1 | FUSE | DEMEX | CE |
| T08 | EMS1 | EMERGENCY STOP | CIRO | CE |
| T09 | EMS2 | EMERGENCY STOP | CIRO | CE |
| T10 | SAFE MICRO | MICRO SWITCH | HAILY | CE |
| T11 | DOWN MICRO | MICRO SWITCH | CIAO TEN | CE |
| T12 | OFF | O SWITCH | TELEMECANIQUE | CE |
| T13 | ON | I SWITCH | TELEMECANIQUE | CE |
| T14 | MS1 | MS | SHIHLIN | CE |
| T15 | MS2 | MS | SHIHLIN | CE |
| T16 | SPEED | SPEED SWITCH | TELEMECANIQUE | CE |
| T17 | COOL | PUMP SWITCH | TELEMECANIQUE | CE |
| T18 | LAMP | POWER LAMP | TELEMECANIQUE | CE |

CY-300

This diagram illustrates the exploded view of the CY-300 microscope assembly. The main components are labeled with numbers, and their assembly sequence is indicated by letters A and B. The diagram includes various parts such as the base, body, eyepiece, objective lenses, and stage. Key components are labeled with numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820,

PARTS LIST CY300

| Ref. No. Description | Ref. No. Description | Ref. No. Description |
|----------------------------|----------------------------|-------------------------------------|
| 1. Washer | 44. Grip | 87. Scale |
| 2. Base | 45. Pin | 89. Hydraulic cylinder |
| 3. Bar stop rod | 46. Handwheel | 90. Pin |
| 4. Cool pump | 47. Return flywheel | 91. Fixed bladeguide plate |
| 5. Bar stop | 48. Hex. nut | 92. Mobile bladeguide plate |
| 6. Countervise | 49. Bearings 2Z | 93. Bush |
| 7. Screw M5 | 50. Saw blade | 94. Toger switch |
| 8. Vice jaw | 51. C-ring | 95. Condenser(motor)(optional) |
| 9. Vice | 52. Hex. nuts | 96. Coolant distributor |
| 10. Body frame | 53. Blade sheel shaft | 97. Stand |
| 11. Casing | 54. Block blade tension | 98. Nut M10 |
| 12. Motor Fan | 55. Handle | 99. Screw M8*15 |
| 13. Motor Cover | 56. Lever | 100. Washer |
| 14. Connection Plate | 57. Vice screw | 101. Plate |
| 16. Rollerway | 58. R. Bladeguard | 102. Bladeguide unit square |
| 17. Filter | 59. Vice spring | 103. Bladeguide unit |
| 18. Bush | 60. Vice lever | 104. Blade tension guide |
| 19. Pin | 61. Bearing | 105. Blade tension gauge (optional) |
| 20. Lever | 62. Bearing cover | 106. Guide pivot |
| 21. Knob | 63. Vice handwheel | 107. Guide pivot |
| 22. Key 7x7 | 64. Spring | 108. 33MM*MS screw |
| 23. Bearing | 65. Screw | 109. C-ring |
| 24. Motor flywheel | 67. Revolving arm | 110. Vice piece |
| 25. Washer | 68. Shaft | 111. Screw |
| 26. Shaft | 69. Stop bolt | 112. Vice jaw |
| 27. Blade cover | 70. Micro switch(optional) | 113. Vice sliding seat |
| 28. Ring nilons | 71. Block | 114. Switch Bracket |
| 29. Bearing 32006 | 72. Hex. nuts | 115. Electrical box |
| 30. Ring nut M30 | 73. Rubber connection | 116. On /Off Oil Switch |
| 31. Pivot | 74. Arm | 117. Handle |
| 32. Bearing cover | 75. Bolt | 118. Bolt |
| 33. Washer | 76. Blade guard | 119. Washer |
| 34. Key 4x25 | 77. Handle | 120. Adjusting Button |
| 35. Reducer | 78. Screw M10 | 121. Emergency Stop |
| 36. Motor | 79. Bearing 6082Z | 122. Screw |
| 37. Screw | 80. Screw M8 | 123. Bracket |
| 38. Spring | 81. Water pipe | 124. Handle |
| 39. Plug | 82. Rust plate | 125. Square |
| 40. Micro switch(optional) | 83. Vice pad | 126. Nut |
| 41. Screw M8 | 84. Bush | 127. Washer |
| 42. Threaded shaft | 85. Switch set | |
| 43. Spring washer | 86. 24V switch set | |



**METAL CUTTING
BAND SAW MACHINE
CY300**

Instruction Manual

Standard Equipment

Bimetal saw blade

Cooling pump

Magnetic switch & CE

Stand