

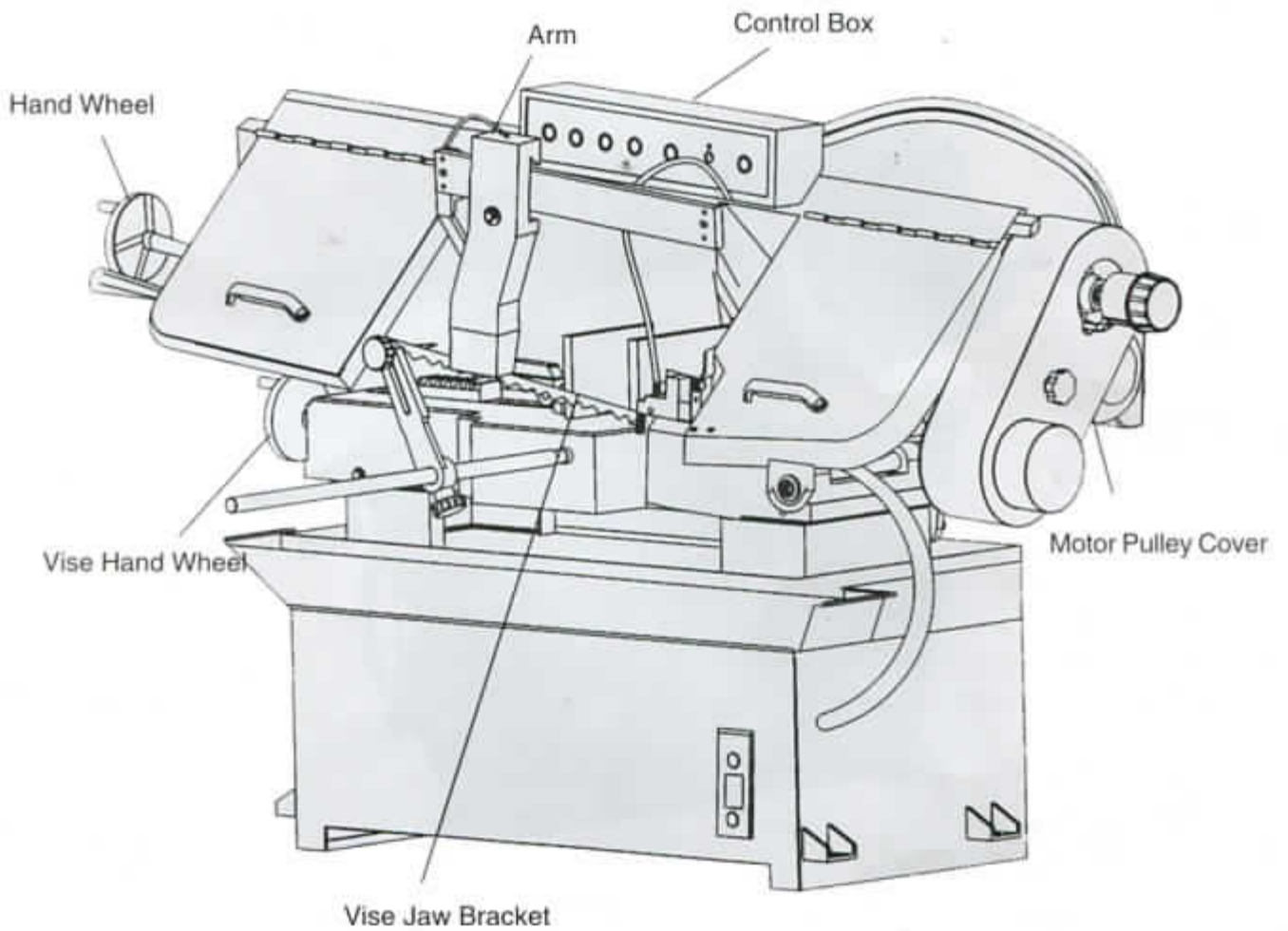
METAL CUTTING BAND SAW

Model: BS-916V



Operation Manual

OVERALL ASPECT



WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

As with all machinery there are certain hazards with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. This machine was designed for certain application only. We strongly recommend that this machine NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the machine until you contact with us and we have advised you.

Your machine might not come with a power socket or plug before using this machine, please.

Do ask your local dealer to install the socket or plug on the power cable end.

RULES FOR ALL TOOLS

A. USER

- (1). **Wear proper apparel.** No loose clothing, gloves, rings, bracelets, or other jewelry to get caught in moving parts.
No-slip foot wear is recommended. Wear protective hair covering to contain long hair.
- (2). **Always wear eye protection.** Refer to ANSLZ87.1 standard for appropriate recommendations. Also use face or dust mask if cutting operation is dusty.
- (3). **Don't overreach.** Keep proper footing and balance at all times
- (4). **Never stand on tool.** Serious injury could occur if the cutting tool is accidentally contacted.
- (5). **Never leave tool running unattended turn power off.** Don't leave tool until it comes to a complete stop.
- (6). **Don't** operate tool while under the influence of drug, alcohol or any medication.
- (7). **Make sure tool is disconnected from power supply.** While motor is being mounted, connected or reconnected.
- (8). **Always** keep hands and fingers away from the blade.
- (9). **Always** keep hands and fingers away from the blade.
- (10). **Shut-off** power and clean the BAND SAW and work area before leaving the machine.

B. USE OF MACHINE

- (1). **Remove adjusting keys and wrenches.** From habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".
- (2). **Don't force tool.** If you will do the job better and be the rate for which it was designed.
- (3). **Use right tool.** Don't force tool or attachment to a job for which it was not designed.
- (4). **Secure work.** Use clamps or a vise to hold work when practical. It's safer than using your hand frees both hands to operate too.
- (5). **Maintain tools in top condition.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- (6). **Use recommended accessories.** Consult the owner's manual for recommended accessories.

The use of improper accessories may cause hazards.

- (7). **Avoid accidental starting.** Make sure switch is in "OFF" position before plugging in power cord.
- (8). **Direction of feed.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
- (9). **Adjust and position** the blade guide arm before starting the cut.
- (10). **Keep blade guide arm tight.** A loose blade guide arm will affect sawing accuracy.
- (11). **Make sure** blade speed is set correctly for material being cut.
- (12). **Check** for proper blade size and type.
- (13). **Stop** the machine before putting material in the vise.
- (14). **Always** has stock firmly clamped in vise before starting cut.
- (15). **Ground all tools.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never removed the third prong.

C. ADJUSTMENT

Make all adjustments with the power off, in order to obtain the machine. Precision and correct ways of adjustment while assembling, the user should read the detailed instruction in this manual.

D. WORKING ENVIRONMENT

- (1). **Keep work area clean.** Cluttered areas and benches invite accidents.
- (2). **Don't use in dangerous environment.** Don't use tools in damp or wet locations, or expose them to rain. Keep work area well-lighted.
- (3). **Keep children and visitors away.** All children and visitors should be kept a safe distance from work area.
- (4). **Don't** install & use this machine in explosive, dangerous environment.

E. MAINTENANCE

- (1). **Disconnect** machine from power source when making repairs.
- (2). **Check damaged parts.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function check for alignment of moving parts, binding of moving parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- (3). **Disconnect tools** before servicing and when changing accessories such as blades, bits, cutters, ect.
- (4). **Make sure** that blade tension and blade tacking are properly adjusted.
- (5). **Re-check** blade tension after initial cut with a new blade.
- (6). **To prolong blade life always** releases blade tension at the end of each work day.
- (7). **Check coolant daily.** Low coolant level can cause foaming and high blade temperatures. Dirty or weak coolant can clog pump, cause crooked. Cut, low cutting rate and permanent blade failure. Dirty coolant can cause the growth of bacteria with ensuing skin irritation.
- (8). **When cutting magnesium never** use soluble oils or emulsions (oil water mix) as water will greatly intensify any accidental magnesium chip fire. See your industrial coolant supplier for specific coolant recommendations when cutting magnesium.
- (9). **To prevent** corrosion of machined surfaces when a soluble one is used as coolant pay particular attention to wiping dry the surfaces where a soluble one is used as coolant, pay particular attention to wiping dry the surfaces where fluid accumulates and does not evaporate quickly, such as

between the machine bed and vise.

F. SPECIFIED USAGE

This machine is used only for general metals cutting within the range of cutting capacity.

G. NOISE

A weighted sound pressure level: 80 DB.

H. SAFETY DEVICE

Interlock switch on cutting area as soon as the cover of cutting area is open, machine will stop at once with the function of this switch. Do not remove this switch from machine for any reason, and check its function frequently.

Your machine might not come with a power socket or plug. Before using this machine, please do ask your local dealer to install the socket or plug on the power cable end.

WORKING CAPACITY

| | | | | |
|--------------------------------|-----|------|----------------|---------|
| Working Capacity | 90° | ○ mm | 229 | 254 |
| | | □ mm | 127×406 | 457×127 |
| | 45° | ○ mm | 150 | 150 |
| | | □ mm | 150×190 | 150×190 |
| Packing Measurement (mm) L×W×H | | | 1800×770 ×1140 | |

TRANSPORTATION OF MACHINE

Unpacking

1. Transportation to desired location before unpacking, please use lifting jack. (Fig.1)
2. Transportation after unpacking, please use heavy duty fiber to lift up the machine.



Fig.1

ALLWAYS KEEP PROPER FOOTING&BALANCE MOVING THIS MACHINE

Installation:

As this machine weights 310kg. It is recommended that the machine shall be transported, with help of lifting jack.

Transportation recommendation:

- (1). **Tighten** all locks before operation.
- (2). **Always** keep proper footing & balance while moving this 310kgs machine, and only use heavy duty fiber to lift the machine as Fig. 2.
- (3). **Turn off** the power before wiring & be sure machine in proper grounding, Overload & circuit breaker is recommended for safety wiring.
- (4). **Tighten** 4 bolts to base holes after machine in balance.
- (5). **Check** carefully if the saw blade is running in counter-clock wise direction it not reverse the wiring per circuit diagram than repeat the running test.
- (6). **Keep** machine always out from sun, dust, wet, raining area.

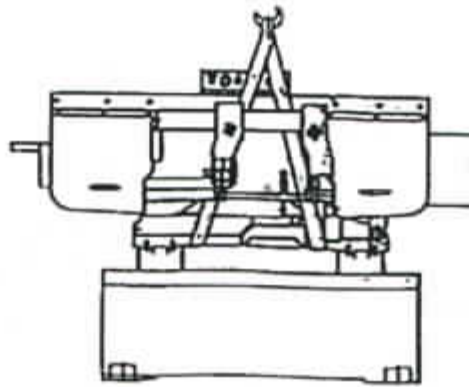
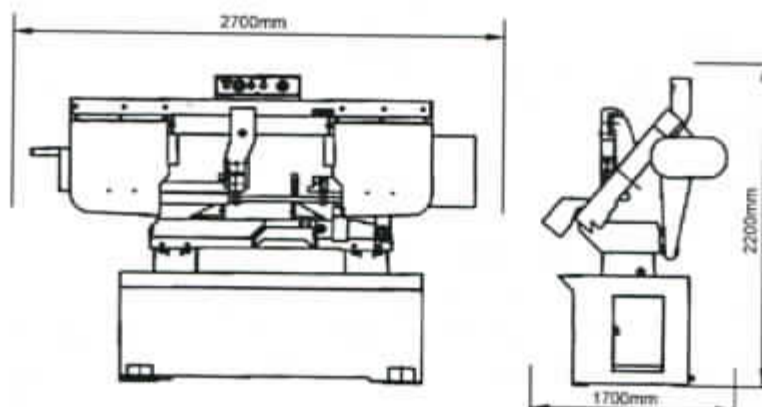


Fig.2

CLEAIG & LURICATING

Your machine has been coated with a heavy grease to protect it in shipping. This coming should be completely removed before operating the machine. Commercial degreaser, kerosene or similar solvent may be used to remove the grease from the machine, but solvent on belts or other rubber parts

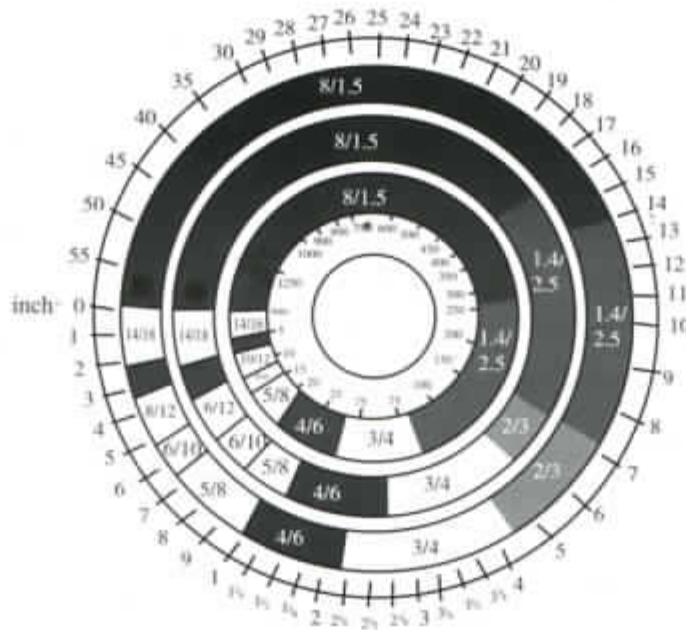
MINIMUM ROOM SPACE FOR MACHINE OPERATION



MAKE PROPER TOOTH SELECTION

For maximum cutting efficiency and lowest cost per cut, it is important to select the blade with the number of teeth per inch (TPI) for the material being cut. The material size and shape dictate tooth selection.

TOOTH SELECTION



You need to consider

The width of the cut. That is the distance in the cut that each tooth must travel from the point enters the workpiece until it leaves the workpiece, and you need to consider.

1. The shape of the workpiece.

● Squares, Rectangles, Flats (Symbol: ■)

Locate the width of cut on the chart. (inches on the outer circle and millimeters on the inner circle.) Select the tooth pitch on the ring marked with the square shape which aligns with the width of cut.

Example: 6" (150mm) Square, use a 2/3 Vari-Tooth.

● Round Solids (Symbol: ●)

Locate the diameter of your workpiece on the chart. Select the pitch on the ring marked with the round shape which aligns with the size of stock you are cutting.

Example: 4" (100mm) round use a 3/4 Vari-Tooth.

● Tubing, Pipe, Structural (Symbol: OH^)

Determine the average width of cut by dividing the area of the workpiece by the distance the saw blade must travel to finish the cut. Locate the average width of cut on the chart. Select the tooth Ditch on the ring marked with the tubing and structural shape which aligns with the average width you are cutting.

Example: 4" (100mm) outside diameter, 3" (75mm) inside diameter tubing. 4"

$$\begin{aligned} (100\text{mm}) \text{ OD} &= 12.5 \text{ sq. In. (79m}^2) \\ 3" (75\text{mm}) \text{ ID} &= 7.0 \text{ sq. In. (44 m}^2) \\ \hline \text{Area} &= 5.5 \text{ sq. In. (35m}^2) \end{aligned}$$

5.5 sq. In. (35 m²) / 4 (100mm) distance = 1.38 (35mm) average 1.38" (35mm), use a 4/6 Vari-Tooth

NOTE: The band speed and cutting rate recommendations presented on this chart are approximations and are to be used as a starting point for most applications. For exact sawing parameters' consult your saw blade supplier.

BI-METAL SPEEDS AND FEEDS

These figures are a guide to cutting 4" (100mm) material (with a 314 Vari-Tooth) when using a cutting fluid.

Increase Band Speed: 15% When cutting 1/4" (6.4mm) material (10/14 Vari-Tooth) 12% When cutting 3/4" (19mm) material (6/10 Vari-Tooth)

10% When cutting 1-1/4" (32mm) material (8/5 Vari-Tooth)

5% When cutting 2-1/2" (64mm) material (6/4 Vari-Tooth)

Decrease Band Speed: 12% When cutting 1/4" (6.4mm) material (10/14 Vari-Tooth)

| MATERIAL | ALLOY ASTM NO. | BANDSPEED | |
|--------------|---------------------|-----------|-------|
| | | FT./M/N | M/M/N |
| Copper Alloy | 173,932 | 314 | 96 |
| | 330,365 | 284 | 87 |
| | 623,624 | 264 | 81 |
| | 230,260,272 | 244 | 74 |
| | 280,264,632,655 | 244 | 74 |
| | 101,102,110,122,172 | 234 | 71 |
| | 1751,182,220,510 | 234 | 71 |
| | 625,706,715,934 | 234 | 71 |
| | 630 | 229 | 70 |
| | 811 | 214 | 65 |
| Carbon Steel | 1117 | 339 | 103 |
| | 1137 | 289 | 88 |
| | 1141,1144 | 279 | 85 |
| | 1141,HI STRESS | 279 | 85 |
| | 1030 | 329 | 100 |
| | 1008,1015,1020,1025 | 319 | 97 |
| | 1035 | 309 | 94 |
| | 1018,1021,1022 | 299 | 91 |
| | 1026, 1513 | 299 | 91 |
| | A36(SHAPES), 1040 | 269 | 82 |
| | 1042,1541 | 249 | 76 |
| | 1044,1045 | 219 | 67 |
| | 1060 | 199 | 61 |
| | 1095 | 184 | 56 |

| MATERIAL | ALLOY ASTM NO. | BANDSPEED | |
|----------------------|-----------------|-----------|-------|
| | | FT./M/N | M/M/N |
| Ni-Cr-Mo Alloy Steel | 8615,8620,8622 | 239 | 73 |
| | 4340,E4340,8630 | 219 | 67 |
| | 8640 | 199 | 61 |
| | E9310 | 174 | 53 |
| Tool Steel | A-6 | 199 | 61 |
| | A-2 | 179 | 55 |
| | A-10 | 159 | 49 |
| | D-2 | 90 | 27 |
| | H-11,H-12,H-13 | 189 | 58 |
| Stainless Steel | 420 | 189 | 58 |
| | 430 | 149 | 46 |
| | 410,502 | 140 | 43 |
| | 414 | 115 | 35 |
| | 431 | 95 | 29 |
| | 440C | 80 | 24 |
| | 304,324 | 120 | 36 |
| | 304L | 115 | 35 |
| | 347 | 110 | 33 |
| | 316,316L | 100 | 30 |
| | 416 | 189 | 58 |

TELLTALE CHIPS

Chips are the best indicator of correct feed force. Monitor chip information and adjust feed accordingly.

Thin or powered chips-increase feed rate or reduce band speed.



Burned heavy chips-reduce feed rate and/or band speed



Curly silveW and warm chips-optimum feed rate and band speed.



CONNECTING SAW TO POWER SOURCE

The electrical rating of your band saw is 230 volt, single phase or 400 volt, three phase magnetic control.

Before connecting your machine to an electrical system it is to be connected to. We recommend that #14 wires, fused with a 16 amp, dual element time lag fuse, be used to supply with your machines regardless of their electrical rating.

Refer to the electrical wiring diagram supplied with your machine for instructions on how to connect saw to power source.

STARTING AND STOPPING MACHINE

1. Raise the saw frame to the up position.
2. The machine is started by pushing the start button (B) Fig.3. And it will continue to run until the saw arm is in the down position at the end of the cut, or when the stop button (C) is pushed.
3. When in emergency push button (D), to stop the machine. After removing the trouble release emergency button re-start the machine by pushing the start button (B).
4. When using the coolant turn the select button (A) to the right.
5. To adjust the feeding rate when in cutting, turn the volume valve (F) clockwise for faster feeding, counterclockwise for slower feeding. When valve (F) has been properly adjusted, turn the control valve (G) to hand saw action.
6. An automatic shut-off limit switch is provided to stop the motor when the cut is completed.
7. If the motor stops before the cut is completed or continues to run after the cut is completed, the limits switch (D) Fig.4. Can be adjusted up or down by loosening the two screws (E).

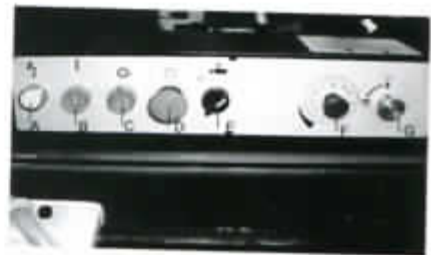


Fig.3

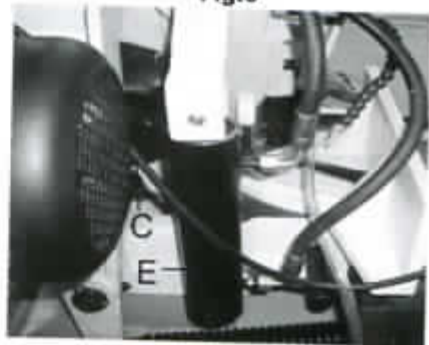


Fig.4

ADJUSTING DOWNWARD TRAVEL OF SAW ARM

The downward travel of the saw arm should be adjusted so that when the saw is in the extreme downward position, the teeth of the blade are 1/16 below the table surface. If an adjustment is necessary loosen lock nut (A) Fig.5. And turn stop screw (B) in or out until the correct adjustment is made. Then tighten lock nut (A).



Fig.5

ADJUSTING BLADE TENSION

To tension the blade, lift up the left wheel cover and turn the blade tension handle (A) Fig.6, clockwise. A pointer and tension scale (B) is located underneath the wheel. The scale is graduated to indicate tension of 1400 and 2000. For carbon blades (similar to the one supplied with the machine) the blade should be tensioned at 1400. For bi-metal blades, the blade should be at 2000. Always release blade tension at the end of each work day to prolong blade life.

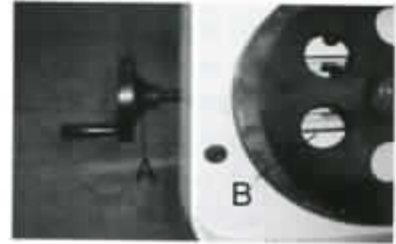


Fig.6

ADJUSTING BLADE TRACKING

Make sure the blade is tensioned correctly before checking or adjusting. The blade is tracking properly when the back of the blade is just lightly touching the wheel flanges of both wheels while the machine is running. If the blade is not touching the wheel flanges tighten or loosen screw (A) Fig.7. Until the blade tracks properly.

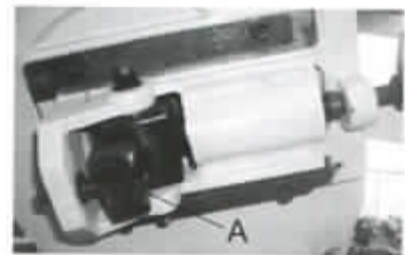


Fig.7

ADJUSTING BLADE GUIDE SUPPORT ARM

The blade guide support arm (A) Fig.8, should be set as close to the workpiece as possible. To move the support arm, first loosen clamp knob (B). Move the support arm (A) into relationship with the workpiece. When you are sure the support arm will not interfere with the workpiece, first tighten knob (B).



Fig.8

ADJUSTING FEED RATE

When the feed rate control knob is turned clockwise as far as it will go the saw frame will not move down, but it can be raised to the up position. By turning the feed rate control knob counter clockwise, the flow of oil from the cylinder is regulated and determines the speed at which the saw frame will lower and the blade will feed through the work. Too many factors are involved to make tabulated data practical on feed rates. As a general rule, an even downward pressure without forcing the blade gives best results. Avoid forcing the blade at the starts as this may shorten blade life and produce a bad cut. By inspecting the chips while the cut is being made will indicate whether the feed rate is correct. Fine powdery chips indicate the feed is too light; the teeth are rubbing over the surface instead of cutting. Burned chips indicate excessive feed, which cause the teeth to break off as the blade overheats. The ideal feed rate is indicated by chips that have a free curl and this will give the fastest cutting time and longest blade life.

ADJUSTING CUTTING PRESSURE OF SAW ARM

The cutting pressure of the saw arm has been set at the factory and should not need further adjustment. If adjustment should ever become necessary, lower the saw arm to the horizontal position. Loosen locknut (A) Fig.9. until the pressure is increased or decreased.



Fig.9

OPERATING AND ADJUSTING VISE

The workpiece is placed between the jaws with the amount to be cut-off extending out past the blade. Your machine is equipped with a "quick action" vise jaw which allows you to instantly position the moveable vise jaw. The vise can be adjusted to cut any angle from a straight 90 degree cut-off to a 45 degree angle by loosening the two spring-loaded clamps handles (one located on each vise jaw), positioning the vise jaws to the desired angle and tightening the clip bolt. The right vise jaw is provided with positive stops to instantly position the jaw at 90 or 45 degrees. To check and adjust the positive stops proceed as follows.

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 the time. The rate of coolant flow is controlled by the stop valve lever which directs the coolant on to the blade.

BLADE GUIDE BEARING ADJUSTMENT

ATTENTION: This is the most important adjustment on your saw. It is impossible to get satisfactory work from your saw if the blade guides are not properly adjusted. The blade guide bearing on your Metak Cutting Band Saw is adjusted and power tested with several test cuts before leaving the factory to insure proper setting. The need for adjustment will rarely occur when the saw is used properly. If the guides do get out of adjustment, it is extremely important to readjust immediately. If improper adjustment is maintained, the blade will not cut straight, and if the situation is not corrected it will cause serious blade damage.

NOTE: The inner guide bearing is fixed and cannot be adjusted. The outer guide bearing is mounted to an eccentric bushing and can be adjusted.

1. Loosen the screw tightener of outer eccentric bolt with a wrench.
2. Adjust eccentric bolt to proper position.
3. Tighten the screw.

4. Adjust the second blade guide bearing in the same manner.



SETTING UP THE MACHINE FOR OPERATION



1. Select the proper speed and blade for the type of material you are cutting.
2. Make sure the blade tension is adjusted properly.
3. Raise the saw flame and close the feed on/off knob
4. Place the stock between the vise jaws. Adjust the stock for the desired length of cut and tighten the vise clamping and wheel.
5. Make sure the blade guide arm, is adjusted as close as possible to the workpiece.
6. Turn the machine on and adjust the coolant flow.
7. Turn the feed rate control knob, counterclockwise until the saw blade begins to lower at the desired rate of speed.
8. After adjusting the down speed, the saw frame position and down movement are controlled by on/off knob.
9. Proceed to cut through the workpiece. The motor and coolant pump will shut off upon completion of the cut.

REMOVING AND INSTALLING THE BLADE

When it is becomes necessary to replace the blade. Proceed as follows:

1. Disconnect the machine from the power source.

2. Raise the saw frame and close the feed on ioff knob, by turning it clockwise as far as will go.
3. Move the blade guide arm to the right.
4. Loosen two screws and open upper blade guard.
5. Open both wheel covers, and clean the swarf out of the machine.
6. Release blade tension by turning the blade tension handwheel counterclockwise.
7. Remove the blade from both wheels and out of each blade guide.
8. Make sure the teeth of the new blade are pointing in the right direction. If necessary, turn the blade inside out.
9. Place the new blade on the wheels, in the blade guides and adjust blade tension and blade guides.

LUBRICATION HYRAULIC SYSTEM

The hydraulic system on this machine consists of a hydraulic cylinder which is operated by a needle valve, the saw frame is raised be hand and as this is done, oil passes to the underside of the piston. The restricted flow is regulated by the feed rate control knob and governs the speed-that The saw frame lowers. If it ever becomes necessary to fill the hydraulic cylinder with oil, proceed as follows:

1. Place the saw frame in the down position.

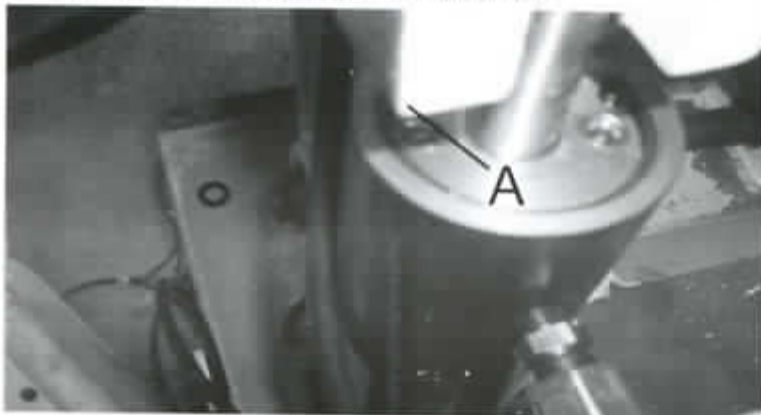


Fig.10



Fig.11

2. Remove plug (A) Fig.10 from the top of the hydraulic system and replace with a suitable hose fitting (B) Fig.11. connect a clear hose (C) to the fitting, as shown.
3. Put approximately one quart of Mobil-DTE (light) oil, available in one-quart of cans into a container (D) Fig.11 place hose (C) in the container (D) making sure end of hose is submerged in the oil, raise and lower saw arm until the bubbles disappear from inside the clear hose (C).
4. Remove hose fitting (B) Fig.11 and replace plug (A) Fig.10.

GEAR BOX

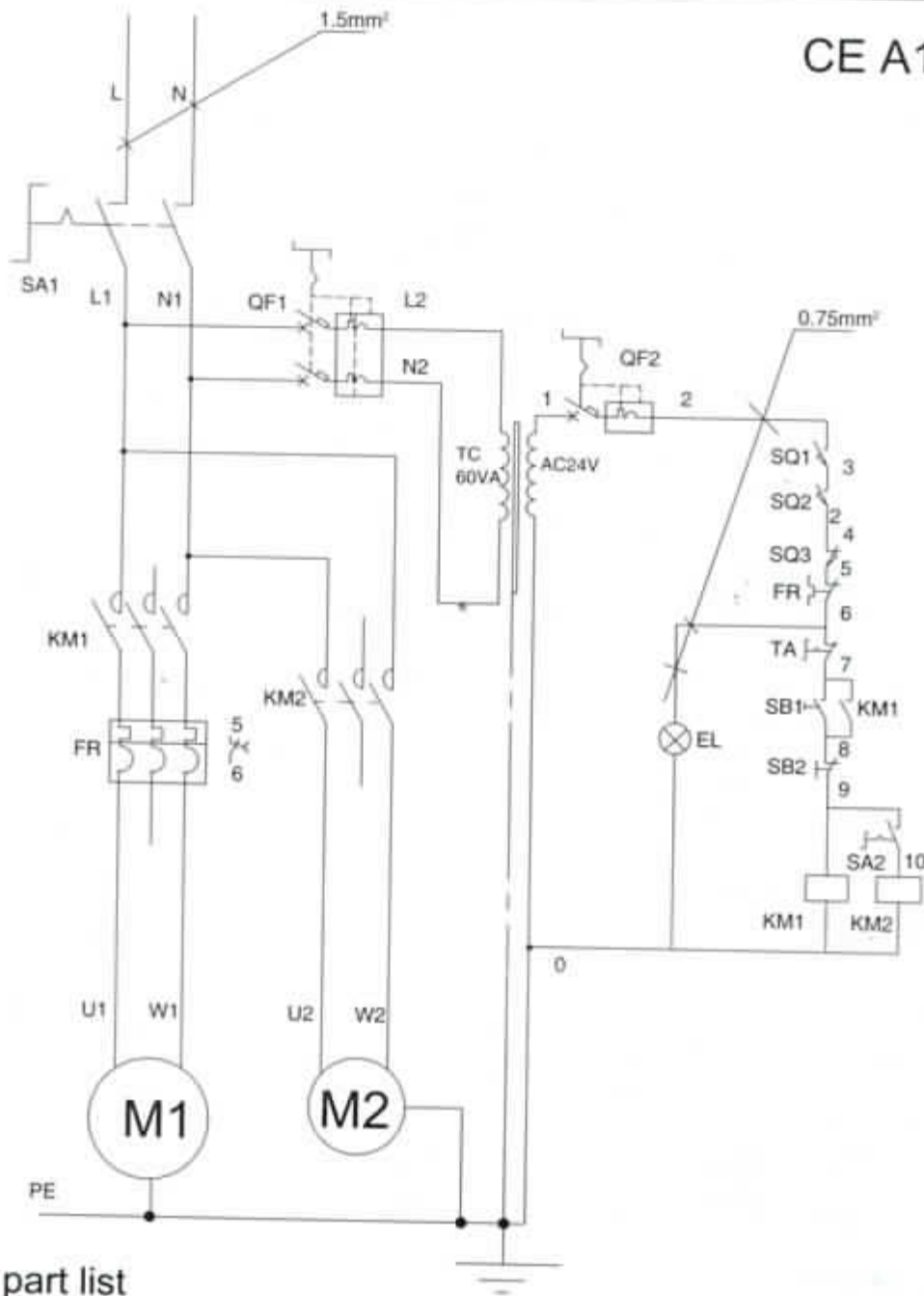
The gear box should be drained and refilled after the 50 hours of use and thereafter every 5 months, with mobil synthetic gear oil, SHC-636, ISO viscosity grade 680. This oil meets or exceeds American gear manufacturers association (A.G.M.A) #8 compounded cylinder oil specification. This oil is available through grainger's in 1 quart bottles as number SW061.

TROUBLE SHOOTING

| Symptom | Possible Cause (s) | Corrective Action |
|----------------------------|---|--|
| Machine can not be started | <ol style="list-style-type: none"> 1. Power isn't plugged; the power light on control panel isn't on. 2. Motor can't be started, power was cut by limit switch. 3. Operation button can't be normally operated. | <ol style="list-style-type: none"> 1. Check the motor specification, connect the power with correct power supply. Make sure the powerlight is on. 2. Make sure the cover is in correct position. 3. Push the emergency button, it to original position. Then release the emergency button. |
| Excessive Blade Breakage | <ol style="list-style-type: none"> 1. Materials loosen in vise. 2. Incorrect speed or feed. 3. Blade teeth spacing too large. 4. Material too coarse 5. Incorrect blade tension 6. Teeth in contact with material before saw is started. 7. Blade rubs on wheel flange. 8. Miss-aligned guide bearings. 9. Blade too thick. 10. Cracking at weld. | <ol style="list-style-type: none"> 1. Clamp work securely. 2. Adjust speed or feed. 3. Replace with a small teeth spacing blade. 4. Use a blade of slow speed and small teeth spacing. 5. Adjust to where blade just doesn't slip on wheel. 6. Place blade in contact with work after motor is started. 7. Adjust wheel alignment. 8. Adjust guide bearing. 9. Use thinner blade. 10. Weld again, note the weld skill. |
| Premature Blade Dulling | <ol style="list-style-type: none"> 1. Teeth too coarse. 2. Too much speed. 3. Inadequate feed pressure. 4. Hard spots or scale on material. 5. Work hardening of material. 6. Blade twist 7. Insufficient blade 8. Blade slide | <ol style="list-style-type: none"> 1. Use finer teeth 2. Decrease speed 3. Decrease spring tension on side of saw 4. Reduce speed, increase feed pressure 5. Increase feed pressure by reducing spring tension. 6. Replace with a new blade, and adjust blade tension. 7. Tighten blade tension adjustable knob 8. Tighten blade tension |

| Symptom | Possible Cause (s) | Corrective Action |
|------------------------------------|--|---|
| Unusual Wear on Side/Back of Blade | <ol style="list-style-type: none"> 1. Blade guides worn 2. Blade guide bearing not adjust properly 3. Blade guide bearing bracket | <ol style="list-style-type: none"> 1. Replace 2. Adjust as per operators manual 3. Tighten |
| Teeth Ripping from Blade | <ol style="list-style-type: none"> 1. Tooth too coarse for work 2. Too heavy pressure; too slow-speed 3. Vibrating work-piece 4. Gullets loading | <ol style="list-style-type: none"> 1. Use finer tooth blade 2. Decrease pressure increase speed 3. Clamp work piece securely 4. Use coarser tooth blade or brush or remove chips |
| Motor running too hot | <ol style="list-style-type: none"> 1. Blade tension too high 2. Drive belt tension too high 3. Blade is too coarse for work 4. Blade is too fine for work 5. Gears aligned improperly 6. Gears need lubrication 7. Cut binding blade | <ol style="list-style-type: none"> 1. Reduce tension on blade 2. Reduce tension on drive belt 3. Use finer blade 4. Use coarse blade 5. Adjust gears so that worm is in center of gear 6. Check oil path 7. Decrease reed anti speed |
| Bad Cuts (Crooked) | <ol style="list-style-type: none"> 1. Feed pressure too great 2. Guide bearing not adjusted properly 3. Inadequate blade tension 4. Dull blade 5. Speed incorrect 6. Blade guides spaced out too much 7. Blade guide assembly loose 8. Blade truck too far away from wheel flanges | <ol style="list-style-type: none"> 1. Reduce pressure by increasing spring tension on side of saw 2. Adjust guide bearing, the clearance can't greater than 0.001 3. Increase blade tension by adjust blade tension 4. Replace blade 5. Adjust speed 6. Adjust guides space 7. Tighten 8. Re-track blade according to operating instructions. |

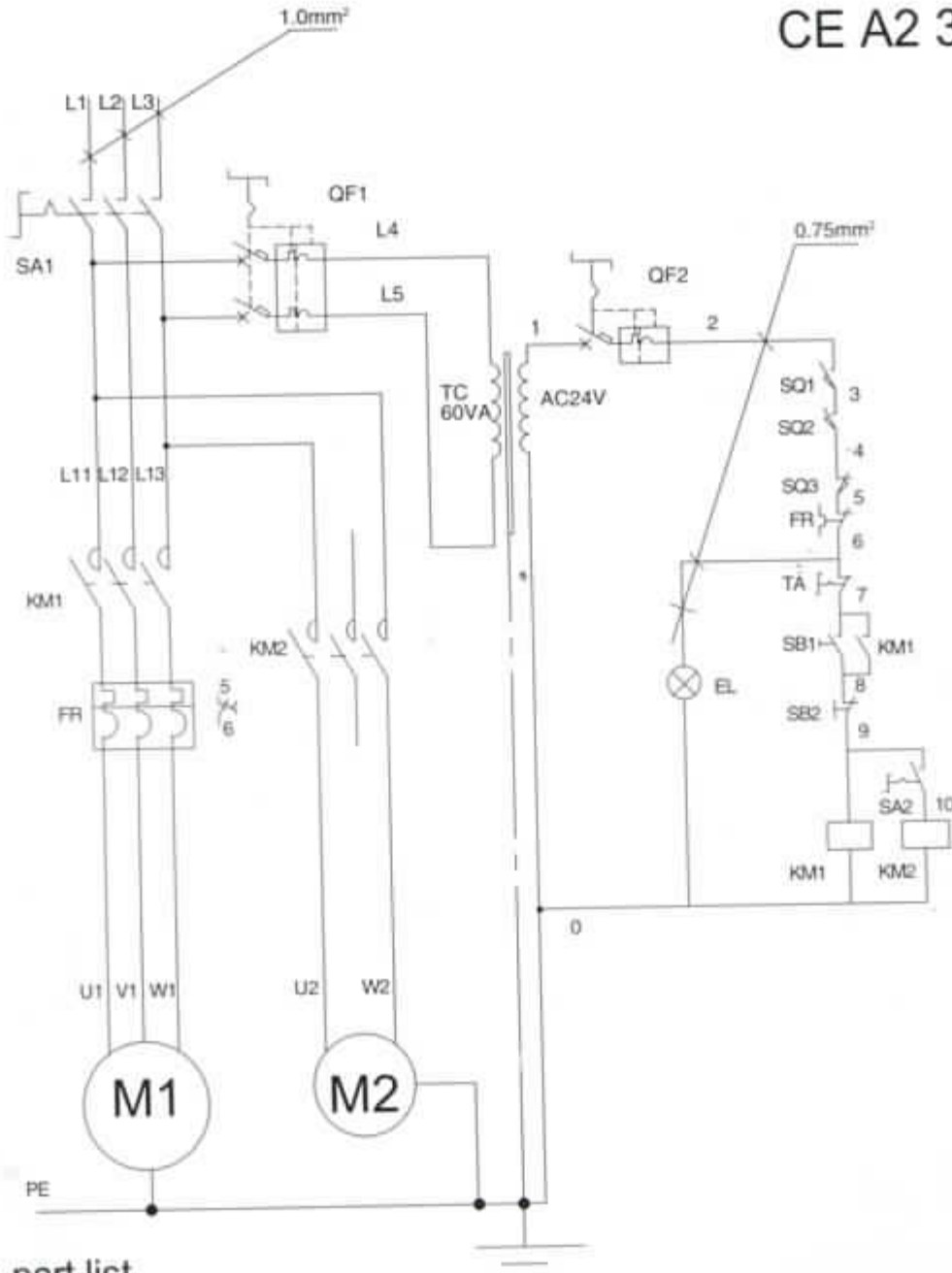
CE A1 1PH



Electric part list

| No. | Name | Designation | Type&Specifications | Quantity |
|-----|-----------------|-------------|-------------------------------|----------|
| 1 | Main motor | M1 | 230V 50Hz 1420r/min 1.5kW 1PH | 1 |
| 2 | Coolant pump | M2 | 230V 50Hz 45W | 1 |
| 3 | Current breaker | QF | DZ47-63 | 1 |
| 4 | Power switch | SA1 | DF11-25 | 2 |
| 5 | Contactors | KM | CN-6 AC24V | 1 |
| 6 | Heat relay | FR | RHn-5M 8-12A | 2 |
| 7 | E.S.P | TA | XB2-ES542 | 1 |
| 8 | Transformer | TC | AC 230V/24V | 1 |
| 9 | Limit switch | SQ | OKS7 250V 10A | 1 |
| 10 | Start | SB1 | SB2-BE101 | 3 |
| 11 | Stop | SB2 | SB2-BE102 | 1 |
| 12 | Select switch | SA2 | SB2-ED21 | 1 |
| 13 | Lamp | EL | XB2-BVD3 | 1 |

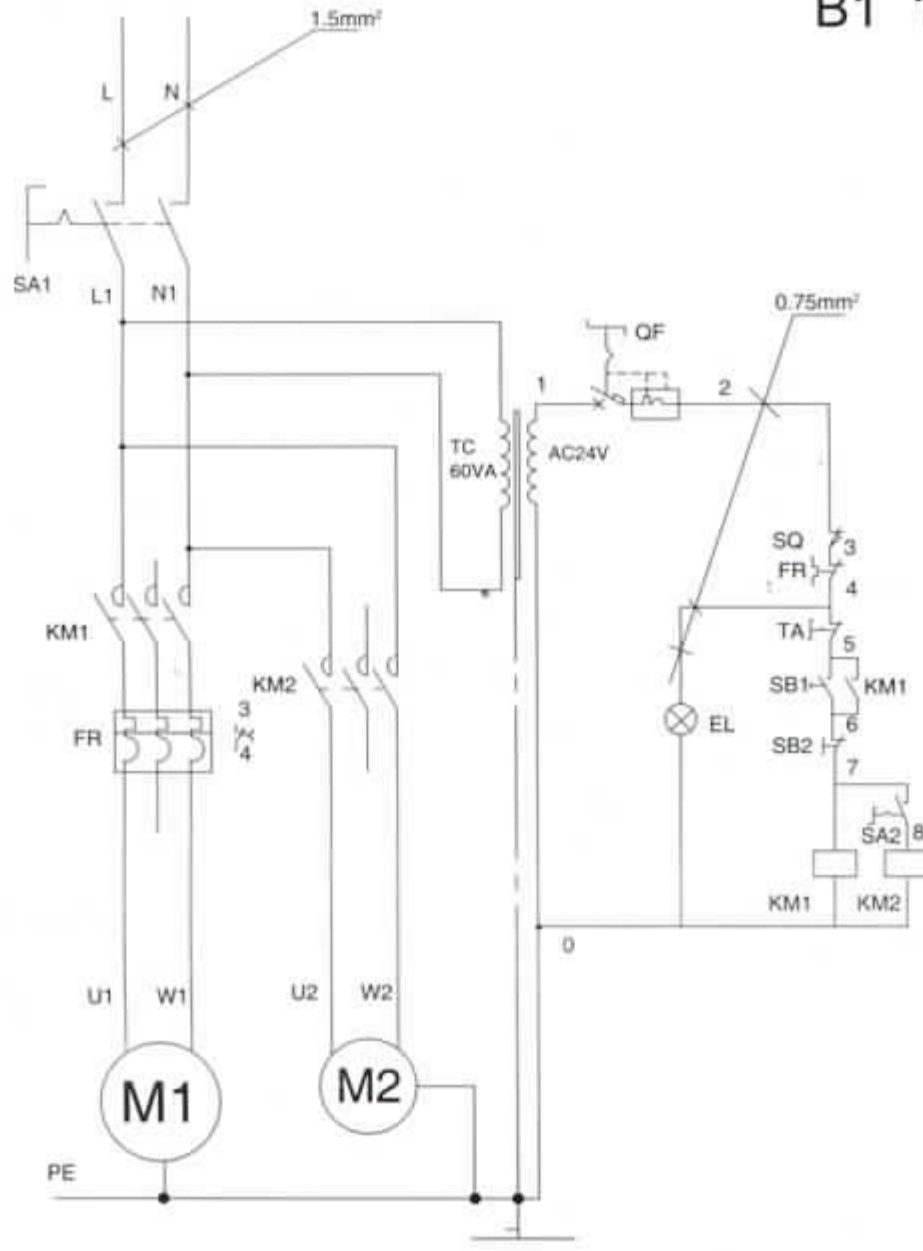
CE A2 3PH



Electric part list

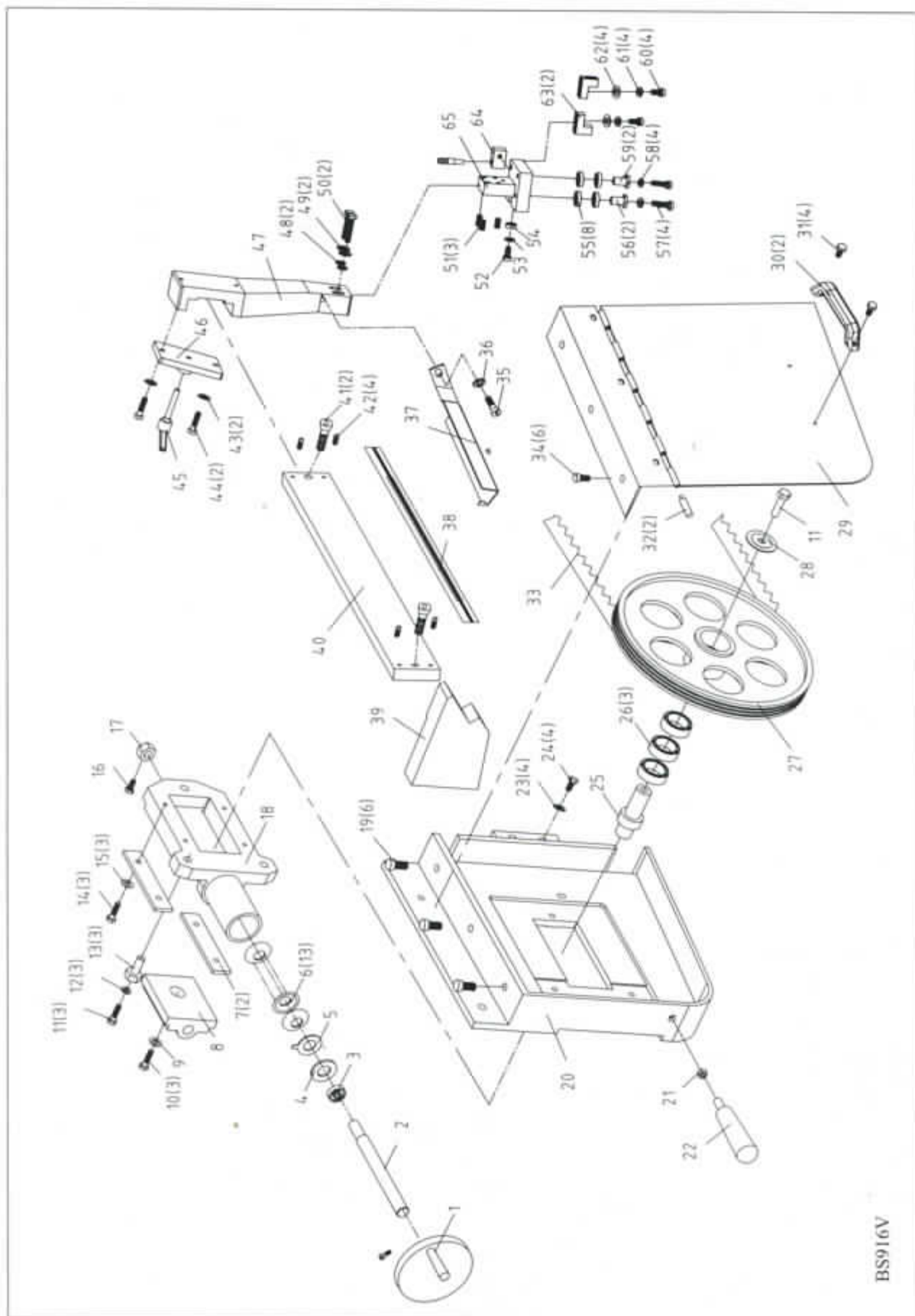
| No. | Name | Designation | Type&Specifications | Quantity |
|-----|-----------------|-------------|-------------------------------|----------|
| 1 | Main motor | M1 | 400V 50Hz 1420r/min 1.5kW 3PH | 1 |
| 2 | Coolant pump | M2 | 400V 50Hz 45W | 1 |
| 3 | Current breaker | QF | DZ47-63 | 2 |
| 4 | Power switch | SA1 | JDF11-25 | 1 |
| 5 | Contactore | KM | CN-6 AC24V | 2 |
| 6 | Heat relay | FR | RHn-5M | 1 |
| 7 | E.S.P | TA | XB2-ES542 | 1 |
| 8 | Transformer | TC | AC400.230V/24V | 1 |
| 9 | Limit switch | SQ | QKS7 250V 10A | 3 |
| 10 | Start | SB1 | SB2-BE101 | 1 |
| 11 | Stop | SB2 | SB2-BE102 | 1 |
| 12 | Select switch | SA2 | SB2-ED21 | 1 |
| 13 | Lamp | EL | XB2-BVD3 | 1 |

B1 1PH

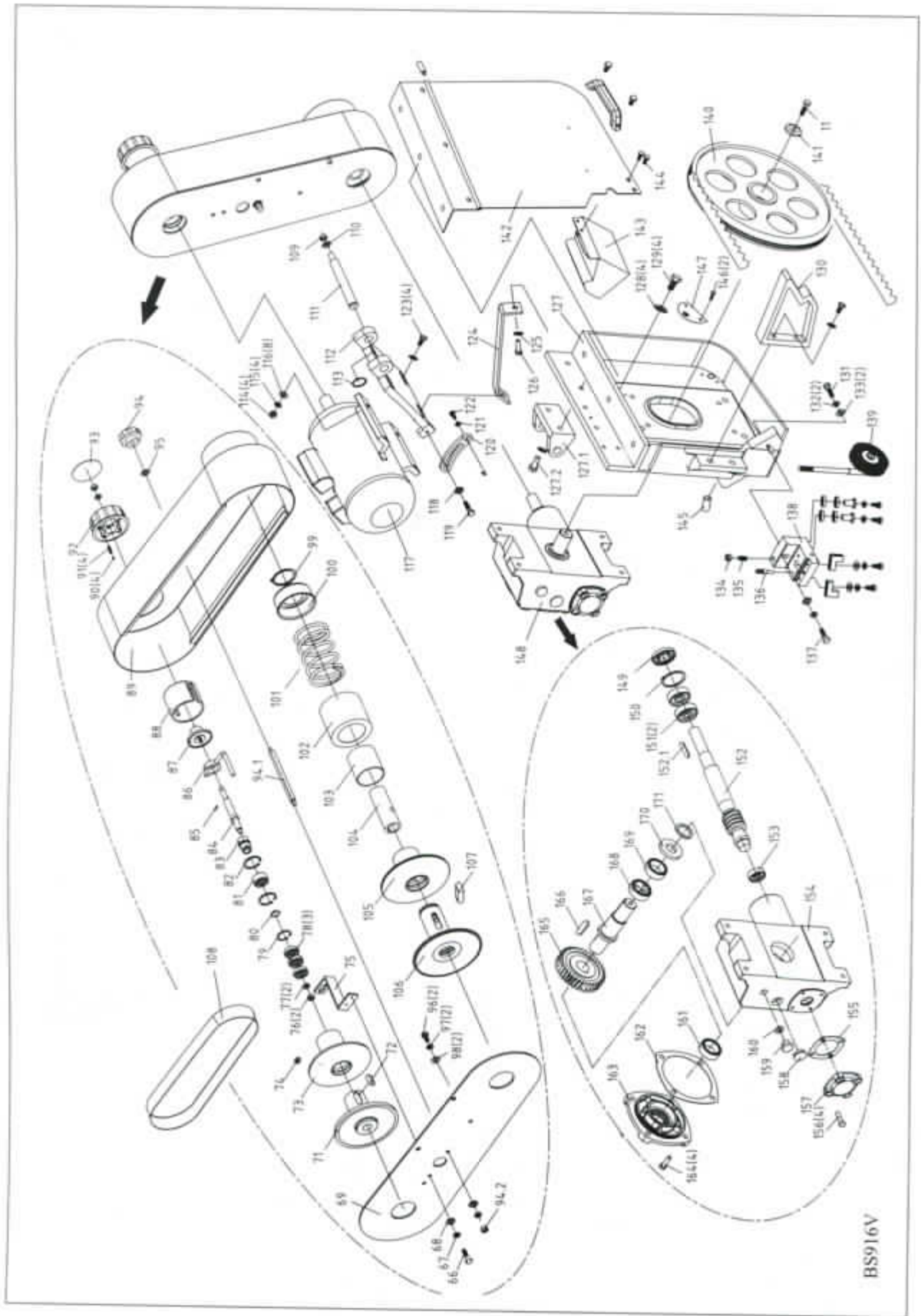


Electric part list

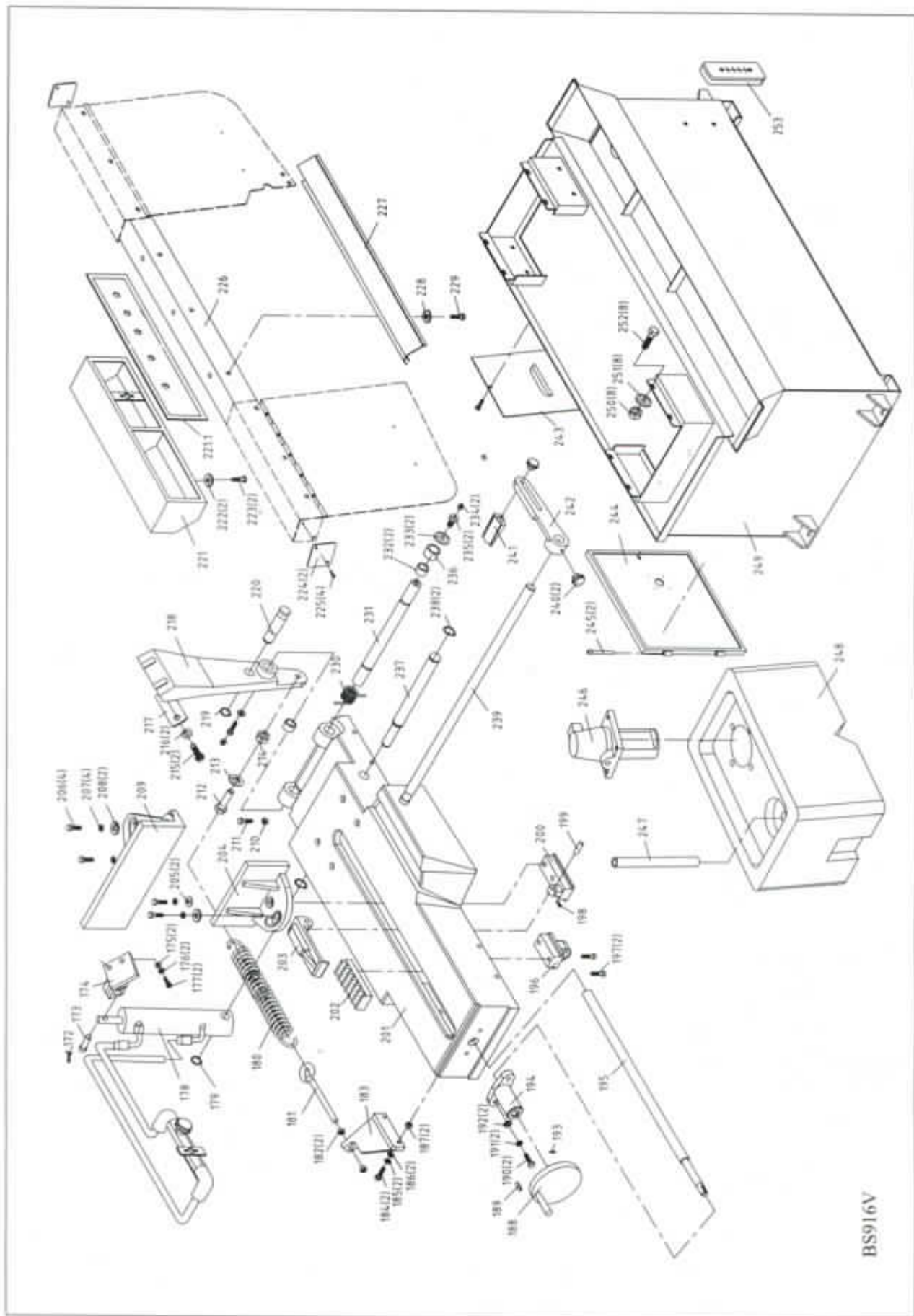
| No. | Name | Designation | Type&Specifications | Quantity |
|-----|-----------------|-------------|-------------------------------|----------|
| 1 | Main motor | M1 | 230V 50Hz 1420r/min 1.5kW 1PH | 1 |
| 2 | Coolant pump | M2 | 230V 50Hz 45W | 1 |
| 3 | Current breaker | QF | DZ47-63 | 1 |
| 4 | Power switch | SA1 | JDF11-25 | 1 |
| 5 | Contactors | KM | CN-6 AC24V | 2 |
| 6 | Heat relay | FR | RHN-5M | 1 |
| 7 | E.S.P | TA | XB2-ES542 | 1 |
| 8 | Transformer | TC | AC230V/24V | 1 |
| 9 | Limit switch | SQ | OKS7 250V 10A | 1 |
| 10 | Start | SB1 | SB2-BE101 | 1 |
| 11 | Stop | SB2 | SB2-BE1J2 | 1 |
| 12 | Select switch | SA2 | SB2-ED21 | 1 |
| 13 | Lamp | EL | XB2-BVD3 | 1 |



BS916V



BS916V



BS916V

PART LIST

| SERIAL NUMBER | DRAWING NUMBER | DESCRIPTION | QUANTITY | SPECIFICATION |
|---------------|------------------|-----------------------------|----------|---------------|
| 1 | | hand wheel | 1 | 125×15 |
| 2 | BS230V-1021 | adjusting shaft | 1 | |
| 3 | GB/T301 | thrust bearing | 1 | 51104 |
| 4 | BS230V-1022 | gasket | 1 | |
| 5 | BS230V-1023 | stop collar | 1 | |
| 6 | | butterfly spring | 13 | 21×44×3 |
| 7 | BS230V-1017 | press plate | 2 | |
| 8 | BS230V-1018 | slid block | 1 | |
| 9 | GB/T96.1 | big washer | 1 | 12 |
| 10 | GB/T5781 | bolt | 1 | M12×30 |
| 11 | GB/T5781 | bolt | 3 | M10×60 |
| 12 | GB/T95 | washer | 3 | 10 |
| 13 | BS230V-1016 | adjusting bolt | 3 | |
| 14 | GB/T5781 | bolt | 3 | M8×20 |
| 15 | GB/T95 | washer | 3 | 8 |
| 16 | GB/T77 | screw | 1 | M6×8 |
| 17 | BS230V-1019 | screw | 1 | |
| 18 | BS230V-1020 | big slid stand | 1 | |
| 19 | GB/T70.1 | screw | 6 | M12×20 |
| 20 | BS230V-1004 | rear saw bow | 1 | |
| 21 | GB/T6170 | nut | 1 | M12 |
| 22 | BS230V-1001 | handle | 1 | |
| 23 | GB/T95 | washer | 4 | 12 |
| 24 | GB/T5781 | bolt | 4 | M12×30 |
| 25 | BS230V-1004 | rear band axle | 1 | |
| 26 | GB/T276 | bearing | 3 | 6205-2Z |
| 27 | BS230V-1002 | driven wheel | 1 | |
| 28 | BS230V-1003 | big washer | 1 | |
| 29 | | safety guard for rear wheel | 1 | |
| 30 | | squre handle | 2 | A120 |
| 31 | GB/T70.1 | screw | 2 | M6×12 |
| 32 | BS230V-4003 | pin shaft | 2 | |
| 33 | | blade | 1 | 27×0.9×3215 |
| 34 | GB/T70.1 | screw | 12 | M6×12 |
| 35 | GB/T70.1 | screw | 1 | M8×16 |
| 36 | GB/T95 | washer | 1 | 8 |
| 37 | BS230V-4015 4016 | safety guard | 1 | |
| 38 | | ruler | 1 | |
| 39 | BS230V-1027 | left supportor | 1 | |
| 39.1 | BS1018R-006 | left supportor | 1 | |
| 40 | BS230V-1025 | sliding beam | 1 | |
| 41 | GB/T70.1 | screw | 2 | M10×25 |
| 42 | GB/T77 | screw | 4 | M10×10 |
| 43 | GB/T95 | washer | 2 | 8 |
| 44 | GB/T70.1 | screw | 2 | M8×25 |
| 45 | | adjustable fasten handle | 1 | M10×80 |
| 46 | BS230V-1029 | tighthen locking base | 1 | |
| 47 | BS230V-1026 | sliding stand | 1 | |
| 47.1 | BS-1018R-007 | sliding stand | 1 | |
| 48 | GB/T93 | bushing | 2 | 8 |
| 49 | GB/T95 | washer | 2 | 8 |
| 50 | GB/T70.1 | screw | 2 | M8×40 |

| SERIAL NUMBER | DRAWING NUMBER | DESCRIPTION | QUANTITY | SPECIFICATION |
|---------------|----------------|------------------------------|----------|---------------|
| 51 | GB/T77 | screw | 3 | M8×16 |
| 52 | GB/T70.1 | screw | 1 | M8×20 |
| 53 | GB/T95 | washer | 1 | 8 |
| 54 | GB/T276 | bearing | 1 | 608-2Z |
| 55 | GB/T276 | bearing | 8 | 6201-2Z |
| 56 | BS230V-1031 | sleeve | 2 | |
| 57 | GB/T70.1 | screw | 4 | M8×45 |
| 58 | GB/T93 | washer | 4 | 8 |
| 59 | BS230V-1032 | eccentric bushing | 2 | |
| 60 | GB/T7 | screw | 4 | M6×30 |
| 61 | GB/T93 | washer | 4 | 6 |
| 62 | GB/T95 | washer | 4 | 6 |
| 63 | BS230V-1015 | nip block | 4 | |
| 64 | BS230V-1043 | pipe fastening block | 1 | |
| 65 | BS230V-1030 | left adjustable base | 1 | |
| 66 | GB/T70.1 | screw | 2 | M6×12 |
| 67 | GB/T93 | washer | 2 | 6 |
| 68 | GB/T95 | washer | 2 | 6 |
| 69 | BS230H-2020 | Belt cover | 1 | |
| 71 | BS230V-5003 | Variable speed mechanism III | 1 | |
| 72 | GB/T1096 | plate key | 1 | 6×28 |
| 73 | BS230V-5004 | Variable speed mechanism IV | 1 | |
| 74 | JB/T7940.1 | oil cup | 1 | M6 |
| 75 | BS230V-4013 | limited supporter | 1 | |
| 76 | GB/T6170 | nut | 2 | M8 |
| 77 | GB/T93 | washer | 2 | 8 |
| 78 | GB/T276 | bearing | 3 | 6201-2Z |
| 79 | GB/T893.1 | circlip for hole | 1 | 32 |
| 80 | GB/T894.1 | bearing gasket | 1 | 20 |
| 81 | GB/T276 | bearing | 1 | 6004-2Z |
| 82 | GB/T893.1 | hole-block circle | 1 | 42 |
| 83 | BS230V-5011 | adjustable nut | 1 | |
| 84 | BS230V-5005 | adjustable shaft | 1 | |
| 85 | GB/T879.2 | pin | 1 | 3×20 |
| 86 | BS230V-5012 | limited supporter | 1 | |
| 87 | BS230V-5009 | | | |
| 88 | BS230V-5006 | sleeve | 1 | |
| 89 | BS230H-2019 | belt protection | 1 | |
| 90 | | steel ball | 4 | 6 |
| 91 | BS230V-5007 | small spring | 4 | |
| 92 | BS230V-5008 | speed-changeable lid | 1 | |
| 93 | BS230V-5010 | speed-changeable label | 1 | |
| 94 | | pentacle handle | 1 | M10×20 |
| 94.1 | BS230V-5002 | fixed link | 1 | |
| 94.2 | GB/T6170 | nut | 1 | M8 |
| 95 | GB/T95 | washer | 1 | 10 |
| 96 | GB/T5781 | bolt | 2 | M8×20 |
| 97 | GB/T93 | flexible washer | 2 | 8 |
| 98 | GB/T95 | washer | 2 | 8 |
| 99 | GB/T894.1 | ring | 1 | 45 |
| 100 | BS230V-5015 | inner sleeve | 1 | |
| 101 | BS230V-5016 | press spring | 1 | |

| SERIAL NUMBER | DRAWING NUMBER | DESCRIPTION | QUANTITY | SPECIFICATION |
|---------------|----------------|-----------------------------|----------|---------------|
| 102 | BS230V-5017 | outer sleeve | 1 | |
| 103 | BS230V-5014 | plastic sleeve | 1 | |
| 104 | BS230V-5001 | shaft | 1 | |
| 105 | BS230V-5018 | Variable speed mechanism II | 1 | |
| 106 | BS230V-5019 | Variable speed mechanism I | 1 | |
| 107 | BS230V-5013 | abnormity pin | 1 | |
| 108 | | belt | 1 | 1422V400 |
| 109 | GB/T6170 | nut | 1 | M12 |
| 110 | GB/T95 | washer | 2 | 12 |
| 111 | BS230V-1035 | shaft | 1 | |
| 112 | BS230V-1034 | motor stand | 1 | |
| 113 | 6B/T894.1 | ring | 1 | 19 |
| 114 | GB/T6170 | nut | 4 | M8 |
| 115 | GB/T93 | flexible washer | 4 | 8 |
| 116 | GB/T95 | washer | 8 | 8 |
| 117 | | motor | 1 | |
| 118 | GB/T95 | washer | 1 | 8 |
| 119 | GB/T5781 | bolt | 1 | M8×25 |
| 120 | BS230V-1038 | connecting plate | 1 | |
| 121 | GB/T95 | washer | 1 | 8 |
| 122 | GB/T5781 | bolt | 1 | M8×20 |
| 123 | GB/T5781 | bolt | 4 | M8×45 |
| 124 | BS230V-1037 | bracket | 1 | |
| 125 | GB/T95 | washer | 1 | 8 |
| 126 | GB/T70.1 | screw | 1 | M8×20 |
| 127 | BS230V-1007 | front saw bow | 1 | |
| 127.1 | BS230V-1036 | fixed seat | 1 | |
| 127.2 | GB/T5781 | bolt | 2 | M12×35 |
| 128 | GB/T95 | washer | 4 | 12 |
| 129 | GB/T5781 | bolt | 4 | M12×35 |
| 130 | BS230V-1028 | right support | 1 | |
| 131 | GB/T70.1 | screw | 1 | M8×45 |
| 132 | GB/T93 | flexible washer | 2 | 8 |
| 133 | GB/T95 | washer | 2 | 8 |
| 134 | GB/T6170 | nut | 1 | M10 |
| 135 | BS230V-1011 | small spring | 1 | |
| 136 | BS230V-1014 | bolt | 1 | |
| 137 | GB/T70.1 | screw | 1 | M8×50 |
| 138 | BS230V-1013 | right adjustable stand | 1 | |
| 139 | | brush | 1 | |
| 140 | BS230V-1008 | steering wheel | 1 | |
| 141 | BS230V-1009 | washer | 1 | |
| 142 | | front wheel guard | 1 | |
| 143 | BS230V-4010 | brush safety guard stand | 1 | |
| 144 | GB/T70.1 | screw | 2 | M6×12 |
| 145 | BS230V-1040 | water pipe | 1 | |
| 146 | GB/T70.1 | screw | 2 | M5×10 |
| 147 | BS230V-1039 | sift net | 1 | |
| 148 | | gear box assembly | 1 | |
| 149 | GB/T9877.1 | lip-shape sealing ring | 1 | B25×52×7 |
| 150 | GB/T893.1 | ring | 1 | 52 |
| 151 | GB/T276 | bearing | 2 | 6205 |

| SERIAL NUMBER | DRAWING NUMBER | DESCRIPTION | QUANTITY | SPECIFICATION |
|---------------|----------------|------------------------------|----------|---------------|
| 152 | BS230V-3004 | worm shaft | 1 | |
| 152.1 | GB/T1096 | plate key | 1 | 6x60 |
| 153 | GB/T297 | bearing | 1 | 30205 |
| 154 | BS230V-3003 | gear box | 1 | |
| 155 | BS230V-3002 | asbestos pad | 1 | |
| 156 | GB/T70.1 | screw | 4 | M8x25 |
| 157 | BS230V-3001 | lid | 1 | |
| 158 | JB/T7941.1 | cap | 1 | A16 |
| 159 | BS230V-3012 | screw | 1 | |
| 160 | GB/T3452.1 | O-sealing ring | 1 | 12.5x1.8 |
| 161 | GB/T276 | bearing | 1 | 6207 |
| 162 | BS230V-3008 | asbestos pad | 1 | |
| 163 | BS230V-3006 | gear box lid | 1 | |
| 164 | GB/T70.1 | screw | 4 | M10x25 |
| 165 | BS230V-3011 | worm shaft | 1 | |
| 166 | GB/T1096 | plate key | 1 | 8x30 |
| 167 | BS230V-3009 | output, shaft | 1 | |
| 168 | GB/T276 | bearing * | 1 | 6207 |
| 169 | GB/T207 | bearing | 1 | 30207 |
| 170 | GB/T9877.1 | lip-shape sealing ring | 1 | B35x55x8 |
| 171 | BS230V-3010 | shock insulator | 1 | |
| 172 | GB/T91 | pin | 1 | 3x25 |
| 173 | BS230V-2021 | pin shaft | 1 | |
| 174 | BS230V-2019 | stand for hydraulic cylinder | 1 | |
| 175 | GB/T95 | flat washer | 2 | 10 |
| 176 | GB/T93 | flexible washer | 2 | 10 |
| 177 | GB/T5781 | bolt | 2 | M10x30 |
| 178 | | hydraulic cylinder | 1 | |
| 179 | GB/T894.1 | bearing gasket | 1 | 20 |
| 180 | BS230V-2020 | big spring | 1 | |
| 181 | BS230V-2027 | spring screw | 1 | |
| 182 | GB/T6170 | nut | 2 | M12 |
| 183 | BS230V-2026 | spring fixed stand | 1 | |
| 184 | GB/T5781 | bolt | 2 | M8x30 |
| 185 | CB/T93 | flexible washer | 2 | 8 |
| 186 | GB/T95 | washer | 2 | 8 |
| 187 | GB/T6170 | nut | 2 | M8 |
| 188 | | hand wheel | 1 | |
| 189 | GB/T1096 | plate key | 1 | |
| 190 | GB/T5781 | bolt | 2 | M8x30 |
| 191 | GB/T93 | flexible washer | 2 | 8 |
| 192 | GB/T95 | flat washer | 2 | 8 |
| 193 | GB/T77 | fixed screw | 1 | M6x8 |
| 194 | BS230V-2001 | T-stand | 1 | |
| 195 | BS230V-2003 | screw rod | 1 | |
| 196 | BS230V-2005 | nut | 1 | |
| 197 | GB/T70.1 | screw | 2 | M8x25 |
| 198 | GB/T77 | fixed screw | 1 | M6x10 |
| 199 | GB/T119.1 | column pin | 1 | 12x45 |
| 200 | BS230V-2007 | sliding block | 1 | |
| 201 | BS230V-2002 | vice | 1 | |
| 202 | BS230V-2004 | rack | 1 | |

| SERIAL NUMBER | DRAWING NUMBER | DESCRIPTION | QUANTITY | SPECIFICATION |
|---------------|----------------|------------------------------------|----------|---------------|
| 203 | BS230V-2006 | grab block | 1 | |
| 204 | BS230V-2009 | sliding vice | 1 | |
| 205 | GB/T95 | flat washer | 2 | 12 |
| 206 | GB/T5781 | bolt | 4 | M12×50 |
| 207 | GB/T93 | flexible washer | 4 | 12 |
| 208 | BS230V-2008 | washer | 2 | |
| 209 | BS230V-2010 | fixed vice | 1 | |
| 210 | GB/T6170 | nut | 1 | M10 |
| 211 | GB/T5781 | bolt | 1 | M10×40 |
| 212 | GB/T5781 | bolt | 1 | M12×40 |
| 213 | GB/T95 | flat washer | 1 | 12 |
| 214 | GB/T6170 | nut | 1 | M12 |
| 215 | GB/T5781 | bolt | 2 | M12×50 |
| 216 | GB/T93 | flexible washer | 2 | 12 |
| 217 | BS230V-2012 | press block | 1 | |
| 218 | BS230V-2011 | slant stand | 1 | |
| 219 | GB/T984.1 | ring | 1 | 22 |
| 220 | BS230V-2013 | shaft | 1 | |
| 221 | BS230V-4026 | operator Station | 1 | |
| 221.1 | | control panel | 1 | |
| 222 | GB/T95 | flat washer | 2 | 6 |
| 223 | GB/T5781 | bolt | 2 | M6×10 |
| 224 | BS230V-1042 | end plate | 2 | |
| 225 | GB/T70.1 | screw | 4 | M5×10 |
| 226 | BS230V-1006 | contact beam | 1 | |
| 227 | BS230V-4014 | blade protector | 1 | |
| 228 | GB/T95 | flat washer | 2 | 6 |
| 299 | GB/T5781 | bolt | 2 | M6×10 |
| 230 | BS230V-2015 | wring spring | 1 | |
| 231 | BS230V-2016 | tuning shaft | 1 | |
| 232 | BS230V-2017 | sleeve | 2 | |
| 233 | BS230V-1009 | washer | 2 | |
| 234 | JB/T7940.1 | oil cup | 2 | M8×1 |
| 235 | BS230V-2014 | bolt | 2 | |
| 236 | BS230V-2018 | sleeve | 1 | |
| 237 | BS230V-2022 | fixed shaft for hydraulic cylinder | 1 | |
| 238 | GB/T894.1 | ring | 2 | 25 |
| 239 | BS230V-2025 | block shaft | 1 | |
| 240 | | pentacle handle | 2 | M6×20 |
| 241 | BS230V-2023 | abnormity spindle | 1 | |
| 242 | BS230V-2024 | handle stop | 1 | |
| 243 | BS230V-4022 | block board | 1 | |
| 244 | BS230V-4023 | electrical box door | 1 | |
| 245 | BS230V-4024 | pin | 2 | |
| 246 | | water pump | 1 | |
| 247 | | water pipe | 1 | |
| 248 | | water box | 1 | |
| 249 | BS230V-4021 | base support | 1 | |
| 250 | GB/T6170 | nut | 8 | M8 |
| 251 | GB/T95 | flat washer | 8 | 8 |
| 252 | GB/T5781 | bolt | 8 | M8×30 |
| 253 | | long oil scale | 1 | A80 |