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Kama Bandsaw EV 996

110 Volt, Single Phase;
220 Volt 3 Phase or Single Phase
6 3/4" Stationary Bandsaw
with cooling system, vise, work stop
and base.



Instruction Manual:

- Introduction to the Manual
- General Precautions
- Equipment
- Machine
- Setup for the Use
- Operative Use
- Caution
- Maintenance



KAMA

EV 996

1. Introduction to the Manual

- **The purpose** of this manual is to provide the necessary information for competent, safe use of the equipment.
- **This information** is the result of continuous, systematic data processing and technical tests recorded and validated by the manufacturer, in accordance with the internal procedures to ensure the safety and quality of information: EN 89/392, EN 60204-1, CEI 110-8, IEC 801, EN 202-2, EN 418, prEN 1050, prEN 614-1.
- **The information below** is intended EXCLUSIVELY for specialized users, capable of interacting with the product with the utmost safety for people, the machine and the environment, interpreting basic diagnostics of problems and malfunctions and performing simple checks and maintenance, in full compliance with the instructions given in the pages that follow and with current health and safety regulations.
- **The document** does not examine in depth the topics of disassembly and extraordinary maintenance, as these operations must always be carried out solely by our authorized Technical Service.
- **For a proper** relationship with the product, it is essential to ensure that the manual remains legible and well-preserved, for future reference. Should it deteriorate or, more simply, for further technical and operating information, contact the nearest Authorized Retailer directly.
- **Before using** the machine or opening its packaging, read the instructions in the following manual very carefully.
- **If the machine** is used by more than one operator, each one must adhere to the following manual very carefully.
- **The Manufacturer** declines any responsibility for damage to persons, things or to the machine itself arising from its incorrect use, negligence and superficial interpretations of safety concepts contained in this manual.
- **This instructions manual** should serve the duration of the machines operating “life” and be available for at least **10 (ten) years**: it is advisable to keep it in a known and accessible place (possibly together with the other manuals relating to the machine).

2. General Precautions

Always make sure in advance that the minimum safety, placement and operating standards are respected, taking note of the environmental conditions, temperature, humidity, lighting, vibrations, suspended dust and the appropriateness of the area to be occupied.

The saw may operate outdoors (work sites, open spaces in general, etc.) or indoors (workshops, laboratories, etc.) where there is no risk of explosion or fire.

Before using the equipment, make sure that the surface where the machine will be placed is flat, and stable.

Always make sure in advance that the workpiece is tightly clamped; in any case, make sure that the start of the production cycle does not create hazardous situations for people and/or property.



It is strictly forbidden to cut pieces of any material whatsoever, which are not previously and properly tightened in the vise. Always load and unload with both hands.

Keep the cutting area (blade and clamp) along with cooling liquid introduction area perfectly clean.

Do not remove or damage the information plates on the machine; you must recognize their meaning and keep the message legible. Should they deteriorate, replace immediately, contacting only an authorized Technical Service directly.

The use of spares that do not respond to the specifications listed below, changes or tampering - however slight- shall exempt the manufacturer from any responsibility regarding the proper use, functioning and safety of people and/or property.

It is strictly forbidden to tamper with safety equipment and/or devices.

Always disconnect electric voltage at the end of each job.

Dispose processing waste in compliance with current regulations.



Any maintenance operation except for those specifically described in the pages of this manual, must be carried out by skilled personnel co-ordinated directly by the authorized Technical Service.

3. Equipment

The machine is partially disassembled when it is delivered and is packed in a cardboard package (box). The conditions to which the package must not be subject are listed outside the package.



Do not overturn or lay the package to the side, always keep it vertical.

The standard equipment includes: instruction manual, warranty certificate, vise, bandsaw blade (75" x 3/4" x .035") already installed.

Upon delivery of the equipment, check (visually) in the presence of the transporter, that there are no traces of "difficult" transportation which may raise doubts as to the intactness of its content. In this case, open the box immediately and check that the equipment is perfectly intact.

3.1 Warranty

The machine is guaranteed for six months following the date of purchase: the warranty is valid only if all of the instructions listed on the warranty certificate and in this manual are fully complied with.

3.2 Handling the package

Note. The packaging weight and volume require the involvement of two people.

Dimensions and weight:

L = 38" W=22" H=31" Lbs.=225



When unpacking the machine make sure the machine is in perfect condition and that the package contains the parts described; the Manufacturer shall not be responsible for errors or missing parts following five days after shipment. The packing material must be disposed of according to environmental protection regulations.

3.3 Assembly (fig. 1)

- Once the packaging has been removed, the machine arrives in two parts: the base is positioned on the operating unit, thus reducing the overall cubage to half and protecting in transit.
- Remove the base (1) (it acts as cover in this configuration) and lay it on the ground.
- Fit the rear guard (it is positioned loose in the packaging) by fastening it with the screws supplied.
- Raise (two people involved) and position the operating unit on the base edge and fasten it with the four screws (A fig.1) supplied.
- Insert and fasten (with the appropriate screw without head) the guide rod (B) of the piece holder (3).
- Insert the piece holder (3) on the rod and lock it by the knob (4).

4. Machine

4.1 General Description

- The sawing machine EV 996 is designed and built for cutting operations (separations in two parts) of metal pieces of any nature (pipes, bars, sections, etc.)
- The machine is equipped with blade and automatic cooling system by emulsifiable oil.
- The blade provided has bi-metal features. For specific uses, it is recommended replacing it with a more suitable blade.
- The "dry" or "cooled" cut is in accordance with the type of material on the basis of its dimensions and its section. Thus, the choice of the operative mode is left to the experience of the operator or other specially designated personnel.
- The machine can be used for cuts ranging from 0° to 45°, in compliance with the limits and environmental condition, recommended by the Manufacturer or safety and health rules in force.



This machine is suitable for cutting wood, soft plastic materials, animal bones, etc.

For any information and/or technical explanations regarding the machine, always indicate:

- model;
- serial number;
- edition and preparation date of the instruction manual.



The description includes the use for which the product has been designed, failure to comply with the technical parameters listed below may constitute a hazard to people and/or property.

4.2 Identification

Machine identification information shown on the plate (G fig. 1): Manufacturer - Serial number - Model - Year of Manufacture - Electric voltage (Volt) - Frequency (Hz) - Electrical power (Kw) - Electrical input (A) - Weight (kg.)



It is strictly forbidden to remove or damage the plates on the machine.

4.3 Components (fig. 1)

1. Base
2. Liquid Tank
3. Piece Holder
4. Piece Clamp
5. Machine Body
6. Saw Tension Lever
7. Grip (on/off)
8. Control Panel
9. Cutting Speed Regulator
10. Blade Guide Lock Lever
11. Blade Guide
12. Band Saw Blade
13. Electric Motor
14. 90° Rotation Unit
15. Cooling Liquid Pump
16. Cooling Liquid Taps

4.4 Technical Specifications




- Blade Drive Pulleys: on Bearings
- Transmission: treated, Tempered Steel Gears
- Switch with safety device
- Automatic Blade Tensioner
- Maximum cutting capacity: 6.75"
- Standard Blade:
 - material: M42 - HSS
 - length: 75"
 - height: 3/4"
 - thickness: .035"
 - teeth 6-10 variable tooth

4.5 Selection: Blade Cutting Speed

Table 3 shows some examples of the most common cutting conditions. The choice of the type of blade and the cutting speed is in accordance with the type of material and its section. Table 4 (below) shows the machine capacity according to cutting angles.

Cutting Capacity:

Table 4

	90°	45°
	6.75"	4.9"
	6.75"	4.9"
	6.75" x 5.9"	4.3" x 6.75"

4.6 Technical Features

Electric Voltage: 110 Volt - 60 Hz - Single Phase
 220 Volt - 60 Hz - 1 or 3 Phase
 (See nameplate to determine Voltage and single or 3 phase).

Overall installed power: Watt 1200/2400

Insulation Class: F

Emulsifiable oil (5% + 8%): MOBIL HYDROIL

Cooling liquid tank capacity: 3 gallons

Speed: 105/210 ft./minute

Loadless Weight: 225 pounds

4.7 Overall dimensions

L	37"
W	21"
H	51"

4.8 Blade Cooler

The automatic blade cooling system is driven by a self-priming electric pump (15 - fig.1). Before starting the machine, always make sure there is cooling liquid in the tank (1 - fig.4) which shall be “flush” to the filter panel (2 - fig.4).

4.9 Noise

Under normal conditions of use, the EV 996 bandsaw has a noise level which is lower than 78 dB (A) while in no-load operation it is 79.0 dB (A).



Keep the above technical features and data in the utmost consideration. Any operation which may modify machine performances stated by the

Manufacturer is strictly forbidden. Thus, the Manufacturer shall not be held liable for any damage whatsoever caused by failure to observe these recommendations.

4.10 Control Panel (fig. 2)

1. “on/off” main switch
2. Emergency pushbutton
3. Cutting Speed Selector (Slow-Fast)
4. Fuse Carrier (24 Volt - 1 Amp)
5. Stop Pushbutton
6. Control activation pushbutton (enables the on off trigger on the grip - has also a “reset” function after pressing the emergency pushbutton)
7. Machine low voltage warning light
8. Machine in operation warning light
9. Activated thermal switch release warning light (sawing machine motor is provided with a thermal circuit breaker disconnecting power when the temperature is too high inside the motor).

4.11 Control Pushbutton (fig. 3)

The pushbutton to the machine is placed on the grip and is made up of a safety switch (1 - fig. 3) and a “trigger” (2).

5. Setup for the use

5.1 Electrical Connection

- The machine is equipped with a cable. Thus, it is necessary to mount a (new) approved plug with the dimensions suitable for the use, on the cable end.
- Check that the supply group is equipped with the ground wire as prescribed by the relevant rules in force.
- Furthermore, check that there is a working safety magnetothermal switch above the supply mains to prevent damage from short circuits or abnormal overloads.

5.2 Cooling Liquid

- Prepare an emulsion of water and oil: MOBIL HYDROIL (or equivalent) in the following percentage: 5% / 8%.
- Mix for a few minutes, in a suitable container and clean the tank of the machine (1 - fig. 4), reposition the cover/filter (3 - fig. 4).

5.3 Checks and Adjustments

- Check that the machine is perfectly stable and all screws are properly tightened.
- Check that guards are positioned correctly.
- Check that the blade tension lever (6 - fig.1) is locked.

5.4 Placing the Piece

- Open the clamp (4 - fig. 1) acting on lever (D).
- Insert the piece in the clamp in a stable way without placing any loose object between it and the jaws.
- Position the piece holder (3 - fig. 1) and lock it with the knob. (C).
- Tighten the clamp action on the lever (D). Apply a tightening pressure suitable for the type of material and the section of the piece to be cut.

5.5 Adjusting the Blade Guide

- Loosen the lever (10 - fig. 1)
- Slide the blade guide (11) which also acts as a protection until the saw (12) is as covered as possible, based on the size of the part to be cut.



This operation is to be executed whenever pieces of different dimensions are to be cut.

5.6 Adjusting Cutting Angle

- After selecting the cutting angulation, loosen the lever (E - fig. 1), turn the whole operating head, acting on the clamp and the metal support of the electric board with the hands, referring to the graduated scale (F - fig. 1).
- Lock the lever (E).

6. Operative Use

6.1 Starting

Connect the feed cable to the main socket, checking that the electrical voltage present at the company corresponds to that on the sawing machine “plate”.

6.2 Operator Position

- The placement of the machine in relation to the operator position must make it possible to observe the results of the operation and maintain safety conditions.
- During this stage, make sure the start button and speed regulator are easily accessible, and that there is sufficient visibility and lighting on the tool, the surrounding area and base.

6.3 Checking your Rotation

- Turn the main switch (1 - fig. 2) to the “on” position.
- Turn the cutting speed selector (3 - fig. 2) to the left (slow speed).
- Press the pushbutton (6 - fig. 2), the warning light (7) will be lighted to confirm that the machine is live.

- Release the safety switch (1) by keeping your right hand on the grip (fig. 3) and at the same time, press the trigger (2), operate the blade for a few turns, which is useful to determine the right direction of rotation marked by the arrow, on the electric motor cap.
- In case of reverse rotation, disconnect electrical voltage and ask for the assistance of the electric serviceman who will reverse the phases of the electrical connection.



Whenever the blade is operated, make sure that your hand is free and far from the cutting area.

6.4 First Starting

- Open the taps (16 - fig.1) of the cooling liquid.
- Operate the blade as described in the previous paragraph.
- Apply a gentle work force on the grip. The operating unit head will be lowered and the blade will start the first cut (with slow speed). It is recommended making the first 4-6 cuts with a limited cutting pressure and on a full “mild steel” piece of average size.



Note: when started for the first time, the machine makes noise which is relatively higher (due to the normal bedding of the drive gears) and usually disappears after the first 8-10 working hours.

6.5 Thermal Switch Release

During the continuous use of the sawing machine on thick pieces, the machine could stop suddenly due to the operation of the safety device of the electric motor. In this case, let the machine “rest for a few minutes, i.e. until the temperature in the electric motor is lowered to the operating values, automatically restoring the electrical feeding. Operate the pushbutton (6 - fig. 2).

7. Caution

The cautionary assessment of the work space and its arrangement establish an indispensable safety relation between placement, operation, emergency operations and surrounding environment. It is recommended observing them from the preliminary steps to the cutting step.

- **It is strictly forbidden** to place and/or use the saw when environmental conditions constitute a hazard of explosion or fire.
- It is forbidden to use the machine for any purpose other than that intended by the manufacturer.
- Make sure that operation of the saw does not create hazardous a situation for people and/or property.
- Should you encounter a malfunction, stop the machine immediately and check the reason for and/or extent of the breakdown. Contact the authorized Technical Service if necessary.
- **It is strictly forbidden** to exceed the cutting capacity stated by the manufacturer.
- Make sure that the operating unit head is aligned with the graduate scale (F -fig. 1) according to the selected cutting angulation.
- Check that all the adjusting levers (grips) are correctly locked.

IT IS ABSOLUTELY FORBIDDEN:

- to lubricate the blade (saw) before/during/after cutting;
- work without the blade guide installed and positioned properly;
- work without the rear guard of the operating head;
- hold the piece to be cut by hand;
- open, close or choke the cooling liquid (through the two taps (6 - fig. 1) during the cutting operation;
- leave the machine with the electrical voltage turned on.

IT IS STRICTLY NOT RECOMMENDED:

- stopping the machine with the blade inserted in the piece to be cut;
- varying the cutting speed during sawing.



The manufacturer shall not be held liable:
for damage of any type or entity caused by irrational use of the machine, failure to observe the safety rules indicated in this manual or superficial observance thereof, as well as changes or tampering with the machine, however slight. These actions shall also invalidate all warranty coverage.

8. Maintenance

8.1 Ordinary Maintenance

Ordinary maintenance operations can be performed by the normal maintenance personnel.

AT THE END OF EACH JOB:

- Clean any machine part thoroughly, removing chips and other processing waste, in particular in the blade guide, in the clamp jaws and on the metal net (filter) (4 - fig. 4) of the cooling liquid tank cover (3).
- Clean the working area thoroughly too (next to the sawing machine).

For cleaning do not use compressed air jets, but use the panel and industrial aspirator.

EVERY 40 WORKING HOURS:

- Check that all screws which are important from a mechanical viewpoint, are properly tightened.

7.2 Replacing the Cooling Liquid

The loss of the cooling liquid's original properties, is a condition which is difficult to assess. Thus, it is recommended to replace it periodically at scheduled intervals or when it is very "dirty" or saturated with impurities.

Record any replacement on a maintenance schedule card with date and signature.

To replace the cooling liquid, act as follows:

- Remove the cover/filter (3 - fig. 4);
- Take a container with appropriate capacity and position it under the drain plug (5);
- Remove the drain plug (5) and let all the liquid in the container flow down;
- Once the tank has been completely emptied, if necessary, rinse it with water;

- Re-screw the plug;
- Pour the “virgin” liquid into the tank until it reaches the top. (2 - fig. 4);
- Reposition the cover/filter (3).



Contact a specialized and authorized company to dispose of the old oils. Do not throw the cooling liquid in the environment.

8.3 Extraordinary Maintenance

Includes the operation by skilled personnel for repairs or replacements of worn, faulty parts etc.

8.4 Replacing the Blade

- Loosen the lever (10 - fig. 1) and move (all along its stroke) the blade guide unit downwards.
- Remove the screws (1 - fig. 5).
- Lift the rear guard (1 - fig. 6) of the operating head and make sure that it is in stable conditions and cannot fall accidentally.



The blade tension lever (6 - fig. 1) requires considerable effort to loosen. The easiest way is to lower the cutting head to the lowest position and use natural leverage to move the lever.

- Remove the blade (2 - fig. 6) from the driven pulley (3) then from blade guide devices (4 - fig. 6) and finally, from the driving pulley (5).
- Insert a new blade following the reverse order of what has just been described.
- Check that the new blade is correctly inserted, then pull the tension lever (6 - fig. 1) energetically outwards.
- Close the guard (1 - fig. 6) and fasten it with the two screws (1 - fig. 5).
- Start the machine and start without load, at short impulses, the blade will self-center on the pulleys.
- Check that the blade tension is at its maximum, pulling the lever again (6 - fig. 1).



With the new blade, make the first 4-6 cuts with a gentle cutting pressure in order to “break-in” the new blade. Doing this will increase your blade life.

Table 3 (refer to Section 4.5)

Sec.	Mat.	S	Z	V	R
	All	3/16-3/4	6 - 10	210	
	Ot 58			210	
	Br 14	< 3/16	14	210	✓
	Fe 35	< 3/16	14	210	✓
	All	< 3/16	14	210	
		> 3/16	6 - 10	210	✓
	Fe 37	< 3/16		210	✓
		> 3/16	6 - 10	105	
	All	< 2”	6 - 10	210	
	Ot 58	> 2”	4 - 6	210	
	Br 14				
	Fe 37	< 2”	6 - 10	105	✓
	C 40	> 2”	4 - 6	105	✓
	Acc. Inox	< 2”	6 - 10	105	✓
	> 2”	4 - 6	105	✓	

Sec. = Section of the piece to be cut
Mat. = Material of the piece to be cut
S = Thickness of the piece to be cut (in inches)
< = Lower than the stated value
> = Higher than the stated value
Z” = Number of teeth per inch of the blade
V = Cutting speed (ft/min.) feet per minute
R = Cut with cooling liquid (✓)

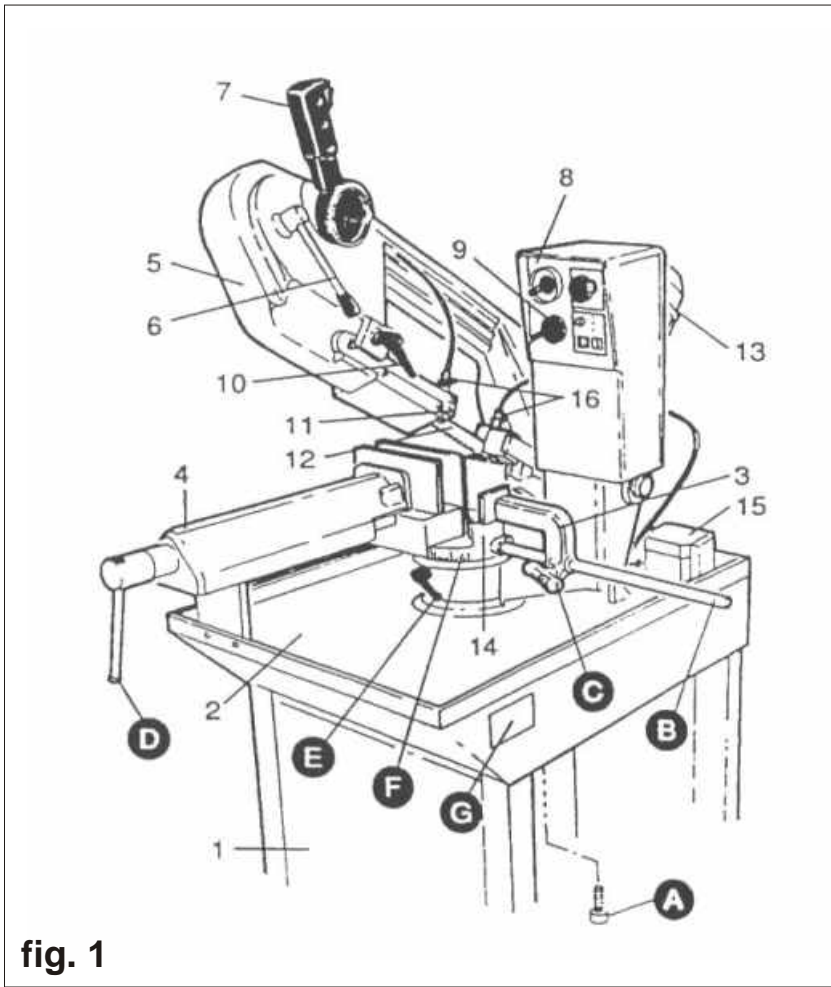


fig. 1

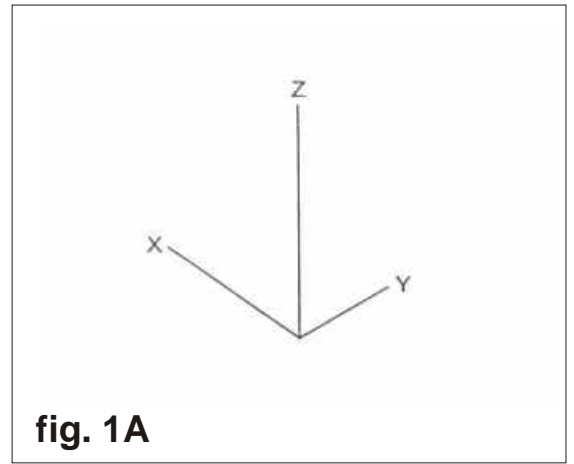


fig. 1A

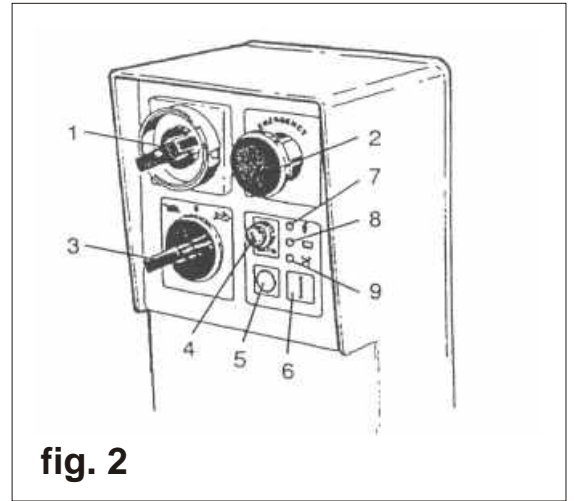


fig. 2

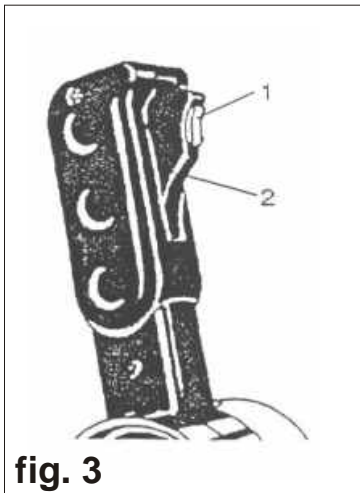


fig. 3

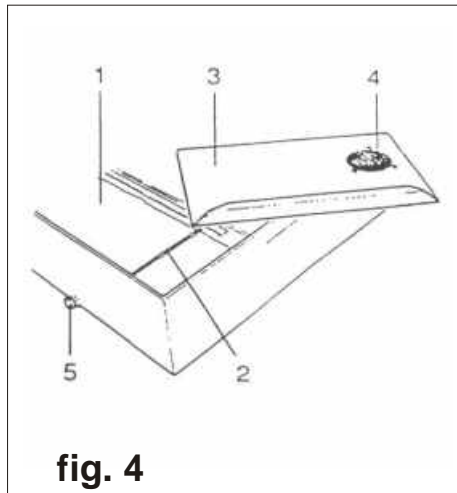


fig. 4

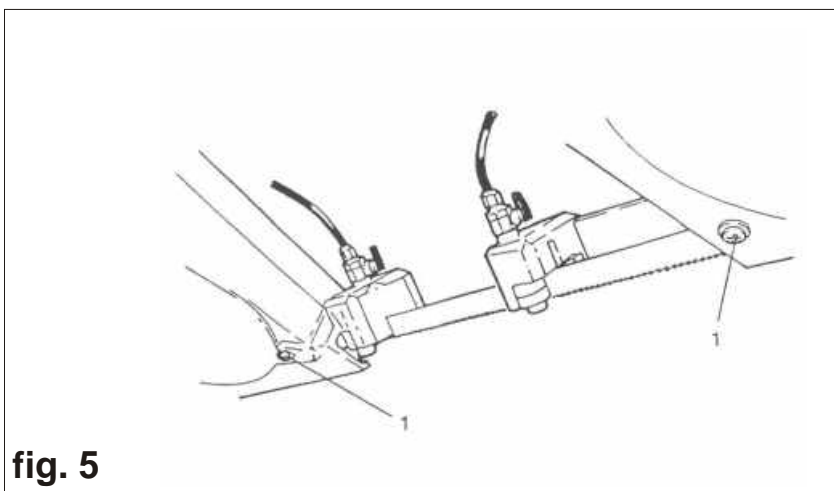


fig. 5

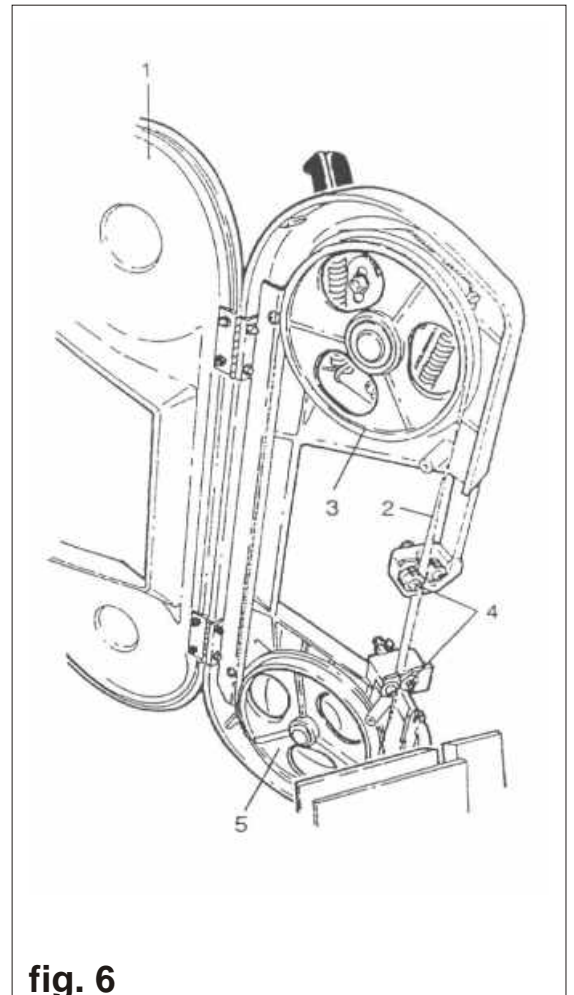
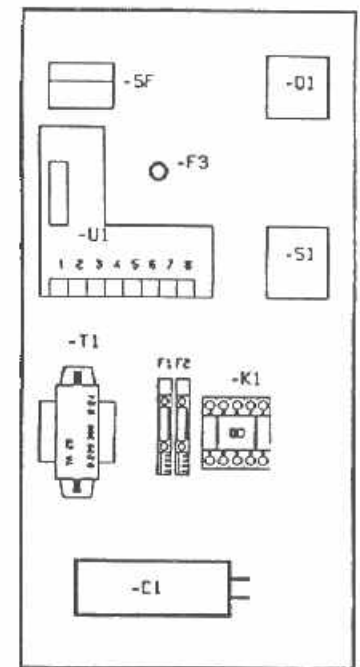
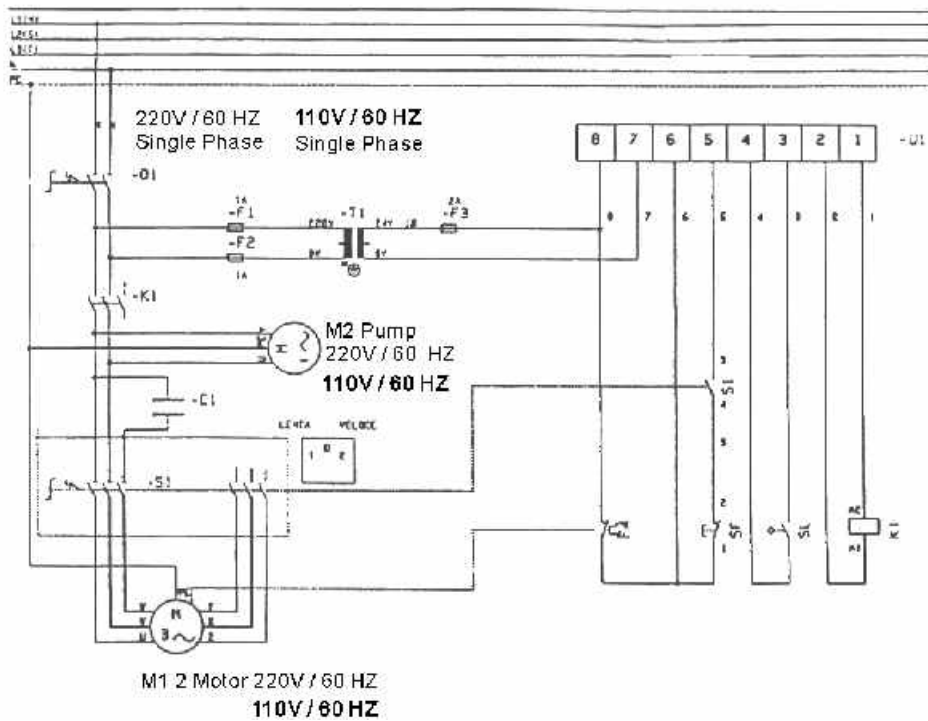
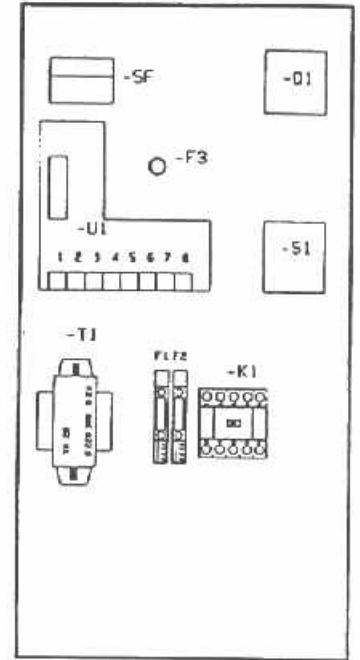
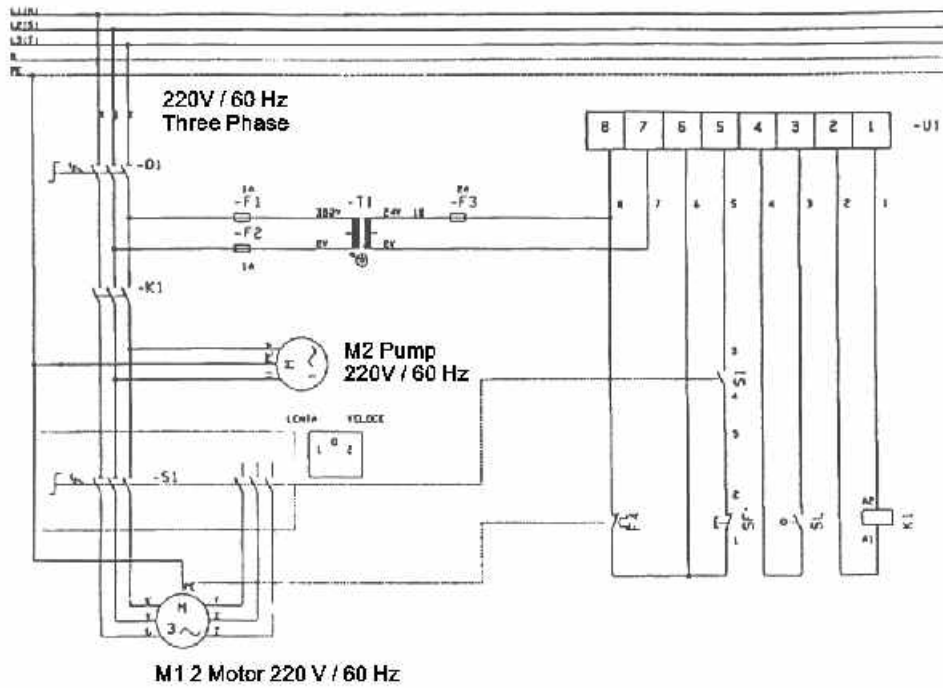


fig. 6

Wiring Diagram



KAMIA

EV 996



KAMA EV 996 BANDSAW

PURCHASED ON: _____

PURCHASED FROM: _____

VOLTAGE / PHASE: _____

NOTES:



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