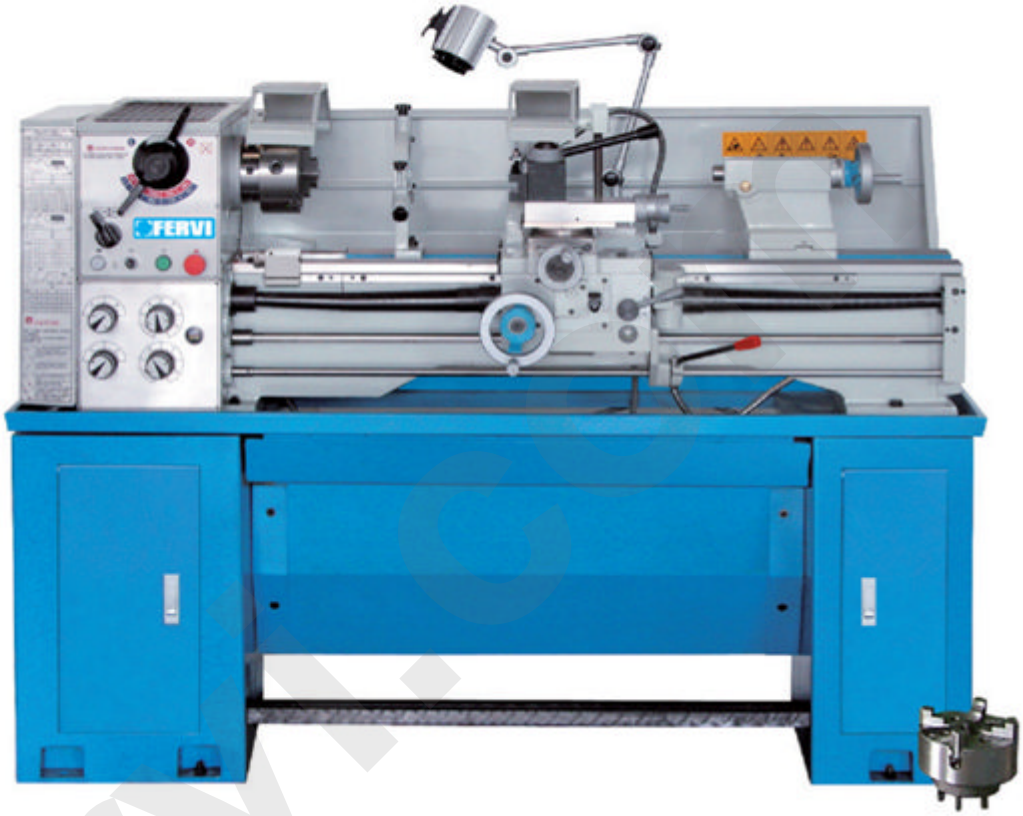
OPERATION AND MAINTENANCE MANUAL



Bench Lathe

Art. T999/230V – T999/230V3A

Art. T999/400V - T999/400V3A

FERVI

PRO SMART EQUIPMENT

TRANSLATION OF THE ORIGINAL INSTRUCTIONS

PREFACE

Please ensure you have read this manual before operation

TRANSLATION OF THE ORIGINAL INSTRUCTIONS

It is compulsory to read this instruction manual before starting operation. The guarantee of smooth operation and full performance of the machine is highly dependent on the application of all the instructions contained in this manual.

Operator qualifications

The workers responsible for the use of this machine must have all the necessary information and instruction and should be given adequate training in relation to safety regarding:

a) Conditions of use for the equipment;

b) Foreseeable abnormal situations, pursuant to Article 73 of Legislative Decree 81/08.

We guarantee the Machine complies with the specifications and technical instructions described in the Manual on the date of issuance and listed herein; On the other hand, the machine may also be subject to important technical changes in the future, without the manual being updated.

Therefore, contact FERVI for information about modifications that may have been implemented.

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INDEX

1 GENERAL INFORMATION

This manual is considered an integral part of the machine it was attached to at the time of purchase.

The manufacturer holds all ownership to material and intellectual property of this manual; any disclosure or copying, even partial, of this publication without prior written consent is forbidden.

This manual is designed to provide the knowledge required for the use and maintenance of the **Gear head lathe (Art. T999/230V – T999/230V3A – T999/400V T999/400V3A)** and to provide the operator assigned to the device with a sense of responsibility and knowledge of its possibilities and limitations.

Operators must be properly trained and prepared, so make sure that this manual is read and consulted by the staff responsible for commissioning, operation and maintenance of the machine. This is to make all operations as safe and effective as possible for those who carry out these tasks. Therefore, it is imperative to strictly comply with the requirements in this manual, a necessary condition for safe and satisfactory operation of the Lathe.

Before starting operation, installation and use of the machine, authorized staff must therefore:

- read this technical document carefully;
- know which protections and safety devices are available on the Lathe, their location and how they work.

The buyer is responsible for ensuring that users are properly trained, that they are aware of all the information and instructions in this document and that they are aware of the potential risks of operating the Lathe.

The manufacturer will not be held responsible for any damage to people and/or property caused by non-compliance with any instructions in this manual.

Operators will be held fully responsible for any changes they have made to the machine; the manufacturer will not be held responsible for any damage to persons and/or property resulting from maintenance performed by unqualified personnel and in a manner that differs from the operating procedures shown below.

The **Gear head lathe** has been designed and built with mechanical guards and safety devices designed to protect the operator/user from possible injury.

It is strictly forbidden to modify or remove guards, safety devices and caution labels. If you do so temporarily (for example, for the purposes of cleaning or repair), make sure that no one can use the machine.

Graphic representation of safety, operational and risk warnings

The following boxes are designed to attract the attention of the reader / user for the **proper** and **safe** use of the machine:

Pay Attention

This highlights behavioural rules to prevent damage to the machine and/or the occurrence of dangerous situations.

Residual Risks

This highlights the presence of dangers that cause residual risks to which the operator must pay attention in order to avoid injury or damage to property.

2 GENERAL SAFETY WARNINGS

2.1 General safety rules for machine equipment

Follow the instructions contained herein, in addition to the general precautions to be observed while working. Even if the operator is already familiar with the use of manually operated lathes, it is necessary to: In particular:

- **Acquire full knowledge of the machine.**
  For safe operation, this manual must be read carefully in order to acquire the necessary knowledge of the machine and to understand: operation, safety devices and all necessary precautions.
- **Wear appropriate clothing for the job.**
  The operator must wear appropriate clothing to prevent accidents.
- **Maintain the machine with care.**

Risks associated with using the machine

The machine must only be used by personnel who have been specially trained by authorized personnel.

Risks associated with using the Machine

DO NOT underestimate the risks associated with using the machine and concentrate on the work in progress.

Risks associated with using the Machine

Despite the implementation of all the safety devices for safe use of the machine, it is necessary to take note of all the requirements for the prevention of accidents detailed in the various sections of this manual.

Protective equipment for the operator

Before starting any type of work, the operator must wear the appropriate personal protective equipment (PPE) such as goggles, gloves etc. (see section 5.3 of this manual).

1. Always check the efficiency and integrity of the machine.
2. Before connecting the machine to the mains, make sure that the rotating parts are not damaged or badly worn. Make sure that the switch is in the neutral position.
3. Do not start the machine in an enclosed or poorly ventilated area, or in the presence of a flammable and/or explosive atmosphere. Do not use the machine in damp and/or wet locations, or those exposed to rain.
4. Avoid starting accidentally.
5. Before starting the machine, get used to ensuring that no remaining maintenance and service keys are inserted.
6. Keep the workplace tidy and free from obstruction; disorder causes accidents.
7. Make sure that your work environment is forbidden to children, strangers and animals.

8. Do not perform tasks on the machine other than those for which it was designed. Only use the machine in the manner in which it was intended, as described in this instruction manual.
9. Work without disturbances.
10. Work areas must be well lit.
11. Always wear eye protection and protective gloves while working. If dust is produced, use the appropriate masks.
12. Wear appropriate clothing. Loose clothing, dangling jewellery, long hair, etc.., can get caught in the moving parts, causing irreparable injury.
13. Firmly secure the workpiece before starting the lathe, using the jaws installed on the spindle.
14. Always use the tool in an appropriate manner. Perform only the work for which the tool is made. Do not use the tool for inadequate work.
15. Only use suitable resistance tools in relation to the work that is to be done. This is to avoid risky and unnecessary overloading for the operator, which may be harmful for the life of the tools themselves.
16. Do not pick up moving tools or other moving parts. To stop the moving parts on the machine, always only use the stop command device.
17. Before performing any measurement of the workpiece mounted on the spindle, turn the motor off, unplug it and wait for the spindle to stop.
18. Do not remove the shavings with your hands, even at a standstill. To do this, use tongs or a palette knife.
19. When the work tools need to be replaced or the speed needs to be changed, stop the motor and wait for the spindle to stop.
20. Do not move away from the machine until the tools and other moving parts, have completely stopped.
21. After the work is completed, clean the tool and check its efficiency.
22. Replace worn and/or damaged parts, check that the repairs and protections work properly before operating. Eventually, if necessary, have it checked by Service staff. Use only original spare parts.
23. **Unplug the power cord of the machine from the power outlet when:**
    - the machine is not being operated;
    - it is left unattended;
    - performing maintenance or registration, because the machine does not work properly;
    - the power cable is damaged;
    - the tool is replaced;
    - it is being moved or transported;
    - during cleaning operations.
24. It is recommended that users of this publication, for maintenance and repair, have a basic knowledge of the mechanical principles and procedures inherent in repair technique.
25. **The company safety officer is required to make sure that machine operators have read and understood this manual in its entirety.**
26. **Management is responsible for safety and verification of the company's risk status according to Legislative Decree 81/08.**

2.2 Safety rules for electrical machine equipment

Changes in the Electrical System

1. Do not modify the machine's electrical system in any way. Any attempt to do so may impair the operation of the electrical devices causing a malfunction or accident.
2. Work on the electrical system of the machine must therefore be carried out only by qualified and authorised personnel.
3. If you hear unusual noises, or notice anything unusual, stop the machine immediately. Then, carry out an inspection and, if necessary, perform any repairs as required.

1. The supply voltage must correspond to that stated on the identification plate and in the technical specifications (400 V / 50 Hz or 230 V 50 Hz). **Never use any other type of power supply**.
2. The use of a lifesaving device on the power supply line is recommended. For more detailed information, contact a trusted electrician.
3. The power plug must be a grounded tripolar type plug for T999/400V and a grounded bipolar plug for T999/230V. Any extension cords must be of equal or greater length than the power cord on the machine.
4. Make sure that the power cord does not come into contact with hot objects, wet or oiled surfaces, and/or sharp edges.
5. The power cord should be checked regularly and before each use to check for signs of damage or wear. If these are not in good condition, do not use the machine and replace the cable.
6. Do not use the power cord to remove the plug from the socket or move the machine.

2.3 Technical Assistance

For any problems or concerns, please do not hesitate to contact the dealer who sold the item.

2.4 Other provisions

TAMPERING WITH SAFETY DEVICES IS FORBIDDEN

Check the presence and integrity of protective devices and the proper functioning of safety devices before starting operation.

If any defect is detected, do not use the Gear head lathe!

It is strictly forbidden to modify or remove guards, safety devices, labels and information plates on the machine.

3 TECHNICAL SPECIFICATIONS

Description (unit of measurement)	T999/230V	T999/400V
Centres distance (mm)	1000	
Spindle hole diameter (mm)	38	
Maximum swing over the bed (mm)	320	
Maximum swing over the cross slide (mm)	198	
Turning diameter over cavity (mm)	470	
Spindle diameter (3 + 3 self centring) (mm)	160	
Spindle connector	Camlock D1-4	
No. of spindle speeds	8	
Spindle speed (r/min)	70 - 2000 RPM	
No. of metric threads	32	
Range of metric threads (mm)	0.44- 10	
No. of inch threads	20	
Range of inch threads (mm)	2 ¼ - 40	
Range of longitudinal feeds (mm)	00.78- 1.044	
Range of transverse feeds (mm)	0.022- 0.298	
Outer diameter of the feed screw (mm)	22	
Guide length (mm)	1390	
Cross carriage travel (mm)	200	
Tailstock sleeve diameter (mm)	32	
Maximum travel of the tailstock sleeve (mm)	80	
Inner taper	CM 5	
Tailstock base length (mm)	165	
Tailstock base width (mm)	125	
Steady rest diameter (mm)	120	
Dimensions (W x D x H) (mm)	1820 x 530 x 1350	
Package dimensions (W x D x H) (mm)	1920 x 840 x 1560	
Weight of machine (kg)	520	
Voltage / power supply frequency (V / Hz)	230/50.	400 / 50
Motor power (W)	1500/1800	
Acoustic pressure level at operator's workstation (dB(A))	84	