
GUNNAR F1

User's Manual



By GUNNAR Weissenberger AG

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General

Preface

The information contained within this manual corresponds with the status at the time of publication. The occasional misprints or errors cannot be excluded.

We reserve the right to make constructional changes or alterations at any time.

Security precautions

Before either installing, operating, maintaining, or repairing the machine, please pay attention to the following security precautions:

- ▶ Any repairs to the machine should only be carried out either by qualified personnel or by technical support authorized by GUNNAR.
 - ▶ The installation instructions as well as the guidelines for the surrounding conditions, are to be followed at all times.
 - ▶ Before operating the machine please read the User's Manual as well as the Software Manual SPT32 thoroughly. Only properly trained persons should operate the machine. Your GUNNAR distributor provides training.
 - ▶ The guarantee and security warranty expire automatically, should any unauthorized changes be made to the machine or the control unit be opened.
 - ▶ For security reasons the machine may only be operated at any one time by one individual.
 - ▶ For security reasons, whilst conducting a lengthy cutting run an operator must be in attendance at all times.
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Purpose

The GUNNAR F1 is built only for the cutting of mounting board and may only be used for this purpose.

Liability

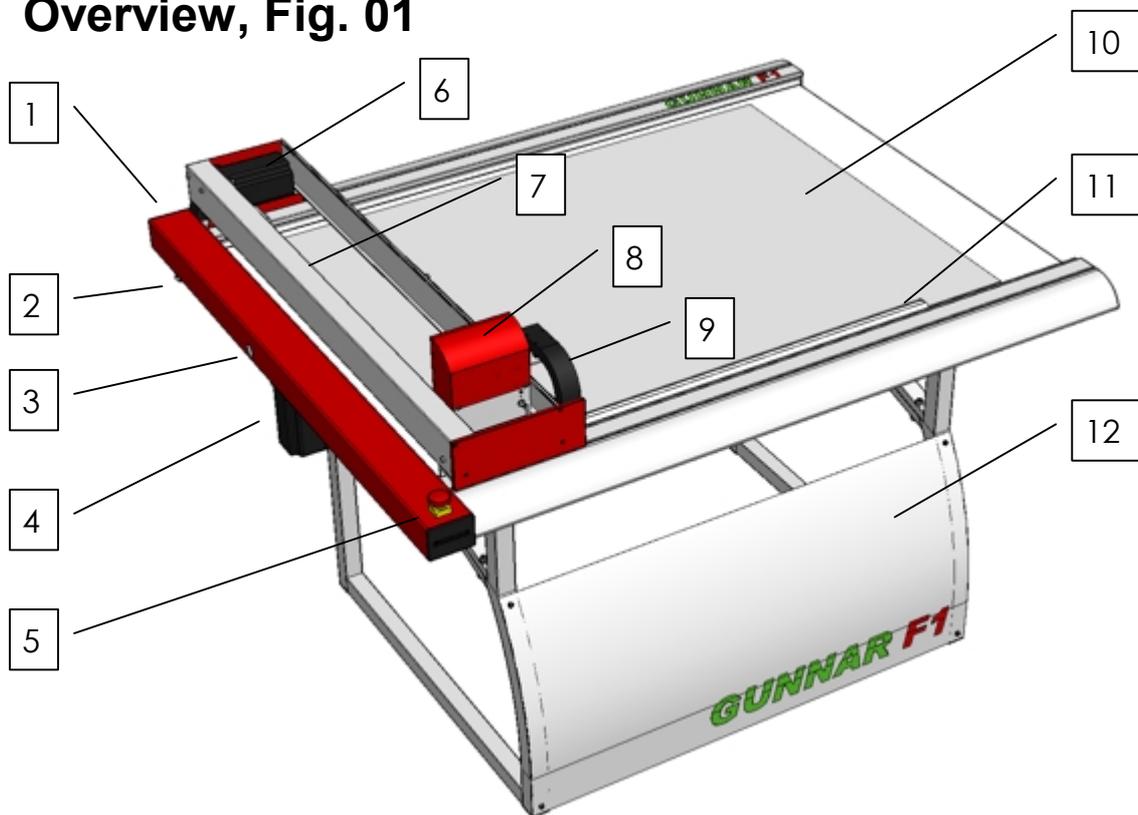
Weissenberger AG cannot be held responsible for any improper handling or use of the software, machine or machine parts. Furthermore, Weissenberger AG will not be held responsible for any loss of data. We recommend that regular backups be conducted.

Data protection

All rights remain the property of Weissenberger AG. Access by a third party to data concerning either the machine or the entire software is strictly prohibited.

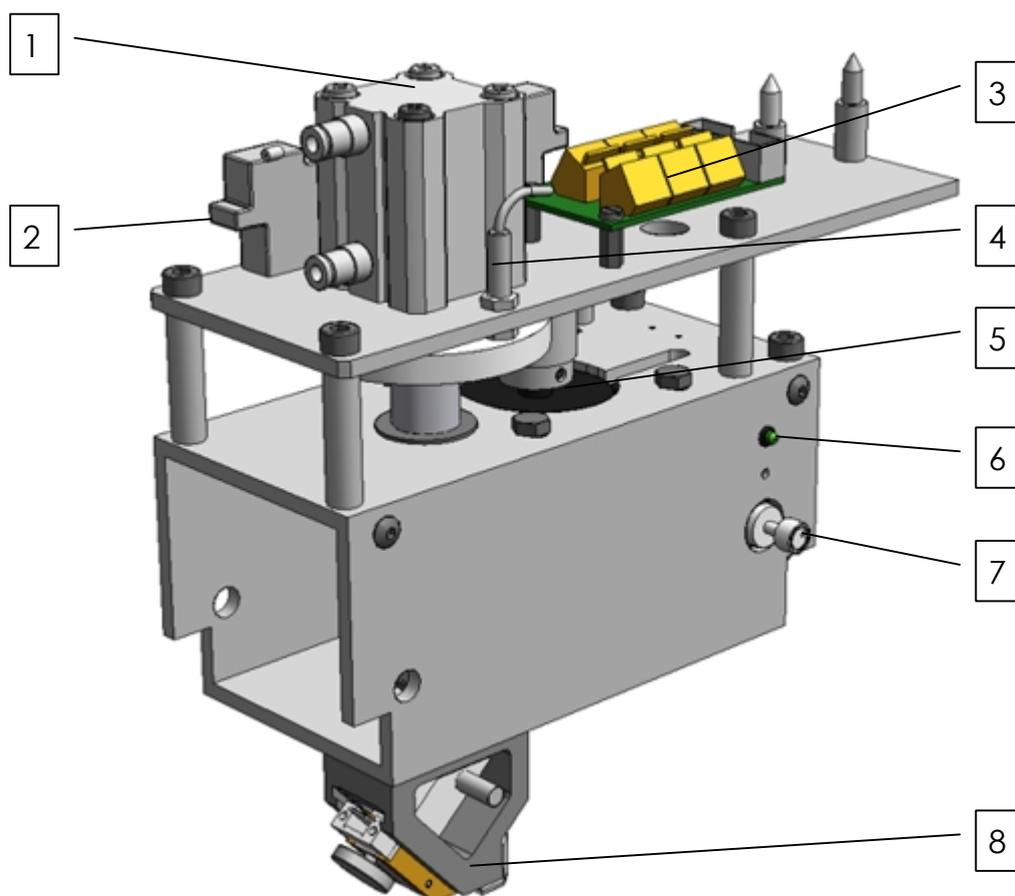
Overview

Overview, Fig. 01



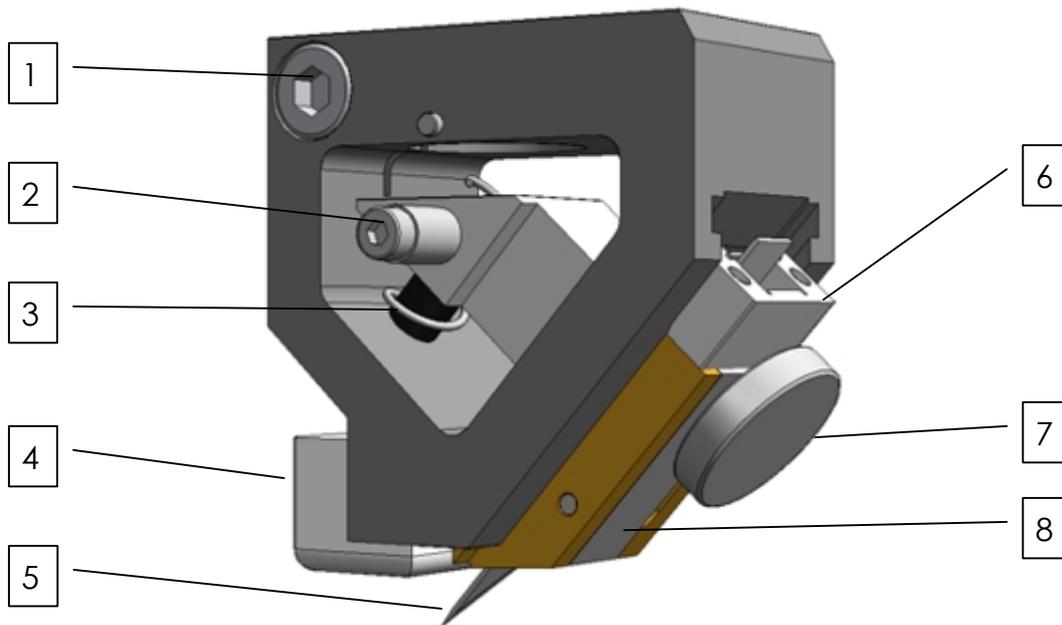
1.	Panel	7.	Y-Arm
2.	Air connection 8mm	8.	Z-Head
3.	Pressure regulator with pressure gauge	9.	Cable trunk
4.	X-Motor	10.	Work table
5.	Emergency stop button	11.	Terminal strip
6.	Y-Motor	12.	Base

Z Head, Fig.02



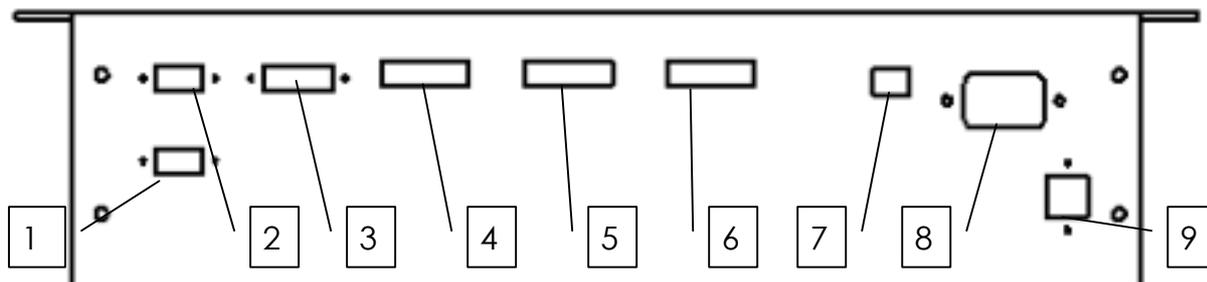
	Item	Number
1.	Pneumatic cylinder	CQ2B20-25D
2.	Solenoid valve	SY3420-5LOU-C4-Q
3.	Distribution print board	300116
4.	Z-Sensor	2400771
5.	Z-Motor	VRDM 366/50LHA
6.	Power light	MD325G3
7.	Throttle valve	A52211F-01-045
8.	Blade head	500016

Blade head, Fig.03



	Item	Number
1.	Clamp screw	Cylindrical screw M5 x 16
2.	DBD – Slide	500151
3.	Pressure spring	W59711.1203
4.	Slider	500142
5.	Blade 0.5mm thick	010012
6.	Blade holder	100086
7.	Knurled screw	500141
8.	Grip	500140

Control panel, Fig. 04



1.	COM Port RS 232	6.	Motor Z Axis
2.	I/O 1 (Clamping mechanism)	7.	Mains voltage selector
3.	I/O 2 (Head)	8.	Mains plug
4.	Motor X Axis	9.	Emergency stop
5.	Motor Y Axis		

Installation

Unpacking

1. Open the packing and remove the boxes of accessories.
2. Check the delivered items.
3. Remove the two base feet (Fig. 05 No.1), which are supplied as an option, by cutting through the cable tie.
4. Lift the front plate out of the packing (Fig. 05 No.2) – supplied as an option.
5. Remove the 4 Allen screws and keep them in a safe place. These are used to secure the base of the wooden backing wall.
6. Remove the wooden backing wall using the size 13 spanner provided.
7. The table feet are mounted on the table in such a way, so that the machine may be mounted horizontally onto the base (Fig. 05) without any further adjustments.



We recommend mounting the machine horizontally (flat) in order to achieve the best possible working conditions.



8. Mount the base according to  "Chapter – setting up the machine".

The original packing material is to be kept for the duration of the guarantee or rental.

Supplied parts

Accessories

Qty	Item	Number
1	1.3 mm Allen key	
1	2.0 mm Allen key	
1	2.5 mm Allen key	
1	3.0 mm Allen key	
1	4.0 mm Allen key	
1	6.0 mm Allen key	
1	13 mm spanner	
4	Size 10 raw plug (for wall mounting)	
1	Pneumatic hose clamp	
5	Blade holder, one of ready set up and labelled with 1.3mm	100086
200	Blade	001012
1	Data cable RS232	11.01.3618
1	Replacement clamping hose X	500118
1	Replacement clamping hose Y	500117
1	Local mains cable (according to country)	

1	User Manual machine	
1	User Manual software	
1	Software CD	

Supplied on the machine

1	Cutting base 120 x 80 (carton)	
1	Test set with template for wall mounting 120 x 80	

To be removed from packing material

4	Ø8 x 70 coach screws (SW13) for wall mounting	
4	M8 x 50 Allen screws, including 2 washers each	
4	Safety nuts	

Optional

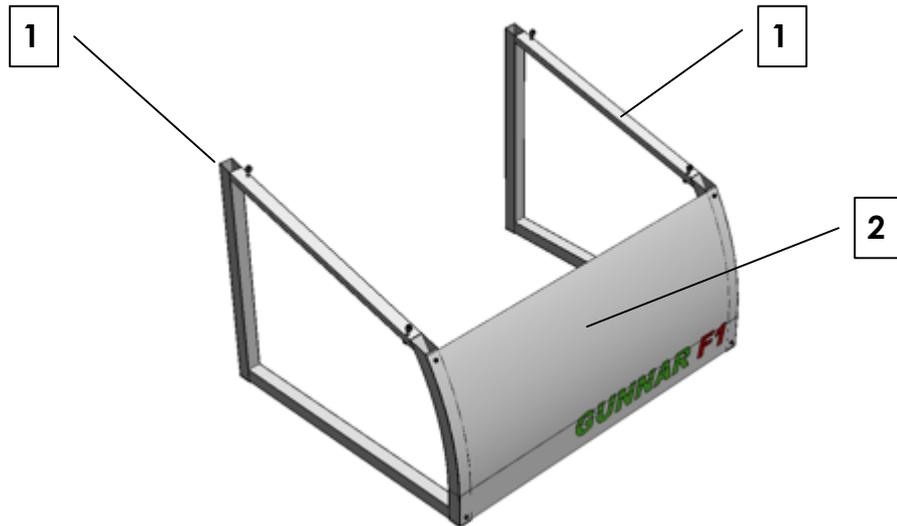
	USB → RS232 Converter	
	Protective plate 120 x 90 cm (plastic)	
	Base (See below for accessories)	500031
	Blade (for soft boards)	001013

Base (supplied with the machine)

2	Base feet	500032
1	Front plate	500183
4	M5 x 16 Allen screws including washers	

More detailed information is available through your GUNNAR dealer or via Internet:
www.gunnar-europe.com

Base, Fig. 05



	Item	Number
1.	Base feet	100058
2.	Front plate	300015

Setting up the machine

Horizontal mounting

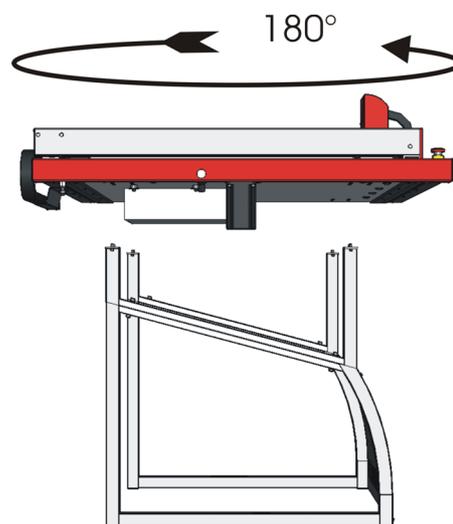
In order to achieve the best quality of cutting, ensure that the machine is placed on a solid and even floor. 2 people will be required to set up the machine.

1. After removing the wooden rear wall of the packing, leave the machine on the pallet.
2. Fit the base feet to the table feet of the machine with the same 4 Allen screws that secured the machine to the wooden rear wall of the packing. Fit the base feet in such a way, so that the curved part is at the top.
3. Secure the screws lightly.
4. Now fit the front plate using the 4 M5 x 20 Allen screws and the matching washers. Attach both of the lower screws first. Hold the plate in the middle at the top and press it evenly onto the curve of the base. Now fit both of the upper screws and tighten them lightly.
5. The machine can now be placed carefully onto the floor.
6. Place the machine in its definitive location.
7. Tighten up all the screws.
8. Adjust the level of the machine using the adjustable feet.
9. Check that the machine is now standing firmly and using a spirit level, ensure that the machine is also absolutely level and not distorted in any way.



30° slanting assembly on a base

1. After removing the wooden rear wall of the packing, leave the machine on the pallet.
2. Fit the base feet in such a way, so that the curved part is at the top. Fit the base feet to the table feet of the machine with the same 4 Allen screws that secured the machine to the wooden rear wall of the packing. Feed the screws from the top through to the bottom and into the profile. This will assist the assembly later on.
3. Tighten the screws lightly.
4. Assemble the front plate using the 4 M5 x 20 Allen screws and the matching washers. Attach both of the lower screws first. Hold the plate in the middle at the top and press it evenly onto the curve of the base. Now fit both of the upper screws and tighten them lightly.
5. The machine can now be placed carefully onto the floor.
6. Loosen and remove the 8 M4 x 12 Allen screws, which secure the table feet to the tabletop.
7. Turn the table top 180°.



8. Attach the tabletop to the feet again using the front screw holes (facing the emergency stop switch).
9. Loosen the connection between the table feet and the base feet.
Tip: Remove only the nuts, leaving the screws in the holes.
10. Lift the table together with the feet off the base and turn it 180°.
11. Fix the table feet to the base again. The tabletop is now tilted to approx. 30° and the emergency stop switch is now in the lower left corner.
12. Place the machine in its definitive location, if you have not already done so.
13. Tighten up all the screws.
14. Adjust the level of the machine using the adjustable feet.
15. Check that the machine stands firmly.

Wall assembly

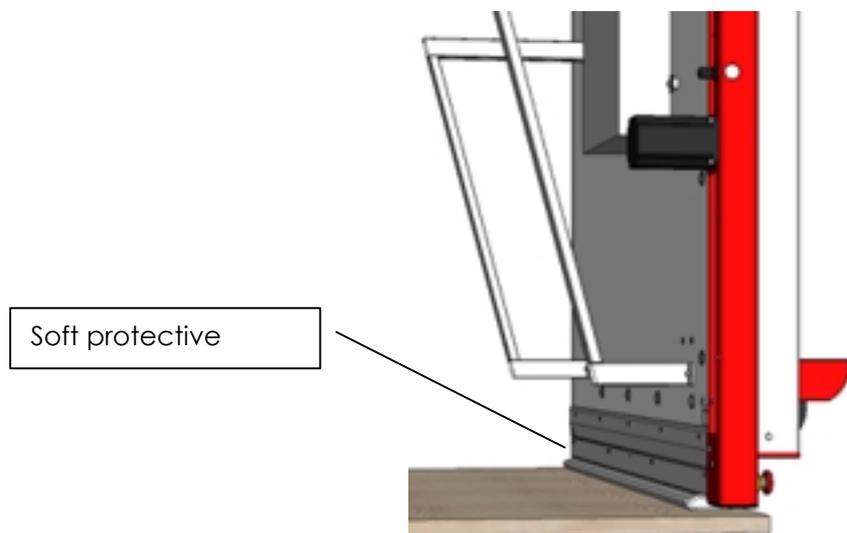
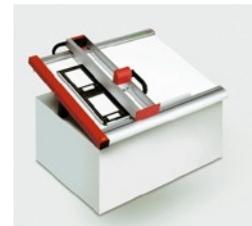
1. After removing the rear wooden packing wall, leave the machine on the palette.
2. Remove the test mount, which is lying on the machine.
3. Hold the test mount against the wall at the point where the F1 should be assembled. Ensure that the wall is solid and able to cope with the required loads. In case a spirit level is not available, measure the distance between both lower corners and the floor, in order to establish a horizontal position.
4. Measure off approximately 90 cm (recommended height) from the floor to the lower edge of the test mount and mark the 4 crosses in the corners of the mount with a pencil.
5. Drill a 10mm Ø hole to a depth of at least 50mm, in order to use the supplied raw plugs and screws. Push the raw plugs into the holes.
6. Lift the machine off the palette and place it against the wall, using the four 8 x 70 screws to attach it.
7. Tighten up the screws firmly.



Attention! Only use the „Vertical assembly“ whilst installing the software.

Table assembly

1. Remove the wooden rear packing wall. Lift the machine of the palette and place it onto the prepared table. The table requires a base area of at least 80 x 108 cm and must be on solid ground, due to the movement of the machine during operation. The recommended table height is between 70 and 80 cm. The live load is at least 75 kg.
2. Lay a soft base on the table directly in front of the table feet. Use for this purpose either a folded rug or a strip of foam rubber.
3. Place the front edge of the machine onto this covering and ensure that both table feet remain free.



4. Now turn the table feet. Loosen the 4 Allen screws on each foot and turn the feet, so that the shorter part is at the front. Use the front screw threads to fix the feet again.
5. Lift the machine again.
6. Remove the soft protective covering and place the machine onto the table.
7. Using either the wooden screws from the rear packing wall or the supplied M8 x 50 screws, fix the machine in place onto the tabletop.

Connecting up the machine

1. Connect the compressed air to the Ø8 mm connection points – see Fig. 02 No. 8. Details concerning the usage and pressure required are given in the technical data.



WARNING: In order to avoid electrocution, disconnect the machine from the mains before making any alterations to the control unit.

2. Check the mains power supply. In case the mains selector switch (Fig. 04 No. 02) has not been switched to the relevant country mains current, this should be done now.



WARNING: Setting the power to an incorrect current setting can cause irreparable damage to the control unit. Warrantee does not cover such damage.

3. Connect the machine to the mains (Fig. 04 No.1) using the supplied power cable.

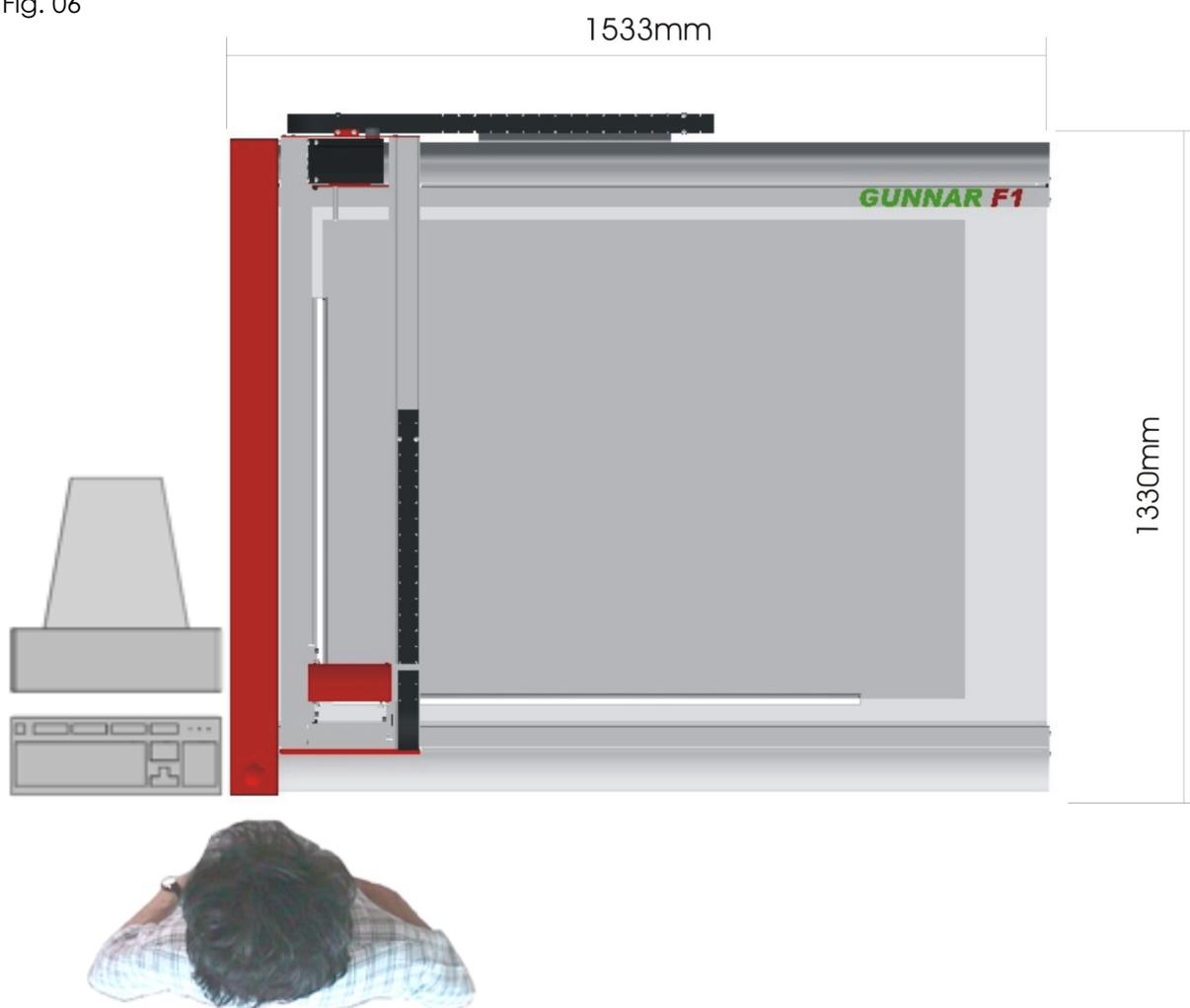
First installation SPT32 Software

1. Start up your PC.
2. Place the supplied CD-ROM in the drive.
3. If the menu does not automatically appear, proceed as follows:
4. Press the **Start** button and click on **Run**.
5. Type in **D:\autorun** (i.e. CD-ROM drive:\autorun).
6. Press **Enter** to confirm.
7. Select **Software** from the main menu, followed by **SPT32**.
8. Follow the instructions given by the setup program.
9. Please pay attention to the Windows settings  "Chapter, PC connection / Settings".

Technical data

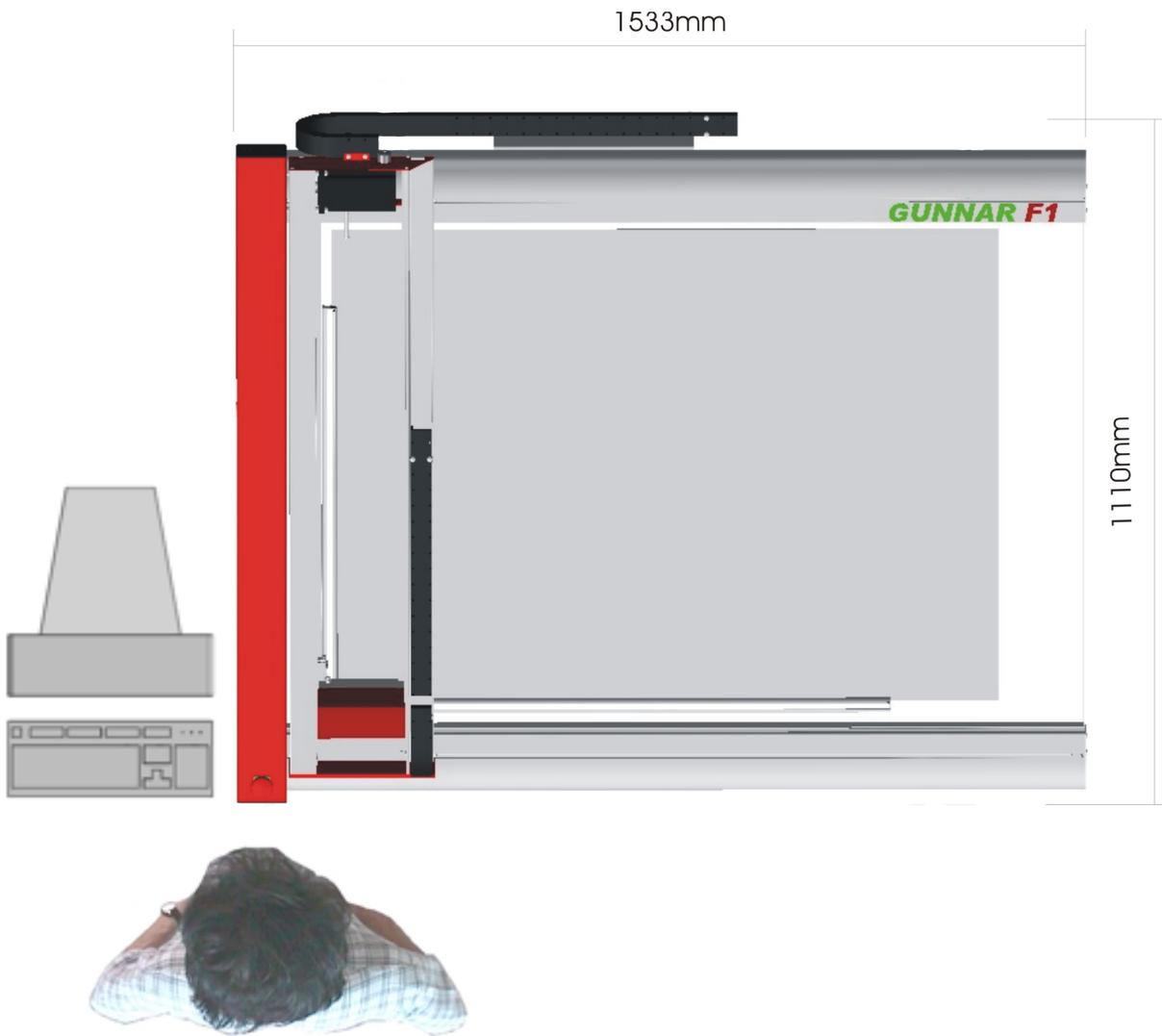
Space requirement, F1-M horizontal

Fig. 06



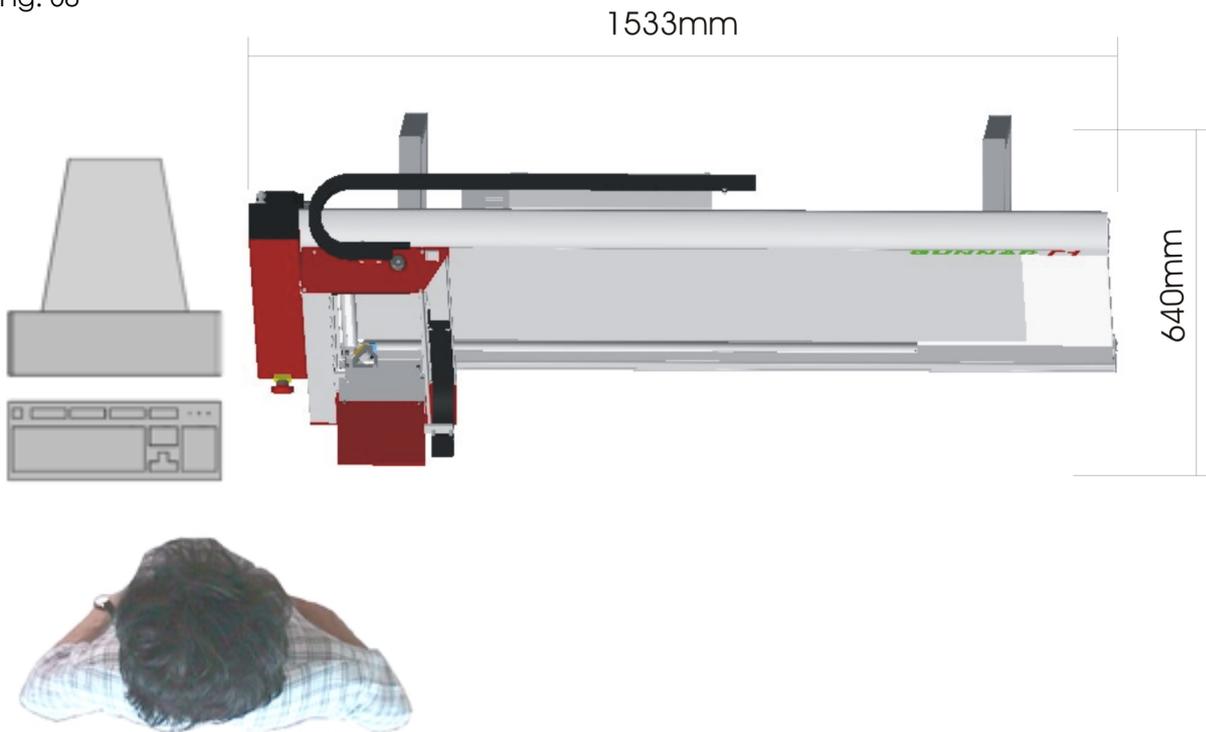
Space requirement, F1-M tilted

Fig. 07



Space requirement, F1 vertical

Fig. 08



Sizes and weights

	GUNNAR F1 M	GUNNAR F1 XL
Max. size of carton	1200 x 900mm 47.2 x 35.4 "	
Dimensions W/D/H (Size when on horizontal base)	1533/1284/1115mm 60.4/50.6/43.9 "	
Weight/ Base	65/ 15 kg	

Electrical connection

A prerequisite for connecting the GUNNAR F1 is a faultless earthed electrical installation (GND) of 100V, 115V or 230V.

Power supply

Mains power	230V
	115V
	100V
Power consumption	230V 1.3A
	115V 2.8A
	100V 3.2A

PC connection / Settings

The GUNNAR F1 must be connected to the PC COM port using the AT link cable already connected to the machine.

The PC should have at least one free COM port fitted with a FIFO UART 16550 compatible chipset, and it is desirable, that COM1 be used for this purpose. Alternatively the USB connection can be used, using a converter connected to the controller. (A converter can be ordered from your GUNNAR dealer).

Only converters supplied by us can be covered under guarantee.

Operating system	Windows 95/98, ME, XP, NT4.0 oder 2000™
PC	min. Pentium 400 (or similar CPU)
RAM	min. 64Mb
CD ROM	min. 8x Speed
Screen resolution	1024 x 768 Pixel

Pneumatic connection

min. supply pressure (dry*)	0,6 MPa (90psi)
max. compressed air consumption	20L / min

* A fully operational water separator integrated within the pneumatic system is a prerequisite.

Environmental conditions

Environment temperature	10 - 35 °C	50 - 95 °F
Relative air humidity	30 - 70 %	

The work area in the vicinity of the machine should be kept free from dust. Dust and dirt must not get into the electronics (see conditions of guarantee).



WARNING: The machine must be situated such, so that it is protected from spray water at all times. Furthermore, explosive dust-air or gas-air mixtures must be kept clear of the machine.

Cutting data

max. cutting speed	500mm (20 Inch) / second
max. cutting carton thickness	3.5 mm (0.14 Inch)
min. cutting radius*	0.5 cm (0.2 Inch)

*This is the smallest radius, which the machine can perform. A governing factor for the quality of cut is the carton composition, the condition of the blade and a correct machine setting.



CAUTION: The cutting speed must be reduced when using either thick or particularly hard carton.

Using the GUNNAR F1

SPT32 Starting the software

Follow the following steps when starting the SPT32 software:

1. Turn on the PC.
2. Wait until the operating system is running normally.
3. Switch on the GUNNAR F1 by turning the main switch/emergency switch (Fig. 02 No. 05) to the right (clockwise) to release it.
4. Click on **Start**.
5. **Programs**.
6. **SPT32 (Program group)**
7. **SPT32**.

Please refer to the SPT32 Help for using and registering the SPT32 software, which can be accessed either by pressing F1 or the direct help "?". This can also be achieved by clicking Help in the SPT32 program group, if the SPT32 software is not running at the time. In addition, all manuals (Help SPT32 and User Manual) can be found on the GUNNAR CD-ROM. In case your own copy of the CD was missing from the delivery, please request the most recent version from your GUNNAR dealer.

The current manuals may also be downloaded as printable PDF format from our website www.gunnar-f1.com. You will need to have Adobe Acrobat Reader installed, before you can read a PDF format. In order to download the manuals use the same password as for the software. A password is assigned once the software has been registered.

Turning off

Turn off the system using the following steps:

1. Close SPT32 by pressing "Alt" + "F4" or **File - Exit**.
2. Switch off the GUNNAR F1 by pressing down the main switch/emergency stop button (Fig. 01 No.5).
3. Run the operating system's shutting down procedure.
4. Turn off the PC
5. If the GUNNAR F1 is not going to be used for a longer period of time, then the compressed air should also be turned off.

Inserting a carton

Always use an underlay when cutting a carton. We recommend using an underlay of 1.3 mm thickness. Ideally use the same material as an underlay, as that which is to be cut. If this isn't possible, then it is preferable to use a carton of a harder quality. Please be aware, that differing materials affect the wear and tear on the blade in different ways.



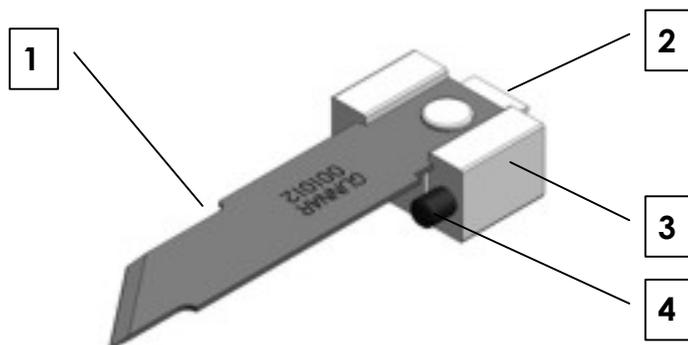
Tip: In order to avoid the underlay or mat slipping, then this can be fixed using spray glue or double-sided tape.

Note: Use the table protector, which is available as an option, in order to protect the tabletop. Repair costs incurred for damage made to the tabletop of rented machines, will be charged separately.

Changing a blade

When SPT32 is running, pressing the keys "Ctrl" + "F5" causes the Z Head to move into the changing blade position, making the knurled screw accessible (Fig. 04 No. 01). Turning the screw in an anticlockwise direction will loosen the blade. The blade and blade holder (Fig. 04 No. 04) can now be taken out.

Fig. 09



1.	Blade	3.	Blade holder
2.	Lug	4.	Depth setting screw

Pressing the lug (Fig. 09 No. 2) on the blade holder will permit the blade to be taken out of the blade holder. (Fig. 09 No. 3) and replaced with a new one. Pay attention that the blade is placed correctly, as shown Fig. 09 (the number is visible).

Ensure that when putting in a new blade, the blade holder is pressed down and then secure the knurled screw firmly (Fig. 03 No. 7).

Machine settings

Configuration Assistant

The individual settings are described in detail in the Settings Wizard (see  "Configuration Assistant"). To start the Configuration Assistant, click on **Start – Programs – SPT32**. The **Configuration Assistant** is in the SPT32 menu. Click on this to start the software, which will go through the settings procedure step by step.

Compressed air setting

Blade head

The compressed air setting for the blade head can be set with the pressure regulator (Fig. 01 No. 3). The default setting is 0,35 MPa (Megapassqualle). If during the cutting process you notice that pressure lines are being left on the work, then the blade head pressure can be reduced to approx. 0,25 MPa. If whilst cutting very thick and hard material the blade does not cut all the way through at the beginning of the cut, the pressure can be increased to maximum 0,5 MPa.

Hose clamping

The compressed air setting for the hose clamping system is preset in the factory and should not be altered. The default setting is 0,4 MPa. If for some reason an alteration becomes necessary, please contact your GUNNAR dealer.

Maintenance

Cleaning



WARNING: All cleaning and maintenance work must be conducted with the machine switched off and the mains cable unplugged. The machine may only be „dry“ cleaned.

General cleansing

The cleansing of the GUNNAR F1 is an intrinsic part of the maintenance procedure. The better the machine is cleaned, the higher the life expectation. Generally, the GUNNAR F1 should be kept free from dust and cartoon off cuts or debris. This is achieved at best by using a vacuum cleaner. Using air to blow away dirt and dust should be **solely** restricted to the cleaning of the **guides**.



Warning: When blowing, always direct the air current away from the guide frame. Dirt could otherwise collect in the bearings subsequently causing damage.

Cleaning the tabletop

In addition, the tabletop may be cleaned using a damp cloth.

Do not use any cleansing fluids.

Oiling

The plastic parts, which are used to guide the cylinder shaft, must be periodically oiled after 15'000 cuts.

1. Remove the Z Head cover
2. Clean the steel shaft
3. Apply grease lightly to the shaft (Recommendation: Molykote DX grease). The grease should not still be visible, but should rather be a thin film of grease.
4. Move the blade head several times up and down in order to spread the grease evenly along the shaft.
5. Replace the Z Head cover.

Replacement of parts



WARNING: All cleaning and maintenance work must be conducted with the machine switched off and the mains cable unplugged.

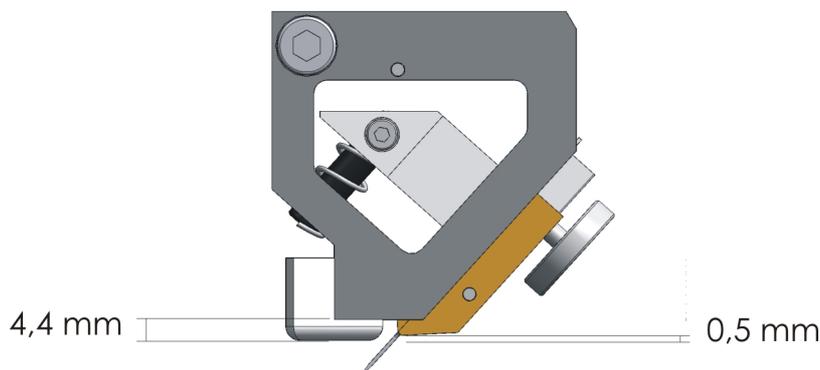
Blade head

1. Turn the machine off.
2. Turn the blade head by hand until you can undo the clamp screw using the supplied Allen key (Fig. 03 No. 08).
3. Turn on the machine to ensure that that the blade head is in the upper position (SPT32 does not have to be started).
4. Pull the blade head down and put in the new one.
5. Tighten up the clamp screw again



NOTE: A mounting board's margin and cutout measurements may become altered whilst changing the blade head. Check the measurements and set them up again if necessary.

Fig. 10



1	Pressure spring	W59711.1203
2	Depth setting screw	M4 x 8
3	Slider	500142

Slider

If slider's **minimum thickness** at the base reaches **4.4mm** (Fig. 10), then it must be replaced as follows:

1. Remove the blade head as described in  "Chapter, Blade head".
2. Loosen the screw in the glider (Fig. 10 No. 2).
3. Remove the glider and secure a replacement in place.
4. Adjust the depth setting screw (Fig. 10 No. 1) in such a way, that the measurement of 0.5mm is maintained - see Setting Wizard
5. Tighten up the blade head again.



NOTE: A mounting board's margin and cutout measurements may become altered whilst changing the slider. Check the measurements and set them up again if necessary.

Pressure spring on cutting head

Please note, that it is **not necessary** to disassemble the blade head before replacing the pressure.

The pressure spring is subject to wear and tear (Fig. 10 No. 3). Follow the steps below when it needs to be replaced:

1. Remove the blade head ( "Chapter, Blade head").
2. Unscrew the depth setting screw (Fig. 10 No. 3) far enough, so that the spring is free.
3. Take out the old spring sideways and replace it with a new one in the same way. Make sure that the spring sits properly in the recess intended for it.
4. Turn the depth setting screw until roughly at the original position.
5. Assemble the blade head again ( "Chapter, Blade head").
6. Check the slide height and adjust if necessary.

Repairs

Most repairs are dealt with by simply replacing parts, which customers can do themselves. If, however, either a service or bigger repair is necessary, then you may request for this to be done by a GUNNAR technician. Please contact your authorised GUNNAR dealer. Details concerning rental machines can be found in the rental contract.

Guarantee

Conditions of guarantee

The GUNNAR F1 is covered by guarantee for 1 year from the date of delivery, or a maximum of 50'000 mounting board cuts (cut outs). The guarantee covers faults caused by faulty materials or manufacturing.

Damage caused by careless and improper use of the equipment is not covered by this guarantee.

Damage caused by a build up of dirt or increased levels of dust in the electronics are not covered by this guarantee.

Equally, that which, in our judgment, constitutes to be normal wear and tear is not covered by this guarantee. In this respect, please note our terms of business. We will carry the costs for repairs carried out within the period of guarantee and after due consultation with us. Details concerning rental machines are to be found in the rental contract.

