GUNNAR 601

User Manual

By GUNNAR Weissenberger AG

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Contents

General information

Introduction

The information contained in this Document corresponds to the latest developments at the time of publication. Printing errors and mistakes cannot be excluded.

We reserve the right to make design modifications or to deviate from the designs shown.

Safety advice

Please read the following safety advice before installing, operating, servicing or repairing the machine.

- The installation, servicing and repair of the machine should be carried out solely by a GUNNAR trained service engineer.

- Care should be taken to observe the installation instruction for the machine and in particular the ambient conditions.

- The machine should be operated by trained personnel only. Your GUNNAR distributor will provide training .

- Any unauthorized modification or opening of the controller will automatically render the product guarantee and the safety guarantee invalid.

- Contact your GUNNAR representative before installing accessories.

- For Security reasons the machine should be served one person only.

- Even with long lasting working procedures, the operator always has to be present because of security.

Intended purpose

The 601 has been designed exclusively to cut cardboard for mounts.

Liability

Weissenberger AG will not assume any product liability in the event of incorrect handling or use of the Software, the machine or its components. Weissenberger AG is not responsible for any loss of data. We recommend that that you save your data in a backup file on a regular basis.

Data protection

Weissenberger AG is owner and holder of all the rights. Neither the machine data nor any of the Software may be made available to third parties.

Overview

Overview, Fig .01
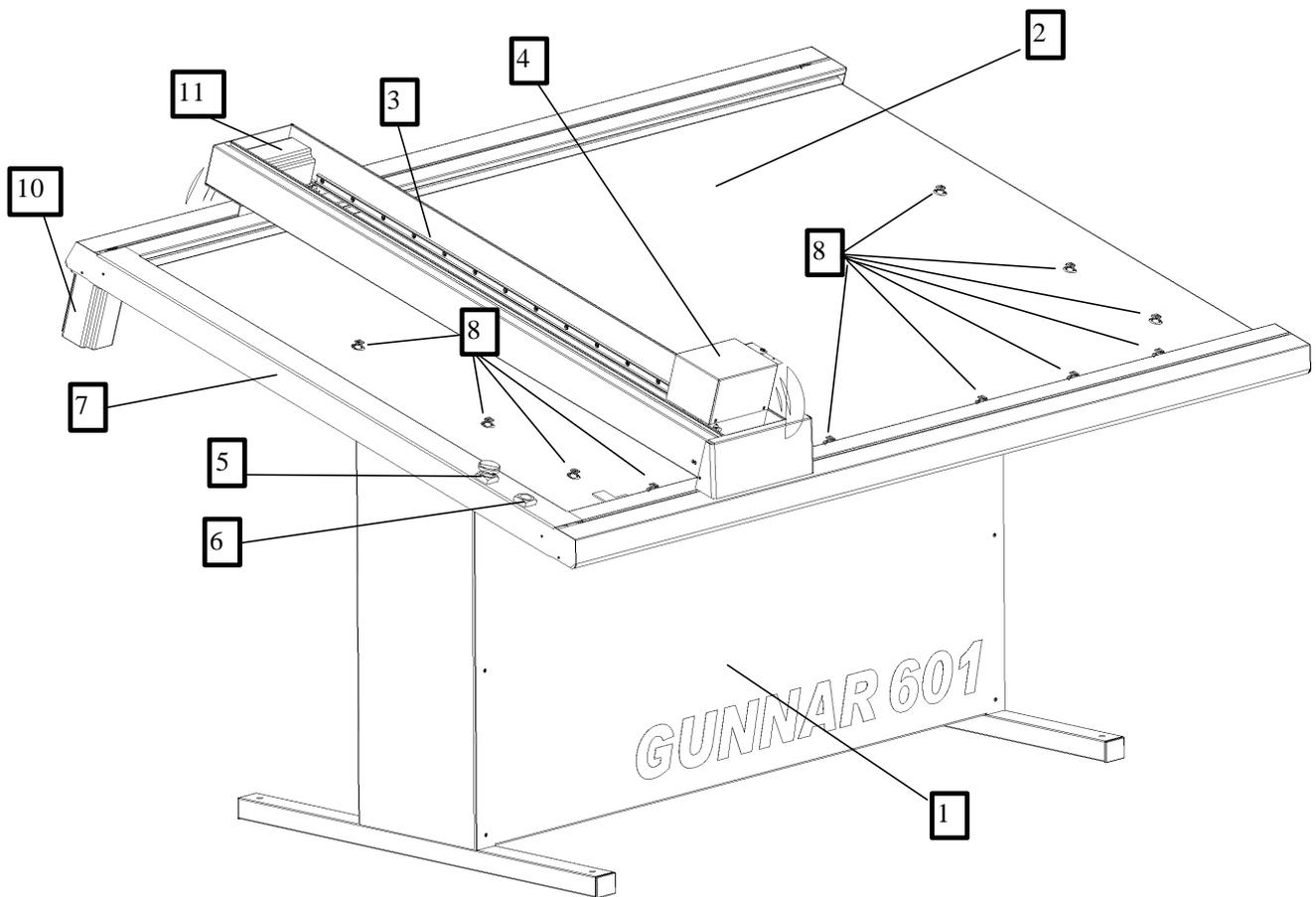
1. Stand
2. Table
3. Y-Arm
4. Z-Head
5. Emergency Stop
6. Start Button

7. Panel
8. Clamping Knobs
9. Cablechain
10. X-Motor
11. Y-Motor

Z-Head Fig.02

Article		Number
1.	Bladehead 45°	300043
2.	Bladehead 90°	300042
3.	Cylinder for 90°	SMC_CQSB_20_25D
4.	Electrovalve	SY3420 – 5MOU – C4 - Q
5.	Electrovalve	VZ110 – 5MOZ – M5
6.	Z-Sensor	MK11-1A71C-500W
7.	One way restrictor	SMC_AS1201F-M5-04
8.	Z Motor	VRDM366-50LHA
9.	Connector Board	300116
10.	Electrovalve	SY3120 – 5MOU – C4 - Q

Bladehead 45° Fig.03

Min. 4,4mm
(see Page 24)

0.7mm
(see Page 24)
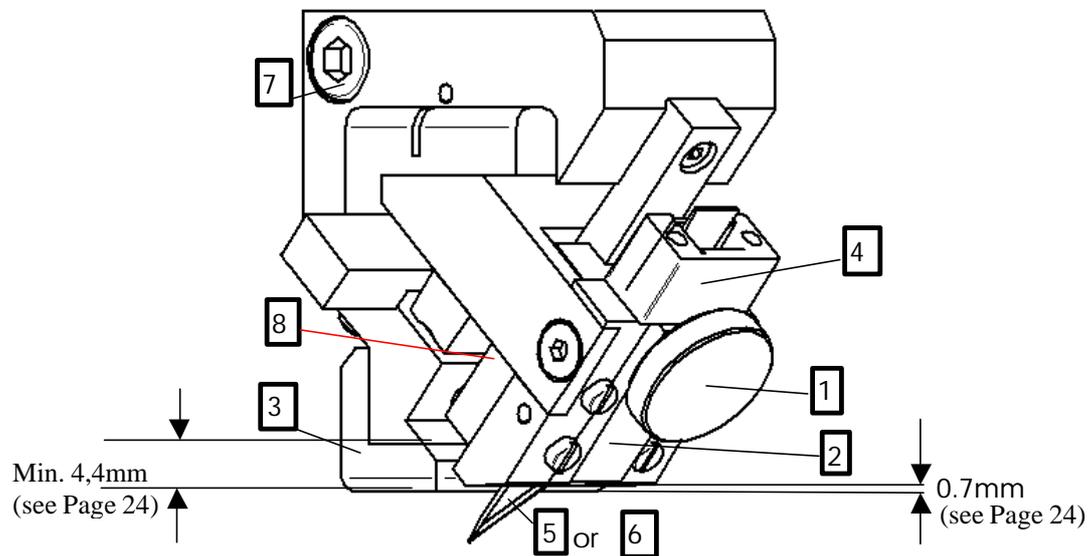
	Article	Number
1.	Knurled Screw	100058
2.	Clamping part	300015
3.	Sliding part	300011
4.	Blade Holder	100086
5.	Blade thick	20011
6.	Blade Thin	20012
7.	Locking Screw	Allen screw M5 x 16
8.	Pressure spring	Feder 44_2_3

Bladehead 90° Fig. 04
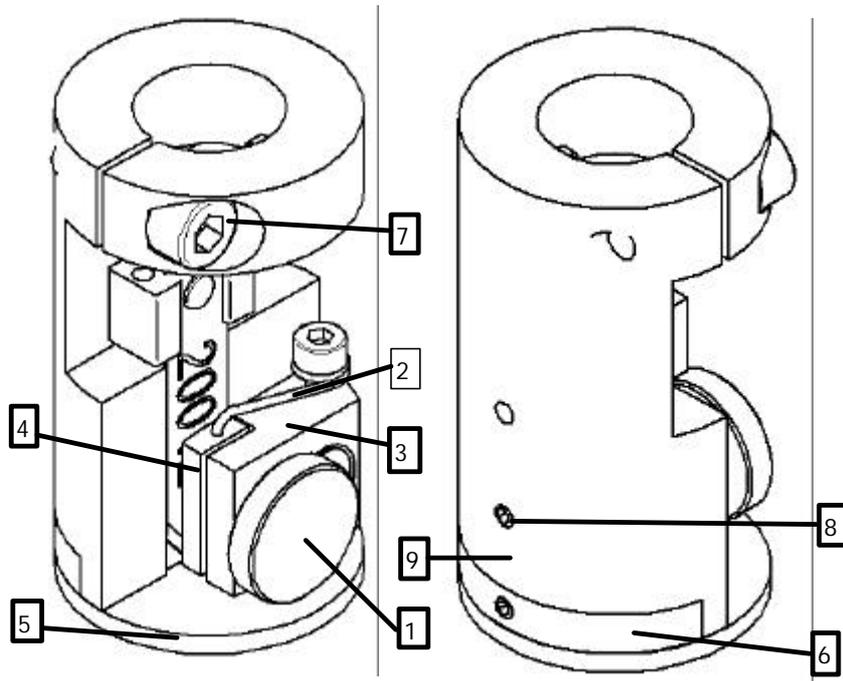
	Article	Number
1.	Knurled Screw	300023
2.	Spring	300128
3.	Clamping arm	300013
4.	Clamping plate	300014
5.	Sliding part 90°	300012
6.	Sliding part holder 90°	300114
7.	Locking screw	Allen screw M5 x 16
8.	Setscrew	M3 x 4
9.	Sliding part axis	300115

Controller Fig.05
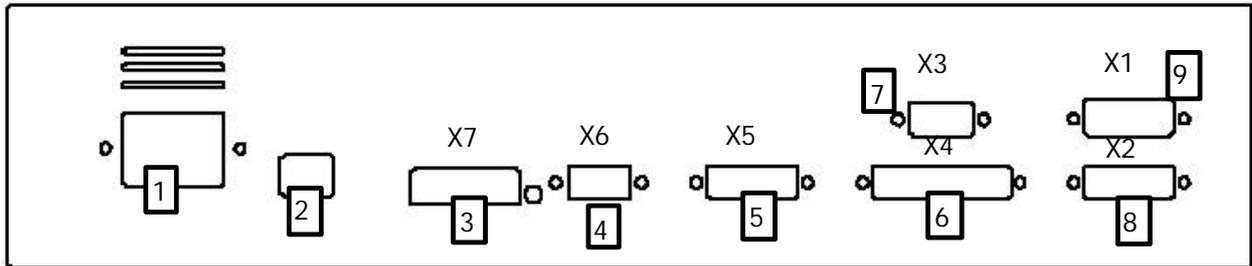
1.   Socket for current
2.   Power supply selection switch
3.   X7 = Motor Z-axis
4.   X6 = Signals stand
5.   X5 = Z-Head
6.   X4 = reserve

7.   X3 = Comport – PC RS232
8.   X2 = Y-axis
9.   X1 = X-axis

Maintenance unit Fig.06
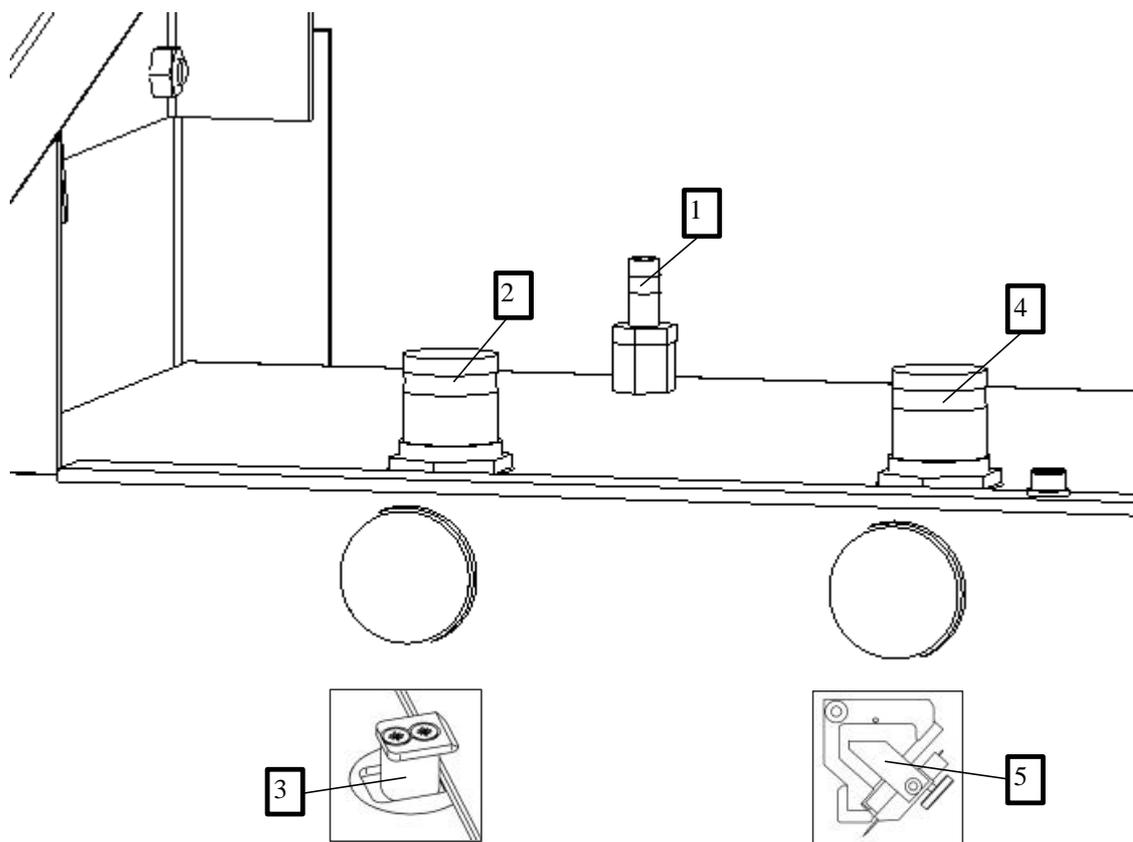
Article	Number
1. Airhose Connection	
2. Pressure Reduction w. Manometer f. clamps	TA26910
3. Labeling for Clamping system	
4. Pressure Reduction w. Manometer f. head	TA26910
5. Labeling for Bladehead	

Installation

Supplied with machine

Article	Number
User Manual	
Allen key 1.3 mm	
Allen key 2 mm	
Allen key 4 mm	
Allen key 5 mm	
Allen key 6 mm	
10 Blade holder	100086
200 Blade 20012 thin	20012
Machine Adjustment disk	
1 Installation CD	
1Test mat	

Unpacking and set up

In order to achieve the best possible cutting Quality, make sure that the machine is placed on an even and strong ground (preferably concrete). The set up and the Installation should be carried out solely by a GUNNAR trained service engineer.

1. Open the machine packaging and remove the box with accessories.

2. Check the scope of delivery.

3. Lift the 2 pre-assembled side parts (Fig.08 No.2 and 3)out of the box.

4. Adjust the angle of the table at both sideparts (0°, 8° or 16°).see📖"Chapter "**Adjusting the table angle''.**

5. Stick on the Rubber buffer at the legs.

6. Align the sideparts (Fig.08 No.2 and 3)at the location where the machine will finnaly be placed.

7. Remove the intermediate carton layer.

8. Lift the front –(Fig.08 No.4) and the back part of the stand (Fig.08 No.1) out of the box.

9. Assemble the backpart (Fig.08 No.1) and the sideparts (Fig.08 No.2 and 3) with the provided allen screws M6 x 12. Just tighten the screws slightly.

10. Lift the Table out of the box directly onto the stand and fix it with the M6 x 20 screws.

11. Connect the machine as described in 📖"Chapter **Connecting up the 601**page 12.

12. Mount the front cover (Fig. 08 No.4).

13. Tighten all the screws on the machine stand.

14. Check now whether the machine has a strong stand and test with help of a spirit level if the machine table is absolutely even.

15. The original packaging must be kept for the duration of the guarantee period.

Adjusting the table angle

Fig.07

0°

8°

16°
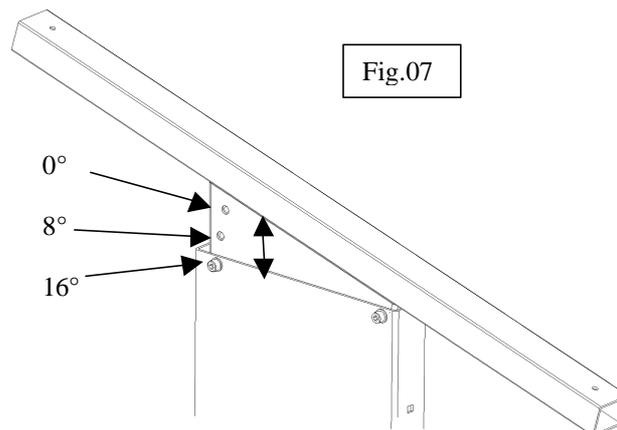
1. Loose the screw (M8 x 16)on the front side of the sidepart.

2. Remove the screw (M8 x 16)on the backside of the side part.

3. Move the profile in the position where you want to adjust the table. The whole on top is 0° angle. The middle one for 8° and the bottom one for 16°. **Please note that the best results can be reached with an absolute horizontal table, that means 0° table angle.**

4. Tighten the the screw on the front and on the backside of the side part.

5. If the table is allready mounted on the stand, loose both screws on the front side (left and right side of the table).

6. Remove both screws on the backside of the side part.

7. Lift the table from the backside in this position you want to work with (0°, 8° or 16°).

8. Insert the screws on the backside into the accordingly wholes.

9. Tighten all 4 screws.

Stand, Fig 08
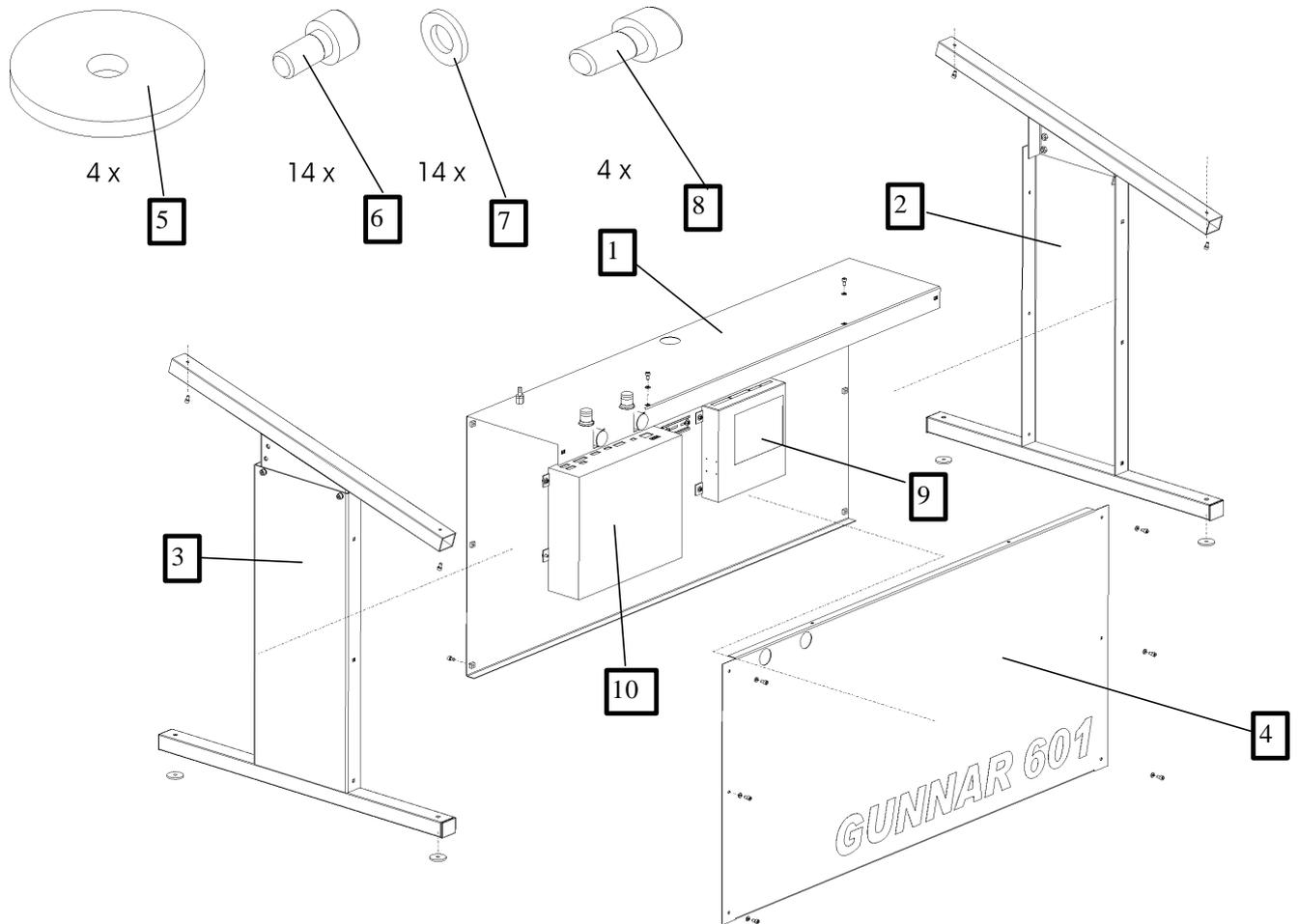
	Article	Number
1.	Stand – back part	105179
2.	Side part right	105196
3.	Side part left	105195
4.	Stand - Frontcover	105180
5.	Rubber-buffer	
6.	Allen Screw M6 x 12	
7.	Washer	DIN125-1 A-6,4
8.	Allen screw M6 x 20	
9.	Power Drive (WDM3)	
10.	Controller	

Installation of the machine

Connecting up the 601

Warning: An incorrect wireing can destroy the controller or cause damages at the machine. Such damage is not covered by the guarantee.

1. Connect the Z-motor cable (green plug) marked with **Z**, to the Controller (Fig.08 No.10)(Fig.05 No.03). **Attention! A wrong Connection of the Z-motor cable will damage the Z-motor.**

2. Connect the X- and Y-motor cable (green plugs) marked with **X** and **Y** to the WDM3 (Fig. 08 No.09).

3. Plug in the blue ribboncable with the D-Sub plug to the Controller (Fig.08 No.10)(Fig.05 No05).

4. The cable for the Start button has to be connected with the white plug in the Cabelchannel above the Controller.

5. Connect the black 6mm air hose with the Pressure Reduction (Fig.06 No.04)

6. Connect the clear and the black 4mm air hoses to the Valves beside the Controller. **NB: COE-mode will not work if the hoses are mixed up.**

7. Connect the five-wire cable like on the diagram below.
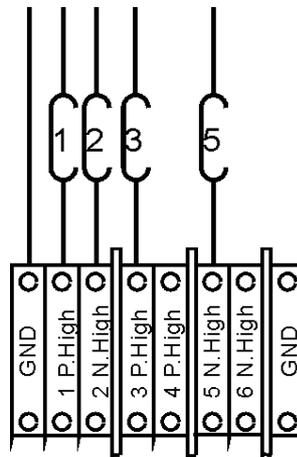
8. Put the cables, wires and hoses carefully into the cable channel and mout the cover of the channel.

9. Connect the compressed air to the Ø8 mm connection sleeve (see Fig.06 No.2). The consumption and the necessary pressure are specified in the technical data.

10. Check the main voltage at the Controller and the Powerdrive. If the main voltage switch (Fig.05 No.2) is not already set to the standard voltage for your country, then change it now.

NB: If the input voltage is incorrectly set, this can destroy the controller. Such damage is not covered by the guarantee.

11. Connect the the main power supply (Fig.05 No.1). using the main cable, article No. 12.03.6510, which is supplied (the plug required for your country must be affixed by a qualified person).

First Installation of the SPT32 Software

1. Start your PC.

2. Insert the SPT32 CD ROM into CD ROM drive.

3. If the program doesn't start automatically, do as follows:

4. Press **Start** button an **Run.**

5. Type in **D:\autorun.exe** (or name of CD ROM drive:\autorun.exe).

6. Press **Enter.**

7. In the main menu select **Software** and then **SPT32.**

8. Follow the instructions in the setup program.

9. The setup program will ask for **"Machine Adjustment"** . Please insert this disk into floppy drive A:.

10. Please configure Windows 📖"Chapter, PC connection / settings".

Update SPT32 Software

1. Start your PC.

2. Insert SPT32 Installationdisk 1. into drive A: or CD ROM into CD ROM drive and do as follows:

3. Press **Start** button.

4. **Run.**

5. Type in **A:\setup** (or name of CD ROM drive:\setup).

6. **Enter.**

7. Follow the instructions in the setup program.

8. **During the installation, setup will ask for the "Machine Adjustment" disk. Do not fit the disk into drive A:, just click OK. (If you do insert a disk you will overwrite the actual machine setting)**

9. **The SPT32 readme.txt file in the "SPT32" directory contains special instructions. This informative text file should be read once the installation is completed.**

Technical Data

Space Requirements, 601XL

The 601 is operated from the front.

Fig. 07

1992 mm

1410 mm

PC
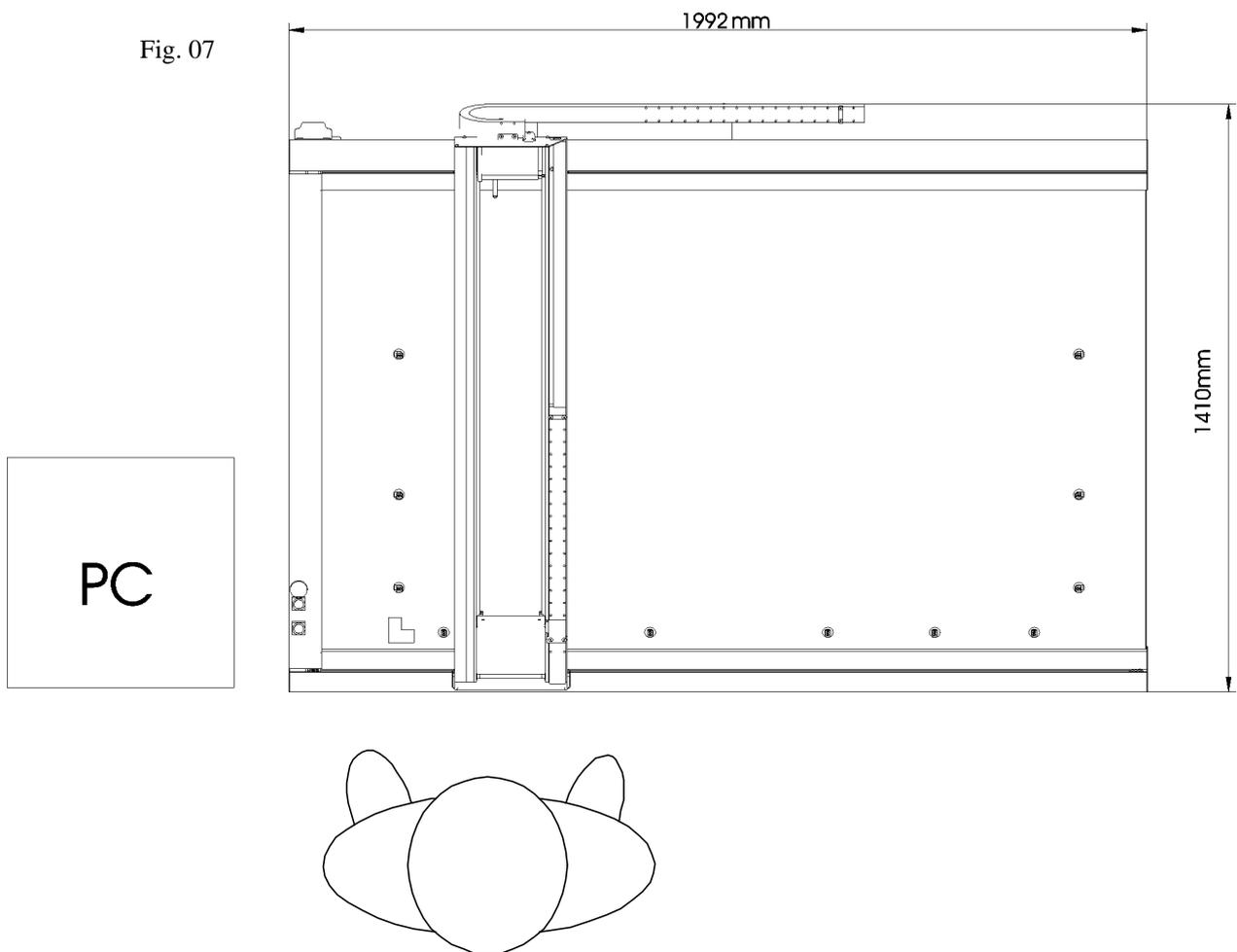
Measurement and Weight

	GUNNAR 601 XL
Max. Matboard size	1560 x 1042mm
	61.40 x 41.00 "
Dimensions L/W/H	1992/1410/1130 mm
	78.4/55.5/44.5 "
Weight	135 Kg
	298 lbs

Electrical connection

The 601 requires a flawless electrical installation with an a ground (GND) before it can be connected.

Power supply

NB: The power level must not fall short at any circumstances (not even for short terms).

Power supply voltage	230V +/- 13%
	115V +/- 13%
Power consumption	230V 3A
	115V 6A

(Check also „Connecting up the 601" page 12)

PC connection / settings

The PC must have at least one free COM interface with a FIFO UART 16550 compatible module. Preferably this should be COM1. Plug in the AT Link cable which is already connected to the machine.

Operating system: Windows 95/98, Windows ME, Windows XP, NT4.0 or Win2000™.

PC	min. Pentium 400 (or comparable CPU)
RAM	min. 32Mb
CD ROM	min. 4x Speed
Screen resolution	min. 800 x 600 Pixels
	recommended 1024 x 768

Pneumatic connection

min. Line pressure (dry)	6 Bar (90psi)
max. compressed air consumption	40L / min

Environment

Ambient temperature	10 - 35 °C / 50 - 95 °F
Relative humidity	30 - 70 %

The location of the machine must be held as dust-free as possible. Neither dust nor other contaminations should reach the electronics-parts (see Guarantee provisions).

> The machine must be free of water contact. Furthermore, no explosive dust – air or gas – air mixture should reach the machine.

Cutting data

max. cutting speed	625 mm (25 Inch) / Second
max. cutable matboard thickness	3.5 mm (0.14 Inch)
min. cutting radius*	0.5 cm (0.2 Inch)

*This is the smallest Radius the machine is able to cut. But the constitution of the matboard and the condition of the blade influences the quality of the cutting as well as the perfect machine adjustment.

Operating the GUNNAR 601

Starting the SPT32 Software

Follow the steps below to start the SPT32 Software

1. Start the PC.

2. Wait until your operating system is started completely.

3. Switch on the GUNNAR 601 by turning the Main-switch/Emergency stop (Fig.01 No.6) right to get loose.

4. Click the **Start** button.

5. Then open **Programs**

6. **SPT32 (Programgroup)**

7. **SPT32 (Icon)**

Operating instructions and register information for the SPT32 Software may be found in the SPT32 Help manual delivered with the machine or in the Help program. This can be started from inside SPT32 by pressing the "F1" key, or "?" for direct help. Without SPT32, the help program can be started from within the SPT32 program group. Also you can find all the manuals (Help, Tips&Tricks, Configuration Assistant and User Manual) on our GUNNAR CD-ROM. If your personal copy is not with the machine ask your GUNNAR Dealer for a current one.

You can download the manuals from our Homepage, www.gunnar-europe.com in a printable PDF format. Please note that Adobe Acrobat Reader is necessary to read the manuals. Use the same password as for the Softwaredownload.

Switching off the system

To switch off the system, proceed as follows:

1. To instantly exit SPT32 press the "Alt" + "F4" keys or via the **menu – file - Exit**. "SPT32 Help, Chapter Switching off".

2. Switch off your GUNNAR 601 by pressing the Main switch / Emergency stop (Fig.01 No.6)

3. Shut down your operating system.

4. Switch off the PC.

5. If the 601 is not used for a longer period, the compressed air should similarly be switched off and the machine covered.

Insert cardboard

To cut a cardboard you must use underlay sheets. We recommend to use a sheet with a thickness of 1.3mm. Normally, it is ideal to use the same material as the material to be cut. If that is not possible, a harder carton is should be used. Please note, different materials influences the wear of the knife in different manner.

Tip: Your working procedure will be easier if you stick the underlay sheeton the working table, for example with a glue double-sided ATG tape.

Changing blade

When SPT32 is running, press the "Ctrl" + "F5" keys to have the blade heads moved into the "change blade " position, making the clamping screw (Fig.03 No.1 and Fig.04 No.1) accessible. Turn the clamping screw anti-clockwise to release the blade. The blade can now be pulled out with the blade holder (Fig.03 No.2).

Fig. 09
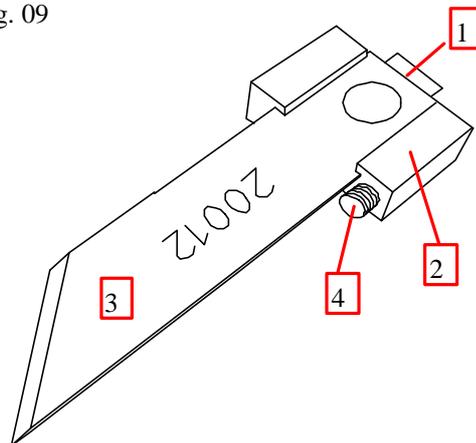
1. Tongue
2. Blade holder
3. Blade
4. Setscrew

Press on the **tongue** (Fig.09 No.1) on the blade holder to pull the blade out and insert a new one.

Make sure that the blade holder will be pushed down when you insert the blade, then tighten the clamping screw solidly.

Take care that the blade is inserted in the right direction, see Fig 09 Nr 3.

Button clamping system

The GUNNAR 601 works with a Button Clamping system in X- and Y-direction. To make a COE mode possible (see SPT32 Help) the buttons on the left on the right hand side can opreate in opposite way.

To be able to cut until the edge of the board, the single buttons can be pushed down. The buttons must be twisted by 180° to do that. Twisting is easier if the button is pressed in a little bit before doing so.

For detailed Information regarding how to use this function read the SPT32 Help.

Machine settings

Reading in the basic settings

The Software settings are supplied with the GUNNAR 601 on a diskette labeled "Machine Adjustment". Instructions for installation the data may be found in ⊟"Chapter, Installation of SPT32 Software".

Basic settings

Instructions for implementing the basic settings are given in the Help program. See ⊟"Chapter, Start SPT32 Software" or in the "Configuration Assistant".

Compressed air setting

Blade head

The compressed air setting for the blade head can be adjusted via the pressure reduction (Fig.06 No.5). The basic setting is 3.5 bars. If excessively pronounced pressure marks are left on the cardboard during cutting, it is possible to reduce the blade head pressure to approximately 2.5 bars. If the blade does not fully cut through thick, hard cardboard at the start of a cut, the pressure can be increased to a maximum of 5 bars.

Clamping system

The compressed air setting for the clamping system (knobs) can be adjusted via the pressure reduction (Fig.06 No.1). The basic setting is 3.5 bars. If very soft board is used, the air pressure can be reduced to 3 bar.

Blade depth setting

The blade depth must be set so that the **backing material is cut into** by **0.3 up to 0.5 mm**. To adjust the blade depth follow these instructions.

1. **Make sure that the initial blade depth is not set too deep (turn set screw on holder in for a more shallow cut) for the first cut. This will avoid damaging the table top.**

2. Cut a rectangle

3. Check the depth of the cut in the underlay sheet.

4. If the cut is too deep, use the 1.3 mm hexagon socket screw key supplied in your installation kit to adjust the blade holder. Turn the screw on holder in (clockwise) for a shallower cut. If the cut is not deep enough, then unscrew the screw (anti-clockwise). One turn is a app. 0.3 mm (0.012 Inch) dept.

5. Repeat steps 2 to 4 until the cut is some 0.3 to 0.5mm (0.012 to 0.019 Inch) deep.

6. It is customary to set up different blade holders for various cardboard thickness that you may be cutting.

Throttle setting

In the case of circles and other shapes, where the blade cannot be inserted in a corner but only in a curve, a throttle is used. This ensures that the blade is inserted more slowly and does not leave any insertion marks on the mount.

Further information on this setting may be found in ⊟"SPT32 Help, Chapter Throttle".

Servicing

Accessories

The following accessories are available at extra cost.

Article	Number
Blades 0.62mm thick	A-20011
Blades 0.5 mm thick	A-20012

Further information is available from your GUNNAR dealer or from the Internet, **www.gunnar-europe.com**.

Cleaning

NB: All cleaning and maintenance work must be conducted with the machine switched off and the main plug pulled out. On the machine only a dry cleaning is allowed.

General cleaning

Cleaning the GUNNAR 601 is an essential part of servicing. The cleaner it is kept, the longer its service life will be. The GUNNAR 601 should be kept dust-free and free from bits of cardboard and fibers. This is best done by sucking up the dust. Dust should only be **blown out** when cleaning the **guides**. Please read the following chapter.

NB: When blowing out the guides, always blow away from the carriage. Otherwise the dust will come into the bearings and can disturb them.

Cleaning the table

The table top can additionally be cleaned with a glass-cleaning agent or detergent.

Do not use solvents.

Lubrication

The bearing bushes, that are used for the leadership of the cylinder-shafts, must be lubricated intermittently all 15 000 cuts .

1. Remove the Z-Head cover.
2. Clean both shafts .
3. Grease the shafts easily.
4. Move both bladeheads up and down by hand for a couple of times, in order to serve the grease on the shaft evenly.
5. Remount the Z-Head cover again.

Replacing parts

NB: All cleaning and maintenance work must be conducted with the machine switched off and the main plug pulled out.

Bladehead

1. Shut the Machine off.

2. Turn the blade head and Undo the locking screw with the 4 mm hexagon socket screw key (Fig.03. No.7 or Fig.05. No.7) .

3. Switch on the machine to make sure that the head is in the upper position (SPT32 has not to be started).

4. Pull the blade head down and insert the new one.

5. Tighten the locking screw again.

NB: Replacing the blade head can alter the boarder and opening dimensions on the mount. Check these dimensions and adjust them if necessary.

Sliding part (45° head)

If the sliding part attains its **minimum thickness** of **4.4 mm** at the base (Fig 03 No.3), then it must be replaced as follows.

1. Remove the blade head as described in 📖"Chapter, Blade head".

2. Undo the screw located in the sliding part (Fig.03. No.3)

3. Remove the sliding part and screw on the new one.

4. At the 45° bladehead adjust the bit stop screw to 0.7mm (Abb.03)

5. Attach the blade head again.

NB: Replacing the sliding part can alter the boarder and opening dimensions on the mount. Check these dimensions and adjust them if necessary.

Sliding part (90°)

After the change of the sliding part 90° head no adjustments necessary. Please check the depth of the blade and adjust the bladeholder if necessary.

Pressure spring 45° blade head

The pressure spring (Fig.03. No.3) is a part subject to wear. If it breaks, then it must be replaced. The procedure for replacing it is as follows

1. Remove the blade head as in 📖"Chapter, Blade head"

2. Pull out the broken spring and insert a new one. Take care to ensure that the spring is located in the recess provided for it.

3. Attach the blade head again as in 📖"Chapter, Blade head"

Please note: it is not necessary to dismantle the Blade head!

Pressure spring 90° blade head

The pressure spring is a part subject to wear. If it breaks, then it must be replaced. The procedure for replacing it is as follows

1. Remove the blade head as in 📖"Chapter, Blade head"

2. Loose the setscrew (Fig.04. No.8) and pull out the sliding part axis (Fig.04. No.9) .

3. Pull out the broken spring and insert a new one.

4. Grease the sliding part axis.

5. Replace the setsrew so again that the sliding part axis itself can move in the pretended lifting .

6. Attach the blade head again as in 📖"Chapter, Blade head"

Repairs

Most repairs can be performed by the customer, simply by replacing parts.

If a service or a major repair is necessary, then this must be performed by a specialist. Please contact your authorized GUNNAR dealer.

Error removal

Errors and removal

Status lamp doesn't light

Problem		What is to be done?
24 V Lamp in the green button does not light.	1.	Check the power supply at the plug and the controller
	2.	Is the emergency stop off?
	3.	Check the pin and socket connector in the cable chain in the stand.

Machine does not work – green lamp is on

Problem		What is to be done?
24 V Lamp in the green button does light, but machine doesn't run.	1.	Check the connection of the datacable from PC to machine.
	2.	Switch off the machine and close SPT32 again.
	3.	Switch on machine and wait until the controller has booted (Beeping noise), then start SPT32 again.

Machine does not initialize

Problem		What is to be done?
After the start of the program the intializing starts but the blade head rotate continously.The Initialization will not be done.	1.	Has the blade-head been lifted when starting the software?
Blade head was not lifted.	2.	Check whether compressed air exists?
	3.	Is the compressor switched on and the main switch of the compressed air supply open?
Blade head was lifted..	4.	Check the distance between the Z-sensor and the white gear.
	5.	Check the Z-sensor by an electrician.(Fig.02 Nr.06)

No Movement in X -, Y- or Z Axis

Problem		What is to be done?
No Initialization after the start, even no movement in X- and Y-direction.	1.	Check if you can move the axis by hand even when the machine is switched on.
If you can move the axis by hand, there is no electric potential at the motor.	2.	Check the plugs and the cable to the Controller (Fig.08 Nr.10) and to the power drive (Fig.08 Nr.09).
	3.	Do the red LEDs at the power drive (WDM3) in the stand, sending an error message? Please contact your GUNNAR Dealer.
	4.	Switch off the GUNNAR 601 with the emergency stop and start again. Do you hear a beeping noise in the Controller after a short boot sequence ?
No Beeping noise.	5.	Is power at the Controller ?
There is power but no beeping noise.	6.	Contact your GUNNAR Dealer.
No axis can be moved by hand	7.	Contact your GUNNAR Dealer.

Button clamping system does not work

Problem		What is to be done?
One or more buttons wont move up and down.	1.	Check the compressed air settings (Min. 3 Bar).
	2.	Switch off the compressed air and move the button up and down by hand. Can you do it easily?
	3.	Check the air hoses under the table.
One ore more knobs wont let them move by hand or just not easily.	4.	Contact your GUNNAR Dealer.

Guarantee

Guarantee provisions

The guarantee on the GUNNAR 601 runs for one year as of the date of delivery or for a maximum of 200.000 mount cuts (holes). The guarantee covers defects due to material faults or production errors.

Damage due to negligent and incorrect handling is not covered by the guarantee.

Damages that has originated through a strong contamination or elevated dust-settlement on the electronics-parts are excluded from the guarantee.

Normal wear is similarly excluded from the guarantee (assessment by us).
Kindly observe our general terms and conditions in this respect.

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Registry Form

GUNNAR - 601

Machine No.:

Controller No.:

Company name:

Contact person:

Street:

City:

Zip Code:

Country:

Fax-no:

Email Address:

Key number:

(You will get this number during the first start of SPT32)

Please Mail or Fax this form to: Weissenberger AG
                                          GUNNAR
                                          Staatsstrasse 119
                                          CH-9445 Rebstein
                                          SWITZERLAND

Fax: +41 71 775 82 29