



高速电子套结机

ZJ1900A ZJ1903A

COMPUTER-CONTROLLED HIGH SPEED LOCKSTITCH BAR TACKING MACHINE



使用说明书
OPERATION MANUAL

零件手册
PARTS BOOK



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1 安全 Safety

1.01 规范 Directives

本机器是按照在制造商声明中给出的欧洲规范制造的。

对本使用说明书的补充，请您注意通用有效的和机器营运所在国家的有关法律和它的规定及法规，以及有效的环保规定！

始终要注意当地同业工伤事故联合会的规定，或者其它监督机构的规定！

This machine is constructed in accordance with the European regulations contained in the conformity and manufacturer's declarations.

In addition to this Instruction Manual, also observe all generally accepted, statutory and other regulations and legal requirements and all valid environmental protection regulations!

The regionally valid regulations of the social insurance society for occupational accidents or other supervisory organizations are to be strictly adhered to!

1.02 一般安全说明 General notes on safety

- 机器只能在阅读完使用说明之后，并由受过培训的操作人员操作！

This machine may only be operated by adequately trained operators and only after having completely read and understood the Instruction Manual!

- 在试车调试之前一定要首先阅读电机生产厂家的安全提示和使用说明！

All Notes on Safety and Instruction Manuals of the motor manufacturer are to be read before operating the machine!

- 请注意装在机器上的危险警告和安全提示！

The danger and safety instructions on the machine itself are to be followed!

- 只允许根据机器的规定操作机器，并且不得在没有所属的保护装置的情况下操作机器，同时要注意有关的安全规定。

This machine may only be used for the purpose for which it is intended and may not be operated without its safety devices. All safety regulations relevant to its operation are to be adhered to.

- 在更换缝纫工具（如：机针、压脚和针板）、穿线、离开工作位置，以及对机器进行维修保养时，必须关闭总开关或将电源插头拉下以切断机器的电源！

When exchanging sewing tools (e.g. needle, roller presser, needle plate and bobbin), when threading the machine, when leaving the machine unattended and during maintenance work, the machine is to be separated from the power supply by switching off the On/Off switch or by removing the plug from the mains!

- 每天的保养工作只能由受过相应培训的人员完成!
Everyday maintenance work is only to be carried out by appropriately trained personnel!
- 修理工作以及专门的保养工作只允许专业人员以及受过相应培训的人员完成!
Repairs and special maintenance work may only be carried out by qualified service staff or appropriately trained personnel!
在电器设备上的工作只允许有相应资格的人员完成!
- Work on electrical equipment may only be carried out by appropriately trained personnel!
不允许在带电的部件和设备上工作! 特殊情况根据EN 50110规定执行。
- Work is not permitted on parts and equipment which are connected to the power supply!
The only exceptions to this rule are found in the regulations EN 50110.
所有机器的改建和修改工作只允许在满足相应的安全规定的条件下进行!
- Modifications and alterations to the machine may only be carried out under observance of all the relevant safety regulations!
在修理工作中只允许使用我们所允许使用的备件! 明确指出的是, 所有不是由我们供货的备件和附件都未经我们检查, 也没有被我们批准使用。装入和/或使用这些产品可能在一定的情况下会对机器的设计特性造成负面改变。对由于使用非原装件所造成的损失, 我们不负任何责任。
Only spare parts which have been approved by us are to be used for repairs! We expressly point out that any replacement parts or accessories which are not supplied by us have not been tested and approved by us. The installation and/or use of any such products can lead to negative changes in the structural characteristics of the machine. We are not liable for any damage which may be caused by non-original parts.

1.03

注意安全图标
Safety symbols



危险位置!
特别注意点!
Danger!
Points to be observed.



对操作人员或专业人员有受伤的危险!
Danger of injury for operating and specialist personnel!



注意

不允许在没有护指器和保护装置的情况下工作。
在穿线、换针、清洁等工作之前，关闭总开关。

Caution

Do not operate without finger deflector and safety devices.
Before threading, changing bobbin and needle, cleaning etc, switch off main switch.

1.04 工作中的特殊注意事项

- 使用说明书属于机器的一部分，因此，操作人员必须可以随时取用。
在首次试车调试之前，必须阅读使用说明书。
- 必须对操作人员和专业人员进行有关机器的防护装置及安全工作法方面的培训。
- 机器营运者有责任保证机器在正常的无故障状态下运作。
- 机器营运者必须注意，不许拆除任何安全装置以及使它们失效。
- 机器营运者必须注意，只允许被授权的人员在机器上工作。

其它的询问可以从负责的销售处获得答复。

Important points for the user

- This Instruction Manual is an integral part of the machine and must be available to the operating personnel at all times.
- The Instruction Manual must be read before operating the machine for the first time.
- The operating and specialist personnel is to be instructed as to the safety equipment of the machine and regarding safe work methods.
- It is the duty of the user to only operate the machine in perfect running order.
- It is the obligation of the user to ensure that none of the safety mechanisms are removed or deactivated.
- It is the obligation of the user to ensure that only authorized persons operate and work on the machine.

Further information can be obtained from your zoje agent.

1.05 **操作人员和专业人员**
Operating and specialist personnel

1.05.01 **操作人员**
Operating personnel

操作人员指的是那些负责机器的机器准备、操作和清洁以及排除缝纫范围故障的人员。

Operating personnel are persons responsible for the equipping, operating and cleaning of the machine as well as for taking care of problems arising in the sewing area.

操作人员有责任注意和遵守下列事项:

The operating personnel is required to observe the following points and must:

- 在所有工作中注意使用说明中所列的安全提示!
always observe the Notes on Safety in the Instruction Manual!
- 决不许使用任何影响机器安全生产的工作方法!
never use any working methods which could adversely affect the safety of the machine!
- 穿贴身服装, 不许带首饰, 如项链和戒指!
not wear loose-fitting clothing or jewelery such as chains or rings!
- 要协助留意, 只让被授权的人员在机器的危险区内逗留!
also ensure that only authorized persons have access to the potentially dangerous area around the machine!
- 在机器上出现影响机器安全生产的变化时, 立即向机器营运者报告!
always immediately report to the person responsible any changes in the machine which may limit its safety!

1.05.02 专业人员

专业人员指的是那些在电/电子和机械方面受过专业训练的人员。他们负责机器的润滑、保养、修理和校验工作。

专业人员有责任注意和遵守下列事项:

- 在所有工作中注意使用说明中所列的安全提示!
- 在校验和修理工作开始之前必须关闭总开关, 并且加上防止重新开机保险!
- 不许在带电的零件和设备上工作! 特殊情况按 EN 50110 规定处理。
- 修理和保养工作完成之后, 必须将防护罩重新盖好!

Specialist personnel

Specialist personnel are persons with a specialist education in the fields of electrics, electronics and mechanics. They are responsible for the lubrication, maintenance, repair and adjustment of the machine.

The specialist personnel is obliged to observe the following points and must:

- always observe the Notes on Safety in the Instruction Manual!
- switch off the On/Off switch before carrying out adjustments or repairs, and ensure that it cannot be switched on again unintentionally!
- wait until the luminous diode on the control box is no longer blinking or on before beginning adjustment or repair work.
- never work on parts which are still connected to the power supply! Exceptions are explained in the regulations EN 50110.
- replace the protective coverings and close the electrical control box after all repairs or maintenance work!

1.06

危险警告
Danger

机器运作过程中，必须在机器的前后各保留1m的自由工作范围，以保证人员能够随时地、不受阻地接近机器。

A working area of **1 meter** is to be kept free both in front of and behind the machine while it is in operation so that it is always easily accessible.



在缝纫过程中，不许在缝纫针区域抓取任何东西！
有被针伤的危险！

Never reach into the sewing area while sewing! Danger of injury by the needle!



调整工作过程中，不许在工作台上放任何物品！
物品有被卡住或者被甩走的可能！
有被四下乱飞的物品伤害的危险！

Never leave objects on the table while adjusting the machine settings!
Objects can become trapped or be slung away! Danger of injury!

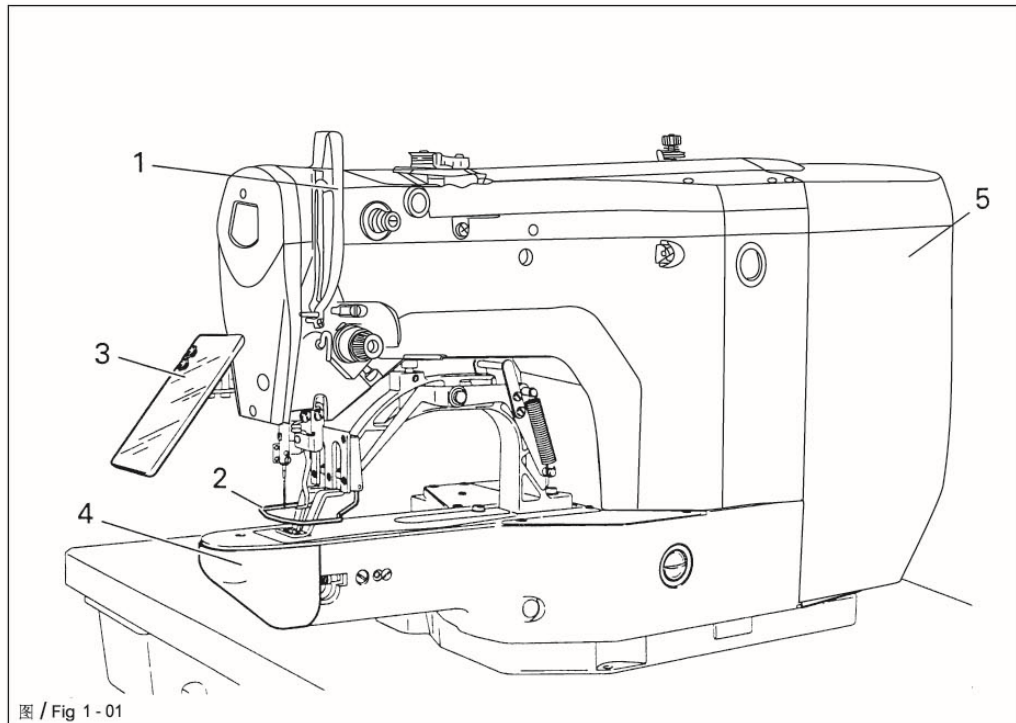


图 / Fig 1-01



不许开动没有挑线杆护罩1的机器!
有被挑线杆的动作伤害的危险!

Do not operate the machine without its take-up-lever guard 1!
Danger of injury due to the motion of the take-up lever!



不许开动没有护指器2的机器!
有被针伤的危险!

Do not operate the machine without finger deflector 2!
Danger of injury by the needle!



不许开动没有护眼罩3的机器!
有被可能飞出的针段伤害的危险!

Do not operate the machine without eye shield 3!
Danger of injury from flying needle fragments!



机器只能在盖上梭匣盖4的情况下开动!
有被旋转的线梭伤害的危险!

Only operate the machine with cover 4 closed!
Danger of injury from rotating hook!



不许开动没有护罩5的机器!
有被运动部件伤害的危险!

Do not operate the machine without cover 5!
Danger of injury from moving parts!

2

应用规定
Proper use

ZJ1900A 是一种在缝纫工业中用于双线连锁线迹套结和短线缝的自动化缝纫机。

The ZJ1900A is an automatic sewing machine for sewing lockstitch bartacks and short seams in the sewing industry.



任何未经机器制造商准许的应用，都被视为违反规定！对由于违反规定的应用引起的损失，机器制造商不负任何责任！属于应用规定的内容也包括遵守由机器制造商所给出的各种操作方法、保养措施、校验方法和修理措施！

Any and all uses of this machine which have not been approved of by the manufacturer are considered to be inappropriate! The manufacturer cannot be held liable for any damage caused by the inappropriate use of the machine! The appropriate use of the machine includes the observance of all operational, adjustment, maintenance and repair measures required by the manufacturer!

3

技术数据 ^
Specifications ^

最大针迹数:.....	2700 min ⁻¹
Max. sewing speed:	2700 spm
送料形式:.....	间歇式
Feed type:	intermittent
针距:.....	0.1 - 10.0 mm
Stitch length:	0.1 - 10.0 mm
线迹类型:.....	301 (双线连锁线迹)
Stitch type:	301 (lockstitch)

针厚
Needle sizes

用于薄料:.....	# 10 - 16
for fine materials:	# 10 - 16
用于中等厚料:.....	# 18 - 19
for medium-weight materials:	# 18 - 19

机针系统:.....	DPx5
Needle system:	DPx5

针杆行程:.....	41 mm
Needle bar stroke:	41 mm

缝料通过高度:.....	最大 17 mm
Fabric clearance:	max. 17 mm
缝纫图案规格:.....	最大 40 x 20 mm
Max. size of sewing area:	40 x 20 mm

电源电压:.....	220 V ±10%, 50/60 Hz, 1 相
Power supply:	220 V ± 10%, 50/60 Hz, single phase

接线功率:.....	0.55 kVA
Power consumption:	0.55 kVA

电接口数据:.....	1.2 kVA
Electrical power rating:	1.2 kVA

保险:.....	1 x 16 A, 惰性
Fuse protection:	1x 16 A, inert

噪音数据:
Noise data:

工作位置的噪音
Noise emission level at workplace

在 1 秒开 2 秒关的缝纫循环时: $L_{pA} = 74 \text{ dB(A)}$ ■
with a sewing cycle of 4 sec. on and 2 sec. off: $L_{pA} = 74 \text{ dB(A)}$ ■

(噪音测量按 DIN 45 635-48-B-1, ISO 11204, ISO 3744 ISO 4871)
(Noise measurement in accordance with DIN 45 635-48-B-1, ISO 11204, ISO 3744, ISO 4871)

机头尺寸
Sewing head dimensions:

长: 约 700 mm
Length: approx. 700 mm

宽: 约 220 mm
Width: approx. 220 mm

高: 约 380 mm
Height: approx. 380 mm

标准机架尺寸
Dimensions of standard base:

长: 约 1060 mm
Length: approx. 1060 mm

宽: 约 600 mm
Width: approx. 600 mm

高: 约 820 mm
Height: approx. 820 mm

重量
Weights

机头: 约 42 kg
Sewing head: approx. 42 kilos

标准机架带控制箱: 约 45 kg
Base incl. control box: approx. 45 kilos

▲ 保留技术更改权利
▲ Subject to alterations

- $K_{pA} = 2.5 \text{ dB}$
- $K_{pA} = 2.5 \text{ dB}$

4

报废机器的处理**Disposal of machine**

- 由用户负责按照相关规定处理报废的机器。
The proper disposal of the machine is the responsibility of the customer.
- 机器中使用的材料是：钢、铝、黄铜和各种塑料。
电设备由塑料和铜组成。
The materials used in the machines are steel, aluminium, brass and various plastics.
The electrical equipment consists of plastics and copper.
- 机器要按照当地有效的环保规定进行处理，有可能要由专门的公司帮助处理。
The machine is to be disposed of in accordance with the locally valid environmental protection regulations. If necessary, a specialist is to be commissioned.



特别要注意的是，带有润滑油的部件要按照当地有效的环保规定进行特别处理!

Special care is to be taken that parts soiled with lubricants are separately disposed of in accordance with the locally valid pollution control regulations!

5 **运输、包装和库存**
Transport, packaging and storage

5.01 **至客户厂区的运输**
Transport to the customer's premises

所有的机器都包装完毕供货。

The machines are delivered completely packed.

5.02 **客户厂区内的运输**
Transport within the customer's premises

对于机器在客户厂区内的运输，或者至具体应用场地的运输，机器制造商不负任何责任。

要特别注意，机器要直立的运输。

The manufacturer bears no liability for transport within the customer's premises or to the individual locations of use. Make sure that the machines are always transported upright.

5.03 **包装材料处理**
Disposal of the packaging

机器的包装材料为纸、纸盒和VCE纤维网。

由用户负责按相关规定处理机器的包装。

The packaging of these machines consists of paper, cardboard and VCE fiber. The proper disposal of the packaging is the responsibility of the customer.

5.04 **库存**
Storage

在未使用的情况下，机器可以存放6个月。对机器要进行防尘和防潮保护。

机器长期存放时，要对各部件，特别是滑动面进行防腐保护，例如涂油膜。

The machine can be stored for up to 6 months if not in use. During this time it should be protected from dust and moisture.

For longer storage the individual parts of the machine, especially the moving parts, must be protected from corrosion, e.g. by a film of oil.

6

工作图标**Explanation of the symbols**

在本使用说明中，所要进行的工作和重要信息都由相应的图标表达。

所使用的图标具有下列含义：

In the following section of this Instruction Manual, certain tasks or important pieces of information are accentuated by symbols.

The symbols used have the following meanings:



提示，信息
Note, information



清洁，保养
Cleaning, care



润滑
Lubrication, greasing



维护，修理，校验，维修
(只能由专业人员完成的工作)
Servicing, repairing, adjustment, maintenance
(only to be carried out by specialist personnel)

7 操作元件 Control elements

7.01 总开关 Main switch

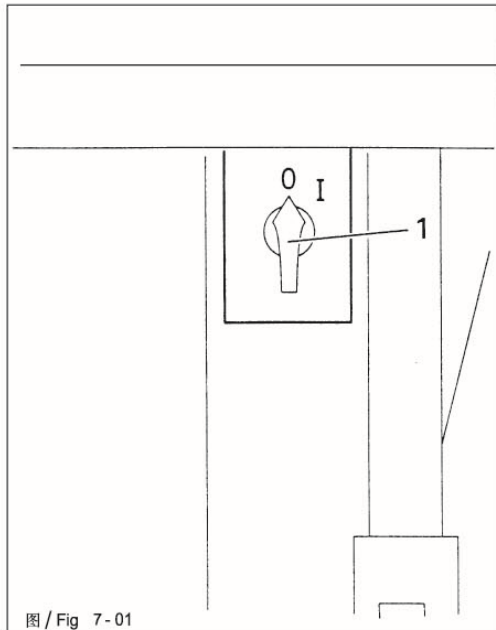


图 / Fig 7-01

- 通过旋转总开关1来接通及断开机器的电源。
Switch the machine on or off by turning main switch 1.



开动机器之后，必须首先按“TE”键，使机器处于初始位置。

After switching the machine on, first press the „TE“ key to bring the machine into its neutral position.

7.02 踏板 Pedal

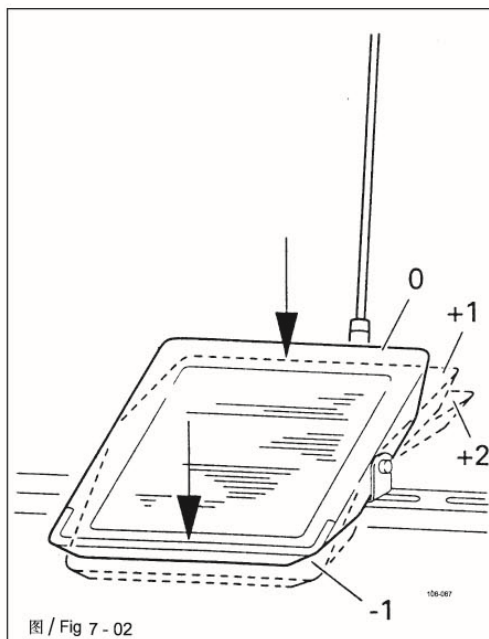


图 / Fig 7-02

踏板用来抬起和放下定位框，以及启动缝纫程序。

The pedal is used to lower and raise the work clamp, and to start the sewing program.

- 1 = 中断缝纫
- 0 = 静止位置
- +1 = 放下定位框
- +2 = 缝纫

- 1 = sewing interruption
- 0 = neutral position
- +1 = lower work clamp
- +2 = sewing

7.03 手轮 Balance wheel

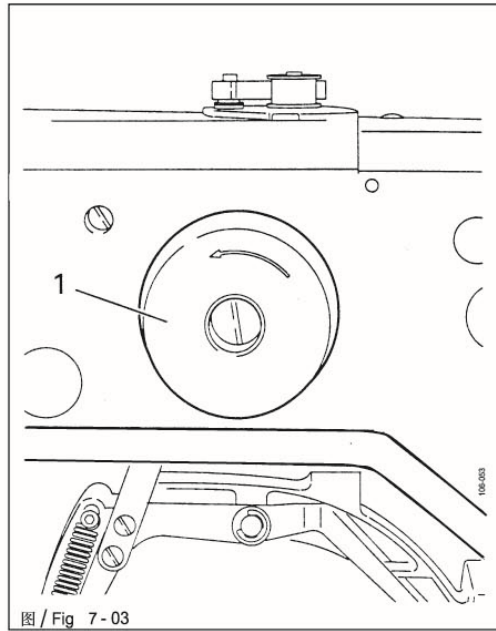


图 / Fig 7-03

- 按下并同时转动手轮1来手动调节针杆。
By pressing and holding down balance wheel 1, it is possible to adjust the needle bar manually.

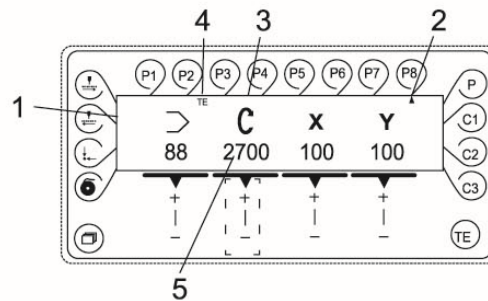
7.04

操作板

Control panel

操作板用于选取缝纫程序、更改参数值、控制不同的运行状态，以及用于阅读错误报告和服务设置。

The control panel is used to select seam programs, change parameter values, control the different operating modes, as well as for reading error signals and service settings.



操作板由一个带有相应显示的屏幕1和一系列功能键组成。

The control panel consists of screen 1 with the appropriate displays and a row of function keys.

7.04.01

屏幕显示

Screen displays

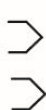
根据不同的运行状态，显示屏1上显示出有关机器状态、程序选择、顺序程序的进展、输入参数，以及错误报告的信息。

Depending on the operating mode, on the screen 1 information is shown about the machine status, program selection, sequence program progress, input parameters, as well as error signals.

- 已经起动的功能由一个三角形符号2在相应的功能键下面，或者旁边标出。
Activated functions are displayed with the triangular marking 2 beneath and next to the respective function key.
- 根据具体的运行情况，用相应的图标及文字显示各种重要的数据，并且能直接进行更改（例如，转速3连同数值5）。
Depending on the operating mode, relevant data is displayed in combination with the appropriate symbol or text, and can be altered directly (e.g. speed 3 with the value 5).
- 在参数输入时，显示出所选的参数号及其所属的参数值，见11.03章，参数输入。
When the parameters are entered, the number of the parameter selected is shown with the corresponding parameter value, see **Chapter 11.03 Parameter input**.
- 在起动操作方式输入之后，在屏幕的上边显示出文字4 ("TE")，此时操作方式输入已活跃，见第11章，输入。
After the input mode has been selected, the text 4 („TE") appears at the top edge of the display, the input mode is activated see **Chapter 11 Input**.
- 当缝纫运行出现故障时，在屏幕上会显示出相应的错误报告，见校验说明的14.33章，屏幕上的错误报告。

- 当缝纫运行出现故障时，在屏幕上会显示出相应的错误报告，见校验说明的 **14.33** 章，屏幕上的错误报告。
If faults occur in the sewing operation, a corresponding error signal appears in the display, see **Adjustment manual Chapter 14.33 Error messages on the display.**

7.04.02 屏幕上的图标 Display symbols



程序号

在此图标下显示出时的缝纫程序号。

Program number

The current seam program number appears under this symbol.



转速

在此图标下给出现时的转速。

Speed

The current speed appears under this symbol.



尺度系数X (横向)

在此图标下以%的形式给出X方向的尺度系数。



Size factor X (crosswise)

The size factor in X-direction in % appears under this symbol.



尺度系数Y (机臂纵向)

在此图标下以%的形式给出Y方向的尺度系数。



Size factor Y (lengthwise to arm)

The size factor in Y-direction in % appears under this symbol.



底线计数器/件计数器

在此图标下给出现时的件数及底线数。



Bobbin thread counter/piece counter

The current value for counting the piece or bobbin thread appears under this symbol.



Enter

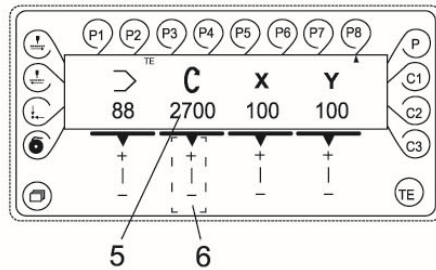
通过按其下面的键结束输入。



Enter

If the key under this symbol is pressed, the input is concluded.

7.04.03 功能键 Function keys



通过功能键来起动和关闭各种功能，以及选取参数和操作方式和更改相应的数值。每按一下键就会发出一个按键声音（出厂时设定）。当按动与机器状态不相符的功能键或者达到了输入数据的上限或下限时，将会发出一个双响信号。数值的更改通过按相应的+/-键完成。例如，通过点按和按住+/-键6来更改转速5的数值。

With the function keys functions are switched on or off, parameters and operating modes are selected and relevant values changed. Each time a key is pressed, an acoustic signal is given (factory setting). If function keys are pressed which are not permitted in accordance with the machine status, or if the top or bottom limit of the input value is reached, a double signal tone can be heard. A value is changed with the corresponding +/-key. In this way, e.g. by pressing and holding +/- on key 6, the speed value 5 can be changed.



菜单

此功能可以在不同的屏幕显示页面之间进行转换。

Menu

This function is used to scroll within various different screen displays.



绕线

调用绕底线功能，见9.03章，绕底线。

Wind

The bobbin thread winding function is called up, see Chapter 9.03 Winding the bobbin thread.



初始位置

将定位框和机针定位在初始位置，在必要时将执行切线功能。

Basic position

Work clamp and needle are positioned in the basic position and , if necessary, the thread trimming function is activated.

**步进后退**

所选的缝纫程序随着每次按键向后退一针，在此过程中，屏幕上将显示出每针的坐标。

Tacting backwards

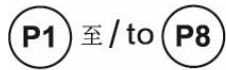
Each time the key is pressed, the selected seam program is sewn stitch by stitch in reverse, and the coordinates for each stitch are shown on the control panel.

**步进前进**

所选的缝纫程序随着每次按键向前进一针，在此过程中，屏幕上将显示出每针的坐标。

Tacting forwards

Each time the key is pressed, the selected seam program is sewn forwards stitch by stitch, and the coordinates for each stitch are shown on the control panel.

**程序站**

功能键P1至P8用于输入和调用缝纫程序，见9.06.02章，程序站选取。

Program stations

The function keys P1 to P8 are used to enter and select seam programs, see Chapter 9.06.02 **Selecting the program station**.

**直选程序**

用此功能选取一个线缝图。在选取之后，可以对转速和尺寸进行更改，见9.06.01章，线缝图的选取和更改。

Direct program selection

This function is used to select a seam pattern. After selection, speed and size can be altered, see Chapter 9.06.01 **Selecting and altering the seam pattern**.

ⓐ C1 至/to ⓑ C3

顺序程序 **Sequences**

功能键C1至C3用于输入和调用顺序程序，见9.06.03章，顺序程序的选取。

The function keys C1 to C3 are used to enter and select sequences, see Chapter **9.06.03**

Selecting a sequence.

Ⓓ TE

TE

在操作方式生产中，此键用于转换到操作方式输入。

在操作方式输入中，此键用于对程序站和顺序程序的输入的确认，用于转换到操作方式输入的初始状态，以及用于转换到操作方式缝纫。

In the production mode, this key is used to change into the input mode. In the input mode this key is used to acknowledge the input of program stations and sequences, to change into the basic status of the input mode and to change into the sewing mode.

8

安装和首次试车
Installation and commissioning

只允许有资格的人员对机器进行安装和试车!
这里必须注意所有有关的安全规定!

如果缝纫机不带台板供货, 则工作时所用的机架和台板必须保证能够承受机器和电机的重量。

即使在缝纫运行中台座也要保证足够的稳定性。

The machine must only be installed and commissioned by qualified personnel!

All relevant safety regulations must be strictly adhered to!

If the machine is delivered without a table, be sure to use a stand and table top that can hold the weight of the machine with its motor.

It is very important to ensure that the stand of the machine is firm and steady, also during sewing.

8.01

安装
Installation

必须保证在机器安装地点拥有适用的电源供给, 见第3章, 技术数据。

另外在机器安装地点还必须有一个平整和坚实的地面, 以及足够的照明。

The site where the machine is installed must be provided with suitable connections for electric current.

It must be ensured that the standing surface of the machine site is firm and horizontal, and that sufficient lighting is provided for.



由于包装的原因, 台板被落下。台板高度的调节如下所述。

For packing and transportation reasons the table top is in the lowered position.

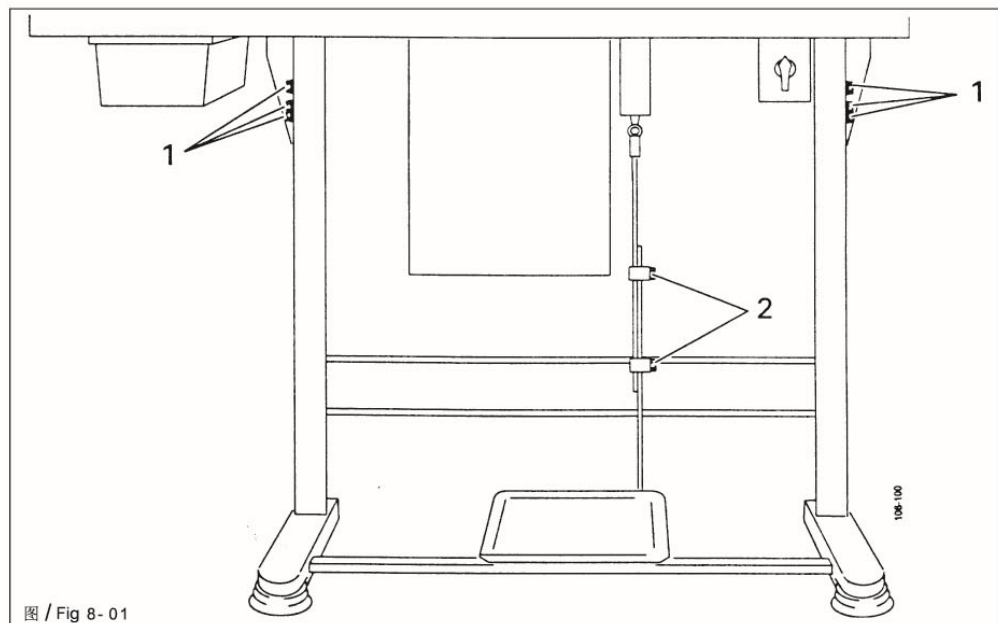
The table height is adjusted as described below.



如果机器连同机架一起供货, 则必须在调试之前, 将运输固定元件取下, 见8.01.02章, 运输固定元件的取下。

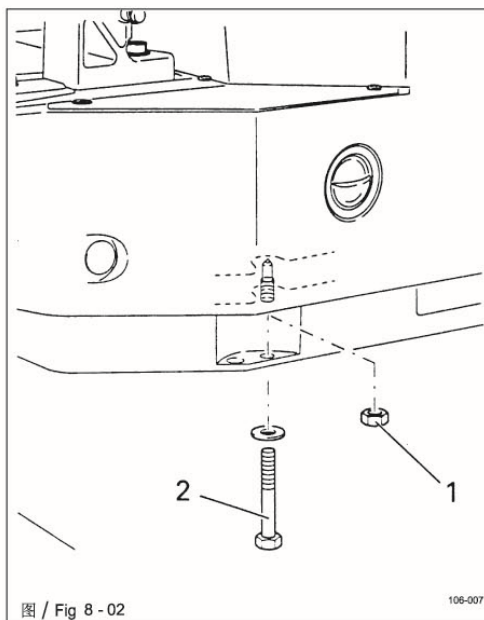
If the machine is delivered with stand, the transit lock must be removed before commissioning, see Chapter 8.01.02 Removing the transit lock.

8.01.01 台板高度调整
Adjusting the table height



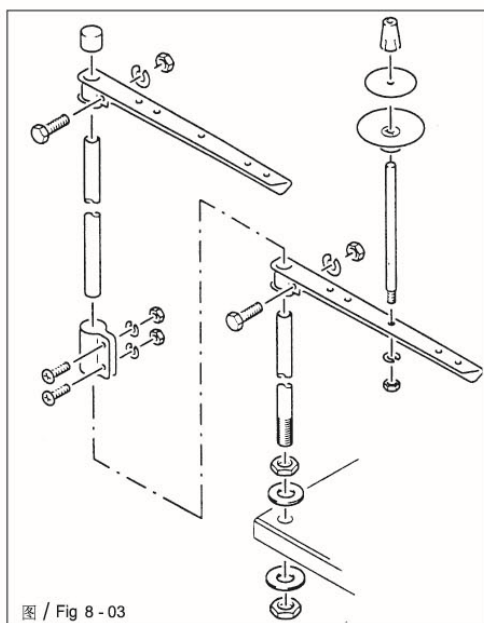
- 松开螺钉1和2，并将台板调整至所需的高度。
- 将螺钉1很好地拧紧。
- 将踏板调至所需的位置，并且将螺钉2拧紧。
- Loosen screws **1** and **2** and set the table height as required.
- Firmly tighten screw **1**.
- Set the required pedal position and tighten screw **2**.

8.01.02 运输固定元件的取下 Removing the transit lock



- 松开螺母 1。
- 旋下螺栓 2。
- Loosen nut 1.
- Remove screw 2.

8.01.03 线轴架安装 Fitting the reel stand



- 线轴架如侧图所示进行安装。
- 然后将线轴架插入台板上的孔中，并且用随带的螺母固定。
- Fit the reel stand as shown in **Fig. 8 - 03**.
- Afterwards insert the stand in the hole in the table top and secure it with nuts provided.

8.01.04 台板安装 (不带机架供货时)
Mounting the table top (for deliveries without stand)

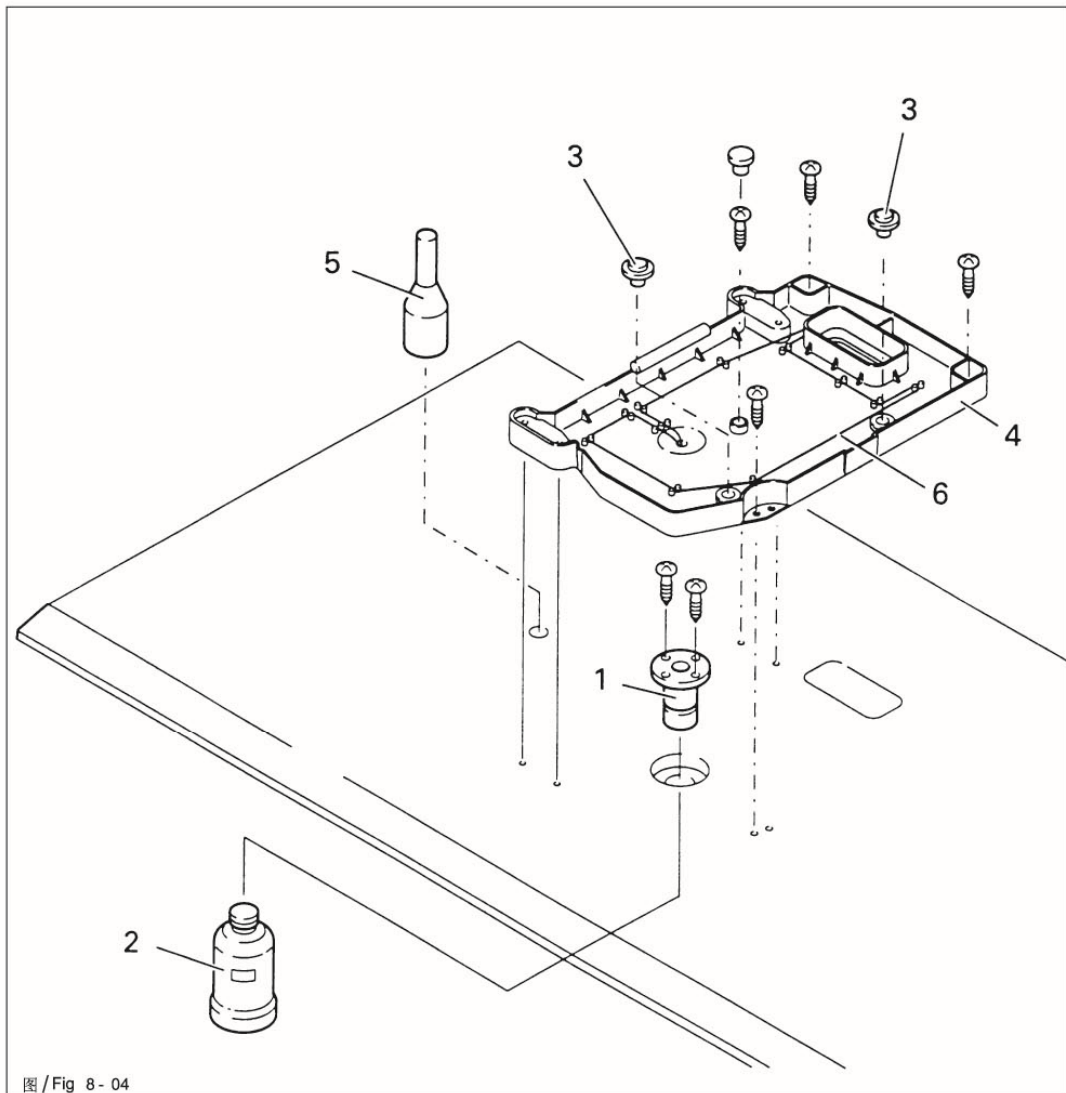
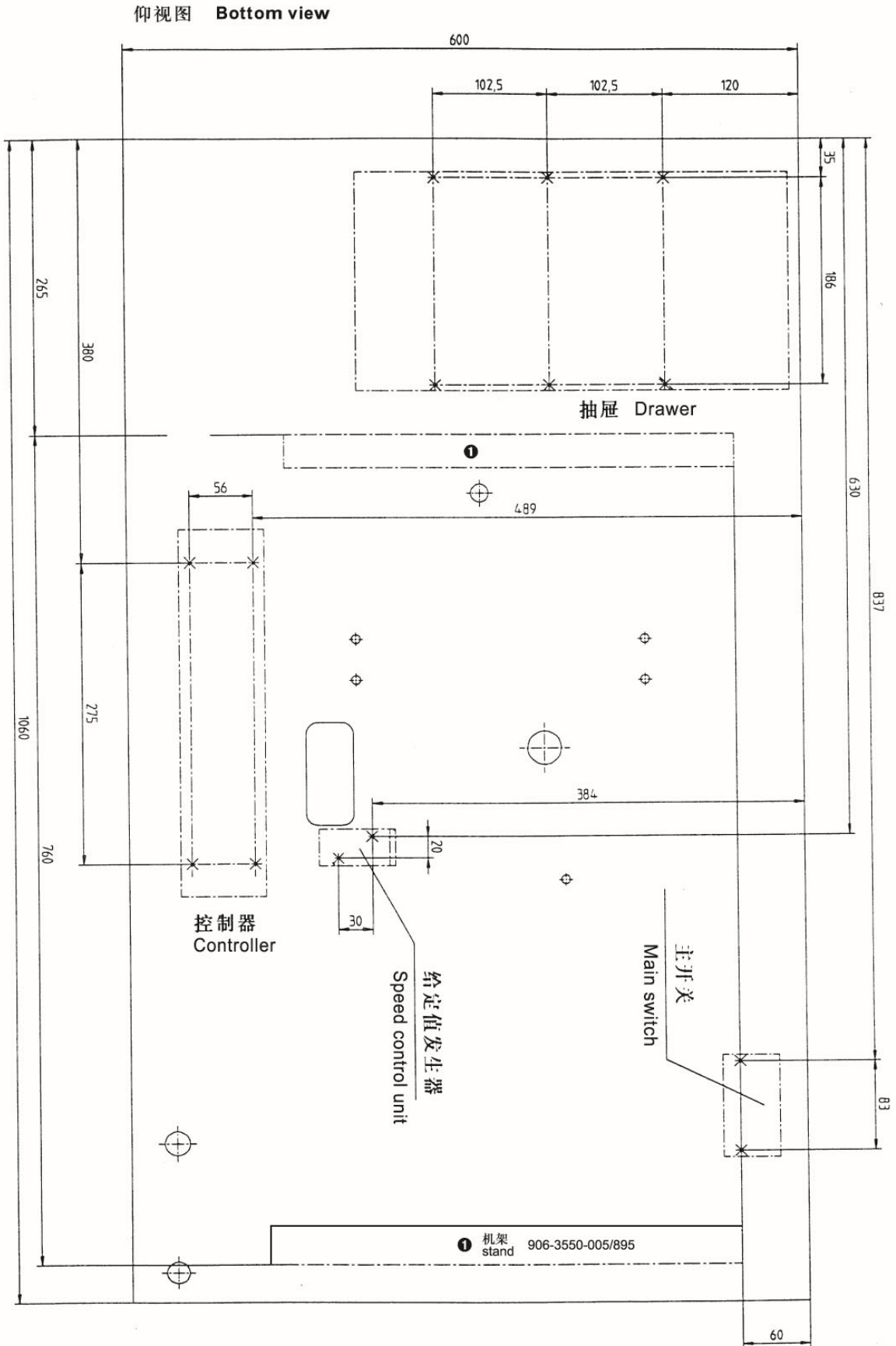


图 / Fig 8 - 04

- 按图纸加工好台板上的孔, 见8.01.05章, 台板孔图纸。
- 旋上下油口1。
- 将油罐2拧在下油口1上。
- 将橡胶垫3放入油盘4的安装孔内, 并且将油盘4拧紧在台板上。
- 将支撑5放入相应的孔内。
- 将油绳6放入油盘4的固定卡箍中。

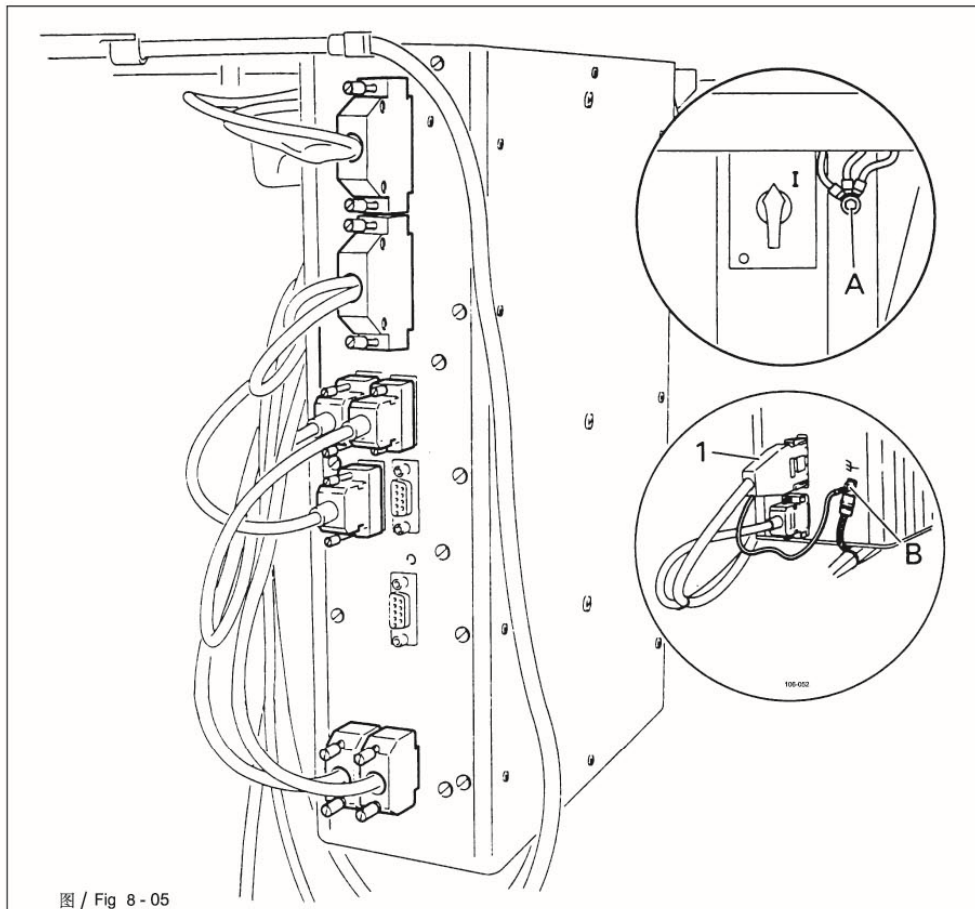
- Drill holes in the table top as shown in the drawing, see Chapter **8.01.05 Table top drill hole plans.**
- Screw on the oil outlet **1.**
- Screw the oil tank **2** to oil outlet **1.**
- Set the rubber pads **3** in the fastening holes of the oil pan **4** and screw oil pan **4** to the table top.
- Set support **5** in the appropriate hole.
- Place wick **6** in the holders of oil pan **4.**



8.01.06

插头连接和地线连接

Connecting the plug-in connections and earth cable



- 按照各自的标记将所有的插头都插到控制箱上。
- 将机器的地线和主开关的地线都接到接地点A上。
- 用地线电缆将接地点A和B连接起来。
- 将插头1的地线拧紧到接地点B上。
- Connect all plugs as labelled in the control box.
- Screw the earth cable from the machine and the main switch to earth point **A**.
- Connect earth point **A** and earth point **B** with an earth cable.
- Screw the earth cable of plug **1** to earth point **B**.

8.02

首次试车

Commissioning the machine

- 对机器进行全面彻底的清扫。
- 检查油量，见第12章，维护和保养。
- 检查机器是否有损坏，特别是检查电缆线是否有损坏。
- 由专业人员检查，机器的电机是否允许用已有的电源电压驱动。
- Clean the machine thoroughly.
- Check the oil level, see **Chapter 12 Care and Maintenance**.
- Check the machine, especially the electric wires, for any damage.
- Have specialists check, whether the machine's motor can be used with the existing mains voltage.

8.03

机器的起动/关闭

Switching the machine on/off

- 机器的起动与关闭，见7.01章，总开关。
- Switching the machine on/off, see **Chapter 7.01 Main switch**.



可以通过孔**2**进行检查，是否已将针插到孔底。用相应的工具伸到孔**2**内，能够将折断的针挑出。

Through hole **2** it is possible to check whether the needle has been inserting as far as possible.

Broken needles can be removed by inserted suitable tools in hole **2**.

9.02

穿上线/上线张力调节

Threading the needle thread / adjusting the needle thread tension

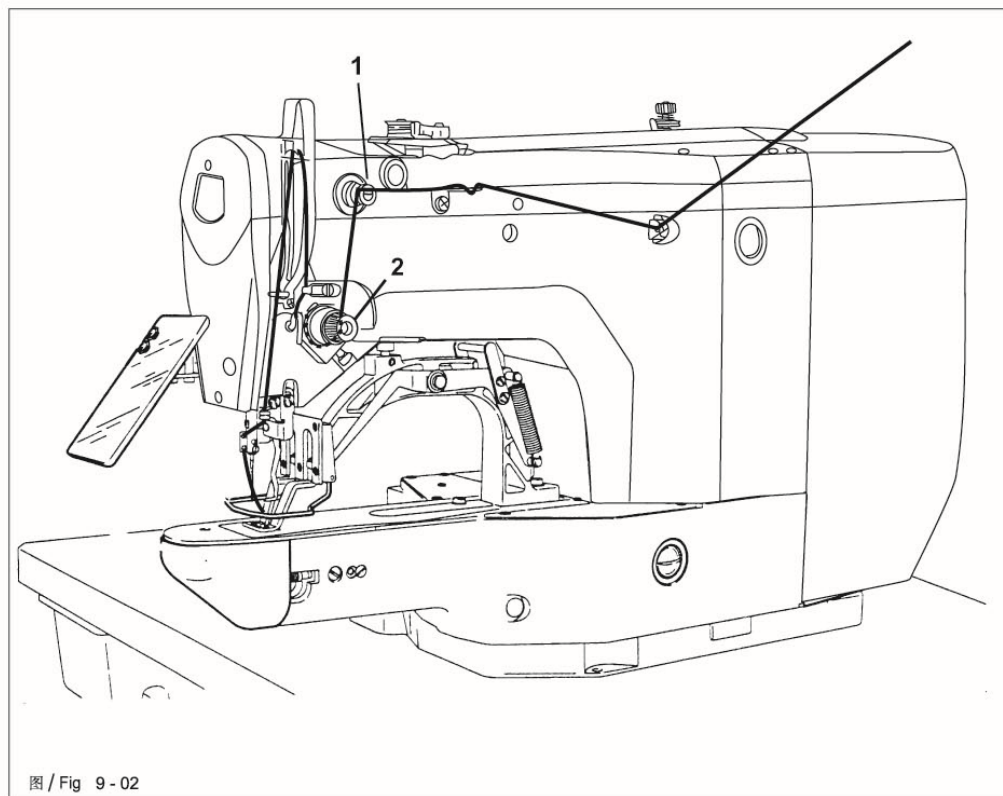


图 / Fig 9-02



关闭机器!

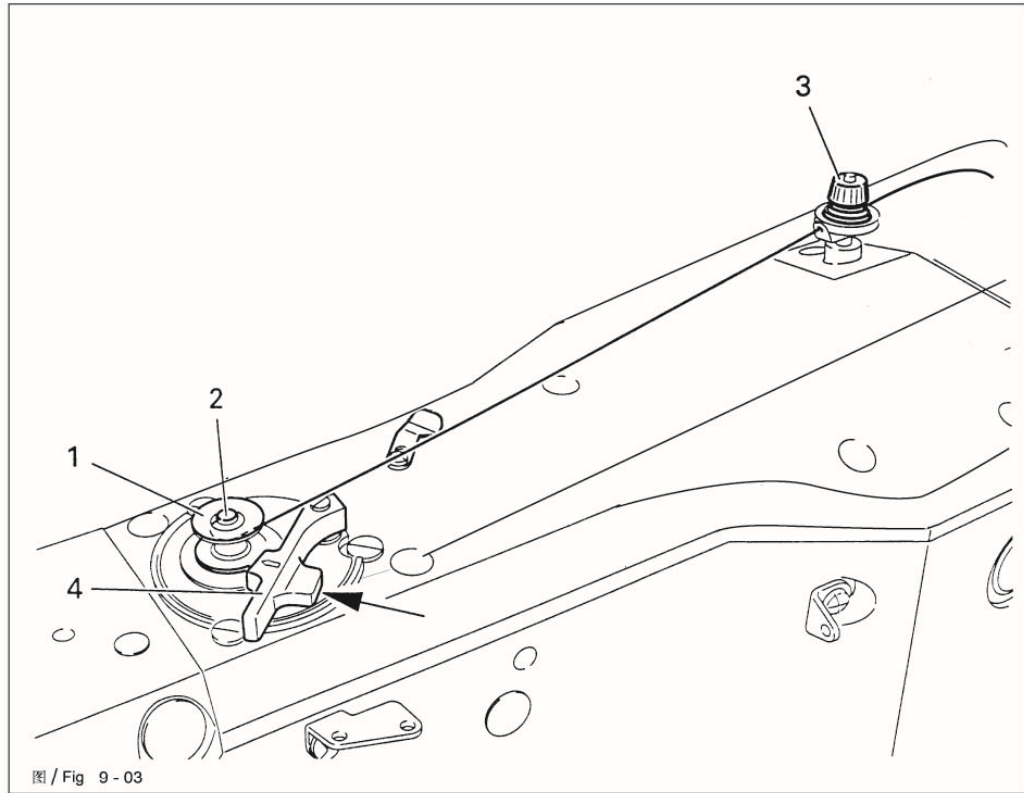
无意地引起机器起动有受伤的危险!

Switch off the machine!

Danger of injury if the machine is started accidentally!

- 按图9-02穿上线。
- 上线张力通过转动花纹螺母1和2调节。
- Thread the needle thread as shown in **Fig. 9-02**.
- Adjust the needle thread tension by turning milled nuts **1** and **2**.

9.03 绕底线 Winding the bobbin thread



- 将空梭心1套在绕线器心轴2上。
- 按图9-03穿底线，并按顺时针方向在梭心1上绕几圈。
- 转动花纹旋钮3调节线张力。
- 将手柄4按箭头方向推入切口内。
- Place the empty bobbin **1** on the bobbin winder spindle **2**.
- Thread the thread as shown in **Fig. 9-03** and wind it round bobbin **1** a few times in clockwise direction.
- Set the preliminary thread tension by turning milled screw **3**.
- Press lever **4** in the direction of the arrow until it clicks into place.



梭心在缝纫过程中绕满。
The bobbin is filled during sewing.

- 另外，也可以用下述方法绕线：



- 启动机器，并按绕线键。
- 将线从针和挑线杆中取出。
- 操作踏板执行绕线工作，当梭心绕满时，绕线器会自动停止。



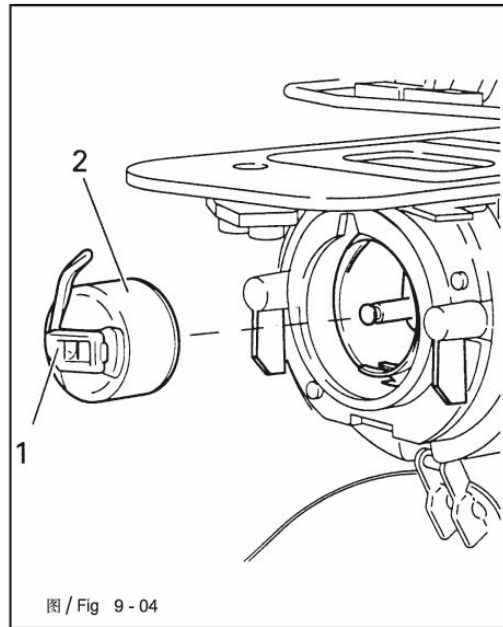
- 按绕线键，机器停车。

- 重新给机器上线。

- Winding is also possible as follows:

- Switch on the machine and press the key for **winding**.
- Remove the thread from the needle and take-up lever.
- Operate the pedal to carry out winding, the bobbin winder stops automatically as soon as the bobbin is adequately full.
- Press the key for **winding**, the machine stops.
- Thread the machine again.

9.04 梭心套的取出/装入
Removing / replacing the bobbin case



关闭机器!
 无意地引起机器起动有受伤的
 危险!
 Switch off the machine.
 Danger of injury if the machine
 starts accidentally!

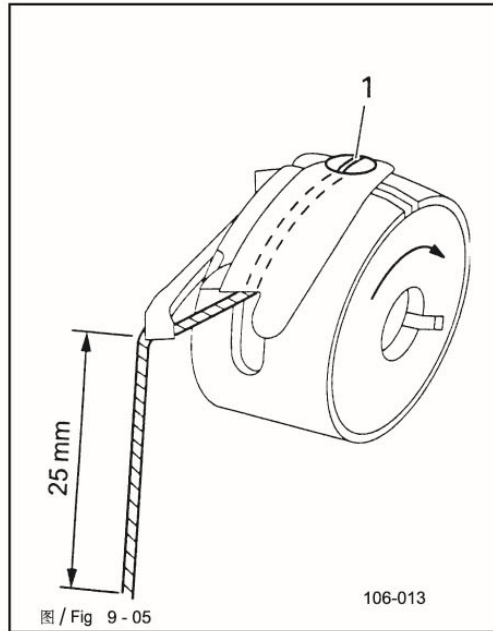
梭心套取出
Removing the bobbin case

- 打开梭匣盖。
- 扳开梭门盖1。
- 取出梭心套2。
- Open the hook cover
- Pull out latch 1
- Remove bobbin case 2

梭心套装入
Replacing the bobbin case

- 将梭心套2压入梭心套壳中，直到能感
 觉到已经嵌入为止。
- 盖好梭匣盖。
- Push bobbin case 2 into the bobbin case
 base until you feel it click into place
- Close the hook cover.

9.05 梭心套穿线/底线张力调节
Threading the bobbin thread / adjusting the bobbin thread tension



- 将梭心放入梭心套中。拉底线时，梭心必须按箭头方向转动。
- 按图 9-05 穿底线。
- 通过转动螺钉 1 调节底线的张力。
- Place the bobbin into the bobbin case, so that this turns in the direction shown by the arrow when the thread is pulled.
- Insert the thread as shown in **Fig. 9-05**.
- Set the thread tension by turning screw **1**.

9.06 调用缝纫程序 **Selecting a seam program**

TE

为了防止无意地引起机器起动，必须在机器打开之后，先按一下TE键。之后，机器处在初始位置，并且可以用不同的方法来选取缝纫程序：

To avoid the machine starting accidentally, to begin with the **TE** key must be pressed, after the machine has been switched on. The machine is then in its basic position and offers a number of possibilities for selecting seam programs.

- 直接选取线缝图，并且在需要时，可以通过更改转速和尺度系数进行具体的匹配。
- 通过一个程序站来选取缝纫程序。为此，必须在事前储存好一个带有所属转速及相应的尺度系数的线缝图。
- 通过选取一个顺序程序，一个接一个地执行多个缝纫程序。为此，必须在事前用一个顺序程序将各单个缝纫程序（程序站）组合在一起。

Direct selection of the seam pattern and its individual adaptation by changing the speed and size factors.

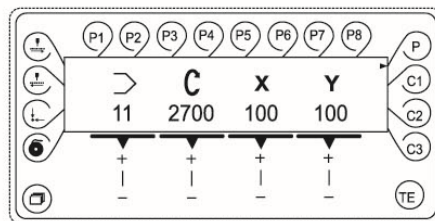
Selection of the seam program via a program station. For this purpose a seam pattern with its respective speed and corresponding size factors must have been stored previously.

With the selection of a sequence several seam programs are sewn after each other. For this purpose a sequence must have been compiled beforehand from individual seam programs (program stations).

9.06.01 线缝图的选取和更改
Selecting and changing the seam pattern.

P

- 在机器的初始位置调用线缝图直接选取功能。
With the machine in the basic position, select the direct seam pattern.



➤ **11**

- 按相应的正/负键选取所需的线缝图，例如11。
线缝图按照程序号存储在机器中，见11.05章，线缝图一览表。
- With the corresponding **plus/minus key** select the desired seam pattern, e.g. 11. The seam patterns are stored in the machine under program numbers, see **Chapter 11.05 Summary of the seam patterns.**

- C 2700** ● 按相应的正/负键输入所需的转速。
Select the desired speed with the corresponding **plus/minus key**.
- X 100** ● 按相应的正/负键输入 (X方向) 所需的尺度系数 (以%的形式)。
Enter the desired size factor (in %) (X-direction) with the corresponding **plus/minus key**.
- Y 100** ● 按相应的正/负键输入 (Y方向) 所需的尺度系数 (以%的形式)。
Enter the desired size factor (in %) (Y-direction) with the corresponding **plus/minus key**.
- TE** ● 按TE键结束输入 (机器转换到操作方式缝纫)。
Conclude the input by pressing the **TE key**. (The machine changes to the sewing mode).



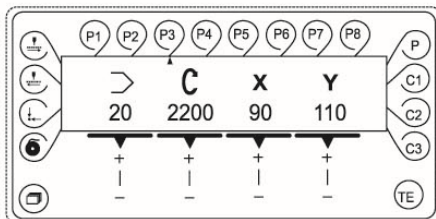
线缝图的放大由机器的缝纫区尺寸限定。
The enlargement of the seam pattern is limited by the size of the machine's sewing area.



转速和尺度系数的更改数据在更换缝纫程序时不被储存。如果需要保留这些数据, 必须对一个程序站用相应的缝纫程序进行设置, 见 11.01 章, 程序站设置。
The altered speed and size factors entered are not stored when the machine changes to another seam program. If you wish to store these values, a station key must be reserved with the corresponding seam program, see **Chapter 11.01 Reserving program stations**.

9.06.02 程序站选取 Selecting a program station.

- P3
 ● 在机器的初始位置选取所需的程序站，例如：P3。
 With the machine in its basic position, select the desired program station, e.g. P3.



只能选取那些在事前用带有所属转速及尺度系数的线缝图设置好的程序站，见11.01章，程序站设置。

Only those program stations can be selected, which have been reserved previously with a seam pattern with its respective speed and size factors, see Chapter 11.01 Reserving program stations.

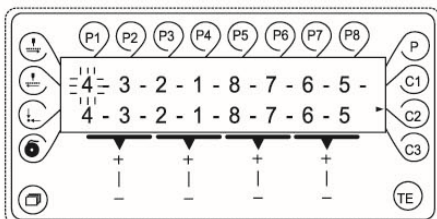


不能在通过程序站所选取的缝纫程序内直接更改转速和尺度系数。

Speed and size factors cannot be changed directly in a seam program selected via a program station.

9.06.03 顺序程序选取 Selecting a sequence

- C2
 ● 在机器的初始位置选取所需的顺序程序，例如：C2。
 With the machine in its basic position, select the desired sequence, e.g. C2.



下一个要执行的缝纫程序由相应闪动的程序站号显示。

The next seam program waiting to be sewn is depicted by the relevant flashing station number.



- 通过调用菜单功能，来显示现时的程序站的参数，如线缝图号、转速和尺度系数。
 By selecting the menu function, the parameters of the current program station, such as number of seam pattern, speed and size factors are shown.



- 使用任意的正/负键都能中断自动运行的顺序程序，并且在顺序程序之内返回前一个程序站，或者跳跃到下一个程序站。

With any desired plus/minus key the automatic sequence cycle is interrupted and the machine moves to the previous or subsequent program station within the sequence.



- 按TE键结束输入（机器转到操作方式缝纫）。

Conclude the input by pressing the TE key. (The machine changes to the sewing mode).

9.07

缝纫区尺寸设置

Adjusting the size of the sewing area

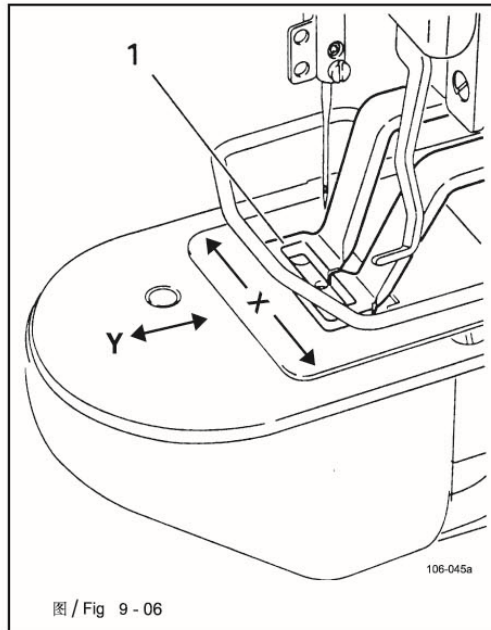


图 / Fig 9 - 06

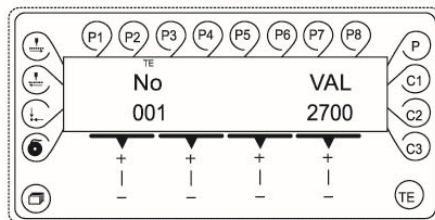
通过对所输入的缝纫区尺寸与定位框的实际缝纫区尺寸进行比较，能够保证，在缝纫区尺寸之外的缝纫程序不被执行。
A comparison between the sewing area size entered and the actual sewing area size of the work clamp ensures that seam programs, which are not within the sewing area size, cannot be sewn.



如果实际的缝纫区尺寸与输入的缝纫区尺寸不符，可能会导致严重的机器损坏！
If the actual and the entered sewing area size do not concur with each other, severe damage can be caused to the machine!



- 在机器的初始位置调用操作方式输入。
With the machine in its basic position, select the input mode.



- 测量定位框1的缝纫区尺寸。
Measure the sewing area size of work clamp 1.



- 通过相应的正/负键调用参数“023”。
With the corresponding **plus/minus key** select parameter „023“.

- 在需要时，输入操作密码，见11.04.01章，操作密码输入。
If required, enter the access code, see **Chapter 11.04.01 Entering the access code.**



- 用相应的正/负键输入用于X轴的测量数值（单位：1/10mm）。
With the corresponding **plus/minus key** enter the measured value (in 1/10 mm) for the X-axis.



- 通过相应的正/负键调用参数“024”。
With the corresponding **plus/minus key** select parameter „024“



- 用相应的正/负键输入用于Y轴的测量数值（单位：1/10mm）。
With the corresponding plus/minus key enter the measured value (in 1/10mm)for the Y-axis.



- 结束参数输入和转换到操作方式缝纫（机器的初始位置）。
Conclude the input by pressing the TE key.(Machine changes to the sewing mode).

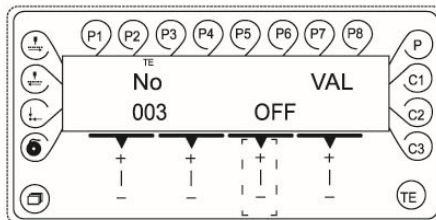
9.08 底线计数器设置
Setting up the bobbin thread counter

- **TE** 在机器的初始位置调用操作方式输入。
With the machine in its basic position, select the input mode.

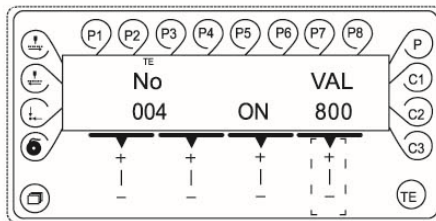


- 用相应的正/负键调用参数“004”。
With the corresponding **plus/minus key** select parameter „004”.

- 在需要时，输入操作密码，见11.04.01章，操作密码输入。
If required, enter the access code, see **Chapter 11.04.01 Entering the access code**.



- **ON** 用相应的正/负键起动底线计数器。
With the corresponding **plus/minus key** switch on the bobbin thread counter.



- **VAL 800** 用相应的正/负键输入要缝纫件的数量。
With the corresponding plus/minus key enter the number of workpieces to be sewn.

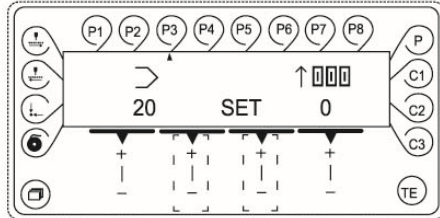
- **TE** 通过按TE键结束输入（机器转换到操作方式缝纫）。
Conclude the input by pressing the **TE** key. (Machine changes to the sewing mode).

9.09 计件器还原
Resetting the piece counter



在操作方式缝纫（机器的初始位置）时，可以通过按菜单键显示计件器及底线计数器（在底线计数器关闭时，显示计件器）。

In the sewing mode (basic position of the machine) the piece counter or the bobbin thread counter can be displayed by pressing the **menu** key. (When the bobbin thread counter is switched off, the piece counter is displayed.)




计件器从零开始向上计数，并且用朝上的箭头表示与底线计数器相区别。


The piece counter counts from 0 onwards and differs from the bobbin thread counter in the display through the upwards pointing arrow.

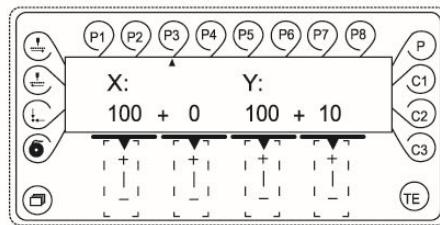
- SET ● 用相应的正/负键将计件器还原。
Reset the piece counter with the corresponding **plus/minus keys**.


9.10 线缝图移动 **Shifting the seam pattern**


可以通过移动所选的线缝图，使线缝图与取决于形状的缝料夹持器相匹配。
 To adapt the seam patterns to formed workpiece holders, selected seam patterns can be shifted.


-  在机器的初始位置选取所需的程序站，例如：P3。
 From the basic position of the machine select the desired program station, e.g. **P3**.

-  步进运行线缝图，例如：前进。
 现时的图坐标连同每针所移动的数值一起显示。
 Tact through the seam pattern, e.g. forwards.
 The actual coordinates are shown together with the shift values for each stitch.



-  用相应的正/负键匹配每针的移动值。
 The shift values are changed with the corresponding **plus/minus key**.

 线缝图的移动配置给每个现时的程序站，并且在改变程序号时被删除。
 The seam pattern shift is allocated to the respective actual program station and is deleted when the program number is changed.

 无论在线缝图的哪一点上改变移动值，都使整个线缝图移动。
 If a shift value is changed, no matter at whatever point in the seam pattern, the entire seam pattern is shifted.

10

缝纫 Sewing



机器必须按照第8章，安装和首次调试中的规定进行安装、接线和设置。

The machine must be installed, connected and set up as described in **Chapter 8 Installation and Commissioning**.



机器不允许在没有安全设施1至5的情况下运行，见1.06章，危险提示！有被伤害的危险！

The machine must not be operated without the safety devices 1 to 5, see **Chapter 1.06 Danger warnings! Danger of injury!**

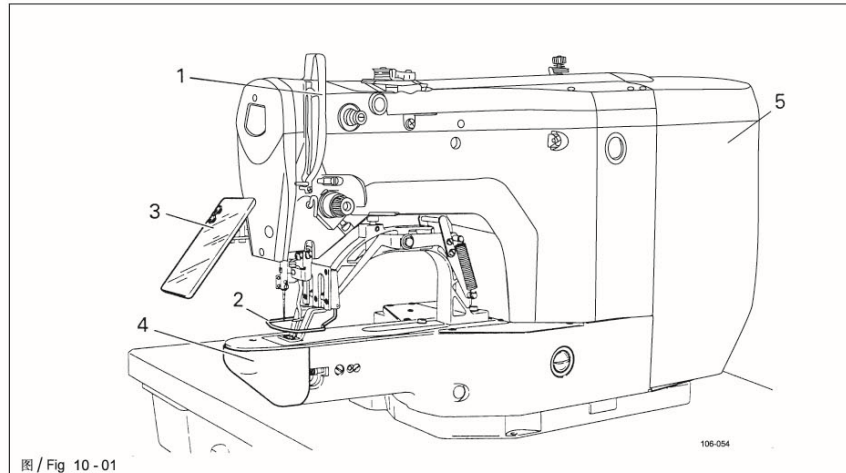


图 / Fig 10 - 01

106-054

10.01

工作过程 Operating cycle

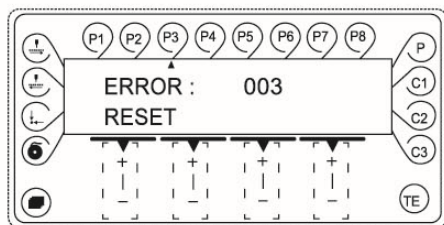
- 按照第9章，机器准备中的各项执行所有的工作步骤。
- 相应地把缝料放在定位框下面。
- 放下定位框，并且开始缝纫工作，见7.02章，踏板。
- Carry out all steps in accordance with **Chapter 9 Setting up**.
- Place the material properly under the work clamp.
- Lower the work clamp and start the sewing cycle, see **Chapter 7.02 Pedal**.

10.02

错误报告 Error messages

在出现故障时，会在屏幕上显示文字“ERROR”和一个错误编码，以及一条短指令。错误编码的说明见校验说明中的14.33章，屏幕上的错误报告。

When an error occurs, the text „ERROR“ appears on the display together with an error code and short instructions. An explanation of the error codes can be found in the Adjustment Manual **Chapter 14.33 Error messages on the display**.



- 错误修正。

RESET ● 通过按相应的正/负键或关机 and 开机确认错误排除。

- Correct the error.

- Acknowledge the correction of the error by pressing the corresponding **plus/minus key** or by switching the machine off and on.

11 输入 Input

机器启动之后，处在操作方式输入状态。在操作板的屏幕上显示出字母组合“TE”。操作方式输入用作程序站的设置、顺序程序的输入，以及机器参数的更改。另外，在这种操作方式下，还有关于服务方面的信息和输入可能性供使用。

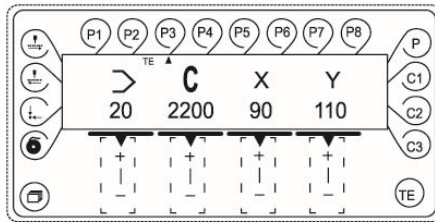
After the machine has been switched on, it is in the input mode. The letter combination „TE“ appears on the control panel display. The input mode is used to reserve program stations, to enter sequences and to change machine parameters, In addition information and input possibilities for the service area are available in this mode.

11.01 程序站设置 Reserving program stations

P1 至 **P8** 程序站 P1 至 P8 用于输入和选取缝纫程序。一个完整的缝纫程序由下列参数组成：
The station keys **P1** to **P8** are used to enter and select seam programs. A complete seam program is configured from the following parameter:

- 线缝图 seam pattern
- 转速 speed
- X方向的尺度系数 size factor in X-direction
- Y方向的尺度系数 size factor in Y-direction

- P3** ● 在操作方式输入下，选取所需的程序站，例如：P3。
In the input mode, select the desired program station, e.g. **P3**.



- 20** ● 用相应的正/负键选取所需的线缝图，例如：20。线缝图按程序号储存在机器中，见 11.05 章，线缝图一览表。
With the corresponding **plus/minus key** select the desired seam pattern, e.g. 20. The seam patterns are stored in the machine under program numbers, see Chapter 11.05 **Summary of the seam patterns.**

- C** ● 用相应的正/负键输入所需的转速。
2200 Select the desired speed with the corresponding **plus/minus key.**

- X** ● 用相应的正/负键输入 (X方向) 所需的尺度系数 (以%的形式)。
90 Enter the desired size factor (in %) (X-direction) with the corresponding **plus/minus key**.

- Y** ● 用相应的正/负键输入 (Y方向) 所需的尺度系数 (以%的形式)。
110 Enter the desired size factor (in %) (Y-direction) with the corresponding **plus/minus key**.



线缝图的放大由机器的缝纫区尺寸限定。

The enlargement of the seam pattern is limited by the size of the machine's sewing area.

- TE** ● 按TE键结束输入 (机器转换到操作方式缝纫)。
Conclude the input by pressing the **TE** key. (The machine changes to the sewing mode).

11.02 顺序程序输入 **Entering sequences**

C1 至 **C3** 顺序程序键 **C1** 至 **C3** 用于输入和选取顺序程序。顺序程序由各设置在程序站 **P1** 至 **P8** 的单个程序组合而成。

The sequence program keys **C1** to **C3** are used to enter and select sequence programs. The sequence programs are put together from seam programs, which have been deposited under the station keys **P1** to **P8**.

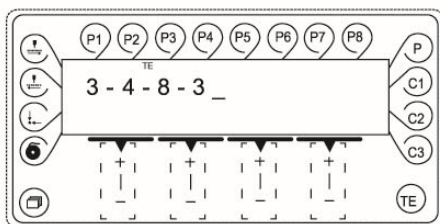
C2 ● 在操作方式输入下，选取所需的顺序程序键，例如 **C2**。
In the input mode, select the desired sequence program key, e.g. **C2**.

P3 ● 将所需的缝纫程序以任意的顺序通过程序站键输入，例如：**P3**。
Enter the desired seam programs in any order by using the station keys, e.g. **P3**.

P4 P4,

P8 P8

P3 和 / and **P3**。



可以最多填入16项。所选的程序站键必须要在事先设置好，见11.01章，程序站设置。

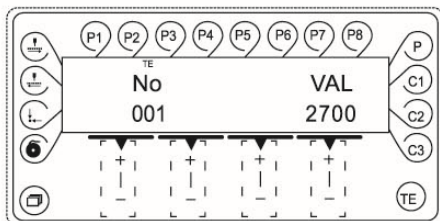
Up to 16 entries are possible. The station keys for selection must have been reserved beforehand, see **Chapter 11.01 Reserving program stations**.

! ● 通过按步进后退键删除各现时的填入内容。
By pressing the **tacting in reverse** key, the current entry is deleted.

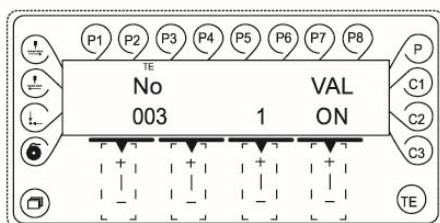
TE ● 通过按 **TE** 键结束输入（机器转换到操作方式缝纫）。
Conclude the input by pressing the **TE** key. (The machine changes to the sewing mode).

11.03 参数输入 Parameter input

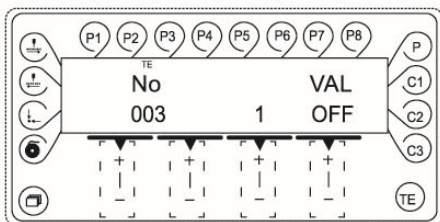
机器起动之后，处于操作方式输入状态。
After the machine has been switched on, it is in the input mode.



- No ● 用相应的正/负键选取所需的参数，例如：003 封锁线缝图。
003 With the corresponding **plus/minus key** select the desired parameter, e.g. 003 lock seam patterns.



- 用相应的正/负键选取所需的线缝图。
With the corresponding **plus/minus key** select the desired seam pattern.



- OFF ● 用相应的正/负键封锁所需的线缝图。
With the corresponding **plus/minus key** lock the desired seam pattern.

- TE** ● 通过按TE键结束输入（机器转换到操作方式缝纫）。
Conclude the input by pressing the **TE** key. (The machine changes to the sewing mode).



所有参数及其说明的一览表在校验说明的14.32章，参数表中。
There is a list explaining all the parameters in **Chapter 14.32 List of parameters** in the Adjustment Manual.

11.04 操作密码 Access codes

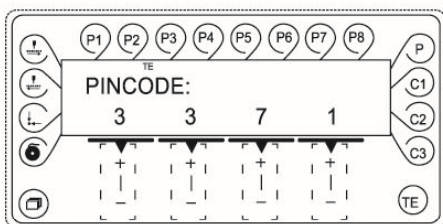
线缝图的选取、程序站的设置、顺序程序的输入，以及各单个参数层面的调用都可以用一个四位数的操作密码封锁。操作密码可以任意更改。出厂时操作密码设定为"3371"。

The selection of seam patterns, the reservation of the program stations, the input of sequences and the selection of individual parameter levels can be locked with a 4-figure access code. The access code can be changed as desired. The factory set access code is „ 3371".

11.04.01 操作密码输入 Entering the access code

如果在操作方式输入下，调用一个设置了操作密码的功能，在屏幕上会显示要求输入操作密码。

If, in the input mode, a function is selected, which has an access code, the demand for entering the access code appears on the display.



- 用相应的正/负键输入操作密码。
Enter the access code with the corresponding plus/minus keys.



- 结束输入。 Conclude the input.



一旦输入了一次操作密码，所有受操作密码保护的功能都已经解密，直至机器关机。

Once the access code has been entered,all functions with access protection are freely accessible,until the machine is switched off.

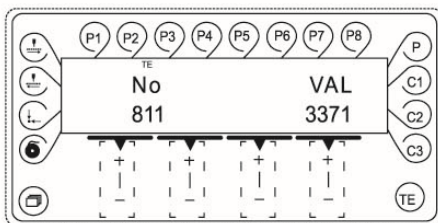
11.04.02 操作密码更改 Changing the access code



- 在操作方式输入下，调用参数"811"。
In the input mode, select parameter „ 811"



- 在需要时，输入操作密码，见11.04.01章，操作密码输入。
Enter the access code, see Chapter 11.04.01 Entering the access code.



- 用相应的正/负键更改操作密码。
Change the access code with the corresponding **plus/minus keys**.



- 结束输入。
Conclude the input.

11.04.03 操作权限发放
Granting access rights



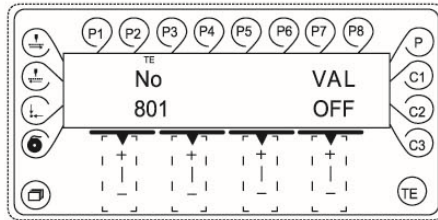
- 在操作方式输入下，调用相应的参数("801"至"806")，见校验说明14.32章，参数表。

In the input mode select the corresponding parameter („801" to „806"). see **Chapter 14.32 List of parameters** in the Adjustment Manual.



- 在需要时，输入操作密码，见11.04.01章，操作密码输入。

If required, enter the access code, see **Chapter 11.04.01** Entering access codes.



- 用相应的正/负键放行(ON)操作和封锁(OFF)操作。

With the corresponding **plus/minus key** approve (on) or lock (OFF) access.









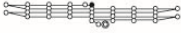

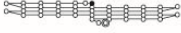


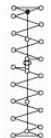
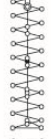








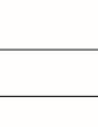
- 结束输入。







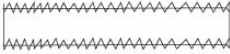
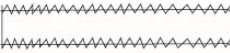
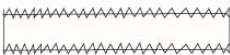


Conclude the input.






11.05 线缝图一览表
Summary of the seam patterns

序号 No.	线缝图 Seam pattern	缝纫区尺寸 [mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P1		16.0 x 2.0		42
P2		10.0 x 2.0		39
P3		16.0 x 2.5		42
P4		24.0 x 3.0		42
P5		10.0 x 2.0		27
P6		16.0 x 2.5		30
P7		10.0 x 2.0		35
P8		16.0 x 2.5		38
P9		24.0 x 3.0		53
P10		24.0 x 3.0		61
P11		6.0 x 2.5		20

序号 No.	线缝图 Seam pattern	缝纫区尺寸 [mm] Size of sewing area [mm]	缝纫针数 / 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P12		6.0 x 2.5		25
P13		6.0 x 2.5		34
P14		8.0 x 2.0		15
P15		8.0 x 2.0		22
P16		8.0 x 2.0		29
P17		10.0 x 0.0		21
P18		10.0 x 0.0		28
P19		25.0 x 0.0		28
P20		25.0 x 0.0		36
P21		25.0 x 0.0		41
P22		25.0 x 0.0		44

序号 No.	线缝图 Seam pattern	缝纫区尺寸[mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P23		4.0 x 20.0		27
P24		4.0 x 20.0		35
P25		4.0 x 20.0		41
P26		4.0 x 20.0		56
P27		0.0 x 20.0		18
P28		0.0 x 10.0		21
P29		0.0 x 20.0		21
P30		0.0 x 20.0		28
P31		9.0 x 9.0		90
P32		9.0 x 9.0		100
P33		9.0 x 9.0		110

序号 No.	线缝图 Seam pattern	缝纫区尺寸[mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P34		9.0 x 9.0		120
P35		9.0 x 9.0		130
P36		9.0 x 9.0		140
P37		9.0 x 9.0		150
P38		10.0x7.0		42
P39		10.0x7.0		57
P40		19.0x2.6		102
P41		20.0x3.6		120
P42		19.0x3.0		101
P43		40.0x20.0		141
P44		20.0x20.0		81

序号 No.	线缝图 Seam pattern	缝纫区尺寸 [mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P45		20.0x20.0		42
P46		24.0x20.0		48
P47		24.0x18.0		62
P48		20.0x20.0		220
P49		9.0x9.0		42

12 维护和保养 Care and maintenance

12.01 保养间隔 Maintenance intervals

整机清洁.....	每周一次
Clean the entire machine	once a week
线梭匣清洁.....	每天一次, 长期运行时, 每天多次
Clean the hook compartment	once a day, more often when in continuous operation
头部零件上油.....	按需要
Oiling the needle head parts	as required
线梭上油.....	按需要
Oiling the hook	as required
机臂轴承部位上油.....	每月一次
Oiling the bearing points in the arm	once a month



上述的保养间隔是根据每天一班作业的平均机器运行时间设定的。在机器运行时间提高的情况下, 建议缩短保养间隔。

During all clearing work the machine must be disconnected from the power supply by switching off the main switch or pulling out the plug!
Danger of injury if the machine is started accidentally!

12.02 机器的清洁 Cleaning the machine

本机器所要求的清洁周期取决于下列因素:
The cleaning cycle required for the machine depends on following factors:

- 单班或多班运行
- 缝料尘的掉落情况
- Single or several shift operation
- Amount of dust resulting from the workpiece

因此, 最佳的清洁规定只能按具体情况设定。
It is therefore only possible to stipulate the best possible cleaning instructions for each individual case.



在做清洁工作时，必须通过主开关或通过拉下插座将机器与电源分开！
无意地引起机器起动有受伤的危险！

For all cleaning work the machine must be disconnected from the mains by switching off the on/off switch or by removing the mains plug!

Danger of injury if the machine suddenly starts up .



为了防止出现运行故障，推荐在单班作业时做好下列的清洁工作：

- 对线梭匣和机头的机针区每天进行多次清洁。
- 最少每周一次对整机进行全面清洁。

To avoid breakdowns, the following cleaning work is recommended for single shift operation:

- Clean hook compartment and needle area of sewing head several times daily.
- Clean the entire machine at least once a week.

12.03 线梭匣的清洁
Cleaning the hook compartment

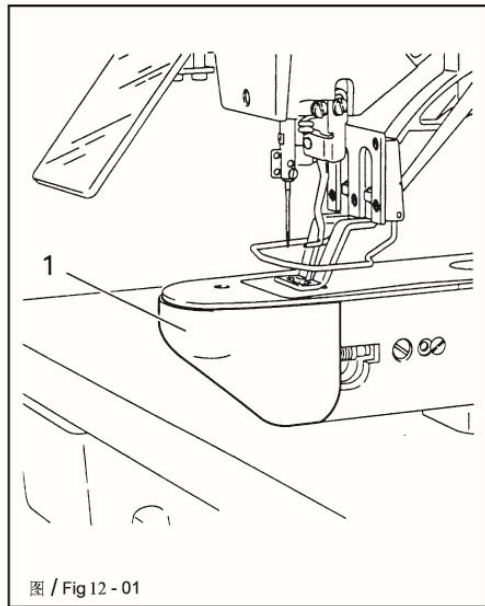


图 / Fig 12 - 01



关闭机器!
无意地引起机器起动有受伤的
危险!
Switch off the machine!
Danger of injury if the machine
is started accidentally!

- 打开线梭匣盖 1。
- 每天，在长期运行时经常清洁线梭和线梭匣。
- Open the hook compartment cover 1.
- Clean the hook and the hook compartment daily, more often if in continuous operation.

12.04 头部零件上油
Oiling the needle head parts

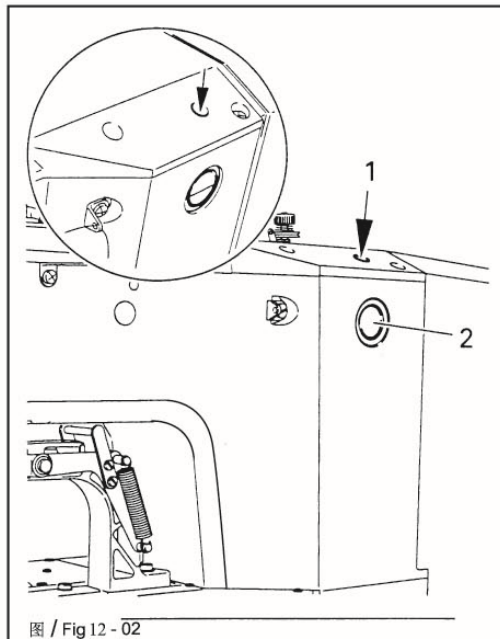


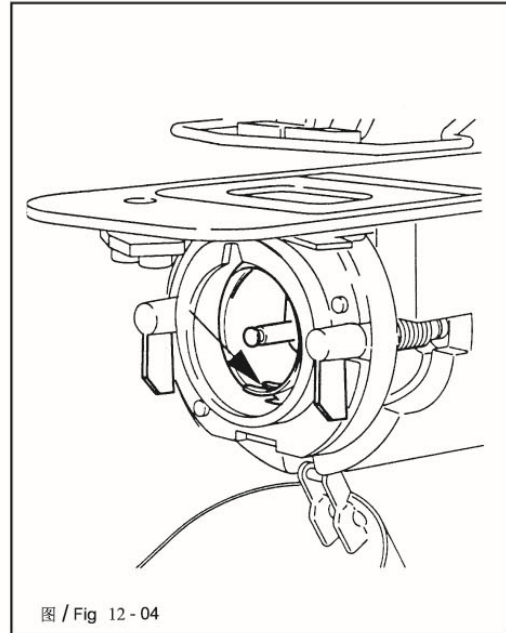
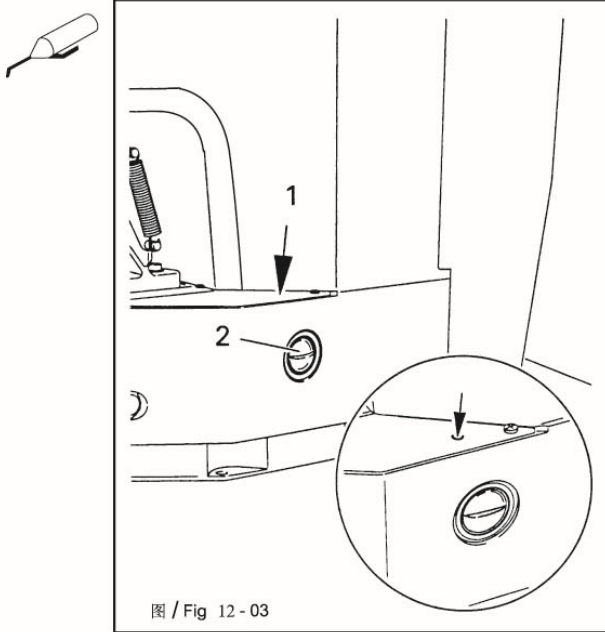
图 / Fig 12 - 02

- 在需要时，通过孔 1 将油填至窗口 2 的上标记。
- When required, pour oil through hole 1 up to the upper marking in inspection glass 2.



只允许使用在 40° C 时中点粘度为 10.0 mm²/s 和在 15° C 时比重为 0.847 g/cm³ 的润滑油。
Only use oil with a mean viscosity of 10.0 mm²/s at 40° C and a density of 0.847 g/cm³ at 15° C.

12.05 线梭上油 Oiling the hook



关闭机器!
 无意地引起机器起动有受伤的危险!
 Switch off the machine!
 Danger of injury if the machine is started accidentally!

- 在需要时，通过孔1将油填至窗口2的上标记。
- 首次调试之前和长期停车之后的调试前，要附加地在线梭轨道上滴几滴油，见图12-04中的箭头。
- When required, pour oil through hole 1 up to the upper marking in inspection glass 2.
- Before commissioning the machine, and after long downtimes, also add a few drops of oil to the hook race, see **arrow in Fig. 12-04**.



只允许使用在40°C时中点粘度为10.0 mm²/s和在15°C时
 比重为0.847 g/cm³的润滑油。
 Only use oil with a mean viscosity of 10.0 mm²/s at 40°C and a density of
 0.847 g/cm³ at 15°C.

12.06 机臂轴承部位上油
Oiling the bearing points in the arm

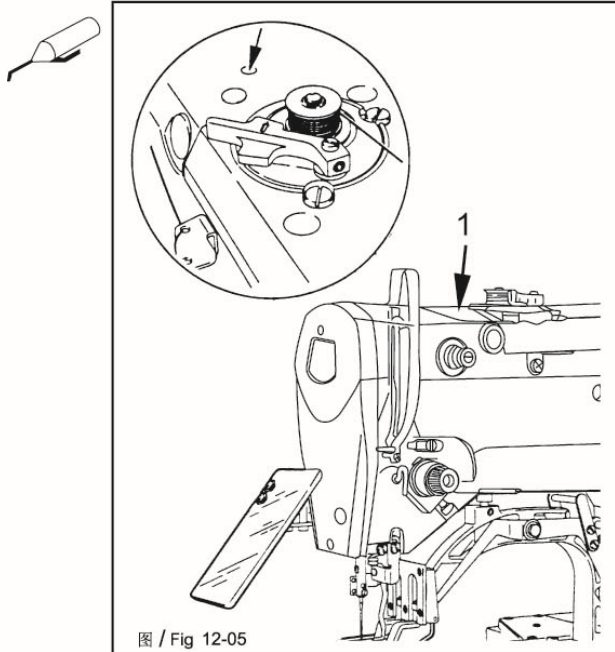


图 / Fig 12-05

- 每月往孔1内上几滴油。
- Once a month pour a few drops of oil into hole 1.



只允许使用在40° C时中点粘度为10.0 mm²/s 和在15° C时比重为0.847 g/cm³的润滑油。
Only use oil with a mean viscosity of 10.0 mm²/s at 40° C and a density of 0.847 g/cm³ at 15° C

12.07 油的环保处理
Oil disposal

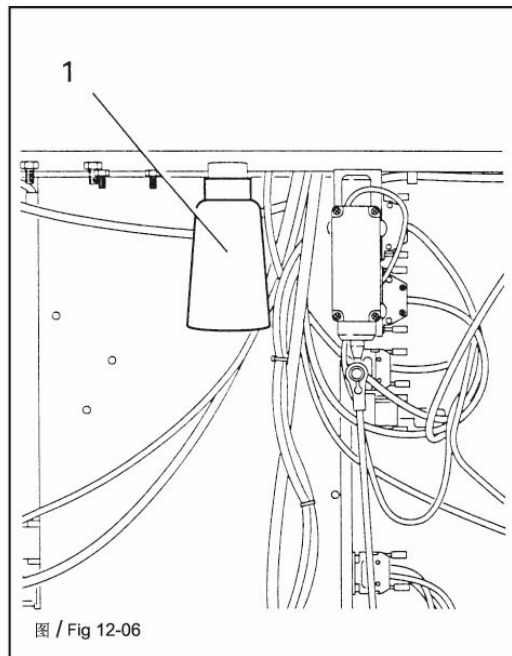


图 / Fig 12-06












- 在需要时，旋下接油罐1。并且对油按照当地适用的环保规定进行相应的处理。
- When required, unscrew oil collector 1 and dispose of the oil in accordance with the valid local environmental regulations.

























不许使油流入下水道中！
有破坏环保的危险！
The oil must not get into the sewer system! Danger of damage to the environment!

13

钉扣线缝图一览表
Summary of the seam patterns

序号 No.	线缝图 Seam pattern	缝纫区尺寸 [mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P1		3.4 x 3.4	6	18
P2		3.4 x 3.4	8	22
P3		3.4 x 3.4	10	26
P4		3.4 x 3.4	12	22
P5		3.4 x 3.4	6	22
P6		3.4 x 3.4	8	26
P7		3.4 x 3.4	8	26
P8		3.4 x 3.4	12	3
P9		3.4 x 3.4	6	18
P10		3.4 x 3.4	8	22
P11		3.4 x 3.4	10	26

序号 No.	线缝图 Seam pattern	缝纫区尺寸 [mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P12		3.4 x 3.4	6	18
P13		3.4 x 3.4	8	22
P14		3.4 x 3.4	10	26
P15		3.4 x 3.4	6	22
P16		3.4 x 3.4	8	26
P17		3.4 x 3.4	10	30
P18		3.4 x 0.0	6	11
P19		3.4 x 0.0	8	13
P20		3.4 x 0.0	10	15
P21		3.4 x 0.0	12	17
P22		3.4 x 0.0	16	21

序号 No.	线缝图 Seam pattern	缝纫区尺寸[mm] Size of sewing area [mm]	缝纫针数/ 钮扣排 Penetrations/ button row	总缝纫 针数 Total number of stitches
P23		0.0 x 3.4	6	11
P24		0.0 x 3.4	10	15
P25		0.0 x 3.4	12	17
P26		3.4 x 3.4	6	18
P27		3.4 x 3.4	10	26
P28		3.4 x 3.4	6	22
P29		3.4 x 3.4	10	30
P30		3.0 x 2.6	5	20
P31		3.0 x 2.6	8	29
P32		3.0 x 2.6	5	20
P33		3.0 x 2.6	8	29