SafetyInstructions

1.Before installing or using this product, please carefully read this operating manual. You also should properly keep this operating manual for reference at all times.

2.Special attentions should be paid to or special actions should be taken for the indications marked with , otherwise, body injury or equipment damage may be caused.

3.This product must be installed or operated by properly trained personnel.

4.For safety's sake, a power socket with an extension cord is not allowed to be used for more than two pieces of electrical equipment.

5.When you connect a power cord to a power socket, you must confirm that the voltage is less than 250V AC and is the same with the voltage specified on the motor nameplate.

※Note:If the power supply specification of the electric cabinet is 220V AC, please do not connect the power cord to a 380V AC power socket, otherwise, an abnormality may occur and the motor cannot operate. At this moment, please immediately power off, and recheck power supply. Continuous 380V power supplying for more than five minutes may burn the electric cabinet and endanger human safety.

6.Please use this product in a place with ambient temperature of 5℃～45℃ and without direct sunshine.

7.Please use this product in a place with relative humidity of 30%～95% and without moisture condensation in equipment.

8.Please use this product in a dust-free place without corrosive substances or combustible gas.

9.This power cord cannot be under pressure or excessively twisted.

10.The ground lead of power cord must be connected to the system's ground lead of production plant through appropriate conductor and connector, and this connection must be fixed.

11.All rotatable parts must be prevented from exposing by the provided parts.

12.Before first startup, operate the sewing machine at a low speed, and check whether the direction of rotation is correct or not.

13.Power off first when you:

1) plug or unplug any connector or connection in the electric cabinet or on the motor;

2) thread the machine needle.

3) turn over or lift the headstock.

4) carry out any mechanical adjustments

5) do not use the machine or the machine is unattended.

14.This product can only be repaired, maintained and inspected by trained professional technicians.

15.All parts used for repair must be approved by our company.

16.Please do not knock or hit this product and each device with an inappropriate object.

17.Please clean the control electric cabinet on a regular basis to ensure its normal operation.

Warranty Period

The warranty period of this product is one year since date of purchase or two years since the date of production.

Warranty Content

If this product fails in normal condition and not due to incorrect human operations, this product will be repaired free of charge within warranty period.
However, the repair is charged within warranty period in the following circumstances:

1. The product is faulty or damaged due to accidents or human factors, such as improper input voltage, non-intended use, unauthorized dismounting or repair, water entry, oil entry, mechanical disruption, or crush.

2. The product is faulty or damaged due to irresistible forces, such as earthquake, thunder strike, fire, flood, salt corrosion, or moisture.

3. The product is faulty or damaged during transportation by the customer or by the entrusted transport company after purchase.

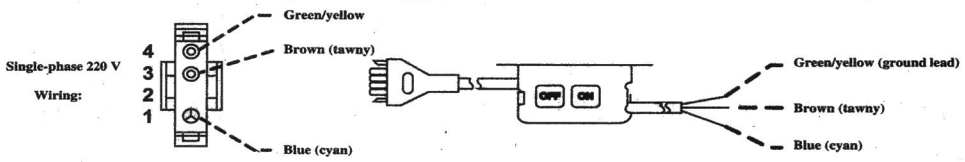
4. The product is faulty or damaged due to design, technology, manufacture or quality problems which are not caused by the product itself.

*** During the whole production, this product is strictly controlled to meet high-quality and high-stability standards. However, powerful external electrical disturbances still affect and damage this product. Therefore, the grounding system on operating site must be well implemented, and users are recommended to install safety devices (such as the leakage protector**

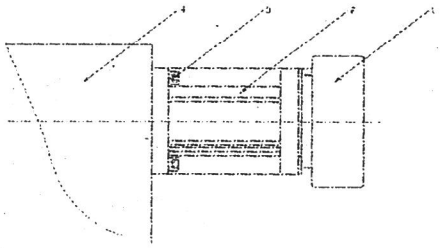
1. Installation

1.1 Connection of Power Cord

When this product is used in a country or area with unstable power supply, it is recommended to install a power stabilizer at the power supply end.



1.2 Installation of Motor



2 Including: 1 - hand wheel 2 - motor 3 - screws 4 – sewing machine tail

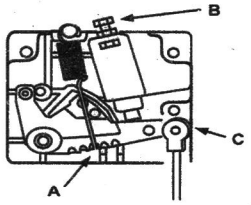
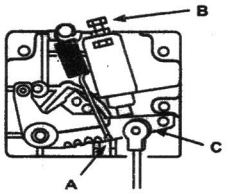
3 Tension Adjustment for Speed Controller Footboard

A: Front footboard tension spring

B: Adjusting screw set of back footboard tightness brake

C: Hook hole of footboard whirling arm lever

∴ When the footboard connector is equipped with a VD air suction series device, we suggest that you change the installations of A and C, as shown in the right figure.

SchematicDiagramofGeneral Installation	**SchematicDia gramofGeneral InstallationwithVDAirSuction Device**
	

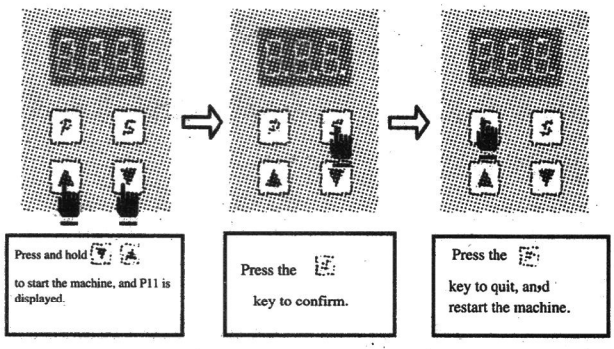
2. Operating Instructions

2.1 Key Description

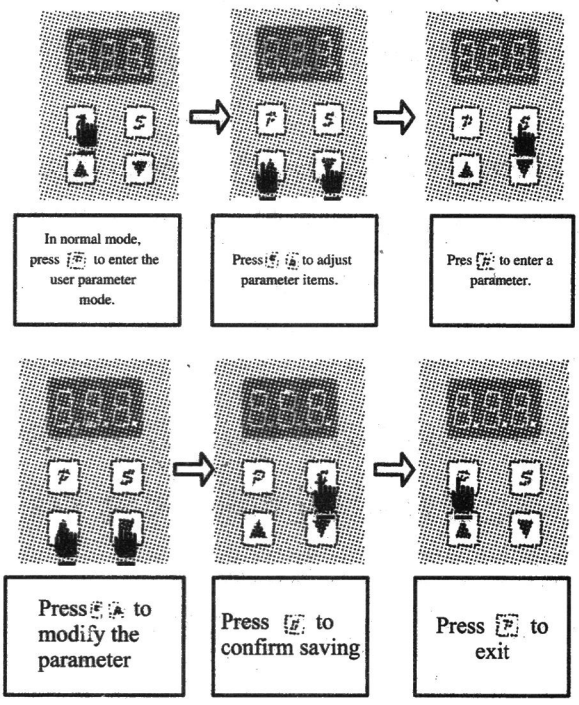
Enter and confirm the storage content value.	S	Enter the parameter content value. If the content value changes after adjustment, you need to press the S key to confirm storage.
Enter the parameter area function key.	P	1. In normal startup mode, press the P key to enter the user parameter mode. 2. Press the P key to start up and enter the technician parameter mode.
Set progressively increasing value/parameter.	▲	1. Set the parameter progressively increasing key in the parameter selection area. 2. Set the value progressively increasing key in the parameter content area.
Set progressively decreasing value/parameter.	▼	1. Set the parameter progressively decreasing key in the parameter selection area. 2. Set the value progressively decreasing key in the parameter content area.

2.2 Operations

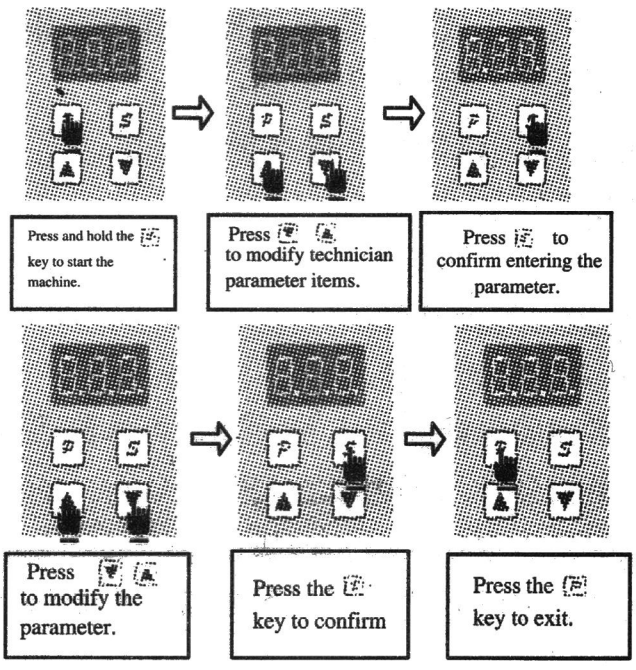
2.2.1 Restore Factory Settings



2.2.2 Enter the User Mode, Modify and Save



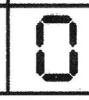
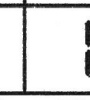
2.2.3 Enter the Technician Mode, Modify and Save



2.2.4 Operating Instructions for Digital Type

2.4.1 Table of Comparison Between LCD Font and Actual Font

Number Font:

Actual value	0	1	2	3	4	5	6	7	8	9
LCD										

2.2.4.2 Display Modes of Liquid Crystal Screen

English Font

English letters	A	B	C	D	E	F	G	H	I	J
LCD										
English letters	K	L	M	N	O	P	Q	R	S	T
LCD										
English letters	U	V	W	X	Y	Z				
LCD										

3. User Parameters & Technician Parameters

3.1 User Parameters

Contentof parameter item	Description	Range	Initial value	Setting key	Content value name, description and remark
P01	Maximum speed (spm)	10～320	300	▲▼	Setting the maximum speed during sewing (actual speed = displayed number * 10)
P02	Starting sewing speed(spm)	20～100	70	▲▼	Setting the speed during pre-sewing (starting sewing) (actual speed = displayed number * 10) (The speed at which the origin is not)
P03	Cutting speed	70-100	70	▲▼	The headstock speed during cutting (actual speed = displayed number * 10)
P04	Number of threadsinslow start	0 — 9	2	▲▼	Setting the number of threads in slow start, each unit represents a needle.
P05	Speed of slow start	40-100	60	▲▼	Setting the speed during slowly starting sewing (actual speed = displayed number * 10)
P06	Reversely stepping in the midway to lift the presser foot	0 — 1	0	▲▼	0 means no presser foot lifting action when you reversely step in the midway. 1 means the presser foot lifting action exists when you reversely step in the midway.
P07	Automatically lifting the presser foot at theend	0 — 1	1	▲▼	0 means no automatic presser foot lifting at the end. 1 means the automatic presser foot lifting exists at the end.
P08	Reserved.	0-1	0		
P09	Reserved.	0-1	0		
P10	Reserved.	0-1	0		

3.2 Technician Parameters

Contentof parameteritem	Description	Range	Initial value	Setting key	Content value name, description and remark
P11	Full output time of presser foot (ms)	10-990	250		The time of full output action when the presser foot starts moving
P12	Periodic signal of presser foot (%)	10-90	30		When the presser foot moves, theperiodic power-saving output prevents the presser foot getting too hot.
P13	Release time of presser foot (ms)	10-990	120		When you step on the presser foot, the starting time is delayed for the confirmation of presser foot release.
P14	Protection time of presser foot (s)	1-990	5		If the set time is exceeded, the continuously lifting automatic presser foot automatically falls down.
P15	Mechanical lock release time	10-990	100		
P16	Mechanical lock close time	10-990	120		
P17	Number of threads when the machine stops	1-100	20		The number of threads after cutting and before the machine stops.
P18	Number of threads for cutting	1-100	10		The number of threads required for cutting, to match with the cuttingspeed.
P19	Protective number of threads	1-990	250		The number of threads by needle required for protection when the base has no induction.
P20	Cuttingangle	1-360	1		After thread cutting, adjust the angle of needle in reverse movement starting fromtheneedle.
P21	Cuttingtime	10-990	40		The action time required for cuttertimesequence.
P22	Automatically finding upper positioning after startup	0-1	1		1:After power-on, the machine automatically finds the upper positioning signal, and then stops. 0:noeffect.
P23	Adjustment of upper positioning	40-180	40		For adjustment of upper positioning, when the value decreases, the needle stops in advance; when the value increases, the needle delays stopping.
P24	Testing the workingtime	1-250	20		Set the turn-on time in test C.
P25	Testing the stop time	1-250	20		Set the stop time in test C.
P26	TestA		0		After the test A option is set, the machine is tested for continuous operation at the speed of P01.

P27	TestB		0		AfterthetestBoption isset,the machine is tested for full functionsatthespeedofP01.
P28	TestC		0		AfterthetestAoption isset,the machine is tested for non-positioning operation at the speedofP01.
P29	Headstock protection switch	0-1	0		0: no headstock protection function 1: the headstock protection functionenabled
P30	Mechanical latch protection switch	0-1	1		0: no mechanical latch protection function 1: the mechanical latch protection function enabled
P31	Broken stitch protection switch	0-1	1		Reserved
P32	Electric/pneumatic	0-1	0		0 means Electric. 1 means Pneumatic.
P33	Direction of rotation	0-1	1		
P34	Pulse count per cycle	60-300	144		(Actual speed = displayed number*10)
P35	Speed limit for needle1	10~320	80		(Actual speed = displayed number*10)
P36	Speed limit for needle2	10~320	80		(Actual speed = displayed number*10)
P37	Speed limit for needle3	10~320	200		(Actual speed = displayed number*10)
P38	Speed limit for needle4	10~320	300		(Actual speed = displayed number*10)
P39	Speed limit for needle5	10~320	300		(Actual speed = displayed number*10)
P40	Midway motor lockselection	0-1	1		0:Notlocked 1:lock

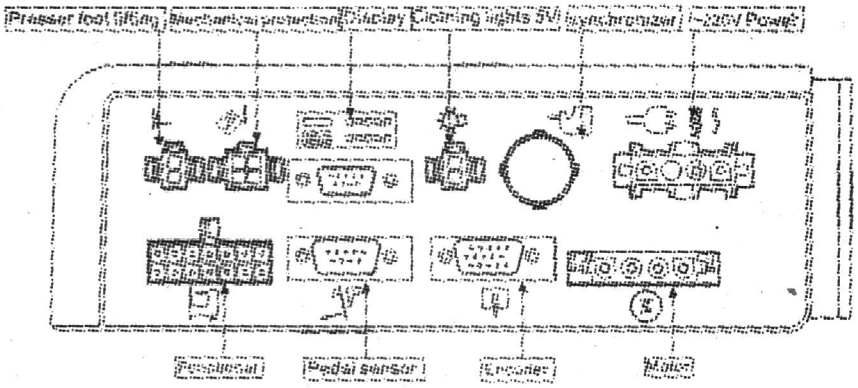
3.Table of Error Code

Error code	Contents	Countermeasures
E1	1) The Error code for electric module 2) Abnormal overcurrent or overvoltage	Both module drive output and headstock output will be shut down. Wait for power supply to restart/reset. (Please carefully check each function of the power board.)
E7	a) The motor does not rotate due to bad contact of plug wiring; b) the positioning signal is abnormal. c) The headstock mechanism is deadly locked or the motor belt is stuck due to foreign matter entering. d) The motor torsion cannot penetrate the too thick processed object. e) The module drive output is abnormal.	Both module drive output and headstock output will be shut down. Wait for power supply to restart/reset. (Please check whether the headstock is stuck, or the positioner, motor or module drive signal is abnormal or not.)
E9	The positioning signal is abnormal.	Check whether the upper or lower positioning signal is normal or not, or whether the belt pulley is too loose or not.
E11	When power-on, the machine automatically finds positioning. However, the positioner is inserted into the control cabinet, and the needle signal cannot be output.	The machine automatically enters non-positioner mode, and thread cutting, thread scanning, upper positioning and all fixed needle sewing and pattern sewing functions are invalid. The motor normally operates. (Please check whether the positioner is abnormal or not.)

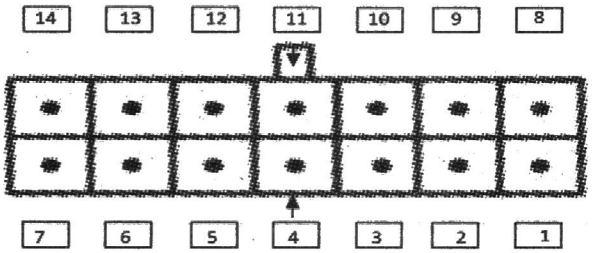
E12	When power-on, the positioner is not inserted.	The machine automatically enters non-positioner mode, and thread cutting, thread scanning, upper positioning and all fixed needle sewing and pattern sewing functions are invalid.The motor normally operates. (Please check whether the positioner is inserted or abnormal.)
E13	Power module overheat protection	Check whether the power module is in good contact with the cooling fin.
E14	The encoder signal is abnormal.	Detect whether the encoder signal is normal or not, or replace the encoder.
E15	The power module overcurrent protection is abnormal.	Both module output and headstock output are shut down. Wait for power supply to restart/reset. (Please carefully check each function of the power board.)
E17	The headstock protection switch is not in correct position.	Check whether the headstock is opened or not, and whether the headstock switch is damaged or not.
E18	The mechanical latch protection switch is not in correct position.	Check whether the position of mechanical latch is normal or not, and whether the protection switch is damaged or not.
E19	The base protection switch is not in place.	Check whether the position of base is normal or not, and whether the switch is damaged or not.

4 Schematic Diagram of Port

4. 1Name of Each Port:



4.2 14P Mapping table of functional ports



① Trimming electromagnet: 1 and 8
② Sewing machine lamp: 2 (signal earth), 9 (+5v)
③ Mechanical latch induction: 5 (Signal earth), 11 (+5v) and 12 (induction signal)
④ The base ends induction: 3 (induction signal), 4 (signal earth) and 10 (+5v)
⑤ Mechanical latch electromagnet: 6 and 13
⑥ Presser foot lifting electromagnet: 7 and 14