QD626F 系列控制系统说明书 V1.1.00

No. 10404049

⚠安全指示

1） 在安装或使用本产品前，使用者必须详细阅读本操作手册。
2） 本产品须由受过正确训练的人员来安装或操作。安装作业时必须关闭所有电源，切记不可带电操作。
3） 所有标有 ⚠ 符号的指示，必须特别注意并按照说明书上的执行，以免造成不必要的损害。
4） 为安全起见，禁止以延长线作电源座供应二项以上的电器产品使用。
5） 在连接电源线时，必须确定工作电压符合本产品标识中规定的额定电压值。
6） 请不要在日光直接照射的场所、室外及室温 45℃ 以上或 0℃ 以下的场所操作。
7） 请不要在暖气（电热器）旁、有露水的场所及在相对湿度 10% 以下或 90% 以上的场所操作。
8） 请不要在灰尘多的场所、具有腐蚀性物质的场所及有挥发性气体的场所操作。
9） 请注意所有电源线、信号线、接地线等接线时不要受压或过度扭曲，以确保使用安全。
10） 电源线的接地端须以适当大小的导线和接头连接到生产工厂的系统地线，此连接必须被永久固定。
11） 所有可转动的部分，必须以所提供的零件加以防范露出。
12） 在安装完成第一次开电后，先关闭切线功能以低速操作缝纫机并检查转动方向是否正确、运转是否稳定。
13） 在进行以下操作前，请先关闭所有电源：
    1.在控制箱与马达上插拔任何连接插头时。
    2.穿针线时。
    3.翻抬缝纫机机头时。
    4.修理或做任何机械上的调整时。
    5.机器闲置不用时。
14） 修理或高层次的保养工作，仅能由受过训练的机电技师来执行。
    所有维修用的零件，须由本公司提供认可，方可使用。
15） 使用本产品请远离高频电磁波和电波发射器等，以免所产生的电磁波干扰伺服驱动装置而发生误动作。
16） 请不要以不适当物体来敲击或撞击本产品及各装置。

保修期限
本产品保修期限为购买日期起一年内或出厂月份起两年内。

保修内容
本产品在正常情况使用且无人为操作失误的前提下，于保修期间无偿为客户维修使能正常操作。
但以下情况于保修期间将收取维修费用：
1. 不当使用包括误接高压电源、将产品移做其它用途、自行拆卸、维修、更改、或不依规格范围使用、进水进油及插入异物于本产品。
2. 火灾、地震、闪电、风灾、水灾、盐蚀、潮湿、异常电压及其它天灾或不当场所造成的损害。
3. 客户购买后摔落本产品，或客户自行运输（或托付运输公司）造成的损害。
＊ 本产品在生产及测试上皆尽最大努力和严格控制使其达到高品质及高稳定的标准,但外部的电磁或静电干扰或不稳定的供应电源,仍可能对本产品造成影响或损害,因此操作场所的接地系统一定要确实做好,并建议用户安装故障安全防护装置（如漏电保护器）

1 按键显示及操作说明

1.1 按键说明

名称	按键	注明
功能参数编辑键	P	进入或退出功能参数的编辑。
参数查看保存键	S	对所选参数号内容进行查看和保存：选择好参数号后按此键可以进行查看和修改操作，修改参数值后按此键则退出并保存参数。
参数递增键	+	增大参数。
参数递减键	—	减小参数。
起始回缝键	前固缝	若点击，切换执行起始回缝 B 段、执行起始回缝（A、B 段）1 次或执行起始回缝（A、B 段）2 次； 若长按，增加屏幕背光亮度。
终止回缝键	后固缝	若点击，切换执行终止回缝 C 段、执行终止回缝（C、D 段）1 次、执行终止回缝（C、D 段）2 次； 若长按，降低屏幕背光亮度。
模式切换键	模式	若点击，切换自由缝模式、一段定针缝模式、连续回缝模式和多段定针缝模式。
自动触发键	自动触发	1.在自由缝的式样中：按下此键无功能。 2.在定针缝的式样中按下此键：当踏板一经往前踏下触发，则自动执行 E，F 段或 G，H 段中所设定的针数，直到段内针数完成后自动停止。再逐一触发踏板，则自动执行下一段所设定的针数直到自动完成切线、扫线等动作为止。相应图标不亮时，表示关闭相应功能。 3. 若长按，可恢复出厂设置。
抬压脚键	压脚	1.✂╧图标亮时，切完线后压脚自动抬起。 2.╟╧图标亮时，车缝中马达停止时压脚自动抬起。 3.当 2 个图标都亮时，切完线后和车缝中马达停止时压脚都自动抬起。 4.当 2 个图标都不亮时，无自动抬压脚功能。
夹线键	夹线松线	若点击，设定使用或取消夹线功能。
切线键	剪线	若点击，设定使用或取消切线功能。
慢速起缝键	慢速起缝	若点击，设定使用或取消慢速起缝功能。
停针位键	停针位	若点击，切换缝制后机针的停止位置（上停针位/下停针位）。
补针键	补针	若点击，可进行补针动作。

1.2 辅助功能

1.2.1 恢复出厂设置

在主界面下，长按自动触发键可恢复出厂设置。

1.2.2 停针位快捷设置

在主界面下，点击 P 键进入参数，将参数调至 P72 项，手动转动手轮至所需的上停针位，显示的数值

会随手轮位置变化而变化，按 S 键可保存当前位置（数值）为上停针位，同时自动计算下停针位。

1.2.3 锁屏功能

在主界面下，当无操作时间达到 P27-N01 项设置的时间（s）时会自动锁屏，或长按 S 键可进行手动锁屏。锁屏"LOCK"状态下，点击 S 键解锁。

2 参数表

参数项	中文说明	范围	初始值	内容值名称说明与备注
P01	最高转速（rpm）	100-3700	3700	车缝时的最高转速设定
P02	加速曲线调整（%）	10-100	80	控速器爬升斜率设定 斜率值愈大，速度愈陡；斜率值愈小，速度愈慢
P03	针停定位选择	UP/DN	DN	UP：上停针；DN：下停针
P04	起始回缝速度（rpm）	200-3200	1800	前段回缝（起始回缝）时的速度设定
P05	终止回缝速度（rpm）	200-3200	1800	后段回缝（终止回缝）时的速度设定
P06	连续回缝速度（rpm）	200-3200	2000	连续回缝时的速度设定
P07	慢速起缝速度（rpm）	200-1500	400	慢速起缝时的速度设定
P08	慢速起缝针数	0-99	2	慢速起缝时的针数设定
P09	自动定针缝速度（rpm）	200-4000	3500	触发自动功能键按下时的速度设定
P10	定针缝后自动执行终止回缝功能	ON/OFF	ON	ON：在执行完最后一段定针缝后，将自动执行终止回缝动作。即在任何缝制模式下，终止回缝前不能作补针功能。 OFF：在执行完最后一段定针缝后，将无法自动执行终止回缝功能，必须重新再作前或全后踏动作时始可。
P11	手按回缝时功能模式选择	J/B	J	J：JUKI 方式（在车缝中和中途停止时均执行倒缝） B：BROTHER 方式（即在车缝中执行倒缝动作，在停止时执行补针动作）
P12	起始回缝运动模式选择	0-3	1	0：受踏板控制，可任意停止与启动； 1：轻触踏板，自动执行回缝动作；
P13	起始回缝结束模式选择	CON/STP	CON	CON：起始回缝段完成后，自动连续下一段功能 STP：起始回缝段针数完成后自动停止
P14	慢速起缝功能设定	ON/OFF	OFF	
P15	补针方式	0-4	2	0：半针；1：一针；2：连续补半针；3：连续补一针；4：连续补针，快速停车
P16	手动倒缝限速	0-3200	0	数值为 0 时功能关闭
P17	自动计件选择	0-50	1	0：P41 项计数器不自动计数 1：P41 项计数器自动计数
P18	起始回缝补偿 1	0-200	131	起始回缝 A 段针迹补偿，0～200 动作逐步滞后；数值越大，A 短最后一针越长，B 段第一针越短
P19	起始回缝补偿 2	0-200	158	起始回缝 B 段针迹补偿，0～200 动作逐步滞后；数值越大，B 段最后一针越长
P20	终止回缝运动模式选择	1-3	1	1：轻触踏板，自动执行回缝动作；
P21	踏板前踩运行位置	30-1000	520	
P22	踏板回中位置	30-1000	418	
P23	踏板抬压脚位置	30-1000	248	
P24	踏板剪线位置	30-500	130	
P25	终止回缝补偿 3	0-200	131	终止回缝 C 段针迹补偿，0～200 动作逐步滞后；数值越大，C 段第一针越短
P26	终止回缝补偿 4	0-200	158	终止回缝 D 段针迹补偿，0～200 动作逐步滞后；数值越大，C 段最后一针越长，D 段第一针越短
P27-N01	锁屏时间（s）	0-300	0	数值为 0 时功能关闭
P27-N04	语音选择	0-2	0	0：关闭；1：中文；2：英文；

参数	名称	范围	默认值	说明
P27-N05	语音播报选择	0-3	0	0：关闭； 1：有开机语，无按键音； 2：无开机语，有按键音； 3：有开机语和按键音
P27-N06	计数器切线次数	0-9	1	
P27-N10	背光亮度	0-3	2	
P27-N11	背光变暗时间	0-200	30	参数值为 0 时，背光亮度不变。
P27-N12	开机显示计数器界面选择	0-1	0	0：关闭 1：开启
P27-N13	计数器模式选择	0-1	0	0：加数缝制计数器 1：减数缝制计数器
P28	连续回缝运动模式选择	0-3	1	0：受踏板控制，可任意停止与启动； 1：轻触踏板，自动执行回缝动作；
P29	切线停车力度	1-45	20	
P32	连续回缝补偿 5	0-200	131	起始回缝 A（C）段针迹补偿，0~200 动作逐步滞后；数值越大，A（C）段最后一针越长；B（D）段第一针越短
P33	连续回缝补偿 6	0-200	158	起始回缝 B（D）段针迹补偿，0~200 动作逐步滞后；数值越大，B（D）段最后一针越长，C 段第一针越短
P34	定针缝运动模式选择	A/M	A	A：轻触脚踏板，即自动执行定针缝动作 M：受脚踏板控制，可任意停止与启动
P36	松线功能设定	0-11	5	0：关闭 1~11：松线力度逐步变大
P37	自动拨线/夹线功能设定	0-11	8	0：关闭 1：拔线功能 2~11：夹线功能，数值越大动作力度越大
P38	自动切线功能设定	ON/OFF	ON	ON：打开 OFF：关闭
P39	中途停车自动抬压脚设定	UP/DN	DN	UP：开启 DN：关闭
P40	切线自动抬压脚设定	UP/DN	DN	UP：开启 DN：关闭
P41	计数器显示	0-9999		车缝完成件数显示；长按减号键可计数清零；
P42	信息显示			N01 电控版本号 N02 选针盒版本号 N03 转速 N04 脚踏板 AD 值 N05 机械角度（上定位） N06 机械角度（下定位） N07 母线电压 AD 值 N12 膝靠位置感应器 AD 值
P43	马达转动方向设定	CCW/CW	CCW	CW：顺时针方向　CCW：逆时针方向
P44	正常停车力度	1-45	16	
P45	回缝出力的周期信号（%）	1-50	25	回缝动作时，以周期性省电输出，避免电磁铁发烫
P46	切线后，反转提针功能选择	ON/OFF	OFF	ON：开启 OFF：关闭
P47	切线后，反转提针角度的调整	50-200	160	切完线后，由上针位算起，以反向运转作提针的角度调整。
P48	最低速度（定位速度）（rpm）	100-500	210	最低速度限制调整
P49	切线速度（rpm）	100-500	300	调整切线周期时的电机速度
P50	抬压脚全额出力的工作时间（ms）	10-990	200	
P51	压脚出力的周期信号（%）	1-50	20	压脚动作时，以周期性省电输出，避免电磁铁发烫

P52	延迟马达启动，保护压脚下放时间（ms）	10-990	120	踩下时延迟启动时间，以配合自动抬压脚放下的确认
P53	半后踏抬压脚功能取消	ON/OFF	OFF	ON：半后踏时，无抬压脚 OFF：半后踏时，有抬压脚
P54	切线动作时间（ms）	10-990	200	切线时序所需的动作时间
P55	拨／扫线动作时间/	10-990	30	拨／扫时序的动作时间
P56	开电后自动找上定位	0-2	1	0：始终不找上定位 1：始终找上定位 2：若电机已经处于上定位时不再找上定位
P57	抬压脚保护时间（s）	1-120	10	抬压脚保持时间后强制关闭
P58	上定位调整	0-1439	40	上定位调整，数值减少时会提前停针，数值增加时会延迟停针
P59	下定位调整	0-1439	750	下定位调整，数值减少时会提前停针，数值增加时会延迟停针
P60	测试速度（rpm）	100-3700	3500	设置测试速度
P61	A 项测试	ON/OFF	OFF	持续运行测试模式
P62	B 项测试	ON/OFF	OFF	全功能启停测试模式
P63	C 项测试	ON/OFF	OFF	无定位、无功能启停测试模式
P64	测试时测试运行时间	1-250	30	
P65	测试时测试停止时间	1-250	10	
P66	机头保护开关	0-2	1	0：不检测　　1：检测零信号　　2：检测正信号
P70	出厂机型选择			
P71	压脚释放缓冲占空比(%)	0-50	2	压脚下放时的力度调整
P72	上定位快捷调整	0-1439		调整上停针位，显示的数值会随手轮位置变化而变化，按"S"键可保存当前位置（数值）为上停针位
P73	下定位快捷调整	0-1439		调整下停针位，显示的数值会随手轮位置变化而变化，按"S"键可保存当前位置（数值）为下停针位
P76	倒缝全额出力时间(ms)	10-990	200	倒缝开始动作时，全额出力的动作时间
P78	夹线器起夹角度	5-359	100	
P79	夹线器结束角度	5-359	270	
P80	剪线进刀角度	5-359	18	剪线进刀角度设置（下定位为 0°计算）
P81	剪线开始加力角度	5-359	130	剪线加力角度设置（下定位为 0°计算，需大于 P80 项参数值）
P82	剪线退刀角度	5-359	172	剪线退刀角度设置（下定位为 0°计算，需大于 P81 项参数值）
P92	电机电角度校正		160	查看说明书 1.5 章节 读取编码器起始角度，出厂已设置，请勿随意更改（参数值不可手动更改，随意更改会导致控制箱、电机出现异常或损坏）
P93	半反踏功能延迟时间	10-900	200	
P99	终止回缝补偿 C1	0-250	1	剪线后防脱线头模式下，终止回缝结束为 C 段时回缝一针的补偿
P100	终止回缝补偿 D1	0-250	5	剪线后防脱线头模式下，终止回缝结束为 D 段时回缝一针的补偿
P101	松线开始角度	1-359	30	松线开始角度（下定位为 0°计算）
P102	松线结束角度	1-359	180	松线结束角度（下定位为 0°计算，需大于 P101 项参数值）

P117	压脚释放缓冲延迟时间（ms）	0-990	0	
P119	电磁铁过流保护选择	0-1	1	0：不检测　　1：检测
P120	油位报警开关检测	0-1	0	0：不检测　　1：检测
P121	剪线模式选择	0-3	0	0：普通模式 1：短线头模式 2：剪线后防脱线头模式 3：短线头和防脱线头模式
P122	剪线后防脱线头模式，剪线前倒缝动作的时机	0-1439	830	参数值越大剪线前一针的针距越大
P123	剪短线头模式，剪线过程中倒缝动作的时机	0-100	0	

注：参数初始值仅供参考，实际参数值以实物为准。

3 错误代码表

错误码	问题描述	解决措施
E01	超电压	关闭系统电源，检测供应电源电压是否正确。（或是否超过使用规定的额定电压）。 若正确，请更换控制箱并通知售后服务。
E02	低电压	关闭系统电源，检测供应电源电压是否正确。（或是否低于使用规定的额定电压）。 若正确，请更换控制箱并通知售后服务。
E03	CPU 通信异常	关闭系统电源，检查控制面板的连线是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换控制箱并通知售后服务。
E05	控速器接触异常	关闭系统电源，检查控速器接头是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换控速器并通知售后服务。
E07	电机堵转	转动机头手轮观察是否卡住。如卡住则先排除机械故障。 如转动正常，检查电机编码器接头和电机电源线接头是否松动。如有松动请修正。 如接触良好，检查供应电源电压是否异常或转速设置过高。如有请调整。 若仍不能正常工作，请更换控制箱并通知售后服务。
E08	手动倒缝动作时间超过 15 秒	倒缝电磁铁吸合时间过长，重启产品即可。 若重启产品后还是报 E-08，请检查手动倒缝开关是否损坏。
E10	电磁铁过流保护	关闭系统电源，检查电磁铁（电磁阀）是否损坏或短路。
E09 E11	定位信号异常	关闭系统电源，检查电机编码器接口是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换电机并通知售后服务。
E14	编码器信号异常	关闭系统电源，检查电机编码器接口是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换电机并通知售后服务。
E15	电力模块不正常过流保护	关闭系统电源，再重新开启。若仍不能正常工作，请更换控制箱并通知售后服务。
E17	机头保护开关没到正确位置	关闭系统电源，检查机头是否掀开，控制箱内滚珠开关

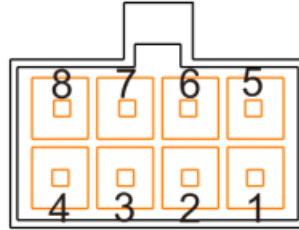|		是否移位或损坏。
E20	电机启动失败（电角度错误）	关闭系统电源，检查电机编码器接口和电机电源接口是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换控制箱并通知售后服务。
oil	油量过低	关闭电源，检查缝纫机油量是否过低，将油量加满后重启系统。若仍不能正常工作，请更换油位感应器并通知售后服务。

4 端口示意图
4.1 端口说明
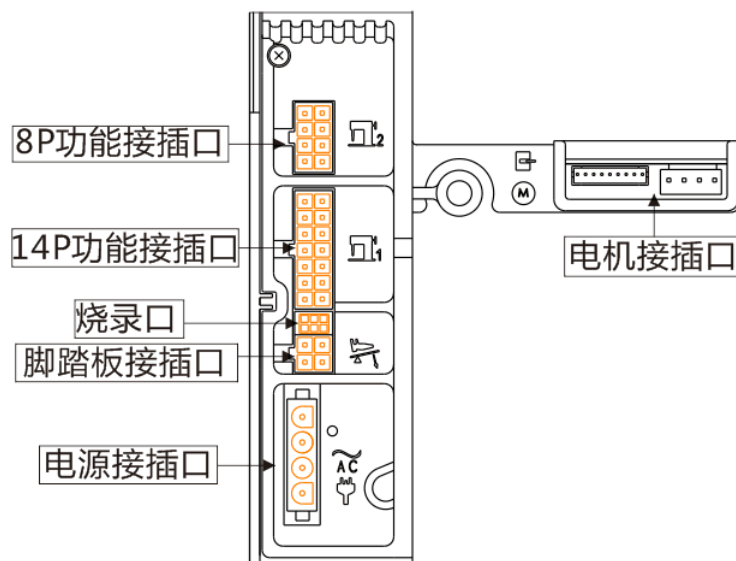
4.2 14P 功能端口说明
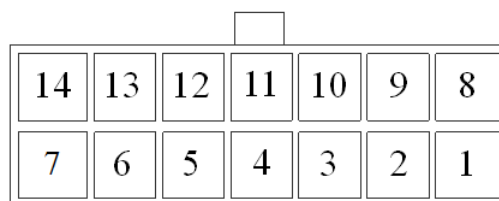
1.剪线电磁铁：1、8（+32V）

2.夹线（扫线）电磁铁：2、9（+32V）

3.松线电磁铁：3、10（+32V）

4.LED 灯：4（DGND）、11（+5V）

5.倒缝按键：5（信号）

6.倒缝电磁铁：6、13（+32V）

7.补针按键：7（信号）

8. 风扇：12（DGND）、14（+5V）

4.3 8P 功能端口说明

1. 油位感应：5（+5V）、6（DGND）、2（信号）
2. 压脚位置感应：1（+5V）、7（DGND）、3（信号）
3. 压脚电磁铁：4、8（+32V）

⚠Safety Instruction

1. Users are required to read the operation manual completely and carefully before installation or operation.
2. All the instruction marked with sign ⚠ must be observed or executed; otherwise, bodily injuries might occur.
3. The product should be installed and pre-operated by well-trained persons.
4. For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
5. When connecting power supply cords to power sources, it is necessary to make sure that the power voltage matches the rated voltage indicated on the motor's name plate.
6. Don't operate in direct sun light，outdoors area and where the room temperature is over 45°C or below 5°C.
7. Please avoid operating near the heater at dew area or at the humidity below 30% or above 95%.
8. Don't operate in area with heavy dust, corrosive substance or volatile gas.
9. Avoid power cord being applied by heavy objects or excessive force, or over bend.
10. The earth wire of power cord must be connected to the system ground of the production plant by proper size of conductions and terminals. This connection should be fixed permanently.
11. All the moving portions must be prevented to be exposed by the parts provided.
12. Turing on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.
13. Turn off the power before the following operation：
    a) Connecting or disconnecting any connectors on the control box or motor.
    b) Threading needle.
    c) Raising the machine head.
    d) Repairing or doing any mechanical adjustment.
    e) Machines idling.
14. Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
15. All the spare parts for repair must be provided or approved by the manufacturer.
16. Don't use any objects or force to hit or ram the product.

Guarantee Time
> Warranty period of this product is 1 year dated from purchasing, or within 2 years from ex-factory date.

Warranty Detail:
> Any trouble found within warranty period under normal operation, it will be repaired free of charge. However, maintenance cost will be charged in the following cases even if within warranty period:

1. Inappropriate use, including: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operation without the precaution, or operation out of its specification range, or inserting other objects or liquids into the product.
2. Damage by fire, Earth quake, lighting, wind, flood, salt corrosive, moisture, abnormal power voltage and any other damage cause by the natural disaster or by the inappropriate environments.
3. Dropping after purchasing or damage in transportation by customer himself or by customer's shipping agency

Note: We make our best effort to test and manufacture the product for assuring the quality. However, it is possible that this product can be damaged due to external magnetic interference and electronic static or noise or unstable power source more than expected; therefore the grounding system of operate area must guarantee the good earth and it's also recommended to install a failsafe device.   (Such as residual current breaker)

1 Button Displays and Operating Instructions

1.1 Key Description

Name	Key	Indicate
Function Parameter Edit	P	Press this key to enter or exit function parameter edit mode.
Setting Parameter Check And Save	S	For the content of the selected parameters check and save: after select parameter press this key to check and modify operation, after modified parameter value press this key to exit and save the parameter.
Parameter Increase	+	Parameter increase
Parameter Decrease	−	Parameter decrease
Start Back-Tacking Selection		Execution starting back seam B segment or execution starting back seam (A, B segment) 1 Execution starting back seam (A, B segment) 2 times. If long press, can increase screen backlighting brightness.
End Back-Tacking Selection		Execution terminates back seam C segment or execution terminates back seam (C, D segment) 1 Execution terminates back seam (C, D segment) 2 time. If long press, can decrease screen backlighting brightness.
Mode Shift Key		If click, shift to free sewing, constant stitch sewing, continuous back seam shortcuts and multi-section set needle shortcuts.
Auto Function		1. under the free sewing mode: press this key no function. 2. Under the Constant-Stitch Sewing mode press this key: As the treadle is toed down, it will automatic performs E,F or G,H section by section, after finished section stitches, it will stop automatically. When the treadle is toed down again, it will automatically execute next section stitches of setting till finished trimming, wiper and so on action. The LED OFF indicate the corresponding function is turn off. 3. If long press, can restore factory setting.
Automatic Presser Foot Lifting Setting		1. Automatic presser foot lifting after trimming function when ✂⤓ icon is lighting. 2. Automatic presser foot lifting after pause function when ⦚⤓ icon is lighting. 3. Automatic presser foot lifting after pause function or trimming function when ✂⤓ icon and ⦚⤓ icon are lighting. 4. Presser Foot is inactive when ✂⤓ icon and ⦚⤓ icon are not lighting.
Clamp Function Setting		Set used or cancelled clamp function.
Thread Trimming	✂	If click, set used or cancelled thread trimming function.
Slow Launch Setting		If click, set used or cancelled slow launch function.
Needle Stop Position Selection		If click, the needle stop position after shift the sewing mode (Up position / Down position)
Fill Up Needle		If click, set used or cancel fill up needle function.

1.2 Auxiliary function

1.2.1 Restore Factory Setting

On the main interface long-press one-shot sewing key, restore factory setting.

1.2.2 Needle Stop Position Function Setting

In the main interface, click the P key to enter the parameters, and set the parameters to P72. Manually rotate the handwheel to up position. The value displayed will change with the change of the wheel position. Press S key to save the current position (value) as the upper pin stop and calculate down position automatically.

1.2.3 Lock Screen Function

In the main interface, when no operation time reaches the time (s) set by item p27-n01, the lock screen will be automatically locked, or long-press "S" key to lock screen. In the lock screen "LOCK" state, click the "S" key to unlock.

2 User Parameter

No.	Items	Range	Default	Description
P01	Maximum sewing speed（rpm）	100-3700	3700	Maximum speed of machine sewing
P02	Set accelerated curve （%）	10-100	80	Set the acceleration slope
P03	Needle UP/ DOWN	UP/DN	DN	UP: Needle Stops at Up Position DN: Needle Stops at Down Position
P04	Start back-tacking speed（rpm）	200-3200	1800	Set Start Back-Tacking Speed
P05	End back-tacking speed （rpm）	200-3200	1800	Set End Back-Tacking Speed
P06	Bar-tacking speed （rpm）	200-3200	2000	Set Repeat Bar-Tacking Speed
P07	Soft start speed（rpm）	200-1500	400	Set Soft Start Speed
P08	Stitch numbers for soft start	0-99	2	Soft Start Stitches Setting
P09	Automatic constant-stitch sewing speed（rpm）	200-4000	3500	Speed adjustment for automatic constant-stitch sewing
P10	Automatic end back-tacking sewing	ON/OFF	ON	ON: After last seam of constant stitch sewing, it will automatic execute the End Back-Tacking sewing function. When turn on, the Stitch-Correction is invalid. OFF: Automatic End Back-Tacking will not execute after last seam, but can be done by pedal manually.
P11	Back-tacking mode Selection	J/B	J	J: JUKI Mode (Press TB switch will activate reverse solenoid when either machine is stopped or running). B: BROTHER Mode (Press TB switch will activate reverse solenoid only when machine is running).
P12	Start back-tacking running mode selection	0-3	1	0:Could be arbitrarily stop and start 1:Automatically perform actions 2:Pause mode
P13	Ending mode of start back-tacking	CON/STP	CON	CON：Start Back-Tacking is completed automatically continued for next action. STP：After the number of stitches is completed, stop automatically.
P14	Slow start function selection	ON/OFF	OFF	

No.	Items	Range	Default	Description
P15	Mending stitch mode	0-4	2	0:half stitch; 1: one stitch; 2: continuous half stitch; 3: continuous one stitch; 4: continuous one stitch, quick stop.
P16	Back-Tacking speed limit	0-3200	0	When the parameter is 0, the speed limit function is OFF.
P17	Auto count selection	0-50	1	0: P41 item counter not count automatically. 1-50: P41 item counter increment count automatically.
P18	Start back-tacking compensation 1	0-200	131	Stitch Balance for end back-tacking A section, 0~200 action gradually delay; the large value, the longer of the A section last stitch, and the shorter of the B section first stitch.
P19	Start back-tacking compensation 2	0-200	158	Stitch Balance for end back-tacking B section, 0~200 action gradually delay; the large value, the longer of the B section first stitch.
P20	End back-tacking running mode selection	1-3	1	1: Automatically perform actions 2: Pause mode
P21	The position of the pedal for running	30-1000	520	
P22	The position of the pedal for the stop	30-1000	418	
P23	The position of the pedal for lifting presser foot	30-1000	248	
P24	The position of the pedal for thread trimming	30-500	130	
P25	End back-tacking compensation 3	0-200	131	Stitch Balance for end back-tacking C section, 0~200 action gradually delay; the large value, the shorter of the C section first stitch.
P26	End back-tacking compensation 4	0-200	158	Stitch Balance for end back-tacking D section, 0~200 action gradually delay; the large value, the longer of the C section last stitch, and the shorter of the D section first stitch.
P27-N01	Lock screen clock	0-300	0	When the parameter value is 0, the lock screen function is invalid.
P27-N04	Speech selection	0-2	0	0: OFF 1: Chinese 2: English
P27-N05	Voice broadcast selection	0-3	0	0: OFF 1: With welcome speech but without key tone 2: With key tone but Without welcome speech 3: With welcome speech and key tone
P27-N06	Counter trimming times	0-9	1	
P27-N10	Backlight brightness settings	0-3	2	
P27-N11	Backlight extinguishing time setting	0-200	30	When the parameter value is 0, the backlight brightness remains the same.
P27-N12	Start machine display counter interface selection	0-1	0	0: OFF 1: ON
P27-N13	Counter mode selection	0-1	0	0: Addend sewing counter 1: Subtrahend sewing counter
P28	Bar-Tacking running mode selection	0-3	1	0: Could be arbitrarily stop and start 1: Automatically perform actions
P29	The rate of thread trimming stop	1-45	20	

No.	Items	Range	Default	Description
P32	Bar-Tacking compensation 5	0-200	131	Stitch Balance for start back-tacking A (C) section, 0~200 action gradually delay; the large value, the longer of the A (C) section last stitch; the shorter of the B(D) section first stitch.
P33	Bar-Tacking compensation 6	0-200	158	Stitch Balance for start back-tacking B (D) section, 0~200 action gradually delay; the large value, the longer of the B (D) section last stitch; the shorter of the C section first stitch.
P34	Constant-Stitch Sewing running mode selection	A/M	A	A：Automatically perform actions M：Could be arbitrarily stop and start
P36	Thread slacking function selection	0-11	5	0: OFF 1-11: The strength of thread slacking
P37	Automatic thread wiping function / Automatic thread clamping function selection	0-11	8	0 : OFF 1: Automatic thread wiping Function 2-11: Automatic thread clamping Function and the strength of automatic thread clamping.
P38	Automatic thread trimming function selection	ON/OFF	ON	ON: ON OFF: OFFF
P39	Automatic presser foot lifting when pause function selection	UP/DN	DN	UP: ON DN: OFF
P40	Automatic presser foot lifting after trimming function selection	UP/DN	DN	UP: ON DN: OFF
P41	Counter display	0-9999		Display the quantity of finished sewing piece.
P42	Information Display			N01　The control system version number N02　The panel version number N03　Speed N04　The pedal AD N05　The mechanical angle(up position) N06　The mechanical angle(down position) N07　Busbar voltage AD N12　Kneeling device position sensor AD
P43	Direction of Motor Rotation	CCW/CW	CCW	CW: Clockwise CCW: Counter Clockwise
P44	The rate of normal stop	1-45	16	
P45	Back-tacking operation duty cycle (%)	1-50	25	Back-tacking operate in duty cycle to save electricity and protect the electromagnet from over-heat.
P46	Motor stop with a reverse angle after trimming function	ON/OFF	OFF	ON: ON OFF: OFF
P47	Adjust the reverse angle when motor stop after trimming	50-200	160	Adjusting at reverse direction after trimming.
P48	The minimum speed Limit（rpm）	100-500	210	Adjust the minimum speed
P49	Thread trimming speed（rpm）	100-500	300	Adjust thread trimming speed
P50	Toot lifter operation time to full output（ms）	10-990	200	
P51	Presser foot lifter operation duty cycle (%)	1-50	20	Presser foot lifter operate in duty cycle to save electricity and protect the electromagnet from over-heat.
P52	Motor starting delay time（ms）	10-990	120	Delay the start time, with automatic presser foot down.
P53	Half back pedaling lifting presser foot function to cancel	ON/OFF	OFF	ON: Function to cancel OFF: Half back pedaling lifting presser foot

No.	Items	Range	Default	Description
P54	Thread trimming action time（ms）	10-990	200	Completion of the thread trimming action required time.
P55	Thread wiping action time（ms）	10-990	30	Completion of the thread wiping action required time.
P56	Power on and positioning	0-2	1	0: always not to find the up needle position 1: always to find the up needle position 2:If the motor is not into the up needle position, it will find the up needle position
P57	Hold time of presser foot lifter（s）	1-120	10	Forced shut-down after hold time.
P58	Up needle position adjustment	0-1439	40	Up position adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P59	Down needle position adjustment	0-1439	750	Down position adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P60	Testing Speed（rpm）	100-3500	3500	Setting testing speed.
P61	Testing A	ON/OFF	OFF	Continuous running testing.
P62	Testing B	ON/OFF	OFF	Start and stop testing with all functions.
P63	Testing C	ON/OFF	OFF	Start and stop testing without all function.
P64	Running Time of Testing B and C	1-250	30	
P65	Stop Time of Testing B and C	1-250	10	
P66	Machine protection switch selection	0-2	1	0：Disable 1：Testing zero signal 2：Testing positive signal
P70	The factory type selection			
P71	Presser foot release operation duty cycle（%）	0-50	2	The buffer force of presser foot release operation.
P72	Up needle position adjustment	0-1439		Hand rotation manual to the appropriate position, press S key to save.
P73	Down needle position adjustment	0-1439		Hand rotation manual to the appropriate position, press S key to save.
P76	Back-tacking operation time to full output（ms）	10-990	200	Back tacking start action, full output action times.
P78	The start angle of thread clamping	5-359	100	
P79	The stop angle of thread clamping	5-359	270	
P80	The start angle of thread trimming	5-359	18	Shear line infeed id angle setting(under defined as 0°)
P81	The angle of the motor start to increase torque	5-359	130	Torque angle of thread trimming setting(Down position as 0°, the value need greater than the P80 parameter item)

No.	Items	Range	Default	Description
	when thread trimming			
P82	The stop angle of thread trimming	5-359	172	Feeder back angle of thread trimming setting Down position as 0°, the value need greater than the P80 parameter item)
P92	Correct the electrical angle of motor		160	Review the user manual 1.5 Reading the initial Angle of encoder, the factory default was set, please do not change the values (parameter value cannot be changed manually, random change it will result the control box and motor abnormal or damaged).
P93	The delay time of the half back pedaling function	10-900	200	
P99	End Back-Tacking compensation C1	0-250	1	Prevent taking off the thread after thread trimming mode, compensation for C part of End Back-Tacking.
P100	End Back-Tacking compensation D1	0-250	5	Prevent taking off the thread after thread trimming mode, compensation for D part of End Back-Tacking.
P101	The start angle of thread slacking	1-359	30	Song line start angle (defined as 0°under calculation)
P102	The stop angle of thread slacking	1-359	180	Loose wire end angle (defined as 0°under calculation)
P117	The delay time of the presser foot release damping force (ms)	0-990	0	
P119	Electromagnet overcurrent protection selection	0-1	1	0: OFF 1: ON
P120	The oil level alarm switch selection	0-1	0	0: OFF 1: ON
P121	Thread trimming mode selection	0-3	0	0: Normal mode 1: Small thread end mode 2: Prevent taking off the thread after thread trimming mode 3: Small thread end mode and prevent taking off the thread after thread trimming mode
P122	Prevent taking off the thread after thread trimming mode, timing of back-tacking operation before thread trimming	0-1439	830	The greater the value, the greater the one stitch before thread trimming.
P123	Small thread end mode, timing of back-tacking operation when thread trimming	0-100	0	

Note: the initial value of parameters is for reference only, and the actual value of parameters is subject to the real object.

3 Error Code List

| Error Code	Problem description	Measure
E01	Over-voltage	Turn off the machine, check the power supply voltage. (Or whether exceed the rated voltage of use). If there are still errors, please replace the control box and call for customer service.
E02	Low-voltage	Turn off the machine, check the power supply voltage. (Or whether under the rated voltage of use). If there are still errors, please replace the control box and call for customer service.
E03	CPU communication error	Turn off the machine, please check if the operation panel in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E05	Pedal connection error	Turn off the machine, please check if the pedal in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E07	Motor locked-rotor error	Turn the machine handwheel, check if it is stuck. If it is stuck, you have to rule out the mechanical failure. If turn normal, check if the encoder and motor in bad connection or is too loose. If yes, please correct. If connection well, check if the power supply voltage is abnormal or sewing speed is too high. If yes, please adjust. If there are still errors, please replace the control box and call for customer service.
E08	Manual reverse feeding operation more than 15 seconds	Back-Tacking electromagnet response time is too long, you have only to restart the machine. If there are still errors E-08 after restart the machine, check if the manual reverse feeding switch is damaged.
E10	Solenoid over-current	Turn off the machine, please check the related circuit is shorted or damaged.
E09 E11	Positioning signal error	Turn off the machine, please check if the encoder in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E14	Encoder error	Turn off the machine, please check if the encoder in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E15	Power supply module abnormal over-current	Turn off the machine, then turn on again. If there are still errors, please replace the control box and call for customer service.
E17	Machine protection switch is not in the correct position	Turn off the machine, check if the machine is turn over, or the Mercury Switch is shifted or damaged.
E20	Motor failed to start (Electrical angle error)	Turn off the machine, please check if the encoder and motor in bad connection or is too loose. To get it right and turn on. If there are still

		errors, please replace the control box and call for customer service.
oil	Low oil	Turn off the machine, check if the oil is too little. To fill it up and turn on. If there are still errors, please replace the control box and call for customer service.

## 4 Port Diagram

4.1 Port Description
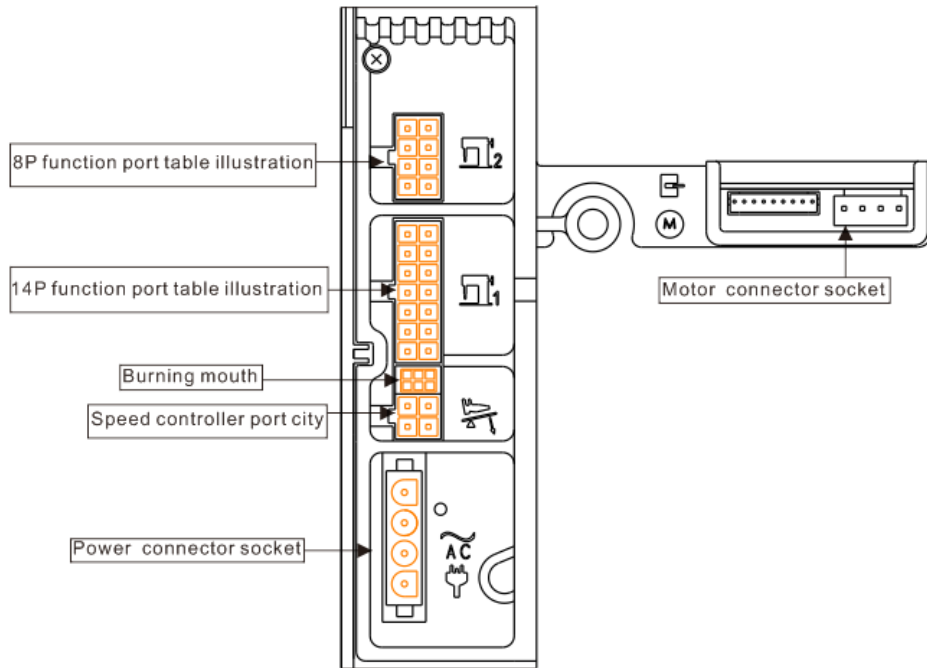
4.2 14P function port description
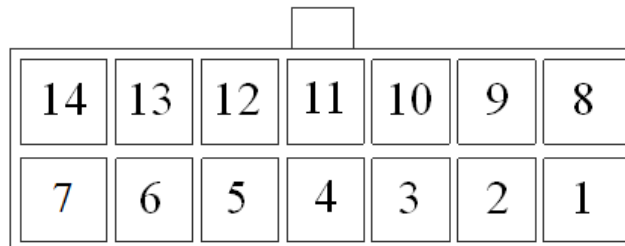
1. Thread trimming electromagnet：1、8（+32V）

2. Thread wiping/ thread clamping electromagnet：2、9（+32V）

3. Thread slacking electromagnet：3、10（+32V）

4. LED Light：4（DGND）、11（+5V）

5 .Reverse stitch key：5（signal）

6. Back-tacking electromagnet：6、13（+32V）

7. Mending stitch key：7（signal）

8. Fan：12（DGND）、14（+32V）

4.3 8P function port description
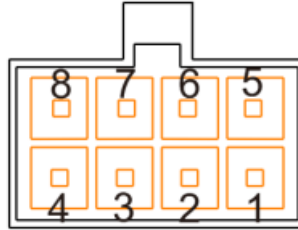
1. Oil level sensor：5（+5V）、6（DGND）、2（signal）

2. Presser foot position sensor：1（+5V）、7（DGND）、3（signal）

3. Presser foot electromagnet：4、8（+32V）