

# GLOBAL

## **BS 473 DD**

**Direct drive buttonsewing machine  
Manual for the DD motor**

**Instruction manual**

**Always switch off the electricity when working on  
the machine.**

# 前言

## Preface

欢迎使用本公司产品，制衣行的正确投资选择！

Welcome to use the our products, it is the right investment choices in garment industry!

本说明书为本公司新研发的“373D 直驱电机控制箱”产品参考手册，请认真阅读此手册以更好的运用本公司产品！

This user manual is for our newly developed “373D ditrect drive motor control box” products reference manual, Please read this manual carefully, hope it can give you useful help!

阅读本说明前以下要求说明请注意：

Before reading the manual, please note the following requirements:

1: 用户使用作业前必须可靠接地，保证人身安全！

The user must be grounded before operations to ensure safety

2: 非专业人士请勿拆卸控制箱

Non-professionals do not disassemble the control box

3: 控制箱与电机远离强磁高辐射环境

The control box and motor away from the magnetic high radiation environment

4: 不要在过热环境中作业

Do not work in hot environment

5: 不要在过于潮湿环境中作业

Do not work in humid environments

6: 220V 电控：【220V 接入供电时电压稳定在（210V~240V）之间】

220V electronic control: [220V access to power supply voltage stability between (210V~240V)]

110V 电控：【110V 接入供电时电压稳定在（100V~130V）之间】

110V electronic control: [110V access to power supply voltage stability between (100V~130V)]

安全叮嘱：

Safety requirement:

1: 电机电控接通电源时（开机状态）请不要把脚放在脚踏板上

Do not put your feet on the pedals when the control box and motor is switched on (boot status)

2: 本产品请专业人士安装调试

Let professionals to install and debug this product

3: 严禁在通电时打开控制箱与电机端盖

Do not open the control box and the motor cover when energized

4: 换针, 穿线或更换底线时请关闭电源

Please turn off the power when changing the needle,threading or replacing the bottom line

5: 安装, 拆卸维修时请拔掉电源插头

During installation and removal service,please turn off the power and pull the plug

6: 翻抬缝纫机时请关闭电源

Please turn off the power when turn lift sewing machine

7: 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器而发生错误动作。

When use this product, please stay away from high-frequency electromagnetic waves and radio wave transmitters, etc., in case the electromagnetic waves generated interfere with the servo drive to occur wrong action .

郑重声明:

Solemnly Declare:

1: 不遵守安全使用说明操作规章, 发生意外后果自负。

Do not comply with the manual book operating regulations and the safety requirements, all accidental occurrence should be taken by yourself.

2: 未经本公司授权, 请勿擅自改动产品, 由此而引起的后果本公司不负任何责任。

Without our authorization, please do not alter our products, our company is not liable for any consequences arising therefrom.

保修策略:

Warranty policy:

1: 本产品自购买起免费保修 2 年, 终身维护。保修期内除人为损坏外出现的任何质量问题可免费修

Since from the purchase of this product,the free 2-year warranty,lifetime maintenance. During the warranty period,any quality problems the product will be free repaired,except artificial damage.

2: 未经本公司同意自行拆卸, 改装造成损坏将不给予保修

Without our consent disassemble or modify,the damaged will not give in warranty


3: 但凡出现无法解决的问题可以联系本公司

Whenever find the problem can not be solved,you can contact with our company













# 1: 显示屏常用操作介绍

## Introduction of display screen common Operation



序号 No.1	按键图 标 Button Icons	功能说明 Function Description
1	LED (A)	当压脚放下到位时 LED 指示灯 A 亮起，压脚抬起或压脚放置不到位时 LED 指示灯 A 熄灭。(可用作判断压脚实时情况，易可用来判断压脚动作传感器好坏) When Press foot put into correct place LED lamp A on, When Press foot up or put into wrong place LED lamp A off.(It can be analyzed the presser foot Actual situation, Also to judge the quality of the presser foot motion sensor )
2	LED (B)	当机器左侧开机找针位的小铝轮旋转到某个固定位置被传感器感应到后 LED 指示灯 B 亮起。(可用来判断感应铝轮传感器的好坏) When small aluminum wheel in left of machine is rotated to a fixed position ( The Al. wheel will auto to find needle stop position when machine open), It will be detected by sensor, LED lamp B will light. (It also can be used to judge the quality of aluminum wheel sensor )
3	LED (C)	电机上针位指示 LED Up Needle position of motor LED
4	LED (D)	此 LED 指示灯为系统状态指示灯，当系统处于运行状态时 LED 指示灯 D 亮起，当系统处于待机时 LED 指示灯 D 熄灭。 This LED system status indicator, when system is running, LED lamp D light. When the system is on waiting, LED lamp D off.
P1		钉扣机 8 针快捷按键，当此功能开启时按键上方 LED 亮起，钉扣机将运行在 8 针模式。(可与 16 针 32 针配合切换使用) Button sewing machine 8-pin shortcut keys, When the function open, LED lights on above the key, machine will run 8-pin mode. (Can with 16-pin or 32-pin switchable)













<p><b>P2</b></p>		<p>钉扣机 16 针快捷按键，当此功能开启时按键上方 LED 亮起，钉扣机将运行在 16 针模式。（可与 8 针 32 针配合切换使用）</p> <p><b>Button sewing machine 16-pin shortcut keys, When the function open, LED lights on above the key, machine will run 16-pin mode. (Can with 8-pin or 32-pin switchable)</b></p>
<p><b>P3</b></p>		<p>钉扣机 32 针快捷按键，当此功能开启时按键上方 LED 亮起，钉扣机将运行在 32 针模式。（可与 8 针 16 针配合切换使用）</p> <p><b>Button sewing machine 32-pin shortcut keys, When the function open, LED lights on above the key, machine will run 32-pin mode. (Can with 8-pin or 16-pin switchable)</b></p>
<p><b>P4</b></p>		<p>拨线快捷按键，功能开启时按键上方 LED 亮起，功能关闭时按键上方 LED 熄灭。</p> <p><b>Wiper shortcut keys, When the function open, LED lights on above the key, When the function close the LED off.</b></p>
<p><b>P5</b></p>		<p>钉扣针数自定义键，点动 () 键，屏幕显示 n-08，后面 08 在闪烁此时点动 () () 按键可直接调整针数，调整完毕后点动 () 键将保存当前针数并运行自定义针数模式。</p> <p><b>Button sewing Pin Defined Button, Touch () , Screen display n-08, after the number twinkling, touch () () can adjust the pin number, after finish touch () to save the number and running the defined Button mode.</b></p>

P6		<p>机头 LED 灯开关按键，当按键上方 LED 灯亮起时表示机头 LED 灯开启，当按键上方 LED 灯熄灭时表示机头 LED 灯关闭。</p> <p><b>Head LED light switch button. The LED on means head LED lamp is on, otherwise it Off.</b></p>
P7		<p>钉扣机开机复位按键，每次开始必须进行一次复位动作后能运行。</p> <p><b>Machine Power reset button, when open the machine power, should be touch the reset one time, then can run the machine.</b></p>
1		<p>进入参数调整辅助键，可与 (  ) (  ) 键配合使用，不同配合将进入不同参数列表</p> <p>Enter parameter adjustment Secondary key, together with (  ) or (  ) using, different Combination into different Parameter List</p>
2		<p>参数确定保存键</p> <p><b>Parameter determines the Save button</b></p>
3		<p>“+” 键（修改参数时加）</p> <p><b>“+” button (modify the parameters plus )</b></p>
4		<p>“-” 键（修改参数时减）</p> <p><b>“-” button (modify the parameters minus )</b></p>
5		<p>向左键（在参数列表中用来返回上一页面用）</p> <p><b>In the parameter list to return to the previous page</b></p>
6		<p>向右键（在参数列表中进入参数调整用）</p> <p><b>In the parameter list to enter the parameter for adjustment</b></p>



# 快捷按键功能

## Shortcut Key Function

	<p>长按 (  ) 键功能</p> <p>Long press (  )</p>	<p>直接进入拨线参数调整</p> <p><b>Direct into enter the Wiper parameter adjustment</b></p>
	<p>长按 (  ) 键功能</p> <p>Long press (  )</p>	<p>直接进入压脚参数调整</p> <p><b>Direct into enter the press foot parameter adjustment</b></p>
	<p>长按 (  ) 键功能</p> <p>Long press (  )</p>	<p>按一下 (  ) 键。显示 000。长按 (  ) 键 5 秒，还原出厂参数。</p> <p>Touch (  ) button, Screen display 000, long press (  ) button 5 seconds, Restore factory settings</p>

## 2: 如何进入参数与如何修改参数

How to enter parameters and how to modify the parameters

系统参数进入解析:

### System parameters entering analysis:

按住 ( **P** ) 键不放, 再按 ( **-** ) 键将进入“系统参数”列

表, 显示屏会显示出 4 个零, 输入密码后按 ( **OK** ) 键即可进入。

进入后可看见系统参数编号, 此时可以用 ( **+** ) ( **-** ) 键,

切换系统参数编号, 找到需要调整的参数时按下 ( **P** ) 键,

进入当前此项参数调整, 最后按 ( **OK** ) 键, 保存退出。

Together touch ( **P** ) and ( **-** ) enter into “System parameters” list, screen

display 0000, after input password, then touch ( **OK** ) enter into. After entering

the system, the parameters number can be seen, then you can use ( **+** ) ( **-** ) key to switch the parameter number, when you find the need modify number,

then touch ( **P** ) key enter the current parameters, last touch ( **OK** ) button to save and Esc

**注:** 以上是进入方法, 具体参数号代表的参数意思详情如下:

**Note:** the up entry method, specific parameters No. on behalf of the parameters meaning as follows:



### 3: 操作参数说明表

Operating Parameter Description Table

#### 373D 系统参数列表:

#### 373D System parameter list

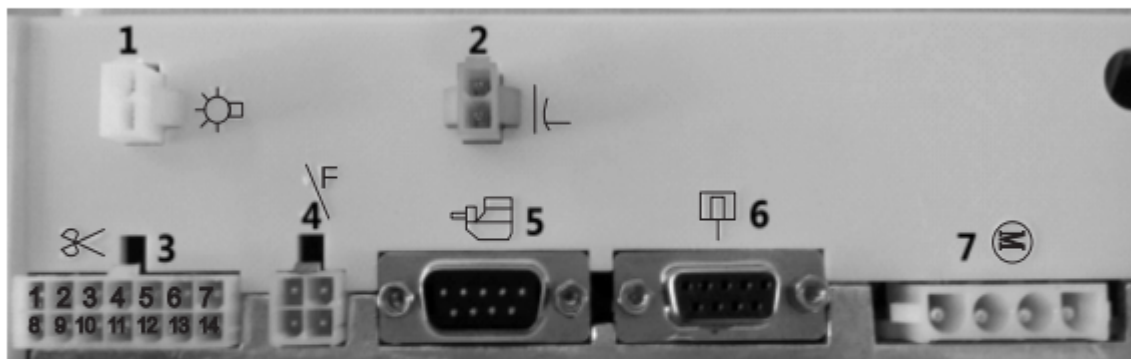
菜单号 System parameter list	功能说明 Function Description	功能参数默认值 Function parameter default values	功能参数范围 Function parameter ranges	参数说明 Parameter Description	注意事项 Precautions
002	复位速度 Reset speed	200	150 ~800	开机后寻找位置的运转速度	不易太快影响安全
021	还原系统密码 Restore the system password	000	000 ~ 003	此参数调到 003 长按 OK 键即可 This parameter is adjusted to 003 long press OK button	还原出厂密码 Restoring the factory password
023	显示速度 Display speed		200 ~ 1800	按一下(P)键 Click the (P) key	显示电机转速 Display motor speed
024	调速器检测 Governor detected	200 左右 (中点值) About 200 (Midpoint)		检测脚踏板是否正常 Detection governor normal	在未复位前检测不然影响安全 Detection Should before reset, otherwise affect safety
025	自动磨合 Automatic Running	0	0: 关闭 1: 开启 0: close , 1:open	机器磨合运行 Machine Running run	关闭电源重新开启即可关闭该参数 Turn the power on again to close the parameter
031	抬压脚提前角度 Presser foot advance angle	80	10 ~ 90	提前角度越大灵敏度越强 Advance angle more bigger the sensitivity more stronger	意见参数值 40 ~ 80 Opinions parameter values 40 ~ 80

046	拨线动作延时启动时间 Wiper action delayed start time	40	10 ~ 2000		
047	拨线动作时间 Wiper action time	70	10 ~ 2000		
048	拨线动作功率时间 Wiper action time at full power time	70	10 ~ 990		
050	拨线动作维持功率时间调整 Wiper action time at maintain power	50	1 ~ 100		
051	拨线动作释放保护时间 Wiper action to release the protect time power	50	20 ~ 800		
055	拨线功能开启开关 Wiper function on off switch	000(关闭)(OFF)	0001(开启)(ON)		
058	抬压脚全功率时间 Foot-lifter action time at full power time	160	0 ~ 900		不易过大影响电磁铁使用时间 Not good too big effect of electromagnets time
059	抬压脚全功率功率 Foot-lifter full-power power	100%	0 ~ 100%		意见参数 80 ~ 100 Opinions parameter values 80 ~ 100

060	抬压脚维持功率 Foot-lifter Maintain power	6%	0 ~ 100%	抬起压脚后挺留时的功率 Power for foot-lifter quite stay	参数不易过大, 容易发热, 影响使用时间 Parameter is not good too large, easy to heat, affecting time
061	放压脚后, 下机针延时 After the release of the presser foot, the time of delay needle down	1	1 ~ 900	当压脚放下时, 运行电机需要的延时时间 When the presser foot down, operation of the motor required delay time	当 63 号参数打开时保护开关起作用不需要延时 When parameter No. 63 open, the protection switch function open, no need delay
062	抬压脚维持功率时间 Time to maintain foot-lifter the power of time	180	0 ~ 900	电机运行后抬起压脚停留的时间 After motor running, foot-lifter Residence time	
063	抬压脚保护机针传感器开关 Foot-lifter protection needle sensor switch	1	0: 关闭 OFF 1: 开启 ON		当 63 号参数关闭时, 需要将 61 号参数设置为 350 以上, 不然容易断机针 When parameter 63 is closed, you need to set parameters No. 61 to 350 or more, otherwise easy to break the needle
065	抬压脚延时时间 Delay time presser foot	0	0 ~ 900		
071	运行速度 Running speed	1500	200 ~ 1800		

## 4: 控制箱端口说明

The control box Port Description



端口号码 Port Number	端口连接的器件名称 Port device name for the connection
1	373D 钉扣机 LED 机头灯插孔 373D button sewing machine head LED socket
2	抬压脚控制端口, 连接压脚电磁铁或电磁阀 (30V) Presser foot control port, connect the presser foot solenoid or solenoid valve (30V)
3	14P 多功能端口 (机针保护开关与机器启动位置传感器插口) 14P multifunction port (Needle-protect switch and start the machine position sensor socket)
4	脚踏板端口, 连接调速器 Foot pedals port , connection governor
5	连接 373D 显示控制面板 connecting 373D the control panel display
6	连接电机相位信号线 Connect the motor phase signal line
7	连接电机 4 线驱动线 connection motor No.4 drive line

### 3 号 14P 多功能端口

#### No.3 14p multifunction port

3 号多功能端口标号 The 3rd multifunction port label	功 能 Function
1, 8, 11	1: GND 8: 信号 Signal 1 11:5V
2, 9, 12	2: GND 9: 信号 Signal 2 12:5V
3, 10	3: 压脚输出 Presser foot output 10:30V
4, 2	4: 保护信号输入 Protection signal input 2: GND
5	5: 大地 Ground
6, 13	6: 拨线输出 wiper output 13:30V
7, 14	7: 剪刀输出 Scissors output 14:30V

## 5: 错误代码解析

### Error code analysis

显示的错误码 Display error code	错误码意思 Error code meaning	错误的产生 Various possible for the erro	解决错误 Solution
ER-01	找不到停针位 No find needle position	1:手轮和电机靠的不够进 2: 手轮上磁钢脱落 3: 手轮磁铁极性装反 4: 九针端子头接触不良 5: 电机霍尔损坏, 跟换电机 1: Hand wheel and motor 2: Hand wheel magnet off 3: Hand wheel magnet polarity reversal 4: Nine-pin terminal head Poor contact 5: Motor hall damaged, with the change motor	
ER-02	脚踏板信号错误 Pedals velometer signal wrong	1: 开机时没插调速器 2: 调速器插反 3: 调速器线断开 4: 调速器损坏 1: Not plugged velometer into box 2: velometer Inserted upside 3: velometer line broken 4: velometer damage	
ER-03	电机相位信号错误 Motor phase error signal	1: 九针插头接触不良 2: 电机安装时霍尔和转子存在大偏差 3: 电机霍尔坏 1: Nine-pin terminal head Poor contact 2: Hall and rotor has large deviations when the motor is mounted 3: Motor hall damage	

ER-04	电机堵转保护 Motor stall protection	1: 缝纫机过重或堵死 2: 电机过载 3: 电机 4 线驱动线没连接好或插反 1: Sewing overweight or blocked 2: Motor overload 3: 4-wire motor drive cable is not connected or inserted upside	
ER-05	硬件过流保护 Hardware over current	1: 缝纫机过重或堵死 2: 电机过载 3: 电机相位信号线没连接好 1: Sewing overweight or blocked 2: Motor overload 3: Motor phase signal line is not connected	
ER-07	串口通讯超时 Serial communication timeout	1: 显示屏连接主板线连接不良 2: 主板芯片损坏 1: Display bad cable connection Motherboard 2: Motherboard chip damage	
ER-09	存储器不良 Poor memory	1: 主板存储器损坏或不良 1: Motherboard memory corruption or bad	
ER-13	压脚传感器无信号 Presser foot sensor no signal	1: 压脚传感器安装距离过远 2: 压脚传感器损坏 3: 压脚连杆上的磁铁脱落或装反 1: Presser foot sensor is mounted too far away 2: Presser foot sensor damage 3: Magnet on press foot connecting bar Falling or installed backwards	
ER - 14	复位传感器找不到针位 Reset sensor can not find the needle position	1: 左侧感应铝轮的传感器损坏 2: 铝轮上磁铁脱落或装反 1: The sensor on left induction aluminum wheel is damaged 2: Magnet on aluminum wheel Fall or installed backwards	
ER - 15	9700 错误信号 9700 error signal	1: 9700 编码器损坏 1: 9700 encoder is damaged	