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A2B Direct Drive Power Operation Manual

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杰克缝纫机

JACK SEWING MACHINE
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Operation Manual

BEFORE OPERATION :

1.Never operate the machine unless its oil reservoir has been filled with oil.
2.After setting up the machine,check the direction of motor rotation.To check it,turn the hand wheel by,hand to bring the needle down,and turn the power switch ON while observing the hand wheel.(The hand-wheel should turn counterclockwise as observed from the hand wheel side)
3.Confirm that the voltage and phase(single or 3-phase)are correct by checking them against the ratings shown on the electronic identification.

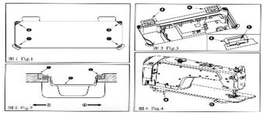
OPERATION PRECAUTIONS:

1. Keep your hands away from the needle when you turn the power switch ON or while the machine is operating.
2. Do not put your finger into the thread take-up-lever while the machine is operating.
3. Be sure to.turn the power switch OFF before tilting the machine head.
4. When an operator leaves from the machine ,make sure to turn off the power.
5. During operation,be careful not to allow your or any other person ' s head or hands to come close to the bobbin winder or hand wheel.Also,do not piece anything close to them.Doing so may be dangerous.
6.If your machine is provided with a finger guard or any other protectors,do not operate your machine with any of them removed.
7. Don' t clean the face of machine head with thinner .

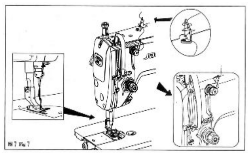
1.INSTALLATION

***Installing the oil pan**

1) Firstly, oil pan holder ❶and Oil pan cushion ❷should be set in the four corners of the oil pan ❸, and then install the oil pan ❸on the stand & table.
2) As is shown in the chart, making sure that the two oil holders ❶are pointing to the operator during the installation and the two oil pan cushions ❷are on the side which is with machine head connecting hook ❺.
3) Install the machine head connecting hook base ❹ on the stand & table, and then put the machine head connecting hook ❺in the baseplate hole, at last, put the head on the stand & table, making sure machine head connecting hook ❺is nested in the machine head connecting hook base ❹ which is on the stand & table.



2.THREADING THE MACHINE HEAD

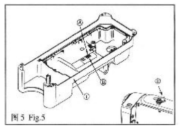


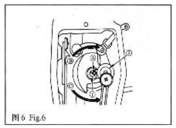
3.LUBRICATION

1. Information on lubrication (Fig.5)

***Before starting the machine**
1) Fill oil pan ① with sewing machine oil (10 white oil) up to HIGH mark A.
2) When the oil level lowers below LOW mark B, refill the oil pan with the specified oil.
3) When you operate the machine after lubrication, you will see splashing oil through oil sight window ② if the lubrication is adequate.
4)Note that the amount of the splashing oil is unrelated to the amount of the lubricating oil.
***Precaution**
When you first operate your machine after set up or after an extended period of disuse, run your machine at 1,800 s.p.m. to 2,200 s.p.m. for about 10 minutes for the purpose of break _in.

2. The amount of oil supplied to the face plate parts apply the plug of main shaft to control (Fig.6)





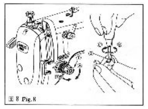
4.SPECIFICATIONS

用途	一般布料、薄料、中厚料	中厚料、厚料
缝纫速度	最高4,000rpm	最高3,500rpm
最大针脚长度	5mm	
机针	DBx1 #9~#18(14#)	DPx5 #20~#23(#21)
压脚高度（自动抬压脚）	9mm(标准)12mm(最大)	9mm(标准)12mm(最大)
使用机油	New Defrix Oil NO.10机油	

Application	General fabrica,light -weight and mdeium-weight materials	Mdeium-weight materials, Heavy-weight materials
Sewing speed	Max. 4,000rpm	Max. 3,500rpm
Max.Stitch length	5mm	
Needle	DBx1 #9~#18（14#）	DPx5 #20~#23（#21）
Presser foot lift	9mm(standard);12mm(Max.)	9mm(standard);12mm(Max.)
Lubricating oil	New Defrix Oil NO.10	

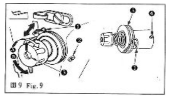
5. THREAD TENSION

1. Adjusting the needle thread tension
1) Adjust the needle thread tension using tension adjust nut ① according to the sewing specifications.
2) As you turn nut ① clockwise (in direction A), the needle thread tension will increase.
3) As you turn nut ① counterclockwise (in directionB), the tension will decrease.
2. Adjusting the bobbin thread tension
1)As you turn tension adjust screw ② clockwise (in direction C), the bobbin thread tension will increase.
2) As you turn screw ② counterclockwise (in direction D). the bobbin thread tension will decrease.



6.THREAD TAKE UP SPRING

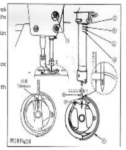
1. Changing the stroke of thread take-up spring ①
1) Loosen setscrew ②.
2)As you turn tension post ③ clockwise (in direction A), the stroke of the thread take-up spring will be increased.
3)As you turn the knob counterclockwise (in direction B), the stroke will be decreased.
2. Changing the pressure of thresd take-up spri ng①
1) Loosen setscrew ②, and take out tension asm ⑤.
2) Loosen setscrew ④, and remove tension post ③.
3)As you turn tension post ③clockwise (in direction A), the pressure will be increased.
4)As you turn the post counterclockwise (in direction B), the pressure will be decreased.



7.NEEDLE-TO-HOOK RELATIONSHIP

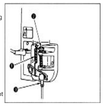
The relation between the needle and the hook should be as follows;
1) Turn the pulley, make the needle stay the lowest point, then loosen the screw (1).
2) The height of the needle bar
Make the needle eyelet top and the hook botton be uniform Then tighten the screw (1).
3) The hook position
Loosen the hook and tighten the screw ,make the top of the thread eyel at the middle thread of the needle(2). Then turn the pulley ,make the thr eyelet top locate above the needle hole about 1mm-- 1 .5mm.
4) In the above situation, remove the hook left and right,make the horiz gauge between the needle and hook about 0~0.05mm then.

*** Preaution**
If the clearance is too small, the tip of the hook will be abraded. If it is too big. it will lead to skip over.
* Note that the type of hook to be substituted for, when replacing the hook. shall be in conformity with the very type of the hook installed in th sewing machine of original assemblage.



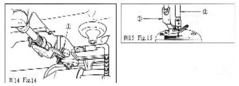
8.ADJUSTMENT DF THE PEDAL

1 Adjusting the pressure required to depress the front part of the pedal
1) This pressure can be changed by changing the mounting position of pedaling pressure adjust spring ❶.
2) The pressure decreases when you hook the spring on the left side.
3) The pressure increases when you hook the spring on the right side.
2 Adjusting the pressure required to depress the back part of the pedal
1) This pressure can be adjusted using regulator screw ❷.
2) The pressure increases as you turn the regulator screw in.
3) The pressure decreases as you turn the screw out.
3 Adjusting the pedal stroke
1)The pedal stroke increases when you insert connecting rod ❸into the right



9.ADJUSTMENT DF THE PEDAL

1) The standard height of the presser foot l ifted using the knee lifter is 10 mm.
2) You can adjust the presser foot lift up to 13 mm using knee lifter adjust screw ①.
3) When you have adjusted the presser foot lift to over 10 mm, be sure that bottom end of needle bar ② in its lowest position does not hit presser foot ③.



Notes for safe use of industrial sewing machines ：
1.Basic measures must be observed.
2. Pass the specialized training and master sewing machine equipment performance.
3. All safety devices should be checked before use.
4. When installing needle, and changing needle, presser foot, plate, feed dog , bent needle, hook or repairing, the power supply should be turned off immediately.
5. Power should be turned off when leaving the sewing machine or workplace.
6. When using the clutch motor, please wait until the motor stops completely.
7. The machine oil and other liquids used in sewing machines and ancillary devices should be cleaned immediately when they are put into eyes or touch skin.
8. Do not touch the parts or devices when the machine is powered by hand.
9. The repair, renovation and adjustment of the main mechanisms of the relevant industrial sewing machines and overseers shall be carried out by specialized technicians.
10. General maintenance is carried out by specially-assigned persons.
11. Electrical repairs should be performed under the supervision and direction of the electrical technician.
12. The machine should be cleaned regularly during operation.
13. In order to operate normally and safely, ground lines should be installed, and they should be used in an environment free from strong noise sources such as high frequency welding machine.
14. Power plug should be installed by specially-assigned person.
15. Industrial lockstitch sewing machine and overlock sewing machine can not be used except the designated use.

Environmental requirements ：
1、Please dispose the waste oil and other waste products properly according to local environmental protection requirements.
2、Please turn off the power after use to reduce power consumption.
3、Please use under the voltage and environment required in the manual to extend the service life of the product and reduce waste generation.
4、Do not treat the machine and its accessories as ordinary household garbage after being scrapped. Please

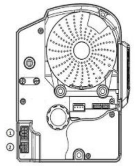
ZB-A2B Operation Manual

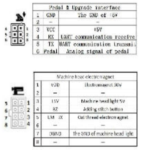
Safety instruction
- Please read this manual carefully, also with related manual for the machinery before use the controller.
- For installing and operating the controller properly and safely, qualified personnel are required.
- Please try to stay away from arc welding equipment, in order to avoid electromagnetic interference and malfunction of the controller.
- Keep in room bellow 45° and above 0°
- Do not humidity below 30% or above 95% or dew and mist of places.
- Install the control box and other components, turn off the power and unplug the power cord.
- To prevent interference or leakage accidents, please do the ground work, the power cord ground wire must be securely connected to an effective way to earth..
- All parts for the repair, provided by the Company or approved before use.
- performing any maintenance action, you must turn off the power and unplug the power cord. There are dangerous high voltage control box, you must turn the power off after one minute before opening the control box.

1 Product installation

1.1 Plug connection

Connecting plugs of the the pedal or machine head to the related socket on the control box,the name of each socket is shown in Figure 1-1.After connecting, please check whether the plug is





1-1 A2B series control box 1-2 Controller interface definition
①pedal & upgrade socket;
②Electromagnet and Machine head button socket.

Note: please check if the plug and socket match or the direction of the plug is right when we can't plug in under normal condition.

1.2 Wiring and grounding

Please make qualified grounding system with professional technicians. Make sure the AC plug is grounded safely before power on. The yellow and green wire is for grounding, and please make sure it is grounded before operating thus can prevent abnormal conditions.

Note: please don't twist or press while grounding power wire, signal wire, grounding wire etc for making sure safety

2 Operation panel instructions

2.1 Operation panel display instructions

According to the system working state, The Digital pipe of the operation panel will display the current sewing status ,contains (stop needle position, thread trimming indication). The operation panel looks as follows.

2-1 operation panel

2.2 The description of each key function

number	diagram	name	Function description
1	P	Enter the parameter area function key	Parameter function entry key
2	S	Parameter view save key	View and save the selected parameter number
3	+	Parameter up(Speed plus)	Enter the parameter function number / value plus, under initial standby situation speed plus
4	−	Parameter down(Speed down)	Enter the parameter function number / value down, under initial standby situation speed down
5	<	Left key	Enter the parameter function to select the parameter item
6	>	Right key	Enter the parameter function to select the parameter item
7		Reset key	Long press for 3S to restore the factory settings
8		Trimming function keys	Trimming function selection key The decimal point of the rightmost digital tube lights up to indicate the thread trimming is on The decimal point of the rightmost digital tube is off to indicate thread trimming off
9		Stop needle position selection key	Up / down stop needle position selection button The horizontal light on the rightmost digital tube indicates the upper needle position The bottom of the rightmost digital tube lights horizontally to indicate the needle position The rightmost digital tube does not light up and down, indicating that there is no needle stop mode

3 Parameters adjustment

3-1 Enter into operator's parameter and save

In free time,press P for a long time,enter into operator parameter, and then press S for a short time,enter into parameters.Press < or > to enter into parameter, and press + or − to modify related parameters.If not modified, press S to back; if modified successfully, press S and save parameter,shows ok and back to main menu. press P to exit the parameters mode.

3-2 Method to enter into operators parameter and save

press P + S for a long time and turn on the power to enter the operator' parameter,same method as operators parameter.

3-3 Speed adjustment

In free time, press + or − to change the speed.100 difference once a time and can press constantly.

3-4 Factory setting

Long press for factory setting.

3-5 method to monitors mode

In free mode,long press P + , show monitoring parameter number, press < and > to select database, the corresponding digit value flashes, then press + or − to increase or decrease monitor parameter number display, press S enter the parameter value corresponding to the monitoring parameter item, and press S back to monitor's parameter number.short press P exit monitor mode.

3-6 Quick adjustment of stop needle position

In free mode,long press P + <, then enter into up and below stop needle position.P58、P59 adjustment parameter.

4 parameters

4-1 Operator parameter

In the standby interface, press P for a long time,enter into the modification mode of user parameter.

parameter	description	Factory value	range	Content Value Name Description and Remarks
P01	Highest speed (r/min)	3600	200-5000	The maximum speed setting during sewing. Adjustment unit: 100RPM
P03	Needle position	DN	OFF-UP-DN	OFF: close UP: up needle position DN: below needle position(When the needle stop position shortcut key is pressed, it does not work, and the corresponding digital tube does not light up and down)
P07	Slow starting sewing speed(r/min)	800	200-2000	Adjustment unit: 100RPM
P08	Slow starting sewing stitches	2	1-9	unit: Half stitch
P29	Slow starting sewing stitches	ON	ON-0FF	OFF:close ON:open
P15	Needle repair function	0	0-3	0: Patching by time 1: Half stitch 2: One stitch 3: off
P24	Pedal thread trimmer position	655	0-4095	
P30	thick force switch	ON	ON-0FF	OFF:close ON:open
P31	Trimming force coefficient	100	10-300	Trimming force coefficient Adjustment unit: 10
P38	Trimming switch	ON	ON-OFF	OFF:close ON:open

4-2 Technicians parameters

Press P + S for a long time, then turn it on, enter into the technician parameter modification mode

parameters	description	Factory value	range	Content Value Name Description and Remarks
F49	Trimming speed	300	200-500	Motor speed when adjusting thread trimming cycle adjustment unit: 10RPM
F55	sleep time	0	0-60	unit: min Set 0 to turn off the sleep function
F56	Boot up and find the needle position enable	ON	ON-OFF	OFF: Don't find the upper needle position when starting up ON: Automatically find the upper needle position when power on
F58	Upper needle position angle adjustment	3	0-11	Control the upper needle stop angle to fine-tune within a small range (Note: Needle bar jitter may occur when the needle stops after some parameters are modified)
F59	Below needle position angle adjustment	8	0-8	The needle stop angle can be fine-tuned within a small range under the control (Note: Needle bar jitter may occur when the needle is stoped after some parameters are modified)
F61	Aging runtime	3	1-255	Running time unit: s
P62	special operating mode	0	0-4	0: normal 1: aging (for Zhongbang workshop) 2: reserved 3: automatic test mode 4: electromagnet run and (only run and electromagnet)
P63	Aging stop time (s)	2	1-255	Stop time unit: s
P64	Operator parameter	0	0-2	0: no action 1: Save current parameters as user parameters 2: restore user parameters
P65	reset	0	0-1	0: no action 1: Restore factory default parameters
P66	Safety switch	ON	ON-OFF	OFF: close ON: open
P68	maximum speed limit	3600	500-5000	Adjust the maximum speed limit adjustment unit: 100RPM
P72	Running start position before pedaling	350	0-4095	Relative to the back-to-center position
P73	Pedal low speed running end position	650	0-4095	Relative to the back-to-center position
P74	Pedal analog maximum	3600	0-4095	
P75	Pedal return to center position setting	1450	0-4095	
P96	Under voltage alarm parameters	0	0、10-15	0:close 10:100VAC 15:150VAC
P97	Over voltage Alarm Parameters	27	0、26-30	0:close 26:264VAC 30:305VAC

4-3 Monitors parameters

In the standby interface,pressP key+stop needle position for a long time, enter into monitor mode

parameter	description	Content Value Name Description and Remarks
M11	Piece count	Counting of Thread Trimming Pieces
M17	Aging 15 minutes mark	Displaying 1 indicates that the aging is completed in 15 minutes, and displaying 0 indicates that the aging is not completed in 15 minutes.
M18	Electronic control master and slave version	Displays the controller software version number

In the standby interface,pressP key+stop needle position for a long time, enter into monitor mode

parameter	description	Content Value Name Description and Remarks
	number	
M20	bus voltage	
M21	head speed	Show real-time speed
M22	Motor line current	Display line current AD value
M25	The maximum value of analog quantity before pedal	
M26	Pedal return to analog sample value	
M27	Electronic control cumulative running time	Display the cumulative running time of the electronic control (hours)
M28	Pedal thread trimmer analog sample value	
M30~M37	Historical fault code monitoring	Display historical fault codes (only the latest 8 are displayed, and E-00 is displayed when there is no fault code)
M38	Power monitoring	Displays real-time power during operation
M39	The highest voltage in history	Display the historical input highest voltage
M40	Needle stop signal up and down	Digital tube one digit display: 0: low level 1: high level

5 Error code

5-1 Error code table

If the system shows error or alarm, please first check the following items:

1. first, confirm if the machine's connection cable is intact; 2. Confirm whether the electronic control box and the machine is matched or not; 3. Confirm whether the factory reset is accurate or not.

Error code	Code meaning	countermeasure
Err-01	Hardware overcurrent	Turn off the system power, re-connect the power after 30 seconds, if the controller still can not work, replace the controller and notify the factory.
Err-02	Software overcurrent	
Err-03	Excessive shutdown	Disconnect the controller power and check if the input supply voltage is low (under 154V). If the supply voltage is low, restart the controller after the voltage has returned to normal. If the voltage is still normal, start the controller still can not work properly, please replace the controller and notify the factory.
Err-04	Running over voltage	Disconnect the controller power and check that the input supply voltage is high (above 264V). If the supply voltage is high, restart the controller after the voltage has returned to normal. If the voltage is still normal, if restart the controller still can not work properly, please replace the controller and notify the factory.
Err-07	Current detection circuit failure	Turn off the system power, re-connected after 30 seconds to observe whether the normal work. Retry several times, if the fault occurs frequently, replace the controller and inform the manufacturer.
Err-08	Motor stalled	Disconnect the power of the controller, check whether the motor power input plug is off, loose, broken, whether there is foreign body wrapped around the machine head. After resetting the system still does not work, replace the controller and inform the factory.
Err-13	The motor hall signal is abnormal	Turn off the power of the system, check whether the motor sensor connector is loose or fall off, restore it to normal and restart the system. If it still does not work properly, please replace the controller and notify the manufacturer.
Err-19	Locator signal is abnormal	After reporting E-19, the controller will automatically recognize that it is running in non-positioning mode. Please check whether the encoder/positioner plug is connected reliably, then power off and then power on again. If the alarm cannot be eliminated, it may be that the motor positioner Hall is abnormal. Please contact Maintenance staff. Long press the S key to clear the E-19 alarm and P03 is set to OFF to turn off the positioning function
Err-20	Governor not plugged in	Turn off the power of the system, check whether the connector of the governor is loose or falling off, and whether the foot pedal is stepped down or stepped down, please restore it to the normal state and restart the system. If it still does not work properly, please replace the controller and notify the manufacturer.

5-2 Security alarm table

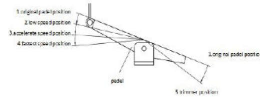
Alarm code	Code meaning	solution
OFF	Power off/ power supply voltage is too low	Please check the supply voltage
OF.	Motor sleep	When the machine is in standby for about the time set by parameter P55, it does not run, and it enters the sleep state, displays OF., and the decimal point of the last digital tube flashes, press any key to wake up the machine.
A-UP	flip switch alarm	Straighten the nose to ensure that the flip switch is restored Press and hold the S key to clear the alarm and turn off the dump detection function
A-01	The signal of the needle is abnormal	Please check whether the needle replenishment button of the machine head can be closed and opened normally. If it is always closed, please replace the needle replenishment button of the machine head. (This alarm will automatically turn off the needle replenishment function, but it will not affect the operation of the motor. After 30s, the alarm will be closed automatically or manually by short pressing the P key.)

Note: If the error alarm cannot be eliminated according to the error handling countermeasures, please contact the manufacturer in time.

6 Foot pedal sensitivity adjustment

1)The pedal movement starts from the initial position ① (parameter 75), slowly stepping forward to ② (72 + 75 parameter) to start the low-speed sewing, and then proceed to step (75 + 73) to start accelerating Deep step to ④ (74 parameters) to achieve the highest speed. Between② ④ segment to maintain the starting speed, between ③ ④ segment is the no-level speed control process;
2) When the foot pedal starts from the initial position ① (parameter 75) Slowly after the step to ⑤ (24 parameters) automatically cut the line when the finished the cutting action;
3) Make sure the parameter value should be arranged as below: (parameter No. 24) <(parameter No. 70) <(parameter 75) <(parameter 75 + 72) <(parameter 75 + 73) <(parameter 74)

4) It can be monitored by the mode of 025,026,028 parameters in real time to monitor the pedal analog maximum, pedal back to the voltage sampling value, pedal trimming voltage sampling value, the operation mode with the stop position on the set, different positions of the pedal. The sampling value is used as the reference value for each parameter. If the machine is too sensitive, touch the pedal machine to start running, may be appropriate (if the machine is too sensitive, it is appropriate to reduce the 72 parameters (not less than the return position parameter 75), you can improve the sensitivity of the previous step; Increase the 72 parameters; if not easy to fill the needle, a little pre-step, the speed of the rapid increase caused by forward needle, may be appropriate to increase the 73 parameters or reduce the 72 parameters (that is, increase the pedal low speed range), can also be Reduce the initial seam speed (parameter 00)appropriate.



Packing List

序号 No	名 称	Description	数量 Quantity	备注 Note
1	说明书	Instruction	1 set（套）	
2	机头	Sewing machine head	1	
3	油盘组件	Oil reservoir asm	1 set（套）	
4	抬压脚顶杆	Knee press lifter rod	1	
5	操纵杆组件	Knee lifter asm	1 set（套）	
6	机头支柱	Machine rest pin	1	
7	拉杆组件	Rod asm	1	
8	调速器组件	Speed adjust asm	1	
9	机头连接勾组件	Machine hinge plate asm	2	
10	机头连接勾座	Rubber cushion	2	
11	螺钉起子（大）	Screw driver，L	1	
12	螺钉起子（中）	Screw driver，M	1	
13	螺钉起子（小）	Screw driver，S	1	
14	油壶	Oil reservoir	1	
15	钉子	Nail	6	
16	机针	Needle	1 bag(包)	
17	梭芯	Bobbin	1	
18	磁块	Magnet	1	
19	油盘支座	Oil reservoir rubber cushion	2	
20	油盘座垫	Oil reservoir felt cushion	2	
21	线架组件	Spool thread stand rod asm	1 set（套）	