

JACK2000B Instruction Manual

Instructiuni de protectie

Va rugam citit cu atentie acest manual impreuna si cu alte instructiuni de protectie a muncii.

Pentru instalare si operare este nevoie de personal calificat.

Incercati sa stati deoparte de sali unde se produce arcuri electrice sau sisteme de sudura pentru evitarea interferentelor electromagnetice si disfunctionalitati ale cutiei de comanda.

Pastrati o temperatur intre 0 si 45 grade Celsius.

Umiditatea sa fie sub 30%

Instalati cutia de comanda si alte componente cu masina oprita de la alimentarea cu curent.

Pentru a evita interferente si scurgeri accidentale va rugam legati masina la pamantare.

Toate piesele de reparat trebuie furnizate de catre firma sau aprobate inainte de folosire.

Inainte de efectuare oricarei operatii de reglare sau inlocuire, masina trebuie oprita de la buton si scoasa din priza. In cutia de comanda exista tensiuni periculoase.

Trebuie oprita masina cu un minut inainte de deschiderea cutiei de comanda.

Acest manual marcat cu simbolul Departamentului de Siguranta a Muncii trebuie folosit in concordanta pentru a nu crea disfunctionalitati in deservirea utilajului

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 below 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.

This manual marked with the symbol of the Department of Safety Precautions must be aware of and strictly adhered to, so as not to cause unnecessary damage.

1 Instrucțiuni de folosință

1.1 Specificații produs

Tipul produsului :JACK200B; viteza max motor: 5000 r / min; Alimentare curente: AC 220 ± 44 V; Frecvența: 50Hz/60Hz; Putere maximă motor: 550W; Moment maxim motor: 3Nm.

1.2 Instalarea pedalei

Pedala se instalează conforma figurii

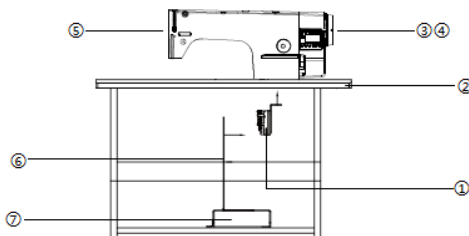



Fig.1-1 Direct drive machine controller installation diagram

 : Pozitia pedalei trebuie facuta in asa fel incat sa fie convenabil operatorului

1.3 Conectarea stecherelor

Conectarea se face corespunzator cu mufele din masina

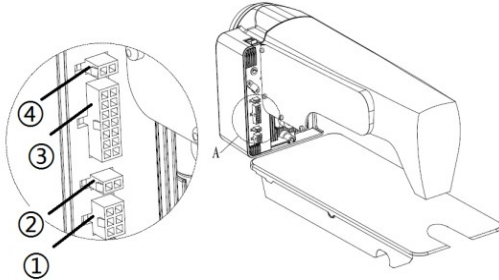


Fig.1-2 Controller Interface diagram

① Pedala; ② Ridicare piciorus ; ③ Solemoid din capul masinii; ④ Ledul din capul masinii (black);

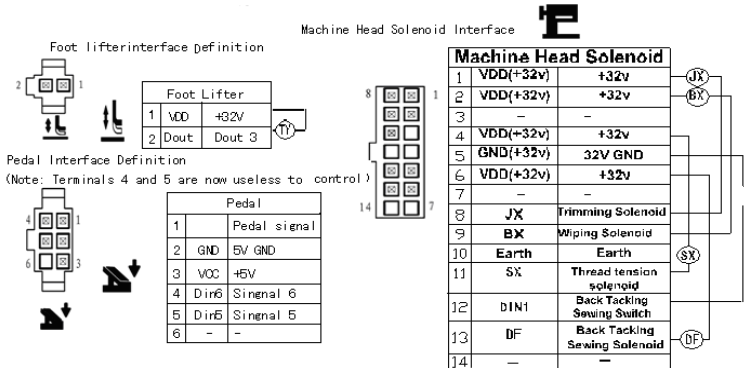



Fig.1-3 Controller Interface Definition

 :Daca stcherele nu intra in mufe se verifica corectitudinea de asamblare

1.4 Alimentare si legare la pamant

Se pregaste constructia in asa fel incat sa fie legatura la pamantare. Cand se alimenteaza

masina trebuie verificat ca exista legatura la pamantare. Pamantarea este cu galben si verde.

⚠ : Atentie ca firele sa nu fie strivite sau laste liber in stecher pentru a preveni curentarea

2 INSTRUCIUNI DE FOLOSIRE A PANOULUI

2.1 Instructiuni de folosire panou

2.1.1 Butoanele panoului de comanda

Panoul se imparte in doua (See Fig2-1) : Display LCD si butoane

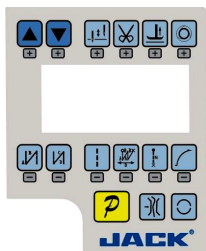


Fig.2-1 Operation Panel

2.1.2 Display -ul LCD

Este in mijlocul panoului si arata modul de coasere, Intarirea la capete, ridicarea piciorusului, pozitia acului la oprire si taierea atei. Sistemul porneste odata cu butonul ON panoul face un test si apoi toate butoanele vor clipi odata. Api el va arata starea curenta a masinii Va rog priviti figura 2-2.

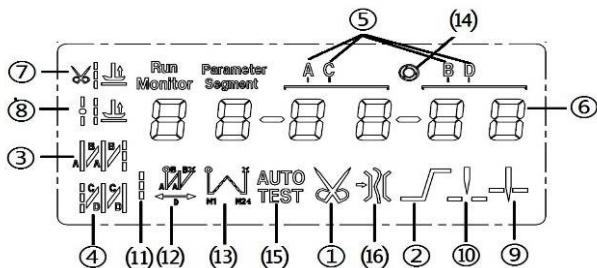
























Fig.2-2 LCD Icon










Table 2-1 LCD Ibutoanele display-ului

Index	Buton	Descriere	Inde	Buto	Descriere
			x	n	

1		Taiere ata	9		Pozitie ac intermediara sus
2		Inceput de coasere lin	10		Pozitie de ac intermediara jos
3		Intarire la inceput	11		Cusatura libera
4		Intarire la sfarsit	12		Cusatura tip "W"
5		Indexul de coasere pe segmente	13		Multi segmente coasere
6		Caractere numerice arata nr de impuns.	14		Funtie tragere
7		Ridicare piciorus dupa coasere	15		Test automat
8		Ridicare piciorus in timp coasere	16		Buton de retinere ata

2.2 Descrierea operatiile butoanelor din panou


No	Appearance	Description
1		Buton de functionare : Operatii majore de confirmare si programare impreuna si cu alte butoane
2		Intarire la capete la inceputul coaserii, odata , dubla sau de patru ori si oprirea coaserii. Starea curenta apare pe ecran.
3		Intarire la capatul de sfarsit a coaserii, o data, dubla , de patru ori si oprire a intaririi. Starea curenta apare pe ecranul display-ului
4		Modul de coasere liber : Orice apasare pe acest buton , sistemul seteaza coaserea libera. Acest mod apare pe ecranul display-ului
5		Modul de coasere "W" Apasarea pe acest buton seteaza modul de coasere "W" . Coasere tip "W" apare pe ecran
6		Modul de coasere multisegmente : Apasarea pe acest buton seteaza masina de a coase multisegmente. Se apasa P la numarul de impunsaturi

No	Appearance	Description
7		Butonul de pornire lenta. Apasand pe acest buton masina va incepe coasere in mod incet. Va apare acest status pe ecranul display-ului
8		Butonul de pozitie a acului la oprire. Se seteaza sus/jos. Stare de lucru va apare pe ecran.
9		Buton de rulare in ciclu : Se schimba parametrii
10		Buton de accelerare temporara a masinii
11		Buton de incetinire temporara a masinii
12		Buton de actionare a tei de taiere a firului
13		Butonul de actionare ridicarii automate a piciorusului.
14		Butonul de coasere "dintr-o bucata". Selecteaza/anuleaza acest buton doar pentru coaserea in mod multi segment . Cand se selecteaza, dintr-o apasare pe pedala se executa coaserea dorita
15		Butonul de retinere a atei . Se foloseste atunci cand se doreste introducerea capatului atei incusatura. Stare de lucru va apare pe display


3 Descrierea setarii parametrilor

3.1 Mod de lucru al operatorului

In acest mod sunt valabile setarile care s-au facut de tehnician. Aceasta stare este cea setata din fabrica. Sub acest mod se lucreaza de catre operator fara a intra in setari si parametrii interni






 : In timpul lucrului daca exista o lunga perioada in care nu s-a apasat pe buton panou intra in stand by automatic si va anula operatia de dinainte















3.1.1 Setarea modului de coasere

- **Coaserea libera:** Apasati butonul  , el se aprinde pe LCD . LCD ----- iarata asa . Doar trebuie sa apasati pe pedala. Ptr. A coase


- **Mod de coasere multi segmente:** Apasa  si se aprinde  pe LCD. Pe

LCD      apare asa. Apasa   si   pentru a alege N segmente, si apasa  pentru a seta nr. De pasi pe fiecare segment    . Apasa   si   kptr. Modificarea numarului de segmente,, apasa   si   pe fiecare segment.





• **Mode de coasere "W"** : Apasa , si apare pe display  . Pe LCD   

apare asa. Apasa   si   pentru alegerea segmentului A si nr de impunsaturi de la 1-99 apasa   si   pentru coasere segmentului B si nr. De impunsaturi de la 1-99 Apasa , pentru a alege segementele A B D ,Pe LCDapare , apasa   si   pentru a alege segmentul B si seta nr de impunsaturi de la 1 la 99.








3.1.2 intarirea de coasere la capete :

ΣΤΕΠ 1: Apasa 

Intarirea la inceputul coaseri poate fi :




- ◆  nici o intarire
- ◆  o singura intarire
- ◆  dubla intarire
- ◆  intarire de patru ori

Opriti apasarea cand ati ajuns la tipul de intarire dorit.

Pasul 2 : Modifica parametrul A apasand  si   si parametrul B apasand   si   . Valorile pot fi intre 1 si 99.




Nota : Intarirea la sfarsitul coaserii se face similar ca mai sus

3.1.3 Setarea de pornire lenta :




Apasa  pentru a intra in starea de inceput lent a coaserii. Pe ecran apare  . Apasa din nou acest buton pentru a iesi din aceasta stare. Imaginea  va disparea de pe ecran.

3.1.4 Butonul de ridicare automata a piciorusului :




Apasa  pentru a intra in starea de ridicare automata a piciorusului - avem patru

pozitii : oprirea ridicarii automate, ridicare automata dupa taiere, () 、 ridicare automata in timpul coaserii () ridicare automata in ambele cazuri, la sfarsit si intimpul coaserii Apasa  pentru alegerea tipului de ridicare si opreste apasarea atunci cand ajungeti la pozitia dorita. Setarea a fost facurta





3.1.5 Butonul de actionare a taierii atei

daca apasati  se selcteza stare de taiere sau nu a atei. Apasa  imaginea  apare/dispare pe LCD .


3.1.6 Coasera “dintr-o apasare”

Apasa  pentru a selecta/ deselectaect/non-select one-shot-sewing statues. The icon  will light if select one-shot-sewing in LCD areas, press  will disappear.



3.1.7 Butonul de pozitionare a opririi acului sus/jos

Apasa  selecteaza pozita de oprire sus/jos. Apasa  repetat intre sus  /jos  pentru a modifica pozita. Allegeti modificarea dorita si opriti apasarea.

3.1.8 Buton de compensare a coaserii

Apasa  pentru a seta compensarea cusaturii. Compensarea jumatate ac sau doua jumatatti ac in functie de necesaitate. Daca tineti apasat acul va face cate o impunsatura pana la luarea degetului de pe buton.



3.1.9 Buton de retinere ata










Apasa  : Selecteaza functia si apare pe ecran  i





3.2 Technician Mode

Technician mode is used for sewing speed and pedal speed control such as the use of performance adjustments.

3.2.1 How to enter the technician mode

Step 1: Under operator mode, press  key and  key, the LCD will display PD 0000, and then set the password 0000 to enter technician mode.

Step 2: Use     keys and     keys to input the password, and then press  key. If the password is correct then enter technician mode, the LCD will display 00 0200 ,otherwise, it will return to operator mode.

Step 3: Change technician parameters by   keys and   keys. The parameters are shown in table 2.


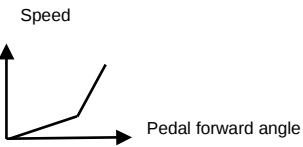
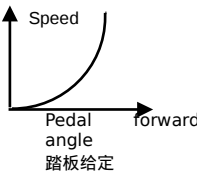
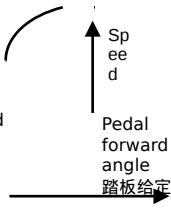
Step 4: Parameters values can be changed by     keys and     keys

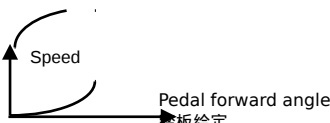
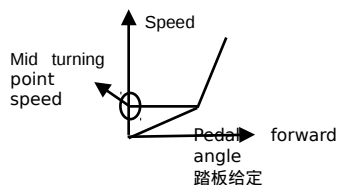
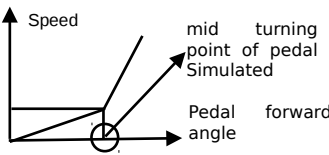
Step 5: Under technician mode, press  key, the panel will return to operator mode.

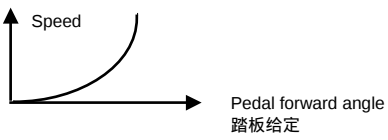
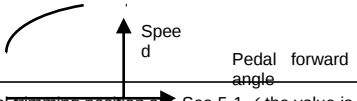
3.2.2 Technician mode parameter :

Table3-1:Technician mode parameter

Mode	Parameter	Default	Range	Comment
speed	0 0	200	100 ~800	Minimum sewing speed
	01	3500	200 ~5000	Maximum sewing speed
	0 2	3000	200 ~5000	Maximum constant sewing speed
	0 3	3000	200 ~5000	Maximum manual back tacking speed
	0 4	200	100 ~800	Stitch compensation speed
	0 5	250	100 ~500	Trimming speed
	0 6	0	0 / 1	Soft start Mode setup: 0 : Soft start only after trimming 1 : Soft start after both trimming and stop
	07	2	1 ~9	Soft start stitch number
	0 8	200	100 ~800	Soft start speed
	0 9	20	1 ~20	System accelerate sensitivity (Direct drive transmission can be set up to a large value ; belt transmission don't set large value or too much noise and vibration. This parameter do not affect the electrical)
	0 A	20	1 ~20	System decelerate sensitivity (Direct drive transmission can be set up to a large value ; belt transmission don't set large value or too much noise and vibration. This parameter do not affect the electrical)
Back tacking	1 0	1800	200 ~2200	Start back tacking speed

Mode	Parameter	Default	Range	Comment
setup	11	1800	200 ~2200	End back tacking speed
	12	1800	200 ~2200	Continuous back tacking speed
	13	24	0 ~70	Start back tacking stitch compensation 1
	14	20	0 ~70	Start back tacking stitch compensation 2
	15	24	0 ~70	End back tracking stitch compensation 1
	16	20	0 ~70	End back tracking stitch compensation 2
	30	0	0 / 1 / 2 / 3	Pedal Curve mode setup: 0 : Auto Calculated liner Curve (According to the highest speed automatic computation) 
Pedal	30	0	0 / 1 / 2 / 3	1 : Twosegment liner Curve.(You shall be free to set slow start after fast or fast start after slow,the parameters "31"and"32"cooperate with use) 
				2 : Arithmetic Curve (the parameters [33] cooperate with use)  

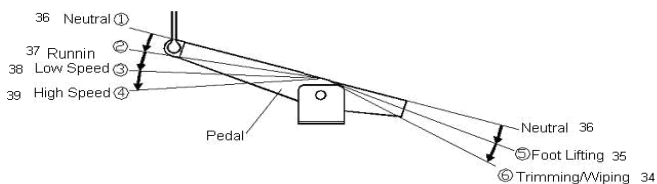
Mode	Parameter	Default	Range	Comment
				<p>3 : S curve (the operate control is very well, slow start after fast)</p> 
	31	3000	200 ~4000	<p>Two segment controls the speed slope : mid turning point speed RPM (two segment of turning point speed) , the parameter[30] set to 1 effective.</p> 
	3 2	800	0 ~1024	<p>Two segment controls the speed slope : mid turning point of pedal Simulated value , the parameter[30] set to 1 effective, the value is between[38]and[39].</p> 

Mode	Parameter	Default	Range	Comment
	3 3	2	1 / 2	<p>Arithmetic Curve supplementary parameter ; the parameter[30] set to 2 effective.</p> <p>1 : Square (the low speed control is very well, slow start after fast) ;</p> 
				<p>2 : Square root (Responding speed is fast, fast start after slow) ;</p> 
	3 4	90	0 ~1024	Pedal trimming position set, See 5-1. (the value is not higher than the parameter [35])
	3 5	300	0 ~1024	Press foot lifting, See 5-1. (the value is between[34]and[36].)
	3 6	419	0 ~1024	Pedal back mid position , see 5-1. (the value is between[35]and[37].)
	3 7	510	0 ~1024	Pedal step upon running position , see 5-1. (the value is between[36]and[38])
	3 8	578	0 ~1024	Pedal low speed running position (upper) ,see5-1 (the value is between[37]and[39])
	3 9	962	0 ~1024	Pedal simulation the largest of value, see 5-1 (the value is not lower than the parameter [38])
	3 A	100	0 ~800	Pedal press foot lifting confirm time
custom	4 0	1	0 / 1	Run to up needle position after Power on :

Mode	Parameter	Default	Range	Comment
setup				0: no action 1: action
	41	1	0 / 1	Automatically reinforcing functions chose : (the machine head is not automatically reinforcing functions, the best way is prohibit) 0 : prohibit 1 : allow
	42	0	0 / 1	Back to sewing by hand when the function mode selection: 0 : Juki mode. In sewing or in the end of the action 1 : Brother mode. It acts only in sewing.
	43	0	0 / 1 / 2 / 3	Special Running Mode setup : 0 : operator select 1 : simple sewing mode 2 : calculate initial angle of motor (do not uninstall strap) 3 : calculate motor/machine head run rate mode (synchronizer, do not uninstall strap)
	44	0	0—31	Torque boost up at low speed : 0 : no action 1~31 : 31 levels Torque boost up
	45	1	0 / 1	Stop pin mode : 0 : Constant speed tackle mode (in the belt transmission, Parking is not precision) 1 : back pull mode (PMX)
	46	100	0 ~800	Command button to fill half-needle time
	47	150	0 ~800	Command button to fill a needle time
Count Mode	50	1	1~100	Stitch counting proportion set up
	51	1	1~9999	Stitch counting value set up
	52	0	0~4	Stitch counting mode selection: 0: no counting 1: Counting up according to stitch number, after reaching set value then restart. 2: Counting down according to stitch number, after reaching set value then restart.

Mode	Parameter	Default	Range	Comment
				<p>3: Counting up according to stitch number, after reaching set value, then motor should stop automatically, recounting should be restart by S4 [152.INI] =CRS or the button A on operation panel.</p> <p>4: Counting down according to stitch number, after reaching set value, motor should stop automatically, recounting should be restart by S4 [152.INI] =CRS or the button A on operation panel.</p>
	5 3	1	1~100	Trimming counting proportion set up
	5 4	1	1~9999	Trimming counting value set up
	5 5	0	0~4	<p>Trimming counting mode selection:</p> <p>0: no counting</p> <p>1: Counting up according to stitch number, after reaching set value then restart.</p> <p>2: Counting down according to stitch number, after reaching set value then restart.</p> <p>3: Counting up according to stitch number, after reaching set value, then motor should stop automatically, recounting should be restart by S4 [152.INI] =CRS or the button A on operation panel.</p> <p>4: Counting down according to stitch number, after reaching set value, motor should stop automatically, recounting should be restart by S4 [152.INI] =CRS or the button A on operation panel.</p>
Operation	61	0	0 / 1 / 2	<p>Translating Parameter</p> <p>0 : no action</p> <p>1 : Download parameters(the panel will parameter from panel to controller)</p> <p>2 : Upload parameters (the panel will parameter from controller to panel)</p>

Mode	Parameter	Default	Range	Comment
	6 2	0	1, 2, XXXX	Restore storage parameter(Only restore parameters to operators, and vendors and maintenance) Belt flat 1000/ Direct drive flat 2000
	6 3	0	1, 2	Backup current parameter as user parameter for restore (restore)
Note: Above such "6x "parameter to operate is not saved.				



3.3 Administrator mode

Administrator mode is used for functions such as sewing machine head solenoid adjustment.

3.3.1 How to enter administrator mode

Step 1 : Under operator mode, press and keys to enter administrator mode in LCD **PD** 0000, and then set the password 0000 to enter administrator mode.

Step 2: The password is entered using keys and keys, then press key. If the password is correct then enter administrator mode, the LCD will display 00 0000 , or return to the operator mode.

Step 3: Change administrator parameters index by keys and keys under administrator mode. The details of administrator parameters are shown in table3.

Step 4: Parameters values can be changed by keys and keys.

Step 5: Under administrator mode, press key, the panel will return to operator mode.

3.3.2 Administrator parameter table

Table 3-2: Administrator mode parameter :







Mode	Parameter	Default	Range	Comment
Trimming mode	0 2	1	0 / 1 / 2 / 3	Mode selection for trimming sequence. 0 : According to the parameters [03] set angles is trimming,

Mode	Parameter	Default	Range	Comment
				until up position delayed 【06】 time off.
	03	10	5 -359	1 : According to the parameters 【03】 set angles is trimming, until 【04】 set angles off. 2 : According to the parameters【03】set angles is trimming, it delayed 【06】 off. 3 : Down position signal delayed the parameter 【05】 set angles is trimming, it delayed 【06】 off.
	04	120	10 -359	The start angles of trimming (relative down position of angle)
	05	10	1 -999	The end angles of trimming (relative down position of angle, Need to greater than the system of parameters 【03】)
	06	60	1 -999	Trimming start delay time T1 (ms)
Tension release、	10	0	0 / 1 / 2 / 3 / 4	Trimming end delay time T2 (ms)
Wiper and Clamp mode	11	25	5 -359	The start angles of tension release(relative down position of angle)
	12	350	10 -359	The end angles of tension release (relative down position of angle, Need to greater than the system of parameters 【11】)
	13	1	1 - 999	Tension release solenoid start delay timeT1 (ms)
	14	10	1 - 999	Tension release solenoid up position delay time T2 (ms)
	15	1	0 / 1	selection for Wiper function 0 : off 1 : on
	16	10	1 - 999	Clamp /Wiper delay time ms
	17	70	1 - 9999	Clamp /Wiper holding time ms
	18	50	1 - 999	Clamp /Wiper revert time ms
	19	0	0 / 1	Thread Clamp function :

Mode	Parameter	Default	Range	Comment
				0 : off 1 : on
	1 A	70	0 - 359	Clamp start angle
	1 B	140	0 - 359	Clamp end angle
Stop mode	3 1	0	0 / 1	The automatic test mode selection : 0: order stitches 1: order time
	3 2	300	0 ~1000	The safety SW alarm confirm time ms(the same way does not distinguish between direct-drive safety SW and flat lock trim of protection SW)
	3 3	50	0 ~1000	The safety SW restore confirm time ms
	3 4	0	0 / 1	Motor rotation direction setup : 1 : Forward 0 : Reverse
Machine head parameter	4 0	1000	0 -	motor/machine head run rate: 0.001
			9999	(if automatic calculation of motor/machine head run rate has done, the Parameter value in control box maybe different with that in HMI)
	4 2	0	0 - 359	Up needle position adjusted angle (compare to up position sensor position excursion)
	4 3	175	0 - 359	Down needle position mechanical angle
	4 4	200	0 - 800	Press down delay time(ms)

3.4 Monitor mode

3.4.1 How to enter monitor mode

During HMI idle, Press  key, then press  key, entry monitor mode. Use   keys and   keys to switch to watch the parameters. About the monitor parameter, please refer the sheet 4, HMI will back to idle if no wheel or no press the key in regulates time.


3.4.2 Monitor mode parameter table

Table 3-3 monitor mode parameter

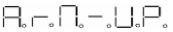
Name	Parameter	unit	comment
Monitor	1 0		Counter stitches

status	1 1		Counter trimming
	2 0	V	DC Bus Voltage
	2 1	RPM	Motor speed
	2 2	0.01A	One phase current
	2 3	degree	Initial angle
	2 4	degree	Mechanical angle
	2 5	---	Sampling value of pedal voltage
	2 6	0.001	motor/machine head run ratio
	2 7	hour	Motor total run time
	3 8	---	Sampling value of potentiometer at machine head

3.5 Wrong warning mode



If the HMI detects something wrong from controller, it will jump automatically to warning mode, and show error code by 8-segment. see . During wrong warning mode, the user can set technician parameter change, administrator parameter and HMI parameter self-change or monitor mode. Exit these modes not back to idle but back to wrong warning mode. It will return normal status after fixing error and resetting power.










3.6 Safety switch warning mode





If HMI test safety switch warning, it will jump automatically to safety switch warning mode, see . During wrong safety switch warning mode, the user can set technician parameter, administrator parameter and HMI parameter self-change or monitor mode. Exit these modes not back to idle but back to wrong warning mode. (It is reunification with the switch input, does not distinguish between safety switch, scissors protection switch)

4 Parameter reset to factory settings

4.1 Restore storage parameter for factory of control

Step 1: Under operator mode, press  and  keys, LCD **PD** 0000; and then set the password 0000 to enter technician mode.

Step 2: The password is entered using     keys and     keys, then press  key. If the password is correct, enter into the technician mode, or return to the technician mode.

Step 3: Change technician parameters index to **【62】** by   keys and   keys under technician mode. Restore storage parameter for factory of control can be changed by

keys and keys, Usually it's four bit.

Step 4: the parameter confirms correct, press **P** key until the red light of HMI are bright or buzz produces a long loud, release **P** key, HMI and the whole system restore storage parameter.

4.2 Adjust the up needle position

Step 1: Press **P** and keys, enter monitor mode to the NO. 24th monitoring parameters. As shown in Figure 4-2

Step 2: Turn the handwheel so that the wiper to the position of the up needle position, LCD will show a mechanical angle of deviation. As shown in Figure 4-2 Legend.

Step 3: Press the **P** and keys, LCD display 240000 (previous step mechanical deflection angle zero) to prove that the needle position set. As shown in Figure 4-2 Legend:

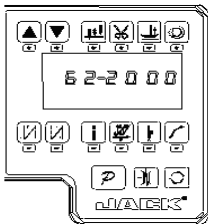


Fig.4-1

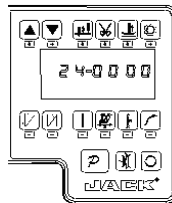


Fig.4-2

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