INSTRUCTION MANUAL

YSC-8361
AC Servo System

Please read the manual before using the Controller

Please keep the manual for easy reference

Version:V.002beta

20160615

For your perfect operation and safety, before using your new machine, please read this instruction manual.

YSC-8361 controller is used for an industrial sewing machine. With industrial sewing machine, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up, and consequently there is always a danger of injury that can be caused by these parts. So when you ready to operate the machine, please follow the instructions from trained personnel and instructors regarding safe and correct operation.

1. NOTICE
   1.1 Work environment
   ▲ Please use 220V AC in ±10% ranges.
   ▲ To avoid the false operate; please keep the product away from the high electromagnetic interference.

   ▲ Please operate in the area which temperature is $5\,℃\sim45\,℃$ and humidity is 80% or less.

   1.2 Notice of installation
   ▲ Turn off the power and unplug the cord before installation.
   ▲ The cables must not set to be near the wheel and other movable parts.
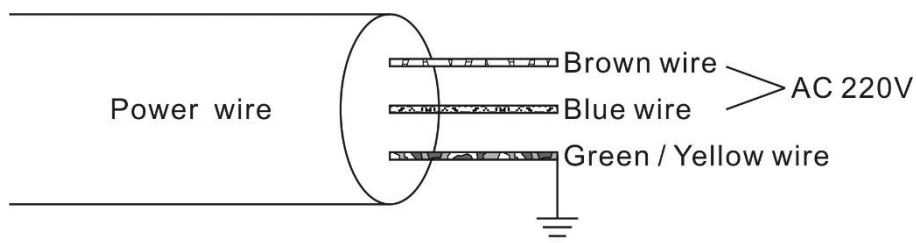   ▲ To avoid the static interference and current leakage, all grounding must be done.

   1.3 Notice of safety
   ▲ Turn off the power before maintenance and repairs or raising the machine arms, or changing needle, or threading needle.
   ▲ Please don't open the box except the professional.
   ▲ When turn on the machine in the first time, use low speed to operate and check the correct rotation direction.
   ▲ During machine operation, don't touch any moving parts.
   ▲ All moving parts must use the protective device to avoid the body contact and objects insertion.
   ▲ When there is water or other liquid, or caustic material on box or motor, you must stop operation and turn off the power.
   ▲ All connector shouldn't be plug and unplug when power on.
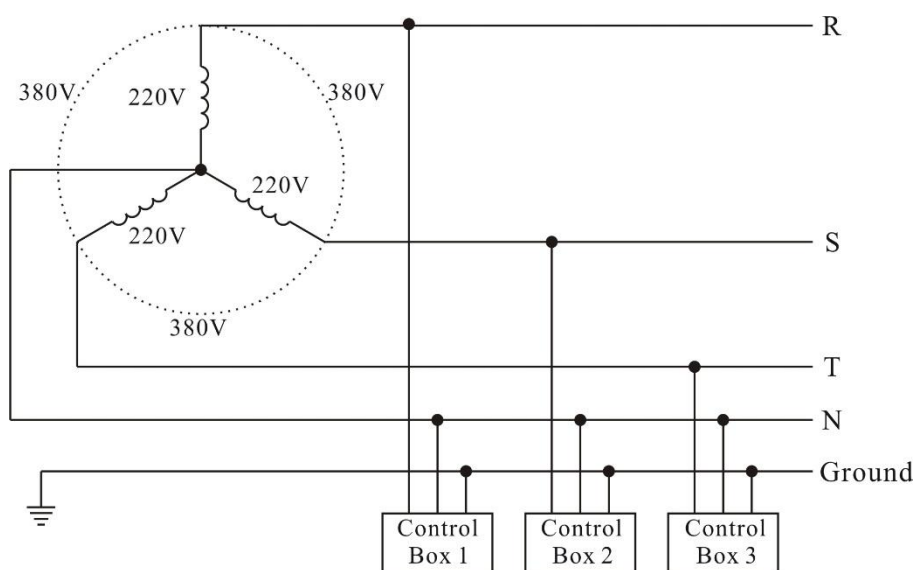   ▲ The connector should be plug and unplug in the correct method.

2. POWER CONNECTION AND GROUNDING

2.1 Single phase 220V power connection

Green/yellow wire must be connected to the earth.

Power wire

Brown wire
Blue wire — AC 220V
Green / Yellow wire

2.2 Three phase 380V power connection

380V   220V   380V
220V
220V
380V

R
S
T
N
Ground

Control Box 1   Control Box 2   Control Box 3

3. CONNECTOR DIAGRAM

4. OPERATING FIELD P200B

Start tacking		Single start tacking, A is the stitches of forward sewing; B is the stitches of backward sewing. They are both in range 1~15
		Double start tacking, A is the stitches of forward sewing; B is the stitches of backward sewing. They are both in range 1~15。
End tacking		Single end tacking, C is the stitches of backward sewing; D is the stitches of forward sewing. They are both in range 1~15
		Double end tacking, C is the stitches of backward sewing; D is the stitches of forward sewing. They are both in range 1~15
Free Sewing		▲ As the pedal is stepped forward, the start tacking(if selected) will be done automatically, then machine will

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		start normal sewing. Once the pedal returned to balance, machine will stop immediately. ▲ As the pedal stepped backward, the end tacking, trimming and wiping(if selected) will be done automatically
Constant-Stitch Sewing		▲ Once the pedal is stepped forward, F, G stitches will be completed with E times. ▲ Constant-Stitch Sewing will perform the number of segments and times as setting, when the stitches are zero, machine will stop immediately.
Bar-Tacking Sewing		▲ Once the pedal is stepped forward, all the seams of bar tacking, A, B, C, D sections will be completed with E times, and the trimming will be done automatically. ▲ The pedal must be returned to balance for next sewing.
Lower thread Counter		Enter lower thread counter interface
Soft start		Enable or disable the soft start
Needle Up / Needle Down		Select the stop position of needle bar
Trimming Enable		Enable or disable the trimming
Interface Selection		Switch current interface to another
One-Key Default /Lock keys		
Parameter Function	P	Enter or exit parameter function interface
Save	S	Confirm and save current value of parameter
Add	+	Value increase
Sub	−	Value decrease

5. OPERATING ELEMENTS

5.1 Single start tacking setting

- A Stitches = 0

    Seven-segment display A display 〖-〗.

    Sewing process: B stitches back – normal sewing.

- A Stitches ≠ 0

    Sewing process: A stitches forth – B stitches back – normal sewing

5.2 Double start tacking setting

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- A Stitches = 0

Sewing process：B stitches back – B stitches forth – B stitches back – normal sewing.

- A Stitches ≠ 0

Sewing process：A stitches forth – B stitches back – A stitches forth – B stitches back – normal sewing

5.3 Single end tacking setting

- A Stitches = 0

Seven-segment display D display 『-』.

Sewing process：C stitches back – end.

- A Stitches ≠ 0

Sewing process：C stitches back – D stitches forth – end.

5.4 Double end tacking setting

- A Stitches = 0

Sewing process：C stitches back – C stitches forth – C stitches back – end.

- A Stitches ≠ 0

Sewing process：C stitches back – D stitches forth – C stitches back – D stitches forth – end.

5.5 Lower thread counter

Set A11 to "1" to active the counter.

- **Enter interface**: Press 📷 Or Special function interface SN F6(refer to 6.6).

- **Initial counter**: Press ⬛ , the initial value of the lower thread counter which was set previously will be shown. Adjust it to a suitable value.

- **How the counter works：**
  - Display initial value
  - The counter reduces by 1 for every 10 stitches sewn.
  - If the counter less than 1, the display area will warn and buzzer sounds for 3 times. After thread trimming, will not start up again. Press ⬛S⬛ the warning will disappear and sewing will be possible, the counter reduces continue.
  - Press ⬛S⬛ again, the display will return to the initial value

5.6 Production counter

Set A11 to "1" to active the counter.

- **Enter interface：** Special function interface SN F2,refer to 6.2

- **Data acquisition：**In SN F2 interface, press ⬛S⬛ will be into collect process interface, seven-segment display D displays 『L』, seven-segment displays E,F,G will display the number of stitches for this process. It records the number of stitches and the number of trimmer. Press ⬛S⬛ to save

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the data and return SN F2 interface.

- **How the Counter works:** If sewn the number stitches more than the number of stitches collected 90%, and the number of trimming times more than collected, the counter add 1.

- **Clear Counter:** press [button: D/🔒]

5.7 Adjust the tacking

- Adjusting of RVE.SOL action time

For start/end tacking or bar tacking, if unbalanced situation is appeared during natural direction to reverse direction, please correct it as below:

| | Decrease parameter T01 | | Increase parameter T01 |

- Adjusting of RVE.SOL release time

For start/end tacking or bar tacking, if unbalanced situation is appeared during reverse direction to natural direction, please correct it as below:

| | Decrease parameter T02 | | Decrease parameter T02 |

5.8 Quick functions on the keypad

Figure 2：Keypad on the machine arm

Foot stroke		Toggle foot stroke level
Start and end strips		This key cancels the general setting for sewing start and end strips. If strips are activated, pressing the key disables the next strip. If no strips are activated pressing the key sews the next strip.
Position of the needle		If the key is selected the needle moves to a specific position. This position is determined individually via the parameter settings, more information read D15, D16
Stitch Length		If this key is selected, the machine sews using the smaller stitch length selected at lower adjusting wheel for the stitch length
Additional thread tension		This key switches on the additional thread tension

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Pause		If the pause switch is triggered, all functions are locked except parameters, the adjacent led light up, panel display "PAUSE"

5.9 LOCK THE HOT KEYS AND KEYPAD

if key is triggered, all functions on the keypad and hot keys are invalid.

5.10 ELECTRONIC HAND WHEEL & HOT KEYS

Turning the hand wheel:

The value of "A23" is 1, electronic hand wheel is activated. By turning the hand wheel, you can move the needle bar forwards or backwards.

Pressing the hand wheel:

THIS IS A CUSTOMIZABLE HOT KEY!

Default: None
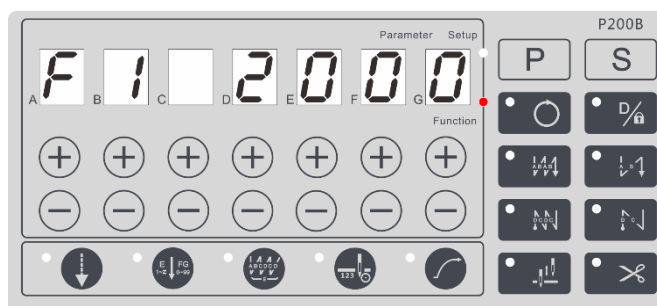
Refer to Parameter list, A05

Pressing the Reverse switch:

THIS IS A CUSTOMIZABLE HOT KEY!

Default: Pressing the key changes the sewing direction.

Refer to Parameter list, A04

6. OPERATION OF THE SPECIAL FUNCTION INTERFACE

Press switch to the special function interface from normal function interface, showed as below:

Display A and B show the SN of function, D~G display contents, press **B+** and **B-** to select functions:

6.1 Dynamic speed limitation

SN F1：display current speed up limitation, the operator can change the speed limitation during running.

6.2 Production counter

SN F2：display the production counter.

6.3 Machine phase

SN F3：display the machine phase

6.4 Torque enhancement function at low speed

SN F4：display the level

0: off, 10:maximum

6.5 Measure the instant speed

SN F5：display the instant speed.

6.6 Lower thread counter

SN F6：display how much the lower thread is remaining

7. PARAMETER INSTRUCTION

7.1 Setting parameter

Press [P] to enter the parameter Interface.

Display E shows the parameter type, press "**E+**" and "**E-**" key to change it.
Display F, G show the parameter index, press "**F+**", "**F-**", "**G+**", "**G-**" key to change it.
Displays A, B, C, D show the parameter value, press the keys under them to change it.
For example, figure 4： parameter index is 1, type is P, value of "S01" is 2000, the nixie

tube will blink when change the value. Press [S] to confirm, press [P] to cancel
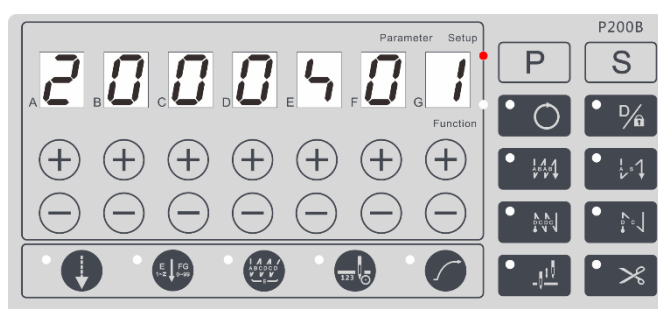
and return to sewing interface.

figure 4: the parameter interface

7.2 Get the permission of setting o type parameter

Only S, T and A type parameter can be select normally, if you want to change

the O type parameter, you must press [P] key when switching power on,

when panel shows 『DO EN』, you get the permission successfully.

7.3 Parameter solidifying

If the operator want to change some parameter's default value, then select the

parameter, press [O] maintain a moment, after 『SD OK』 displaying, the

default value has been changed.

7.4 Resumine parameter through one-key default

Select any parameter in parameter interface, [D/🔒] can be used to recall the

default value. The display will be twinkling if the parameter is modified, use

[S] to confirm or [P] to cancel the change

7.5 Controller recovery

■ **Resume the default value of all parameters**
Set parameter **O17** to "ON", turn on the power again, after twinkling of
"INIT" finished, all parameters have been default value themselves

■ **Restore Factory Defaults**
Set parameter **O51** to "ON", turn on the power again.

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7.6 Disable the safety switch

If you want to disable the function of Safe SW., you can change the value of "**O31**" from "1" to "0" normally, in a particular case, for example, the Safe SW. broke down, you can power on while press "**C+**" key to disable the function of Safe SW.

warning：*it means potential security problems for you if you* disable *the function of Safe SW., so attention please.*

7.7 Parameter list

SN	PARAMETER	RANGE	DESCRIPTION
S Type Para			
S01	Max Speed	500 ～ 3000spm	Unit: stitch/min
S02	Min Speed	150 ～ 500spm	Unit: stitch/min
S03	Start tacking speed	500 ～ 2000spm	Speed adjustment for start tacking
S04	End tacking speed	500 ～ 2000spm	Speed adjustment for end tacking
S05	Bar-tacking speed	500 ～ 2000spm	Speed adjustment for bar-Tacking
S06	C-S sewing speed	500 ～ 2000spm	Speed adjustment for constant-stitch sewing
S07	Trimming speed	150 ～ 300spm	Speed adjustment for trimming
S08	Soft start speed	200 ～ 500spm	Soft start speed
S09	Speed limit for stroke height level 1	500 ～ 4000spm	
S10	Speed limit for stroke height level 2	500 ～ 4000spm	
S11	Speed limit for stroke height level 3	5004 ～ 000spm	
S12	Speed limit for stroke height level 4	500 ～ 4000spm	
T Type Para			
T01	RVS action time	1～200（ms）	Action time of the REV SOL.
T02	RVS release time	1～200（ms）	Release time of the REV SOL.
T05	Foot lifter delay time setting	1～500（ms）	Foot lifter Delay time adjustment for pedal's feet lift position
T06	Running-Delay time setting	1～500（ms）	Running delay time adjustment for Automatic Foot Lifter

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T09	Safety switch-Delay time setting	1 ～ 1000 （ms）	Safety switch-Delay time adjustment for machine vibration
T10	Pedal-Delay time setting	1～200（ms）	Pedal-Delay time adjustment for pedal vibration
A type			
A01	Needle Position on Stop	0～1	1：Up Position 0：Down Position
A02		0～1	Automatic Constant-Stitch sewing 1 = On 0 = Off
A03		0～1	Correction stop mode 1 = stop position accord to D15,D16 0 = random
A04	Reverse switch function	0～12	You can choose between: 0：none 1：reverse 2：half stitch correction 3: continuously correction 4：half stitch correction at machine stop，reverse at machine run 5: continuously correction at machine stop，reverse at machine run 6： 7：trim at normal sewing，foot lifer after trimming 8：foot lifer 9：foot stroke 10 ： single backtack supression 11：2nd STITCH LENGTH 12：
A05	Hand Wheel Switch function	0～12	Refer to A04
A06	Trimmer function selection	0～1	1 = trimmer enable 0 = trimmer disable
A07	Lock Machine Buttons	0～1	Machine Buttons includes Hot Keys, Hand Wheel Switch, Reverse Switch.

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A09	Foot Lifer function selection	0～1	1 = Foot lifter function enable 0 = Foot lifter function disable
A10	Clamp function selection	0～1	1: Clamp enable 0: Clamp disable
A11		0～1	Production Counter 1 = On 0 = Off
A12		0～1	Lower thread Counter 1 = On 0 = Off
A13		0～1	Pull Back after Trimming(refer to O35) 1 = On 0 = Off
A14		0～1	Automatic Foot Lifter at stop 1 = On 0 = Off
A15		0～1	Automatic Foot Lifter after trimming 1 = On 0 = Off
A16		0～1	Automatic constant-stitch sewing after start tacking (only when A02=0) 1 = On 0 = Off
A17		0～1	Automatic end tacking for constant-stitch sewing(only when A02=0) 1 = On 0 = Off
A18		0～1	Search Upper position when switching the power on 1 = On 0 = Off
A19	Function when Half-Heeling the pedal	0～2	Function when Half-Heeling the pedal 2：thread cutting 1：feet lift

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			o：Idle
A20		0～1	Mode of start tacking 1：stitch for stitch 0：normal
A22		0～1	Mode of end tacking 1 = stitch for stitch 0：normal
A23		0～1	Electronic hand wheel 1 = Yes 0 = No
D type Parameter			
D01	Up lever	0～359（°）	Angle of needle bar up lever
D02	Down lever	0～359（°）	Angle of needle bar down lever
D03		0～359（°）	Switch-on angle of Trimmer SOL
D04		0～359（°）	Switch-off angle of Trimmer SOL
D05		0～359（°）	Switch-on angle of Reverse SOL.
D06		0～359（°）	Switch-off angle of Reverse SOL.
D07		0～359（°）	Switch-on angle of thread clamp SOL
D08		0～359（°）	Switch-off angle of thread clamp SOL
D13		0～359（°）	Switch-on angle of thread tension SOL
D14		0～359（°）	Switch-off angle of thread tension SOL
D15		0～359（°）	Position of the needle 1
D16		0～359（°）	Position of the needle 2
O Type Parameter			
O01	Number of stitches for the Soft Start	1 ～ 10（stitch）	Number of soft start stitches
O04		1 ～ 1000（ms）	Delay time for stitch for stitch tracking. Refer to A20
O06		0～1	1：Automatic foot lifter release after the time of O06 0：No
O07		5 ～ 30（needle）	Refer to O06

O17	Resume the default value of all parameters	0～1	
O31		0～1	Safety switch function 1 = enable 0 = disable
O32		0～1	Signal polarity of safety switch 0: Normal closed 1: Normal opened
O35		0～359	Angle of pull back function
O51	Restore Factory Defaults	0～1	
O69		0～1	Correction mode 1 = Correction when machine is stopped. 0 = Can not Correct after trimming
O72		0～10	torque enhancement function when running at low speed 0 = Off 1～10 = level 1-10
O84		0～720	Step width for electronic hand wheel
O85		0～200	Speed for electronic hand wheel
O86		0～2	Speed Limit Device to stroke 0：none 1：Digital 2：Analog

8. HOW TO ADJUST THE ZERO POSITION

Press hold [icon] and power on to adjust ZERO position for the machine.

Rotate the motor to ZERO position, displays will show the angle.

Press [S] to confirm and save.

9. ERROE MESSAGES & POSSIBLE TROUBLESHOOTING

ERROE CODE	DESCRIPTION	SOLUTION
PEDAL	Pedal warning	- Check or replace the pedal - Pedal not connected - Do not pedal yet
CARE	Safe Switch problem	- Check the Safe Switch - Replace the safe switch
KEY1	Machine button warning	- Do not press machine button - Replace the buttons
E101	High AC voltage fault	- Check mains voltage - Stabilize mains voltage - Use generator
E103	High Bus voltage fault	- Check mains voltage - Stabilize mains voltage - Use generator
E106	Bus current overload	- Check the encoder and motor - Replace the encoder - Replace the motor
E107	Motor blocked	- Eliminate stiff movement in the machine - Replace the encoder - Replace the motor
E110	Encoder/Synchronizer fault	- check or replace the synchronizer for a belt-drive machine - check or replace the encoder for a direct-drive machine
E190，E290	Software Update Error	- Software update - Replace the control
E191, E291	Software Update Error	- Software update - Replace the control
E193, E293	Software Update Error	- Software update - Replace the control
E294	Software Update Communication Error	- Software update - Replace the control
E199	Software Update Error	- Software update - Replace the control
E900	Communication problem	- Restart the control - Replace the control

1. Controller Check

Press hold ⬚S during power on, it will display "TEST" and then enter the Check interface. Diplay A display check index, the else display contents.

1.1 Pedal
1.2 Synchronizer

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1.3 Hot Keys

1.4 Motor encoder

1.5 Output Device

Press [S] to test.

Trimmer:

Foot Lifter:

Thread tension:

Thread clamp:

Addition thread tension:

Reverse:

Stitch length:

Stroke:

1.6 Input Switches

Display C：Reverse switch

Display E：Safety Switch

Display G：Knee Stroke Switch

1.7 Electronic Handwheel

Display B：Rotation

Display C：Press Switch

Display DEFG：Encoder

1.8 Speed Limit Device to stroke

Digital Type：

Analog Type：

1.9 AC voltage

1.10 Bus voltage

1.11 Software Version

1.12 Hardware Version

1.13 Software Release Date

2. Appendix

2.1 Machine ID

2.1.1 How to change the machine ID

Press hold 『A+』key and turn on the power to access to adjust the machine ID, seven-segment displays F,G will display the ID, change it

and press [S] to save.

2.1.2 Table of maximum speeds

Machine ID		Unit(sti/min)
1	20665 Direct-drive	2000
2	20665 Belt-drive	2000
3	TW1-899-D2T3	2500
4	TW1-898D3T3	2500
5	TW1-999-D2T3	2500
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2.2 Seven-Segment Display Characters Compare Table

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J
A	b	C	d	E	F	G	H	i	J
K	L	M	N	O	P	Q	R	S	T
t	L	n	n	o	P	q	r	y	r
U	V	W	X	Y	Z				
U	u	H	II	Y	Ξ				

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