



1. Preface

	Caution	Users are advised to read this manual closely and strictly follow directions of other sewing equipments to ensure correct partnership between different equipments. A trained specialist is expected to install and operate this motor.
--	---------	---

This motor applies only to the prescribed sewing equipments, pairing with other types of sewing equipments is not allowed.

We have the exclusive right to interpret this manual.

Contact us if you have any doubts, your suggestions and criticism will be highly appreciated.

Safety notes

1. Follow the guidance when installing and tuning this motor.
2. Pay attention to the sign which marks the particular steps by which operators should strictly abide to prevent harm.
3. Trained specialists are strongly recommended to handle this motor.
4. Make sure that power supply is grounded, and voltage and technical terms meet the required specifications.
5. When power on, take your feet off the pedal.
6. power off before the following steps could be taken.
 - installing
 - connecting any plugs onto the control box or disconnecting them.
 - threading and changing the needle and turning machine head.
 - At the state of idleness, under repair, or being adjusted.
7. Fasten all tighteners to prevent vibration and needle position dislocation.
8. A space of 30 seconds is needed between power off the system and reboot
9. Maintenance work and parameter-setting of control system should be handled by trained specialists.
10. All spare parts used in repair should be provided or accredited by us.
11. Ground lead should be installed with special care.

	Caution	The controller should be correctly grounded, otherwise, may lead to controller failure or being shocked.
--	---------	--



2. Front Panel

		Four buttons	
		Name	Description
<p>Two buttons</p>	<p>Four buttons</p>		Display parameter or operating mode Parameter select or set Parameter select or set Parameter select or set
		+	Parameter select or set
		-	Parameter select or set

3. Display Mode of Front Panel

a: Two buttons

After power on, two rotation cursors will be displayed. When accessed parameter mode, it display parameter index or value. After setting parameter, it will back to show rotation cursors automatically.

If parameter N.4 set to ON, "P" will be displayed on left bar, and display of right bar remains.

If a warning appears, the bar will display EX. (X means the error code)

b: Four buttons

1) After turning on power, maximum speed will be shown on screen. And after entering parameter mode, parameter serial No. or value will be shown on the screen. After setting parameters, press "P" key to return or it will return automatically after a few seconds.

2) Press "-" key or "+" key to change maximum speed. Pls refer to picture.

3) If a dot appears in the left digit tube, it means that motor runs clockwise; otherwise, motor runs anti-clockwise. Pls refer to picture.

4) If a dot appears in the right digit tube, it means that needle positioning function is turned on; otherwise, needle positioning function is off. Pls refer to the picture:

Shining of LED light on the right upper side of keys means upper needle position; otherwise, it means lower needle position.

5) If there is a warning, ErrX (X is error code) will appear on digit tube.

4. How to Set Parameter

a: Two buttons

Steps	Description
1	Press "-" until display N.0
2	Press "+" to increase index, then select the parameter to be modified
3	Press "-" to show the value
4	Use "+" or "-" to change the value, then wait to return

ENERGY SAVING MOTOR



5	After the change, waiting for return
Note:N6-NY parameter settings please contact your dealer or manufacturer.	

b: Four buttons

Steps	Description
1	Press "P" and "S" keys together, then N0 shows up;
2	Press "-" or "+" to select your serial No.;
3	Press "S" key to enter parameter. And parameter value is shown on screen;
4	Press "-" or "+" to change parameter;
5	Press "S" key to return serial no page and change other parameters;
6	After setting, press "P" key to exit or wait a few seconds to exist automatically.

5. Parameter Table

Index	Range	Default	Description
N.1	30~90	35	Startup speed. Speed = value x 10 (spm)
N.2	05~45	30	Max speed. Speed = value x 100 (spm)
N.3	0~1	0	Needle stop position. 0: down; 1:up
N.4	OF~ON	OF	Synchronizer function. OF: close, ON: open Note: Do not open the parameter if not connected to synchronizer.
N.5	OF~ON	OF	Motor reverse rotation function. OF: close, ON: open
N.6	10-60	30	Increase time from 0 to 4500 (spm). A value bigger means acceleration is quicker.
N.7	10-60	30	Decrease time from 4500(spm) to 0. A value bigger means deceleration is quicker.
N.8	0~6	*	Motor braking intensity.
N.9	1~24	10	Up position adjustment, only effect when N.D is 1
N.A	1~24	10	Down position adjustment, only effect when N.D is 1
N.B	OF~ON	OF	Speed-lock function. OF: close, ON: open
N.C	OF~ON	OF	When it is ON, the motor will move to up position and stop automatically as power on.
N.D	1~2	*	Synchronizer type. 1: single signal, 2: double signal



ENERGY SAVING MOTOR

N.E	OF~ON	OF	Pedal backward function. OF: close, ON: open. When value is ON, if motor stop at down position, pedal anti-step will move motor to up position.
N.G	OF~ON	OF	When value is ON, turn on the power again, after twinkling of "IN" finished, all parameters will be restored
N.H	0-9	*	Motor type(may not be modified)
N.I	*	*	Software version
N.K	0-9	0	Soft start function and pin number
N.L	10-90	40	Soft start max speed
N.M	05~45	45	System speed limitation, motor speed never exceeds this parameter. Speed = value x 100 (spm)
N.Y	10~90	60	Stop speed. Speed = value x 10 (spm) Effected by connect to synchronizer.

6. Error Code Table

Code	Cause	Measurement
E1	When motor stop voltage is too high	Check the AC power.
E2	Voltage is too low	Check the AC power.
E3	Over current	Check motor connector, or replace control box
E4	Pedal fault	Check pedal connector
E5	Synchronizer fault	Check Synchronizer connector and position signal
E6	Hall fault	Check motor connector, or replace motor
E7	Lock rotor fault	Check motor connector, or machine head
EC	When motor run voltage is too high	Check the AC power.
EE	Power down fault	Check the power plug
EF	Data storage fault	Power off, restart motor
EG	Current loop fault	Power off, restart motor
EH	Overspeed fault	Power off, restart motor
EI	Motor reverse fault	Power off, restart motor
EJ	Motor overload	Check whether the motor load is overweight or overload operation

ENERGY SAVING MOTOR



7. Check Function

Press “-” can enter the check function, use “-” to switch the index.

No.	Item	Method
A	Pedal	Press pedal, from back to front, it will be shown: B, S, L, 1~9.
B	Synchronizer	Turn the hand wheel, vertical bar of left and right shown signal.
C	Hall	Rotate motor to display hall value 1-6

8. Special Function

Software Restart

In the check condition or fault condition, press the “+” to allow the control box reset.

Quick Recovery Parameter

After power switch on, press “+” and “-” together more than three seconds will automatically restore the parameters and reset.

9. Display Characters Table

0	1	2	3	4	5	6	7	8	9	Arabic
---	---	---	---	---	---	---	---	---	---	--------

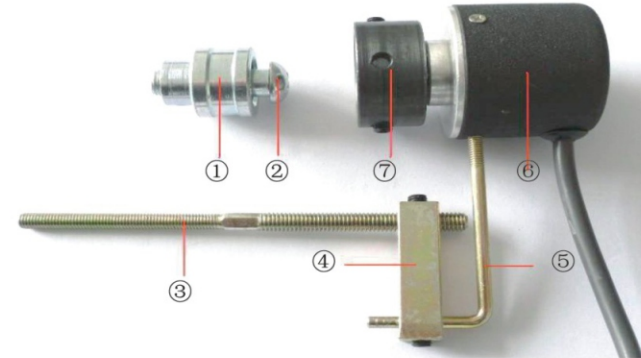
A	B	C	D	E	F	G	H	I	J	English Alphabet
K	L	M	N	O	P	Q	R	S	T	
U	V	W	X	Y	Z					



ENERGY SAVING MOTOR

**OPERATION MANUAL
FOR BRUSHLESS ENERGY SAVING MOTOR**

1. ILLUSTRATION ABOUT SYNCHRONIZER



- ①. MAIN SHAFT ADAPTOR ②. MAIN SHAFT CONNECTING SCREW
- ③. BOLT M5 & M6 ④. DOUBLE-HOLED CONNECTING BAR
- ⑤. L-SHAPED SUPPORTING BAR ⑥. SYNCHRONIZER ⑦. COUPLING

2. HOW TO INSTALL SYNCHRONIZER

(1) INSTALL MAIN SHAFT ADAPTOR ① TO CONNECT SEWING MACHINE SHAFT AND SYNCHRONIZER;

INSTALLATION: FIX MAIN SHAFT ADAPTOR TO SEWING MACHINE MAIN SHAFT WITH CONNECTING SCREW ②. TRY HARD TO KEEP THE ADAPTOR CONCENTRIC WITH SEWING MACHINE SHAFT SO AS TO MAKE THE SYNCHRONIZER, WHILE IN OPERATION, STABLE AND STEADY AND PREVENT SHAKING;

(2) INSTALL BOLTS M5 AND M6 TO PREVENT SYNCHRONIZER FROM SHAKING.

INSTALLATION: APPLY THE SUITABLE SIDE OF BOLTS M5 AND M6 TO FIX THEM ON SEWING MACHINE WITH SPANNER.

(3) INSTALLATION OF SYNCHRONIZER (FIX ALL PARTS AS INDICATED IN THE PICTURE)

INSTALLATION:

A: FIX THE SYNCHRONIZER COUPLING ⑦ WITH MAIN SHAFT ADAPTOR ①;

B: HOLD SEWING MACHINE WHEEL WHEN NEEDLE BAR IS IN ITS UPPER POSITION; THEN TURN THE COUPLING ⑦ UNTIL BLUE LED LIGHTS; FINALLY, FASTEN COUPLING ⑦ ONTO MAIN SHAFT ADAPTOR ① BY A HEXAGON SPANNER

C: FIT THE SCREW THREAD SIDE OF L-SHAPED SUPPORTING BAR ⑤ INTO SYNCHRONIZER'S ⑥ SCREW HOLE, THEN CONNECT ONE END OF L-SHAPED SUPPORTING BAR ⑤ WITH BOLTS M5 AND M6 FIXED ON SEWING MACHINE HEAD WITH DOUBLE-HOLED CONNECTING BAR ④.

D: FINALLY, TIGHTEN TWO HEXAGON SCREWS ON THE DOUBLE-HOLED CONNECTING BAR.