

D9-01 USER MANUAL

1. Caution

- When plugging or un-plugging the connector be sure to turn the power OFF before adjusting the sewing machine. When you lay down the sewing machine head and touch the needle or removing the connector, do not forget to turn the power switch "OFF" always make sure the pilot lamp goes off.
- Grounding is required.
A grounding conductor (green) is provided in the push button switch. Therefore grounding is necessary.
- Do not disassemble the motor.
Precision parts are assembled inside the motor's fan cover. It is prohibited to disassemble any of its parts.
- Take special care not to touch the printed circuit board (PC board), the PC board has a high voltage circuitry.
- Wait one minute after the power is turned OFF, the internal circuit may still be charged with high voltage. Before changing over the dip switch inside the control box, do not forget to turn the power OFF. Always make sure the pilot lamp has gone out.
- After completion of the operation, be sure to turn the power switch OFF. Take care not to press or heel back the pedal until the pilot lamp goes out (approx. 8 seconds) after the power switch is turned OFF. Otherwise, the pedal operation may cause the sewing machine to rotate.
- Take care so that no foreign matter, such as sewing machine oil, intrudes into the control box.
- Do not use equipment near a strong noise source, such as high-frequency welding machines.
- Static electricity may occur in the belt. Take care so that the belt does not come into contact with the belt cover on the sewing machine side. Ground metallic parts such as the belt cover must be connected to the grounding conductor.
- If noise intrudes into the radio, keep it away from the motor. (If a weak signal radio broadcast is received, radio noise may become large.)
- If a ceiling lamp flickers, wiring connection of motor power supply with different lines from the ceiling lamp will reduce this flickering.
- Check the connector for the shape and direction, and insert it firmly.
- Do not touch the connector pin section; poor contact of the connector and malfunctions by static electricity may result.



- This symbol indicates electrical risks and warnings.

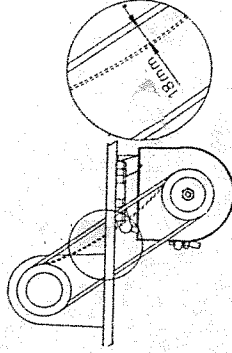
2. Installation

Direct Motor Assemble Manual is attached later

When a force of 1 kg is applied in the center of the belt, tighten the belt to an extent that it sags by approx. 18mm.

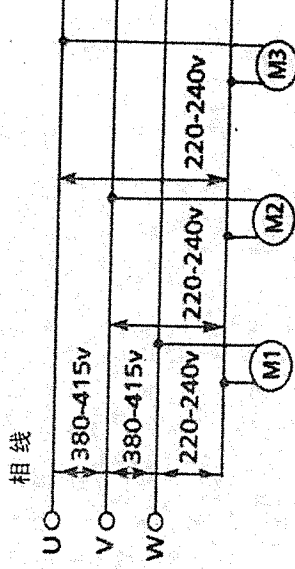
For reference, the following method is also recommended:

- (1) Loosen the belt adjusting screws at the upper and lower sides, and support the motor with only the belt.
- (2) Tighten the belt adjusting screw at the upper side and re-tighten it one more turn from the position in which the load is applied to the screw.
- (3) Tighten it with the belt adjusting screw at the lower side and secure it.



3. Wiring and Grounding

- (1) When wiring, please follow the National Electrical Code Standards and electric power company provisions, while and paying particular attention to safety.
- (2) The push button switch is provided with a green grounding conductor:
always ground this.
- (3) Connection to high voltage power source (380-415V)
 - Connect the motor between neutral point to each power line.
 - Confirm the voltage is 220V - 240V, and set the voltage select switch to right position.
 - Balance each line load in connecting multiple motors.



4.SY2 Synchronizer(Optional Components)

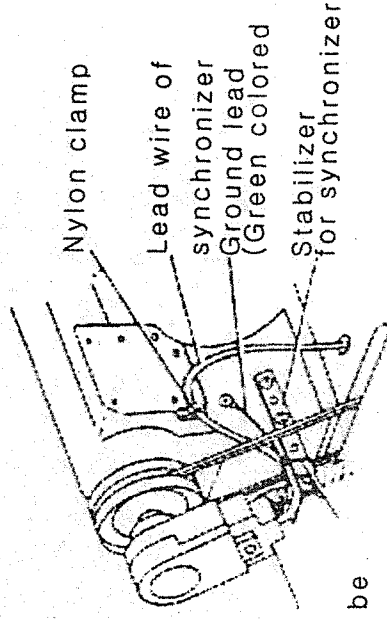
- (1) Attach the synchronizer to the hand wheel of the sewing machine.
If adjustments of the synchronizer are necessary,
please refer the "ADJUSTMENT".

NOTE: The cable extending from the

synchronizer should be fixed
to the retaining bolt with the

band. The grounding terminal must
be affixed on the sewing machine.

- (2) Adjustment of the needle stop positions
At factory it is pre-adjusted. However, if necessary
re-adjust the needle stop positions by turning the reflection plates of the synchronizer as described
below:



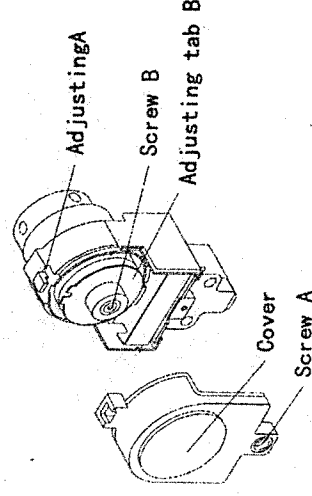
NOTE: While re-adjust the positions, trimmer and wiper solenoids should be disconnected. Don't touch the reflecting portions of the plates.

- Turn the sewing machine manually into the "needle down" position.
(MAKE SURE THE DIRECTION OF ROTATION IS CORRECT)
- Remove the cover from the synchronizer. (Remove screw A)
- Loosen screw B. (Don't remove screw B.)
- Turn the reflection plate A so that the adjusting tab of plate A will be at located position.
- Turn the sewing machine to the "needle up" position.
- Make the same adjustment of the reflection plate B for "needle up" position
- Tighten screw B.

Place the cover on the synchronizer. To make fine adjustments,
follow the preceding instructions:

- Operate the sewing machine with the foot pedal.
- Press the pedal forward and release.
- Make sure the sewing machine is in the "needle down" position.
- Correct for required needle position by turning the adjusting tab A.
- Heel the pedal. (Needle stops in the up position)
- Correct for the required position by turning the adjusting tab B.
- Finally tighten screw B and install the synchronizer cover.

CAUTION: DO NOT TOUCH THE SYNCHRONIZER

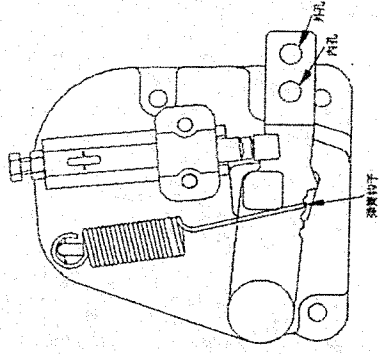


REFLECTION PLATE OR OTHER ROTATING PARTS WHILE THE SEWING MACHINE IS OPERATING.
REMEMBER THE FINE ADJUSTMENT IS CHECKED WITH POWER ON

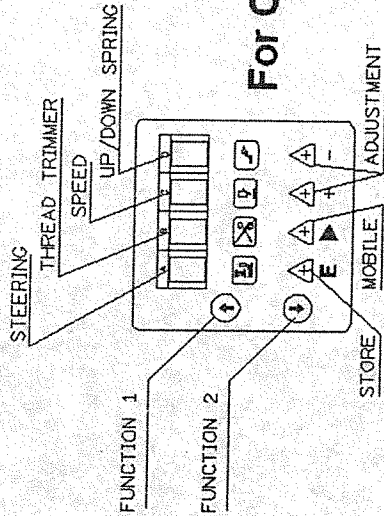
5. Adjustment

Before starting any adjustment, be sure to turn the power switch "OFF".

- Change pedal-spring hook
- Use external hole to set pedal
- To make the pedal lighter, adjust by internal hole



6. Controller explain diagram



For Chainsstitch

Panel Key Functions

Parameter Type	Setting	Function
Max. Speed	Press $\uparrow$ and $\downarrow$ together.	Screen will show speed, Press $\uparrow$ or $\downarrow$ to adjust
Rotating Direction	For Parameter A29	" $\curvearrowright$ "direction change to " $\curvearrowleft$ "direction
Needle up/down position	Press $\uparrow$ the press + key for 2 sec.	Upper position of the screen shows needle up and bottom shows needle down.
Slow start	Press $\uparrow$ then press $-$ key for 2 sec.	Screen showing bent sign "Z" mean slow start function
Needle up/forward stitch correction	Press needle up/forward stitch correction key	Needle up stitch at needle down position, continuous forward stitch function, set parameter to A1=1

Parameter Setting

Parameter Type	Setting	Function
Enter Parameter	Press $\uparrow$ key and turn ON power.	Screen show A1
Change Parameter	After entering to "A" section	Press +, $-$ key. Choose by $\triangleright$ to enter, then press +, $-$ to adjust and press E key to save.

Offer Used Parameter Chart:

A group	setting	Function
1	1	1: Needle-up and needle-down are performed alternately 0: Needle-up
2	0	1: Random stop(Use this switch when operation without synchronizer is performed) 0: Stop in the needle home position
3	0	1: Needle position sensing mode(1sensor) 0: Needle position sensing mode(2sensor)
4	0	1: GF519=ON(at 1sensor)Makes origin signal as needle-up 0: GF519=ON(at 1sensor)Makes origin signal as needle-down
5	50*2=180	Machine angle between standard position and needle-up at 1sensor (CW angle from origin and needle position signal input) [deg]
6	0	1: The sewing machine does not run after trimming 0: The sewing machine runs after trimming
7	1	1: Foot lift operates at the 1st stage of heel-back 0: Foot lift does not operates at the 1st stage of heel-back
8	0	1: FL provided 0: No AFL
9	160	Setting of automatic foot-lift (*0.1s with 5interval)
10	5*10=50	Setting of on-delay time of foot-lift (10ms interval)
11	1*1=1	Setting of on-time of chopping (ms)
12	1*1=1	Setting of off-time of chopping (ms)
14	3	3: Safety switch mode Opened 11: Safety switch mode Closed
15	0	1: Foot-lift on with pedal neutral 0: Foot-lift off with pedal neutral
19	1	1: A20 to enable 0: A20 to disable
20	100*2=200	Cutting speed (Use A19 to choose enable/disable)
21	0	1: Reversing after trimming 0: No reversing after trimming
22	1	0: Reverse angle after trimming, (20 degree) 1: Reverse angle after trimming, (30 degree) 2: Reverse angle after trimming, (45 degree) 3: Reverse angle after trimming, (60 degree) 4: Reverse angle after trimming, (75 degree) 5: Reverse angle after trimming, (90 degree) 6: Reverse angle after trimming, (105 degree)
23	0	1: 1/2 gain: Use this function when a special sewing machine vibrates at stop 0: Normal gain: Normally, use the machine at this setting

24	1	1:Slow start 0:Slow start-low speed	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
25	0	1:Brake applied during stop 0:No brake during stop	
26	36	Brake force	
27	0	1:Needle-up 0:Needle-down	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
28	0	1:With soft start 0:Without soft start	
29	1	1:Direction of motor rotation,(Anticlockwise) rotation,(Clockwise)	
31	0	1:Input Drive command and/or speed command for 12p.(9)(For Shokei PK-3) 0: Input speed command for 12p.(9)	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
32	0	1:Trimming at 1st stage heel back 0: Trimming at 2nd stage heel back	
34	200	s/min: Minimum speed adjustment	
35	1500	s/min: Set the Back-Tack speed	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
36	0	1:The counter is Validates 0:The counter is invalid	
37	2000	Setting the count	
38	25	Delayed timing prior to timer engaged(ms)	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
39	38	Trimming time(ms)	
40	25	Delayed timing prior to tension release engaged(ms)	
41	38	Timing of tension release (ms)	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
42	25	Delayed timing prior to wiper engaged(ms)	
43	38	Setting timing of wiping (ms)	
44	80	Delayed timing prior to foot lifter engaged(ms)	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
46	0	1:stops at the end of each process of auto-backtack 0:Does not stop at the end of each process of auto-backtack	
47	100	setting of stop time of GF116 0~200[ms] (2ms interval)	
48	1	1:Ends the start-backtack by inching-pedal down 0:No ending of start -backtack by inching-pedal down	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
49	1	1:Validates needle-up after power- on 0:Invalidates needle-up after power-on	
50	0	1:Invalidates manual backtack during stopping 0:Validates manual backtack during stopping	
53	1	1:Edge sensor activate even without fabric, needle count enable as well 0:Edge sensor inactivate without fabric	0:Direction of motor rotation, (Anticlockwise) 0:Direction of motor rotation, (Clockwise)
54	1	1: Disconnecting console without ABT 0:Disconnecting console with ABT	
55	1	1: Sets max. and external speed to double 0:sets max.and external speed to normal	
56	0	1:Backtack speed adjusting A57 to adjust 0:SBT and EBT speed are the same	

57	1900	Backtrack speed (A56=1)
56	0	1:Validates soft-start by every pecal-down 0:Validates soft-start only after trimming
67	1	1:Chopping of back tack solenoid 0:No chopping of back tack solenoid
69	0	1:Add +10 stitches of setting for automatic back tack 0:No Addition of +10 stitches of setting for automatic back tack
70	180	MAX speed setting
77	0	0 : 0 needle
78	0	1 : + 1 needle
79	0	2 : + 2 needle
80	0	3 : - 1 needle 4 : - 2 needle
82	2 0 * 2 0	First Needle Speed (A24=0)
83	3 2 * 2 0	Second Needle Speed (A24=0)
84	5 0 * 2 0	Third Needle Speed (A24=0)
85	8 5 * 2 0	Fourth Needle Speed (A24=0)
91	0	1:FL Air Pneumatic Type (DC 24V) 0:FL Solenoid Type
92	1	1: Activates foot-lift with 2rc.stage heel-back 0: Deactivates foot-lift with 2 r c . stage heel-back
93	0	Selection of test mode for machine controller 1:Heat-run
94	100,125	Load inertia (setting as accelerating data)
101		C1=100、104、105、120、124、125, 1 st half vacuum needle count
102		C1=101、121, 2nd half vacuum needle count
103		GWS Slow speed adjusting
104		C1=13、18、510, Delayed timing prior to tension release enable
105		C1=13、18、510, Delayed timing prior to tension release disable
106		C1=103、106、107、108、123、126、127、128, C1 needle count
107		C1=103、106、107、108、123、126、127、128, C2 needle count
108		C1=103、107、123、127, C2 needle count
109	2500	C1=606、607, KN-OUT output time
110	1000	C1=606、607, HLT-OUT than KN-OUT delay time
111	2500	C1=606、607, HLT-OUT output time
112	200	C1=606、607, The next key valid delay time
113	800	C1=606、607, Sewing stop suction when the delay time
114	2	C1=606、607, Three vehicle suction time WIP*512ms
115	180	C1=606、607, Three car WIP suction time * 2ms
116	3000	C1=512, mini switch 1st section speed adjusting

117	2500	C1=512, mini switch 2nd section speed adjusting
118	2000	C1=512, mini switch 3rd section speed adjusting
119	1500	C1=512, mini switch 4 th section speed adjusting
120	200	C1=108, 128, cutting solenoid time
121	200	C1=108, 128, second cutting solenoid time delay
122	20	C1=107, 127, C4 needle count
123	20	C1=107, 127, C5 needle count
124	20	C1=107, 127, C6 needle count
125	2	C1=201, 206, 209, Chain stitch WIP blow time*512ms
126	1	1: Wiper Solenoid ON 0: Wiper Solenoid OFF
127	2	C1=211, 212, 213, chainstitch lock needle setting
128	0	C1=211, 212, 213, chainstitch needle up angle
129	180	C1=211, 212, 213, chainstitch coil time
130	0	1: Grasp thread (ON) 0: Grasp thread (OFF)
131	70	Needle up to grasp thread C1delay angle
132	100	Grasp thread C2 time (angle)

D9-01 Reset to Factory Setting:

Press , turn on power. Show A1,

Press  and E key show S - - -

Press  key to enter, show C - 31

Need to choose c - 31, press together  key and  (key)

Press E key to go back when finish, will show POFF.

Turn off power

Note: During resetting to factory setting do not disconnect power

7.Troubleshooting

- First, make sure that the ground is connected securely.
- If you are not able to locate the defect according to the table, be sure to turn the power switch OFF before proceeding with servicing the unit.

Symptom of Malfunction	Checking Points	Suggested Solutions
The sewing machine does not run even after pedal-down.	Is the supply voltage normal?	Check for wiring.
	Power switch conduction. (Check for conduction after removing the power switch from the power supply.)	If the power switch is not conductive, replace it.
	Loose connector and disconnection.	Insert the connector correctly and firmly.
	The pilot lamp does not light up.	Ask your sales shop for repair.
	The protection circuit is actuated.	Remove the cause for which the protection circuit was actuated and turn the power switch ON once again.
	Maximum speed control. (Control box)	Turn the knob clockwise.

The machine does not run at a high speed.	The machine does not run smoothly.	Remove the cause for which the machine does not run smoothly.
	Supply voltage drop and open phase of 3-phase power supply.	Check the power supply wiring.
The machine does not run even after heeling back.	Check that the needle-down stop position does not deviate.	After needle-down stop, do not turn the pulley by hand.
Even when the pedal is placed in the neutral position, the motor does not stop or it does not stop in the correct position.	Belt tension.	Re-adjust the belt.
	The pulley is loose.	Re-tighten the pulley.
	The motor stops if the pedal lever is heeled back slightly.	Replace the pedal sensor.
	The synchronizer is not connected.	Connect the synchronizer normally.
No solenoid works.	Open-phase operation of 3-phase control box (Red or black lead wires or the push button switch are coming off.) Remove the power connector to check the voltage between the terminals.	Check the wiring. * When you use the machine with single phase, wiring connections should be made so that the white and black lead wires of the push button switch are connected to the power supply.
Other symptoms	No voltage of LED lamp develops.	Check the wiring, and examine the lamp.

• **Information Error Code and Measurement:**

Error Code	Abnormality Item	Cause of The Problem	Measure
E - 1	•Sewing machine lock	• Sewing machine lock • Needle sensor connector is disconnected • V-Belt has loose tension • Motor connector is disconnected • Trimmer sequence is set improperly	• Check the sewing machine • Connect the needle sensor connector • Tighten the belt(See page 4) • Connect the motor connector • Confirm trimmer sequence
E - 2	•Hardware tripping in control	• Abnormal power supply voltage for control box • High voltage at braking form high speed	• Check the power-supply voltage • Replace the control box to repair the regenerated circuit
E - 3	•Encoder signal of motor sensor is abnormal	• Motor connector is disconnected	• Connect the motor connector • Check the wires of the motor sensor cable
E - 4	• Commutation signal of motor sensor is abnormal	• Motor connector is disconnected	• Connect the motor connector • Check the wires of the motor sensor cable • Replace the motor
E - 5	• Abnormal motor speed	• Abnormal control box	• Replace the control box
E - 6	• Motor over-load or lock	• Machine has heavy load • Motor connector is disconnected	• Check the machine load. If yes, reduce the machine load. • Connect the motor connector.
E - 7	• High voltage supply	• Power supply voltage abnormal	• Exchange control Box
E - 8	• Abnormal Solenoid.	• Solenoid is short-circuited	• Check the solenoid.
E - 10	• Control Box memory is abnormal.	• EEPROM has wrong data.	• Reset EEPROM by using (RESET) node.

E - 11	•Abnormal Communication	•The console is cable was plugged in after power on.	• Plug in the console cable with power off, then power on.
SAFE	Safety Switch	Trimming protection Safety switch broken Safety switch setting incorrect (open or close)	Correct trimming device to be used Check if the switch is damaged Usually set to close, use A14 to adjust.

9. Segment Display characters comparison chart

Actual Numbers	0	1	2	3	4	5	6	7	8	9
Display Numbers										

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

D9-01 Programmable Inputs and Outputs

Panel Connector		Paramter No. I/O Setting
1490R 4P(White)	※ 1 VD	
	※ 2 TRIM	GF028=14 GF029=0
	※ 3 TR	GF032=14 GF033=5
	※ 4 WIP	GF030=14 GF031=1
1545R 2P(White)	※ 1 VD	
	※ 2 FL	GF036=14 GF037=3
5025-06P 6P(White)	※ 1 VD	
	※ 2 MOVE	GF042=15 GF043=0
	※ 3 BT	GF034=14 GF035=2
	※ 4 Sol.GND	
	※ 5 VD	
	※ 6 MOVE	GF038=15 GF039=0
1375R 15P(White)	※ 1 MOVE	GF038=15 GF039=0
	※ 2 VD	
	※ 3 PDU2	GF40=16 GF41=0
	4 PI EGSG	GF020=4 GF021=6
	※ 5 VD	
	6 OA	
	※ 7 Sol.GND	
	8 GND	
	9 +12V	
	10 O.B	
	NU (ハード信 11号)	
1360R 12P(White)	12 PD2	GF046=13 GF047=2
	13 PU2	GF044=13 GF045=3
	14 MV_M	GF026=6 GF027=1
	15 MBT	GF006=7 GF007=1

Panel Connector		Paramter No. I/O Setting
1396R 3P(Blue)	1 GND	
	2 MFL	GF004=7 GF005=0
	3 MNU	GF008=7 GF009=2
1396R 3P(White)	1 GND	
	2 RET_WIP	GF010=8 GF011=11
	3	
1360R 12P(White)	ND (ハード信 1号)	
	2 1SHOT	GF018=7 GF019=7
	3 UG STOP	GF016=7 GF017=6
	4 UG TRIM	GF014=7 GF015=5
	5 UG RDM	GF012=7 GF013=4
	6 RET_WIP	GF010=8 GF011=11
	7 MV_E	GF024=6 GF025=0
	8 MPU	GF022=6 GF023=3
	9 EXT_V	
	10 GND	
	11 +5V	
	12 FG	