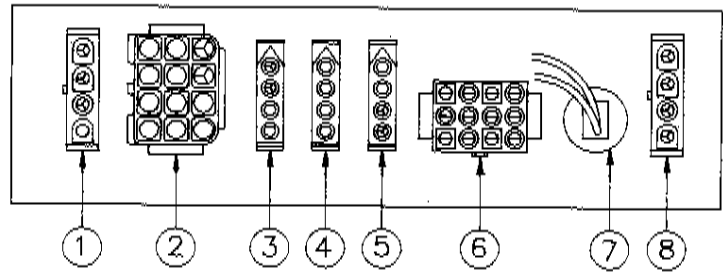
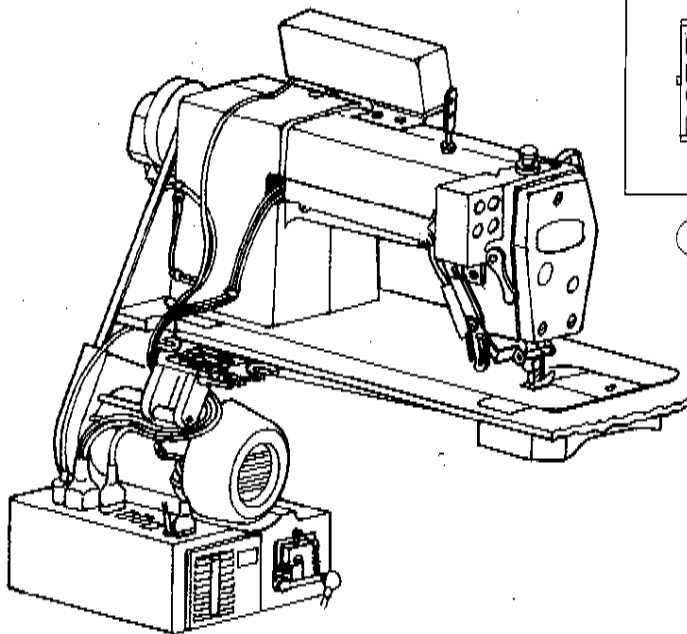
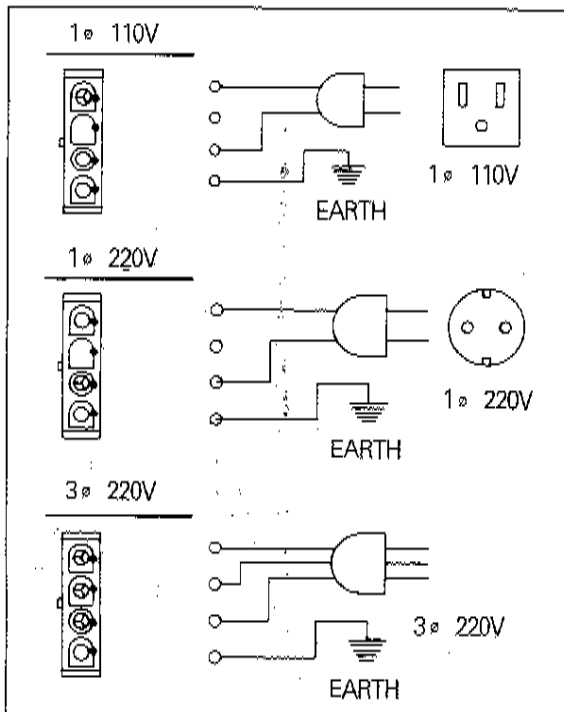


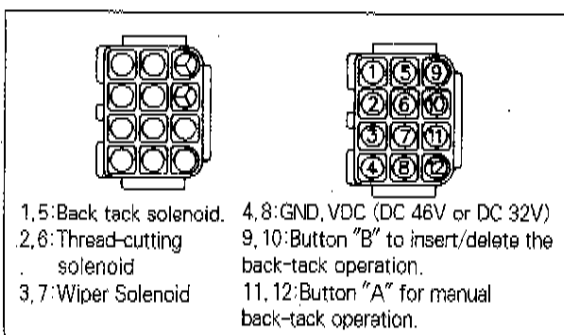
2)Rear Panel:



① AC power input.

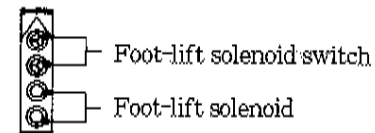


② Standard solenoid connector.



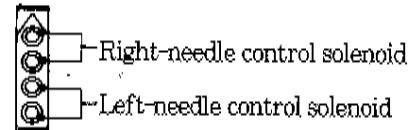
③ Foot-lift solenoid.

Connector color: Green



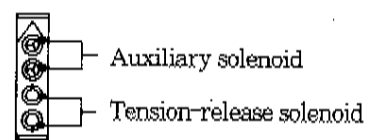
④ Right/left solenoid (used in twin-needle sewing machines)

Connector color: Blue

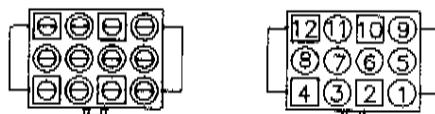


⑤ Tension-release and auxiliary solenoid

Connector color: White



⑥ Switch and lamp (used in twin-needle sewing machine)



- | | |
|---------|-------------|
| ① +5V | ⑦ GND |
| ② +5V | ⑧ 4/4 (N.C) |
| ③ L LED | ⑨ 3/4 (N.C) |
| ④ R LED | ⑩ 2/4 (N.C) |
| ⑤ L S/W | ⑪ 1/4 (N.C) |
| ⑥ R S/W | ⑫ (N.C) |

⑦ LAMP POWER (AC 6V/20W)

⑧ MOTOR POWER (MOTOR TO CONTROL BOX)

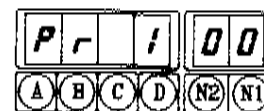
3) CHANGING THE P/U SETUP

*Various additional sewing functions of Fortuna AC Servo Motor can be used by changing the P/U default codes. The group "A" programs described below correspond to the initial sewing functions of appropriate codes. The user can modify these initial sewing setups to meet the varying sewing needs. Read through this instruction manual first before making any changes, and please order the "APPLICATIONS" manual for more program functions in addition to those listed below.

■ PROCEDURE FOR THE PROGRAM CHANGE

○Execute the thread-cutting before you make any program changes.

○Press the **Prog** and **(A)** keys simultaneously in order to get the P/U ready for program changes as shown in the figure.



○ Press **(N2)** and/or **(N1)** to get the code to be modified on the 2-digit display. Then, change the initial setup by pressing the **(C)** & **(D)** keys. Hit the **Enter** key to enter the program modifications. Finally, hit the **Prog** key to turn off the blinking light.

*Note: All modified program settings will be reset to the factory default settings by an initialization.

■ GROUP "A" PROGRAMS

► Controller type CM(CPU Version 0.65)

Code No.	Initial(Default) Setting	Step	Range	Meaning of the Program Code
01	200 spm	2 spm	20 - 510 spm	Setting the lower sewing speed limit by the pedal.
02	4000 spm	25 spm	25 - 6375 spm	Setting the upper sewing speed limit by the pedal.
03	230 spm	2 spm	20 - 510 spm	Setting the speed of the thread-cutting operation.
04	110 spm	2 spm	20 - 510 spm	Setting the 1/2-stitch sewing speed of the P/U
05	300 spm	2 spm	20 - 510 spm	Setting the sewing speed of the button ③ of the sewing machine.
06	3000 spm	15 rpm	15 - 3405 rpm	Setting the motor upper speed limit.
07	30.0 sec	0.5 sec	0.5 - 127.5 sec	Automatic pressure foot-lifting time when the sewing is stopped.
08	100 msec	4 msec	1 - 1020 msec	Waiting period for the pressure foot-lifting when the pedal is pressed.
09	100 msec	4 msec	4 - 1020 msec	Time interval between the lowering of the pressure foot and the start of sewing.
10	45.0 msec	0.5 sec	0.5 - 127.5 sec	Maximum operation time of the twin-needle solenoid.
11	80 msec		4 - 1020 msec	Wiper-operation time after thread cutting.
12	1		0 - 1	Setting the motor direction: 1. forward rotation; and 0 reverse rotation.
13	0		0 - 3	Setting the start-sewing speed selectively: 0=No slow start. 1=Slow start only after thread cutting 2=Slow start only when the pedal is pressed down. 3=Slow start after thread cutting or when the pedal is pressed down.
14	200 spm	2 spm	2 - 510 spm	Slow start-sewing speed.
15	0		0 - 1	1=Pressure foot "UP" after thread-cutting
16	0		0 - 1	1=Setting the reverse-rotation stop after thread cutting.
17	0		0 - 2	Selection the model of the sewing machine 0=235A/B 1=790BL-7,790-7. 2=560-7,867-7
18	4.0 sec		2 - 127.5 sec	Setting the sensing time for the sewing machine overload.
19	0		0 - 1	1=Lock the sewing machine when the sewing is halted.

Code No.	Initial(Default) Setting	Stop	Range	Meaning of the Program Code
20	60 pulse		20 - 225 pulse	Setting the reverse-rotation distance when the reverse-rotation stop after thread cutting is selected.
21	1		0 - 1	1=Thread cutting sequence is locked. 0=Thread cutting sequence is changed.
22	4 msec		4 - 1020 msec	Time interval between the end of wiper operation and the start of the pressure foot operation.
23	1		0 - 1	Modifying the functions of the Ⓐ and Ⓑ buttons during the sewing operation: 0=Button Ⓐ: Back tack sewing only. Button Ⓑ: The needle shaft makes an "UP" stop when this button is pressed once. 1=Button Ⓐ: Back tack operation when this button is pressed during the sewing. The needle shaft makes a "DOWN"/"UP" stop when this button is pressed once/twice. Button Ⓑ: Insert/Delete the back tack sewing.
24	1		0 - 1	Thread-cutting selection in the start back-tack process.
25	3		1 - 9	Setting the slow stitching speed when operating at start sewing speed.

► Controller type E, G, H (CPU Version 1.0, 2.0)- Program group "A"

No.	Initial (Default) Setting	Range	Step	Meaning of the Program Code
01	200	20 - 510 spm	2 spm	Setting the lower sewing speed limit by the pedal.
02	4000	40 - 9960 spm	40 spm	Setting the upper sewing speed limit by the pedal.
03	230	20 - 510 spm	2 spm	Setting the speed of the thread-cutting operation.
04	100	20 - 510 spm	2 spm	Setting the 1/2-stitch sewing speed of the P/U.
05	300	20 - 510 spm	2 spm	Setting the sewing speed of the button Ⓐ of the sewing machine.
10	300	0.5 - 127.5 sec	0.5 sec	Setting the "UP" duration time of the automatic pressure foot.
11	100	4 - 1020 msec	4 msec	Setting the delay time for the lifting of the automatic pressure foot.
12	100	4 - 1020 msec	4 msec	Setting the delay time after pressure foot lowering and before the start of next sewing operation.
13	0	0 / 1	1 = UP	Setting the "UP" duration time of the automatic pressure foot after thread cutting.
14	48	4 - 1020 msec	4 msec	Setting the wiper operation time.
15	4	4 - 1020 msec	4 msec	Setting the delay time after the wiper operation and before the next operation.
16	0	0 / 1	1 = Selected	Selecting the operation of thread cutting by the halfway backward pedal-pressing.
20	0	0 / 1	1 = Selected	Selecting the slow start-sewing speed after thread cutting.
21	0	0 / 1	1 = Selected	Selecting the slow speed sewing after halting the sewing.
22	0	0 / 1	1 = Selected	Selecting the double start back-tack sewing.
23	0	0 / 1	1 = Selected	Selecting the double end back-tack sewing.
30	0	0 / 1	1 = Selected	Selecting the semi-automatic sewing needle of the twin needles used.
31	200	24 - 2040 spm	8 spm	Setting the speed when the semi-automatic sewing needle is selected.
32	3	0 - 64	1 Stitch	Setting the number of primary stitches after selection of the left needle.
33	3	0 - 64	1 Stitch	Setting the number of secondary stitches after selection of the left needle.
34	3	0 - 64	1 Stitch	Setting the number of primary stitches after selection of the right needle.

No.	Initial (Default) Setting	Range	Step	Meaning of the Program Code
35	3	0 - 64	1 Stitch	Setting the number of secondary stitches after selection of the right needle.
36	450	5 - 1275 sec	0.5 sec	Setting duration time of the left/right-needle solenoid.
40	0	0 / 1		Selecting the kind of the fabric sensor.
41	3	0 - 64	1 Stitch	Setting the number of stitches to be sewed after the fabric is sensed.
42	1000	24 - 2040 spm	8 spm	Setting the lower speed limit for the stitching after the fabric is sensed.
50	1	0=Halt of the on going back tack sewing. 1=End back-tack sewing. 2=Exact-stitch back-tack sewing.		Selecting the start back-tack condition.
51	0	0=Normal 1=Exact-stitch back-tack sewing.		Selecting the end back-tack condition.
52	200	24-2040 spm	8 spm	Setting the one-stitch speed of at the beginning of the exact-stitch back-tack sewing.
53	0	0 / 1		Changing the back-tack switches ③ and ⑤ during the sewing work.
54	2	0=Operate back-tack sewing only. 1=One-touch lifting/lowering of the needle shaft. 2=Double-touch lifting/lowering of the needle shaft. 3=Continue at a slow speed when the sewing is halted.		Selecting the functions of the button ③.
55	0	0=Insert /delete back-tack sewing. 1=One-touch lifting/lowering of the needle shaft. 2=Continue sewing at a slow speed when the sewing is halted. 3=Operates back-tack sewing only.		Selecting the functions of the button ⑤.
60	0	0 / 1	1 = Selected	Selecting the stopping of the reverse rotation after completion of thread cutting.
61	60	20 - 255 pulse	1 pulse	The reverse-rotation distance when the reverse rotation is stopped after completion of thread cutting.
62	0	0 / 1	1 = Locked	Lock the pulley when the sewing is stopped.
63	1	0 / 1	0 = Reverse rotation 1 = Forward rotation	Setting the direction of the motor rotation.
64	1000	40 - 9960 spm	40 spm	Setting the moving speed of the auxiliary solenoid.