

ASSEMBLY BOARD AUTOMATIC CONVEYING UNIT

Section

5

1.

REPLACEMENT

Name of replacement part	Number of parts	Replacement section	Replacement interval	Procedure
Belt	2	Fig. 4 ④ ⑤	Every 2 years - or if the belt is cut, worn or begins to slip on the assembly board	1
Pulley (with bushes)	10 10	Fig. 1 ③ - ⑦	At time of belt, replacement or faulty rotation	2
Pulley shaft	10	Fig. 1 ③ - ⑦	At time of pulley replacement	2
Conveyer wiring assembly	1	Fig. 4 ④	At time of solenoid valve or sensor failure	3
Conveyer motor assembly (motor wiring assembly)	1	Fig. 5 ① - ③	At time of faulty rotation due to motor faulty)	4

- For belt replacement, remove the arm ① (see Figs. 1 and 2). The arm can be detached by removing the nut (8 mm) on the rear side of the arm shaft ②. Having removed the arm, the arm on the adjustable board conveyer ① (Figs. 3 and 4) side can be replaced. (When removing the arm, remove also the spring (③ in Fig. 2). Next remove the sensor bracket ③ on the fixed board conveyer ② side (see Figs. 3 and 4). By removing the arm in the same way as for side ①, the belt can be replaced.
- As in the above (belt replacement), first remove the arm, then remove the retaining nut of the pulley ⑤ (of pulleys ③ - ⑦ in Fig. 1) and replace the pulley. Other pulleys can be replaced by removing the nuts on the rear side of each. Pulley replacement is usually accompanied by replacement of the pulley shaft. Also replace the board conveyers (① and ② in Figs. 3 and 4). For the board conveyer ②, first remove the sensor bracket ③.

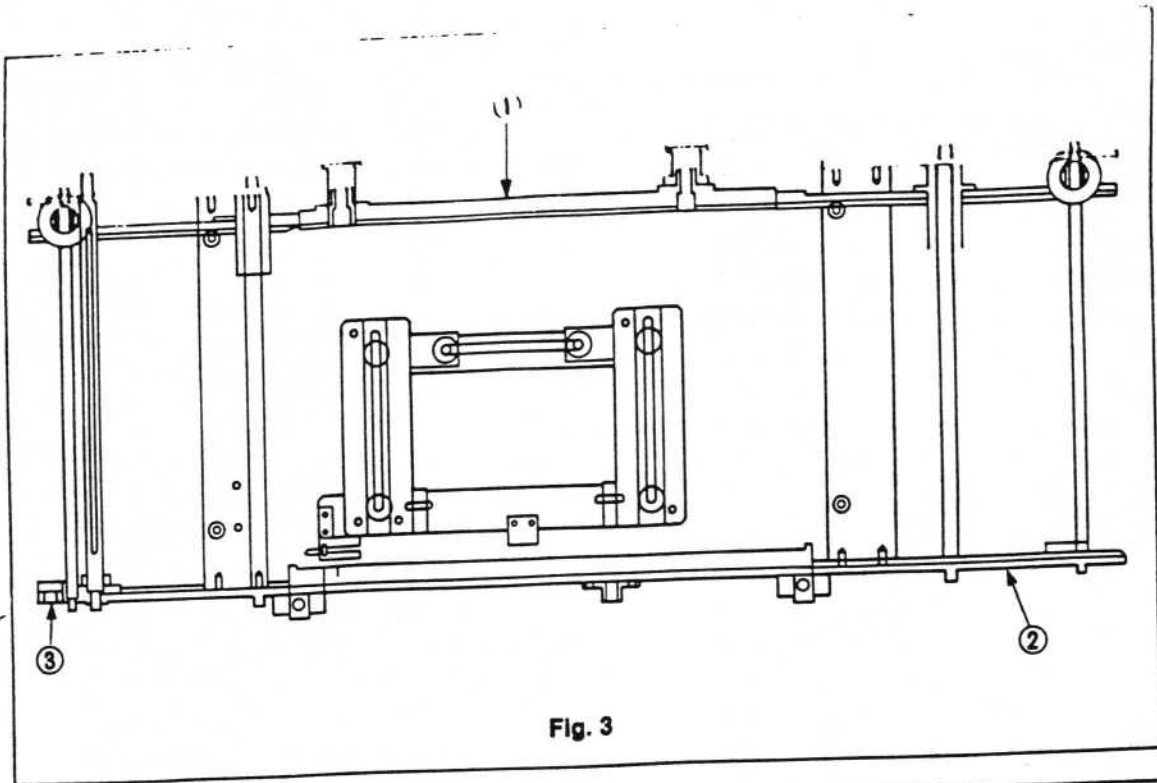


Fig. 3

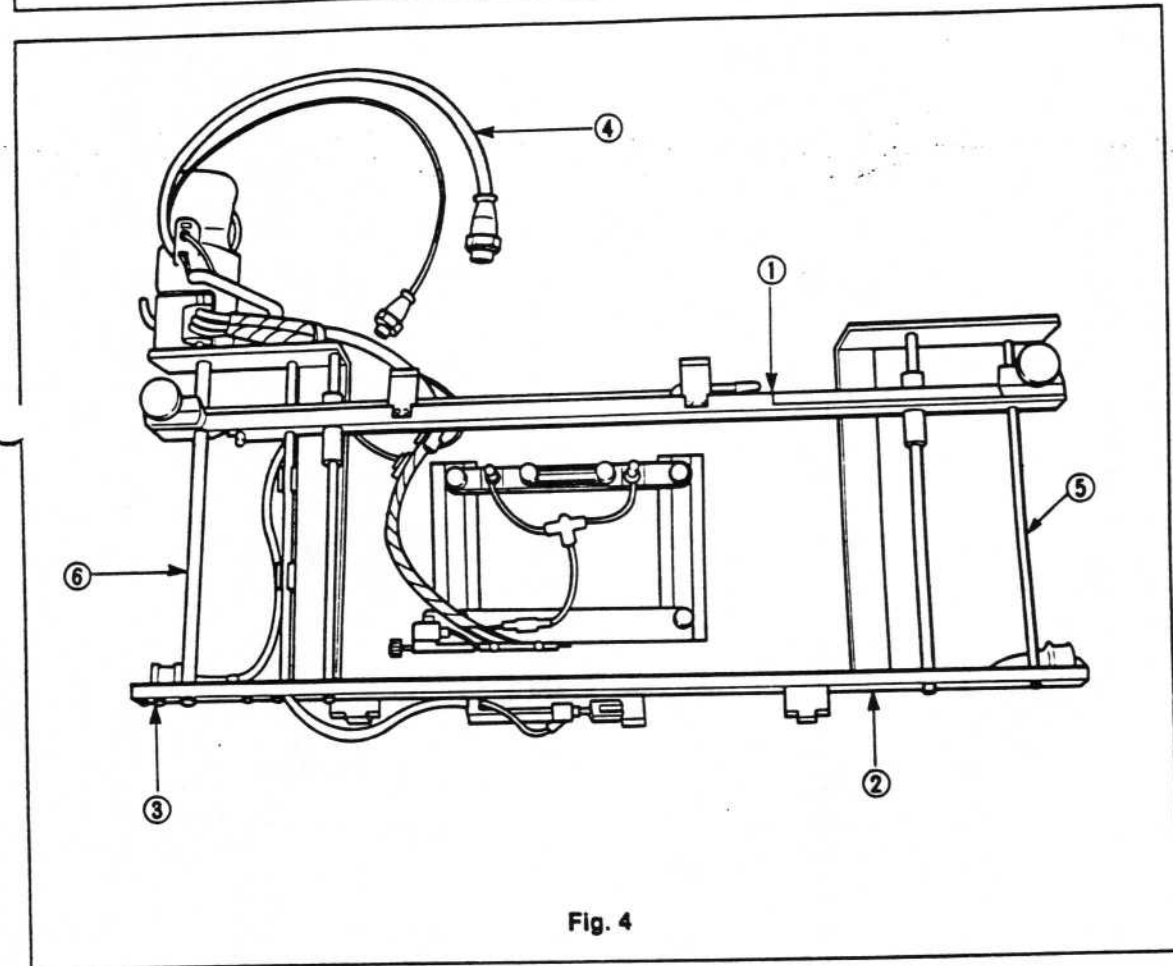


Fig. 4

3. Replace the conveyer lead assembly (④ in Fig. 4).

First release the band and clip for fastening the leads and, after disconnecting the connector from the terminal of the solenoid valve, cylinder and sensor, unfasten the spiral tube and replace. (Cut the lead fastening band and replace.)

Note:

The leads for the conveyer are fastened together with air tubes by the spiral tube. When replacing them, therefore, be careful not to damage these tubes (do not stretch them cut them etc.).

4. Replace the conveyer motor assembly ① shown in Fig. 5.

Cut the band (② in Fig. 5) holding the connector for the wiring and, after removing the wiring (③ in Fig. 5) and connector for the motor, remove the bolts (x 4) holding the motor (④ in Fig. 5) and replace it.

Note:

If the conveyer motor does not rotate even after replacement, replace also the wiring to the motor.

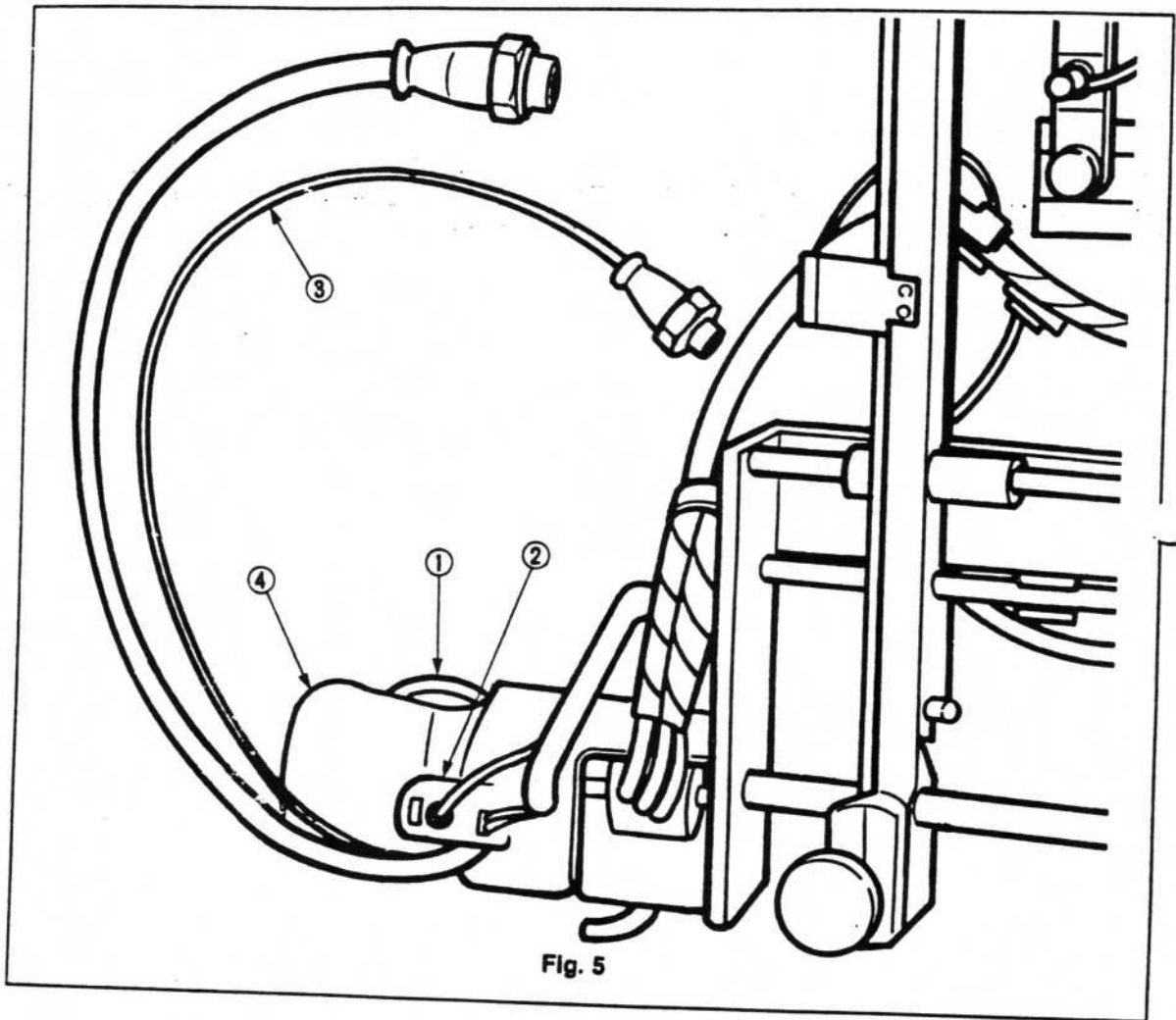


Fig. 5

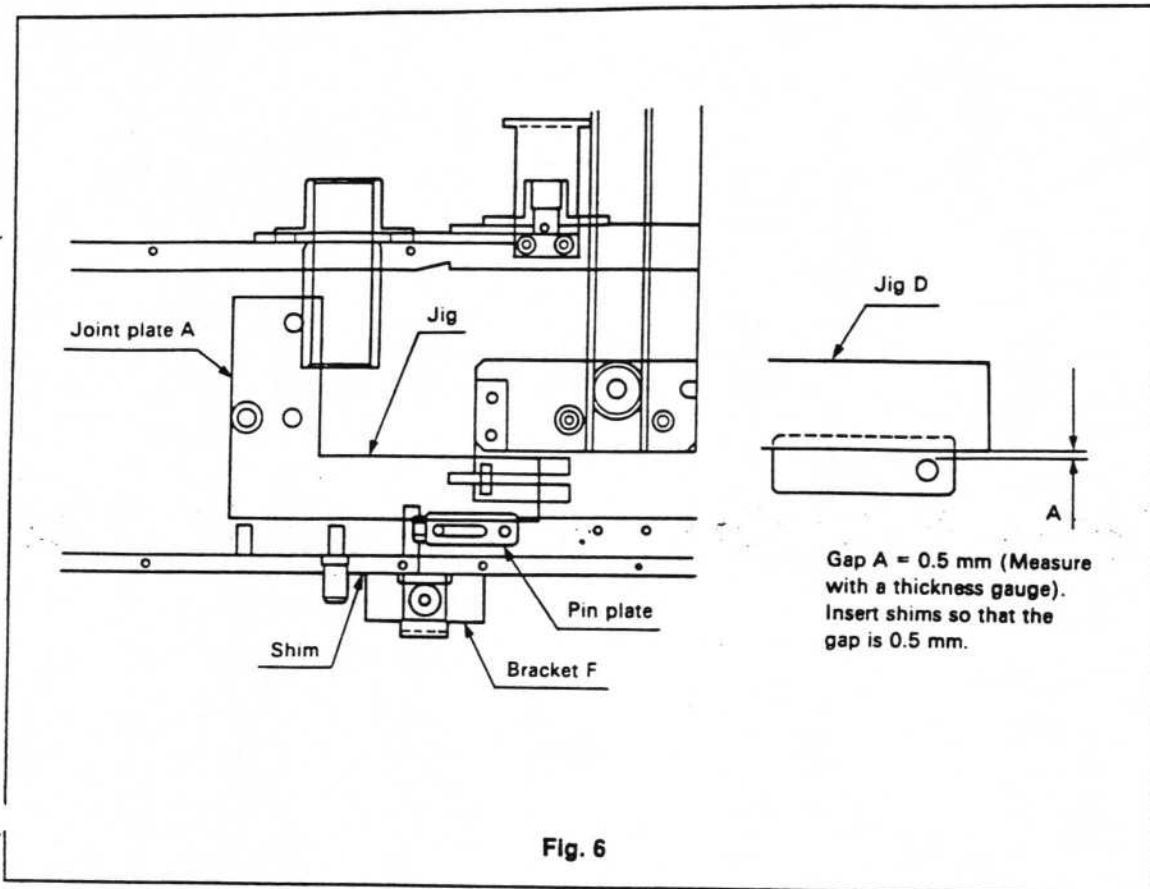
2.

ADJUSTMENT

1. Assembly board pin adjustment

(1) Y axis

Use the jig (pin plate adjustment block - Y8782123301) and carry out shim adjustment as in the figure below.



(2) X axis

Using the jig E (pin plate fixing block), move the pin plate as in the figure below, and fasten it. Push in a set screw from section A and screw on a lock nut.

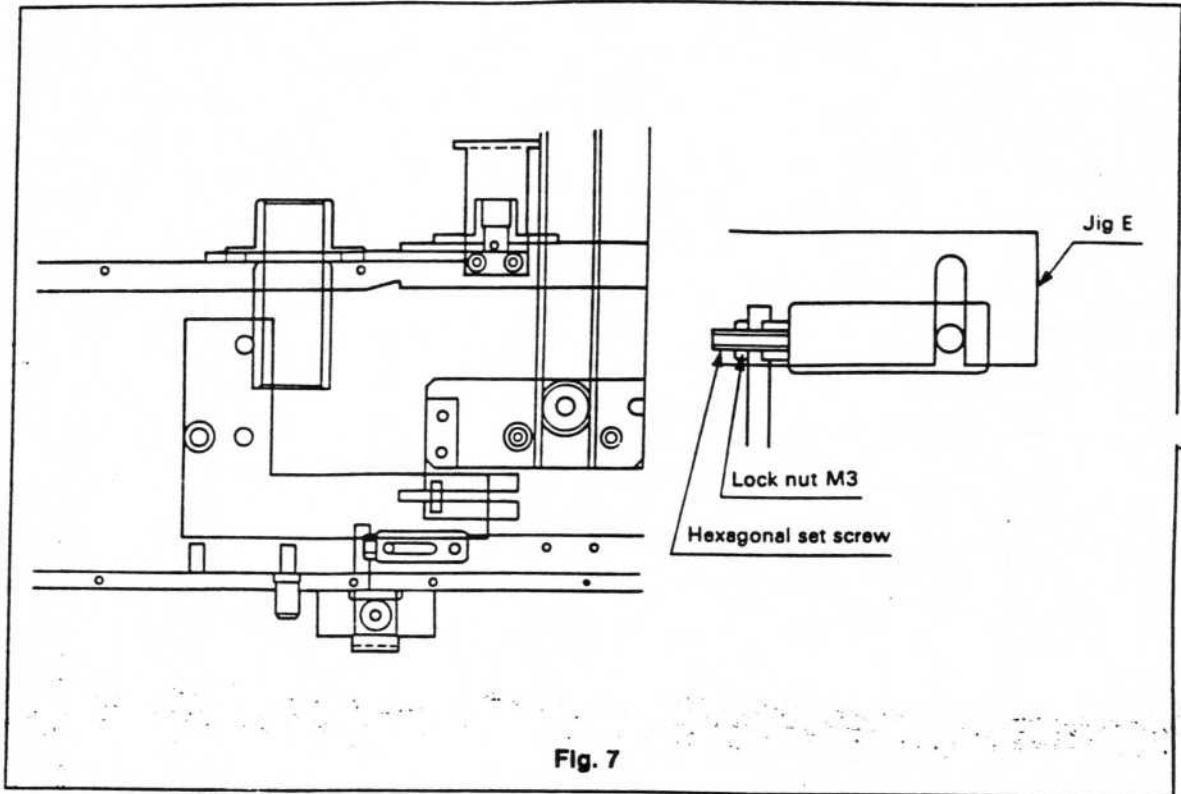
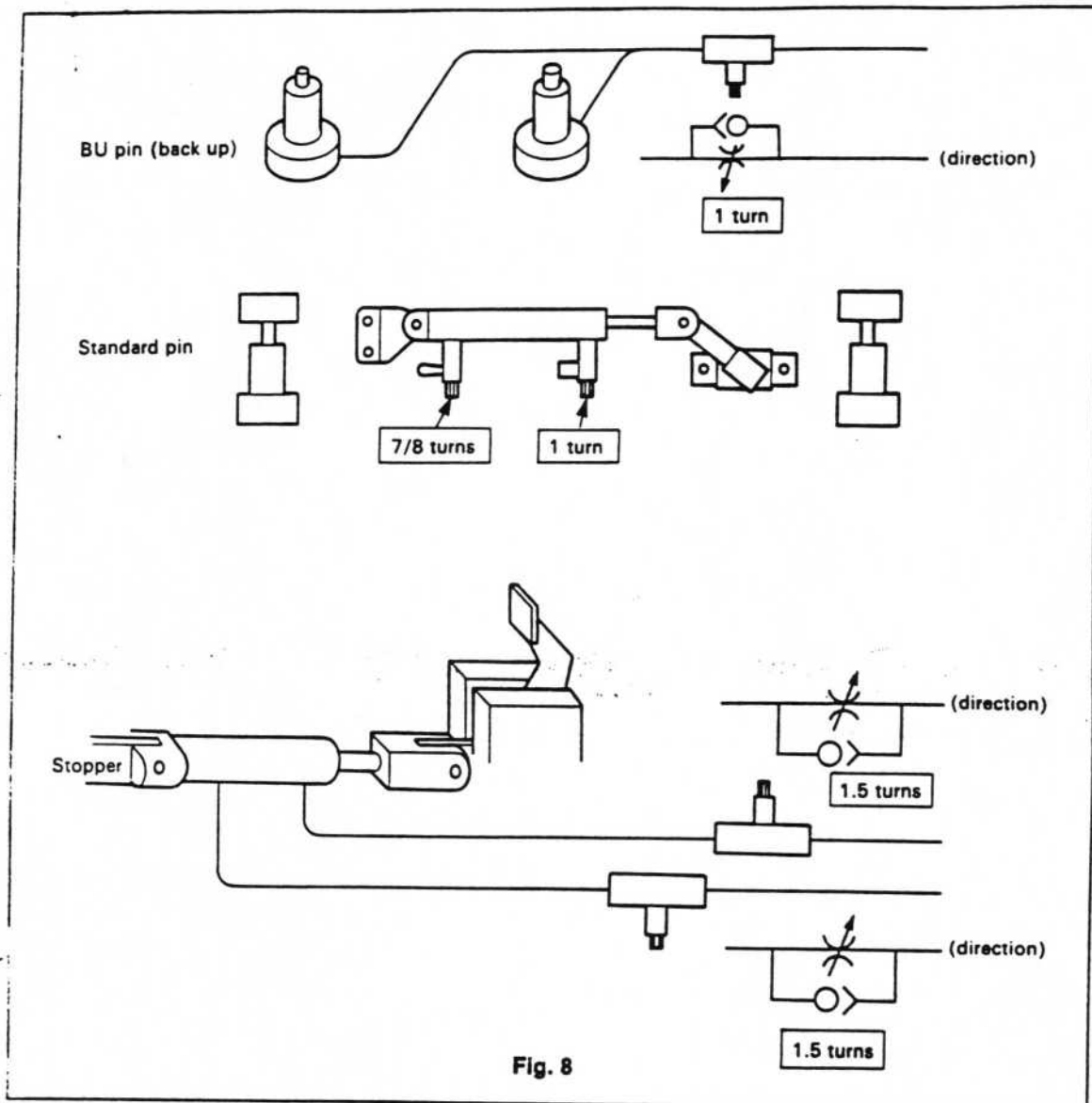


Fig. 7

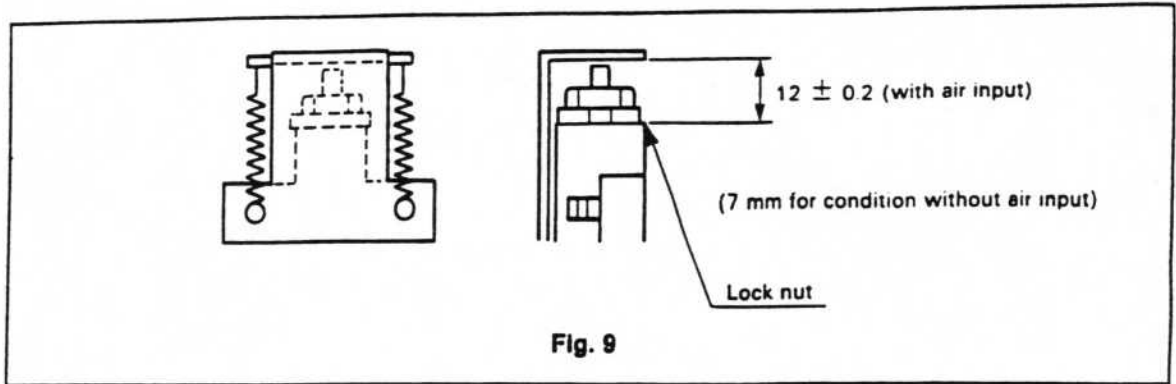
2. Speed controller adjustment

The speed controller's setting direction and adjustment value are as follows.

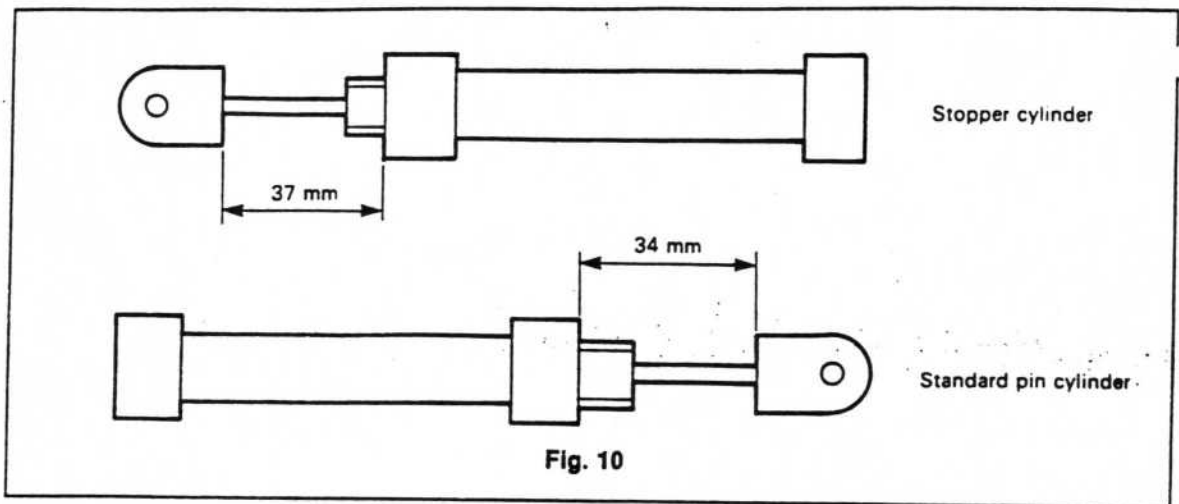
- * Each figure indicates the number of turns from the fully shut down position.
- * Take care in which direction you set the speed controller.



3. Number of W adjustment turns on the air cylinder
 Assembly board presser air cylinder

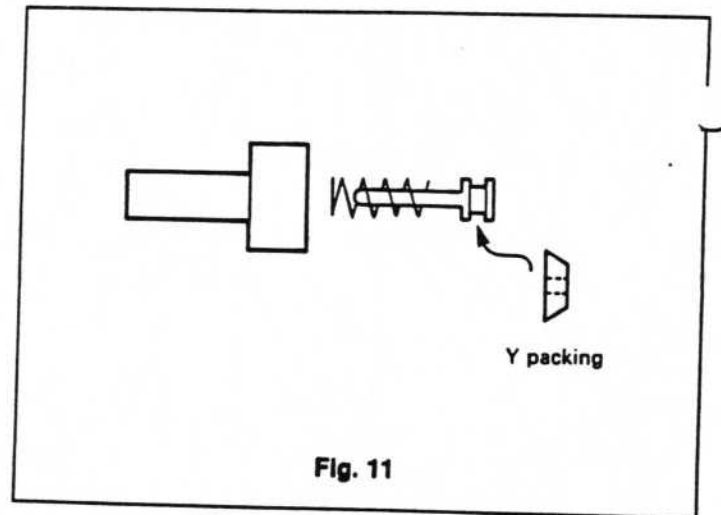


4. Air cylinder dimension adjustment



5. BU (back up) cylinder, piston, Y packing

- * Attach the Y packing in the direction shown in the figure on the right.
- * Use Albania grease for the packing.



5. Stopper position adjustment

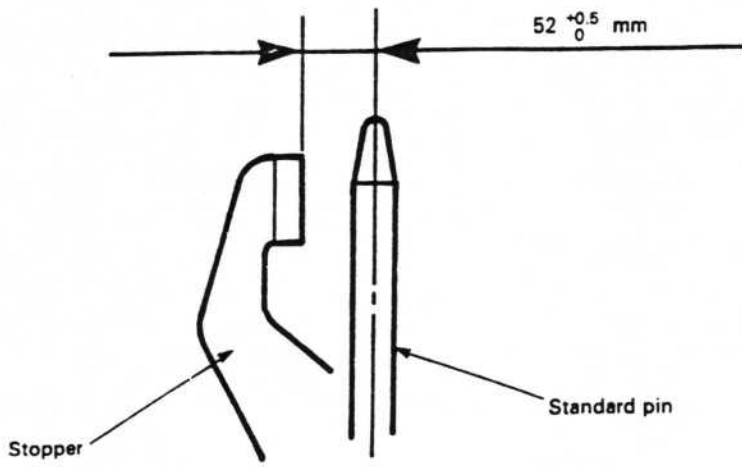


Fig. 12

7. Sensor adjustment

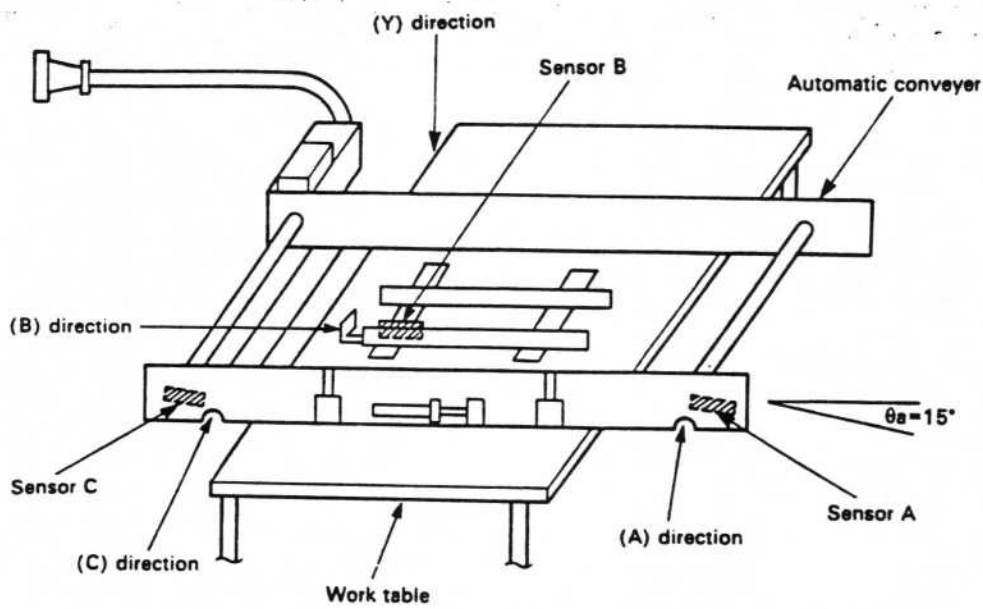


Fig. 13

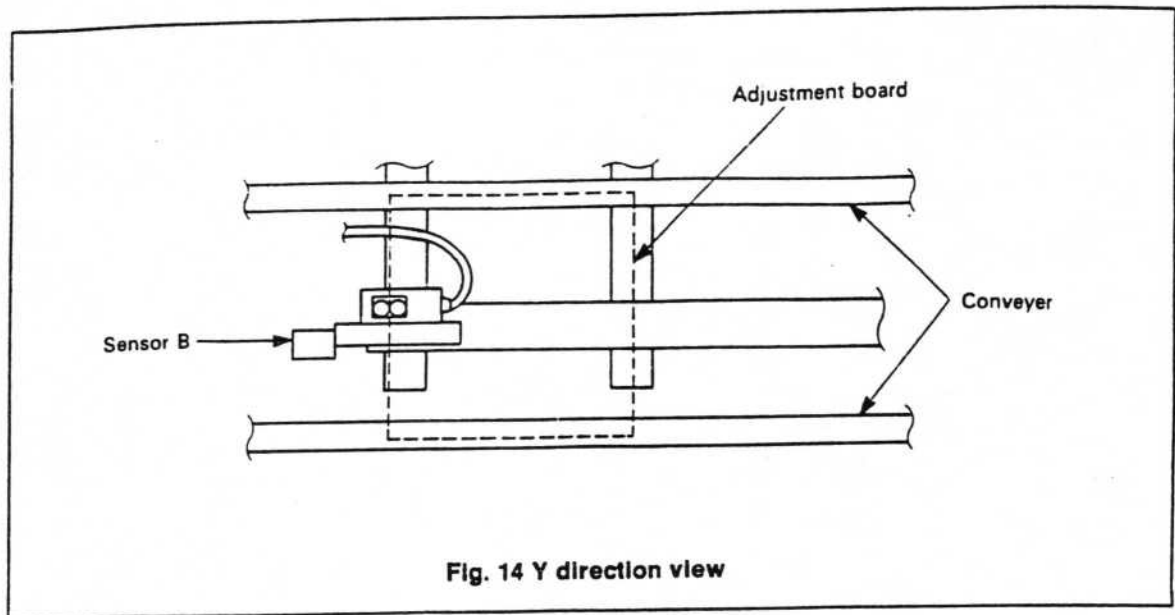


Fig. 14 Y direction view

- (1) Set the sensor attachment angle in the following way.

Sensor A = -15°

Sensor B = 0°

Sensor C = 0°

With reference to the direction
of conveyance.

- (2) Sensor adjustment is carried out with the work board attached as in Fig. 13.
 (3) Set the conveyer width to that of the adjustment board.
 (4) Place the adjustment board at the end of the conveyer on the PWB IN side.
 (5) From the [A] direction turn the sensor A control towards Min (counterclockwise) and set it at the minimum position.
 (6) Turn the control slowly towards Max (clockwise) until the LED goes OFF.
 (7) Sensor A adjustment is then complete.
 (8) Place the adjustment board at the end of the conveyer on the PWB OUT side.
 (9) From the [C] direction, adjust sensor C in the same way as sensor A.
 (10) Sensor C adjustment is then complete.
 (11) Place the adjustment board on the conveyer so that it covers half the lens surface of sensor B (see Fig. 14).
 (12) From the [B] direction, adjust sensor B in the same way as sensor A. (However, note that the LED lights up in the reverse direction of sensors A and C.)
 (13) Sensor B adjustment is then complete (all sensor adjustments complete).

Note:

1. Use the small (-) screwdriver provided for control adjustment.
2. The adjustment board (for measurement purposes) (30 mm x 30 mm) has been coated on the reverse side with a semi-gloss insulation spray (Inspection Board D).

3.

LUBRICATION

The backup pin ①, shown in Fig. 15, requires lubrication.

1. Remove the air tube ② (see Fig. 15).
2. Remove the securing bolt ③ (see Fig. 16) and remove the BU (backup) cylinder stand ⑤ from the backup pin stand ④.
3. Remove the flathead screws (①, x 4) and take off the cylinder (see Fig. 17).
4. Take out the centrally located cylinder pin (① in Fig. 18 - yellow color - press lightly to remove).
5. Coat the rounded section A of the backup pin shown in Fig. 19 with grease. (Use lithium based grease.)
6. Greasing should be carried out whenever the backup pin is not operating smoothly.

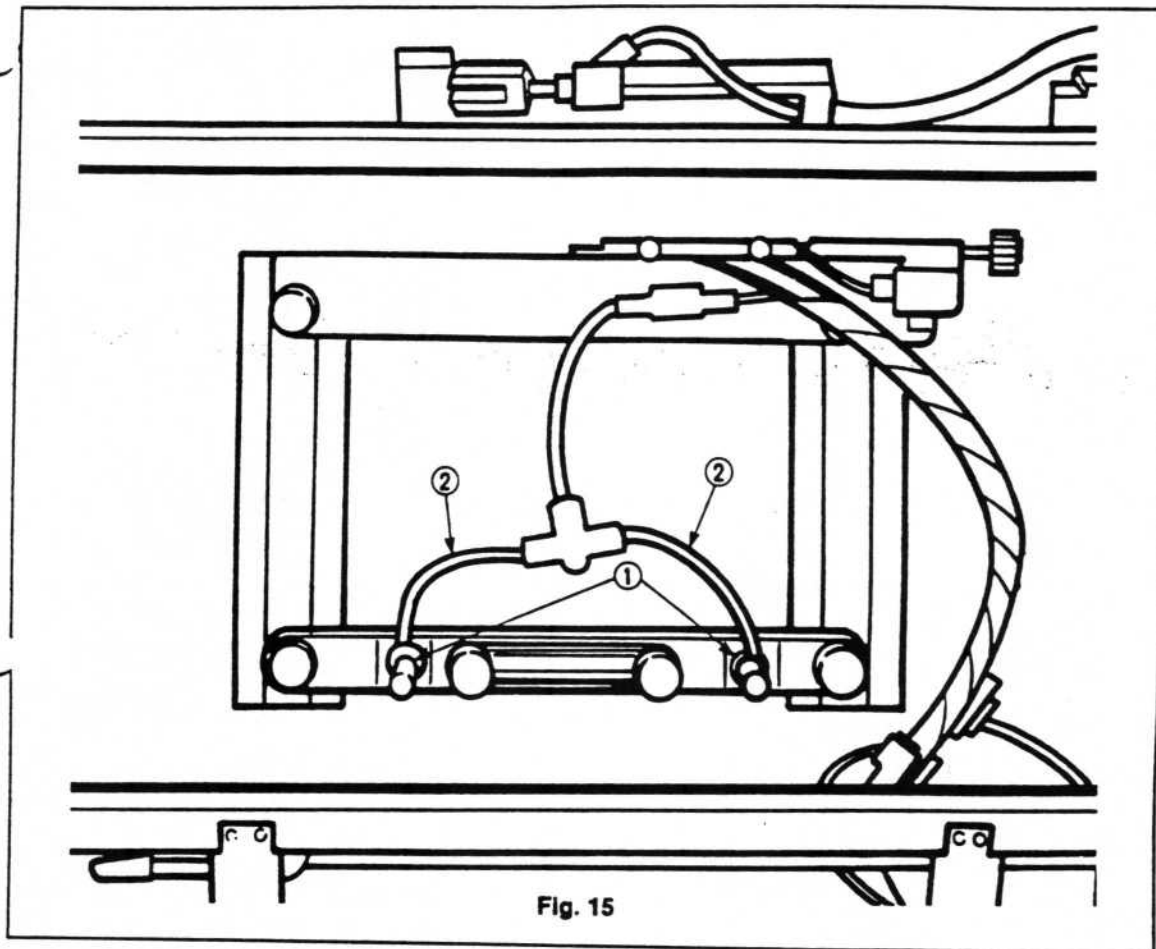


Fig. 15

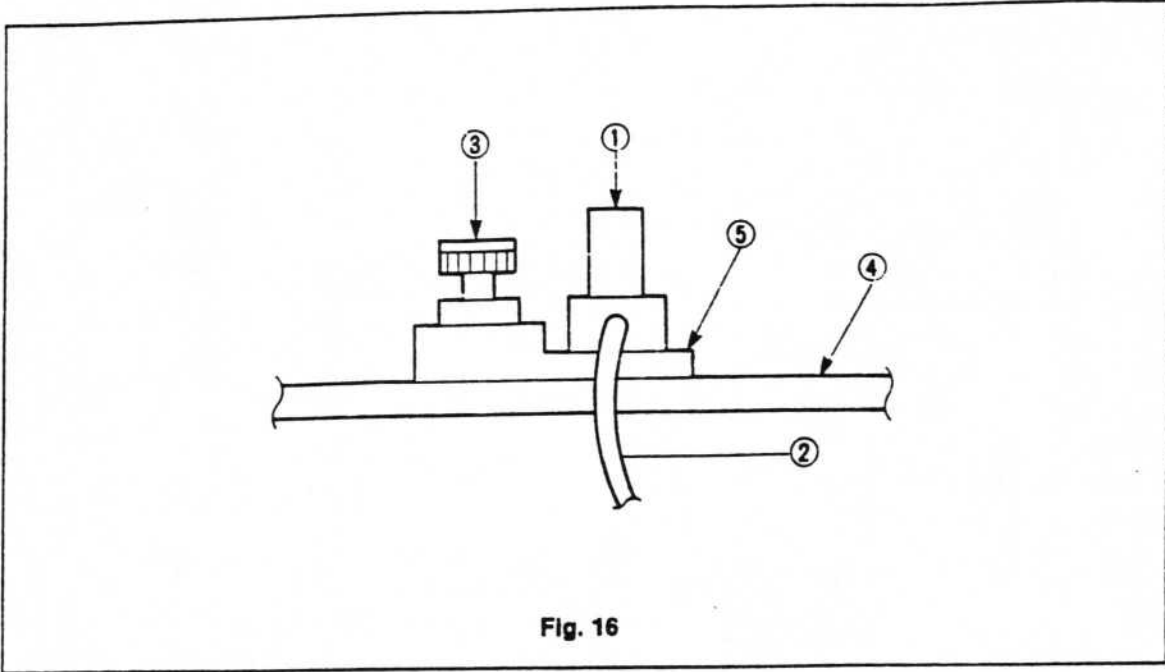


Fig. 16

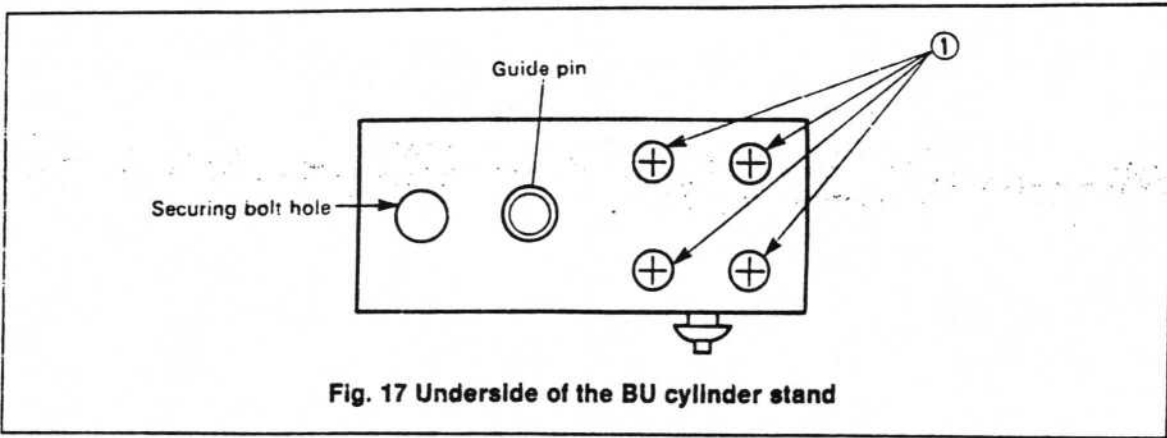


Fig. 17 Underside of the BU cylinder stand

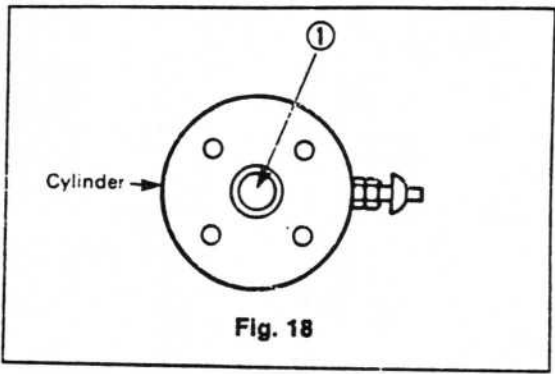


Fig. 18

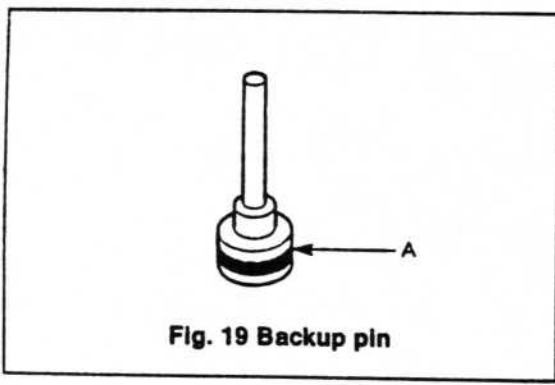


Fig. 19 Backup pin

4.

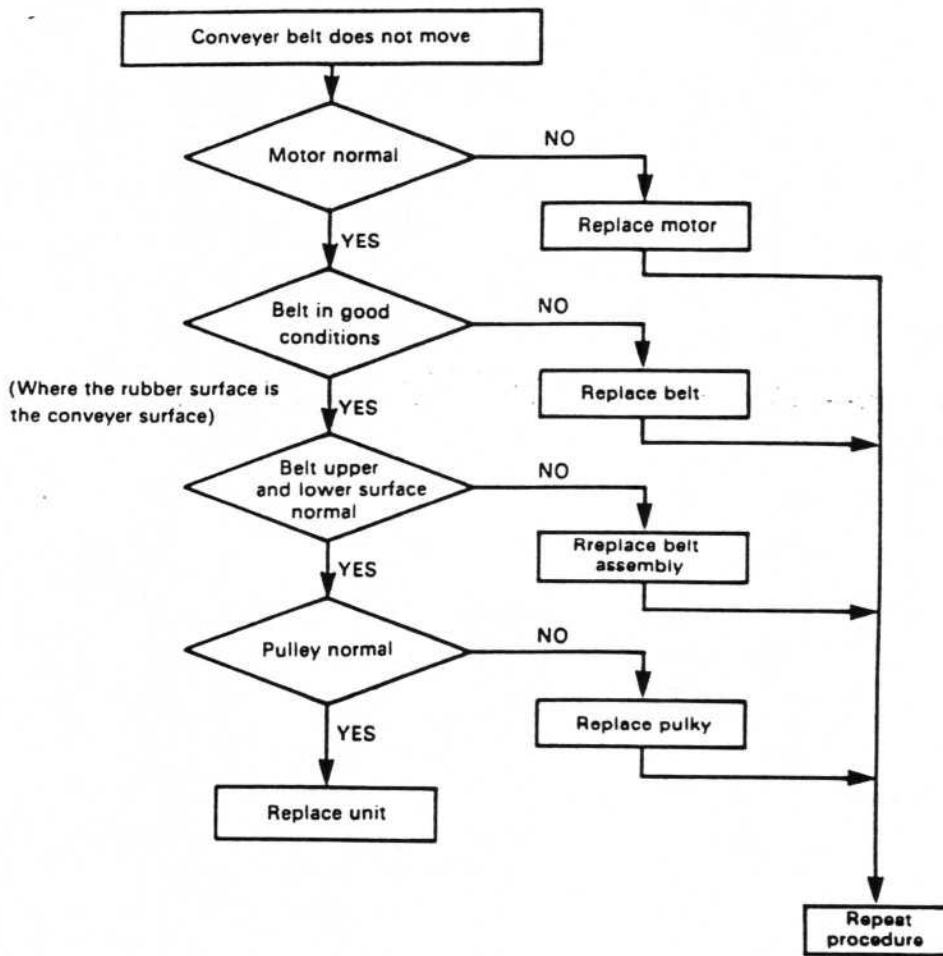
TROUBLESHOOTING

Be sure to check the following items before troubleshooting.

- a) Power ON/OFF
- b) Connection of each connector
- c) Controller onset

This troubleshooting guide is confined to this unit. Be sure that the mounter main unit and controller are set correctly.

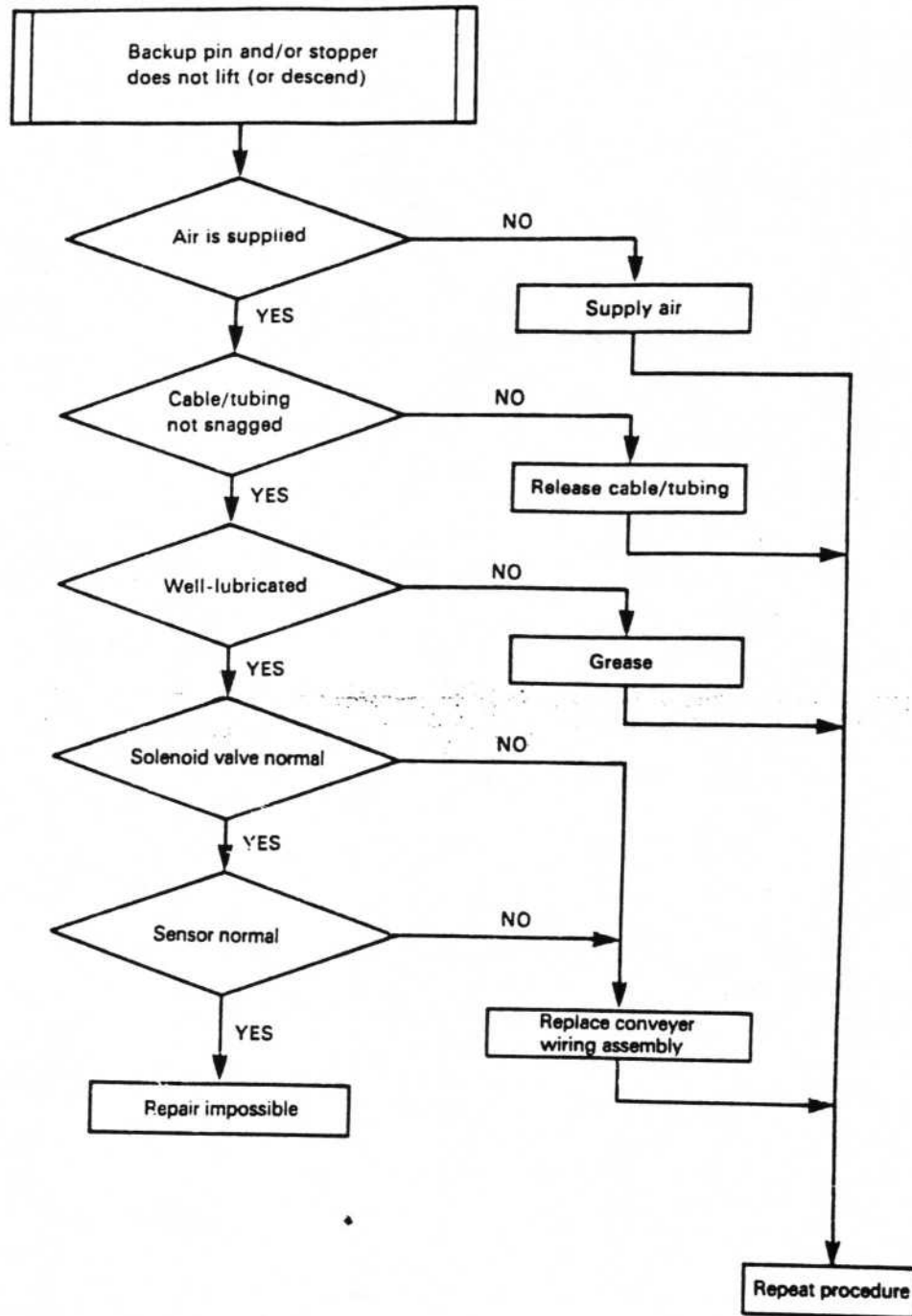
1. Conveyer belt does not more



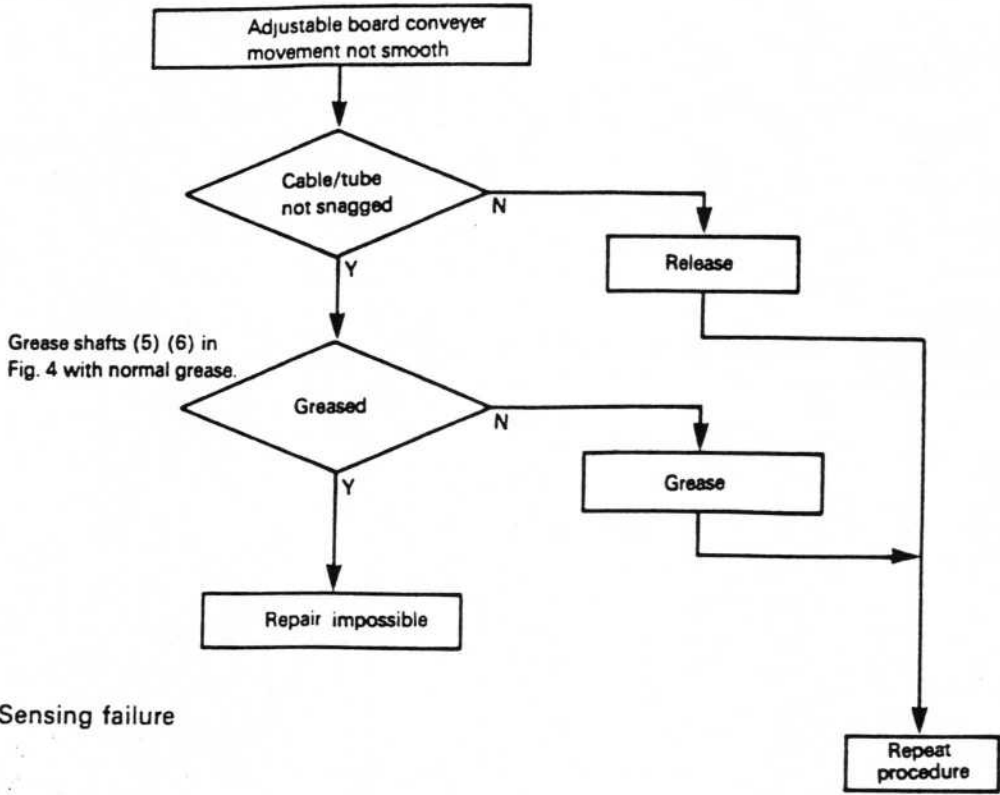
Note:

If the motor does not rotate even after replacement, replace also the motor wire harness.

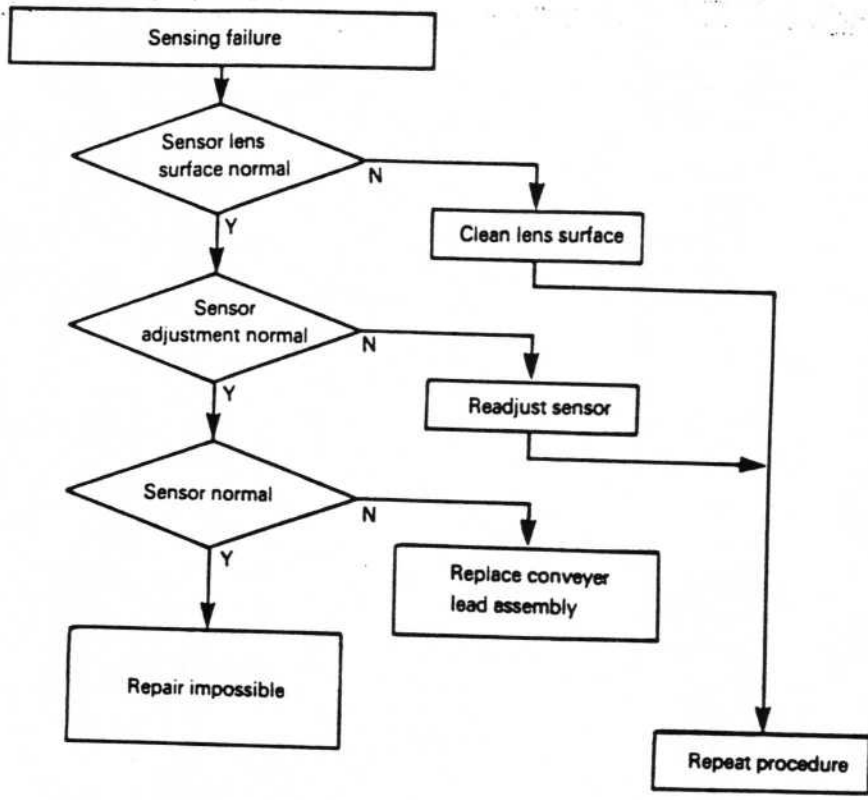
2. Backup pin and/or stopper does not lift



3. Adjustable board conveyer movement is not smooth



4. Sensing failure



5.

PERIODIC CHECKS

1. Mechanical section

Intervals are not specified. However, if the automatic assembly board conveyer is not used for a period of more than one month, check the operation of each movable part and the sensors in the TEST mode before using the unit.

2. Electrical section

Clean the surface of the sensor lenses with a soft cloth before commencing operations.

DISPENSER UNIT

Section

6

1.

REPLACEMENT

Carry out replacement according to the procedure below. Switch OFF power supply to all mechanisms and release air pressure to 0 kgf/cm².

1. Removal of the head down sensor

- (1) Disconnect the sensor lead ① from the sensor ③ (see Fig. 1).
- (2) Remove the sensor set screws (②, x 2) (see Fig. 1).
- (3) Remove the sensor from the bracket ④ (see Fig. 1).

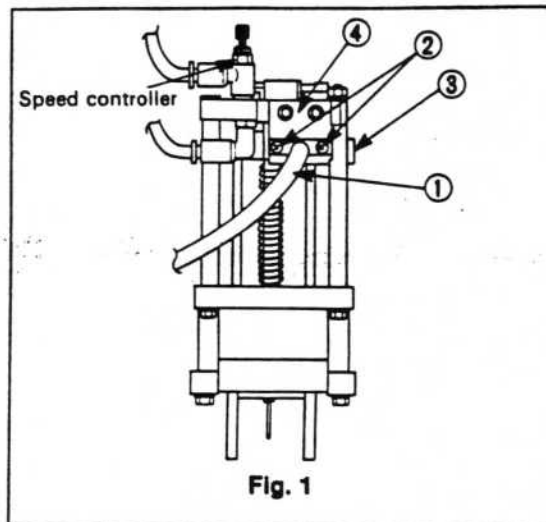
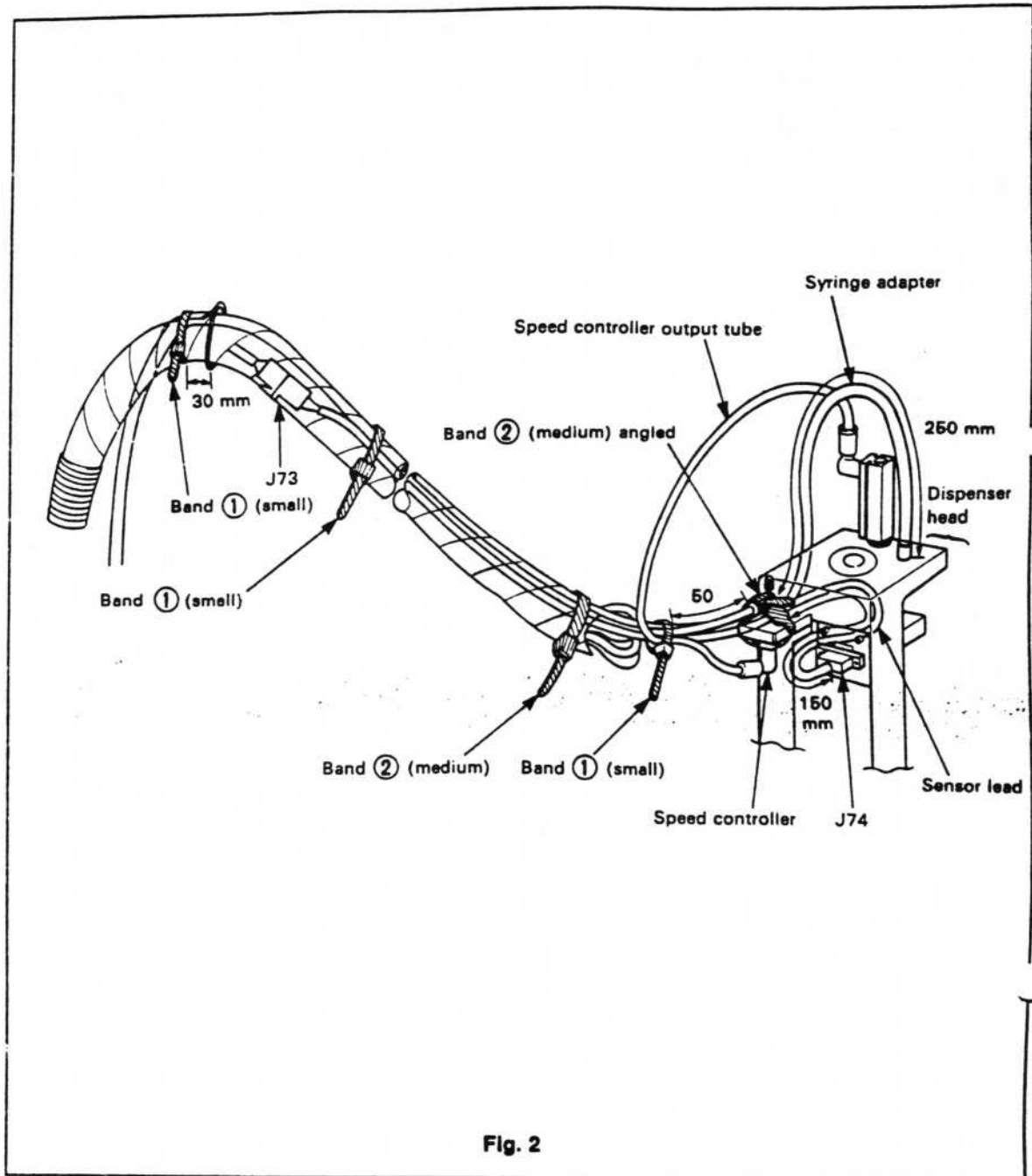


Fig. 1

2. Removal of the sensor lead

- (1) Remove bands ① and ② taking care that they are not severed (see Fig. 2).
- (2) Disconnect the sensor lead connector J74 from the sensor (see Fig. 2).
- (3) Remove the sensor lead connector J73 (see Fig. 2).

Adjust the length of the 3 tubes (head down tube, speed controller tube, syringe adapter tube) and the sensor lead so that there is equal tension on each, and fix the band at an angle to secure.



Note:

1. Do not cut the bands, as they can be reused.
2. Do not secure the bands too tightly, as this could cause an obstruction in the tubes.

3. Removal of the DISP IF cable
- (1) Loosen the DISP IF set screws (①, x 2) (see Fig. 3).
 - (2) Disconnect the DISP IF cable from the DATA I/O terminal on the rear panel of the dispenser controller (see Fig. 3)
 - (3) Disconnect the DISP IF cable from the connector at the back of the mounter main unit (see Fig. 4).

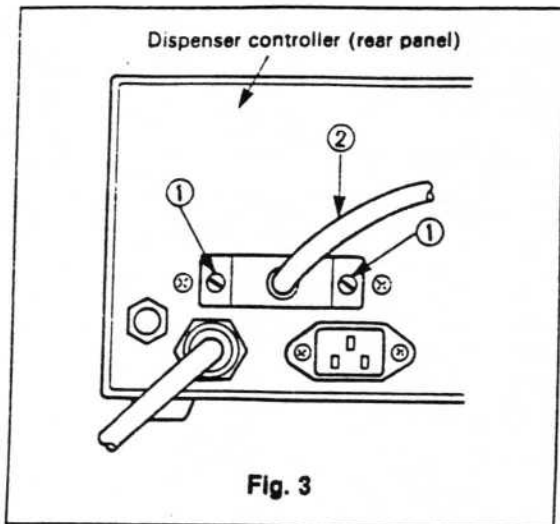
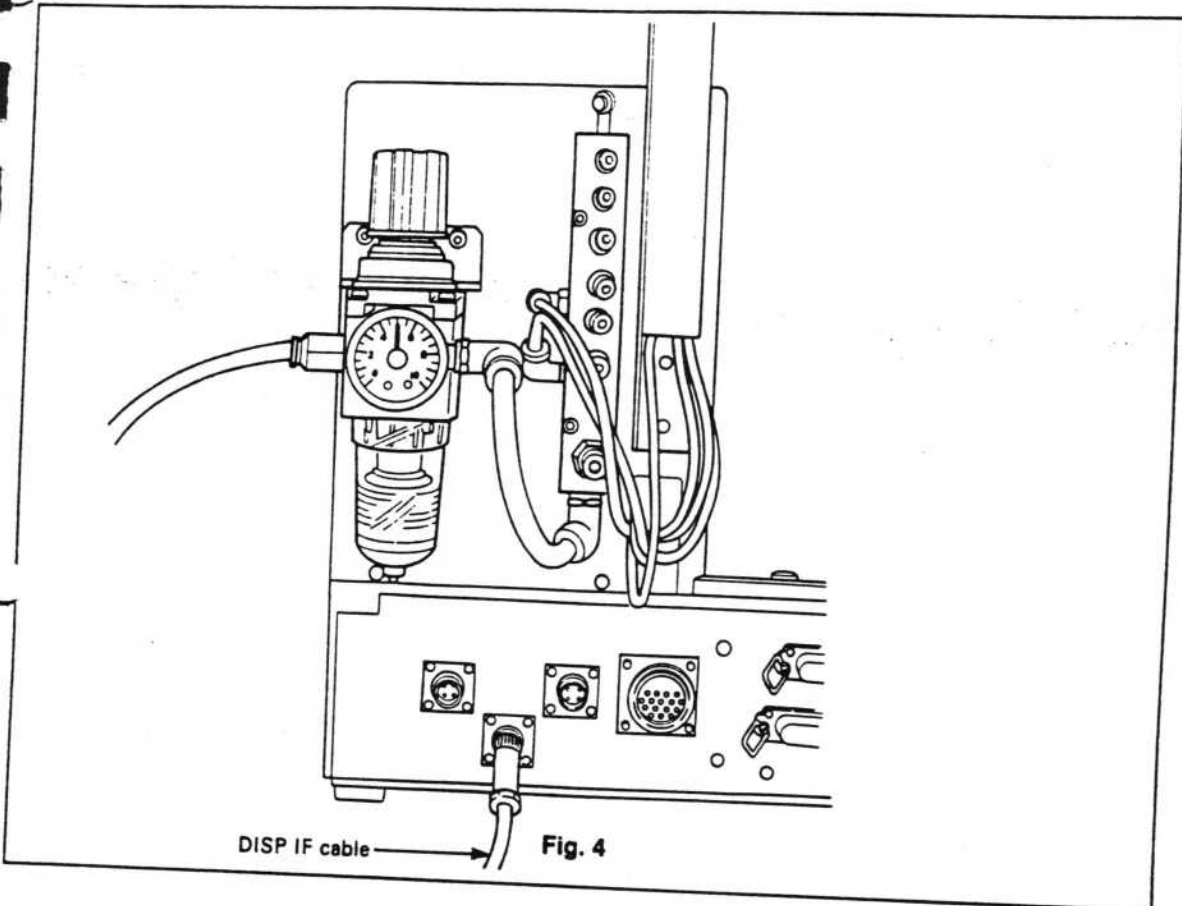


Fig. 3



2.

ADJUSTMENT

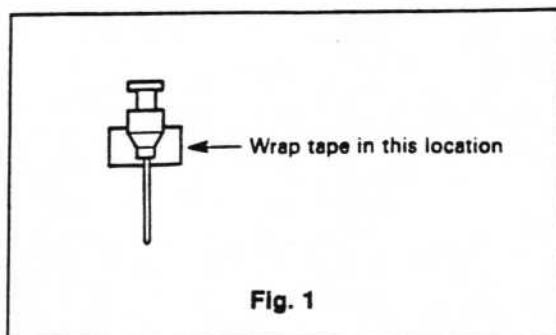
1. Adjustment of the speed controller

Adjust the speed controller ⑤ in the dispenser head as follows.

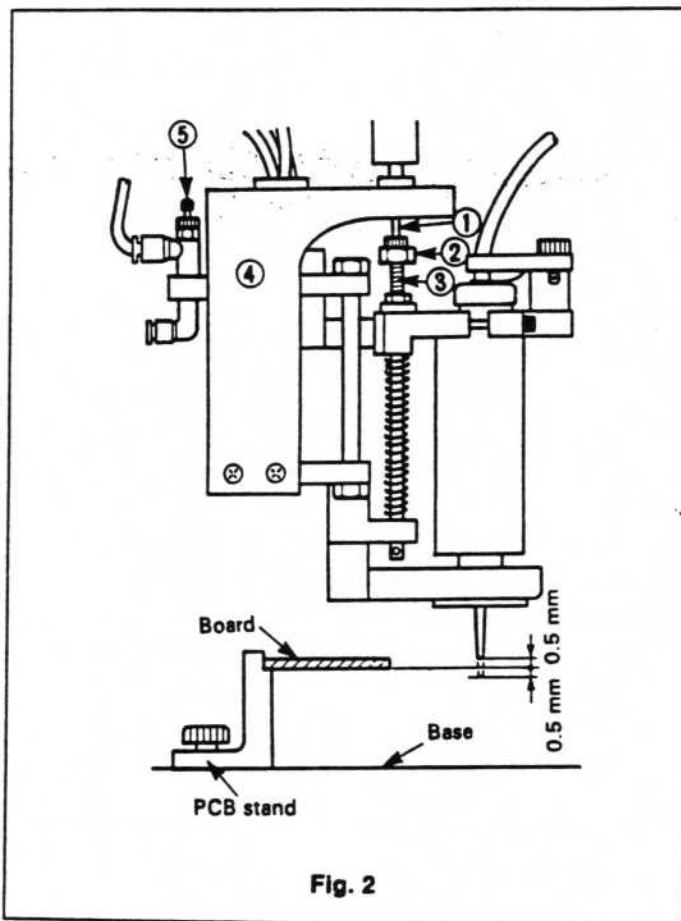
Adjust so that the time from the Head Down ON signal until the needle end contacts the board is 270 μ sec.

Carry out the procedure below.

- (1) To insulate the needle from the tube, wrap a piece of vinyl tape 2 - 3 times around the base of the needle as in Fig. 1.



- (2) Attach the needle (with vinyl tape affixed) and syringe adapter to the syringe and set in the dispenser.
- (3) Attach the BD cylinder bracket ④, making sure that the center of the cylinder shaft ① and center of the hexagonal bolt ② are straight (see Fig. 2). Also check that the height of the needle end is aligned within ± 0.5 mm of the underside of the board when the bit is down. If the needle end height is not so aligned, adjust it with the hexagonal bolt ② and hexagonal nut ③.



- (4) Prepare a jig as in Fig. 3
- (5) Set a PCB soldered on both sides on the PCB stand.
- (6) Attach the IC clip to the needle and the crocodile clip to the soldered board.

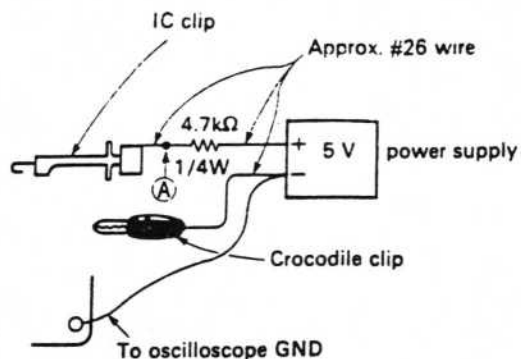


Fig. 3

- (7) Observe the I/O board TrA4-7 pin (HEAD signal) and point (A) in Fig. 3 on the oscilloscope.
- (8) Switch on the + 5 V power supply.
- (9) Turn on the main unit power for the system, switch to TEACHING mode, switch ON/OFF the HEAD SW on the main unit operation panel and operate HEAD DOWN/UP.
- (10) The waveform for each signal will appear on the oscilloscope as in Fig. 4. Adjust the dispenser head speed controller (5) so that $T = 270 \mu\text{sec}$.

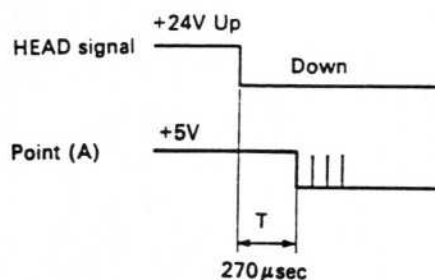


Fig. 4

Note:

- * Make sure that the main unit power switch and +5 V power switch are OFF until the jig has been attached and the oscilloscope probes are in place.
- * When adjustment is complete, switch OFF the main unit power and +5 V power supply, after removing the system disc and data disc.
- * Remove the vinyl tape from the base of the needle.

2. Adjustment of the needle height

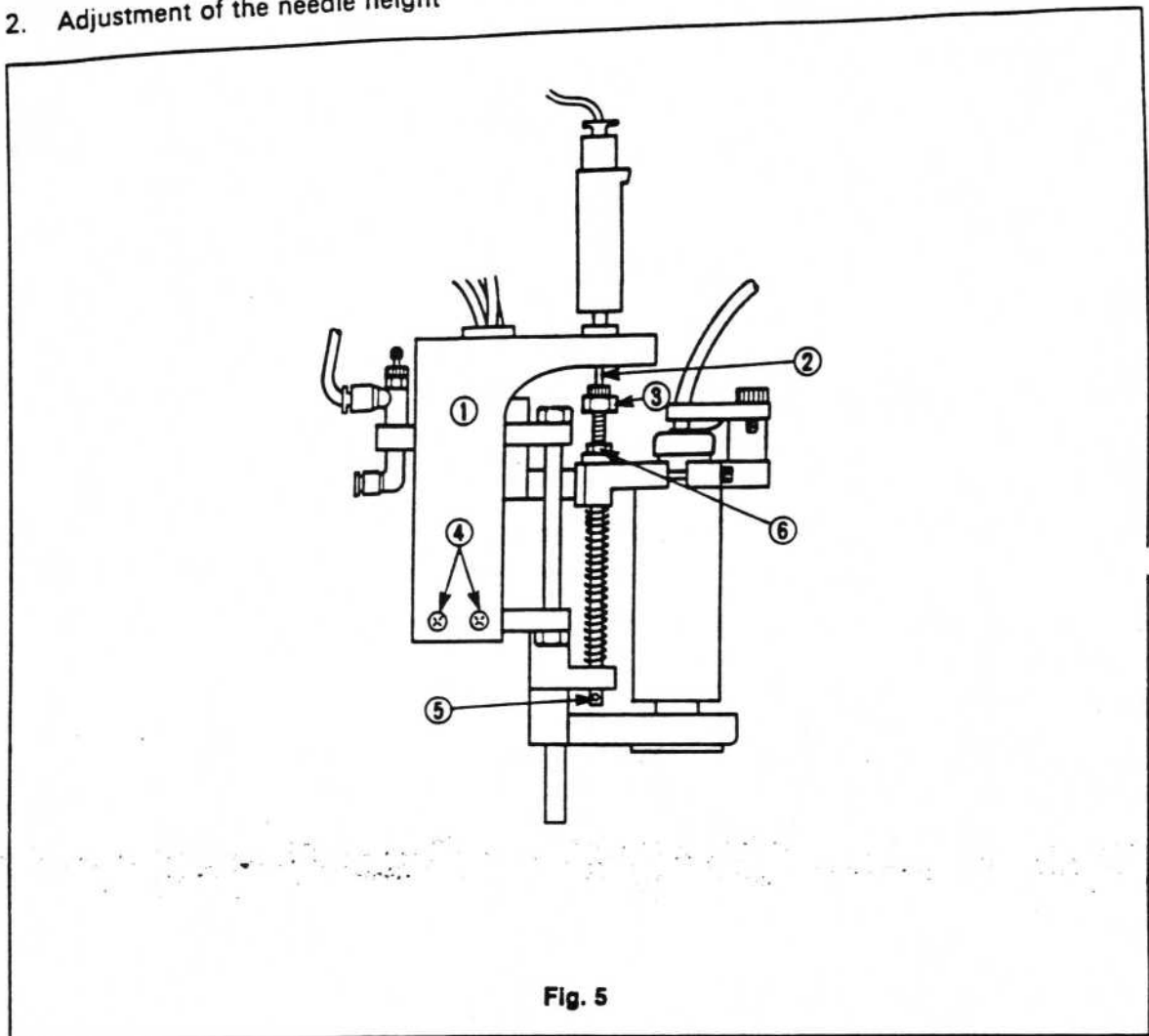


Fig. 5

- (1) Loosen the screws ④ in the BD cylinder bracket ① and adjust, making sure that the centers of the cylinder shaft ② and the hexagonal bolt ③ are in alignment (Fig. 5).
- (2) Set the main unit to TEACHING mode, switch ON/OFF the HEAD SW on the main unit's operation panel and operate HEAD UP/DOWN.
- (3) Check that the needle end is aligned with the height of the underside of the board when the head is down (see Fig. 6).
- (4) If the heights are not aligned, adjust according to the following procedure so that the height of the needle end is within ± 5 of the height of the underside of the board (see Fig. 6).
- (5) Insert a pin in the $\phi 3$ mm hole ⑤ in the lower end of the spring shaft and loosen the hexagonal nut ⑥ (see Fig. 5).
- (6) Turn the hexagonal bolt ③ to adjust the height of the needle end so that it is within ± 5 of the height of the underside of the board (see Fig. 5).

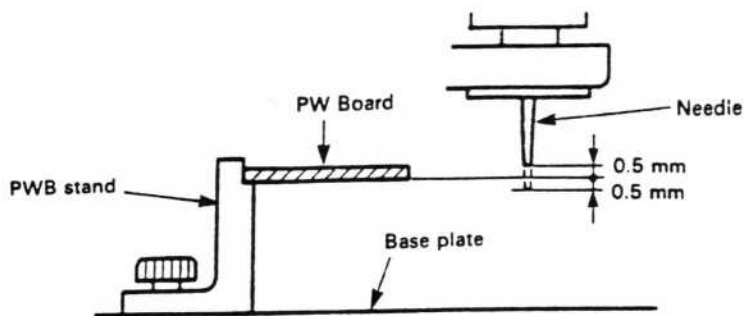
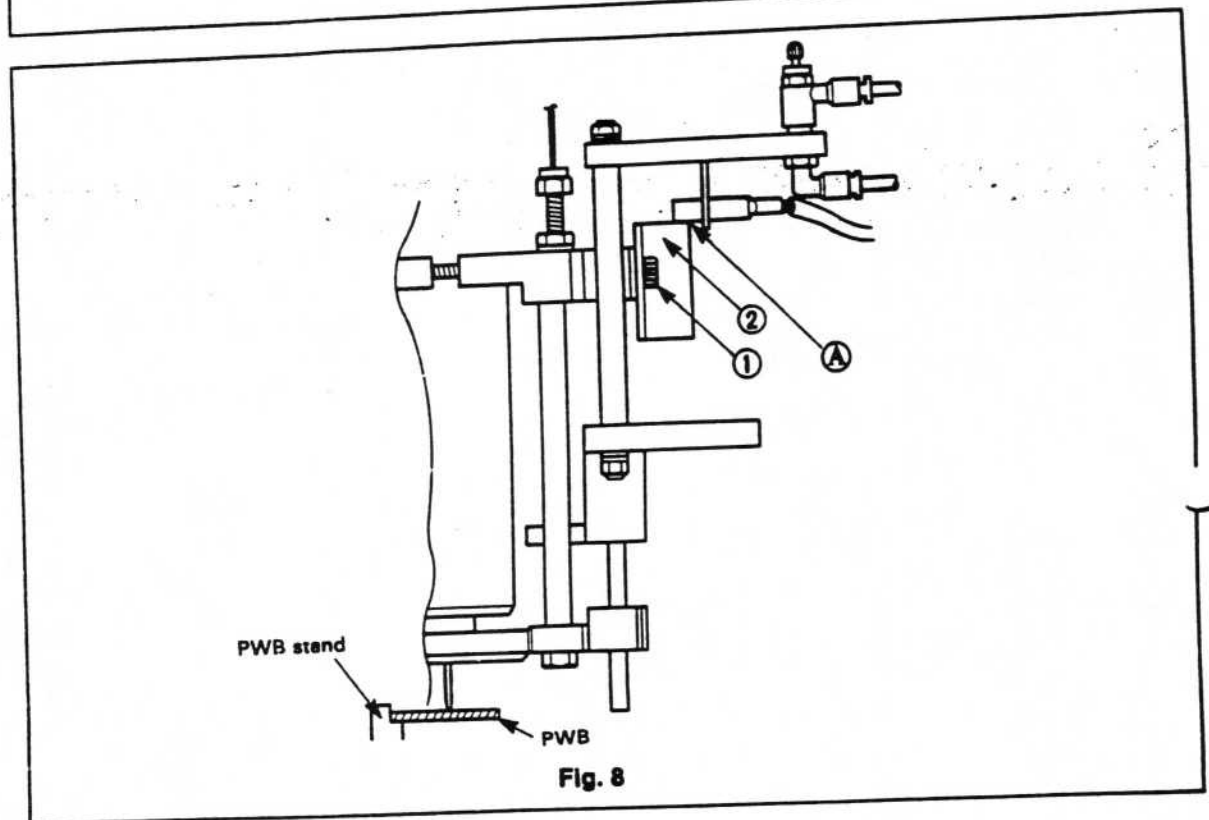
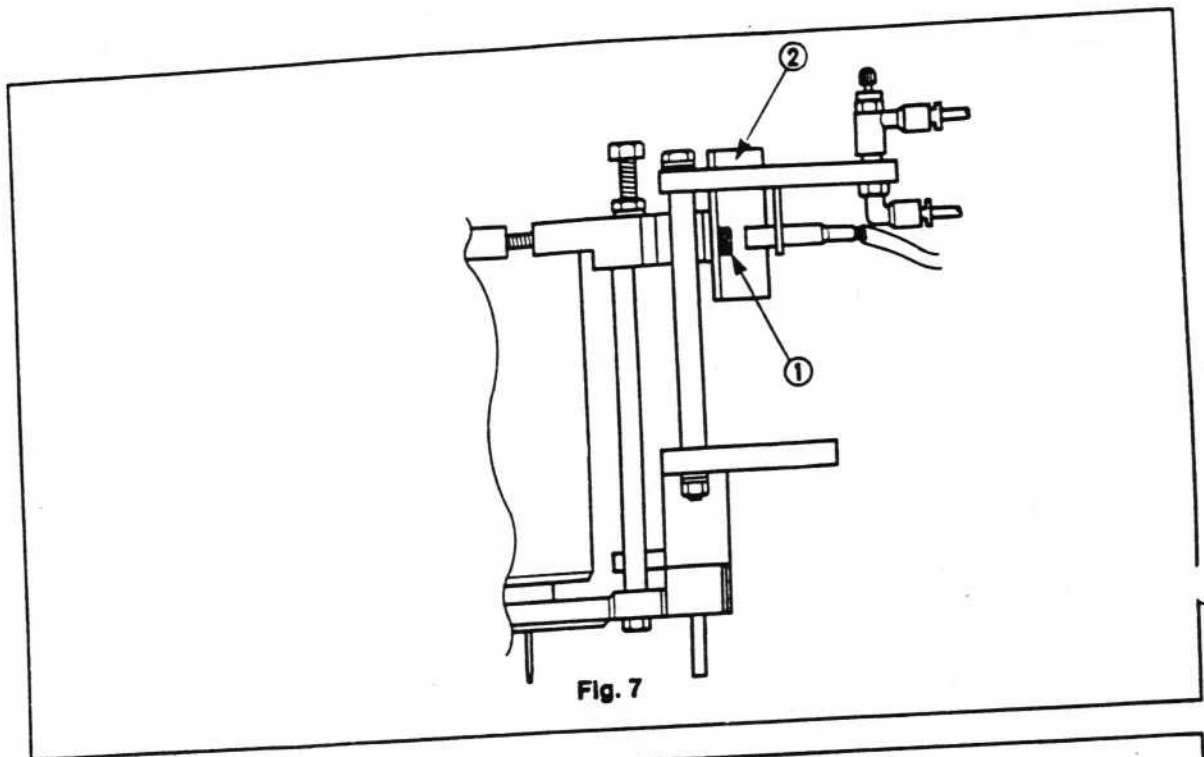


Fig. 6

- (7) After adjustment, turn the hexagonal nut ⑥ counterclockwise to tighten it so that the hexagonal bolt ③ is not loose (see Fig. 5).
 - (8) Remove the pin from the hole in the lower spring shaft (see Fig. 5).
3. Adjustment of the sensor plate height
- (1) Adjust the needle height in accordance with "2. Needle height adjustment" above.
 - (2) Loosen the screws (① x 2) so that the sensor plate ② can be moved freely (see Fig. 7).
 - (3) Set the mouter main unit to TEACHING mode, switch ON/OFF the Head switch on the main unit's operation panel and operate the HEAD UP/DOWN.
 - (4) Set a board on the PWB stand and switch to HEADDOWN (see Fig. 8).
 - (5) Now adjust the sensor plate ② height with section (A) so that the height of the underside of the sensor and the sensor plate's ⑤ top end are level, and fix it in position with the set screws (①, x 2) (see Fig. 8).



3.

TROUBLESHOOTING

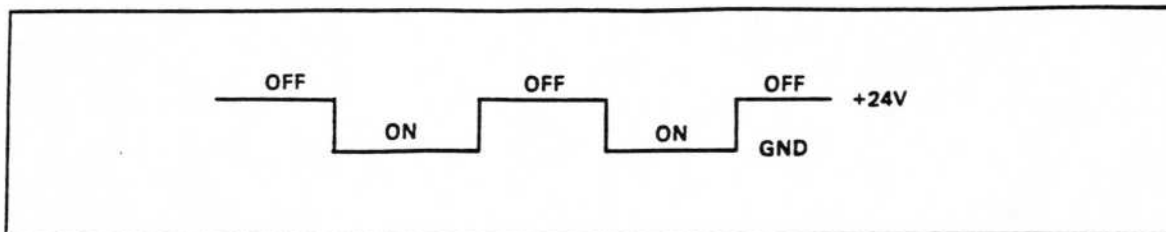
If the dispenser does not operate correctly, check the items listed in the table below.

Item	Checkpoint	Measures to take
Dispenser head down sensor	Move the head UP/DOWN and check the ON/OFF of the sensor's LED.	Sensor replacement (see Replacement Manual - 1)
Sensor lead	Remove J73 and J74 and check with a circuit tester.	Replace the sensor lead (see Replacement Manual - 2)
DISP IF cable	Disconnect the main unit rear panel connector and the connector on the rear panel of the dispenser controller and check with a circuit tester.	Replace the DISP IF cable (see Replacement Manual - 3)
Needle height adjustment nut and bolt	Check for looseness	Adjust the needle height (see Adjustment Manual - 2)
Sensor plate	Check the plate position	Adjust the sensor plate height (see Adjustment Manual - 3)
Speed controller	Check for looseness of the lock nut	Adjust the speed controller (see Adjustment Manual - 1)
Slide shaft	Check whether the shaft is greased	Grease the shaft - Periodic Checks
Slide shaft	Check whether the shaft is bent	Replace the unit

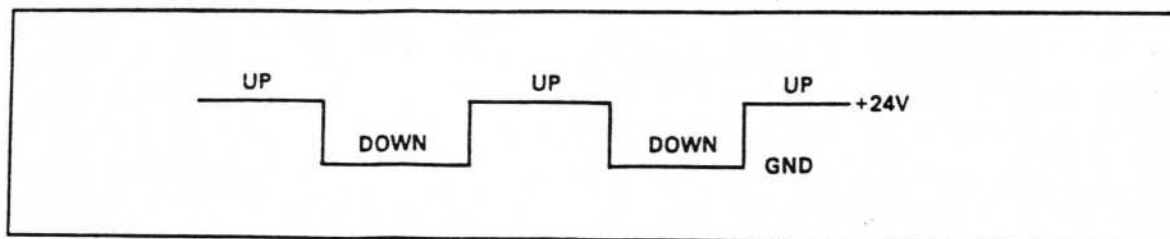
Table - 1

If, after carrying out all the checks in Table 1, the head fails to move UP/DOWN, or there is an ejection failure, check the main unit's I/O board signals.

- (1) Set the main unit to the TEST mode and select for HEAD.
- (2) Press the **[F6]** key and check the following signals.
- (3) When there is an ejection failure:
Observe the signal from the I/O board's J3-5 pin (Dispenser S signal) on the oscilloscope.



- (4) When there is a HEAD UP/DOWN failure:
Observe the signal from the I/O board's J6-4 pin (Head signal) on the oscilloscope.



- (5) If there is a faulty signal output at the connector, follow the procedure for replacement of the main unit's I/O board.

PERIODIC CHECKS

Carry out the following periodic checks of the dispenser.

(1) Lubrication

Grease the shaft ① with a thin layer of grease once a year (see Fig. 1).

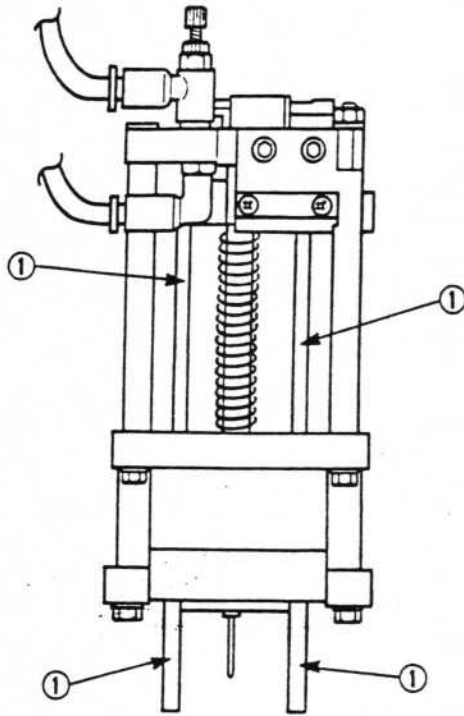


Fig. 1

ROTARY TABLE UNIT

Section 7

1.

REPLACEMENT

Name of replacement part	Number of parts	Replacement section	Replacement intervals	Procedure
RT PCB assembly	1	Fig. 1 ②	When PCB fault arises	1
Solenoid valve	1	Fig. 1 ⑤	When valve fault arises	2
RT motor wire assembly	1	Fig. 1 ⑧	When motor fault arises	3
Illuminating button switch (momentary)	2	Fig. 2 ① ②	When there is a switch fault	4
Illuminating button switch (alternate)	1	Fig. 2 ③	When there is a switch failure	4
Illuminating button switch button (yellow)	1	Fig. 2 ③	When there is a button fault	5
Illuminating button switch button (blue)	2	Fig. 2 ① ②	When there is a button fault	5
O rings	3	Fig. 4 ③	When there is an air leak or chuck fault	6
Timing belt	1	Fig. 5 ⑤	When the belt is cut or worn	7
Set plate assembly	1	Fig. 6 ②	When there is a chuck fault	8
Rotary drum assembly	1	Fig. 6 ④	When there is a chuck fault	8

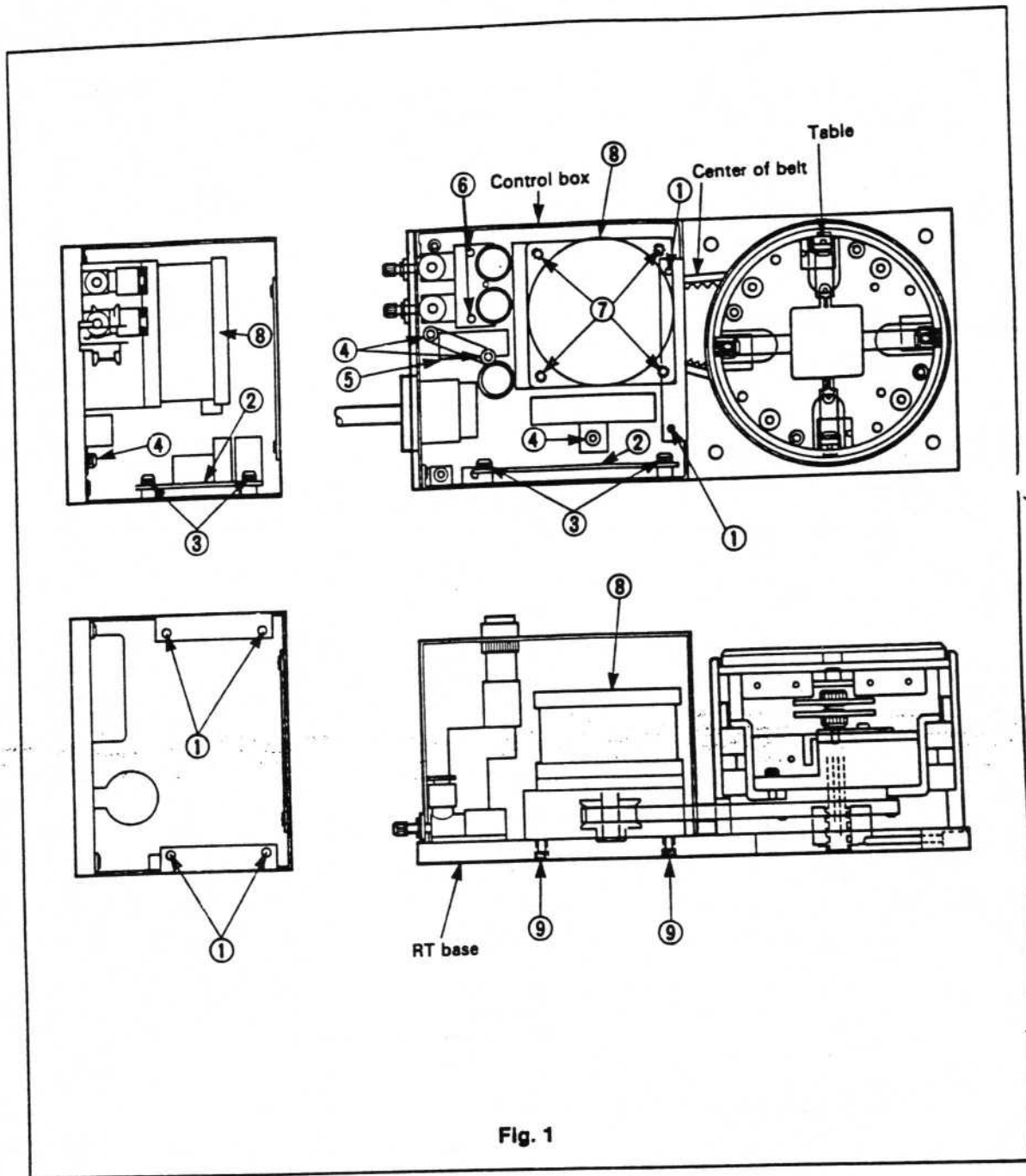


Fig. 1

1.
 - (1) Remove the screws (①, x 6) from the control box cover and open the cover (see Fig. 1)
 - (2) Remove the connector to the RT PWB (②) (see Fig. 1).
 - (3) Remove the board securing screws (③, x 4) and resistor securing screw (④ x 1), and replace the RT board ASSY (②).

2.
 - (1) Open the cover as in section 1-(1).
 - (2) Remove the solenoid valve securing screws (③, x 2) and manifold securing screws (⑥, x 2) (see Fig. 1).
 - (3) Lift the solenoid valve (⑤ in Fig. 1) remove the air tube connected to it, remove the solenoid valve and replace it.

3.
 - (1) Open the cover as in section 1-(1).
 - (2) Remove the motor securing screws (⑦), remove the motor wiring connector from the board (②) and replace the motor (see Fig. 1). (After replacing the motor be sure to adjust the belt tension and set to home position).

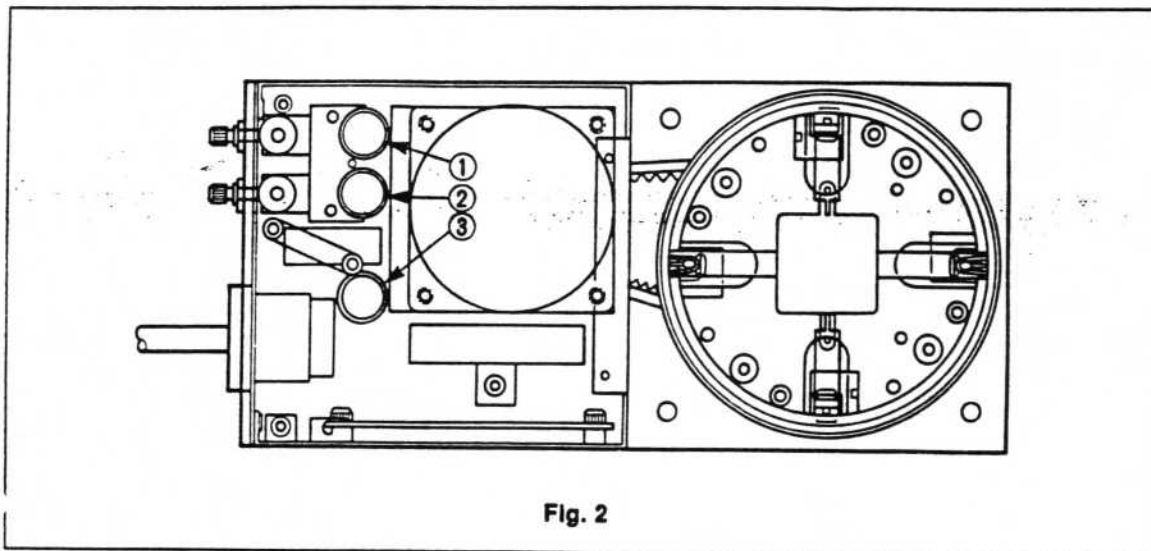
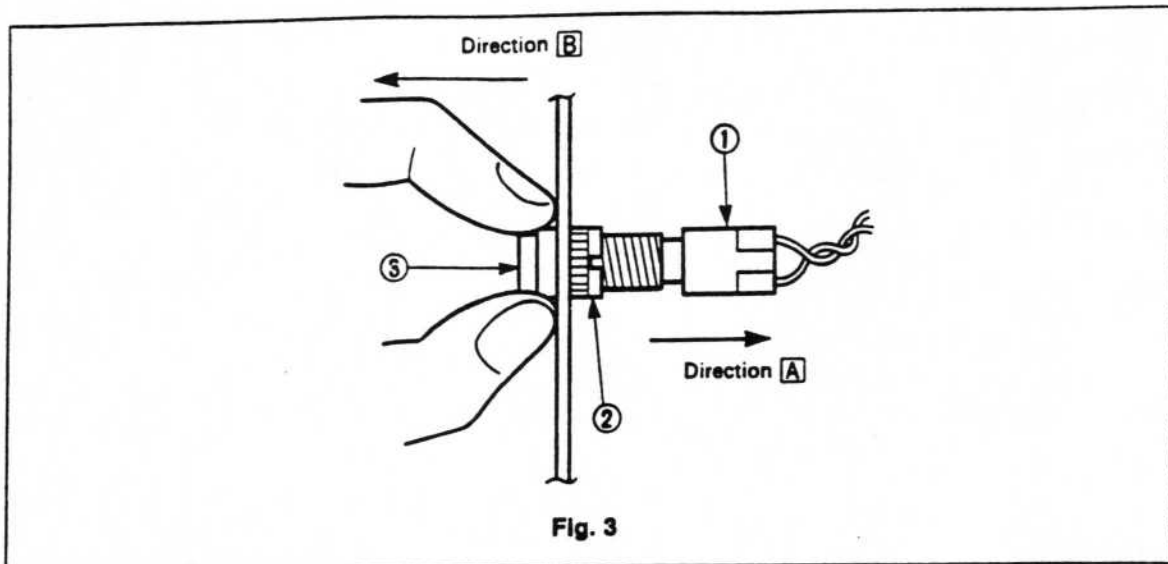


Fig. 2

4.
 - (1) Open the cover as in section 1-(1).
 - (2) As in Fig. 3, pull off the insulating covers (①) of the illuminating push button switches (① ② and ③ in Fig. 2) in direction **A**, disconnect the wires using a soldering iron, remove the securing screw (② in Fig. 2) and replace the switches.

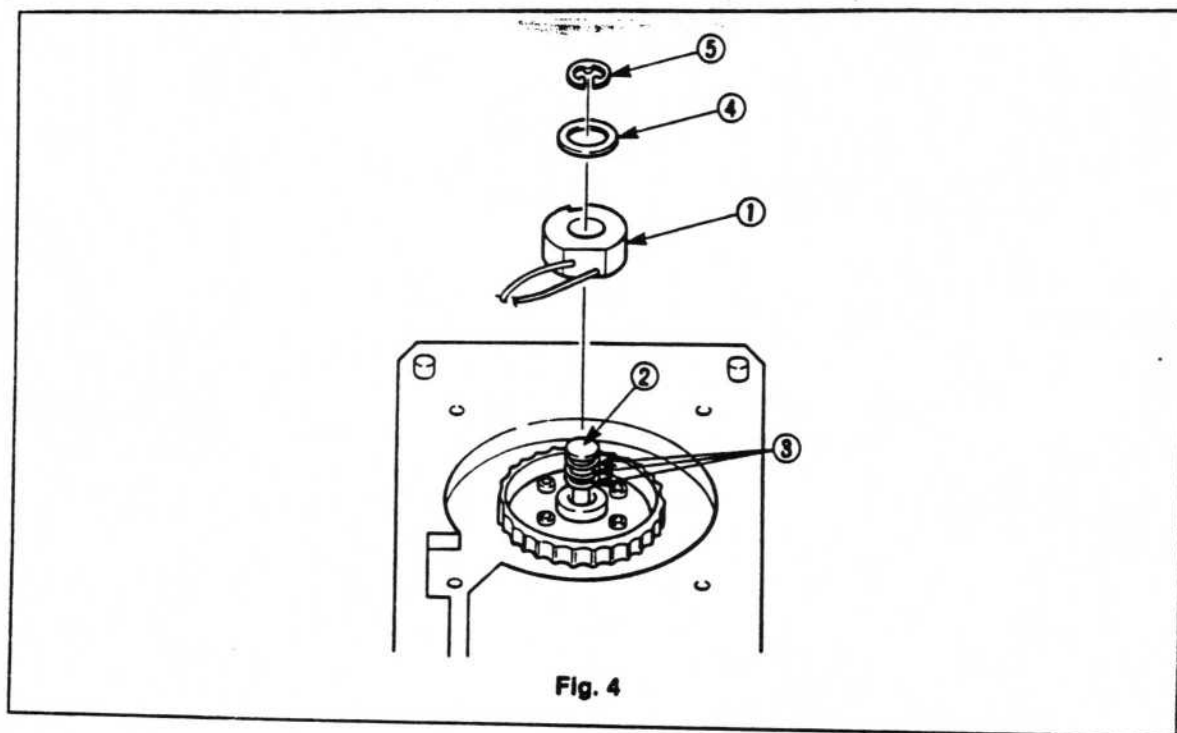


5.

- (1) The buttons of the illuminating push button switches (1 2 and 3 in Fig. 2) are attached on the cover side as shown in Fig. 3. As in Fig. 3, pull each button in direction B to remove it, and replace them when necessary.

Note:

When replacing buttons be sure not to misplace the colors (ie. yellow and blue).



3.

Use Fig. 4 as a reference

- (1) Remove the E ring (5) securing air block D (1) to air block SH (2).
- (2) Remove the block support spacer (4) and air block D (1) from air block SH (2).
- (3) Replace the O rings (3), x 3).

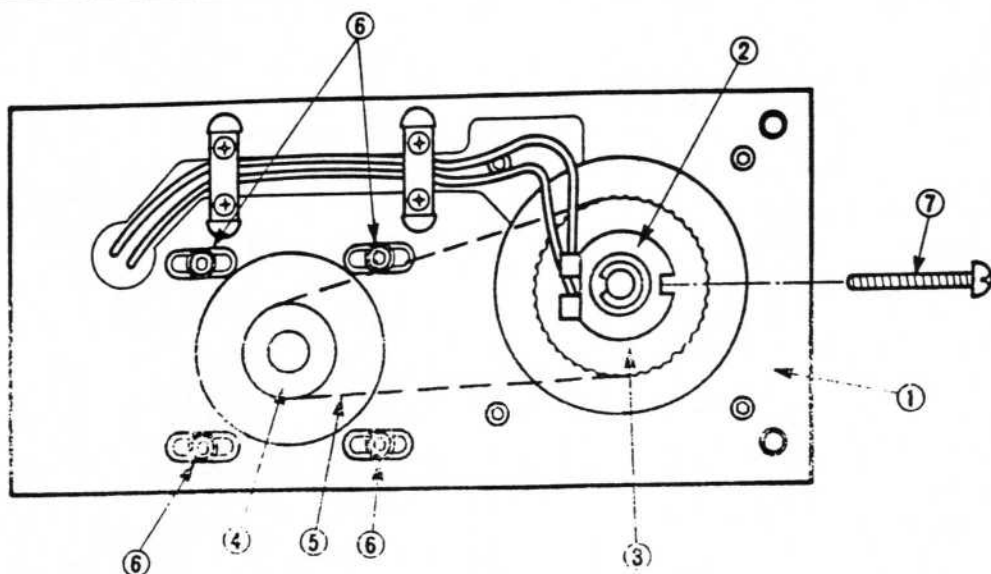


Fig. 5

7.

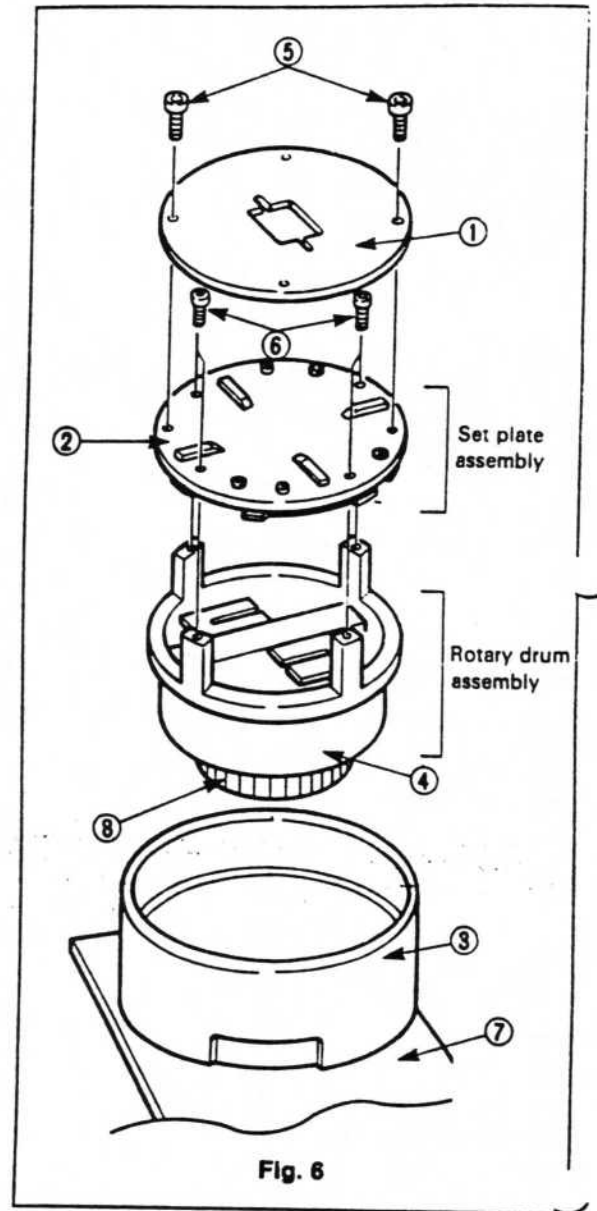
Use Fig. 5 as a reference.

- (1) Remove air block D (2) in accordance with the instructions given in section F above.
- (2) Loosen the set screws (6), x 4 which hold the motor bracket to the RT base (1), and move the motor in the direction which slackens the tension on the timing belt (5).
- (3) Loosen the set screw (7) and open a gap so that the timing belt (5) can pass between air block D (2) and the set screw (7).
- (4) Remove the timing belt (5) from pulley A (3) and pull the timing belt off from the hole on the RT base motor shaft side. Replace the timing belt.

8.

Use Fig. 6 as a reference.

- (1) Remove the set screws (5), x 2 holding the cover plate (1) to the set plate (2).
- (2) Remove the set screws (6) holding the set plate assembly (2) to the rotary drum assembly.
- (3) Screw the M3 continuous thread studs into the holes in the set plate (2) for the set screws (5), removed in section 1 above), and pull the M3 studs upwards to separate the set plate assembly from the rotary drum (4). Replace the set plate assembly.
- (4) From the hole on the RT base (7) lower side, push pulley A (8) upwards on the rotary drum (4) and remove the rotary drum assembly. Replace the rotary drum assembly.



2.

ADJUSTMENT

1. Belt tension adjustment

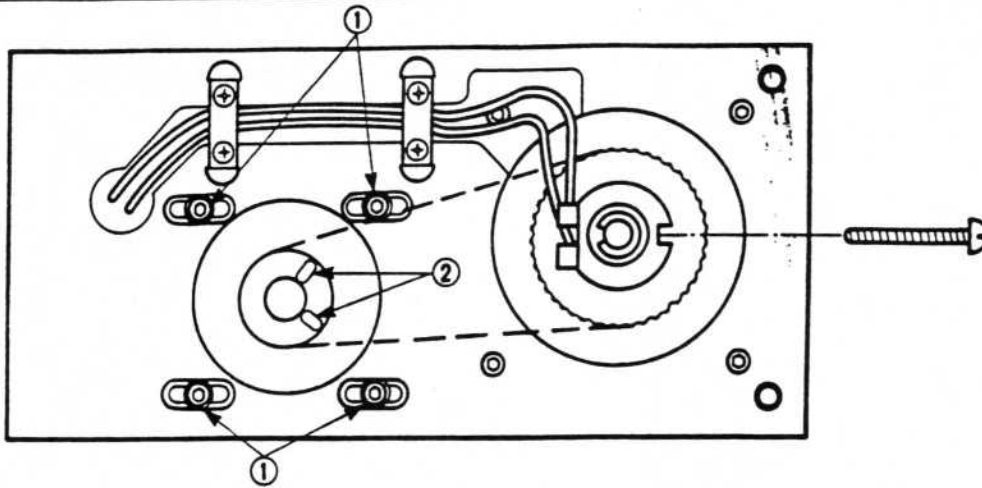


Fig. 7 View from the back side of the RT base

- (1) Loosen the motor bracket securing screws (①, x 4) (see Fig. 7).
- (2) From the outer side, apply a weight F (150 - 250 g) to the central section of the span as shown in Fig. 8, shift the motor bracket and tighten the belt so that the tension (flexure) $t = 1$ -mm and secure the bracket with the screws (① in Fig. 7).

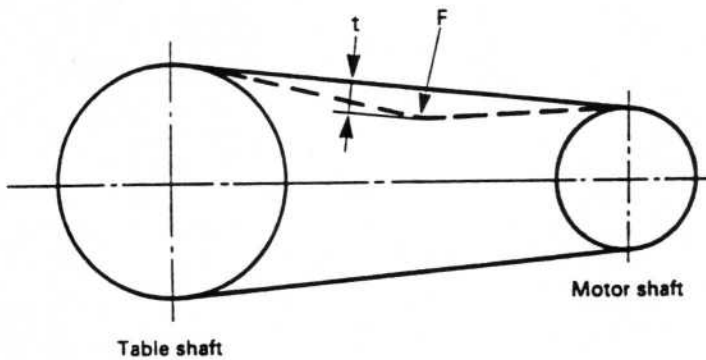
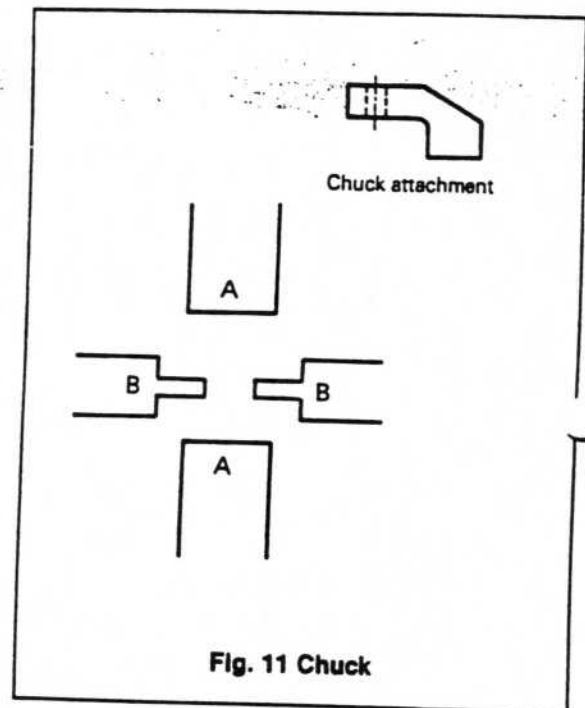
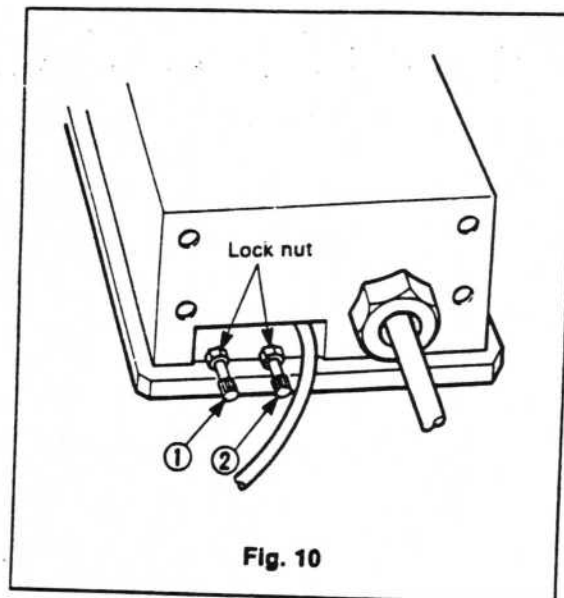
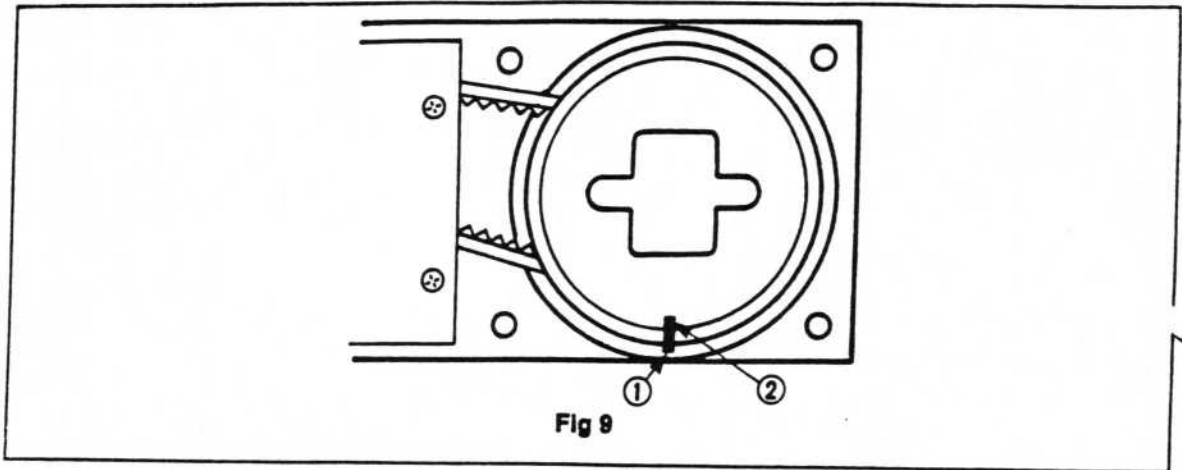


Fig. 8

2. Setting the home position

- (1) Loosen the motor pulley securing screws (②, x 2) (see Fig. 7).
- (2) Connect the rotary table to the main unit (motor operating).
- (3) As in Fig. 9, align the table home position groove ② with the table frame home position groove ①.
- (4) With the assembly as in (3) above, fix the motor pulley in place with the securing screws (② in Fig. 7).



3. Speed controller adjustment (chuck speed adjustment) Use the rotary table chuck speed adjustment software.

Input values: close time 150 msec
 open time 90 msec

- (1) Attach the chuck attachment to the chuck B (see Fig. 11).
- (2) Input close time 150 msec and open time 90 msec with the adjustment software.
- (3) Fully shut down the speed controller (① in Fig. 10) which operates chuck A (see Fig. 11) to stop the operation of chuck A.
- (4) Starting with the speed controller (② in Fig. 10) which operates chuck B in the fully shut down position, gradually turn the speed controller and, when the left and right sides of chuck B connect, lock the speed controller ②.
- (5) Gradually open up the speed controller for chuck A. If the controller is opened up too much, chuck A will clamp chuck B. Adjust the controller so that chuck A reaches the limit where it is just clear of connecting with chuck B, and lock the controller in this position.

3.

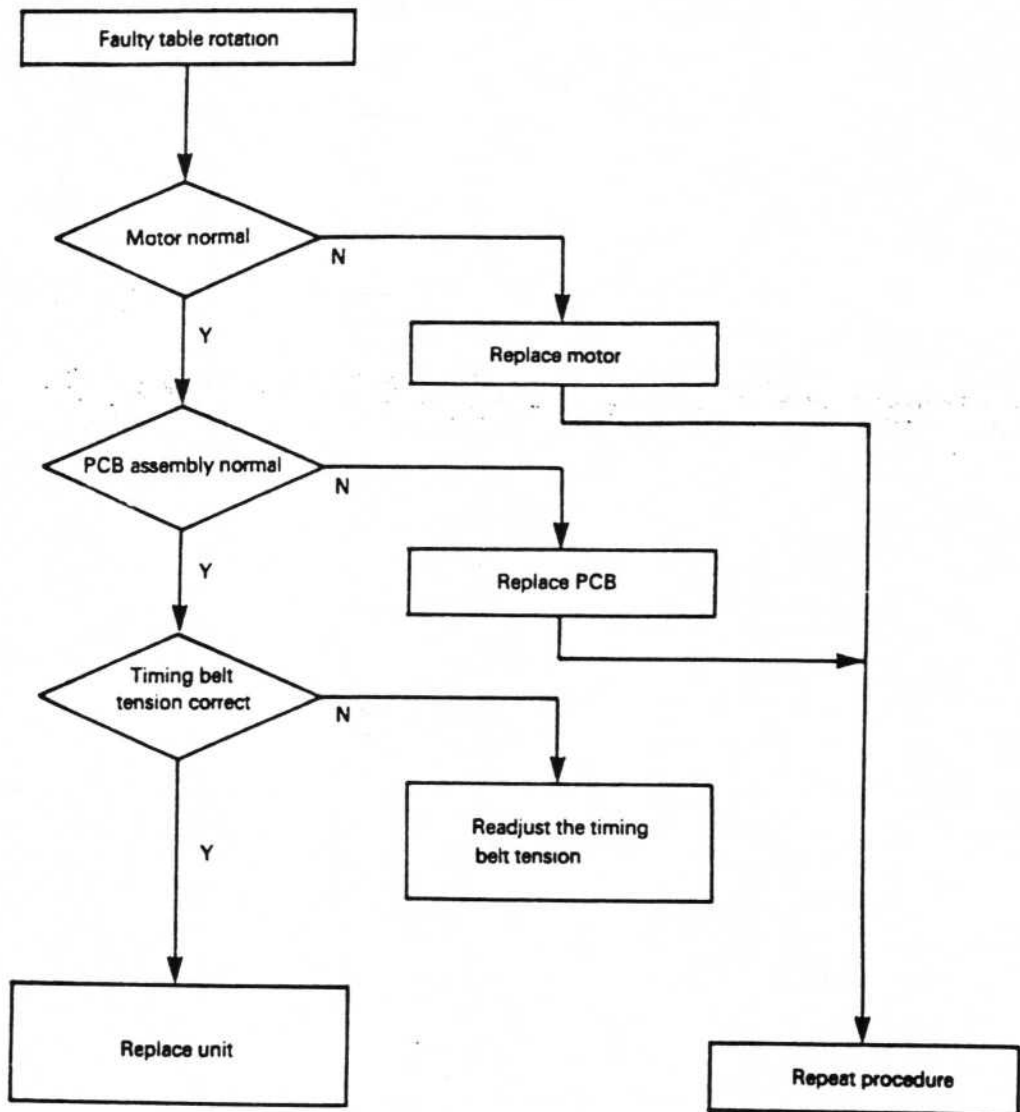
TROUBLESHOOTING

Be sure to check the following items before troubleshooting.

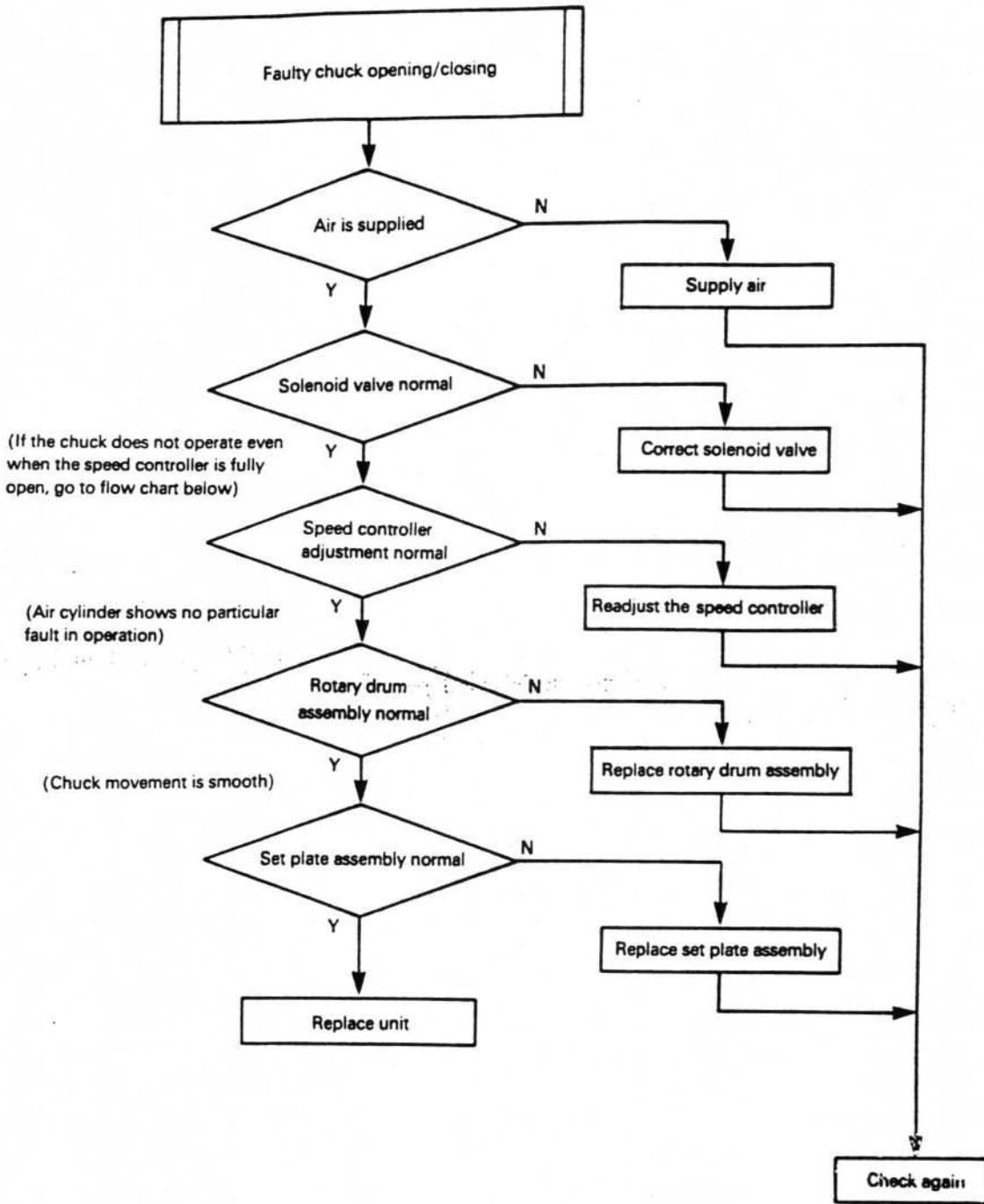
- (1) Power ON/OFF
- (2) Connection of each connector
- (3) Controller onset

This troubleshooting guide is confined to this unit. Carry out with the mounter main unit and controller at the correct settings.

1. Faulty table rotation



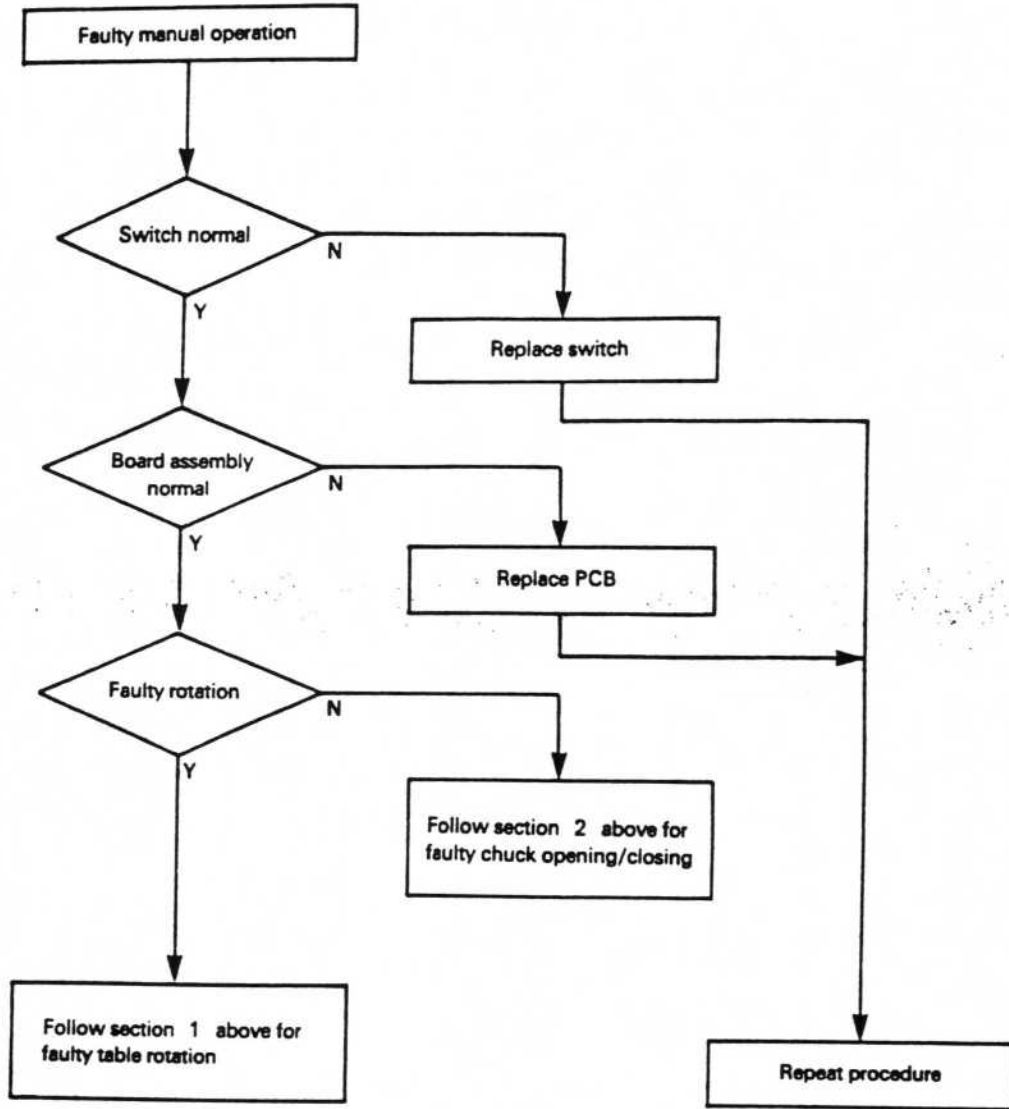
2. Faulty opening/closing of the chuck



3. Manual operation faults

Note:

Manual operations are carried out in the TEACHING mode by the control buttons on the rotary table.



4. _____

PERIODIC CHECKS

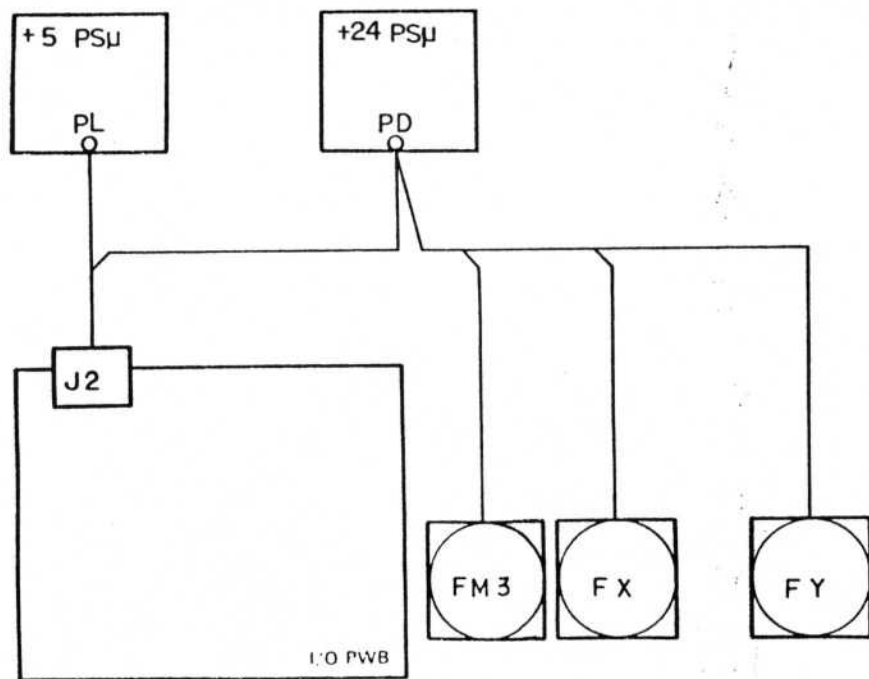
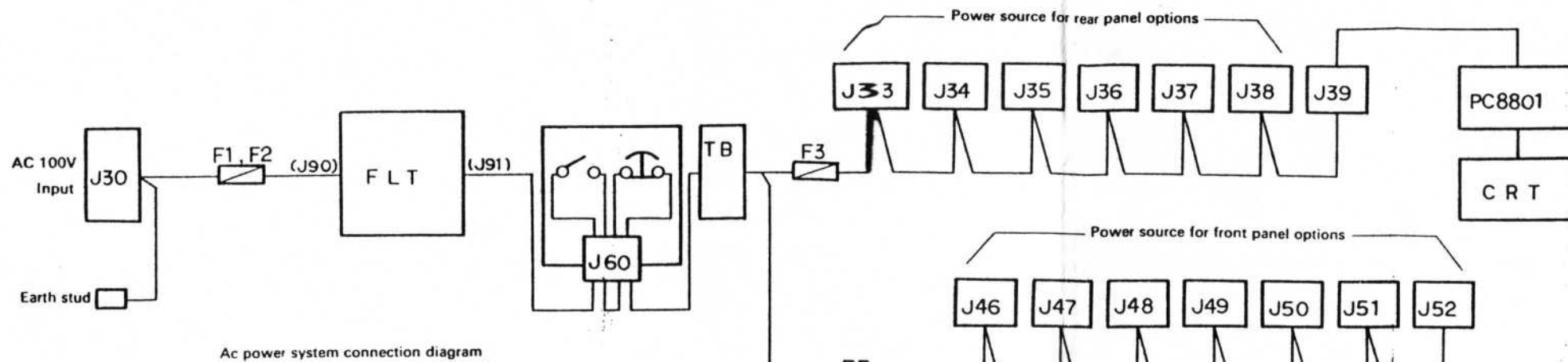
There are no specified intervals for the periodic checking of this equipment. However, it is advisable to occasionally test the tension of the timing belt. (If the tension is maladjusted, adjust according to the procedure given in section 2-1 above).

LOGIC DIAGRAM

Section

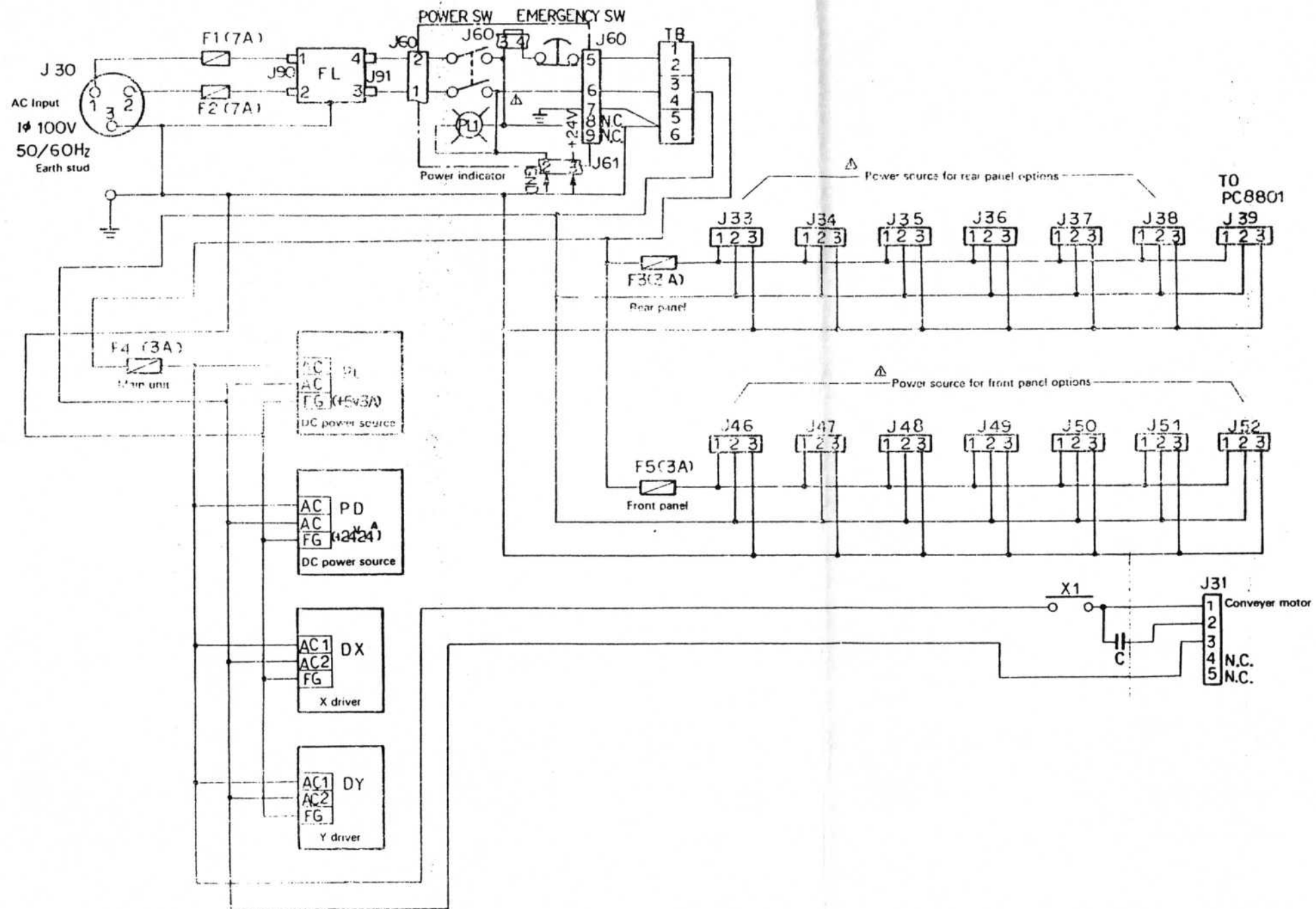
8

No.	DESCRIPTION	PART No.
(1)	Power system diagram	E9500760020
(2)	Signal system diagram	E9500760030
(3)	AC power connection diagram	E9500760040
(4)	I/F cable DC power connection diagram	E9500760050
(5)	Expansion PWB logic diagram 1/2	E9500760060
(6)	Expansion PWB logic diagram 2/2	E9500760070
(7)	I/O PWB logic diagram 1/3	E9500760080
(8)	I/O PWB logic diagram 2/3	E9500760090
(9)	I/O PWB logic diagram 3/3	E9500760100
(10)	X axis sensor/motor connection diagram	E9500760110
(11)	Power switch/home position return switch/ Y axis sensor/motor connection diagram	E9500760120
(12)	Head valve connection diagram	E9500760130
(13)	Automatic conveyor connection diagram	E9500760140
(14)	T.SPOT/operation panel connection diagram	E9500760150
(15)	Ready/dispenser/rotary table connection diagram	E9500760160
(16)	RT PWB logic diagram	E9500760170
(17)	Linear feeder/stick feeder connection diagram	E9500760180
(18)	Feeder PWB logic diagram	E9500760190
(19)	Tape feeder connection diagram	E9500760200
(20)	Tape feeder PWB logic diagram	E9500760210

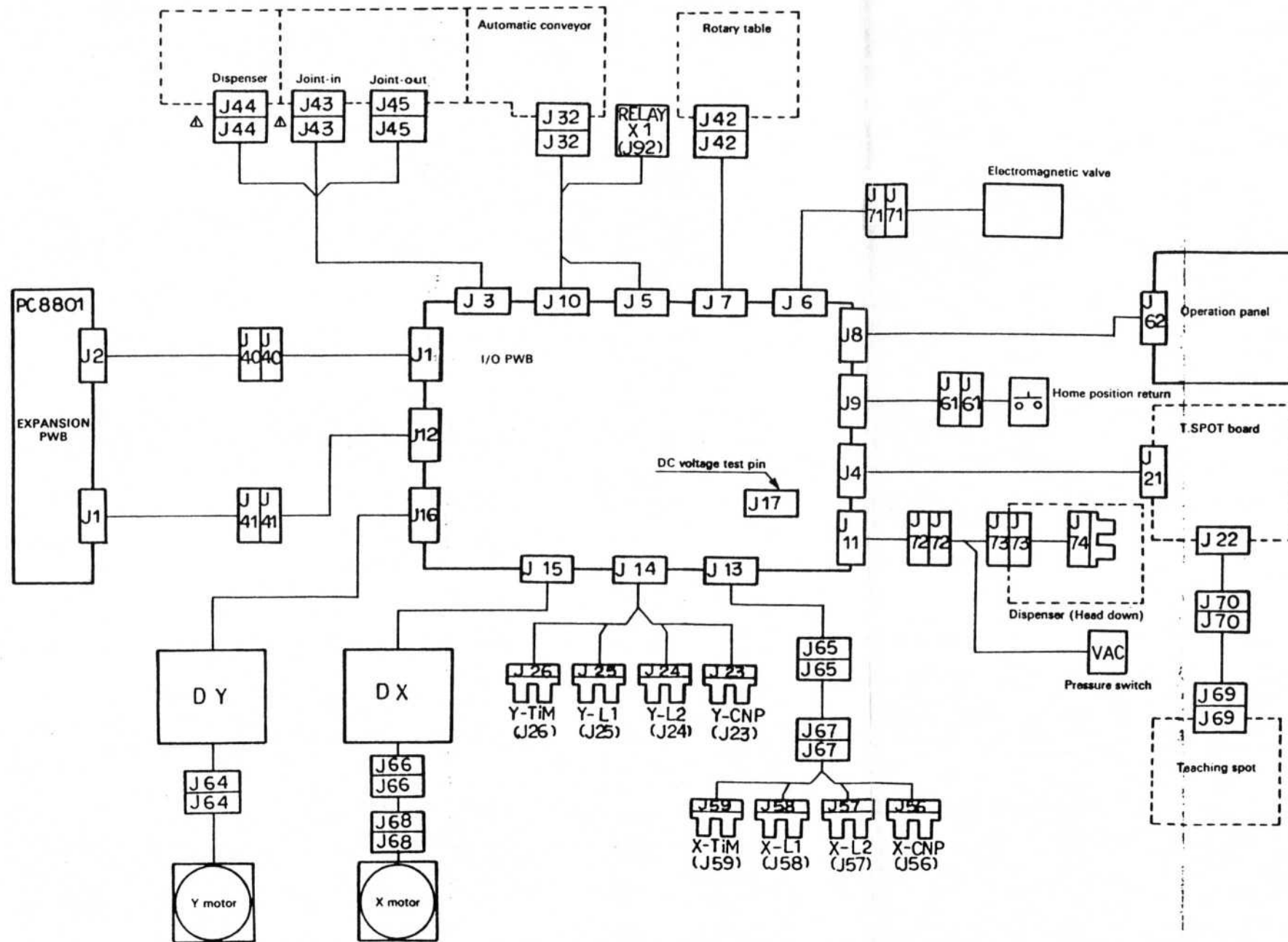


DC power system connection diagram

(1)	PART NO.	E9500760020
	DESCRIPTION	POWER SYSTEM DIAGRAM



(3)	PART NO.	E9500760040
	DESCRIPTION	AC POWER CONNECTION



* Dotted lines indicate options

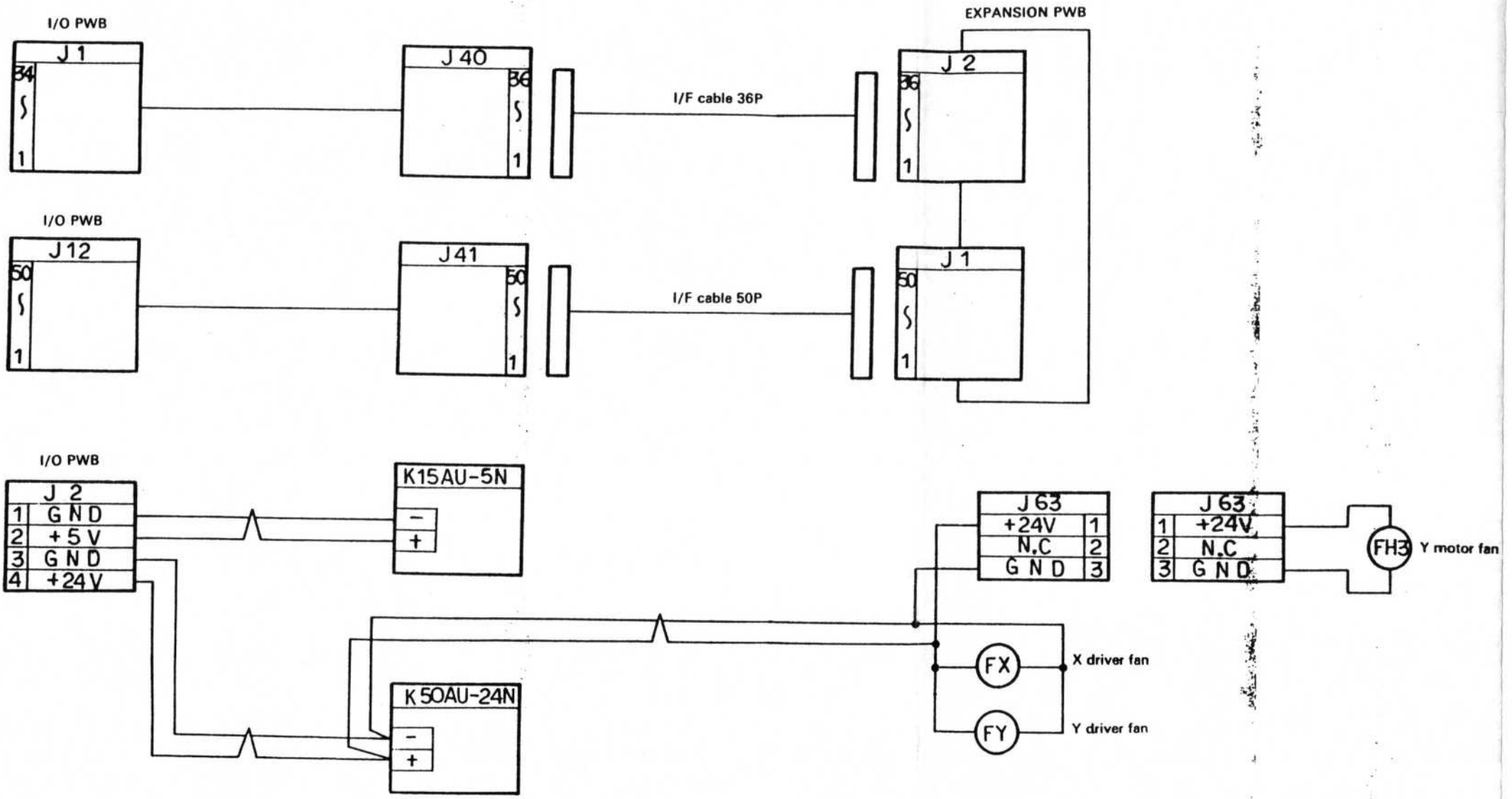
(2)	PART NO.	E9500760030
	DESCRIPTION	SIGNAL SYSTEM DIAGRAM

A

B

C

D



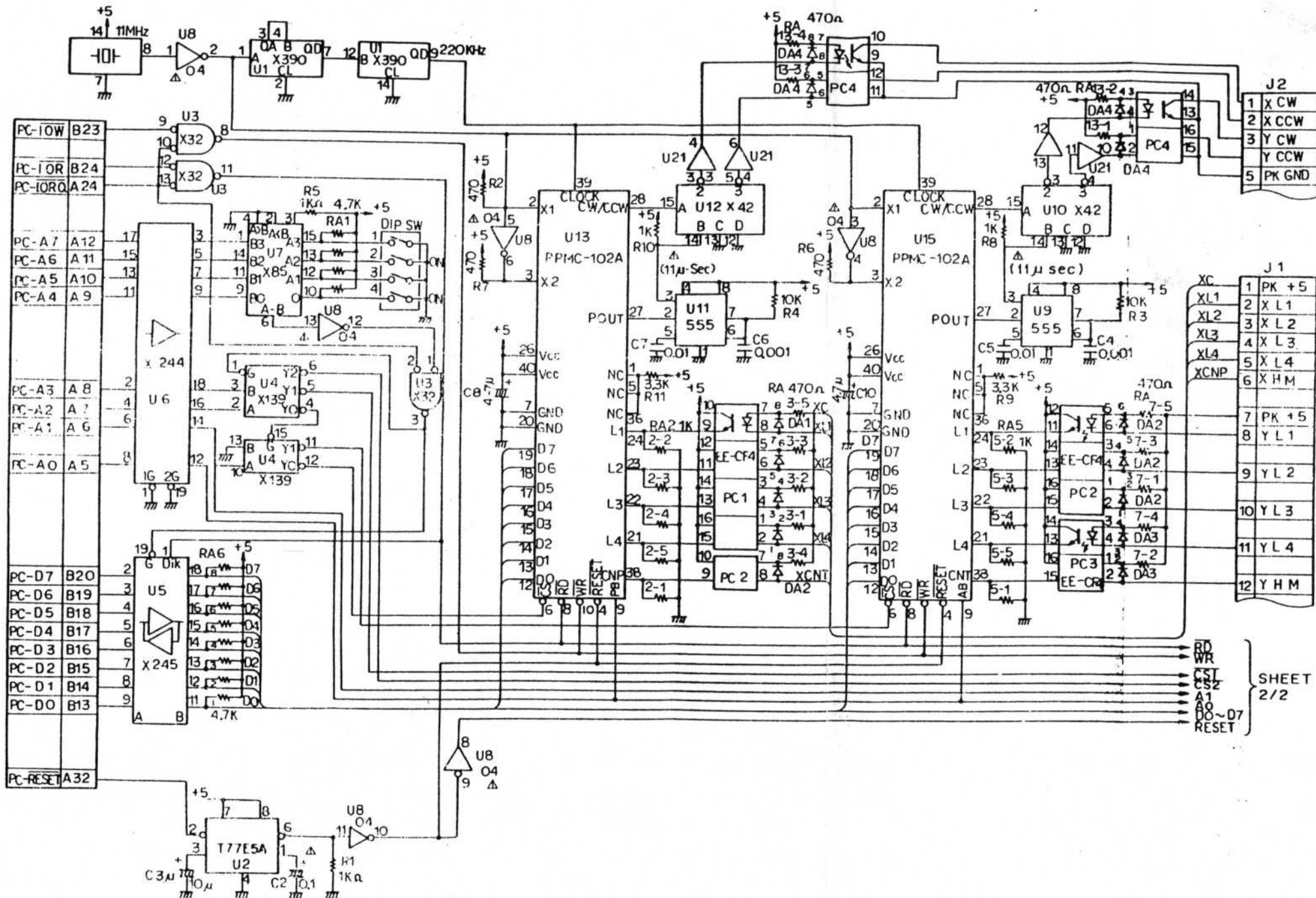
A

B

C

D

(4)	PART NO.	E9500760050
	DESCRIPTION	I/F CABLE DC POWER



PC-IOW	B23
PC-IOR	B24
PC-IOR0	A24
PC-A7	A12
PC-A6	A11
PC-A5	A10
PC-A4	A9
PC-A3	A8
PC-A2	A7
PC-A1	A6
PC-A0	A5
PC-D7	B20
PC-D6	B19
PC-D5	B18
PC-D4	B17
PC-D3	B16
PC-D2	B15
PC-D1	B14
PC-D0	B13
PC-RESET	A32

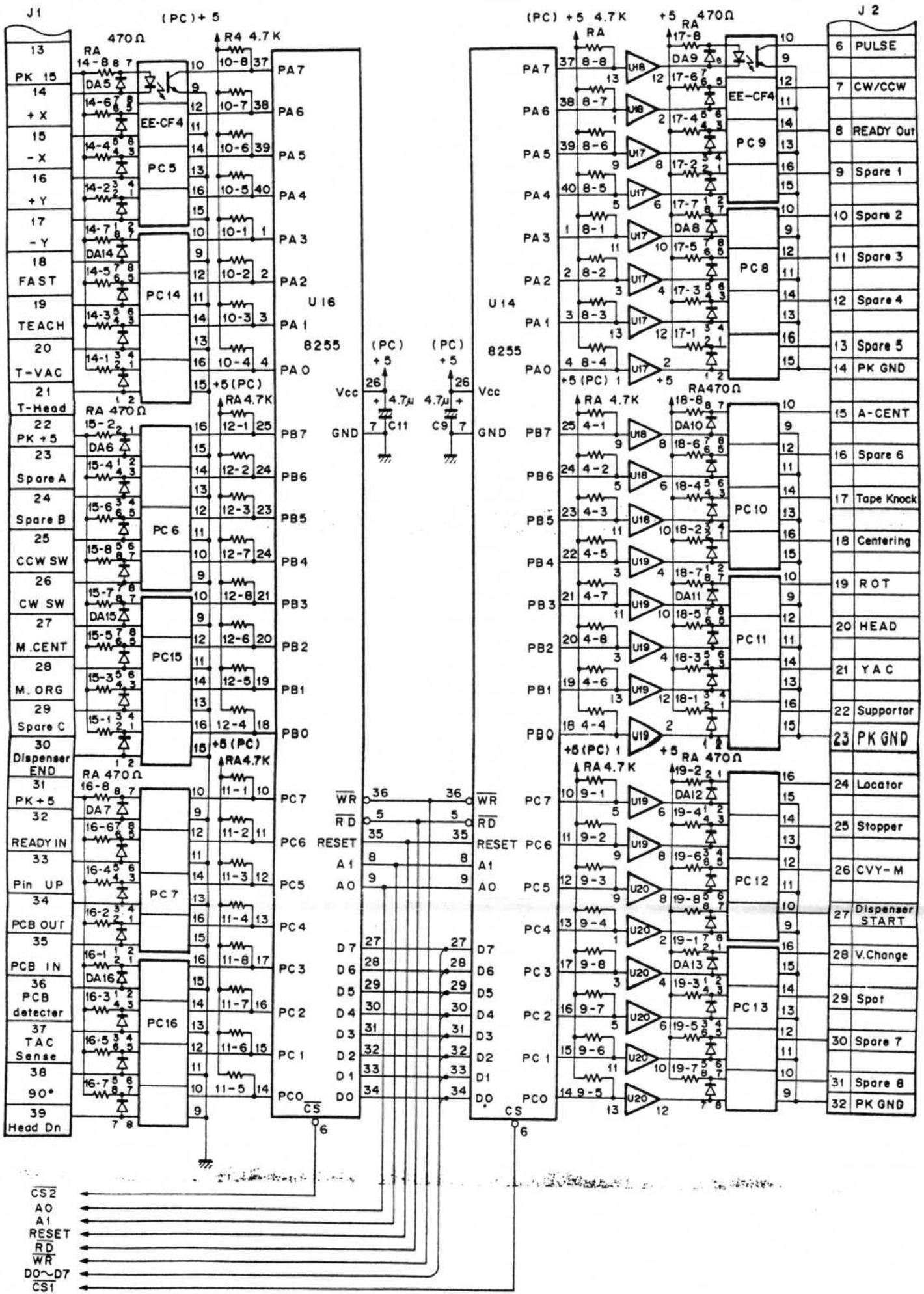
J1	1	PK +5
XL1	2	XL1
XL2	3	XL2
XL3	4	XL3
XL4	5	XL4
XCNP	6	XHM
J1	7	PK +5
YL1	8	YL1
YL2	9	YL2
YL3	10	YL3
YL4	11	YL4
YHM	12	YHM

J2	1	X CW
J2	2	X CCW
J2	3	Y CW
J2	4	Y CCW
J2	5	PK GND

RD
WR
CS1
CS2
A1
D0~D7
RESET

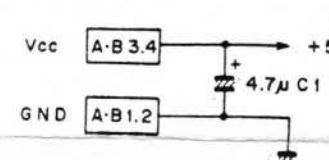
SHEET
2/2

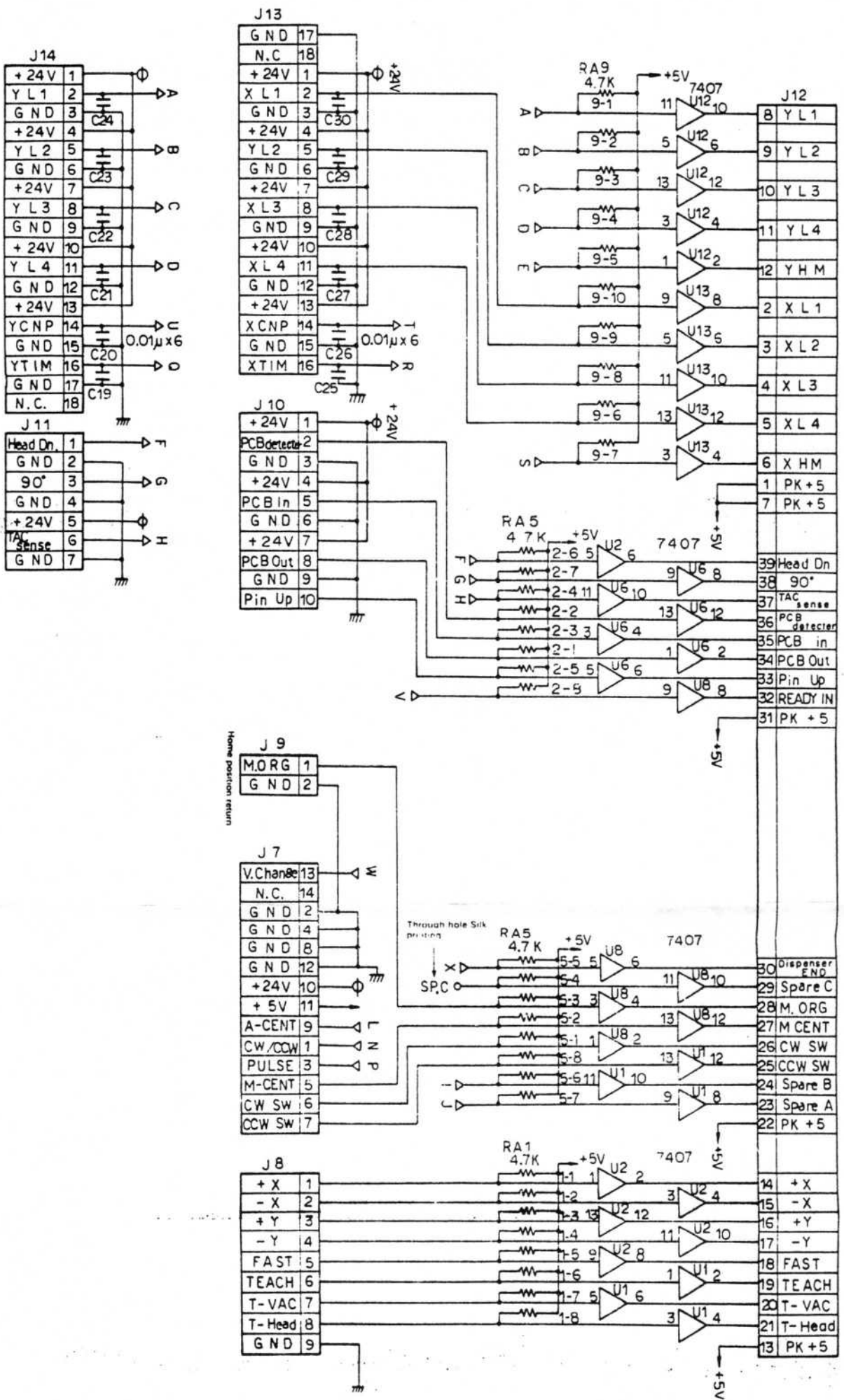
(5)	PART NO.	E9500760060
	DESCRIPTION	EXPANSION PWB LOGIC DIAGRAM 1/2



(6)
PART NO.
DESCRIPTION
EXPANSION PWB LOGIC DIAGRAM

E9500760070





J14

+24V	1	Φ
YL1	2	→ A
GND	3	
+24V	4	
YL2	5	→ B
GND	6	
+24V	7	
YL3	8	→ C
GND	9	
+24V	10	
YL4	11	→ D
GND	12	
+24V	13	
YCNP	14	→ U
GND	15	0.01μx6
YTIM	16	→ O
GND	17	
N.C.	18	

J11

Head Dn	1	→ F
GND	2	
90°	3	→ G
GND	4	
+24V	5	Φ
TAC sense	6	→ H
GND	7	

J13

GND	17	
N.C.	18	
+24V	1	Φ
XL1	2	→ A
GND	3	
+24V	4	
YL2	5	→ B
GND	6	
+24V	7	
XL3	8	→ C
GND	9	
+24V	10	
XL4	11	→ D
GND	12	
+24V	13	
XCNP	14	→ T
GND	15	0.01μx6
XTIM	16	→ R

J10

+24V	1	Φ
PCB detect	2	→ S
GND	3	
+24V	4	
PCB In	5	→ T
GND	6	
+24V	7	
PCB Out	8	→ G
GND	9	
Pin Up	10	→ H

J9

M.ORG	1	→ M
GND	2	

J7

V.Chance	13	→ W
N.C.	14	
GND	2	
GND	4	
GND	8	
GND	12	
+24V	10	Φ
+5V	11	→ L
A-CENT	9	→ N
CW/CCW	1	→ P
PULSE	3	→ P
M-CENT	5	→ P
CW SW	6	→ P
CCW SW	7	→ P

J8

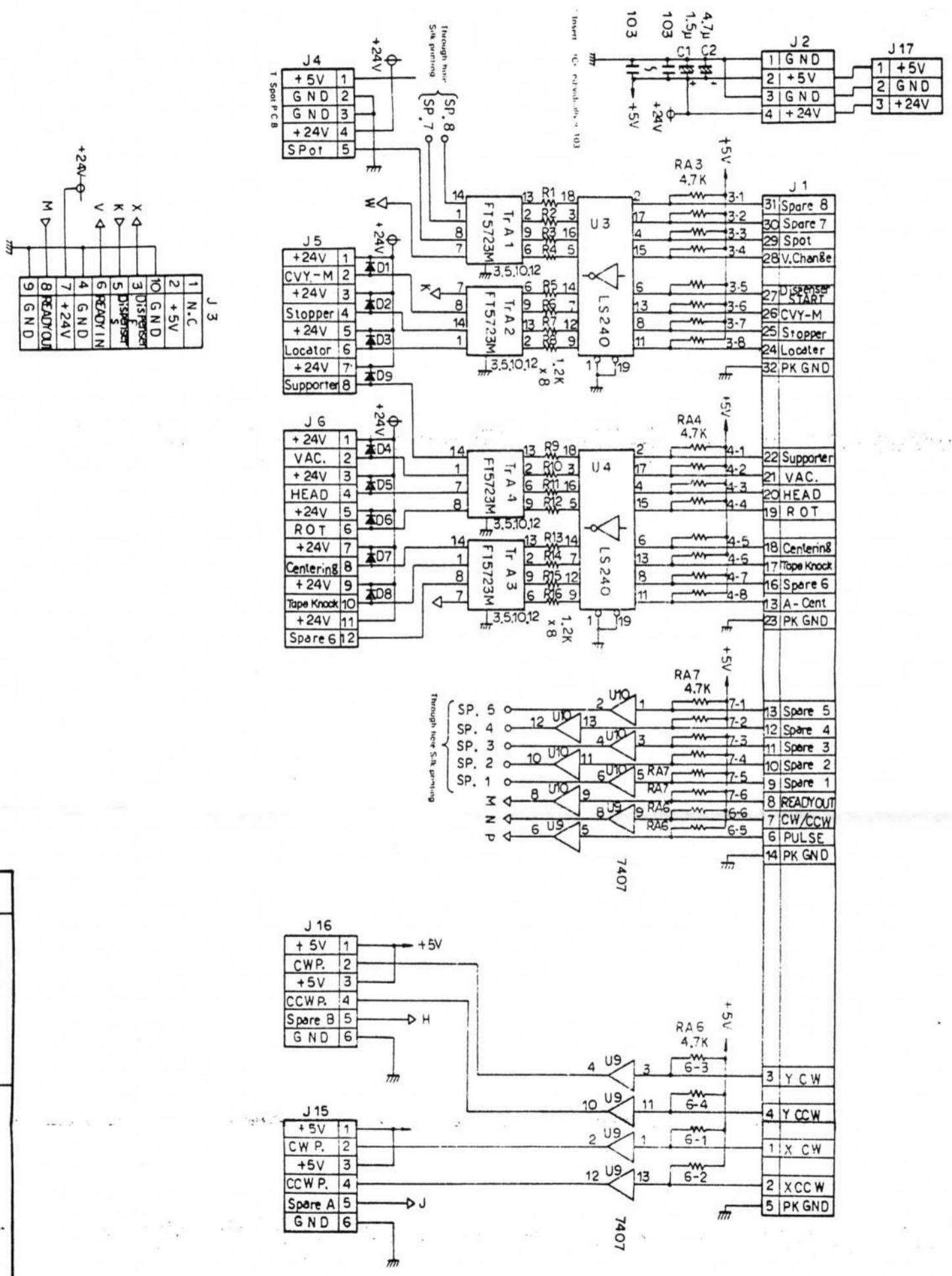
+X	1	→ X
-X	2	→ X
+Y	3	→ Y
-Y	4	→ Y
FAST	5	→ Y
TEACH	6	→ Y
T-VAC	7	→ Y
T-Head	8	→ Y
GND	9	

J12

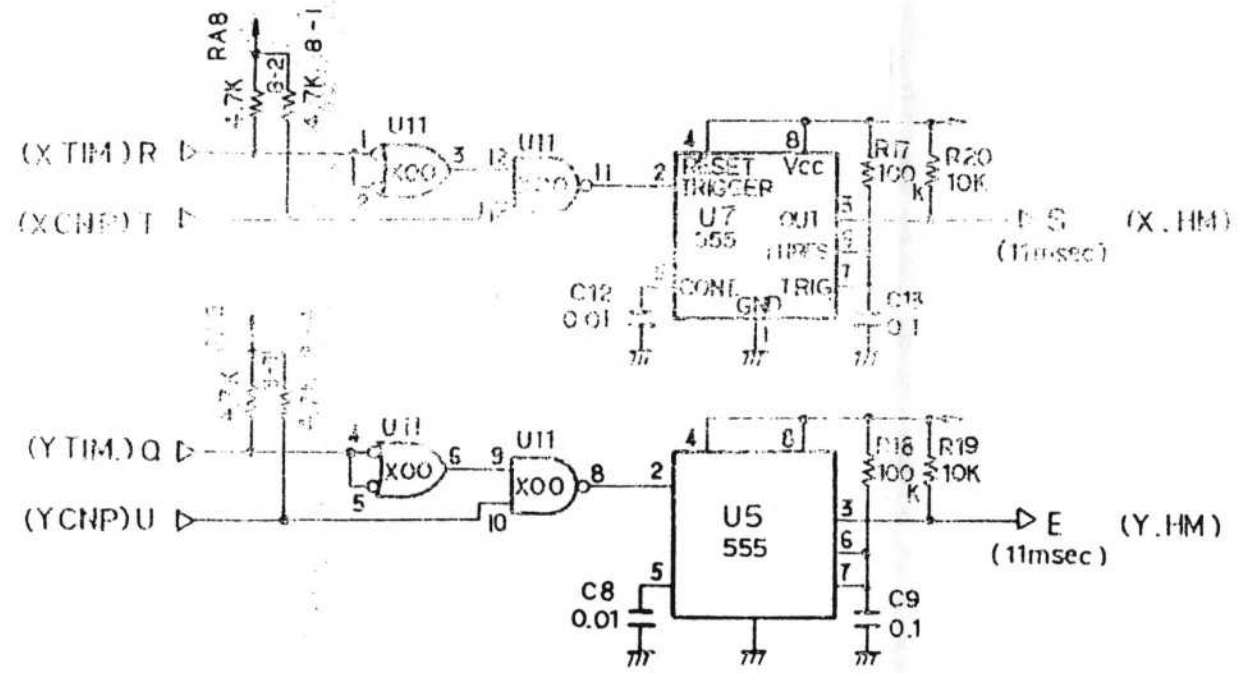
YL1	8	
YL2	9	
YL3	10	
YL4	11	
YHM	12	
XL1	2	
XL2	3	
XL3	4	
XL4	5	
XHM	6	
PK +5	7	
PK +5	31	

Head Dn	39	
90°	38	
TAC sense	37	
PCB detector	36	
PCB in	35	
PCB Out	34	
Pin Up	33	
READY IN	32	
PK +5	31	
Dispenser END	30	
Spare C	29	
M.ORG	28	
M.CENT	27	
CW SW	26	
CCW SW	25	
Spare B	24	
Spare A	23	
PK +5	22	
+X	14	
-X	15	
+Y	16	
-Y	17	
FAST	18	
TEACH	19	
T-VAC	20	
T-Head	21	
PK +5	13	

(7)
PART NO. E9500760080
DESCRIPTION I/O PWB LOGIC DIAGRAM 1/3



(8)	
PART NO.	E9500760090
DESCRIPTION	I/O PWB LOGIC DIAGRAM 2/3



(9)	PART NO.	E9500760100
	DESCRIPTION	I/O PWB LOGIC DIAGRAM 3/3

A

B

C

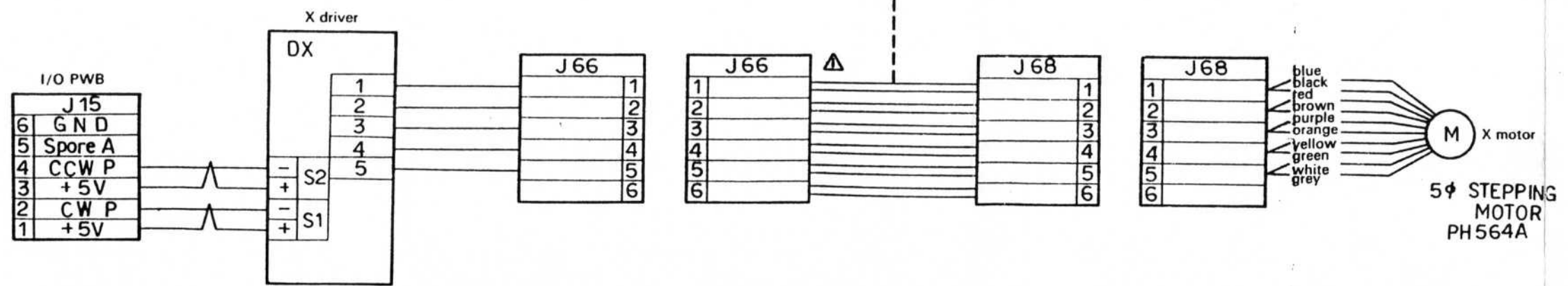
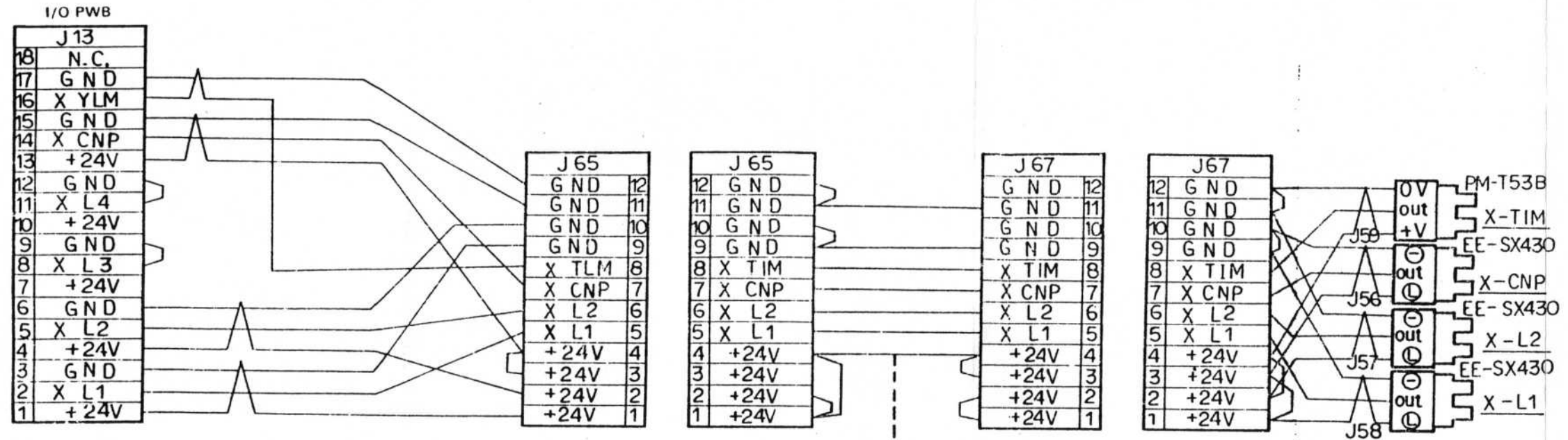
D

A

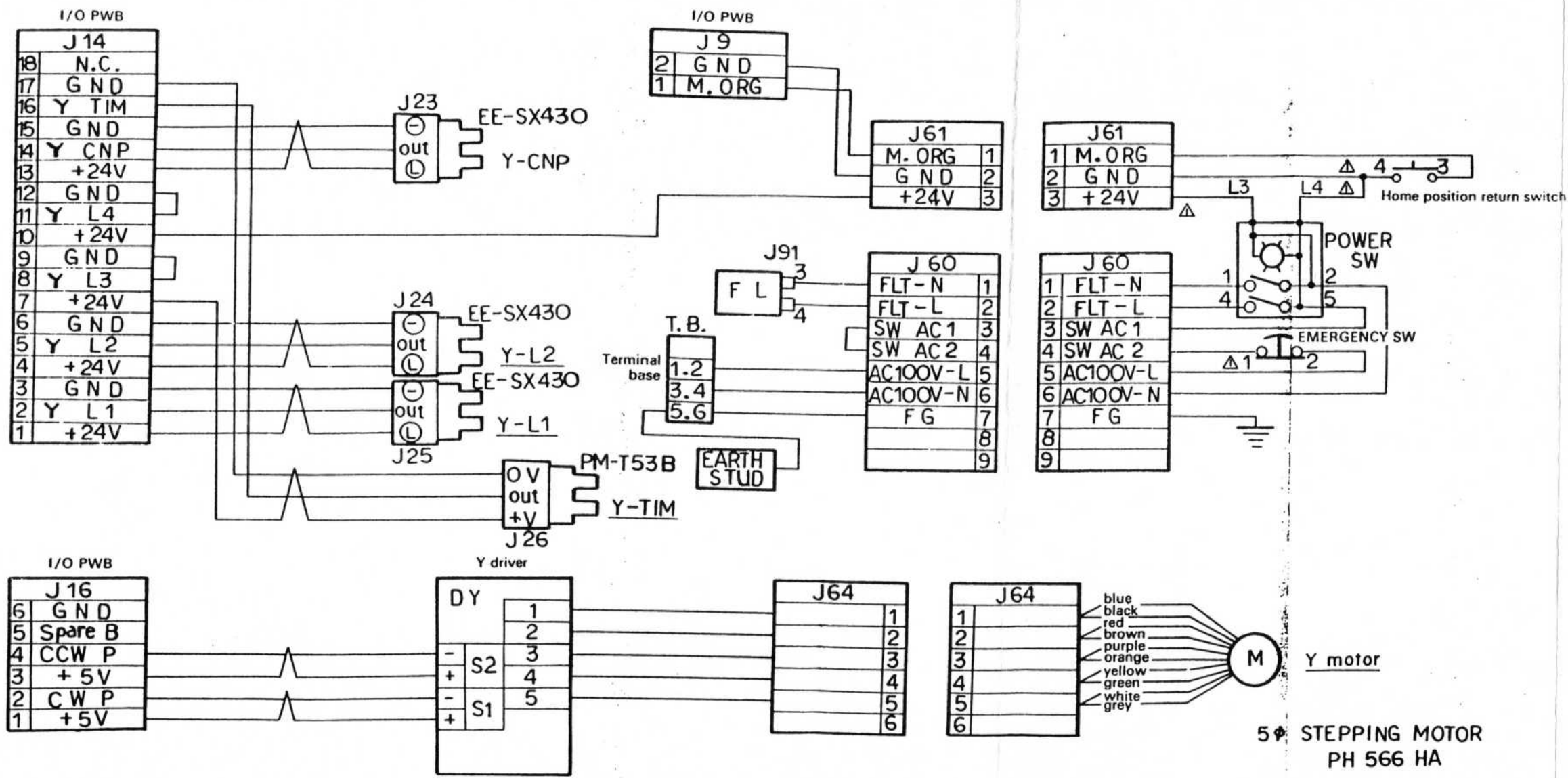
B

C

D



(10)	PART NO.	E9500760110
	DESCRIPTION	X AXIS SENSOR/MOTOR CONNECTION DIAGRAM



500 step/rev

(11)	PART NO.	E9500760120
	DESCRIPTION	POWER SWITCH/STARTPOINT RETURN SWITCH/ Y AXIS SENSOR/MOTOR CONNECTION DIAGRAM

I/O PWB

J 6	
12	Spare 6
11	+24V
10	Tape Knock
9	+24V
8	Centering
7	+24V
6	ROT
5	+24V
4	HEAD
3	+24V
2	VAC
1	+24V

J71	
12	
11	
10	Tape Knock
9	+24V
8	Centering
7	+24V
6	ROT
5	+24V
4	HEAD
3	+24V
2	VAC
1	+24V

J71	
12	
11	
10	Tape Knock
9	+24V
8	Centering
7	+24V
6	ROT
5	+24V
4	HEAD
3	+24V
2	VAC
1	+24V

Tape Knock
Centering
ROTATION
HEAD DOWN
VACUUM

I/O PWB

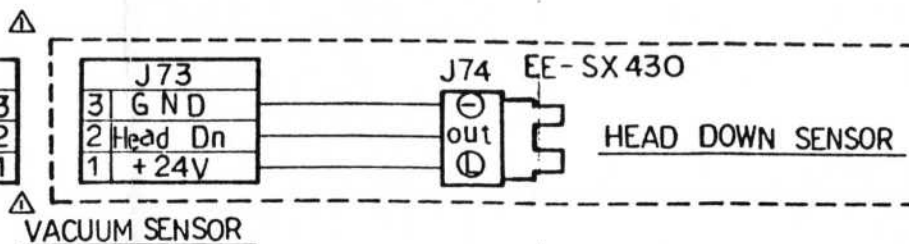
J11	
7	GND
6	VAC Sense
5	+24V
4	GND
3	90°
2	GND
1	Head Dn

J72	
6	GND
5	Head Dn
4	+24V
3	GND
2	VAC, Sense
1	+24V

J72	
6	GND
5	Head Dn
4	+24V
3	GND
2	VAC, Sense
1	+24V

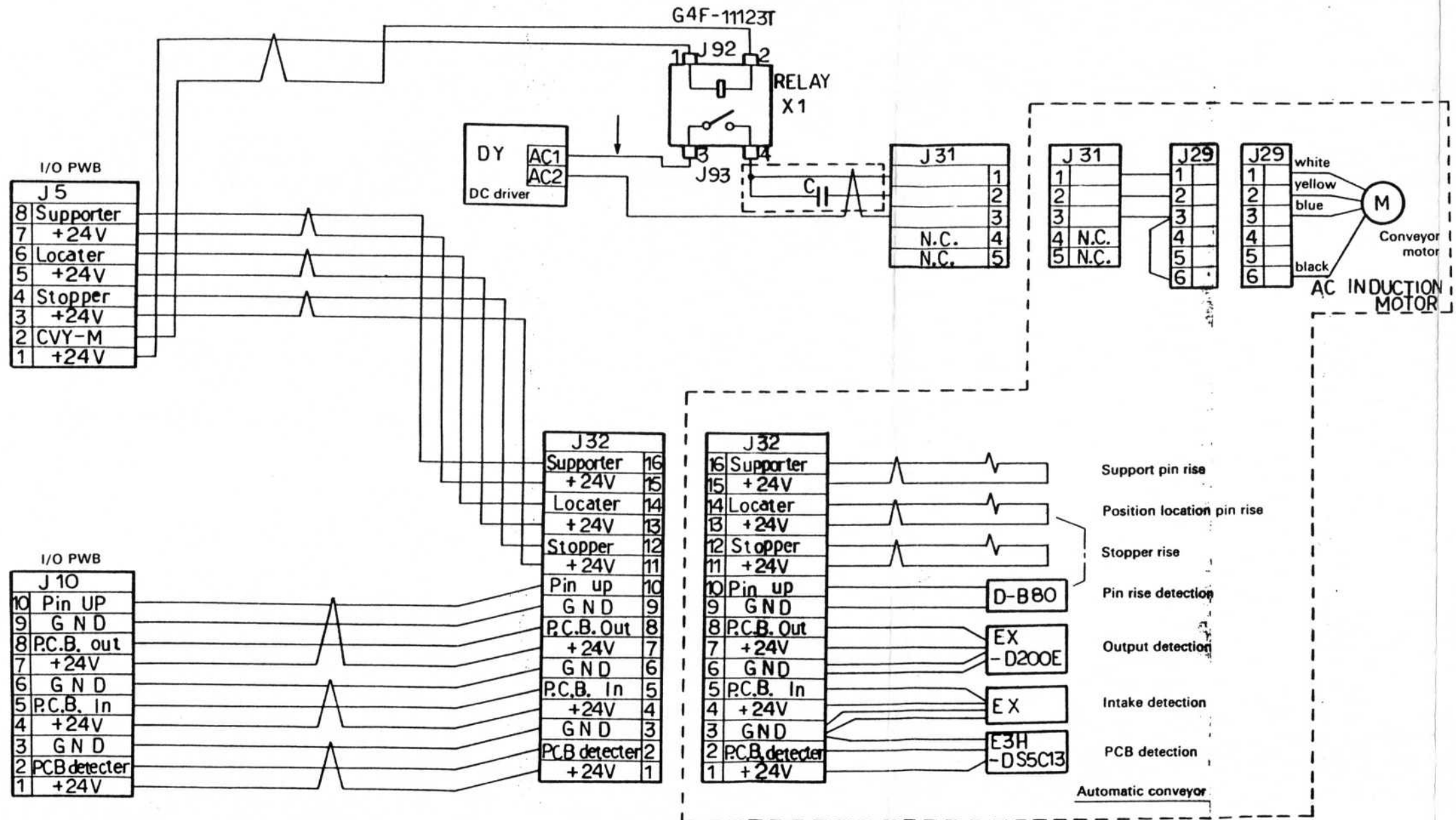
J73	
3	GND
2	Head Dn
1	+24V

PS4
-102V



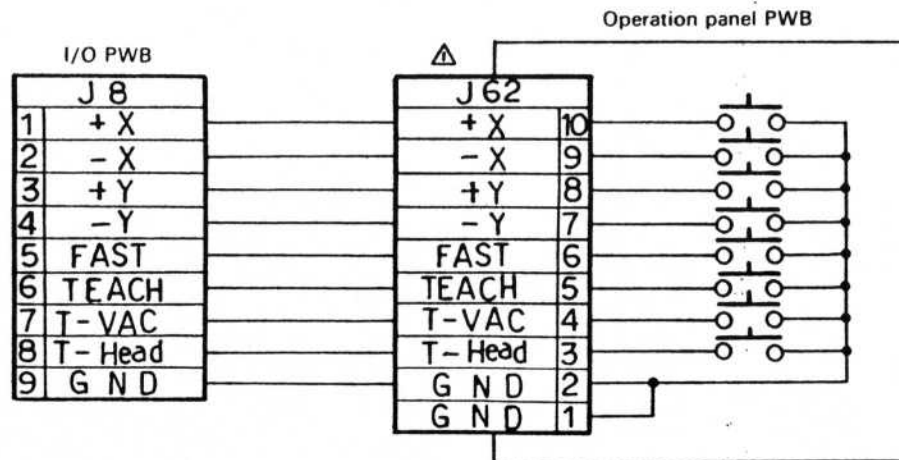
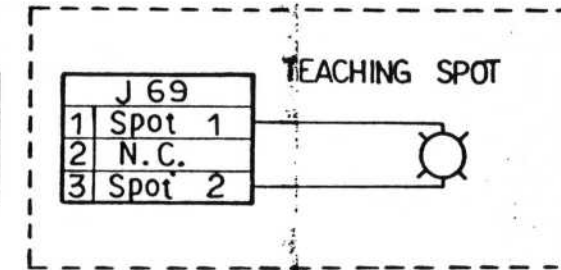
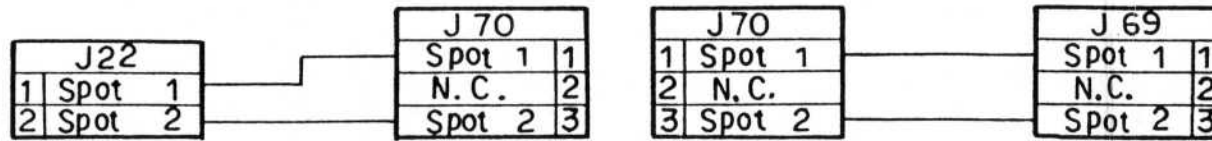
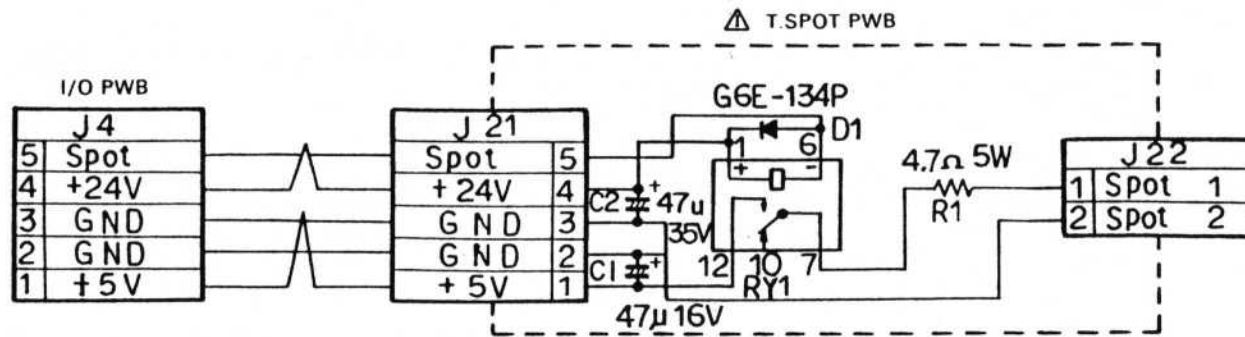
△ Dotted lines indicate options.

(12)	PART NO.	E9500760130
	DESCRIPTION	HEAD VALVE CONNECTION



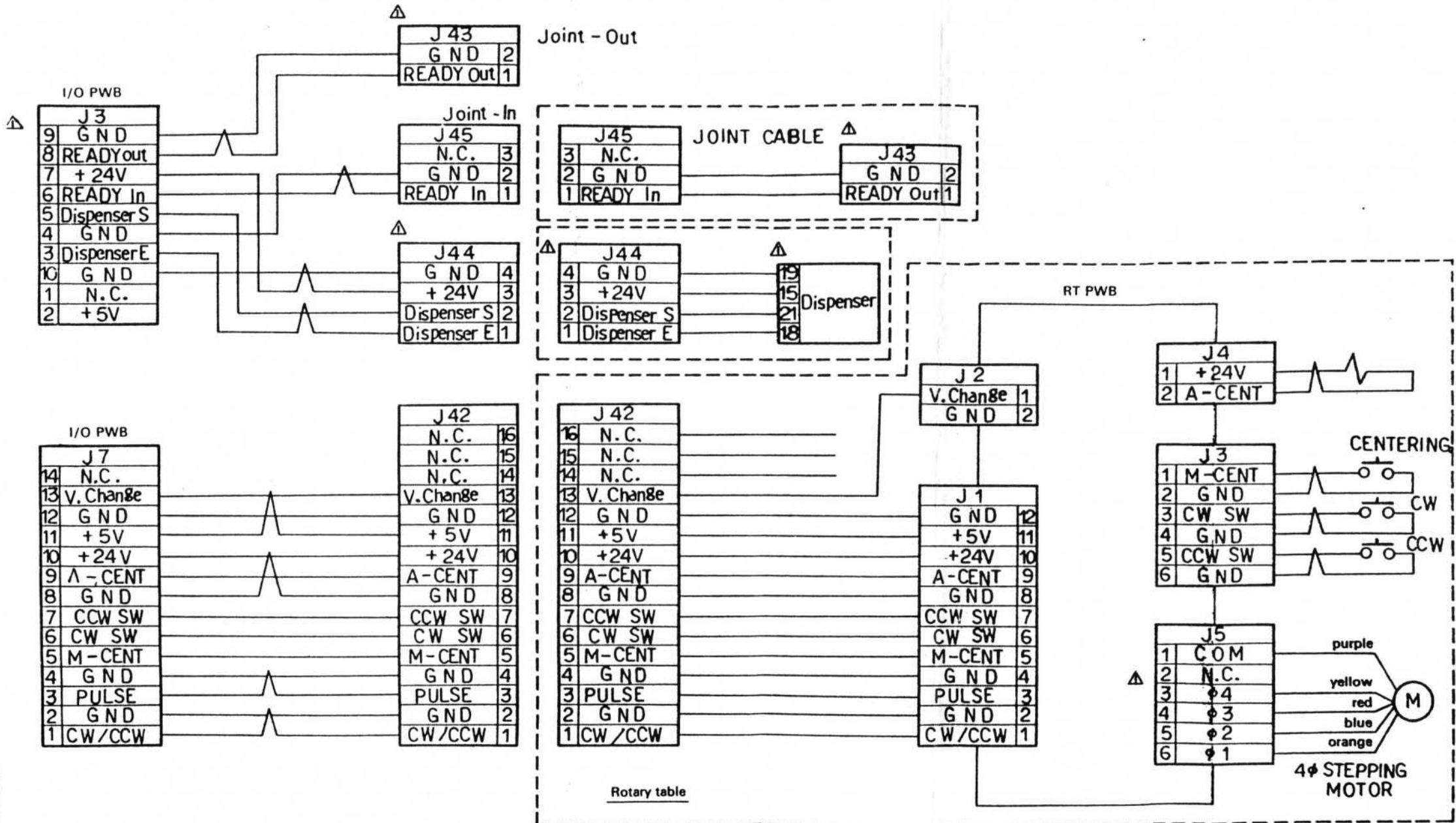
Dotted lines indicate options

(13)	PART NO.	E9500760140
	DESCRIPTION	AUTOMATIC CONVEYOR CONNECTION DIAGRAM



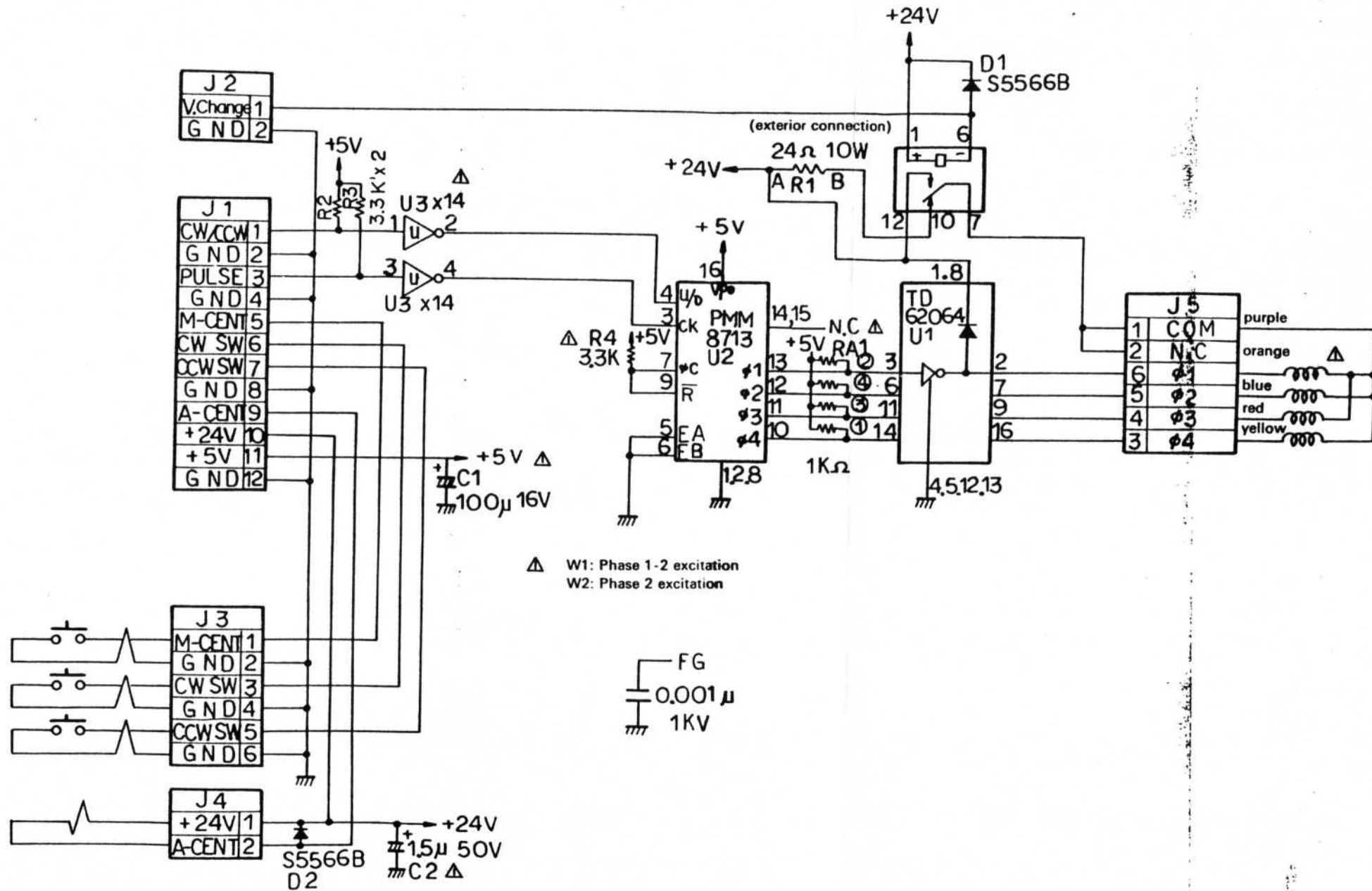
Dotted lines indicate options.

(14)	PART NO.	E9500760150
	DESCRIPTION	T.SPOT/OPERATION PANEL CONNECTION DIAGRAM

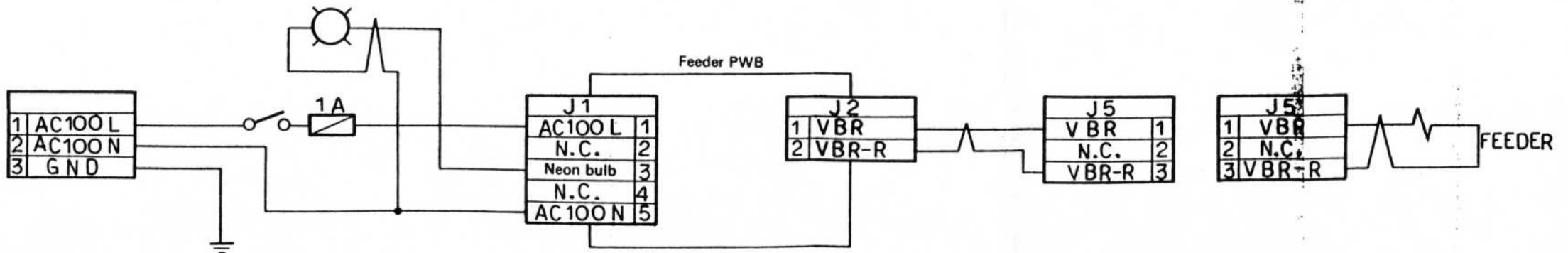
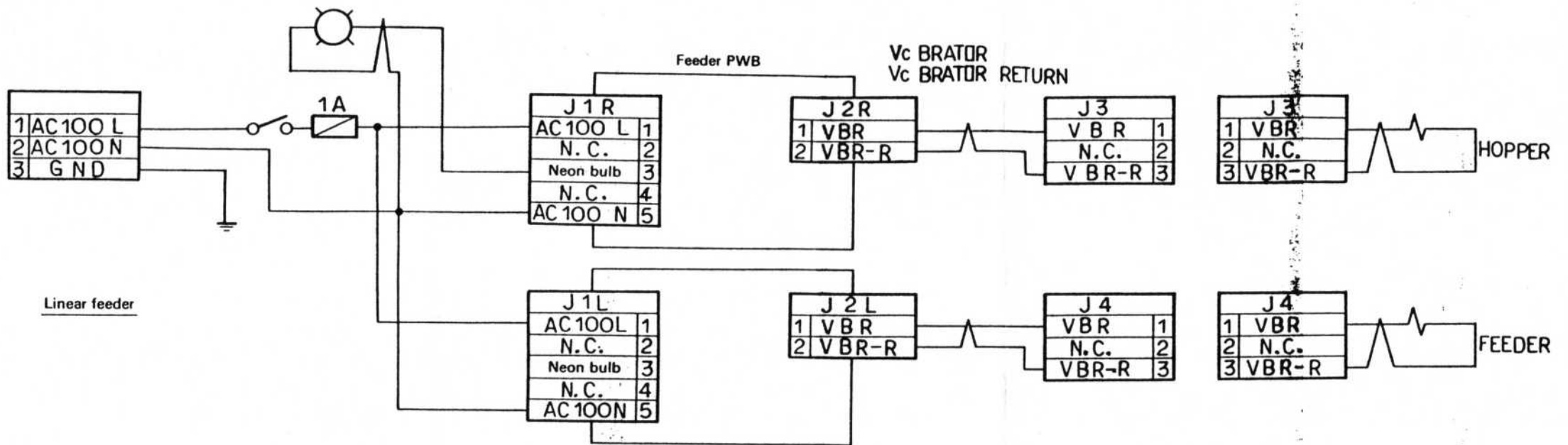


Dotted lines indicate options.

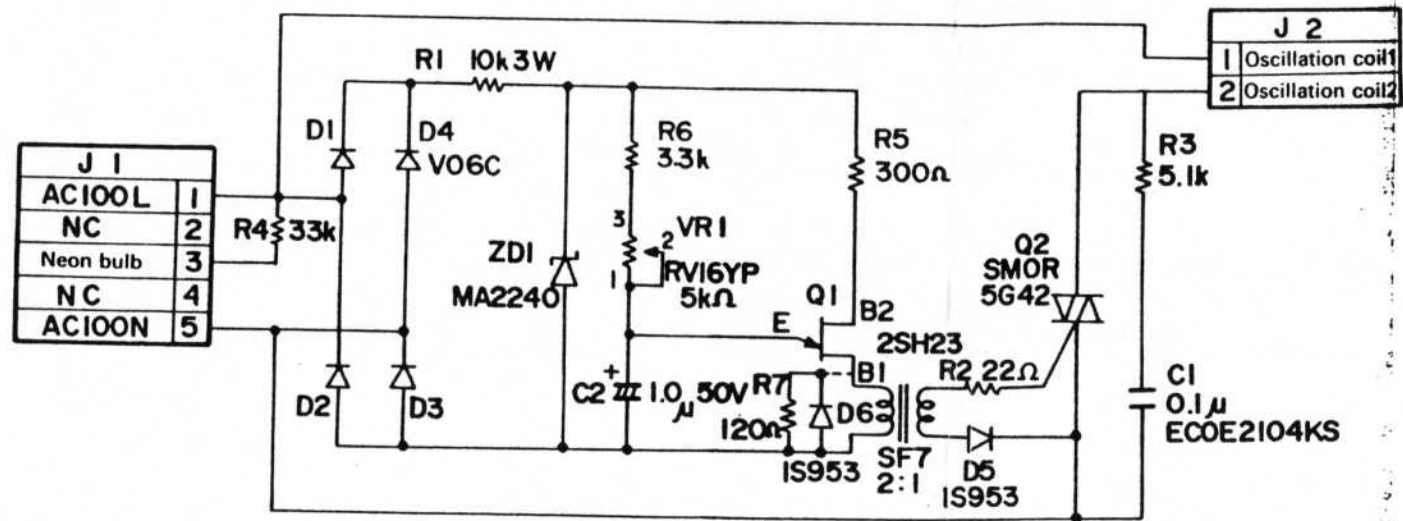
(15)	PART NO.	E9500760160
	DESCRIPTION	READY/DISPENSER/ROTARY TABLE CONNECTION DIAGRAM



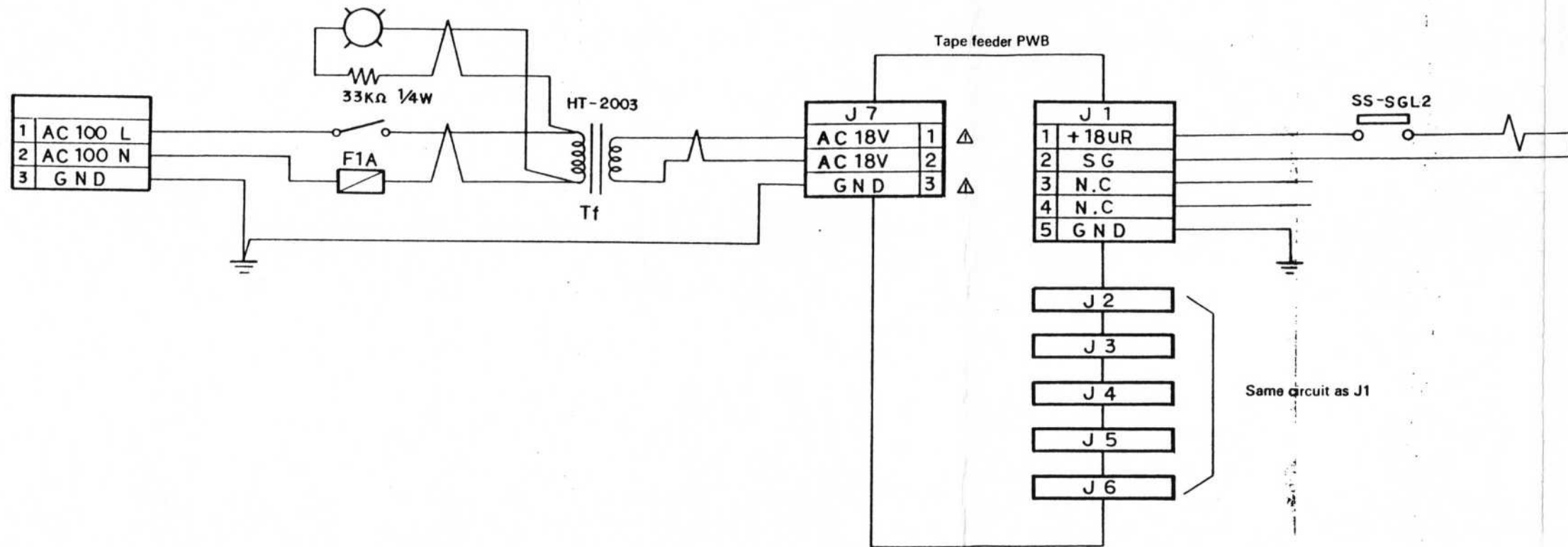
(16)	PART NO.	E9500760170
	DESCRIPTION	RT PWB LOGIC DIAGRAM



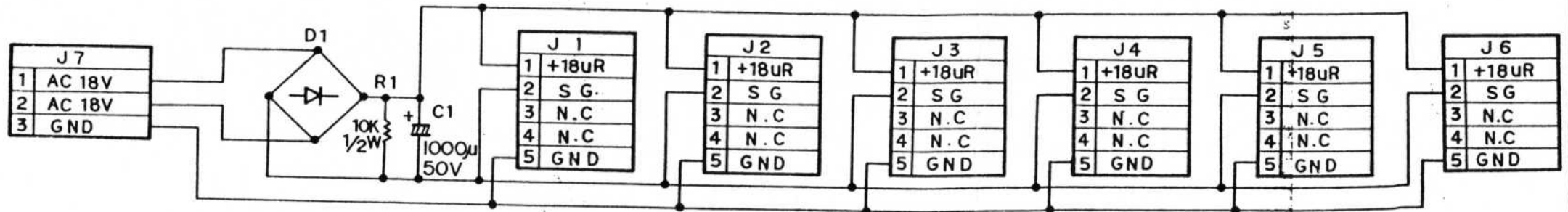
(17)	PART NO.	E9500760180
	DESCRIPTION	LINEAR FEEDER/STICK FEEDER CONNECTION DIAGRAM



(18)	PART NO.	E9500760190
	DESCRIPTION	FEEDER PWB LOGIC DIAGRAM



(19)	PART NO.	E9500760200
	DESCRIPTION	TAPE FEEDER CONNECTION DIAGRAM



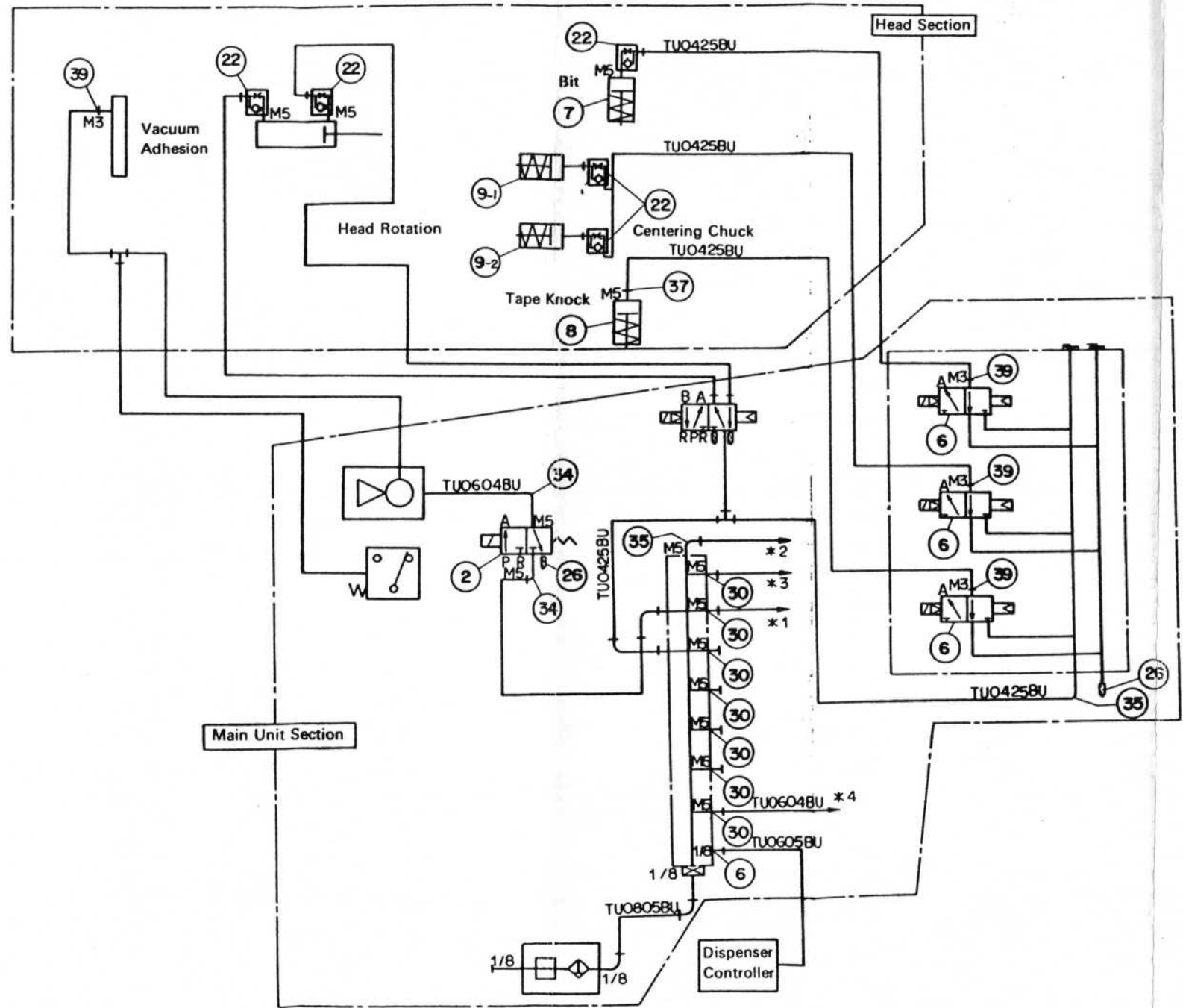
(20)	PART NO.	E9500760210
	DESCRIPTION	TAPE FEEDER PWB LOGIC DIAGRAM

**AIR PRESSURE
SYSTEM DIAGRAM**

9

Section

43		Screw	KQTO4	
42		Plug	1/8	
41		Plug	M-5-P	
40		JOINT	M-3ALU-4	
39		JOINT	M-3AU-4	
38		Rotary joint	RL-4-01	
37		Hose nipple	M-5HU-4	
36			KQY04-01S	
35		Elbow union	KQL04-M5	
34		Elbow union	KQL06-M5	
33		Elbow union	KQL06-01S	
32		Elbow union	KQL08-01S	
31		Half union	KQH04-M5	
30		Half union	KQH06-M5	
29		Half union	KQH08-01S	
28		Hand valve	HV01-6	
27		Silencer	AN120-M3	
26		Silencer	AN120-M5	
25		Speed controller	AS1200F-M5-04	
24		Speed controller	AS1000F-06	
23		Speed controller	AS1200-M3	
22		Speed controller	AS1210F-M5-04	
21		Air cylinder	CJ1D10-15	
20		Air cylinder	CDJ1D10-15-B76S	
19		Solenoid valve	VJ3120-5G-M3	
18		Manifold	VV5J3-20-03	
17		Air cylinder	CJPS6-5-B	
16		Solenoid valve	VJ312-5G-M3	
15		Air cylinder	CJ1WB10-30	
14		Solenoid valve	VJ3120-5G-M3	
13		Air cylinder	MSA10 x 10	
12		Mechanical valve	VM1010-4NU-01	
11		Air cylinder	CJ1B10-15	
10		Solenoid valve	VJ3120-5G-M3	
9 ₂		Air cylinder	CJPS6-10-8 CJPS6-10	
8		Air cylinder	CJPB6-5	
7		Air cylinder	CJPB6-15	
6		Solenoid valve	VJ312-5G-M3	
5		Manifold	VJ3J3-20-04	
4		Pressure switch	PS4	
3	E2603760000	Vacuum generator	VBH12-66	
2		Solenoid valve	**110-5*-5	
1		Filter regulator	AW2000-01BG	
No.	Part number	Part name	Model	Mfgr.



2. When the computer is operating

Trouble	Advice
1 Input is not possible with the computer.	a The keyboard is not connected. b The "kana" key is depressed. c Replace the computer.
2 "Disk full!" is displayed.	a This is displayed when 12 files have already been stored. When this warning message appears, operation can be continued by pressing the return key. (See section 8-4 in the manual.)
3 "Limit over" is displayed.	a Press the return key and then the Home key to return to the Home position. If the Home key does not produce this result, check the connection cable, I/O board, expansion board, and limit sensor. Replace the system disk.
4 The file cannot be saved.	a If 12 files have already been stored, the file cannot be saved under a new name. Save it under a previous filename, or delete a previous file. b In Mount Data Input, if an error number appears when saving a file, it indicates that there is a mistake in that particular line. Correct the mistake.
5 In Mount Data Input, coordinates cannot be automatically calculated.	a The necessary data has not been input. b If coordinates have already been output, press the f-6 key.
6 Copying is not possible in Mount Data Input.	a The developmental data for copying exceeds the effective coordinate range.
7 Feeder specification (F.Pos) is not possible in Mount Data Input.	a Has the unit data been specified? Even if it has, one item may have been omitted.
8 The cement pattern cannot be accessed in Mount Data Input.	a The cement pattern has not been input.
9 A printout (from the printer) is not possible.	a Check the printer's power source and interface cables. b Check the system disk for production management information input.

3. When the moulder is operating

Trouble	Advice
1 The Rotary Table switch and/or main unit cursor cannot be operated.	<ul style="list-style-type: none"> a The unit is not in Teaching mode. b Check the connections of the Rotary Table, the I/O board, and the expansion board. (See the TM for the main unit hardware.)
2 When production is implemented, the system shuts down at that point.	<ul style="list-style-type: none"> a There is an error in the Production mode specifications. b If the unit is in Cement mode, the stored pattern is insufficient.
3 Vacuum adhesion is not effective for parts.	<ul style="list-style-type: none"> a Check the air pressure and tubing. (See the TM for the head.) b Check the vacuum sensor. c Check the expansion board, I/O board, and connectors. (See the TM for main unit hardware.)
4 Teaching is not possible.	<ul style="list-style-type: none"> a Teaching is not possible in Cement mode. (See the manual.) b When the feeder spot was used for teaching, there is "offset", making teaching impossible sometimes. Use the bit to perform teaching. (See the manual.)
5 The X-Y motors do not move.	<ul style="list-style-type: none"> a Check the connections of the I/O board, expansion board, and connectors. (See the TM for main unit hardware.) b Perform an operation check in Test mode.
6 The Rotary Table doesn't move.	<ul style="list-style-type: none"> a The connectors are not properly connected. b Check and/or replace the I/O board and expansion board. (See the TM for main unit hardware.) c See the TM for the Rotary Table.
7 The Automatic Conveyor operation is faulty.	<ul style="list-style-type: none"> a Check to see if connectors are properly connected. b Perform operation checks of the sensor and motor in Test mode. c See the TM for the Automatic Conveyor.
8 The Dispenser operation is faulty.	<ul style="list-style-type: none"> a Check the air pressure and the controller connections. (For details, see the TM for the Dispenser.) b Check and/or replace the I/O board and the expansion board. c Check and/or replace the Head UP/DOWN sensor. (For details, see the TM of the Dispenser.)

	Trouble	Advice
9	Head system operation is faulty. Bit UP/DOWN Rotation Vacuum Centering chuck Tape knock	a Check the air pressure and tubing, and adjust the speed controller. b Check and/or replace the I/O board, expansion board, and connectors. c For details, see the TM for the Head.