Publication No. MA 3058-24
11/92

MODIFICATION INSTRUCTIONS

for the

KODAK X-Omatic MULTILOADER 300

Service Code 3058

MODIFICATION No. 24

Type 1 REQUIRED

PURPOSE:

To increase reliability by checking and performing several adjustments.

IMPORTANT : Only qualified personnel should do the described adjustments.

SERIAL NUMBERS : 1001 to 1310

TIME : approx. 3 h

SPECIAL TOOLS : VERNIER CALIPER
ADJUSTMENT PLATE 9193386
DENTIST MIRROR TL-2753
BLOWPIPE POSITIONER MAGAZIN TL-4582

PARTS REQUIREMENTS **: No modification Kit available. This modification only requires adjustments!**

PLEASE NOTE

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1. CASSETTE REGISTRATION SENSOR B2

Purpose:

To make sure that the B2 Sensor is not deactuated by a curved CASSETTE before it is removed from the XML 300.

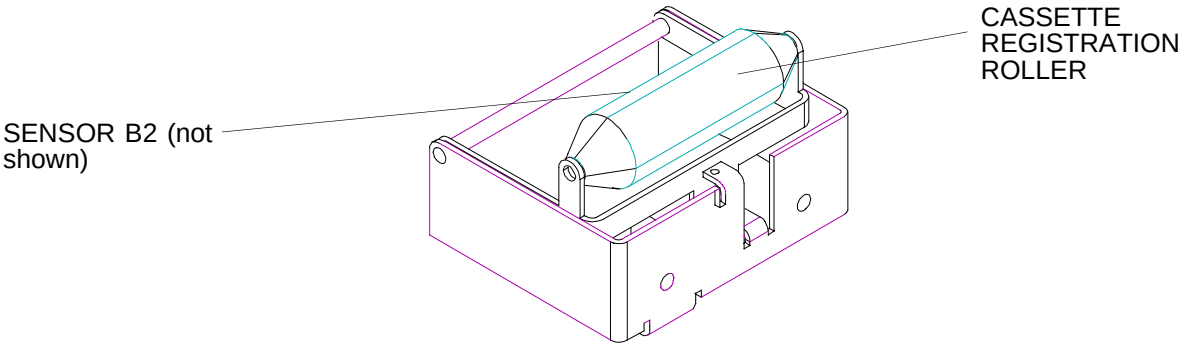


figure 1

1. Take out the MAGAZINES to avoid FILM FOGGING.

2. Connect the LAPTOP Computer to the XML 300 and start the Service Software.

3. Go to COMPONENT TEST.

4. Take off the TOP COVER, REAR PANEL, and both SIDE PANELS.

5. Use LAPTOP/SENSORTEST.

6. If the distance between the CASSETTE REGISTRATION ROLLER level and the TRANSPORT ROLLER level is less than 3mm (fig. 2), proceed with step 7, else proceed with item 2 CASSETTE OPENER.

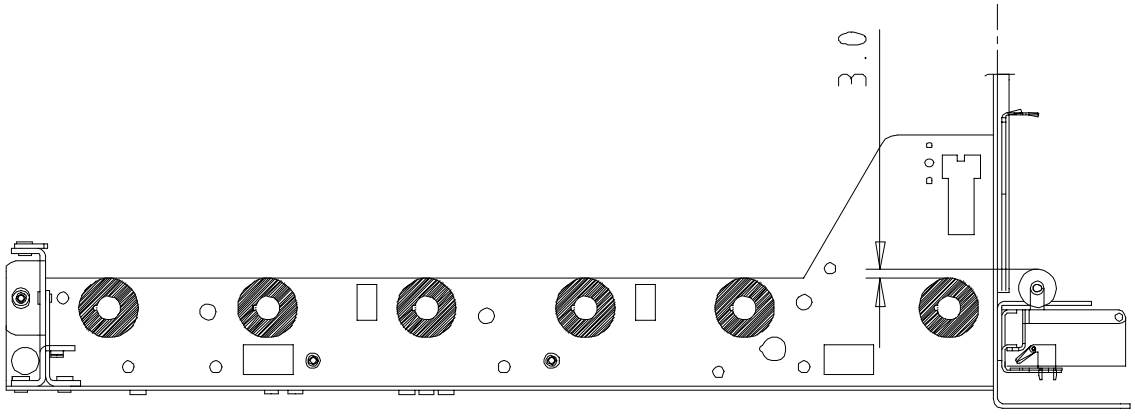


figure 2

7. Remove DISPLAY PANEL.

8. Remove CASSETTE REGISTRATION MECHANISM.

9. Make 2 vertical slots out of the mounting holes by using a file.

10. Reinstall the CASSETTE REGISTRATION MECHANISM at the correct place and proceed with step 6.

11. Install the DISPLAY PANEL.

2. CASSETTE OPENER

1. Actuate the OPENER ROTARY SOLENOID by using the LAPTOP.

2. If the OPENER SHOVEL is only just touching the OPENER PLATE (figure 3), proceed with step 5, else proceed with step 3 .

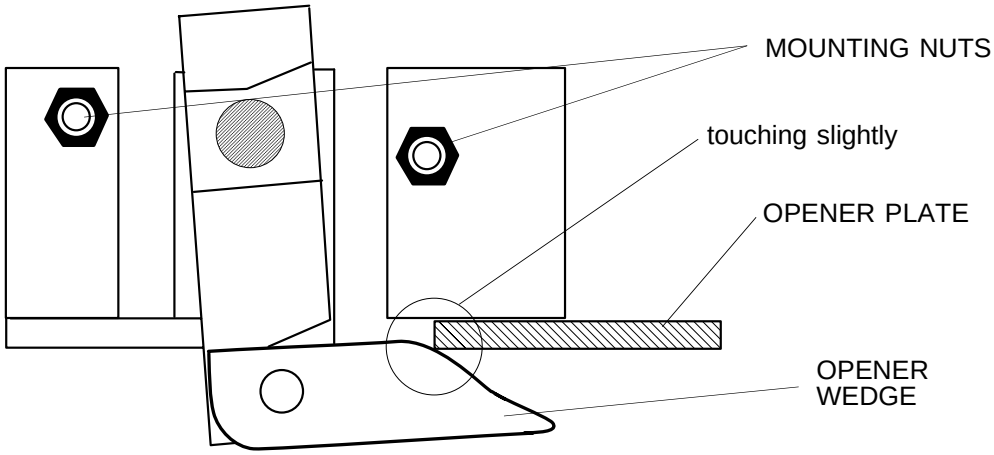


figure 3

3. Loosen the MOUNTING NUTS and turn the ROTARY SOLENOID (fig. 4).

4. Tighten the MOUNTING NUTS and proceed with step 1.

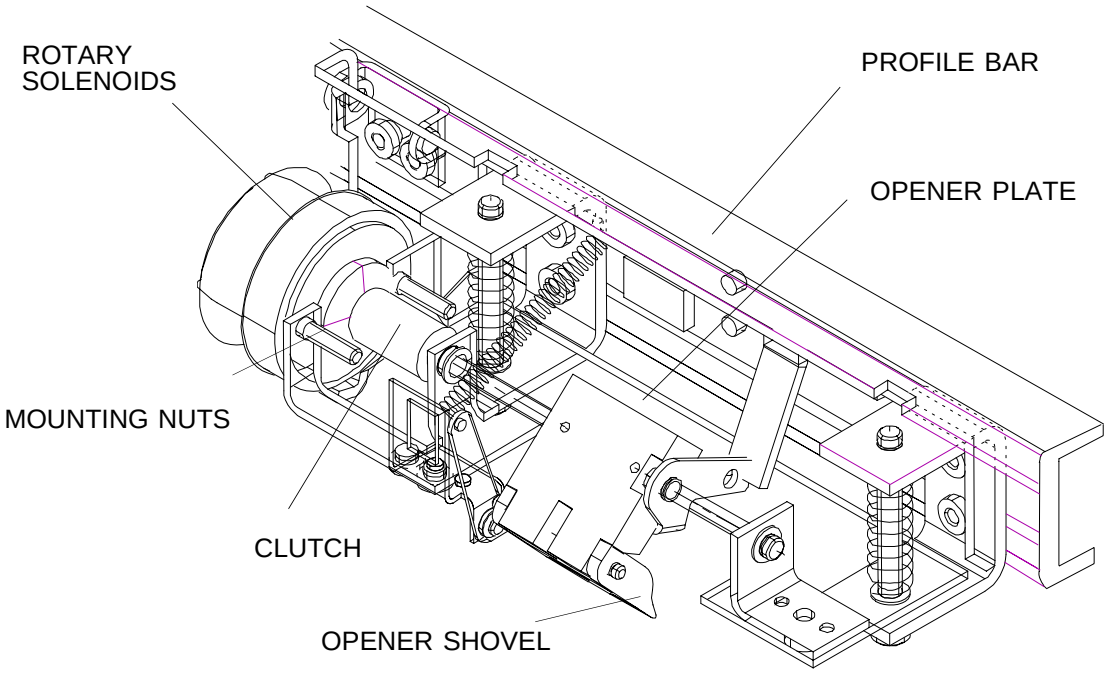


figure 4

5. Make sure that the CLUTCH can be moved slightly to the left and right using only low force.

3. CASSETTE - BLOWPIPE

PART 1: Check function of BLOWPIPE HOLDERS.

1. Check the movement of the BLOWPIPE HOLDERS in the direction of the arrows in figure 5. Be sure that the spring function is correct.

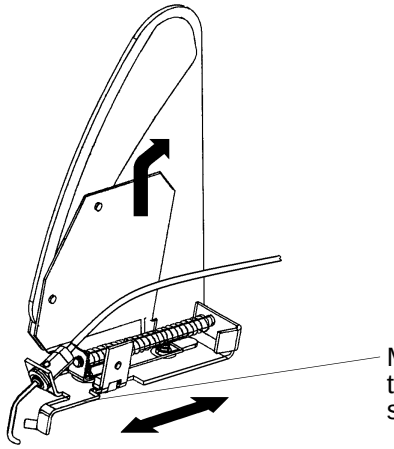


figure 5

2. If necessary, repair or replace the damaged parts.

PART 2: BLOWPIPE POSITION

Purpose:

This ensures that the BLOWPIPE will not interfere with the CASSETTE edge.

Check the distance between the tip of BLOWPIPE and the edge of the CASSETTE (figure 6). Use X- OMATIC CASSETTE 18 x 24 or MIN R2 CASSETTE 18 x 24 if X-OMATIC CASSETTE is not available.

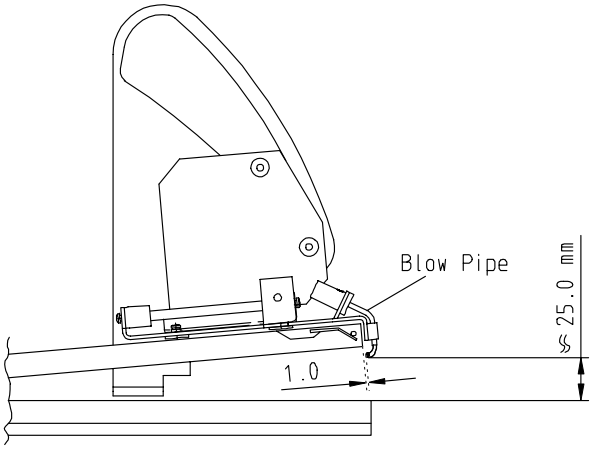


figure 6

1. Place CASSETTE on ROLLER and against the CASSETTE STOP.

2. Move the CENTERING BARS by hand.

3. Move HOLDING FINGER by hand.

4. Lift the CASSETTE LID by hand and check for distance as shown in figure 6.

5. Check in the SERVICE MODE that the BLOWPIPE HOLDERS rest on the CASSETTE LID in blow position.

NOTE

Lower the CASSETTE OPENER carefully and check that the right hand BLOWPIPE does not interfere with parts of the OPENER mechanism.

4. CASSETTE SUCKERBAR

Purpose:

This adjustment ensures that the CASSETTE SUCKERBAR CARRIAGE travels the correct distance, that the rear end position is correct, and that the CASSETTE SUCKERS are withdrawn correctly from the FILM, as it is picked up by the TRANSPORT ROLLERS to avoid static or pressure marks.

NOTE

This procedure is divided into 2 parts. Part 1 is for the adjustment of SENSOR B17/C_PU_EF and B18/C_PU_ER. Part 2 is for the adjustment of the ENDSTOP SCREW.

NOTE

Recent testing has shown that one of the main causes of SUCKER marks is contamination of the SUCKER surface. This contamination can be any of a number of substances ranging from natural body oil, sweat, or even KODAK Intensifying Screen Cleaner and anti static Solution (which has sometimes been recommended for cleaning SUCKERS!).

Do not use KODAK Intensifying Screen Cleaner and anti static Solution to clean the SUCKERS!

If a SUCKER is touched during installation or a repair or adjustment procedure it must be properly and carefully cleaned as detailed below, or film artifacts may result. This procedure should also be followed, if new SUCKERS are fitted.

1. Abrade the surface of the SUCKER carefully using Emery Cloth grade 400, or a similar material.

2. Lightly coat the SUCKER with NATURAL (un-perfumed) talcum powder (available from all chemists and pharmacies

SAFETY PRECAUTION

When you do this adjustment, you are working close to the CASSETTE OPENER. Make sure that the CASSETTE OPENER is not started when someone's hands are in this area.

Special Tools: VERNIER CALIPER

ADJUSTMENT PLATE 919 4801

PART 1

1. Measure the distance between the REAR STEEL ROD and the MOUNTING BRACKET of SENSOR B17. It should be 170 +/- 1 mm.

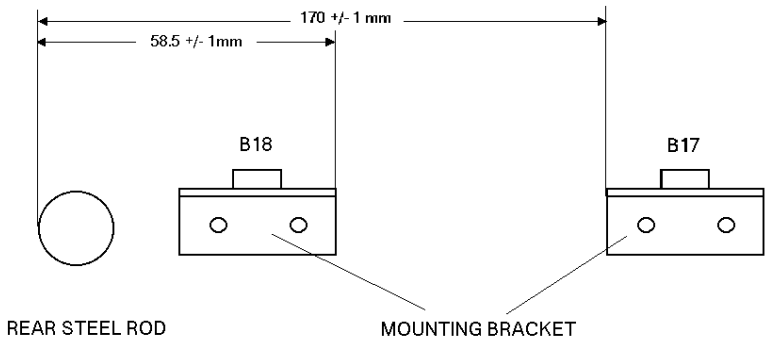


figure 7

2. If the distance is not correct, change the position of the B17 MOUNTING BRACKET.

3. Measure the distance between the REAR STEEL ROD and the MOUNTING BRACKET of SENSOR B18. It should be 58.5 +/- 1 mm.

4. If the distance is not correct, change the position of the MOUNTING BRACKET for SENSOR B18.

PART 2: SUCKERBAR ADJUSTMENT

1. Put the ADJUSTMENT PLATE 919 3386 to the CASSETTE ENDSTOP.

NOTE

This tool is also used on ML 700.

2. Connect the LAPTOP COMPUTER to the XML 300 and start the Service Software:

Select Drive C:\.
Key in **CD\XML300** and press ENTER.
Key in **START** and press ENTER.

3. Select **SERVICE MODE ML 300**.

4. After the ENTER SERVICE MODE message is displayed, press ENTER.

5. The UNIT DATA are displayed, press ENTER.

6. Move the CASSETTE SUCKERBAR about 40 mm forward by hand (figure 8).

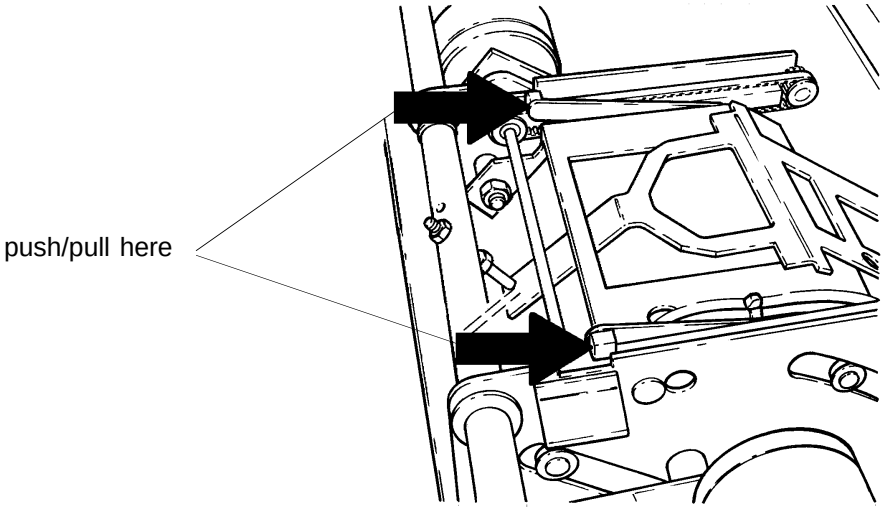


figure 8

7. Tilt the CASSETTE SUCKERBAR in the COMPONENT TEST MODE.

8. Move the CASSETTE SUCKERBAR forward by hand to the ADJUSTMENT PLATE P/N 919 3386.

9. Check that the edge of the SUCKERS is 18 mm +1 -0 away from the rear of the ADJUSTMENT PLATE (PN 919 3386) .

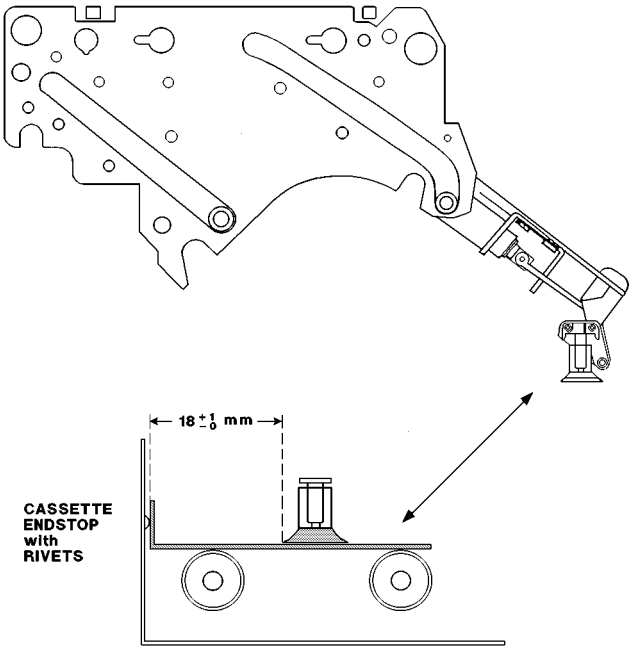
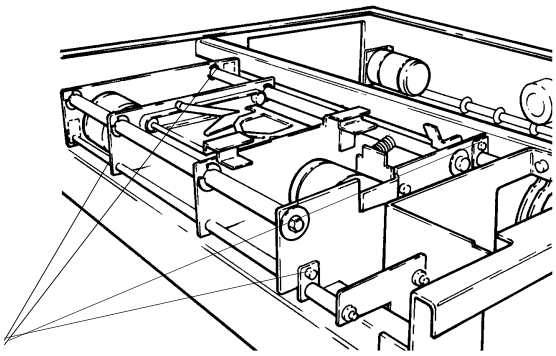


figure 9

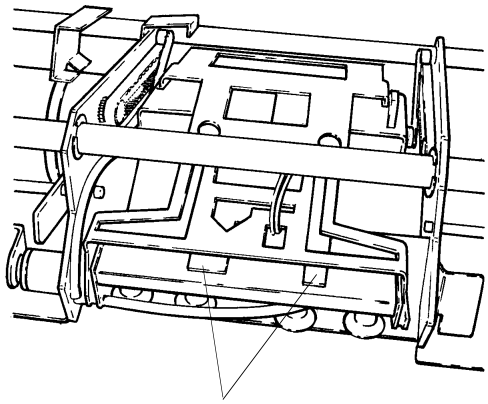
10. If the distance is not correct, loosen the RETAINERS and move the CONVEYOR forward or backward, as required, and fasten the RETAINERS.



RETAINERS

figure 10

11. If it is not possible to reach the 18 mm (figure 9, step 9), bend the parts shown in figure 11.



carefully bend here, but
only if necessary

figure 11

PART 3: TESTING

1. Do CONTINUOUS LOOP.

To select CONTINUOUS LOOP do the following:

a) Move DIP SWITCH S1-1 on PCB A1 to the ON (up) position. The OPERATOR CONTROL PANEL will now show the following possibilities:

FUNC UNLOAD LOAD SERIAL PROC

b) Press FUNC to get the following display:

TYPE 2 SYSTEM USAGE LANG CLEAR

c) Press SYSTEM to get the following display:

TIME HISTO CONTIN INFO RETURN

d) Press CONTIN to get the following display:

TYPE 2 SYSTEM USAGE LANG CLEAR

e) Press CLEAR . The display will show the normal user.

f) To end the CONTINUOUS LOOP MODE, a malfunction must occur, or you can press the CASSETTE ENTRY SWITCH.

2. Feed in a loaded CASSETTE 18 x 24 cm.

3. Observe from the right hand side that the trailing edge of the FILM just touches the CASSETTE SUCKERS (look at the middle of the SUCKERBAR), when the FILM is transported into the CONVEYOR (figure 12).

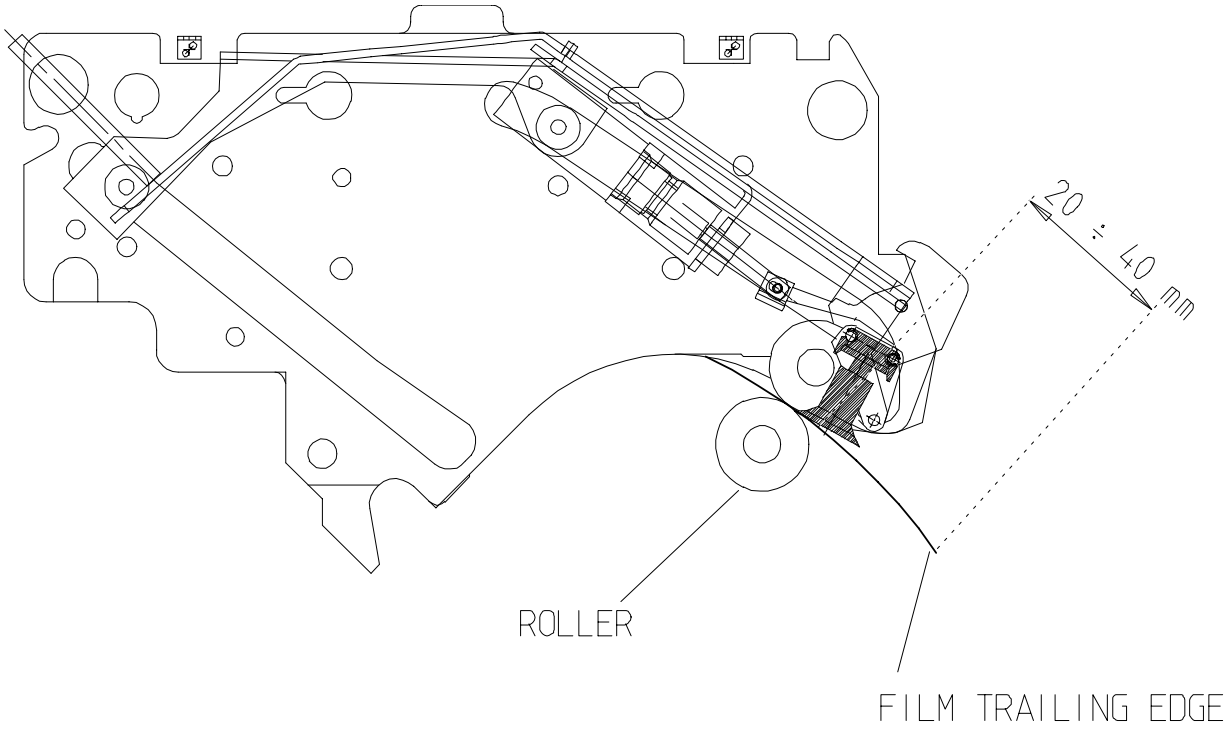


figure 12

4. If the distance between FILM and SUCKERS is not correct, turn the ENDSTOP SCREW in or out as required. Do not forget to lock the NUTS.

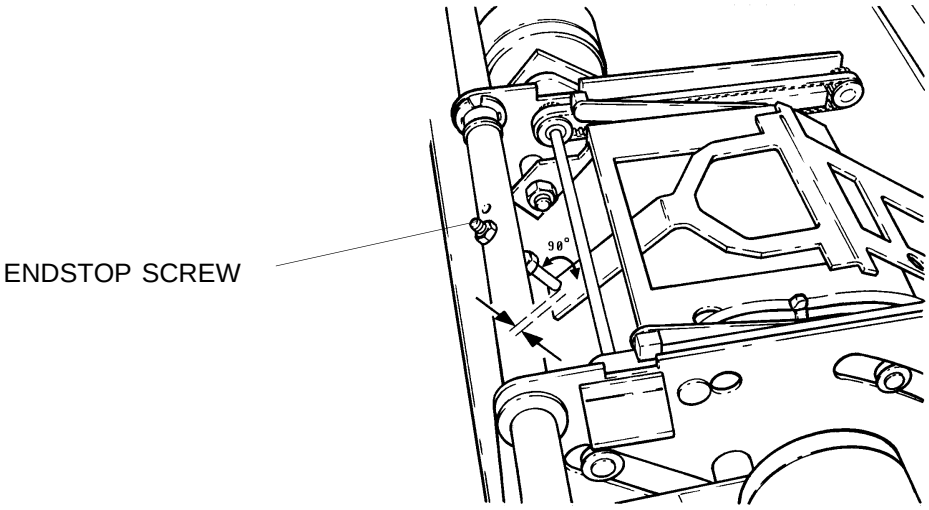


figure 13

NOTE

The ENDSTOP SCREW will lift the CASSETTE SUCKERBAR away from the film when it enters the ROLLERS.

Part 4: ADJUSTMENT OF SENSOR B20 VACUUM OFF

The procedure is valid for all XML 300, no matter if CONNECTOR A8x50 has 3 pins or 6 pins. If it has 6 pins, leave the jumper in the position where it was set by the Manufacturer. It must be in the middle position (pin 2-5)

Purpose:

This adjustment ensures that the LEADING EDGE of the CASSETTE FILM is detected to turn off the CASSETTE SUCKERBAR VACUUM. Use only SENSORS P/N 922 8991. They are selected and known as good.

CAUTION

Take proper ESD SAFETY PRECAUTIONS when doing this adjustment.

1. Switch off the XML 300.

2. Pull out U37 of PCB A8.

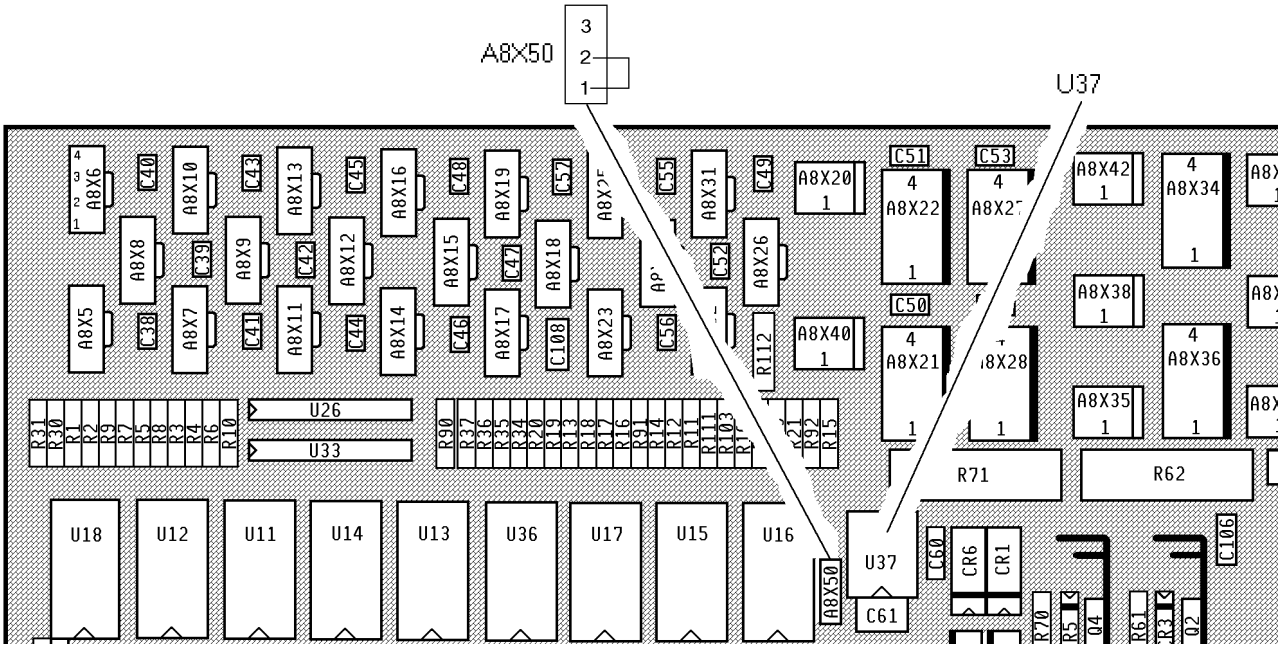


figure 14

3. Short PIN 1 to PIN 3 at the SOCKET of U37.

4. Connect the DVM to TP11 on PCB A8 and to TP10 (GND PE) on PCB A8 (figure 16, next page).

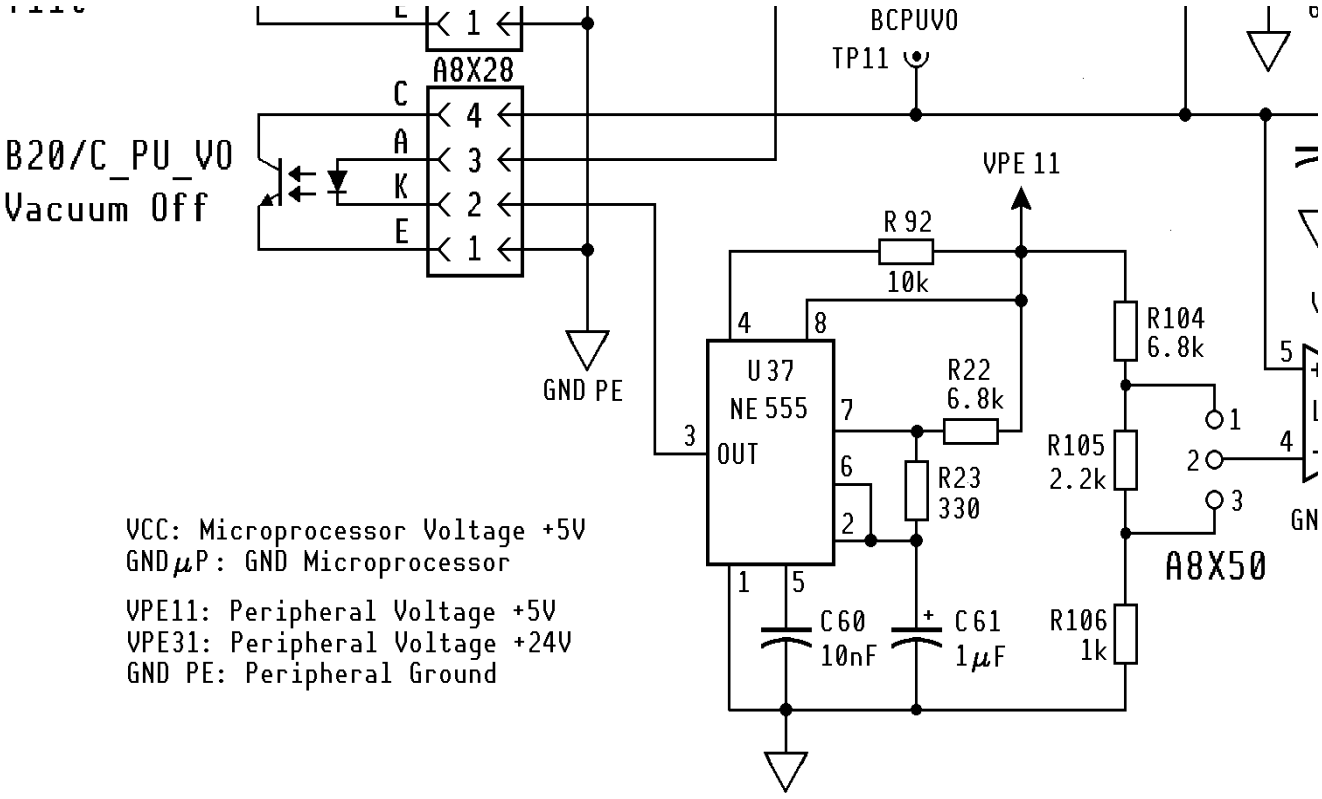


figure 15

5. Switch on the XML 300.

WARNING

You are now working in the CASSETTE OPENER AREA. Be very careful that the CASSETTE OPENER is not started by accident. Do not override the INTERLOCK SYSTEM.

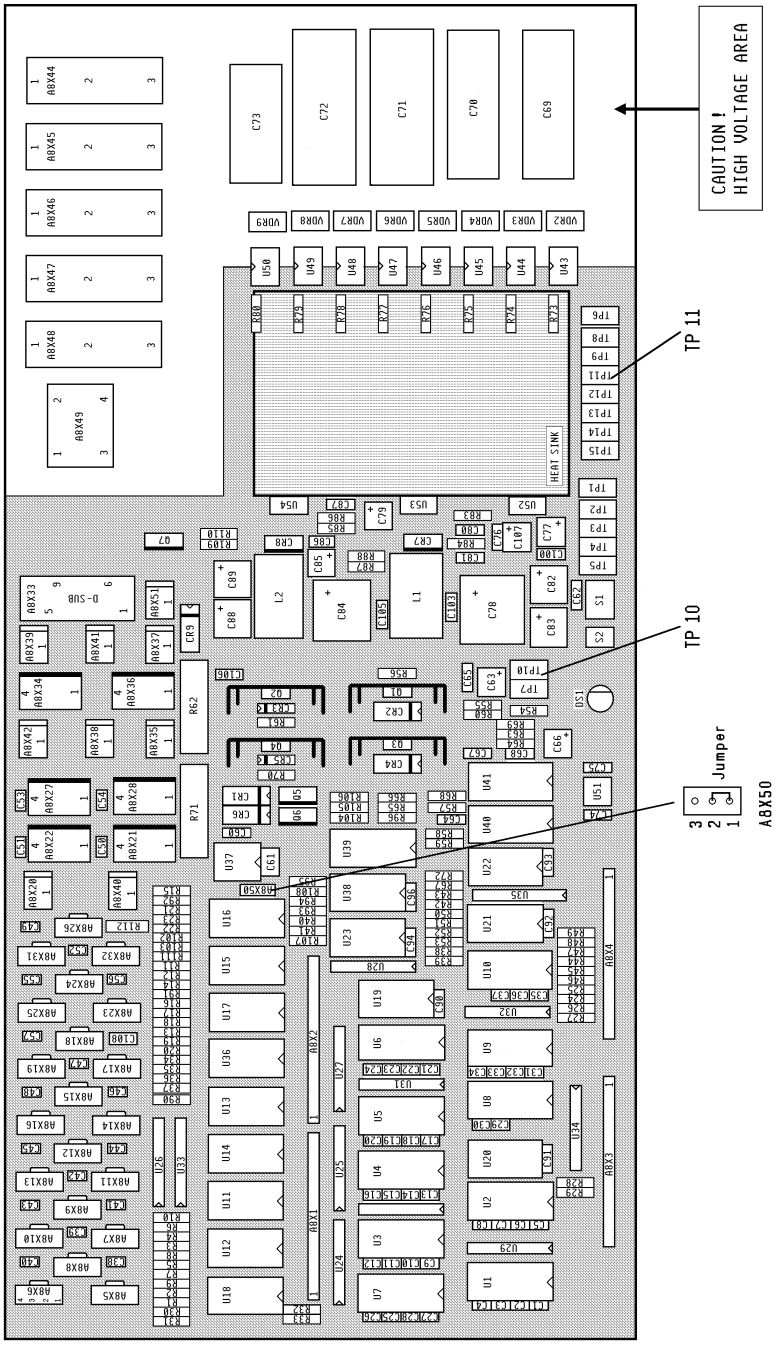


figure 16

6. Adjust the mechanical position of SENSOR B20 relative to its MIRROR, so that the indicated voltage is < 500mV.

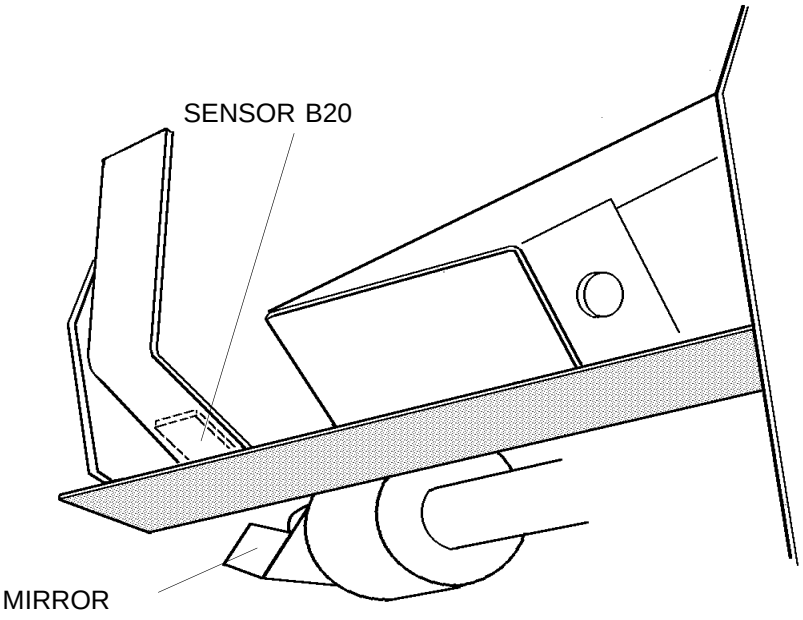


figure 17

7. Interrupt the infrared beam with a FILM. The voltage should now be > 2.2V. Check this with all different types of customer films.

8. If the voltage is not correct, reposition SENSOR B20 and its MIRROR.

NOTE

The position of the MIRROR is not adjustable.

9. Switch off the XML 300.

10. Take out the JUMPER between PIN 1 and PIN 3 at the SOCKET of U37.

11. Install U37.

12. Check the setting of JUMPER A8x50. The JUMPER has to be between 1 and 2.

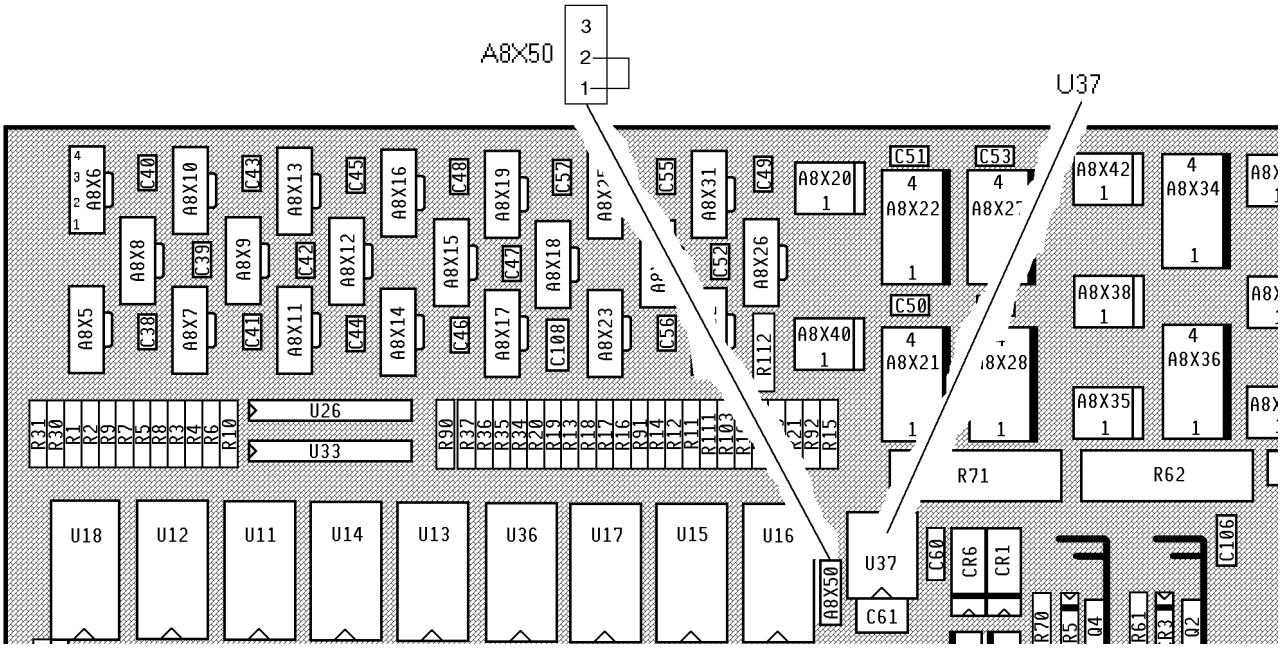


figure 18

13. Switch on the XML 300.

14. This adjustment is sensitive to vibrations of the DRIVE SHAFT. Therefore it is not enough to do it in the static mode. It has to be repeated in the dynamic mode as well.

WARNING

Keep your hands out of the CASSETTE OPENER AREA when doing the measurements.

5. FILM CHUTE

Two movable and adjustable flaps are included in the CHUTE SUBASSEMBLY (figure 19).

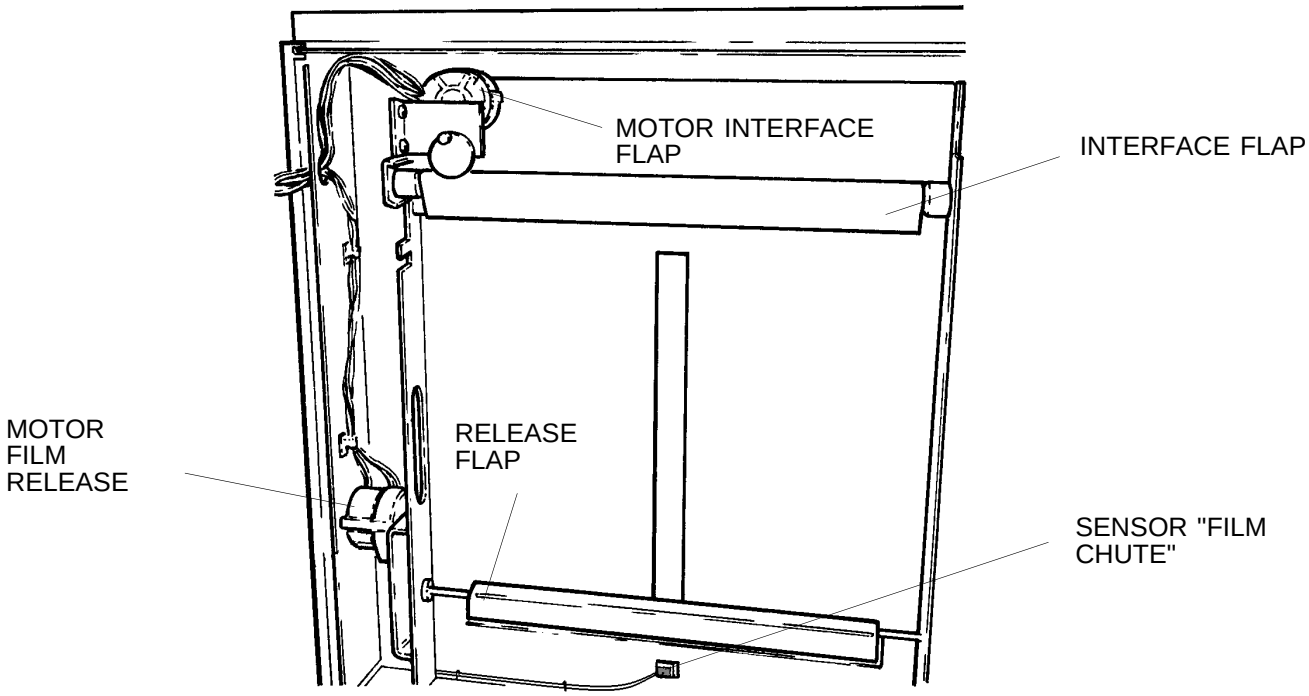


figure 19

INTERFACE FLAP (figure 19)

This flap should protect the FILM in the FILM CHUTE from light. The distance between the plush strip and the flap should not be more than 2 mm.

PART 1: ADJUSTMENT OF THE CAM

The INTERFACE FLAP MOTOR should stop when the INTERFACE FLAP is closed.

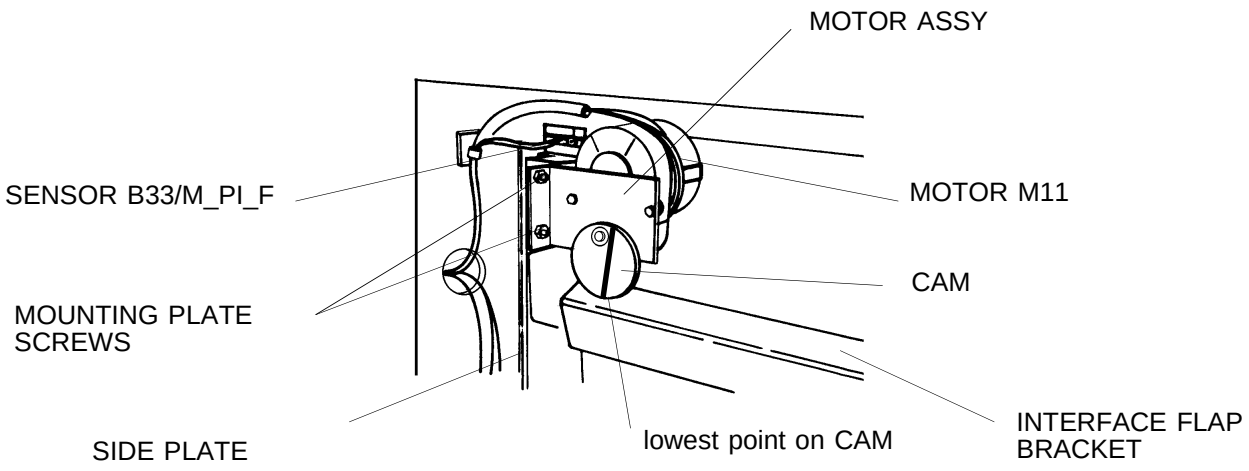


figure 20

1. Take out the FILM CHUTE.

2. Turn the CAM clockwise by hand until the lowest point of the CAM rides on the INTERFACE FLAP BRACKET.

3. Make sure that the distance between the plush and the INTERFACE FLAP is not more than 2 mm. If necessary, move the MOTOR ASSEMBLY down or up after loosening the MOUNTING SCREWS.

4. Switch on the MOTOR with the LAPTOP.

5. While the CAM is turning, make sure that the SIDE PLATE (figure 20) is moving only slightly when the CAM is touching the INTERFACE FLAP BRACKET. If necessary, go back to step 3.

PART 2: ADJUSTMENT OF SENSOR B 33

The INTERFACE FLAP MOTOR should stop when the INTERFACE FLAP is closed. this is basically correct. However, especially when operated with 60 Hz the INTERFACE FLAP MOTOR M11 does not stop immediately and the SENSOR B33/M_PI_F may by released. If now the next CASSETTE is unloaded, the CASSETTE TASK believes that the INTERFACE FLAP is already open. In this case the FLAP is not opened and the FILM falls into the area of the FILM POCKET. To avoid this failure, adjust SENSOR B 33 so that the MOTOR M11 is stopped reliably, before the CAM reaches the lowest position (figure 20).

NOTE

In some units MOTOR M11 runs clockwise and in others counter-clockwise. This has no effect on the function.

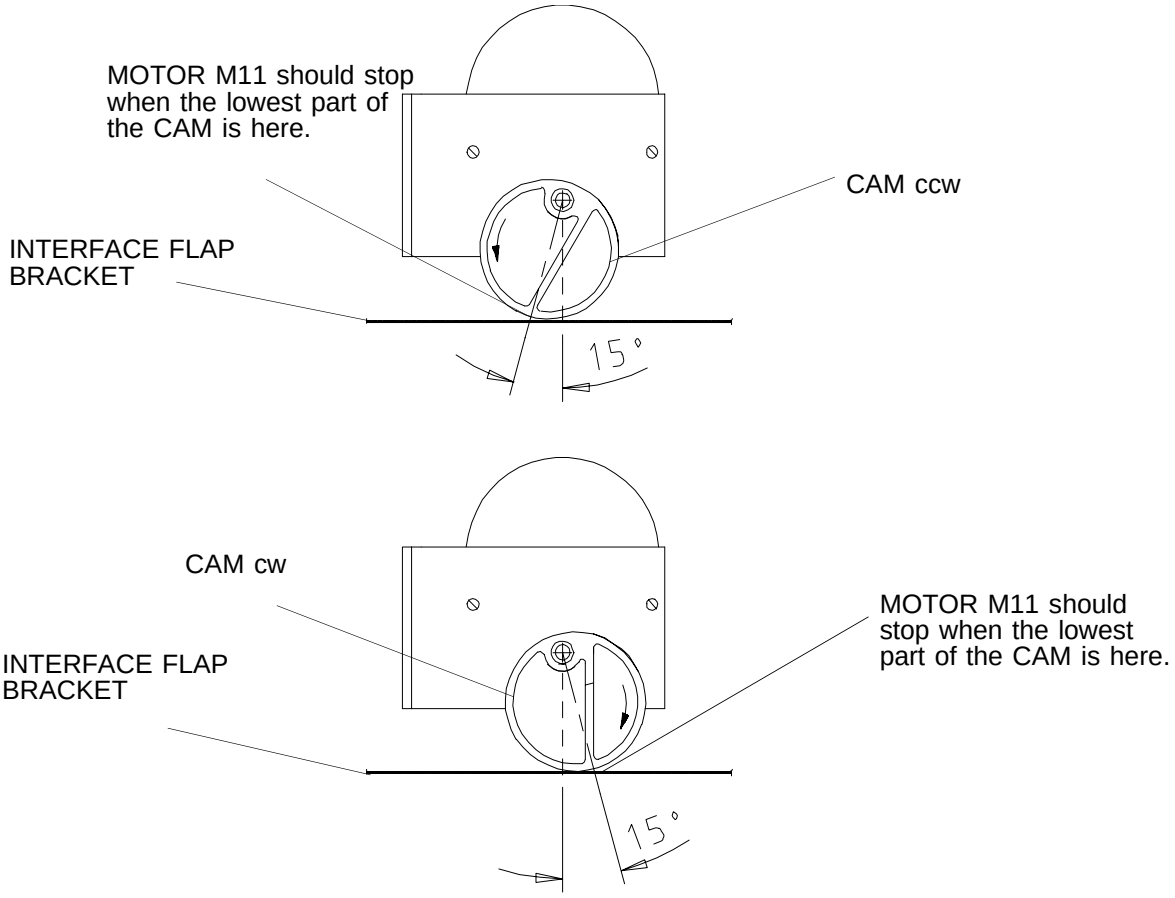


figure 21

PART 3: FILM RELEASE

Purpose:

Using the LAPTOP, check if the FILM RELEASE in the FILM CHUTE is closing completely as shown in figure 22.

NOTE

It the FILM RELEASE is not closing as shown in figure 22, it may result in scratches on the FILM or in a film jam in the FILM CHUTE.

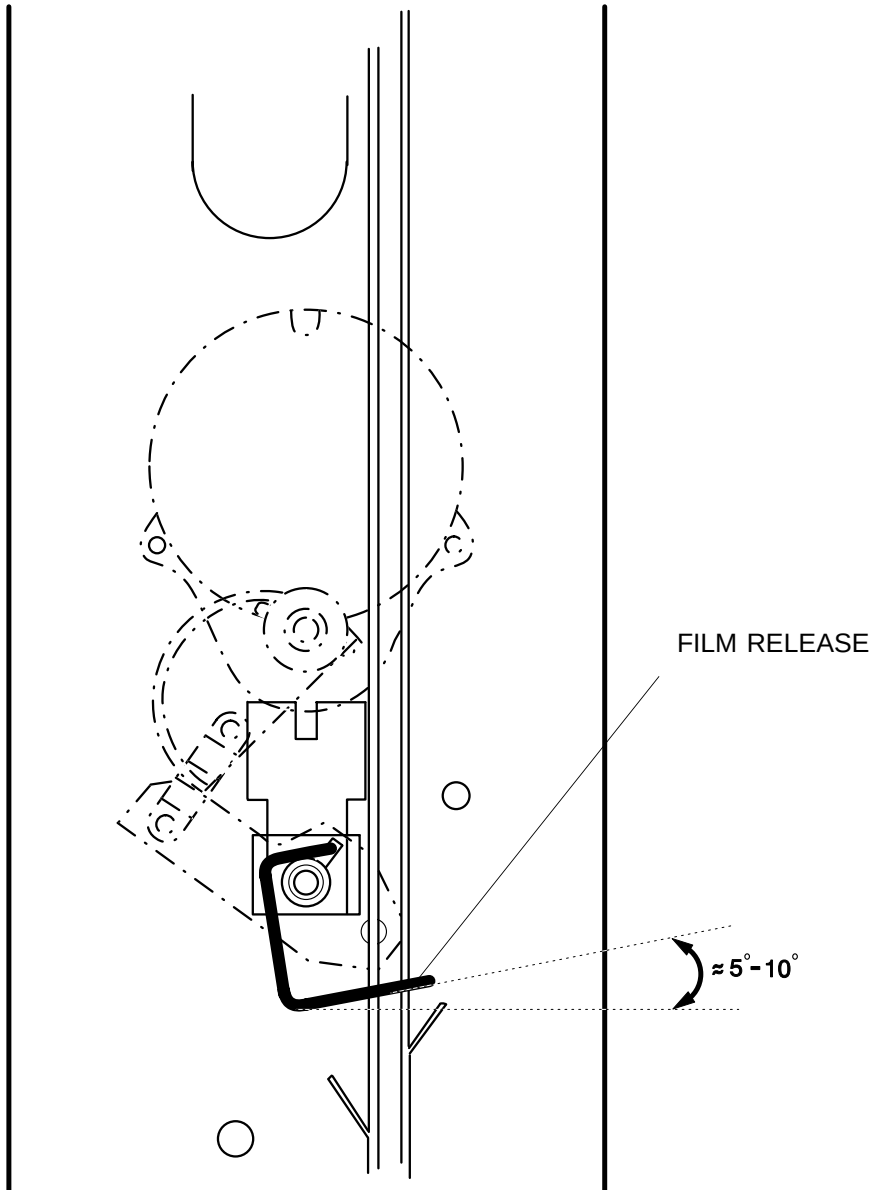


figure 22

If necessary, make the MOTOR FILM RELEASE ADJUSTMENT.

MOTOR FILM RELEASE ADJUSTMENT

Purpose:

To hold the FILM securely back until it can be delivered to the PROCESSOR.

1. Enter the SERVICE MODE. Use the LAPTOP.

2. Start the MOTOR FILM RELEASE. Wait until it reaches HOME POSITION and stops.

3. Loosen the MOUNTING SCREWS.

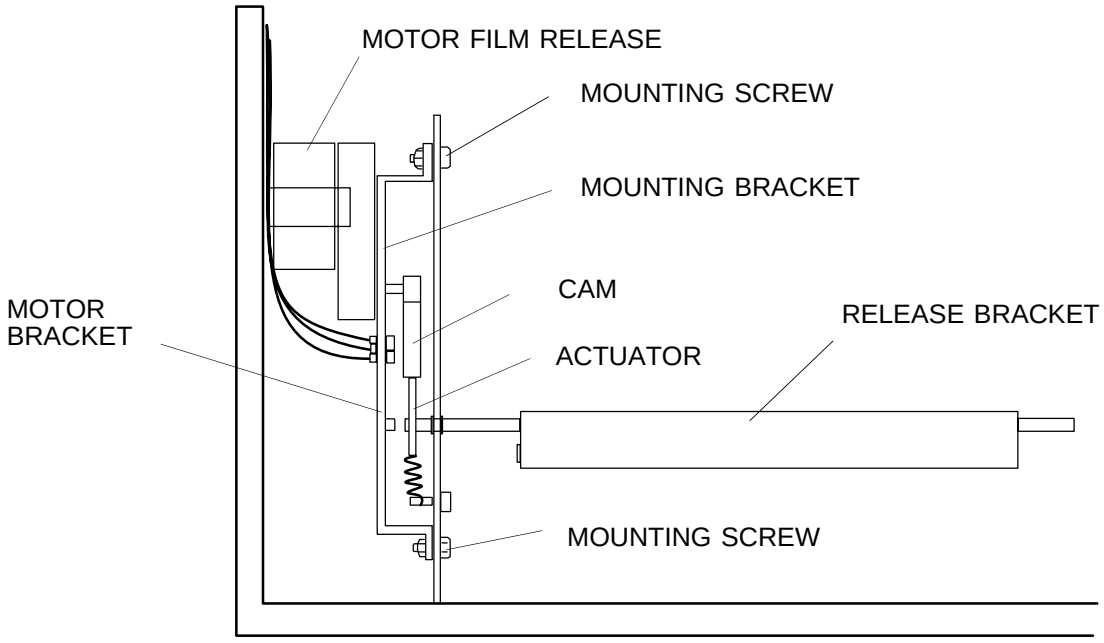


figure 23

4. Manually close the RELEASE FLAP and hold it.

5. Move the MOUNTING BRACKET until there is a gap of 1 mm between the CAM and the ACTUATOR.

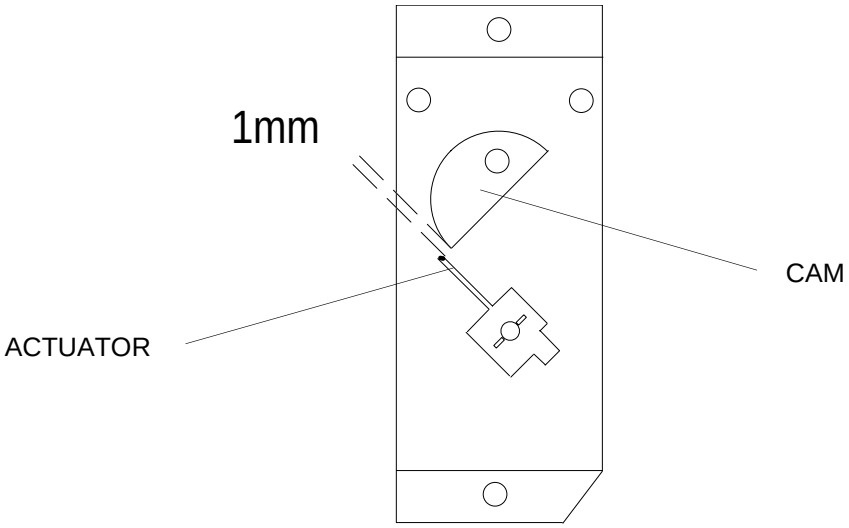


figure 24

6. Fasten the MOUNTING SCREWS.

7. Exit the SERVICE MODE.

PART 4: ADJUSTMENT OF SENSOR B35 FILM IN INTERFACE BOTTOM

Purpose:

This adjustment ensures that the FILM is recognized in the bottom of the FILM CHUTE.

CAUTION

Take proper ESD SAFETY PRECAUTIONS when doing this adjustment.

1. Switch off the XML300.

2. Pull out U41 off PCB A4.

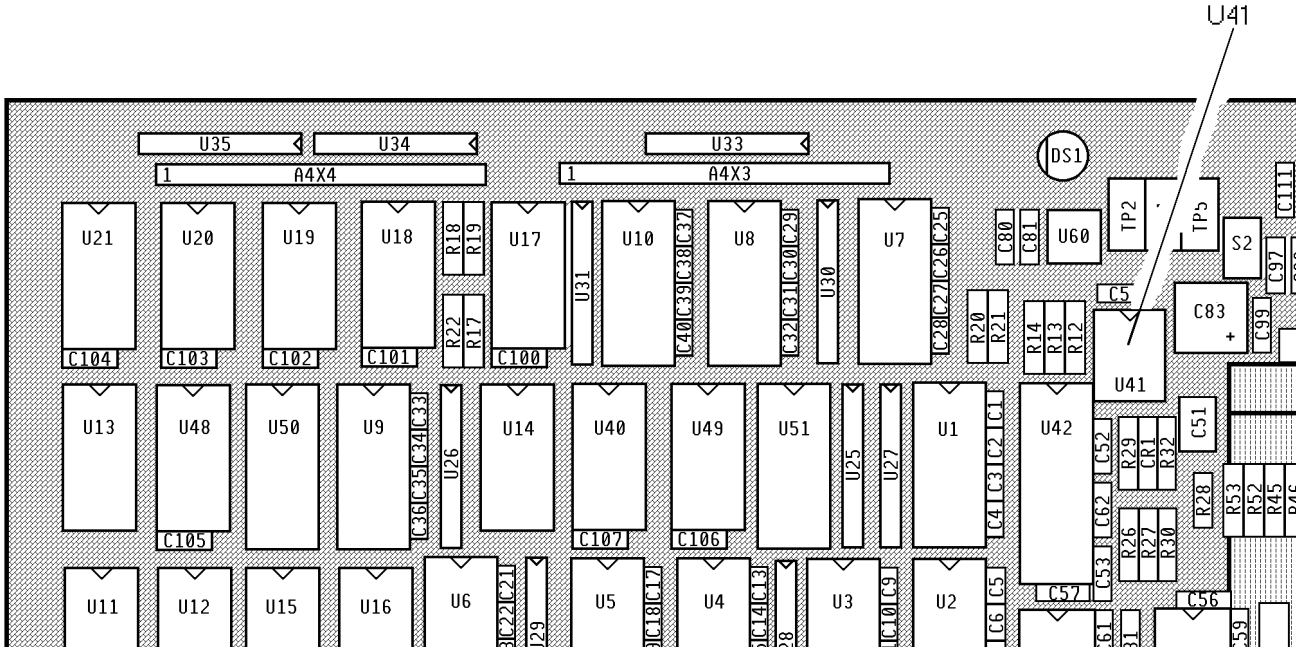


figure 25

3. Connect PIN 1 to PIN 3 at the SOCKET of U41.

4. Connect the DVM to TP12 of PCB A4 and to TP11(GND PE) of PCB A4 (see fig. 28,next page).

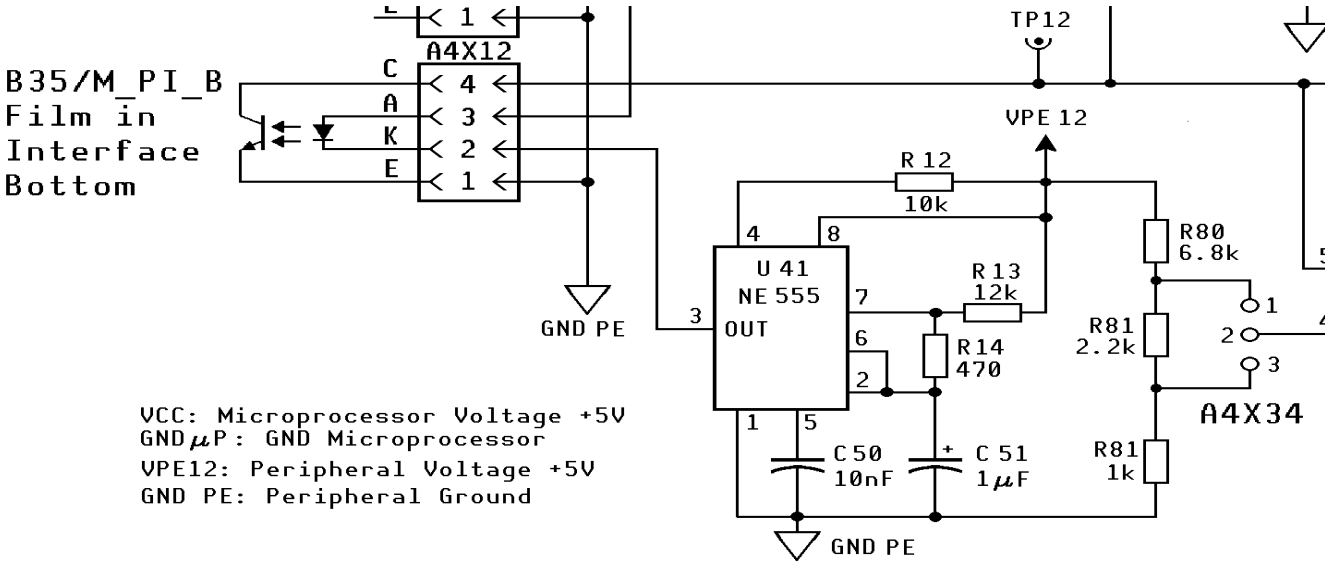


figure 26

5. Switch on the XML300.

6. Adjust the mechanical position of B35 relative to its MIRROR, so that the indicated voltage is < 500mV.

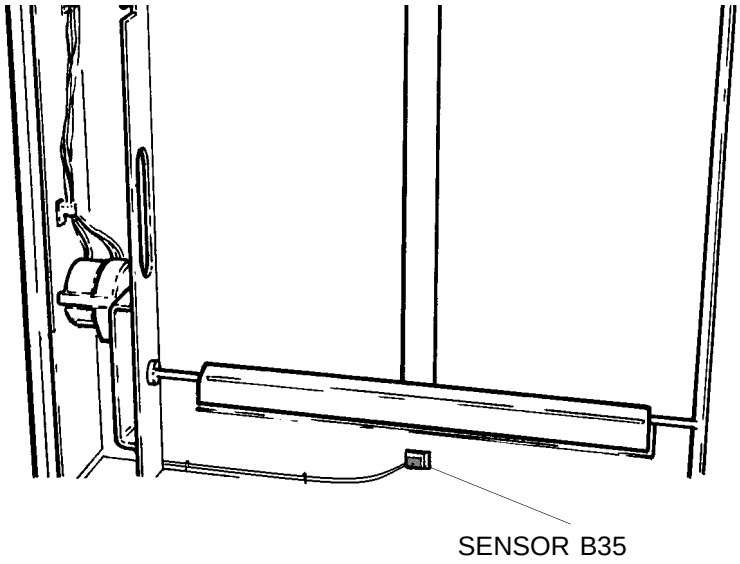


figure 27

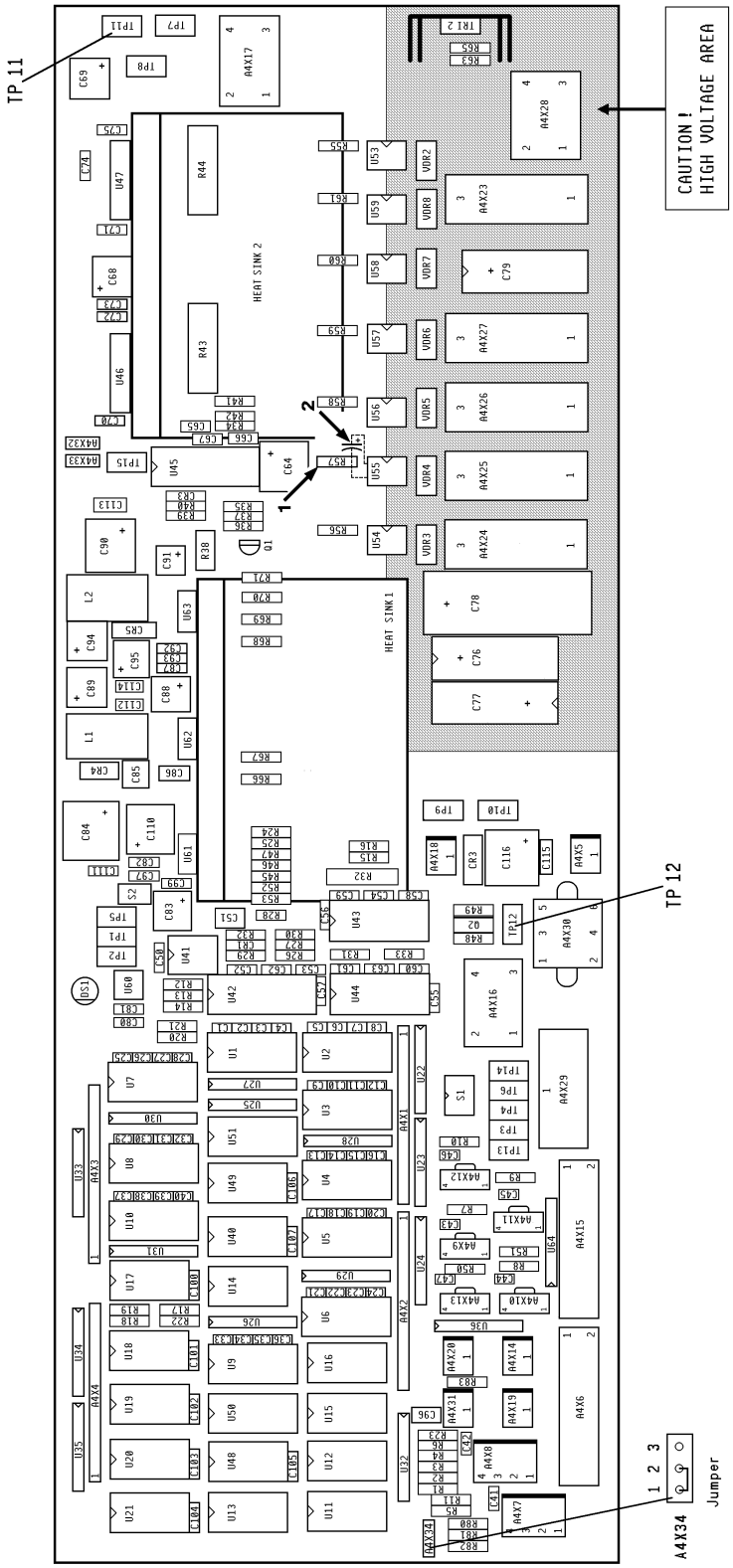


figure 28

7. Interrupt the infrared beam with a FILM. The voltage should now be > 2.2 V.

NOTE

The FILM should be close to the SENSOR and not close to the MIRROR.

8. If the values are not correct, reposition SENSOR B35 and its MIRROR.

9. Check this adjustment with all different types of customer films.

10. If necessary, do the corrections.

11. Switch off the XML300.

12. Take out the JUMPER between PIN 1 and PIN 3 at the SOCKET of U41.

13. Insert U41.

14. Check for the correct setting of JUMPER A4X34. The JUMPER has to be between 1 and 2.

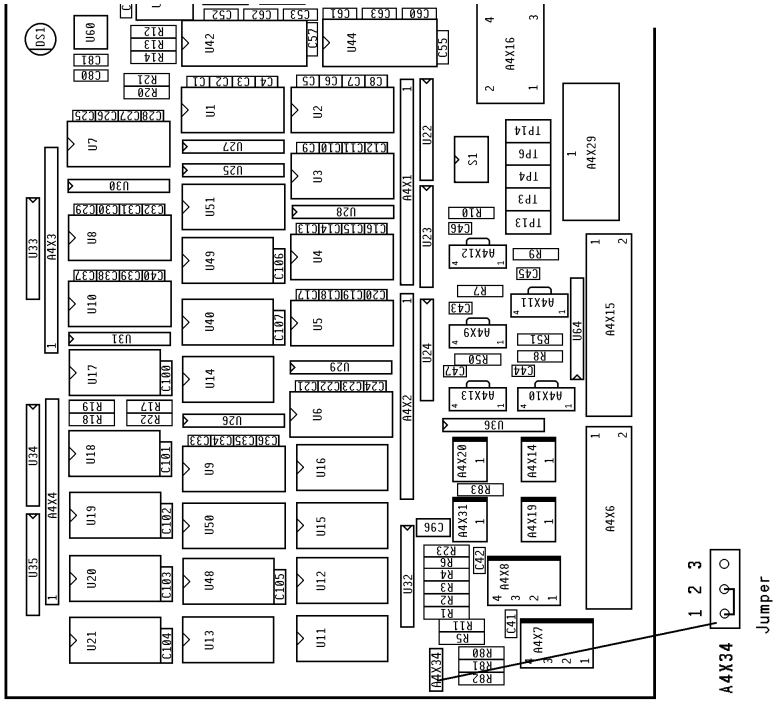


figure 29

PART 5: ADJUSTMENT OF THE GUIDE

Purpose:

To ensure proper FILM TRANSPORT in the CHUTE.

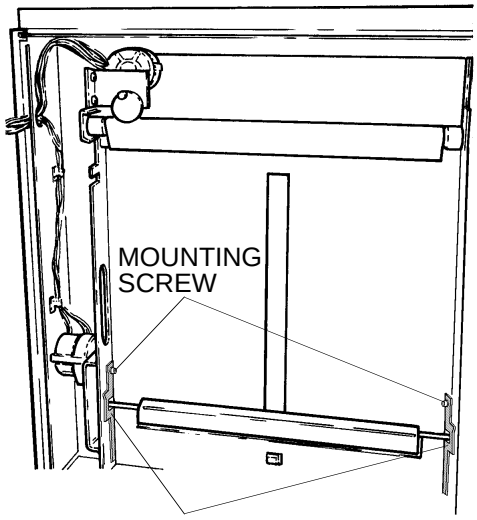


figure 30

1. Loosen MOUNTING SCREWS.

2. Push GUIDES all the way up.

3. Re tighten SCREWS.

6. FILMPOCKET ADJUSTMENT

Purpose:

This adjustment ensures that a FILM is picked up from the MAGAZINE.

NOTE

Recent testing has shown that one of the main causes of SUCKER marks is contamination of the SUCKER surface. This contamination can be any of a number of substances ranging from natural body oil, sweat, or even KODAK Intensifying Screen Cleaner and anti static Solution (which has sometimes been recommended for cleaning SUCKERS!).

Do not use KODAK Intensifying Screen Cleaner and anti static Solution to clean the SUCKERS!

If a SUCKER is touched during installation or a repair or adjustment procedure it must be properly and carefully cleaned as detailed below, or film artifacts may result. This procedure should also be followed, if new SUCKERS are fitted.

1. Abrade the surface of the SUCKER carefully using Emery Cloth grade 400, or a similar material.

2. Lightly coat the SUCKER with NATURAL (un-perfumed) talcum powder (available from all chemists and pharmacies).

Special tools:

DENTIST MIRROR TL 2753
BLOWPIPE POSITIONER MAGAZINE TL-4582

NOTE

Check the adjustment of the FILMPOCKET TIMING DISKS after you do the FILMPOCKET ADJUSTMENT.

When doing this adjustment, the unit must be levelled.

1. Take out all MAGAZINES from the XML300.

2. Empty one MAGAZINE in the dark-room.

3. Take off the LID from the empty MAGAZINE.

4. Draw a reference line 3mm away from the leading edge of a film.

5. Put this film into the empty MAGAZINE.

6. Make sure that the film is at the MAGAZINE WALL.

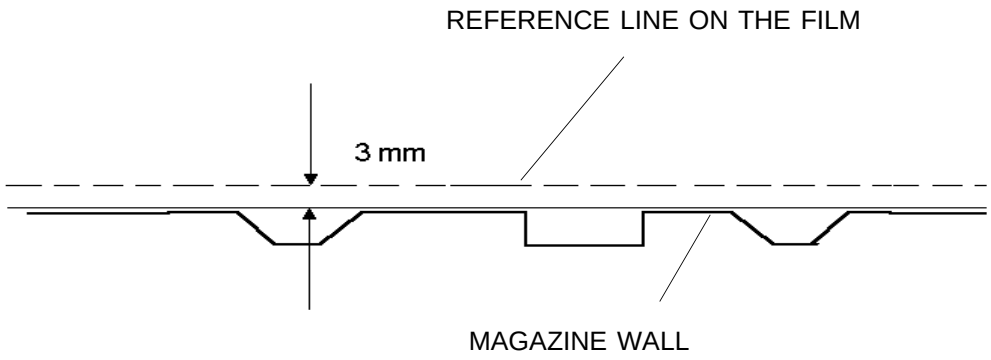


figure 31

7. Insert the prepared MAGAZINE into position 3.

8. Rotate out the FILM CHUTE.

9. Switch off the XML 300.

NOTE

Step 10, 11, and 12 are simple tests to see if there is an offset between the left and right CHAIN.

10. Manually move FILMPOCKET to a position so that the top surface of one of the counterweights is level with the top edge of the GUIDE.

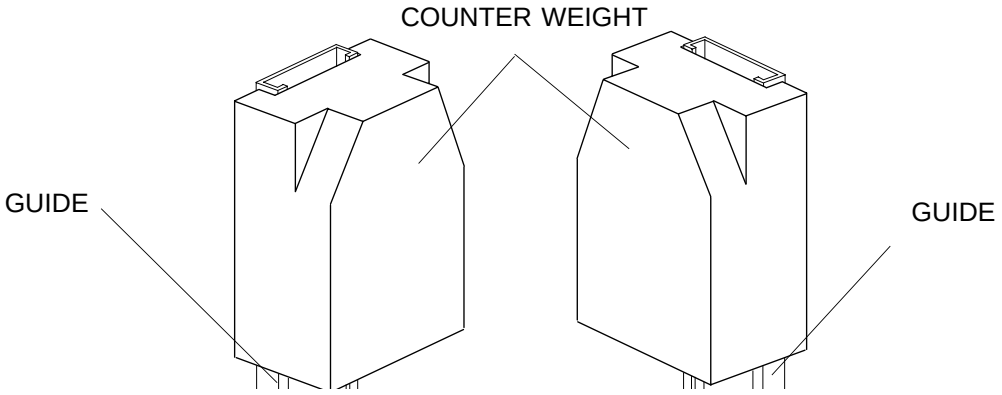


figure 32

11. Check that the second counterweight is also approx. level with the top of the GUIDE.

12. If necessary, move the CHAIN to the correct position on the GEAR.

13. Pull the INTERLOCK OVERRIDE.

14. Connect the LAP TOP COMPUTER to the XML300 and start the SERVICE SOFTWARE.

15. Select **SERVICE MODE ML300**

16. After the ENTER SERVICE MODE MESSAGE is displayed press ENTER.

17. The UNIT DATA are displayed - press ENTER.

18. Select **COMPONENT TEST and press ENTER.**

19. Move the FILMPOCKET to MAGAZINE LEVEL 3

Select	**MAGAZINE MOTORS**	and press ENTER.
Select	**STEPPER MOTOR FILMPOCKET M10**	and press ENTER.
Select	**MOVE TO LEVELS/HOME POSITION**	and press ENTER.
Select	**MOVE TO MAGAZINE 3**	move the CURSOR to START.

20. After the FILMPOCKET has reached LEVEL 3, press Backspace twice to come back to screen **TEST MAGAZINE MOTORS**.

21. Rotate the FILMPOCKET SUCKER BAR to its vertical position, so that the BALL BEARING is fully engaged in the DETENT.

Select	**FILM PICK UP MAGAZINE (M15)**	and press ENTER
Select	**FORWARD**	with the CURSOR KEY

Press BACKSPACE twice to go back to the SCREEN COMPONENT TEST.

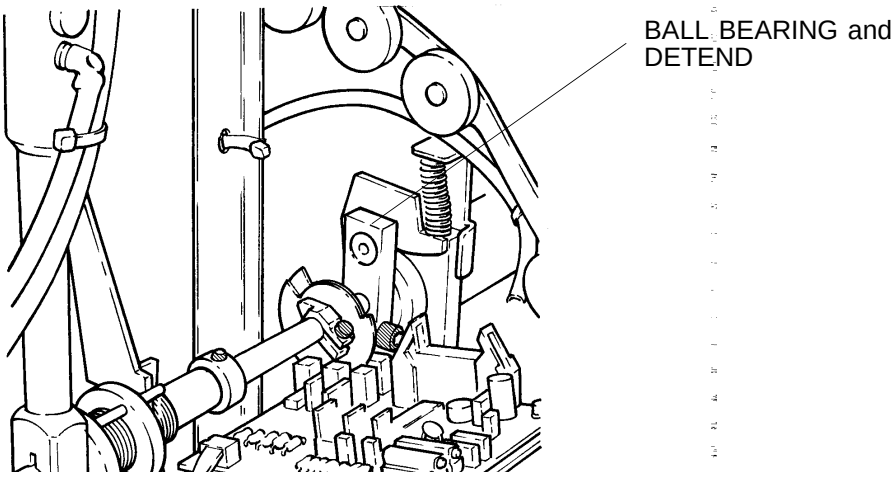


figure 33

22. Move the SUCKERBAR ARM by hand using low force. If it can be moved, proceed with step 23, else proceed with step 30.

23. Do the adjustment "MAGAZINE SUCKERBAR IN FRONT POSITION" of the FILMPOCKET TIMING DISK.

24. Start the SENSOR TEST. Use the LAPTOP.

25. Make sure that the BALL BEARING is engaged in the DETEND.

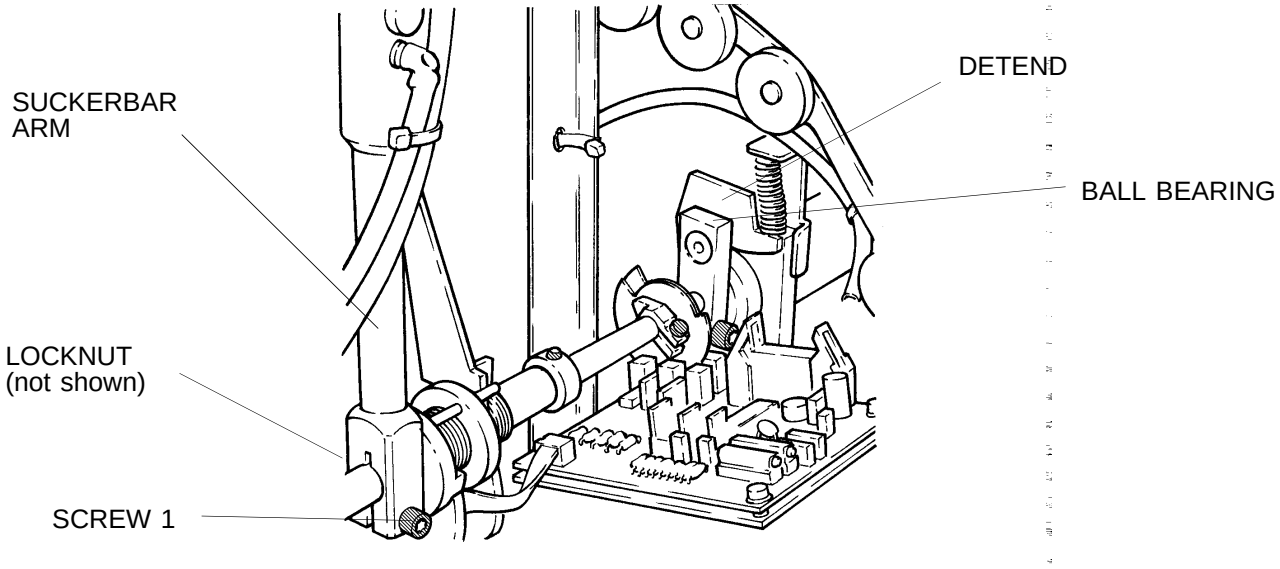


figure 34

26. Loosen the SETSCREW of the LEFT TIMING DISK.

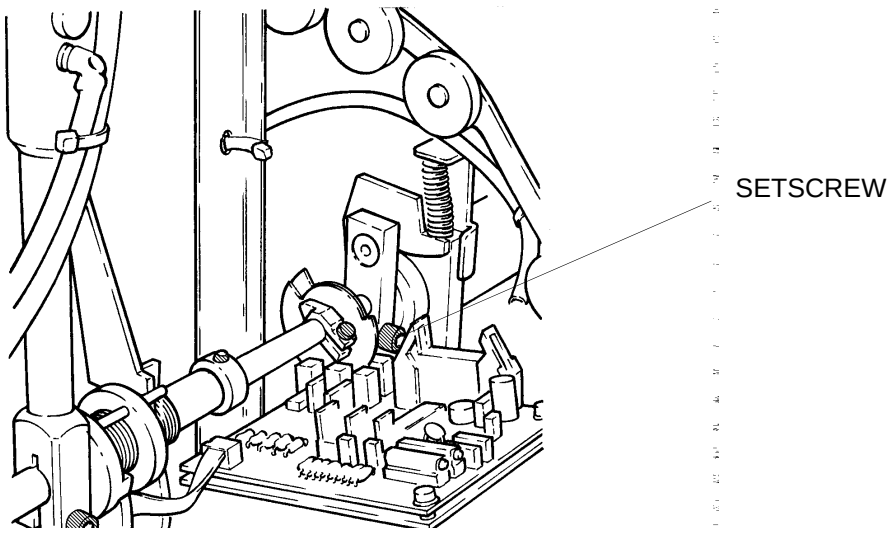


figure 35

27. Turn the SUCKERBAR ARM forward by hand until there is no clearance.

28. Rotate the LEFT HAND TIMING DISK in the direction of the arrow (fig. 36) until the SENSOR B56/M_PU_EF is interrupted.

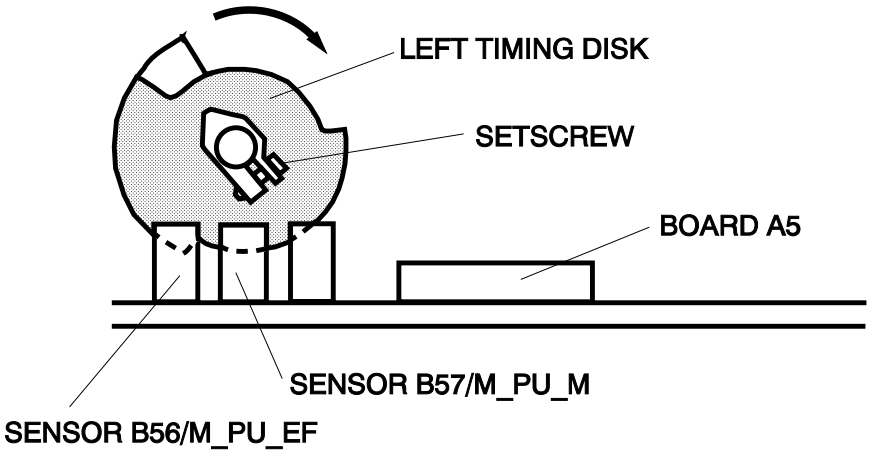


figure 36

29. Tighten the SETSCREW and proceed with step 21.

30. Leave the SERVICE MODE.

31. Insert a MAGAZINE with 35x43 TEST FILMS into the XML 300.

32. Run a few cycles; if the FILM does not interfere with parts of the CASSETTE TRANSPORT MODULE, proceed with step 40, else proceed with step 33.

33. Do the adjustment "MAGAZINE SUCKERBAR IN TRANSPORT POSITION" of the right hand TIMING DISK.

34. Start SENSOR TEST. Use the LAPTOP.

35. Rotate the SUCKERBAR ARM fully down beyond the vertical position.

36. Open the SETSCREW of the right hand TIMING DISK.

37. Turn the SUCKERBAR ARM backward by hand until there is no clearance.

38. Rotate the right hand TIMING DISK in the direction of the arrow (fig. 37) until SENSOR B58/M_PU_ER is interrupted. This is indicated by a BEEP from the SENSOR TEST.

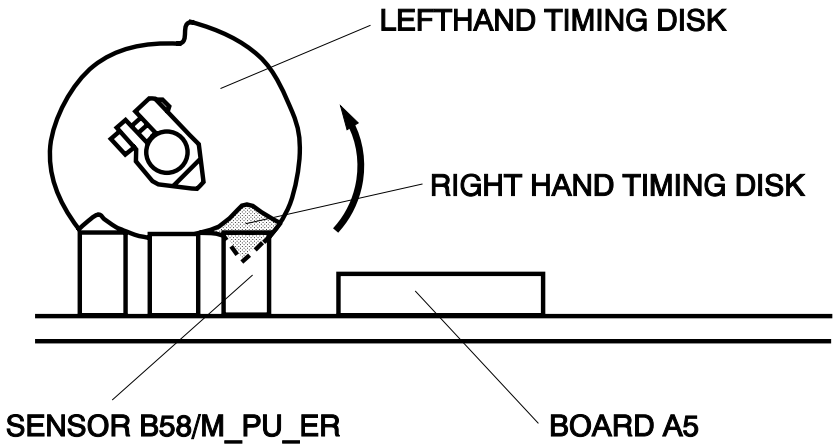


figure 37

39. Tighten the SETSCREW and proceed with step 32.

40. Select **COMPONENT TEST and press ENTER.**

41. Move the FILMPOCKET to MAGAZINE LEVEL 3

Select	**MAGAZINE MOTORS**	and press ENTER.
Select	**STEPPER MOTOR FILMPOCKET M10**	and press ENTER.
Select	**MOVE TO LEVELS/HOME POSITION**	and press ENTER.
Select	**MOVE TO MAGAZINE 3**	move the CURSOR to START.

42. After the FILMPOCKET has reached LEVEL 3, press Backspace twice to come back to screen **TEST MAGAZINE MOTORS**.

43. Rotate the FILMPOCKET SUCKER BAR to its vertical position, so that the BALL BEARING is fully engaged in the DETENT.

Select	**FILM PICK UP MAGAZINE (M15)**	and press ENTER
Select	**FORWARD**	with the CURSOR KEY

Press BACKSPACE twice to go back to the SCREEN COMPONENT TEST.

44. Press Backspace twice to go back to the screen **COMPONENT TEST.**

45. Move the FILMPOCKET to the film in the MAGAZINE.

Select	**MAGAZINE MOTORS**	and press ENTER.
Select	**STEPPER MOTOR FILMPOCKET M10**	and press ENTER.
Select	**MOVE TO A SPECIAL POSITION**	and press ENTER.
Select	**POCKET TO FILM (MAG)**	move the CURSOR to START.

NOTE

Do not energise the SOLENOID Y14 for too long. It will become very hot.

46. Check that the MAGAZINE SUCKERS are 3 mm ± 0.5 away from the leading edge of the film. Use the line made in step 4 as reference.

47. Check that all SUCKERS are plane on the FILM.

NOTE

Use the DENTIST MIRROR to observe the position of the FILMPOCKET SUCKERS. Make sure that the FILM is touching the MAGAZINE WALL.

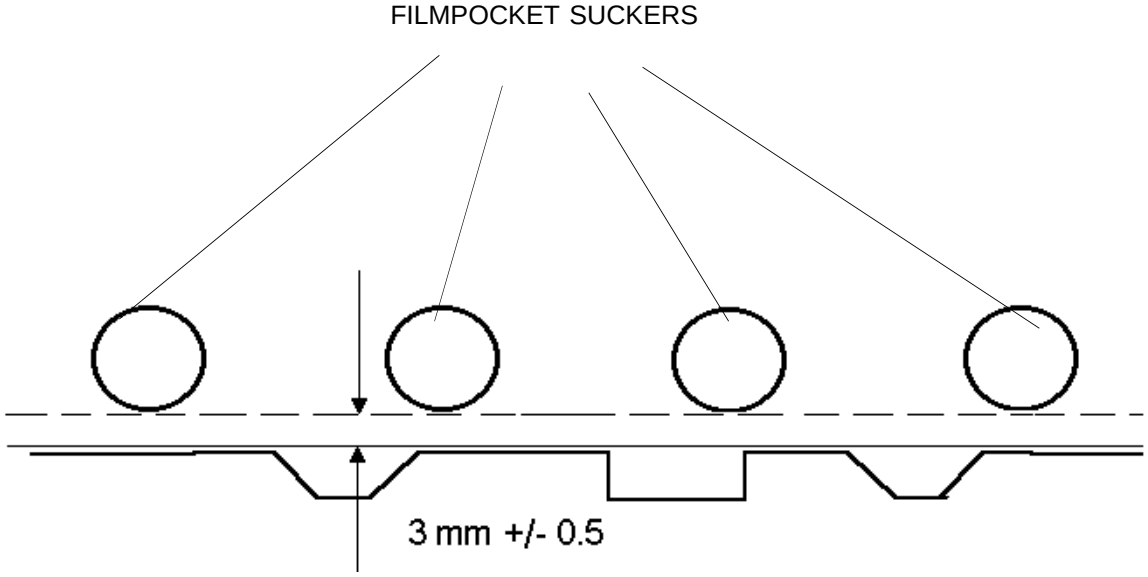


figure 38

48. If the distance is not correct, or if the MAGAZINE SUCKER BAR hits against the MAGAZINE WALL proceed with step 49. Otherwise proceed with step 56.

49. Select **MOVE OUT POSITION** move the CURSOR to START.

50. Loosen SCREW 1 and rotate the SUCKER BAR in or out as required. **Tighten SCREW 1.**

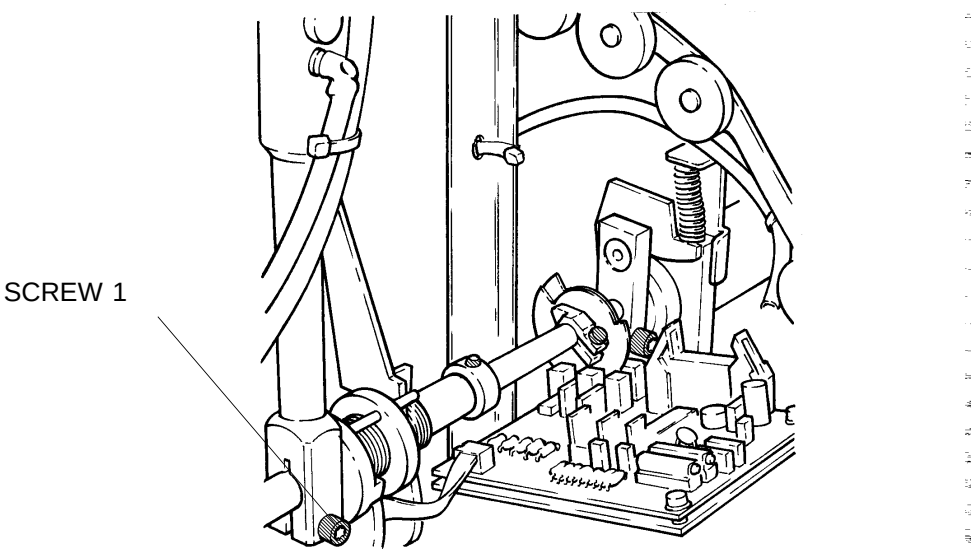


figure 39

51. Manually rotate the SUCKER BAR fully out.

52. Press Backspace until you reach the screen COMPONENT TEST.

53. Deenergize the SOLENOID TILTING MAGAZINE SUCKER BAR Y14 to avoid overheating and let it cool down if necessary.

Select	**SOLENOIDS**	and press ENTER
Select	**TILTING MAGAZINE SUCKER BAR Y14**	and press ENTER
Select	**SOLENOID OFF**	

54. Press Backspace until you reach the screen COMPONENT TEST.

55. Proceed with step 41.

56. Press Backspace until you reach the screen COMPONENT TEST.

57. Deenergize the **SOLENOID TILTING MAGAZINE SUCKER BAR Y14** to avoid overheating and let it cool down if necessary.

Select	**SOLENOIDS**	and press ENTER
Select	**TILTING MAGAZINE SUCKER BAR Y14**	and press ENTER
Select	**SOLENOID OFF.**	

58. Press Backspace until you reach the screen **COMPONENT TEST.**

59. Check that the BLOW PIPES are not touching the side of the MAGAZINE RECESSES. The BLOW PIPES must not be in the shaded area.

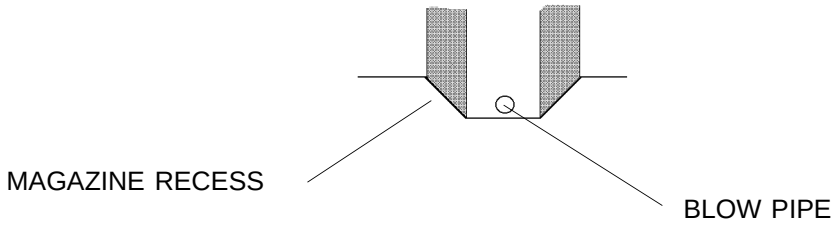


figure 40

60. If they are too far to the left or to the right, loosen SCREW 1 and carefully move the SUCKER BAR ARM in the desired direction. Make sure the SUCKER BAR does not interfere with the DOUBLE FILM DETECTOR.

NOTE

If the SUCKER BAR ARM is too far to the left, SCREW 2 from the COLLAR has also to be loosened.

NOTE

Ensure that the position of the MAGAZINE SUCKER BAR in relation to the 3mm reference line is not changed (see step 46).

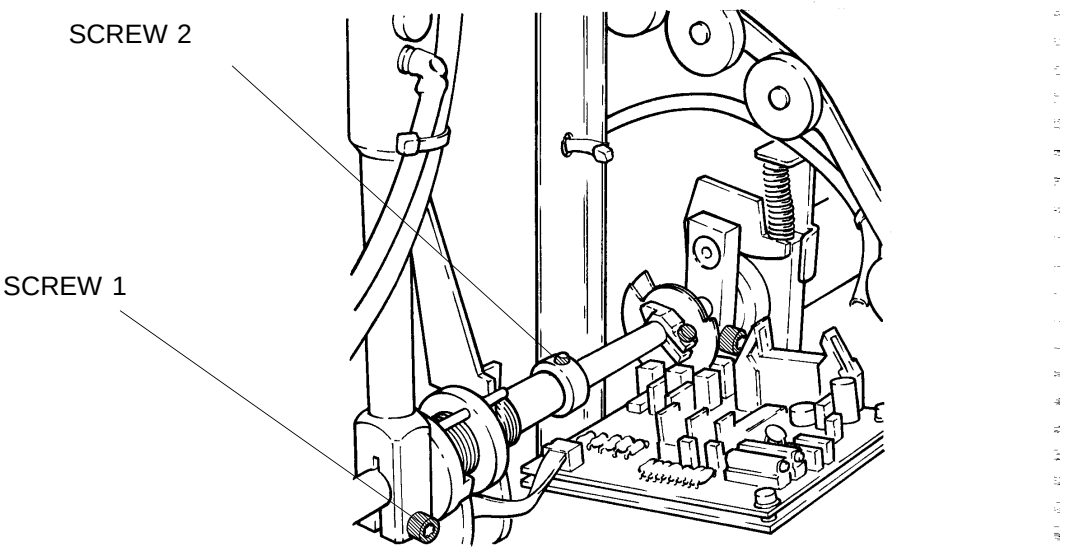


figure 41

61. Tighten SCREW 1

Note

It is most important that SCREW 1 is tightened. If it is not tight, the relationship between the 2 FILMPOCKET TIMING DISKS and the MAGAZINE SUCKER BAR will be lost. It is then impossible to pick up a film from the MAGAZINE.

62. Move the COLLAR with SCREW 2 to the left as far as possible and tighten SCREW 2.

63. Check that the BLOWPIPES are correct in the MAGAZINE RECESSES. The BLOWPIPES must not be in the shaded areas. They have to be between the centerline of the recess and the MAGAZINE WALL. They must not touch the MAGAZINE WALLS. If this distance is not correct, loosen the LENGTH ADJUSTMENT SCREWS of the BLOWPIPES and shift them forward or backward. Tighten the screws.

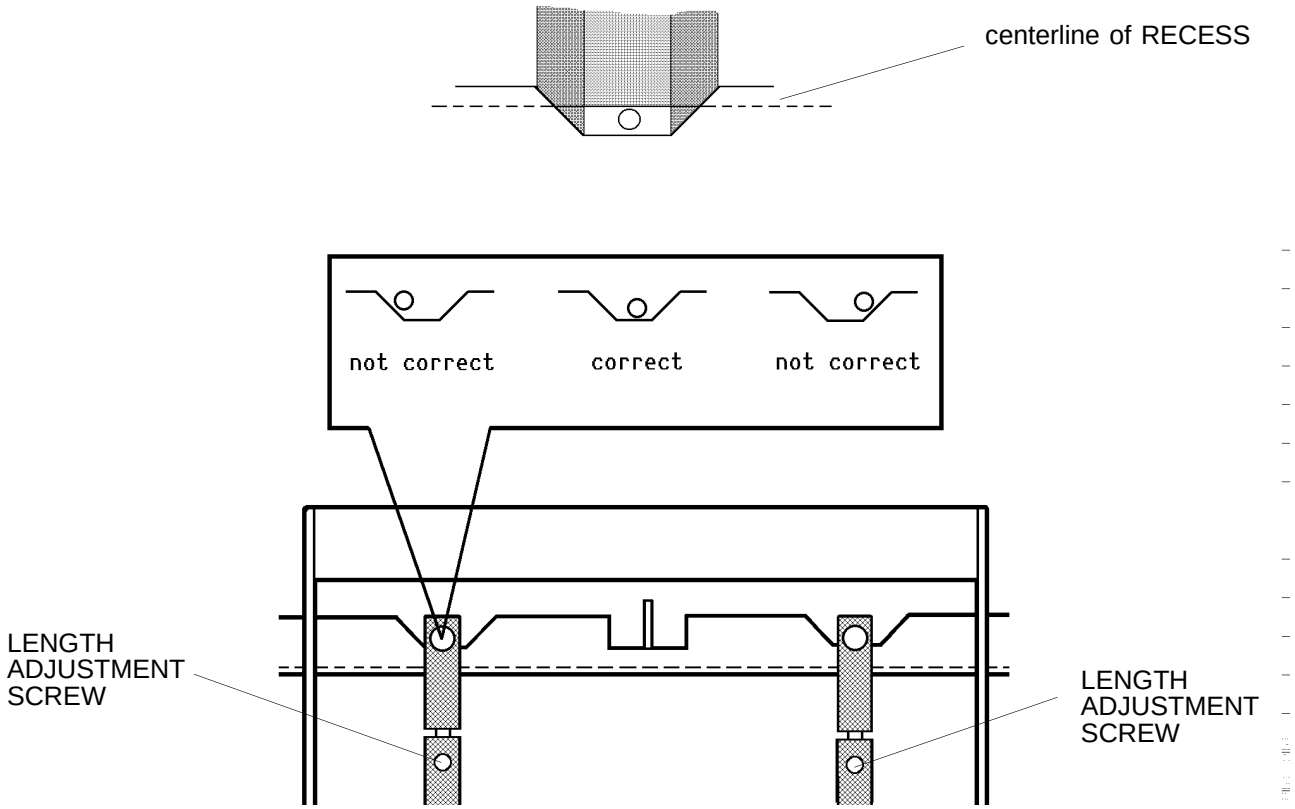


figure 42

64. Manually rotate the FILMPOCKET SUCKER BAR out of the MAGAZINE.

65. Switch on the **COMPRESSOR**.

Select	**MAGAZINE MOTORS**	and press ENTER.
Select	**COMPRESSOR M16**	and press ENTER.
Switch	**MOTOR ON.**	

66. Press Backspace twice to go back to the screen **COMPONENT TEST**.

67. Switch on the **SOLENOID MAGAZINE SUCKING Y12**.

Select **SOLENOID VALVES** and press ENTER.
Select **MAGAZINE SUCKING Y12**
Switch on the SOLENOID VALVE.

68. Press Backspace twice to go back to the screen **COMPONENT TEST**.

69. Tilt the MAGAZINE SUCKER BAR Y14.

Select **SOLENOIDS** and press ENTER.
Select **TILTING MAGAZINE SUCKER BAR Y14** and press ENTER.
Switch on the SOLENOID.

NOTE

Do not leave on the SOLENOID Y14 for too long. It will become very hot.

70. Place the BLOWPIPE POSITIONER GAUGE TL 4582 onto the FILMPOCKET SUCKERS.

BLOWPIPE POSITIONER

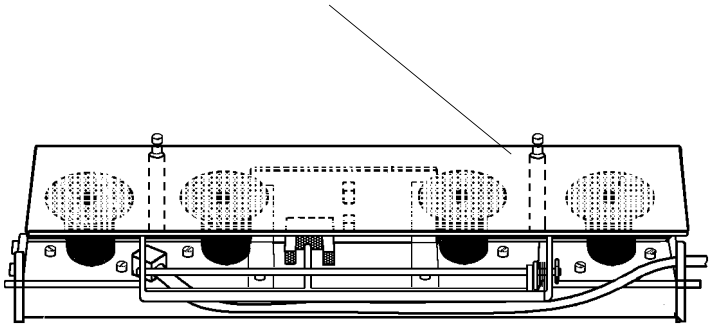


figure 43

71. Check that the 0.5mm HOLE of the BLOWPIPES (Parts of MOD 20) is just above the BLOWPIPE POSITIONER.

72. If the position of the HOLE is not correct, loosen the HEIGHT ADJUSTMENT SCREWS of the BLOWPIPES and move the BLOWPIPES up or down as required. Then fasten the SCREWS.

NOTE

The position of the hole in the BLOWPIPES is important to separate the films in the MAGAZINES.

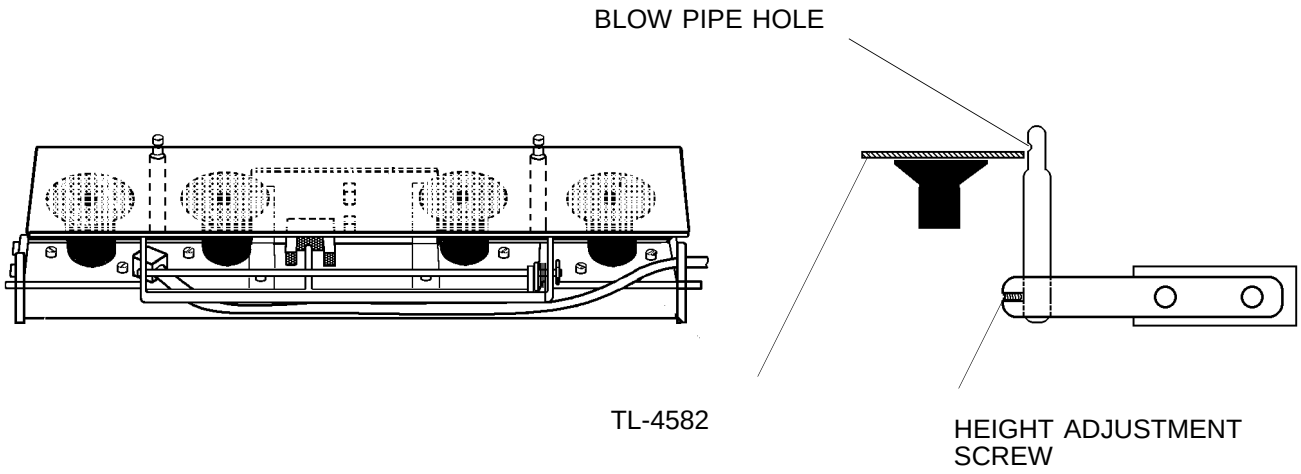


figure 44

73. Switch off the SOLENOID Y14.

74. Press Backspace twice to go back to the screen COMPONENT TEST.

75. Blow air into the MAGAZINE SUCKERS to take off the BLOWPIPE POSITIONER.

Select **SOLENOID VALVES** and press ENTER.
Select **MAGAZINE SUCKING Y12** and press ENTER.
Switch off **SOLENOID VALVE Y12**
Press Backspace to go back to the screen TEST SOLENOID VALVES
Select **MAGAZINE BLOW SUCKER Y10** and press ENTER.
Switch on **SOLENOID VALVE Y10.**
Switch off **SOLENOID VALVE Y10**.
Press Backspace twice to go back to the screen **COMPONENT TEST**.
Take off the BLOWPIPE POSITIONER.

76. Switch off the COMPRESSOR.

Select **MAGAZINE MOTORS** and press ENTER.
Select **COMPRESSOR M16** and press ENTER.
Switch off the COMPRESSOR
press Backspace twice to go back to screen TEST MAGAZINE MOTORS.

77. To do the adjustment of the SENSOR B61, place the BLOW PIPE POSITION TOOL TL-4582 onto the MAGAZINE SUCKERS and go into the SENSOR TEST.

figure 45

78. Carefully press down the tool onto the SENSORS. After 0.2 - 0.5 mm, SENSOR B61 should be actuated.

79. If the SENSOR is not actuated, carefully remove the ACTUATOR BRACKET.

80. Exit the SENSOR TEST.

81. Insert a MAGAZINE into position 3.

82. Check if the BLOWPIPES have the correct distance to the wall of MAGAZINE 3.

Select	**STEPPER MOTOR FILMPOCKET M10**	and press ENTER.
Select	**MOVE TO LEVELS/HOME POSITION**	and press ENTER.
Select	**Move to MAGAZINE 3**	and move the CURSOR to START.

Press 2 times Backspace to go back to the screen TEST MAGAZINE MOTORS.

Select **FILM PICK UP MAGAZINE M15**.

Select **FORWARD**.

83. Check that there is a gap of 0 to 1mm between the BLOWPIPES and the MAGAZINE WALL.

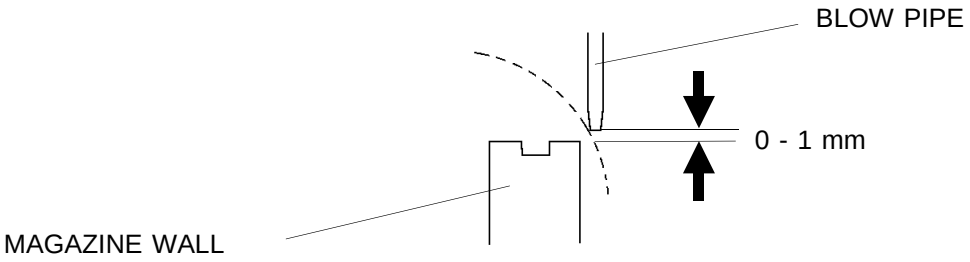


figure 46

84. If this distance is not correct, proceed with step 85 else proceed with step 89.

85. Rotate out the FILMPOCKET SUCKER BAR.

Select **BACKWARD**

86. Loosen the MOUNTING SCREWS of the MAGAZINE LEVEL BRACKET and move it up or down as required. Then fasten the MOUNTING SCREWS.

NOTE

The gap has to be correct. The distances given in the MAGAZINE LEVEL ADJUSTMENT are just a starting point.

87. Do a SCAN RUN.

Press 3 times BACKSPACE to come back to the screen MAIN MENU

Select	**CHANGE ML300 DATA**	and press ENTER
Select	**CHANGE PARAMETER**	and press ENTER
Select	**SCAN RUN**	and press ENTER
Select	**NEARLY EMPTY**	and press ENTER
Select	**STORE PARAMETERS**	and press ENTER
Select	**RETURN TO MAIN MENU**	and press ENTER
Select	**COMPONENT TEST**	and press ENTER
Select	**MAGAZINE MOTORS**	and press ENTER

88. Proceed with step 91.

89. Rotate out the FILMPOCKET SUCKER BAR.

Select **BACKWARD** with the CURSOR KEY.

90. Press Backspace to go back to the screen TEST MAGAZINE MOTORS.

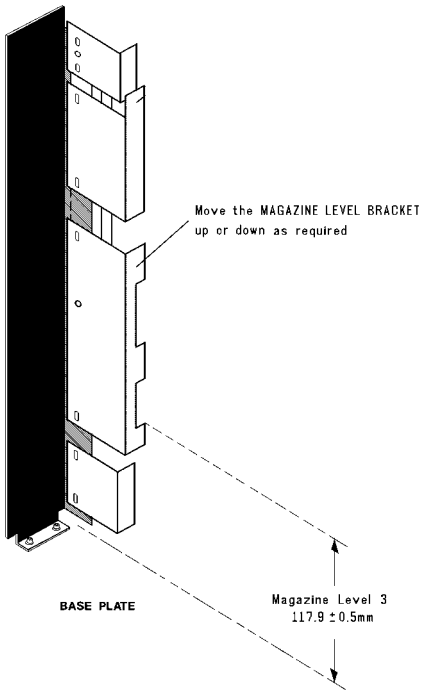


figure 47

91. Insert the MAGAZINE into position 1.

92. Check if the BLOWPIPES have the correct distance to the wall of MAGAZINE 1.

Select	**STEPPER MOTOR FILMPOCKET M10**	and press ENTER.
Select	**MOVE TO LEVELS/HOME POSITION**	and press ENTER.
Select	**MOVE TO MAGAZINE 1**	and START.

Press Backspace twice to go back to the screen TEST MAGAZINE MOTORS.

Select	**FILM PICK UP MAGAZINE M15**	and press ENTER.
Select	**FORWARD.**	

93. Check that there is a gap of 0 to 1.0 mm between the BLOWPIPES and the MAGAZINE WALL.

94. If the distance is not correct the MAGAZINE LEVEL ADJUSTMENT must be altered. Use the procedure described in step 85, 86 and 87.

NOTE

Find a compromise between step 85 and step 94.

95. Rotate out the FILMPOCKET SUCKER BAR.

Select	**BACKWARD**	with the CURSOR KEY.

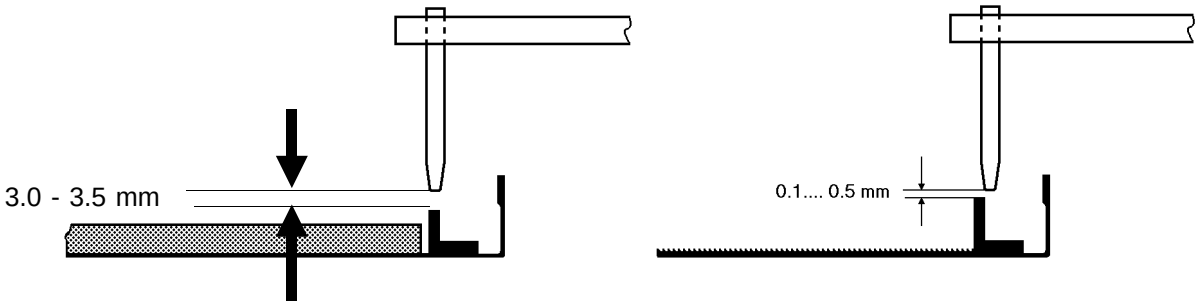
96. Exit the SERVICE PROGRAM.

Press BACKSPACE until you reach the MAIN MENU.
Select **QUIT ML300 SERVICE MODE** and press ENTER.
Select **QUIT THE PROGRAM** and press ENTER.

97. Put the FILM CHUTE in its correct position and install all SCREWS.

98. Run several cycles with X-OMAT CASSETTES and with VIDEO-FILM HOLDERS (if available).

99. Make sure that the MAGAZINE BLOWPIPES do not interfere with the CASSETTES.



X-OMATIC CASSETTE
MINR2 CASSETTE

CRT CASSETTE (VIDEO FILM HOLDER)

figure 48

100. The distance between BLOWPIPES and LABYRINTH must be as shown in figure 48.

101. If necessary loosen the MOUNTING SCREWS of the CASSETTE LEVEL BRACKET and move it up or down as required. Then fasten the MOUNTING SCREWS.

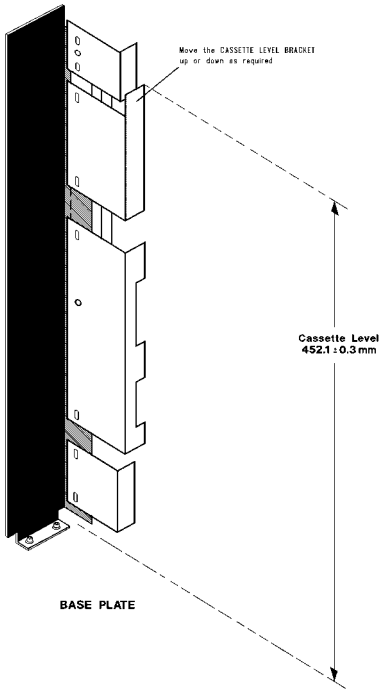


figure 49

102. Do a SCAN RUN.

Select Drive C:		
Key in	**CD\XML300**	and press ENTER.
Key in	**START**	and press ENTER.
Select	**SERVICE MODE ML300**	and press ENTER

After the ENTER SERVICE MODE MESSAGE is displayed press ENTER.

Select	**CHANGE ML300 DATA**	and press ENTER
Select	**CHANGE PARAMETER**	and press ENTER
Select	**SCAN RUN**	and press ENTER
Select	**STORE PARAMETERS**	and press ENTER
Select	**RETURN TO MAIN MENU**	and press ENTER
Select	**QUIT ML300 SERVICE MODE**	and press ENTER
Select	**QUIT THE PROGRAM**	and press ENTER

103. Proceed with step 98.

7. FINAL TEST

1. Insert the MAGAZINE loaded with TEST FILMS (Use different magazine sizes/18x24 and 35x43).

2. Do CONTINUOUS LOOP for about 30 FILMS.

3. Watch the various movements.

4. Circle MOD 24 on the MODIFICATION LABEL.

5. Mount all Panels.

6. Insert the MAGAZINES with CUSTOMER FILMS.

7. Run several cycles using unexposed FILMS.

8. CHECK LINE VOLTAGE SET-UP

NOTE

Be sure that the new F4 (6.3 A) fuse is installed. The old fuse F4 was rated for a too low value. Therefore it has been replaced by a higher rated fuse.

Old F4 value:		4A
New F4 value:	Europe:	F4 T6.30 A PN 453 3666
	US/CANADA:	F4 6.25 A PN 453 4036

When you replace the fuse, the FUSE LABEL has to be replaced, too. FUSE LABEL PN 922 7320 gives the correct fuse rating.

Mains Connection

If the Multiloader 300 is connected to one of the following services, the wiring of the TRANSFORMERS T1 and T2 has to be changed.

System Mains [V]	Frequency [Hz]	Phases	Current [Amps]	Service Wires	Mains Circuit Breaker		
					[Amps/Phase]		
					Europe	US	Poles
220	50/60	1/2	24	2/3[1]	32	30	2
230	50/60	1/2	24	2/3[1]	32	30	2
240	50/60	1/2	24	2/3[1]	32	30	2
240/415	50/60	3	11	4	16	20	4
120/208	60	3	19	4[2]	32	20	3
120/208	60	3	24	3[3]	32	20	2

[1] L1, N / L1, L2 used in this configuration
[2] L1, L2, L3 used in this configuration
[3] L1, L2 used in this configuration is sometimes referred to as Single Phase Connection

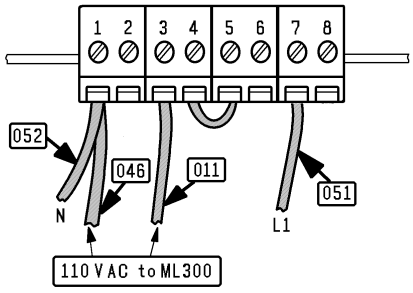
This change ensures that due to the allowed -10% Input Voltage the voltage to the AC-Motors does not go too low.

NOTE

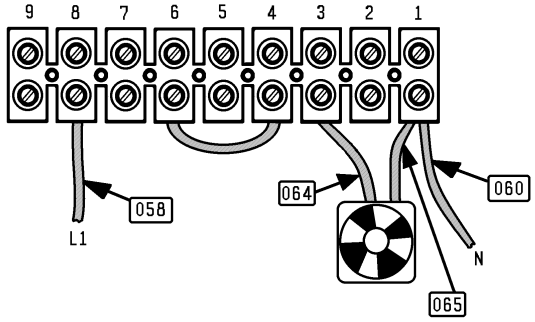
Do not rewire TRANSFORMERS T1 and T2 for the services not mentioned in the table. The voltage to the AC-Motors would exceed the upper limit.

Wiring for 240/415 V (50/69 Hz) Three Phases

Transformer No. 1

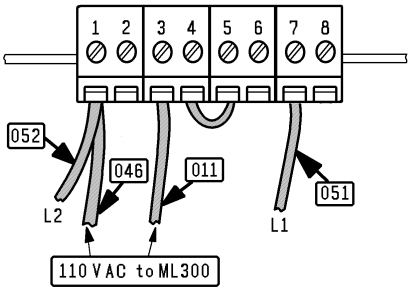


Transformer No. 2

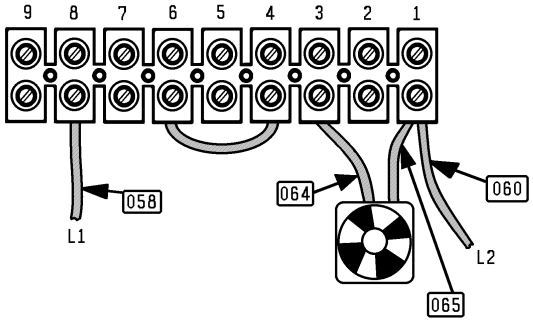


Wiring for 240 V (50/60 Hz) Two Phases

Transformer No. 1

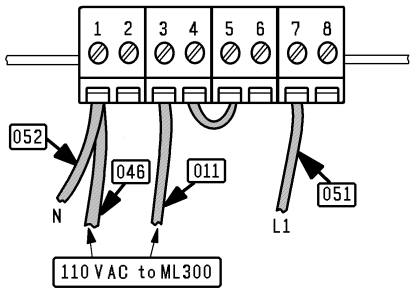


Transformer No. 2

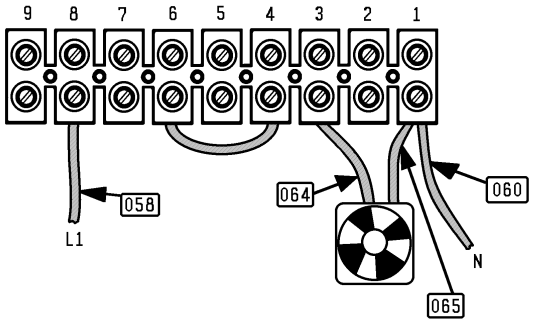


Wiring for 240 V (50/60 Hz) Single Phase

Transformer No. 1

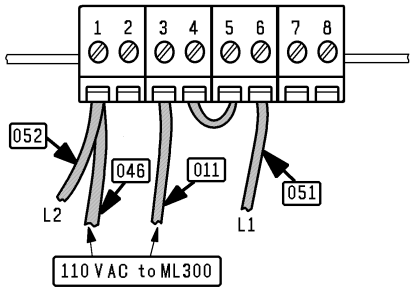


Transformer No. 2

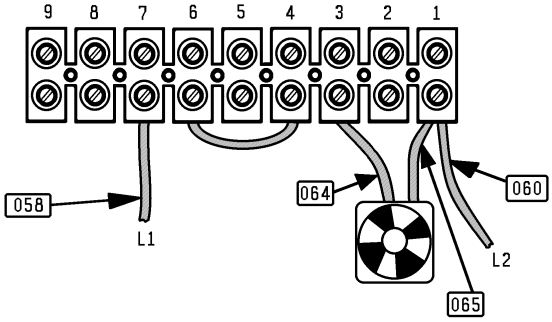


Wiring for 230 V (50/60 Hz) Two Phases

Transformer No. 1

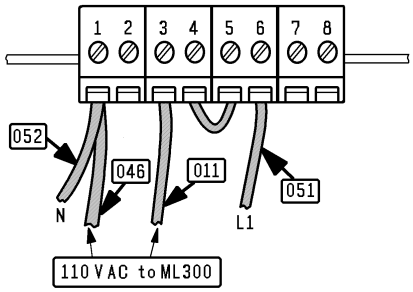


Transformer No. 2

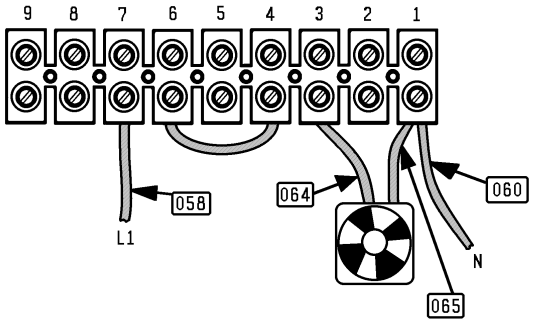


Wiring for 230 V (50/60 Hz) Single Phase

Transformer No. 1

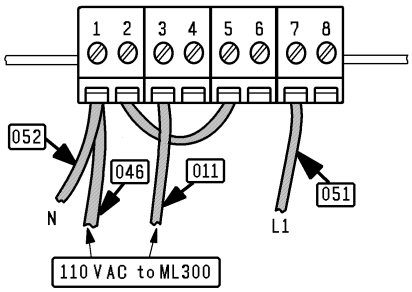


Transformer No. 2

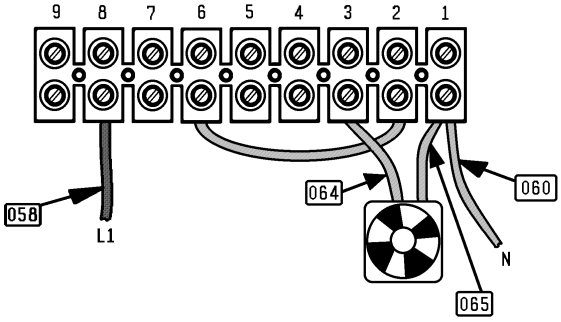


Wiring for 220 V (50/60 Hz) Single Phase

Transformer No. 1

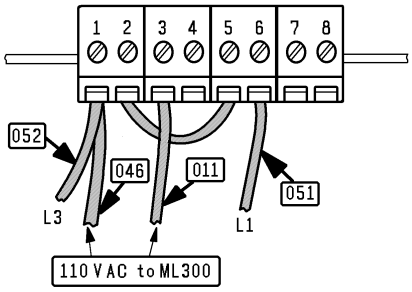


Transformer No. 2

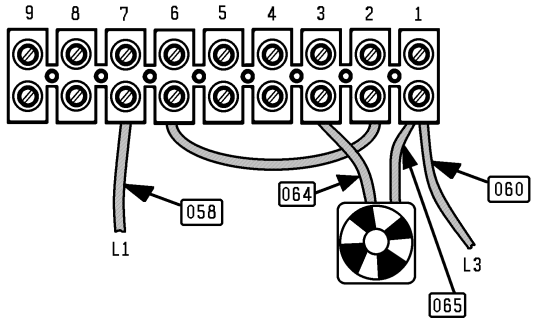


Wiring for 120/208 V (60 Hz) Three Phases

Transformer No. 1

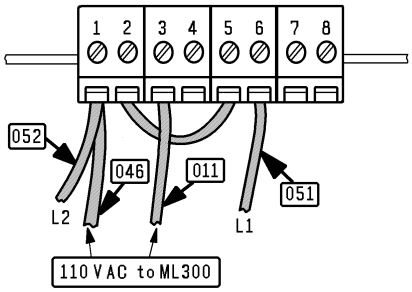


Transformer No. 2

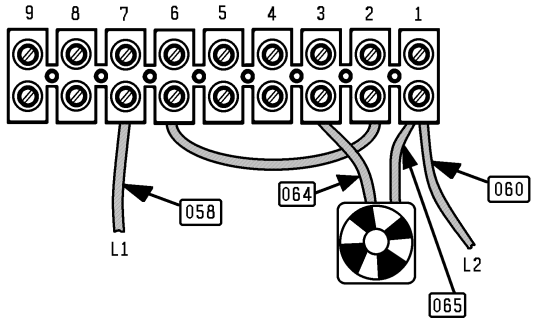


Wiring for 120/208 V Three Phases (if only L1 and L2 are used!)

Transformer No. 1



Transformer No. 2



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