

# MODIFICATION INSTRUCTIONS

for the

## ***KODAK X-Omatic* MULTILOADER 300**

Service Code 3058

### MODIFICATION No. 20

### Type 1 REQUIRED

#### PURPOSE:

To avoid water sprayed onto the FILM

**IMPORTANT** : Use qualified service personnel to install this modification !

**SERIAL NUMBERS** : up to SN 1439

**INSTALLATION TIME** : Approx. 2.5 hours

**SPECIAL TOOLS** : DENTIST MIRROR TL 2753  
BLOWPIPE POSITIONER MAGAZINE TL 4582

**PARTS REQUIREMENTS** : MOD KIT #20 PN 9225900

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## PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
9225900 .....	MOD KIT 20	1

contains:

9215901 .....	COPPER COIL .....	1
9215871 .....	CABLE CLAMPS .....	2
9186556 .....	WATER TRAP .....	1
9215891 .....	FITTING for WATER TRAP .....	2
9226180 .....	FELT RING for WATER TRAP .....	2
9183531 .....	FELT RING MOUNT .....	1
9186886 .....	AIR FILTER with 3mm FITTING .....	1
9220170 .....	HOSE PU-PK3 .....	2
9220150 .....	HOSE PU-PK4 .....	1
9225840 .....	MAGAZINE BLOW PIPES .....	2

## INTRODUCTION

In modification No 10 the air pressure was increased from 2 bar to 4 bar. In some cases this results in moisture accumulation in the pressure system. This moisture (small drops of water) is then blown onto the film when it is picked up from the MAGAZINE. To avoid this an additional WATER TRAP and a COPPER COIL are installed.

### 1. COPPER COIL:

The purpose of this coil is to cool down the compressed air. The moisture condenses and can be separated in the WATER TRAP.

### 2. WATER TRAP:

The efficiency of a WATER TRAP is not very high. To improve WATER SEPARATION a second WATER TRAP is installed.

### 3. AIR FILTER:

The AIR FILTER ensures that no dust particles are blown onto the FILM and it keeps the hoses clean.

### 4. MAGAZINE BLOW PIPES:

The new BLOW PIPES have a hole of 0.5mm instead of a slit. This improves film separation in the MAGAZINE.

The other parts are just mounting hardware.

## NOTE

**If you altered the pressure after MOD 10 was installed, set the pressure to its original value (4bar). If the pressure is too low, the films may not be separated from the CASSETTE LID SCREEN.**

## Installation

1. Switch off the ML300.
2. Take off the TOP-, REAR- and LEFT-HAND PANEL.
3. Take out the MOD 10 FILTER and the hose to the SOLENOID VALVE Y11. Discard both parts.

### **NOTE**

**The new FILTER in the MOD 20 Kit is the same as in MOD 10. However it is possible that moisture is already accumulated in the MOD 10 FILTER. Therefore it is better to replace it with a new one.**

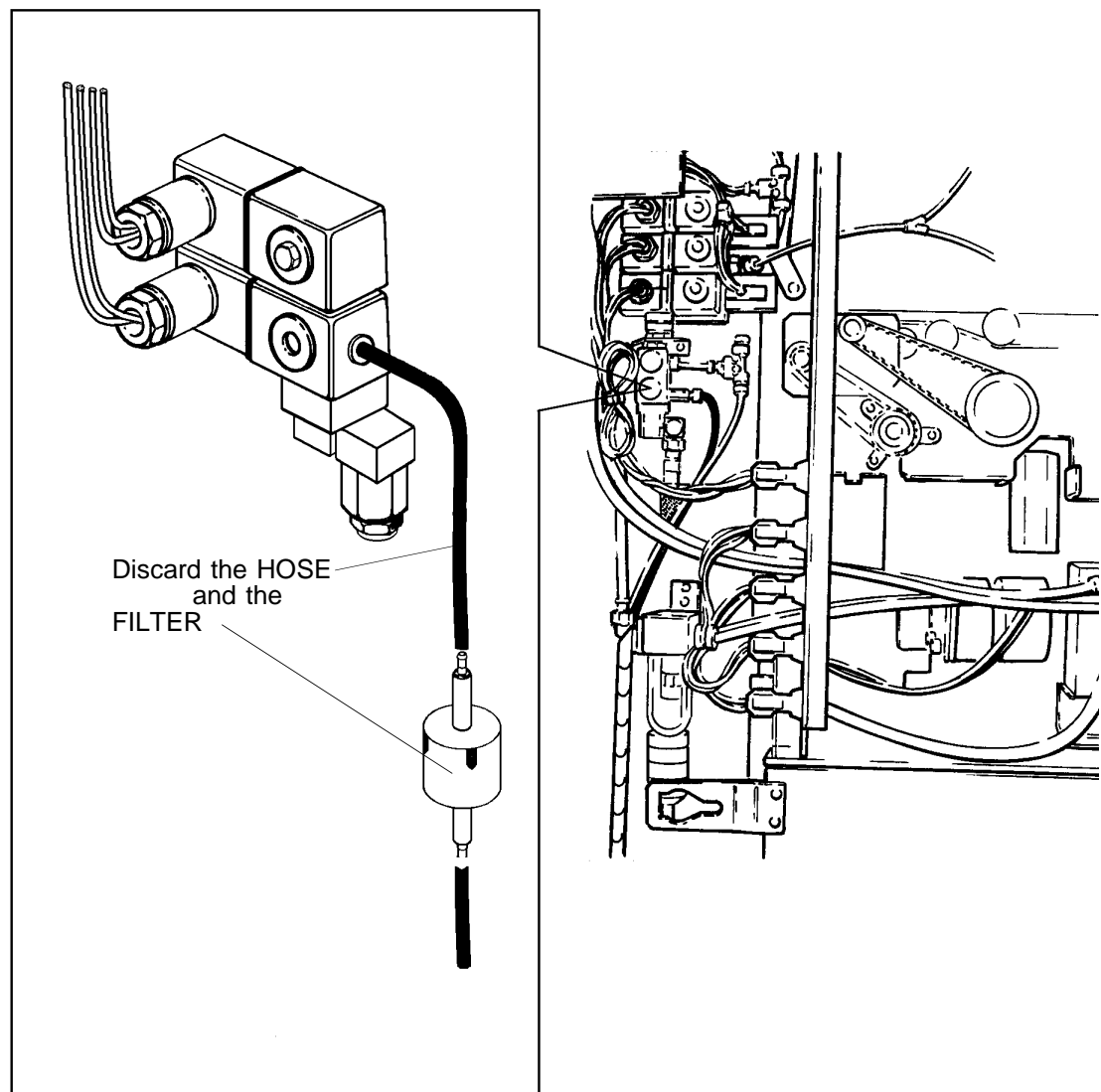


figure 1

4. Mount the additional WATER TRAP below the existing one. Use the double sided tape to mount it.

#### NOTE

**Mount the additional WATER TRAP in such a position that it is still possible to take off the transparent plastic caps with the associated felt rings of both water traps.**

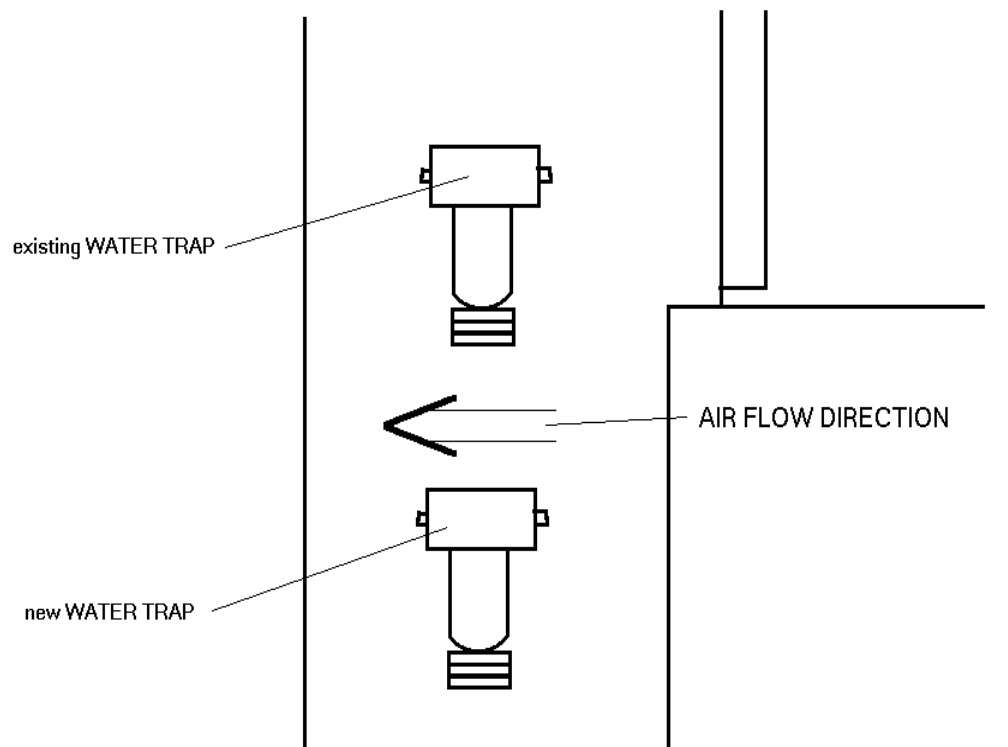


figure 2

5. Mount the COPPER COIL.

### NOTE

**Mount the COPPER COIL horizontally. This ensures that the condensed water flows to the first WATER TRAP.**

Cut the PRESSURE HOSE to the existing WATER TRAP and mount the COPPER COIL in between

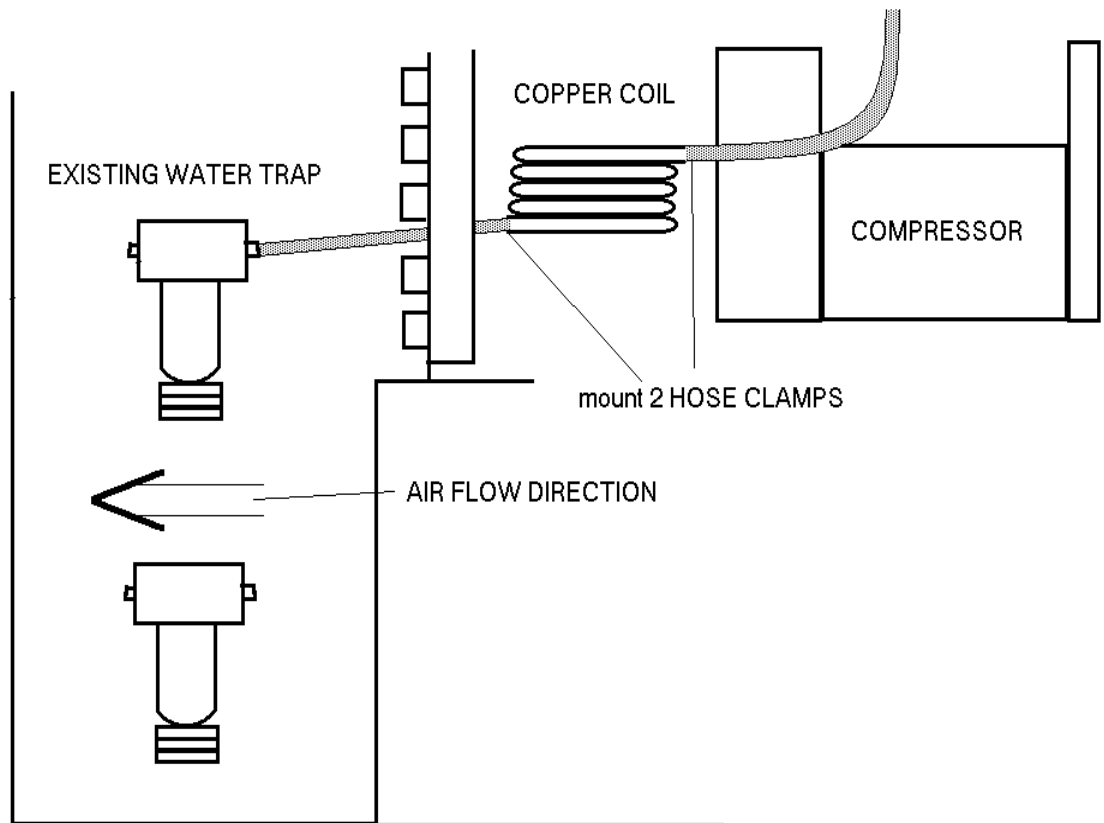


figure 3

6. Connect the additional WATER TRAP to the system.

### NOTE

**Ensure that the HOSES do not interfere with the moving CHAIN.**

New HOSE to SOLENOID VALVE Y11	3mm internal diameter
HOSE from additional WATER TRAP to new AIR FILTER	3mm internal diameter
HOSE from new AIR FILTER to moving CHAIN	4mm internal diameter

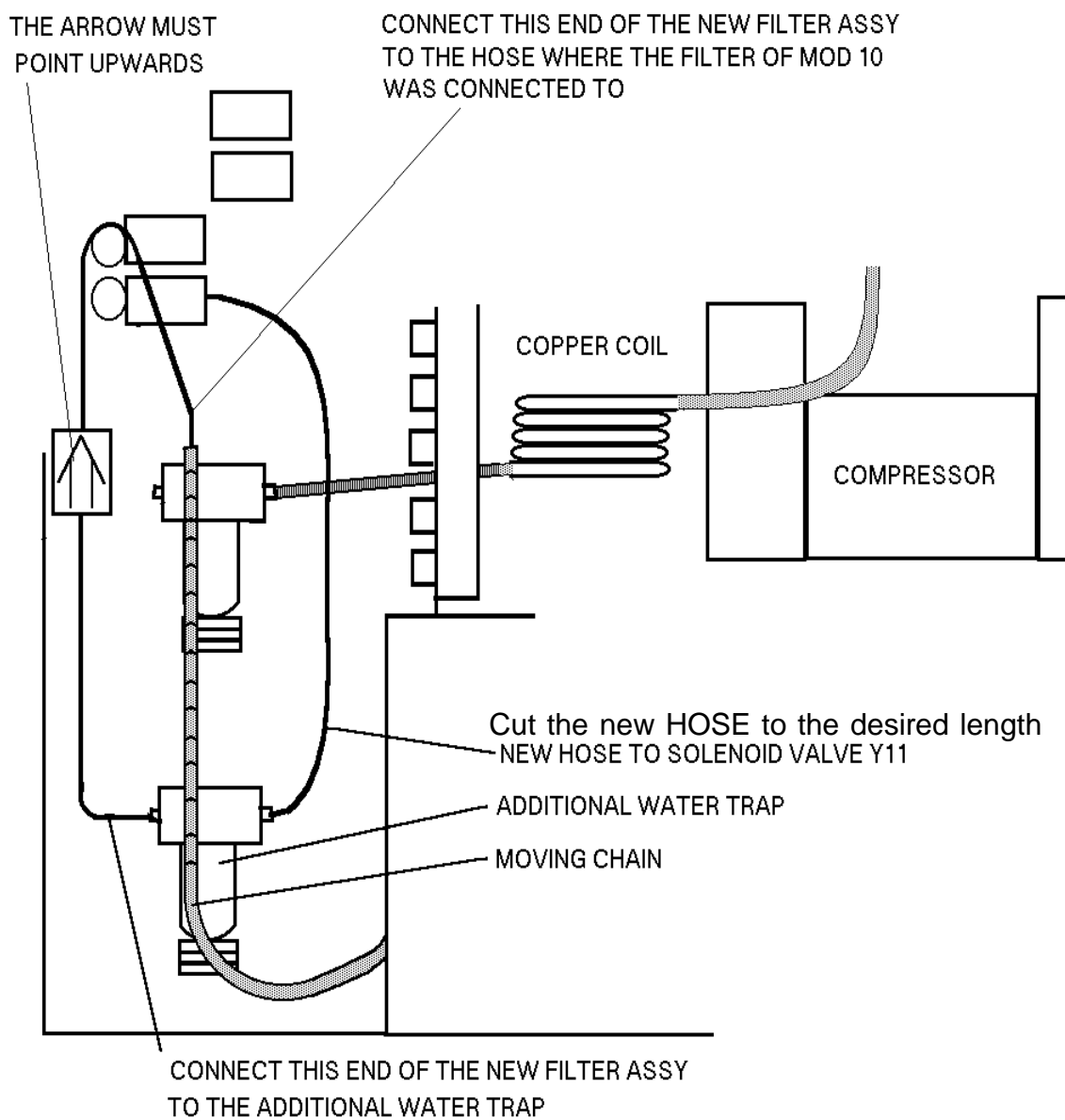


figure 4

7. Check at both WATER TRAPS that the CIRCLIP is in the lower position and not in the upper position. If the CIRCLIP is in the upper position the WATER TRAP will be always closed and the condensed water cannot be drained.

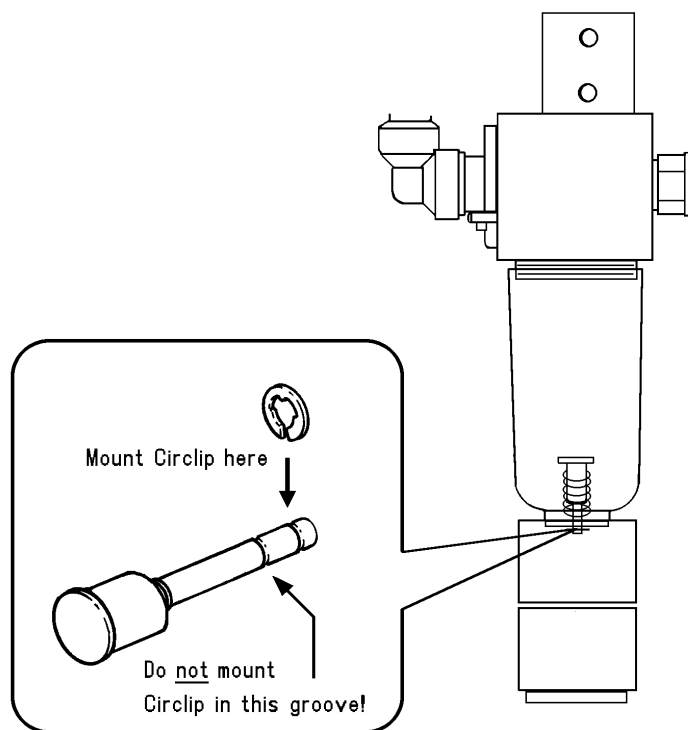


figure 5

8. Replace the existing BLOW PIPES in the FILM POCKET with the new ones. The new BLOW PIPES have a hole of 0.5mm diameter instead of a slit.
9. Adjust the BLOW PIPES. Use the procedure starting on the following page.

#### **NOTE**

**This procedure gives the complete adjustment of the FILM POCKET.  
Use it to check the adjustments. Alter only those adjustment which are  
not correct according to the description.**

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## **FILMPOCKET ADJUSTMENT**

### **PURPOSE:**

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

Special tools:

DENTIST MIRROR TL 2753

BLOWPIPE POSITIONER MAGAZINE TL 4582

### **NOTE**

**Check the adjustment of the FILMPOCKET TIMING DISKS after you did the FILMPOCKET ADJUSTMENT.**

1. Take out all MAGAZINES from the XML300.
2. Empty one MAGAZINE in the dark-room.
3. Take off the LID of 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.

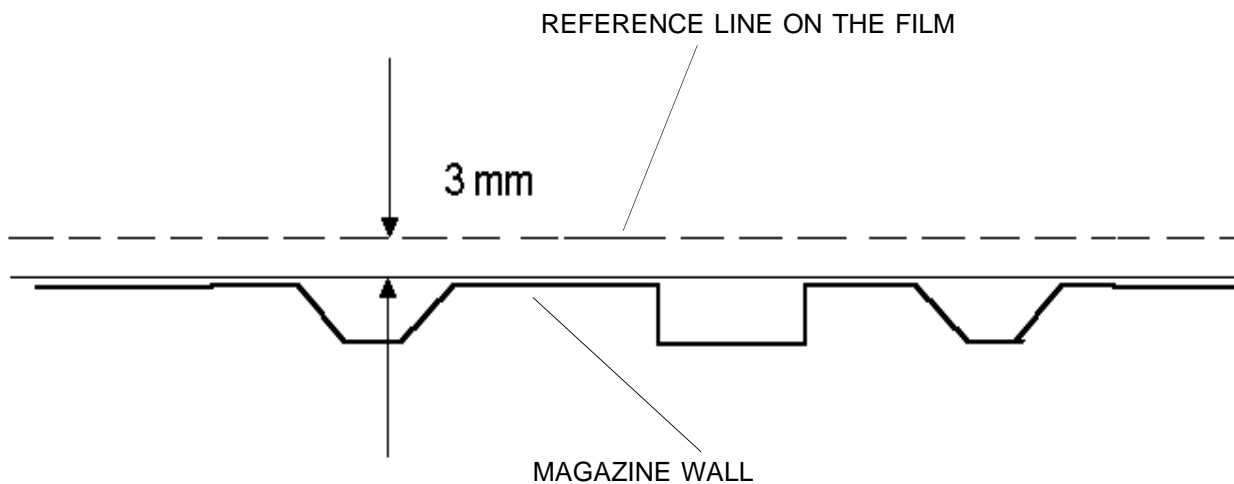


figure 6

6. Make sure that the film is at the MAGAZINE WALL.
7. Insert the prepared MAGAZINE into position 3.
8. Take off all PANELS and rotate out the FILM CHUTE.
9. Pull the INTERLOCK OVERRIDE.
10. Connect the LAP TOP COMPUTER to the XML300 and start the SERVICE SOFTWARE.

Select Drive C:

Key in **CD\XML300** and press ENTER.

Key in **START** and press ENTER.

11. Select **SERVICE MODE ML300**

Use the Up or Down Cursor Key to move the ROLLBAR to  
SERVICE MODE ML300 and press ENTER.

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

13. The UNIT DATA are displayed - press ENTER.

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

15. Move the FILMPOCKET to MAGAZINE LEVEL 3

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

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

17. 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.

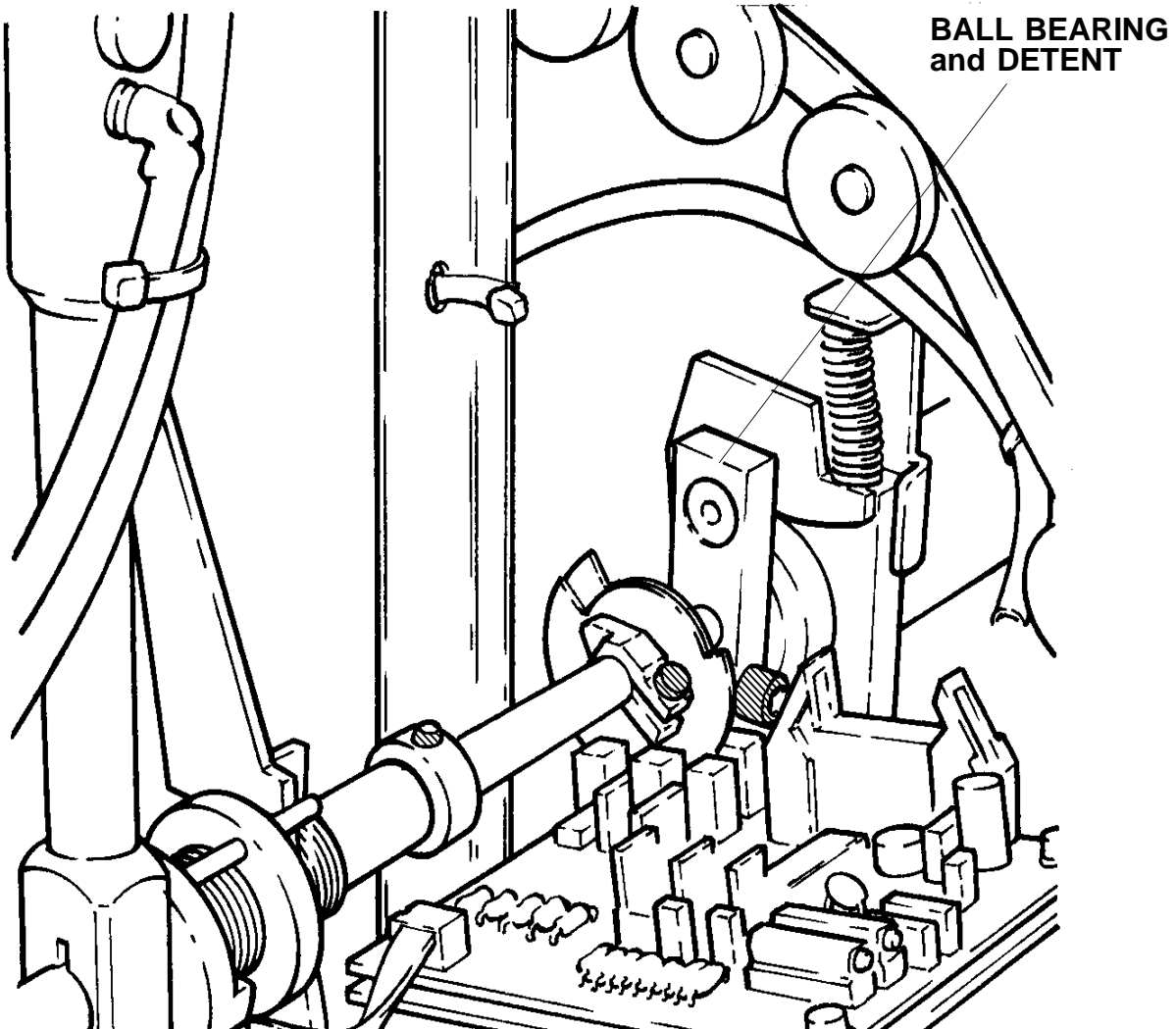


figure 7

18. Energise the SOLENOID TILTING MAGAZINE SUCKER BAR Y14.

Select **SOLENOIDS** and press ENTER.  
Select **TILTING MAGAZINE SUCKER BAR Y14** and press ENTER.  
Select **SOLENOID ON** move the CURSOR to START.

#### NOTE

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

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

**20.** Move the FILMPOCKET to the film in the MAGAZINE.

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

**21.** Check that the MAGAZINE SUCKERS are  $3 \text{ mm} \pm 0.5$  away from the leading edge of the film.  
Use the line made in step 4 as reference.

### NOTE

**Use the DENTIST MIRROR to observe the position of the FILMPOCKET SUCKERS.**

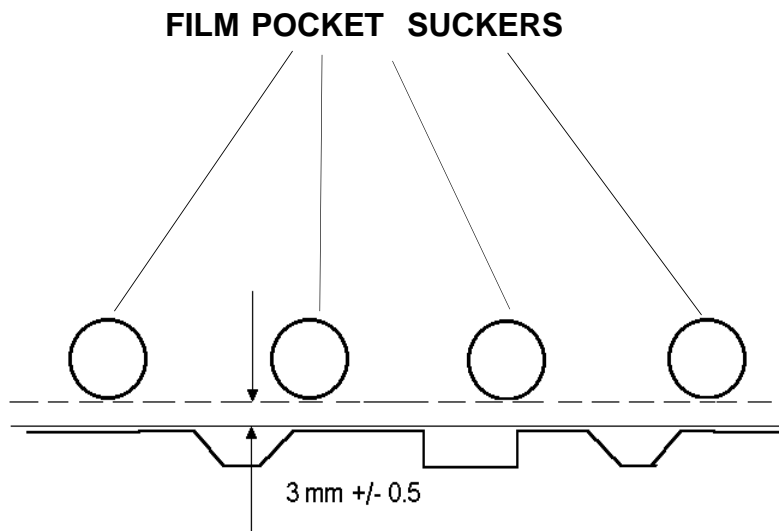


figure 8

**22.** If the distance is not correct, or if the MAGAZINE SUCKER BAR hits against the MAGAZINE WALL proceed with step 23. Otherwise proceed with step 30.

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

24. Loosen SCREW 1 and rotate the SUCKER BAR in or out as required. **Fasten SCREW 1.**

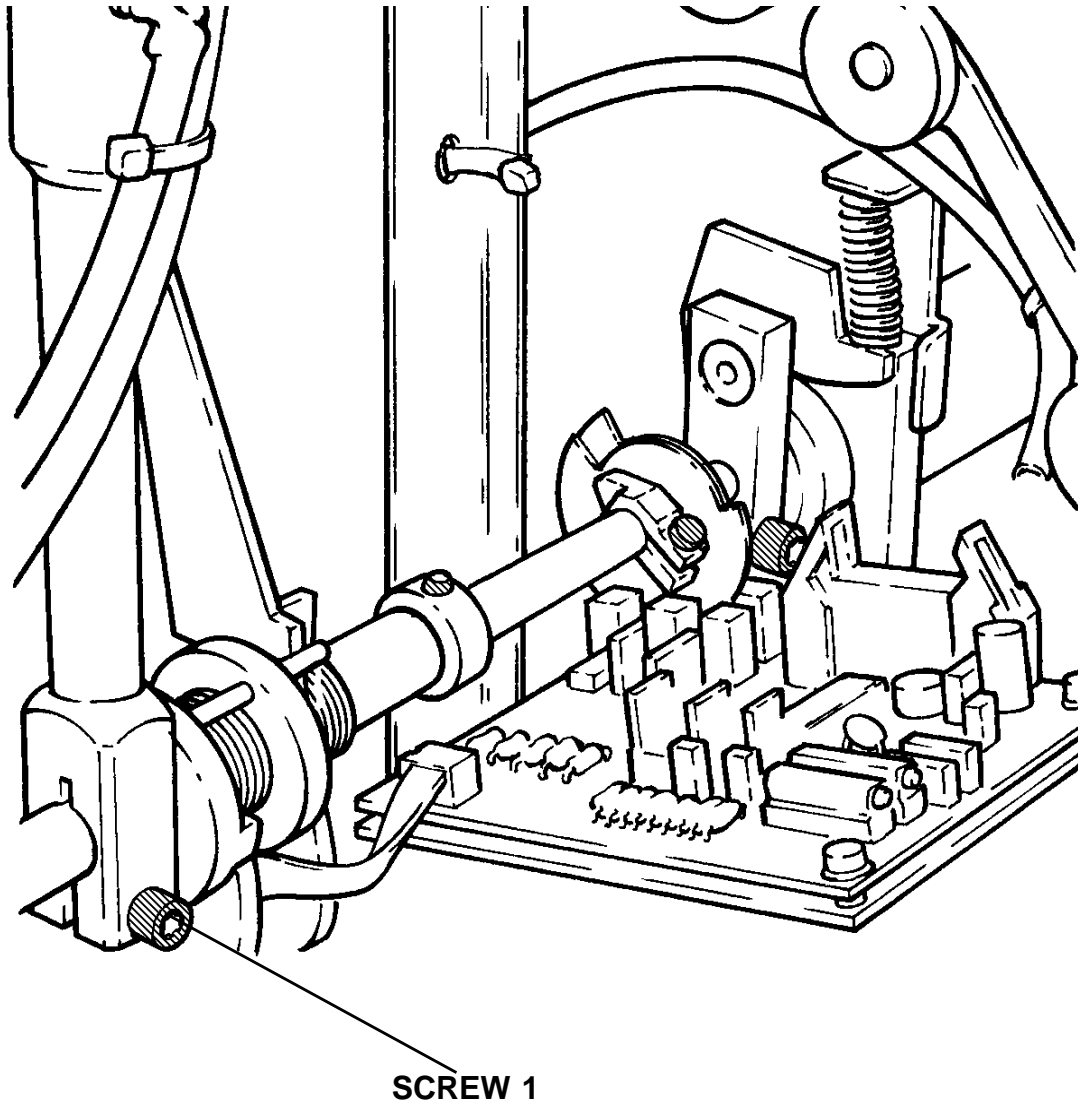


figure 9

25. Manually rotate the SUCKER BAR fully out.
26. Press Backspace until you reach the screen COMPONENT TEST.
27. Deenergize the SOLENOID TILTING MAGAZINE SUCKER BAR Y14 to avoid overheating and let it cool down if necessary.

Select	<b>SOLENOIDS</b>	and press ENTER
Select	<b>TILTING MAGAZINE SUCKER BAR Y14</b>	and press ENTER
Select	<b>SOLENOID OFF</b>	

28. Press Backspace until you reach the screen **COMPONENT TEST**.
29. Proceed with step 15.
30. Press Backspace until you reach the screen **COMPONENT TEST**.
31. 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**.

32. Press Backspace until you reach the screen **COMPONENT TEST**.
33. Check that the BLOW PIPES are not touching the side of the MAGAZINE RECESSES. The BLOW PIPES must not be in the shaded area.

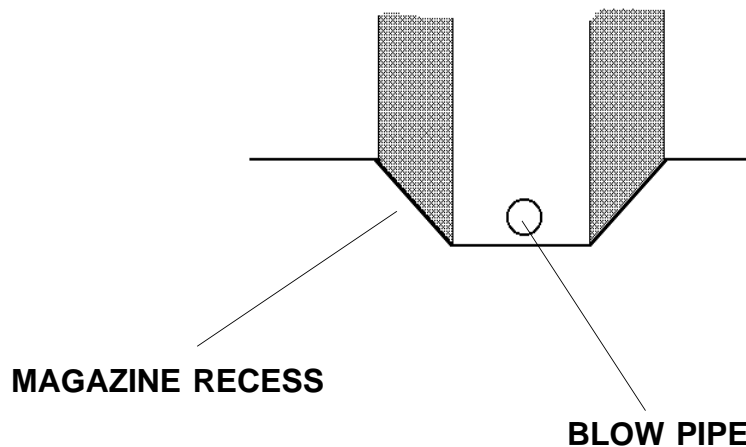


figure 10

- 34.** 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.

**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 21).

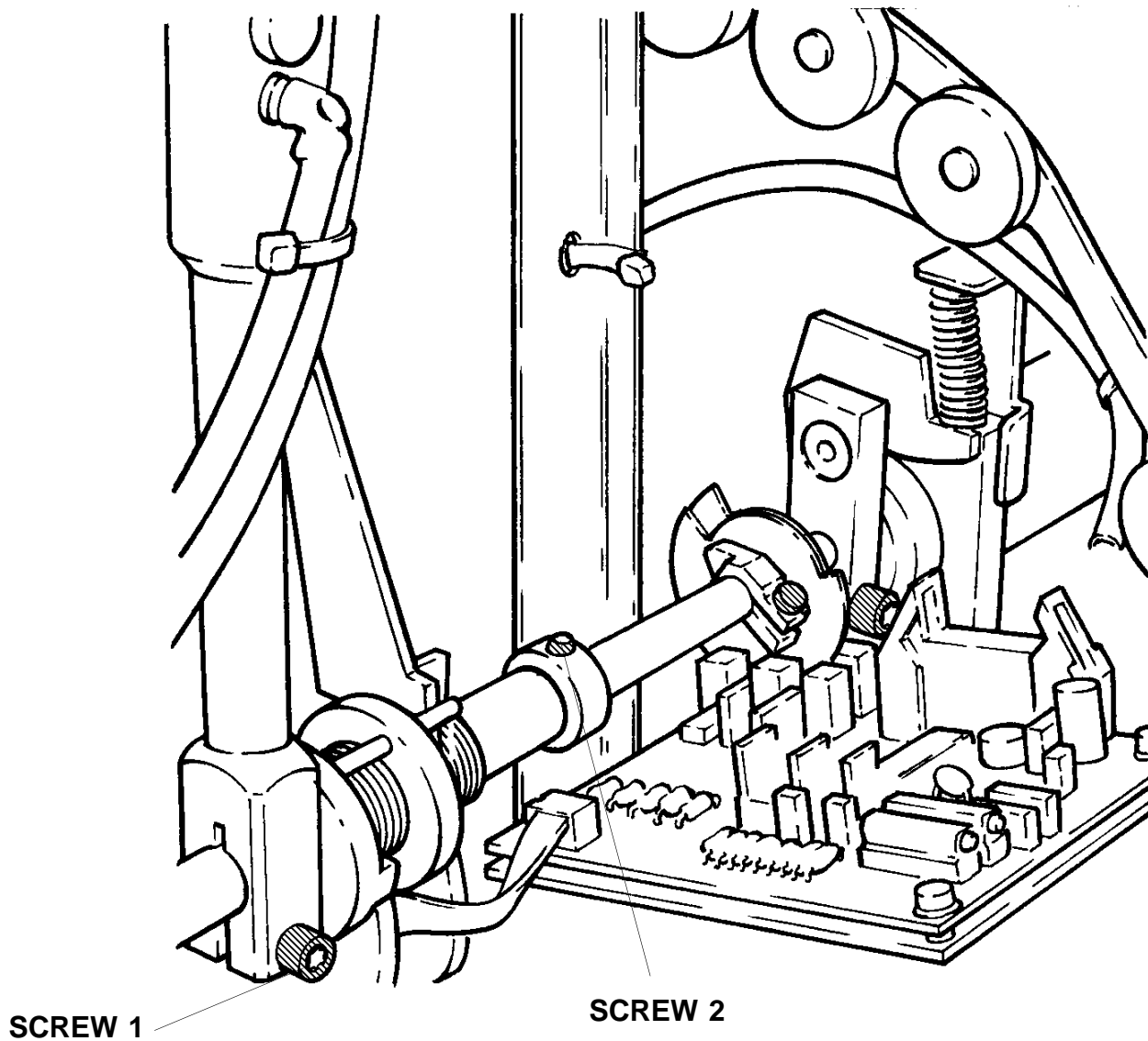


figure 11

**35.** 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.**

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

**37.** 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.

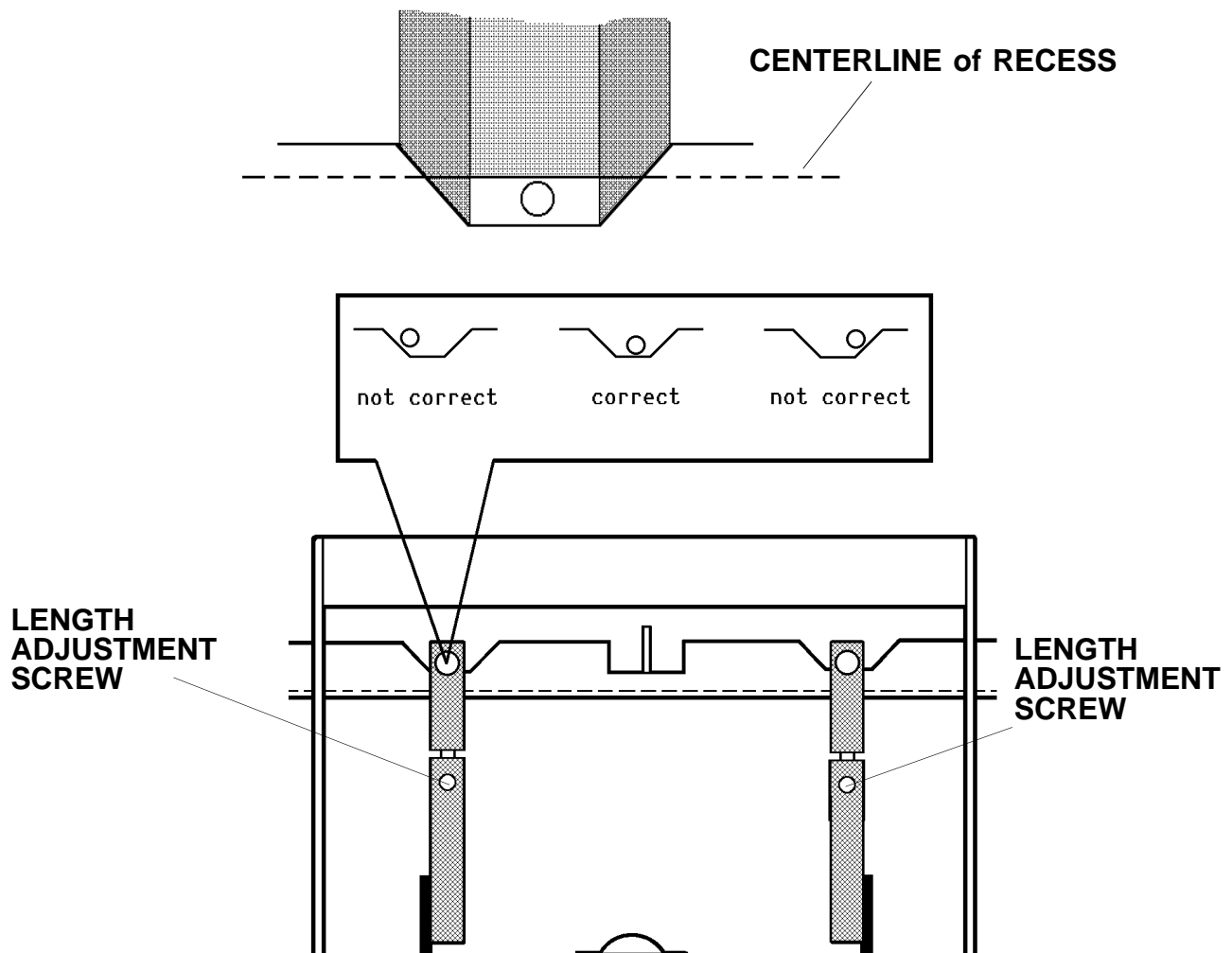


figure 12

**38.** Manually rotate the FILMPOCKET SUCKER BAR out of the MAGAZINE.

**39.** Switch on the **COMPRESSOR**.

Select	<b>MAGAZINE MOTORS</b>	and press ENTER.
Select	<b>COMPRESSOR M16</b>	and press ENTER.
Switch	<b>MOTOR ON.</b>	

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

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

Select	<b>SOLENOID VALVES</b>	and press ENTER.
Select	<b>MAGAZINE SUCKING Y12</b>	
Switch on the	<b>SOLENOID VALVE.</b>	

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

**43.** Tilt the **MAGAZINE SUCKER BAR Y14**.

Select	<b>SOLENOIDS</b>	and press ENTER.
Select	<b>TILTING MAGAZINE SUCKER BAR Y14</b>	and press ENTER.
Switch on the	<b>SOLENOID.</b>	

#### **NOTE**

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

**44.** Place the **BLOWPIPE POSITIONER GAUGE TL 4582** onto the **FILMPOCKET SUCKERS**.

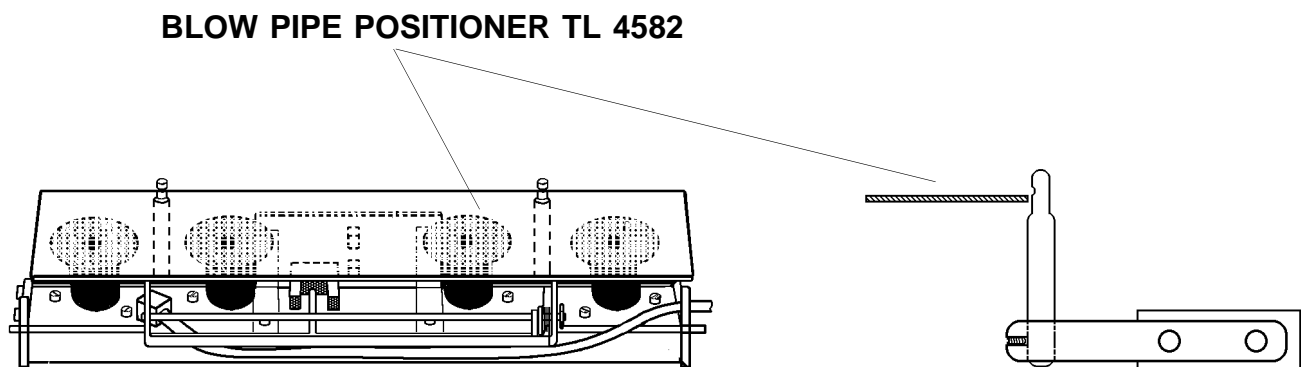


figure 13

45. Check that the 0.5mm HOLE of the BLOWPIPES is just above the BLOWPIPE POSITIONER.
46. 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.**

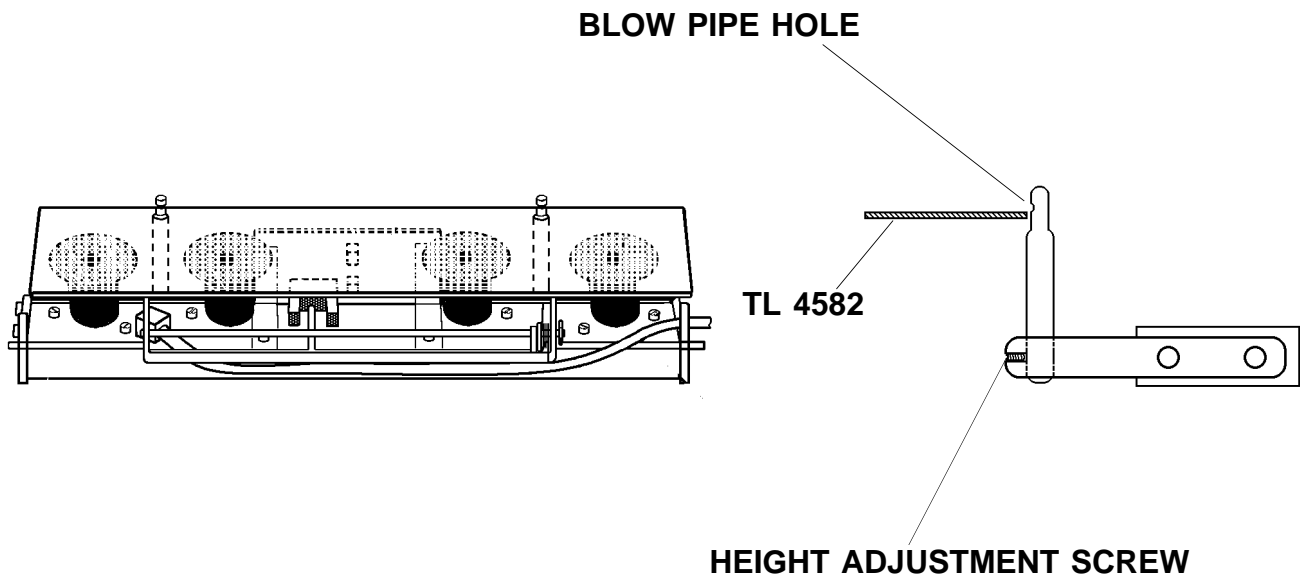


figure 14

47. Switch off the SOLENOID Y14.
48. Press Backspace twice to go back to the screen COMPONENT TEST.

**49.** 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.

**50.** 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.

**51.** Insert a MAGAZINE into position 3.

**52.** 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.**

**53.** Check that there is a gap of 0.5 to 1mm between the BLOWPIPES and the MAGAZINE WALL.

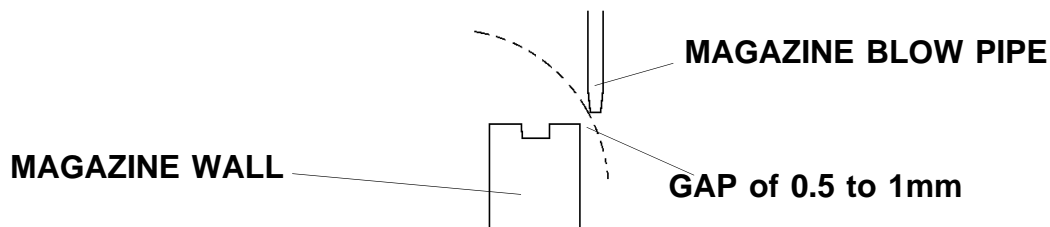


figure 15

**54.** If this distance is not correct, proceed with step 55 else proceed with step 59.

**55.** Rotate out the FILMPOCKET SUCKER BAR.

Select **BACKWARD**

**56.** 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.**

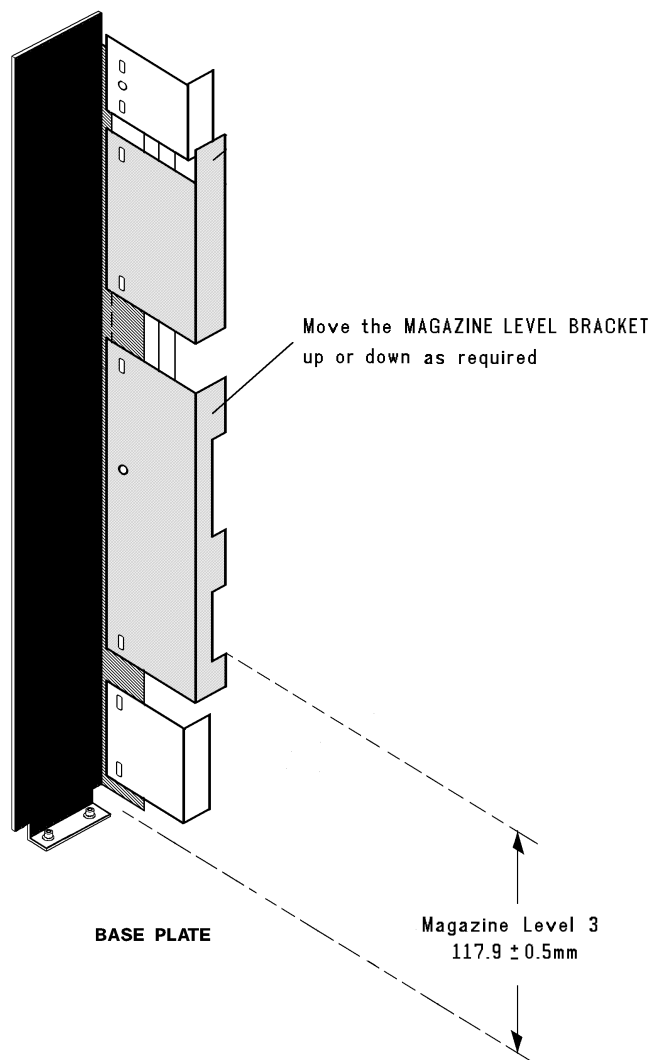


figure 16

**57.** 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

**58.** Proceed with step 61.

**59.** Rotate out the FILMPOCKET SUCKER BAR.

Select **BACKWARD** with the CURSOR KEY.

**60.** Press Backspace to go back to the screen TEST MAGAZINE MOTORS.

**61.** Insert the MAGAZINE into position 1.

**62.** 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.**

**63.** Check that there is a gap of 0.5 to 1.0 mm between the BLOWPIPES and the MAGAZINE WALL.

**64.** If the distance is not correct the MAGAZINE LEVEL ADJUSTMENT must be altered. Use the procedure described in step 55, 56 and 57.

## NOTE

## Find a compromise between step 55 and step 64

**65.** Rotate out the FILMPOCKET SUCKER BAR.

Select **BACKWARD** with the CURSOR KEY.

**66.** 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.

**67.** Put the FILM CHUTE in its correct position.

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

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

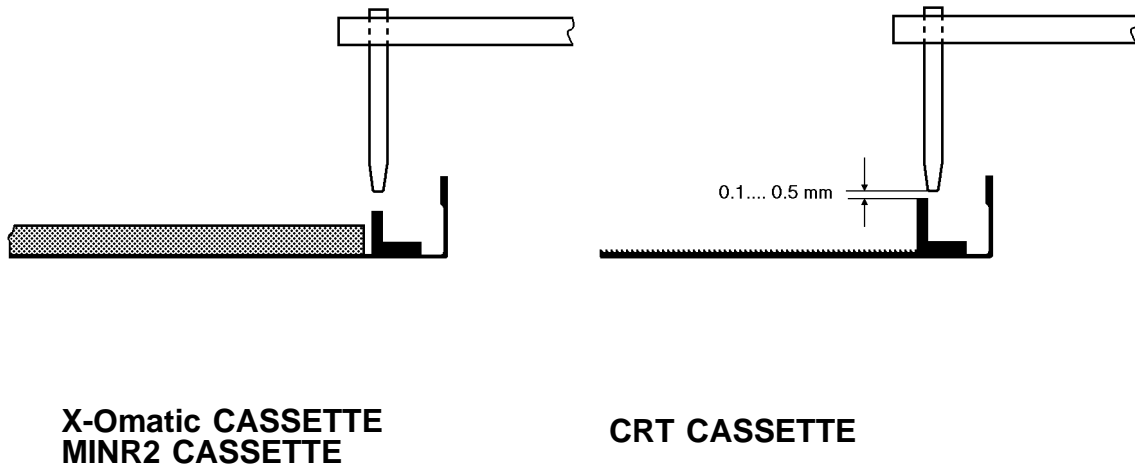


figure 17

**70.** If necessary change the PARAMETER LOWER FILMPOCKET.

**NOTE**

**The PARAMETER LOWER POCKET has no function when a CRT CASSETTE is used.**

71. If the indicated gap between the **MAGAZINE BLOW PIPE** and the **CRT CASSETTE** is not correct adjust the **CASSETTE LEVEL BRACKET**. If the gap is correct or if CRT CASSETTES are not used proceed with the **FINAL TEST**.
72. Loosen the **MOUNTING SCREWS** of the **CASSETTE LEVEL BRACKET** and move it up or down as required. Then fasten the **MOUNTING SCREWS**.

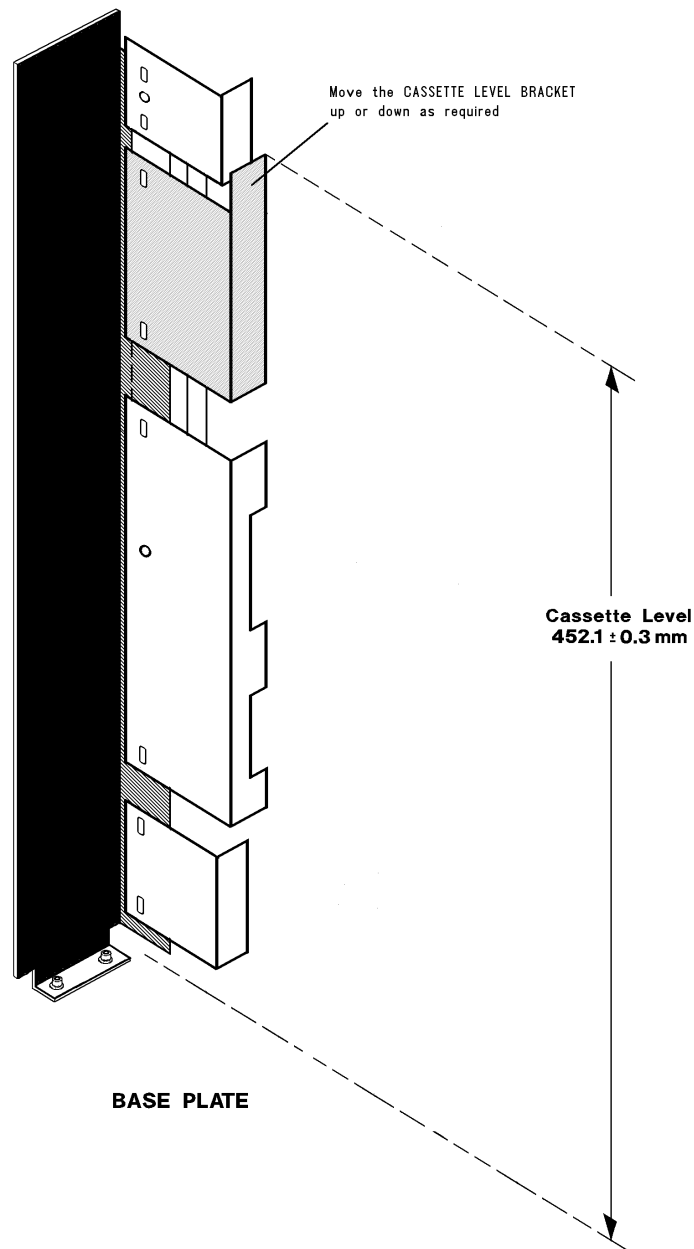


figure 18

**73.** Do a SCAN RUN.

Select Drive C:

Key in **CDXML300** 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

**74.** Proceed with step 68.

## **FINAL TEST**

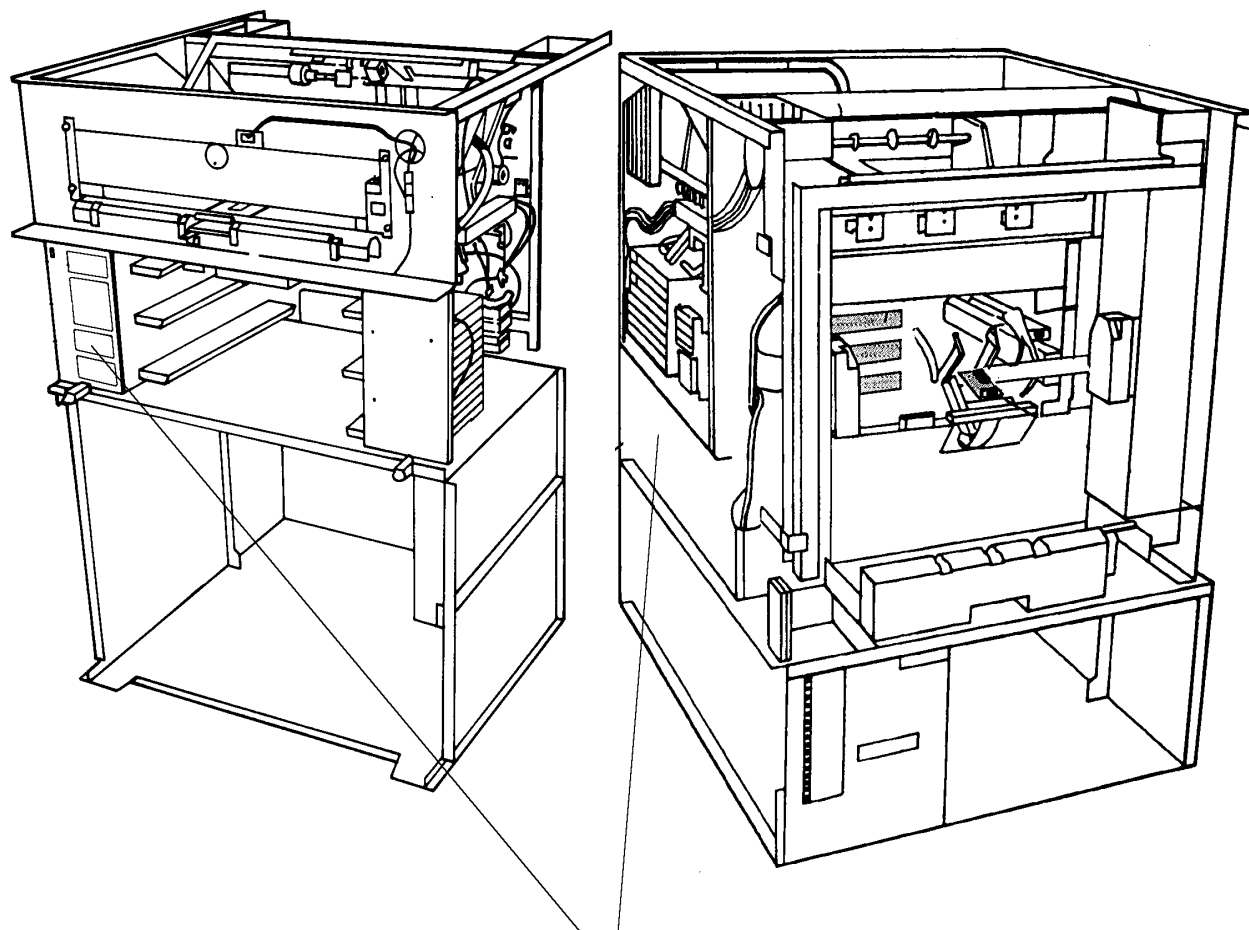
### **NOTE**

**It is not possible to test if water is still sprayed onto the film. For such a test the XML300 has to run several hours and maybe 500 to 600 CASSETTES have to be reloaded. For this reason only the functions of the XML300 should be tested.**

- 1.** Take out all MAGAZINES to avoid fogging the CUSTOMER FILMS.
- 2.** Insert MAGAZINE loaded with test films. (Use different magazine sizes).
- 3.** Run at least 20 cycles to see if the films are picked up correctly from the MAGAZINE. If there was any water in the system, it will be blown out at this time.
- 4.** Circle MOD 20 on the MODIFICATION LABEL. See figure on the next page.
- 5.** Mount all Panels.
- 6.** Insert the MAGAZINES with CUSTOMER FILMS.

from SN 1370

up to SN 1369



1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	
22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	

figure 19



**CUSTOMER EQUIPMENT SERVICES KODAK AG STUTTGART GERMANY**