

Modification Index

File Name	Mod No.	Type	Pub No.	Pub Date	Product
ma323401.pdf	M01	1 Required	MA3234-M01	November 1992	Miniloader 1M
mb323403.pdf	M03	2	MB3234-M03	July 1993	Miniloader 1M
mb323405.pdf	M05	2	MB3234-M05	November 1994	Miniloader 1M
ma321131.pdf	M31	1 Selective	MA3211-31	August 1992	Miniloader 1
mb321132.pdf	M32	2	MB3211-M32	June 1992	Miniloader 1
mb321133.pdf	M33	1 Selective	MB3211-M33	November 1992	Miniloader 1
mb321134.pdf	M34	1 Selective	MB3211-M34	November 1992	Miniloader 1
mb321135.pdf	M35	2	MB3211-M35	February 1994	Miniloader 1, 1M
mb321136.pdf	M36	2	MB3211-M36	November 1994	Miniloader 1



MODIFICATION INSTRUCTIONS

for the

KODAK MINILOADER 1

Service Codes 3211, 3212

MODIFICATION No. M31

Type 1 SELECTIVE

PURPOSE:

The TILT MOTOR SHAFT is replaced with a new shaft which provides an earlier actuation of MICROSWITCH MS 14 to prevent the TILT MOTOR over-running. If the motor over-runs, film jams can result in the SUPPLY MAGAZINE or the MULTIPLE FILM LOAD DETECTOR area.

NOTE - Modification M17 added a potentiometer to control the speed of the TILT MOTOR, and in most cases this will provide all the control needed. However some TILT MOTORS cannot be satisfactorily adjusted for speed by modification M17. If it is possible that the speed has to be set so slow to prevent over-running, that the TILT MOTOR occasionally stalls.

IMPORTANT: Only qualified service personnel should install this modification!

SERIAL NUMBERS: 1162 - 1269

INSTALLATION TIME: Approximately 1 hour.

SPECIAL TOOLS: None

PARTS REQUIREMENT: See Parts list.

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30090031	MODIFICATION KIT	1
THE KIT CONTAINS:		
30012377	SHAFT FOR TILT MOTOR	1
MA3211-31	MODIFICATION INSTRUCTIONS	1

CAUTION



This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

PLEASE NOTE

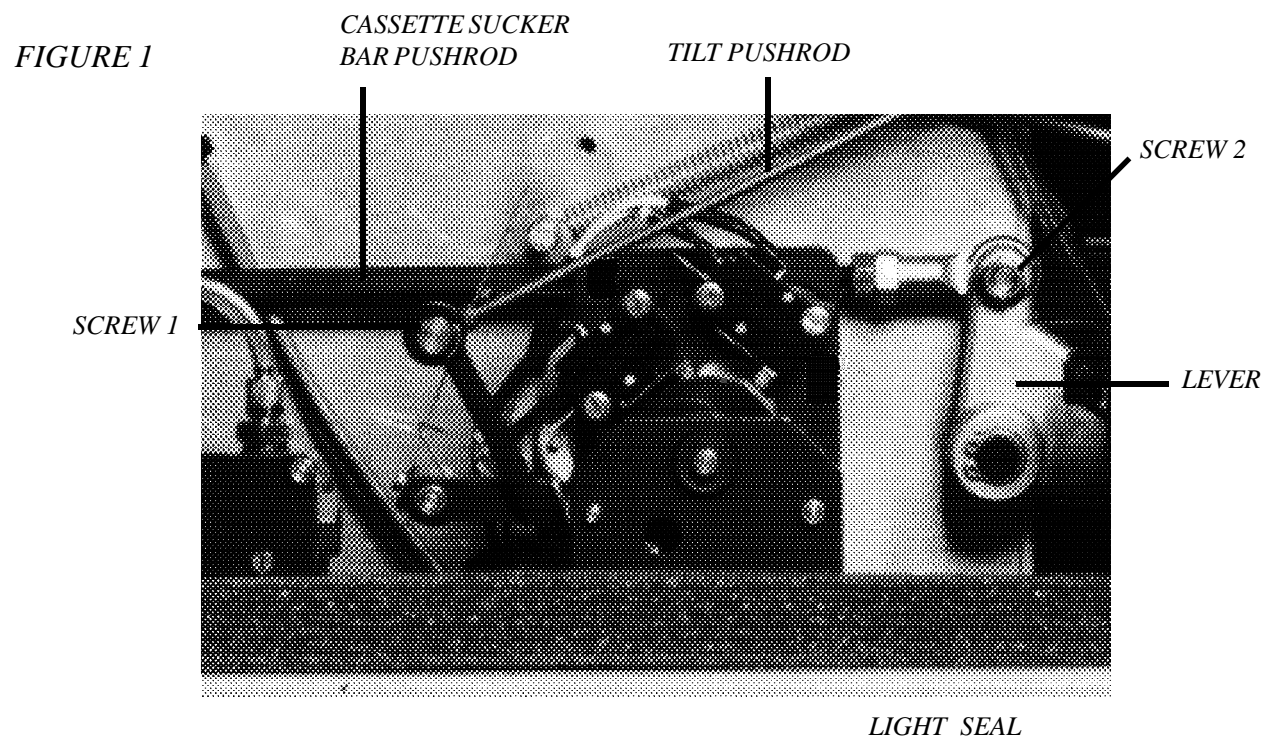
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MODIFICATION INSTRUCTIONS

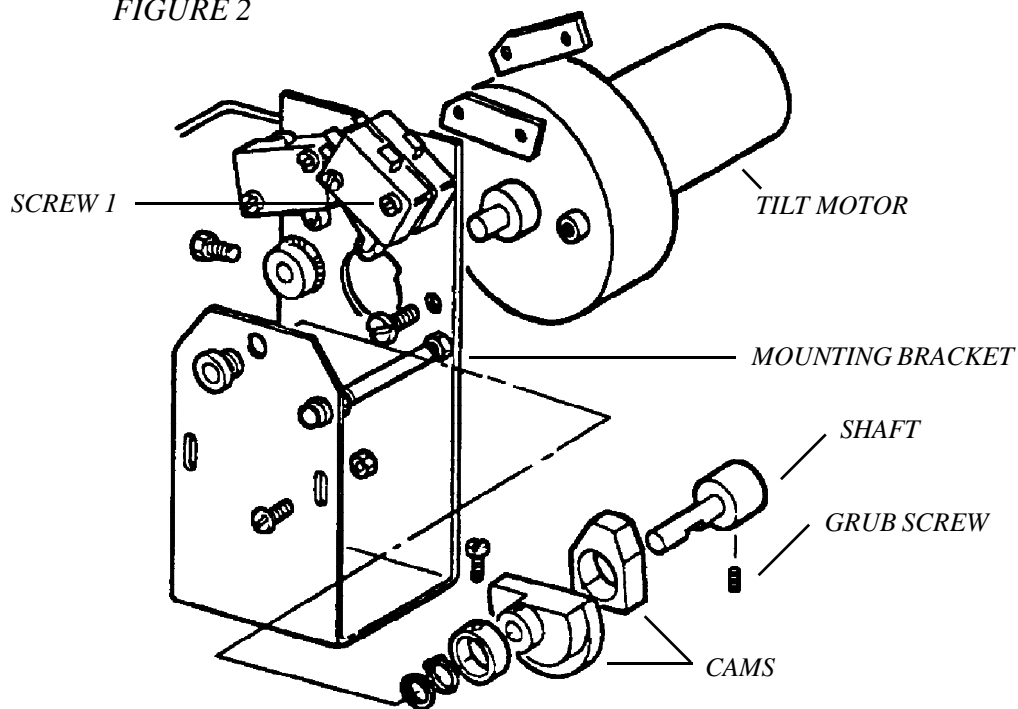
1. Switch off the MINILOADER, and remove the TOP COVER and the left (looking from the front) SIDE PANEL.
2. Disconnect the TILT PUSH ROD by removing the M4 SCREW (SCREW 1 in FIGURE 1) on the TILT LINKAGE.
3. Disconnect the CASSETTE SUCKER BAR PUSH ROD by removing the SCREW (SCREW 2 in FIGURE 1) from the LEVER. CAUTION - support the SUCKER BAR as you remove the SCREW, and gently lower the SUCKER BAR to the CASSETTE CONVEYOR BELT as it becomes loose. Do not attempt to disconnect the CASSETTE SUCKER BAR PUSH ROD by unscrewing the PUSH ROD, as you will destroy the adjustment.



4. Carefully peel back the LIGHT SEAL to gain access to the SCREWS that secure the TILT MOTOR ASSEMBLY and remove them.
5. By rotating the complete assembly by 90 degrees it is now possible to withdraw the TILT MOTOR ASSEMBLY from the MINILOADER. The MICROSWITCH WIRES are still connected to the WIRING HARNESS so you must keep the assembly alongside the MINILOADER.

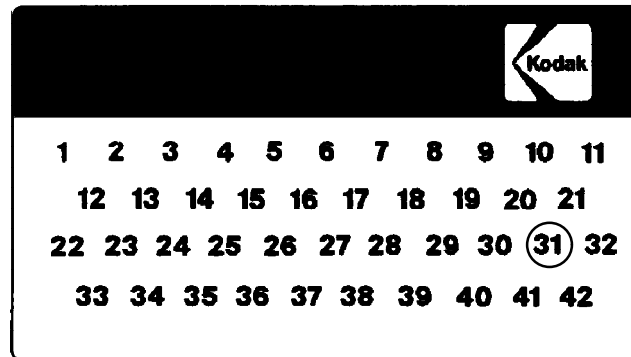
6. Remove the SCREW (1 in FIGURE 2) that retains the two MICROSWITCHES, and then rotate the MICROSWITCHES away from the CAM ASSEMBLY.

FIGURE 2



7. Remove the three SCREWS that secure the TILT MOTOR to the MOUNTING BRACKET. Hold the CAM FOLLOWERS away from the CAMS and withdraw the TILT MOTOR. The hole in the MOUNTING BRACKET is profiled to allow the withdrawal.
8. Change the existing SHAFT for the new SHAFT, reusing the GRUB SCREW. The new SHAFT has the FLAT for the MICROSWITCH operating CAM advanced by 15 degrees compared to the old SHAFT. This ensures the MICROSWITCHES are operated earlier. Reassemble the TILT MOTOR on the MOUNTING BRACKET.
9. Replace the MICROSWITCH MOUNTING SCREW, and adjust the MICROSWITCHES so the SWITCHES are not bottomed as the CAMS rotate.
10. Refit the TILT MOTOR ASSEMBLY in the MINILOADER and refit the LIGHT SEAL.
11. Refit the CASSETTE SUCKER BAR PUSH ROD onto the LEVER.

12. Refit the TILT PUSH ROD.
13. Load some TEST FILM into the SUPPLY MAGAZINE and run some cycles to check the operation of the TILT. If necessary adjust the speed of the TILT MOTOR by means of the POTENTIOMETER P601 on PCB 106A/B. It should be possible to run the TILT MOTOR faster now that the modification has been carried out.
14. Circle M31 on the MODIFICATION LABEL and refit the PANELS.





HEALTH SCIENCES DIVISION



MODIFICATION INSTRUCTIONS
for the
KODAK MINILOADER 1M,
MODELS STAND-ALONE, & PROCESSOR INTERFACE

Service Codes 3234, & 3235

MODIFICATION No. M01

Type 1 Required

PURPOSE:

To change the speed of the cam motor to stop cam system malfunctions, to prevent damage to the cam motor relays, and lengthen the life of the cam motor. Film handling is also improved.

This modification will also prevent spurious blowing of the cam motor fuse.

IMPORTANT: Only qualified service personnel should install this modification!

SERIAL NUMBERS: 1500 - 1530
1700 - 1718

INSTALLATION TIME: Approximately 30 minutes.

SPECIAL TOOLS: None

PARTS REQUIREMENT: No parts required.

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
MA3234-M01	MODIFICATION INSTRUCTIONS	1

CAUTION



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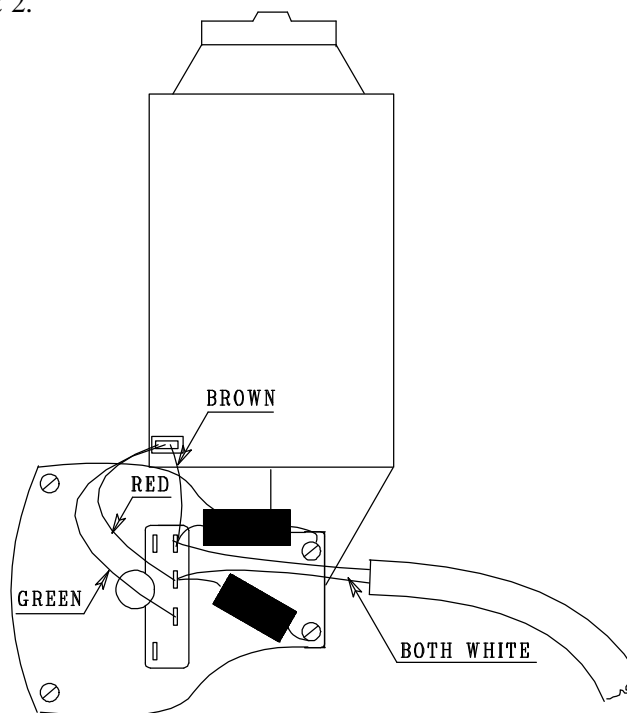
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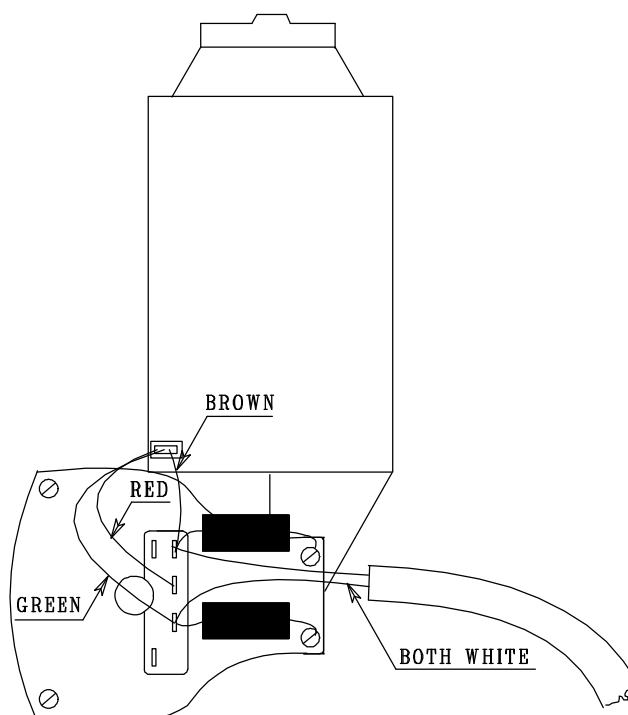
MODIFICATION INSTRUCTIONS

1. Switch off the power to the MINILOADER and remove the TOP COVER and the right hand (from the front) SIDE PANEL.
2. On the CAM MOTOR, identify the CONNECTOR STRIP. Un-solder the WHITE WIRE marked "C" and the CAPACITOR from the CONNECTION that the RED MOTOR WIRE is connected to, and re-solder the WHITE WIRE and the CAPACITOR to the CONNECTION that the GREEN MOTOR WIRE is connected to. See FIGURES 1 & 2.

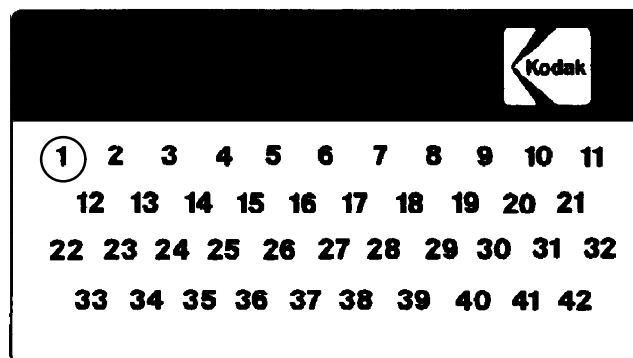
*FIGURE 1.
Before the modification.*



*FIGURE 2.
After the modification.*



3. Replace the right hand SIDE PANEL, and turn the power to the MINILOADER on.
4. Using the SWITCHES on PCB 303 enter the PROGRAMMING MODE. (SWITCH 1 ON) Check that the DATE & TIME are still correct, reset if necessary.
Check the SERIAL NUMBER is still correct, change if necessary.
Select the required LANGUAGE.
Note that PARAMETER P3, "MULTIPLE FILM DETECTION PAUSE" can now be reduced to 0.5 Seconds (previously 1.0 Second) because as the CAM MOTOR is now moving more slowly, less time is required for the FILM to stabilise.
5. On most MINILOADERS, the cycle time after doing this modification does not change. This is because although the CAM MOTOR is running more slowly, the time for HOME POSITION to be reached at the end of the cycle is much reduced as, due to the slower speed, the program is able to stop the CAM MOTOR in HOME POSITION first time, and does not need to "hunt" for HOME POSITION. However, on PROCESSOR INTERFACE MINILOADERS, it is necessary to check that PARAMETER P4 "GAP BETWEEN FILMS" is still correctly set. The correct way to do this is to check the gap between films leaving the PROCESSOR in SERIAL MODE, and alter PARAMETER P4 if necessary.
6. Circle MOD M01 on the MODIFICATION LABEL, re-assemble the MINILOADER and test .



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MODIFICATION INSTRUCTIONS

for the

KODAK MINILOADER 1

Service Codes 3211, 3212

MODIFICATION No. M32

Type 2

PURPOSE:

On some MINILOADERS it is not possible to adjust the MAGAZINE SUCKER BAR to prevent FILMS being pulled back out of the CASSETTE by the SUCKERS as the SUCKER BAR returns from the CASSETTE.

This modification replaces the old SUCKER BAR with a bar of a new shape.
The new SUCKER BAR can be identified by a white spot on the mounting.

IMPORTANT: Only qualified service personnel should install this modification!

SERIAL NUMBERS: All

INSTALLATION TIME: Approximately 1 hour.

SPECIAL TOOLS: STEP BY STEP SWITCH Part no. 29035052
SPRING BALANCE 0 - 5 kg Part no. 29030707

PARTS REQUIREMENT: See Parts list.

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30092032	MODIFICATION KIT	1
THE KIT CONTAINS:		
30012380	MAGAZINE SUCKER BAR	1
MA3211-32	MODIFICATION INSTRUCTIONS	1

CAUTION



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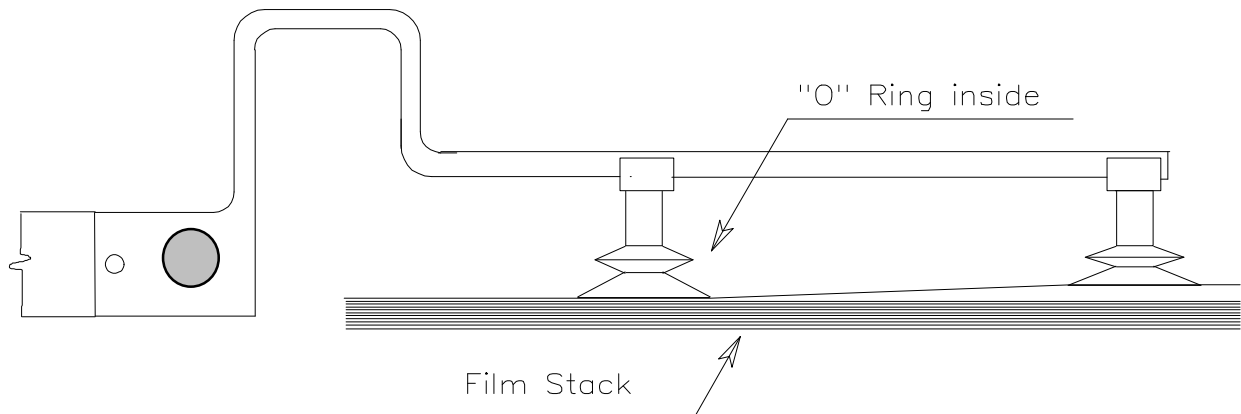
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MODIFICATION INSTRUCTIONS

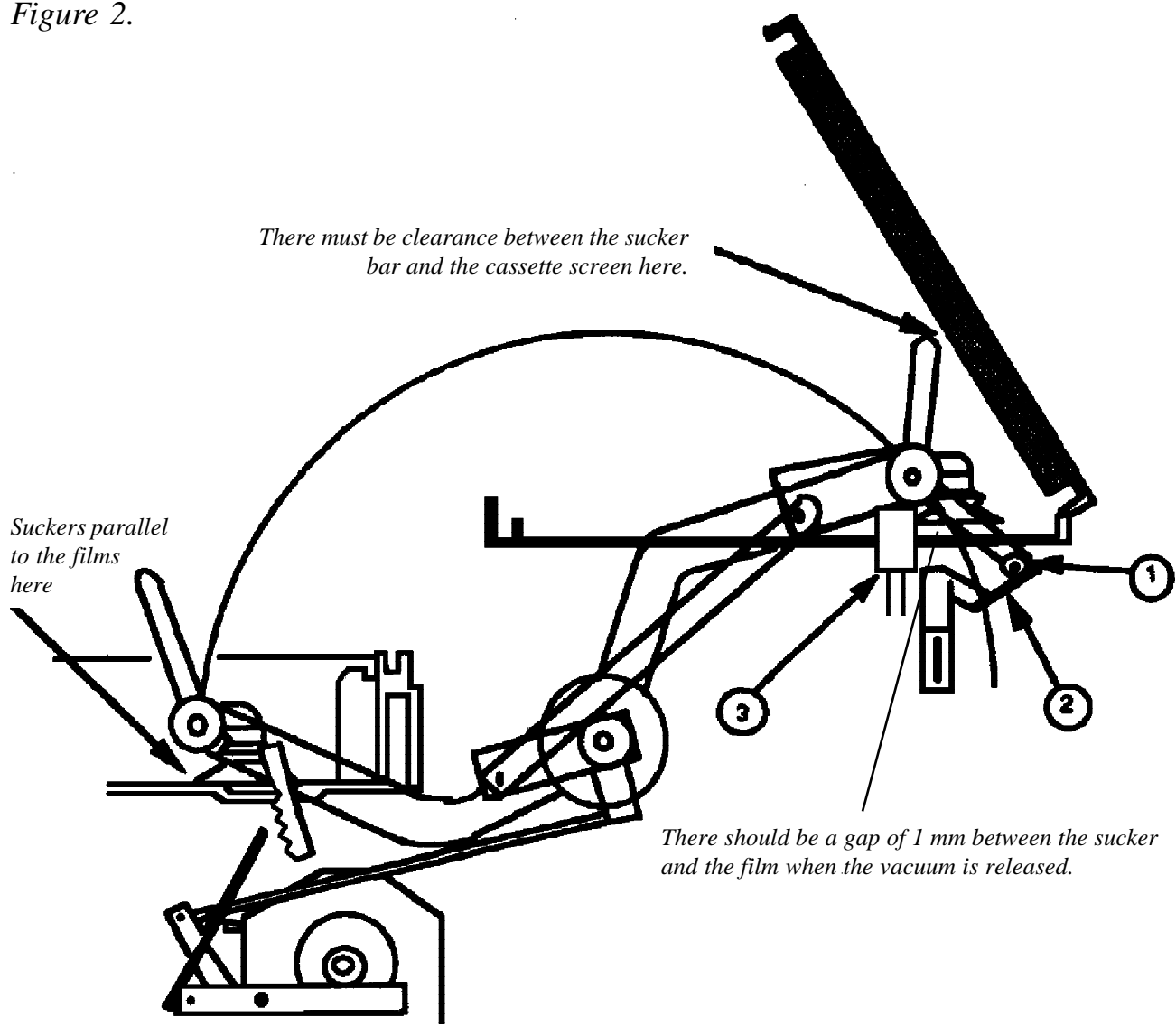
1. Remove the MINILOADER COVER and the non-drive SIDE PANEL. Remove the FILM MAGAZINE(S). Unload the SUPPLY MAGAZINE and place some TEST FILMS in it. Replace the SUPPLY MAGAZINE in the MINILOADER.
2. Remove the MAGAZINE SUCKER BAR from the MINILOADER, retain the SUCKERS and discard the old BAR. **IMPORTANT - Do not touch the surface of the SUCKER with your hand, use a GLOVE or a CLEAN CLOTH to handle the SUCKERS.**
3. Fit the SUCKERS on the new SUCKER BAR **IMPORTANT - Make sure the SUCKER with the "O" RING inside is fitted to the mounting end of the SUCKER BAR.** This ensures correct separation of FILMS when the vacuum is applied to the SUCKERS. See Figure 1.

Figure 1.



4. Fit the new SUCKER BAR to the MINILOADER taking care not to damage the "O" RING SEAL inside the SUCKER BAR MOUNTING. Using the JOG SWITCH (on PCB 106) jog the machine until the MAGAZINE SUCKER BAR is just above the TEST FILM in the SUPPLY MAGAZINE. See Figure 2. Loosen the two GRUB SCREWS on the SUCKER BAR and adjust the angle of the BAR, so the SUCKERS are parallel with the FILM. If necessary alter the individual SUCKERS, so both SUCKERS are parallel..
5. Jog the machine further through the cycle and make sure that the SUCKER BAR does not touch the CASSETTE SCREEN as the SUCKER BAR enters and leaves the CASSETTE.

Figure 2.

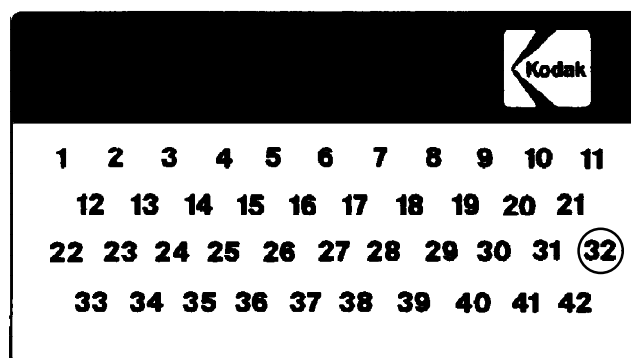


6. Fit the STEP BY STEP SWITCH to the MINILOADER (see the SERVICE MANUAL for instructions if necessary). Run some cycles and check that the FILMS enter the CASSETTE correctly.

The FILM should be "tucked into" the HINGE of the CASSETTE without catching the BASE of the CASSETTE or the SCREEN. The FILM must not be pulled back out of the CASSETTE when the SUCKER BAR returns. There should be a gap of a least one millimetre between the FILM and the SUCKER when the vacuum is released.

If necessary adjust the angle of the CAM FOLLOWER (1), the height and/or angle of the STATIC CAM (2) or the height of the STOP (3). It may also be necessary to adjust one of the PUSH RODS which drive the SUCKER BAR.

7. When the FILM is entering the CASSETTE correctly, check that the SUCKER BAR presses against the STOP (3) with a force of 0.5 to 1 kg. Adjust the PUSHROD if required.
8. Circle M 32 on the MODIFICATION LABEL, replace the SIDE PANEL and the LID of the MINILOADER. Reload the MAGAZINE(S) and if possible process some film to check for ARTIFACTS.





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MODIFICATION INSTRUCTIONS

for the

KODAK MINILOADER 1

Service Codes 3211, 3212

MODIFICATION No. M33

Type 1 SELECTIVE

PURPOSE:

To replace PCB 101A or PCB 101B with a modified PCB 101C to prevent the CONVEYOR BELT running in reverse at the end of a cycle. The new PCB has a SOLID STATE RELAY to replace TIMER T6. This modification replaces Modification M28.

IMPORTANT - The new PCB 101C cannot replace PCB 101, only PCB 101A & PCB 101B.

IMPORTANT: Only qualified service personnel should install this modification!

SERIAL NUMBERS: 1162 - 1412
Plus 1101 - 1161 with a serial number suffix M.

INSTALLATION TIME: Approximately 1 hour.

SPECIAL TOOLS: Test film.

PARTS REQUIREMENT: See Parts list.

PARTS AVAILABILITY: End of September 1992.

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30090033	MODIFICATION KIT	1
THE KIT CONTAINS:		
30015981	PCB 101C	1
HTL 1217	STATIC SENSITIVE LABEL	1
MA3211-33	MODIFICATION INSTRUCTIONS	1

CAUTION



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MODIFICATION INSTRUCTIONS

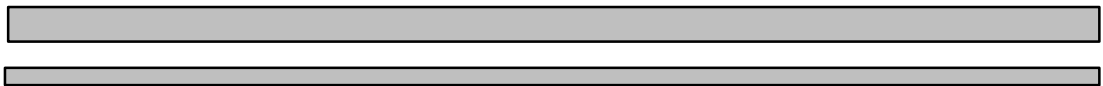
1. Switch off the MINILOADER and remove the SUPPLY MAGAZINE and the ELECTRICAL COVER.
2. Remove PCB 101A or PCB 101B (whichever is fitted) and replace it with PCB 101C. Re-pack the old PCB in the ANTI-STATIC BAG and re-seal the BAG with the STATIC SENSITIVE LABEL supplied in the MODIFICATION KIT. Tick the "UNFIT FOR STOCK" box and write the SERIAL NUMBER of the MINILOADER on the LABEL. The old PCB must be returned to your SPARES SERVICES DEPARTMENT.
3. Load the SUPPLY MAGAZINE with TEST FILM. Run some cycles to check the operation of the MINILOADER. Check the settings of the TIMERS on PCB 101C. IMPORTANT, if the MINILOADER is a PROCESSOR INTERFACE MODEL, do not forget to set TIMER T14 to suit the processing cycle being used.
4. Replace all parts and circle M 33 on the MODIFICATION LABEL.

Kodak										
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	

5. Use the normal procedure in your country to send the old PCB back to your SPARES SERVICES so it can be modified. If the old PCB is not returned, with the SERIAL NUMBER of the MINILOADER which it was removed from written on it, your country will not receive credit for it.



HEALTH SCIENCES DIVISION



CUSTOMER EQUIPMENT SERVICES DIVISION, SWALLOWDALE LANE, HEMEL HEMPSTEAD, HERTFORDSHIRE, ENGLAND.



MODIFICATION INSTRUCTIONS

for the

KODAK MINILOADER 1

MODELS STAND-ALONE, & PROCESSOR INTERFACE

Service Codes 3211, & 3212

MODIFICATION No. M34

Type 1 Selective

PURPOSE:

To change the speed of the cam motor to stop cam system malfunctions, to prevent damage to the cam motor relays, and lengthen the life of the cam motor. The cam motor is run at a slower speed, and the cycle time is maintained by changing the gearing of the cam system.

IMPORTANT: Only qualified service personnel should install this modification!

SERIAL NUMBERS: All.

INSTALLATION TIME: Approximately 1 hour.

SPECIAL TOOLS:	CAM CLUTCH TOOL M224	30015677
	SPRING BALANCE 0 - 20Kg	29030715

PARTS REQUIREMENT:	MODIFICATION KIT	30090034
	See Parts List on page 2.	

PARTS AVAILABILITY: November 1992.

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30013391	CAM MOTOR SPROCKET	1
MA3211-M34	MODIFICATION INSTRUCTIONS	1

CAUTION



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PLEASE NOTE

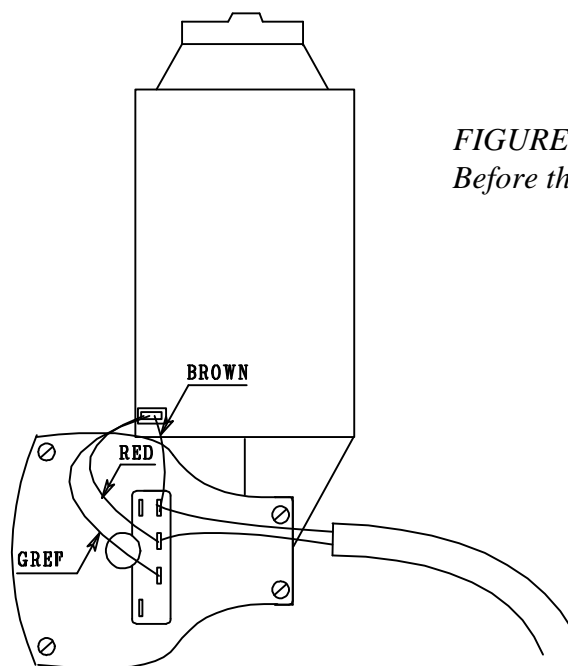
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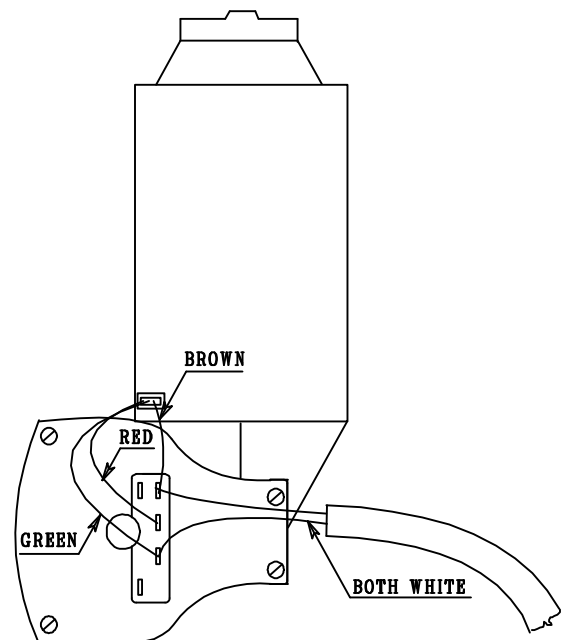
MODIFICATION INSTRUCTIONS

1. Turn off the power to the MINILOADER and remove the MAGAZINE(S).
2. Remove the TOP COVER, the right hand (from the front) SIDE PANEL and the REAR PANEL. If the MINILOADER is a STAND-ALONE machine, go to step 3. If the MINILOADER is connected to a PROCESSOR, it will be necessary to disconnect the MINILOADER from the PROCESSOR. It will also be necessary to dismount PHOTOCELL FC7 from the REAR PANEL as the PANEL is removed.
3. On the CAM MOTOR, identify the CONNECTOR STRIP. Un-solder the WHITE WIRE marked "C" from the CONNECTION that the RED MOTOR WIRE is connected to, and re-solder the WHITE WIRE to the CONNECTION that the GREEN MOTOR WIRE is connected to. See FIGURES 1 & 2.



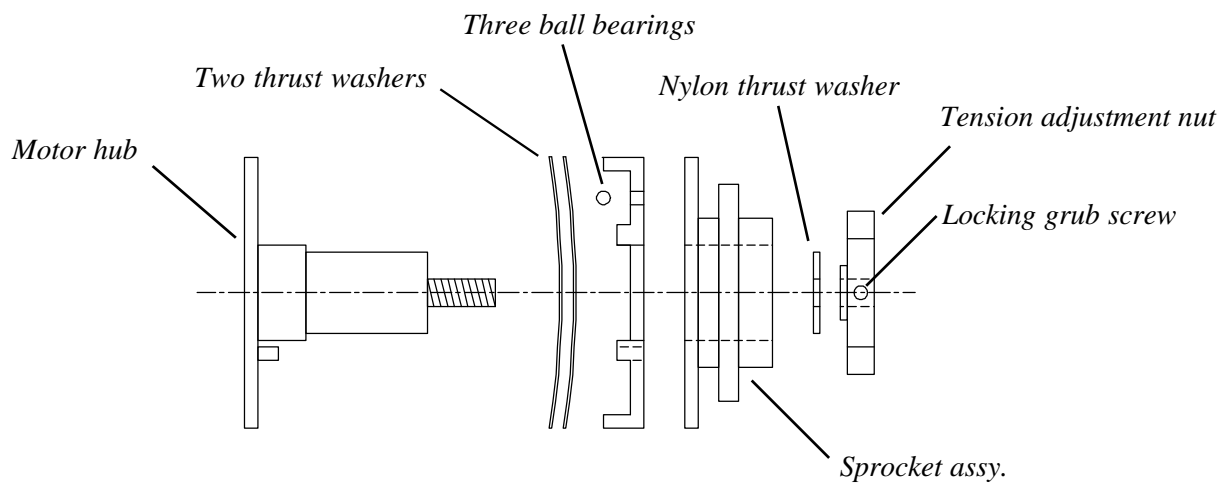
*FIGURE 1.
Before the modification.*

*FIGURE 2.
After the modification.*



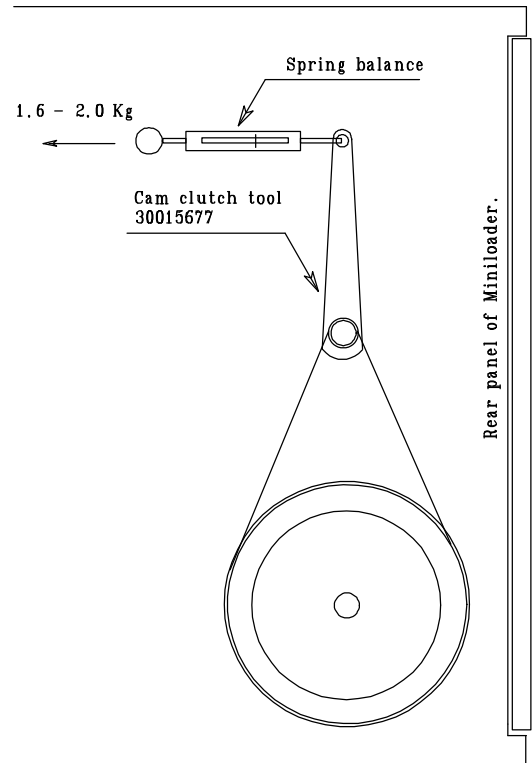
4. Peel back the two LIGHT SEAL STRIPS that cover the heads of the four MOTOR MOUNTING BRACKET SCREWS. Loosen the SCREWS so the MOTOR can be lowered. Lift the CHAIN off the MOTOR SPROCKET. It should not be necessary to split the CHAIN.
5. Loosen the GRUB SCREW on the MOTOR CLUTCH ADJUSTING NUT, and remove the NUT. See FIGURE 3. Remove the existing CAM MOTOR SPROCKET. CAUTION - TAKE CARE NOT TO LOOSE THE THREE BALL BEARINGS FROM THE CLUTCH.

FIGURE 3

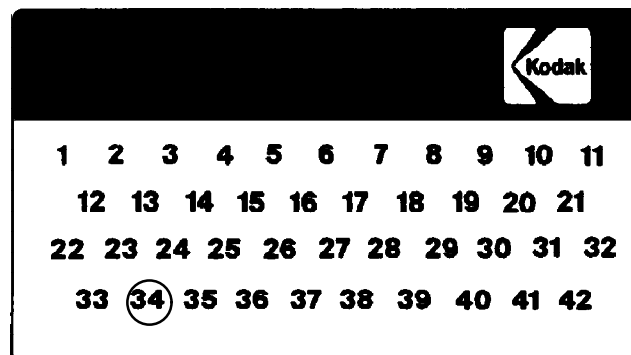


6. Fit the NEW MOTOR SPROCKET, taking care that the BALL BEARINGS are correctly positioned. Refit the MOTOR CLUTCH ADJUSTING NUT, and tighten by hand. Refit the CHAIN on the SPROCKET (if necessary the CHAIN can be split at the CONNECTING LINK) and move the MOTOR MOUNTING BRACKET up to tension the CHAIN. Tighten the four fixing SCREWS and replace the LIGHT SEAL STRIP. The CHAIN tension is correct when there is a free play of 4 mm at the centre.

FIGURE 4



7. Using tool M224 (PART NUMBER 30015677) reset the CAM SYSTEM to HOME POSITION (MICROSWITCH MS1 made). Replace the MAGAZINE(S) making sure that there is no CUSTOMER FILMS in them. Set the tension of the CAM MOTOR CLUTCH by using tool M224. See FIGURE 4. The CLUTCH should slip when a pull of 1.5 to 2 Kg is applied (2.0 to 2.5 Kg for a STAND-ALONE machine). When the correct tension is set, re-tighten the GRUB SCREW in the ADJUSTING NUT.
8. Refit the REAR PANEL, remembering to refit PHOTOCELL FC7 on PROCESSOR INTERFACE MINILOADERS. Remount the MINILOADER on the PROCESSOR if appropriate.
9. Load the SUPPLY MAGAZINE with some TEST FILMS, and run some cycles to check that the CLUTCH does not slip. If necessary, re-adjust the CLUTCH TENSION.
10. Check the gap between films has not changed. If necessary adjust TIMER T14 on PCB 101B/101C (TIMER T3 on PCB 102 on MINILOADERS serial 1101 - 1161 without serial number suffix M).
11. Circle MODIFICATION M34 on the MODIFICATION LABEL and re-assemble the MINILOADER.





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MODIFICATION INSTRUCTIONS
for the
KODAK MINILOADER 1,
MODELS STAND-ALONE, and PROCESSOR INTERFACE

Service Codes 3211, & 3212

MODIFICATION No. M35

and for the
KODAK MINILOADER 1M
MODELS STAND-ALONE, and PROCESSOR INTERFACE
Service Codes 3234 & 3235

MODIFICATION No. M04

Type 2

PURPOSE:

To install a HUMIDIFIER to maintain the humidity inside the MINILOADER. This will reduce problems associated with FILM curl and static artifacts which may occur at low humidity.

IMPORTANT: Only qualified service personnel should install this modification!

SERIAL NUMBERS:	Miniloader 1 Stand-Alone	(3211)	ALL
	Miniloader 1 Processor-Interface	(3212)	ALL
	Miniloader 1M Stand-Alone	(3234)	ALL
	Miniloader 1M Processor-Interface	(3235)	ALL

INSTALLATION TIME: Approximately 1 hour.

SPECIAL TOOLS: HUMIDITY METER 29050132

PARTS REQUIREMENT: Modification kit 30092035
See parts lists on page 2.

PARTS AVAILABILITY: February 1994

PARTS LISTS

PART NO.	DESCRIPTION	QUANTITY
30092035	MODIFICATION KIT	1
THE KIT CONTAINS:		
30027102	HUMIDIFIER ASSY MINILOADER 1 & 1M	1
30027133	CABLE, HUMIDIFIER SUPPLY	1

CAUTION



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INTRODUCTION.

The MODIFICATION replaces the existing right HAND SIDE PANEL of the MINILOADER with a new SIDE PANEL containing a HUMIDIFIER. The new SIDE PANEL is 55 mm thicker than the original. The drawings below show the outlines of the machines with the HUMIDIFIER fitted and the position of the plumbing connections. The position of the WATER INLET and the DRAIN vary according to the model and configuration.

WATER SUPPLY

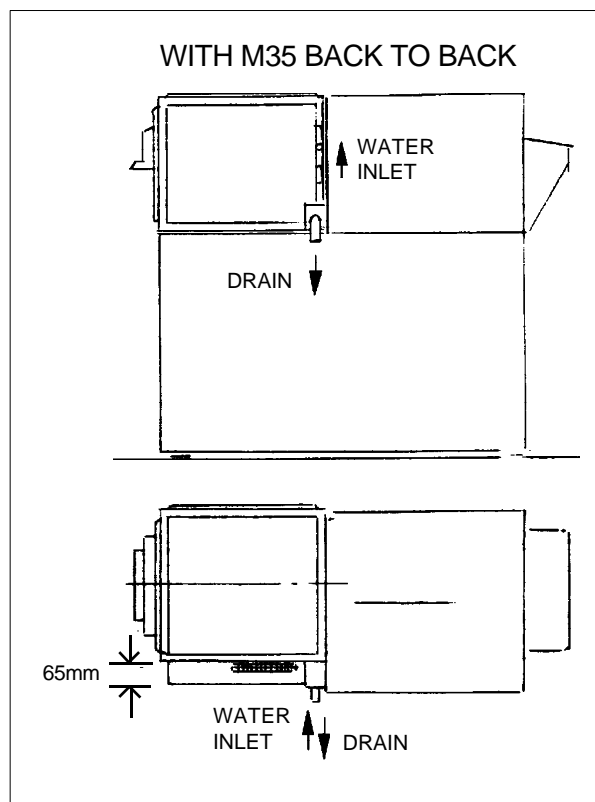
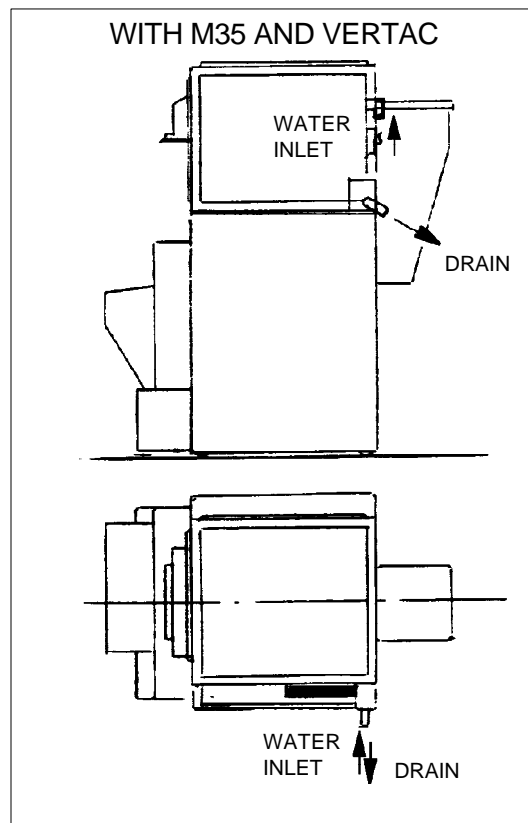
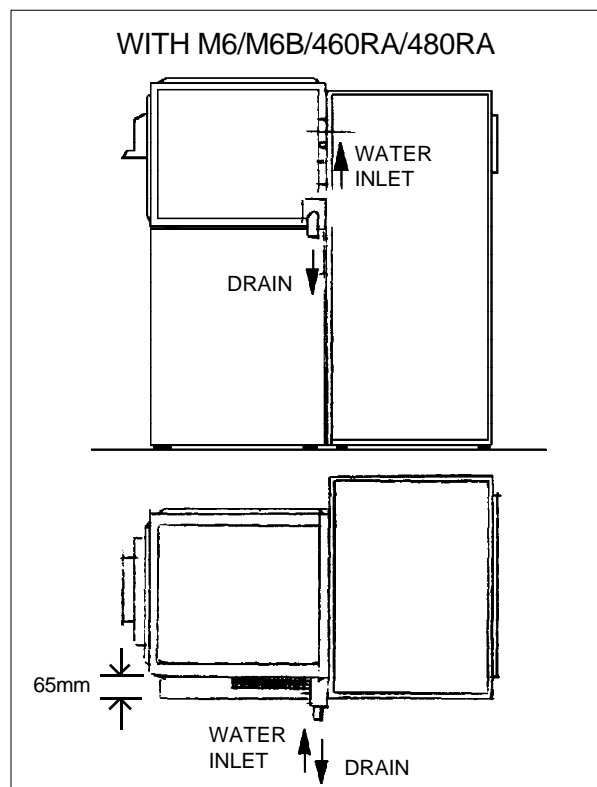
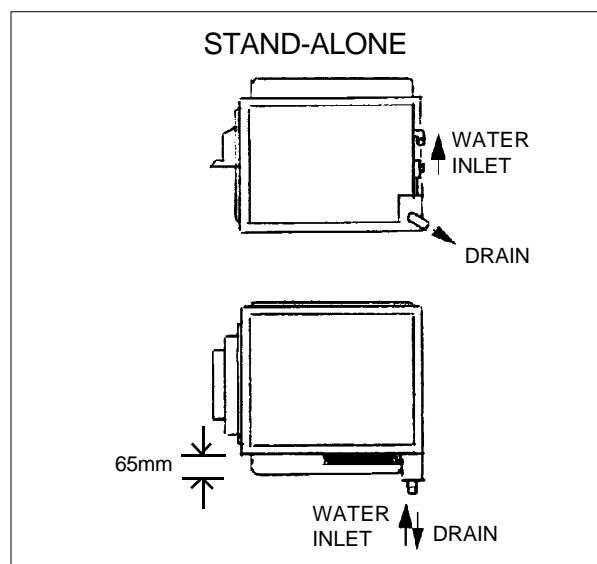
The incoming water supply specification is:-

Pressure range 0.3 to 5 Bar

Temperature 4 to 29°C

Volume approx. 1 litre/day

NOTE:- A 50 micron water filter should be provided by the customer.



MODIFICATION INSTRUCTIONS

1. Check that all the parts are present in the MODIFICATION KIT.
2. Remove the SUPPLY MAGAZINES, and turn off the power to the MINILOADER.
3. Remove the TOP COVER, FRONT PANEL, REAR PANEL and right hand SIDE PANEL.
4. Peel back the FOAM STRIP and remove the FAN SUPPORT and the FAN, see FIGURE 1.
5. Cut the wires to the FAN and discard the ASSEMBLY. Insulate the ends of the WIRES.
6. For MINILOADER 1M go to STEP 8.
7. For MINILOADER 1, remove FUSE F4 from PCB 106/106A/106B and discard. See FIGURE 2. Go to STEP 11.

FIGURE 1

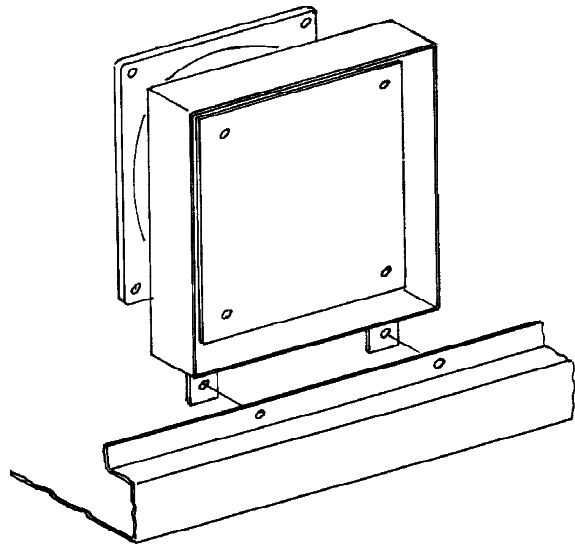


FIGURE 2

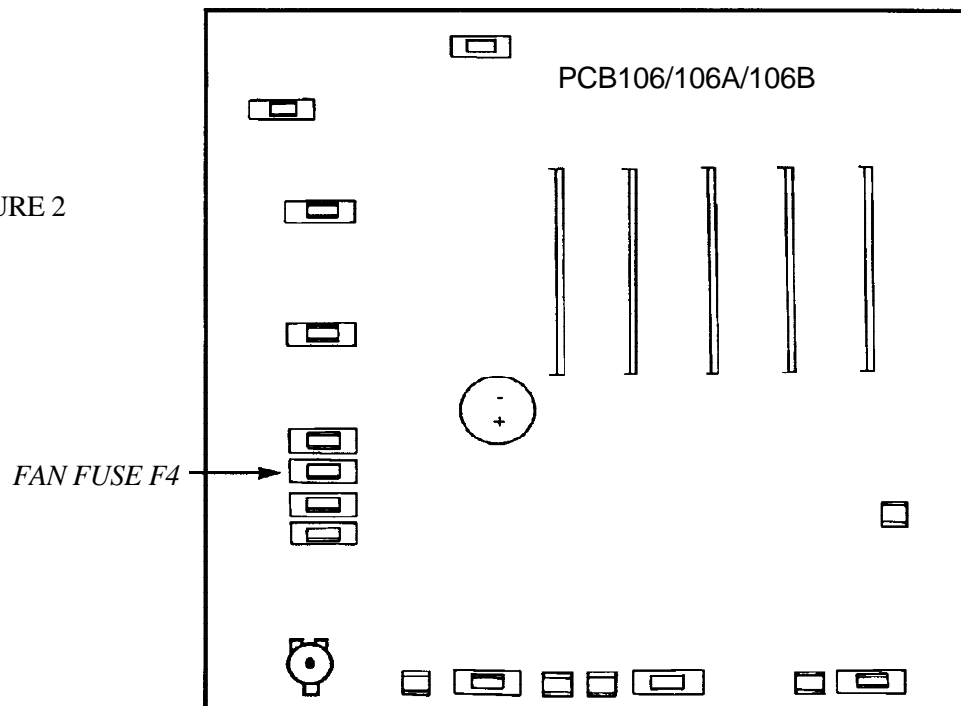


FIGURE 3

8. For MINILOADER 1M, disconnect the FAN SUPPLY WIRE B4 from PLUG X107-6 on PCB 301, see FIGURE 3. Insulate the end of the WIRE.
9. Disconnect the FAN SUPPLY WIRE N4 from TB1-17 on the MAIN TERMINAL BLOCK (inside the ELECTRICAL BOX). Insulate the end of the WIRE.
10. Remove FUSE F4 from PCB 301. See FIGURE 3.

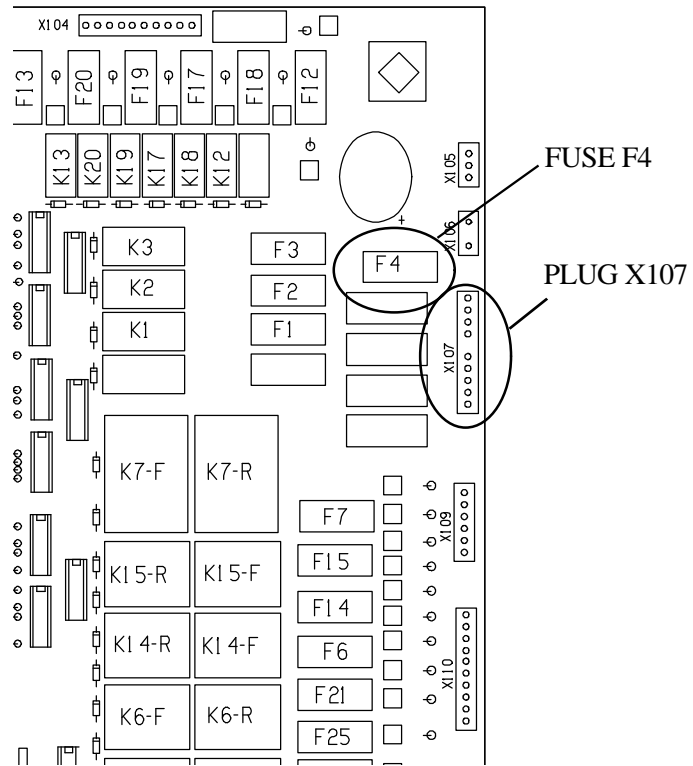


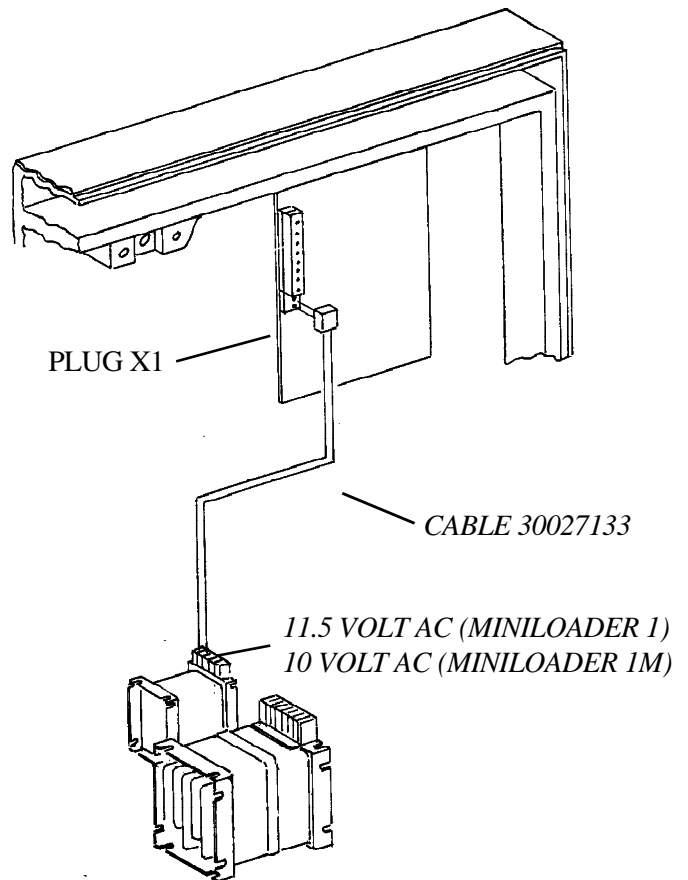
FIGURE 4

11. Connect the new CABLE 30027133 to the TRANSFORMER.

For MINILOADER 1 use the 11.5 volt TAPPING of TRANSFORMER T1.

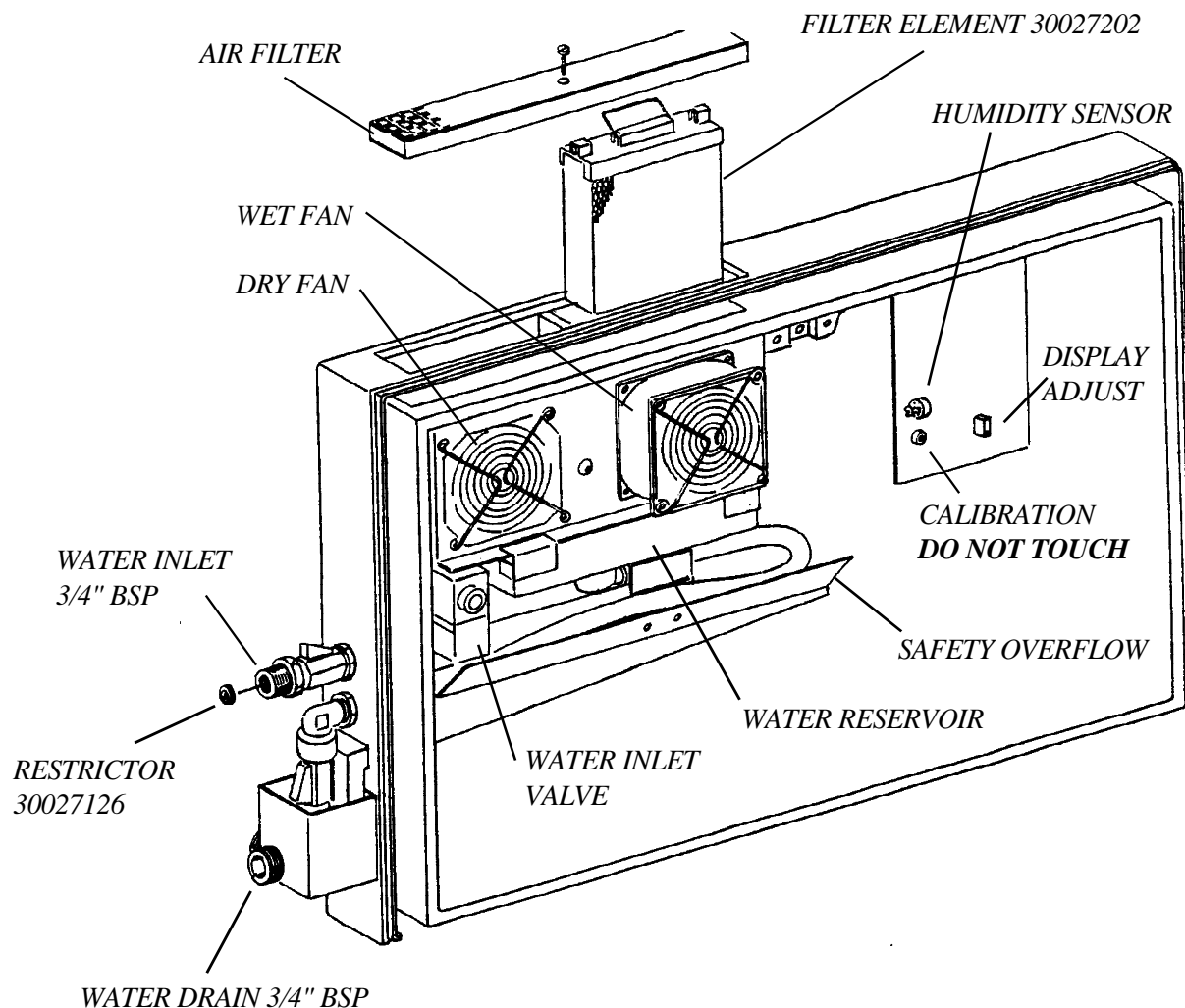
For the MINILOADER 1M use the 10 volt AC terminals of TRANSFORMER T2 - TB3-1 and TB3-2.

Feed the CABLE under the SIDE PLATE. See FIGURE 4.
12. Plug the CABLE into the PLUG X1 on the HUMIDIFIER PCB, and fit the HUMIDIFIER to the MINILOADER.



12. Connect the WATER SUPPLY using a WASHING MACHINE HOSE and the DRAIN (a HOSE CONNECTOR is supplied) to the HUMIDIFIER. Note - if using a BOTTLE to supply water to the HUMIDIFIER the RESTRICTOR 30027126 must be removed See FIGURE 5.

FIGURE 5

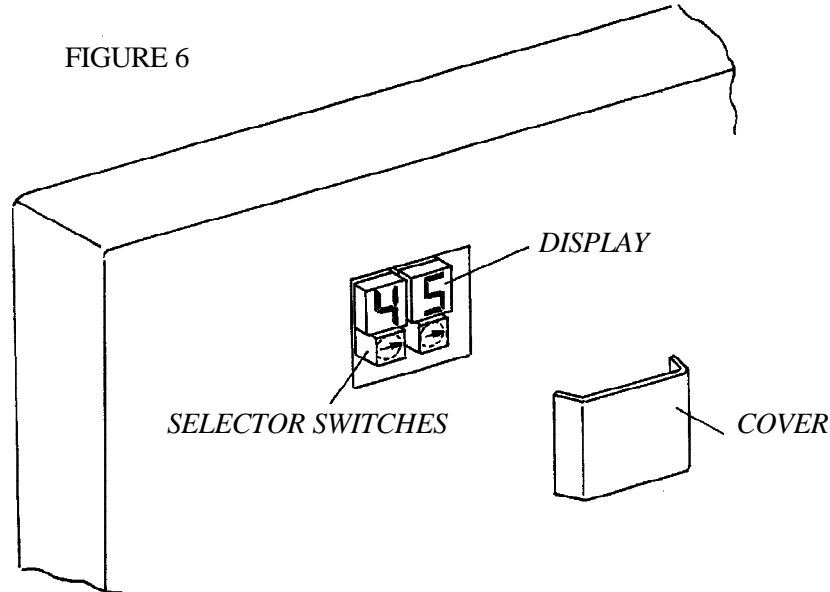


13. If necessary install the HUMIDIFIER FILTER.

Go to PAGE 8.

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14. Remove the clear plastic COVER and set the SELECTOR SWITCHES to the desired humidity. The recommended preset is 45% RH. Replace the COVER. See FIGURE 6.



15. Replace all the covers and power up the MINILOADER. The HUMIDIFIER should switch on automatically. If the humidity inside the MINILOADER is greater than the preset value, only the DRY FAN will run. If the humidity is below the preset value, the INLET WATER VALVE opens, the DRY FAN stops and the WET FAN starts to increase the humidity inside the MINILOADER.

IMPORTANT :- If the humidity inside the MINILOADER is different (either higher or lower) from the preset value after 10 minutes, the figures on the DISPLAY will flash. If the humidity is higher than the preset nothing can be done, but if the humidity is lower, check the water supply, FLOAT VALVE and the FILTER ELEMENT.

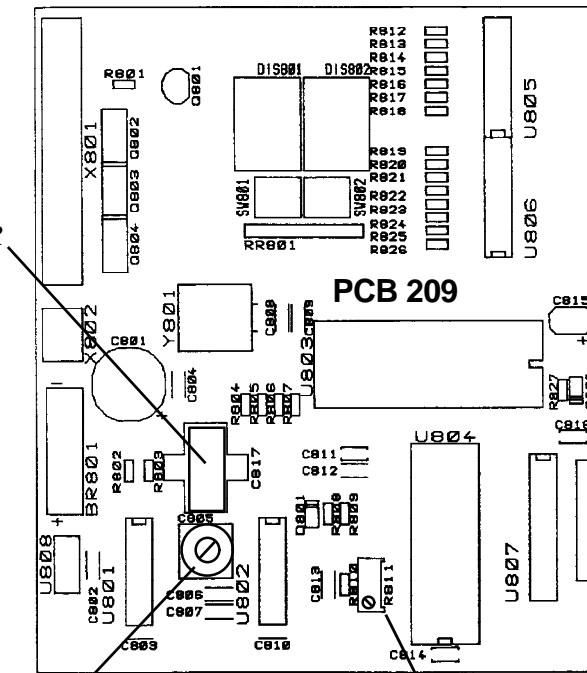
16. The calibration of the HUMIDITY SENSOR is factory set, but if a HUMIDITY METER (29050132) is available the calibration of the DISPLAY can be adjusted. After the unit has stabilised (after 30 minutes), measure the humidity inside the MINILOADER by inserting the PROBE of the HUMIDITY METER through the ENTRY SLOT. Compare the reading on the HUMIDITY METER with the HUMIDIFIER DISPLAY. If necessary the HUMIDIFIER DISPLAY reading can be adjusted by POTENTIOMETER R11 on the HUMIDIFIER PCB 209. See FIGURE 7.

IMPORTANT - DO NOT TOUCH THE VARIABLE CAPACITOR ON YOU WILL UPSET THE FACTORY SETTING.

The SERVICE DETAILS for the HUMIDIFIER including the PARTS LIST will shortly be released as PUBLICATION XP3291-1.

FIGURE 7

HUMIDITY SENSOR



PCB 209

DISPLAY ADJUSTMENT

CALIBRATION - DO NOT TOUCH - FACTORY SET

17. Circle the appropriate MODIFICATION on the MODIFICATION STICKER inside the MINILOADER. MODIFICATION M35 for MINILOADER 1. MODIFICATION M04 for MINILOADER 1M.

FOR MINILOADER 1

Kodak											
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		

FOR MINILOADER 1M

Kodak											
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		



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MODIFICATION INSTRUCTIONS

for the

KODAK MINILOADER 1,

MODELS STAND-ALONE & PROCESSOR INTERFACE

Service Codes 3211 & 3212

MODIFICATION No. M36

Type 2

PURPOSE:

To fit a new SWF Cam Motor in order to improve the reliability of the MINILOADER.

IMPORTANT:	Only qualified service personnel should install this modification!		
SERIAL NUMBERS:	Model Stand-Alone	(3211)	All
	Model Processor Interface	(3212)	All
INSTALLATION TIME:	Approximately 1 hour.		
SPECIAL TOOLS:	None		
PARTS REQUIREMENT:	Modification kit 30092036		
	See parts list on page 2.		
PARTS AVAILABILITY:	December 1994		

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30092036	MODIFICATION KIT	1
THE KIT CONTAINS:		
30025250	SWF CAM MOTOR (FITTED WITH SMALL SPROCKET 30026362)	1
30015697	FASTON CONNECTORS	2
30014391	LARGE MOTOR SPROCKET ASSY.	1
MB3211-M36	MODIFICATION INSTRUCTIONS	1

CAUTION



This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

PLEASE NOTE

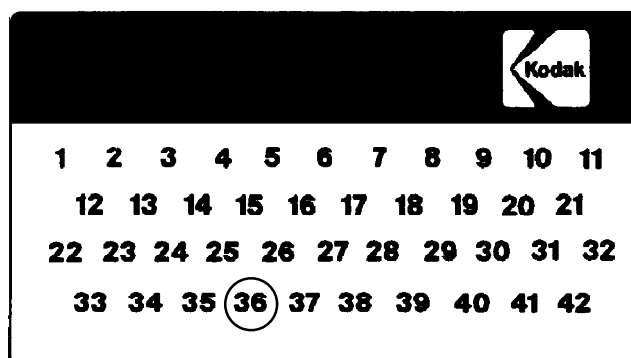
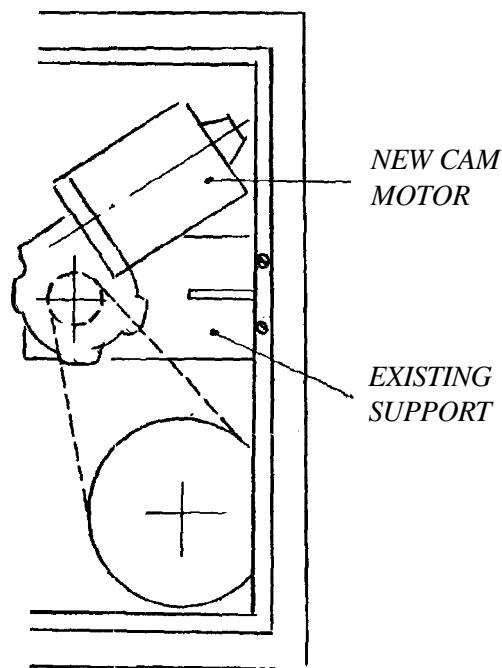
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MODIFICATION INSTRUCTIONS

1. Turn off the power to the MINILOADER.
2. Remove the TOP COVER and the right hand (from the front) SIDE PANEL.
3. Cut the WIRES from the existing CAM MOTOR, and remove the MOTOR from the MINILOADER.
4. If necessary, fit the SPROCKET that is the same size as the one fitted to the original MOTOR to the new MOTOR.
5. Using the original SCREWS mount the new CAM MOTOR. See FIGURE.
6. Fit the FASTON CONNECTORS to the MOTOR LEADS and connect to the MOTOR TERMINALS.
7. Ensure the MOTOR turns in the correct direction, if necessary reverse the MOTOR LEADS.
8. Set the MOTOR CLUTCH to the correct tension as detailed in the SERVICE MANUAL.
9. Using TEST FILM check the operation of the MINILOADER.
10. If the MINILOADER is PROCESSOR INTERFACED, check TIMER T14, "FEED DELAY" (TIMER T3 for serial numbers below 1162) is set correctly as there will be a slight cycle time difference with the new MOTOR.
11. Circle M36 on the MODIFICATION LABEL and replace the PANELS.





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MODIFICATION INSTRUCTIONS

for the

***KODAK* MINILOADER 1M,**

MODELS STAND-ALONE & PROCESSOR INTERFACE

Service Codes 3234 & 3235

MODIFICATION No. M03

Type 2

PURPOSE:

To replace three glass FUSES with auto-resetting devices. This will eliminate service calls that are made purely to replace blown fuses.

IMPORTANT:	Only qualified service personnel should install this modification!
SERIAL NUMBERS:	1500 - 1537 1700 - 1718
INSTALLATION TIME:	Approximately 30 minutes.
SPECIAL TOOLS:	None
PARTS REQUIREMENT:	Modification kit 30092103 See parts list on page 2.
PARTS AVAILABILITY:	August 1993

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30092103	MODIFICATION KIT	1
THE KIT CONTAINS:		
30025886	MULTIFUSE R250	2
30025888	MULTIFUSE R050	1
MB3234-M03	MODIFICATION INSTRUCTIONS	1

CAUTION



INFORMATION ABOUT THE MULTIFUSES.

BOURNS MULTIFUSE protectors act like a FUSE under over-current conditions. Unlike a FUSE they are resettable.

A MULTIFUSE is a solid state device with a positive temperature coefficient. The MULTIFUSE is used in series with the power source and the circuit or component that have to be protected against damage or fire.

Under normal operating conditions the resistance of the MULTIFUSE is comparable to that of a fuse link, between milliohms and a few ohms, depending on the specified current carrying capacity.

The MULTIFUSE undergoes an abrupt change in resistance when an over-current heats it up to its "trip" temperature, about 125°C. This increase limits the current from the power source and the circuit to be protected to a value which normally does not cause any harm. Switch-off times are similar to those of slow-blow fuse-links. The remaining current keeps the MULTIFUSE above its trip temperature and latches it in the protective high resistance state.

The MULTIFUSE will reset, which means it will return to its low resistance state, if it is allowed to cool to below its trip temperature. This can be achieved if power is switched off, or if the current is substantially reduced. Once the MULTIFUSE is reset, and the fault condition has been cleared, the normal circuit operation resumes.

A MULTIFUSE always fails safe, which means that it will go towards high resistance.

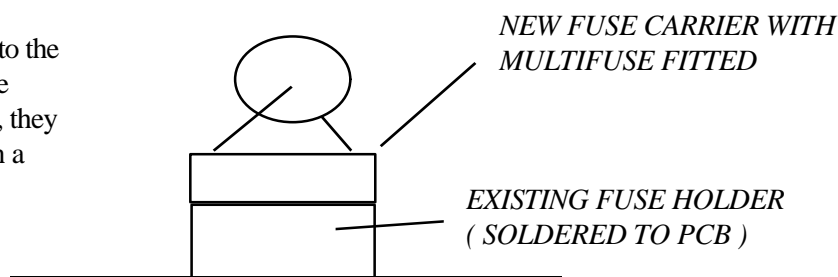
The TABLE below shows the normal resistance at room temperature of each of the three devices used, the normal holding current (MULTIFUSE will not trip) and the typical trip current. The actual trip current will depend on ambient conditions.

The typical reset time is less than 20 seconds at 20°C, and the expected life is about 200 reset cycles.

CAUTION :- The maximum surface temperature in the tripped state is 125°C.

DEVICE	HOLDING CURRENT	RESISTANCE AT ROOM TEMPERATURE	TRIP CURRENT
R050	500 m Amp	0.5 - 1.2 OMH	750 m AMP
R250	2.5 AMP	0.02 - 0.08 OHM	4.25 AMP

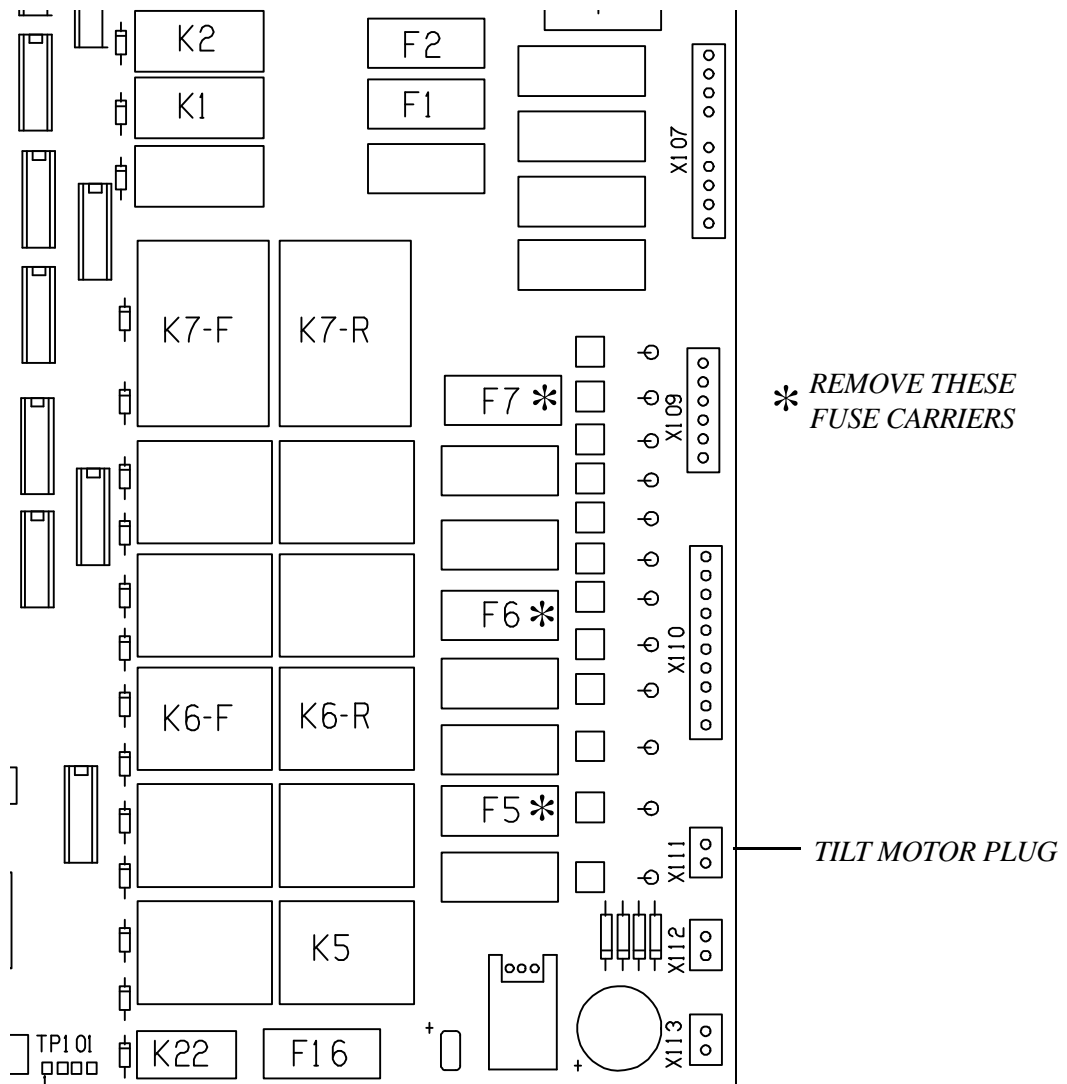
These devices would normally be soldered onto the PCB, but to facilitate the fitting to existing PCB's, they are supplied mounted on a FUSE CARRIER.



MODIFICATION INSTRUCTIONS

1. Turn off the power to the MINILOADER.
2. Remove the TOP COVER and the FRONT PANEL. Make sure you disconnect all CABLES as you remove the FRONT PANEL.
3. Pull the PCB 301 forwards and remove the SCREWS which hold the clear plastic PROTECTION COVER in place. Disconnect the POTENTIOMETER for the TILT MOTOR (PLUG X111) and remove the COVER.
4. Taking ESD precautions, remove the FUSE CARRIERS for FUSES F7, F6, and F5. See FIGURE 1.

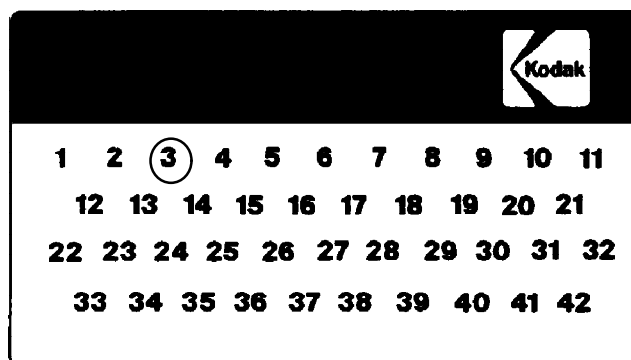
FIGURE 1



5. Using the TABLE below, fit the new MULTIFUSES into the existing FUSEHOLDERS.

FUSE POSITION	PURPOSE	MULTIFUSE	PART NUMBER
F7	CAM MOTOR	R250	30025886
F6	CASSETTE CONVEYOR MOTOR	R250	30025886
F5	TILT MOTOR	R050	30025888

6. Plug the TILT MOTOR POTENTIOMETER back into PLUG X111, and refit the PROTECTION COVER on PCB 301.
7. Push the PCB 301 ASSY back into position, and refit the FRONT PANEL. Make sure all the PLUGS are refitted as you replace the PANEL.
8. Circle M03 on the MODIFICATION LABEL.



9. Refit the TOP COVER and test the MINILOADER. Make sure you test all sizes.
10. Inform the operator that in the event of an ERROR CODE being displayed that cannot be cleared by the RESET BUTTON, to switch the MINILOADER off for 1 minute and they try again to reset the machine.



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MODIFICATION INSTRUCTIONS

for the

***KODAK* MINILOADER 1M,**

MODELS STAND-ALONE & PROCESSOR INTERFACE

Service Codes 3234 & 3235

MODIFICATION No. M05

Type 2

PURPOSE:

To fit a new SWF Cam Motor and a PCB to replace the Cam motor Relays in order to improve the reliability of the MINILOADER.

IMPORTANT:	Only qualified service personnel should install this modification!		
SERIAL NUMBERS:	Model Stand-Alone	(3234)	All
	Model Processor Interface	(3235)	All
INSTALLATION TIME:	Approximately 1 hour.		
SPECIAL TOOLS:	None		
PARTS REQUIREMENT:	Modification kit 30092105		
	See parts list on page 2.		
PARTS AVAILABILITY:	December 1994		

PARTS LIST

PART NO.	DESCRIPTION	QUANTITY
30092105	MODIFICATION KIT	1
THE KIT CONTAINS:		
30025250	SWF CAM MOTOR (FITTED WITH SMALL SPROCKET 30026362)	1
30015697	FASTON CONNECTORS	2
30014391	LARGE MOTOR SPROCKET ASSY.	1
30014392	PCB100	1
MB3234-M05	MODIFICATION INSTRUCTIONS	1

CAUTION



This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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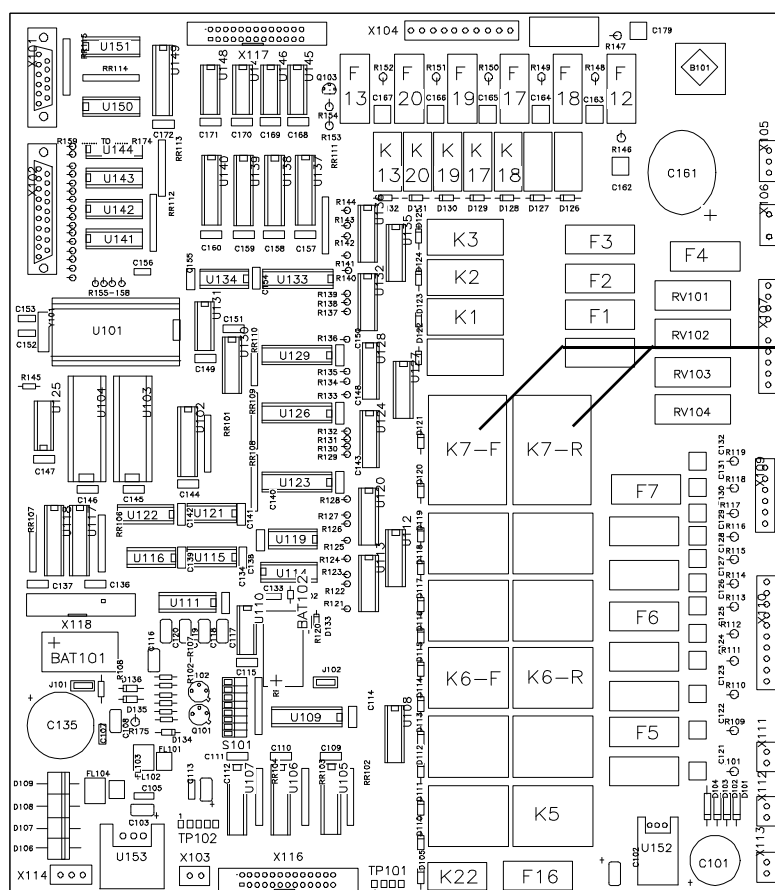
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MODIFICATION INSTRUCTIONS

1. Turn off the power to the MINILOADER.
2. Remove the TOPCOVER, the right hand (from the front) SIDE PANEL and the FRONT PANEL. Ensure all leads are disconnected when removing the FRONT PANEL.
3. Pull the PCB 301 forwards and remove the SCREWS which hold the clear plastic PROTECTION COVER in place. Disconnect the POTENTIOMETER for the TILT MOTOR (PLUG X111) and remove the COVER.
4. Taking ESD precautions, identify and remove the following RELAYS see the FIGURE on below :-

K7-F CAM MOTOR FORWARD
K7-R CAM MOTOR REVERSE

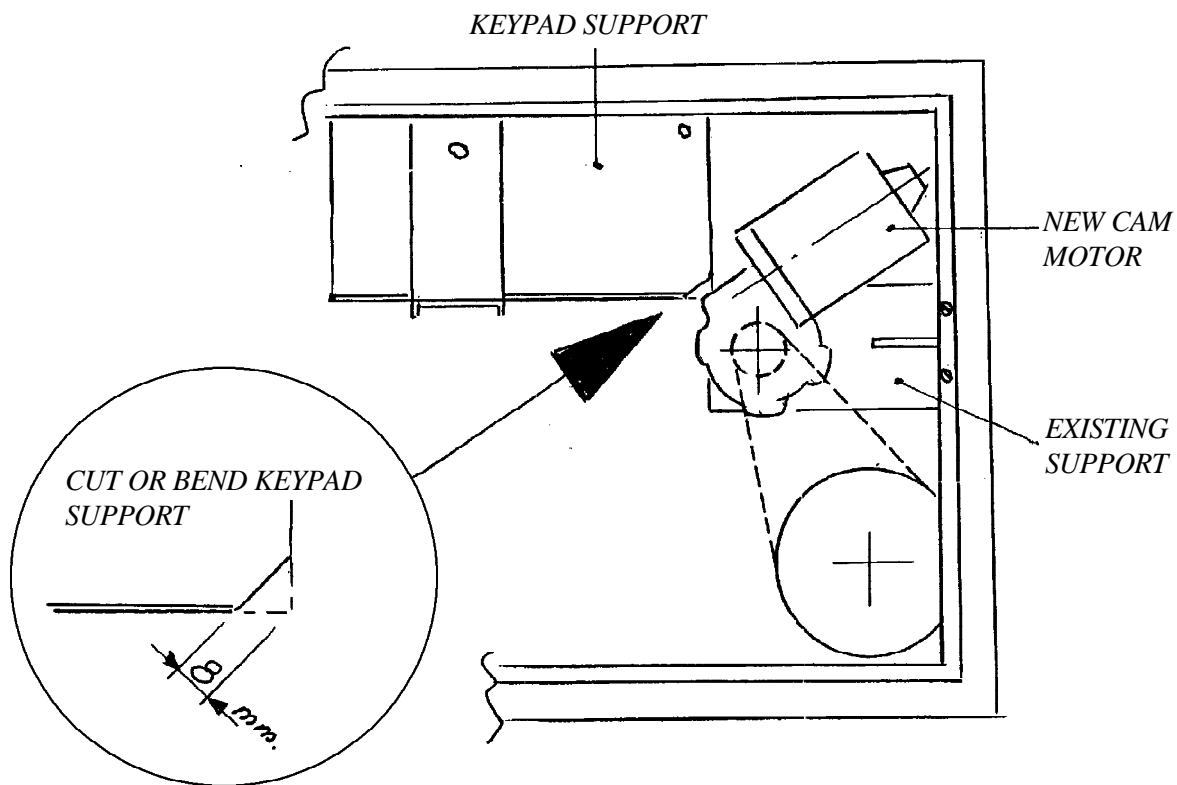
5. Plug the new PCB 100 into the vacated RELAY SOCKETS (it will only fit one way round) making sure that the PINS on the PCB are fully inserted into the SOCKETS.
6. Plug the TILT MOTOR POTENTIOMETER back into SOCKET X111, and refit the plastic PROTECTION COVER to PCB 301.
7. Push PCB 301 back into position, and refit the FRONT PANEL making sure all the PLUGS are re-connected. Do not forget to reconnect the GROUND LEAD or MICROPROCESSOR malfunctions can result.



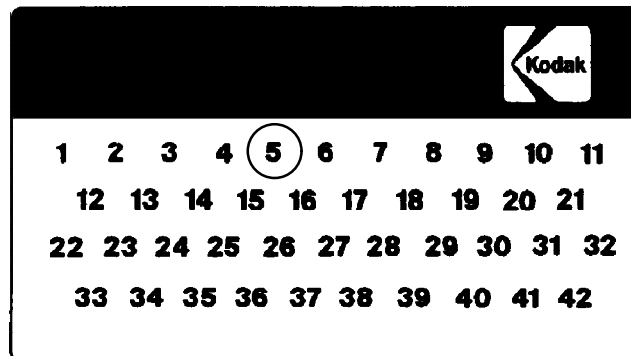
*REMOVE THESE
RELAYS AND
REPLACE WITH
THE PCB 100.*

- TILT MOTOR PLUG

8. Cut the WIRES from the existing CAM MOTOR, and remove the MOTOR from the MINILOADER.
9. If necessary, fit the SPROCKET that is the same size as the one fitted to the original MOTOR to the new MOTOR.
10. See the FIGURE below. Cut or bend the corner of the KEYPAD SUPPORT to allow clearance for the new MOTOR.
11. Using the original SCREWS mount the new CAM MOTOR.
12. Fit the FASTON CONNECTORS to the MOTOR LEADS and connect to the MOTOR TERMINALS.
13. Ensure the MOTOR turns in the correct direction, if necessary reverse the MOTOR LEADS.
14. Set the MOTOR CLUTCH to the correct tension as detailed in the SERVICE MANUAL.



15. Using TEST FILM check the operation of the MINILOADER.
16. If the MINILOADER is PROCESSOR INTERFACED, check the PARAMETER, "GAP BETWEEN FILMS" is set correctly as there will be a slight cycle time difference with the new MOTOR.
17. Circle M05 on the MODIFICATION LABEL and replace the PANELS.





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