



PHOTOMEK CINE PROCESSING

OPERATING AND MAINTENANCE

Photomec (London) Ltd are specialist manufacturers of Cine Type processing machines and, whilst we are proud of the equipment we produce we constantly strive to improve our products in line with our own and our customers' experiences. It cannot be overemphasised that systematic checking and routine servicing by the operating and maintenance staff are imperative if the equipment is to perform consistently to its original design, specification without damaging film.

Please remember a Cine Processing Machine has several thousands of parts, many of which are mechanical - bushes, ball races, chains, sprockets, springs, shafts, all rotating or performing in an aggressive chemical environment. You also have hundreds of tyres and several wipers which are in contact with film, and unless all of these items are in good condition, damage to film can occur, and almost certainly will without regular, routine systematic maintenance.

It is difficult to define a precise schedule of routine maintenance. So much depends on the amount of use the equipment is having and, in the case of Cine processing equipment, it does not follow that items should be checked after so many hours running. In most situations a processing machine that has not been used for a time will require more attention than one that has been used extensively during the same period.

After you have used the equipment, your own experience will be the best guide as to maintenance requirements, and this will depend on the film stock being used, footage processed, and, to some extent, the operating budget that has been set aside for the maintenance of the equipment. Many of our customers operate an "Incident or Log Book" for each Cine-Processor in use. In this can be recorded for each shift:

- a. Footage 16mm
- b. Footage 35mm
- c. Any special requirements i.e. (Forced Processing Silver Enhancement)
- d. Any problems experienced from the equipment.
- e. Operator name or I.D. number
- f. The time of any occurrences.




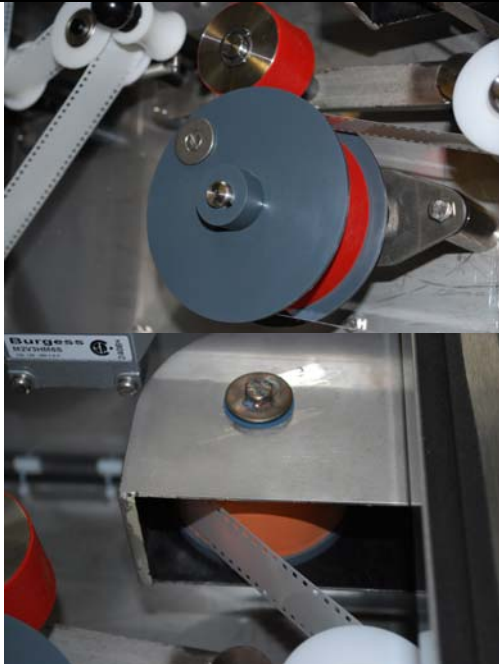

The type of recording can greatly assist maintenance, the elimination of faults and record a history of recurring problems which can then, after collation, be referred back to us, the Manufacturers.

At Photomec we produce four models of Cine Machines and the following suggested check list incorporates those four models. Therefore, some items may not apply to the equipment you have.

For identification purposes, the following letters are used to identify the model range:






- 'C' Compact
- 'M' Modular (including wide versions)
- 'I' Integrated
- 'M/F' Multiform.

In order to reduce the risk of damage to the film being processed, continual checks of the equipment should be carried out prior to loading, particularly original, negative film, and the following notes are for your guidance. There are spaces where you can add your own items and we at Photomec welcome any suggestions you have to improve our products or the information we supply to our Clients.

<u>EQUIPMENT CHECK LIST</u> <u>PRIOR TO LOADING ORIGINAL FILM (ALL MODELS)</u>	
Daily	
Input Pacer Tyre clean	
Clean join box weighted rollers tyre and light trap roller tyre	
Output Pacer Tyre clean	







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Clean output pacer weight roller tyre		
Clean take Up Panel weight roller tyres		
Clean backing removal buffers		
Clean squeegee and wipers		
Chemical levels correct and circulating		
Solutions at correct temperature		
Wash Water Set to Auto		
Stapler available and full		





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Spare film cores available at take up	 A close-up photograph of the Photomec control panel. On top of the panel, there are two film cores, one yellow and one white, and a pair of scissors. The control panel itself has a digital display showing various settings and a 'Photomec' logo.	
Scissors available		
Replenishment Available		
Dryer on and temperature correct		
Replenishment set to Auto		
Machine Transport correct		
Indicator Rods at correct level	 A photograph showing the interior of the machine, specifically the area where the indicator rods are located. The rods are positioned at the correct level, and the machine's stainless steel interior is visible.	
Feed-on Elevator normal position	 A photograph of the feed-on elevator mechanism. The elevator is in its normal position, and the film cores are visible on the tray.	
Take-Up Elevator normal position	 A photograph of the take-up elevator mechanism. The elevator is in its normal position, and the film cores are visible on the tray.	



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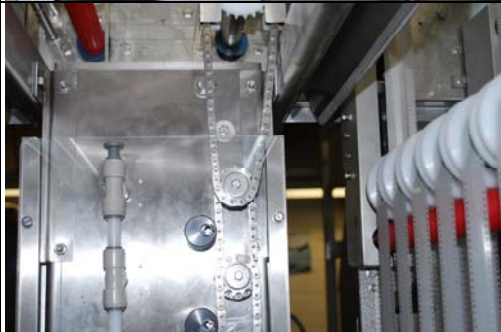


Check air Lift Pressure Gauge is reading 3 Bar or 40 PSI		
Check on magazine (cassette) processors that the pressure fan in top of feed on elevators is working and clean		
Check silver level in fixer baths		
Agitation Switched On		
Sound Track Dryer on (where fitted)		
Sound Track Solution circulating (where fitted)		
Sensitometric Test Strip processed and checked		
Scratch Test processed and checked		

PHOTOMEC PROCESSOR MAINTENANCE SCHEDULE

<u>Weekly</u>		<u>Completed By</u>
Vacuum: Film join box/loading table		
Vacuum: Feed on elevator cabinet		
Vacuum: Take off elevator un-load station		
Check agitation sprays and wash water sprays		
Check backing removal sprays		





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<p>Check film end detection system</p>		
<p>Remove and clean dry cabinet air filters</p>		
<p>Check for condition backing removal, bearings, chains, sprockets, Adjust and replace as necessary</p>		
<p>Check condition of bottom shaft springs (incl. dryer).</p>		
<p>Check condition of top weight springs ensuring it is correctly positioned and not broken (incl. dryer).</p>		



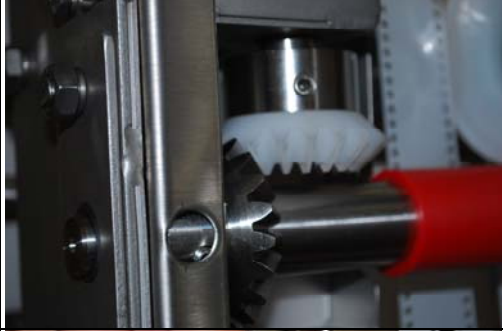
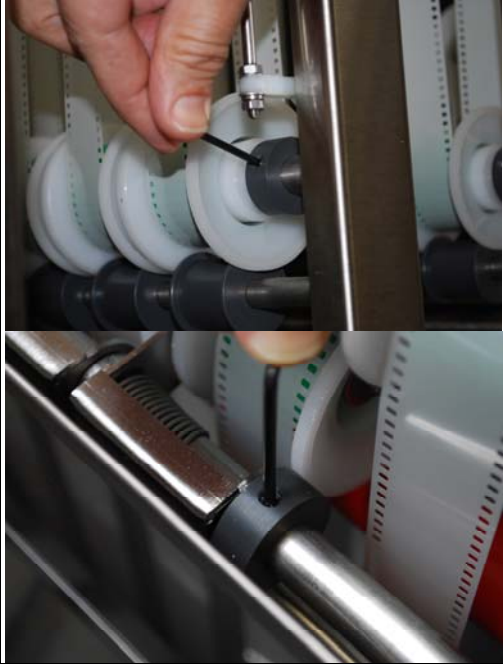
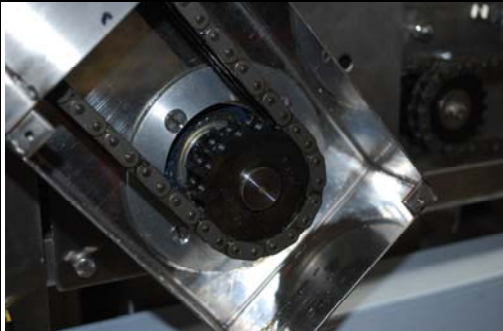

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<p>Check condition of drive shaft sleeve. Move or replace if worn.</p>		
<p>Check 'V' seals on drive shafts. Replace if distorted or worn.</p>		

<h2 style="text-align: center;">Every 2 Weeks</h2>		
<p>Inspect cassettes for free running and damage. Check friction clutches for correct friction</p>		
<p>Check elevator sliding carriages for smooth operation and running position. Lubricate lightly linear bearings to sliding carriages</p>		
<p>Change backing removal sponge buffers</p>		



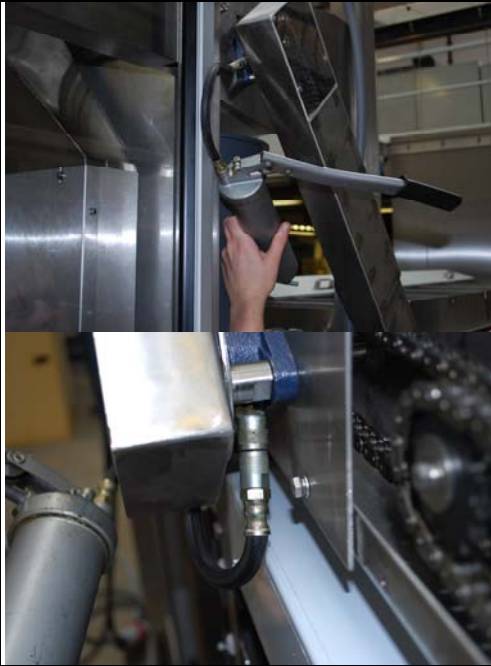
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<p>Check bevel gear drive assembly in developer bath</p>		
<p>Check all locking collars to top and bottom shafts are secure</p>		
<p>Check sprockets in telescopic guard and adjust chain as necessary</p>		
<p>Check all drive chains - lubricate where dry</p>		



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Lubricate pollard bearings located on lay shaft and stabiliser shaft



Grease 2:1 gearbox in the dryer using Shell Alvania RL2 or Castrol Spheerol LEP2



Check condition and ensure tight main drive motor sprockets



Change dry box cotton sleeves





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Check oil level in Kopp gearbox



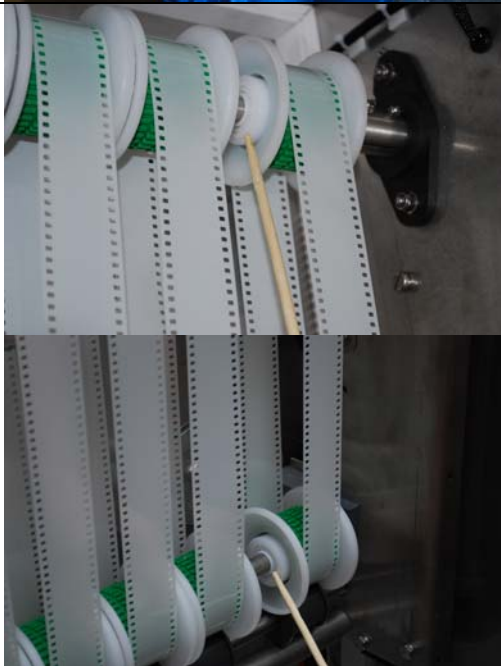


Check filters in circulation system
- change as required





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<u>Monthly</u>		<u>Completed by</u>
Dismantle, lubricate and adjust friction pads to darkroom feed on unit or film cassettes		
Ensure film join box lift off roller linkage screws are tight.		
Examine all elevator shaft ball races. Replace as necessary.		

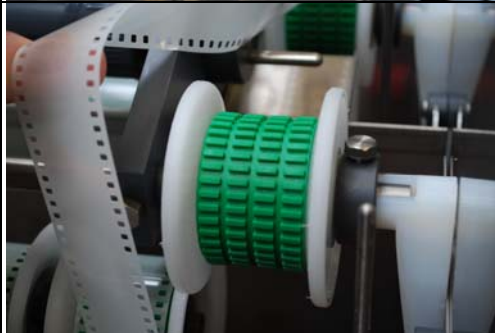


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Examine for wear drive shaft bushes or ball races. Replace as necessary (incl. dryer)



Examine tyres on cross over rollers. Replace as necessary. Check especially ECN II fixer tyre for swelling. If any found change all.
Check all wet bottom roller PHO 385 particularly in ECN II bleach racks



Adjust tensioners to drive chains, leaving an 8mm gap between tensioner and chain



Lift beam assembly approx. 50mm and check for level. Adjust as necessary.





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Remove inlet air filters to dry box and vacuum out dryer fan and surrounding areas.







Dismantle vacuum pump. Clean, Re-apply epoxy paint if damaged. Clean and grease ball races



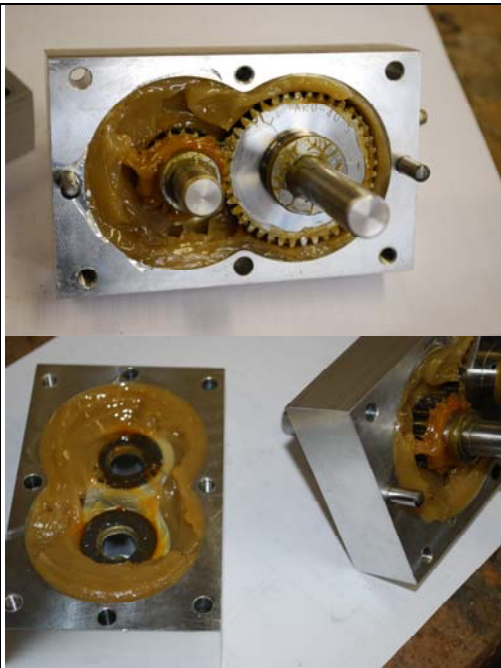
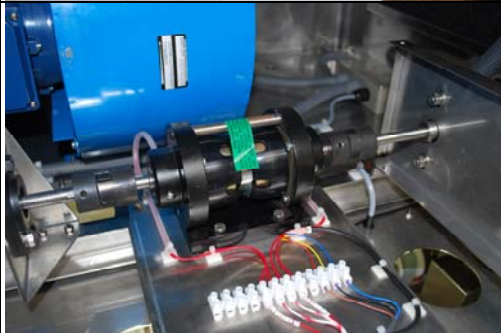

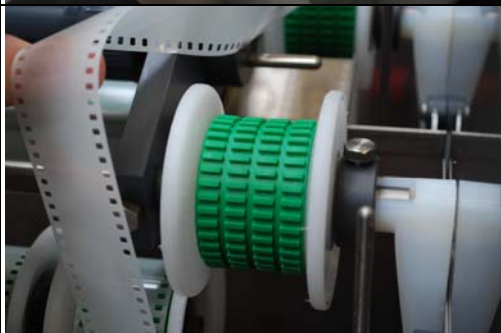
Attend to any signs of leaks on chemical control unit/wet section.



<u>Six Monthly</u>		<u>Completed by</u>
<p>Examine for wear all chain sprockets. Replace when showing signs of wear.</p>		
<p>Examine for wear drive shaft stub spindles. Replace drive shaft/stub shaft if wear apparent.</p>	 	
<p>Dismantle 2:1 Gearbox located in the dryer and clean and fill with new grease.</p> <p>Use Shell Alvania RL2 or Castrol Spheerol LEP2</p>		



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<p>Examine clutch and brake assembly situated in dryer fan housing clean. Ensure all screws are tight.</p>		
<p>Examine all top and bottom tyres. Replace as necessary.</p>		
<p>Check and replace any film rollers showing signs of wear or damage</p>		

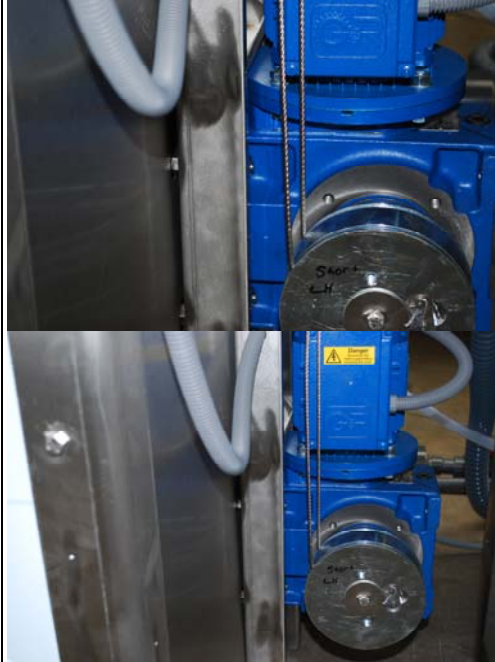


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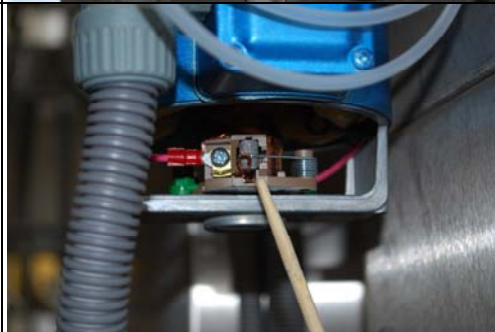
Check vacuum squeegee system for leaks. Rectify as requested.



Inspect winch cables on first 2 metres from drums. Change if any visible sign of fraying.



Check feed-on motor brushes. Replace if 50% worn.



Check take-up motor brushes. Replace if 50% worn.





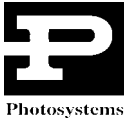
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Check and adjust all micro switch operation.



Drain developer tank. Fill with dilute Sulfamic acid and circulate. Pay special attention to the agitation spray bars. See Kodak H24 Module 2 for tank cleaning specifications.





IMPORTANT MAINTENANCE SCHEDULE NOTES

Note 1

All drive shafts on Photomec cine machines are machined to ensure concentricity. The Company operates an exchange service on these items to ensure equipment can be maintained to the original specification.

Note 2

Integrated models utilise a winch motor and cables to lift the beam assembly.

These cables are tested on manufacture to a safety factor of 7 times the work load to ensure the cable ends and connection to winch drums are safe.

Whilst replacement cables are readily available from the factory, they can only be completely tested if the winch drums are returned to the factory for fitting or the Client purchases a spare set of winch drums for each machine.

"Please ensure that your maintenance procedure complies completely with the legislation relating to lifting machines in your country."

Note 3

Any top film, rollers fitted to integrated machines which are worn can be fitted with 2 off bushes which will vastly increase their usable lift.

Note 4

The Company prides itself on the efficient despatch of spare parts and will always respond to any emergency requirement for spares or replacement items if made aware of the situation. Please contact the factory.

Note 5



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By arrangement, a senior Technician will always visit you to ensure your Photomec processor is set up and adjusted to achieve an optimum performance.

LUBRICATION DATA

<u>Pumps</u>			
<u>Model</u>	<u>Use</u>	<u>Type</u>	<u>Lubrication</u>
MD70R	(Other)	Magnetic	Sealed for life
MD100RM	(Dev-bleach)	Magnetic	Sealed for life
MD401RM	(Agitation)	Magnetic	Sealed for life
Siemens	(Vacuum)	Rotary Vane	See separate manual
<u>Motors</u>			
<u>Main Drive</u>			
1.5 Kw Radicon Unit	(Main Drive)	A.C.	Sealed for life
Motor Bearing			Sealed for life.
<u>Beam Lift Motor</u>			Sealed for life
Input Pacer Motor and Take-Up Motor			Every 1500 hours or 6 monthly check brush wear and replace when 50% worn. Grease ballraces with Shell Avania No. 2 and fill gearboxes with Shell Spirex 90EP.
Feed on Elevator Top Shaft Motor			Sealed for life.
Variable Gearbox "Kopp"		312 Horizontal	Check separate manual Shell Tellus R10
Dryer Fan HP102			Sealed for life, clean impellor and fan housing every 2000 hours.



Tank Capacities

Integrated Processors

Junior

1 shaft	127 litre	28 gallons
2 shaft	268 litre	59 gallons
3 shaft	409 litre	90 gallons
4 shaft	551 litre	121 gallons
5 shaft	692 litre	152 gallons
6 shaft	883 litre	183 gallons
7 shaft	975 litre	214 gallons
8 shaft	1116 litre	245 gallons

Senior

1 shaft	168 litre	37 gallons
2 shaft	355 litre	78 gallons
3 shaft	541 litre	119 gallons
4 shaft	728 litre	160 gallons
5 shaft	915 litre	201 gallons
6 shaft	1101 litre	242 gallons
7 shaft	1288 litre	283 gallons
8 shaft	1474 litre	324 gallons

Modular Processors

Standard

1 shaft	68 litre	15 gallons
2 shaft	136 litre	30 gallons
3 shaft	205 litre	45 gallons
4 shaft	273 litre	60 gallons

Wide

1 shaft	113 litre	25 gallons
2 shaft	227 litre	50 gallons
3 shaft	340 litre	75 gallons
4 shaft	454 litre	100