

INSTRUCTION MANUAL

37 NDT DRYER



Colenta[®]

WDA 1-1/S2



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37 NDT DRYER

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1 INTRODUCTION

Congratulations upon your decision to buy a

Colenta[®] 37 NDT FILM DRYER

Your purchase has been designed to meet the highest technical standards.

Some outstanding design features are:

- *) compact, space-saving design
- *) full automatic processing cycle
- *) smooth roller transport system
- *) low tank volume
- *) low energy consumption

This manual is an instruction for routine use of your:

Colenta[®] 37 NDT FILM DRYER



2 TECHNICAL SPECIFICATIONS

Processing applications: All type of Industrial X-Ray films

Film thickness: min. 0.10 mm
Material width: min. 10 cm (4") - max. 36 cm (14")
Material length: min. 10 cm (4")

	cm/min	dry to dry in Sec
Cycle times:	15	212
(adjustable on speed switch)	20	159
	25	127
	30	106
	35	091
	40	080
	45	070

Tank capacity: Wash water: 3,7 L

Solution heating: no heating

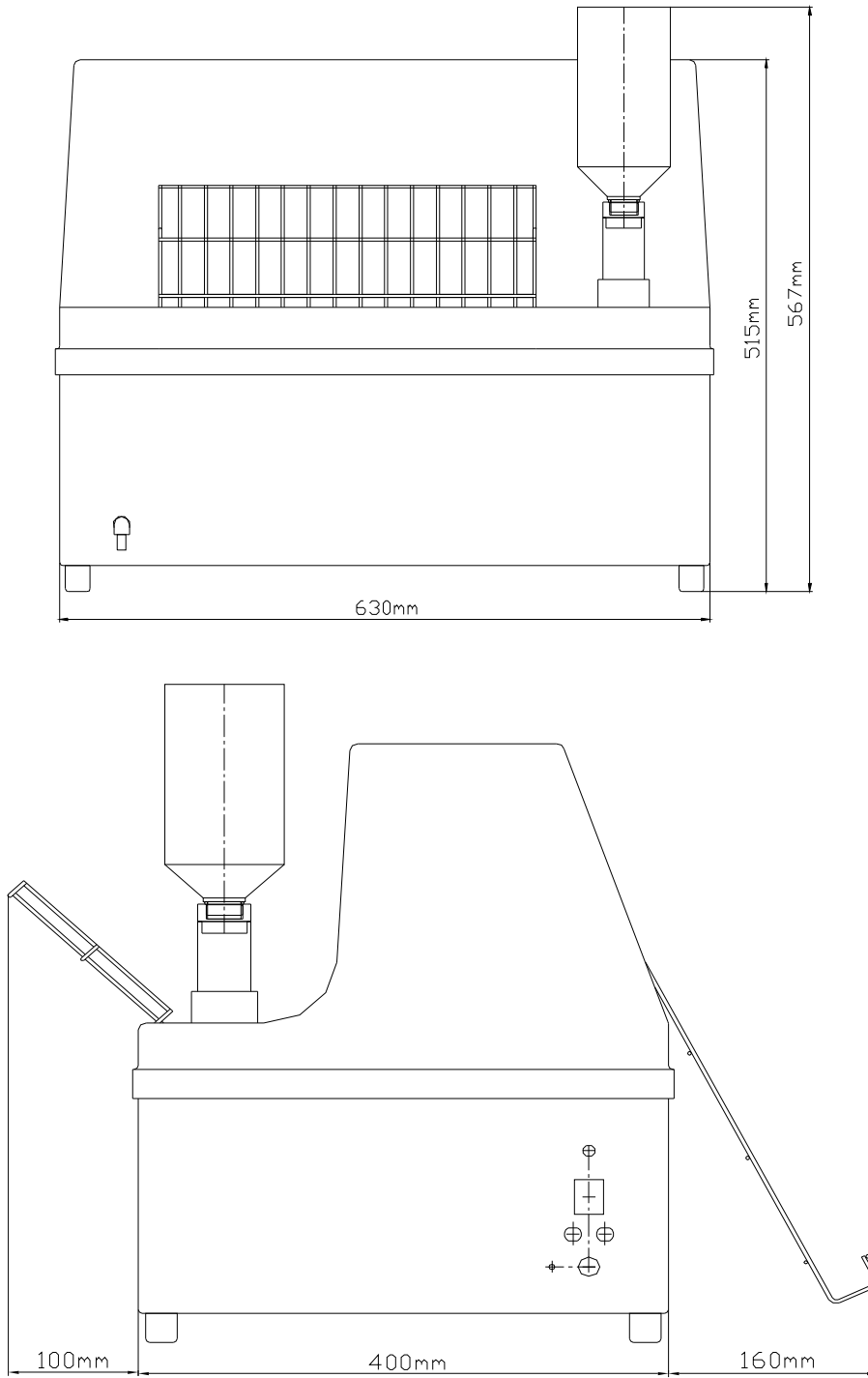
Dryer: warm air (incl safety switch)

Replenishment for water tank: gravity filling, by supplied water bottle (1 liter)

Power supply: 1 / N / PE ~ 230 V (+6% / -10%), 50 Hz, 10 A, 1.2 kW

Weight:
 Empty 28 kg
 With solution 32.5 kg

2.1 DIMENSIONS

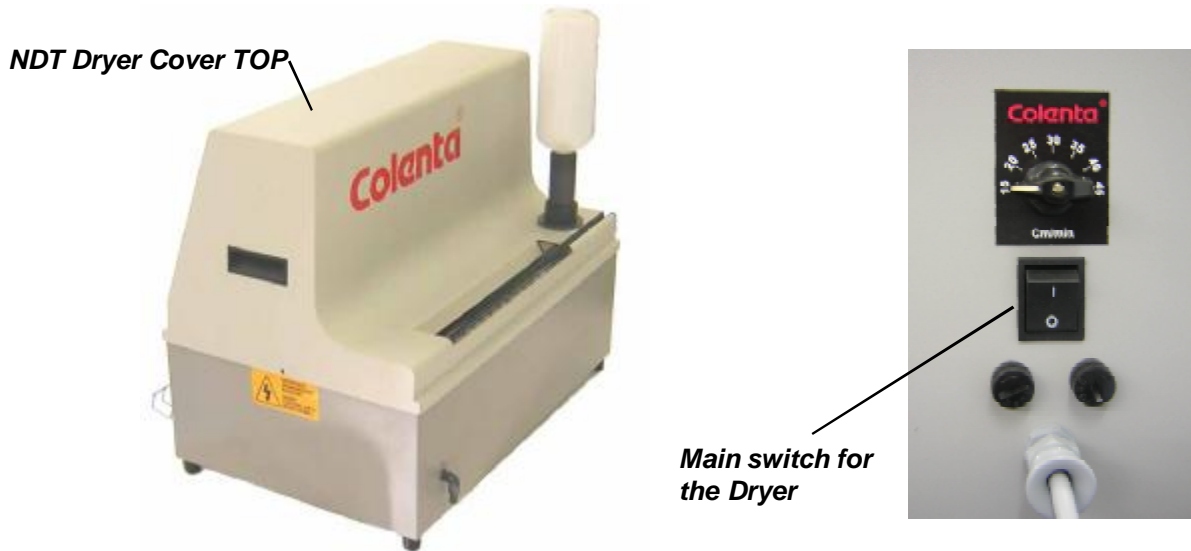


Technical specification subject to change without notice.

Colenta[®] 37 NDT FILM DRYER

3 GENERAL SAFETY INSTRUCTIONS

- *) Staff in charge of maintenance of the processor need to be thoroughly familiar with the equipment.
- *) Only the Top Cover of the processor may be removed by the operator (see picture below).
- *) Prior to carrying out any maintenance, the processor must be separated from mains. To do so, switch the main switch of the processor to "0" position. Always wear safety goggles and protective clothing when handling with chemicals.



- *) The processor may not be in operation without supervision.
- *) Make sure that clothing or other objects can not get entrapped in gear drives or similar of the processor.
- *) The installation, service, repair as well as the initial operation of the machine may be carried out by qualified and trained service personnel only.
- *) Built-in safety devices may not be elude or made inoperative. Use only original COLENTA spare parts when exchanging failed electrical components.
- *) Do not wear any loose necklaces or bracelets!

3.1 CHEMICAL HANDLING / FILM HANDLING

- *) Observe all safety technical regulations of the chemical manufacturer.
- *) Wear safety goggles and protective clothing when handling chemicals.
- *) Ensure proper ventilation of the room in which the chemicals are prepared.
- *) Spillage or overflow of chemicals has to be removed instantly.
- *) In case of contact with the eyes flush with plenty of cold water for approximately fifteen minutes and consult an physician.
- *) Chemical disposal has to be in accordance with the local environmental codes. Contact your local water treatment and sewer district authorities for more information.

3.2 IMPORTANT WARNING AND SAFETY INSTRUCTIONS

Please read these instructions carefully!

Processor Operation

Make sure that no long hair, loose clothing or jewellery can get entrapped in the gear drives or in the media transport area.

The "**Service Manual for Colenta NDT Film Dryer**" is for the use of qualified service personnel only.

The roller pairs must be cleaned with running water outside the NDT Film Dryer.

Do not clean the NDT Film Dryer with running water.

Electrical and Mechanical Hazards

Observe all safety warnings to minimize the risk of electrical shock, burns or equipment damage. NDT Film Dryer are complex machines with many electrical and mechanical parts as well as with a considerable amount of chemicals.

Fire Prevention

The area around the NDT Film Dryer must be kept clean at all times. Keep dust, wood shavings, scrap paper or other inflammable materials out of the dryer compartment.

Fire extinguishers must be available in the room where the NDT Film Dryer is installed.

Chemical Handling and Accident Prevention

Misuse of almost any chemical may create a hazard of some type. Generally photo chemicals are not any more dangerous as most of the regular cleaning agents. However, there is always a residual risk. When handling chemicals observe the lateral procedures.

1. Never sniff a container or open bottle to determine its contents. A cautious sniff of the cap or lid is safer.

2. When handling chemicals wear protective clothing, safety goggles and rubber gloves.

3. Label storage containers properly. Avoid storing hazardous chemicals on high shelves or in unprotected glass containers. Keep chemicals away from children. Do not store chemicals in a refrigerator used for food because they may contaminate food or be mistaken for edibles.

4. Ensure proper ventilation in the area where chemicals are used or stored.

5. Observe the manufacturer's recommendations for using and mixing chemicals.

Overexposure to photographic chemistry may cause skin irritation to certain individuals.

PHOTOGRAPHIC CHEMICAL EMERGENCIES AND FIRST AID PROCEDURES:

- **SKIN** - Rinse thoroughly with water.
- **EYES** - Rinse thoroughly with water and consult a physician.
- **INGESTION** - Consult a physician immediately.

Chemical Disposal

Waste from photographic processing normally contains diluted chemicals. These chemicals should be collected and disposed in accordance with local environmental codes. Dumping chemicals into a drain system could lead to a pollution problem. Contact your local water treatment and sewer district authorities before disposing chemicals.

All plumbing must comply with local and national codes. The DRAIN must be made of chemical resistant and non-corrosive material. Use PVC or equivalent.

Exhaust, Temperature and Humidity

It is necessary to ensure proper ventilation in order to receive good processing results.

Room temperatures between 18-23 °C (65 - 80 °F) with a relative humidity between 35 % and 75 % are ideal for photographic processing and working.

The NDT Film Dryer is a complex machine with moving parts such as the gear train and media transfer components. It uses photo processing chemicals which are irritating to eyes, lungs and skin. High voltage is used to power the filmprocessor.

The dryer compartment produces heat.

- High voltage may cause electric shocks, burns or even death.
- Hands or fingers may be pinched or injured by moving parts or when handling heavy parts.
- Dryer compartment heat may ignite combustible materials and cause fires.
- Eyes, skin and lungs may be irritated by photo chemicals. Before using photo processing chemicals always read the *Material Safety Data Sheets (MSDSs)* for information about the hazards of the particular chemicals and how to use them safely.
- Do not operate the NDT Film Dryer after consuming alcohol or taking strong medication.
- Do not wear jewellery or loose clothing when operating the NDT Film Dryer.

Electronical and Electrical Hazards

HAZARDOUS VOLTAGE CAN CAUSE ELECTRIC SHOCK, BURNS OR EVEN DEATH!

Qualified service personnel must verify during installation that the NDT Film Dryer is permanently and reliable grounded according to standards in the National Electrical Code.

Prior removal of the top cover, carry out the following steps:

1. **Train operators of the NDT Dryer.**
2. **Switch off the main power switch ("0"-position) and secure against restart by unplug the Power cord (see picture below).**



Main power switch

Fire Hazards

DRYER COMPARTMENT PRODUCES HEAT-PAPER OR OTHER COMBUSTIBLES CAN BE IGNITED

- Keep the area within 10 feet of the processor clean. Do not store combustible materials, including paper, close to the plate processor.
- Verify that a functional 10 lb. ABC fire extinguisher is located close to the film dryer.

Burn Hazard

DRYER COMPARTMENT PRODUCES HEAT-DRYER PANELS AND GUARDS GET HOT

- Therefore do not touch dryer panels or guards when dryer in operation.

Corrosive Liquids

CHEMICALS MAY IRRITATE EYES, LUNGS, SKIN AND DIGESTIVE TRACT

- Wear safety goggles, protective gloves and chemical aprons as indicated on Material Safety Data Sheets (MSDSs) when handling chemistry.
- Drain tanks carefully, avoid splashing. Always drain the system thoroughly before working on any of the external hose systems.
- Read the MSDSs for more information regarding the proper safety procedures for working with photo processing chemicals.
- Do not allow untrained personnel to handle photo processing chemicals or to operate the NDT Film Dryer.
- To avoid hazardous situations, keep floors and floor coverings around the NDT Film Dryer and associated drains clean and dry at all times. Any accumulation of fluids outside the film NDT Film Dryer, should be cleaned up immediately.

In the event of an accumulation of liquid due to backup, overflow or other malfunctions of the drain associated with the NDT Film Dryer call a plumber or other contractor to correct the problem with the drain.

Colenta assume any responsibility or liability whatsoever for the service ability of any drain connected to the NDT Film Dryer. Such drains are the sole responsibility of the customer.

Drains must be made of chemically resistant and non-corrosive material.

Chemical Hazards

Chemicals can be the source for errors, contaminate the waste water, irritate skin or eyes.

Spills must be cleaned up immediately as follows:

1. Prevent the spilled chemicals from entering a waste water drain.
2. Clean up the spill with a moist mop or rag.

CAUTION!
When handling chemicals, especially fixer, wear protective clothing, safety goggles and rubber gloves.

If plateprocessor chemicals make contact with the eyes, rinse them thoroughly with lots of water. If irritation persists, consult a physician.

3. Dispose cleaning materials and collected waste water from the clean up according to environmental regulations and locals codes.
4. Avoid any inhalation of chemicals as this is dangerous to health.
5. Observe all environmental regulations for storage and disposal of waste chemicals.
6. Use this manual together with the instructions for chemicals.
When handling chemicals wear protective clothing, safety goggles and rubber gloves.

Corrosive Vapours

CHEMICAL VAPOURS MAY IRRITATE EYES, LUNGS AND SKIN, IF ALLOWED TO ACCUMULATE IN WORK AREA.

Assure an adequate supply of fresh outdoor air through natural or mechanical ventilation.

- Make sure that qualified service personnel is checking the external exhaust system at regular intervals.
- Read the *Material Safety Data Sheets (MSDSs)* for more information regarding the proper safety procedures for working with photo processing chemicals.

4 BEFORE INSTALLATION

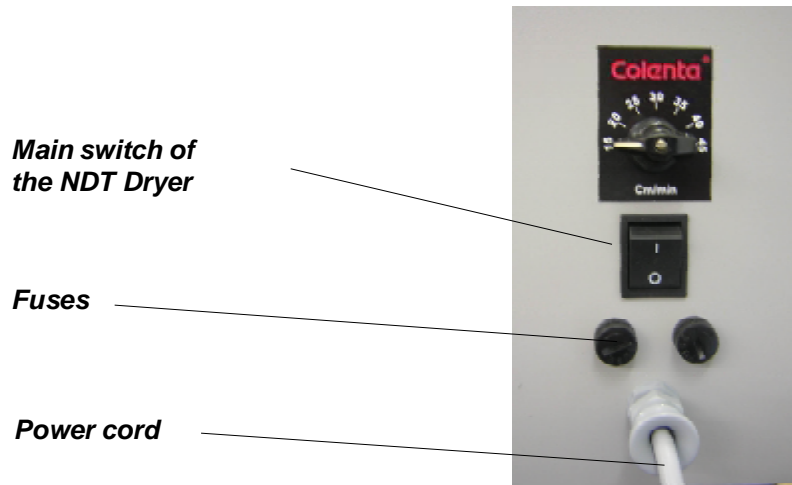
Site preparation has to be completed before delivery and installation.

4.1 LOCATION

Required measurements can be taken from the processor specification sheet. For "through-the-wall", a purpose built panel is required (optional accessory).

4.2 ELECTRICAL SUPPLY

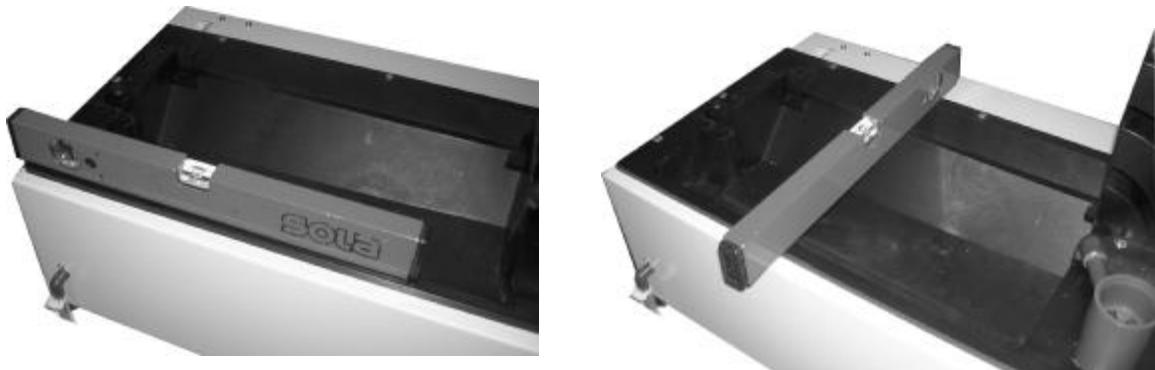
All electrical connections must meet national safety requirements. Correct fuses and electrical requirement can be taken from the processor specification sheet.



4.3 WATERSUPPLY

There is now fixed water supply required to operate the dryer, it is recommended to have a cold water supply with 2.5 meters of hosing to facilitate easy cleaning of the racks and tanks

Make sure the room where the Dryer is installed, is well ventilated (7-10-times the volume of the room per hour) and the unit itself is leveled correctly.



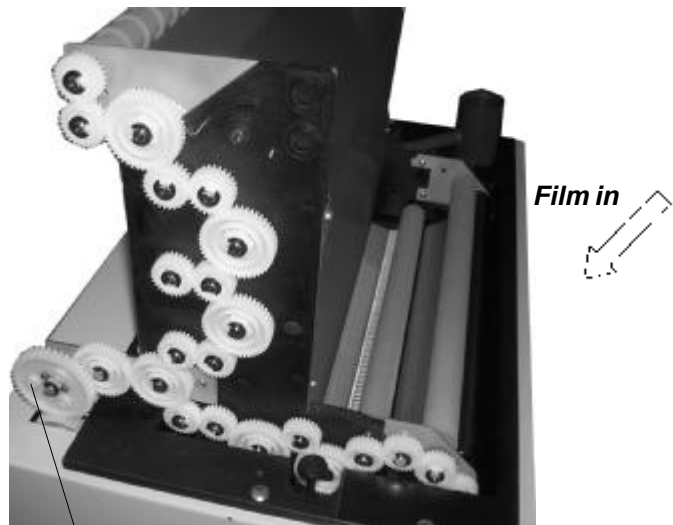
4.4 INSERT THE TRANSPORT RACK

After cleaning or for first installation, the transport rack (Dryer and Water) has to be re-installed to the processor. To do that, follow the instruction and illustration mentioned below:

WARNING:

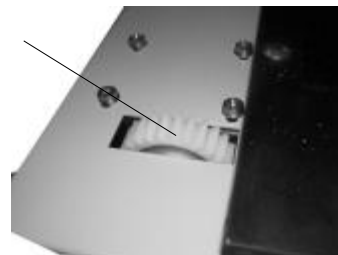
Separate the Film Processor from mains. To do so, switch the main power switch of the Filmprocessor to „0“ position. Wear safety goggles, protection gloves and clothing.

- # Rinse the tank with water, remove any deposits or buld ups.
- # Remove any possible algas from the tank.
- # Close the the drain-tube as mentioned on the page before.
- # Insert the transport rack as shown below *
- # Fill the tank until the overflow level is reached
- # Close the topcover and switch on the NDT Film Dryer (2 screws)



drive gear

Make sure the drive gears are proper connected!



overflow level

4.5 FILM GRIDS

The film grids has to be installed as following:



4.6 TO DRAIN THE WATER

To drain the water of the dryer just open the drain tube according the illustrations below. Take care that all the mentioned drain taps are close during re-fill up.

Drain Tube



Lift to drain the WASH

Check regularly that the rubber O-Ring is in correct position.



Water drain ... to be connected to a suitable container

5 WORKING WITH THE NDT DRYER

IN THE MORNING:

- Make sure the water supply bottle is full and in position.
- Make sure, that the drain tube is in correctly position.
- Fill up the level of the Washtank.
- Close the top cover of the NDT Film Dryer.
- Insert the full water bootle.
- Switch on the Film Dryer (Position „1“).

NORMAL WORKING:

- Run some cleaning films / sheets (optional item).
- Set the speed according the film in use.
- Ensure that the 1st roller pair is pulling the film gently.
- Full width film

cm/min	Dry to Dry in Sec
15	212
20	159
25	127
30	106
35	091
40	080
45	070

IN THE EVENING:

- Switch off the main power switch of the NDT Film Dryer. (Main switch in position „0“)
- Open water drain tap to prevent algae growths in water tank.
- *Lift the top cover to prevent condensation !!*



6 MAINTENANCE

The filmdryer is designed to produce consistent high quality production with the minimum of maintenance.

Regular maintenance minimizes the chances for equipment failure and loss of processing quality. As well a trained person has to be responsible for performing the maintenance of the filmdryer and must be familiar with the operation and function of the unit as well.

6.1 DAILY MAINTENANCE

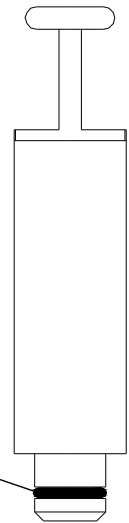
- *) Cleaning feed grid
- *) Before starting production it is recommended to feed some cleaning films to remove any overnight residue.

6.2 WEEKLY MAINTENANCE

- *) Wipe down the external surfaces of film dryer / enclosures / panels with a wet cloth to remove any chemical / dirt deposits.
- *) Check the O-rings located at the water drain tube as well as at the water supply bottle (from time to time some sliding means (Vaseline,..) should be applied to the O-rings).
- *) Inspect and clean the wash tank and intermediate water rins drains. If algae present then they should be removed, in such a case we suggest to use a proven algae control system.



Check regularly that the rubber O-Ring is in correct position.



6.3 MAINTENANCE EVERY 2-4 MONTH

Period is subject to film dryer usage.

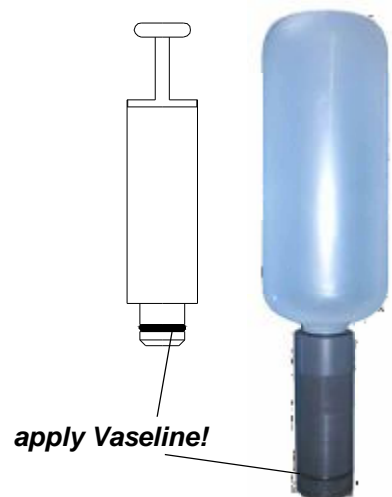
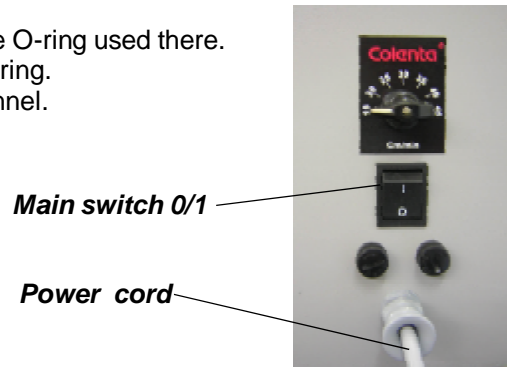
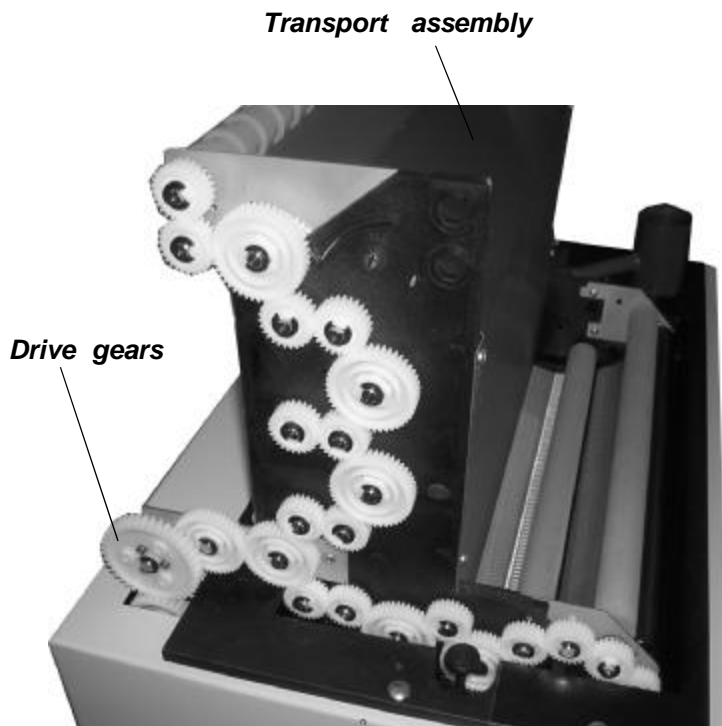
Good processing quality and the reliable operation of a filmprocessor is dependent upon regular and careful cleaning.

Every 3-6 months, the chemicals in the tanks should be drained. A chemical cleaning of the processing tanks and wash tank is recommended. Always follow safety warnings as described in section 1 when cleaning the NDT Dryer.

Prior to carrying out any maintenance:

- switch off the power at the main power switch (position "0") ensuring it can not be accidentally switched back on additional, disconnet the main power supply (Power cord) of the NDT Film Dryer!

- *) Switch off the main power switch of the film dryer first (position "0").
- *) Remove the top cover of the film dryer.
- *) Drain the washtank, use a sponge to clean - remove all deposits
- *) Remove Transportrack assembly and check it carefully for any:
 - damaged or worn bearings
 - loose screws
 - scratched or bent film guides
 - plastic flat springs in developer bottom underturn.
- *) Check the transport assemble of any kind of alges or deposits - remove in case.
- *) Check the ventilation system - remove any kind of dust. Use warm water and a sponge to do so.
- *) Check all rollers - any possible damages must be reported to your sales agent.
- *) Check all external hose connectors (outside of the Dryer) and fittings for possible available leaks.
- *) Put the drain tube back in position (check the O-ring used there)
- *) Put the transport assembly back in position - make sure the gears are in the right position
- *) Fill wash tank.
- *) Re-install the top cover and switch on the NDT Dryer.
- *) Put the water supply bottle back in position and check the O-ring used there. Eventually put some sliding means (Vaseline,..) to the O-ring.
- *) All repairs must be carried out by qualified service personnel.
- *) Process some test films.



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