HEALTHCARE
Sales & Services >
Global Services Organisation

Installation Planning

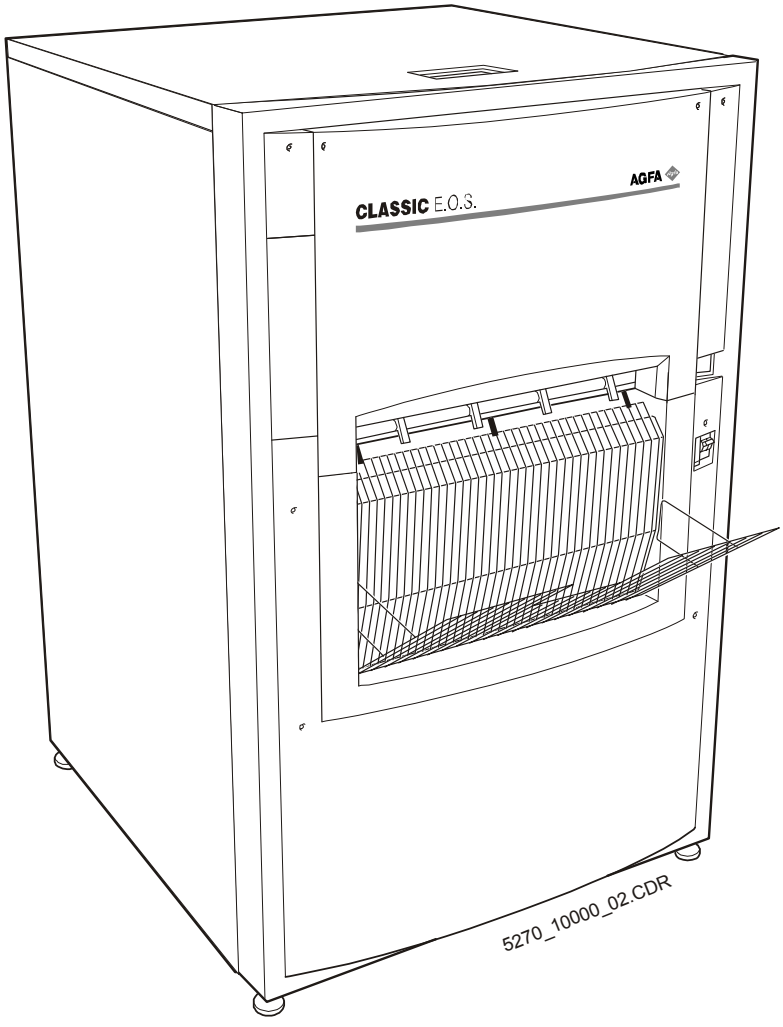
Order No.: DD+DIS303.03E
1 piece WACPK MA 1

Classic E.O.S.
Type 5270/100

Classic E.O.S. CL
Type 5270/105

INSTALLATION PLANNING and Technical Data

Internal Version 6



The Installation Planning Instructions can also be ordered separately.
Order number: DD+DIS303.03E

printed in Germany 02 / 2004

AGFA

Caution:

This system uses mains voltage. Please observe the pertinent safety instructions.

These instructions describe adjustments and routines,
which must only be performed by qualified technical personnel.

Note:

Electrical repairs and connections must only be made by certified electricians.

Mechanical repairs and connections must only be made by certified technicians.

CE Declaration:

According to the medical directives the CE Declaration
(CE Conformity) becomes void if the product is modified without permission of the manufacturer!
This applies to all parts, not only the safety devices!

We reserve the right to change data and characteristics in the light of technical progress.

Chapter 14

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1 Safety

General safety instructions

- The machine must only be used as described in the operating instructions. Any other use may result in damage to the machine or may affect the machine function with the consequence that the machine can no longer be used as intended, and therefore presents a risk for patients, user, and environment.
- The machine must only be operated by qualified personnel trained on the machine.
- Ensure that only trained personnel have access to the machine.
- Ensure that the machine can always be supervised and that any tampering is prevented.
- Repairs or modifications on the machine must only be performed by trained service personnel authorized by Agfa.
- In case of visible damage on the machine housing the machine must not be operated or used, and must immediately be disconnected from the mains.
- Built-in or external safety devices must not be circumvented or disabled.
- Disconnect the machine from the mains before starting any maintenance.
- If a mains connection is absolutely required these maintenance routines must only be made by specially trained personnel.
- Like all technical devices, this machine must be operated, cared for and serviced correctly as described in the documentation provided with the machine.
- If the machine is not operated correctly, or if it is not serviced correctly, Agfa will not be liable for any resulting disturbances, damage or injuries.
- When installing the machine make sure that either the mains plug or an all-cable disconnecting device is provided in the internal installation close to the machine and is easily accessible.
- If the machine is connected with other components or assemblies, Agfa will guarantee safety only for combinations which are approved by Agfa.
- In case of conspicuous smoke or noises, immediately disconnect the machine from the mains.

Special instructions for the handling of chemicals

- When handling chemicals, always observe the applying safety and environmental regulations, as well as the operating and warning instructions pertaining to these chemicals.
- Wear stipulated protective clothing and safety goggles.
- When disposing of chemicals and waste water, you must comply with the local regulations concerning waste water and environmental protection.
- If photo-chemicals get in your eyes, proceed exactly according to the warning instructions and/or the instructions published by the manufacturers of the chemicals. If required, immediately rinse your eyes with cold water. Afterwards see the doctor immediately.
- Avoid inhaling of chemical fumes. Make sure that there is sufficient ventilation at the installation site of the machine, i.e. an air exchange that is at least ten times the room volume per hour.
- Always comply with the installation instructions.
- Verify tightness of all connections for chemicals and water, as well as waste water, on the machine in regular intervals. At least check whenever suggested in the operating instructions and/or service instructions.

- If solution gets into the inside of the machine (e.g. by spilling during tank filling), the machine must immediately be disconnected from the mains and cleaned thoroughly by the service personnel.
- Do not use chlorine or chlorine containing substances in the film processor. The use of chlorine or chlorine containing substances may cause irreparable damage in your film processor. Use of these substances may result in termination of the manufacturer's warranty.

The film processor must not be operated in the direct vicinity of the patients as defined in EN60601-1 and IEC 601-1.

Adherence to safety regulations

- This film processor meets the safety requirements as defined in EN 60950: 1997 (IEC 950) and EN 60601-1-2: 1993, UL 1950 and CSA C22.2 No. 950 and has interference suppression as defined in EN 50081-1, EN 55011, and FCC 47 Part 15, Subchapter B, Class A.
- The water connection is in compliance with DIN 1988 / EN 1717:2001.

2 Scope of Delivery and Accessories

2.1 Classic E.O.S. Type 5270/100

Machine	Type	Power connection	ABC Code
Classic E.O.S.	5270/100	1 N~ 230 V (200-240 V) 50/60 Hz	37XK3

Accessory box

- Wire chute
- Exhaust hose including joint to the connection stub
- Power cable UL NEMA 6-20 P
- Power cable VDE CEE 7 standard cover VII
- Sealing tape 12x12mm; 1.3m long; self-adhesive
- Pipe
- Label (wrap-around) DEV, FIX, WAT; OVERFLOW
- Installation kit
- Accessory box with small installation parts
- Accessory box with installation parts for the exhaust
- Technical documentation

2.2 Classic E.O.S. CL Type 5270/105

Machine	Type	Power connection	ABC Code
Classic E.O.S. CL	5270/105	1 N~ 230 V (200-240 V) 50/60 Hz	EFPHK

Accessory box

- Wire chute
- Exhaust hose including joint to the connection stub
- Power cable UL NEMA 6-20 P
- Power cable VDE CEE 7 standard cover VII
- Sealing tape 12x12mm; 1.3m long; self-adhesive
- Pipe
- Label (wrap-around) DEV, FIX, WAT; OVERFLOW
- Installation kit
- Accessory box with small installation parts
- Accessory box with installation parts for the exhaust
- Technical documentation

2.3 Peripheral equipment

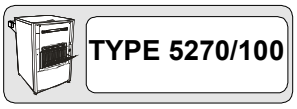
Mixer	Type 5280
Mixer communication cable (Mixer to film processor)	CM+9528030301
Replenisher tanks (2 x 30 liters) with level sensor / cable 5 m	Type 8186 / 701 ABC Code: FJ1QL
Replenisher tanks (2 x 80 liters) with level sensor / cable 6 m	Type 8186 / 101 ABC Code: F98XW

2.4 Exhaust connection through the floor

Order an additional exhaust stub Ø 100 mm, CM+9522030091

3 System Overview

3.1 Classic E.O.S. Type 5270/100



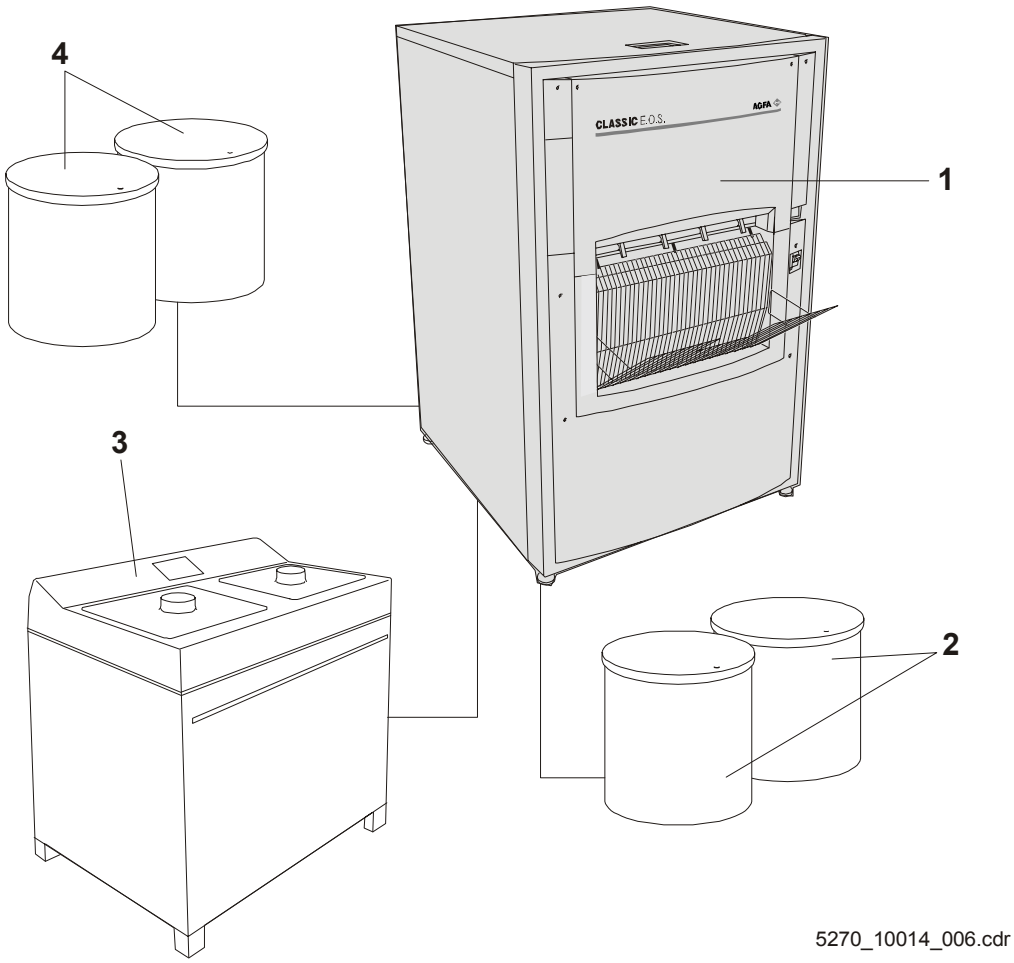


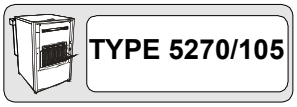
Figure 1

The system requires the following components which must be considered in the planning:

1	Film processor Classic E.O.S. 5270/100
2	Disposal tanks or connection to a centralized disposal system
3	Chemical solution mixer
4	Replenisher tanks for developer and fixer instead of mixer
--	Water connection via water filter (not shown)

Depending on the customer's wishes, the film processor can be combined with the following additional equipment.
According to the required configuration further installation planning for corresponding equipment (e.g. mixer) must be taken into consideration.

3.2 Classic E.O.S. CL Type 5270/105



The system requires the following components which must be considered in the planning:

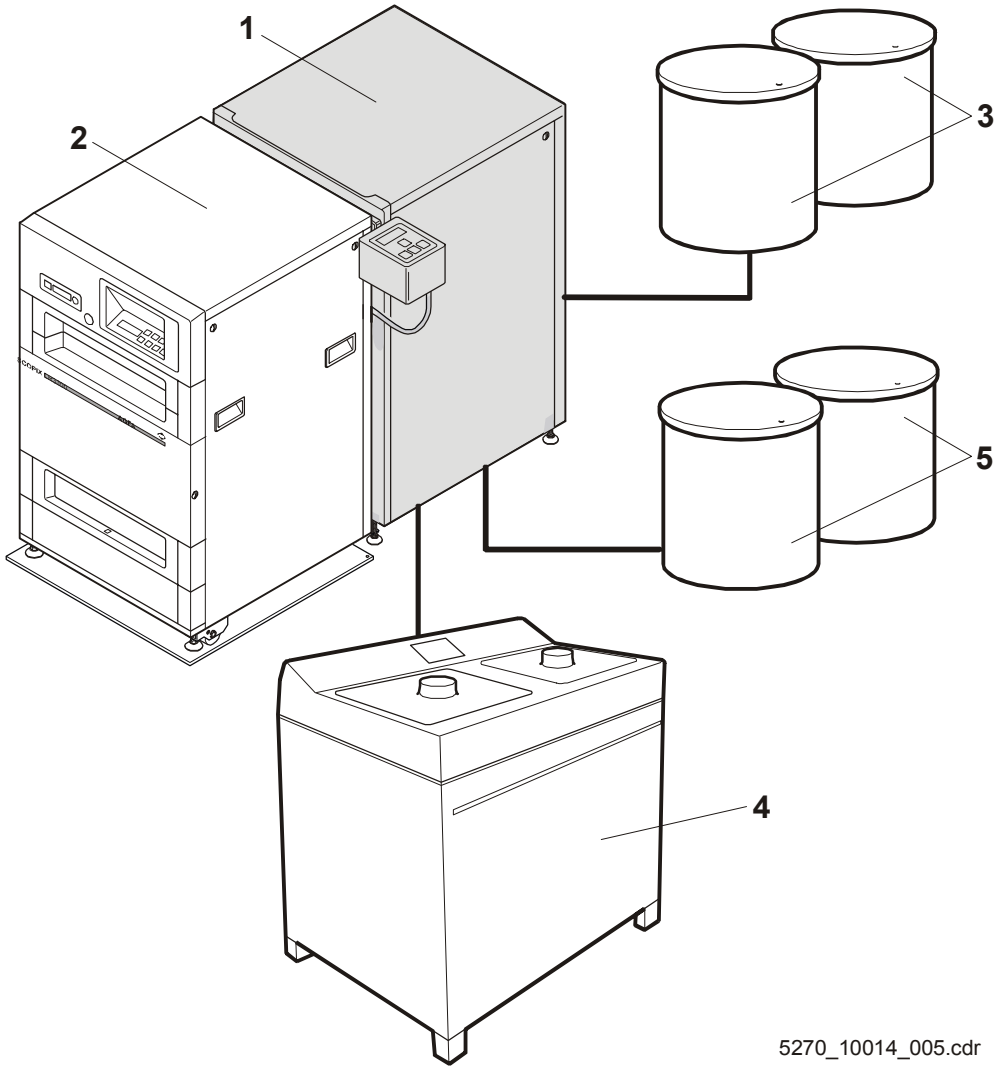


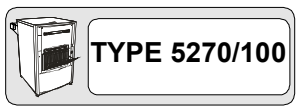
Figure 2

1 Film processor Classic E.O.S. CL 5270/105
2 Laser Imager LR3300
3 Disposal tanks or connection to a centralized disposal system
4 Chemical solution mixer
5 Replenisher tanks for developer and fixer instead of mixer
-- Water connection via water filter (not shown)

Depending on the customer's wishes, the film processor can be combined with the following additional equipment.
According to the required configuration further installation planning for corresponding equipment (e.g. mixer) must be taken into consideration.

4 Machine Dimensions

4.1 Classic E.O.S. Type 5270/100



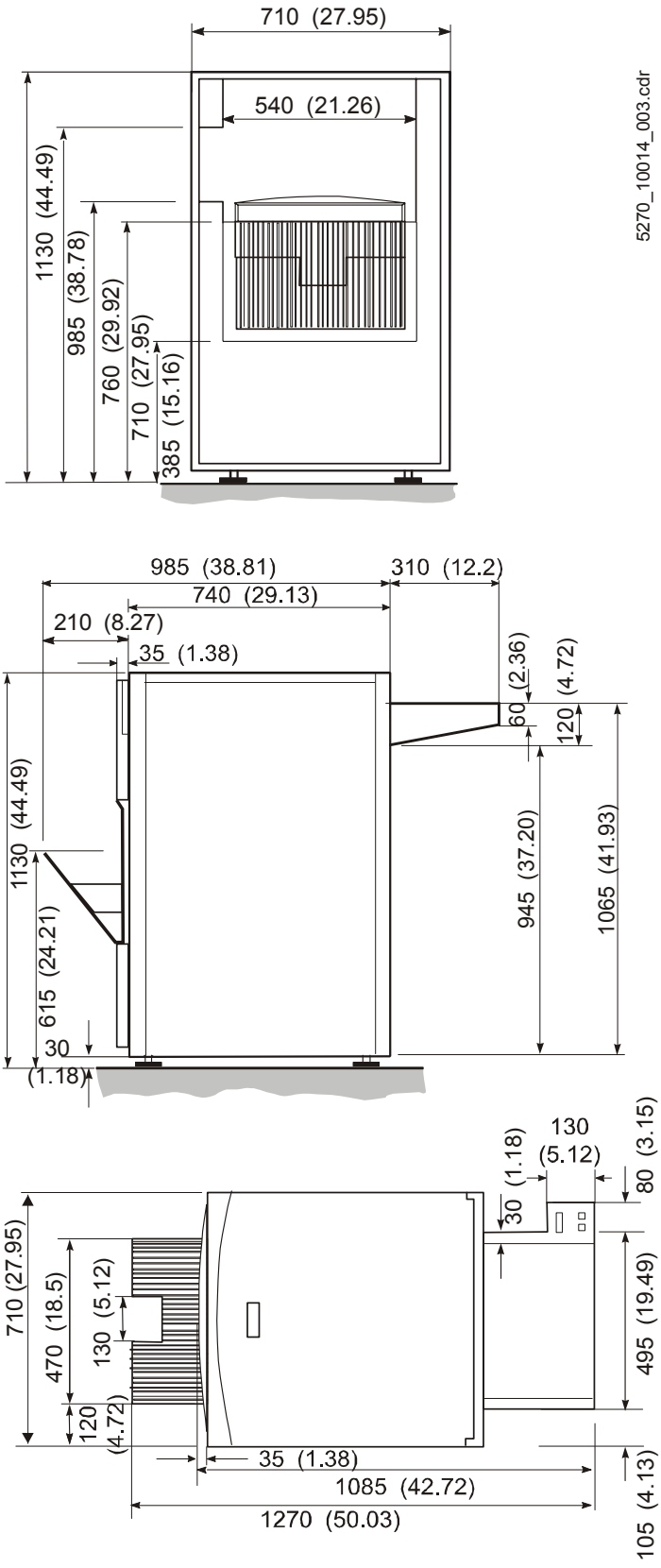
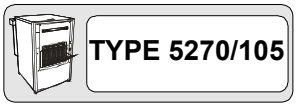
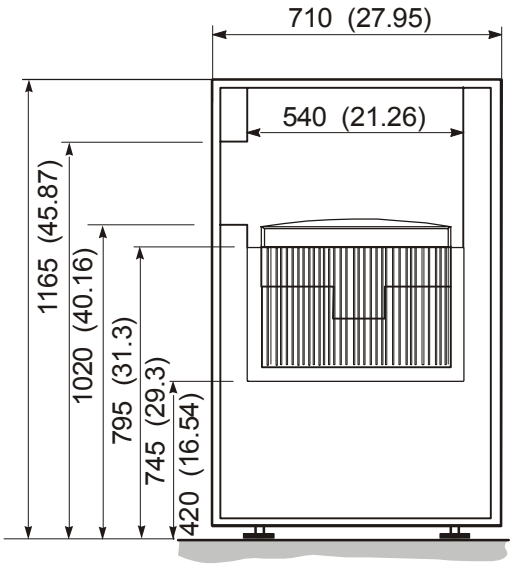


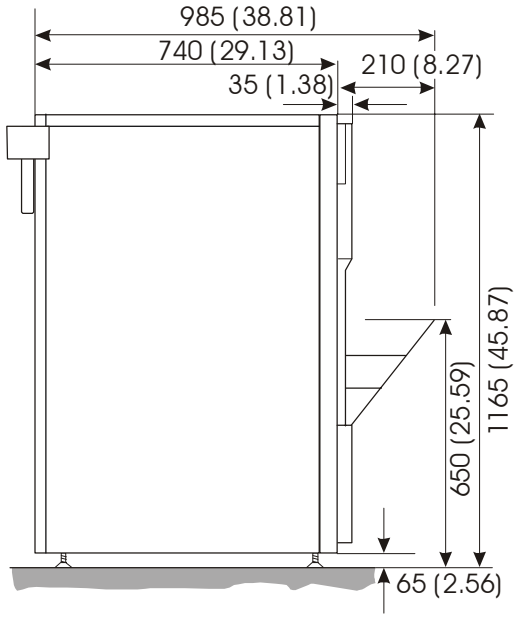
Figure 3

Dimensions in mm (inch)

4.2 Classic E.O.S. CL Type 5270/105







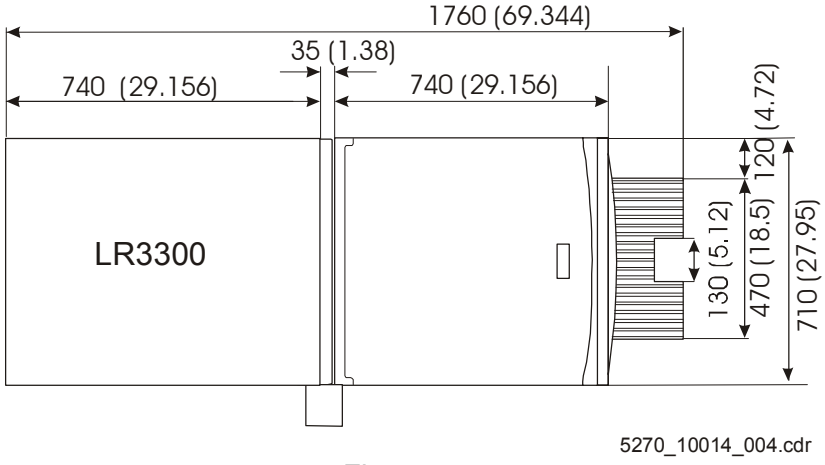


Figure 4

Dimensions in mm (inch)

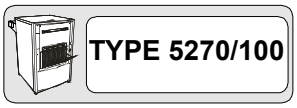
5 Transport path

The film processor must fit through all doors and hallways on its transport path to the installation site.

Classic E.O.S. / Classic E.O.S. CL (Type 5270/100/105)	**Smallest door width**
without pallet	**at least 73 cm (29 inch)**
with pallet	**at least 82 cm (32 inch)**

6 Access for Repair and Maintenance

6.1 Classic E.O.S. Type 5270/100



The required floor space for the film processor (with feed table, chute and the required clearance on the left) is 1270 x 860 mm (50.03 x 33.88 inch).

The free space indicated in the illustration must be guaranteed for repair and maintenance, otherwise the time required for service will increase.

Optimum dimensions:
We recommend to plan on this free space.

Minimum dimensions:
Do not go below this minimum space.

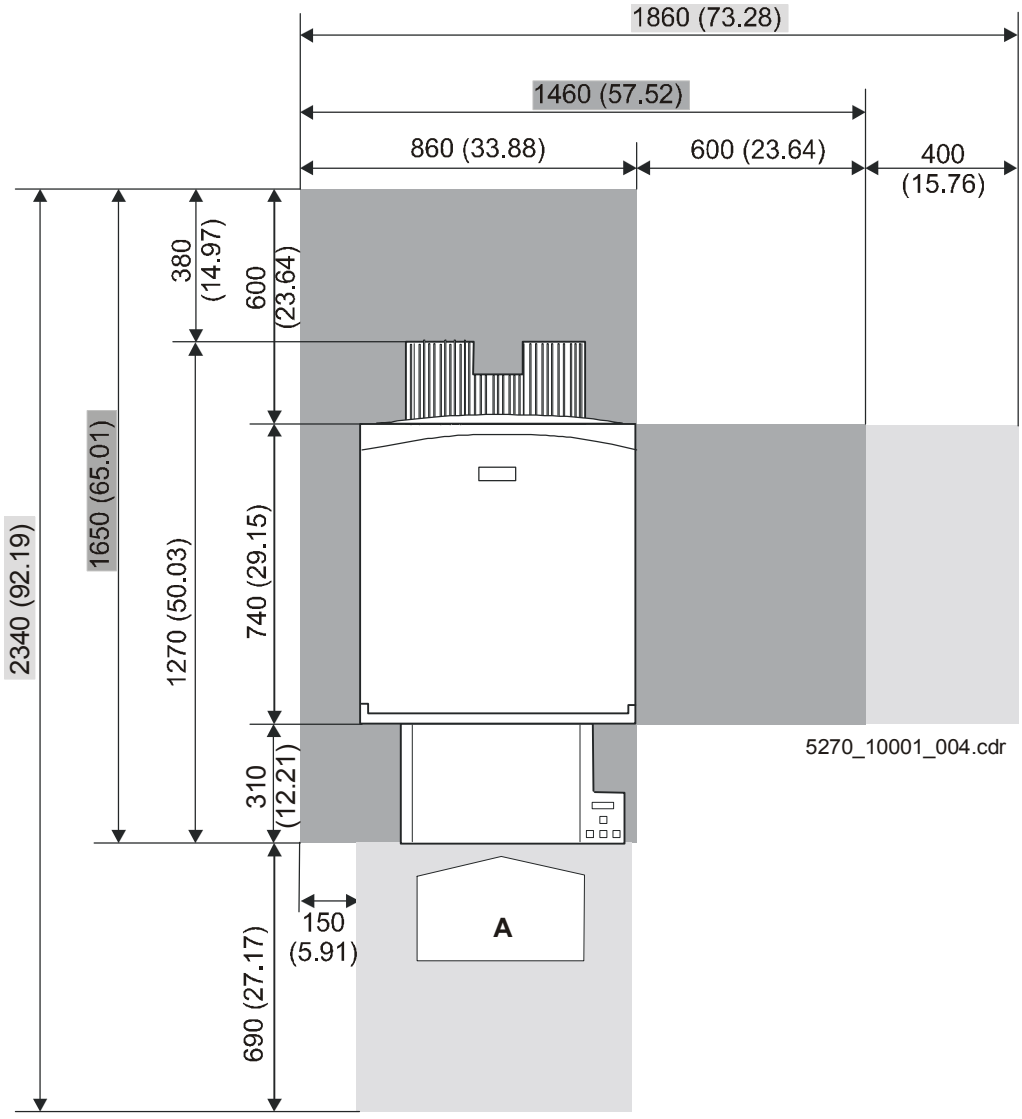
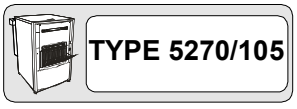


Figure 5

(A) Operation side
Dimensions in mm (inch)

6.2 Classic E.O.S. CL Type 5270/105



The required floor space for the film processor in combination with the Laser Imager LR3300, feed table, chute and the required clearance on the left is 1700 x 860 mm (66.98 x 33.88 inch).

In case of an installation of the Laser Imager LR3300 or another daylight system observe the installation documentation enclosed with the machine.

The free space indicated in the illustration must be guaranteed for repair and maintenance, otherwise the time required for service will increase.

Optimum dimensions:
We recommend to plan on this free space.

Minimum dimensions:
Do not go below this minimum space.

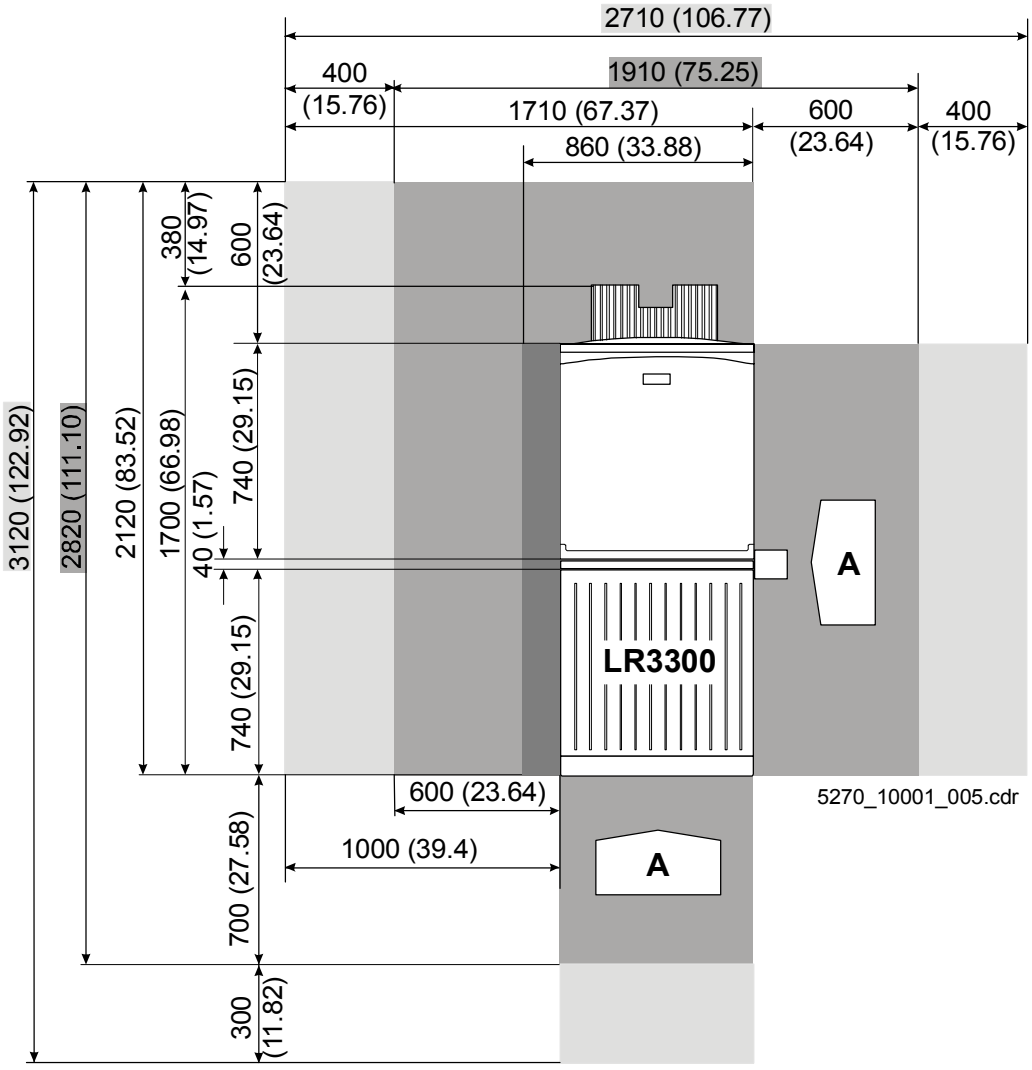


Figure 6

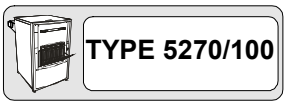
(A) Operation side
Dimensions in mm (inch)

7 Daylight / Darkroom Installation (only Classic E.O.S. Type 5270/100)

Chapter 7 “Daylight / Darkroom Installation” only refers to the Standalone Version Type 5270/100.
Type 5270/105 has been designed for installation as daylight system.

7.1 Machine in the daylight, film feed in the darkroom, light seal at the darkroom feed table

7.1.1 Installation at the wall opening



① Film feed
② Film output (wire chute)
③ A 60° chamfer must be provided on the wall opening.
④ Wall
⑤ Wall base
⑥ Light seal (foam rubber – by the meter) Order no. CM+0000014259

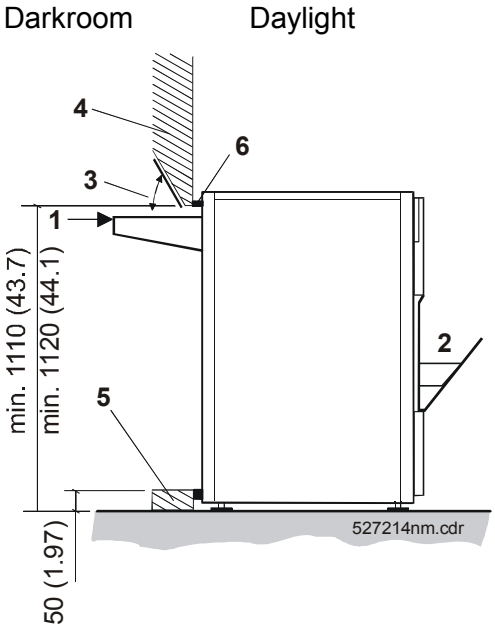


Figure 7

Dimensions in mm (inch)

Wall opening:

① Wall
② Wall base
③ Wall opening

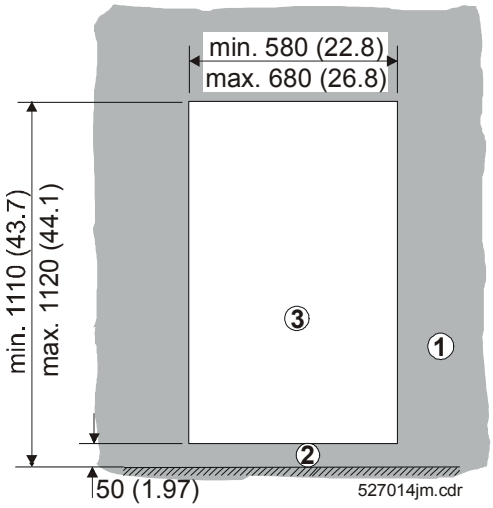


Figure 8

Dimensions in mm (inch)

7.1.2 Installation with light tight wall

① Film feed
② A 60° chamfer must be provided on the wall opening.
③ Wall
④ Light tight wall
⑤ Film output (wire chute)
⑥ Wall base
⑦ Light seal
(foam rubber – by the meter)
Order no. CM+0000014259

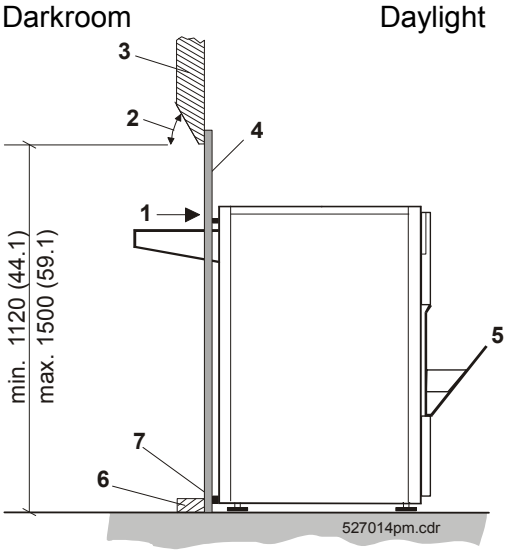


Figure 9

Dimensions in **mm (inch)**

Wall opening

① Wall

② Overlap wall / light tight wall at least 5 cm on all sides

③ Wooden board, 20 mm (0.79 inch) with opening

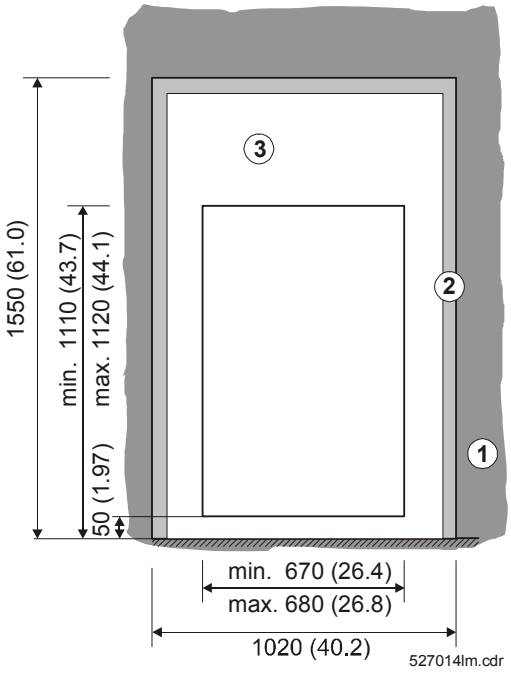


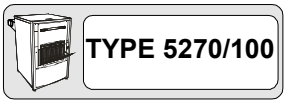
Figure 10

Dimensions in mm (inch)

See 7.3, Light tight wall

7.2 Machine in the darkroom, film exit in the daylight, light seal at the dryer with light tight wall

7.2.1 Installation at the wall opening with light tight wall



1 Film feed
2 Wall
3 A 60° chamfer must be provided on the wall opening.
4 Light tight wall
5 Film output (wire chute)
6 Light seal (foam rubber – by the meter) Order no. CM+0000014259
7 Wall base

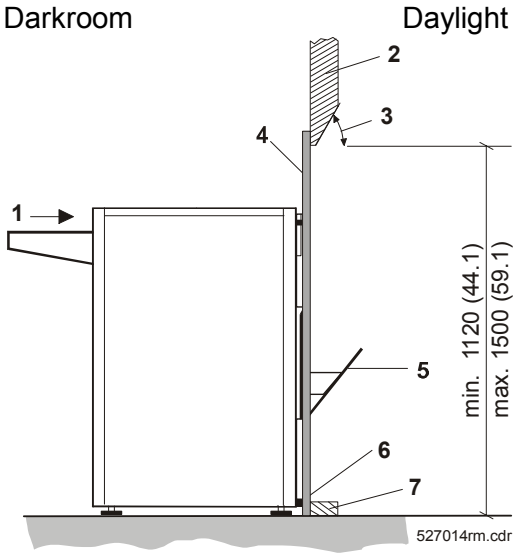


Figure 11

Dimensions in mm (inch)

The lower the height of the wall opening the more difficult will be the access to the film removal.

Wall opening

1 Wall
2 Overlap wall / light tight wall at least 50 mm (1.97 inch) on all sides
3 Wooden board, 20 mm (0.79 inch) with opening

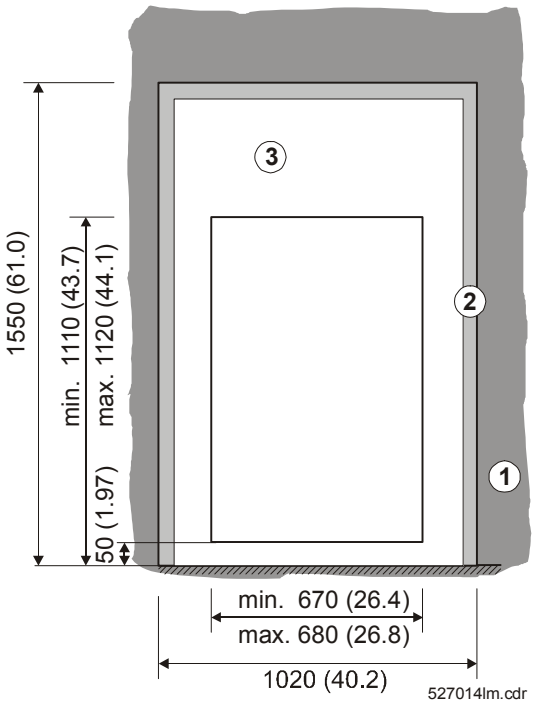
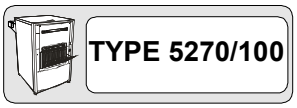


Figure 12

Dimensions in mm (inch)

See 7.3, Light tight wall

7.3 Light tight wall



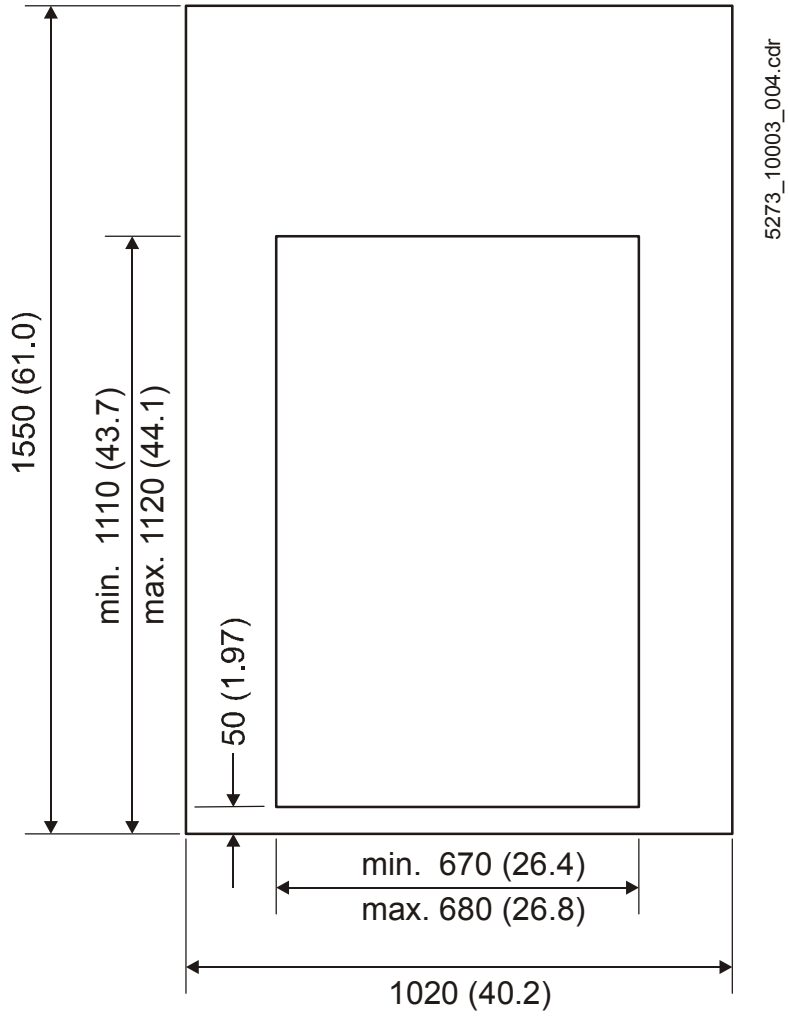


Figure 13

Dimensions in mm (inch)

Coverage of a wall opening of up to 1400 mm x 900 mm (55.16 inch x 35.46 inch) is possible.

An overlap of 50 mm (1.97 inch) must be guaranteed on all sides.

The manufacturer does not supply the light tight wall (wooden board) required for the installation of a film processor!

8 Installation

8.1 Hoses and installation material

Only use **fiber-reinforced** PVC hoses Ø 19x4 mm for the external hose connections (outside the machine)!

The supply and disposal hoses for developer, fixer, water, and safety overflow in the machine are marked by tapes:

DEV	= developer	**WAT**	= water
FIX	= fixer	**OVERFLOW**	= safety overflow

Tapes to be wrapped around external hoses are included in the accessory box.

The following hoses are to be used for the supply connections:

Supply connection	**Color**	**Dimensions (mm / inch)**	**Order number**
Developer	red (DEV)	10x3 / 0.39x0.12 fiber-reinforced	CM+0000064082
Fixer	blue (FIX)	10x3 / 0.39x0.12 fiber-reinforced	CM+0000064083

The following hoses are to be used for the disposal connections:

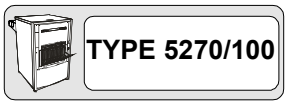
Disposal connection	**Color**	**Dimensions (mm / inch)**	**Order number**
Developer	red (DEV)	19x4 / 0.75x0.16 fiber-reinforced	CM+0000064133
Fixer	blue (FIX)	19x4 / 0.75x0.16 fiber-reinforced	CM+0000064134
Water safety overflow	transparent (WAT)	19x4 / 0.75x0.16 fiber-reinforced	CM+0000007620

The accessory box includes an approx. 50 cm (19.69 inch) long PAP hose **for the exhaust connection**.
The PAP hose (Ø 100 mm / Ø 3.94 inch) can be ordered by the meter:
Order number CM+0000064117

Hose clamp	Supply	CM+9037170090
Disposal		CM+9037200400
Exhaust		CM+7037196490
Hose connection	Supply	CM+9521075161
Disposal		CM+9521075041
Threaded bush		CM+9521075050
Y – connector		CM+9034200440
Exhaust connection ∅ 100 mm (3.93 inch) Order an additional joint for the floor connection!		CM+9522030091

8.2 Supply and disposal through the lower front panel (only Classic E.O.S. Type 5270/100)

8.2.1 Instructions for breaking out the openings



- It is **not** necessary to remove the front panel in order to break out the openings.
- Mark the recesses to be broken out with a felt-tip marker.
- The material can be broken out by holding a screwdriver against he groove and hitting it with a hammer.

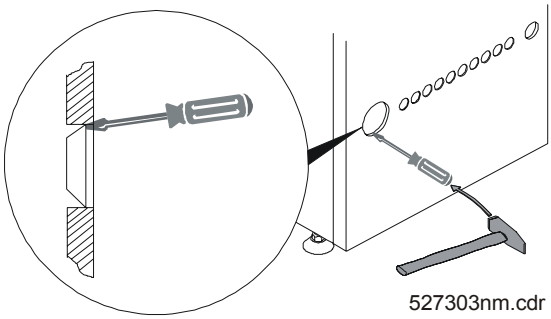
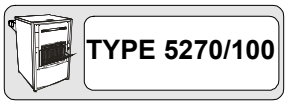


Figure 14

8.2.2 Required openings for standard installations



(A) Exhaust connection
(B) Developer overflow / drain
(C) Fixer overflow / drain 1
(D) Water overflow / drain
(E) Safety overflow, tanks
(F) Developer supply
(G) Fixer 2 supply
(H) Water supply

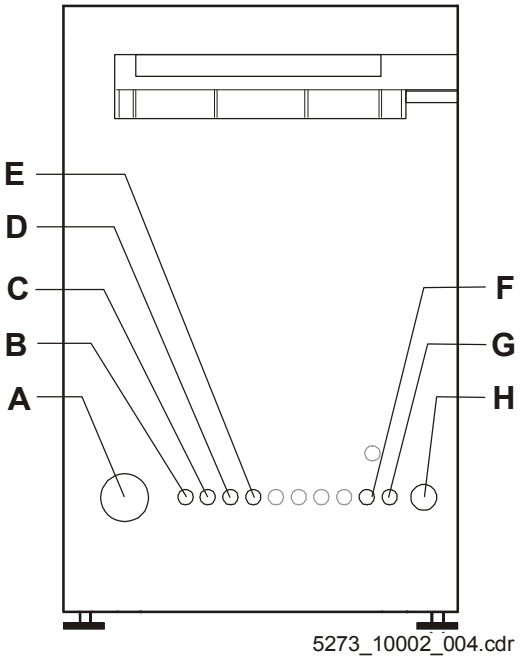
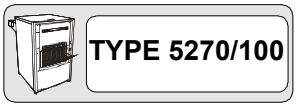


Figure 15

8.2.3 Installing the developer / fixer supply hoses



Only use **fiber-reinforced** PVC hoses Ø 10x3 mm (0.39x0.12 inch) for the external hose connections (outside the machine)!

Position the hoses **without kinks**!

Installing the developer / fixer supply:

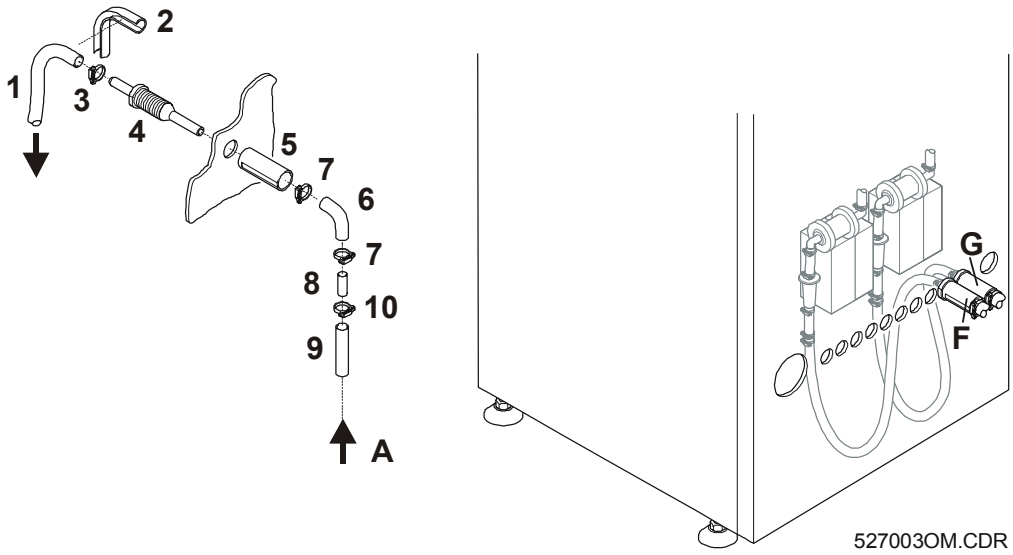


Figure 16

(F) Developer (DEV) (A) Supply direction
(G) Fixer (FIX)

POS	Designation	Configuration
1	PVC hose Ø 9x1.5 mm (0.35x0.06 inch)	Pre-installed in the machine
2	Hose positioning / reinforcement bend-protection	Not included in shipment, can be ordered, CM+7946064580
3	Hose clamp	Pre-installed in the machine
4	Hose connection stub	
5	Threaded bush	Included in the accessory box
6	Rubber elbow Ø 10 mm (0.39 inch)	Not included in shipment, can be ordered, CM+9511017970
7	Hose clamp	Not included in shipment, can be ordered, CM+7037200210
8	Pipe stub Ø 10x1 mm (0.39x0.04 inch)	Not included in shipment, can be ordered, CM+9511017920
9	PVC hose Ø 10x3 mm (0.39x0.12 inch) fiber-reinforced Developer: red Fixer: blue	Not included in the shipment, can be ordered, CM+0000064082 CM+0000064083
10	Hose clamp	Not included in shipment, can be ordered, CM+7037200230

8.2.4 Installing the disposal hoses

TYPE 5270/100

Only use **fiber-reinforced** PVC hoses Ø 19x4 mm (0.75x0.16 inch) for the external hose connections (outside the machine)!

Position the hoses **without kinks**!

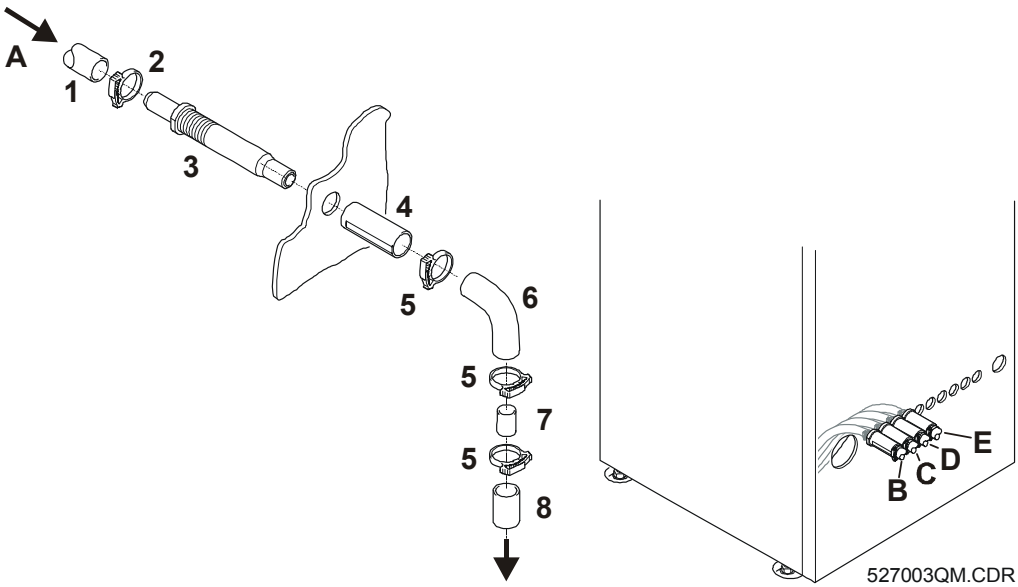


Figure 17

(A) Drain direction
(B) Developer drain / overflow
(C) Fixer drain / overflow
(D) Water drain / overflow
(E) Safety overflow, tanks

Pos	Designation	Configuration
1	PVC hose Ø 19x2.5 mm (0.75x0.10 inch) transparent	Pre-installed in the machine
2	Hose clamp	
3	Hose connection stub Ø 20 mm (0.79 inch)	
4	Threaded bush	Included in the accessory box
5	Hose clamp	Not included in shipment, can be ordered, CM+9037200400
6	Rubber elbow	Not included in shipment, can be ordered, CM+9889629521
7	Pipe stub Ø 20 mm (0.79 inch)	Not included in shipment, can be ordered, CM+7839185010
8	PVC hose, Developer (red, fiber-reinforced): Ø 19x4 mm (0.75x0.16 inch) Fixer (blue, fiber-reinforced): Ø 19x4 mm (0.75x0.16 inch) Water (transparent, fiber-reinforced): Ø 19x4 mm (0.75x0.16 inch)	Not included in shipment, can be ordered CM+0000064133 CM+0000064134 CM+0000007620

- Combine the hoses of the safety overflow (OVERFLOW) and water (WAT) with a Y piece and connect them with one drain hose, if this is permitted by the local regulations. Install the drain hose to the floor drain.

8.3 Supply and disposal through the floor

Only use **fiber-reinforced** PVC hoses Ø 10x3 mm (0.39x0.12 inch) for the external hose connections (outside the machine)!
Position the hoses **without kinks**!

Classic E.O.S. (5270/100)

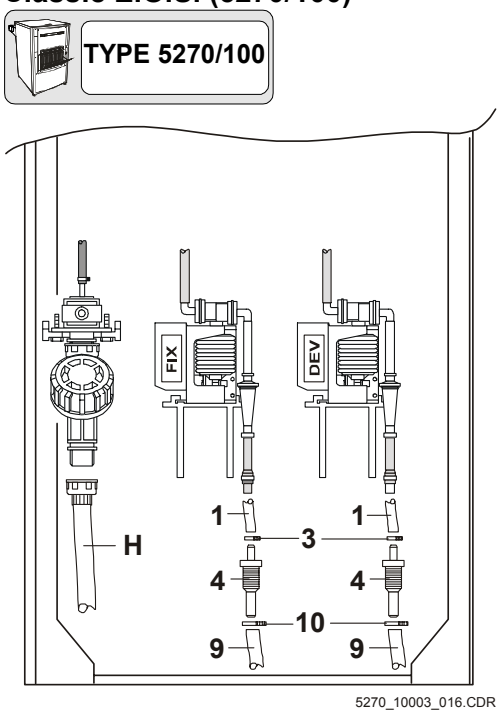


Figure 18

Classic E.O.S. CL (5270/105)

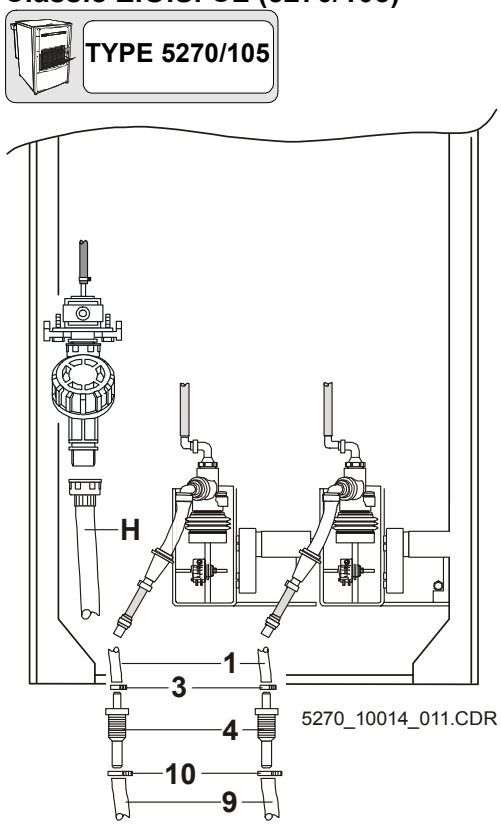


Figure 19

Pos	Designation	Configuration
1	PVC hose Ø 9x1.5 mm (0.35x0.06 inch)	Pre-installed in the machine
3	Hose clamp	
4	Hose connection stub	
10	Hose clamp	Not included in shipment, can be ordered, CM+7037200230
9	PVC hose Ø 10x3 mm (0.39x0.12 inch) fiber-reinforced Developer: red Fixer: blue	Not included in the shipment, can be ordered, CM+0000064082 CM+0000064083
H	Safety pressure hose	Included in the accessory box

- If necessary shorten the internal supply hoses and insert the hose connection stub (4) again.
- Connect the fiber-reinforced (external) PVC hoses with the hose connection stub (4) of the internal supply hoses.
- Position the hoses together through the opening in the bottom to the mixer or to the individual tanks.

8.3.1 Installing the disposal hoses

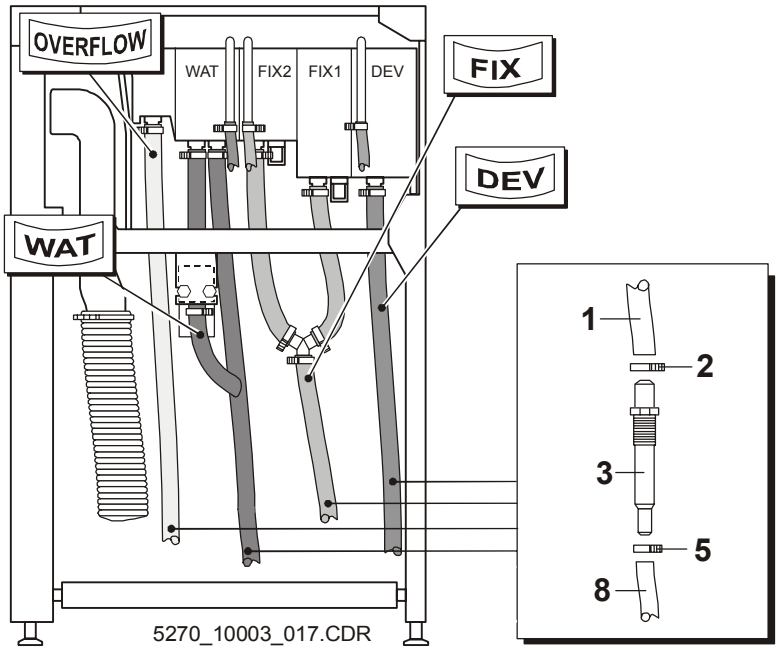
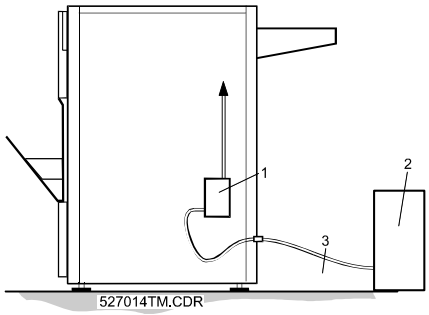


Figure 20

Pos	Designation	Configuration
1	PVC hose Ø 19x2.5 mm (0.75x0.10 inch) transparent	Pre-installed in the machine
2	Hose clamp	
3	Hose connection stub Ø 20 mm (0.79 inch)	
5	Hose clamp	Not included in the shipment, CM+9037200400
8	PVC hose, Developer (red, fiber-reinforced): Ø 19x4 mm (0.75x0.16 inch) Fixer (blue, fiber-reinforced): Ø 19x4 mm (0.75x0.16 inch) Water (transparent, fiber-reinforced): Ø 19x4 mm (0.75x0.16 inch)	Not included in shipment, can be ordered CM+0000064133 CM+0000064134 CM+0000007620

- Shorten the internal disposal hoses if necessary and insert the hose connection stub (3) again.
- Connect the fiber-reinforced (external) PVC hoses with the hose connection stub (3) of the internal disposal hoses.
- Position the disposal hoses of developer (DEV) and fixer (FIX) together through the opening in the bottom and to the central disposal site.
- Combine the hoses of the safety overflow (OVERFLOW) and water (WAT) with a Y piece and connect them with one drain hose, if this is permitted by the local regulations. Install the drain hose to the floor drain.

8.4 Replenisher tanks for developer and fixer



① Replenisher pump with filter
② Replenisher tanks or Mixer
③ Replenisher hose

Figure 21

- To be observed for the use of individual tanks or a mixer:
  maximum **suction height**: 2 m (78.74 inch)
  maximum **suction length**: 15 m (590.55 inch)

Replenisher tanks must not be installed inside the machine!
The customer cannot refill the tanks!

Level monitoring in the replenisher tanks
Four plugs are provided on the Control Board PCB1 for connection of the replenisher supply for mixer, developer, fixer, and for the anti-algae solution.

A communication cable with 20 m (787.4 inch) an be ordered for the Mixer:
CM+9528030301

8.5 Disposal tanks

For disposal of chemicals and wash water the regulations of the local authorities regarding the pertaining Sewage Act must be observed!

If it is allowed to drain the exhausted solutions into the sewer, then the drain pipe must be a polyethylene pipe up to the main pipe (vertical drain pipe).

The installation of the disposal lines to the disposal tanks must be carried out professionally by authorized technicians.
In Germany this must be done in compliance with §19 WHG and DIN 1988 / EN 1717:2001. In other countries the corresponding national regulations must be considered.

It must be guaranteed that developer or fixer solution never gets into the wash water, not even in case of overflow due to clogged lines, if the wash water is drained into the public sewage system. Install the respective hoses and protection facilities.

In Germany the pertaining regulations are the general minimum requirements for the disposal of waste water in waters, dated Jan. 31, 1994, Appendix 53 – Photographic Processes (silver halide photography). In other countries the respective country-specific regulations and laws must be observed.

Disposal possibilities

Disposal through the front panel (only type 5273/100):
Disposal connections through the lower front panel:

- Disposal in individual tanks (developer / fixer), and water is drained in the sewer, or
- Disposal in centralized disposal station

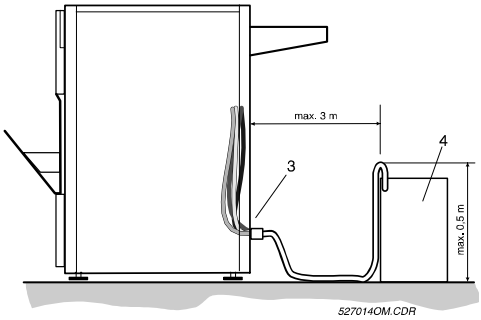


Figure 22

③ Disposal connections through the lower front panel
④ Disposal tanks

In case of a disposal with individual tanks, the disposal hoses are always filled with chemicals.

Disposal through the floor:
Disposal through the floor to the centralized disposal station with one disposal hose each for developer, fixer, and water.
For maintenance purposes we recommend a separate drain fro cleaning chemicals.

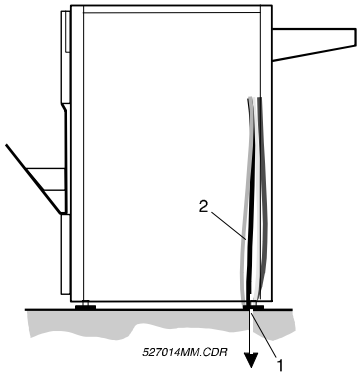


Figure 23

① Centralized disposal
② Drain hoses (below the film processor)

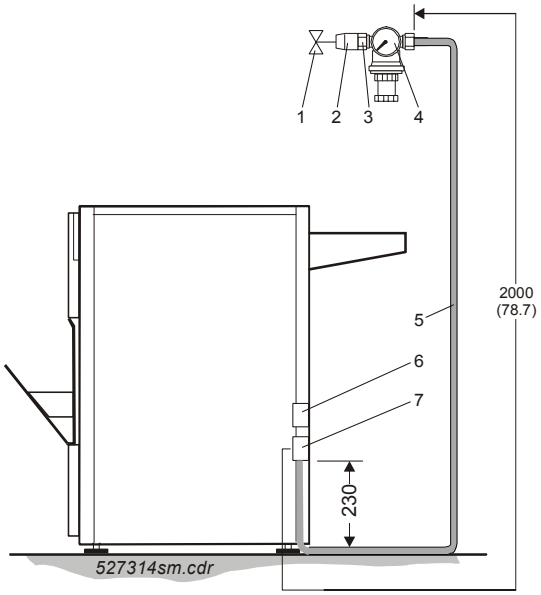
8.6 Water connection

Also see Chapter 3

Water consumption	Permanent replenishment: max. 3 liters / min (101.45 fl.oz. / min). The water supply rate per square meter of processed film can be changed via code.
Water pressure	2 bar (200 kPa) to 6 bar (600 kPa)
Water temperature	**min. 5 °C**
pH value	6.5 to 8
Water conductivity value	min. 3µS/cm Reliable level detection in the water tank cannot be guaranteed if this value is too low.

Regulations

The free water supply of the machine is in compliance with the regulations of DIN 1988 / EN 1717:2001 (technical regulations for the installation of drinking water).



① Shut-off valve
② Clutch
① - ④ not included in shipment
③ Threaded fitting
④ Pressure reducer (manometer), for water pressure > 6 bar
⑤ Flexible safety pressure hose
⑥ Solenoid valve
⑦ Dirt filter

Dimensions in mm (inch)
Figure 24

- Position the safety pressure hose, mounted at the dirt filter, all the way to the shut-off valve or pressure reducer.
  Safety pressure hose: CM+9036260160
  tested in compliance with DIN 57700 Part 600
  2 m (78.74 inch) long
  $^3/_4$" union nut
- For safety we recommend to provide a floor drain close to the machine.

8.6.1 Wall / machine connection at a water pressure of 2 – 6 bar

To protect the drinking water from a return flow of waste water via the hand shower a safety fitting (1) must be installed. This consists of a ventilation valve with integrated check valve. The installation according to the standard DIN 1988 / EN 1717:2001 must follow the illustration!

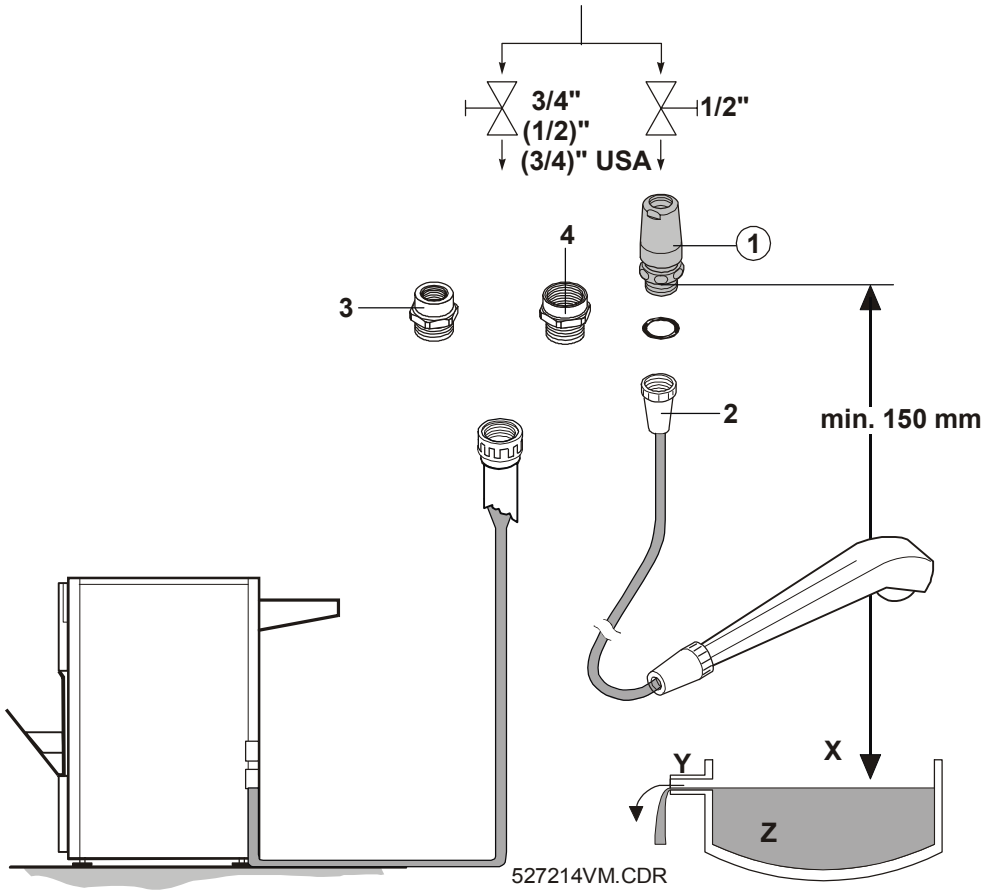


Figure 25

If necessary the individual assemblies must be supported.

X Cleaning sink
Y Overflow
Z Waste water

Pos.	Part number	Qty	Designation	Size	Remarks
①	FU+8966008	1	Safety combination, chromium plated	½"	optional
2	FU+58618	1	Hand shower with hose	½"	
3	CM+9034200580	1	Hexagon reduction piece (brass)	¾" USA	
4	CM+9034200590	1	Hexagon reduction piece (brass)	¾"	

8.6.2 Wall / machine connection at a water pressure > 6 bar

To protect the drinking water from a return flow of waste water via the hand shower a safety fitting (1) must be installed. This consists of a ventilation valve with integrated check valve. The installation according to the standard DIN 1988 / EN 1717:2001 must follow the illustration!

Set the pressure reducer to a pressure value between 2 and 6 bar!

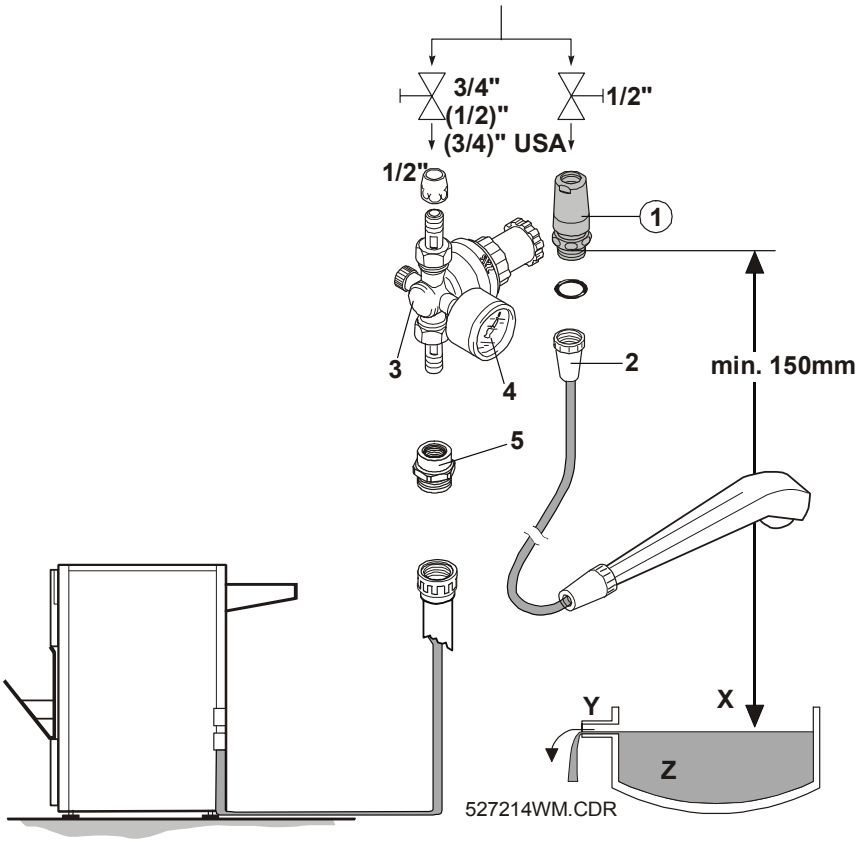


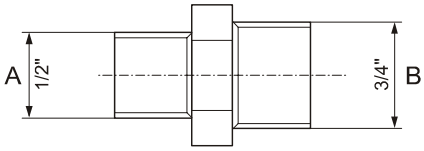
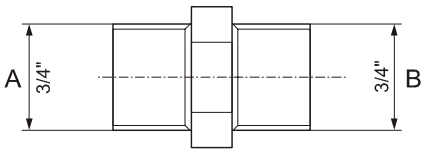
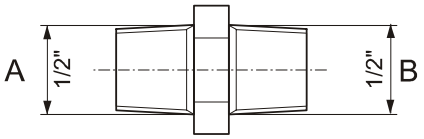
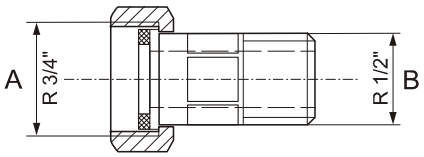
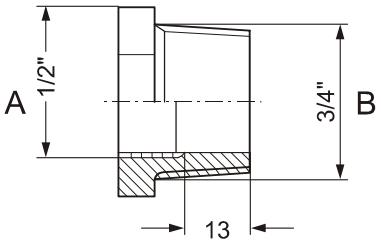
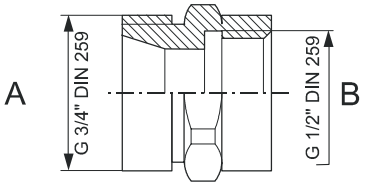
Figure 26

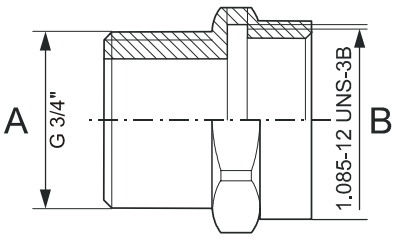
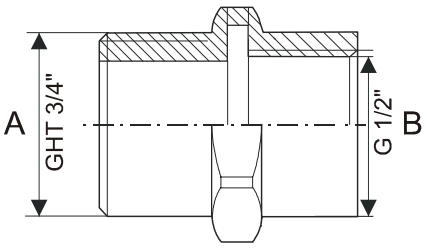
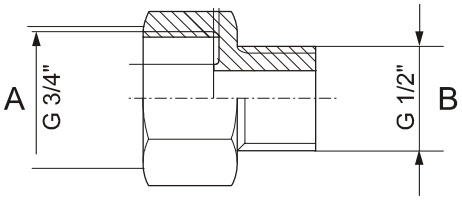
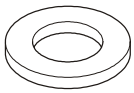
If necessary the individual assemblies must be supported.

X Cleaning sink
Y Overflow
Z Waste water

Pos.	Part number	Qty	Designation	Dimensions	Remarks
(1)	FU+8966008	1	Safety combination, chromium plated	½"	
2	FU+58618	1	Hand shower with hose	½"	
3	FU+8656001	1	Pressure reducer SYR 315	½"	optional
4	FU+8656002	1	Manometer 0 - 10 bar	½"	
5	CM+9034200590	1	Hexagon reduction piece (brass)	¾"	

8.6.3 Overview of adaptation parts for water installations:

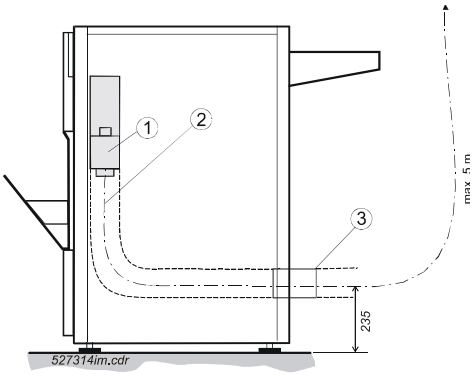
Adaptation part with name	Connection	Order number/ part number
 Reduction nipple (brass)	**A** ½ " external thread **B** ¾ " external thread	CM+7034200320
 Double nipple (brass)	**A** ¾ " external thread **B** ¾ " external thread	CM+9034200600
 Double nipple (brass, chromium plated)	**A** ½ " external thread **B** ½ " external thread	CM+7034200260
 Reduction piece with seal (movable parts; brass, chromium plated)	**A** ¾ " internal thread + seal **B** ½ " external thread	CM+7034215230
 Reduction nipple (brass)	**A** ½ " internal thread **B** ¾ " external thread	CM+7034200280
 Reduction piece (brass)	**A** ¾ " external thread **B** ½ " internal thread	CM+9034200590

Adaptation part with name	Connection	Order number/ part number
 Reduction piece (fitting for USA)	**A** ¾ " external thread **B** 1.085-12 UNS-3B internal thread PIPE THREADS American National Standard	CM+9034200580
 Fitting for USA (water connection humidifier)	**A** ¾ " external thread (GHT) PIPE THREADS American National Standard **B** ½ " internal thread	CM+7512017410
 Reduction piece (brass, compact part)	**A** ¾ " internal thread **B** ½ " external thread	CM+7523010550
 Flat seal	for ½ " screw connection ¾ " screw connection	 CM+9896611740 CM+9034200610
 Pressure hose	**A** ¾" union nut **B** ¾" union nut	CM+9036260160

8.7 Exhaust connection

Also see Chapter 3, Section 6

8.7.1 Exhaust connection through lower front panel (only Type 5270/100)



① Flexible exhaust hose ∅ 100 mm
② Crossover
③ Connection piece for exhaust hose

Dimensions in mm

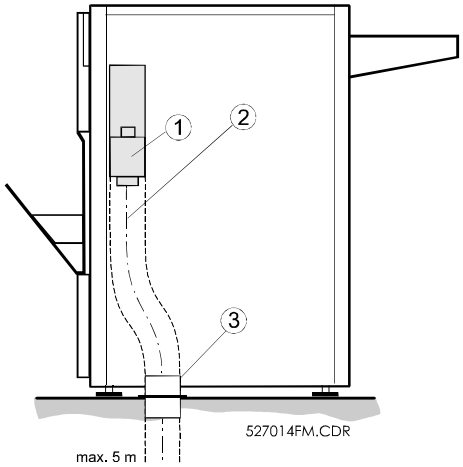
Figure 27

The film processor has an integrated exhaust unit.

- Connection stub at the machine: ∅ 100 mm
- Max. length of the exhaust hose: 5 m.
  If the hose is longer install an additional fan!
- Exhaust volume:
  min. 50 m³/h – max. 100 m³/h

For functional reasons the exhaust connection must always lead out of the machine.

8.7.2 Exhaust connection through the floor



Dimensions in mm

① Flexible exhaust hose
∅ 100 mm

② Exhaust connection through the floor

③ Exhaust connection:
2 screw-type exhaust connections;
center hole through the floor
∅ ≥ 114 mm
Order no.: CM+9522030091

Figure 28

The film processor has an integrated exhaust unit.

- Connection stub at the machine: ∅ 100 mm
- Max. length of the exhaust hose: 5 m
  If the hose is longer install an additional fan!
- Exhaust volume:
  min. 50 m³/h – max. 100 m³/h

For functional reasons the exhaust connection must always lead out of the machine.

8.8 Electrical connection of the machine

Power connection	1N~ 230 – 240 V; 50/60 Hz (200 - 240 V)
Fuse protection	15 / 16 A
	A GFI switch: (I_N = 30 mA in compliance with VDE 664) is integrated in the machine.
Leakage current towards PE	< 3.5 mA
Protective earth	< 0.1 Ω towards ground
Installation regulations	VDE Electrical installations in the installation room must be in compliance with the regulations IEC 364, VDE 0100 and VDE 0107. UL Electrical installations in the installation room must be in compliance with the regulation "National Electrical Code" (NEC) (NFPA 70).
Mains connection in the installation room	VDE Double shockproof outlet according to DIN 49441 and CEE 7 standard plate VII UL Outlet for three-prong plugs NEMA 6-20 R
Required connection cable (scope of delivery)	VDE PVC line H05VV - F 3G 1.5 (3 wires) cable length 3.5 m usable length 2.3 m UL Cable included in the accessory box to replace the VDE cable. PVC line SJT 3 x AWG 12 (with plug NEMA 6-20 P) cable length 3.4 m usable length 2.4 m
Main breaker	Upon machine installation it must be ensured that either the mains connector or an all-pole circuit breaker for the installation on site is located close to the machine and easily accessible.

Outlet connection:

① All-pole main breaker (option: if there is no access to the outlet)
② Mains supply with outlet
③ Power cable with three-prong plug
④ GFI switch (I_N = 30 mA, in compliance with VDE 664)

Note:
Parts ① and ② are not included in the machine shipment.

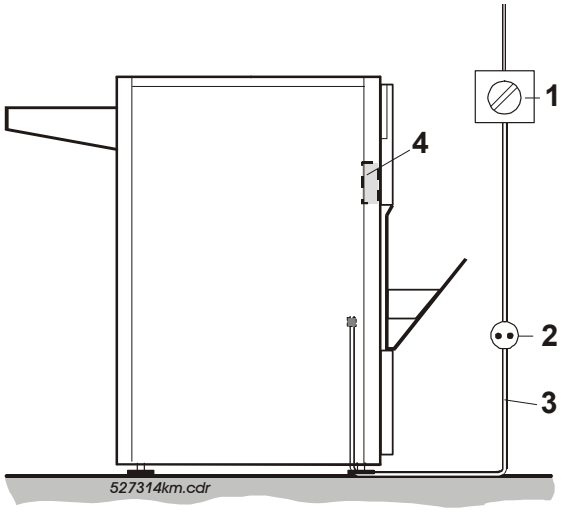


Figure 29

9 Technical Data

9.1 Electrical data

Power connection	1N~ 230 – 240 V; 50/60 Hz (200 - 240 V)
Power consumption:	
Standby (room temperature ~ 20 °C)	0.45 kWh (1620 kJ)
during film processing	2.9 kW/h (10440 kJ/h)
Fuse protection	15 A / 16 A
Leakage current towards PE	< 3.5 mA
Main breaker	Upon machine installation it must be ensured that either the mains connector or an all-pole circuit breaker for the installation on site is located close to the machine and easily accessible.
Safety regulations	Electrical installations in the installation room must be incompliance with IEC 364 (VDE 0100 / 0107).
	A GFI switch: (I_N = 30 mA in compliance with VDE 664) is integrated in the machine.

9.2 Ambient and climatic conditions

Room temperature	min. 10 °C (50 °F), max. 30 °C (86 °F) Room temperature min. 5 °C (41 °F) below the set developer temperature
Relative humidity	min. 10 %, max. 80 %, no condensation
Ventilation	Avoid inhaling of chemical fumes. Make sure that there is sufficient ventilation at the installation site of the machine, i.e. an air exchange that is at least ten times the room volume per hour.
Light-tightness	maximum 2500 Lux
	 The machine must not be opened during the operation. It is light tight only if all panels are correctly mounted.
Acoustic test ISO 7779 (airborne noise)	during standby max. 35 dB (A) during film cycle max. 48 dB (A)

Radiation effects	Upon machine installation in the close vicinity to the X-ray room, the local regulations for radiation protection must be followed (protection of personnel against scattered radiation). The machine has not been designed for the installation in the X-ray room, i.e. there is no internal screening against scattered radiation.		
Floor conditions	Waterproof, chemical-resistant floor covering (pH value 4 - 11) A floor drain close to the film processor is recommended.		
Floor load	50 N / cm² (7.75 N / in²)		
Cleaning sink	A cleaning sink with water tap and hose shower should be provided for maintenance work. Minimum inside dimensions of the sink: Width 70 cm (27.56 inch) Depth 40 cm (15.75 inch) Height 20 cm (7.87 inch)		
Heat emission (approx. values)	Standby (max.)	into the room	250 W / 900 kJ/h
	Film run (max.)	into the connected exhaust	1200 W / 4320 kJ/h
		into the room	900 W / 3240 kJ/h
		total	2100 W / 7560 kJ/h
	Exhaust connect.	Integrated exhaust in the dryer is a standard feature. During film cycle the exhaust runs at full capacity. During standby mode the exhaust can be set to half-capacity via the service program.	

9.3 Transport and storage conditions

Ambient temperature	up to max. -25 °C for 72 h (IEC 68-2-1 (Ab)) max. 55 °C for 96 h (IEC 68-2-2 (Bb)) Relative humidity in the given temperature range between 5% and 95%.

10 Machine Specifications

10.1 Type overview

Machine	Type	Power connection	ABC Code
Classic E.O.S.	5270/100	1N~ 230-240 V (200 - 240 V) 50/60 Hz	ECZ26
Classic E.O.S. CL	5270/105	1N~ 230-240 V (200 - 240 V) 50/60 Hz	ECZ38

10.2 Film types

All commercially available medical x-ray films suitable for machine processing.

10.3 Film formats

Type 5270/100

Sheet films	smallest size	10 x 10 cm (3.9 x 3.9 inch)
	largest size	35 x 43 cm (13.8 x 16.9 inch)
	max. film width	43.5 cm (17.1 inch)
Roll film	Processing of roll film is **NOT** possible!	

Type 5273/105

Sheet films	smallest size	13 x 18 cm (5.1 x 7.1 inch)
	largest size	35 x 43 cm (13.8 x 16.9 inch)
	max. film width	43.5 cm (17.1 inch)
Roll film	Processing of roll film is **NOT** possible!	

10.4 Functional data

Process code	**HT (60s)**	**IP (90s)**	**RP (2min)**	**EXT (3min)**
Feeding speed	160 cm/min (62.99 in/min)	106 cm/min (41.73 in/min)	80 cm/min (31.5 in/min)	52 cm/min (20.47 in/min)
Processing time in DEV	12.5 sec	18.8 sec	24.9 sec	38.3 sec
Processing time **(film 35 x 35 cm)** **Film: end / end** **incl. Film**	 71 sec 82 sec	 107 sec 124 sec	 142 sec 164 sec	 218 sec 253 sec
Films / h (35 x 35 cm)	220	150	110	75
Machine tank volumes **Developer** **Fixer 1** **Fixer 2** **Water**	 8.8 l (297.6 fl.oz.) 10 l (338.18 fl.oz.) 5.8 l (196.15 fl.oz.) 5.8 l (196.15 fl.oz.)			
Developer tank temperature **standard** **adjustable between** **25 °C (77 °F) - 39 °C (102.2 °F)**	 38 °C (100.4 °F)	 36 °C (96.8 °F)	 34 °C (93.2 °F)	 34 °C (93.2 °F)
Fixer 2 tank temperature	34 °C (93.2 °F)			
Heating time from **20 °C (68 °F) to** **34 °C (93.2 °F)**	approx. 20 min			
Dryer step setting	13 (Software Version CLLC1107; older versions: 10 steps)			
Standard setting **replenishment cycles** **Developer / fixer**	 0.25 m² (3.88 in²)			
Standard setting **Replenishment rate** **Developer / fixer** **Water**	 400 ml/m² 30000 ml/m²			
Range **Replenishment rate** **Developer / fixer** **Water**	 50 – 800 ml/m² 3000 – 30000 ml/m²			
Water supply	3000 ml/min (101.45 fl.oz./min)			
Adjustment range **for water pressure** **min.** **max.**	 2 bar 6 bar			
Water conductivity value	min. 3 µS / cm If the value drops below this threshold reliable level detection in the water tank can no longer be guaranteed!			
Water pH value	6.5 to 8			
Silver concentration in the waste water	< 1 ppm			

11 Dimensions and Weights

11.1 Classic E.O.S. Type 5270/100

Dimensions

	Length mm (inch)	Width mm (inch)	Height mm (inch)
incl. packing box	1200 (47.24)	800 (31.5)	1460 (57.48)
without packing material (with feed table and chute)	1270 (50)	710 (27.95)	1130 (44.49)

Weight

	Weight approx. kg (lbs)
with packing material	200 (441)
without packing material	135 (297)
with full tanks	165 (364)

11.2 Classic E.O.S. CL Type 5270/105

Dimensions

	Length mm (inch)	Width mm (inch)	Height mm (inch)
incl. packing box	1200 (47.24)	800 (31.5)	1460 (57.48)
without packing material (with docking unit and chute)	1070 (42.16)	710 (27.95)	1130 (44.49)

Weight

	Weight approx. kg (lbs)
with packing material	200 (441)
without packing material	135 (297)
with full tanks	165 (364)

12 Machine Standards and Directives

12.1 Safety

Europe

EN 60950 / A11 1997 "Safety of Information Technology Equipment" (identical with IEC 950: 1992 and with VDE 0805/ 11. 97).

USA

UL 1950 July 3, 1995 “Safety of Information Technology Equipment, Including Electrical Business Equipment”.

Canada

CSA 22.2 No. 950 - 95 “Safety of Information Technology Equipment, Including Electrical Business Equipment”.

12.2 Radio interference suppression

Europe

In compliance with EN 50081-1: 1992 "Generic Standard for Emission Requirements", (identical with VDE 0839, Part 81-1/ 03. 93)
EN 55011 1998, Class B "Radio Disturbance Characteristics of Medical Equipment" (corresponds to VDE 0878, Part 22 / 04.98)
For equipment in residential areas, business and commercial areas, and in doctors’ offices.

North-America (USA, Canada)

US Standard FCC 47 Part 15, Subchapter B, Class A / Edition 8/ 1976
Equipment considered “Non-Household Appliances”

12.3 Electromagnetic compatibility

EMVG (German Electromagnetic Compatibility Act) and
EC Regulation 89 / 336 / EEC; EN 50082-1: 1997
EN 61000-3-2 “Limit Values for Harmonic Emissions”
EN 61000-3-3 “Limit Values for Flicker”

12.4 Certificates and guidelines

CE Medical Device Directive	93/42 EEC
TÜV Product Service Mark	"Design tested and monitored"
UL Approbation	E 477 50 (M)
C-UL Approbation	E 477 50 (M)

"Technical directives for drinking water installations, protection against reflux"	DIN 1988, Part 4/ 1988 / EN 1717:2001

General conditions and administrative regulations for minimum requirements on the disposal of waste water into public waters, dated 31.01.1994 **(Germany)**	Appendix 53 – Photographic Processes (silver halide photography)

Ministry for Environmental Protection (France)	Rubrique No. 2950 Maximum water consumption for - single-layer emulsions must not exceed a maximum of 15l/m^2 * - double-sided emulsions must not exceed a maximum of 30l/m^2 * * Activated in the program <Service Settings / Replenishment / Wat. Repl. Value>

13 Checklist for Installation Planning

General			**yes no**
1	**System components**	Film processor Daylight system Mixer Replenisher tanks Centralized disposal Disposal tanks Silver recovery (fixer, water)	❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒
2	**Transport path**	Sufficient floor load Elevator (door size, load) Door size	❒ ❒ ❒ ❒ ❒ ❒
3	**Installation version**	Daylight Darkroom	❒ ❒ ❒ ❒
4	**Unloading and unpacking**	Free space provided for lifting the machines off the pallet	❒ ❒
Required external connections:		**prepared:**	**yes no**
5	**Film processor**	All-pole circuit breaker Outlet (distance to machine:_____m)	❒ ❒ ❒ ❒
6	**Mixer**	Outlet (distance to machine:_____m)	❒ ❒
6	**Silver recovery**	Outlet (distance to machine:_____m)	❒ ❒
7	**Hose connections**	Supply and disposal through rear wall Supply and disposal through the floor Exhaust hose required, length_____m Exhaust: connection piece installed on site Supply hoses installed Disposal hoses installed	❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒
8	**Air conditioning system**	Exhaust connection installed Exhaust rate sufficient	❒ ❒ ❒ ❒
9	**Water connection**	present	❒ ❒
10	**Free space around machine**	Required minimum guaranteed	❒ ❒
11	**Wall opening**	considered	❒ ❒

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