

**Site Specification for the
KODAK INDUSTREX Processor
Models M35 and M35-A**

PLEASE NOTE The information contained herein is based on the experience and knowledge relating to the subject matter gained by Carestream Health, Inc. prior to publication.

No patent license is granted by this information.

Carestream Health, Inc. reserves the right to change this information without notice, and makes no warranty, express or implied, with respect to this information. Carestream Health shall not be liable for any loss or damage, including consequential or special damages, resulting from any use of this information, even if loss or damage is caused by Carestream Health's negligence or other fault.



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



Warning

To avoid hazardous conditions, keep floors and floor coverings around your *Kodak Industrex* Processor and associated drains clean and dry at all times. Any accumulation of fluids from mixing tanks, drain lines, etc, 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 your *Kodak Industrex* Processor, call a plumber or other contractor to correct any problem with the drain. Carestream Health accepts no responsibility or liability whatsoever for the serviceability of any drain connected to or associated with the *Kodak Industrex* Processor. Such drains are the sole responsibility of the customer.

Table of Contents

Description	Page
Items Required for Installation. But Not Supplied	4
Dimensions and Weight	4
Optional Accessories	6
Lighttight Feed Tray	6
Silver Recovery System.....	6
Processor Stand	7
Room Layout	8
Clearances.....	8
Replenishment Tanks	12
Automixer	13
Electrical	14
Agency Listings.....	14
Radio Interference.....	14
<i>Industrex</i> Processor. Model M35-A. Basic Requirements.....	14
<i>Industrex</i> Processor. Model M35. Basic Requirements.....	15
Main Power Disconnect.....	16
Water	17
Processor Supply.....	17
Drain.....	17
Optional Parts Available	18
Environmental Requirements	19
Room Temperature.....	19
Humidity	19
Air and Heat.....	19
Static Pressure Requirements.....	19
Seismic Kit	22
Center of Gravity.....	23
Related Publications	24

Items Required for Installation, But Not Supplied

Items Not Supplied

The following items are needed for installing a **Kodak Industrex** Processor, Models M35 and M35-A. They do not come with the processor. Some are available from Carestream Health, but must be ordered separately.

- Replenisher Tubing — 3/8-inch ID (9.5 mm), Part No. 452990, specify the length needed
- Replenishment Tanks; see page 12
- Stand or table, for example the optional **Kodak M35 X-Omat** Mounting Stand, CAT No. 808 1176
- Plywood frame, needed for through-the-wall installations only; see Figure No. 6
- Air exhaust duct; see page 19
- Electrical service; see page 14
- Water service; see page 17
- Flooded Replenishment Pump Timer 419779 is optional; however, it is recommended for low-volume users.

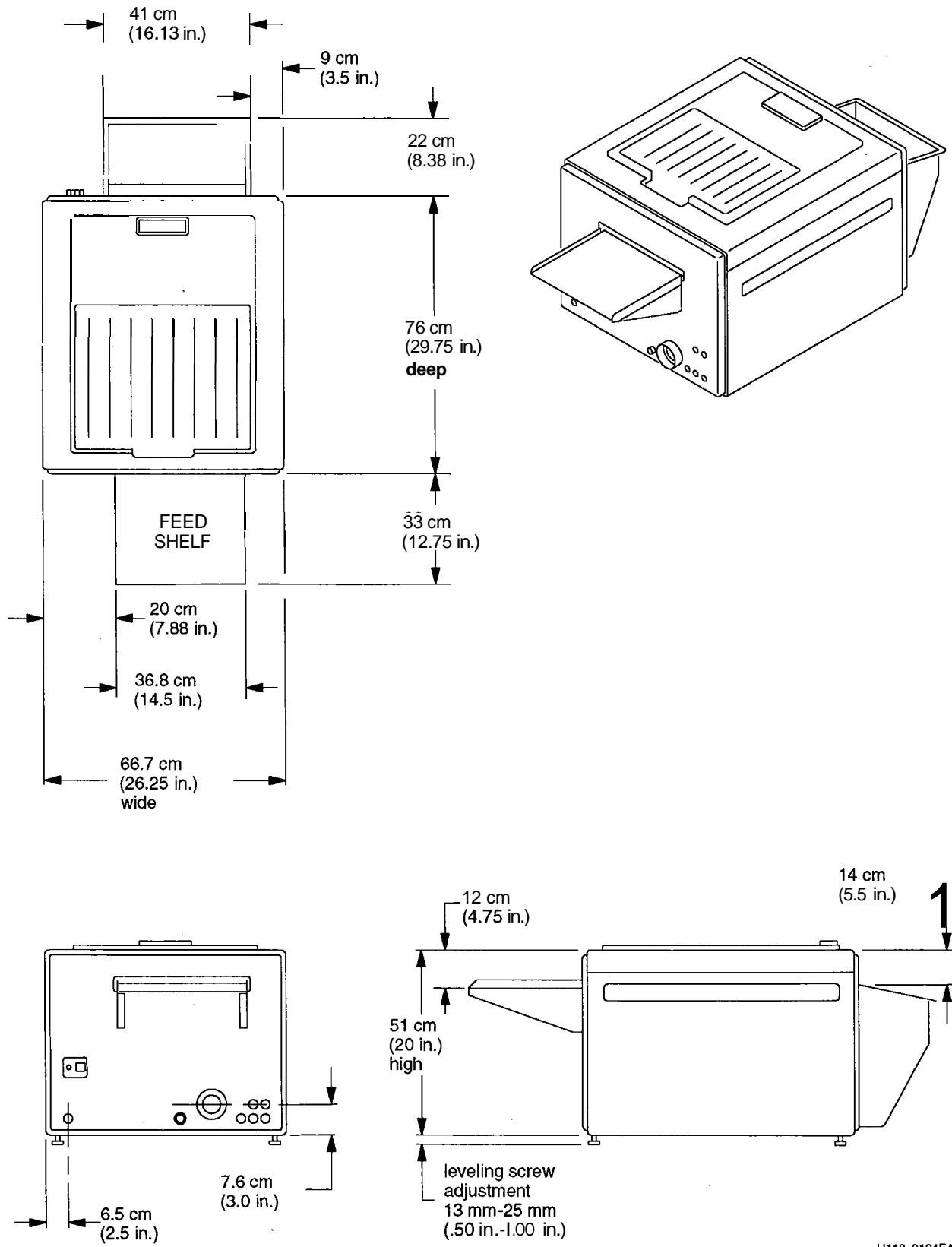
Dimensions and Weight

The Processor

See the table below and the illustration on the next page for the dimensions and weight of the processor.

Table 1 Dimensions and Weights

Description	Crated	Uncrated
Length (with feed shelf and receiving bin)	89 cm (35 in.)	130 cm (51 in.)
Width	81 cm (32 in.)	67 cm (26.25 in.)
Height (without stand)	97 cm (38 in.)	51 cm (20 in.)
Weight (empty)	108 kg (240 lb)	90 kg (200 lb)
Weight (full of solutions)	**	113 kg (250 lb)

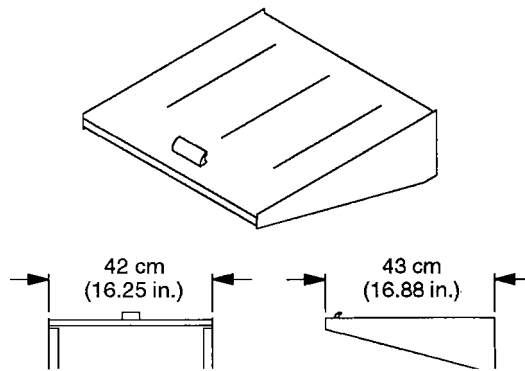


H112_0194EA

Figure 1 Processor Dimensions

Optional Accessories

Lighttight Feed Tray *Kodak M35/M35A X-Omat Lighttight Feed Tray, Part No. 246558*



H112_0143AA

Figure 2 Optional Lighttight Feed Tray

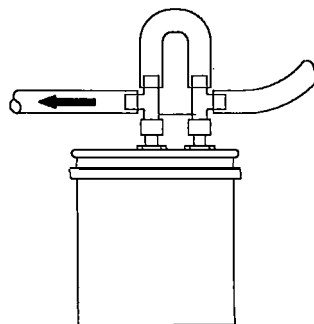
NOTE

The Lighttight Feed Tray cannot be used to process 2 sheets of 18 x 24 cm film side by side.

Silver Recovery System

Kodak Chemical Recovery Cartridge, Model II, CAT No. 173 4953
Kodak Chemical Recovery Cartridge, Junior Model II, CAT No. 166 9431
Kodak Circulating Unit, Model II, CAT No. 175 0868

A Tubing Adapter, 1/2-inch to 1/4-inch ID, Part No. 555561, is needed to connect the above silver recovery units to the M35 and M35-A Processors.



P112_0007AC

Figure 3 Silver Recovery Unit

Processor Stand

Use a rigid stand that can support a minimum of 225 kg (500 pounds) with the **Kodak Industrex Processor**, Models M35 and M35-A, such as the **Kodak M35 X-Omat Mounting Stand**, CAT No. 808 1176.

For maximum processor stability, it is recommended that the processor be bolted to the stand. The stand should then be leveled and fastened to the floor. Observe all local codes. **Kodak Developer-Fixer Replenisher Tank Set**, Model M7, CAT No. 150 0537, can be stored in the base of the stand.

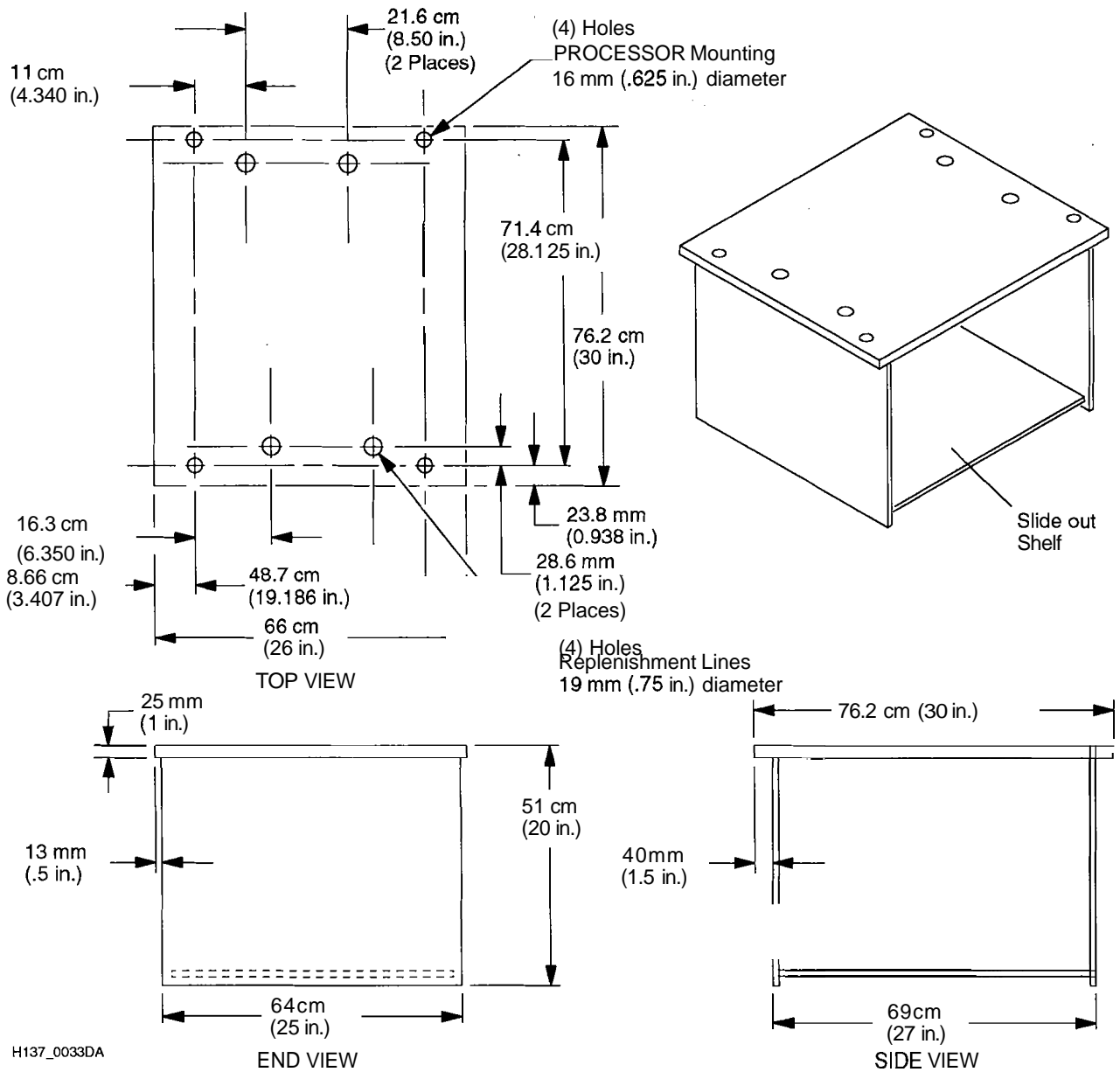


Figure 4 Dimensions of the Optional Stand

Room Layout

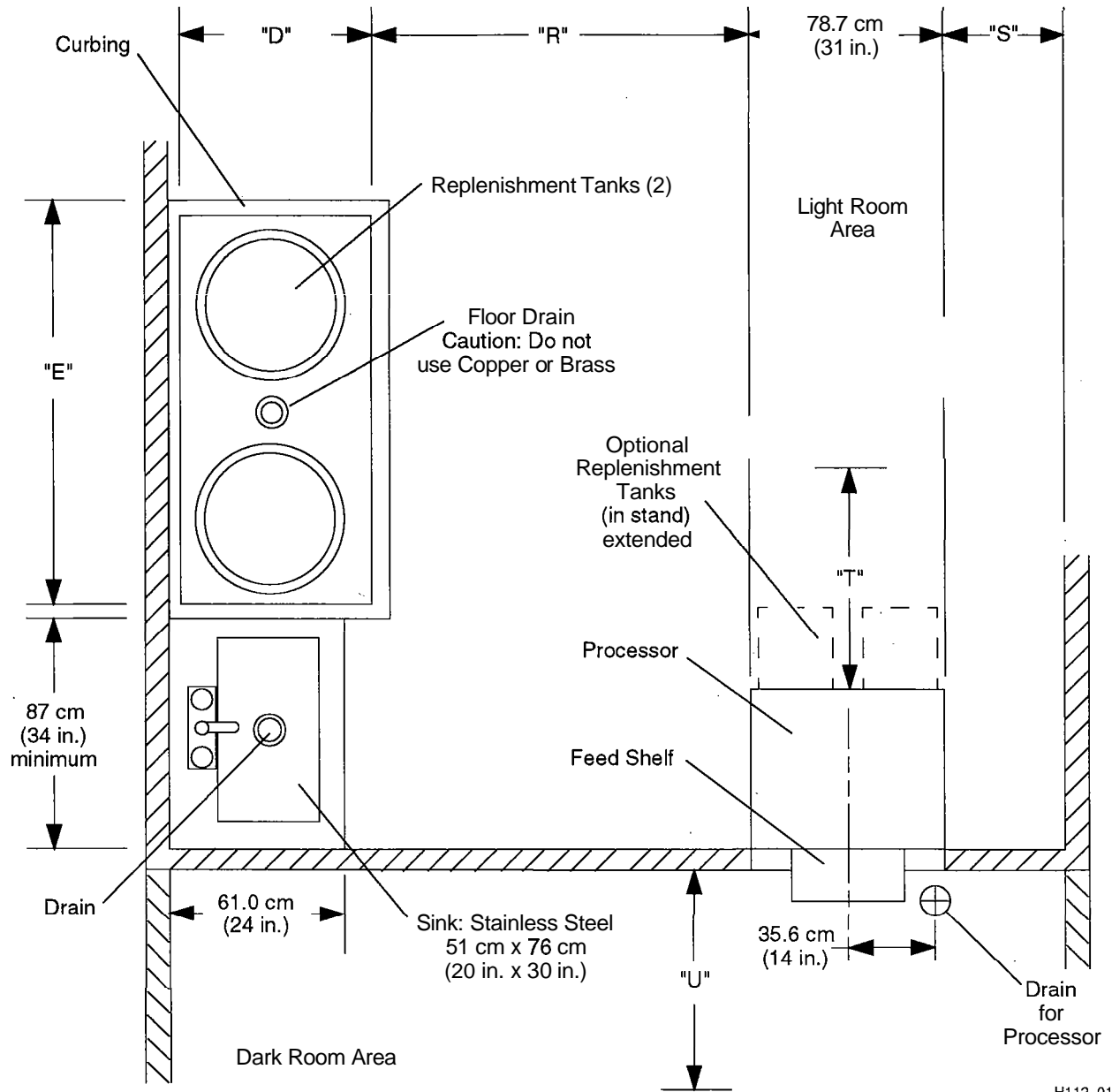
Clearances

Table 2 Maintenance and Operation Access Requirements

Symbol (See Figure 5)	Description	Recommended Minimum Distances
R	Drive side of processor	91 cm (36 in.)
S	Non-drive side of processor	91 cm (36 in.)
T	Dryer side of processor	91 cm (36 in.)
U	Feed end of processor	91 cm (36 in.)
	Top side of processor	91 cm (36 in.)

IMPORTANT

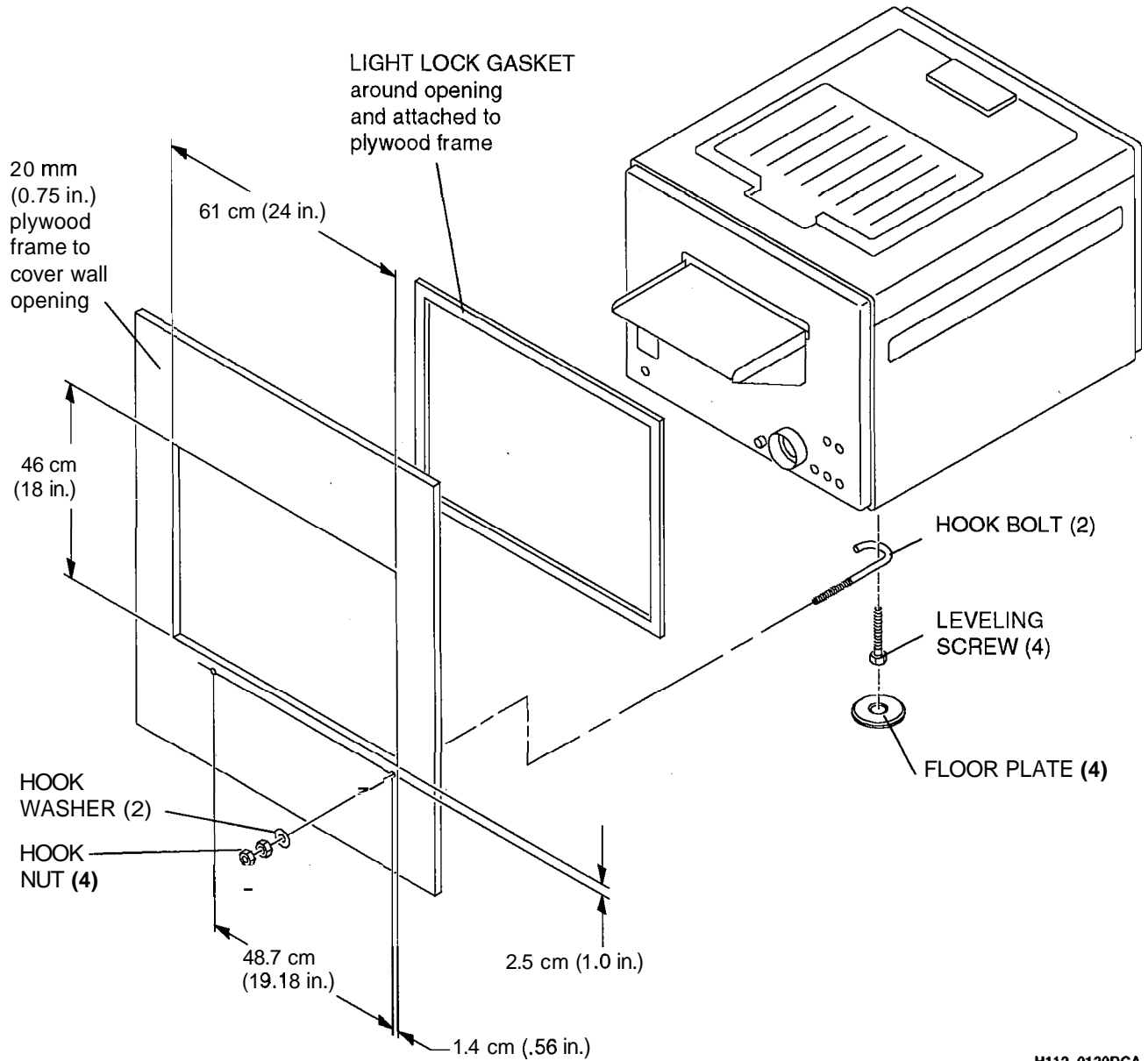
Service time — and therefore service cost — may be increased if recommended access requirements are not met.



**Figure 5 Suggested Room Layout and Drain Locations
(not drawn to scale)**

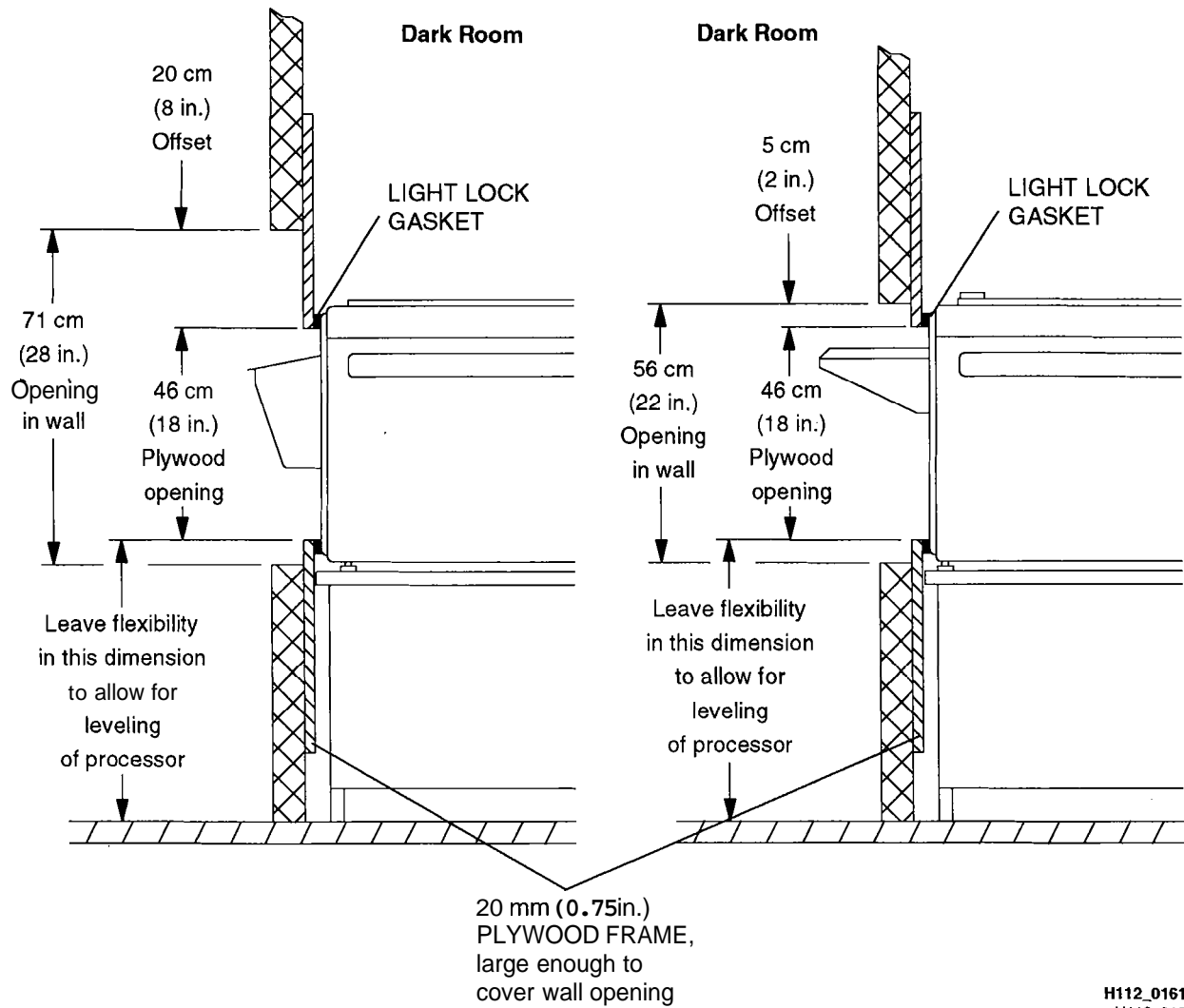
NOTE

For dimensions "R", "S", "T", and "U", see Table 2 on page 8. For "D" and "E", see the table on the top of page 12.



H112_0130DCA
H112_0130DA

Figure 6 New Wall Installation, Materials Needed



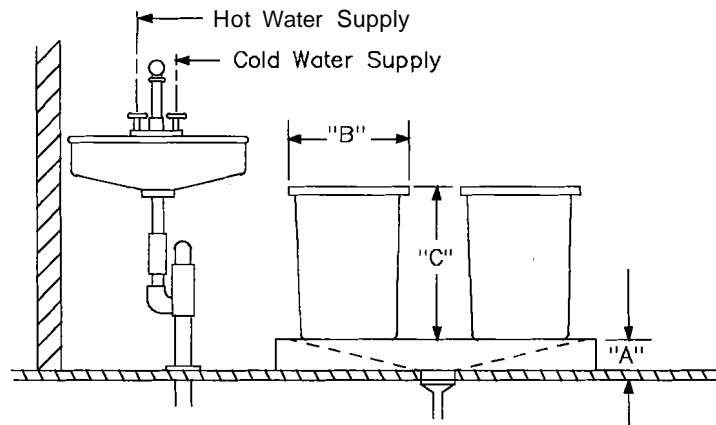
H112_0161DCA
H112_0161DA

Figure 7 Wall Installation, with either the Receiving Bin or the Feed Shelf through the Wall

Replenishment Tanks

Table 3 Dimensional Requirements for the Replenishment Tanks

Description	Dimension	Replenishment Tank Size		
		8 Gallon	14 Gallon	30 Gallon
External Replenishment Tank Area See Figure 5	"D" x "E" Minimum	--	61 x 127 cm (24 x 50 in.)	61 x 153 cm (24 x 60 in.)
Max. Platform Height	"A"		48 cm (19 in.)	35 cm (14 in.)
Tank Diameter	"B"	29 x 43 cm (12 x 17 in.)	43 cm (17 in.)	56 cm (22 in.)
Tank Height	"C"	32 cm (12.5 in.)	58 cm (23 in.)	70.5 cm (27.75 in.)

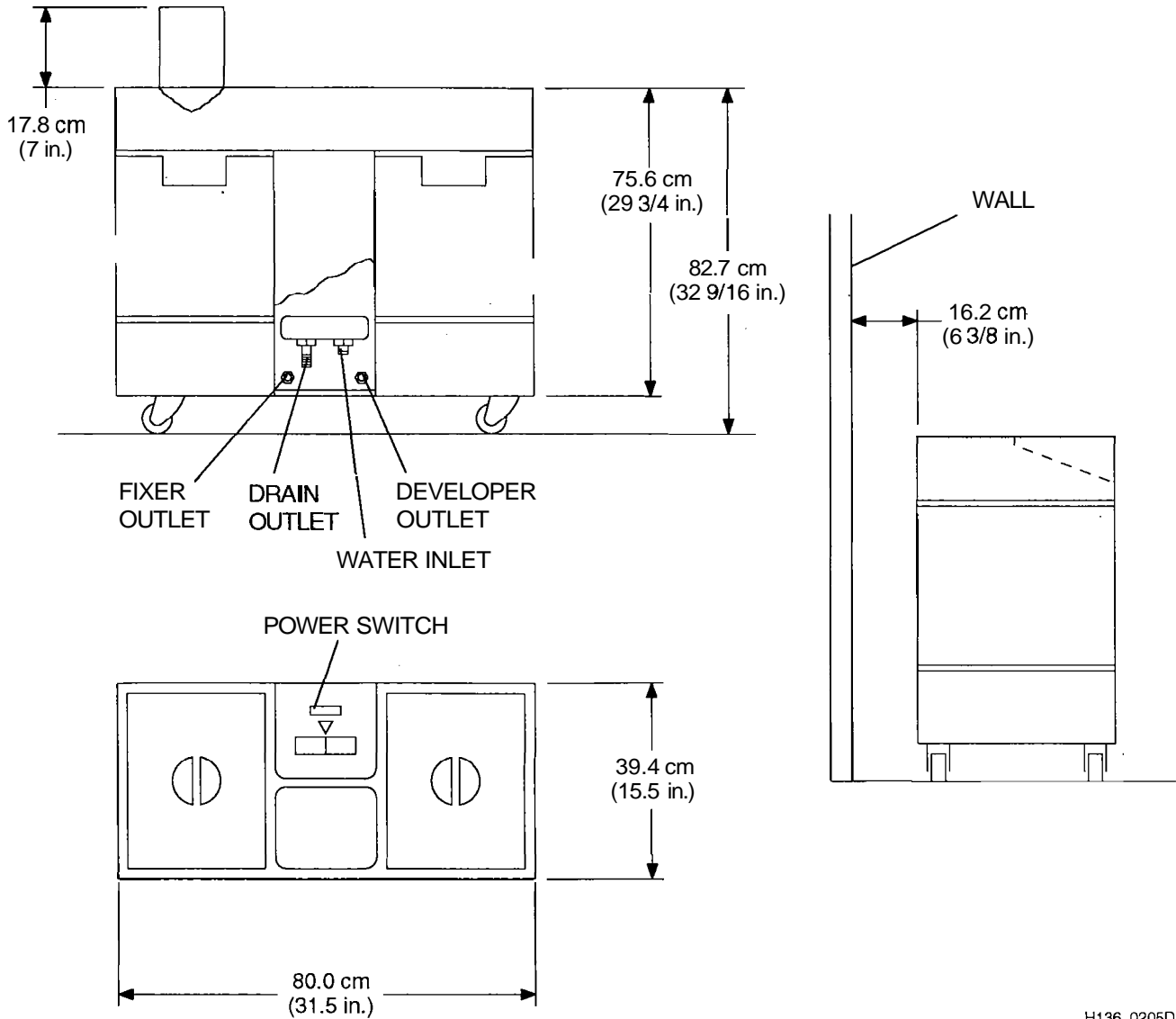


P104_0002BA

Figure 8 Replenishment Tank Dimensions and Catalog Numbers

Tank Kit	Replenishment Tank Size		
	8 Gallon	14 Gallon	30 Gallon
KODAK Developer Replenisher Tank Kit	--	151 1740	1022987
KODAK Fixer Replenisher Tank Kit	--	151 1765	102 2961
KODAK Developer-Fixer Replenisher Tank Set, Model M7 -- Can be used with the optional Mounting Stand, CAT No. 808 1176.	150 0537	--	--

Automixer



H136_0205DCA
H136_0205DA

Figure 9 Automixer Dimensions and Catalog Number

<i>Kodak Automixer II*</i>	CAT No. 707 5286
----------------------------	------------------

* This product has been discontinued.

In Europe: The KODAK Automixer II Plus (CAT 715 7050) provides fast, accurate, consistent, "no mess" mixing of 40 (factory setting) or 20 litre volumes. Concentrate insertion guides minimize human error. The concentrate bottles' safety seals and the use of the Automixer eliminate any contact with the chemicals.

In the US: Automixers with templates specific to Kodak chemicals are available from White Mountain Imaging (www.whitemountainimaging.com/ischemix.htm). Their IS-199 Chemical Mixer is available in 7.5 and 12.5-gallon capacities.

Electrical

Agency Listings

The processor has the following Agency listings—

- * UL Listed (#122, 5th edition)
 - CSA Certified (C22.2, #950-M)
 - FCC Approved (Part 15 Class A limits)
-

Radio Interference

These processors have been type tested and found to comply with:

- The limits of a Class A digital device pursuant to Part 15, Subpart J, of the Federal Communications Commission Rule of the United States
- The limits of a Class A digital apparatus as set out in the Radio Interference Regulations C108.8-M1983 of Canada
- The requirements for electrical appliances as established by European Communities Council Directive 87/308/EEC (EN55014:1987/A2:1990) and EN 55022



CAUTION

This equipment generates, uses, and can radiate radio-frequency energy. If the equipment is not installed and used according to the instructions, it may cause interference to radio communications. The equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at the user's own expense will be required to take whatever measures may be required to correct the interference.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Industrex Processor, Model M35-A, Basic Requirements

- Amperage: 20 A
- Earth ground
- A line cord and receptacle, furnished
- Main power disconnect, wall mounted, not furnished
The switch, either a single-pole, thermomagnetic circuit breaker with a solid neutral **or** a fused disconnect switch, **must be:**
 - located on a wall adjacent to the processor
 - easily accessible from the processor
 - visible from the processor
 - not more than 2 metres (7 feet) from the processor

IMPORTANT

All electrical services, *including earth ground*, must comply with local and national electrical codes.

Table 4 Model M35-A Service Options

Voltage (volts)	Frequency (Hz)	Watts	Service
120	50/60	2000	1-phase, 2-wire and earth ground

**Industrex Processor,
Model M35, Basic
Requirements**

- Amperage: 20 A
- Earth ground
- Main power disconnect, wall mounted, not furnished
The switch, either a fused disconnect switch or a 2-pole, thermomagnetic circuit breaker with a solid neutral and a common trip, must be:
 - located on a wall adjacent to the processor
 - easily accessible from the processor
 - visible from the processor
 - not more than 2 metres (7 feet) from the processor

IMPORTANT

All electrical services, *including earth ground*, must comply with local and national electrical codes.

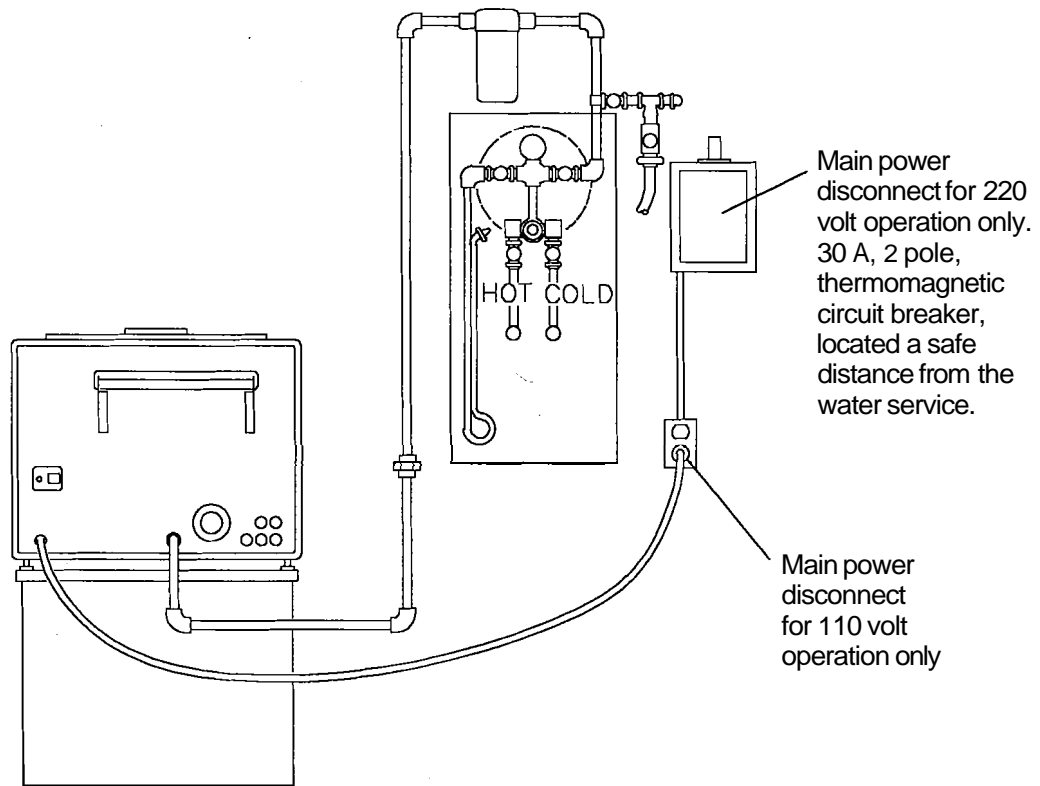
Table 5 Model M35 Service Options

Voltage (volts)	Frequency (Hz)	Watts	Service
200	50/60	3000	1-phase, 2-wire and earth ground
208	50/60	3000	1-phase, 2-wire and earth ground
220	50/60	3300	1-phase, 2-wire and earth ground
240	50/60	3300	1-phase, 2-wire and earth ground
220	50/60	3300	2-phase, 3-wire and earth ground
240	50/60	3800	2-phase, 3-wire and earth ground

Main Power Disconnect

A wall mounted main power disconnect switch, which is not furnished, is shown in Figure 10. This switch should consist of a thermomagnetic circuit breaker with solid neutral and common trip **or** a fused disconnect switch and **must be—**

- located on a wall adjacent to the processor in the lighted area
- visible and accessible from the site of the processor
- a safe distance from water
- a maximum of 2 metres-(7 feet) from the processor



H112_0138DCB
H112_0138DA

Figure 10 Locating the Main Power Disconnect

Water

Processor Supply

IMPORTANT

- Water supply and plumbing must comply with local codes; iron piping is **not** recommended.
- Water supply may be located on either side of the processor and **must be** accessible.
- Tempered water is optional if cold water temperature is within specified range.
- Tempered water service is suggested for cleaning the processor and for mixing chemicals manually.
- If the upper limit of the room ambient temperature or the water supply temperature is exceeded, a water chiller may be required.
- Connection parts are not furnished by Carestream Health.

Temperature: 15° to 25°C (59° to 77°F). If the temperature of the water supply to the processor is higher than 25°C (77°F), install a water chiller.

Pressure: 138 to 448 kPa (20 to 65 psi); install a regulator if necessary.

Flow Controlled within the processor to
Volume: 2.8 ± 0.2 Umin (0.75 ± 0.05 gal/min)

Filtration: A 50 micron filter, not supplied by Carestream Health, is required in the input water line.

Check Valve: The processor has an internal 20 mm (0.8 in.) water gap in the fixer/wash crossover for antisiphoning protection. A check valve (or vacuum breaker) should **not** be necessary; however, check and observe local codes.

Drain

WARNING

- Drains must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.
- The drain must have a minimum diameter of 7.6 cm (3 in.) and be free of obstruction.
- Drain service must comply with all local codes.
- Do not make a solid connection between the hoses and the drain.
- Locate the drain within 1.5 m (60 in.) of the processor.
- The drain line should slope gradually downward to the floor drain.

Capacity: 3 Umin (0.75 gal/min) during normal operation
43.5 Umin (11.5 gal/min) for draining all 3 solutions together
14.4 Umin (3.8 gal/min) if each solution is drained separately

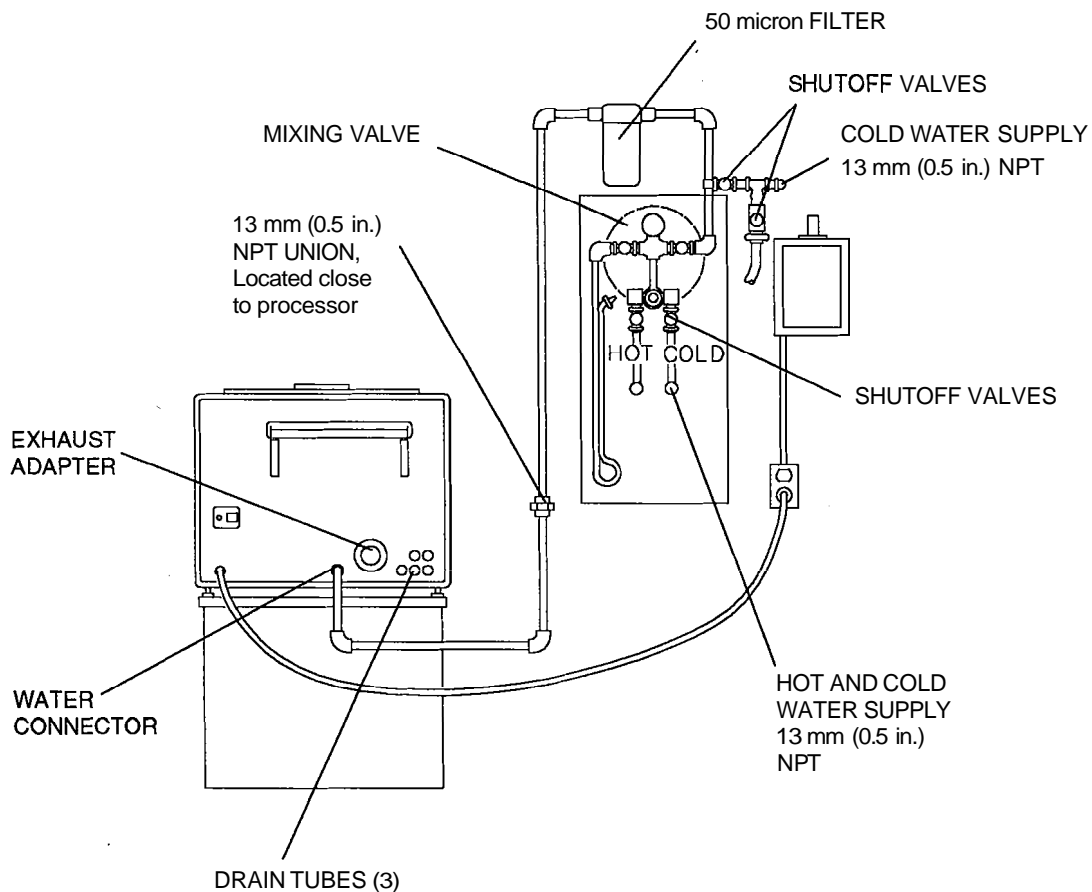
Optional Parts Available

The following parts can be ordered from Service Parts Management, Carestream Health, Rochester, New York 14650:

Part No.	Description	Quantity
760476	Drain Tube, 1/2 inch, order by the foot	
551400	Water Connector, 3/8 inch NPTM	1
467621	Kodak Thermostatic Mixing Valve, 1/2 inch NPT	1

The following parts, not available from Carestream Health, may also be useful in installing the processor.

- Check Valve, 1/2 inch NPT
- In-line Thermometer
- NPT Union, 1/2 inch
- Tubing and Hoses
- 2 Shutoff Valves, 1/2 inch NPT



H112_0138DCA
H112_0138DA

Figure 11 Suggested Processor Water Supply

Environmental Requirements

Room Temperature	15°C (59°F) to 30°C (86°F)	
Humidity	15% to 76% Relative Humidity	
Air and Heat	Air Exhaust (full load):	Volume: 2,124 L/min (75 ft ³ /min) • Temperature: 66°C (150°F) maximum
	Processor Exhaust Adapter:	7.6 cm (3 in.)
	Heat load to room:	3400 kJ/hr (3200 Btu/hr)

Static Pressure Requirements

IMPORTANT

- If the venting is not correct, fumes will corrode the equipment. Do not install the processor or accessories if the venting is not correct. Check local codes for venting requirements.
- The air flow is correct when the fumes are flowing out of the processor through the Exhaust Hose. **Before installing the processor, or when checking the static pressure later, do the following procedure to check at the air flow is correct.**

Do the following procedure, using an Air Meter TL-2431, to check that the venting is correct.

- [1] If the processor is installed, deenergize the processor.
- [2] Disconnect the Exhaust Hose from the processor Exhaust Adapter.
- [3] Place the Rubber Hose on the Center Connector of the Air Meter.
- [4] If a replenishment J Tube TL-4803 is available, do the following. If not, advance to step 5.
 - (a) Cut off and discard the curved portion of the replenishment J Tube.
 - (b) Install the tapered end of the replenishment J Tube into the Rubber Hose.
 - (c) Advance to step 7.
- [5] If a replenishment J Tube is not available, align a Hose Support, such as a straightened coat hanger, next to the Rubber Hose. The ends of the Hose Support and the Rubber Hose must be together.
- [6] Place tape around the Hose Support and the Rubber Hose at 3 points. See the illustration.

IMPORTANT

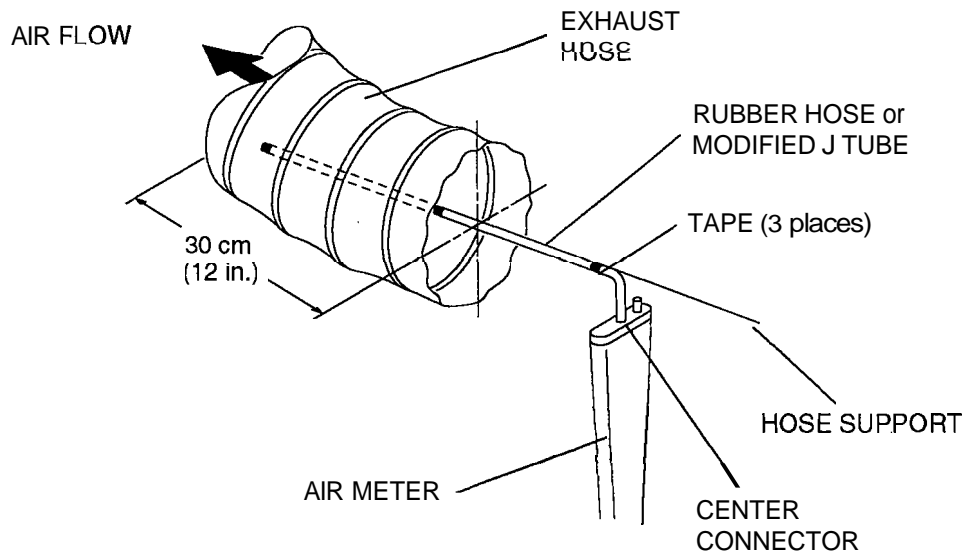
The tape should not inhibit the air flow through the Rubber Hose.

- [7] Insert the replenishment J Tube or the Rubber Hose into the Exhaust Hose until the end is 30 cm (12 in.) from the end of the Exhaust Hose.

IMPORTANT

The Rubber Hose or J Tube must be in the center of the Exhaust Duct.

- [8] Hold the Air Meter vertical, and record the average of several readings.



P048_0118BCA
H048_0118BA

Figure 12 Using the Air Meter

[9] Compare the average reading with the table:

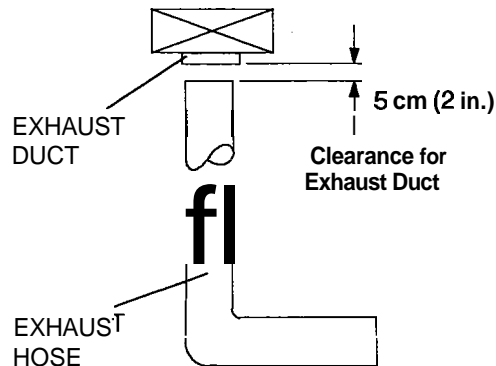
Table 6 Measuring the Static Pressure

Duct Diameter	Negative Static Pressure, Water Head	
	MIN	MAX
76 mm (3 in.)	0.76 mm (0.03 in.)	1.02 mm (0.04 in.)
102 mm (4 in.)	0.25 mm (0.01 in.)	0.51 mm (0.02 in.)

[10] Adjust one of the following to obtain the required reading:

- (a) the damper (or fan) in the building ventilation system or
- (b) the clearance between the Exhaust Duct and the Exhaust Hose to 5 cm (2 in.); see Figure 13.

- [11] If the air flow reading is still not correct, contact the sales representative and the customer to correct the venting.
- [12] When the air flow reading is the same as the measurements in the table, connect all the hoses.



H104_0005ACA
P104_0005AA

Figure 13 Exhaust Requirements

- [13] If the processor has been installed, install the Covers and Panels on the processor.

IMPORTANT

- To obtain optimum results from the venting, all Covers and Panels must be installed while the processor is energized.
- If the processor is installed through the darkroom wall, it is most important that the air pressure in the darkroom is greater than the air pressure of the area surrounding the darkroom.
- Air in a 27 m³ (1000 ft³) room should change 10 times each hour, including 2 exchanges of outside air.

- [14] Do the following to check the air flow at the Feed Shelf:
- (a) If the processor is installed, deenergize the processor.
 - (b) Hold a piece of tissue paper in front of the Feed Shelf.

NOTE

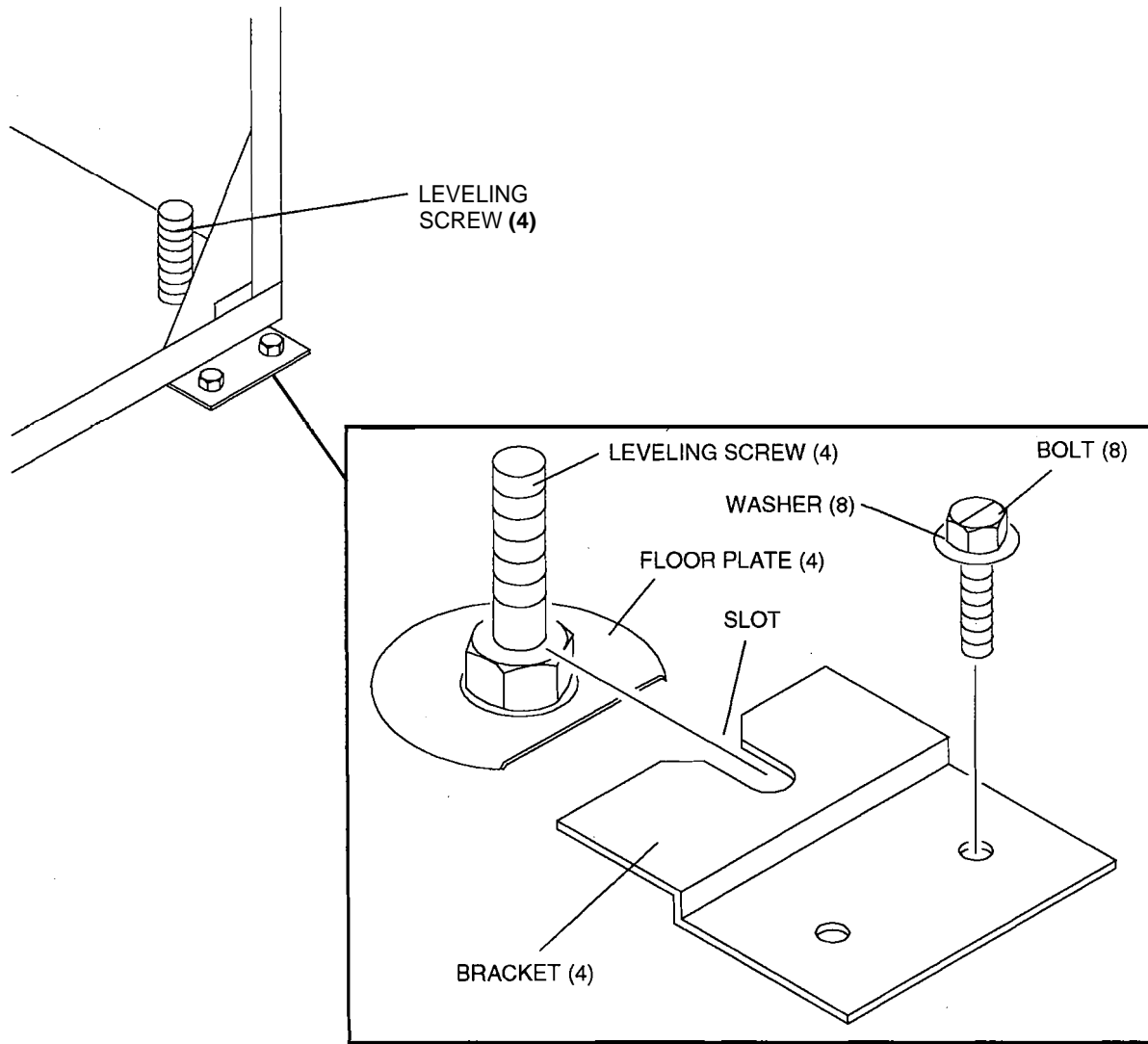
The air flow should be **toward** the processor.

- (c) If the tissue paper moves away from the processor:
Call the Industrial Imaging Customer Technical Support Center
24 hrs/day, 7 days/week
1-800-328-2910

Seismic Kit

Local building codes may require that Seismic Brackets be used. Install the Seismic Brackets to the processor or to the M35 Mounting Stand. **Seismic Kit, Part No. 261413**, is available.

Part No.	Description	Quantity
240104	Bracket	4
261898	Floor Plate	4
261929	Anchor, not shown	8
188623	Bolt - Stainless Steel	8
173824	Washer - Stainless Steel	8
261910	Instructions	1



P108_0193DCA
P108_0193DA

Figure 14 Seismic Kit

Center of Gravity

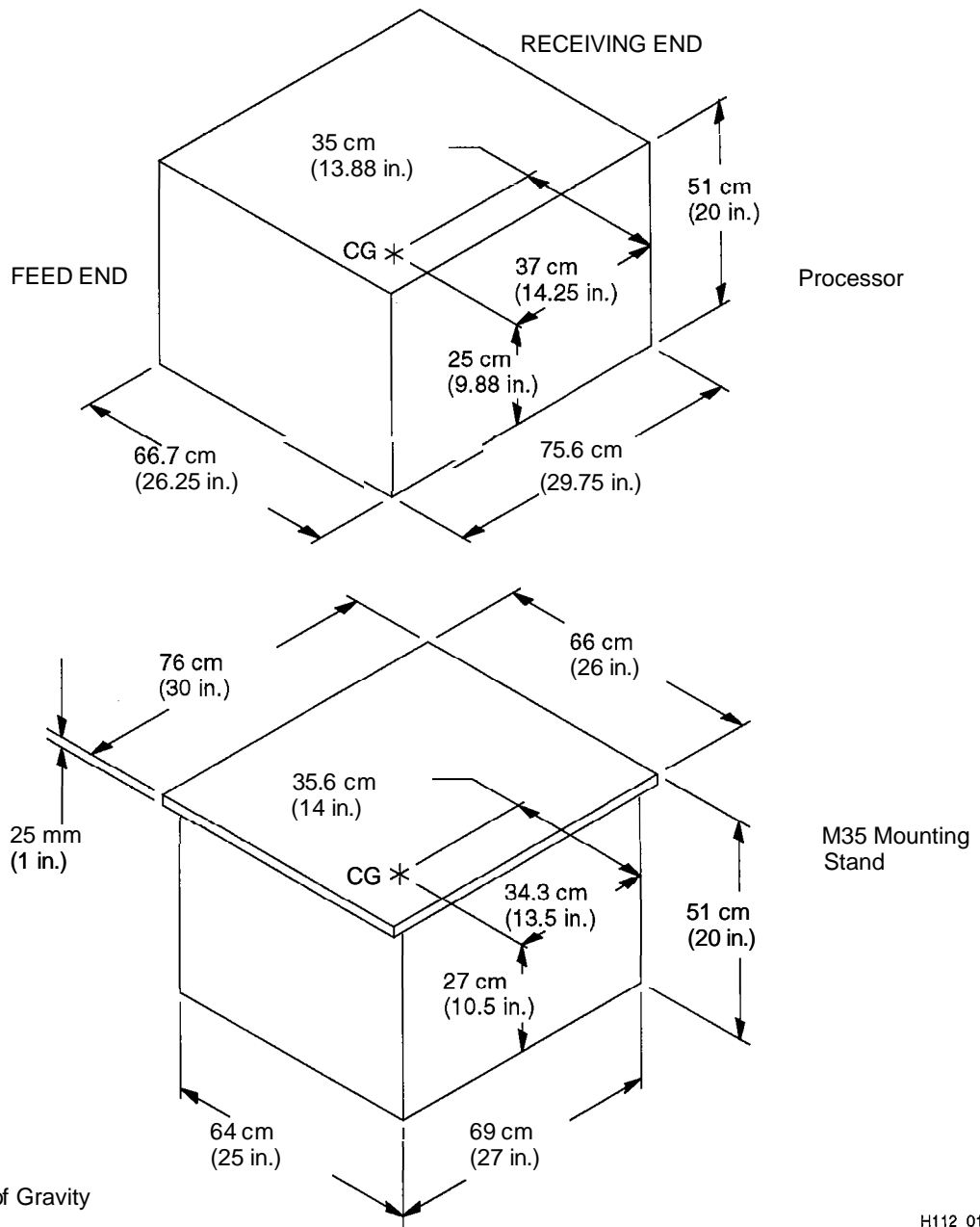


Figure 15 Center of Gravity

H112_0139DA

Related Publications

Kodak Industrex Processor, Models M35 and M35-A

This publication is one of a series of instruction books that provide technical support information on the **Kodak Industrex** Processor, Models M35 and M35-A. It is recommended that these publications be kept in the binder provided. If an individual book is misplaced or destroyed, order another copy from your authorized representative using the Publication Part Numbers below.

Kodak Industrex Processor, Models M35 and M35-A						
	Complete Binder	Operator Manual	Site Specs	Installation Instructions	Service Manual	Parts List
Publication Part No.	1C4755	1C4750	1C4751	1C4752	1C4753	1C4754

3414SS_A.TXT

BLANK PAGE

Industrex and *X-Omat* are trademarks of Carestream Health.
Kodak is a trademark of Kodak, used under license.

Printed in U.S.A. • 1C4751.fm

Carestream Health, Inc.
Rochester, NY 14608