



# Xcellerex™ *X-platform* bioreactors

Figurate™ powered by PlantPAx®

## Unpacking Instructions

Original instructions



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# 1 Introduction

## Read this before unpacking the product



These instructions contain information that is important for safety during the unpacking of Xcellerex™ *X-platform* bioreactor and the accessories. Read these instructions carefully before starting to unpack the product.

## About these instructions

These instructions cover the unpacking of the following equipment:

- *X-platform* bioreactor vessel
- Cabinet assembly
- Human-machine interface (HMI)
- Temperature control unit (TCU)
- Mobile platform
- Accessories
- Floor scale
- Ramp

These instructions also cover the assembling of the following components to the bioreactor vessel:

- Vessel jacket overflow assembly
- Top frame
- Exhaust filter holders

See *Xcellerex X-platform bioreactors (Figurate powered by PlantPAx) Operating Instructions* (29446781) for instructions on how to install the bioreactor.

## Illustrations

The images in this document are for illustrative purposes only and might not show the exact configuration of the product delivered.

## Notes and tips

**Note:** *A note is used to indicate information that is important for trouble-free and optimal use of the product.*

**Tip:** *A tip contains useful information that can improve or optimize your procedures.*



## 2 Safety precautions

### Definitions

This user documentation contains safety notices (WARNING, CAUTION, and NOTICE) concerning the safe use of the product. See definitions below.



#### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury. It is important not to proceed until all stated conditions are met and clearly understood.



#### **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. It is important not to proceed until all stated conditions are met and clearly understood.



#### **NOTICE**

**NOTICE** indicates instructions that must be followed to avoid damage to the product or other equipment.

### General precautions



#### **WARNING**

**Lifting safety.** Due to the significant weight of the product, sufficient manpower and suitable equipment with adequate lifting capacity must be used when moving the instrument or performing maintenance procedures. Make sure that forklifts, pallet lifters, or equivalent equipment have the capacity to safely lift the crate weight and have adequate braking power to prevent rolling too fast when crates and systems are moved over a sloping floor.

**WARNING**

**Use adequately sized lifting system.** Lifting equipment must support both sides of the vessel frame. The vessel frame and lifting equipment must be balanced so that neither can tip over.

**WARNING**

**Properly balanced system.** Note that crates may not be marked

with a center of gravity symbol.



Make sure that the crates are properly balanced and centered over the forks of the lifting equipment so that they will not accidentally tip when moved.

**WARNING**

**Tipping hazard.** Pay extra attention when moving the system to make sure that the system does not tip.

**CAUTION**

**Assistance when unpacking the system.** To avoid injury to yourself, or damage to the system components, have two or more assistants help you unpack the components from the crates.

**WARNING**

**Personal Protective Equipment (PPE).** Whenever packing, unpacking, transporting or moving the product, wear:

- Protective footwear, preferably with steel toe-cap.
- Working gloves, protecting against sharp edges.
- Protective glasses.

**WARNING**

**Safety of personnel.** Packing crates must only be moved by personnel with appropriate training, and in adherence with local regulations.

It is the responsibility of the customer to guarantee the safety of personnel while working with the system.

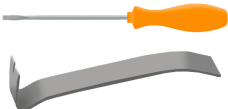

# 3 Before you start



## Required tools and equipment

Use adequate lifting equipment, such as a forklift, with a minimum capacity to safely lift the weight of the system plus the transport crate.




The following tools are needed to unpack all crates:

Part	Function
	Small pry bar or large flat-head screwdriver
	Electric screwdriver or powerdriver with a number 2 hex bit

Part	Function
	Adjustable wrench
	Set of hex keys

Additional tools and equipment needed:

Part	Function
	A ladder is needed to assemble the bioreactor system (mounting the separately delivered parts onto the bioreactor vessel).

### When you receive the delivery

Follow the instructions below when you receive the delivery.

Step	Action
1	Verify the number of crates according to the delivery notes.
2	Check the crates for signs of damage. If any damage is observed, photograph the damage, record the damage on the receiving documents and inform your Cytiva representative.

Step	Action
3	<p>Verify before moving the transport crates that the doors or openings are large enough to allow passage of each crate when it is lifted from the floor.</p> <p><b>Note:</b> <i>For dimensions and weight information for the transport crates see <a href="#">Shipping crate specifications, on page 69</a>.</i></p>
4	<p>Move the crates to a protected indoor location with sufficient space for temporary storage or immediate unpacking. Use a suitable forklift or pallet jack.</p>

**NOTICE**

Make sure that the load is evenly distributed over the forks of the lifting equipment.

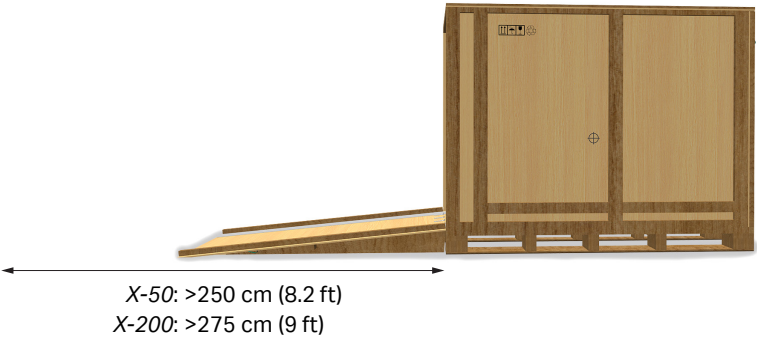
# 4 Unpack bioreactor vessel

## Open vessel crate

Follow the steps below to unpack the bioreactor vessel.

Step	Action
------	--------

- |   |                                                                                                                        |
|---|------------------------------------------------------------------------------------------------------------------------|
| 1 | Place the crate on a hard, horizontal floor. The illustration below shows the free space needed in front of the crate. |
|---|------------------------------------------------------------------------------------------------------------------------|



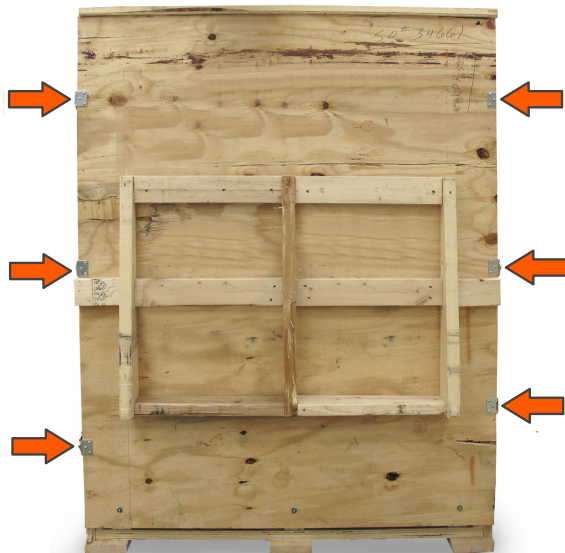
- |   |                                                                |
|---|----------------------------------------------------------------|
| 2 | Instruct an assistant to support the front panel of the crate. |
|---|----------------------------------------------------------------|

**Note:**

*The front panel is used as a ramp for removing the system from the crate.*

Step	Action
------	--------

- |   |                                                               |
|---|---------------------------------------------------------------|
| 3 | Locate the butterfly latches at the sides of the front panel. |
|---|---------------------------------------------------------------|



- |   |                                        |
|---|----------------------------------------|
| 4 | Pull each butterfly latch towards you. |
|---|----------------------------------------|



Step	Action
------	--------

- |   |                                                                              |
|---|------------------------------------------------------------------------------|
| 5 | Turn each butterfly latch counterclockwise until it releases the panel lock. |
|---|------------------------------------------------------------------------------|



- |   |                                                |
|---|------------------------------------------------|
| 6 | Turn each butterfly latch away from the crate. |
|---|------------------------------------------------|



**CAUTION**

**Support front panel.** After unlocking all butterfly latches the crate front panel is free and can fall. Support the front panel to avoid injuries to personnel.



Step	Action
------	--------

- |   |                                                                                                                                                |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Carefully lower the front panel to the floor to use it as a ramp for removing the system from the crate. Two persons are needed for this step. |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|



*Result:*



**Note:**

*The vessel and vessel components are wrapped in protective plastic. The protective plastic is not shown in the illustrations of this instruction.*

Step	Action
------	--------



**NOTICE**

Check that the ramp hinges are intact and the ramp is securely fastened to the crate.

**Remove vessel from the crate**



**WARNING**

**Squeezing or crushing injuries.** Because of the significant weight of the product, great care must be taken not to cause squeezing or crushing injuries during movement.

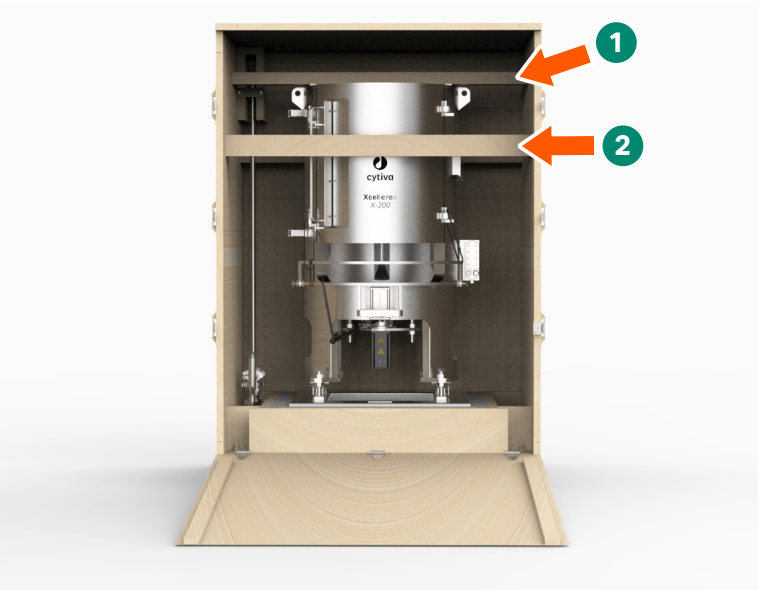
Follow the steps below to remove the bioreactor vessel from the crate.

Step	Action
------	--------

1

Remove the wooden braces that keep the vessel in place inside the crate, one by one. Follow the instruction below.

a. Support one brace (1 or 2).



Step	Action
------	--------

- |  |                                                                                                                                                                    |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>b.</b> Locate the screws on the side panels that attach the brace to the panels. The screws are marked on the panels as shown in the illustration below.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|



- |  |                                                                                                                                                                      |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>c.</b> Ask your assistant to remove the screws.</p> <p><b>d.</b> Lift the brace out of the crate.</p> <p><b>e.</b> Repeat step 1 for the remaining braces.</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- |   |                                                                              |
|---|------------------------------------------------------------------------------|
| 2 | Remove the screws that attach the bottom front brace (3) to the side panels. |
|---|------------------------------------------------------------------------------|



- |   |                                         |
|---|-----------------------------------------|
| 3 | Lift the bottom brace out of the crate. |
|---|-----------------------------------------|

Step	Action
------	--------

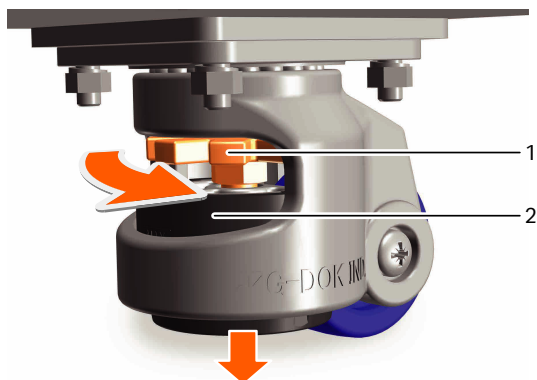
*Result:*



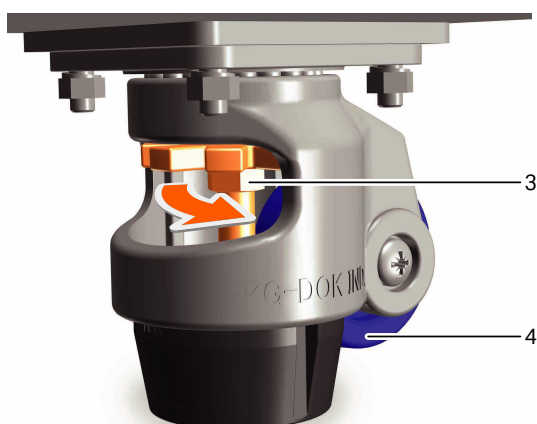
- |   |                                                                                                                                                                                                                      |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Carefully pull the system out of the crate and slowly roll it down the ramp and onto the floor. It is recommended that two persons manage the system from the front, and one person guides the system from the rear. |
| 5 | Roll the system carefully to the intended location.                                                                                                                                                                  |
| 6 | Remove the plastic wrapping. The plastic wrapping is not shown in the illustrations of this instruction.                                                                                                             |
| 7 | Lower the leveling feet of the bioreactor as instructed below.                                                                                                                                                       |

Step	Action
------	--------

- |    |                                                                                                                                                 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|
| a. | Use your fingers to turn the handwheel (1) counterclockwise to move the leveling foot (2) downward, until the leveling foot reaches the ground. |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|



- |    |                                                                                                                                                 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|
| b. | Continue turning the nut (3) until the caster (4) is lifted from the ground and the leveling foot supports the weight of the bioreactor vessel. |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|



- |    |                                                |
|----|------------------------------------------------|
| c. | Repeat step 7 for all remaining leveling feet. |
|----|------------------------------------------------|

- |   |                                                                               |
|---|-------------------------------------------------------------------------------|
| 8 | Verify that the vessel frame is level.                                        |
| 9 | Remove the protective plastic wrapping from the bioreactor vessel components. |

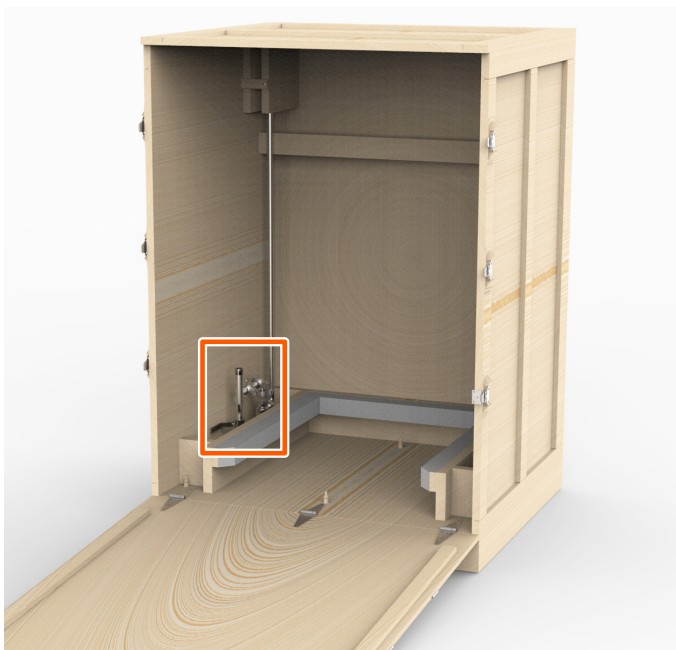
Step	Action
------	--------

- |    |                                                                                                                               |
|----|-------------------------------------------------------------------------------------------------------------------------------|
| 10 | Remove all cable ties that fasten the probe support bar and the impeller ejector handle (X-200) or the locking handle (X-50). |
|----|-------------------------------------------------------------------------------------------------------------------------------|



Step	Action
------	--------

- |    |                                                                                                                                                                                                                       |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11 | Take out the vent assembly for the pressure relief of the vessel jacket. The assembly is located on the crate floor, in the slot between the crate side panel and the wooden supporting structure on the crate floor. |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

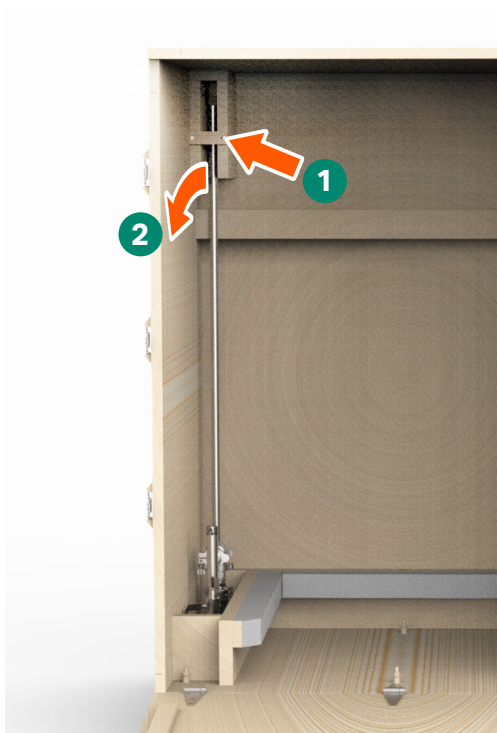
**Note:**

*The assembly is wrapped in protective plastic (not shown in illustration) and comprises pressure relief valve and vents.*

- |    |                                                                                                                                                                                                                                                                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 | <p>Take out the vessel jacket overflow pipe from the crate, following the steps below. The pipe is wrapped in protective plastic (not shown in illustration) and is located in the left rear corner of the crate, in vertical position.</p> <p>a. Open the latch (1) that keeps the top end of the overflow pipe in the protecting box. The box is located on the side panel of the crate.</p> |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Step	Action
------	--------

- |  |                                                                                                                             |
|--|-----------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>b.</b> Pull out the top end of the overflow pipe from the protecting box (2), and lift the pipe out of the crate.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------|



Attach the components to the bioreactor vessel as instructed in [Chapter 10 Assemble bioreactor system, on page 62](#).



# 5 Unpack cabinet assembly

## Open cabinet assembly crate

Follow the steps below to unpack the cabinet assembly.

Step	Action
------	--------

- |   |                                                                                                                        |
|---|------------------------------------------------------------------------------------------------------------------------|
| 1 | Place the crate on a hard, horizontal floor. The illustration below shows the free space needed in front of the crate. |
|---|------------------------------------------------------------------------------------------------------------------------|



- |   |                                                                |
|---|----------------------------------------------------------------|
| 2 | Instruct an assistant to support the front panel of the crate. |
|---|----------------------------------------------------------------|

**Note:**

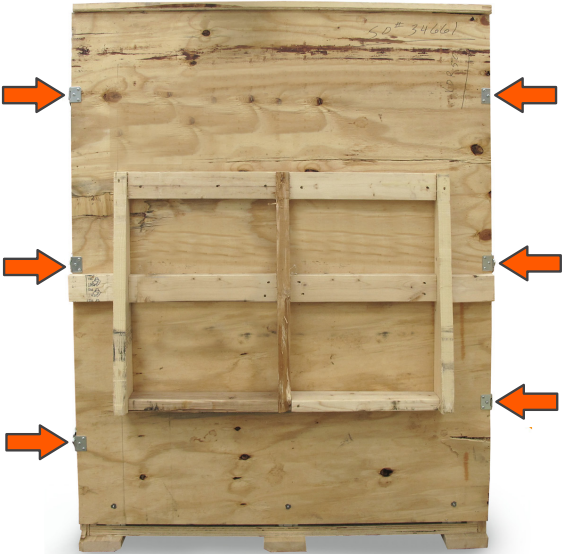
*The front panel is used as a ramp for removing the system from the crate.*

- |   |                                                               |
|---|---------------------------------------------------------------|
| 3 | Locate the butterfly latches at the sides of the front panel. |
|---|---------------------------------------------------------------|

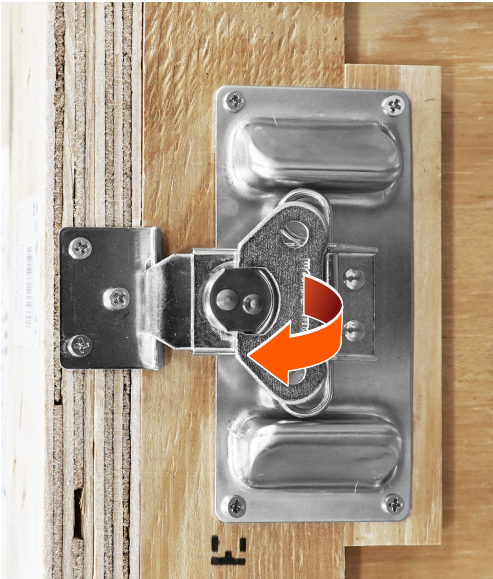
**Note:**

*The shipping company may additionally fasten the front panel to the frame with screws. Unscrew the front panel screws before starting to open the butterfly latches.*

Step	Action
------	--------



4 Pull each butterfly latch towards you.



Step	Action
------	--------

- |   |                                                                              |
|---|------------------------------------------------------------------------------|
| 5 | Turn each butterfly latch counterclockwise until it releases the panel lock. |
|---|------------------------------------------------------------------------------|



- |   |                                                |
|---|------------------------------------------------|
| 6 | Turn each butterfly latch away from the crate. |
|---|------------------------------------------------|

**CAUTION**

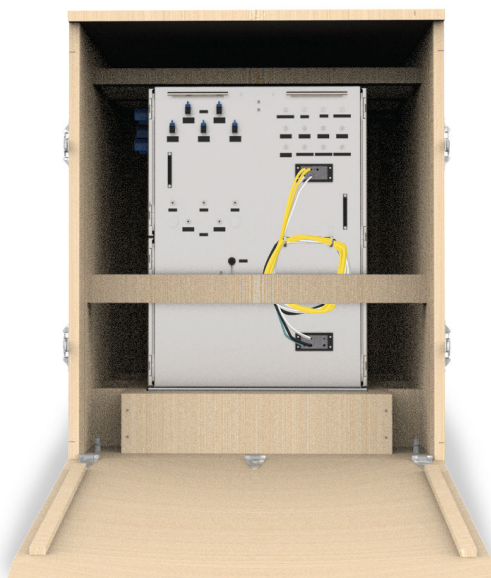
**Support front panel.** After unlocking all butterfly latches the crate front panel is free and can fall. Support the front panel to avoid injuries to personnel.

Step	Action
------	--------

- |   |                                                                                                                                                          |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Carefully lower the front panel to the floor to use it as a ramp for removing the cabinet assembly from the crate. Two persons are needed for this step. |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|



*Result:*



Step	Action
------	--------



**NOTICE**

Check that the ramp hinges are intact and the ramp is securely fastened to the crate.

**Remove cabinet assembly from the crate**



**WARNING**

**Squeezing or crushing injuries.** Because of the significant weight of the product, great care must be taken not to cause squeezing or crushing injuries during movement.

Follow the steps below to remove the cabinet assembly from the crate.

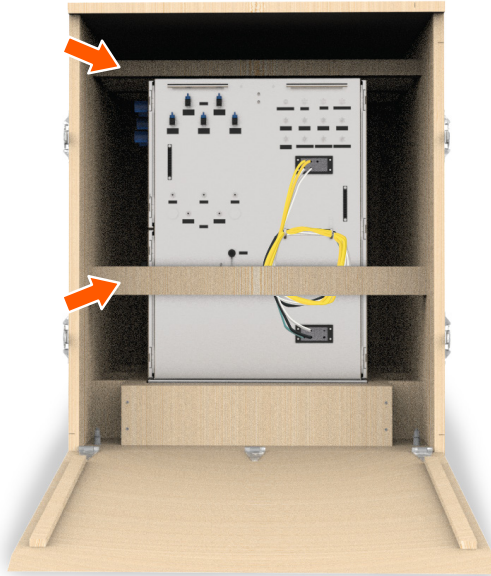
**Note:** *The cabinet assembly is wrapped in protective plastic. The plastic is not shown in the illustrations below.*

Step	Action
------	--------

- |   |                                                                                                                      |
|---|----------------------------------------------------------------------------------------------------------------------|
| 1 | Remove the two wooden braces that keep the cabinet assembly in place inside the crate. Follow the instruction below. |
|---|----------------------------------------------------------------------------------------------------------------------|

Step	Action
------	--------

- |  |                              |
|--|------------------------------|
|  | <p>a. Support the brace.</p> |
|--|------------------------------|



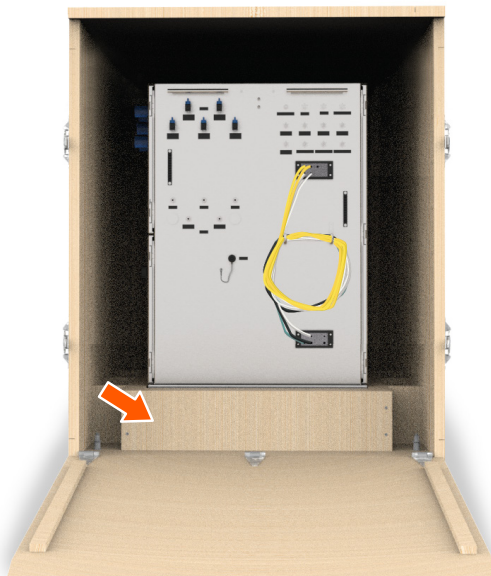
- b. Locate the screws on the side panels that attach the brace to the panels. The screws are marked on the panels as shown in the illustration below.



- c. Ask your assistant to remove the screws.
- d. Lift the brace out of the crate.

Step	Action
------	--------

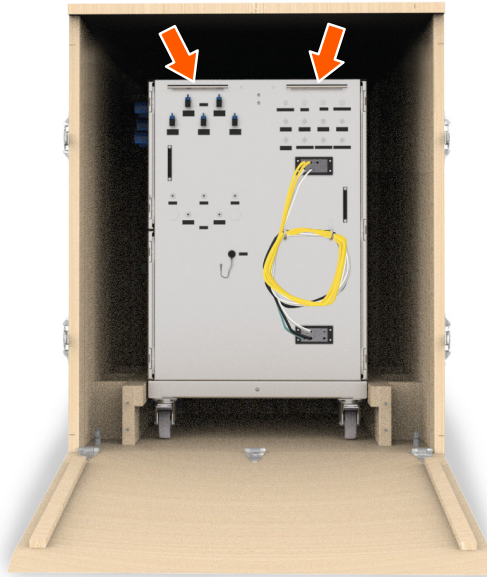
- |   |                                                                          |
|---|--------------------------------------------------------------------------|
| 2 | Remove the screws that attach the bottom front brace to the side panels. |
|---|--------------------------------------------------------------------------|



- |   |                                         |
|---|-----------------------------------------|
| 3 | Lift the bottom brace out of the crate. |
|---|-----------------------------------------|

Step	Action
------	--------

- |   |                                                                                                                                                                                                                                                                  |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Use the handles to pull the cabinet assembly carefully out of the crate. Slowly roll the cabinet assembly down the ramp and onto the floor. It is recommended that two persons manage the system from the front, and one person guides the system from the rear. |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



- |   |                                                                                                                                 |
|---|---------------------------------------------------------------------------------------------------------------------------------|
| 5 | Roll the cabinet assembly carefully to the intended location.                                                                   |
| 6 | Remove the wrapping film from the cabinet assembly. The plastic wrapping is not shown in the illustrations of this instruction. |
| 7 | Remove the cable ties from the cables at the back of the cabinet assembly.                                                      |

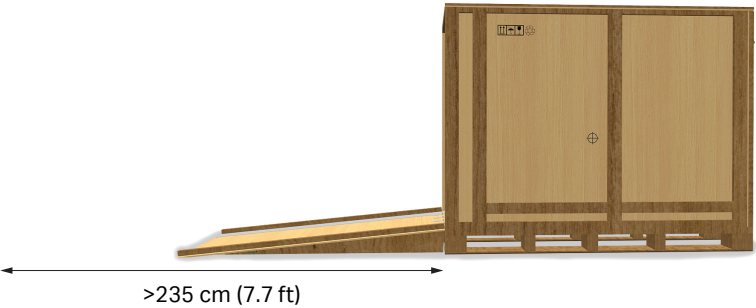


# 6 Unpack HMI

## Open the crate and unpack HMI

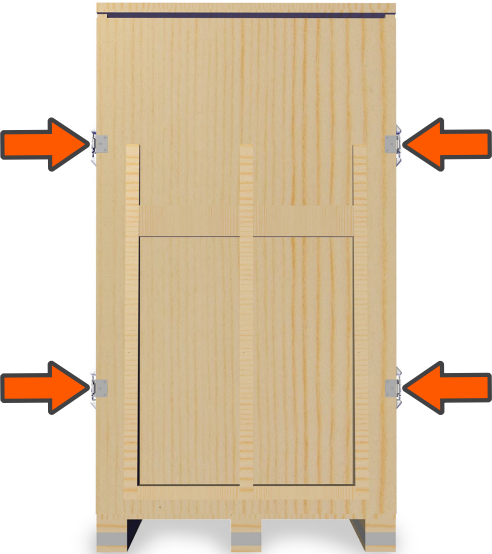
Follow the steps below to unpack the HMI.

Step	Action
1	Place the crate on a hard, horizontal floor. The illustration below shows the free space needed in front of the crate.



- |   |                                                                                                                                                                                                                                                                             |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | <p>Instruct an assistant to support the front panel of the crate.</p> <p><b>Note:</b></p> <p><i>The front panel is used as a ramp for removing the system from the crate.</i></p>                                                                                           |
| 3 | <p>Locate the butterfly latches at the sides of the front panel.</p> <p><b>Note:</b></p> <p><i>The shipping company may additionally fasten the front panel to the frame with screws. Unscrew the front panel screws before starting to open the butterfly latches.</i></p> |

Step	Action
------	--------



4 Pull each butterfly latch towards you.



Step	Action
------	--------

- |   |                                                                              |
|---|------------------------------------------------------------------------------|
| 5 | Turn each butterfly latch counterclockwise until it releases the panel lock. |
|---|------------------------------------------------------------------------------|



- |   |                                                |
|---|------------------------------------------------|
| 6 | Turn each butterfly latch away from the crate. |
|---|------------------------------------------------|

**CAUTION**

**Support front panel.** After unlocking all butterfly latches the crate front panel is free and can fall. Support the front panel to avoid injuries to personnel.

Step	Action
------	--------

- |   |                                                                                                                                                          |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Carefully lower the front panel to the floor to use it as a ramp for removing the cabinet assembly from the crate. Two persons are needed for this step. |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|



*Result:*

**Note:**

*The cabinet assembly is wrapped in protective plastic. The plastic is not shown in the illustrations below.*



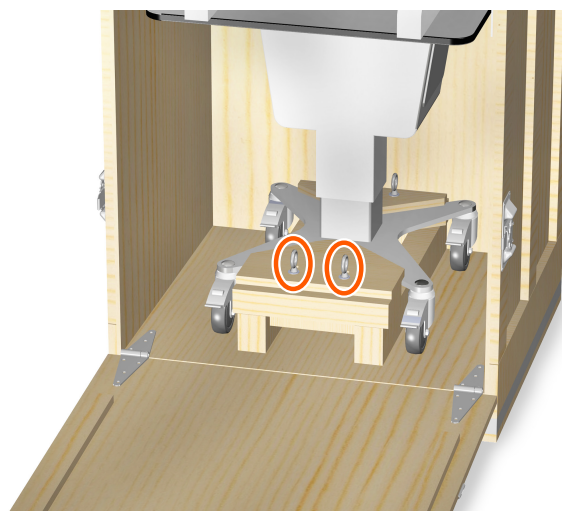
**Step      Action****NOTICE**

Check that the ramp hinges are intact and the ramp is securely fastened to the crate.

- 8      Unscrew the wing bolts on the bracing block at the bottom of the crate, and slide forward the bracing block to remove it.

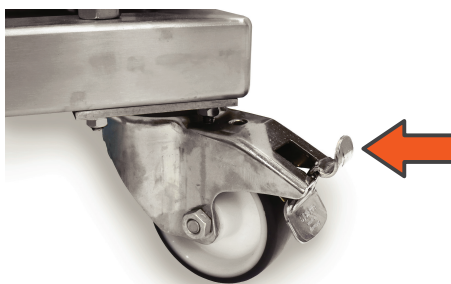
**Note:**

*The cables are packed under the bracing block.*



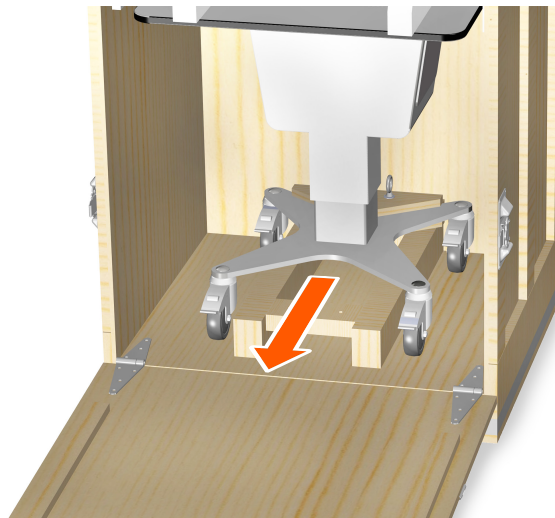
- 9      Remove the HMI mains cable and the Ethernet cable from under the bracing block.

- 10      Unlock the two front casters: push hard the top tab toward the HMI bottom frame.



**Step      Action**

- 11      Carefully pull the HMI out of the crate and slowly roll it down the ramp and onto the floor.



- 12      Remove the plastic wrapping.

Step	Action
------	--------

- |    |                                                                                 |
|----|---------------------------------------------------------------------------------|
| 13 | Remove the protective foam that is located between the screen and the keyboard. |
|----|---------------------------------------------------------------------------------|



- |    |                                                             |
|----|-------------------------------------------------------------|
| 14 | Remove the protective film from the touchscreen display.    |
| 15 | Roll the HMI to the intended location and lock the casters. |

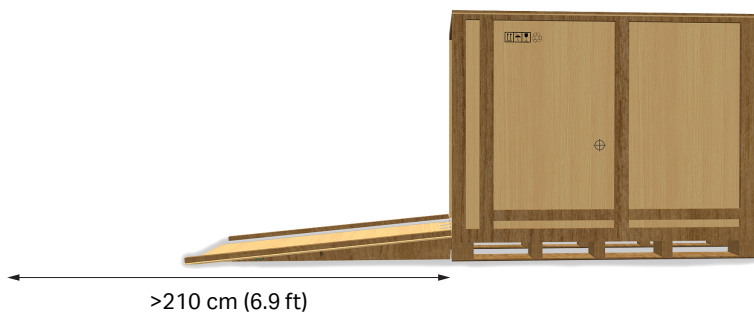
## 7 Unpack TCU

### Open the TCU crate

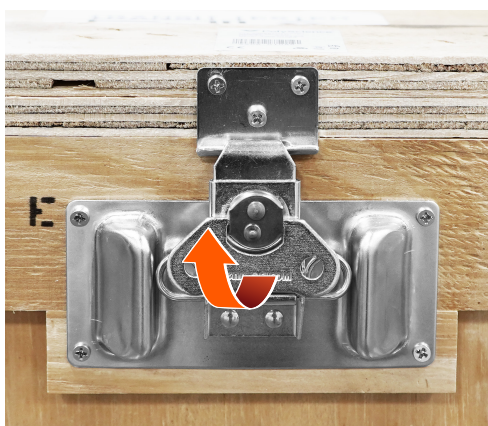
Follow the instructions below to open the crate.

Step	Action
------	--------

- |   |                                                                                                                        |
|---|------------------------------------------------------------------------------------------------------------------------|
| 1 | Place the crate on a hard, horizontal floor. The illustration below shows the free space needed in front of the crate. |
|---|------------------------------------------------------------------------------------------------------------------------|



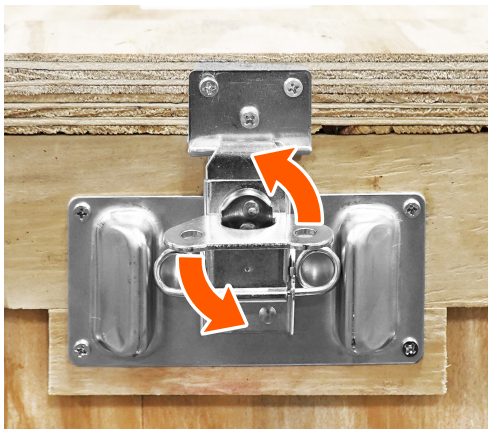
- |   |                                                             |
|---|-------------------------------------------------------------|
| 2 | Locate the butterfly latches on the top panel of the crate. |
| 3 | Pull each butterfly latch towards you.                      |





Step	Action
------	--------

- |   |                                                                              |
|---|------------------------------------------------------------------------------|
| 4 | Turn each butterfly latch counterclockwise until it releases the panel lock. |
|---|------------------------------------------------------------------------------|



- |   |                                                |
|---|------------------------------------------------|
| 5 | Turn each butterfly latch away from the crate. |
|---|------------------------------------------------|



**Step      Action**

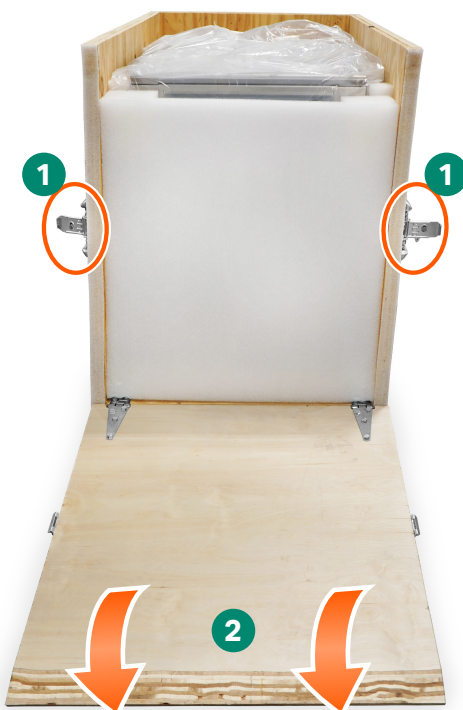
- 6      Remove the top panel of the crate.



- 7      Remove the wooden braces and the foam packaging from the top of the open crate.



Step	Action
8	Open the butterfly latches (1) holding the front panel as described above in steps 3 to 5.



9	Lower the front panel (2) to the floor to use it as a ramp for removing the system from the crate.
---	----------------------------------------------------------------------------------------------------

## Remove the TCU from the crate

Follow the instructions below to remove the TCU from the crate.

Step	Action
------	--------

- |   |                                                              |
|---|--------------------------------------------------------------|
| 1 | Remove the protective foam block at the front of the system. |
|---|--------------------------------------------------------------|



Step	Action
------	--------

- |   |                                                                     |
|---|---------------------------------------------------------------------|
| 2 | Slowly and carefully roll the TCU down the ramp and onto the floor. |
|---|---------------------------------------------------------------------|



- |   |                                                          |
|---|----------------------------------------------------------|
| 3 | Remove any protective plastic that may cover the system. |
|---|----------------------------------------------------------|

- |   |                                                            |
|---|------------------------------------------------------------|
| 4 | Roll the TCU to the intended location and lock the wheels. |
|---|------------------------------------------------------------|

See the manufacturer's documentation for more information on the TCU.

# 8 Unpack optional accessories

## Introduction

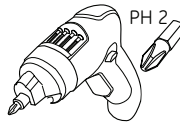
The accessories described in this chapter is optional equipment for the *X-200* bioreactor system. This chapter gives information on how to unpack the following equipment:

- Mobile platform
- Accessories crate
- Floor scale
- Ramp

## Preparation

The following tools are required for opening the crate:

- Cordless drill
- #2 Phillips bit

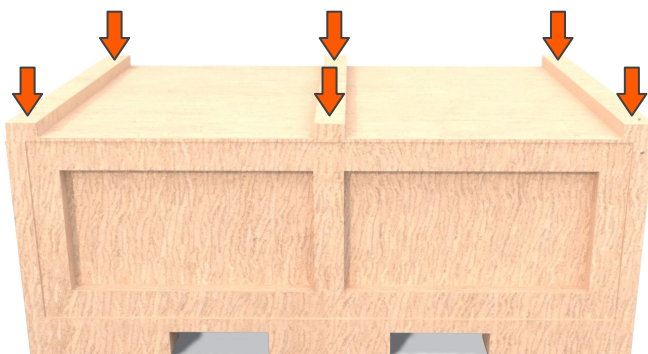


## Unpack mobile platform

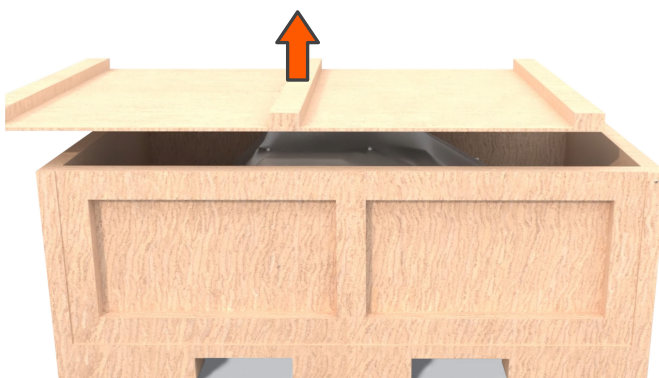
Follow the steps below to unpack and assemble the mobile platform. For some steps you need an assistant to help you.

**Step      Action**

- 1      Unscrew the screws from the top panel of the crate, using a cross-head screwdriver with a number 10 head.



- 2      Lift off the top panel.



- 3      Unscrew the screws from the front panel of the crate, using a cross-head screwdriver with a number 10 head.



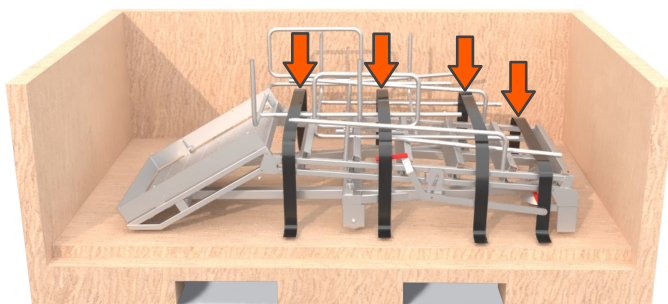
Step	Action
------	--------

4	Lift off the front panel.
---	---------------------------

5	Cut open the protective plastic cover and remove the cover.
---	-------------------------------------------------------------



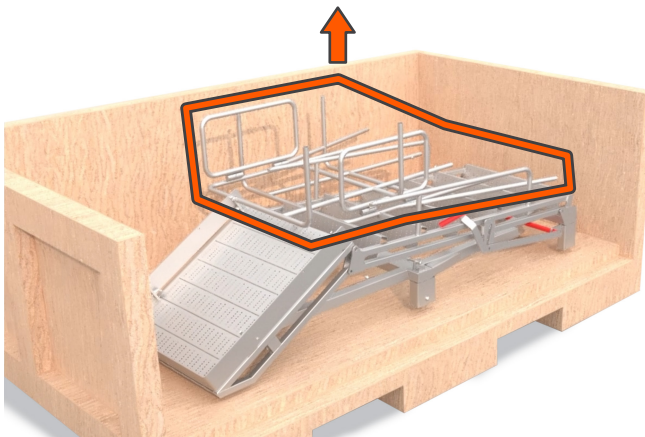
6	Unscrew the screws that hold the black fastening straps in place, and remove the four straps, one by one.
---	-----------------------------------------------------------------------------------------------------------



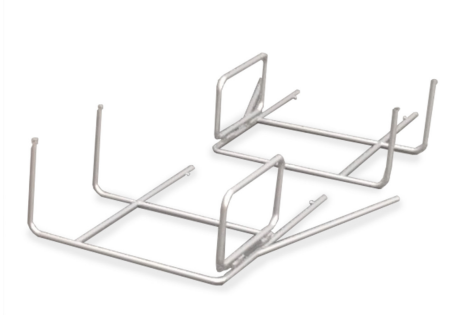


**Step      Action**

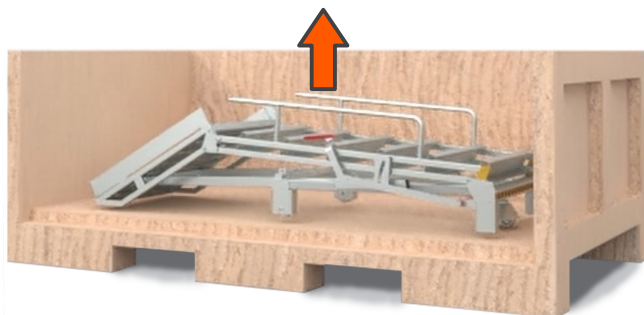
- 7      Lift the two railing components from the crate and put them aside.



*Result:*

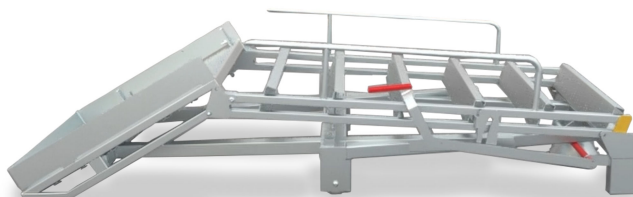


- 8      Lift the mobile platform out of the crate, using a forklift or a similar lifting equipment.



Step	Action
------	--------

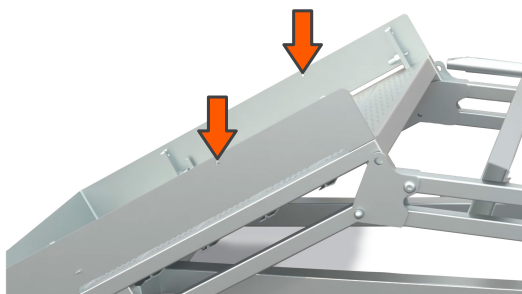
	<i>Result:</i>
--	----------------



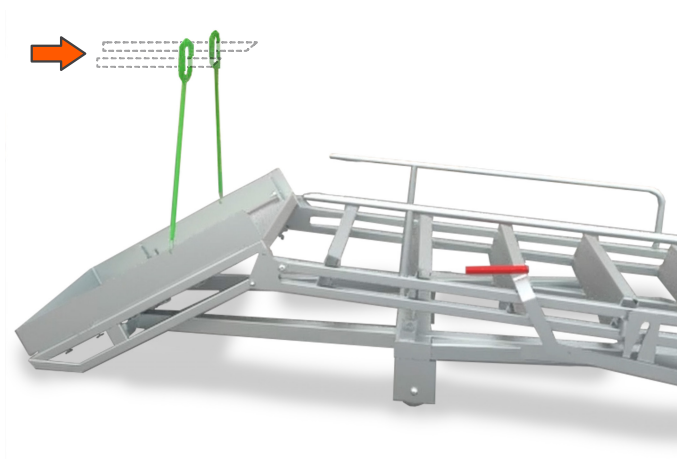
- |   |                                                                                 |
|---|---------------------------------------------------------------------------------|
| 9 | Cut and remove the packing straps that bind the mobile platform parts together. |
|---|---------------------------------------------------------------------------------|

- |    |                                                                                                          |
|----|----------------------------------------------------------------------------------------------------------|
| 10 | Lift up the top platform and assemble the mobile platform frame as described in the following sub-steps. |
|----|----------------------------------------------------------------------------------------------------------|

	<b>a.</b> Attach the lifting straps to the holes at the sides of the top platform.
--	------------------------------------------------------------------------------------



	<b>b.</b> Lift the forklift forks approximately 70 cm and insert the forks into the lifting strap loops.
--	----------------------------------------------------------------------------------------------------------



Step	Action
------	--------

- |    |                                                                        |
|----|------------------------------------------------------------------------|
| c. | Lift the forklift forks up to pull up the top platform to full height. |
|----|------------------------------------------------------------------------|

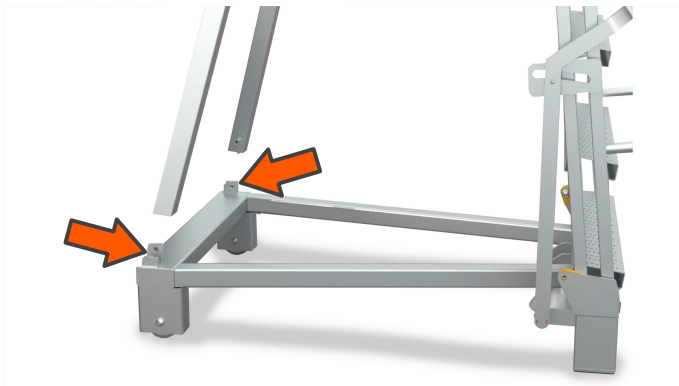
**Note:**

*Do not remove the lifting straps from the forklift.*

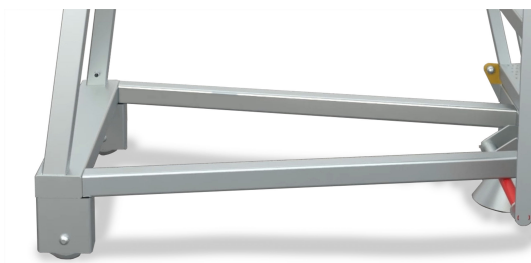


Step	Action
------	--------

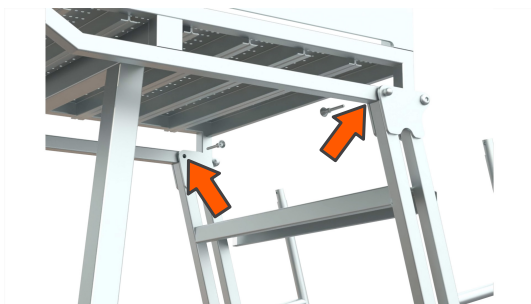
- |    |                                                                                                          |
|----|----------------------------------------------------------------------------------------------------------|
| d. | Place the back legs of the mobile platform on the leg fasteners on the back corners of the bottom frame. |
|----|----------------------------------------------------------------------------------------------------------|



*Result:*



- |    |                                                     |
|----|-----------------------------------------------------|
| e. | Insert the two locking pins under the top platform. |
|----|-----------------------------------------------------|

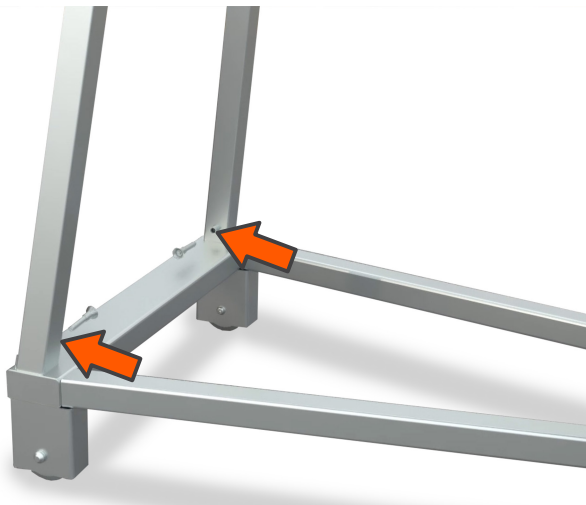


*Result:*

The top platform is fastened in place.

Step	Action
------	--------

- |    |                                                                                                      |
|----|------------------------------------------------------------------------------------------------------|
| f. | Insert the two locking pins at the bottom of the back legs, on the back corners of the bottom frame. |
|----|------------------------------------------------------------------------------------------------------|



*Result:*

The back legs are fastened in place.

- |    |                                                                            |
|----|----------------------------------------------------------------------------|
| g. | Remove the lifting straps from the forklift forks and remove the forklift. |
|----|----------------------------------------------------------------------------|

Step	Action
------	--------

	<i>Result:</i>
--	----------------



- |    |                                                              |
|----|--------------------------------------------------------------|
| 11 | Assemble the railing as described in the following substeps. |
|----|--------------------------------------------------------------|

Step	Action
------	--------

- |  |                                                                                                |
|--|------------------------------------------------------------------------------------------------|
|  | <p><b>a.</b> Move the two railing components towards each other and connect the pipe ends.</p> |
|--|------------------------------------------------------------------------------------------------|



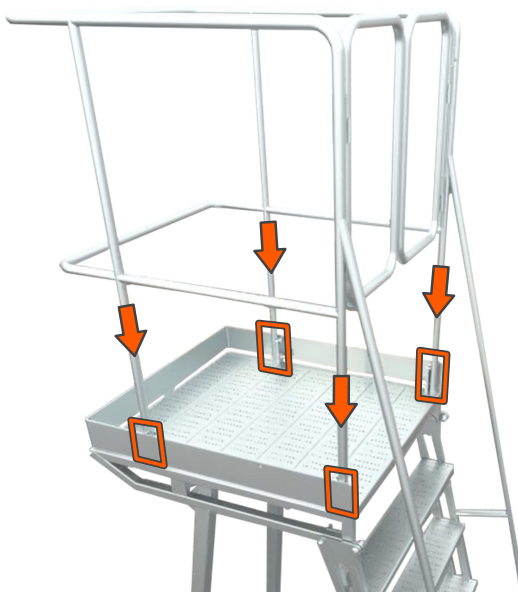
- b.** Insert the locking pins to lock the railing components.



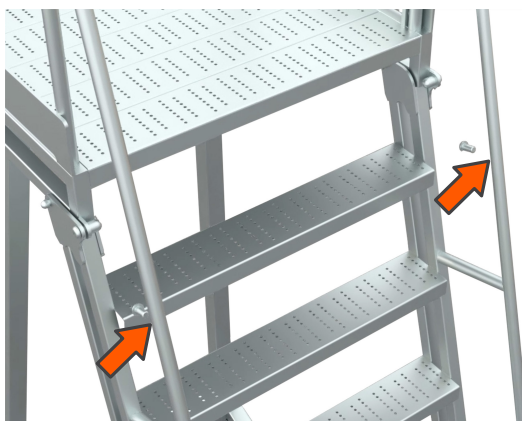
- 12 Install the railing on top of the mobile platform as described in the following substeps.

Step	Action
------	--------

- |    |                                                                                                                                                                 |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a. | Lift the railing to the intended position at the top of the mobile platform and insert the railing legs into the holders. Two persons are needed for this step. |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|



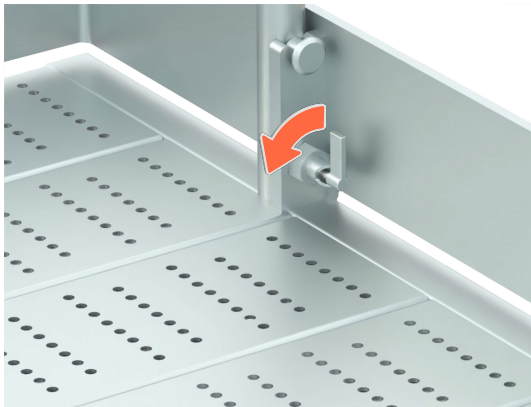
- |    |                                                   |
|----|---------------------------------------------------|
| b. | Insert the locking pins to lock the railing legs. |
|----|---------------------------------------------------|



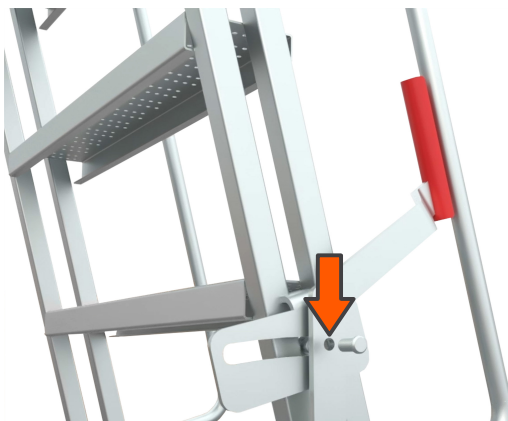


Step	Action
------	--------

- |    |                                                                                                                                  |
|----|----------------------------------------------------------------------------------------------------------------------------------|
| c. | Locate the four lock handles at the bottom of the railing. Turn each lock handle 90 degrees to firmly lock the railing in place. |
|----|----------------------------------------------------------------------------------------------------------------------------------|

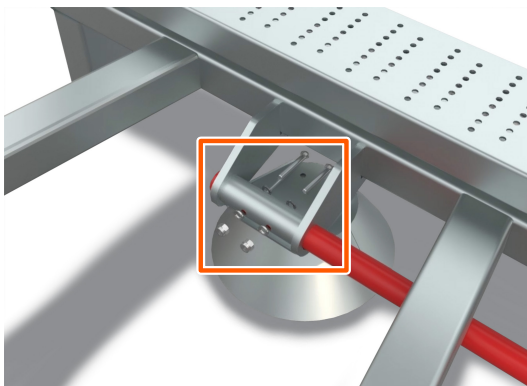


- 13 Connect the wheel locking handle: assemble the locking pin and bushing using the fastener.



Step	Action
------	--------

- |    |                                                                       |
|----|-----------------------------------------------------------------------|
| 14 | Lock the wheel mechanism in place using two bolts, washers, and nuts. |
|----|-----------------------------------------------------------------------|



Step	Action
------	--------

*Result:*

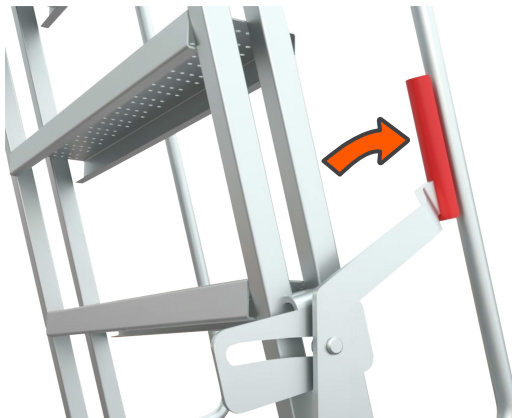
The mobile platform assembly is completed.



- |    |                                                                                          |
|----|------------------------------------------------------------------------------------------|
| 15 | Move the mobile platform to the designated area and lock the wheels, as described below. |
|----|------------------------------------------------------------------------------------------|

Step	Action
------	--------

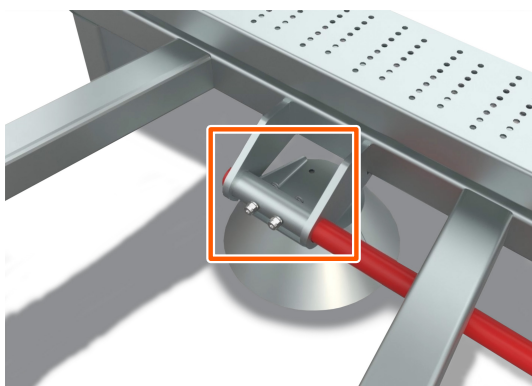
- |    |                                                                                                     |
|----|-----------------------------------------------------------------------------------------------------|
| a. | Pull the wheel locking handle towards the handrail. Hold the handle and the handrail with one hand. |
|----|-----------------------------------------------------------------------------------------------------|



- |    |                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------|
| b. | Hold the other handrail with your other hand and push the mobile platform to the designated location. |
| c. | Push the wheel locking handle away from the handrail.                                                 |

*Result:*

The wheel is locked and the mobile platform stays in place.



After assembling the mobile platform as described above, verify that the system is functioning as expected.

## Unpack the accessories crate

One or two crates with accessories are delivered with *X-platform* bioreactor. The amount and content of the accessory crates varies based on what was ordered from Cytiva. The crates can contain the following items:

- Top frame

- Filter heaters
- Probes, probe transmitters, and transmitter cables
- TCU tubing
- External pumps
- External benchtop scales
- Power cables
- Ethernet cables
- Pneumatic tubing kits
- Bag hook kit

Follow the steps below to open the accessory crates.

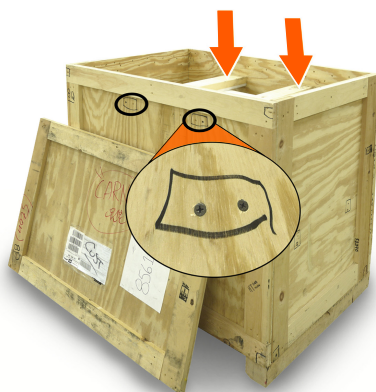
Step	Action
------	--------

- |   |                                                               |
|---|---------------------------------------------------------------|
| 1 | Unscrew the screws on the top panel and remove the top panel. |
|---|---------------------------------------------------------------|



**Step      Action**

- 2      Remove the screws holding the braces inside the crate.



- 3      Remove the wooden braces from the crate.



Step	Action
------	--------

4	Remove one side panel.
---	------------------------



5	Lift out the content from the crate and place it on the floor.
---	----------------------------------------------------------------



Step	Action
6	Open the cardboard boxes, one by one, and take out the contents. Remove any protective plastic and protective foam from the accessories.

### Unpack floor scale

The floor scale is delivered with a detached post and a detached transmitter. See the manufacturer's documentation for unpacking and installation of the floor scale.

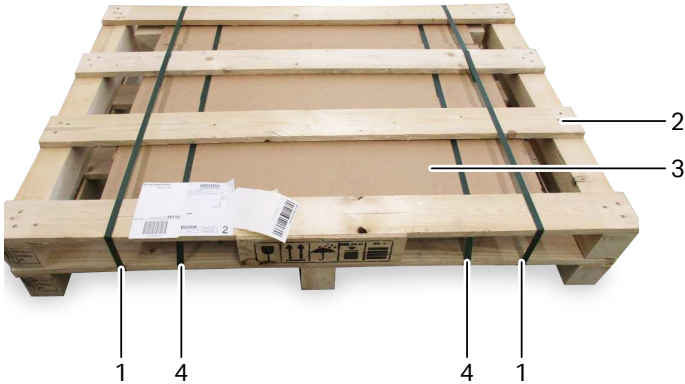
The floor scale is an optional equipment for *X-200* bioreactors.

### Unpack ramp

The ramp is an optional equipment for *X-200* bioreactors.

Follow the steps below to unpack the ramp.

Step	Action
1	Cut the plastic straps that hold the top pallet in place (1).

A top-down view of a wooden pallet. A cardboard box is placed on the pallet. Four numbered callouts point to specific parts: '1' points to the black plastic straps securing the box; '2' points to the top pallet itself; '3' points to a piece of cardboard on the surface of the ramp; '4' points to the black plastic straps that hold the ramp in place.

2	Lift off the top pallet (2).
3	Remove the cardboard (3) from the top of the ramp.
4	Cut the plastic straps that hold the ramp in place (4).
5	Lift the ramp from the pallet using a forklift with adequate capacity.
6	Move the ramp to the designated location.



## 9 After unpacking

### Inspect the system

Follow the instructions below to inspect the system.

Step	Action
1	Verify that you have received all components.
2	Inspect all components for damage and missing pieces.
3	Verify that the components meet the following specifications: <ul style="list-style-type: none"> <li>• Components and quick connect fittings are not scratched or dented.</li> <li>• Cords and cables have not loosened during shipping.</li> <li>• The interior of the bioreactor vessel is free of debris.</li> </ul>
4	If there is any apparent damage or missing parts, make a written report of the damage and inform your Cytiva representative.

### Check accessories

A packing list is placed on the inside of the accessories crate.

After unpacking the accessories, open the boxes of accessories and make sure that all items listed on the packing list have been received.

Report any missing or damaged accessory items to your local Cytiva representative.

### Recycling information

For ease of future transport, retain the shipping crates in which the bioreactor and other system parts were delivered.

If the crates have to be discarded, recycle the empty packing crates and packing materials in accordance with current local rules and regulations.



#### CAUTION

Packing crates may have been exposed to pesticides, depending on the regulations of the country of delivery. Recycle packing crates according to local recommendations for pesticide-treated wood.

# 10 Assemble bioreactor system

## Assembling the bioreactor

Some *X-platform* bioreactor components are delivered separately, they need to be mounted on the bioreactor vessel after unpacking. The assembling is done by Cytiva service engineer or by the customer personnel. The following sections give instructions on how to install the following components on the bioreactor vessel:

- Vessel jacket overflow assembly
- Top frame
- Exhaust filter holders

Cytiva recommends to move the bioreactor vessel to its designated location before installing the top frame and the exhaust filter holders. This makes it easier to move the system through the doors, avoiding space constraints.

## Attach the vessel jacket overflow assembly

Attach the vessel jacket overflow assembly to the bioreactor vessel, as instructed in the steps below.



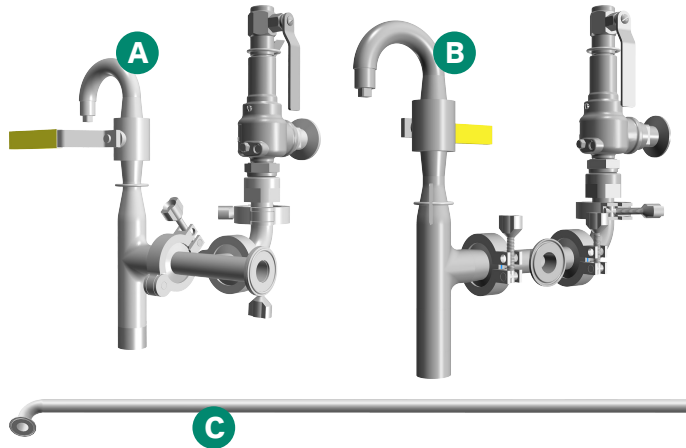
### CAUTION

**Assistance during assembling.** To avoid injury to yourself, or damage to the system or its components, have an assistant to help you to assemble the system.

Step	Action
1	Take out the vent assembly (pressure relief valve and vents), and the overflow pipe from the bioreactor crate, as instructed in <a href="#">Remove vessel from the crate, on page 14</a> , from <a href="#">step 12 on page 19</a> forward.

Step	Action
------	--------

- |   |                                                                                                                                                                                                                   |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Remove the protective plastic wrapping from the vent assembly and the overflow pipe. The following illustration shows the vent assembly for X-50 (A), the vent assembly for X-200 (B), and the overflow pipe (C). |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



- |   |                                                                                                   |
|---|---------------------------------------------------------------------------------------------------|
| 3 | Attach the vent assembly to the back of the bioreactor vessel, using the gasket and the TC-clamp. |
|---|---------------------------------------------------------------------------------------------------|

X-50 bioreactor



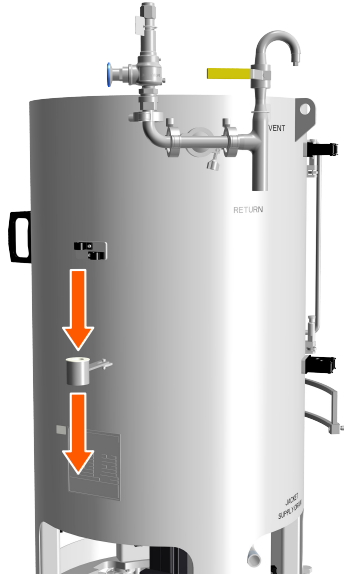
X-200 bioreactor



- |   |                                         |
|---|-----------------------------------------|
| 4 | Attach the overflow pipe to the vessel. |
|---|-----------------------------------------|

Step	Action
------	--------

- |    |                                                                                                  |
|----|--------------------------------------------------------------------------------------------------|
| a. | Push the straight end of the overflow pipe through the pipe support and slide the pipe downward. |
|----|--------------------------------------------------------------------------------------------------|

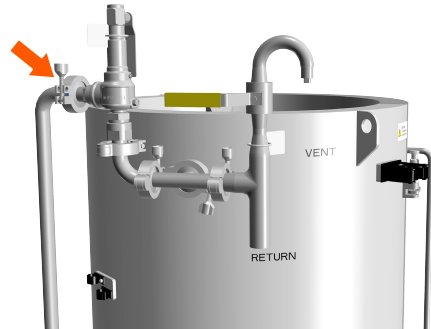


- |    |                                                                                                   |
|----|---------------------------------------------------------------------------------------------------|
| b. | Connect the bent end of the overflow pipe to the vent assembly using the gasket and the TC-clamp. |
|----|---------------------------------------------------------------------------------------------------|

X-50 bioreactor



X-200 bioreactor



## Attach the top frame

Cytiva recommends to move the bioreactor vessel to its designated location before attaching the top frame. This makes it easier to move the system through the doors and avoid space constraints.

Attach the top frame to the bioreactor vessel, as instructed in the steps below.

**CAUTION**

**Assistance during assembling.** To avoid injury to yourself, or damage to the system or its components, have an assistant to help you to assemble the system.

Step	Action
------	--------

- |   |                                                                             |
|---|-----------------------------------------------------------------------------|
| 1 | Take the top frame and the plastic bag with bolts out of the cardboard box. |
|---|-----------------------------------------------------------------------------|

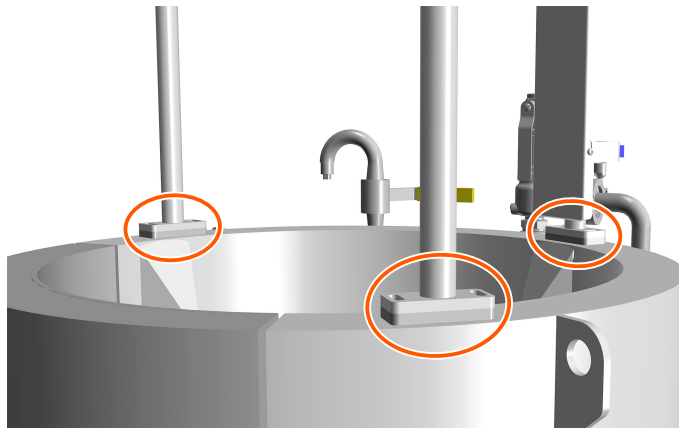
**Note:**

*The pinch valves and the sparge tubing interconnector are attached to the top frame prior to the delivery.*

- |   |                                                                                                                                                |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Lift the top frame up and align the frame legs with the support pieces on the rim of the bioreactor vessel. Work together with your assistant. |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|

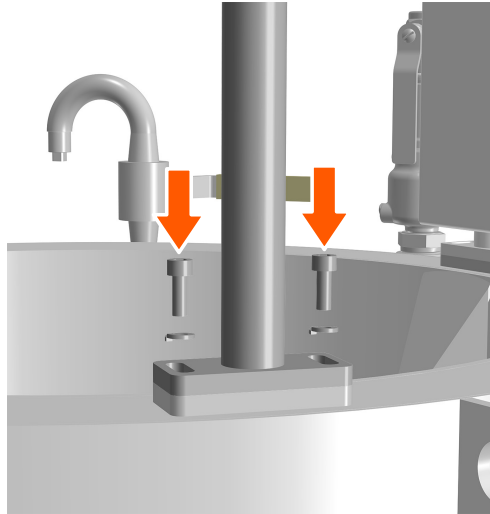
**Tip:**

*Use a ladder to access the bioreactor vessel top.*



Step	Action
------	--------

- |   |                                                                                                                                        |
|---|----------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Fasten each top frame leg to the bioreactor vessel using the washers and the M6 (6 mm) bolts. Use a 5 mm hex key to tighten the bolts. |
|---|----------------------------------------------------------------------------------------------------------------------------------------|



## Attach the exhaust filter holders

Cytiva recommends to move the bioreactor vessel to its designated location before attaching the exhaust filter holders. This makes it easier to move the system through the doors and avoid space constraints.

Attach the exhaust filter holders to the top frame, one by one, as instructed in the steps below.



### CAUTION

**Assistance during assembling.** To avoid injury to yourself, or damage to the system or its components, have an assistant to help you to assemble the system.

Step	Action
------	--------

- |   |                                                                                  |
|---|----------------------------------------------------------------------------------|
| 1 | Take the filter holders and the plastic bag with bolts out of the cardboard box. |
|---|----------------------------------------------------------------------------------|

**Note:**

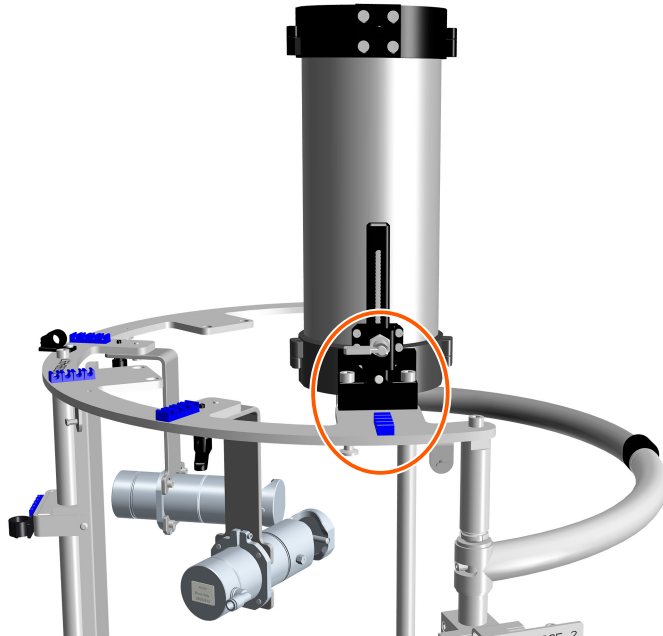
*The exhaust filter heaters are wrapped around the filter holders prior to the delivery.*

Step	Action
------	--------

- |   |                                                                                                                              |
|---|------------------------------------------------------------------------------------------------------------------------------|
| 2 | Align the support piece at the bottom of the exhaust filter holder with the corresponding piece on the bioreactor top frame. |
|---|------------------------------------------------------------------------------------------------------------------------------|

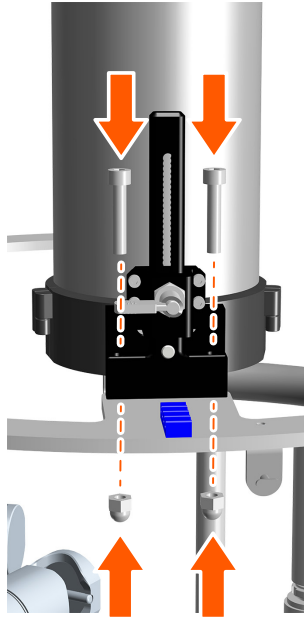
**Tip:**

*Use a ladder to access the bioreactor vessel top. Ask an assistant to help you, if needed.*



Step	Action
------	--------

- |   |                                                                                                                 |
|---|-----------------------------------------------------------------------------------------------------------------|
| 3 | Fasten the support pieces with the M8 (8 mm) bolts, washers, and nuts. Use a 6 mm hex key to tighten the bolts. |
|---|-----------------------------------------------------------------------------------------------------------------|



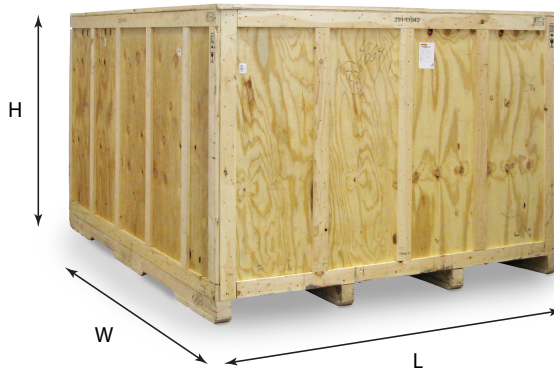
- |   |                                                                                        |
|---|----------------------------------------------------------------------------------------|
| 4 | Attach all exhaust filter holders to the vessel top, as instructed in the steps above. |
|---|----------------------------------------------------------------------------------------|



# 11 Reference information

## Shipping crate specifications

The illustration and the table below show the dimensions and the weights of the crates.



Crate contents	L	W	H	Weight (system + crate)
50 L vessel	124 cm (48.8")	129 cm (50.8")	166 cm (65.4")	428 kg (944 lbs)
200 L vessel	117 cm (46.1")	128 cm (50.4")	174 cm (68.5")	517 kg (1140 lbs)
Cabinet assembly	175 cm (68.9")	113 cm (44.5")	133 cm (52.4")	412 kg (908 lbs)
Human-machine interface (HMI)	87.0 cm (34.3")	80.5 cm (31.7")	160 cm (62.9")	130 kg (287 lbs)
Top frame for 50 L vessel	55.9 cm (22")	55.9 cm (22")	48.3 cm (19")	12 kg (26.5 lbs)
Top frame for 200 L vessel	78.7 cm (31")	73.7 cm (29")	58.4 cm (23")	15 kg (33 lbs)
Temperature control unit	123 cm (48.4")	67.9 cm (26.7")	90.2 cm (35.5")	154 kg (340 lbs)

Crate contents	L	W	H	Weight (system + crate)
Accessories crate 1	122 cm (48")	122 cm (48")	122 cm (48")	Up to 200 kg (441 lbs), dependent on order.
Accessories crate 2	107 cm (42.1")	77 cm (30.3")	108 cm (42.5")	Up to 100 kg (220 lbs), dependent on order.
Mobile platform <sup>1</sup>	193 cm (76")	123 cm (48.4")	96 cm (37.8")	350 kg (772 lbs)
Floor scale (size C) <sup>1</sup>	89 cm (35")	117 cm (46.1")	28.5 cm (11.2")	124 kg (273 lbs)
Floor scale (size D) <sup>1</sup>	140 cm (55.1")	115 cm (45.3")	28.5 cm (11.2")	238 kg (525 lbs)
Ramp (4 ft, for size C floor scale) <sup>1</sup>	139 cm (54.7")	89 cm (35")	28.5 cm (11.2")	85 kg (187 lbs)
Ramp (7.66 ft, for size C floor scale) <sup>1</sup>	251 cm (98.6")	89 cm (35")	28.5 cm (11.2")	161 kg (355 lbs)
Ramp (4 ft, for size D floor scale) <sup>1</sup>	139 cm (54.7")	115 cm (45.3")	25 cm (9.8")	151 kg (333 lbs)

<sup>1</sup> Optional

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