

ARJO

FREEDOM BATH

SITE PREPARATIONS



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May 2007



CE

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Introduction

Freedom Bath

ARJO Freedom Bath is a sophisticated piece of medical equipment and has to be handled as such. The Freedom Bath does require installation, however we do not want the Freedom Bath tiled in as certain components need regular service and maintenance.

Site Preparations

This document has been developed to supply you with accurate and targeted information in order to make your site preparation for the ARJO Freedom Bath ideal. Combining good engineering practice with a well prepared installation site, will ensure a worry free installation the day your Freedom Bath is delivered. Please read through the complete manual prior to preparing your site as it will show different installation scenarios.

Please take extra care to identify your specific installation scenario. We suggest that you use the tic box in the lower right hand corner of each scenario for future reference as well as simple identification within different workgroups. (plumbing, electrical, drywall, tiling etc.)

For installation sites that require a seal between their tub and wall; we have an accessory in the form of a Tile-in kit comprising of a seal that can be placed between tub and wall, allowing for easy removal.

Approvals

UL classification

UL marking (US-models 120V-60Hz)
Patient Bathing Units Classified in accordance with the standards for Plastic Bathtub and Shower Units, ANSI Z124.1.2-2005;
Whirlpool Bathtub Appliances, ANSI/ASME A112.19.7M-1995;
Suction Fittings, ANSI/ASME A112.19.8-1987;
Pipe Applied Vacuum Breakers, ANSI/ASSE 1001-1988;
Hand- Held Showers, ANSI/ASSE 1014-1989;
Individual Thermostatic, Pressure Balancing and Combination Pressure Balancing and Thermostatic Control Valves for Individual Fixtures, ANSI/ASSE 1016-1996.

Medical Equipment with respect to electrical shock, fire and mechanical hazards only in accordance with Standards no. UL60601-1
CAN/CSA-C22.2No.601.1-M90

Patient bathing units Classified in accordance with CAN/CSA-B45.0-2004 and B45.5-2004, "Plumbing Fixtures", and CAN/CSA-B64.0-1994 and B64.1.1-1994, "Backflow Preventers and Vacuum Breakers."

CE marking

CE-marking in accordance with the directive 93/42/EEC (Medical Devices Directive).

The equipment has been tested and fulfils all requirements with respect to electrical and mechanical hazards according to IEC 60 601-1 and for EMC according to IEC 60 601-1-2.

WRAS (GB only)

WRAS approved Thermostatic Mixing Valves, according to National Health Service Model Engineering Specification D 08- TMV3. Thermostatic Mixing Valves (Healthcare Premises). Designation Code: HP-S / HP-T44.

User Guidelines

In order to ensure that we accomplish your demands, we are grateful if this information is read. This will facilitate the installation procedure and give the correct and optimal working conditions of all involved persons.

Safety Precautions

All electrical and plumbing work must be carried out by authorized personnel:

- In accordance with local codes
- In accordance with local regulations

It is the responsibility of the customer to prepare the site before the installation procedure starts.

To avoid personal damage due to heavy lifts, suitable transporting aids must be available when installing the product.

Attention:

Massachusetts customers

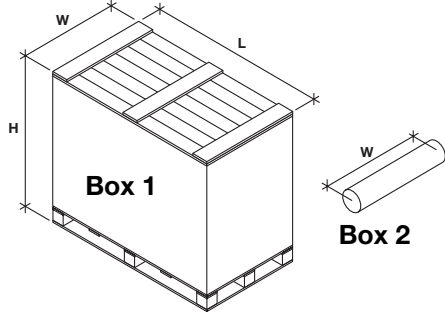
With reference to Massachusetts state plumbing regulations, customers shall install proper back-flow prevention devices in compliance with 248 CMR (Code of Massachusetts Regulations).

The drainage system shall also comply with 248 CMR.

In the Commonwealth of 248 Massachusetts, all water temperatures shall comply with 248 CMR.

Measurements and Weights

Box



The Freedom Bath is delivered in box 1
Box 2 contains installation kit

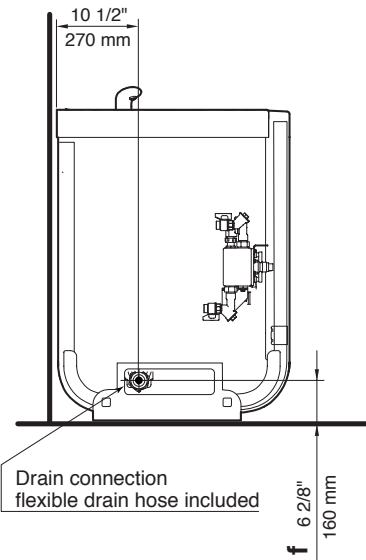
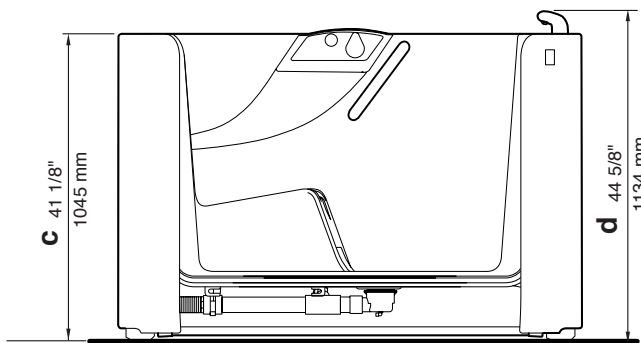
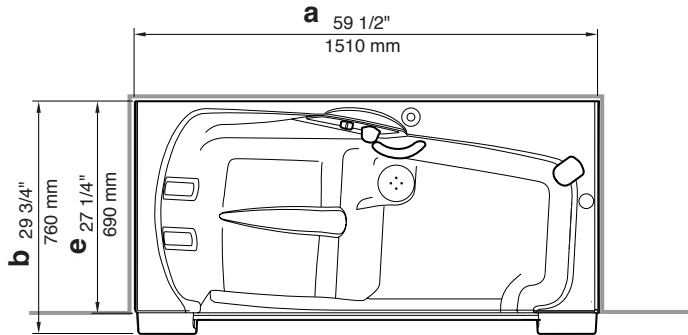
Measurements:

L Length	W Width	H Height
64 3/4" (1645 mm)	36" (915 mm)	54" (1370 mm)

Shipping weights:

Model	Weight with built-in water control	Weight without built-in water control
Still bath	335 lb (152 kg)	313 lb (142 kg)
Air spa	357 lb (162 kg)	335 lb (152 kg)

Freedom Bath



Measurements:

a	Length
b	Width
c	Height
d	Height, spout
e	Recommended depth of alcove
f	Distance (c/c) drain-floor

Freedom Bath is available in right-hand version only!

Weights:

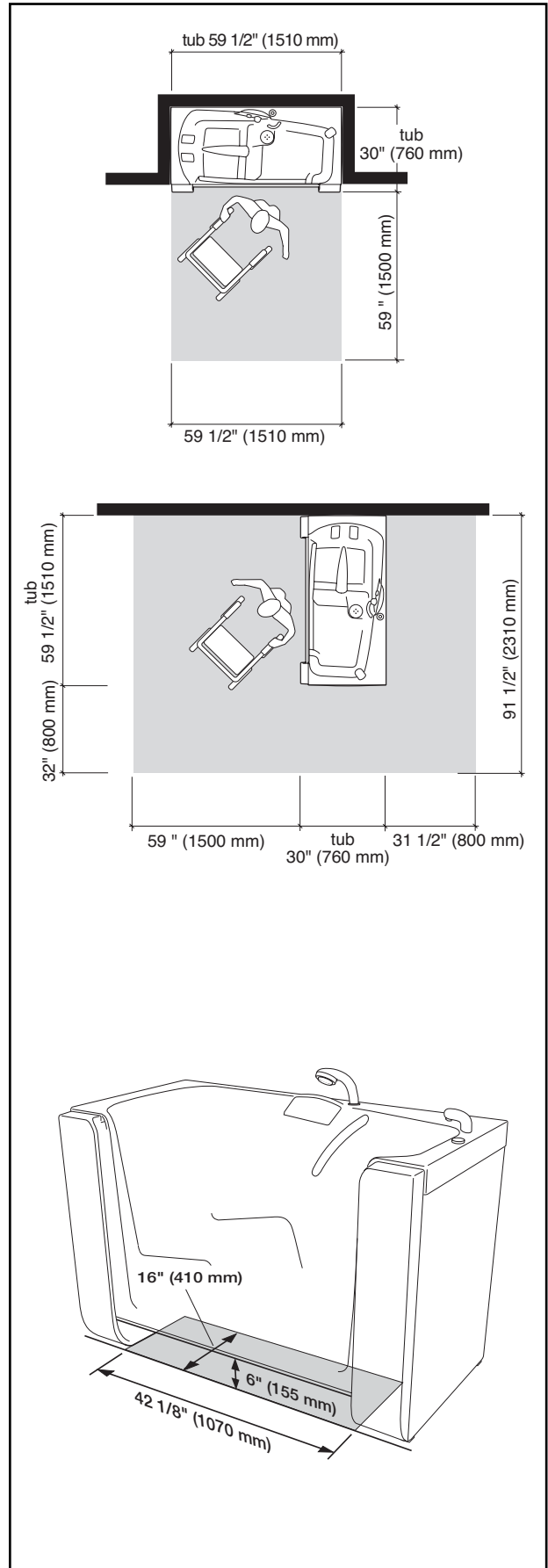
Model	Weight with built-in water control	Weight without built-in water control
Still bath	287 lb (130 kg)	264 lb (120 kg)
Air spa	309 lb (140 kg)	287 lb (130 kg)

Space Requirements

Space requirements around the bath

Freedom Bath must always be installed according to recommended space requirements, this to provide optimal working conditions for personnel and resident.

Note that space for furniture and other personal items are not included in these measurements.



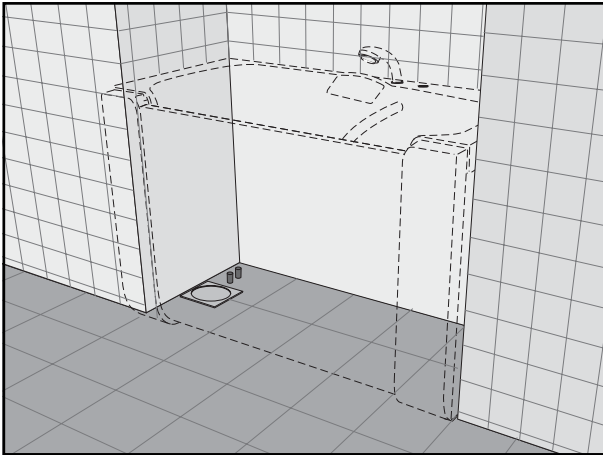
Available area for lift integration

Freedom Bath in lift accessible version (LA) allows following area for lift integration, limited by the drain connections.

Site Preparations

Floor/Walls

Prior to installation of Freedom Bath the floor and walls within the required area must be finished.



Materials

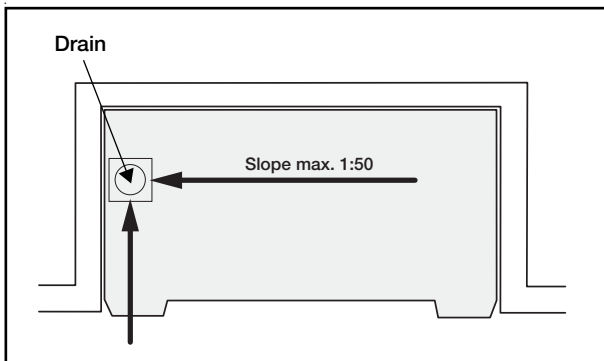
The floor should be made of a slip-resistant material, free of bumps.

Levels

The doorway must not have a threshold or if necessary it should be of the depressible rubber type, this to facilitate the use of a mobile aid.

Floor Slope

When using a floor drain the slope towards the drain should not exceed 1:50.



Floor attachments

The sliding tracks provided in the installation kit have to be used when installing Freedom Bath. The floor construction must be suitable for anchoring the bolts.

For exact positioning of the two sliding tracks a template is provided. (See figures 1 and 2.)

Loads

Max. floor load (filled with water + resident):
384 psi (265 N/cm²)

Max. floor loading (filled with water + resident):
292 lbs pounds force (1300 N)/foot pad

Weights

Total weight of tub filled with water and typical
176 pound resident (80 kg).

Water capacity

Tub weight

Max. load = resident weight + water weight + tub weight.

Caulking between tub and wall

Not recommended as it will make the service access difficult. NOTE ! The tub must never be built into the finished wall. In order to seal the space between tub and wall we strongly recommend use of the tile-in kit.

Tile-in kit

When a water protection is wanted between tub rim and wall the optional tile-in kit should be used. (See figure 3.) The tile-in kit consists of a flexible seal that can be placed between tub and wall. The tile-in kit can both be applied horizontally as well as vertically.

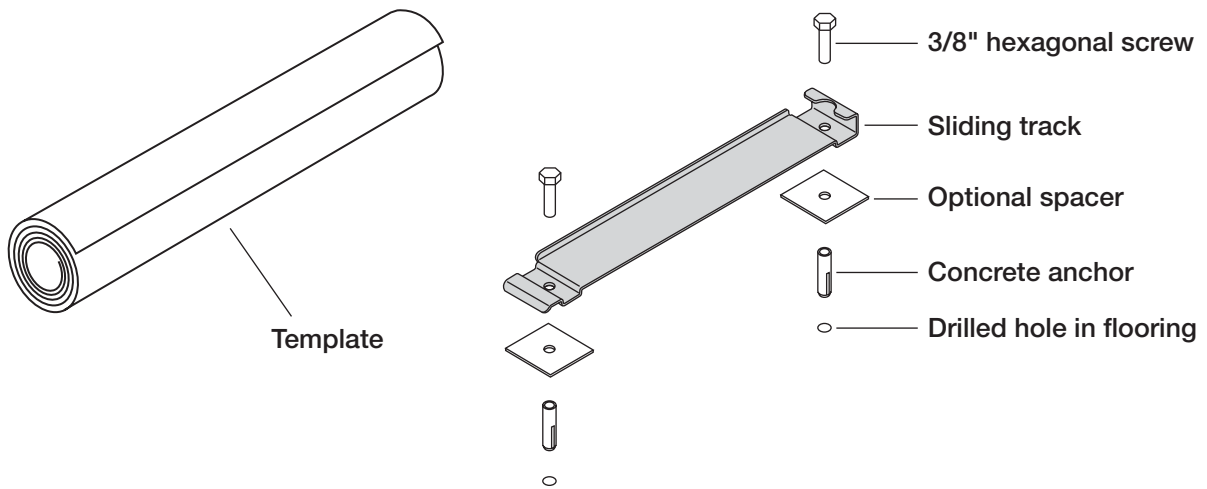


Figure 1. Floor attachment kit

Drilled holes (x4) for internally 3/8" threaded flush mount concrete anchors. Follow instructions from anchor manufacturer, for example www.hilti.com
 Suitable anchor, example: *HILTI HDI 3/8 SS 303*

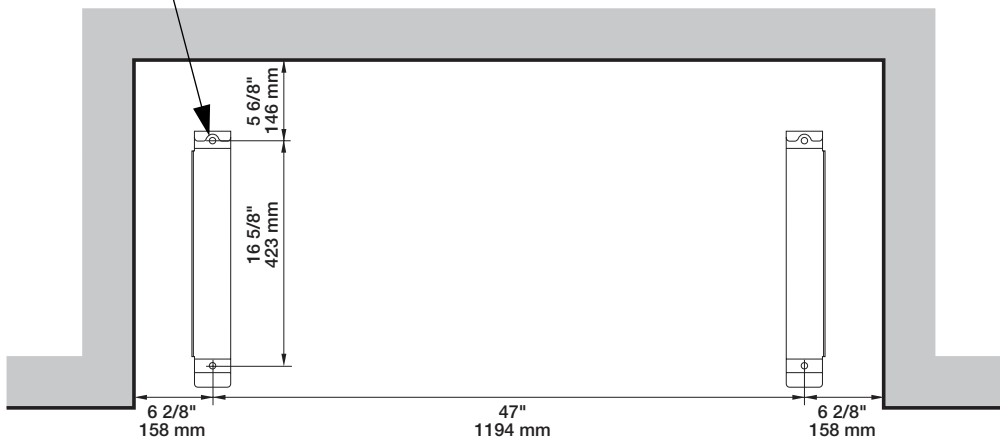


Figure 2. Sliding tracks mounted in alcove layout

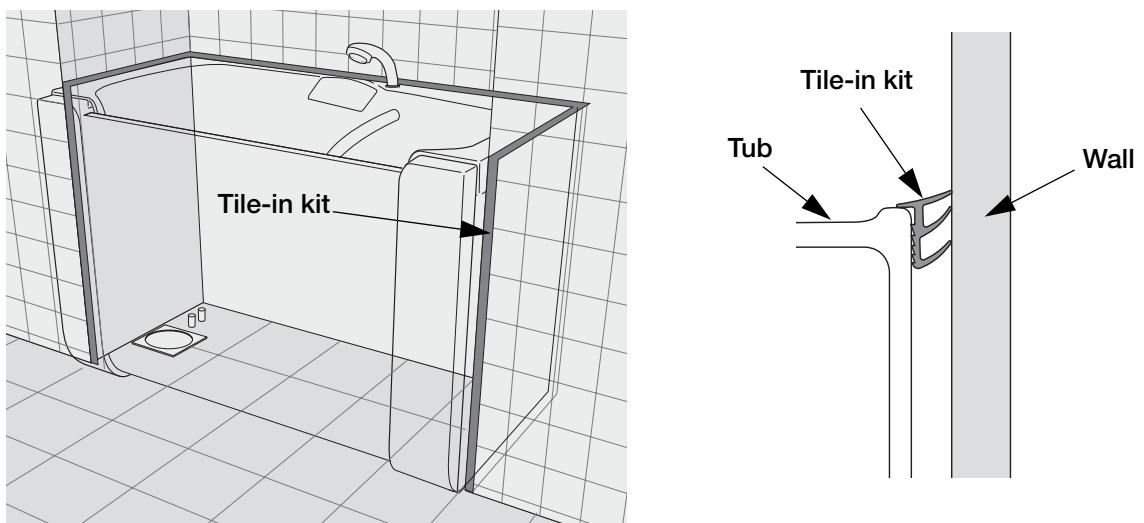


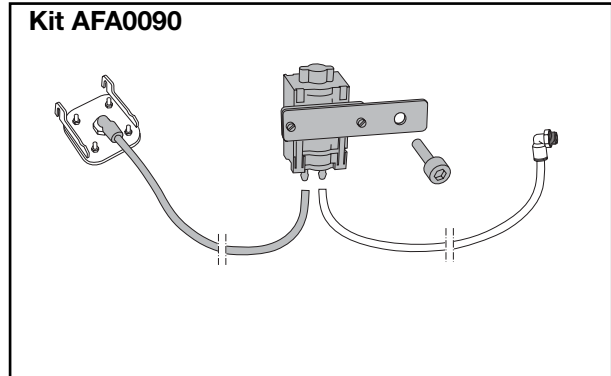
Figure 3. Tile-in kit applied between Freedom Bath and wall in alcove layout

Available Kits (For special installations)

For the in this manual described alternatives for water and drainage installations, the following kits are available:

AFA0090

1 Drainage pump with accessories

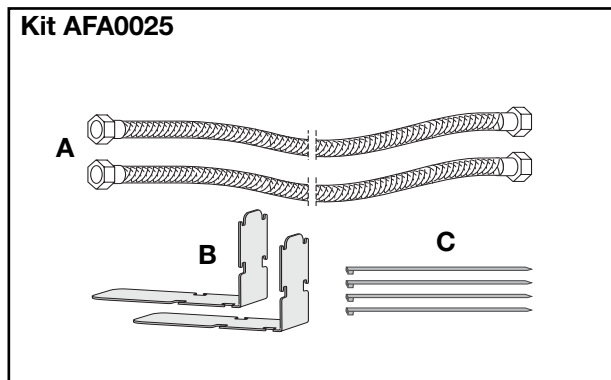


AFA0025

A 2 water hoses 94 4/8" (2400mm)

B 2 holders

C 4 ties



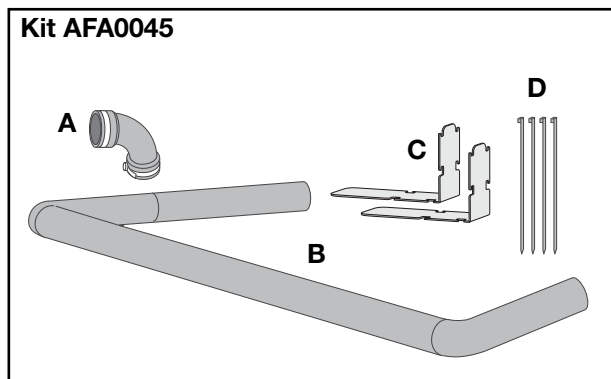
AFA0045

A 1 coupling 90° 1 1/2"

B 1 drain pipe

C 2 holders

D 4 ties



Water Supply (Internal Mixer)

Time necessary to fill tub will be dependent on actual delivery rates.

Actual delivery rates will be dependent on temperature of hot and cold water in facility water supply net and related supply pressure.

Plumbing

This manual contains sets of values for temperature and flow; the min./max. values are there to give you the extremes and are showing the tolerances of the Freedom Bath, we will however also give you a recommended temperature span and your target should be to end up within this span to achieve an optimal function of your product.

Please note that in some countries/states/cities; local variations of recommended values might differ from our recommended values, in this case the local code/rules apply. If the local recommendations fall outside the min./max. values, other solutions will have to be looked into and we ask you to contact your local ARJO representative.

Temperatures

The Freedom Bath contains (optional) a thermostatic mixer that responds very well to differences in the supply line, both temperature and pressure differences.

This mixer will safely ensure that the resident never is exposed to temperatures exceeding 108° F (42° C) even if the maximum specified hot water temperature is supplied. Please note that a few degrees are always "lost" when using a thermostatic mixer and it is therefore recommended to have a higher supply temperature than the wanted bath water temperature.

An important reason for keeping hot supply water really hot is that high temperatures prevents the rapid growth of Legionella in hot water systems. Of the same reason it is important that the cold water temperature is really cold. Of course other methods of reducing the risk of Legionella than regulating temperature can be used.

Pressure and Flow

When designing a bath system with an integrated mixer it is essential to plan for a low filling time and a high temperature accuracy. In the Freedom Bath we did this by installing a combined 3x1/2" pressure and temperature compensating mixer. This mixer allows us to fill the Freedom Bath at a high rate and at the same time ensuring a very stable low flow situation when taking a shower. In order to achieve this we require you follow the recommended values/rates on the supply side. Please see to that the Freedom Bath is fed according to the recommended specifications.

Water connections

G 3/4", Stub-ups must be well sealed not protruding more than 4" above the finished floor. (See figure 1 on next page.) Stub-ups with shut-off valves are recommended.

Flexible water hoses are included in delivery.

Restrictions

Pressure:

Max static: 87 psi (600kPa, 6 bar)

Min. dynamic: 14.5 psi (100kPa, 1 bar)

Flow/supply pipe:

Min.: 6.6 gallons/min (25 l/min)

CW+HW: 13 gallons/min (50 l/min)

Temperature:

Cold water: 36-77°F (2-25°C)

Hot water: 100-176°F (38-80°C)

Recommendations

Pressure:

Dynamic: 29-43.5 psi (200-300kPa, 2-3 bar)

Temperature:

Hot water temperature 114-140°F (45-60°C)

Cold water temperature 41-59°F (5-15°C)

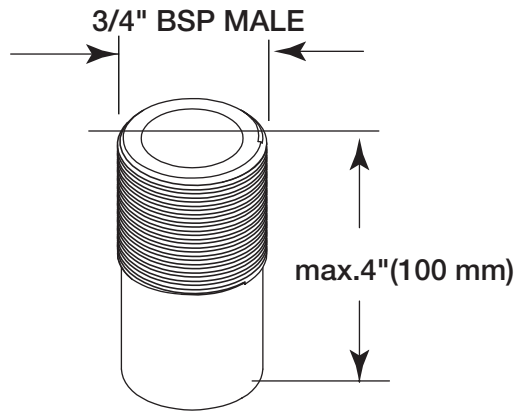


Figure 1

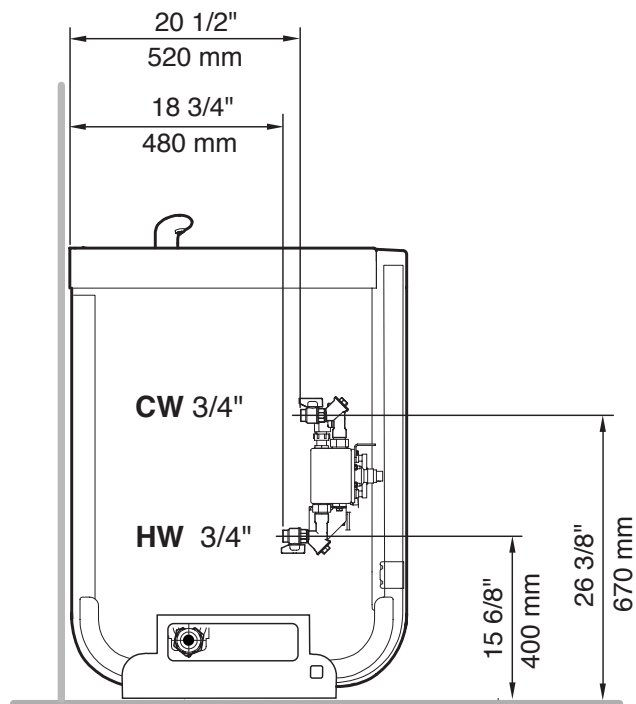
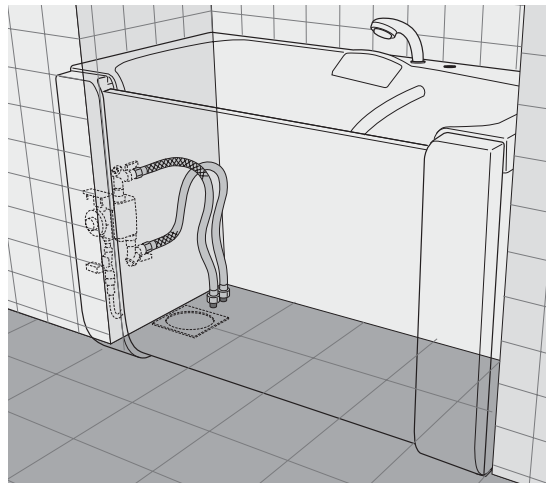
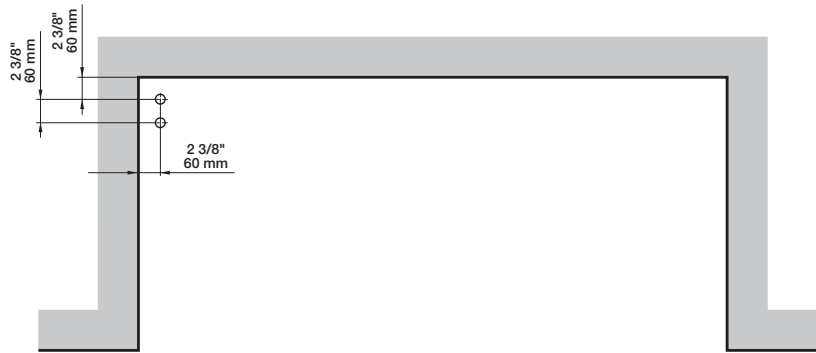


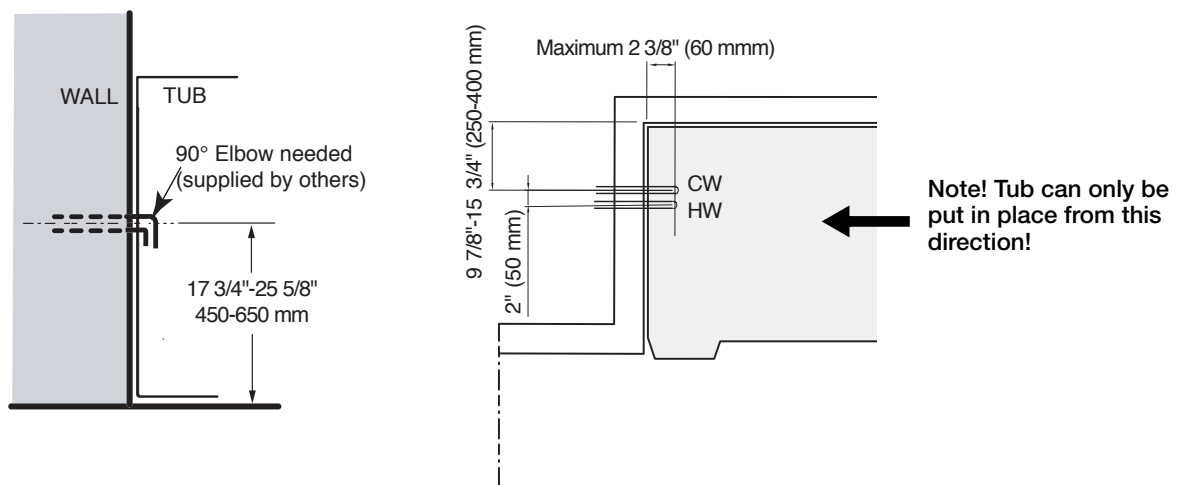
Figure 2

ARJO recommended water supply - floor



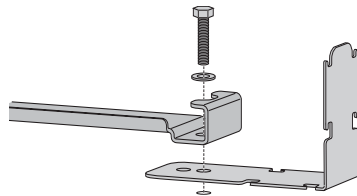
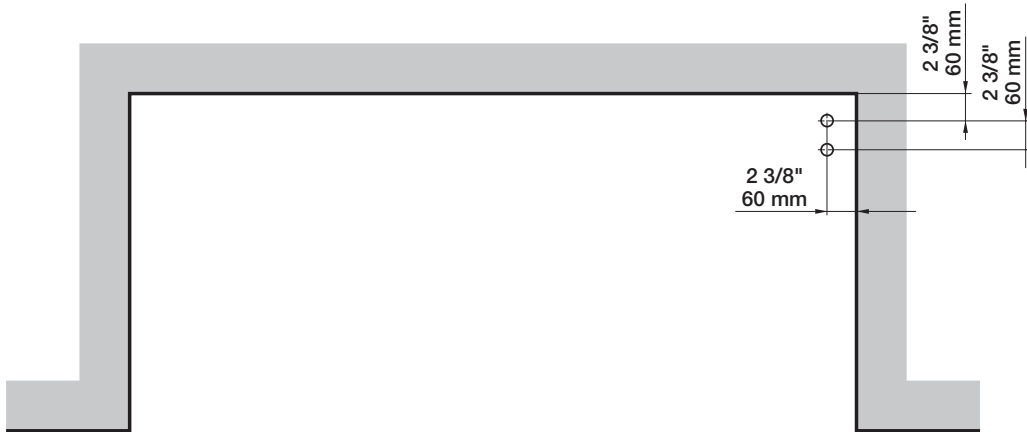
SITE SPECIFIC CHOICE

Water supply - wall, left side of tub

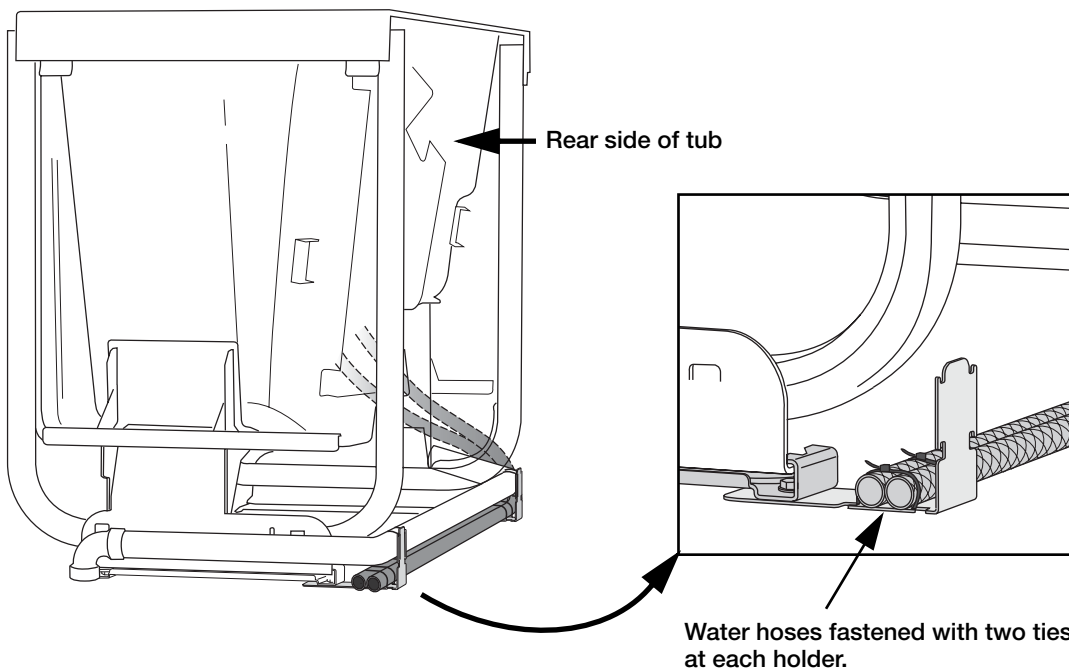


SITE SPECIFIC CHOICE

Water supply - wall, right side of tub. Use kit AFA0025



Holder mounted under rear side of each sliding track.

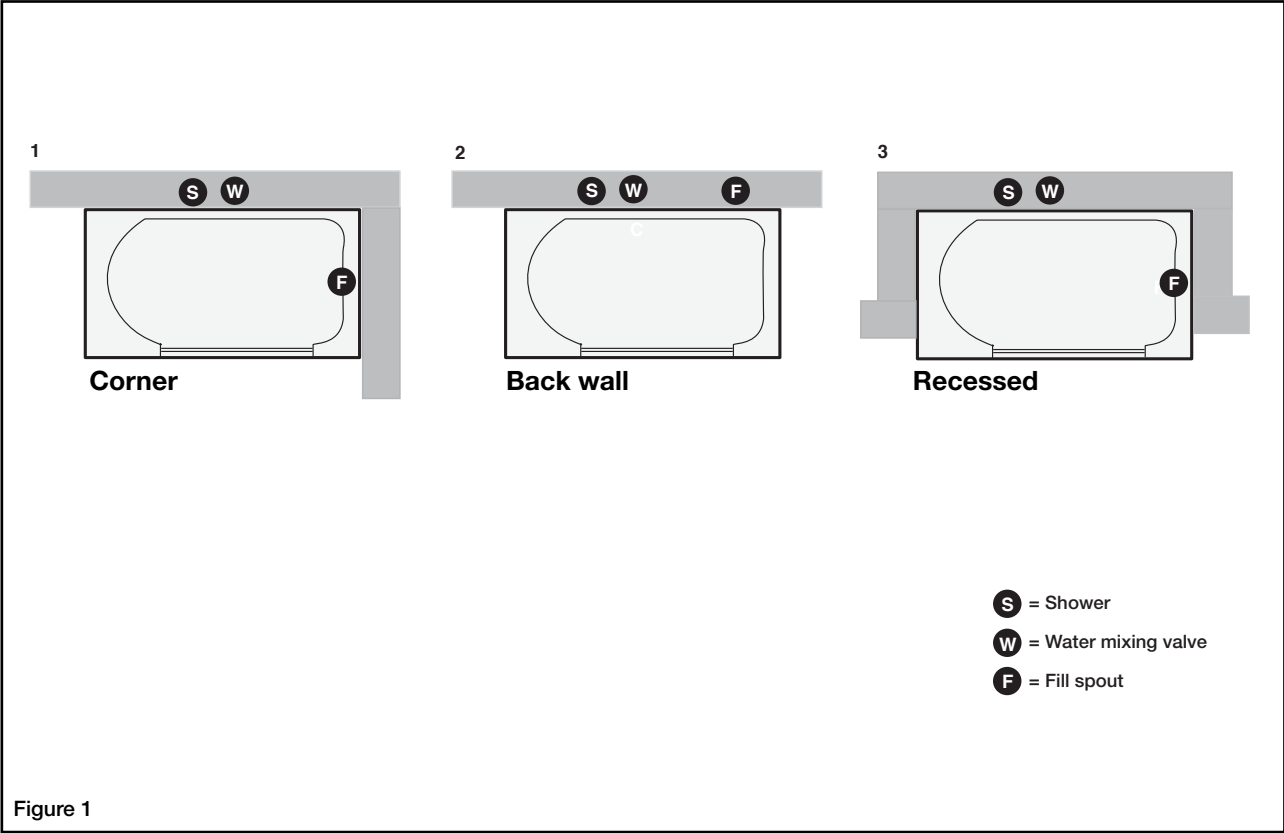


SITE SPECIFIC CHOICE

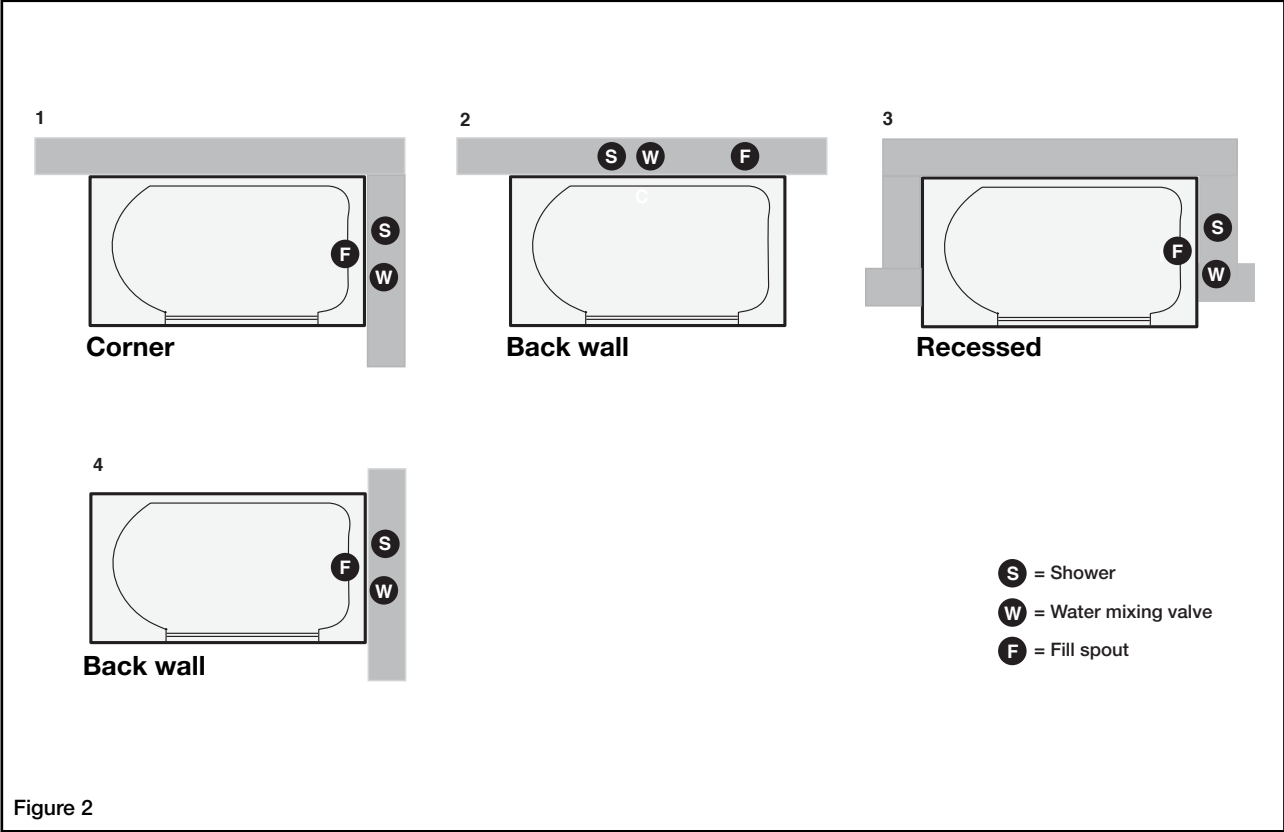


Water Supply (External Mixer)

Unassisted bathing - recommended locations of externally mounted water control



Assisted bathing - recommended locations of externally mounted water control



Drain Installation

Connections must be done in accordance with local regulations.

Restrictions

Min. drainage capacity: 24.6 US gallons/min (100 l/min).

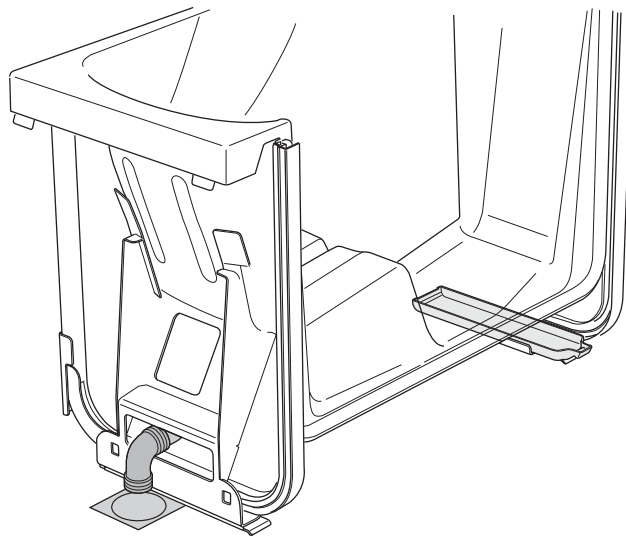
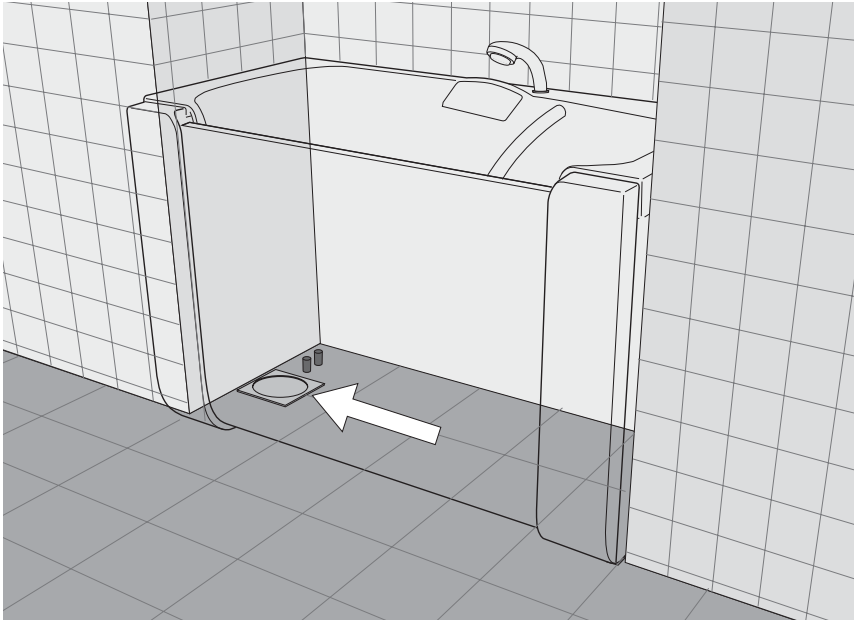
Recommendations

8" floor sink with trap, indirect connection with 3" drain pipe is preferred. A floor sink facilitates maintenance of the tub and eliminates the risk of water damage in case of emergency draining of the tub.

Recommended location of floor sink drain according to measurements in figure on next page.

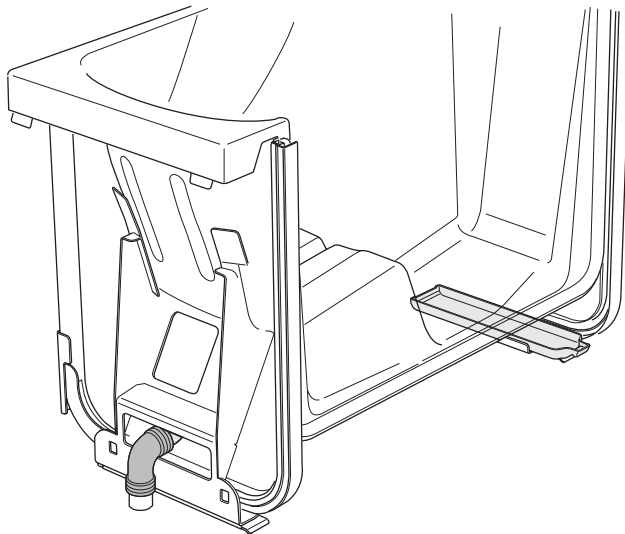
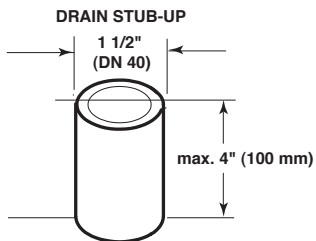
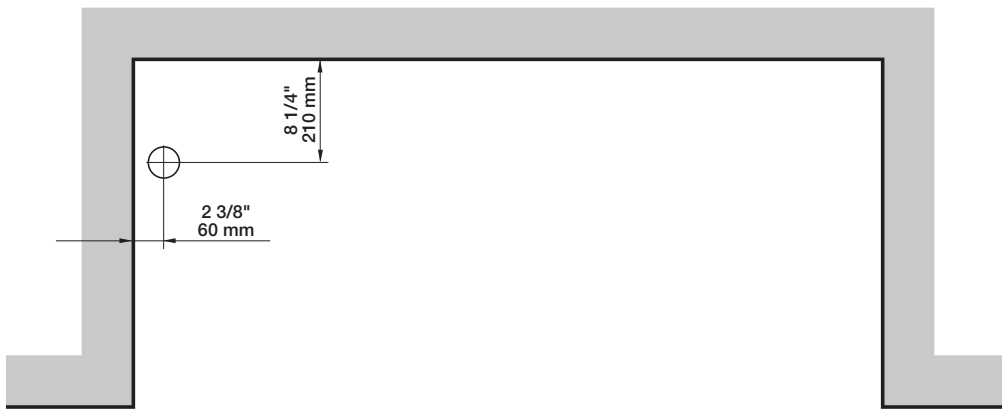
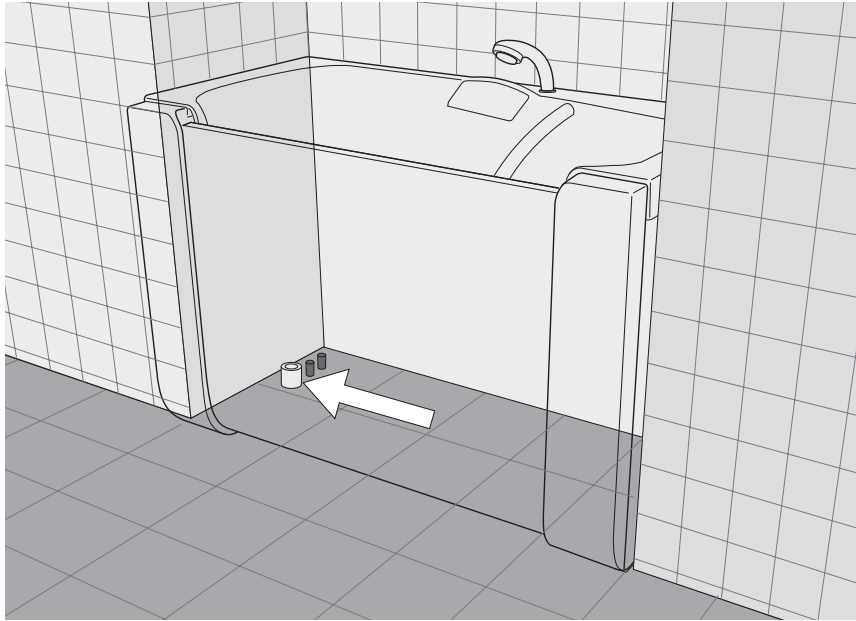
If alternative area for floor sink is chosen be sure the floor sink drain will not interfere with water supply area.

ARJO recommended floor sink drain



SITE SPECIFIC CHOICE

Alternative stub-up connection



SITE SPECIFIC
CHOICE



Power

The unit must be permanently connected to the mains.

When used in USA and Canada: All electrical installations must comply with the US National Electrical Code and the Canadian Electrical Code respectively.

Requirements

The unit shall be permanently connected using the following equipment (not included in delivery):

- Separate external fuse.
- Ground fault circuit interrupter (10mA).
- Safety switch, according to regulations and local codes.
- Mains cable (3x16AWG / 3x1.5 mm²).

Market	Voltage	Frequency	Power consumption
Europe N.America	230/240V single phase AC 120V single phase AC	50Hz 60Hz	max. 800 VA max. 800 VA

Potential equalization.

Freedom Bath is equipped with a potential equalization connection. Connect to the potential equalization connection according to local/national requirements. (See figure 2.)

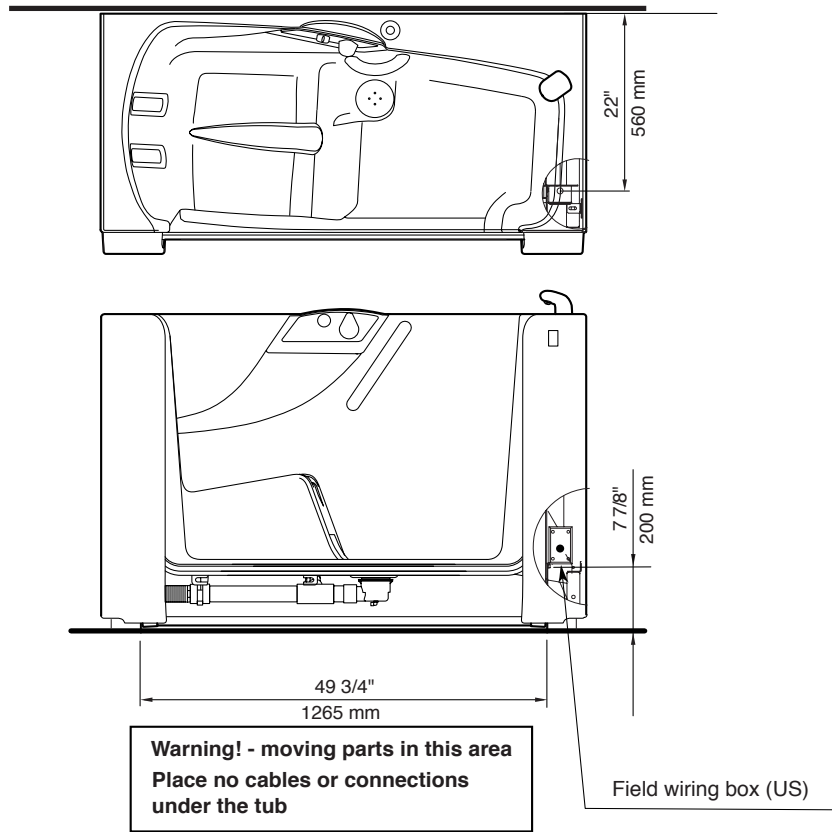


Figure 1

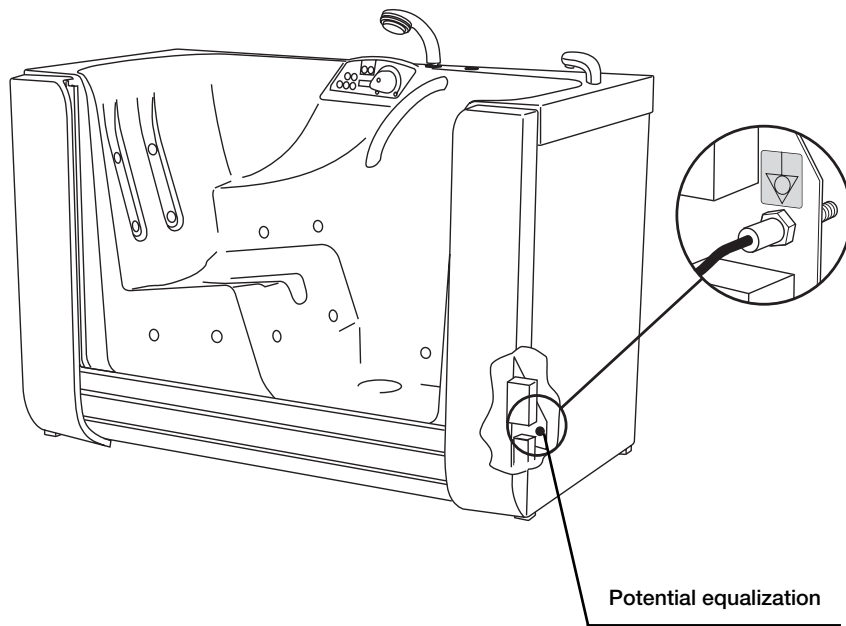


Figure 2

Check Points prior to the Installation

Always make sure that the following check points are fulfilled and completed prior to the installation. Reference to values and other information in this manual.

		Completed
Water cold/hot	pressure, temperature, location, local/national requirements	
Drain	location, capacity, local/national requirements	
Power	fusing, capacity, local/national requirements	
Potential equalization	local/national requirements	
Attachments floor/wall	fittings, local/national requirements	
Floor loads	construction, materials, local/national requirements	
Materials	slip/moisture protection, local/national requirements	
Floor	slope, evenness, thresholds, local/national requirements	
Installation accessibility	doors, measurements	
Space requirements	for personal and patient	
Service accessibility	for maintenance staff and annual service	

Make sure to include these check points in your internal installation activities.



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