



**MFC**International  
by RESPIREX

# Mass Decontamination Shower User Instructions

SA-MA58-02

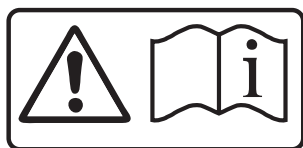




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**⚠ WARNING:** Carefully read this manual before operating the Mass Decontamination Unit.

**NOTICE:** The manufacturer takes no responsibility for the consequences of actions not complying with the instructions given in this manual.

Sales literature and product videos for the Mass Decontamination Shower are available on our website, visit [mfc-international.com](http://mfc-international.com) or scan the QR code opposite.



## Technical Data

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| Technical Data                        |                  |
|---------------------------------------|------------------|
| Product Code                          | DSW027           |
| Length (cm)                           | 726              |
| Int. Length (cm)                      | 726              |
| Width (cm)                            | 452              |
| Int. Width (cm)                       | 406              |
| Height (cm)                           | 302              |
| Int. Height (cm)                      | 278              |
| Int. Floor Area (sq.m)                | 30               |
| Air Requirements (ltr)                | 3800             |
| Max. Water Inlet Pressure (bar)       | 3                |
| Recommended Pump Flow Capacity (ltrs) | 5 l/m per nozzle |
| Pack Size (cm)                        | 160 × 100 × 80   |
| Weight (kg)                           | 140              |
| Number of Shower Nozzles              | 8                |
| Number of Shower Connectors           | 8                |
| Number of Heater Sleeves              | 4                |
| Number of Cable Sleeves               | 8                |

## Decontamination Shower Accessories

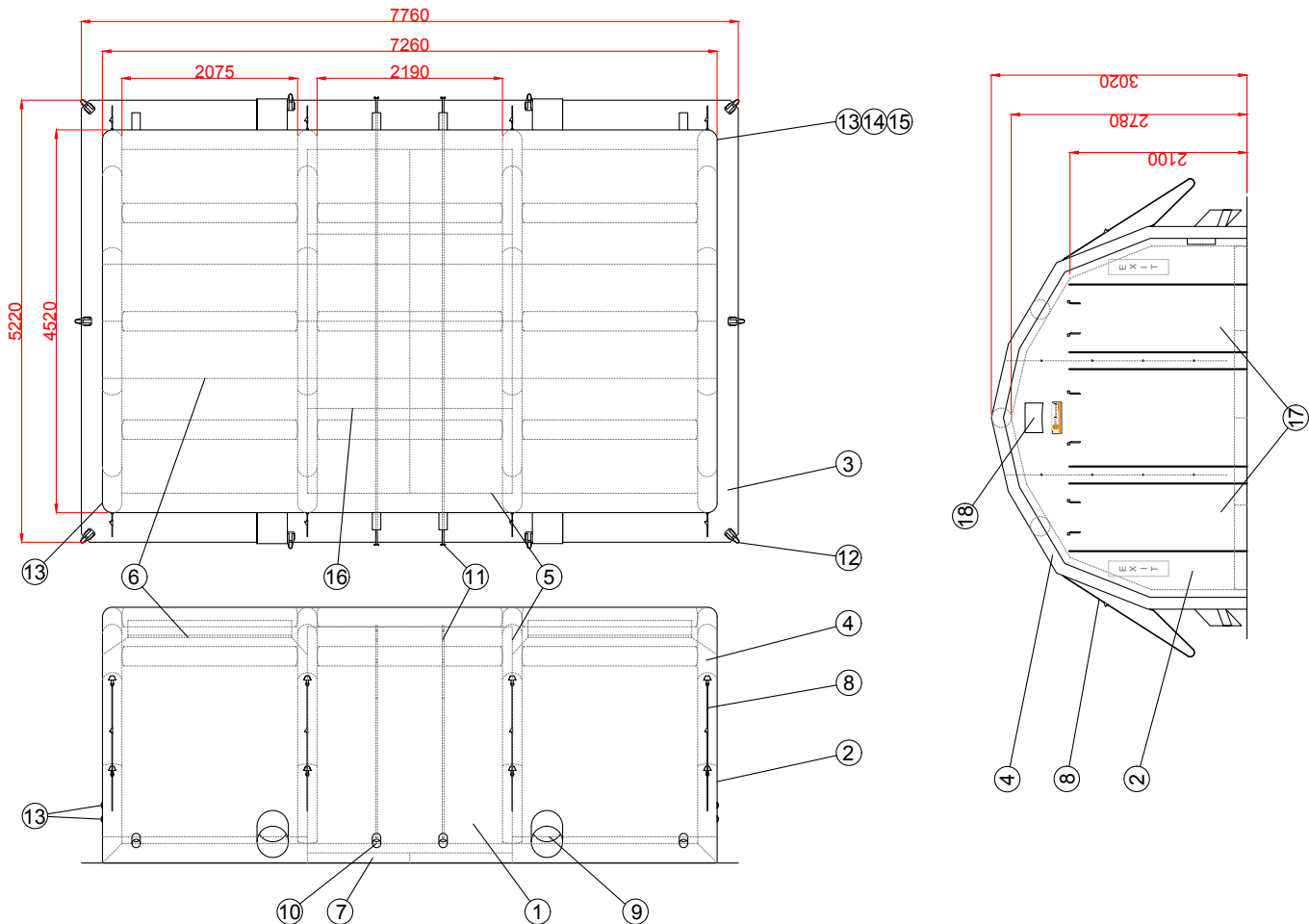
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A range of compatible accessories are available for the Mass Decontamination Shower unit to provide a complete decontamination system. These include:

- Inlet Water Pumps
- Sump Pumps
- Electric Inflators
- Clean & Dirty Water Pillow Tanks
- Clean & Dirty Water Hoses
- Dosatron Dosing System
- Generator
- Raised Flooring Panels
- Spray Guns & Brushes
- Portable Air Heaters
- Water Heaters
- Lighting
- Couplings and Connectors
- Patient Roller Conveyor
- Ballast bags
- Spare Parts

For more information about the accessories available for the mass decontamination shower, please contact our sales team on +44 (0)1443 433 075 or e-mail [sales@mfc-international.com](mailto:sales@mfc-international.com)

## Materials List



| Description                                                                   | P/No.    | Qty |
|-------------------------------------------------------------------------------|----------|-----|
| 1 Detachable canopy (PU coated polyester)                                     | 550030A  | 1   |
| 2 Detachable door panel (PU coated polyester)                                 | 550030B  | 2   |
| 3 Detachable floor (PVC coated nylon)                                         | 570022   | 1   |
| 4 Frame (PU coated polyester)                                                 | 540028   | 1   |
| 5 Shower enclosure                                                            | 550031   | 1   |
| 6 Lane dividers (coated polypropylene)                                        | 530239   | 4   |
| 7 Pallets - (optional)                                                        | 140065   | 6   |
| Pallets - submersible pump opening (optional)                                 | DSA011   | 2   |
| 8 Guy line and runners (polypropylene cord 7mm, reflective/phosphorescent)    | 530132/2 | 8   |
| 9 Heater sleeve (PU coated polyester)                                         | N/A      | 4   |
| 10 Cable sleeve (PU coated polyester)                                         | N/A      | 8   |
| 11 Shower assembly- clean & rinse (PVC hose, plastic fittings, brass nozzles) | 630022   | 2   |
| 12 Loops for ground spikes                                                    | N/A      | 10  |
| 13 Valve - Inflate/Deflate (D7 black acetal)                                  | 50065    | 3   |
| 14 Valve - Relief (A6 black acetal, 0.38 bar/5.5 psi)                         | 50100    | 1   |
| 15 Label - Data                                                               | 160349   | 1   |
| 16 Shower enclosure lane dividers (coated polypropylene)                      | 530240   | 2   |
| 17 Roll up door, C/W zips and ties                                            | N/A      | 5   |
| 18 Vent                                                                       | N/A      | 2   |
| <i>Not Shown:</i>                                                             |          |     |
| 19 Valise (PVC Coated nylon)                                                  |          | 1   |
| 20 Repair kit (tube of adhesive, patches, Tear-Aid patches)                   |          | 1   |

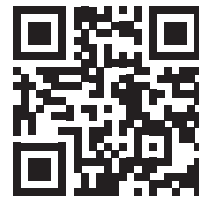


## Operational Instructions

### 1. Deployment

- 1.1. At deployment point, select best site, particularly if a long-term use is anticipated. The surface should be reasonably flat and level, free from stones, sharp objects, or holes in the ground. The surface must be free from oil or chemical spills.
- 1.2. If required, position a groundsheet under the Mass Decontamination Shower before inflation to prevent damage to the sump.
- 1.3. Unpack the shower from its valise and unroll it.
  - 1.3.1. Unfasten the compression straps on the valise and open all sides, folding the flaps back over the valise
  - 1.3.1. Roll the valise over so that the shower is touching the ground and the base of the valise is pointing upwards, then lift off the valise
  - 1.3.1. Position the rolled shower centrally on the width of the groundsheet (if using), and at one end of the groundsheet's length. If necessary rotate the rolled shower so that it will unroll along the length of the ground sheet.
  - 1.3.1. Unroll the shower
  - 1.3.1. With one person at either end of the shower, take a corner each and unfold the first fold of the shower
  - 1.3.1. Repeat for the second fold
  - 1.3.1. Once the shower is unfolded peg the groundsheet loops or attach ballast to the ground sheet prior to commencing inflation
- 1.4. Deploying in windy conditions. To reduce the effect of strong winds on the shelter, it should be positioned, where possible, with the corner of the shelter facing into the wind. Make sure all guy-lines and webbing floor loops are used to secure the shelter to the ground and that a suitable amount of ballast is used

There is a demonstration video on how to unpack and inflate the Mass Decon Shower available on our website, visit [mfc-international.com](http://mfc-international.com) or scan the QR code opposite.



### 2. Preparing for Inflation

- 2.1. Locate the inflate/deflate valves and relief valves on the Mass Decontamination Shower (they are behind a flap with hook and loop fasteners at the entrance and exit of the shower)



*Inflate /Deflate Valve and Cap*



*Pressure Relief Valve*

- 2.2. Remove dust caps from inflate/deflate valves at both the 'entrance' and 'exit' ends; for each valve ensure the central valve diaphragm is closed, i.e. the internal spindle is raised. (push and turn 90° clockwise).

### 3. Inflation using an SCBA Cylinder

Note: Inflating the Mass Decontamination Shower will require at least two full SCBA cylinders

- 3.1. Attach the regulator to the cylinder and tighten securely, then connect the delivery hose to the

Regulator.



- 3.2. Connect the delivery hose to the inflate/deflate valve of the shower



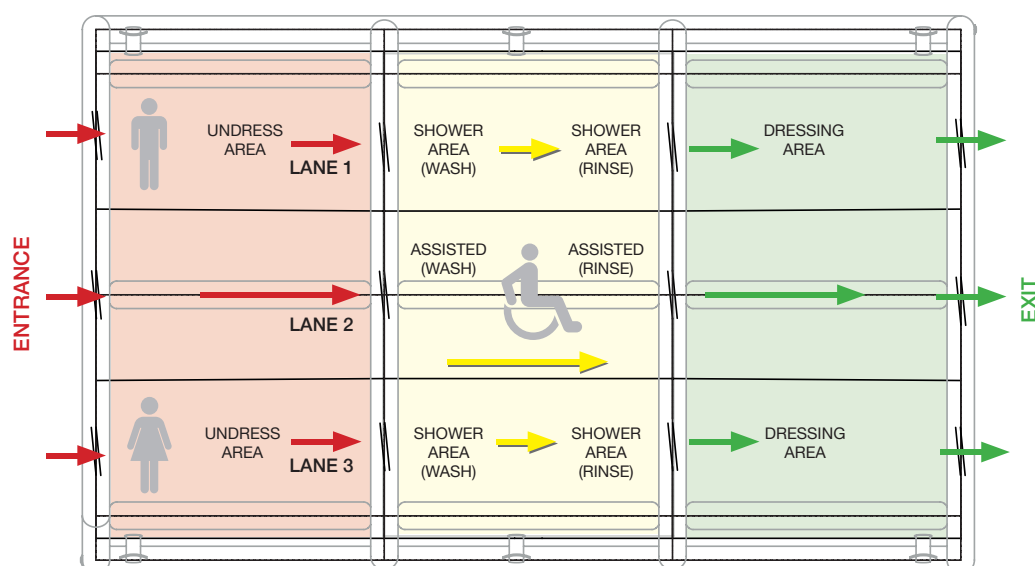
- 3.3. Slowly open the gas cylinder valve - The pressure in the cylinder will now be indicated on the regulators cylinder pressure gauge
- 3.4. [Adjustable regulators only] Set the working pressure by turning the handwheel clockwise until the desired pressure is indicated by the working pressure gauge (Maximum 8 bar recommended)
- 3.5. Slowly open the shut off valve, allowing gas to flow into the delivery hose
- 3.6. Do not disconnect the delivery hose during inflation. ⚠️ WARNING: Failure to do this may result in personal injury.
- 3.7. Inflate the shower until the relief valve activates.
- 3.8. [Adjustable regulators only] Close the handwheel, fully relieve the pressure in the regulator by opening the shut off valve,
- 3.9. Close the shut off valve, then close the cylinder valve.
- 3.10. Disconnect the delivery hose
- 3.11. Ensure the inflate / deflate valve dust cap is replaced to prevent ingress of dirt and water into the valve.
4. Inflation using a manual pump
- 4.1. Fit the correct inlet adapter for the Mass Decontamination Shower's inflate / deflate valve to the manual pump's hose outlet
- 4.2. Attach bellows/pump hose to inflate/deflate valve.
- 4.3. Operate bellows/pump until the relief valve activates.
- 4.4. Remove hose and replace dust cap on inflate/deflate valve.
5. Inflation using an ARS electric inflater
- 5.1. Connect the inflater to the electrical supply (ensure there is RCD protection)

- 5.2. Locate the side of the shelter with two inflate/deflate valves
- 5.3. Connect delivery and sensor hoses to the Mass Decontamination Shower's inflate/deflate valves. The inflate/deflate valve for the sensor hose connection (the smaller clear hose), needs to be open (the deflate position) - press the red spindle down and turn 90° counter clockwise)



- 5.4. Set the required pressure on the pump (380mbar /5.5psi).
  - 5.5. Activate the pump and inflate the frame.
  - 5.6. Keep the pump plugged into the system – it will automatically top-up the air pressure in the shower when required.
6. Anchor points / weights
    - 6.1. Guy ropes are attached to each frame upright so that the Mass Decontamination Shower can be firmly anchored to the ground using pegs or ground anchors. The guy ropes can alternatively be secured to strong points such as trees or vehicles. Peg out the guy lines and adjust the tensioners until they are tight enough to be secure, but with a small amount of slack in the line. Ideally when using pegs or ground anchors the uppermost line should be at an angle of 45 degrees to the ground.
    - 6.2. If using water or sand ballast, position it either where straps are provided, or near the inflated frame. Secure the ballast using the frame ballast straps or attach it to the shower guy lines and adjust the tensioners until they are tight enough to be secure, but with a small amount of slack in the line.
  - 6.3. Internal layout

The shelter is divided into three lanes; two narrower ambulant lanes on either side with a central wider lane for non-ambulant patients. The dividers between each lane can be taken down to create wider lanes if required (these are held by hook and loop fastener at the roof, and poppers on the sides). If creating wider lanes, the doors can be zipped together to create a larger opening central to the lane. The decontamination area can be fully closed from the disrobing and active drying area, stopping water ingress or offering patient control.





**⚠ WARNING:** To prevent possible injury from tripping, care should be taken when stepping into and out of each section of the shower tent.

Observation windows (with blinds) are fitted into the decontamination area, and the assisted isle has a pass through port for handing medical supplies without having to open the shower door.

The canopy, floor, shower enclosure and partitions can be removed from the frame and replaced if required.

Plastic pallets (1.2m x 1.0m) or rubber mats may be placed in shower enclosure to raise the user above the level of the wastewater.

## 7. Shower System

Two shower hose lines (1x wash, 1x rinse) run across the shelter. Each hose line is fitted with:

- 4x spray nozzles with shut off valves (2x nozzles on each ambulant lane)



*Spray nozzle and shut-off valve*

- 4x connection points (2x in the non-ambulant lane and 1x in each ambulant lane), for brushes and/or spray gun. The connection point coupling has an outer 'sleeve' which needs to be pushed back to insert (or remove) the plug coupling of the spray gun or brush.



*Spray gun/brush connection point*

Shower system summary:

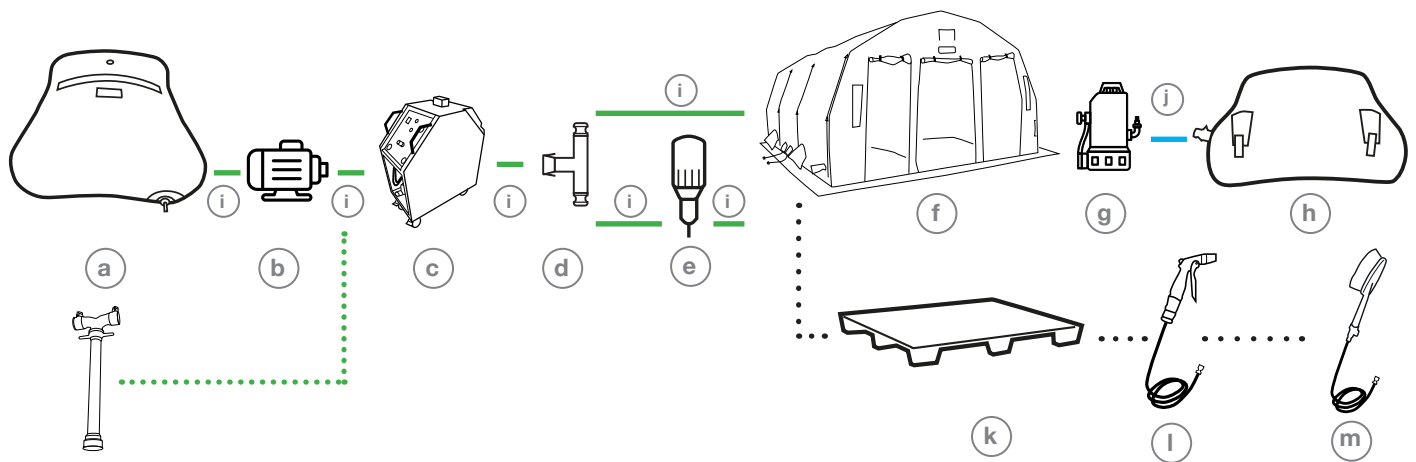
|                   | Wash          |                   | Rinse         |                   | Total         |                   |
|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|
|                   | Spray Nozzles | Connection Points | Spray Nozzles | Connection Points | Spray Nozzles | Connection Points |
| Lane 1            | 2             | 1                 | 2             | 1                 | 4             | 2                 |
| Lane 2 (Assisted) | 0             | 2                 | 0             | 2                 | 0             | 4                 |
| Lane 3            | 2             | 1                 | 2             | 1                 | 4             | 2                 |

The Mass Decontamination Shower can be connected to the water source on either side of the canopy, with the opposite side having a cap on the end of each coupling.

**⚠ WARNING:** Before decontamination of any person commences, we recommend running clean water through the whole system to flush out any contaminants that might be left in the hose from stagnant water

## 8. Wastewater

Waste water can be pumped from the Mass Decontamination Shower sump by passing the pump hose/s through the sleeves on either side of the tent. Additional cable/hose sleeves are fitted in the undressing and dressing areas. Two heater sleeves are fitted at each end of the shower to allow heated air from a suitable heater/s to be pumped into the dressing and disrobing areas. The heated air can circulate into the other areas of the shower.



A typical system set up will consist of the following equipment

- a. Water source: This could be a pillow tank, dam, tender or stand pipe
- b. Inlet pump: Required if the water source has a pressure lower than 2 bar
- c. Water heater: Used to bring the water up to a tepid temperature for showering
- d. T-Piece: Used to split the water supply to the decontamination and rinse sections of the shower (not required if the water heater has 2 or more outlets)
- e. Dosatron: This injects a pre-set dose of detergent or neutraliser into the water for the decontamination (wash) side of the shower (not required if the water heater includes an injector)
- f. Mass Decontamination Shower
- g. Submersible (sump) pump: for extraction of contaminated water from the shower sump
- h. Pillow tank: for collection of dirty/contaminated water
- i. Clean water hoses
- j. Dirty water hose
- k. Raised flooring
- l. Spray gun(s)
- m. Spray brush(es)

*Not Illustrated*

- n. Generator: Petrol or diesel generator for powering all electrical equipment
- o. Lighting: Interior waterproof LED lighting for night time operations
- p. Portable air heater: To provide warm air to the dressing area, which will then flow through and warm the rest of the shower
- q. Electric inflator: For extended deployments an ARS (automatic refill system) inflator can be used. The shower includes two inflation points at one end to allow an ARS inflator to be used.
- r. Ballast bags: Filled with water or sand these are used to secure the shower in windy conditions
- s. Roller conveyor: used for transporting casualties on spine boards through the assisted lane of the shower
- t. Ground sheets: Additional ground sheets for added protection of the shower and pillow tanks

Notes:

- i. The choice of couplings for the system is important; standardising on a single coupling type will simplify set-up
- ii. When choosing electrical equipment (generators, pumps, heaters etc) it is sensible to ensure all equipment is of the same voltage, either 120VAC (which is typically used for outdoor construction and hazardous area equipment) or 230VAC

## Connecting the system

The connection of the system components will depend to a large extent on the specific components chosen. The following is a guide based on the equipment recommended by MFC International - for details of all equipment please contact the sales department on +44 (0)1443 433 075 or email [sales@mfc-international.com](mailto:sales@mfc-international.com)

1. With the water supply turned off, connect the water supply to the inlet pump (if required) with a clean water connection hose, then with another hose connect to the water heater inlet.
2. From the water heater outlet use a T-piece connector (unless the heater has two outlets), and connect one outlet to the Dosatron inlet (unless the heater has an internal dosing unit) with a hose and then from the Dosatron outlet connect to the decontamination side of the shower (the first set of shower nozzles from the entrance).
3. Fit the container with the detergent or neutralising agent underneath the Dosatron and insert the pick up tube; check the dosing level - if necessary, adjust the dose level by rotating the Dosatron locking ring to the unlocked position then turning the adjustment sleeve until the desired dosing ratio is displayed in the grey ring, then turn the locking ring back to the locked position. Finally check the switch on the top of Dosatron is set to mix the cleaning/neutralising agent.
4. Connect the other outlet of the T-piece to the rinse side of the shower with another clean water hose. Check the hose connectors on the opposite side of the shower are capped off.
5. Place the raised flooring into the shower sump, then fit the sump pump into the sump, ensuring it sits on the floor of the shower itself and sits in the lowest corner of the sump. Feed the sump pump's power cable through the nearest cable/hose sleeve.
6. Connect the dirty water hose to the pump and feed outside the shower through the sleeve. Now connect the other end of the dirty water hose to the dirty/contaminated water pillow tank and open the ball valve on the tank.
7. If required, install the roller conveyor in the assisted lane of the shower, taking care that the legs of the conveyor straddle the frame of the shower sump.
8. Connect the spray guns or brushes to the connectors in the assisted lane, and in the unassisted lanes if required.
9. Attach the hot air duct to the portable air heater and feed this through the heater sleeve and secure, ensure the air heater is a safe distance from the shower canopy.
10. With the power switched off, connect the inlet pump, sump pump, air heater and water heater to the electrical distribution block and then connect this to the generator/electrical supply.

## Running the system

1. Close and fasten all the Mass Decontamination Shower inner and outer doors
2. Referring the manufacturers user instructions for the operation of each piece of equipment, start the generator (if using), start the water heater and air heater - these may take some time to come up to temperature - refer to the manufacturers instructions.
3. Turn on the electrical supply to the sump pump, then turn on the water supply (or open the valve on the clean water pillow tank) and finally turn on the electrical supply to the inlet pump. The shower should now be ready to use.

## Packing the Mass Decontamination Shower

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1. After every use, disconnect the water supply hoses, drain any water from the base of the shower sump and allow the shower to dry out.
2. Reef the guy ropes neatly to prevent tangling.
3. Make sure all the zips are open to prevent damage when deflating.
4. To deflate the shower, depress the central spindle in the inflate/deflate valves at each end of the frame, and rotate them 90° counter clockwise (after which the valve will hold in the open position).



5. While the shower is deflating, tuck the vertical tubes on each side of the shower in towards the centre of the canopy



6. Before folding and packing the shower, ensure that as much air as possible has been expelled from the frame. Where possible use the deflation facility of the inflation pump to extract the air from the shower frame – make sure all the other inflate/deflate valves are closed. Once the air has been extracted, open all valves.  
NOTE: To prevent possible damage, do not walk on the deflating shower unit to expel the air.
7. Lay the deflated shower unit so the shower roof is positioned directly in the middle with the sides tucked in towards the centre.



8. From one side, fold approximately one third over, on top of the main frame.





9. Fold the other side over on top of the first. (Use carrying valise for guide to packing width).



10. Roll from the one end, expelling the air through the inflate/deflate valves as you roll.



11. Once the shelter has been fully rolled, place the valise over the rolled shelter and continue to roll until the valise is upright.



12. Fold up the ends of the valise and secure the webbing straps. Complete the packing procedure by folding up the two remaining sides of the valise and secure the webbing straps.



There is a demonstration video on how to pack the Mass Decontamination Shower available on our website, visit [mfc-international.com](http://mfc-international.com) or scan the QR code opposite



## Storage

1. On return to base the Mass Decontamination Shower should be unpacked, inflated, and left to dry. Water should be expelled from the shower hose where possible – this can be done by opening all valves and allowing the water to drain.
2. When the shower unit is completely dry it should be checked for wear or damage. If none is found it should be repacked in the valise (see Packing the mass decontamination shower section).
3. If any damage is found it should be repaired immediately in accordance with the repair instructions located on page 15.
4. The packed shower should be stored off the ground in a cool, dry location away from direct sunlight and heat sources such as hot pipes or stoves.

## Maintenance & Test Procedures

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### Cleaning

This should be carried out using soap and water.

**WARNING:** To prevent possible damage, do not use strong detergents, bleach, or any type of hydrocarbons.

If the Mass Decontamination Shower canopy or partitions become excessively contaminated, and cannot easily be decontaminated, they should be removed and incinerated. A replacement shower canopy or partitions can be sourced from the manufacturer.

### Shower system fittings and hoses

The holes in the shower heads may become partially blocked with sediment over a period of time. This may be rectified by unscrewing the brass nozzles and cleaning the parts with soap and water, thoroughly dry the parts before reassembly. Ensure any sealing washers or PTFE tap are refitted. Check hoses and fittings for leaks and repair / replace as necessary.

**⚠ WARNING:** To prevent possible damage. Do not use strong detergents, bleach, or any type of hydrocarbons.

## Quarterly Inspection & Maintenance

1. Check control equipment as per relevant user manual.
2. Inflate shower unit to working pressure.
3. Check audible relief valve operation. If using an ARS inflater, set the target pressure for the inflater higher than the operating pressure of the shelter (380mbar /5.5psi)
4. While the shower is inflating, check connections and valves for leaks using brush and soapy water (keep the electric inflater away from any water).
5. When relief valve has operated, and the unit is at working pressure; it can be left to stand for a length of time that would be comparable to an operational situation (e.g. 6 to 8 hours).
6. After this time, the shower unit should still be firm.
7. If the shower frame has become soft, the air-loss should be located by applying a soapy-water solution.
8. Any significant leaks (see below) should be marked and repaired using the repair kit provided.
9. Check shower hoses and fittings for leaks, and repair / replace as necessary.

## Recommendations

Shower units should undergo an annual test carried out by the manufacturer, or persons certified by the manufacturer. If in doubt, contact the service department.

## Repairs

As a rule, punctures and other damage will need to be assessed in two categories.

1. Repairs that are manageable at the base workshop will be minor punctures to any area of the Mass Decontamination Shower. These can normally be repaired by the application of a small repair patch.
2. Repairs that should be carried out by MFC will be the more serious kind, such as damaged valves, badly torn fabric and the replacement of damaged fittings.

If in doubt as to the extent of the damage and the level of repairs necessary, please contact the MFC service department on +44 (0)1443 433 075.

## Trouble shooting

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### No water from the shower nozzles

- Is the electrical supply to the pump turned on
- Are the shut off valves on each shower head turned on
- Is the inlet pump primed - Disconnect the pump outlet and check that water flows when the pump is on.
- Is the supply valve on the pillow tank or water source open
- Are the shower nozzles blocked - unscrew and clean with soap and water

### The shower will not fully inflate

- Are all of the inflate/deflate valves closed (check all valves on the entry and exit sides of the shower - three valves in total)
- If using an ARS inflater the valve that the sensor (clear) hose connects needs to be open - ensure there is no air escaping from the valve connector or at the inflater
- Is there dirt in the inflate/deflate valve allowing air to escape
- Is the frame damaged - can you feel air escaping from any part of the frame



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