Instructions For Use

Mustang® Q XT5000 Stand and Lifting Handle Assembly
Assembly and Installation Procedures
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Introduction
These instructions are for the use of suitably trained personnel familiar with safe working practices.

Safety Conventions in this Manual

 CAUTION! Identifies a situation that may cause system or filter damage and may pose a safety risk that can cause personal injury.

 WARNING! Identifies a dangerous or potentially dangerous situation that may cause irreversible damage to equipment and poses a safety risk that can cause serious personal injury.

User Responsibility

- Ensure that all personnel employ safe working practices when handling and installing all items or pressure equipment.
- Excessive pipe loads should be avoided when mounting the capsules in their operating position.
- It is imperative that not more than two upper units be placed on a base unit.
- The stand assembly must be positioned on a flat, even surface when in operation.
- The brakes must be applied when in operation.
- The assembly should be dismantled if the assembly is to be moved.
- Do not move at speed — walking pace only.
- Load stand assemblies from ground up — load capsules using the associated lifting handle (Part Number XT5000H100) from the base unit upwards only.

Section A: Stand

1. Description

The stand assembly has been designed to hold up to three Pall Mustang Q XT5000 chromatography capsules (Part Number XT5000MSTGQP1). A stand assembly consists of a lower section (Part Number XT5000B100) and up to two upper sections (Part Number XT5000T100) for assembly by the customer. The lower section consists of four vertical tubes located by three fixed supports. A braked swivel caster is attached to the lower end of each tube. The upper sections are of a similar construction to the base section but without the casters. The lower ends of the upper tubes are designed to fit over the base unit tubes in a stacking fashion. A maximum of two upper sections can be added to the base unit. Each section has a fixed support plate and an adjustable floating plate.

Once loaded into the stand, the capsules are connected by plastic piping (supplied separately). Capsules can be connected by straight piping or a tee. The tee can be fitted with a pressure gauge for monitoring pressure drop.

Correct flow direction is from bottom to top (against gravity).
2. **Specifications**
Refer to the general arrangement drawing and the sales drawing.

3. **Receipt of Equipment**
Dispose of the packaging according to national and local environmental procedures.

4. **Health and Safety**
1. Ensure that assistance is used for heavy loads.
2. Ensure that suitable lifting devices are used; i.e., use lifting handle (Part Number XT5000H100 supplied separately).
3. Ensure that suitable platforms are used for safe working height.

5. **Assembling the Stand**
The assembly of the base and upper units and the installation of capsules should be undertaken by two persons.

5.1 **Fitting Base Unit Capsule**

1. Position base unit on the floor and apply the caster brakes where fitted (Figure 1).

   **WARNING!** Ensure that stands are on level ground and all wheels securely locked before use.
   Do not climb on stand or use for support.
   Do not move stand when attached to system pipework.

2. Install the bottom capsule as follows:
   (i) Open the two safety hinges.
   (ii) Attach the lifting handle to the capsule. Refer to Section B: Lifting Handle.
   (iii) Lift the capsule into position above the support plate.
   (iv) Orient the capsule to allow the drain valve to pass through central cut-out.
   (v) Carefully move the capsule into the base unit, ensuring that it sits centrally on the support plate.
   (vi) Lock the safety hinges together to prevent capsule displacement.
   (vii) Remove the capsule inlet and outlet protective caps and inner dust caps. Retain all caps for later use when removing capsules from the stand.
3. If one capsule only is to be used, connect the following components (not supplied).
   (i) Connect a 90° elbow with sanitary fittings (38 mm [1.5 in.]) to the Inlet and Outlet openings of the capsule.
   (ii) Connect a matching tee with sanitary fittings (38 mm [1.5 in.]) to each of the 90° elbows that were attached to the Inlet and Outlet openings in the previous step.
   (iii) Attach a suitable pressure gauge with sanitary fittings to each of the tees from Step ii.
   (iv) Connect the process feed delivery tubing to the capsule Inlet tee fitting.
   (v) Connect the capsule Outlet tee to the downstream plumbing.
   (vi) Attach a clear, flexible tube (ID = 6.35 mm [¼ in.]) to the air vent valve on the Outlet side (top) of the capsule.

   Make sure that the length of the tubing is long enough to empty into a container. Connect the Inlet and Outlet pipework to the capsule using the recommended plastic sanitary connections and clamps.

   **CAUTION!** Ensure that Inlet connection is at the bottom, and Outlet is at the top of the capsule.

5.2 Fitting Upper Capsules

   **WARNING!** Do not stack base unit with more than two upper sections (Figure 2).

   1. Using a two person lift, lift the upper unit into position above the base unit, ensuring that the cut-out faces forwards.
   2. Lower the upper unit until the upper unit knurled height adjusters fit over and rest on the top of the base unit poles.
   3. Attach the lifting handle to the capsule. (Refer to Section B: Lifting Handle).
   4. Lift the upper capsule into position on the upper unit support plate. Ensure that it sits centrally on the plate. The use of mechanical lifting equipment is recommended.

5.3 Connecting the Capsules

   1. Connect a tee with sanitary fittings (38 mm [1.5 in.]) to the bottom of the capsule in the bottom (lowest) position (tee is upside down).
   2. Using the four knurled height adjusters fitted to the base of the upper unit uprights adjust the height of the upper capsules so that a 140 mm (5.5 in.) plastic tee or straight pipe can slide between the two sanitary connections and seals without any pre-loading of the connection. The use of a level may assist in setting the height of the capsules.
   3. Connect tees with sanitary fittings (38 mm [1.5 in.]) in between the bottom and middle (or top, if two capsules) and middle and top capsules (tees are sideways).
   4. Connect a tee with sanitary fittings (38 mm [1.5 in.]) to the top of the capsule in the highest position (tee is upright).
5. Attach a suitable pressure gauge with sanitary fittings to each of the tees from Steps 1 to 3.
6. Connect the process feed delivery tubing to the capsule Inlet (lowest) tee fitting.
7. Connect the capsule Outlet (highest) tee to the downstream plumbing.
8. Attach a clear, flexible tube (ID = 6.35 mm [¼ in.]) to the air vent valve on the Outlet side (top) of the capsule. Make sure that the length of the tubing is long enough to empty into a container. Connect the Inlet and Outlet pipework to the capsule using the recommended plastic sanitary connections and clamps.
9. Lock the safety hinges together to prevent displacement of the capsule.

**WARNING!** Under no circumstances should a third upper unit be fitted.

6. **Dismantling the Stand**

**CAUTION!** Dismantling of the stand should be undertaken by two persons.

1. Isolate the capsules from the system.
2. Depressurize the capsules by operating the capsule vents.
3. Drain the capsules by operating the capsule drains.
4. When all pressure has been removed, disconnect pipework and connections to and from the capsules. Refit dust caps and endcaps.
5. Remove the capsules from the stand sections.
6. Using a two person lift, lift the upper frame from the stand. A soft-faced mallet may be required to ease the connecting tube ends apart. Do not use excessive force.
7. If two sections are used with the base unit, remove the center section in a similar manner.
8. Dispose of used capsules in accordance with national and local environmental procedures.

**Section B: Lifting Handle**

7. **Description**

The handle for the Mustang Q XT5000 Capsule (Part Number XT5000MSTGQP1) is manufactured from stainless steel and it is to be used for installing or removing capsules from the Mustang Q XT5000 Stand. The handle is supplied with three M10 hexagon headed bolts for securing the handle to an individual capsule.

8. ** Specifications**

Refer to the general arrangement drawing and the sales drawing.

9. **Receipt of Equipment**

Dispose of the packaging according to national and local environmental procedures.

10. **Health and Safety**

**CAUTION!** Ensure assistance is used for heavy loads. Ensure that lifting handle is attached securely to capsule before lifting operations take place. Ensure suitable platforms are used for safe working height.
11. **Attaching the Handle Assembly**

1. Position the handle with the tubular ring uppermost on the top of the Mustang capsule.
2. Position the handle cut-away around the capsule vent valve aligning the three holes with the capsule threaded holes.
3. Secure the handle to the capsule using the three M10 hexagon headed bolts supplied. Tighten bolts hand tight only. Do not over-tighten bolts.
4. Removal of the handle is the reverse of fitting.
5. Handles may remain fitted to the capsules if sufficient handles are available as capsules.

Refer to **Section A: Stand** for details of loading and unloading the capsules.

**Figure 3**
*Handle (Part Number XT5000H100)*

12. **Maintenance**

Clean the assembly and inspect for signs of damage or corrosion. There are no spare parts available for the assembly.

13. **Scientific and Laboratory Services**

Pall operates a technical service team to assist in the application of our filter products. The service is available to you and we encourage your questions so that we can help. In addition, a full network of technical representatives are available throughout the world.

14. **Ordering Information**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand base unit (lower section)</td>
<td>XT5000B100</td>
</tr>
<tr>
<td>Top (upper) section</td>
<td>XT5000T100</td>
</tr>
<tr>
<td>Lifting handle</td>
<td>XT5000H100</td>
</tr>
</tbody>
</table>

For details of available spare parts, please contact Pall or your local Pall representative.
Technical Addendum for ATEX 94/9/EC Pall Encapsulated Filter Assemblies

Installation and maintenance should be undertaken by a competent person. National and local codes of practice, environmental regulations and Health and Safety directives must be adhered to and take precedence over any stated or implied practices within this document.

For fluids having low conductivity, there exist the possibility of the generation of static electricity during use with polymeric components. This could potentially lead to a static electricity discharge resulting in the ignition of a potentially explosive atmosphere where such an atmosphere is present. These Pall products are not suitable for use with such low conductivity fluids in an environment that includes flammable liquids or a potentially explosive atmosphere.

Where flammable or reactive fluids are being processed through a Pall capsule assembly, the user should ensure that spillages during filling, venting, depressurizing, draining and capsule change operations are minimized, contained or directed to a safe area. In particular, the user should ensure that flammable fluids are not exposed to surfaces at a temperature that may ignite the fluid, and that reactive fluids cannot contact incompatible materials that may lead to reactions generating heat, flame or that are otherwise undesirable.

Pall capsule assemblies do not generate heat, but during the processing of high temperature fluids, including steam sterilization operations and process upset conditions, it will take on the temperature of the fluid being processed. The user should ensure that this temperature is acceptable for the area in which the filter is to be operated, or that suitable protective measures are employed. When processing flammable fluids, the user should ensure that any air is fully purged from within the assembly during filling and subsequent operation to prevent the formation of a potentially flammable or explosive vapor/air mixture inside the equipment. This can be achieved through careful venting of the assembly or system as detailed in the user instructions.

To prevent damage or degradation which may result in leakage of fluids from this equipment it is imperative that the end user check the suitability of all materials of construction (including seals on the connections where appropriate) with the process fluid and conditions. The user should ensure that the assembly is regularly inspected for damage and leaks, which should be promptly corrected, and that seals (where appropriate) are renewed after every capsule change.

Leakage of flammable or reactive fluids from this assembly, arising through incorrect installation or damage to the equipment (including any seals), may generate a source of ignition if flammable fluids are exposed to a heated surface, or if reactive fluids contact incompatible materials that may lead to reactions generating heat, flame or that are otherwise undesirable. The user should ensure that the assembly is regularly inspected for damage and leaks, which should be promptly corrected, and that any seals are renewed after every filter change.

The user should ensure that these products are protected from foreseeable mechanical damage that might cause such leakage, including impact and abrasion.

Should you have any questions, please contact your Pall representative.