

## Installation Guide

For the longevity of your reactor system, it is crucial to carefully scrutinize, handle, and install it correctly. If you plan on installing a reactor into a system, it's important to read this guide thoroughly and follow its instructions. However, you are still responsible for properly inspecting, managing, and installing the reactor. Failure to do so may damage the reactor, leading to mechanical failure, property damage, or injury. If you encounter any conflicts between this guide and the system supplier's recommendations, seek assistance from Techinstro.

### Handling, Receiving, and Inspection

Many laboratories prefer Techinstro Reactors due to their durability and extended lifespan. Handling and installing them correctly is crucial to prevent any malfunctions while in use. To avoid any problems, following the precautions provided below is mandatory.

1. To avoid any damage to the reactor, it's crucial not to insert anything into the bore under pressure when lifting or moving it. The reactor should only be removed when the pressure is at atmospheric levels. Carelessly lifting the reactor in any other way may cause permanent damage.
2. To prevent damage, it's essential to avoid scratching the interior surface of the reactor, especially in the area where the head components must seal to the reactor body, including the serrations inside the reactor bore.
3. To prevent potential damage to the reactor's interior, it's important to place reaction mass inside and avoid placing any tools or other objects.
4. Ensure that you do not drop the reactor or let it come into contact with other objects to prevent any damage that may cause the reactor to fail.
5. To ensure the longevity of the reactor, it's best to avoid applying unnecessary pressure on its shell. While it can withstand some misalignment, subjecting it to excessive stress may lead to leakage during operation.

### Impact Damage

If the reactor part's exterior is damaged, it may result in early failure. If any damage occurs during shipment, it must be reported to the shipping company immediately. Minor damage that only affects the paint won't affect the performance significantly, but deep gouging should be inspected before placing the reactor in service. If you need clarification, please reach out to Techinstro for assistance.

### Mounting the Accessories

This section covers how to mount all accessories to the pressure reactor. If it's your first time mounting a reactor, please refer to the recommendations provided.

### Installation

1. To ensure proper reactor positioning, ensure enough space to access both ends. Additionally, place the gas inlet and vent ports on opposite ends.
2. As previously mentioned, please adhere to all relevant handling, receiving, and inspecting guidelines.

3. To ensure the system piping does not strain the reactor, it's best to position it in a way that minimizes any stress. We recommend mounting the trolley on a flat surface and placing the feed or concentrate ports in a location that allows easy piping connections without causing undue pressure. Additionally, any components attached to the head assembly should be supported independently.
4. To assemble the equipment, refer to the GA drawing and connect the Motor, Pressure Gauges, Heater, and other loose accessories accordingly. Make sure the coupling between the motor and Magnetic drives is appropriately aligned. Connect all cables to the Control Panel, including the Motor, Heater, RTD Sensor, and cooling Pump.
5. Before proceeding, make sure that the earthing has been completed as required and that the control panel shows an "ALL OK" signal. If the "ALL OK" signal does not appear, follow the instructions and double-check the main cable connection. Also, ensure that the main power supply meets the recommended guidelines mentioned on the back side of the Control Panel.
6. For proper usage, make sure to tighten the flexible hose connection between the gas cylinder and gas inlet port to prevent bending or twisting of the hose.

### **Head Removal Procedure**

This guide serves as a supplement to ensure safe operation and longevity of equipment. We advise that only qualified engineers or experienced mechanics who have worked with pressure vessels or high-pressure equipment should perform the following tasks.

#### **Step 1: Switch OFF the control panel and de-pressurize the system**

Turn off the system and take all necessary actions to release the pressure from the vessel.

#### **Step 2: Disconnect Cooling Hose Piping and Cables from the control panel**

To safely proceed, first disconnect the cooling hose pipe from the quick-release coupling. Then, remove all cable connections from the control panel.

#### **Step 3: Disconnect the Motor assembly**

First, to move the Motor assembly to the opposite side of the control panel, loosen the Locking handle on the Pillar drive.

#### **Step 4: Loose Clamp Bolts and remove the head assembly**

To remove the Body clamp and head assembly from the vessel body, loosen the clamp bolt in a criss-cross pattern. Put them on the headrest on the Vessel trolley. Look for any rust or harm on the end closure. If there is any, clean it with a brush and rinse with clean water. If necessary, buy new parts and seals.