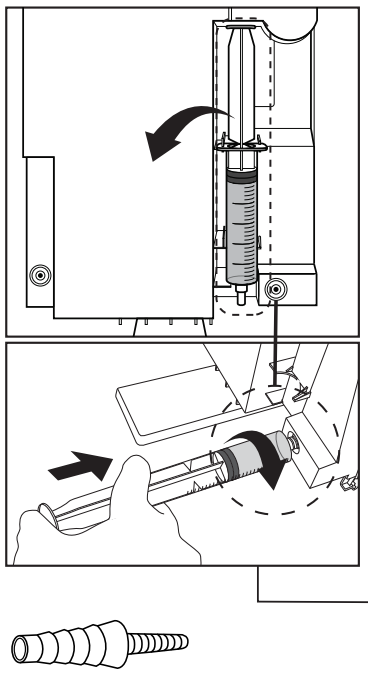
# Dry Seal Chest Drain

## INSTRUCTIONS FOR USE EN

REF ST382-0001
Catalogue Number

**fig. 1** Back side (right)



No. 3 (step-down): 8-12 Fr

**fig. 2**

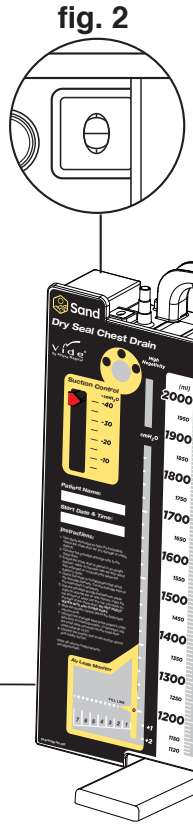


**fig. 3**




(16-40 Fr)

## Indications for Use

- To evacuate air and/or fluid from the chest cavity or mediastinum.
- To help re-establish lung expansion and restore breathing dynamics.

## Precautions:

- Ensure the chest drain is placed on the floor (with floor stand fully rotated) or hung securely on the bedside below patient's chest in an upright position before use.
- If sterile water is to be used for air leak chamber (to visual air leak), do not overfill the chamber above the 2cm fill line.
- Replace chest drain if damaged or when collection volume capacity is exceeded.
- Do not use if device or package is damaged.
- Practitioners must be familiar with thoracic surgical procedures and techniques before starting to use the chest drain.

## Warnings:

- Do not collect fluids for I.V. or for autotransfusion. For chest drainage only.
- Do not obstruct the automatic positive pressure release valve at the top of the drain. Blocking or closing may cause tension pneumothorax or respiratory function may be jeopardized.
- Do not activate the high negativity relief valve when suction is not operating or on gravity drainage. This may open the pleural space to atmospheric pressure and respiratory function may be jeopardized.
- Do not separate drainage tube before clamping off drainage tube first. This may open the pleural space to atmospheric pressure and respiratory function may be jeopardized.
- Do not clamp drainage tube closed during drain collection or patient transport. It will prevent drain operation and respiratory function may be jeopardized if fluid drainage is stopped or an active pneumothorax is present.
- Do not puncture patient tube with needle. This may open the pleural space to atmospheric pressure and respiratory function may be jeopardized.
- Do not reuse, reprocess or resterilize. Doing so may compromise the structural integrity of the device and/or lead to device failure which may result in patient injury, illness or death.
- Whenever possible please use the inline needle-less sampling port. We recommend to withdraw the sample at self-sealing sampling port provided by using a 24 gauge or smaller needle. It is possible to withdraw the sample by puncturing the patient tube with 24 gauge or smaller needle at a 45 degree angle. However, we do not recommend puncturing patient tube or with a 23 gauge or larger needle (at 90 degree angle). This may open intrapleural space to atmospheric pressure and jeopardize respiratory function. Need to ensure care is taken when puncturing the patient tube to avoid injuries to the practitioner.

## Contraindications

- In general the use of chest drains do not have any contraindications. Contraindications for tube thoracostomy (or chest tube insertion) would include refractory coagulopathy and presence of a diaphragmatic hernia, as well as hepatic hydrothorax. Additional contraindications include scarring in the pleural space (adhesions).

## Instructions

1. Using sterile technique, open the packaging and unfold the sterile wrap. Inspect the chest drain for any damages and visual defects.
2. Connect the provided drainage tube to the chest drain.
3. Ensure the chest drain is placed in an upright position on the floor (with the floor stand fully swung out) or hung securely below the patient's chest.
4. Ensure there is no dependent loop along the drainage pathway, and coil the drainage tube on the chest drain if necessary.
5. To activate the air leak monitor, use the provided pre-filled syringe. Remove cap from syringe and completely inject the sterile water through the luer-lock connector on the back of chest drain. **DO NOT INJECT WATER INTO ANY OTHER PORT (fig. 1).**
6. Slide the suction control dial to the prescribed vacuum level.
7. Connect the drainage tube to the patient's chest tube, prior to initiating suction.
8. Connect the suction port to the suction source and turn on the suction. To achieve most accurate vacuum level, use a vacuum source with flow rate greater than **25 LPM with at least -80mmHg vacuum level.**

## During Operation

- The automatic positive pressure relief valve opens automatically at low positive intrapleural pressure **(fig. 2)**. It is designed to eliminate tension pneumothorax in case of blocked suction source or obstructed suction tubing. **DO NOT OBSTRUCT OR COVER THIS VALVE DURING USE.**
- The manual high negative relief valve is designed as a manual intervention should intrapleural pressure experience an abnormally high level. Pressing it will lower the negative pressure water column and the intrapleural pressure **(fig. 3)**. **DO NOT USE MANUAL VENTING WHEN SUCTION IS NOT OPERATING OR WHEN PATIENT IS ON GRAVITY DRAINAGE.**
- The air leak monitor has a 7-scale graduation. Bubbling indicates the presence of air leak.
- Sample Collection – fresh fluid sample can either be collected using a luer-lock syringe on the inline needle-less sampling port on the drainage tube or through the sampling port on the back of the collection chamber. In both cases, engage the syringe to the sampling port. Pull the plunger to draw fluid out. The sampling ports are self-sealing **(fig. 4)**.

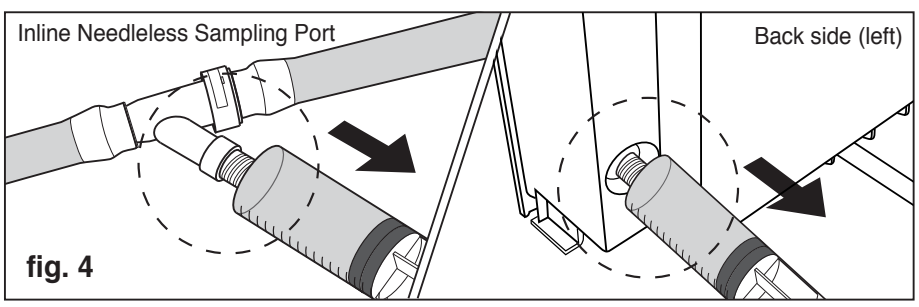



**fig. 4**

**Do not milk or strip the drainage tube as this would create unexpected pressure change in the pleural space.**

## Automatic High Negativity Release

- Vide dry seal chest drainage unit consists of an automatic high negativity relief valve. The automatic high negativity relief valve limits the pressure to approximately **-80 cmH20 (59 mmHg)** before it gets released.

## Changing and Disposal

- Disconnect the suction source from the chest drain before changing a new chest drain to the patient or upon time of disposal.
- Disengage the chest drain from the patient chest tube quick disconnect port located on the inline needle-less sampling port.

## Glossary of Symbols


See Video