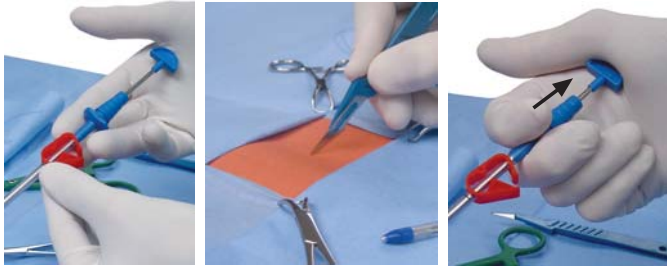
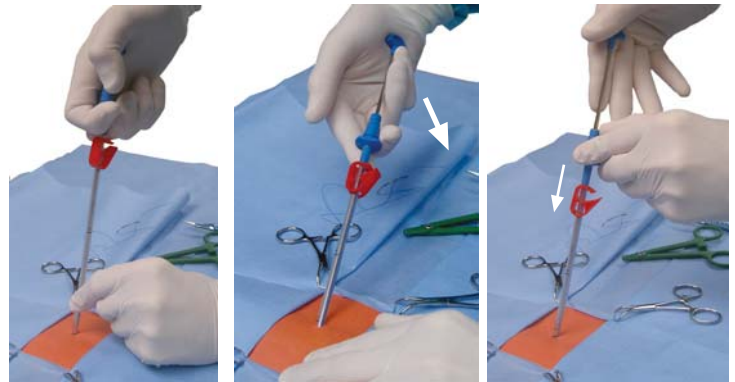


# Using Needle-Free Trochar Chest Drain Sets

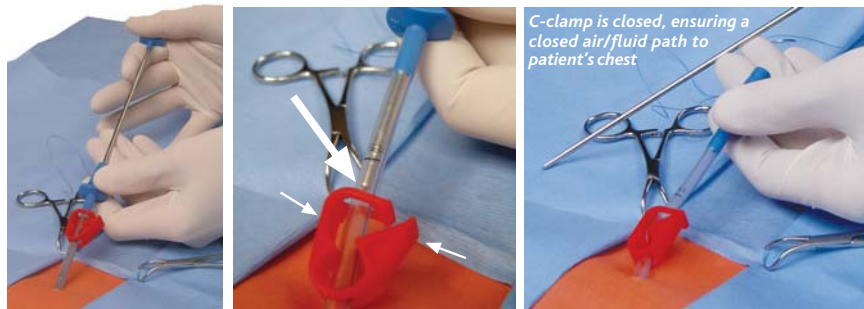
This pictorial guide takes you through the principles of using our needle-free trochar chest drain sets. The drain shown is 18Fr and the connection requires bonding. Sizes 12-16 Fr use a simple luer lock connection to the valve - no bonding is necessary. Please contact us for further details before use if required.



Place the C-clamp in the desired position prior to incision. With a non-scrub assistant pulling thoracic skin forward 2-3 rib-spaces, identify the best location for thoracic puncture. Incise skin. It helps placement to pull the drain connector into the palm of your hand. This also ensure an integral connection.



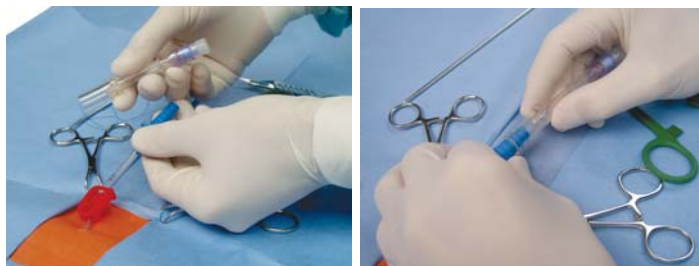
Place the trochar tip into the incision site and advance with a rotational movement. Steady the distal tip with your free hand to minimise untoward trochar movement. Once into thoracic cavity, angle the trochar into the preferred direction - (normally flattening the angle and directing cranio-ventrally). Advance the drain off the trochar in that direction ensuring that the movement is not restricted.



Continue to advance the drain off the trochar until you reach the correct pre-determined depth. Allow for the proximal hole position 35mm from the end of the drain. Re-position the clamp close to the skin. Back the trochar out of the drain tube until it is just free of the C-clamp (large arrows). CLOSE the C-clamp (small arrows) and remove the trochar.



You can now attach the needle-free valve to the drain. This is normally done prior to securing the drain to the chest wall, but you can suture the drain in place first. For trochar sizes 12 - 16 Fr, simply screw the needle-free valve to the female luer.



For 18+ Fr sizes, use 2-3 drops of CYANOACRYLATE glue in 3-4 strips over the surface of the drain connector. Push the needle-free connection tubing onto the drain connector FIRMLY, and leave to set for 10-15 seconds. The chest drain closure is now complete. Once bonded you may commence drainage operation, provided you take precautions to prevent drain migration.



Remove the non-activating protective cap and connect a syringe or any other preferred male luer device to the needle-free valve. Start to aspirate or drain as normal. Leaving the needle-free valve in place, simply disconnect and swab the valve surface. Remember to re-swab the valve prior to each subsequent activation of the valve.



A Chinese Finger Trap suture (CFT) is placed to secure the drain tubing in place. It should be placed cranial to the cutaneous drain exit point, and be assumed to be the main fixation point. A similar securing suture can be used on the C-clamp. When closed, the C-clamp now provides a good anchor point and helps protect the Chinese Finger Trap (CFT) suture from stress.

This suture would normally be anchored on the skin first, and then the anchoring loop is passed through the bottom of the U-bend. NEVER rely on the C-clamp suture as your primary drain fixation point. The C-clamp can also be reversed (PRIOR to thoracic puncture) to give a more robust fixation point, however this position will limit access to the clamp during routine use.



18+ Fr sizes

The finished drain placed, connected and ready for use. . .



12-16 Fr sizes

The C-clamp is for additional security as the needle-free valve is the main point of drain closure. Tubing can be folded back on itself to make the connection more compact. Dress or protect both the drain and entry point in a suitable manor.