

THE STENOR FIRE HOSE REPAIR SYSTEM

TYPE 3 HOSE

This poster has been designed to help you easily learn how to repair PVC Nitrile hose using the Stenor Merlin System.

Summary

- 1 Turn on and heat up. Prepare hose.
- 2 Vulcanise internal patch for 10 minutes at 165 degrees centigrade.
- 3 Vulcanise external patch for a further 10 minutes at 165 degrees centigrade.
- 4 Cool down under pressure for a further 20 minutes.

Total repair time is 40 minutes

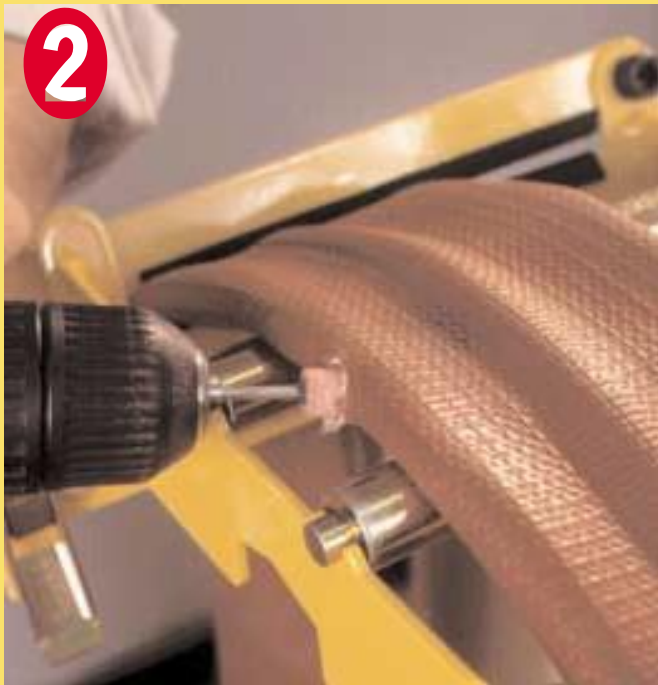
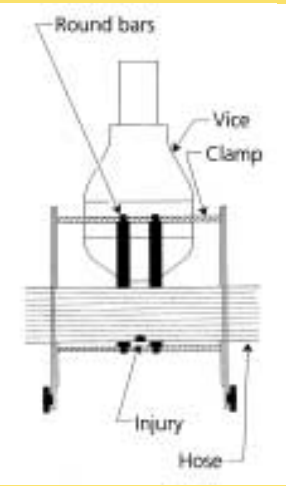
Factors in successful hose repair

- **Temperature** PVC/Nitrile hose needs to be vulcanised at an accurately held 165°C.
- **Preparation** This is very important
- **Pressure** Stenor Merlin has a spring that keeps a constant pressure during the cure.
- **Time** for vulcanising and cooling is controlled digitally by a Stenor Merlin.
- **Patch** shelf life is 12 months. The patches should be stored in a fridge.

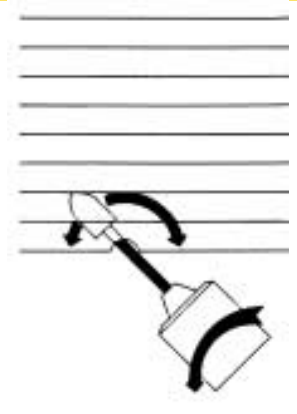
Pressure testing It is highly recommended that you pressure test a repaired hose prior to putting it into service.
Test pressure 10 bar or 1.5 times maximum working pressure whichever is greatest and maintained at that pressure for 1 minute.
It is essential that the pressure can be applied gradually to allow the hose to take the strain imposed on it.
Allow 2 hours after repairing prior to pressure testing.



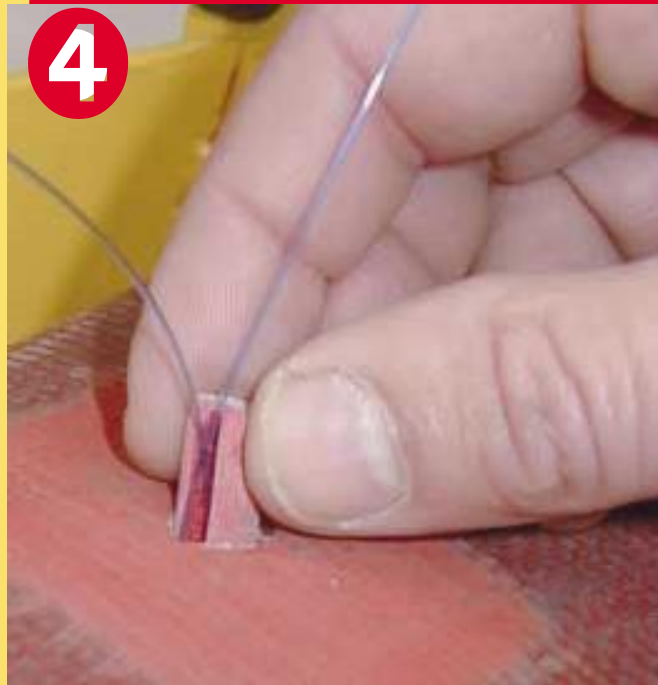
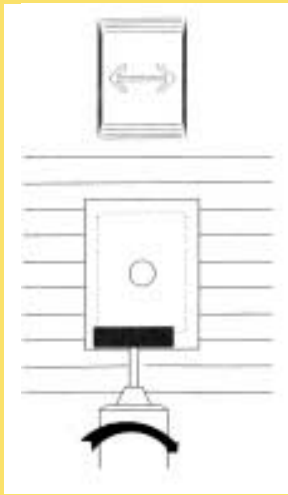
For best results dry the hose internally and externally. Switch Stenor Merlin to "On" and "Constant" to heat up. This will take around 8 minutes, and will heat whilst you carry out the preparation. Mount the hose clamp in a vice as shown here, with the round bars in place. Fold the hose in the clamp with the injured area closest to you. Cut a round hole about 8mm in diameter around the injury. This hole may be bigger than original injury. This will enable internal preparation and positioning of the internal patch.



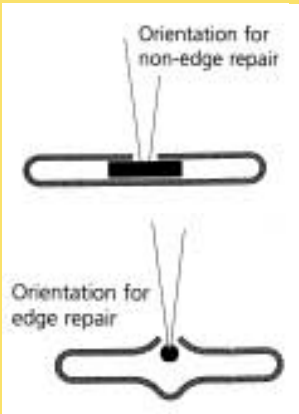
Mount the stone in a drill and prepare the inside of the hose carefully. A drill speed of less than 1200 rpm is recommended to avoid excessive damage to the internal hose wall. If you are new to this method, practice on some condemned hose a few times and cut the hose open and inspect the preparation. This will help you to get "a feel" for the internal preparation.



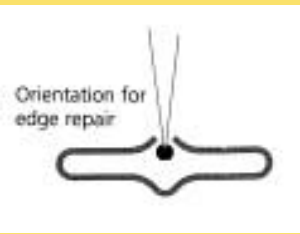
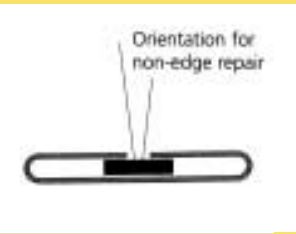
Move the hose in the clamp, so the injury is uppermost, and carry out the external preparation with the wire brush and drill. Prepare an area greater than the size of the patch to allow for the patch spreading. Avoid excessive material removal and damage to the fabric.



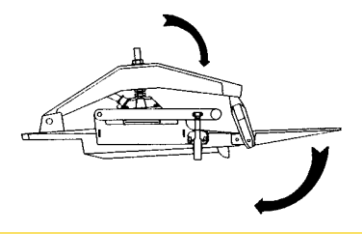
Remove the bars and ensure that the injury is in the centre of the clamp. The bars are not needed anymore. Squeeze the hose to open it. Fold the nylon line keeping both ends of the nylon folded back (see above), and push the internal plug patch into the hose and align as shown. Reclamp the hose, centrally. Leave the nylon in place and remove the hose and clamp assembly from the vice and place it over the Merlin machine. If the hose is still very new, then you need to use a Stenor Part No 3223 which has a release film on the internal patch.



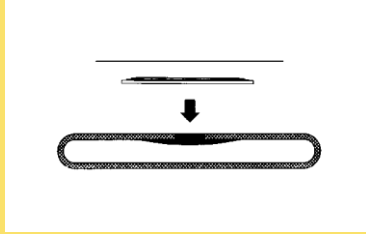
Check the plug patch position. When you are satisfied with its position, remove the nylon and discard it. Cover with a piece of cellophane to stop the patch sticking to the heating unit.



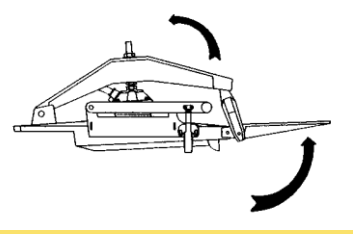
Make sure the vulcaniser has reached 165°C. Bring the top arm over and use the overcentre lever to apply the pressure. Switch to "Timed" and the timer will start to count down. The units on the timer are minutes and seconds. The internal patch will spread and fill the injury before vulcanising.



When the timer shows 30.00 (after 10 min) release the top arm and remove the cellophane. Having removed the polythene from the underside of the external patch apply the patch. The arrows are on the top. See drawing for correct orientation. Place cellophane over the external patch, bring down the top arm and vulcanise for ten minutes.



Alarm sounds to signal end of repair, switch to "Constant" to reset timer and switch "Off". If you are new to this technique of hose repair, then try it out on some condemned hose and cut the hose open. Check the area that you have prepared internally. You will see from a cross section that the internal patch bonds to the hose and external patch.



CONTROL BOX

Setting Temperature.

Stenor Merlins are factory set at 165°C. This is the temperature for repairing PVC/Nitrile hoses. If you wish to change this operating temperature do as below. Press SEL until display reads "ST1". Release SEL to display current set point (flashing). Change set point using ↑ and ↓. Return to actual temperature display by pressing SEL. NB During temperature setting the internal alarm may sound to show that the controller is awaiting input. This may be silenced by pressing MUTE.

Setting Times

Stenor Merlins are factory set. If these have been altered, and you want to return to factory settings follow the instructions below:
Press PRG and the display shows "ST1" (This is the Alarm Time). Press SEL and ↑ and ↓ to set to desired time (40.00).
Press PRG and display shows "ST2", (This is Heating Time). Use SEL and ↑ and ↓, to set to desired time (20.00).
The SEL button also moves the cursor from one digit to another. Press PRG to return display mode. Once the times have been set the Merlin can be controlled using only the On/Off and Mode switches.

Correct orientation of external patch to injury