



# Clinical Practice Procedures: Trauma/Orthopaedic splinting – vacuum

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<b>Date</b>	September, 2018
<b>Purpose</b>	To ensure a consistent procedural approach to vacuum splints.
<b>Scope</b>	Applies to Queensland Ambulance Service (QAS) clinical staff.
<b>Health care setting</b>	Pre-hospital assessment and treatment.
<b>Population</b>	Applies to all ages unless stated otherwise.
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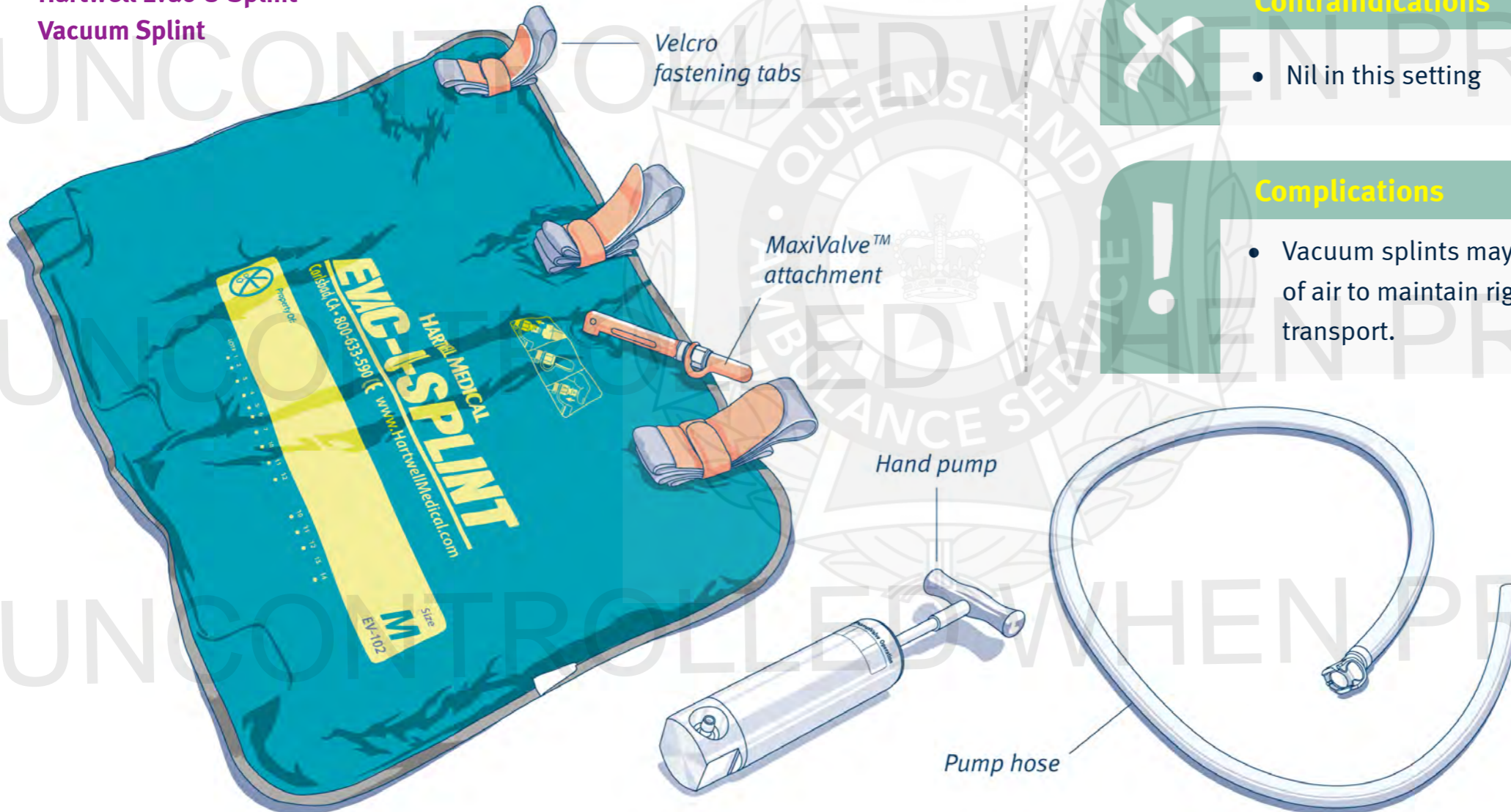
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# Orthopaedic splinting – vacuum splint

September, 2018

**Vacuum splints** are primarily used as a stabilisation and splinting device for various limb injuries. Appropriate levels of splinting are achieved by the correct sizing of the splint, sculpting of the splint to the patient's limb and removal of excess air from the device. Vacuum splints utilised by QAS are supplied with a single MaxiValve™ device which allows one-way air extrication from the splint when correctly coupled with the provided hand pump. This model does not permit air removal via the portable or ambulance suction kits.

## Hartwell Evac-U-Splint® Vacuum Splint



### Indications

- Suspected fractures and dislocations of arms, legs, or joints
- Spinal motion restriction or full body splinting where appropriate for infants or small children

### Contraindications

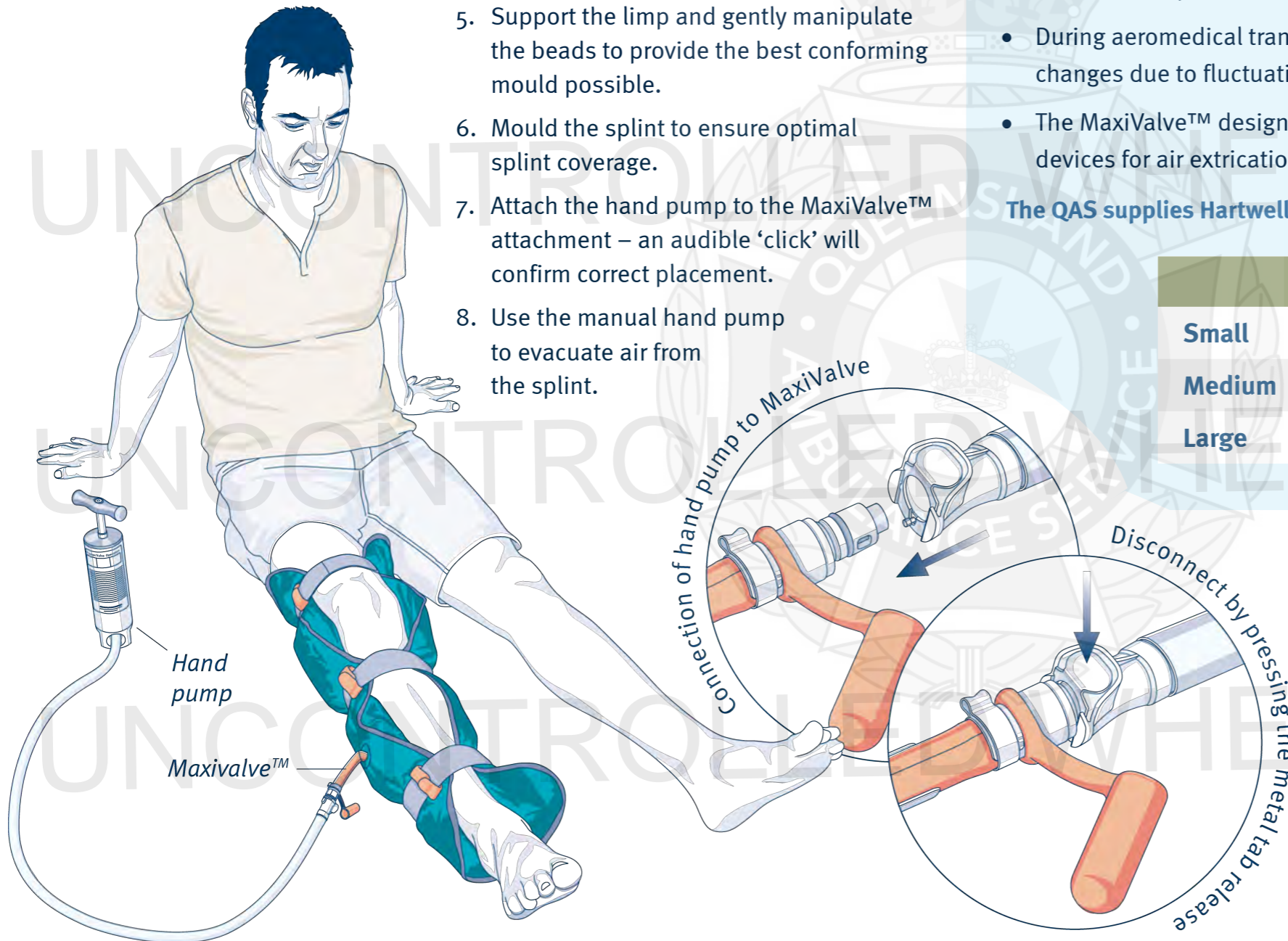
- Nil in this setting

### Complications

- Vacuum splints may require further extraction of air to maintain rigidity during aeromedical transport.

## Procedure<sup>[1]</sup> – Orthopaedic splinting – vacuum splint

1. Apply appropriate dressings to all wounds.<sup>[2]</sup>
2. Select the appropriate sized splint for the injured limb – a correctly sized splint will immobilise the joints above and below the injury site.
3. Lay the splint valve side down on a flat surface, manually distribute the beads evenly through-out the splint.
4. Slide or position the splint under the injured area, positioning the splint so that at least one strap is above and below the suspected injury site.
5. Support the limb and gently manipulate the beads to provide the best conforming mould possible.
6. Mould the splint to ensure optimal splint coverage.
7. Attach the hand pump to the MaxiValve™ attachment – an audible ‘click’ will confirm correct placement.
8. Use the manual hand pump to evacuate air from the splint.



## + Additional information

- Placing a pulse oximeter on an extremity of the affected limb may assist with monitoring the degree of limb perfusion.
- At times it may be appropriate to reduce and realign fractures prior to splinting, but this must be done with care so as not to open a closed fracture.
- When used as a spinal motion restriction device for infants or small children, the vacuum splint acts in a similar manner to vacuum mattresses for adults.
- During aeromedical transport the splint may soften with significant altitude changes due to fluctuation in air pressure – adjust splint as necessary.
- The MaxiValve™ design does not permit the use of oxygen driven suction devices for air extrication.

The QAS supplies Hartwell Evac-U-Splint®(s) in the following sizes:

	Length (cm)	Width (cm)	Suggested uses
<b>Small</b>	49.5	33.0	Small arm
<b>Medium</b>	69.9	50.8	Arm/leg
<b>Large</b>	101.60	76.2	Leg

9. Disconnect the valve and pump coupling by pressing the metal release tab on the pump connector.
10. Secure the splint straps with slight tension around the splint.
11. Check distal circulation immediately after applying the splint. Recheck distal pulses and vital signs regularly throughout care.