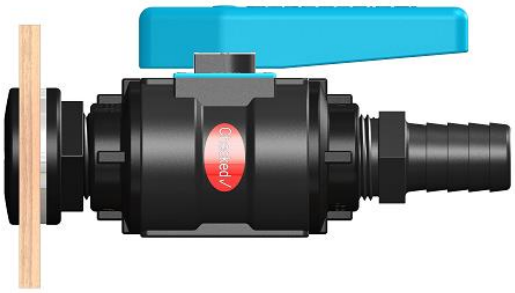
Skin Fitting (Thru Hull) Installation & Sealing

Location & Drilling

- Skin Fittings with Tail must only be installed above the healed water line.
- Threaded skin fittings are for below and above water line applications. For below water line, best practice is to always have the Ball Valve directly fitted to the skin fitting. Always turn ball valve off when unattended at the marina or dock.
- Ensure there is enough room on the inside of the boat to allow the Ball Valve to be screwed on without hitting the bulkhead or other part of the hull. Note; A “T” handle is available for smaller area locations
- Ensure the location will not cause the valve handle to be knocked open or closed or damage from heavy objects.
- Mark the location and drill from the inside a pilot hole 3mm in diameter. Select a hole-saw 1 mm larger than the outside thread diameter of the Skin Fitting (Thru Hull). From the inside, use the pilot hole as a centre and drill through the hull with the selected hole-saw.
- Minimise overhang - It is recommended to “dry fit” the Ball Valve Skin fitting assembly and then trim the skin fitting (with a hacksaw) to allow a 2mm to 5mm gap between Skin Fitting Nut and Ball Valve to minimise overhang and ensure compliance to ISO 9092-2021.



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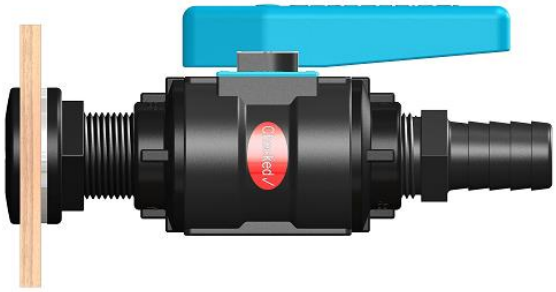

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Recommended Hull Adhesive Sealants & Glues.

- Note: read Sealants manufacturer's instructions before use.
- **SIKAFLEX® 591, and 291i** Marine Sealants. A one-part polyurethane adhesive/sealant. Full cure takes 24 hours. Note **alcohol cleaners are not recommended for surface preparation**. For best results pre-clean the skin fitting surface with Sika Activator-205 and allow to flash off for 10 minutes. – refer to manufacturer's product literature.
- **3M™ Marine Adhesive Sealant Fast Cure 5200**. A one-part polyurethane adhesive/sealant. Full cure takes 24 hours. Note **alcohol cleaners are not recommended for surface preparation** – refer to manufacturer's product literature.
- **Bostik® 920** Marine Sealant. A one-part urethane adhesive/sealant. Starts to cure (tack-free) in approx. 2 hours, after which ball valves and or hoses can be attached. Full cure takes 1.5 – 3 days – refer to manufacturer's product literature.
- **West System®** (or similar) two-pot epoxy that mixes to a paste. Tip – adding filler to the West System® will increase the viscosity and help minimise "running" of the epoxy. Visit http://www.westsystem.com/ss/filler-selection-guide/ for more details.
- **FixTech – Fix 15** A one-part MS Polymer.

Fitting – Method 1 – Sealant on outside and small way up the thread.

- Smear the adhesive or glue on the underside of the Skin Fitting (Thru Hull) flange and a small way up the thread, but no further than the thickness of the hull. It is important not to have any adhesive on the exposed thread area as this could prevent the Nut or Ball Valve from turning.
- Insert the Skin Fitting (Thru Hull) through the hull from the outside. Note the TruDesign Skin Fitting Installation Tool enables our skin fittings to be installed by one person saving time and money. See separate information sheet on our web site.
- If necessary, place two strips of masking tape over the flange and attach to the hull to temporarily hold in place. Go inside the hull to fit the Nut. Note it is good practice to have a backing plate to spread the load especially if there is excessive curvature in the hull or the hull is very thin.
- Hold the thread down near the washer and screw on the nut. Once the nut is screwed down far enough you can hold the fitting above the nut and then continue to screw the nut down onto the washer hand-tight.
- On the outside of the hull clean off any excess adhesive. Tip – use an angled tool or putty knife to 'blend' adhesive around the Skin Fitting (Thru Hull) flange and the hull so it is easier to clean when sanding and antifouling in the future.
- For Adhesive sealants after recommended curing times, tighten the nut a further quarter turn or to no more than 15 ft lb. There is no need to over-tighten the nut, especially if epoxy has been used, as the Skin Fitting (Thru Hull) is now an integral part of the hull.

Fitting – Method 2 – Sealant on outside and inside under washer and Nut

- Smear the adhesive or glue on the underside of the Skin Fitting (Thru Hull) flange, between the thread and the hull and between the hull and the inside washer.
- Insert the Skin Fitting (Thru Hull) through the hull from the outside. Note the TruDesign Skin Fitting Installation Tool enables our skin fittings to be installed by one person saving time and money. See separate information sheet on our web site.
- If necessary, place two strips of masking tape over the flange and attach to the hull to temporarily hold in place. Go inside the hull to fit the Nut. Note it is good practice to have a backing plate to spread the load especially if there is excessive curvature in the hull or the hull is very thin.
- Place some more sealant on top of the washer then hold the thread down near the washer and screw on the nut. Once the nut is screwed down far enough you can hold the fitting above the nut and then continue to screw the nut down onto the washer firmly (hand-tight) being careful not to squeeze out all the sealant.
- Once the sealant is cured, cut away any excess adhesive with a Stanley knife or similar.

Skin Fitting Installation Tool

- TruDesign Skin Fitting (Thru Hull) Installation Tools make the fitting of our Skin Fitting (Thru Hull) to be carried out quickly and simply by one person – traditionally a task that has required two people, saving time and money. Ideally suited for boat builders. See Information sheet on our web site.
- Available in 5 sizes from ¾” to 2”, they are reusable. They work with TruDesign Domed or Recessed Skin Fittings (Thru Hulls). Not suitable for our Long Skin Fitting range.

Epoxy or Polyurethane adhesive area shown in blue