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SPECS & INFORMATION

Long Skin Fittings (Thru Hulls)

Designed for larger hull-thickness vessels TruDesign Long Skin Fittings (Thru Hulls) are precision moulded from glass-reinforced Nylon composite.

- Comply with **ISO 9093-2** and as certified by IMCI Belgium. For sizes ¾", 1", 1¼", 1½", 2" and 3" Thru Hull's, Ball Valves and Tail assemblies
- Comply with the **ABYC 500Lb** load test with or without an ABYC collar. For sizes 1¼",1½",2" and 3" Thru Hulls, Ball Valves and Tail assemblies.
- Complies with the ABYC 500Lb load test when used with the TruDesign ABYC collar. For 1" Thru Hull, Ball Valve and Tail assembly.

TruDesign Skin Fittings (Thru Hulls) eliminate all corrosion and bonding problems associated with electrolysis. Giving peace of mind with respect to the safety of your vessel.

Features:

- Extra-long length as required for larger hull-thickness vessels.
- Manufactured from a glass-reinforced Nylon composite – High strength, tough and light weight.
- Compatible with all hull types – Can be used on aluminium, steel, wood, composite & GRP hulls.
- Immune to corrosion & electrolysis – No corrosion breakages, increased safety.
- Chemical resistant – Unaffected by diesel, petrol, chemicals, and antifouling paints.
- U.V resistant – Will not degrade or discolour from the sun's ultraviolet rays.
- Paintable – Paintable with all types of antifoul.
- Fits TruDesign Ball Valves and other parallel BSP threads.
- Large operating range – Suitable for all marine conditions from -40°C to +110°C

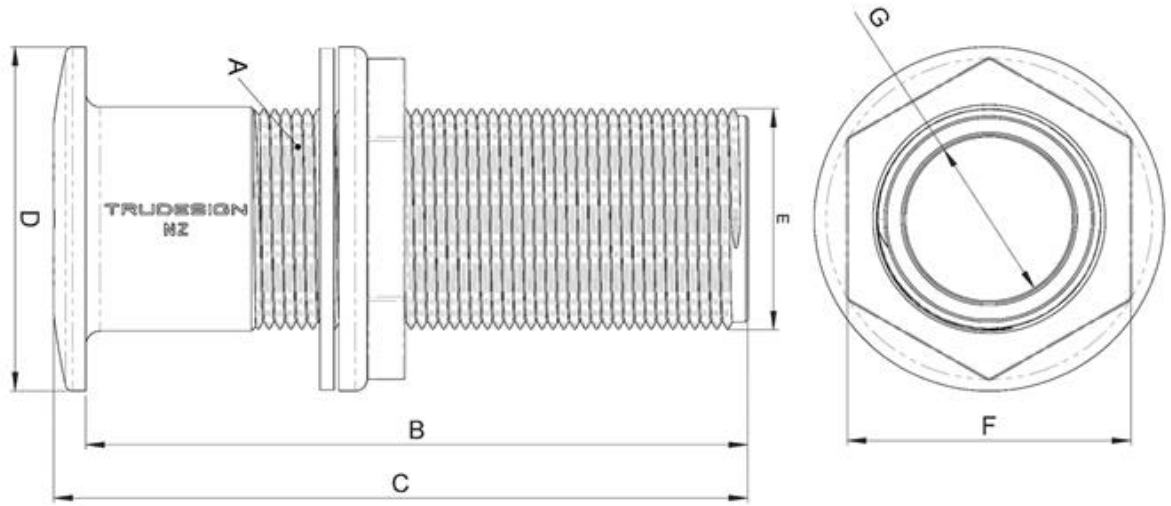
Part Numbers and Description.

Part #	Description
91077	Skin Fitting (Thru Hull) Long ¾" BSP Black
91078	Skin Fitting (Thru Hull) Long 1" BSP Black
91079	Skin Fitting (Thru Hull) Long 1¼" BSP Black
91080	Skin Fitting (Thru Hull) Long 1½" BSP Black
91081	Skin Fitting (Thru Hull) Long 2" BSP Black
91160	Skin Fitting (Thru Hull) Long 3" BSP Black

Part #	Description
91148	Skin Fitting (Thru Hull) Long ¾" BSP White
91149	Skin Fitting (Thru Hull) Long 1" BSP White
91150	Skin Fitting (Thru Hull) Long 1¼" BSP Wht
91151	Skin Fitting (Thru Hull) Long 1½" BSP Wht
91152	Skin Fitting (Thru Hull) Long 2" BSP White

Dimensions –

A	B		C		D		E		F		G	
Thread Size	Thread Length		Overall Length		Head Diameter		Cutout Diameter		Hex Size AF		Minimum Internal Ø	
¾"	140mm	5 1/2''	146mm	5 3/4''	41mm	1 3/5''	27mm	1"	34mm	1 1/3''	16mm	5/8"
1"	140mm	5 1/2''	146mm	5 3/4''	52mm	2"	34mm	1 1/3''	42mm	1 2/3''	23mm	8/9"
1¼"	140mm	5 1/2''	147mm	5 7/9''	65mm	2 5/9''	42mm	1 2/3''	52mm	2"	30mm	1 1/6''
1½"	140mm	5 1/2''	147mm	5 7/9''	74mm	3"	48mm	1 8/9''	60mm	2 1/3''	35mm	1 2/5''
2"	140mm	5 1/2''	148mm	5 5/6''	93mm	3 2/3''	60mm	2 1/3''	75mm	3"	49mm	2"
3"	160mm	6 2/7''	170mm	6 2/3''	145mm	5 5/7''	88mm	3 4/9''	112mm	4 2/5''	75mm	3"



Standards and approvals

TruDesign Skin Fittings (Thru Hulls) are certified by the International Marine Certification Institute (IMCI) and Bureau Veritas to meet; ISO 9093-2 Small craft. They also meet ABYC H-27 – see below.

ISO 9093-2 Standard requirements.

ABYC H-27 Standard requirements.

In accordance with ISO 9093-2 standards, Skin Fittings (Thru Hulls) are subjected to a 155kg (341.7lb) load, applied to the threaded section for a minimum of 30 seconds, without any damage occurring. TruDesign Skin Fittings (Thru Hulls) meet this standard.

Note: ½" size Skin Fitting (Thru Hulls) are not compliant to ISO 9093-2. See overhang instructions below to ensure compliance.

The ABYC H-27 standard requires that the entire assembly is to withstand a 500lb (226.8kg) load applied as per above for a minimum of 30 seconds without any damage occurring.

TruDesign sizes 1¼",1½",2" and 3" Thru Hulls, Ball Valves and Tail assemblies comply with this standard with or without an ABYC collar

TruDesign 1" Thru Hull, Ball Valve and Tail assembly complies with this standard only when used with the TruDesign ABYC collar.

Note: ½" and ¾" Thru Hulls are not compliant to this load test. See overhang instructions below to ensure compliance.

Installation: Location & Drilling

- 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 Ball Valve is available for smaller area locations
- Ensure the location will not cause the valve handle to be knocked open or closed.
- 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.
- 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 ISO 9093-2 compliance.

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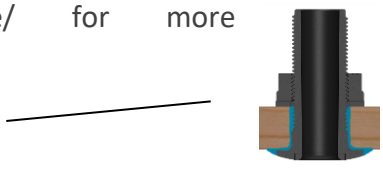
Recommended Hull "Adhesive Sealants" & Glues:

First clean all surfaces to be sealed with a general-purpose cleaner.

- 3M™ Marine Adhesive Sealant Fast Cure 5200. A one-part polyurethane adhesive/sealant. Starts to cure (tack-free) in approximately 2 hours, after which hoses can be attached. Full cure takes 24 hours – refer to manufacturer's product literature.
- SIKAFLEX® 291i Marine Sealant. A one-part polyurethane adhesive/sealant. Starts to cure (tack-free) in approx. 2 hours, after which hoses can be attached. Full cure takes 24 hours – 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 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.

Epoxy or Marine adhesive sealant area shown in blue



Fitting & sealing:

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.
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 that you can hold the fitting above the nut do so and continue to screw the nut down onto the washer ensuring it is only finger 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.
After recommended curing times, tighten the nut 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.

Thread Sealing: - Ball Valve to Skin Fitting (Thru Hulls) and Tails.

For Thread Sealing Instruction go to our Technical Information Sheet on the TruDesign Website – Scan QR Code

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