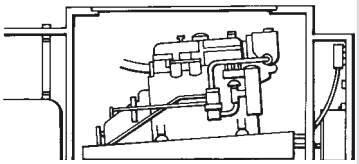
Halyard

Noise Insulation

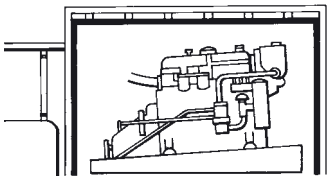
Installation & Operating Instructions

Halyard

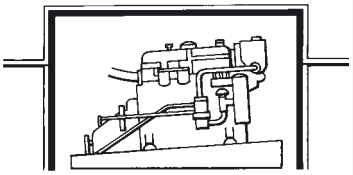
As far as possible, bulkheads should totally encase the engine area. They should also be free of clutter bolted on, forcing areas of bulkhead to be left without insulation.



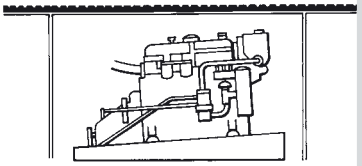
Insulation material should be fitted over the total surface of the engine room bulkheads, not merely between deckhead joists and in convenient clear areas.



With engine boxes, remember that the noise will flow under the general deck area. Bulkheads should continue right down to the hull, leaving limber holes for bilge water if necessary. Insulate down to, but not into, bilge water.



With noise insulation all round the engine, further improvements can be achieved by adding density to the bulkheads. With powered craft, Halyard's high density barrier layer can be fitted between mats or carpeting and the actual deck.



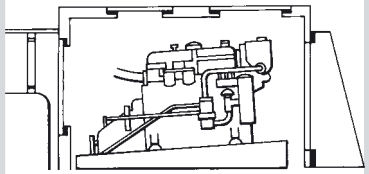
Halyard

Halyard Noise Insulation Material - How do I use it?

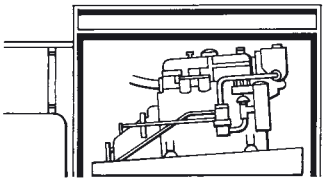
The following sketches set out the basic rules. The key is to clad as much of the engine space as possible, leaving no gaps for noise to get out, and no hard surfaces for noise to bounce off. Air flow to the engine needs to be considered and is discussed overleaf. Remember our technical staff are ready to help with advice over the phone.

Adhesives

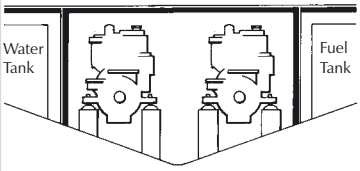
The insulation panels can be stuck with conventional thixotropic adhesive such as Evostick or Dunlop Thix-o-fix. The containers will have manufacturers instructions printed on them and these should be followed carefully including those related to health, safety and disposal of empty containers.
As an alternative to traditional contact adhesives we recommend the use of Sikaflex 291 which is widely available from chandlers. This requires a separate method described on the tube and briefly under point 2 below.
The following points should also be considered and where appropriate followed to achieve a successful lasting quality installation.



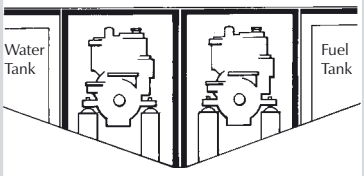
Hatches and companionways must fit neatly and should have a noise tight cushion such as Halyard's hatch tape.



Powered craft, particularly with twin engines, will benefit enormously from 'double decking' insulation, with a 6" gap between layers.



Avoid leaving noise caverns either side of the engine. Drop a removable bulkhead beside the engine and insulate this. Remember, fuel and water tanks collect and amplify noise.



With twin engines in a new vessel, try to put each engine in a separate compartment with a removable bulkhead between.

1. The usual situation of clean, dry, grease free surfaces obviously applies to steel, GRP and timber surfaces.
A hairdryer may be used to remove condensation if you are fitting the material in conditions other than hot dry weather. Jizer de-greasing fluid (made by Deb Chemicals, who also make Swarfega), may be used to remove grease from the surfaces.
GRP surfaces should be sanded to produce a rough surface as a key.

2. The majority of adhesives will instruct you to coat both surfaces and let these 'Go touch dry'. In real terms this means at least 15 minutes and more if the coating is a heavy one. It is vital that this step is executed correctly.
Contact glues should only be used in dry weather with an ambient temperature of 10 degrees C or more. The safety precautions on the container regarding flammability and fumes must be oberved.
NEVER apply 2 coats of adhesive to the foam unless the first coat is allowed a minimum of 24 hours to cure.
Sikaflex 291. Please foloow the instructions issued by Sikaflex which broadly call for a dry surface, low humidity, freedom from dust and minimum ambient temperature of 10 degrees C. The glue is used only on one of the surfaces. Each sheet will require support while the glue is drying.

3. Where the materials are fixed upside down below decking and hatches they should be fixed by some mechanical means such as screws and washers, pins with washers, thin battens or wires stretched across.

Halyard
Noise Insulation

Self Adhesive Noise Insulation Material.

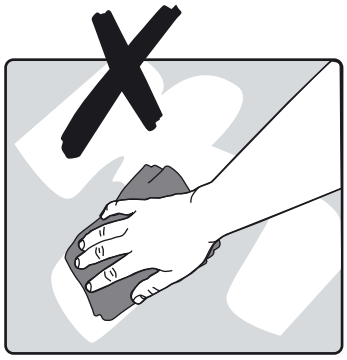
Noise Insulation has always been too heavy to use self adhesive materials. Glue technology development has changed all this, and we now make a reliable self-adhesive product in 12mm (1/2") and 32mm (1 1/4") thicknesses.

Application is the key to success. Remember that a marine engine room could not be more hostile to adhesives. The temperature will go from zero in winter to 40°C in the heat of summer with the engine running. The atmosphere will go from damp to dry. Grease, oil, water and salt are all enemies of successful adhesion!

Remember: No self adhesive material will stay put unless you get it right from the beginning. The same generally applies if you use a liquid glue!

Storage.

Material must be stored, prior to application, in temperatures between 10°C and 20°C.



GRP Surfaces.

Self adhesive materials will glue to flat GRP, but not to rough or curved surfaces.

Sand the surface lightly to scratch the gel coat and provide a key. Then remove all dust.

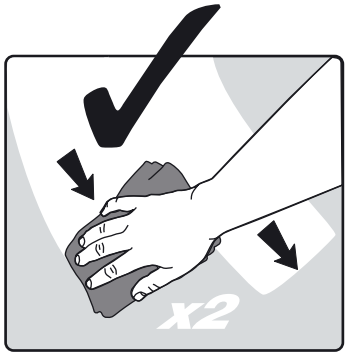
The surface must be cleaned with a grease free cleaner using a lint free wipe which does not leave threads, dust or paper traces on the surface. Use Carbon Tetrachloride, Cellulose thinners, White Spirit, Iso Propyl Alcohol, Evostik cleaner, or spirit wipes.

Do not use Meths, Petrol, De-greasing fluid.

Be certain to follow the maker's recommendations for masks, eye protection and gloves.

When you clean the surface, do not wipe in circles! Instead, wipe towards one corner so you are pushing dust and grease towards one point and then removing them. Always clean the surface twice.

The surface must also be dry and free from condensation. A hair dryer is ideal for removing any condensation.



Steel.

An etch primed steel surface is ideal. Ordinary steel is fine. This should be lightly sanded and then cleaned. The material will stick on flat surfaces, but not on curved.

The surface must be cleaned with a grease free cleaner using a lint free wipe which does not leave threads, dust or paper traces on the surface. Use Carbon Tetrachloride, Cellulose thinners, White Spirit, Iso Propyl Alcohol, Evostik cleaner, or spirit wipes.

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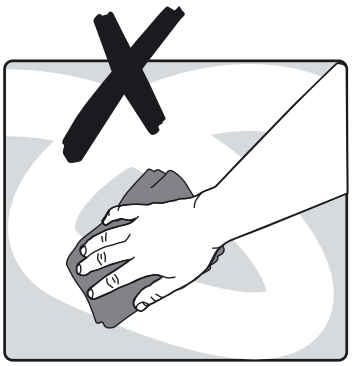

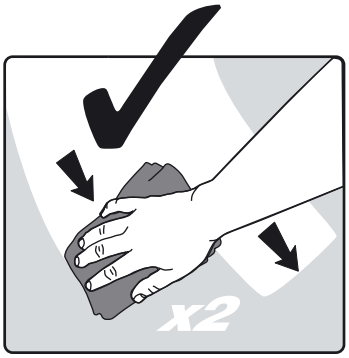

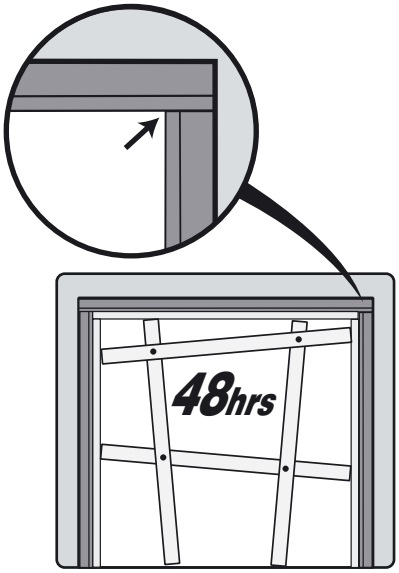

Aluminium.

Sand the surface lightly before cleaning. The material will stick to flat surfaces, not to curved.

The surface must be cleaned with a grease free cleaner using a lint free wipe which does not leave threads, dust or paper traces on the surface. Use Carbon Tetrachloride, Cellulose thinners, White Spirit, Iso Propyl Alcohol, Evostik cleaner, or spirit wipes.

Do not use Meths, Petrol, De-greasing fluid.

Be certain to follow the maker's recommendations for masks, eye protection and gloves.

When you clean the surface, do not wipe in circles! Instead, wipe towards one corner so you are pushing dust and grease towards one point and then removing them. Always clean the surface twice.

The surface must also be dry and free from condensation. A hair dryer is ideal for removing any condensation.

Timber.

Bare timber should be primed with a common wood primer. Self adhesive materials cannot be used with oily timber such as teak. Self adhesives will work on normal grained timber, but not with really coarse grain or cratered surfaces. The material will stick to flat surfaces, but not on curved.

The surface must be cleaned with a grease free cleaner using a lint free wipe which does not leave threads, dust or paper traces on the surface. Use Carbon Tetrachloride, Cellulose thinners, White Spirit, Iso Propyl Alcohol, Evostik cleaner, or spirit wipes.

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Glueing.

Cut the material to shape with the backing paper in place. When you are certain the shape is correct, remove the backing paper and press the material into place. More pressure gives a better bond. Ideally the material should be "jigged" or shored into place for 48 hours.

Use vertical surfaces to support horizontal panels.

The glue is progressive. It "grabs" the bulkhead surface initially and the bond then strengthens over the next 48 hours. During this process the ambient temperature should be between 10°C and 20°C. The more pressure you can apply during this period, the better. Temperatures outside this range will adversely affect the bond.

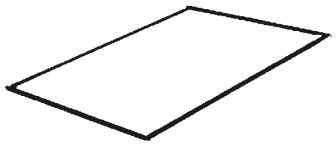
Help!

If in doubt, call us! Remember, a careful job on day one will ensure your noise insulation stays put for years, as well as avoiding hours of nasty work in a fume filled environment with liquid contact adhesives.

E-Mail: Techhelp@Halyard.eu.com

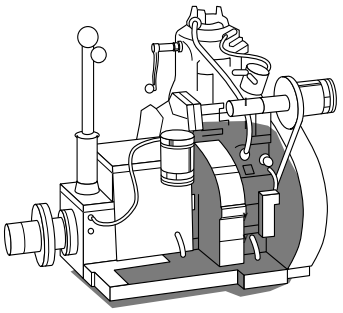
Lead Barriers?

Our standard materials use an artificial lead barrier, which replaced sheet lead some years ago. The use of lead sheet by itself has no acoustic value at all, unless the weight per square metre is higher than the artificial alternative. We do supply materials with lead barriers and would be happy to quote.



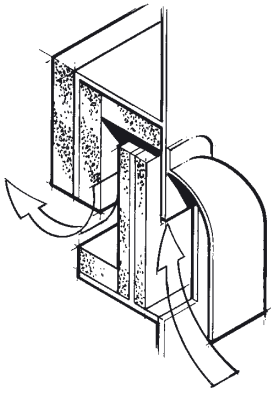
Engines to Watch

Two types of engine pose particular problems. Any engine which has no flexible mounts will be a problem, particularly in a steel hull. The Aquadrive coupling, with its special softer mounts, is the answer here. Air cooled engines are also difficult as you must not impede the flow of cooling air into the compartment.



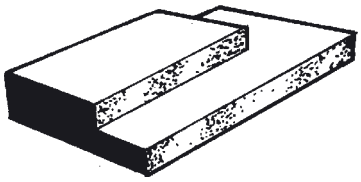
Air Flow

All engines require air for combustion. Small auxiliaries require very little and the problem can effectively be ignored as it would be difficult to insulate the compartment sufficiently to starve the engine of air. Larger engines, particularly with turbo chargers, require substantial air feed. The splitter box, sketched here with insulation on all its surfaces, will greatly reduce noise if built and placed over the air intake.



Double Layers?

The use of double layers is a frequent question. Results will be dramatically better, although not twice as good as single layers. Frequently, owners will double layer under a helm position, or against a bulkhead into a cabin, where reduced noise transmission is doubly important.



These fitting instructions are given for advice only and expert help should be sought in areas of doubt. Customers should note that the flammability rating applicable for different purposes may be a legal requirement, always seek help if in doubt.

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