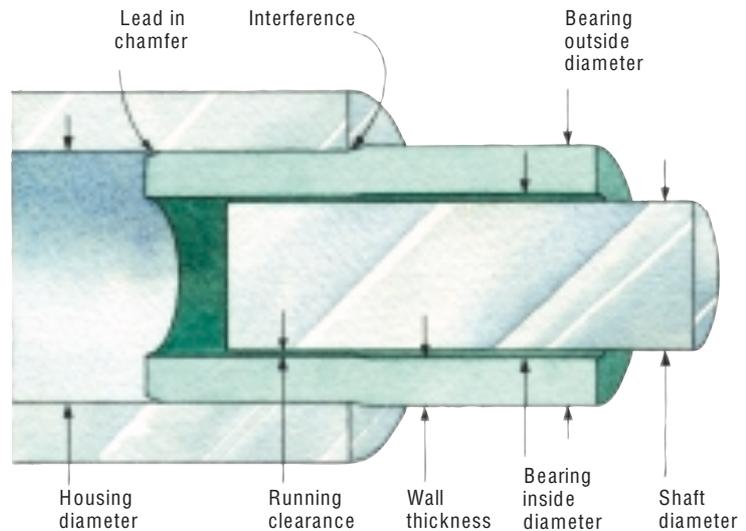


Design: Securing bushes

Interference fits

The easiest method to secure a Vesconite bush is to use an interference fit, and may be used for bushes that operate at temperatures up to 70°C (160°F).

Vesconite is a rigid material and may be easily secured with an interference fit without the need for additional methods. The bush can easily be installed and removed using simple mechanical methods.



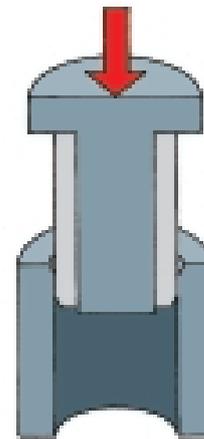
Fitting bushes with an interference fit

Fitting and removing of Vesconite bushes is easier than fitting metal backed bushes.

Do NOT heat the bush housing to aid installation as this may damage the Vesconite bush.

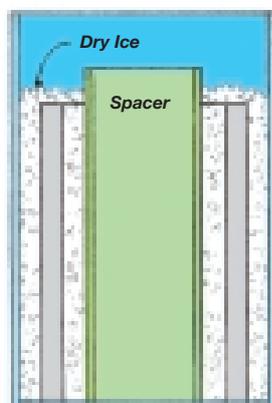
Press fitting

Vesconite bushes can be fitted using mechanical or hydraulic presses. Care needs to be taken that the bush is fitted square to the housing and is well supported, preferably with a mandrel.



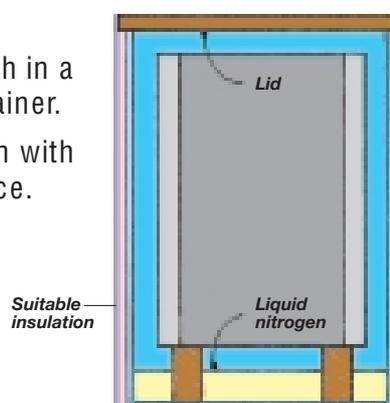
Freeze fitting

Freeze fitting helps when installing large bushes, bushes with thin walls and long bushes (length greater than the shaft diameter). Use a cold freezer, dry ice or liquid nitrogen.



Using dry ice

- Place the bush in a suitable container.
- Pack the bush with crushed dry ice.



Using liquid nitrogen

Contact the manufacturer for correct procedures.

Take care to avoid the bush coming into direct contact with the liquid nitrogen.

Measure the outside diameter of the bush before removing to ensure that the outside diameter is less than the housing size. Follow safety precautions and use personal protective equipment.

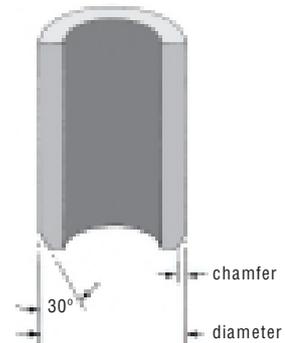
Design: Securing bushes

Chamfers and edge breaks

Lead in chamfers on the Vesconite bush and the metal housing ease installation and ensure that the bush will not be scored.

Corners should be broken to limit edge chipping and aid the installation of the shaft.

Diameter		Chamfer @ 30°	
mm	inches	mm	inches
10 - 25	1/2" - 1"	0.5	0.02"
25 - 50	1" - 2"	1	0.04"
50 - 100	2" - 4"	1.5	0.06"
100 - 250	4" - 10"	2	0.1"
>250	> 10"	3	0.15"



Mechanical securing

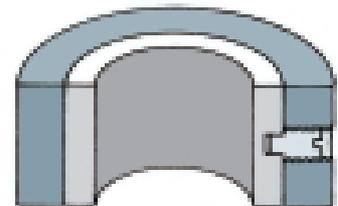
As an alternative to an interference fit, various mechanical securing methods may be used.

Operation of Vesconite bushes above 70°C (160°F) may result in loosening of the press fit as a result of stress relaxation. In this case the bush should be split with an expansion gap and secured mechanically to stop rotation and axial migration.

Grub or locating screws

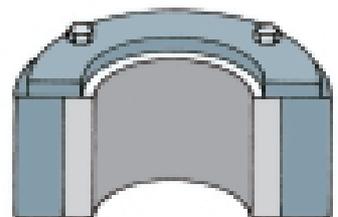
Grub screws are a convenient and effective way to stop rotation and axial migration. The Vesconite bush should be drilled to accept the grub screw. This is to avoid excessive spot pressure being placed on the bush which could lead to cracking or distortion.

Ensure that grub screws are suitably bonded or secured into their threads so that they do not vibrate or work loose and cause damage to the equipment.



Keeper plates

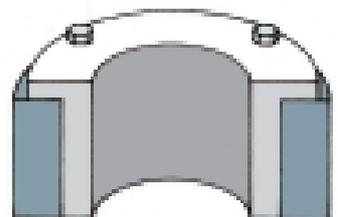
Keeper plates are recommended to avoid axial movement of the bush. Care must be taken that no excessive pressure is placed on the bush.



Flanged bush secured with bolts

An advantage of using a flanged bush is that the flange allows for easy installation and removal.

Flanged bushes are usually more expensive and are not an ideal design.



Bonding

Use an epoxy, Loctite or other suitable bonding agent for metal on plastics which will sustain the expected operating temperature. Roughening both surfaces will improve the bond.

