

# Machinery mounting

## An introduction to the mounting of industrial machines

### Summary

Using the latest mounting techniques can help achieve an ideal foundation for machinery. The best mounting technique and product may be different for every application and situation. Each mounting product has different advantages and each installation can have specific conditions that should be complied with. Often, a classification organization or a machine supplier must approve a mounting product before it may be used. Some mounting techniques are not allowed to use for certain installations. The use of the latest mounting products can save time and money by providing a perfect machine foundation. This article outlines the use of three different rigid mounting products and methods: the Vibracon<sup>®</sup> SM element, epoxy resin chocks, and shims.

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**Table of contents**

<b>1.</b>	<b>Introduction .....</b>	<b>3</b>
<b>2.</b>	<b>Vibracon® SM element .....</b>	<b>3</b>
2.1.	Application.....	3
<b>3.</b>	<b>Epoxy Resins .....</b>	<b>4</b>
<b>4.</b>	<b>Shims .....</b>	<b>5</b>
<b>5.</b>	<b>Selecting a Mounting Method .....</b>	<b>6</b>
<b>6.</b>	<b>About Machine Support .....</b>	<b>6</b>

## 1. Introduction

Good mounting products provide a stable foundation and allow a fast and accurate alignment of the mounted machinery. The best mounting technique and product may be different for each single application and situation.

It is very important be aware of the differences in resilient and rigid mounting. When aspects like noise reduction and vibration levels are important, products like vibration dampers are used.

The selection of a mounting product and technique has mainly to do with:

- The alignment procedure
- The quality of the foundation
- The need for re-alignment
- Time-efficiency

The use of three different rigid mounting products and methods are explained in this document: the Vibracon<sup>®</sup> SM element, epoxy resin chocks, and shims. The differences between these products are described in the final section.

## 2. Vibracon<sup>®</sup> SM element

In many cases Vibracon<sup>®</sup> SM elements provide a good foundation for machinery. The product permits quick and extremely accurate alignment, and often costly machining of foundations can be avoided.

The Vibracon<sup>®</sup> SM is widely used for mounting various types of machinery aboard seagoing vessels, and also has a broad range of uses in industry. Moreover, leading classification institutions and machine suppliers approved it.

In simple terms, the Vibracon<sup>®</sup> SM element is a universal, adjustable, steel chock. Universal refers to the fact that a Vibracon<sup>®</sup> SM element can be used instead of rigid steel chocks, shims, or epoxy resin chocks. Adjustable refers to the possibility of aligning and re-adjusting the element every time it is required. The product's name, Vibracon, suggests that the elements can absorb vibrations like a vibration damper. However, the Vibracon<sup>®</sup> SM element is absolutely **not** a vibration damper. Vibracon<sup>®</sup> elements can be used direct on concrete, although a metal soleplate is required.



Figure 1. The Vibracon<sup>®</sup> SM.

### 2.1. Application

In figure 2, Vibracon<sup>®</sup> SM elements are used to install a generator.



Figure 2. A Generator on Vibracon<sup>®</sup> SM Elements.

Figure 3 shows an application mounted on concrete, and Figure 4 sketches the mounting technique in detail.



Figure 3. Vibracon® SM Element Application on Concrete.

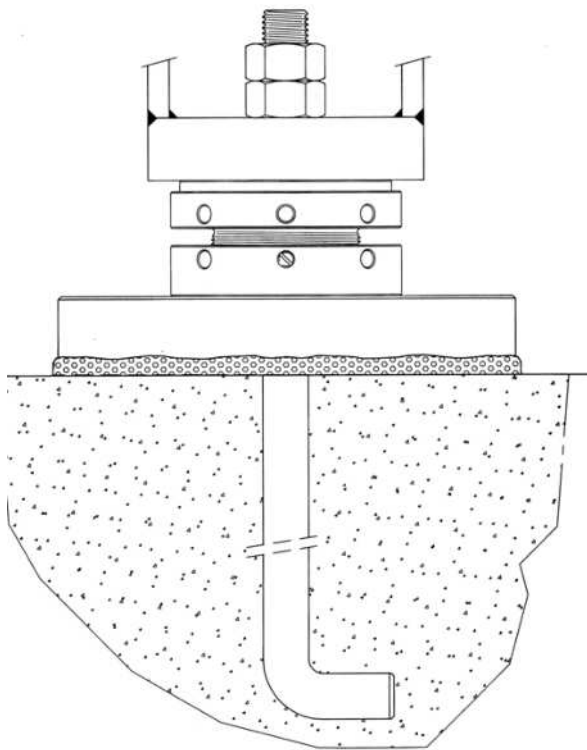


Figure 4. Drawing of a Concrete Application, Showing the Vibracon® on a Soleplate.

### 3. Epoxy Resins

For machine foundation you can also use a product like Epocast® 36. This is a high-grade, high-quality epoxy resin especially suitable for chocking propulsion units. Like Vibracon® SM, the product has obtained

worldwide approval from classification institutions and machine suppliers.

There are various grouting (types of cement) available, which are especially suitable for various industrial applications. They can be specially adapted to suit specific demands and can be delivered or installed.



Figure 5. Pouring Epoxy Resin.

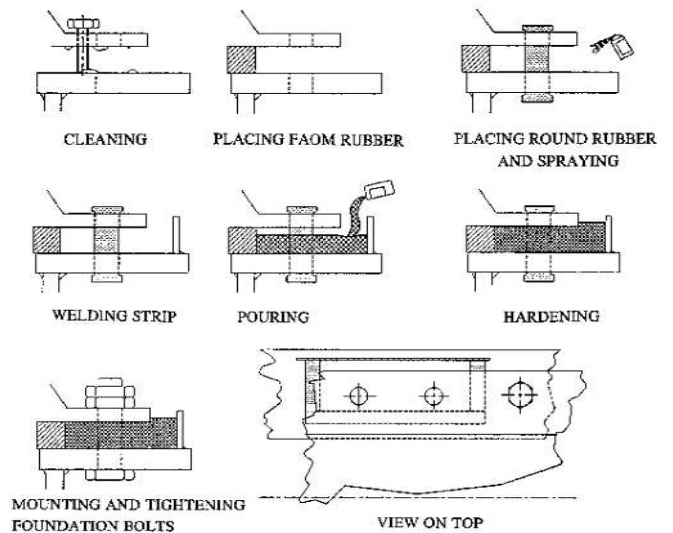


Figure 6. Procedure of Cleaning, Pouring the Resin, and Hardening and Tightening Machine Foundation.



Figure 7. Machinery Mounted Using an Epoxy Resin.

#### 4. Shims

Solid, stainless steel Steelshim® shims are invaluable when aligning machinery. Cutting your own shims is time consuming and carries a risk of injury. They come in a range of sizes and thickness and, for convenience, are packed in a suitcase. They are readily available for the next alignment job.



Figure 9. Use of Shims with Laser Alignment Equipment.



Figure 8. Suitcase with Steelshim® Shims.

## **5. Selecting a Mounting Method**

When selecting a mounting method, one important step is to determine the amount of money that can be spent. For example, for a \$2000 pump set it would be much too expensive to use Vibracon® elements, although from a reliability standpoint it would be superior.

Another critical factor is the need to realign the machinery. When it is a one-time installation without the possibility that machine alignment could change an epoxy grout like Epocast® 36 is a good selection.

Vibracon® elements are mainly used by machinery manufacturers who assemble the equipment in their factory and install it on the production site. OEM packagers, like diesel / turbine builders, are using these elements because they can create perfectly aligned machines within a few hours.

## **6. About Machine Support**

Machine Support is the specialist on laser alignment, and machinery mounting on board ships and in industrial environments. Machine Support is a service company that also sells the products they use when performing alignment jobs: laser alignment equipment, shims, epoxy resins, and Vibracon® SM elements. Their experience allows them to provide customers with sound advice for all kinds of alignment and mounting jobs. Machine Support is an SKF Reliability Systems company.

For more information please take a look at: [www.machinesupport.com](http://www.machinesupport.com) or dial: +31-(0)180-483828.