



# VIBRO/DYNAMICS

technologically advanced machinery mounting systems

**Your Best Way to Install and Level Industrial Machinery  
for Effective Control of Vibration, Shock and Noise**

**Machinery  
Mounting News**  
August 2000  
Issue 12

## *Did You Know?*

### **You can get a quick, free quote from us on the web!**

Simply visit [www.vibrodynamics.com](http://www.vibrodynamics.com) and click on "Request for Quotation". Then select the type of machinery you need a quote for and fill in the blanks! We will analyze the machine data and send you a quote. If you have many machines in your plant, just fill out a request for each one.

Remember, if you're rearranging your plant or even just relocating one or two machines, Vibro/Dynamics' Isolators give you the plant layout flexibility you need because there are no anchors or bolts. You can arrange your plant to maximize productivity, because you can locate even very sensitive equipment near stamping presses!

## *What's Inside?*

### **Proper use of a Precision Machinists' Level for Accurate Leveling**

You already know WHY it is so important to make sure your machine is level and correctly aligned. Inside, we'll explain how to properly use a precision machinists' level, and how it can make your job easier!

# Proper use of a precision machinists' level for accurate leveling

## Why level?

It is common knowledge that presses perform better when they are precisely leveled and aligned.

Press builders build press beds to very tight tolerances, and assemble the rest of the press components either parallel or perpendicular to the precisely level and untwisted bed. It can be difficult to duplicate this ideal setup on your plant floor, but you can make it easy on yourself.

This is easily accomplished when you use the right tools: a calibrated machinists' level and isolators that have been specifically engineered to match the operating characteristics of the machine.

## The Precision Machinists' Level

A precision machinists' level is a very precise instrument. It is designed to detect very small deviations in the level of a surface (inclination), and, more importantly, to indicate when that surface is level. When properly used and maintained, it will indicate when a press bed is level and flat (untwisted) to tens of thousandths of an inch.

## Level Calibration

To check the calibration of your level, see the instructions supplied with the level or use the following procedure:

1. Clean the bottom surface of the level. It must be clean, dry, and free of nicks and scratches.
2. Place the level on a clean, flat surface.
3. Outline the level with a felt tip pen.
4. Record the bubble reading.
5. Turn the level 180° and carefully place within the outline marking.
6. Record the bubble reading.
7. If both readings are the same, the level is in calibration.
8. If the readings are different, the level must

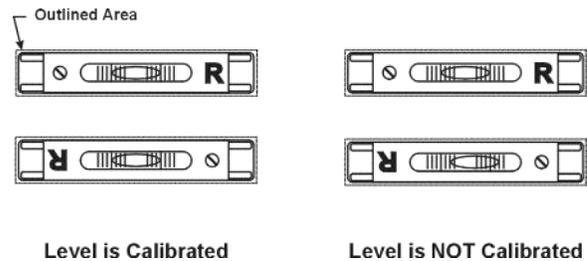


Figure 1

be calibrated (Figure 1). See the level's manual for instructions.

## Level Preparation & Use

Mark the letter 'R' on the top of one end of the level. Every time you place the level on the press bed, the end marked 'R' must be either toward the **Rear** of the press or to the **Right** end of the press.

When reading the level, look at both ends of the bubble because the bubble size can change:

1. When it is cold, the bubble gets bigger.
2. When it is warm, the bubble gets smaller.

The liquid expands as the temperature goes up, leaving less room for air in the bubble. If someone breathes on the bubble or covers it with their hand when moving the level, the bubble size can change. Other things that affect the bubble size

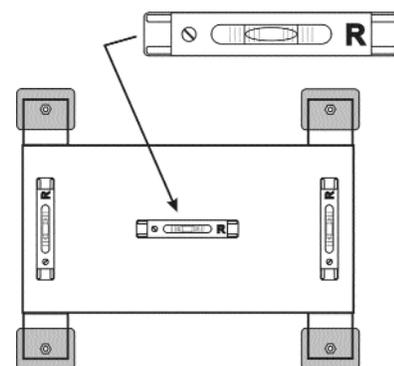


Figure 2

# Proper use of a precision machinists' level for accurate leveling

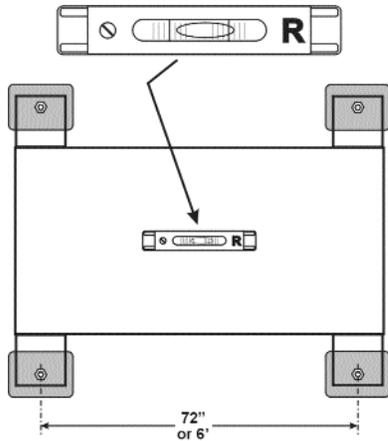


Figure 3

are drafts and temperature changes caused by HVAC units, doors opening and closing, nearby high intensity lighting, and so forth.

A typical machinists' level reads in units of .0005 inch per 12 inches, although some use different units. When reading a typical machinists' level, if the bubble is one division to the right, then the measured surface has an upward slope to the right of .0005 inch for each 12 inches of distance along that surface. For example, referring to Figure 3, if the press bed is 72 inches wide, and the bubble is one division to the right, then the level is indicating that the right side of the press bed is 0.003" higher than the left side. [(1 bubble x 0.0005"/ft.) x (72/12 ft.) = 0.003"].

### Press Bed Preparation

After calibrating the machinists' level, prepare the surface of the press bed or bolster plate to ensure accurate readings. Make sure that each spot on the bolster plate where the level is placed is clean, dry, and perfectly flat with no scratches, dents, or bumps. Wherever there is a scratch, there is a ridge sticking up next to it. If there is a drilled hole, the metal around the hole is raised. If you place the level on these ridges or high spots, the level will give false readings.

If you can't find a good spot to place the level, the bolster plate should be ground flat and parallel. If

there are just a few scratches or small dents, you can usually correct it by stoning the area with a fine-grained stone. Don't use a file or coarse stone; you may remove too much metal. All you want to do is remove the raised metal around the scratches and dents. Remember, you are measuring this surface to tens of thousandths of an inch or better. The level should be positioned so that it is parallel to the front and rear edges for left-to-right readings, and parallel to the left and right edges for front-to-rear readings, as in Figure 4.

When you have the level in the desired leveling location, mark the outline of the level on the bolster plate with a felt tip pen. This allows you to return the level to exactly the same location. When you return the level to a leveling location, make sure that it's within the marked outline and not sitting on any ink. When you relocate the level, make sure that the bottom surface of the level is clean by carefully wiping the level with a clean, dry cloth.

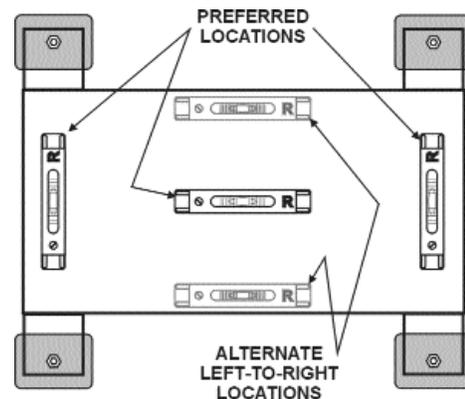


Figure 4

Now you are ready to level your press! Follow all safety and lockout/tagout procedures, and proceed with leveling. For information about easy and accurate ways to level your press, call us for your free copy of our technical bulletin, "How to Level A Press Using A Precision Machinists' Level".

## What's New?

### **New large 24W Wedge Isolators are now available.**

These isolators have load capacities up to 160,000 lbs. for four-legged machines weighing up to 533,000 lbs. Patented multi-layer configurations are also available for an even greater degree of vibration isolation protection.



### **New ZIP Code:**

Effective October 1, 2000, our ZIP code is 60155-3941. At that time, our old ZIP code, 60153, will no longer be valid. Please make sure your records are updated.

### **ISO Certification:**

We were recertified unconditionally for ISO9001 by ABS Quality Evaluations in May of this year.

### **New Employees:**

We are pleased to welcome Greg Madden, Inside Sales Coordinator, and Vicki Morton, Controller, to Vibro/Dynamics.

Vibro/Dynamics, Micro/Level, Hydra/Level and Lod/Sen are registered trademarks and Hy/Speed, Hy/Damp, Hy/Tuned, Glide/Damping and Lift/Lock are Trademarks of Vibro/Dynamics Corporation.

©2002 Vibro/Dynamics Corporation. All rights reserved. Printed in the U.S.A.  
Vibro/Dynamics Products are protected by one or more of the following U.S. Patents: 3,332,647; 4,047,427; 4,135,392; 4,846,436; 4,930,741; 5,360,195; 5,577,703; 5,690,304; 5,738,330; and 6,116,565.  
Also protected by foreign patents in E.U. and Japan. U.S.A. and Foreign Patents pending.

NL-12 08/2002

### Contact us:

#### **VIBRO/DYNAMICS CORPORATION**

2443 Braga Drive

Broadview, IL 60155-3941

E-Mail: [vibro@vibroynamics.com](mailto:vibro@vibroynamics.com)

Web site: [www.vibroynamics.com](http://www.vibroynamics.com)

Telephone 708-345-2050

Toll-Free in USA 1-800-842-7668

Fax 708-345-2225

### **VIBRO/DYNAMICS**

2443 Braga Drive  
Broadview, IL 60155-3941

BULK RATE  
U.S. POSTAGE  
**PAID**  
PERMIT NO. 512  
LISLE, IL 60532