

# Installation Guide for *EasyBalance 2.2*

High-end dynamic balancing instrumentation



# 1 Mechanical Modifications

There are two mechanical modifications required:

1. Replace the existing **Phase reference Sensor** (Photocell or Proximity switch) with the new Phase reference Sensor, supplied with the instrumentation package.
2. The existing cables coming from the vibration sensors can be used in most cases. However, the existing connectors need to be replaced with Switchcraft SC1001 connectors to fit the EasyBalance instrumentation. New pickup cable connectors are included in this instrumentation package, in case the existing connectors need to be replaced.

## Phase Reference Sensor:

### Horizontal Balancing Machines:

The Phase Reference Sensor is a photo switch and senses the presence of diffuse-reflective material. The photocell should be at a distance of between 1 to 3 inches from the rotor surface carrying the ZERO-mark. The ZERO mark could for instance be a small white piece of tape, or any similar marking. Do not point the sensor straight against the rotor surface. Rather, point the sensor at an angle between 30 and 45 degrees so that mirror-reflections off the surface of the rotor cannot cause a false trigger.

### **NOTE:**

**The Photocell should trigger at either the 12 o'clock or the 6 o'clock position of the ZERO mark.**

### Vertical Balancing Machines and for Horizontal End-drive machines:

The Phase Reference Sensor (Proximity switch) senses the presence of metal (bolt head or similar). The sensor should be mounted at a distance of 1/8" (3mm) to metal surface serving as the ZERO-mark.

### **NOTE:**

**The Proximity Switch should trigger when the balancing spindle is at the ZERO position.**

## 2 Electrical Connections



This rear panel view shows the available connectors.

**1. To PC:**

USB cable, plug into PC USB port

**2. Vibration Pickup Left:**

Connect to the left-side vibration pickup, or  
to the vibration pickup of 1-plane vertical machines

**3. Vibration Pickup Right:**

Connect to the right-side vibration pickup  
(leave open for 1-plane machines)

**4. Reference Pickup:**

Connect to the phase reference pickup (Photocell or Proximity switch)

**5. Encoder Input:**

Connect to the encoder (if equipped)

Warning: Encoder must be designed for 18 Volts supply voltage and have line  
driver output (5 Volts signals)

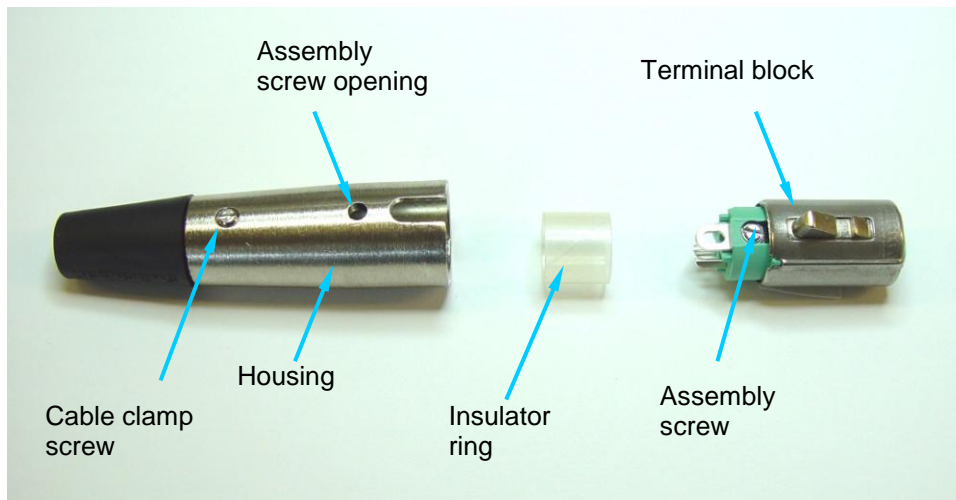
**6. Power:**

Connect to 120VAC, 50-60Hz (230VAC, 50-60 Hz)

### 3 Connectors

Connectors for the EasyBalance system are manufactured by Switchcraft.

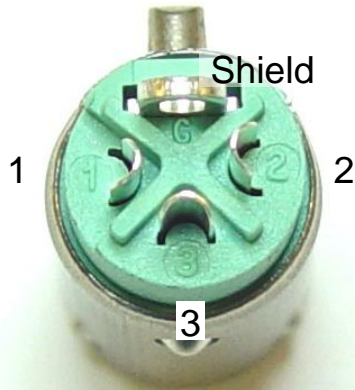
The vibration input uses a 3-pin female connector, SC1001:



To open the connector, insert a small screw driver into the assembly screw opening and turn the screw CCW. Carefully pull the terminal block out of the housing. When connecting your cable, insert the cable through the housing and through the insulator ring, before soldering the cable to the terminal block.

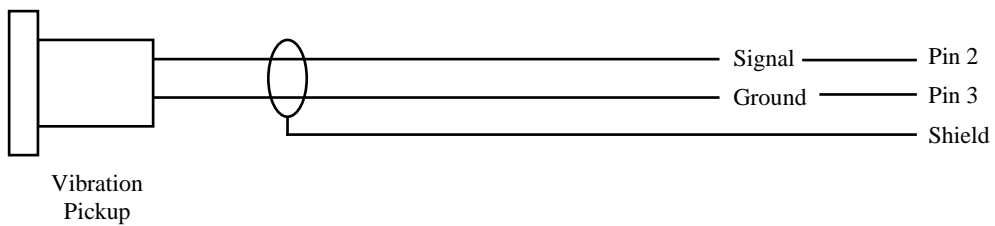
Once the cable has been soldered to the terminals, carefully assemble the connector and tighten the assembly screw CW. Tighten the cable clamp screws (2).

## 4 Vibration Pickup Connector



Vibration pickup connector, solder-side view

- Pin 1: Not connected
- Pin 2: Signal
- Pin 3: Ground
- Shield: Connect to shield of cable, if available



## 5 Calibration

Hard-bearing machines require calibration before first use. Follow the calibration procedure in the Owner's manual, page 15.

## 6 Disclaimer

**BalanceMaster Inc.** disclaims all other warranties, expressed or implied, including but not limited to, any implied warranties of merchantability, fitness for a particular purpose and non-infringement. **BalanceMaster Inc.** shall not be liable for any direct, indirect, consequential, exemplary, punitive or incidental damages arising from any cause even if **BalanceMaster, Inc.** has been advised of the possibility of such damages.

## 7 Copyright

Complying with all applicable copyright laws is the responsibility of the user. This software may be used on more than one computer and is licensed to a single user. You are allowed to make backup copies of this software. Illegal distribution and/or copying of this software will be pursued to the fullest extent of the law.