



# 12R993

## Operation Manual

Contents subject to change without notice

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## Construction and Application

12R993 single-Pan Balance is of unequal arm type with three beams. The beam is made of high quality aluminum alloy and the plane is of agate which can improve accuracy of use and lengthen life of operation. To speed up weight readings, the magnetic damping system brings the pointer to rest with a minimum number of swings.

It is widely suitable for physical-chemistry experiments and analytical weighing in chemical works, medical and hygiene, food-stuff, agriculture, textiles, electronics, mines, scientific research institutions, universities and colleges, etc.

## Unpacking:

Carefully remove the balance and the separate poise (sliding weight) from the protective carton. You will find a slit rubber washer lodged underneath the platform, and one rubber washer located above the pointer. The washers are to be removed from the scale.

## Set-up:

After placing the balance on a smooth, flat surface, slide each separate poise (sliding weight) into its zero slot. With all poises at the zero position, the pointer should be near zero.

## Zeroing:

For extra zero, adjust the knurled knob which is located at the left end of the beam. It is advisable to check the zero adjustment periodically.

## Weighing:

Place the specimen on the center of the platform and proceed as follows:

1. Starting with the largest capacity beam (500g). Move the 500g poise to the right to the first notch which caused the pointer to drop, then, move it back one notch, causing the pointer to rise.
2. Repeat procedure with the 100g poise.
3. Slide the 10g poise to the position that brings the pointer to rest at zero.

The weight of the specimen is the sum of the values of all poise positions, read directly from the sum of the values of all poise positions, read directly from the graduated beams.

## Attachment Weights:

Total capacity is either 2610 grams or 5 pounds, 2 ounces when attachment weights are suspended from the pivots. Without the weights, the capacity is 610 grams (1 pound, 2 ounces).

## Care and maintenance:

Keep the balance clean at all times. Most dirt or foreign matter can easily be removed with an air syringe, but a piece of adhesive-backed tape pressed against the magnet faces will keep them free from dirt. Never apply lubricants to the knives or bearings and don't allow dirt or foreign materials to accumulate on any part of the beam. The beam must be kept clean in order to provide years of accurate stable readings.

## Specifications

### Capacity:

Without attachment weights: 610g

With included attachment weights: 2610g

**Readability:** 0.1g

**Weighing Units:** grams

**Beam Calibrations:** 10x0.1g, 100x10g, 500x100g

**Features:**

- Three beam direct reading
- Attachment Weights included
- Magnetic Damping System

**Troubleshooting:**

Before troubleshooting please take these words of “Balance Beam Wisdom” Balance Beams are a very old and basic design of scale. They date back to the ancient Egyptian Empire and Balance Beam scales were used to build the pyramids. Thus, the design is quite simple—a cup (hidden on modern beam scales) filled with metal loose weights and some metal sliding weights. Therefore, to fix a Balance Beam scale requires very basic steps—such as adding/removing weight from the cup or using a wrench to make the beam operate smoothly (if it’s touching or rubbing as it operates). First, before troubleshooting be certain that you have correctly unpacked the scale and removed all rubber stoppers (you’d be surprised how many times this happens). Also be sure that the sliding weights are all at their proper ZERO position. Please be 100% sure that you have removed both rubber stoppers and all packing bands/materials.

**1) “The Scale Won’t Zero”:** Sometimes in transport the beam will somehow become unbalanced. This means adjusting the zero knob doesn’t make the scale zero properly. If this happens to your scale please know that you can manually add or remove weight to the “Balance Cup”. The Balance Cup is located underneath the round metal tray. Simply spin the tray off (counterclockwise) to access the Balance Cup and add or remove weight as follows:

If your scale would not zero because it was reading too light (meaning you would have had to press down on the tray to make it zero), then add a small amount of weight to the cup (just a coin or paperclip, you can remove or add weight as you require).

If your scale would not zero because it was reading too heavy (meaning you would have had to pull up on the tray to make it zero), then remove a small amount of weight from the cup (just remove a tiny amount, you can remove or add weight as you require).

If you are trying to compensate for a small bowl or tray, you can remove weight from the cup until the scale zeros. The Balance Beam is a very basic scale and if it zeros & moves freely, then it always reads accurately.

**2) “The Beam is Rubbing / Touching”:** In order for this scale to work properly, it must operate smoothly without touching or rubbing. Sometimes in transport the beam will get shifted and touch the internal magnets by the front of the beam (where the “0” indicator is). If this happens please try to manually adjust the beam using a wrench on the main bolt under the scale. Simply twist the beam to make it operate smoothly. If you cannot make the beam operate smoothly then the scale will need to be sent in for service.

## **1. One Year Limited Warranty**

MeasureTek products covered in this manual are guaranteed to be free from defects in material and workmanship for a period of one year after date of purchase. Misuse, accidental damage, overload, alteration, and improper installation are expressly excluded. Any product which is determined to be defective in material or workmanship within this time period may, as the exclusive remedy, be returned to an authorized MeasureTek distributor or service center, freight prepaid with prior return authorization, to be repaired or replaced at the manufacturer’s option. MeasureTek’s liability under this warranty is limited to the repair or replacement of the defective product and in no event shall MeasureTek be liable for consequential or indirect damages.