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To ensure our content is always up-to-date with current information, best practices, and professional advice, articles are routinely reviewed by industry experts with years of hands-on experience. Reviewed by on Jun 02, 2023 A digital scale uses computerized pressure gauges to weigh objects. Calibration of those instruments is usually done in the factory and shouldn't be required unless they lose accuracy. That said, if your readings start to seem suspect, there are some steps you can take. **Scale Calibration Overview** Normally you need special weights to calibrate a scale and the best way to accomplish this is using the proper scale weights. Sometimes they come with the scale, but if not, such weights can also be purchased (Figure 2). If weights aren't available and the scale needs to be checked in a hurry, you can improvise makeshift weights using common items available around the house. Some people use coins, but beware! During all the years that coins have been produced, their weights haven't remained consistent. Different metal alloys have become available, and the ratio of their use in coins has evolved over time. This is particularly true of Canadian coins, which have thus proven to be unreliable throughout the years for calibration. US coins, however, have been more consistent for periods of many years, as shown in the table in Figure 3. If the calibration isn't urgent, it's probably worth purchasing the proper weights. They're actually available at a great variation in price. As people say, you get what you pay for—pharmacists might need a set of weights priced at a few hundred dollars for their accuracy, where the common household baker would probably be satisfied with a set under \$10. **Step 1 - Clean the Scale** The scale must be completely clean so nothing interferes with the calibration process. Many things can make it difficult for the scale to zero, and often you may not even be able to see what's affecting the scale. Cleaning will require special tools and products that will not damage or degrade the scale and its surfaces. Use a soft bristle brush and a mixture of warm water with a mild soap, to remove residue from the creases around and underneath the pan, then finish with a soft piece of cloth moistened with the same soapy solution. It's usually not a good idea to wash electronics with a fully soaked cloth, since that creates the risk of water seeping into the internal components, causing short outs or corrosion. Once this is done, use a different cloth to thoroughly dry out every part and surface of the scale. **Step 2 - Prepare the Weight Samples** The amount of weight required to perform the test should be at least half of the capacity of the scale, with two-thirds being ideal to obtain the most accurate reading. So if a scale is rated at 500g, samples weighing between 250g and 350g should be used to do the testing. Whether using proper weights or coins or anything else, the type of weight samples and the quantity of each required should be selected beforehand. **Step 3 - Prepare the Scale for Verification** The scale has to be reset at zero, but first it should be turned on and allowed to warm-up for 10 minutes before calibration. Before starting to calibrate, press the power button to turn it on for one minute, then the off button to turn the power off. The next step is to set the instrument to "Calibration" by pressing some buttons on the front in a specific sequence that varies between sale models. Consult the owners manual for this information, and for any other details pertaining to calibration. If you don't have it, try looking up your model online for detailed instructions. The calibration has to be done with nothing on the scale. First, turn the power on, then press the "Zero" or "Tare" button if there is one present. Wait patiently while the scale clears any remaining data from previous uses. It may take a second, but your scale should show a "0.00" weight once it is zeroed. **Step 4 - Proceed to Calibrate** Once the scale is properly zeroed, you can go about calibrating it properly. If the scale is not zeroing properly, make sure it's on a completely level surface. It could take up to a minute for the scale to zero, so be patient. The process could vary slightly with different models, so consulting the manual is strongly recommended to ensure proper preparation for the calibration. Place the calibration weight on the plate, then press the "Unit" key to show the value on the readout screen. If the right value is displayed within the scale's tolerance, the calibration is completed. Then remove the samples from the plate, and return the scale to weighing mode by turning it off and then back on again. Then add the weight to the plate again to see if the same reading appears. If it doesn't, start the calibration again. **Calibrate a Digital Pocket Scale Without Weights** FAQ How can bathroom scales give a different weight if I step off let it reset itself and then get on again? Scales seem like pretty simple, straightforward devices but actually, all kinds of little things can give you an inaccurate weight reading. First, make sure the scale is on a perfectly level spot. The scale should also be flat and not sloping or inclining in any way. Also, make sure the scale is set to zero before you weigh something on it. If you do these things and you're still getting different readings from the scale, it may need calibration. How do I reset my digital scale calibration? If your scale needs to be calibrated, you essentially need to set it back to zero. Remove all the batteries from the scale and leave them out for about 10 minutes. Clean the battery compartment and contact terminals to get rid of any dust and debris that may be in there. Re-insert the batteries. Place the scale on a flat, level, even surface. Activate the scale by pressing on it with your hand. You may see a series of dashes or other symbols and then 0 should appear in the display. Test your scale with an item that you know the weight of to see if the scale is reading accurately now. How do I know if my digital scale is accurate? To test your scale's accuracy, first make sure it's set to 0 and it's on a flat, even surface. Now, weigh an object that you know the weight of. Try weighing the object a couple of times to make sure you get the same reading each time. Do bathroom scales go bad? Scales can wear out over time, just like any other item. After all, the Grand Canyon was created by wear and tear. Scales can get out of balance with use and may simply need to be replaced once they reach this point. How long do digital bathroom scales last? Digital scales, like anything else, come in a huge range of price points. Lower-end, more affordable scales will not last as long as more expensive scales because they are built with less expensive materials. A lower quality, more affordable scale could last anywhere from one to three years, though some may last longer. A scale made with a higher grade of materials can last five to 10 years, on average. October 10, 2023 Scale Supply Co. It is always best practice to use precise calibration weights to calibrate your digital scale, which you can find here: **Calibration Weights & Weight Sets** For a great (and cheaper!) alternative, we've found this set on Amazon to be fantastic for calibrating smaller digital scales. However, if you're in a hurry, using the methods below can provide accurate and fast results. Why is Calibration Important? Before we dive into the process of calibrating your digital scale without a weight, let's understand why calibration is important. Calibration ensures that your scale provides accurate measurements, which is crucial for various applications such as cooking, baking, or monitoring your weight. Over time, digital scales can drift and lose their accuracy, so regular calibration is necessary to maintain their reliability. **Method 1: Using Water** One simple method to calibrate your digital scale without a weight is by using water. Here's how you can do it: Fill a container with a known volume of water. For example, you can use a measuring cup filled with 500 milliliters of water. Place the container on the scale and note the displayed weight. Adjust the scale reading to match the known weight of the water. Most digital scales have a calibration feature that allows you to adjust the displayed weight. Once the adjustment is made, remove the container and check if the scale now displays zero weight. If not, repeat the process until the scale reads zero. **Method 2: Using Coins** If you don't have access to a known weight or water, you can use coins of known weights to calibrate your digital scale. Follow these steps: Gather a set of coins with known weights. For example, you can use five quarters, which weigh approximately 5 grams each. Place the coins on the scale and note the displayed weight. Adjust the scale reading to match the total known weight of the coins. Again, use the calibration feature of your digital scale to make the adjustment. Remove the coins and check if the scale now displays zero weight. Repeat the process if necessary. **Method 3: Using Everyday Objects** If you don't have access to water or coins, you can use everyday objects of known weight to calibrate your digital scale. Here's how: Select objects with known weights, such as a can of soup (approximately 400 grams) or a bag of sugar (approximately 1 kilogram). Place the object on the scale and note the displayed weight. Adjust the scale reading to match the known weight of the object using the calibration feature. Remove the object and check if the scale displays zero weight. Repeat the process if needed. **Conclusion** Calibrating your digital scale without a weight is possible using various methods such as water, coins, or everyday objects. Regular calibration ensures accurate measurements and reliable results. Remember to consult your scale's user manual for specific instructions on calibration, as different models may have slight variations in the process. Enjoy precise measurements and peace of mind with a properly calibrated digital scale! **ScaleSupplyCo.com** Free Shipping When you spend \$150+ Give Us A Call (323) 828-2072 Chat With Us Use the chat box in the lower right-hand corner Email Us sales@calesupplyco.com January 5, 2024 Scale Supply Co. In the realm of precision weighing, the Ohaus Ranger 3000 stands tall as a beacon of accuracy, efficiency, and reliability. For professionals and businesses seeking a top-tier weighing solution, this advanced scale offers a myriad of features that make it... Read now December 2, 2023 Scale Supply Co. When it comes to measuring force or weight, load cells play a crucial role. But what exactly is a load cell and how does it work? In this blog post, we will explore the ins and outs of load cells... Read now November 29, 2023 Scale Supply Co. Industrial scales are essential tools for accurately measuring the weight of various objects in manufacturing, logistics, and other industries. However, it can be frustrating when your scale consistently shows different weight readings. In this blog post, we will explore the... Read now When you test, or calibrate, a scale, you check its accuracy by comparing the known exact weight of an item to the weight displayed when it is placed on the scale. You can check your own scales at home too. While calibration weights serve this purpose, you can use other items of known weight. Commercial scales must undergo a regular schedule of inspection to comply with standards for accuracy. Check the owner's manual of your scale, as there may be a prescribed procedure for calibration. You'll need a hard, level surface that doesn't shake. Load the scale evenly and allow time for your weight to settle before taking a reading. With a very sensitive scale, even the room temperature or atmospheric pressure can influence the reading. Digital scales will have a calibration mode, and mechanical scales will have a thumbscrew or similar adjustment. For simple accuracy testing of any size of scale, the general rule is to use a test weight similar to what you would typically weigh on that scale. You may need to combine a number of weights. Proper calibration calls for using a weight that's close to the highest capacity of the scale. Different commercial and international standards allow various amounts of tolerance between the test weight and the indicated weight. Lower quality scales are marked "Not legal for trade" because they fail to meet commercial standards. Food packaging shows weight as "NET WT.," which indicates the weight of the product without the weight of the container. If the container is very light, as in the case of a candy bar wrapper, the gross weight is very close to the net weight. In a 2.260-kg (5-lb) bag of flour, the paper bag itself is about 23 grams. Add the net and the tare - the weight of the container itself - to get the gross. Weighing the bag of flour, your scale should read a gross weight close to 2.283 kg, possibly rounded up to 2.3 or rounded down to 2.28. Coins are minted to precise specifications, including weight, so they can serve as calibration weights. For example, a U.S. nickel weighs 5 grams. A penny weighs 2.5 grams. These numbers easily multiply, so 10 nickels can serve as a 50-gram calibration weight. Other U.S. coins are less useful because their weights don't fall at such even numbers; for example, a dime weighs 2.268 grams. A 1-euro coin weighs 7.5 grams, and a 0.02-euro coin weighs 3 grams. Silbajoris, Alex. "How To Calibrate A Scale Without Weights" sciencing.com, 13 March 2018. APA Silbajoris, Alex. (2018, March 13). How To Calibrate A Scale Without Weights. sciencing.com. Retrieved from Chicago Silbajoris, Alex. How To Calibrate A Scale Without Weights last modified March 24, 2022. How to Calibrate Fusion Digital Scales How to Read a Scale by Weighing Grams How to Calibrate a Tamita Jewelry Scale How to measure the weight of a bag of coins Problems With Digital Scales How to Convert a Load Cell Reading Into Total... How to measure butter without scales How do I Remove the Batteries From Salter... How to use an architect's scale ruler How to Format an SD Card to a Smaller Size How to Convert MG to MMOL/L How to Measure Scooter Roller Weight How to Convert Conductivity to Concentration Sansui R606 Specifications Industrial scales are essential tools for accurately measuring the weight of various objects in manufacturing, logistics, and other industries. However, it can be frustrating when your scale consistently shows different weight readings. In this blog post, we will explore the top 10 reasons why your industrial scale may be displaying inconsistent weight measurements. 1. Calibration Issues One of the most common reasons for inconsistent weight readings is calibration issues. Industrial scales need regular calibration to ensure accurate measurements. If your scale hasn't been calibrated recently, it may display inaccurate weight readings. Also, using precise calibration weights to calibrate can help you verify the accuracy of the scale. See our Calibration Weights collection 2. Environmental Factors Environmental factors such as temperature, humidity, and air pressure can affect the accuracy of your industrial scale. Changes in these factors can cause the scale to show different weight readings. It's important to keep your scale in a controlled environment to minimize these effects. 3. Overloading the Scale Industrial scales have a maximum weight capacity, and exceeding this limit can lead to inaccurate readings. If you consistently overload your scale, it may show different weight measurements. Make sure to check the weight capacity of your scale and avoid exceeding it. 4. Uneven Surfaces An uneven surface can cause your industrial scale to display different weight readings. If the scale is not placed on a level and stable surface, it may tilt or wobble, affecting its accuracy. Ensure that the scale is placed on a flat and stable surface for consistent measurements. You can also use an anti-vibration table to keep your scales stable. Check out our Anti-Vibration Tables 5. Mechanical Issues Mechanical issues such as worn-out load cells or damaged components can also lead to inconsistent weight readings. If your scale has been in use for a long time or has undergone rough handling, it's possible that it may require maintenance or repair to restore its accuracy. 6. Electrical Interference Electrical interference from nearby equipment or power sources can disrupt the functioning of your industrial scale, resulting in different weight readings. Keep your scale away from sources of electromagnetic interference to ensure accurate measurements. 7. Operator Error Incorrect usage or operator error can also contribute to inconsistent weight readings. If the operator doesn't place the object properly on the scale or doesn't follow the correct weighing procedure, it can affect the accuracy of the measurements. Proper training and adherence to weighing protocols are crucial for obtaining reliable results. 8. Aging Components Over time, the components of your industrial scale may wear out or deteriorate, leading to inconsistent weight readings. Regular maintenance and replacement of aging components can help maintain the accuracy of your scale. Shop our large selection of scales 9. Power Supply Issues Inadequate or unstable power supply can impact the performance of your industrial scale. Fluctuations in voltage or power surges can cause the scale to display different weight measurements. Ensure that your scale is connected to a stable power source to avoid such issues. 10. Software or Firmware Problems Software or firmware issues can also result in inconsistent weight readings. If your scale's software is outdated or has bugs, it may affect the accuracy of the measurements. Regularly update your scale's software or firmware to ensure optimal performance. In conclusion, there are several reasons why your industrial scale may show different weight readings. By addressing the possible issues above, you can improve the accuracy and consistency of your scale's weight measurements. Our professional scale technicians are available to help you address and correct the issue 24/7. Refer to our Service Request page and we'll be happy to help you out! Calibrating a scale without weights can be a challenging task, but it is not impossible. There are several methods you can use to achieve accurate calibration, even without the use of traditional calibration weights. In this answer, I will outline some alternative methods that can be used to calibrate a scale without weights. 1. Household items: Look around your house for objects with known weights. For example, a standard 500ml bottle of water weighs approximately 500 grams. Similarly, a can of soda or a bag of flour can provide a rough estimate of weight. By placing these items on the scale and comparing the reading to their known weights, you can calibrate the scale accordingly. 2. Coins: As mentioned earlier, coins can serve as calibration weights when their weights are known. You can gather a variety of coins, such as nickels, pennies, dimes, and quarters, and use their known weights to calibrate the scale. By placing multiple coins on the scale and adjusting the calibration until the correct weight is displayed, you can ensure accurate measurements. READ More: Can you smoke lemon drop? Online resources: The internet can be a valuable tool for calibration without weights. Many websites provide information on the weights of common objects. For example, you can find the weight of a standard AA battery or a common fruit like an apple or an orange. By using these known weights as references, you can adjust the scale accordingly. READ More: Why won't my Xbox connect to my laptop? 4. Estimation and comparison: If you don't have access to any known weights, you can estimate the weight of objects by comparing them to each other. For instance, you can place two similar-sized objects on the scale and adjust the calibration until they balance each other out. This method relies on trial and error and may not provide precise calibration but can still be useful in some situations. 5. External calibration: If you have access to another calibrated scale, you can use it to calibrate the scale in question. By placing an object on both scales simultaneously and comparing the readings, you can adjust the calibration until the readings match. This method requires access to a reliable calibrated scale but can provide accurate results. READ More: Is Kalo alcoholic? It is important to note that these alternative methods may not provide the same level of accuracy as using calibrated weights. However, they can still be useful for general calibration purposes or in situations where weights are not readily available. Calibrating a scale without weights may require some creativity and resourcefulness. By using household items, coins, online resources, estimation, comparison, or external calibration, you can achieve a reasonably accurate calibration. Remember, the goal is to ensure that the scale provides consistent and reliable measurements, so it is always a good idea to verify the calibration periodically using certified weights if possible. October 10, 2023 Scale Supply Co. It is always best practice to use precise calibration weights to calibrate your digital scale, which you can find here: **Calibration Weights & Weight Sets** For a great (and cheaper!) alternative, we've found this set on Amazon to be fantastic for calibrating smaller digital scales. However, if you're in a hurry, using the methods below can provide accurate and fast results. 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Here's how: Select objects with known weights, such as a can of soup (approximately 400 grams) or a bag of sugar (approximately 1 kilogram). Place the object on the scale and note the displayed weight. Adjust the scale reading to match the known weight of the object using the calibration feature. Remove the object and check if the scale displays zero weight. Repeat the process if needed. **Conclusion** Calibrating your digital scale without a weight is possible using various methods such as water, coins, or everyday objects. Regular calibration ensures accurate measurements and reliable results. Remember to consult your scale's user manual for specific instructions on calibration, as different models may have slight variations in the process. Enjoy precise measurements and peace of mind with a properly calibrated digital scale! **ScaleSupplyCo.com** Free Shipping When you spend \$150+ Give Us A Call (323) 828-2072 Chat With Us Use the chat box in the lower right-hand corner Email Us sales@calesupplyco.com January 5, 2024 Scale Supply Co. In the realm of precision weighing, the Ohaus Ranger 3000 stands tall as a beacon of accuracy, efficiency, and reliability. For professionals and businesses seeking a top-tier weighing solution, this advanced scale offers a myriad of features that make it... Read now December 2, 2023 Scale Supply Co. When it comes to measuring force or weight, load cells play a crucial role. But what exactly is a load cell and how does it work? In this blog post, we will explore the ins and outs of load cells... Read now November 29, 2023 Scale Supply Co. Industrial scales are essential tools for accurately measuring the weight of various objects in manufacturing, logistics, and other industries. However, it can be frustrating when your scale consistently shows different weight readings. In this blog post, we will explore the... Read now Calibrating a Digital Scale without Weights: A Step-by-Step Guide Understanding the Importance of Calibration Before we dive into the process of calibrating a digital scale without weights, it's essential to understand the importance of calibration. Calibration ensures that your digital scale is accurate and reliable, which is crucial for various applications, including cooking, baking, and even scientific experiments. A calibrated scale can save you time, money, and frustration. In this article, we'll provide a step-by-step guide on how to calibrate a digital scale without weights. Preparation is Key Before you start the calibration process, make sure you have the following: A digital scale with a built-in calibration feature A set of weights (e.g., 1-10 grams) that match the scale's weight range A stable and flat surface to work on A ruler or measuring tape **Step 1: Set the Scale to the Correct Unit** Check the scale's unit: Make sure the scale is set to the correct unit (e.g., grams, ounces, or pounds). Set the scale to zero: Set the scale to zero by pressing the "zero" button or by placing the weight on the scale and pressing the "zero" button. **Step 2: Add Weights to the Scale** Choose the correct weights: Select weights that match the scale's weight range (e.g., 1-10 grams). Add weights to the scale: Place the weights on the scale, making sure they are evenly distributed and not touching each other. Repeat the process: Repeat the process for each weight, adding weights in the correct order (e.g., 1-2-3-4-5-6-7-8-9-10). **Step 3: Calibrate the Scale** Press the "calibrate" button: Press the "calibrate" button on the scale. Wait for the calibration process: The scale will perform a calibration process, which may take a few minutes. Check the scale's accuracy: After the calibration process is complete, check the scale's accuracy by placing a weight on it and pressing the "zero" button. **Step 4: Verify the Scale's Accuracy** Use a known weight: Use a known weight (e.g., a 10-gram weight) to verify the scale's accuracy. Compare the readings: Compare the readings on the scale to the known weight. Check for accuracy: Check if the readings are accurate and consistent. **Tips and Tricks** Use a stable surface: Use a stable and flat surface to work on to ensure accurate readings. Avoid touching the scale: Avoid touching the scale's surface, as this can affect the accuracy of the readings. Calibrate the scale regularly: Calibrate the scale regularly to ensure accuracy and reliability. Common Issues and Solutions Scale not turning on: Check if the scale is properly plugged in and if the battery is charged. Scale not reading weights: Check if the weights are evenly distributed and not touching each other. Scale showing incorrect readings: Check if the scale is calibrated correctly and if the weights are properly placed. **Conclusion** Calibrating a digital scale without weights requires attention to detail and a step-by-step approach. By following these steps and tips, you can ensure that your digital scale is accurate and reliable. Remember to calibrate your scale regularly to maintain accuracy and reliability. With practice, you'll become a pro at calibrating your digital scale without weights. **Table: Weights and Calibrating a Digital Scale Weight Range Recommended Weights** 1-10 grams 1-10 grams 10-50 grams 1-5 grams, 6-10 grams 50-100 grams 1-5 grams, 6-10 grams, 11-15 grams 100-500 grams 1-5 grams, 6-10 grams, 11-15 grams, 16-20 grams **Additional Resources** Manufacturer's instructions: Check the manufacturer's instructions for specific calibration requirements. Online tutorials: Check online tutorials and videos for additional guidance on calibrating a digital scale without weights. Digital scale calibration apps: Download digital scale calibration apps to help you calibrate your scale on the go. Your friends have asked us these questions - Check out the answers!