Como leer el vernier

Professor Eduardo J. Stefanelli Measuring with a caliber with nonium in fractions of an inch - measuring and interpreting Before you continue reading this text and interacting with the simulator, you may prefer to revise the process to read, interpret and suo fractions inches without the help of nonium, which is a prerequisite for understanding it. We also recommend that you consider the topic: Nonio or vernier: a simulation of reading and interpretation in fractions of inches resolution 1/128 and caliber in a fraction of an inch - examples of measurement. How to read and use a caliber with nonium to read and interpret in fractions of inches resolution 1/128 We saw in the theme: Using measurements in fractions of an inch - understanding and measurement, without noranium, that reading graduated ruler with a scale in a fraction of an inch is not a mystery that ordinary people assume. In the theme of Nonio or vernier: the simulator reading and interpreting in a fraction of inches resolution 1/128 we have seen how each division of the main scale represents 1/16 (sixteenth) inch. We have also seen that this space is divided into eight nonium and that the value of the measure is what is received by the amount: from the integer; share of the main scale and the share of the non-zero. With experience, this algebra becomes automatic. However, we don't always have time to perfect this. I'll give some advice to the theme we've seen in the topic: Virtual caliber in inches - simulator with nonium or vernier 1/128 - metrology that engineering uses nonium in determining what part of the distance between two signs (1/16) or zero nonium is. For example: when a nonium zero is in the middle of a distance between one mark and another, for example, half of 1/16 (1/16 and 1/2 x 1/32) is added to the measurement of the main scale. Number 4 (which is half 8) aligned non-externality indicates this (if you don't understand anything, it's a sign that you should interact with the page mentioned above and then go back here ☺ In the image on the side, the fifth mark of the nonium indicates We've seen an easy way to craft this diet that: Basically scale, count the number of marks after all an inch and to zero and multiply that value by 1/16 (7 marks No. 1/16 x 7/16) Note that the name is aligned and multiplied by 1/128 (5th Mark No. 1/128 x 5/128) Add these values to the whole main scale, (7/16 x 14/32 x 28/64 x 56/128 - 5/128 - 1 x 1.61/128) How 61 is a strange number It cannot be simplified. All this algebra can at the beginning, leave some uncomfortable and afraid to carry out these accounts when it comes to the truth. There is an even easier way to read these measurements: Each mark on the main scale is equivalent to 8/128 (1/16 x 2/32 x 4/64 x 8/128 - see nonium number 8 to help remember) as follows: On the scale Calculate the number of marks after all an inch and to zero nonium and multiply this value by 8/128 (7 marks No. 8/128 x 56/128) Note, which is not aligned and multiplied by 1/128 (5th mark No. 1/128) 5/128) Add these values with the main scale integrator (56/128 and 5/128 and 1 x 1 61/128) For even the main faction insifif. and the denominator for two, until the numerator is clear. With experience, you will see that if the sign of non-commitment you aligned was an even number, it is easy to simplify before starting calculations, further promoting the accounts. Let's say that the fourth nonvention mark was aligned in the figure above (we can conclude that the result will be equal to the measure we calculate reduced from 1/128), but we will do so by reading and interpretation. but we go or fazer I read and interpret. Thus: Notice which sign is aligned with nonium and multiply by 1/128 (4th mark No. 1/128 x 4/128) Simplify this faction: 4/128 x 2/64 x 1/32 (remember that it is half 1/16) On the main scale, Calculate the number of marks after just an inch and to zero and multiply this value by 2// 32 (7 marks No 2/32 x 14/32) Add these values to the main scale integrator (1/32 - 1 4/32 - 1 . 1.15/32) Figure 2 themes: Nonio o vernier: a simulation of reading and interpretation in factions of inch resolution 1/128 demyst especially faction and faction denominator, express nonium. The key point is that if the denominator is 32, each mark on the main scale should be multiplied by 2/32 64, each mark on the main scale should be multiplied by 4/64 128, each mark on the main scale should be multiplied by 8/128 It is also good that you remember this list. Virtual caliber with nonium simulator for use in fractions of an inch - understanding and measurement - 1/128 Vernier (Av). The neim or mobile vernier scale is designed to achieve better accuracy in the measurement that is performed. Generally nonio graded in 10 or 20 divisions (figure has 20 divisions) the appreciation of the vernier is determined by the following relationship. for the vernier figure over the appreciation of the 1mm hecontage rule and the number of nonium 20 divisions, then the appreciation of the vernier vernier reading consists of two parts one whole, that every other decimal, that is given nonium. Each nonium division will cost 0.05 mm. The way to get the measurement is as follows: 1.- We will place a figure to measure at the lower stops.2.- Move nonium, To match the size of part.3.- We take the whole part in millimeters of measurement, looking at the nonium 0 situation on a fixed line, in example 16mm.4.- We take a decimal part of the measurement by looking at a nonium line that corresponds to a fixed rule separation, such as 0.40mm.5.- The The calibration devices measure the devices used to accurately determine the width of a space or object, much more accurately than with a roulette or ruler. In addition to digital models that use an electronic display, calibration can display measurements on a pair of scales (the return of the calibrator) or on a scale and on a quadrant comparator (calibration clock). 1 Identify the calibration. Use instructions for vernier calibrators if the device has two scales, one mobile with the other. If you have a scale and 24 hours a day in place, look at the instructions in the calibrator of the watch. If you're using digital calibration, measurement should be displayed on an electronic display, usually with the ability to switch between millimeters (mm) and inches (in). Before you work out the measurement, close the large jaws completely and press the zero, container or ABS button to set the closed position to zero. 1 If available, use the adjustment wheel. While this is not common, some gauges or rather have a adjustable wheel on a moving scale that can be pressed to adjust the scale without affecting the gauge jaws. If the model has a wheel, click on it until zeros are aligned on the travel scale and fixed scale; then move forward to read the measurements. Otherwise, continue the next step. Look closely at the jaws to make sure you don't tighten the finely fit screw that opens and closes the jaws in small amounts. 2 Calculates a zero positive error. If the 0 travel scale is to the right of the 0 fixed scale, read the measure in a fixed scale that corresponds to 0 the travel scale. This is a zero positive error, so write it down with q. For example, if 0.9 mm on the motion scale is 0.9 mm on a fixed scale, this indicates a zero margin of error: 0.9 mm. 3 Calculate a negative zero error. If the 0 of the travel scale is to the left of the fixed scale, follow these steps: With closed jaws, look for a mark on a moving scale that exactly coincides with the fixed scale. Moves the moving scale so that the sign is consistent with the next highest value. Repeat until 0 on the movement scale is to the right of the 0 fixed scale. Write down the number of distances traveled. Reads the value in a fixed scale that aligns with 0 of the travel scale. Subtract the distance traveled from the value you just read. Writes this error from scratch, including a negative sign. For example, 7 on a touching scale is aligned with 5 mm on a fixed scale. Moves the moving scale until it is more to the right than a fixed scale; then align 7 with the following fixed scale mark: 7 mm. Note that you have moved to a distance of 7 - 5 x 2 mm. 0 on a moving scale now At 0.7 mm. The margin of error is 0.7 mm - 1.3 mm. 4 subtract zero error from all measurements. Whenever you take action, subtract a zero error from the result to get the actual size of the object. Be sure to consider a zero (me) or -) error mark. For example, if the zero margin of error is 0.9 mm and you make a measurement of 5.52 mm, the actual value is 5.52 - 0.9 x 4.62 mm. For example, if the zero margin of error is -1.3 mm and you make a measurement of 3.20 mm, the actual value is 3.20 - (-1.3) x 3.20 and 1.3 x 4.50 mm. Read the measurement 1 Adjust the jaw to make the measurement. Holds large flat jaws around the object to measure the external dimension. Insert smaller curved jaws into the object and expose them outwards to measure the internal dimension. Tighten the lock screw to keep the scale in place. Swipe to open or close your jaws. If the gauge screw has a finely tweaked, you can use it to make more accurate adjustments. 2 Read the fixed scale. If you have the calibration jaws in the right position, look at the fixed scale engraved on the instrument body. Usually there is an imperial scale and a fixed metric scale; or will work. Follow these steps to find the first pair of digits in the measurement: Find 0 in the smallest travel scale, next to the fixed scale you're using. On a fixed scale, find the sign closest to the left of that 0, or exactly above it. Read the value of the sign as if it were reading the rule, but keep in mind that the imperial side of the calibrator divides every inch by tenth, not sixteenth, as most rules are. 3 Check the travel scale for additional numbers. Carefully examine the moving scale, starting from mark 0 and moving to the right. For when you find a sign that aligns exactly with any mark on a fixed scale. Read this value on a scale as if it were a normal rule using a unit recorded on a scale. The value of the fixed scale does not matter; just read the value on a mobile scale. 4 Add two values together to get the final answer. This should be a simple case of entering fixed scale numbers and then entering those moving scales. Check the recorded unit on each scale just to make sure. For example, a fixed scale measures 1.3 and is marked as inches. The moving scale measures 4.3 and is marked as 0.01 inches, which means it represents 0.043 inches. The exact measurement is 1.3 inches and 0.043 inches - 1,343 inches. If you've experienced zero error before, be sure to subtract it to the extent. 1 Look for zero error. Close the jaws completely. If clockwise do not point to zero, throw it with your fingers until the zero is below the needle. You may have to loosen the screw at the top or Watch the face before you can do it. If so, be sure to tighten the screws again after adjusting. 2 Take measurements. Close the large, flattery around the object to measure the outer diameter or width, or insert the smallest curved jaws into the object and expand them to measure the internal diameter or width. 3 Read the scale. The scale engraved on the calibration can be read as if it were an ordinary ruler. Find the value on the inner edge of the jaws. The scale should be marked by a unit that is usually cm (centimeters) or in (inches). Note that the gauge inch scale is usually an engineer scale, with each inch divided into ten parts (0.1) or five parts (0.2), that is, different from most rules, showing a sixteenth or eighth inch. 4 Read the value of the watch. Clockwise indicates the additional value for a more accurate measurement. Units should be tagged on the face of the watch, usually 0.01 or 0.001 cm or inches. 5 Add two values together. Transform these two measures into the same unit, and then join them. For many applications, you may not need to use the most accurate numbers. For example, a fixed scale shows 5.5 and is marked in a clockwise hour pointing to 9.2 and is marked as 0.001 cm, So if you're working on a project that requires extreme precision, you'll probably be able to round it up to 5.51 cm. You can buy a digital calibration device if you're having trouble reading the vernagne or the watch's calibration. To reduce the risk of errors, store calibrators with slightly separate jaws. Often removes dust and dirt between the jaws, rubbing them with alcohol or mineral alcohol. wikiHow is a wiki, which means that many of our articles are written by multiple authors. To create this article, 10 people, some anonymous, have worked to edit and improve it over time. 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