READOUT SYSTEMS SERVICE BULLETIN

ACU-RITE®

Acu-Rite Companies Inc.

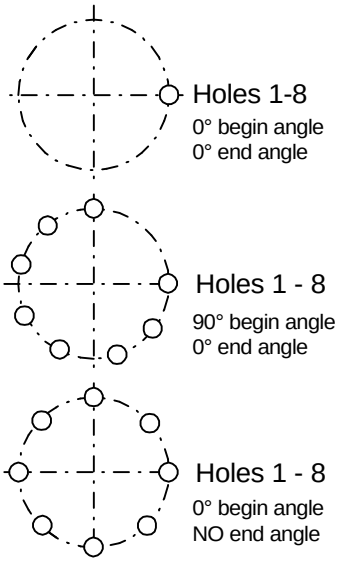
DRO 200M BOLT HOLE PATTERN TEST

June 8, 2005

Please include this bulletin with your ***ACU-RITE®*** product literature for future reference.

To verify that the bolt hole feature of a DRO 200M is functioning as expected, the following verification procedure can be used (see page 2). When using a hole pattern, the DRO 200M will change to the incremental display (INCR) and preset the hole location at zero. The display will show the incremental distance to this hole location (incremental zero). When you move the machine to incremental zero, you will be at the hole location.

The most common reason a defined bolt hole pattern is not positioning as expected, is because an end angle exists when none is needed. For example, if an 8 hole pattern is defined with a 0° begin angle and a 0° end angle, the resulting pattern will have a 0° sweep angle. In other words, all 8 holes in the pattern will be in the same location.

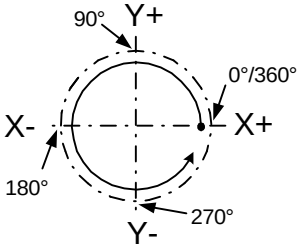


If the pattern is then changed to begin at 90° and the end angle is not cleared (remains at 0°), the holes in the pattern will be equally spaced within a 270° sweep angle.

A full circle pattern when correctly defined, can begin at any desired starting angle, and will have no value for the ending angle. This causes the DRO 200M to space the holes along a full 360° sweep.

If an ending angle exists, clear it using the CLEAR key when defining the pattern.

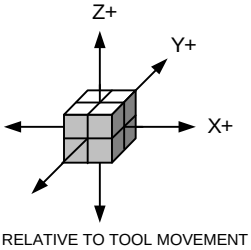
Another reason for a hole pattern not to position as expected, may be due to scale count directions. All of the DRO 200M Reference Manual examples are based on conventional Milling count directions where table left is positive and table toward you is positive. These count directions place 0° at the 3 o-clock position, sweeping counter-clockwise. If your count directions differ, you will have a different orientation. For example, if the X-axis count direction is reversed, 0° will be at 9 o-clock. If the Y-axis count direction is reversed 90° will be at 6 o-clock and the sweep will be clockwise.



These settings do not degrade the performance of the hole pattern feature if the different orientation is considered when defining a hole pattern.

When your Scale Resolution Settings do not match the scale's actual resolution, your machine movement will not be 1:1. If you find that your DRO display values differ from actual machine travel, follow the DRO setup procedure found in your manual. Correct errors of 0.005" per inch or less, with the Linear Error Compensation procedure.

The DRO 200M can be set up to define hole patterns by either diameter or radius. Depending on your setting, you may be asked to enter one or the other when defining a hole pattern. Enter the appropriate value.



RELATIVE TO TOOL MOVEMENT

If you have any questions, feel free to contact Chris Hanson, Product Specialist at (800) 344-2311 Ext. #1722.

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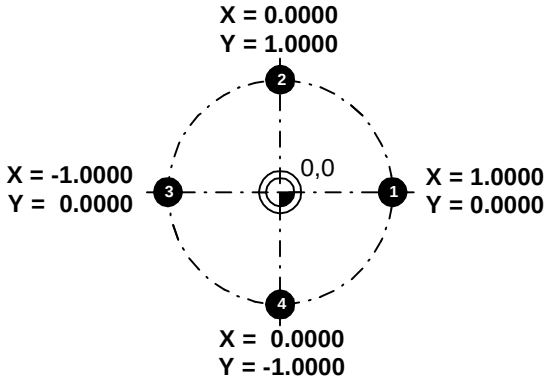
DRO 200M Bolt Hole Verification Procedure



This procedure will determine if your DRO200M Bolt Hole function is working properly. Absolute zero can be set at any location on the table for this test. The absolute display must read 0.0000 in both X-, and Y-Axis during this test. For the purpose of this test do not move the table after setting Absolute Zero.

Procedure:

1. Press the **ABS/INCR** Key if the ABS indicator is NOT illuminated.
2. Press the **ZERO** key next to the X key twice.
3. Press the **ZERO** key next to the Y key twice.
   The DRO should now read **ABS**, X = 0.0000, Y=0.0000.
4. Press the **DEFINE** Key.
5. Press **4** for the number of holes, then press **ENTER**.
6. Press **0.0** for the X-Axis center, then press **ENTER**.
7. Press **0.0** for the Y-Axis center, then press **ENTER**.
   Read the display to determine what the next value should be.
8. Press **1.0** for radius or **2.0** for diameter as requested by the display, then press **ENTER**.
9. Press **0** for the starting angle, then press **ENTER**.
10. Insure there is no information in the ending angle (O° is a value and must be cleared).
    Press **CLEAR** if there is a value displayed.
11. Press **ENTER** to continue.
12. press **USE**.
    THE DISPLAY WILL SHOW:
    HOLE 1
    INCR
    X-AXIS = -1.0000
    Y-AXIS = 0.0000
13. Press **USE**.
    THE DISPLAY WILL SHOW:
    HOLE 2
    INCR
    X-AXIS = 0.0000
    Y-AXIS = -1.0000
14. Press **USE**.
    THE DISPLAY WILL SHOW:
    HOLE 3
    INCR
    X-AXIS = 1.0000
    Y-AXIS = 0.0000
15. Press **USE**.
    THE DISPLAY WILL SHOW:
    HOLE 4
    INCR
    X-AXIS = 0.0000
    Y-AXIS = 1.0000

NOTE: The results of this procedure are based on the Machine travel conventions described on page 1. If your Scale Count Directions differ from these conventions, the 4 hole positions may differ from the diagram above, but their ± values and their 1 inch distance from datum (zero) should remain the same.

The positions shown for each hole location represent the incremental travel required to move to that hole location. If you were to move the machine until the displays read 0.0000, you would be positioned at that hole location.

The test is now complete. Press the **ABS/INCR** key to return to the ABS mode.

If your results do not match the above information, check your setup parameters and test again. If you cannot correct the problem, please call Acu-Rite at (800) 344-2311 and press 2 for technical support.

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