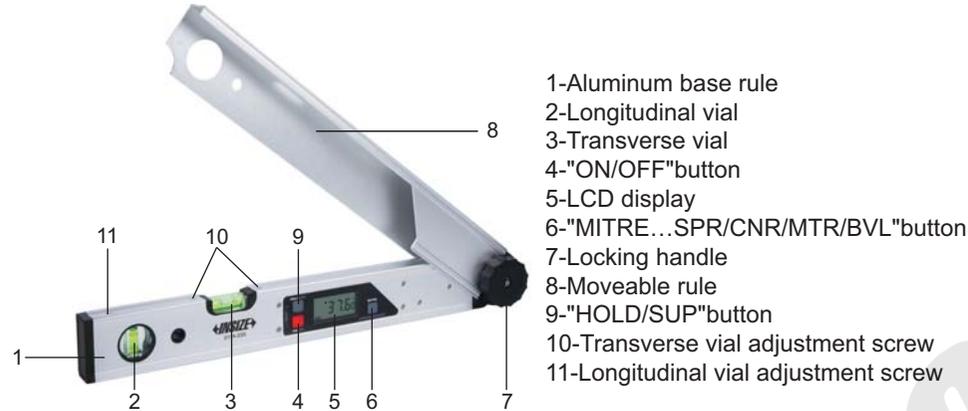




# OPERATION INSTRUCTION

## Waterproof Digital Protractor (Heavy Duty)

Range: 0-225°  
Resolution: 0.05°  
Accuracy: ±0.10°



- 1-Aluminum base rule
- 2-Longitudinal vial
- 3-Transverse vial
- 4-"ON/OFF"button
- 5-LCD display
- 6-"MITRE...SPR/CNR/MTR/BVL"button
- 7-Locking handle
- 8-Moveable rule
- 9-"HOLD/SUP"button
- 10-Transverse vial adjustment screw
- 11-Longitudinal vial adjustment screw

1. IP54 dust/waterproof, used for angle measurement, can also be used to set horizontal and vertical mitre angles of cutting machine.
2. Install battery:
  - Remove the battery cover, correctly install two AAA batteries according to the battery polarity
  - Close the battery cover
3. Absolute level, zero settings is not needed when batteries are replaced.
4. Buttons
  - ON/OFF --- Short press to enter display or reverse display, long press to power off, short press to power on when power off.
  - HOLD/SUP
    - Short press to enter/exit HOLD mode, keep the current measurement value in HOLD mode;
    - Long press to enter/exit SUP mode, display the complement of the current value.

### MITRE/SPR/CNR/MTR/BVL

--- In measurement mode, short press to enter single cut angle mode: MTR flashes. If the angle is  $\leq 180^\circ$ , MTR=90-CNR/2, the display is locked. Short press again to return to the normal measurement mode. If the angle is  $>180^\circ$ , display "----" and returns to the normal measurement state after 2 seconds.

In measurement mode, long press to enter double cut angle mode: SPR flashes twice and simultaneously displays the data stored in the last SPR. After 2 seconds, the current measurement value is displayed. Long press to save the current measurement value of SPR; Short press in double cut angle mode to switch SPR→CNR→MTR→BVL function ; In CNR mode, CNR flashes three times to display the data stored in the last CNR, after 2 seconds, the current measurement value is displayed. Long press to save the current measurement value of CNR. In "MTR /BVL" mode, the corresponding calculated value is displayed. (If "----" appears, it means the value is not correct ). Short press the "ON/OFF" key to exit the double cut measurement mode.

5. How to use
  - a. Transverse checking(Fig.1).
  - b. Longitudinal checking (Fig.2).

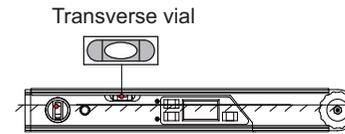


Fig.1

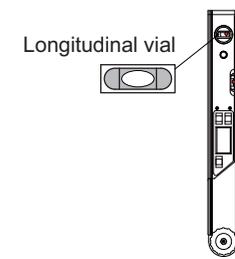


Fig.2

- c. Angle measurement (Fig.3, Fig.4) and scribing (Fig.5).
  - Note: Both the upper and lower surfaces can be used to measure.

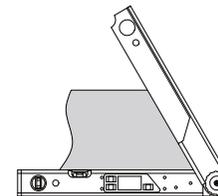


Fig.3

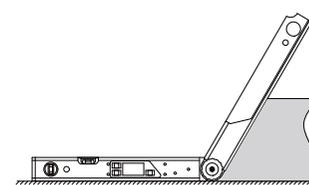


Fig.4

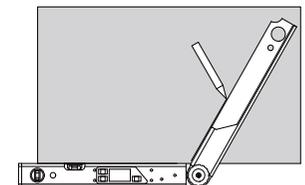


Fig.5

d. Double cut angle measurement.

Two pieces of multi-angled workpieces (such as ceiling decorative strips) must be accurately joined. Proceed as follows:

---Store tilt angle

Open the base rule and moveable rule to the desired angle, lock the moveable rule, and long press the "MITRE...SPR/CNR/MTR/BVL" button to switch to the SPR mode. The display flashes twice and the data stored last SPR is displayed at the same time. After 2 seconds, the current measured value is displayed. Long press again to save the current measured value of SPR (that is, the required tilt angle of double cut angle measurement). The display shows "SPR" and the current angle.

---Store angle

When measure the angle of the wall, lock the moveable rule, and short press the "MITRE...SPR/CNR/MTR/BVL" button to switch to the CNR mode. The display flashes twice and the data stored last CNR is displayed at the same time. After 2 seconds, the current measured value is displayed. Long press again to save the current measured value of CNR (that is, the required angle of double cut angle measurement). The display shows "CNR" and the current angle.

---Measure the transverse miter angle

Short press the "MITRE...SPR/CNR/MTR/BVL" button, the display shows "BVL" and get the transverse miter angle to the cutting machine.

---Measure the longitudinal miter angle

Short press the "MITRE...SPR/CNR/MTR/BVL" button again, the display shows "BVL" and get the longitudinal miter angle to the cutting machine.

---Set the MTR value on the cutting machine to make a transverse oblique cutting (Fig.6)

---Set the BLV value on the cutting machine to make a longitudinal oblique cutting (Fig.7)

Note: If the tilt angle or angle is more than 180°, the display will show an error signal "----" after holding the "MITRE...SPR/CNR/MTR/BVL" button for two seconds, it will automatically converts to the "basic measurement" mode.

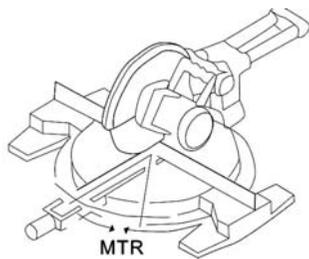


Fig.6

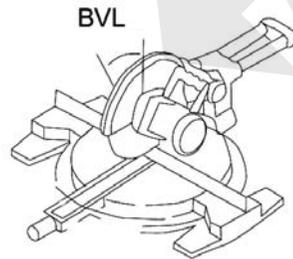


Fig.7

6. For inaccurate measurements due to transportation, adjust the screws (10) and (11) on the base rule.
7. Backlight will turn off in one minute after no data changing, automatic power off in 5 minutes. If the protractor is not be used for a long period of time, please remove the battery. Otherwise, liquid may leak from the battery and damage the protractor. In the event of an unknown circuit failure, try removing the battery and reinstalling it.
8. IP54 dust/waterproof.
9. The protractor cannot be directly exposed to sunlight.
10. Working temperature is -5~50°C, working humidity is 20%~85%.