



[www.insize.com](http://www.insize.com)

INSIZE

## ISU-PB5 PENETRATION STANDARD TEST BLOCK

OPERATION MANUAL

PLEASE SCAN QR CODE TO  
WATCH THE OPERATION  
VIDEO OF PRODUCTS.



4.4 According to the instruction manual of the flaw detection agent manufacturer, implement the penetration inspection procedure on the test block, and do not make arbitrary changes.

4.5 The minimum imaging time is usually 10 minutes

4.6 Due to improper use, the crack group of the test block may become blocked or dense on the chrome plated surface. If there are thermal cracks, scratches, etc., the test block can only be downgraded for use or scrapped.

## JB/T6064 TypeB5 Penetration standard test block

(Conforms to NB/T47013.5 and the standard requirements specified by ASME)

### 1. SCOPE OF APPLICATION

1.1 This test piece is suitable for the systematic and process sensitivity level identification of penetrant testing, and can also be used for the removal inspection of penetrant.

1.2 The substrate of this test block is stainless steel plate. There is a chrome plating strip and sand blowing strip on the working surface, and five crack groups of varying sizes are evenly distributed on this chrome plating surface, which are basically radiating; The sandblasting belt has a medium roughness.

### 2. Role

2.1 The test block can be used to evaluate the sensitivity of the penetration flaw detection system, such as all parts of the system are normal. If all parts of the system are normal, the ultra-high sensitivity penetrant can show all five groups of cracks; while high sensitivity The ultra-high sensitivity penetrant will show all five groups of cracks if all parts of the system are normal, while the high sensitivity penetrant will show four groups of cracks with an occasional fifth group, and the medium sensitivity penetrant will show three groups. A medium sensitivity penetrant will show three groups of cracks and occasionally a fourth.

2.2 The main function of this test piece is to enable the flaw detector to find out the abnormal changes of all factors of the system in time to avoid the failure of the system or operation errors caused by the failure of the flaw detection.

The following factors may affect test results:

- A. Penetrant composition
- B. Emulsifier composition
- C. Hydrophilic emulsifier water content
- D. Developer concentration
- E. Penetrant application time and method
- F. Emulsifier application time
- G. developer application time

H, water washing pressure temperature and time

I, Drying temperature and time

As long as one of the above factors undergoes a significant change, it can be determined by the cracks in this test piece Or reflected by changes in the background display

### 3.USE

3.1 In order to ensure the performance of the flaw detection system, this test piece should be used at the beginning of each replacement or change in the system. This test piece should be used at the beginning of each change or alteration in the system, and for important work probing, this test piece can be used for on-shift identification and control. This test piece should be used whenever there is a suspicion in the penetration search system.

3.2 The effectiveness of this test piece directly depends on the technical proficiency of the user. He must know Distinguish the differences exhibited by the test piece over and over again, such as an increase in fluorescence background or a decrease in crack display.

3.3 A dialectical review of crack groups and backgrounds:

3.3.1 If the crack group can be displayed, it shall be judged whether the display is normal. For example, if no penetrant is used in the experiment, a certain level of crack group may still be displayed, but it is found that the display of the crack group becomes dim and blurry, which is a signal of penetration failure.

3.3.2 Some penetrants, especially high or ultra-high sensitivity penetrants, will leave a background display on the blown sand surface of this specimen. This is normal. A sudden change in the background display means that something is wrong. This is normal. For example, if a hydrophilic emulsification system is used, a higher than normal background display emulsifier is too dilute, or the emulsification time is too short, or there has been no pre-cleaning, etc. A low background indication means the emulsifier is too dilute, or the emulsification time is too short, or there has been no pre-cleaning, etc. A low background indication means that the emulsifier has not been diluted, or that the emulsifier has been over-emulsified, or that the developer has been improperly applied. The background level of a specimen is uncertain, and the permissible level of background display is based on actual production parts.

The permissible level of background display is determined by the actual production parts and is different for each penetrant system due to the Since the sensitivity and cleanliness of penetrant flaw detectors are often contradictory, the use of this specimen for a specific inspected part can .The use of this specimen for a specific part is therefore helpful in the selection of a suitable penetrant.

### 3.4 Imaging replica

Each test piece is accompanied by a corresponding imaging photo (or copy of the film), which is a record of the imaging obtained from the inspection of the test piece using post emulsified testing agent by Level III testing personnel and testing engineers. It can be used as a reference for the user. The competent departments of each functional unit for flaw detection can also independently produce standard imaging photos or copy films corresponding to the specific flaw detection system of their own unit for the test blocks used.

### 4.CAVEAT

4.1 Different permeation systems must be used with their own specially formulated test pieces. This is because:

a. It is difficult to thoroughly clean the test piece, so mixing the same test piece with different sensitivity levels of flaw detection systems will result in incorrect evaluation of system performance.

b. Dye penetrant can affect the fluorescence effect of fluorescent penetrant.

4.2 To prevent or delay the blockage of crack groups on the test piece, post use cleaning is crucial, and steam degreasing or ultrasonic cleaning should be chosen as daily post cleaning methods. If there is no such device, alcohol and acetone can be used for wiping, and then the test piece can be soaked in these solvents for one hour. When not in use, the test piece can be directly immersed in this type of solvent.

4.3 The test piece must be dried before use. If there is solvent in the crack that can affect the test results, it is allowed to dry in the oven, but it must be ensured that the test piece has cooled before testing to avoid thermal cracking of the chrome plated surface.