



How to Instructions

Fluorescent Penetrant Testing

GETTING STARTED

Smooth surfaces such as those produced by clean cutting tools give best results. These include ground, machined, and sand blasted surfaces. Shot blasting, polishing, etc., which tend to smear over and close up surface openings, can give finishes that can cause poor results.

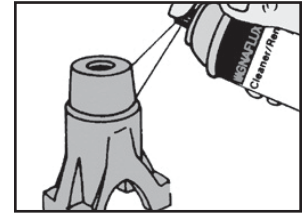
Surfaces should be free of foreign materials and paint that would prevent penetration of defects or hold unwanted penetrant. Grease, oils, etc. prevent penetration and should be removed by precleaning with cleaner. Scale, sand, dirt, etc. trap penetrant and hinder removal, therefore wire brushing or similar precleaning is necessary. Paint must be removed from areas to be tested.

Just before starting the test, plug the black light into a 115 Volt A.C. supply. Allow the light to warm up to maximum brilliance, in 5 or 10 minutes. Leave the light on throughout the tests. If turned off, it must cool before it will relight.

INSTRUCTIONS

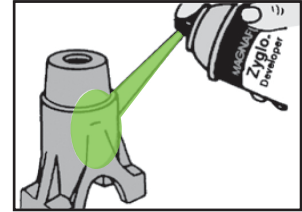
1. Cleaning

For precleaning, spray the part or section to be inspected with cleaner. Allow cleaner to remain on part long enough to dissolve dirt or film. Wipe dry with a clean rag. A check with black light will show any oils remaining, by their fluorescence. Repeat if necessary. After final clean wiping, allow time to dry before using penetrant.



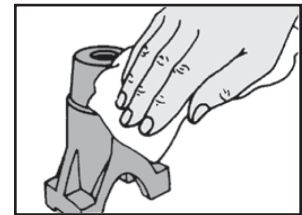
2. Apply Penetrant

Spray the part or section to be inspected so that surface is covered with penetrant. Allow penetrant to remain on the part for a period of time. Generally a 10 minute dwell time is sufficient on new (clean) castings and welds, and most defects.



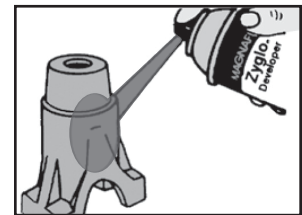
3. Remove Penetrant

When sufficient penetration time has been allowed, wipe the surface clean with a clean towel or cloth. Repeat if necessary. Some surfaces will require only wiping. In general, however, remove excess surface penetrant with clean cloths premoistened with cleaner/remover. DO NOT flush surface with cleaner/remover because this will impair sensitivity. Repeat this procedure with additional wiping until residual surface penetrant has been removed.



4. Develop

Shake the can vigorously until the agitators rattle inside. Hold the can 8 to 12 inches above the part when spraying. Spray the part or section with developer, enough to wet the part thinly and evenly, no more. Proper thickness will dry to a thin white layer. Too much developer will mask indications; too little will not develop the indication sufficiently. Apply to 6-8 inch sections at a time. Allow developer to dry. Large cracks show up immediately. Smaller cracks may take a few minutes to develop.



5. Inspect

Defects will be marked by a bright indication when viewed with the portable black light. A glowing line marks a crack, lap, forging burst or cold shut. If wide and deep, the indication will grow and spread. Porosity, shrinkage, lack of bond, and leaks will appear as dots or bright areas under the black light. These, too, will grow and spread if the defect is large or extensive.

