

## Technical News Bulletin

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### Special Cutting Tools Help Improve Performance of Vision MNR

Emhart Glass has developed a group of special cutting tools for engraving base dot codes. These tools, designed to be used in either the press & blow or blow & blow process enable the production of containers with durable, and well-defined base codes. This leads to improved performance of the Vision Mold Number Reader on the ProScanner 8200, 8200T and Veritas iB.

Designed with a flat end, these special cutting tools produce mold dot codes that have vertical, or nearly vertical, sides. This provides high contrast, very well-defined images. These images have a very even circular pattern that is well-defined due to the high contrast between the clear area and the dot. The nearly vertical sides of the dots are essential to producing crisp dot code images because the vertical sides reflect the incident light away from the optical axis, thus creating dark circles (dots) in the image.

The table below shows the various cutting tools available and their application.

Part Number	Description	Application
16102B	Cutter tool, .080 in. (2.03mm) diameter	Containers – approximate diameter range 1.5 to 3.5 in. (38-89mm) – produced with the Press & Blow process
16103B	Cutter tool, .120 in. (3.05mm) diameter	Containers – approximate diameter range 1.5 to 3.5 in. (38-89mm) – produced with the Blow & Blow process
16148B	Cutter tool, .100 in. (2.5mm) diameter	Large diameter (approximately 3.5 in. – 38mm – and larger). All processes.
16149B	Cutter tool, .062 in. (1.57mm) diameter	Small diameter (approximately 1.5 in. – 38mm – and smaller). All processes.

These modified Die Sinking End Mill tools have been proven to be significantly better than conventional, ball end mill tools usually used for cutting dot codes. Conventional ball end mill tools produce code cavities that often are too shallow and have no vertical sides. They create a dimple, rather than a well-defined dot. The dimple code acts as a lens to gather and focus the incident light on to the camera.

For optimum mold number reading, incident light needs to be reflected away from the camera. With the dimple code, only the ring of the code cavity, where it intersects the base plate surface, generates a surface that results in incident light being reflected away from the optical axis. This results in very low contrast dots, with the line of the edge

being narrow and often poorly defined. An additional benefit of sharper-sided dot code cavities is that they also help improve glass flow into the cavities, further improving dot code definition.

For more information concerning dot code specifications, refer to 22444A Bottom & Heel Code Specifications for VMNR, which is available from Emhart Glass.

For more information about the Emhart Glass Vision Mold Number Reader or these special cutting tools, contact your Emhart Glass representative.

### Revisions

Rev.	Date	Description
	28 June, 2002	<ul style="list-style-type: none"><li>Initial Release</li></ul>