



SIX HEADS BETTER THAN TWO FOR LARGE BEARING MEASUREMENT

Producers of large, thin-walled bearings are faced with two key challenges. They need high precision, and they usually must produce many different bearing configurations in small volumes. Thus, they need a gaging solution that is usable for a wide variety of parts, that can be changed over for different sized parts in a matter of minutes, and yet can still perform to the accuracy required for precision bearings.

The accurate measurement of large, thin-walled parts is complicated. Extra care must be taken because almost any gaging pressure—no matter how light—can deform the part. Using a two-point contact system will almost certainly cause two-point out-of-roundness and influence the readings. The answer is to use six measuring heads. Using six heads will tend to round the part, and by taking an average of the three diameters, an accurate and repeatable diameter result can be obtained.

The specially designed Mahr Federal ID/OD Gage shown uses six measuring heads mounted on a universal plate. The ability to move the heads about or reverse them for checking both IDs and ODs ensures fast and easy changeover for parts having diameters up to 32 inches. Setup time is typically less than 10 minutes and system accuracy is better than $80\mu\text{in}/2\mu\text{m}$. A digital readout system provides all three diameters independently and calculates average diameter, roundness, Max, Min, and more, making the operator's job of measuring and classifying the parts easy.