

Ultrasonic Application Solutions

HW-Flex Probes for Hollow Axle / Borehole Inspection in the Railway Industry

Manual inspection of train hollow axles / borehole inspection

- Rail industry
- Isochronous service inspection for all European trains is mandatory

Shape and geometry of hollow train axles are not standardised

- Variation of borehole diameter between 30mm and 110mm (coupling surface for the inspection)
- To cover the diameter range above **more than 50 different probes are needed**

The new HW-Flex probe design

The current Waygate Technologies probe design for this kind of service inspection requires some design variation, because the current design is covering the nominal borehole diameter with a tolerance of 1.5mm. So, for each diameter a special probe design is needed. The new HW-Flex probe design provides a UT probe for the manual service inspection of hollow axles covering a larger diameter range than the standard design.

To cover the full diameter range only 8-10 probes are needed.

Frequency range: 2 MHz and 4 MHz

Refracting angle (in steel): 37.5°, 45°, 70°

Crystal size (probe unit): 8X9mm (MWB), 14X14mm (SWB), 20X22mm (WB)

Solution benefits:

- Less equipment needed to provide full service
- Sturdier than the old design
- Less of wear
- Easier to repair

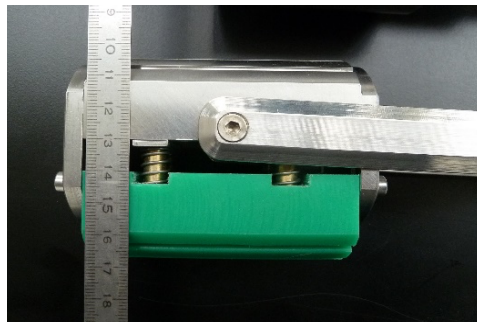
Part Numbers:

Currently one size is realized in different beam angles and different probe frequencies (see ID's below). **This size covers a diameter range from 90mm to 100mm.**

<p>0600559 0600560 0600562</p>	<p>HW45/45 B2RB/88,8 HW70/70 B4RB/88,8 HW37,5/37,5 B4RB/88,8</p>	<p>Further probe designs covering different diameter ranges will follow according to customer requirement</p>
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The new HW-Flex (top) and previous design (bottom).



The HW-Flex probe design allowing a larger diameter coverage.



The HW-Flex probe when inspecting a hollow axle using a USM Go instrument.