*Crack detection of **rings***

The non-symmetrically inductively hardened rings are used as joining elements for automatic couplings.

Crack detection is required at 4 positions:

- *gap scanning at the outer diameter with 2 fixed probes, and*

- *at the plane faces of transition from inductively hardened area to basic material. Here the cracks are not in cross direction to the probe, but in radial direction.*

The fully-automatic test system shown on the enclosed photos is doing the required crack detection.

Directly after induction hardening, the rings are forwarded via conveyor belt to eddy current crack detection and separated by a rotary table. After introduction into a rotary head, the rings are checked automatically. The probes are fixed, they do not move. Depending on the sort decision made, the rings are moved on to a NOT O.K. container or O.K. channel. At the outputs, a robot picks-up the rings to pass them on to further processing.

A special problem of the present test task is that the surface of the rings is not smooth, but still is covered with scales from hardening, so that cracks of 100µm depth are not easy to detect.

*Originally the test system was equipped with simply-structured Teledictor instruments which were now replaced by **eddydector®** instruments to guarantee detection of radial cracks at the plane faces.*

- *4 probes*

- *2 probes at the citcumference*

- *1 probe each for plane faces*

- *4.5 sec/part*

- *minimum crack depth 100µm*

- *fully-automatic feeding,testing and sorting*

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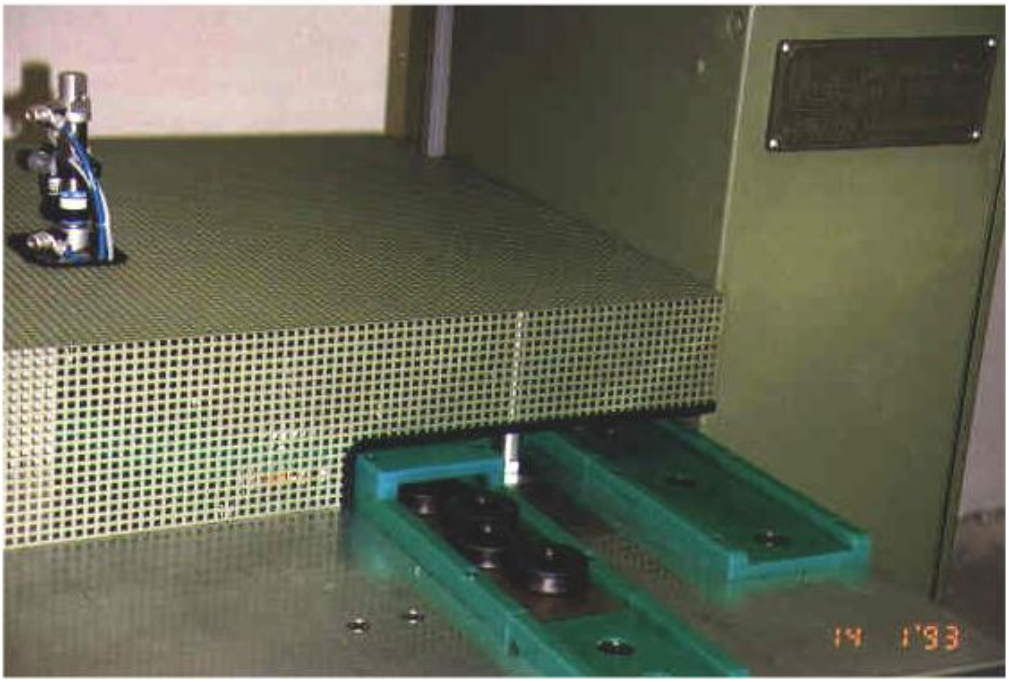
Protective grating



protective grating opened

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Test station

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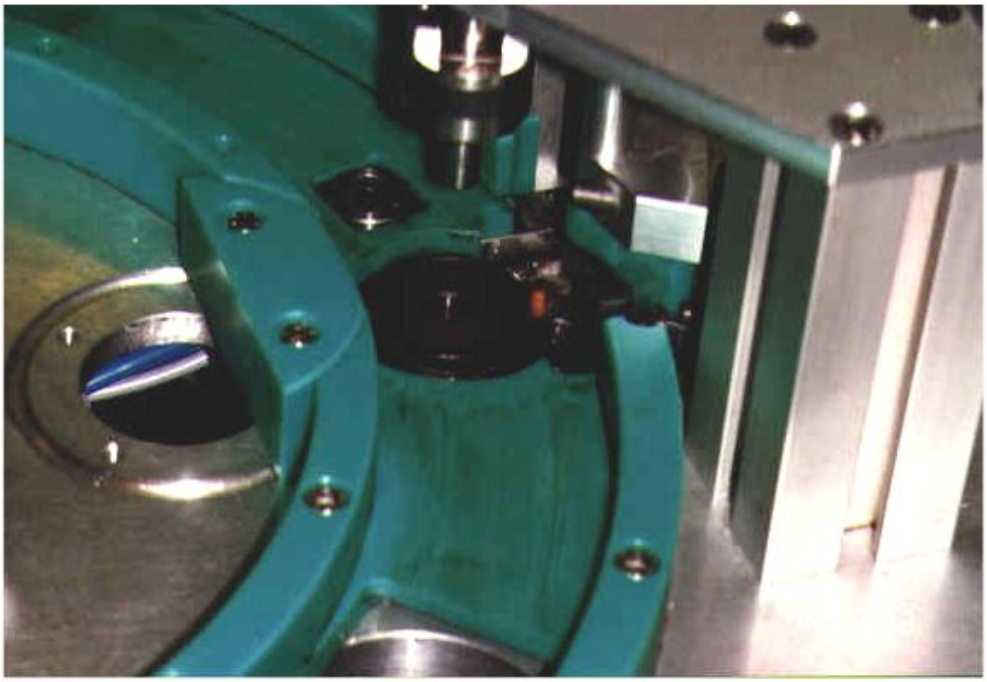
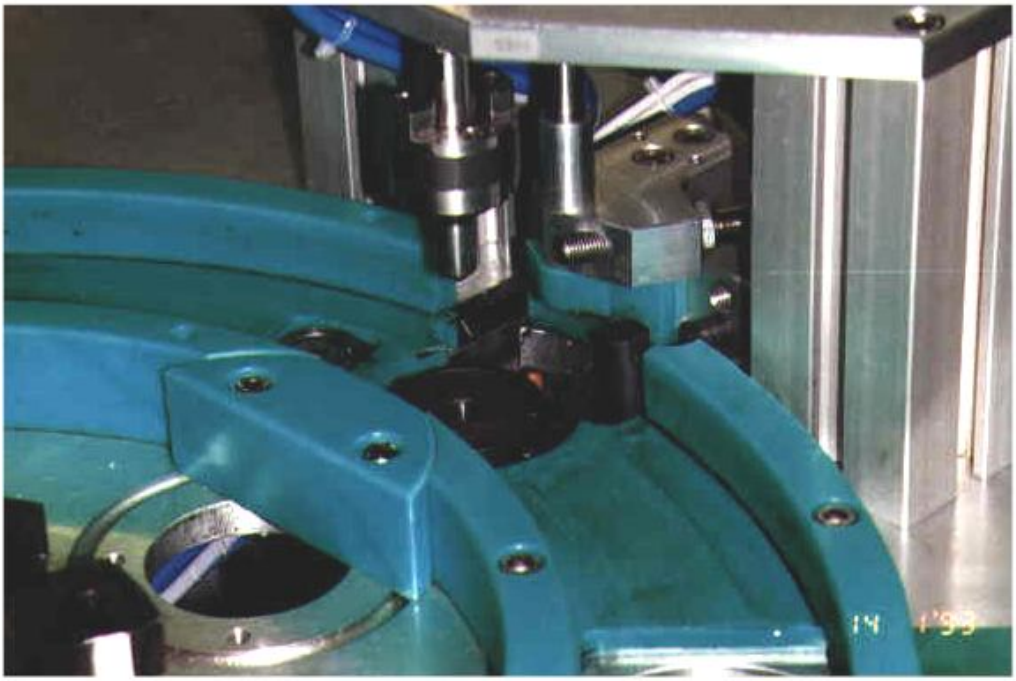
Test station without part



Test station with part



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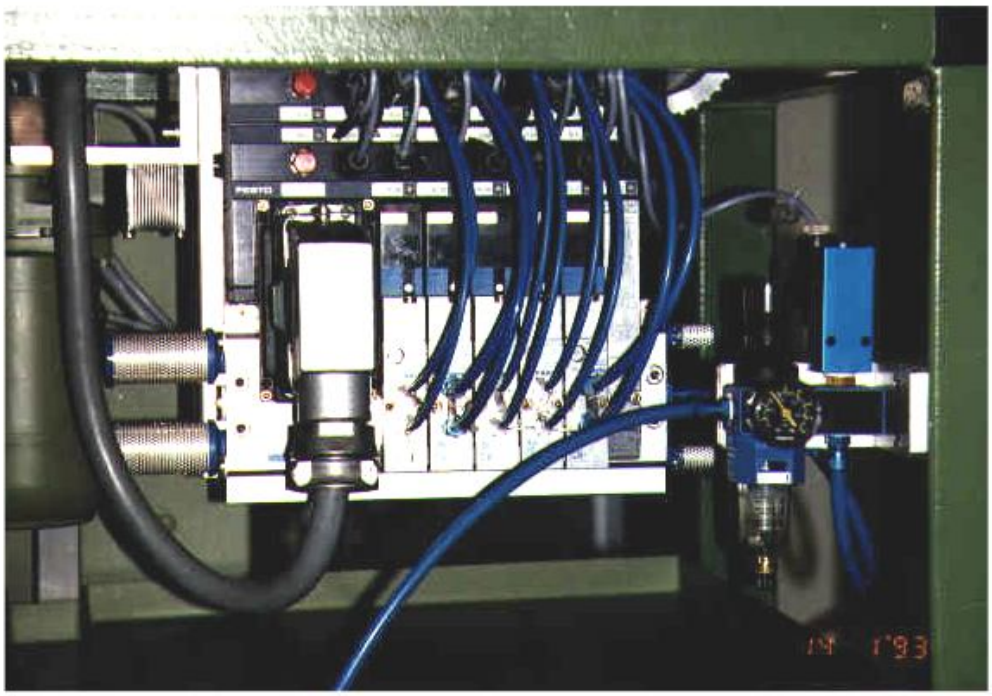
Pneumatic partition and sensor connections



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