

Object position detection at the different stages of hot forging process



Product

Type	OKA 204.05 GS5
Art. no.	6410I
Application	Non contact detection of hot objects
Industry	Steel – Hot Forging

Detailed description

Customer /field / Equipment Manufacturer	Hot steel forging presses / Equipment Manufacturer Farina Presse Srl – Italy (now Schuler Group)
Application description	<p>In automated forging presses and complete lines the presence or position of the material to be forged must be monitored at several steps of the forging process. This varies according to the automated machines which are involved in the process.</p> <p>Before shaping the metal, it is necessary to check the position and the temperature of the piece in the forging area of the press. If the piece is loaded automatically with mechanical hands or robots, its position in the mechanical hands must be checked before loading and removal.</p> <p>The position of the forged pieces must be controlled also in the mechanical shears which are generally placed next to the press with a deburring function. A control of the forged piece takes place also when it is ejected on the conveyor.</p>
Customer problem	<p>In the hot forging process the steel temperature is around 900 °C. According to the press layout, more than one piece is worked simultaneously next to each other; a sensor with restricted angle of view is required to monitor the relevant area. Mounting is possible only directly on the border of the press, looking down into the respective working area, where temperature and graphite are very aggressive.</p>
Previous solution / Competitor product	<p>No previous solution.</p> <p>Presses and forging lines from Farina have been equipped for over 30 years with Proxitron hot metal detectors, as the most suitable product for a rough operating environment. End-users who have experienced Farina Presse and Proxitron sensors will buy again new forging lines from market leader Farina and expect them to use Proxitron sensors again. Also when existing machines are refurbished, rebuilt or retrofitted, Proxitron sensors become compulsory.</p>

Proxitron solution

Hot Metal Detector in compact design. HMDs with fixed switching temperature are preferred as cost-effective and adequate solution. A short protection tube OL 31 is placed on the optic, with aperture 4 mm, to reduce the field of view and prevent the smallest possible inlet of contamination. Laser light unit DAK 308 is used for an easy and quick alignment on the object.

Advantages compared to previous solution or competition

Reliable, long service life and flexible use on different machines. One model for different tasks. Since it reacts to the temperature of the material to be forged, the hot metal detector also monitors its minimum temperature: this is a very important function, as it prevents a possible damage of the die due to too low temperature. In some workshops the HMD output signal is used also for counting purposes.

Pictures

This press is equipped with 3 HMDs



Shear with deburring function. Equipped with 2 HMDs.



In complete forging lines the piece to be forged is conveyed automatically to the press. A hot metal detector checks the flow.



Working area - free

Material to be forged ready in the working area

Accessories used

	Type	Art.-no.
Short protection tube with aperture 4 or 8 mm	OL 31	9828N
Laser pilot light unit for quick alignment (can be fixed directly on OL 31)	DAK 308	6813G

Additional information**Document**

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