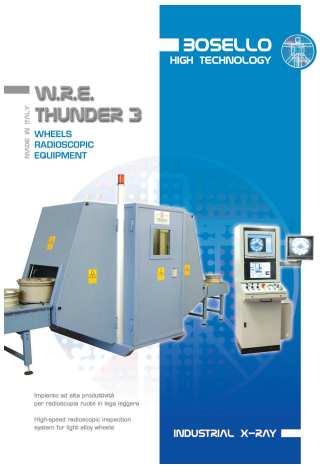
WRE Thunder 3



HIGH-SPEED RADIOSCOPIC INSPECTION SYSTEM FOR LIGHT ALLOY WHEELS

RADIATION SHIELDED CABINET

X-Ray shielded cabinet complies with Italian regulation (DPR 257/2001) and the strictest international regulations for fully shielded radiation devices. The cabinet is completely self-contained. Manufactured in steel with complete lead shielding. The cabinet can be transported by either crane or fork-lift. The cabinet does not require any further shielding and can be located safely in any workplace area. The cabinet is designed with a large maintenance access door at the front and is also available with lead/glass inspection window. Wheel entrance and exit tunnels with two sliding doors each end which allows for faster cycle times.

MANIPULATOR

The equipment is able to operate with different designs and sizes of wheels coming randomly from the production platforms.
Rotating controlled axis on 360° revolution of wheel moved by four independent motors, very strong and powerful mechanical-pneumatic gripping mechanism.
Five axes of movement guaranties that all inspection angles can be easily achieved. The movement of the X-Ray source and detector is achieved without the traditional C arm design. The accurate alignment of X-Ray source and detector is achieved in software, saving weight, simplifying design and reducing machine cycle times. A Mechanical magnification axis guarantees linear and constant magnification factor.
External roller conveyor with inlet sequencer and rejection pusher can be supplied as an option.

X-RAY/TV

The Thunder 3 is equipped with a Bosello HT made High Voltage generator type XRG 160, high performance equipment 160 KV -10 mA 640 W max.
Coupled with double focal spot 0,4 x 0,4 mm (d=1.0 according to EN12543) 160 KV 640 W metal-ceramic tube XRT 160-0.4. Image intensifier XRI 420 industrial version, input window 9 inches and 3-magnification field switchable and programmable by PC.

CONTROL CONSOLE

An operator panel with the main functions pushbuttons and joysticks for axes movement is located in an ergonomic air conditioned console, also a 15” touch screen display for user interface and programming, a Radioscopic image monochromatic high resolution 17” monitor is also provided.
A Computer installed with BOSELLO BHT software controls all functions of the equipment, it is interfaced to a PLC for the loading operations and diagnostics, all axes movements are controlled from the PC through a remote microprocessor controller.
The Standard version offers, in addition to the usual working programs, diagnostic programs for optimizing trouble shooting and maintenance operations. The inspection programs are made by a teach-in software which allows for the storage several kinds of wheel programs. X-Ray KV and mA variation is also automatically controlled by RS 232 serial line. The Personal Computer can be connected to the peripheral devices (printers etc.) Ethernet port is also available for connection with a local area network or to us for remote diagnostic and service. Automatic wheel identification (AWI) and automatic analysis software (VISUAL FARIS) are optionally available.

FUNCTIONAL DESCRIPTION

The WRE THUNDER 3 equipment is the fastest solution for the on-line inspection of alloy wheels. It has been designed to overcome the handling problems of large and heavy wheels. The machine has also been designed to cope with flashing left on the wheel. This equipment has a strong and robust mechanical structure, designed for long and continuous use in the industrial environment. WRE THUNDER 3 is very innovative because the inspection positions are obtained by the movement of the complete X-Ray system without any C-arm. The X-Ray tube is moved by 2 handling axes and the Image Intensifier is moved by 3 handling axes. Coordination and alignment between source and detector

is controlled by software. This design concept allows us to produce a very compact cabinet, the dimensions allows customers to place it in small spaces, installation is easy and the machine can be relocate quickly if necessary. This design solution has allowed us to reduce to 2 seconds or less, the non productive time (idle time), this makes our machine the fastest available on the market.

INNOVATIVE TECHNICAL SOLUTIONS

- Automatic gripping of the wheel directly on the chain conveyor belt without any elevator. This has reduced the dead time; four powerful independent motors allow a high rotation speed of the inspected wheel and high positional accuracy without any misalignment even with row cast wheels;
- Transport of the wheels inside/outside the shielded cabinet by chain conveyor belt. This eliminates any possibility of skidding;
- New mechanical concept of twin manipulators which handle the X-Ray Tube and image intensifier;
- Automatic centring of the wheel on the X-Ray beam without any adjustment. This is also an improvement due to the new gripper concept.