Flaw detection, material and hardness determination with DEFECTOMETER M

There are specialized inspection devices for flaw detection, material differentiation, and post-heat treatment evaluation. However, these devices are stationary and not suited for mobile use on-site. They are complicated to operate, re-quire knowledge of evaluation, and are not user-friendly. Mobile devices, on the other hand, are lightweight, and quality evaluation is simple and fast. We present you three applications where these advantages come into play.

1. Maintenance and inspection of hot rolling rolls

Hot-rolled rolls for steel are used continuously for long periods of time at high temperatures and under extremely high pressure. Therefore, heat and abrasion resistance, surface roughness resistance, and crack resistance are required. If the rolls have cracks or defects on the surface, cracks will occur on the rolled material. If further cracks develop from this, the surface will be greatly gouged and the rolling line may be disturbed. To prevent this from happening, the rolls are periodically removed from the line for maintenance. They are being inspected for defects by ultrasonic and eddy current testing, and defects are removed by machining the surface. During the maintenance process, the DEFECTOMETER M identifies the location of surface defects, predicts their depth, and confirms that no defects remain after machining.

Figure 1: Hot-rolled rolls in the production process

2. Material differentiation of various types of rolls

Rolls are used in a variety of industries and are used for different purposes. Rolls can be made of various materials. However, if the external dimensions and shape are the same, it is difficult to visually distinguish between different materials. If rolls made of different materials from the original specifications are installed and used in the line, the quality of the products manufactured from them will be greatly affected. Roll makers therefore use the DEFECTOMETER M to identify the material during the manufacturing process and in storage management.

3. Quality control in heat treatment process

Metal parts are heat treated to ensure surface hardness depending on the application. It is possible to easily determine hardness without spending time adjusting equipment in advance in the manufacturing process. When parts that have undergone normal heat treatment are used as the standard, an LED indicator will show abnormal parts either above or below that standard.

Figure 2: DEFECTOMETER M with different probes

DEFECTOMETER M consists of a main unit with an LED level meter that displays the signal amplitude and a probe. By simply placing the probe on the part to be inspected the device will determine if it is OK or NOK.