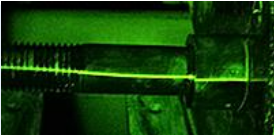

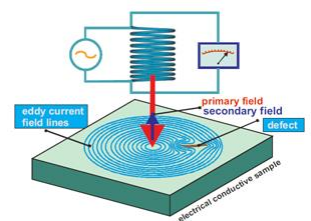
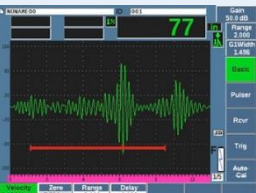
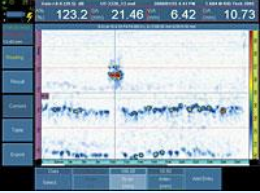



Defects detection

Type of defects detected on steel parts	Methods
Surface cracking 	Magnetic Particle Testing Eddy Current Testing Leakage flux
Surface pitting 	Surface ultrasonic testing Penetrant Testing
Matter inclusions Porosity, corrosion Delamination Imperfection in the volume   	Volume ultrasonic testing Low Frequency Impulse Eddy Currents testing

Structure analysis, metallurgy by AND methods

Measurable values	Methods
Mechanical characteristics <ul style="list-style-type: none"> <input type="checkbox"/> Young's mechanical modulus E, shear G, density <input type="checkbox"/> Hardness, residual stresses (permanent) <input type="checkbox"/> Applied stresses, strains Heat treatment <ul style="list-style-type: none"> <input type="checkbox"/> Depth, quality of treatment Structural and characteristics <ul style="list-style-type: none"> <input type="checkbox"/> Grain size and orientation <input type="checkbox"/> Metallurgical phases, information on the macro and microstructure 	Ultrasonic testing Eddy current testing Magnetic techniques: Barkhausen noise Incremental Permeability Harmonic analysis