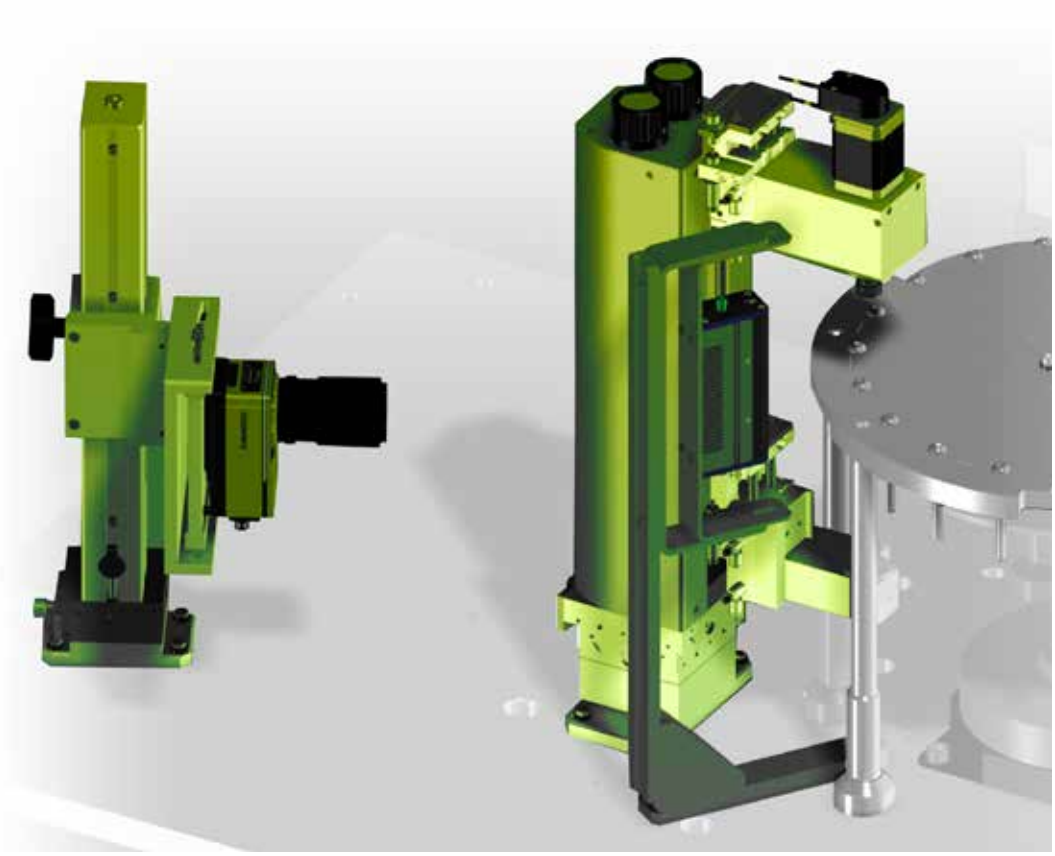
DIMAC
LINEAR CAMERA
CS

CASE STUDY

The linear camera, combined with an encoded 360° rotation station, allows you to reconstruct the image of the lateral development of pieces with cylindrical or similar geometry.

The analysis of the development of the lateral surface of the piece can provide many informations of superficial and dimensional type: from **the presence of surface inhomogeneities** (lines, scratches) to **the dimensional control of the correct phase between two asymmetric elements of the piece** (for example two radial holes) .

The applications are many and the solution lends itself to components with very variable shapes and sizes. We present some case studies.



CASE
STUDY

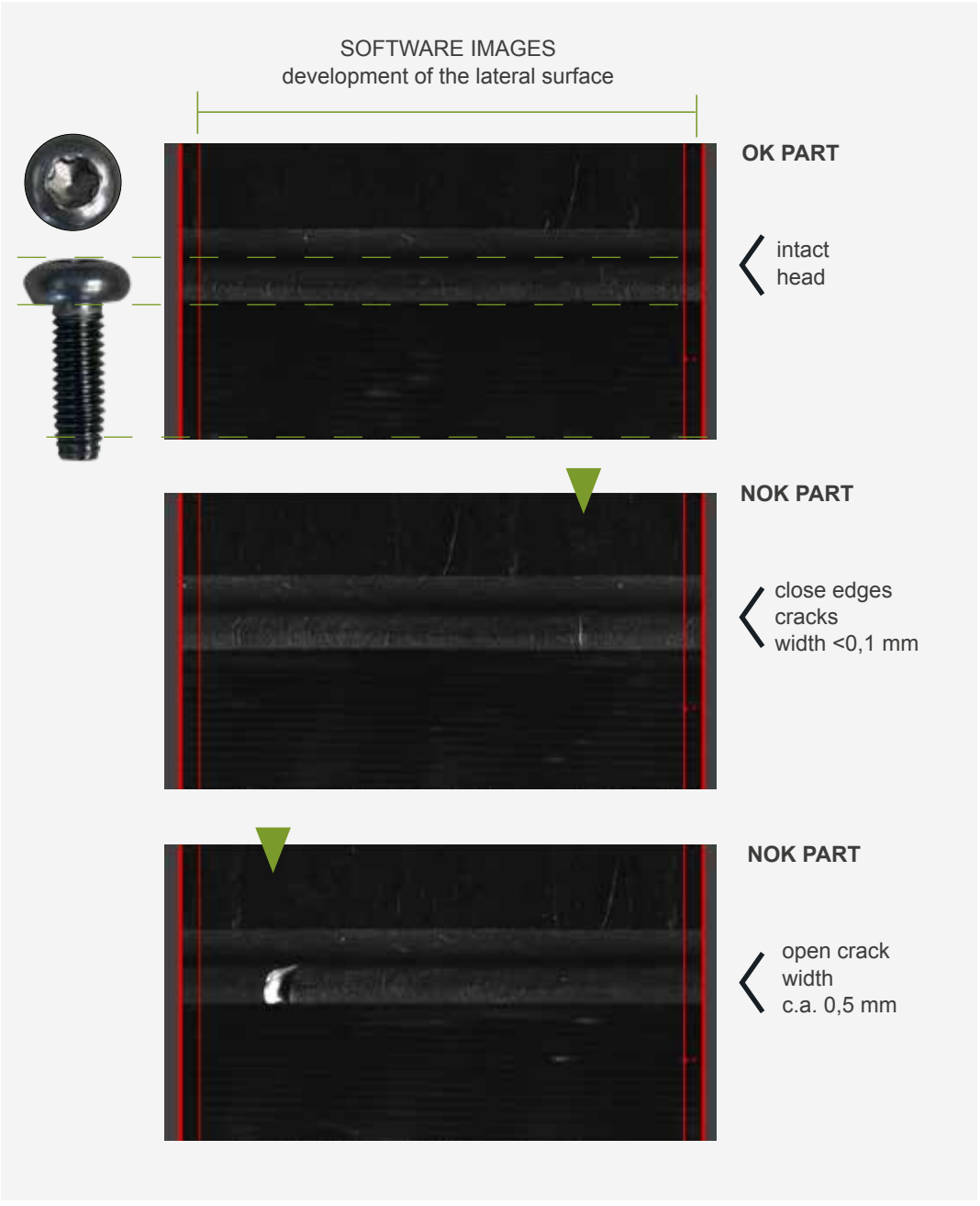
Stainless steel M4x20 screws

The screws in question have occasional **cracks on the head, generally open or with close edges.**

After several attempts to identify the defects using eddy current equipment (the first hypothesized solution) this solution was discarded. The material, non-magnetic stainless steel, responds insufficiently to eddy currents and control often proves ineffective.

The position of the cracks, generally located on the side of the head, also makes the inspection via a surface camera that frames the piece from the side of the key imprint ineffective: for geometric reasons, only cracks on the top surface are visible.

In this case, the linear camera provides an optimal response: it allows to intercept all the cracks, from the finest to the open ones, without false rejection. The cadence is more than 110 pcs per minute.



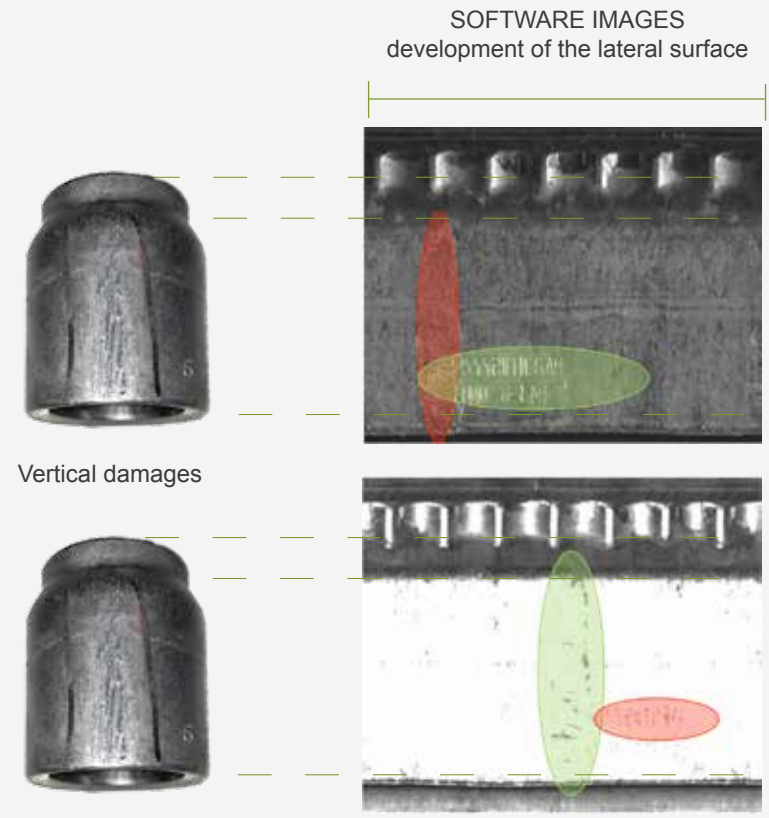
CASE
STUDY

Molded bushings up to Ø 50 mm and height 62 mm

Unlike the previous situation, the case of the bushings enhances the ability of the linear camera to identify, with a single instrument, surface inhomogeneities of very variable origin. In the case in question, in fact, the defects can be classified as scratches in various directions, cracks, bubbles, rust stains, geometric malformations, gaps in material at the edges.

Through the linear camera, after appropriate adjustment of the lighting, all these defects can be traced within the same image. In this case we find that the linear camera intercepts a wide range of appearance defects.

DEFECTS SAMPLES



Vertical damages

Missing Material on the Skirt/Head
Missing Head

Horizontal damages

Cracks
Pseudo craks

CASE
STUDY

Flanged shafts

Another interesting application of the linear camera is that of measuring the angle between two asymmetrical elements in the piece. In the case in question, for example, the angle between the milled side in the flange and the notch is used as code for the type of piece. The measurement of the position of the notch with respect to the milled side allows the pieces to be separated into three different batches.

Through the linear camera, the control is easy and takes the form of measuring the distance between the two light areas in the development of the flange.

batch A batch B batch C