

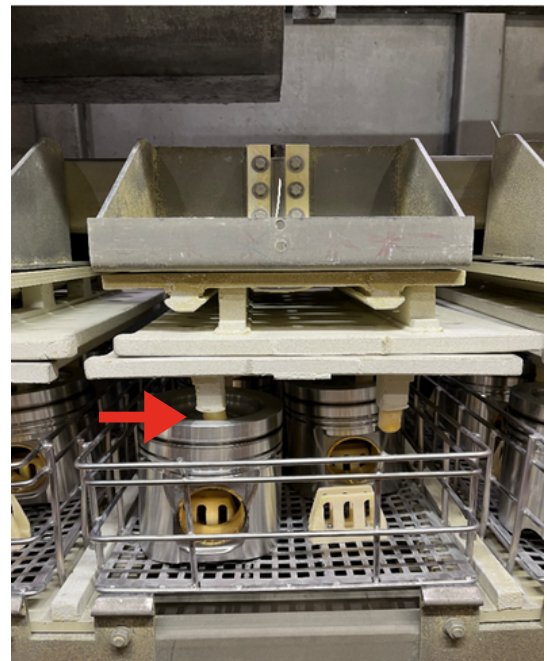
## “Fixing Marks” on Phosphate Coated Pistons

“Fixing marks” / uncoated areas on the crowns of phosphate coated aluminium pistons are an effect of the phosphate coating process. They do not affect the piston operating properties, and the pistons are fully compliant with the acceptance specifications (Nüral TSIE-014-001).

### PHOSPHATE COATING FUNCTION

Phosphate coating prevents piston skirt scuffing during initial engine start-up; it has no functional effect on the piston crown. Phosphate coating on piston crown occurs when applying the coating to critical areas of the piston skirt. Clamping the piston in a basket as it rotates in the phosphate bath leaves small uncoated areas.

Picture 1:



### Picture 1:

Phosphate coating process: Pistons are clamped in baskets prior to immersion in a phosphate bath. Small marks occur where the clamp is in contact with the piston crown.

### Picture 2:

Post-phosphate coating: Note the small bright circular uncoated “fixing marks” on the piston crowns.

Picture 2:

