CASE STUDY

PROJECT DESCRIPTION: Preventing corrosion on clamps and fittings for Agrifirm

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Situation:	Semi-circular tapered clamps are used on a rotating wheel that presses pellets. The clamps, fittings, and mounting bolts are prone to corrosion. A tapered shim ring that is also mounted tends to get stuck due to varying temperatures and corrosion. It is important to perform maintenance at regular intervals, and it is particularly difficult to disassemble the clamp system, requiring the use of hammers, chisels, grinding wheel, or hydraulic press.
Task:	Keep the clamps, shim rings, and wheel free of corrosion. Ensure that the screw thread keeps running. Keep the fittings intact and unscratched (eliminating sandblasting, sanding or polishing as methods). Must be able to remove parts without use of heavy equipment (grinding, drilling, and pushing).
Action:	Archoil AR5100 was used as a corrosion remover. During this process, large synthetic molecules bind to the corrosion, removing them from the metal surface and leaving behind no patina. No abrasive ingredients are used, meaning the fitting's structure remain untouched. The clamps are completed degreased, and the metal is now clean, but unprotected. The cleaning process is then followed by the use of Archoil AR8100. AR8100 is a very high quality biosynthetic grease (Durasyn 148 high VI), enriched with Archoil's Nanoborate compound. The chemical process of Nanoborate chelation, a durable, chemically bonded surface layer is formed. This layer reduces the coefficient of friction for metal surfaces to below 0.037%, ensuring that friction related wear is minimal. The chemical bond is very durable, does not wash away, can withstand extreme temperatures up to 2600 °C, high pressure, and provides protection against corrosion. The high quality of the grease and the chemical reaction of the added Nanoborate makes AR8100 exceptionally abrasion resistant and gives the product an unrivaled washout factor (0.05) with a steam or water rinse, guaranteeing a prolonged lubrication interval. Nanoborate has no toxic or hazardous additives that are regularly found in conventional high-performance greases. The product is free of heavy metals, PTFE, molybdenum, graphite, boric acid, zinc, barium, and lead, and is biodegradable and of industrial quality.
Result:	Metal parts were kept free of corrosion for a long duration (> 12 months). This enables normal disassembly after 2 months to 5 years. Rust is removed from the clamps without sanding or blasting and without using significant manpower. After redeployment, the clamps remain corrosion free.