KOLENE®
EXTREME CLEANING TECHNOLOGIES®

Molten Salt Cleaning of Engine Components

An Alternative MRO / RESET Cleaning Technology

- Molten salt cleaning processes find broad applications in the cleaning of used engine components in preparation for inspection and remanufacturing. Molten salts offer a combination of performance, speed, thoroughness, and flexibility not available in other chemical or thermal cleaning technologies.

- Molten salts are unique, in that they are 100% active chemical melts. There are no solvents, diluents, water, etc involved with the molten bath. It is liquid solely because of its operating temperature. There is no evaporation or loss of "liquid" from the bath as it has negligible vapor pressure at normal operating temperatures.

- Any organic compounds that may be present on the used components - oils, carbon, soils, greases, and paints – including CARC - are quickly and completely converted to inorganic compounds by thermochemical oxidation. Thick metal scales such as rust and heat scales are not removed by the bath, but any organic oils or soils that were absorbed into them during service are removed; this greatly increases the efficiency and effectiveness of subsequent chemical brightening or pickling operations after salt bath cleaning.

- After teardown, draining, and minor precleaning, the dry workload is immersed into the molten salt for stripping of all organics - oils, greases, paints, and coke/carbon deposits. When a load of components is first immersed in the molten salt, a "cocoon" of solidified salt forms on the cold workload. As the load heats up, the solid salt remelts and the reaction between the soils and salts begins.

- After a predetermined time, the workload is removed and any excess salt is allowed to drain back into the bath. Depending on the quench sensitivity of the parts being cleaned, the work is either directly quenched into water, or allowed to air cool before quenching. Chemical post-treatments such as chelated alkaline derusters or inhibited acid pickling solutions are commonly used to complete the cleaning process and produce a clean, metallic appearance.

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