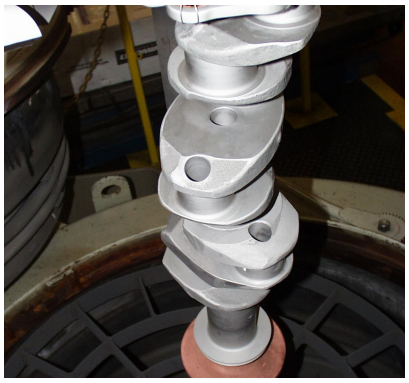
COMMERCIAL HEAT TREATING SERVICES

TYPICAL APPLICATIONS

CRANKSHAFT

High performance automotive and aircraft engine crankshafts are nitrided for better fatigue resistance and wear properties on bearing journals.

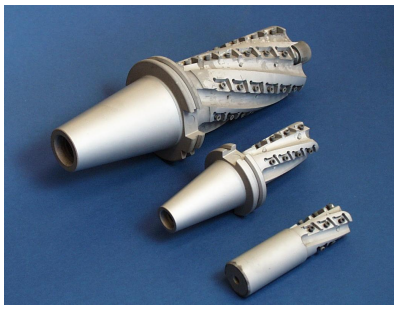


SHAFT

Properties of small shafts exposed to atmospheric conditions and/or other corrosive environments are frequently treated in an in-process post-nitriding oxidizing treatment. Such components have excellent wear and corrosion properties, as well as an attractive appearance.

TOOLING

Dies and other tooling require vacuum hardening, tempering, and cryogenic treatment. This combination of processing techniques imparts excellent properties on the tool, such as long life, resistance to wear and other damage, and dimensional stability.



SHAFT

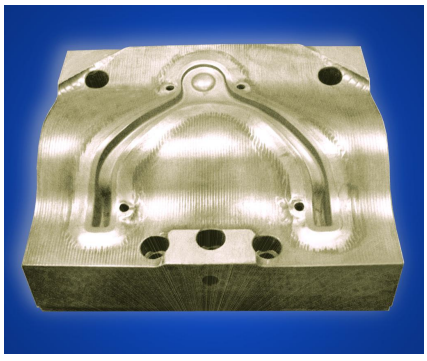
Shafts made of stainless steel or nickel based alloys require vacuum hardening and tempering, frequently followed by nitriding.

LANDING GEAR MECHANISM

Aerospace specifications often call for controlled nitriding with limited white layer capable of producing deep diffusion cases on Nitralloy 135M and other alloyed steels. Such well controlled nitriding produces a hardened case that has excellent wear and toughness properties. The reduction in white layer thickness eliminates the need for costly finishing operations that might otherwise have been required.

FORGING / FORMING DIES

Forging and forming dies made of tool steels, alloy steels, cast steels or cast iron are a frequent visitor in a heat treating shop. The dies are vacuum hardened and tempered, flame hardened, flood-welded, and nitrided, as applicable, for better life.



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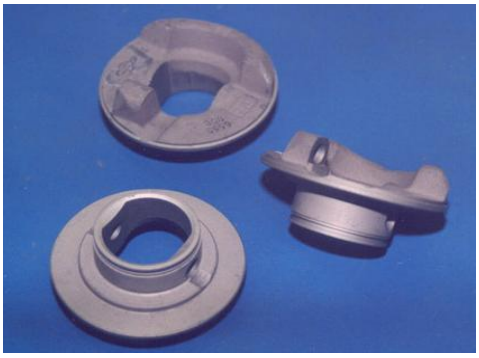
TYPICAL APPLICATIONS

GEARS

Nitriding gears for applications ranging from heavy-duty machinery to small automotive accessories enables lower manufacturing costs. For one customer, this meant eliminating costly finishing operations needed after carburizing.

JOURNAL

The component is delivered in an “almost” finished-machined state to one of our locations where it is subjected to such operations as buffing, sizing, nitriding, polishing, cleaning, application of R/P and inspection. The finished product is delivered to the customer’s assembly line.



PISTON RINGS

Nitrided piston rings show high surface hardness at elevated temperatures, and good sliding wear resistance with a low coefficient of friction.

FUEL INJECTOR

Fuel injector bodies and spray tips are vacuum hardened and nitrided.

SPRING

Springs are routinely nitrided at Nitrex to enhance their fatigue resistance to premature failure.

ALUMINUM EXTRUSION DIE

Extrusion dies are nitrided and re-nitrided several times to extend their die life. Nitriding parameters are adjusted to the expected die duty cycle resulting in significant cost reductions and virtual elimination of unscheduled press shutdowns.