

Steel, Stainless Steel, High Alloy & Super Alloy-

Castings, Spares, Replacement Parts & Custom Made Components

Manufacturer - Supplier to OEM's, Plants and Process Industry

Heat, Wear, Abrasion, Pressure and Corrosion Resistant Alloys for Specific End Applications

Conversion to an Integrated Casting from Fabrications, Forgings and Welded Assemblies

Fabricated and Welded-Parts, Components & Assemblies in Steels and Stainless Steels

Engineering & Metallurgical Consulting

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Application Note »

Elevated temperature oxidation wear erosion corrosion CFBC Boiler Air Injection Nozzles:

High performance air injection nozzles for CFBC Boilers withstanding high temperature erosion-corrosion and oxidation due to pulverized coal and hot air injection

ACME® Fe-Cr-Ni & Fe-Ni-Cr Heat Resistant Alloys with Rare Earth Metal (REM) Mod Alloys

Most of installed AFBC Boilers are being now converted into CFBC Boilers to improve boiler thermal efficiency. Air injection nozzles are used to inject pulverized coal and hot air mix into the combustion chamber.

High ash and volatile content coal injection at elevated temperature at under high pressure and velocity results in high temperature oxidation corrosion, wear and erosion of nozzle material demanding frequent replacements.

ACME high chromium heat resistant alloys are designed to withstand such demanding applications. To combat high temperature oxidation of alloys, rare earth metal (REM) modified alloys are also offered along with 50Cr-50Ni-Nb/Cb alloys when longer service life and less boiler shut downs are desired. High performance, longer life of nozzles helps reduce boiler shut down and maintenance costs, leading to overall lower cost of power generation at the power plants overcoming high initial cost of nozzles.

ACME alloys can offer custom made cast and machined air injection nozzle assemblies in various alloy options including all grades of ASTM A 297/ A 297 M, USA Standard Specification of Heat Resistant Stainless Steels and its equivalents in DIN, JIS, ANFOR, UNS or alike alloys as well as proprietary alloy solutions.

Candidate Alloys include ASTM A 297-Grade HH, HH Modified, HE, HD. Picture shows alloy basket machined holes 2.5 mm diameter in HK-40 Modified with blank machined alloy baskets. Picture below it shows proof machined bars in alloy A297 grade HE (25-28Cr, 8-11Ni) along with its cut section. Subsequent pictures show proof machined nozzles to client's CFBC boiler design, and specifications.



For air injection nozzles and blow pipe assemblies of your boilers and power plant solutions, talk to us to learn about high performance heat resistant alloys and solutions better than those offered by OEM.

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