

Technical information

Jonalloy

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Technical Information

Useful information on the use of Jonalloy

1 Cutting off

Cutting off is recommended using bakelite-bonded cut off wheels.
We advice: Tyrolit Ø200*1,5 A60 M4B 43 (2500/3000 Rpm)

ALWAYS USE DRY

2 Pre-profiling (roughing)

ROUGHING BEFORE PROFILING IS A MUST TO AVOID EXTREMELY HIGH INTERNAL STRESS WHEN GRINDING LARGE PROFILES AFTER BRAZING!!!

The grinding wheel should be softer and with more open grain than those used for grinding HS. It is detrimental for Jonalloy to use grinding wheels that are too hard or too loaded (dress the grinding wheel on time!!)

Roughing is done with ceramic-bonded grinding wheels (CBN is too expensive for this application)

We recommend dry roughing, but it can be done with cooling too. In that case plenty of cooling must be provided in order to eliminate the risk of cracks caused by thermal shock. Dry roughing is always better than roughing with inadequate cooling!

3 Brazing

The method used is the same as for carbide and applicable for all brazing methods.

3.1 Preparation

- F After milling, grind the seat of the body flat. Grind Jonalloy flat and **preprofile** if necessary.
- F Degrease the surface to be brazed (to remove any oil or dirt).
- F Apply flux evenly on the two contact surfaces.
- F Apply silver solder (a thickness of $\pm 0,2\text{mm}$ all over the surface). For normal working conditions conventional silver solder should do. If the material is subjected to violent shocks (e.g. sawing in pinewood with many knots), we recommend using a solder sandwich (sandwich= silver-copper-silver).

3.2 Brazing

- F Make sure that the brazing temperature is not too high (max. 800°C / 1472°F) so that Jonalloy does not lose its excellent qualities. Heat up evenly!
- F After brazing, the tool should cool down gradually (avoid thermal shocks!). Delicate pieces should be immersed in vermiculite after brazing.
- F Melting point of brazing alloy: $\pm 610^{\circ}\text{C}$ / 1130°F
(We suggest using Degussa 4003 silver solder and Braze Tec special h paste.)
- F Roughing of profiles should be done before brazing in order to avoid internal stress.

4 Profiling

We recommend using CBN grinding wheels.

Use either abundant cooling or none.

The grinding wheel should be softer and more open than those used for grinding HS. It is disadvantageous for Jonalloy to use grinding wheels that are too hard or too loaded (dress the grinding wheel on time!)

5 Regrinding

Very important hint:

The rim of the CBN grinding wheel should be as small as possible (preferably between 1,5mm and 2,5mm). Less experienced grinders usually grind with a rim of 4mm to 5mm. And risk heating up the Jonalloy cutter thus creating the risk of cracks and leading to much poorer grinding results.

Regrinding of the cutter: -roughing: coarse
-finishing: fine

Either regrind dry or provide abundant cooling. Most people prefer using a coolant during regrinding for a longer life of the grinding wheel.

After regrinding, the tool should cool down gradually (avoid thermal shocks!)

6 Safety and health advices

- ! Always use the appropriate grinding wheel with the proper grinding speed!
- ! Use a good exhaust system!
- ! Always use protective cap while grinding!
- ! If you grind with coolant, always make sure that vapors are exhausted!
- ! We recommend a dust mask if working under less favorable conditions.
- ! Also while brazing, vapors are formed as the flux is heated. Make sure these vapors are eliminated using a good exhaust system.

WARNING:

Jonalloy contains one or more of the following substances: carbon, chromium, cobalt, manganese, nickel, niobium or tungsten. Grinding of Jonalloy produces dust containing potentially harmful substances.