voestalpine ONE STEP AHEAD.	Utasítás	Változat-szám	Lapszám
Azonosító **MU-32**	**Requirements for PVD coating**	1	1

Requirements for PVD coating

Substrate properties

The components must be electrically conductive. The materials must be capable of withstanding the temperatures of approximately 500 °C prevalent during the coating process (loss of hardness, distortion). Options here include a number of cold work steels (such as 1.2379), in particular, tempered at approximately 540 °C, as well as HSS, hot work steels (e.g. 1.2343), carbides and stainless steels. After hardening heat treatment, the hardness adjusting tempering heat treatment step temperature have to be minimum 540°C of the tool steels have to be coated.

Components must be delivered in a non-magnetic condition in order to avoid problems removing grinding dust.

It is only possible to coat brazed components if the brazing alloy used is vacuum and temperature resistant (the brazing alloy may not contain any cadmium or zinc, the brazing temperature must be greater than 600 °C and the joint must be free of any cavities or flux residues).

Vacuum compatible solders: all major solder manufacturers have suitable cadmium and zinc free silver brazing alloys in their ranges.

Welded tools have to be stress relieved.

Surface quality, packaging condition

The surface of the components must be metallically clean (e.g. ground, polished, smooth eroded or lapped components are suitable). Dull grinding wheels should be avoided! Remove polish residues using a suitable solvent (ask the polish manufacturer), clean with ultrasonic if necessary and then oil immediately. The components should always be slightly oiled to protect against corrosion.

To achieve optimal results on cutting tools the surface roughness should be Rz ≤ 3 µm, and Rz ≤ 2 µm on forming tools. A high gloss finish on the functional surfaces is advised for forming tools, in particular.
The cutting edges should be free from burrs.

Készítette		Ellenőrizte		Jóváhagyta	
mikor	ki	mikor	ki	mikor	ki
2018.05.14	Varga-Kiss Nikolett	2018.05.14	Kis László	2018.05.14	Péchy Gábor

voestalpine ONE STEP AHEAD.	Utasítás	Változat-szám	Lapszám
Azonosító **MU-32**	**Requirements for PVD coating**	1	2

The components must be free from corrosion protection products, paint residues, paint markings and other coatings. The components must be free from processed materials (e.g. solidified molten plastic or metal, sheet metal, etc.). They may not be nitrided, oxidized, burnished, hard-chrome platted etc.
Packaging residues should be avoided (e.g. waxes, adhesives, PVC residues).
Please package the tools to not be able to damage during the transportation. The packaging should be able to use for delivery back. The blind holes and inner threads should be free from dirt. The cooling channels could be opened and cleaned.

Please deliver bolted or press-fit components as individual parts; armoured dies (special treatment) on request.
Inner contours can only be coated with an orifice to depth ratio of approximately 1 : 1

Készítette		Ellenőrizte		Jóváhagyta	
mikor	ki	mikor	ki	mikor	ki
2018.05.14	Varga-Kiss Nikolett	2018.05.14	Kis László	2018.05.14	Péchy Gábor