Which process is more suitable?

Wet versus dry brushing process

Wet working
High-tech brushes are used in wet working environments. Low temperatures increase rigidity of the filaments, thereby increasing performance. Lubrication tends to have the opposite effect.

Effectiveness of tools is attained through selection of appropriate filaments, grain size and bundle geometry. Feeding rates are high, surface finish is enhanced and large volumes can be processed.

Coolant flushes off debris and therefore needs to be filtered permanently. Parts exit the brushing system under humid conditions and are routed to cleaning and conservation processes.

Dry working
When brushes are used under dry running conditions, generated heat dissipation is poor. Special materials are essential to prevent filament softening or melting.

Grinding media on the other hand are more aggressive, resulting in higher surface roughness and removal rates. Feed rates are low and hence suitable for low volume production.

Dry working environments require dust extraction. Special filtration systems (explosion-proof) are often needed.

Parts exit a brushing system dry, but grinding dust still adheres to the surface. A cleaning process needs to follow.

BOTECH
FINISHING TOOLS

BOTECH AG
Rothenburgstrasse 51
CH - 6020 Emmenbrücke
Switzerland

Tel +41 (0) 41 281 39 50
Fax +41 (0) 41 281 39 55

info@botech.ch
www.botech.ch

TOOLS Swiss Quality

BOTECH
FINISHING TOOLS

BOTECH News 2017-02

BOTECH Technology
Presenting dry brushing as an alternative.

TOOLS Swiss Quality

BOTECH is building bridges between two technologies

Over time, the fluid elements of wind and water form the hardest stone into bridges. In only a fraction of the time, but using comparable principles, today's fabricating processes deploy nylon based tooling to work steel. An exacting challenge that needs mastering.

In markets served by BOTECH technologies, the processes involved run predominantly under wet conditions. Comparatively high feed rates of 8 to 20 m/min are one aspect of this situation. On the other hand, high performance brushes built by BOTECH have been developed with precisely these conditions in mind. Water based coolants should have the least possible influence on the abrasive effectiveness of the brush filaments. The proprietary filaments used in FAST and SUPERCUT brushes are already technology leaders.

Nonetheless, markets are calling for alternatives. For a variety of reasons a need for brushes capable of operating in dry conditions arises regularly. Particularly when developing processes jointly with machine builders, the need for tools which remain functional even on dry processing equipment has become evident. While diamond brushes by BOTECH are already ideally adapted to such requirements, the demand for lower cost brushes remains strong among volume parts producers.

Meeting that challenge is our latest DRYCUT line. These products are destined to open new fields of application. For parts which can be processed without excessive cleaning in particular, dry working will eliminate entire process steps. The occurrence of staining or even rust is avoided from the outset.

These new brushes are also expected to be introduced in technologies employing light-gauge sheet metal. The objective is to achieve perfect rounding of edges, including those of laser-cut parts. Hitherto, defining radii to tight tolerances has been restricted to deburring by brushing. Hence, the sheet metal processing industry was forced to deburr using soft grinding discs, which do not allow the application of defined radii. Brushes equipped with inclined bundles of DRYCUT materials will now be transferring results achieved in wet working into the sphere of dry processing.

Potential use of brushes in dry working areas:

- Polishing of cutting edges on punches and dies (primarily diamond tools)
- Increased rounding of edges of FB parts (radii 0.2 mm or above)
- Brushing of porous materials
- Usage on brushing systems without a coolant supply in place