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1. **Maximum rotational speed n_{\max} [min^{-1}]**

The maximum rotational speed defines the maximum possible speed of the unguided (i.e. only clamped at the shank) driven tool/clamping device at which it is still safe but not necessarily functional. Up to this speed, it is guaranteed that, on the one hand, no built-in parts will become loose which may endanger personnel or lead to damage to the machine and, on the other hand, no ductile (permanent) deformation of the basic body will occur.

2. **Maximum rotational speed guided $n_{g\max}$ [min^{-1}]**

For tools/clamping devices with unfavourable or critical L/D ratio, a differentiation is made between unguided and guided use. In this case the maximum rotational speed will be displayed as guided. As a rule, this is higher than in unguided operation.

Opposed to the unguided operating (i.e. only clamped at the shank) the tool/ clamping device have additionally supported during guided operations by one or more support systems. This could be the cutting head and/ or additional guide support on the tool-/ clamping device body.

3. **Machining operating speed [min^{-1}]**

The machining operating speed is the rotational speed at which the tool/ clamping device is used. This is dependent upon the material pairing of cutting edge and workpiece, as well as guide pads and workpiece. The machining operating speed is not allowed to be higher than the maximum rotational speed.

Explicit note:

As a rule, the machining operating speed is not given or indicated on the drawing and/ or the tool body.

4. **Burst rotational speed [min^{-1}]**

Is the rotation speed established during centrifugal force research at which the tool/ clamping device fails, however the research was stopped due to the high level of vibration present (through deformation or component failure).

5. **Rotational speed for test [min^{-1}]**

The rotational speed for test is the final rotational speed that can be maintained for a minimum of 60 seconds without any damage to the tool/ clamping device occurring or the test having to be stopped.

The rotational speed for test is divided by a safety factor (as a rule 2.0; occasionally also 1.6 or 2.2). The newly calculated rotational speed represents to the maximum rotational speed (see chapter 1 maximum rotational speed).

6. Maximum spindle rotation speed [min⁻¹]

Is the maximum rotational speed the spindle can achieve, this specification comes from the machine manufacturer/ customer.

7. Nominal balancing speed

The result of the nominal balancing speed and the balancing grade is the maximum allowable residual unbalanced of the test body.

This rotational speed will be given together with the balancing value as a balancing note on the drawing and is not allowed to be greater than the maximum rotational speed.