DITTEL

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NEW!

Dittel-System P6000 Pre-balancing

Unbalances are the most common cause of unwelcome machine vibrations within machine tools. Balanced grinding wheels, tool holders and spindles can increase the useful lifetime of the bearings and tools, and make it possible to generate greater surface accuracies.

During ‘pre-balancing’ (field balancing), the unbalance is measured while the machine is running and compensated by shifting correction weights (sliding blocks) or by adding defined weights (e.g. screws) to the wheel clamping flange. The spindle is balanced in one plane or two plane, depending on the application.

The **P6000** generation (P6001 for 1-plane balancing and P6002 for 1-plane and 2-plane balancing) was developed specifically to balance precision machine tools. The size and location of the spindle unbalance are determined while the machine tool is running at operating speed. The machine controls or a Windows PC are used to display data as well as to adjust and operate the **P6000.**

One of the following two methods is used to compensate for the unbalance:

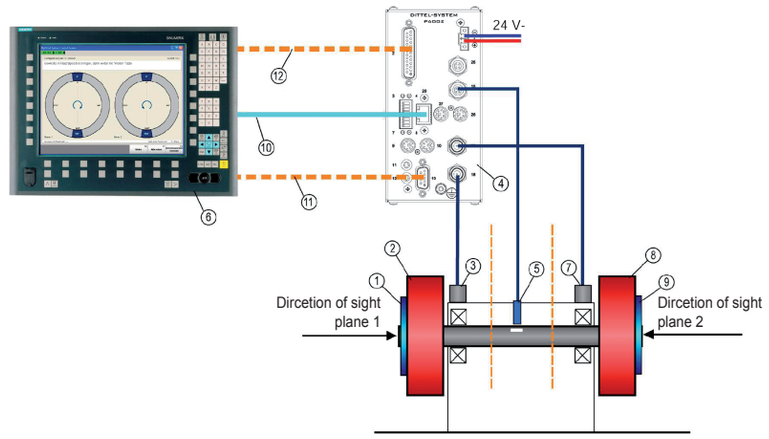
Spread angle method: unbalance is compensated by shifting two equally heavy weights (sliding blocks) to the calculated positions.

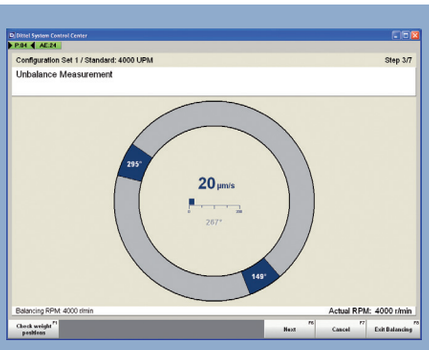
Fixed position method: unbalance is compensated by adding defined weights (e.g. screws) at specific positions.

Dittel-System P6000 Pre-balancing

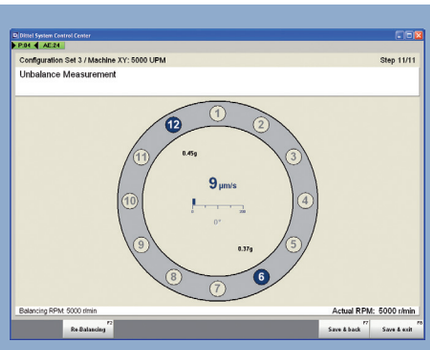
Scheme: 2-plane pre-balancing with P6002

1 Flange for correction weights
2 Rotor (in this illustration: grinding wheel)
3 Acceleration pick-up, plane 1
4 Balancing module P6002
5 Proximity switch
6 Machine controls e.g. SINUMERIK
7 Acceleration pick-up, plane 2
8 Rotor (in this illustration: grinding wheel)
9 Flange for correction weights
10 Ethernet or RS 232 interface
11 Profibus
12 Static interface

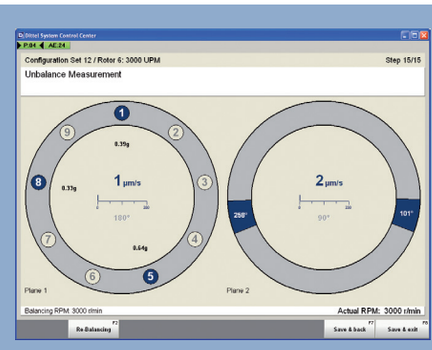




1-plane balancing (spread angle method)



1-plane balancing (fixed position method)



2-plane balancing
(fixed position and spread angle method)

Basic functions:

- Hardware and software integration into the DS6000 series
- Profibus and static interface to machine monitoring system
- Series start-up of several modules for all parameters
- “Open system architecture” i.e. updates, customized software and new functions can be integrated flexibly
- User dialog can be switched to German, English, French, Italian, Spanish and Czech.
  Other languages on request.

Special features:

- Intelligent graphical user prompting
- Accessory balancing rings (optional with integrated AE sensor)
- Continuous unbalance monitoring with 2 limits per measurement channel
- RPM monitoring with 1 limit per proximity switch
- RPM input from rotary encoder

Interfaces:

- RS232 or ethernet interface (alternatively: USB with adapter) for controls and visualization
- Profibus (Profibus connection significantly reduces wiring: 9 pin D-SUB connector)
- Control signal input/output via static interface (25 pin D-SUB connector) and/or via Profibus
- All digital inputs/outputs are optically isolated

Software:

- Easy integration into open, Windows based machine controls
- Open programming, Windows based user interface
- Integration into customer applications
- Uniform software and operating concept for all DS6000 modules
- Comfortable user interface
- Integrated online help
- Guaranteed data security/consistency
- Easy to reset operating conditions after servicing (series start-up)
- Optional: customized software/ applications

Dittel Messtechnik GmbH
Erpftinger Straße 36
86899 Landsberg am Lech
Germany

Tel.: +49 (0) 81 91 3351-0
Fax: +49 (0) 81 91 3351-49
info@dittel.com
www.dittel.com