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Materials Testing

Product Information

Vibrophores Amsler 5 – 10 HFP 5100

Figure: Amsler 10 HFP 5100

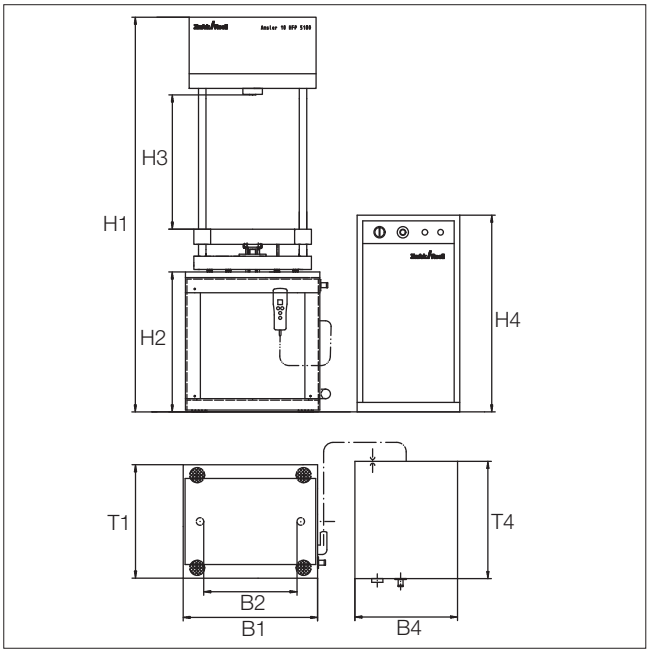

Figure: Drawing of Amsler 10 HFP 5100 with dimensions

Range of application

For fatigue testing of materials or components by applying sinusoid loads Zwick Vibrophores offer an economical alternative using the resonance principle with constant or variable amplitude and mean load.

Fatigue testing of materials and components, e.g. fatigue tests according to DIN 50100 (S/N curve) for tensile stress, compressive and alternating stress ranges. Testing can be performed either force controlled or strain controlled.

Typical applications are fracture toughness tests on Compact Tensile (CT) and Single Edge Bending (SEB) specimens, oscillating of bending specimens, fatigue strength tests on components such as springs and screws. Other applications include production and quality control of components that are exposed during their lifetime.

Tests can also be carried out under various environmental conditions (temperature, aggressive media) with corresponding special features. In addition torsion and bending tests can also be carried out.

Advantages and features

- High specimen throughput due to high test frequencies and short test time
- Extremely low energy consumption due to resonance drive (2% of the cost of a typical servo-hydraulic testing machine)
- Simple installation, no additional power packs necessary (e.g. hydraulics, cooling water)
- Virtually maintenance-free system through lack of wearing parts
- Precision force measurement through calibration according to DIN 51 221 and US MIL Std. 1312 B
- High testing precision through adaptive control
- Fast and precise mean load control by servo drive
- High system stability and low noise-sensitivity through pulse width modulator
- Two measurement channels for additional extensometers (force, strain), optional extensible through two measuring inputs
- User friendly operation through the use of industry standard *testXpert*® application software configured precisely for each test
- Standard PC can be used because no special interface card is necessary
- The testing frequency can easily be changed using standard weights

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Fmax [kN]	**5**	**10**
Mean load max. [kN]	± 5	± 10
Force amplitude max. [kN]	± 2.5	± 5
Oscillation range of specimen max. [mm]	5	5
Testing frequency range [Hz]	35 – 300	35 – 300
Number of frequency stages[1]	5	5
Speed of machine frame max. [mm/s]	2.9	2.9
Dimensions load frame		
H1 – Height [mm]	1887	1887
B1 – Width [mm]	720	720
T1 – Depth [mm]	600	600
Dimensions test area		
H2 – Height of machine table [mm]	740	740
H3 – Heigth between machine table and load cell [mm]	190 – 510	190 – 510
B2 – Horizontal daylight [mm]	500	500
Travel of machine frame max. [mm]	320	320
Measurement and control electronics *VibroWin*		
H4 – Height [mm]	1040	1040
B4 – Width [mm]	550	550
T4 – Depth [mm]	620	620
Cable length between HFP and *VibroWin* [m]	5	5
Weight approx. [kg]	350	350
Item no.		
Standard type	• **940727** (BRA351008001)	• **940728** (BRA351008001/S)
With column extension[2] 200 mm	• **924502** (BRA351008001.A)	• **924503** (BRA351008001/S.A)

Environmental conditions		
Operating temperature [°C]	+10 ... +35	+10 ... +35
Storage temperature [°C]	-25 ... +55	-25 ... +55
Humidity range (not condensing) [%]	< 90	< 90
Electrical connection		
Mains voltage 3 Ph/N/PE [3] [V]	3 x 400	3 x 400
Mains frequency [Hz]	50 / 60	50 / 60
Drive power [kVA]	1	1
Fuse [A]	16	16
Noise level at 1m distance [dB(A)]	80 – 110	80 – 110

[1] by activation / deactivation of weights
[2] with column extension the stated machine heigt and weight of the vibrophore changes
[3] Three phase AC motor (L1, L2, L3), neutral wire N, protective earth PE

All Data at ambient temperature.