Application

The Electromechanical Creep Testing Machine KAPPA SS-CF offers a wide range of applications.

- Creep fatigue tests (through-zero)
- Creep tests
- Creep rupture tests
- Stress rupture tests
- Relaxation tests
- Creep crack tests
- Definition of individual stepless sequences of load and temperature
- ‘Advanced creep’ - Tests
  - Creep strain modelling (e.g. to give creep strength at various levels of strain)
  - Creep ductility
  - Creep property deterioration due to service exposure
  - Creep data from component tests
- Tensile, compression, flexure, LCF or fracture toughness tests
- Ambient or elevated temperature
- For long term tests (reaching up to 10,000h)

Load Frame and drive system

- High precision planetary gear and servo-motor placed centrically in load line
- Planetary gear and servo-motor moving up and down with the travelling cross-head
- Equal-zero backlash for cyclic through-zero testing
- High resolution crosshead resolver and high resolution load channel permit excellent control characteristics
- Stand-alone floor machine
- High stiffness, precision and durability by 4-columns-design and central single screw
- Precise axial alignment according to ISO 23788 and NADCAP-requirements by precision crosshead guiding and adjustable alignment device
- Requires no special base or foundation
- Includes vibration isolation with sylomer dampers under the load frame
- Precise speed of +/-0.1% of set speed in range of 1µm/h to 100 mm/min (no load or constant load) measurement (average over 5 sec or 10 mm)
- Load-, stress- and strain-control
- High durability by use of brushless AC-motors
- The high drive control frequency of 1000 Hz enables fast, precise force and strain control
Product Information
Electromechanical Creep Testing Machine Kappa SS-CF

Technical data

<table>
<thead>
<tr>
<th></th>
<th>Kappa 50 SS-CF</th>
<th>Kappa 100 SS-CF</th>
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</thead>
<tbody>
<tr>
<td>Load capacity</td>
<td>50 kN</td>
<td>100 kN</td>
</tr>
<tr>
<td>Test area-depth</td>
<td>unlimited</td>
<td>unlimited</td>
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<tr>
<td>Test area-width</td>
<td>720 mm</td>
<td>720 mm</td>
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<tr>
<td>Test area-height</td>
<td>max. 1090 mm</td>
<td>max. 1090 mm</td>
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<tr>
<td>Crosshead stroke</td>
<td>200 mm</td>
<td>200 mm</td>
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<tr>
<td>Lateral support of moving crosshead</td>
<td>precision sliding bearing on four hard chromium-plated columns (40 mm diameter)</td>
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<tr>
<td>Test speed range</td>
<td>0.001 mm/h to 250 mm/min</td>
<td>0.001 mm/h to 250 mm/min</td>
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<tr>
<td>Return speed</td>
<td>200 mm/min</td>
<td>200 mm/min</td>
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<tr>
<td>Crosshead speed accuracy</td>
<td>+/- 0.1 % of setting (no load or constant load averaged over 10 mm or 5 s)</td>
<td>+/- 0.1 % of setting (no load or constant load averaged over 10 mm or 5 s)</td>
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<tr>
<td>Resolution of stroke-encoder</td>
<td>0.14 nm</td>
<td>0.14 nm</td>
</tr>
<tr>
<td>Frame Dimensions (WxDxH)</td>
<td>860x655x2212 mm</td>
<td>860x655x2212 mm</td>
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<tr>
<td>Weight</td>
<td>700 kg</td>
<td>700 kg</td>
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<tr>
<td>Power requirements</td>
<td>230 VAC, 1 kVA</td>
<td>230 VAC, 1 kVA</td>
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Dependency of cycling frequency and amplitude

Example: At a gauge length of 10 mm and a frequency of 1.2 Hz the max. amplitude is 0.87 % (±0.087 mm) of initial gauge length and vice versa. The area of operation is below limit curve.

All data at ambient temperature. We reserve the right to make technical changes in the course of ongoing development.