

Product Information

Electromechanical Creep Testing Machine Kappa SS-CF

CTA: 219137 179371

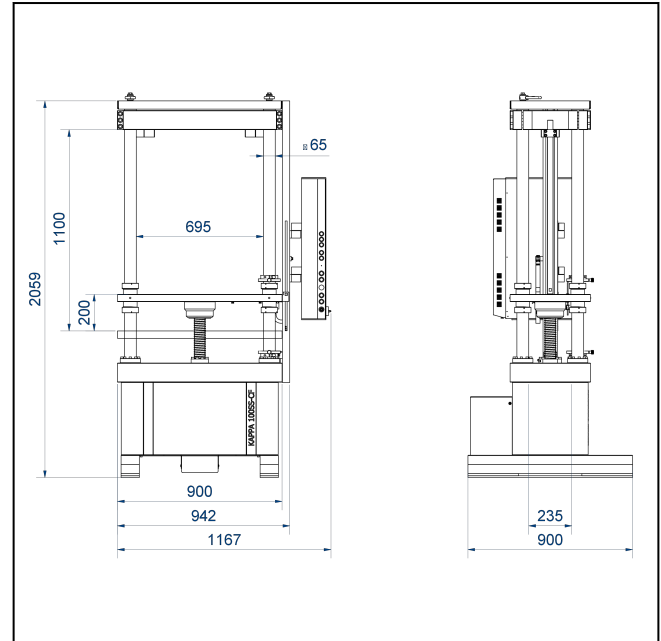


Kappa 100 SS-CF with videoXtens 1-32 HP/TZ and alternatively with contact-type extensometer

Applications

This patented electromechanical fatigue testing machine with play-free zero crossing has a central lead screw and is ideal for force and strain-controlled creep fatigue tests. The Kappa SS-CF provides maximum flexibility, covers the complete range of creep testing applications and is ideal for a variety of tests with alternating loads in both ambient temperature and high-temperature conditions.

- Force-controlled and strain-controlled creep fatigue tests with alternating loads (through zero), e.g., CF, LCF and TMF
- Advanced creep tests:
 - Strain modeling (e.g. determination of creep curve at different loads)
 - Creep test with slow strain rate (SSRT)
 - Creep data from components tests
- Static (CCG) and cyclic creep fatigue crack growth tests (CFCG)
- Determination of hydrogen embrittlement
- Relaxation tests
- Classic fatigue tests:
 - Creep, creep rupture
 - Stress rupture
- Short-term tensile, compression, and flexure tests can also be performed with this testing machine



Kappa 50 / 100 SS-CF

Specific machine design

- Specially designed and patented for fatigue tests
- Load frame with play-free central lead screw drive and precision guidance provided via four steel columns for precise, axial loading
- Adjustable crosshead enables maximum flexibility in test area height
- High drive control frequency from 1000 Hz, which enables precise force and strain control for a large application range.
- High-resolution force and travel measurement for optimum control properties, especially at very low test speeds
- Precise loading speed with $\pm 0.1\%$ tolerance of the set speed in the measurement range of $1\mu\text{m/h}$ to 100 mm/min unloaded or under constant load
- Precision testing machine to DIN EN ISO 7500-1

Axial alignment

- Central lead screw for axial alignment to ASTM E292
- Accessories: Fixed load spring for alternating tensile/compression loading with optimal alignment properties to ASTM E012
- Option: Alignment fixture for axial alignment to ISO 23788:2012 and NADCAP requirements ($\pm 5\%$ flexural stress)

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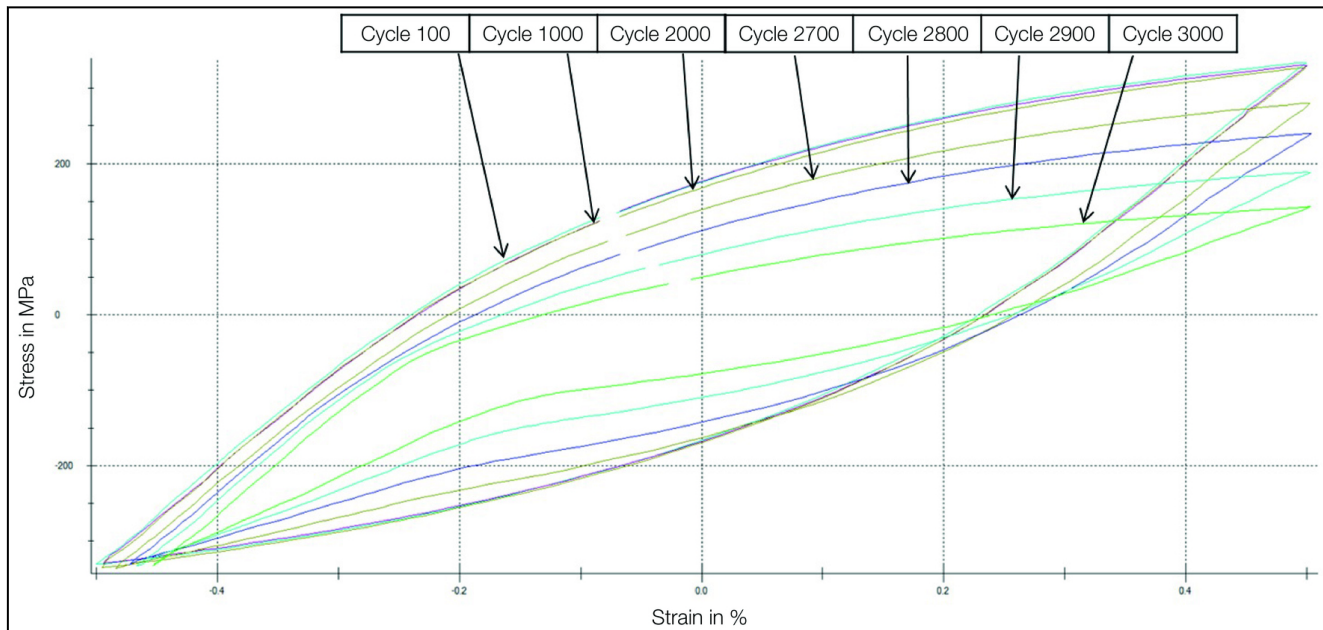
Technical data

Type	Kappa 50 SS CF	Kappa 100 SS CF	Kappa 250 SS CF
Test load, max. Fmax	50 kN	100 kN	250 kN
Dimensions of the test frame			
Width	942 mm	942 mm	942 mm
Depth	900 mm	900 mm	900 mm
Height	2059 mm	2059 mm	2395 mm
Test area depth	Unlimited	Unlimited	Unlimited
Test area width between the lead screws	695 mm	695 mm	680 mm
Test area height, max.	1100 mm	1100 mm	1150 mm
Crosshead travel	200 mm	200 mm	250 mm
Lateral guidance of the moving cross-head via precision bearings on four hard-chromed guide columns	Ø 65 mm	Ø 65 mm	Ø 80 mm
Test speed range	0.001 mm/h to 250 mm/min	0.001 mm/h to 250 mm/min	0.001 mm/h to 250 mm/min
Accuracy of the test speed	< ± 0.1 % (measured over an interval of at least 5 s or 10 mm travel)		
Position transducer travel resolution	0.14 nm	0.14 nm	0.14 nm
Weight	1200 kg	1200 kg	1500 kg
Power supply voltage	230 VAC	230 VAC	3 x 400 VAC
Installed load	1 kVA	1 kVA	4 kVA

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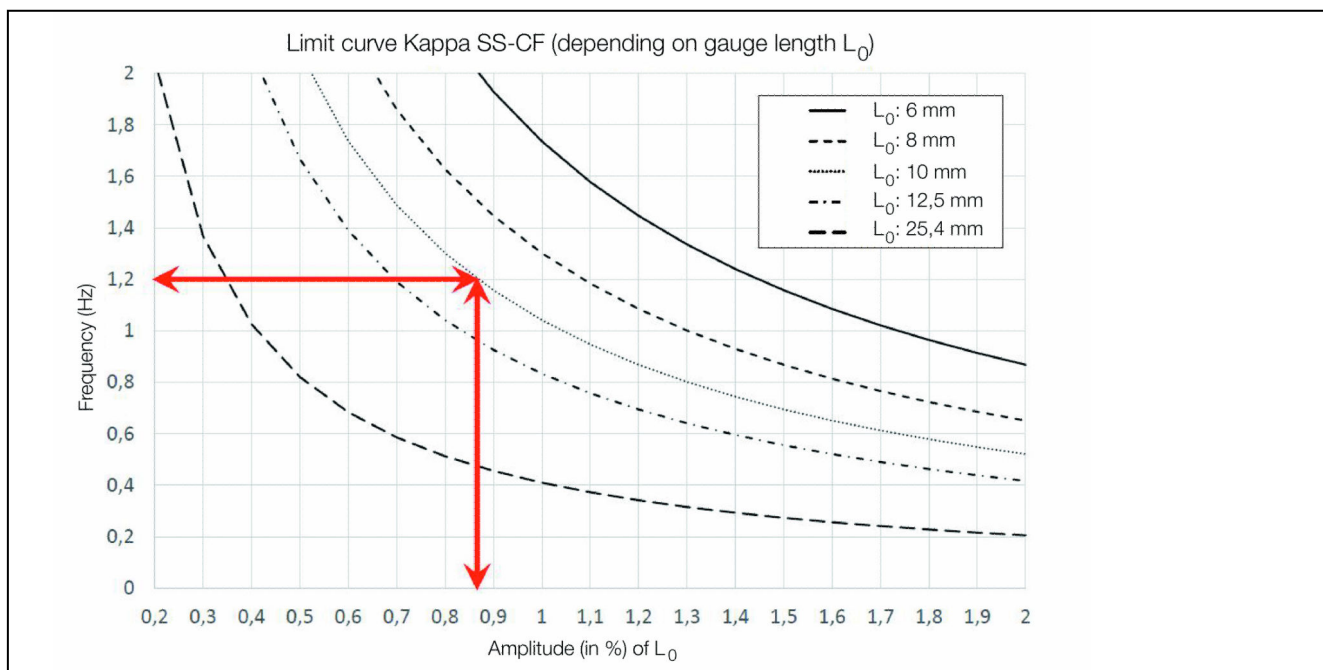
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Stress-strain curve

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Dependency between alternating stress and amplitude

Example: for a gauge length of 10 mm and a frequency of 1.2 Hz, the max. amplitude is 0.87% (= 0.087) of

the initial gauge length and vice versa. The application range is below the limit curve.

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Overview of the Kappa SS-CF range of application

