

+ 1500 °C Compression Rods and Anvils

Catalog Number 3118-304/3118-313

Features

- The compression rods are compatible with a standard range of compression anvils and flexure fixtures
- For use to +1500 °C in air
- Geometry optimised for use in Instron® +1500 °C ceramics furnace (3118-303)
- Water cooled adapters included as standard
- Integral LVDT deflection measurement
- Compression anvils have self aligning feature to accommodate for specimen and load string geometric and alignment errors

Description

In structural design or in research studies, it is important to be able to measure the strength of ceramics and glasses.

In the place of tensile testing both compressive and transverse bending tests are commonly employed for the determination of stress-strain behaviour in brittle materials.

Instron 3118-304 high temperature push rods are designed to accept compression anvils and a wide range of three and four point bend fixtures to enable the study of the physical properties of brittle materials at elevated temperature.

Principle of Operation

The compression rods are made of high grade alumina, and include a central plunger for direct measurement of bend displacement (only when used with 3118-310 bend fixture). The plunger contacts the lower surface of the bend specimen and extends through the lower compression rod to a centrally located LVDT.

The compression anvils locate directly into the compression rods and include a self aligning wear block above the specimen.

Application Range

- Materials properties testing of brittle materials at elevated temperatures
- Compression strength testing
- Fracture toughness testing when used in conjunction with the double torsion fixture
- Bend tests on brittle materials when used with the appropriate fixtures



▲ +1500 °C compression pushrods

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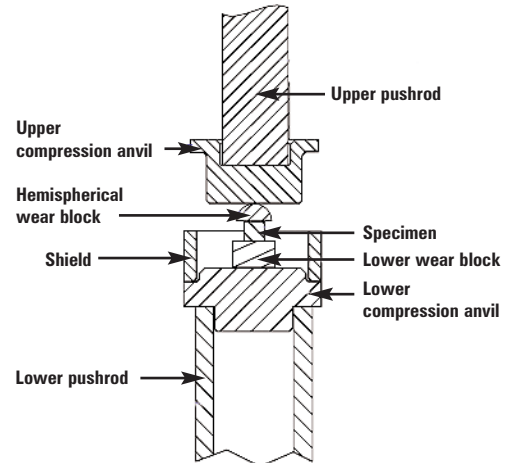
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Specifications

Catalog Number	3118-304	3118-313
Max Operating Temperature	+1500 °C (+2732 °F)	+1500 °C (+2732 °F)
Overall Length	1065 mm ¹ (41.93 in)	N/A
Diameter	75 mm (2.95 in)	50 mm (1.97 in)
Maximum Load	1 kN (2.2 lb)	1 kN (2.2 lb)
LVDT Travel	1 mm (0.04 in)	N/A
Requirements	Water cooling supply LVDT conditioning	N/A
Material	Alumina	Silicon carbide
Mounting	M30 RH female thread	N/A

Note:

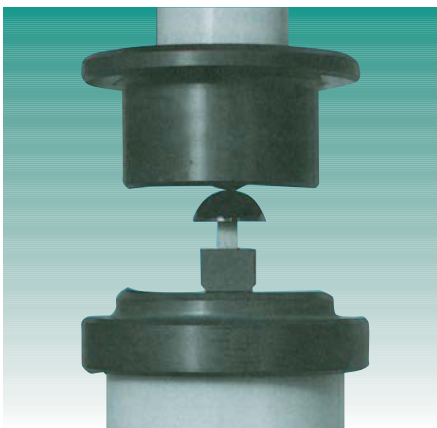
1. Overall daylight required when fitted with 3118-310 bend fixture 1168 mm (45.98 in)



▲ +1500 °C compression push rods

Accessories

Catalog Number	Description
3118-303	+1500 °C (+2732 °F) in air furnace system
3118-305	+1500 °C (+2732 °F) three-point bend fixture (partial articulation)
3118-307	+1500 °C (+2732 °F) four-point bend fixture (partial articulation) span 30 mm/15 mm (1.18 in/0.59 in)
3118-308	+1500 °C (+2732 °F) four-point bend fixture (partial articulation) span 40 mm/20 mm (1.57 in/0.79 in)
3118-309	+1500 °C (+2732 °F) double torsion fixture
3118-310	+1500 °C (+2732 °F) four-point bend fixture (fully articulated)
3118-311	Conversion kit for 3118-310 to convert to three-point bend
3118-316	Spare pushrods for 3118-304



▲ +1500 °C compression anvils



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