

Hip Femoral Fatigue Fixture | Catalog Number 7814C

The hip femoral fatigue fixture was specifically designed to meet the enhanced requirements of ISO 7206-4. The fixture simulates the fatigue loading of a hip stem during a gait cycle.

The easy-to-install fixture consists of a specimen potting holder, saline chamber and seals, a low friction loading head incorporating a low friction bearing and lower adapter for mounting to the system load cell. The assembly comes complete with a temperature controller and a recirculating pump for complete in vivo testing.

The flexible specimen holder allows a wide variety of hip geometries, offset angles, embedding materials and embedding depths to be used.

Features and Benefits

- Rated capacity ± 5 kN (2.2 kip)
- Applies compression, bending and torsional stresses to meet requirements of ISO 7206-4
- Accommodates both metallic and non-metallic based hip prostheses, suitable for a wide variety of geometries
- Deep specimen holder allows a variety of offset angles and embedding depths
- Special low friction loading head to minimize off-axis loads
- Corrosion-resistant construction to allow a variety of embedding mediums to be used
- High stiffness fixturing to allow loading frequencies up to 30 Hz for a reduction in test time and costs
- Saline bath to assist in simulation of in vivo conditions
- Combined temperature/ aeration control to ensure environmental conditions are maintained
- Fits into standard Instron® 8872 and 8874 machines

Application Range

- Type of loading: cyclic compression, bending, torsion
- Specimen material: metallic and non-metallic hip prostheses
- Specimen shapes: prostheses with a plane of symmet

Principle of Operation

The specimen is embedded into the specimen holder while maintaining the required offset angles and embedding depth.

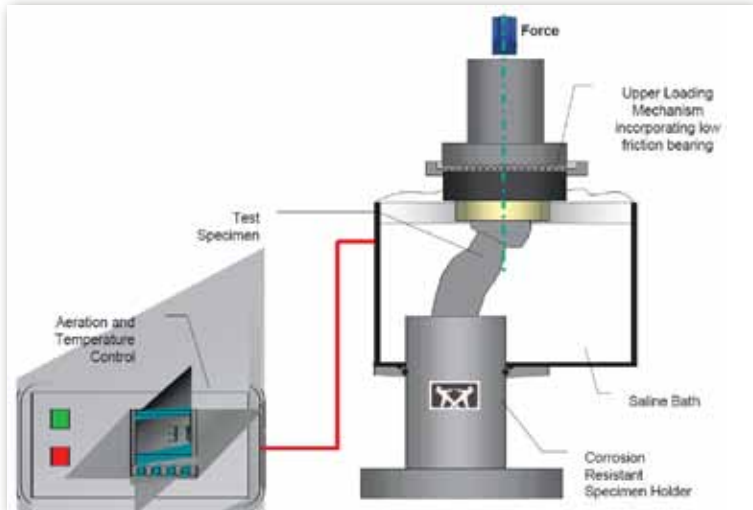
The specimen holder is then mounted to the machine and the saline chamber fixed in position. The test specimen is then immersed in the fluid test medium and the loading head introduced.

Through compression loading via the loading head, the specimen is subjected to loads and frequencies as specified in ISO 7206-8. The test ends either when specimen fails or a specified number of cycles have been attained.



Specifications

Catalog Number	7814C	
Dynamic Load Capacity	kN	± 5
	kip	2.2
Maximum Test Frequency	Hz	30 (10 Hz recommended maximum)
Test Standards	ISO 7206-3, 4, IRAM 9422-3	
Attachment	Via mounting flanges suitable for 8874 machine (6 equi-spaced M8 on 75 mm PCD or M10 accessory holes)	
Construction	Corrosion resistant stainless steel	
Embedding Medium	Various	
Embedding Depth	80 ±2 mm (recommended)	
Suggested Fluid Test Medium	Sodium chloride mixed with distilled water	
Set-Point Temperature	°C	+37
	°F	+99
Set-Point Control Accuracy	°C	±1 (where laboratory temperature is controlled to ±4)
	°F	±34 (where laboratory temperature is controlled to ±39)
Fixture Temperature Range	°C	+4 to +65
	°F	+39 to +150



Hip femoral fatigue system



The embedding fixture ensures correct implant alignment for the test

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