

Universal Testing Machine
Median | Up to 600 kN

BISS is a subsidiary of ITW-India and part of the Test and Measurement Business Division of ITW, headquartered in Chicago, IL, USA. BISS Test & Measurement sister companies include Instron, Buehler and AveryWeightronix.

Our servo-controlled test systems provide solutions for various applications, broadly classified as material test systems, structural test rigs, tissue growth technologies, shake tables, and special purpose machines.



LFS | up to 10 kN



Nano | up to 25 kN



Median | up to 600 kN



Magnum | up to 3000 kN

Provider of quality *equipment* and *testing services* to global leaders in industry and academia.

ISO 9001 : 2015

ISO 14001 : 2004

BS OHSAS 18001:2007



CC-2761
TC-7512



On request



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The Median range of servo-hydraulic systems meet practically all the requirements of metals, composites and plastics testing for strength, durability and toughness. It is backed up with a wide choice of application software, transducers and accessories that satisfy the requirements of most standard test practices applicable to such tests.

Median system accessories cover the requirements of room and elevated temperature testing of metals for tension and compression properties, low and high-cycle fatigue, fracture and fatigue crack growth. Accessories are also available for testing of composites under ambient and controlled environments for shear, tension/compression and fatigue and testing of joints and fasteners for strength and durability under a wide range of loading conditions, including constant amplitude, programmed block loading and simulated service loading. Custom accessories may be engineered to meet specific customer requirements.

Test Applications

- ▲ Fatigue Crack Propagation
- ▲ Fracture Mechanics
- ▲ Low and High Cycle Fatigue
- ▲ Tension, Compression, Flexural
- ▲ Low and High Temperature Tests
- ▲ Elastomeric Property Determination
- ▲ Workability and Formability

Materials

- ▲ Metals and Ceramics
- ▲ Polymers and Composites
- ▲ Components
- ▲ Rock materials
- ▲ Rails and I-channels

Standard Features

- ⤴ High stiffness (600 to 2000 MN/m), precision aligned load frames
- ⤴ Double-ended, double acting actuators with optional hydrostatic bearings
- ⤴ Optional top mount actuators
- ⤴ High performance 32-bit digital servo-controllers
- ⤴ Load cells of ISO 7500-1 Class 0.5
- ⤴ Multiple fixtures adaptable to frame
- ⤴ Configurable to different hydraulic power packs to suit specific dynamic performance requirements

Key Features

- ⤴ Noise-free 0.1 μm resolution of stroke readout for precision control and measurement
- ⤴ Test-By-Wire/WiFi/Wireless: Absolutely all operator controls accessible through context sensitive and intuitive touch screen display.



Tension Testing

Median Systems offer a range of solutions for tension testing of metallic, plastic and composite materials at ambient/high/low temperatures and controlled environments. High resolution extensometers enable precision strain control. Optional video extensometers or specimen-bonded strain gauges may be integrated with the test system. Hydraulic grips offer a user-adjustable clamping force to avoid slippage or damage.

Types of Specimens

- ▲ Flat
- ▲ Round
- ▲ Threaded

Materials

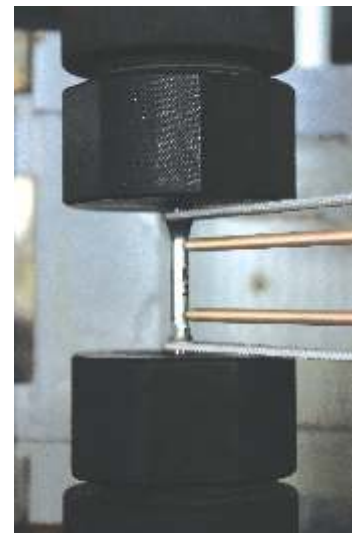
- ▲ Metals
- ▲ Polymers
- ▲ Composites

Test Conditions

- ▲ Ambient
- ▲ Low Temperature (up to -150°C)
- ▲ High Temperature (up to +1600°C)
- ▲ Strain/Stress/Displacement Controlled
- ▲ Vacuum/inert gas chambers (up to 10^6 torr. or 1600°C with inert gas)
- ▲ Corrosive Media



Mechanical Wedge Grips



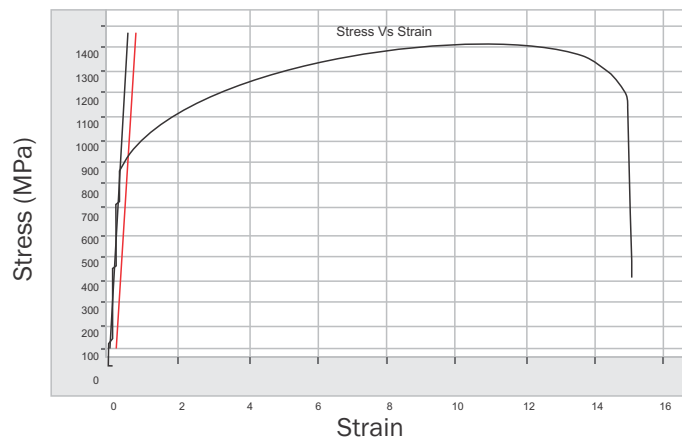
High Temperature LCF Grips



Extended Hydraulic Wedge Grips

Grips

Model	Grips	Specimen Type	Operating Temperature (°C)
AC-05-01TX	Mechanical Wedge Grips	Flat or Smooth Round	Up to +80
AC-05-11TX	Hydraulic Wedge Grips	Flat or Smooth Round	Ambient
AC-05-12XX	Extended Hydraulic Grips	Flat or Smooth Round	-70 to +300
AC-05-01PX and 01L-0X	RT Pull Rods and Threaded Adaptors	M8, M10, M12, M16 Threaded	Up to +80
AC-05-02PX and 02L-0X	HT Pull Rods and Threaded Adaptors	M8, M10, M12, M16 Threaded	-150 to +1000



Stress (MPa) vs. Strain results of an Aluminum Tensile Specimen

Accessories

Model Number	Purpose	Accessories
AC-07-10XX	Strain measurements	RT Extensometers
AC-07-11XX		HT Extensometers
-		Strain gages
AC-07-7500	Temperature measurements	Digital Image Correlation
-		Thermocouples
AC-09-1XXX	Temperature control	Oven
AC-09-2XXX		Environmental Chamber
AC-09-0XXX		Furnace

Software

Model Number	Software	Standards
AC-08-0001	Test Builder	ASTM, ISO, DIN and custom tests
AC-08-0002	Monotonic	ASTM E8

Compression and Flexural

Median systems can be used for determination of compressive strength, compressive modulus, flexural strength, flexural modulus etc. The loading in compression can be of plane, shear, end or combined loading . BISS provides fixtures for each type of configuration along with the required strain channels for data acquisition through pasted strain gages or extensometers.

Flexural strength of a three or four point configurations can also be tested. A variety of ovens, chambers and furnaces enable studies of compression and flexural properties under varied conditions.

Types of Specimens

- ▲ Flat
- ▲ Round
- ▲ Threaded

Materials

- ▲ Metals
- ▲ Ceramics
- ▲ Polymers
- ▲ Composites
- ▲ Components, sub-assemblies

Test Conditions

- ▲ Ambient
- ▲ Low Temperature (up to -150°C)
- ▲ High Temperature (up to +1600°C)
- ▲ Strain/Stress/Displacement Controlled
- ▲ Vacuum/inert gas chambers (up to 10^{-6} torr. or 1600 °C with inert gas)
- ▲ Corrosive Media



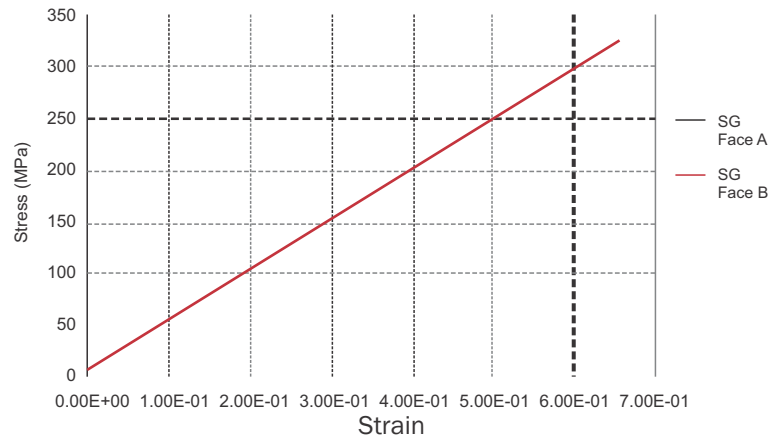
Extended Hydraulic Wedge Grips
With Compression Platens



Four Point Bend Grips with strain gaged specimen

Grips

Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05,-01PX, AC-05-01CX	RT Pull Rods and Compression Platens	User defined	Up to +80
AC-05,-02PX , AC-05-02CX	HT Pull Rods and Compression Platen	User define	-150 to 900
AC-05-0CXX	IITRI Compression Fixture	Flat	Up to 80
AC-05-8700	Anti-bucking Jig	Flat	Up to 80
AC-05-1CXX	Combined loading fixture	Flat	Up to 80



Stress (MPa) vs. Strain results from a Combined Loading Compression Test with Strain Gages

Accessories

Model Number	Purpose	Accessories
AC-07-10XX	Strain measurements	RT Extensometers
AC-07-11XX		HT Extensometers
-		Strain gages
AC-07-7500		Digital Image Correlation
-	Temperature measurements	Thermocouples
AC-09-1XXX	Temperature control	Oven
AC-09-2XXX		Environmental Chamber
AC-09-0XXX		Furnace

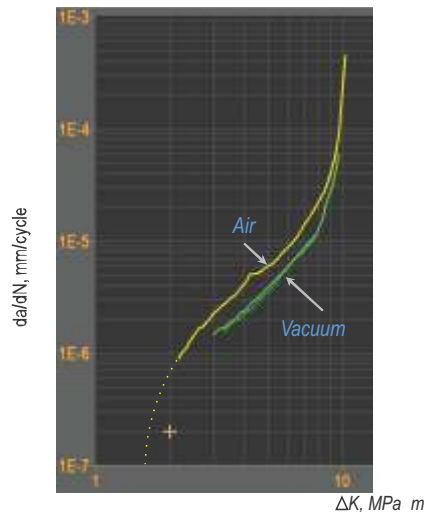
Software

Model Number	Software	Standards
AC-08-0001	Test Builder	ASTM, ISO, DIN and custom tests
AC-08-0002	Monotonic	ASTM E9, D2344 and Others

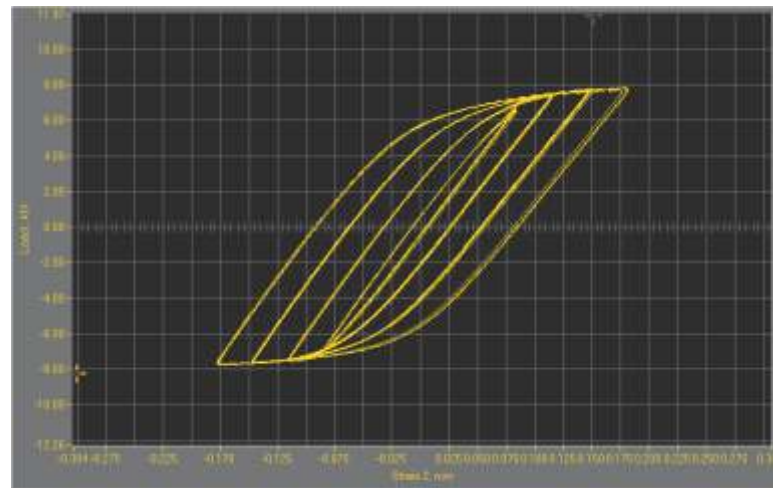
Fatigue Testing

Fatigue testing is the application of cyclic loads to quantify the life of a material or component. Different end applications require different types of fatigue tests. Tests can be under tension-tension, compression-compression or alternating stress/strain conditions. The loads may remain within the elastic strain regions of the material, or may be extended into the elastic-plastic range. Loading may also be in axial, flexural or torsional conditions.

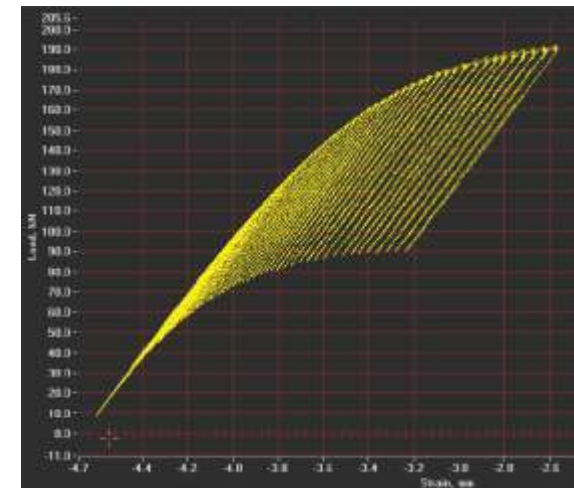
Median systems are servo-hydraulic solutions designed primarily for fatigue testing. Their high stiffness load frames, performance driven hydraulic actuators and power packs, contamination insensitive servo-valves, high performance 40-bit precision digital control with PID control algorithms, and a variety of accessories enable studies of different fatigue mechanisms, crack growth and toughness characterizations



da/dN vs ΔK (MPa \sqrt{m}) for Fatigue Crack Growth Studies



Cyclic Stress (MPa) vs. Strain loading to determine Low Cycle Fatigue Properties

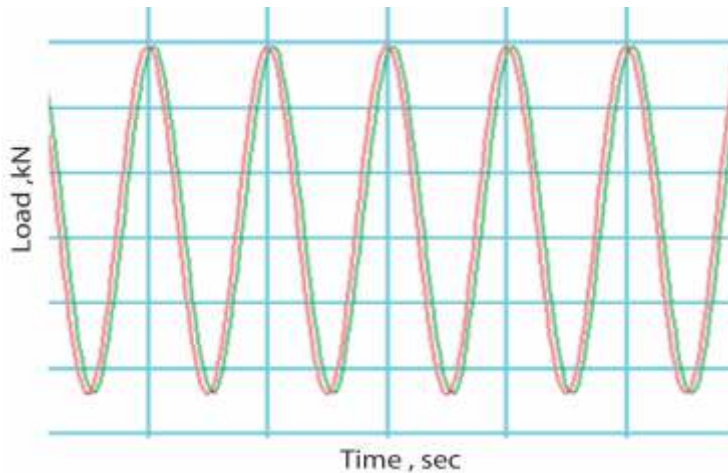


Elastic-Plastic Load vs. Displacement to determine J IC Fracture Toughness

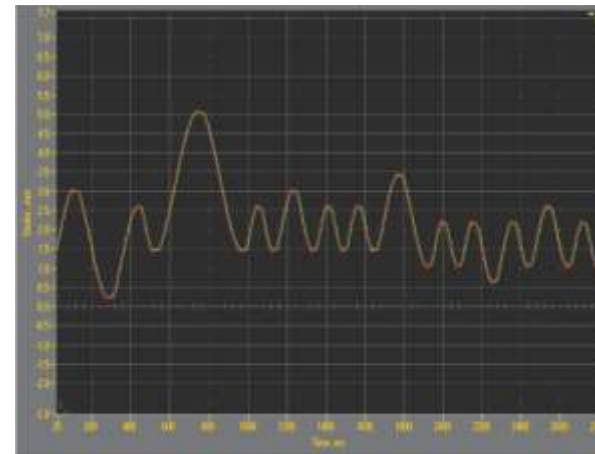
Common fatigue tests performed on Median Systems are:

- ▲ Stress-Controlled Axial Fatigue of Metals (ASTM E466, ISO 1099)
- ▲ Strain-Controlled Low Cycle Fatigue (ASTM E606, ISO 12106)
- ▲ Variable Amplitude Fatigue of Metals (ISO 12110-1)
- ▲ Tension-Tension Fatigue of Polymer Matrix Composite (ISO 13003, ASTM D3479)
- ▲ Open-Hole Fatigue Response of Polymer Matrix Composites (ASTM D7615)
- ▲ Uniaxial Fatigue of Plastics (ASTM D7791)
- ▲ Flexural Fatigue of Plastics (ASTM D7774)
- ▲ Shear Fatigue of Sandwich Core Materials (ASTM C394)
- ▲ Measurements of Fatigue Crack Growth Rates (ASTM E647)
- ▲ Strain Controlled Thermomechanical Fatigue Testing (ASTM E2368, ISO 12111)

In addition to the list above, other configurations of fatigue testing can be adapted to the Median System. Each type of fatigue test requires a unique mode of system/test control, transducers for test feedback/control and software for online computations during testing. Some examples appear below.



Constant Amplitude Stress Controlled Cycling



Variable Amplitude Fatigue Loading

High Cycle Fatigue (Stress Controlled)

High Cycle Fatigue testing is the simplest and most common fatigue test performed on materials. It is used for the determination of Stress vs Number of cycles (S-N curve) properties, when loaded under linear elastic limits. Common tests include axial fatigue (ASTM E466) and flexural fatigue.

Types of Specimens

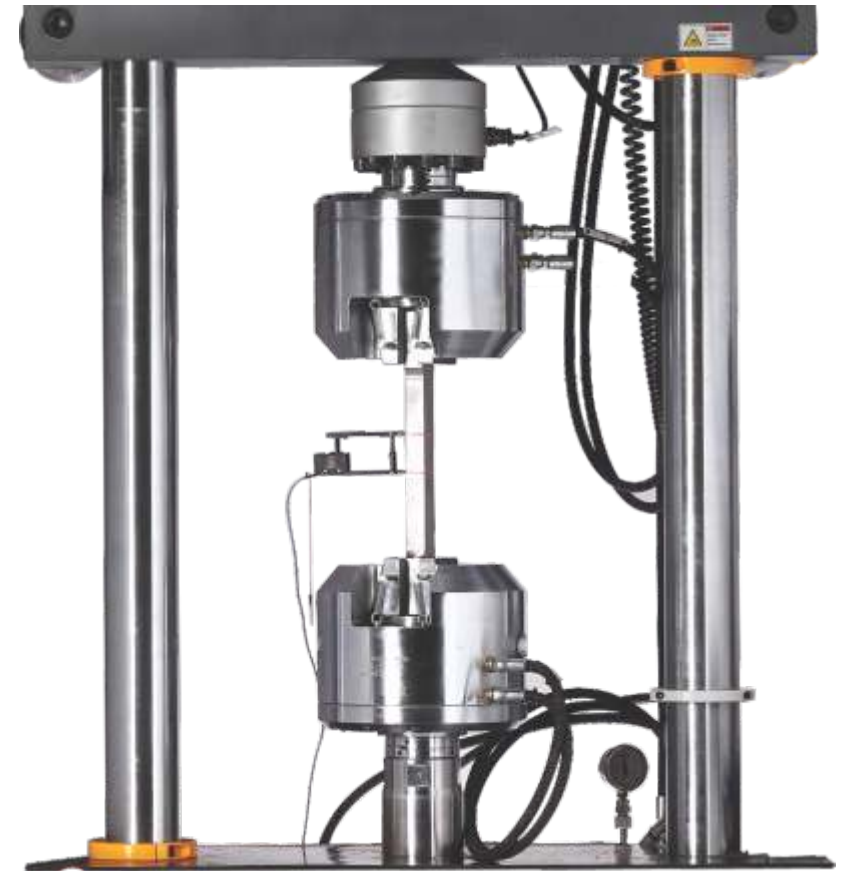
- ▲ Flat
- ▲ Round
- ▲ Threaded
- ▲ Flexural

Materials

- ▲ Metals
- ▲ Polymers
- ▲ Composites

Test Conditions

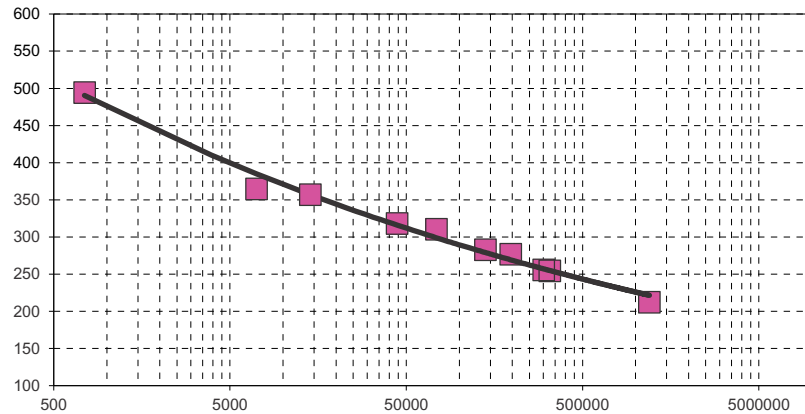
- ▲ Ambient
- ▲ Low Temperature (up to -150°C)
- ▲ High Temperature (up to +1600°C)
- ▲ Stress/Displacement Controlled
- ▲ Vacuum/inert gas chambers (up to 10^{-6} torr. or 1600°C with inert gas)
- ▲ Corrosive Media



Hydraulic Wedge Grips

Grips

Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05-01TX	Mechanical Wedge Grips	Flat or Smooth Round	Up to 80
AC-05-11TX	Hydraulic Wedge Grips	Flat or Smooth Round	Ambient
AC-05-12XX	Extended Hydraulic Grips	Flat or Smooth Round	-70 to +300
AC-05-01PX and 01L-0X	RT Pull Rods and Threaded Adaptors	M8, M10, M12, M16 Threaded	Up to 80
AC-05-02PX and 02L-0X	HT Pull Rods and Threaded Adaptors	M8, M10, M12, M16 Threaded	-150 to +1000



S-N curve: Maximum Stress (MPa) vs. Number of Cycles to Failure of GFRP Composite Material

Accessories

Model Number	Purpose	Accessories
AC-07-10XX	Strain measurements	RT Extensometers
AC-07-11XX		HT Extensometers
-		Strain gages
-	Temperature measurements	Thermocouples
AC-09-1XXX	Temperature control	Oven
AC-09-2XXX		Environmental Chamber
AC-09-0XXX		Furnace

Software

Model Number	Software	Standards
AC-08-0001	Test Builder	ASTM, E466 and custom tests

Low Cycle Fatigue (Strain Controlled)

During Low Cycle Fatigue testing materials are strained beyond their elastic limits to study properties commonly experienced in service conditions in the elastic-plastic range. This close control is achieved through strain controlled fatigue testing. Testing is done according to ASTM E606.

Types of Specimens

- ▲ Flat
- ▲ Round
- ▲ Threaded

Materials

- ▲ Metals

Test Conditions

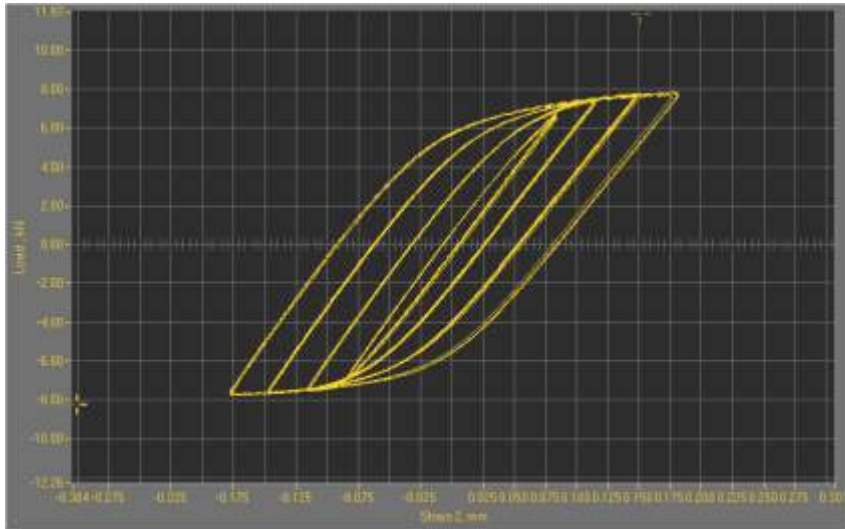
- ▲ Ambient
- ▲ Low Temperature (up to -150°C)
- ▲ High Temperature (up to $+1000^{\circ}\text{C}$)
- ▲ Strain Controlled
- ▲ Vacuum/inert gas chambers (up to 10^{-6} torr. or 1600°C with inert gas)
- ▲ Corrosive Media



High Temperature Hydraulic Low Cycle Fatigue Grips and Furnace

Grips

Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05-11TX	Hydraulic Wedge Grips	Flat or Smooth Round	Up to 80
AC-05-12XX	Extended Hydraulic Grips	Flat or Smooth Round	-70 to +300
AC-05-11LX and 11L-0X	RT Hydraulic LCF Grips and cups	M8, M10, M12, M16 Threaded	Ambient
AC-05-12LX and 12L-0X	HT Hydraulic LCF Grips	M8, M10, M12, M16 Threaded	-150 to 1000



Cyclic Stress (MPa) vs. Strain

Accessories

Model Number	Purpose	Accessories
AC-07-10XX	Strain measurements	RT Extensometers
AC-07-11XX		HT Extensometers
-	Temperature measurements	Thermocouples
AC-09-1XXX	Temperature control	Oven
AC-09-2XXX		Environmental Chamber
AC-09-0XXX		Furnace

Software

Model Number	Software	Standards
AC-08-0003	Low Cycle Fatigue	ASTM E606

Fatigue Crack Growth

Fatigue Crack Growth tests study the rate of crack growth under uniform, random or spectrum loading of a material with a pre-existing crack. This characterization is done by studying the da/dN (change in crack length with change in number of cycles) with respect to ΔK (difference in applied stress intensity). The curve obtained provides details of the threshold, Paris region and unstable failure conditions of the material.

Types of Specimens

- ▲ Compact Tension C(T)
- ▲ Single Edge Bend SE(B)

Materials

- ▲ Metals

Test Conditions

- ▲ Ambient
- ▲ Low Temperature (up to -150°C)
- ▲ High Temperature (up to $+1000^{\circ}\text{C}$)
- ▲ Crack opening displacement control through COD or DCPD Unit
- ▲ Vacuum/inert gas chambers (up to 10^{-6} torr. or 1600°C with inert gas)
- ▲ Corrosive Media
- ▲ Hot cell compliant with Remote COD technology



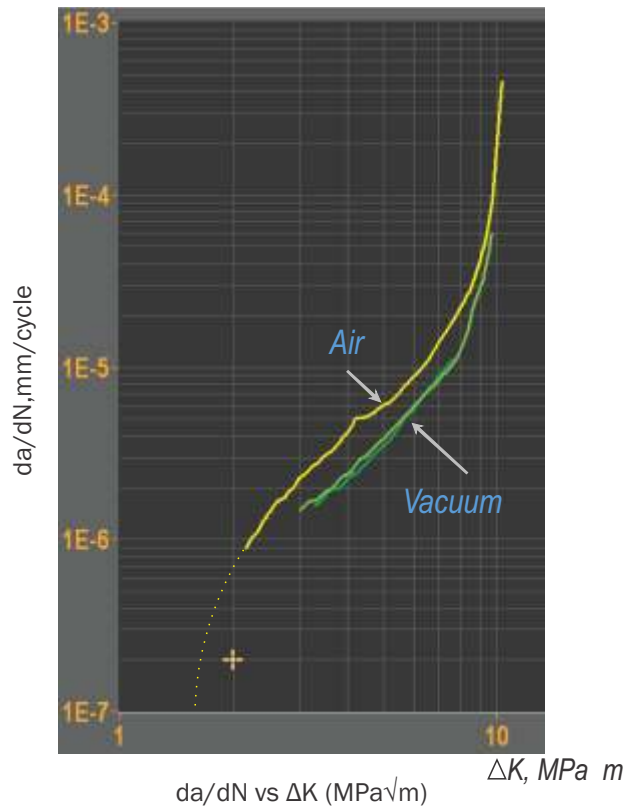
Clevis Grips for C(T)
specimen with COD Gage



Three Point Bend Grips for
SE(B) specimen with COD Gage

Grips

Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05-01FX	RT Clevis Grips	C(T)	Up to 80
AC-05-02FX	HT Clevis Grips	C(T)	-150 to 1000
AC-05-01BX	Three Point Bend Grips	SE(B)	Up to 80



Accessories

Model Number	Purpose	Accessories
AC-07-00XX	Crack measurements	RT crack opening displacement gage
AC-07-01XX		HT crack opening displacement gage
AC-07-5XXX		DCPD Unit
AC-09-1XXX	Temperature control	Oven
AC-09-2XXX		Environmental Chamber
AC-09-0XXX		Furnace

Software

Model Number	Software	Standards
AC-08-0005	Fatigue Crack Propagation	ASTM E647

Fracture Toughness Testing (K_{IC} , J_{IC} and CTOD)

Fracture Toughness tests are used to quantify the resistance of a material with a pre-existing crack to fracture under loading. ASTM E399 serves the purpose of estimation of fracture toughness (K_{IC}) if LEFM is applied and is thus applicable for brittle materials. For the ductile materials, where the plane-stress condition is achieved, ASTM E399 is no longer applicable, and E1820 is recommended.

Types of Specimens

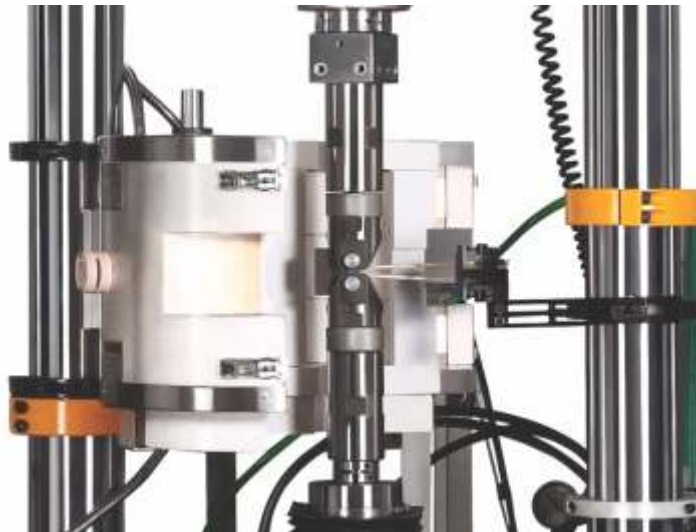
- ▲ Compact Tension C(T)
- ▲ Single Edge Bend SE(B)

Materials

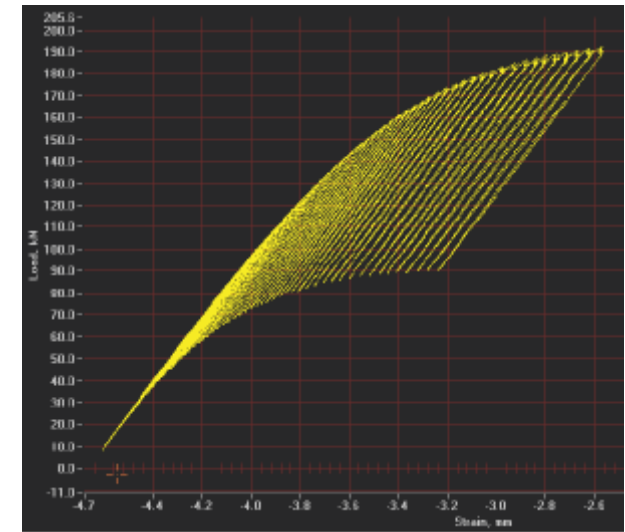
- ▲ Metals

Test Conditions

- ▲ Ambient
- ▲ Low Temperature (up to -150°C)
- ▲ High Temperature (up to $+1000^{\circ}\text{C}$)
- ▲ Crack opening displacement control through COD or DCPD Unit
- ▲ Vacuum chambers (up to 10^{-6} torr. or 1600°C with inert gas)
- ▲ Corrosive Media
- ▲ Hot cell compliant with Remote COD technology



Fracture Toughness Testing (K_{IC} , J_{IC} , and CTOD)



Elastic-Plastic Loading vs. Displacement

Grips

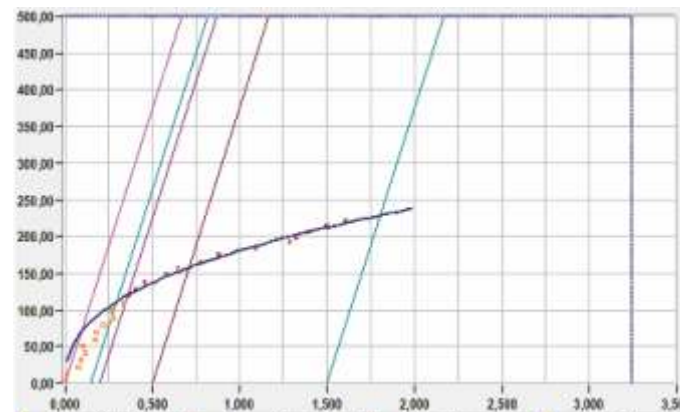
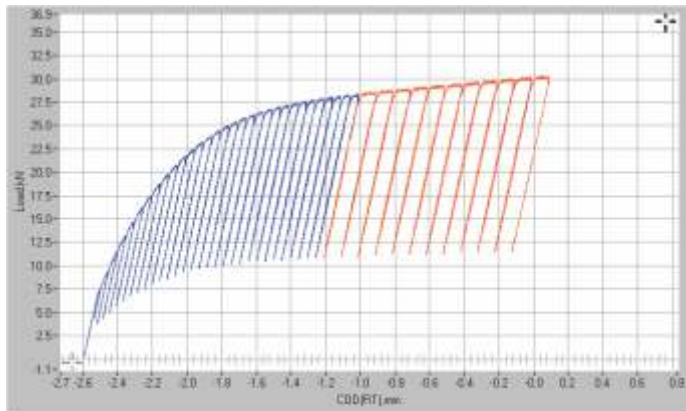
Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05-01FX	RT Clevis Grips	C(T)	Up to 80
AC-05-02FX	HT Clevis Grips	C(T)	-150 to 1000
AC-05-01BX	Three Point Bend Grips	SE(B)	Up to 80

Accessories

Model Number	Purpose	Accessories
AC-07-00XX	Crack measurements	RT crack opening displacement gage
AC-07-01XX		HT crack opening displacement gage
AC-07-5XXX		DCPD Unit
AC-09-1XXX	Temperature control	Oven
AC-09-2XXX		Environmental Chamber
AC-09-0XXX		Furnace

Software

Model Number	Software	Standards
AC-08-0004	Fatigue Toughness K_{Ic} , J_{Ic} , CTOD	ASTM E1820



Typical test results: (a) load line displacement after the test (b) J-R curve obtained from the post processed data using BISS software

Axial Torsion Testing

Axial Torsion tests characterize the fatigue and fracture properties of materials subjected to simultaneous loading in the longitudinal and rotary directions. The application of loads may be monotonic or cyclic, and can be simulated in-phase or out-of-phase of each other depending on the final application of the material. BISS Axial Torsion Grips feature a two cylinder clamping mechanism to ensure adequate gripping and controlled movement during application of simultaneous loads. Testing performed in accordance with ASTM E2207 for thin-walled tubular specimens or according to application specific parameters for custom tests.

Types of Specimens

- ▲ Round
- ▲ Tubular
- ▲ Flat

Materials

- ▲ Metals

Test Conditions

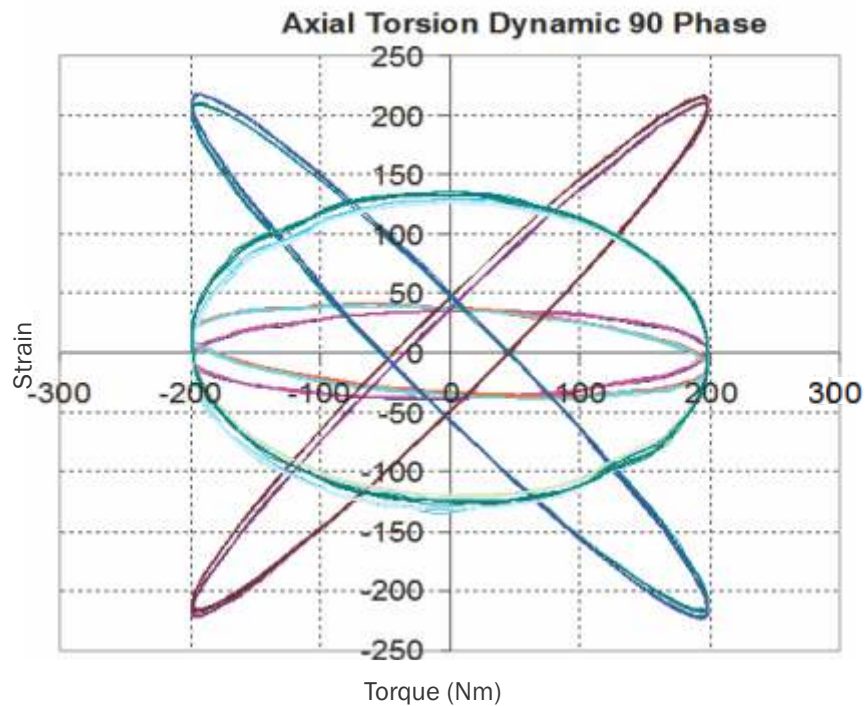
- ▲ Ambient
- ▲ Axial and Torsional Load/Stress Controlled



Hydraulic Axial Torsion Grips with Torsional Strain Measuring Device

Grips

Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05-11AX	Axial Torsion Grip	Round/Tubular	Ambient



Axial Strain vs. Torque measurements
for 90° out-of-phase loading

Accessories

Model Number	Purpose	Accessories
AC-07-551	Torsional Strain Measurement	Rotary encoder based strain measurement unit

Software

Model Number	Software	Standards
AC-08-0001	TestBuilder	Axial Torsion as per custom requirements

Thermo Mechanical Fatigue Testing

Thermo-mechanical fatigue (TMF) testing is a complex and demanding strain controlled test under programmable temperature variations. It simulates real life service conditions of mechanical fatigue loads in combination with fluctuating temperatures. The simultaneous mechanical and thermal strains generate a unique material response that cannot be understood by isothermal fatigue tests. Over the years, BISS has developed proven techniques using unique algorithms and firmware to incorporate compensation of thermal strains from temperature cycling to exclusively characterize thermo-mechanical properties.

Types of Specimens

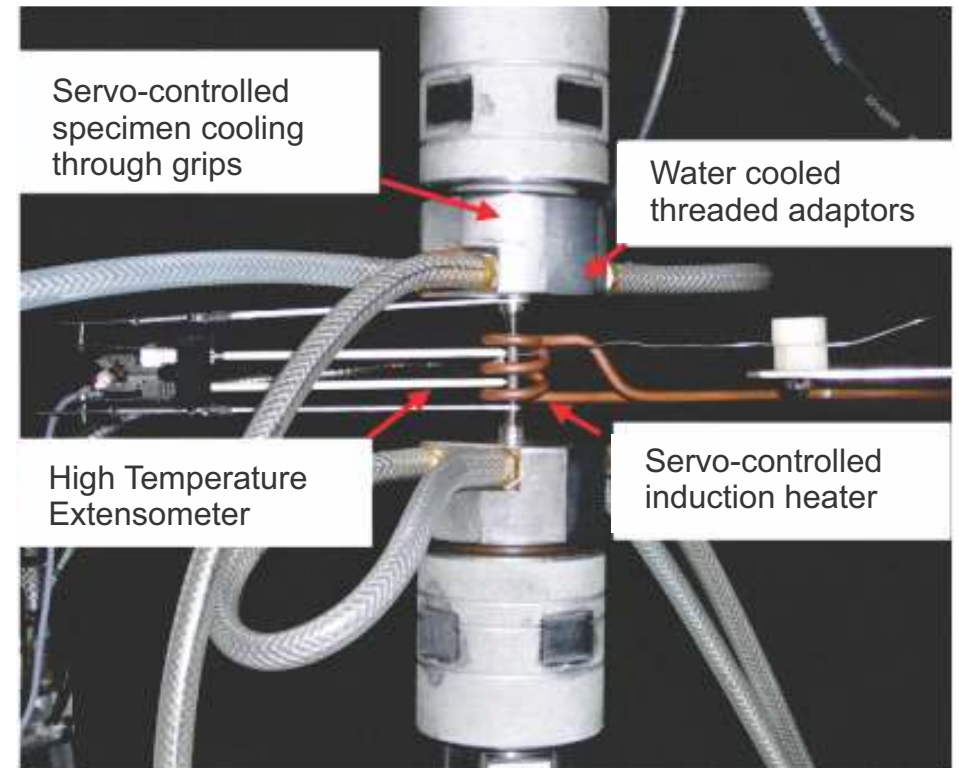
- ▲ Round
- ▲ Tubular

Materials

- ▲ Metals

Test Conditions

- ▲ Ambient
- ▲ High Temperature with Induction Heating (up to +1200°C)
- ▲ Axial Strain Control



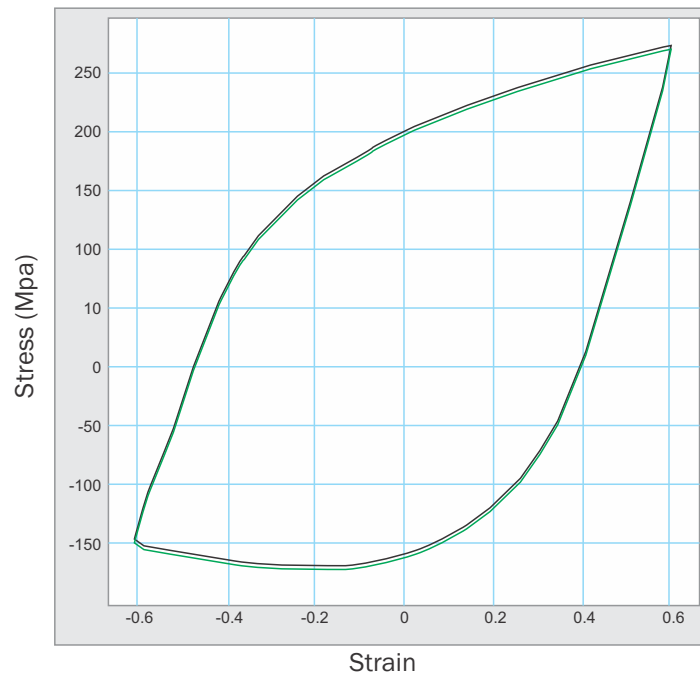
Thermo-Mechanical Fatigue Test Setup

Grips

Model Number	Grips	Specimen Type	Operating Environments (°C)
AC-05-11LX*C	Hydraulic LCF with cups and cooling arrangements	M8, M10, M12, M16 Threaded	Up to 900

Software

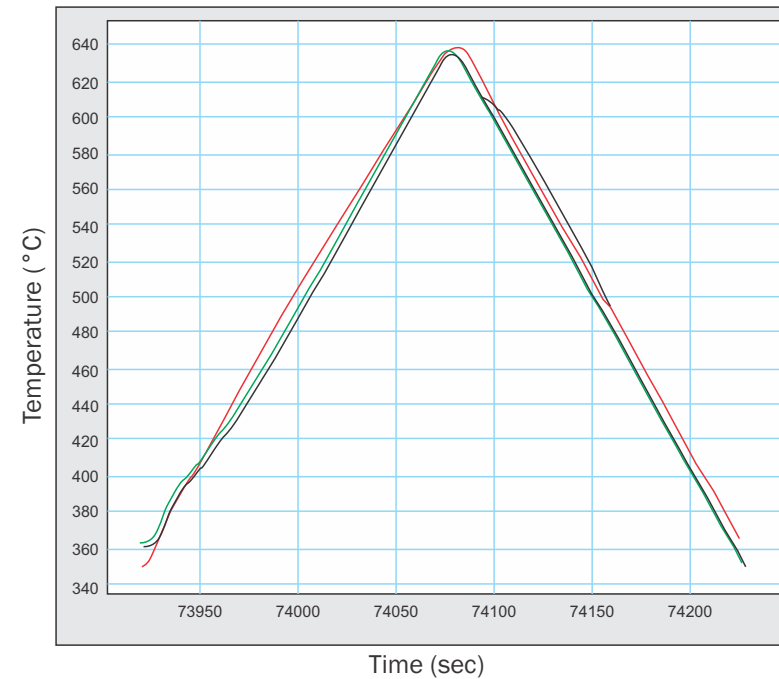
Model Number	Software	Standards
AC-08-0008	TMF	ASTM E2368



Half-life stress vs. strain with out of phase thermal and mechanical cycling

Accessories

Model Number	Purpose	Accessories
AC-07-11XX	Strain Measurement	HT Extensometers
AC-09-3002	Temperature Control	Induction Heater
-		Grip Water Cooling device
-	Temperature Measurements	Specimen Air Cooling device
-		K-type thermocouple



Temperature variation of three thermocouples pasted on the top, middle and bottom on the specimen

Metal Formability Studies

Tests can be done at room and high temperatures with a high blank holding force to minimize blank slip-in. A variety of formability tests can be done with suitable toolings to simulate various conditions of metal forming.

Types of Specimens

- ▲ Blanks

Materials

- ▲ Metals

Test Conditions

- ▲ Ambient
- ▲ High Temperature (up to +900°C)

Test Types

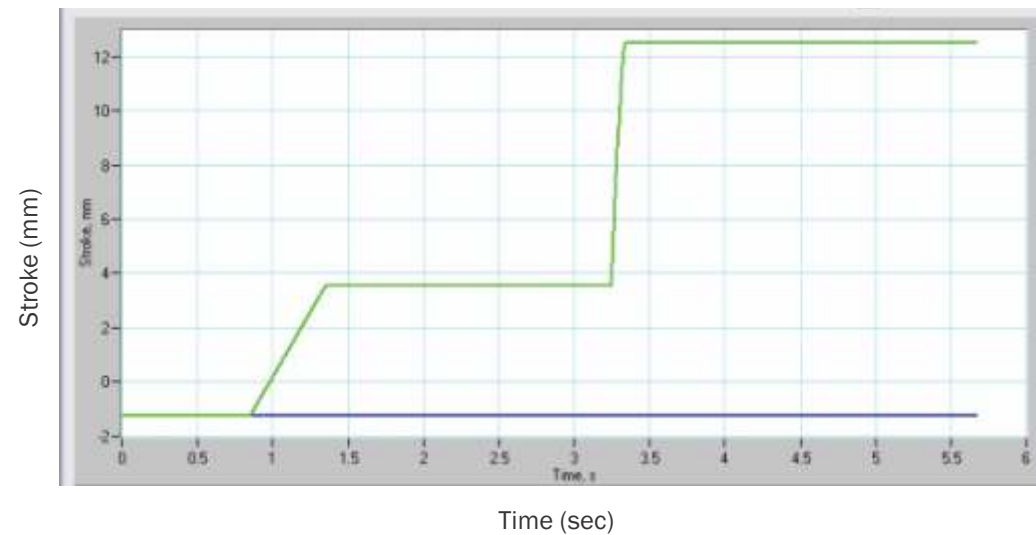
- ▲ Ericson cup test
- ▲ Olsen cup test
- ▲ Swift cup test
- ▲ Hemispherical dome test
- ▲ Hole expansion test



Before

During

After



Step-wise loading formability operation

Composite Testing Solutions

BISS has developed a number of products and features to provide comprehensive solutions for a range of static and dynamic tests on composite materials. Some of the tests performed are tension, compression, three/ four point bend, peel, shear and high cycle fatigue. Solutions are developed with capabilities to meet the emerging demands of the composite industry with features to test in controlled environments, ensure alignment as per Nadcap requirements, in-situ damage scanning for CFRP specimens, digital image correlation and fully automated imaging techniques.



Modulus Verification before
High Cycle Fatigue



Sandwich Core Shear



Drum Peel



Four Point Bend Fatigue



Combined Loading Compression



Sub-component level fatigue



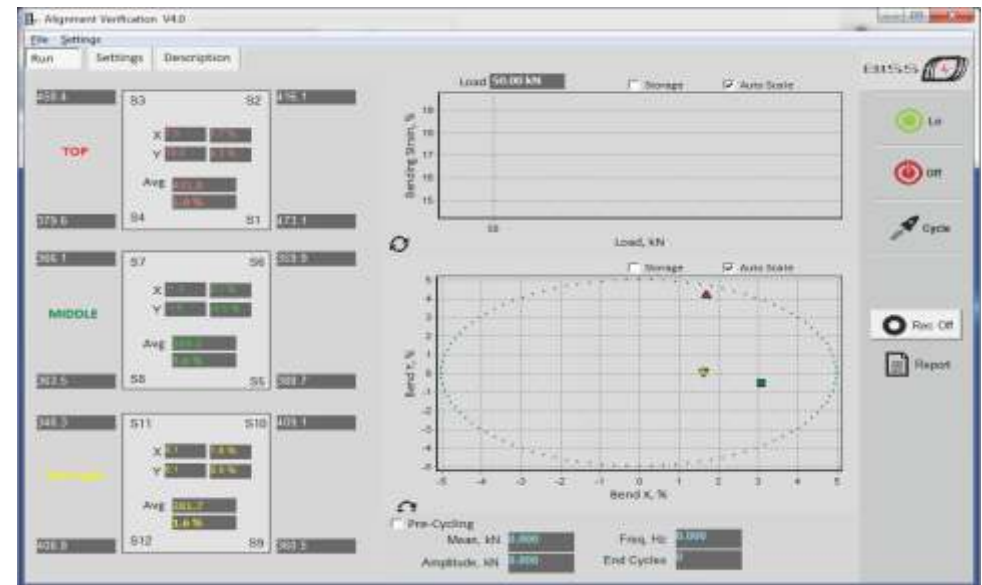
Fracture Toughness (G_{IC})

Alignment Kit

BISS alignment kit ensures load train alignment for system compliance in accordance with ASTM E1012 and Nadcap standards. It adjusts the angularity and concentricity of the load train under pre-loads to ensure there is less than 10% bending strains on the specimen during testing. The Alignment Kit features the adjustment fixture, strain gaged specimen and software which provides online monitoring and guidance while setting up the system.



Alignment Fixture



Software for online display and correction

Power Packs

BISS Hydraulic Powerpacks are equipped with servo-driven, variable-frequency drives resulting in a significant improvement in energy efficient, reduced heat dissipation, lower noise levels and lower operational costs.

Model Numbers	Power Pack (lpm)	Tank Capacity (litre)	Power Rating (kW)	Cooling Tower (TR)	Dimensions length x width x height (mm)
AC-03-0004	4	20	1.5	8	550 x 800 x 970
AC-03-0011	11	200	5.5	10	900 x 1300 x 1250
AC-03-0021	21	200	11	10	
AC-03-0040	40	200	18.5	25	
AC-03-0065	65	200	30	30	1000 x 1180 x 1450
AC-03-0090	90	360	45	30	1050 x 1400 x 1600
AC-03-0130	130	480	60	40	1050 x 1800 x 1365
AC-03-0180	180	700	90	40	1400 x 2000 x 1600
AC-03-0250	250	1500	110	50	1350 x 2500 x 1850

Standard Features

- ▲ Contamination insensitive hydraulics to work in an unprotected shop floor environment
- ▲ Servo control of programmed pressure through electronic control of motor rpm up to 90 lpm
- ▲ Flexible hose connections.
- ▲ Rated pressure – up to 210 bar
- ▲ Sensors to monitor oil level, temperature and cleanliness of filter cartridge
- ▲ Safety interlocks to protect from higher motor currents
- ▲ 10 micron pressure and return line filters

Optional Feature

- ▲ Sound-proof enclosures
- ▲ 3 micron pressure and return line filters
- ▲ Cooling options: Cooling tower, chiller or air-oil heat exchanger
- ▲ Submersible motor pump assembly for operation under 65 dB at distance of 1 meter
- ▲ Variable displacement pump



Machine Specifications

Model Number	Capacity (kN)	Frame Stiffness (MN/m)	Column Diameter (mm)	System Weight (kg)	Dimensions (W x B x H in mm)
UT-04-0050	50	600	65	925	1065 x 1000 x 3100
UT-04-0100	100	600		1085	1065 x 1000 x 3100
UT-04-0150	150	2000	125	1300	1065 x 1000 x 3100
UT-04-0250	250	2000		1690	1250 x 1500 x 3600
UT-04-0300	300	2000		1850	1250 x 1500 x 3600
UT-04-0500	500	2000		2120	1250 x 1500 x 3600
UT-04-0600	600	2000		2340	1250 x 1500 x 3600

Common Specifications

Stroke (mm)	Displacement resolution(μm)	Horizontal Daylight(mm)	Vertical Daylight(mm)	Working Pressure(bar)	Loadcell Accuracy	Frequency Range(Hz)
150	0.1	600	1200	210	ISO 7500-1 Class 0.5	0.001 - 200

Vertical and horizontal daylight and actuator stroke can be customized.



Electra

BISS servo-electric systems are engineered specially for quasi static and static applications. These machines are built with servo-electric motors, ideal for slow strain rate corrosion and creep applications. The load frames can be in the horizontal or vertical configuration and fitted with corrosion baths, chambers or furnaces depending on the test application.



Controllers

2370 Series digital controllers cover the needs of practically any mechanical test on materials, components and structures. They reflect over three decades of innovation, research and worldwide experience in a wide variety of applications. The unified architecture of the hardware and firmware serve system configurations that are compatible with practically all industry standard analog and digital transducers and drives. The 2370 series controllers are built around the latest analog, digital and hybrid integrated circuits providing high performance, versatility, safety and convenience.

Controller: 2370 Series	SS	Octa	
	AC-04-2370-10	AC-04-2370-20	AC-04-2370-25
Control Channels (DAC)	2	4	8
Encoder Channels]	2	4	8
Load/ Strain Channels	4	8	12
High Level Channels	4	4	
Digital Input Output(Control/Sense)	8	8	16
Independent DAQ Rates (kHz)	6	6	
Control Loop update (kHz)	6	6	
Dimensions (l x w x h in mm)	493 x 351 x 133	493 x 351 x 214	
Weight (kg)	10	14	



SS

Octa

Octa is recommended where alignment checks are required and when testing composites or other materials with additional strain measurement requirements.

Test-By-Wire/WiFi/Wireless

Test-By-Wire technology transforms the testing experience. It renders test equipment operation as easy and as intuitive as using your smartphone! What it means to the user: Absolutely all operator controls concentrated onto a single device with context sensitive touchscreen display. Conventional test systems have their controls scattered all over the system, requiring intimate knowledge of individual system components, distracting physical movement away from the 'point of action'. For example, pump controls may be located separate from crosshead controls that are separate from grip controls and all of these may not be together with the E-Stop, not to mention the operator console itself. With all these integrated into a single 'cockpit' style panel, it is intuitive and easy-to-use for even a less experienced operator.



Touchscreen interface for crosshead control



Touchscreen interface for grip control



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BISS

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