SEMI-AUTOMATIC FLEXURAL TESTING MACHINES

STANDARDS: EN 1338, 1339, 1340, 12390-5, 12390-6, BS 1881, ASTM C78, C293, C496

The HİRA Semi-Automatic (Motorized) range of 100 kN, 200 kN, 300 kN and 500 kN capacity Flexural Testing Machines have been designed for reliable and consistent testing of flexural test on standard concrete beams, concrete or natural stone kerbs, concrete paving flags, and natural stone slabs and tensile splitting test of concrete paving blocks with suitable apparatus.

The Semi-Automatic Flexural Testing Machines consist of;

- Heavy Duty Welded Load Frame,
- Semi-Automatic Hydraulic Power Pack,
- Digital Readout Unit

Flexural test assemblies should be ordered separately.

HR-C5600

Flexural Load Frame

The multipurpose HİRA Flexural Testing Frames are designed for minimum deflection at maximum load resulting in very high accuracy. The load frame is a welded steel fabrication carrying the ram fitted to the steel base. All Frames have a single acting up stroking ram with over travel switch protection to stop the machine when maximum ram travel is reached. A load cell is used for load measurements on all frames.

Flexural Frames are designed to accept all accessories required for flexural or compression tests.

Flexural Frames are 100 kN, 200 kN, 300 kN capacity U Type, 200 kN, 500 kN capacity Wide Clearance U Type and 300 kN, 500 kN capacity Wide Clearance C Type open structure designed to allow easy and practical front loading of the specimen.

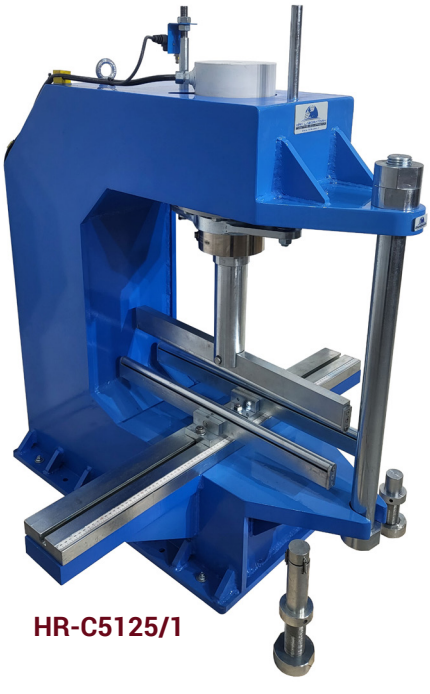
The very rigid C type design is ideal either for conventional flexural test or for more sophisticated tests such as deformability and ductility index.

The load frame provides the stability needed for accurate and repeatable test results over the years of operation.

All frames can be connected to HİRA compression machine as a second frame or can be used with any HİRA power pack as an independent Flexural Machine.

The main characteristics are:

- High stability welded assembly
- High accuracy load measurement with load cells
- Can accept wide range of accessories for mentioned standards
- Can be connected to HİRA Compression Machine or Hydraulic Power Pack



HR-C5125/1

HR-C5750

FLEXURAL TESTING ACCESSORIES

HR-C5050

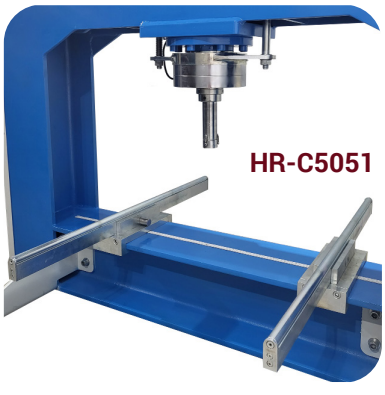
Flexural Testing Assembly for Concrete Beams

The test assembly is used for 3 or 4 point flexural tests on 100 or 150 mm Concrete Beams.

The set consist of 2 upper and 2 lower rollers of Ø38 x 160 mm.

The distance of lower bearers can be adjusted between 100 mm and 800 mm. The distance between upper bearers can be set to 100 mm or 150 mm.

For 3 point testing one of the bearers can be removed and the other placed in the center.



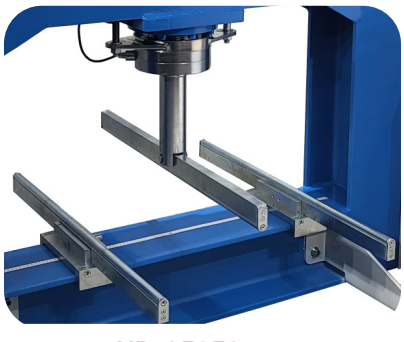
HR-C5051

Flexural Testing Assembly for Concrete Kerbs

The test assembly is used for flexural tests on Concrete Kerbs.

The set consists of 2 lower rollers of Ø 20 x 620 mm and Ø 40 mm upper loading piston with ball seating assembly.

The distance of lower rollers can be adjusted between 100 mm to 800 mm.



HR-C5052

Flexural Test Assembly for Concrete Paving Flags and Concrete Terrazzo Tiles, Natural Stone Kerbs and Slabs

The test assembly is used for flexural tests on Concrete Paving Flags and Concrete Terrazzo Tiles, Natural Stone Kerbs and Slabs.

The set consists of 2 lower rollers and upper roller of Ø 20x 620 mm.

The distance of lower rollers can be adjusted between 100 mm to 800 mm.

HR-C5054

Splitting Tensile Test Device for Block Pavers

Splitting Tensile Test Device for Block Pavers is accessory for compression machines for measuring the splitting tensile strengths of 60-100 mm height x 220 mm length concrete block pavers according to the requirements of the related standards.

HR-C5053

Splitting Tensile Test Device for Concrete Cubes

Splitting Tensile Test Device for Concrete Cubes is accessory for compression machines for measuring the splitting tensile strengths of 150 mm cube concrete specimens according to the requirements of the related standards.

Distance Piece for Splitting Tensile Test Device for Concrete Cubes

Can be used for 100 mm cube concrete specimens by using this Distance pieces with Splitting Tensile Test Device for Concrete Cubes.

HİRA TESTING EQUIPMENT

HR-C5055

Splitting Tensile Test Device for Cylinders

Splitting Tensile Test Device for Cylinders is accessory for compression machines for measuring the splitting tensile strengths of Ø150x300 mm and Ø160x320 mm cylindrical specimens according to the requirements of the related standards.

Distance Piece for Splitting Tensile Test Device for Cylinders

Can be used for Ø100x200 mm Cylindrical Specimens by using this Distance pieces with Splitting Tensile Test Device for Concrete Cylinders.

HR-C5057

Technical Specifications:

Product Code	Product Name	Standards	Dimensions (cm)	Weight (kg)
HR-C5050	Flexural Testing Assembly for Concrete Beams	ASTM C 293, ASTM C 78, EN 12390-5, BS 1881:118	20x20x20	16
HR-C5051	Flexural Testing Assembly for Concrete Kerbs	EN 1340	62x25x10	17
HR-C5052	Flexural Testing Assembly for Concrete Paving Flags and Concrete Terrazzo Tiles, Natural Stone Kerbs and Slabs	EN 1339, EN 1343, EN 12372	62x26x15	25
HR-C5053	Splitting Tensile Test Device for 150x150 mm Cube Specimens	EN 12390-6	18x15x32	15
HR-C5053/1	Distance Piece for HR-C5053 for 100x100 mm Cube Specimens	EN 12390-6	---	---
HR-C5054	Splitting Tensile Test Device for 60-100 mm height Block Pavers	EN 12390-6, EN 1338, ASTM C 496	24x16x32	17,5
HR-C5055	Splitting Tensile Test Device for Ø150x300 mm & Ø160x320 mm Cylindrical Specimens	EN 12390-6, ASTM C 496	34x15x33	25
HR-C5055/1	Distance Piece for HR-C5055 for Ø100x200 mm Cylindrical Specimens	EN 12390-6	---	---
HR-C5056	Apparatus, used for Flexure Test on Rain Gutter	---	---	---
HR-C5057	Wood Fibre Boards, Pack of 50	---	0,4x1,5x34,5	---

SEMI-AUTOMATIC (MOTORIZED) HYDRAULIC POWER PACK AND DIGITAL READOUT UNIT

Semi-Automatic (Motorized) Hydraulic Power Pack

The Semi-Automatic (Motorized) Power Pack, controlled by a pressure rate control valve is designed to supply the required oil to the load frames for loading. The power pack can load different frames with required pace rates. A pump is supplied as standard. The power pack is equipped with a safety valve (maximum pressure valve) to avoid machine overloading. Maximum working pressure of the system is 400 bar.

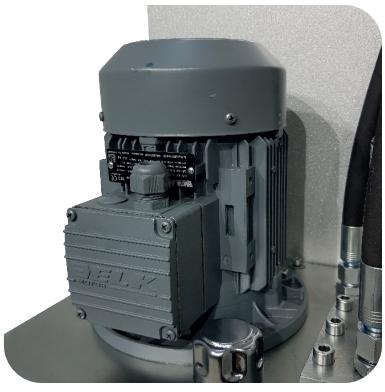
HR-C9000

Single Stage Pump

The single stage pump is formed by;

High pressure pump

On the single stage pump, high pressure pump is used for test execution.



Motor

The motor which drives the pump in an AC motor.

Distribution Block

A distribution block is used to control the oil flow direction supplied by single stage pump. Loading and unloading process and pace rate adjustment is done from the arms on the distribution block. The following parts are fitted to the distribution block; Solenoid valve, Safety valve (max. pressure valve), Load Cell and High pressure radial piston pump.

High Precision Pressure Transducer

The HİRA range of Semi-Automatic Machines can be upgraded with option High Precision Pressure Transducer special calibration Class 1 starting from 1% of the full range.

This unique performance enables the machines to be used for a considerable number of applications including:

- Early age (2 or 3 days) compression strength tests
- Flexural and splitting tests by using proper accessories
- Mortar (Cement) compression tests by using proper accessories
- Core Testing

HR-C8003

Oil Tank

The tank includes enough oil to fill the mechanism which pushes the ram during the test. The level and oil temperature can be seen on the indicator fitted to the tank. It has 15 L capacity. Hydraulic motor oil, number 46, must be used.

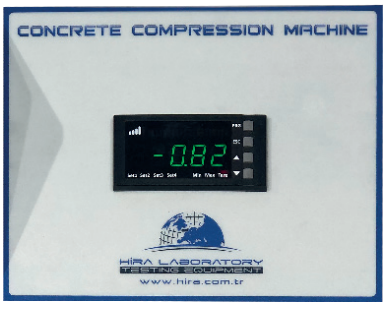
HİRA TESTING EQUIPMENT

Digital Readout Unit

The Digital Readout Unit has been designed to use with load cells or pressure transducers on different material test applications.

The peak value and the load change during the test are displayed on the screen.

- Peak value hold property
- Easy preload zeroing
- 5 Digits
- Multi-point Calibration



HR-C9002

Technical Specifications:

Product Code	Semi-Automatic Flexural Testing Machines						
Product Code	HR-C5500	HR-C5600	HR-C5700	HR-C5650	HR-C5750	HR-C5800	HR-C5900
Type	U Type	U Type	U Type	U Type	U Type	C Type	C Type
Capacity (kN)	100	200	300	200	500	300	500
Ram Travel (mm)	50						
Max. Vertical clearance (mm)	405 (without accessories)						
Max. Horizontal clearance (mm)	1000						
Max. Clerance Between Lower Rollers (mm)	890						

Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Emergency stop button

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-C5500	100 kN Semi-Automatic Flexural Testing Machine, U Type	119x100x100	300	220 V, 50-60 Hz, 1 ph
HR-C5600	200 kN Semi-Automatic Flexural Testing Machine, U Type	119x100x100	325	220 V, 50-60 Hz, 1 ph
HR-C5700	300 kN Semi-Automatic Flexural Testing Machine, U Type	119x100x100	400	220 V, 50-60 Hz, 1 ph
HR-C5650	200 kN Semi-Automatic Wide Clearance Flexural Testing Machine, U Type	178x60x115	655	220 V, 50-60 Hz, 1 ph
HR-C5750	500 kN Semi-Automatic Wide Clearance Flexural Testing Machine, U Type	188x75x115	300	220 V, 50-60 Hz, 1 ph
HR-C5800	300 kN Semi-Automatic Wide Clearance Flexural Testing Machine, C Type	138x110x130	655	220 V, 50-60 Hz, 1 ph
HR-C5900	500 kN Semi-Automatic Wide Clearance Flexural Testing Machine, C Type	138x110x135	300	220 V, 50-60 Hz, 1 ph

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-C5000/1	100 kN Flexural Testing Frame, U Type	81x100x100	200	---
HR-C5005/1	200 kN Flexural Testing Frame, U Type	81x100x100	225	---
HR-C5010/1	300 kN Flexural Testing Frame, U Type	81x100x100	300	---
HR-C5100/1	200 kN Wide Clearance Flexural Testing Frame, U Type	140x60x115	555	---
HR-C5150/1	500 kN Wide Clearance Flexural Testing Frame, U Type	150x75x115	600	---
HR-C5125/1	300 kN Wide Clearance Flexural Testing Frame, C Type	100x110x130	555	---
HR-C5130/1	500 kN Wide Clearance Flexural Testing Frame, C Type	100x110x135	600	---
HR-C9000	Semi-Automatic Hydraulic Power Pack and Digital Readout Unit	36x38x91	70	220 V, 50-60 Hz, 1 ph
HR-C9001	Semi-Automatic Hydraulic Power Pack	36x38x91	70	220 V, 50-60 Hz, 1 ph
HR-C9002	Digital Readout Unit	10x9x5	0,300	220 V, 50-60 Hz, 1 ph
HR-G0982	Load Cell, 100 kN capacity	---	---	220 V, 50-60 Hz, 1 ph
HR-G0983	Load Cell, 200 kN capacity	---	---	---
HR-G0984	Load Cell, 300 kN capacity	---	---	---
HR-C8003	High Precision Pressure Transducer (optional)	---	200	---