

SEMI-AUTOMATIC CONCRETE COMPRESSION TESTING MACHINES

STANDARDS: ASTM C39, ISO EN 7500, 12390-4

The HİRA Semi-Automatic (Motorized) range of 600 kN, 1500 kN, 2000 kN and 3000 kN capacity compression testing machines have been designed for reliable and consistent testing of a wide range of specimens. Machines confirms all EN, ASTM and BS standards written above. These also meet the requirements of CE norms for the safety and health of the operator.

The Semi-Automatic Concrete Compression Testing Machines consist of;

- Load Frame,
- Semi-Automatic Hydraulic Power Pack,
- Digital Readout Unit or LPI Digital Readout Unit,
- Distance Pieces, 30 mm, 50 mm and 80 mm,
- Upper Platen (with ball seating assembly),
- Lower Platen,
- Loading Cylinder Assembly & Limit Switch for safety,
- Front and Rear Protective Doors for safety.

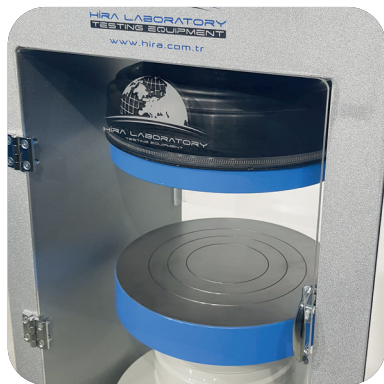


HR-C2450

Concrete Compression Load Frame

Capacities of 600 kN, 1500 kN, 2000 kN and 3000 kN Load Frames are most popular and available models for welded type frames.

The load frame provides the stability needed for accurate and repeatable test results over the years of operation. The machine's hydraulic power pack, control and read out units are positioned on the right hand side of the load frame for easier accessibility, increased productivity and for safer operations.



HR-C1260

Upper Platens/Lower Platens

The platens enable the testing of a wide variety of cylinder, cube blocks or similar samples.

- Manufactured from high quality steel, which is then hardened, smoothed and finished.
- The roughness value for the surface texture of the auxiliary platens is $\leq 3.2 \mu\text{m}$.
- $\varnothing 165 \text{ mm}$ and $\varnothing 300 \text{ mm}$ Upper Platen (with ball seating assembly) and Lower Platen have centering rings on the lower platens for proper centering of 100 mm and 150 mm cube, 100 mm and 150 mm cylinder samples.
- $\varnothing 300 \text{ mm}$ Upper Platen (with ball seating assembly) and Lower Platen has an specimen centering apparatus on lower platen as standard 150 mm cube and 150 mm cylinder.

Block Platens with Sliding Rail Assembly

STANDARDS: EN 772-1, 12390-4

Product Code: HR-C1250

Block Platens with Sliding Rail Assembly are installed on the compression testing machines for testing concrete blocks and other structural materials. The Sliding Rail Assembly allows the platens to be easily installed without removing the existing $\varnothing 300 \text{ mm}$ compression platens. This assembly should be factory installed.

It should be noted that after installing, the vertical clearance between the platens decreases by 50 mm.

Block Platens Lifting Assembly is used for easy removal of the lower platen of Block Platens and easy replacement of the distance pieces between the piston and the lower platen.



HR-C1250

Technical Specifications:

Product Code	HR-C1255	HR-C1260	HR-C1265	HR-C1270	HR-C1275
Product Name	Upper Loading Platen (with ball seating assembly) and Lower Loading Platen				
Standard	ASTM C39	ASTM C39	EN 12390-4 & ASTM C39	EN 12390-4	EN 772-1
Dimensions (mm)	Ø 105	Ø 165	Ø 216	Ø 300	310x510x50
Samples	Ø 2", 3", 4" cylinders	Ø 4", 6" cylinders, 100 mm cubes	Ø 6" cylinders 100, 150 mm cubes	Ø 100, 150, 160 mm cylinders 100, 150, 200 mm cubes	Blocks up to 310x510 mm
Hardness (not less than)	≥ 55 HRC	≥ 55 HRC	≥ 55 HRC	≥ 55 HRC	≥ 55 HRC

Distance Pieces

Distance pieces are used to reduce the amount of vertical clearance between the upper platen and the lower platen.

HR-C8166 & HR-C8167 HR-C8168



Technical Specifications:

Product Name	Distance Pieces						
Product Code	HR-C2350	HR-C2400	HR-C2450	HR-C2500	HR-C2600	HR-C3500	HR-C3600
Distance Piece Dia. (mm)	Ø 165	Ø 200	Ø 165	Ø 200	Ø 165	Ø 200	Ø 165

Loading Cylinder Assembly & Limit Switch

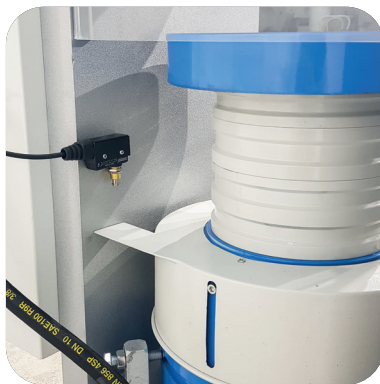
All frames have a single acting up stroking ram. The diameter of piston changes with regard to the capacity.

The maximum ram stroke is 50 mm, a limit switch is fitted to prevent over travel of the ram which cuts the power to the pump for safety.

At the end of the test process to start a new test the piston returns to default position.

The pressure transducer is used for load measurements.

There is a low friction coaxial PTFE seal between the cylinder and the piston fitted to the cylinder.



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



HİRA TESTING EQUIPMENT



Dual Stage Pump

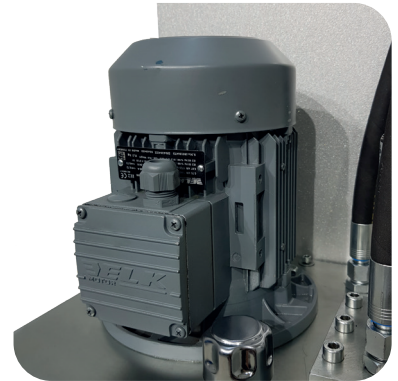
The dual stage pump is formed by two groups;

- 1.Low pressure gear pump
- 2.High pressure radial piston pump

On the dual stage pump, a high delivery, low pressure gear pump is used for rapid approach, while a low delivery, high pressure radial piston pump is used for test execution. The rapid approach facility shortens the time interval from piston start until the upper platen touches to the specimen. This excellent feature helps to save a lot of time when a large number of specimens are going to be tested.

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 the 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; Safety valve (max. pressure valve) and Transducer.

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.

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

LPI Digital Readout Unit

LPI Digital Readout Unit is used for reading of the applied load on load cells or pressure transducers in different material test applications.

- Can operate with 2 x AA batteries or 5V AC adapter
- Real time numeric display of load and load pressure
- 1 channel with two different calibration table (by changing the sensor belong to other frame, the unit can be control for second test frame)
- Peak hold property
- Multi-point calibration
- Easy preload zeroing
- 8 keys keyboard
- RS232 Serial port for PC or thermal or dot matrix printer



HR-C9002/LPI

Technical Specifications:

Product Name	Semi-Automatic Compression Testing Machines						
Product Code	HR-C2350	HR-C2400	HR-C2450	HR-C2500	HR-C2600	HR-C3500	HR-C3600
Standard	ASTM	EN	ASTM	EN	ASTM	EN	ASTM
Capacity (kN)	600	1500	1500	2000	2000	3000	3000
Roughness (µm)	≤ 3.2	≤ 3.2	≤ 3.2	≤ 3.2	≤ 3.2	≤ 3.2	≤ 3.2
Ø Lower Platen (mm)	165	300	165	300	165	300	165
Ø Upper Platen (mm)	165	300	165	300	165	300	165
Max. Vertical clearance (cm)	365	340	365	340	365	340	365
Piston diameter (cm)	150	230	230	250	250	320	320
Piston Stroke(cm)	50	50	50	50	50	50	50
Horizontal clearance (cm)	230	320	320	350	350	440	440
Thickness of platens (cm)	50	50	50	50	50	50	50
Hardness of Platens (HRC)	55-60	55-60	55-60	55-60	55-60	55-60	55-60
Oil Capacity (lt)	25	25	25	25	25	25	25
Max. Working Pressure (bar)	400	400	400	400	400	400	400
Power (W)	750	750	750	750	750	750	750

Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Front and rear transparent durable Plexiglas guards

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-C2350	600 kN Semi-Automatic Compression Testing Machine, ASTM	71x38x91	370	220 V, 50-60 Hz, 1 ph
HR-C2400	1500 kN Semi-Automatic Compression Testing Machine, EN	79x38x93	620	220 V, 50-60 Hz, 1 ph
HR-C2450	1500 kN Semi-Automatic Compression Testing Machine, ASTM	79x38x93	570	220 V, 50-60 Hz, 1 ph
HR-C2500	2000 kN Semi-Automatic Compression Testing Machine, EN	81x38x101	820	220 V, 50-60 Hz, 1 ph
HR-C2600	2000 kN Semi-Automatic Compression Testing Machine, ASTM	81x38x101	770	220 V, 50-60 Hz, 1 ph
HR-C3500	3000 kN Semi-Automatic Compression Testing Machine, EN	95x48x105	1120	220 V, 50-60 Hz, 1 ph
HR-C3600	3000 kN Semi-Automatic Compression Testing Machine, ASTM	95x48x105	1070	220 V, 50-60 Hz, 1 ph
HR-C2350/LPI	600 kN Semi-Automatic Compression Testing Machine, ASTM with LPI unit	71x38x91	370	220 V, 50-60 Hz, 1 ph
HR-C2400/LPI	1500 kN Semi-Automatic Compression Testing Machine, EN with LPI unit	79x38x93	620	220 V, 50-60 Hz, 1 ph
HR-C2450/LPI	1500 kN Semi-Automatic Compression Testing Machine, ASTM with LPI	79x38x93	570	220 V, 50-60 Hz, 1 ph
HR-C2500/LPI	2000 kN Semi-Automatic Compression Testing Machine, EN with LPI unit	81x38x101	820	220 V, 50-60 Hz, 1 ph
HR-C2600/LPI	2000 kN Semi-Automatic Compression Testing Machine, ASTM with LPI	81x38x101	770	220 V, 50-60 Hz, 1 ph
HR-C3500/LPI	3000 kN Semi-Automatic Compression Testing Machine, EN with LPI unit	95x48x105	1120	220 V, 50-60 Hz, 1 ph
HR-C3600/LPI	3000 kN Semi-Automatic Compression Testing Machine, ASTM with LPI	95x48x105	1070	220 V, 50-60 Hz, 1 ph

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-C0650/1	600 kN Load Frame, Welded Wall, ASTM	35x30x91	300	---
HR-C1500/1	1500 kN Load Frame, Welded Wall, EN	43x35x93	550	---
HR-C1550/1	1500 kN Load Frame, Welded Wall, ASTM	43x35x93	500	---
HR-C2000/1	2000 kN Load Frame, Welded Wall, EN	45x35x101	750	---
HR-C2100/1	2000 kN Load Frame, Welded Wall, ASTM	45x35x101	700	---
HR-C3000/1	3000 kN Load Frame, Welded Wall, EN	59x48x105	1050	---
HR-C3100/1	3000 kN Load Frame, Welded Wall, ASTM	59x48x105	1000	---
HR-C9000	Semi-Automatic Hydraulic Power Pack and Digital Readout Unit	36x38x91	70	220 V, 50-60 Hz, 1 ph
HR-C9000/LPI	Semi-Automatic Hydraulic Power Pack and LPI 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-C9002/LPI	LPI Digital Readout Unit	15x20x20	1	220 V, 50-60 Hz, 1 ph
HR-C8003	High Precision Pressure Transducer	---	---	---
HR-C8200	Distance Pieces	Ø 20 x 2,5	---	---
HR-C8201	Distance Pieces	Ø 20 x 3	---	---
HR-C8202	Distance Pieces	Ø 20 x 5	---	---
HR-C8203	Distance Pieces	Ø 20 x 8	---	---
HR-C8165	Distance Pieces	Ø 16,5 x 2,5	---	---
HR-C8166	Distance Pieces	Ø 16,5 x 3	---	---
HR-C8167	Distance Pieces	Ø 16,5 x 5	---	---
HR-C8168	Distance Pieces	Ø 16,5 x 8	---	---
HR-C1250	Block Platens with Sliding Rail Assembly	51x31x50	175	---
HR-C1280	Ball Seating Assembly	---	---	---



HR-C2500/LPI