Testing Equipment for Construction Materials

HUMBOLDT

Fully-automated Triaxial Testing System

The Humboldt Triaxial Testing System is a state-of-the-art system specifically designed to fully automate and monitor the complete testing cycle of UU, CU and CD Triaxial and Unconfined Compression Tests. Built around Humboldt's HM-3000 Digital Load Frame, our HM-4152A Distribution Panel and controlled by Humboldt's Material Testing Software, our Triaxial Testing System provides complete control of the testing process, providing more accurate test results while freeing up lab personnel for other tasks. The Humboldt Triaxial Testing System is designed to concurrently control up to 3 triaxial cells at a time, whether they are running the same or different types of tests. The Humboldt Triaxial Testing System is comprised of:

The HM-4152A Distribution Panel provides all the necessary port connections for Triaxial testing. It provides distribution of de-aired water, tap water, pressure and vacuum within the Triaxial testing system for up to 3 Triaxial cells, 1 de-airing tank, 3 cell/back pressure controllers, and 6 air/water bladder cylinders. The panel also houses a pressure regulator, digital pressure readout, air/water filter for the input pressure and de-aired water tank control valves.

The HM-3000 Digital Masterloader is a microprocessor-based, stepper-motor driven compression frame with built-in, 4-channel data acquisition for stress, strain, pore water pressure and volume change measurement.

The HM-2315 Automatic Volume Change Apparatus measures the volume change of a soil sample by monitoring the flow of water through the chamber of the unit. The lower assembly contains changeover valves, which when used in conjunction with the upper assembly provides limitless capacity. The unit is accurate to better than ±0.05 ml and is easily de-aired in seconds.

The HM-2450A Pressure Controller provides automatic incremental back pressure saturation with B-value calculation and check. The unit's on-board digitalized and bias pressure regulators allow simultaneous control of the confining and back pressure while maintaining a constant differential pressure.

The HM-4151A Air/Water Bladder Cylinder is used to deliver pressurized de-aired water to the triaxial cell. It acts as an interface between the compressed air, used as a pressure source, and the deaired water, which is used as the means of pressurizing the sample. The cylinder will operate continuously to a maximum pressure of 150 psi (1000 kPa).

For the complete list of components comprising the Humboldt Triaxial Testing System, please refer to the diagram and component list on the back of this data sheet.

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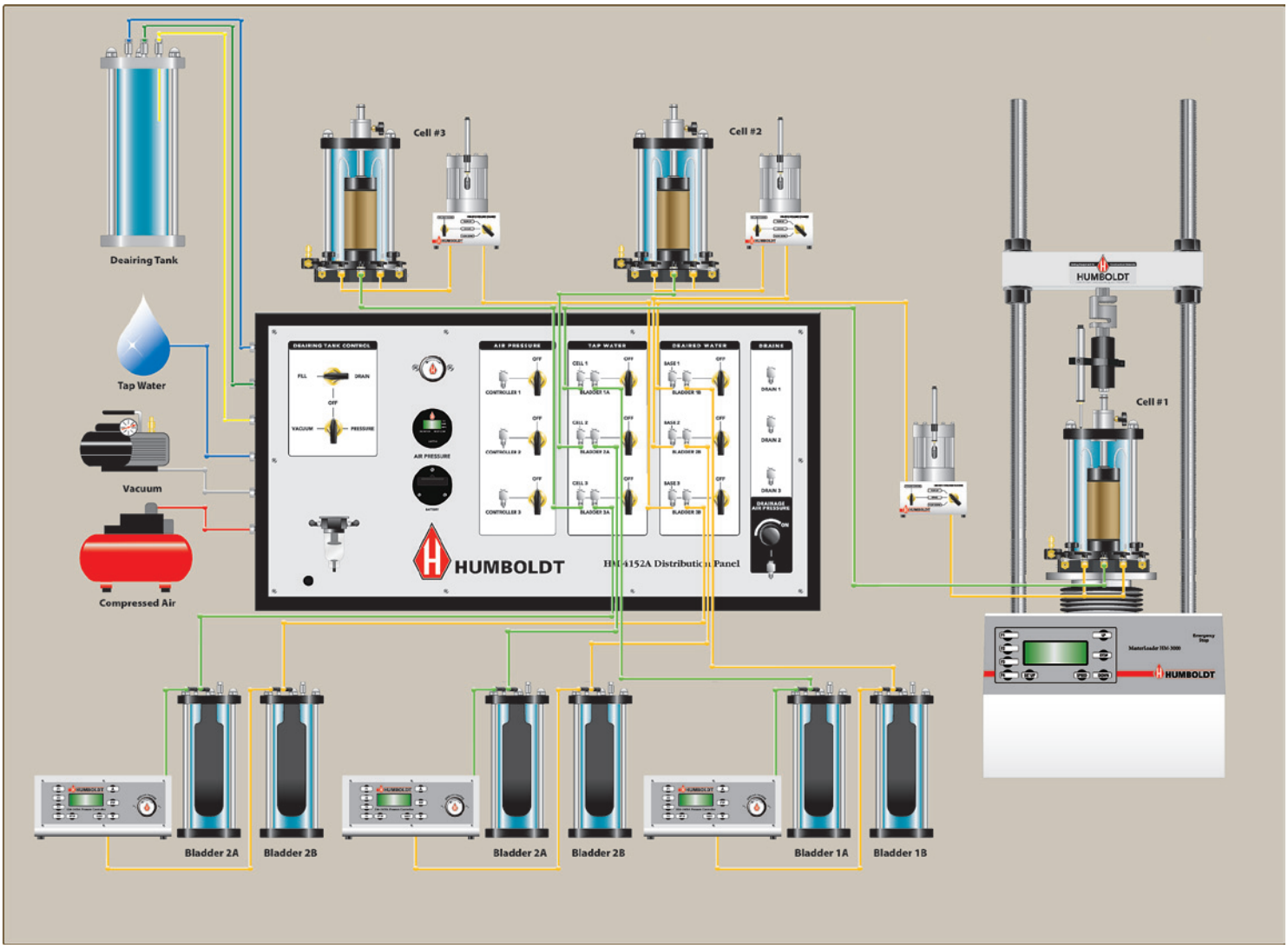

Typical Automated Triaxial, 3-Cell Setup

Part #	Qty	Description
HM-3000.3F	1	Digital MasterLoader 110/220V
HM-3002SW	1	UU Triaxial Reporting Software
HM-3003SW	1	CU Triaxial Reporting Software
HM-4152A	1	Distribution Panel (3 cells)
HM-4199B	3	Triaxial Cell, Brass Fittings
HM-4199.XX	3	Top Cap & Base Pedestal
HM-2300.020	1	S-Type Load Cell, 2,000lbf (50 kN)
HM-2310.20	1	Strain Transducer 2" (50mm)
HM-4170	3	Pore Pressure Transducer 200 PSI
HM-2315	3	Automatic Volume Change Apparatus
HM-2310.10	3	Strain Transducer 1" (25mm)
HM-2310BR	3	Strain Transducer Bracket
HM-4178BRT	1	Displacement Transducer Bracket

Part #	Qty	Description
HM-200387	1	Ball Seat Adapter and Converter
HM-4180.XX	1	Membranes, 12/pk
HM-4181.XX	1	Membrane Stretcher
HM-4182.XX	1	O-Rings, 12/pk
HM-4184.XX	6	Porous Stone
HM-4187E	1	De-Airing Tank, 6 Liter, 110V
HM-3847.XX	1	Split Miter Box
HM-4189.XX	1	Filter Paper, 100/pk
HM-4189FS	1	Filter Strips 5 x 150mm 100/pk
HM-4198	1	Vacuum Grease
HM-4179.XX	6	Acrylic Base
HM-2325A.3F	1	MiniLogger 4 CH Analog Data Acquisition
HM-2450A.3F	3	Pressure Controller

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